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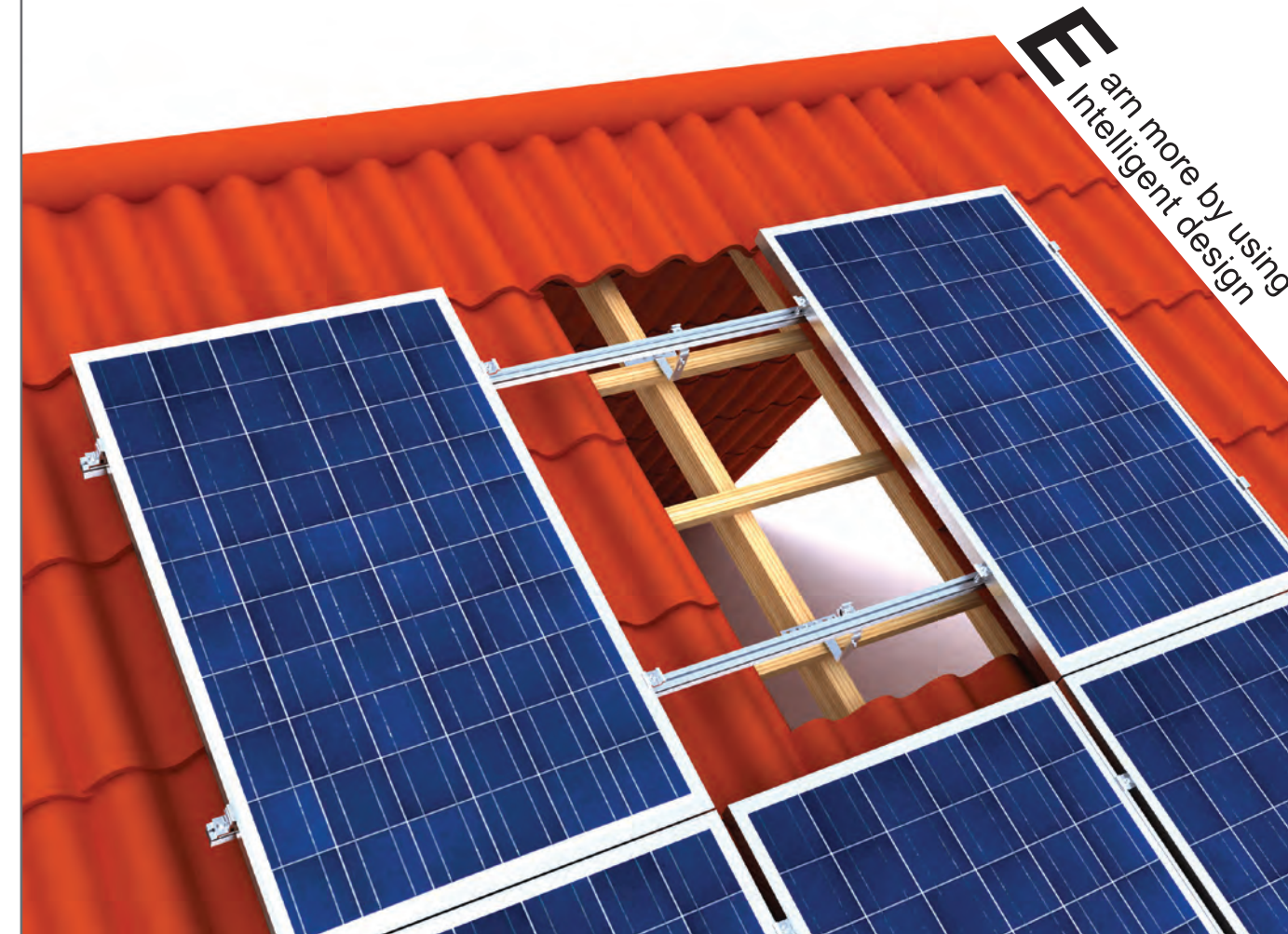
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PV Mounting System



Better Energy Better Life

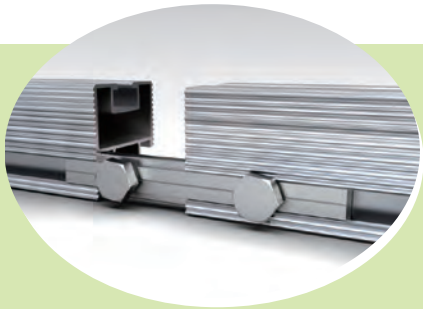
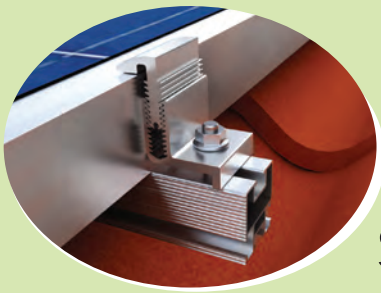
- T series Tile Roof Mounting System
- C series Tin Roof Mounting System
- F series Flat Roof Mounting System
- G series Ground Mounting System



PV Mounting System Contents



- > T series Tile Roof Mounting System ----- 4
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SAMIL POWER CO., LTD. Mounting System

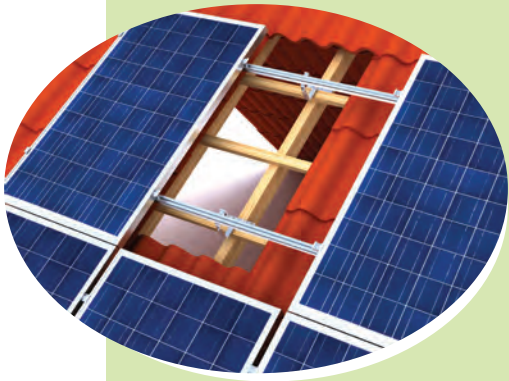
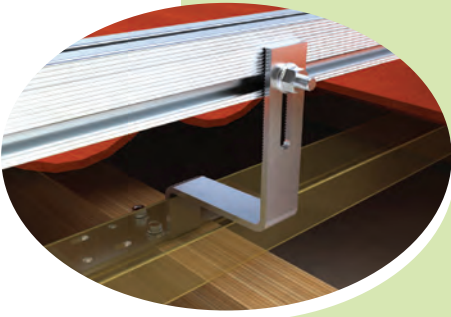
Samil Power Mounting System Division specializes in developing, manufacturing of all kinds of PV (Photovoltaic) Mounting System Solutions.

Quality Control
Before packaging, Our Mounting Systems is required to pass the test of stretch, bend, fire-resistant and salt spray to ensure its excellence, stability and durability.

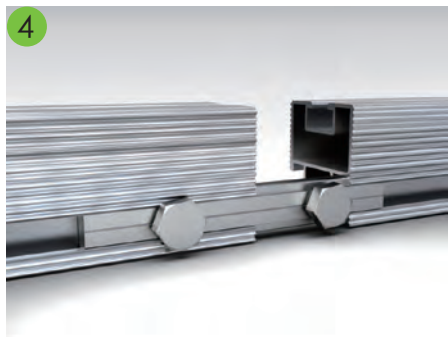
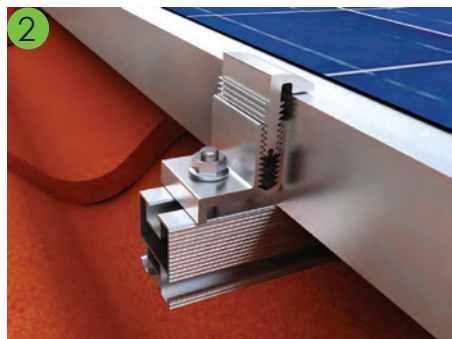
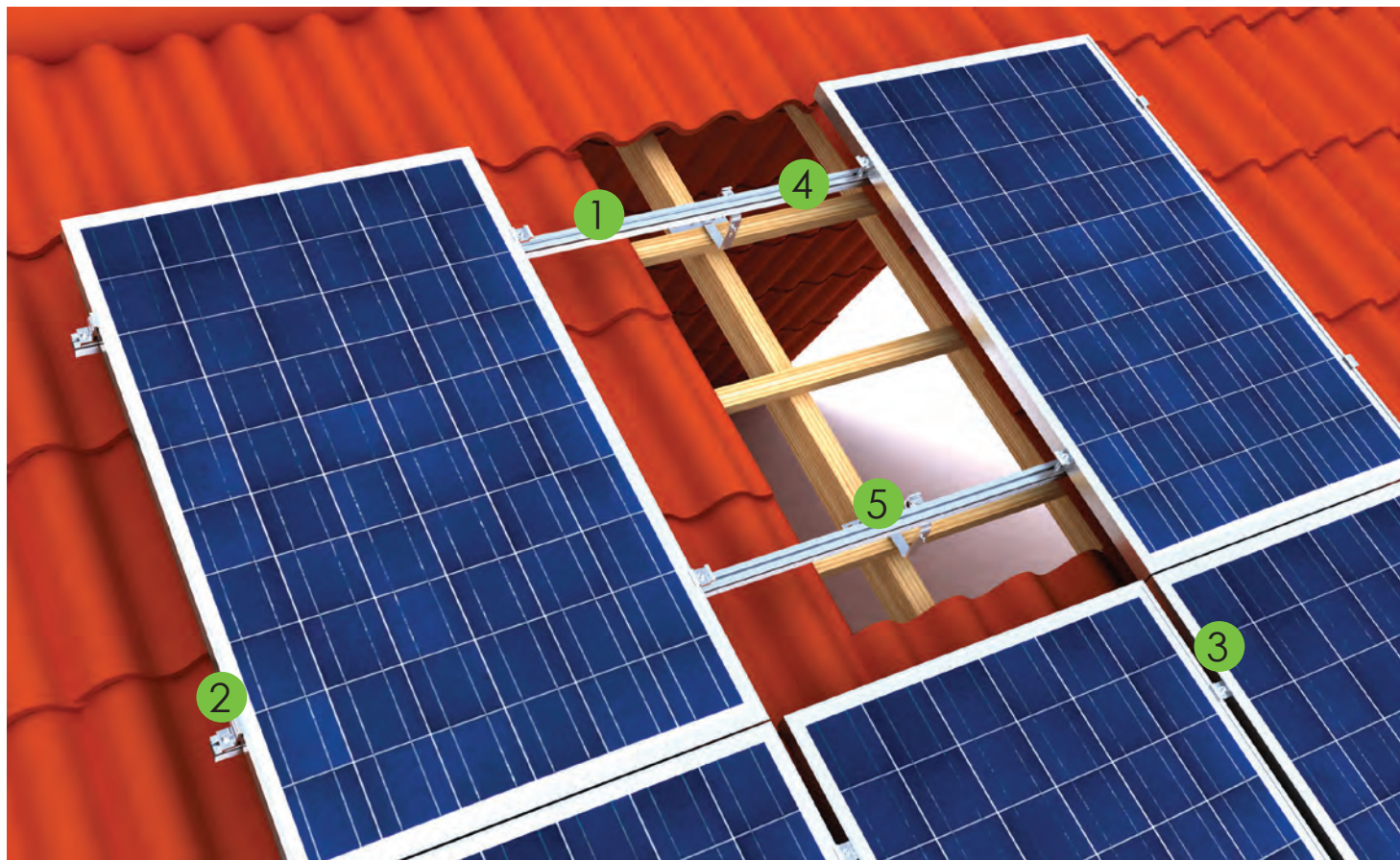
Comply with many Countries Building Codes
Our mounting systems comply with many countries' building code, like: China, Austria, UK, German, Greek, Sweden, Netherland, Australian, etc.

Leading-edge Technology
The **new patent** will enable you using one person, one tool and one step to finish the whole assembling of the mounting system.

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



T series Tile Roof Mounting System



- 5 T series Tile Roof Mounting System further divide 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 with 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 components sharing features enable the possibility of quick installation.

Components List for T-A



1

318-71091-00 Rail D

- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations.
- Standard types: 2120mm/3140mm/3420mm



2

760-30034-00 Adjustable End Clamp Assembly - A01

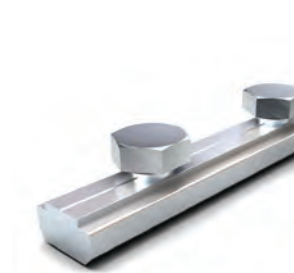
- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



3

760-30056-00 Middle Clamp Assembly - A01

- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



4

760-30086-00 Rail Connector Assembly - A01

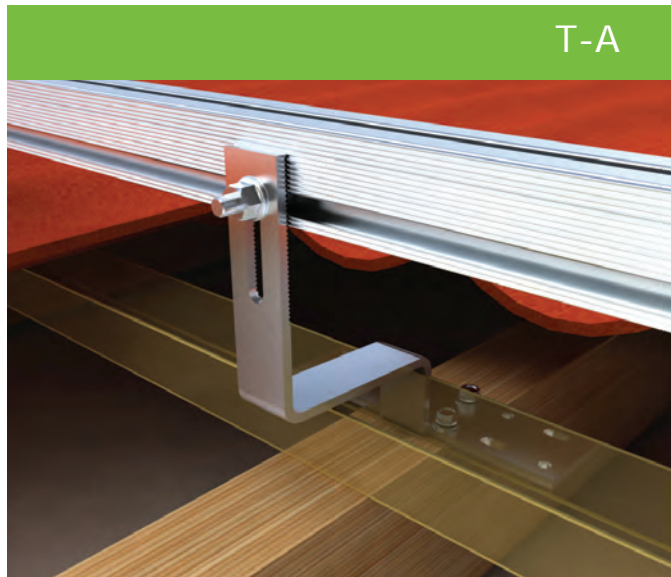
- Material : AL 6063-T6/SUS304
- Connection of adjacent rails. Can be used with Rail A, Rail B, Rail D.



5

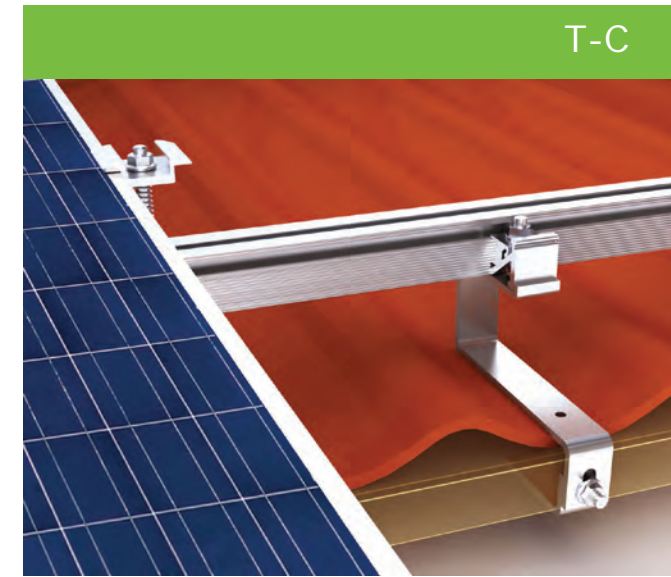
760-30060-00 Hook Assembly - A01

- Material : SUS304
- Connection of rails to wooden beams, fixed from upper side, vertically adjustable.



Features:

1. Height is adjustable in installation, make the whole array looks neat and beautiful.
2. Special oval hole design, make it more flexible and better the universal.
3. It also with highly modular design, pre-assembly and easy installation features.



Features:

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



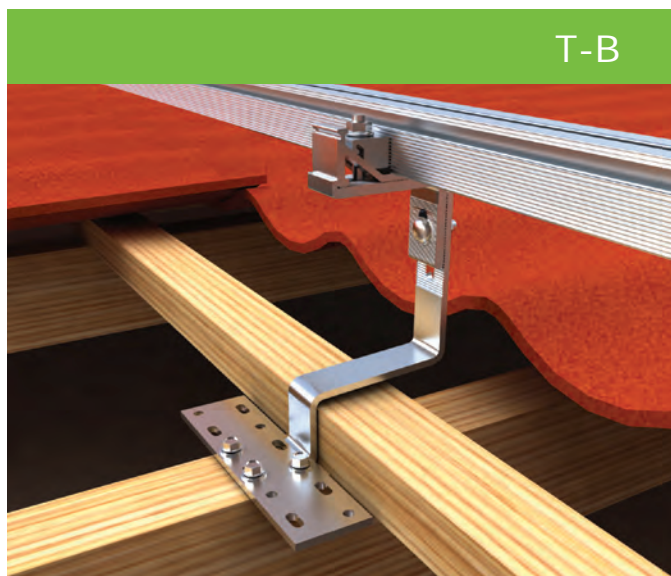
760-30060-00 Hook Assembly - A01

■ Material : SUS304



760-30100-00 Hanging Hook Assembly

■ Material : AL 6063-T6 / SUS304



Features:

1. Thanks to the snap on design, the whole system is installed from the upper, save the installation time up to 25%.
2. Both vertical and horizontal height is adjustable, can match uneven roofs.



Features:

1. Thanks to the snap on design, the whole system is installed from the upper, require less installation time and saves labor cost up to 25%.
2. Stainless steel flushing, excellent water proof.



760-30062-00 Hook Assembly - A02

■ Material : AL 6063-T6 / SUS304



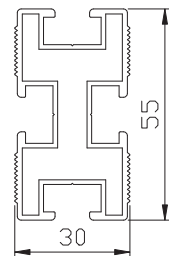
760-30101-00 Shingle Roof Hook Assembly

■ Material : AL 6063-T6 / SUS304
■ Suitable for shingle roof

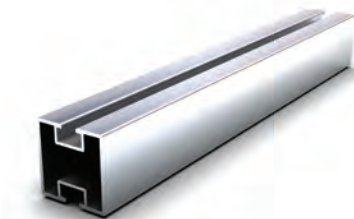
Optional Components



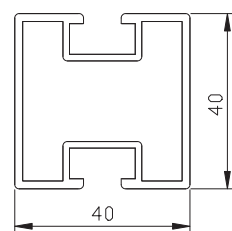
318-72001-01 Rail A



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



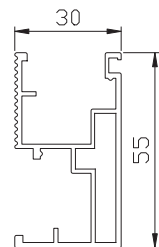
318-72002-00 Rail B



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



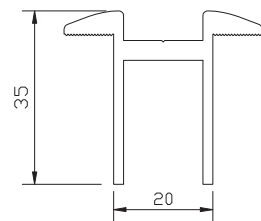
318-72004-00 Rail C



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



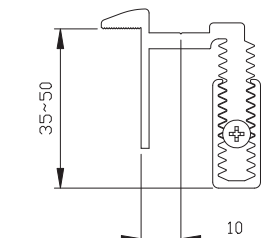
318-74012-00 Middle Clamp Assembly - B01



- Material: AL 6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm

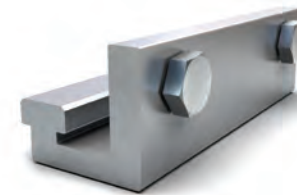


760-30003-00 Adjustable End Clamp Assembly - B01

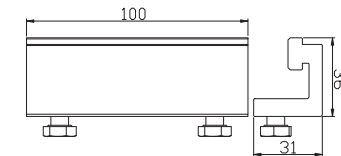


- Material: AL 6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm

Optional Components



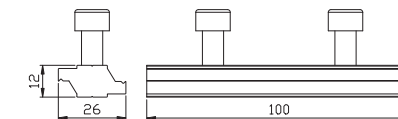
760-30080-00 Rail Connector Assembly - D01



- Material : AL 6063-T6/SUS 304
- Connection of adjacent rails
- Screw: Hex screw M8*10mm



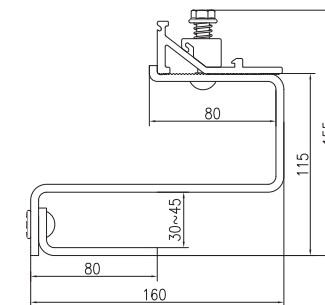
760-30079-00 Rail Connector Assembly - C01



- Material : AL 6063-T6/SUS 304
- Connection of Rail C
- Screw: Hex screw M8*10mm



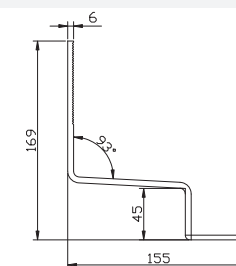
760-30100-00 Hanging Hook Assembly



- Material : SUS 304
- Can be fixed to the beams without screws. Easy and convenient installation



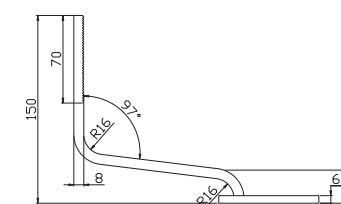
373-70062-00 Hook B



- Material : SUS 304
- Connection of rails to wooden beams, fixed from the side, highly adjustable



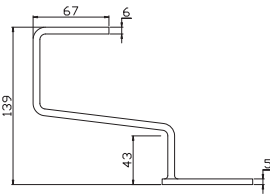
373-70063-00 Hook C



- Material : SUS 304
- Connection of rails to wooden beams, fixed from the side, highly adjustable

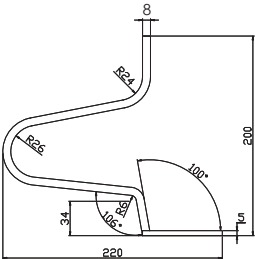
Optional Components

373-70064-00 Hook D



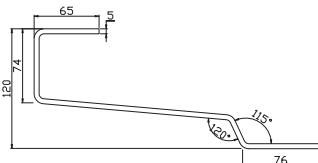
- Material : SUS 304
- Connection of rails to wooden beams, fixed from the upper, vertically adjustable

373-70065-00 Hook E



- Material : SUS 304
- Connection of rails to wooden beams, fixed from the side, horizontally adjustable

373-70066-00 Hook F



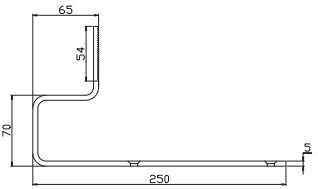
- Material : SUS 304
- Used on plate tile roof, horizontally adjustable

373-70067-00 Hook G



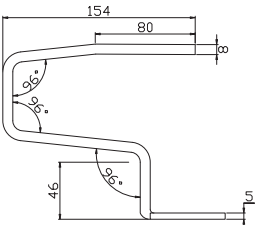
- Material : SUS 304
- Used on shingle roof, fixed from the upper, horizontally adjustable

373-70068-00 Hook H



- Material : SUS 304
- Used on shingle roof, installed from the side, vertically adjustable

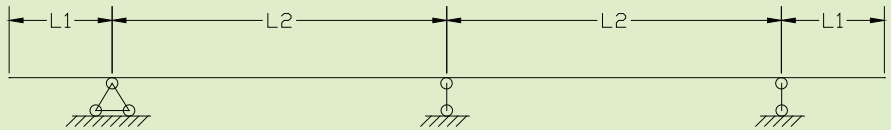
373-70069-00 Hook I



- Material : SUS 304
- Connection of rails to wooden beams, fixed from the upper, horizontally adjustable

T series Mounting System Mechanical Parameters

I 、 Load Parameters



Parameter	L1(mm)	L2(mm)	Wind Load (KN/㎡)	Wind Speed (m/s)	Snow Load (KN/㎡)	Installation Angle
Rail A+Hook A	300~500	≤1400	0.8	30	0.6	Any
Rail A+Hook B	300~500	≤1400	1.2	35	1.0	Any
Rail B+Hook A	300~500	≤1400	0.8	30	0.6	Any
Rail B+Hook B	300~500	≤1400	1.2	35	1.0	Any
Rail C+Hook A	300~500	≤1400	0.8	30	0.6	Any
Rail C+Hook B	300~500	≤1400	1.0	32	0.8	Any
Rail D+Hook A	300~500	≤1400	0.8	30	0.6	Any
Rail D+Hook B	300~500	≤1400	1.0	32	0.8	Any

II 、 Mechanical Parameters of Hook

Hook is generally applicable in the 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. Below is the data showing the bearing capacity of hook A& hook B in different angle.



Hook A(thickness 5mm) Technical Parameters							
Angle α°	0	10	20	30	40	50	60
Bending Resistance(KN)	0.8	0.69	0.62	0.58	0.54	0.53	0.54
Stretching Resistance(KN)	0.75	0.65	0.58	0.55	0.53	0.52	0.53

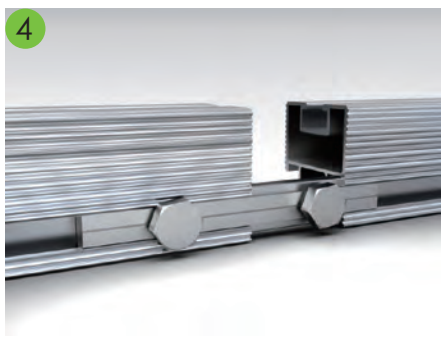
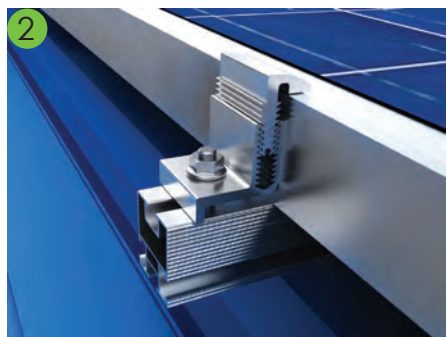
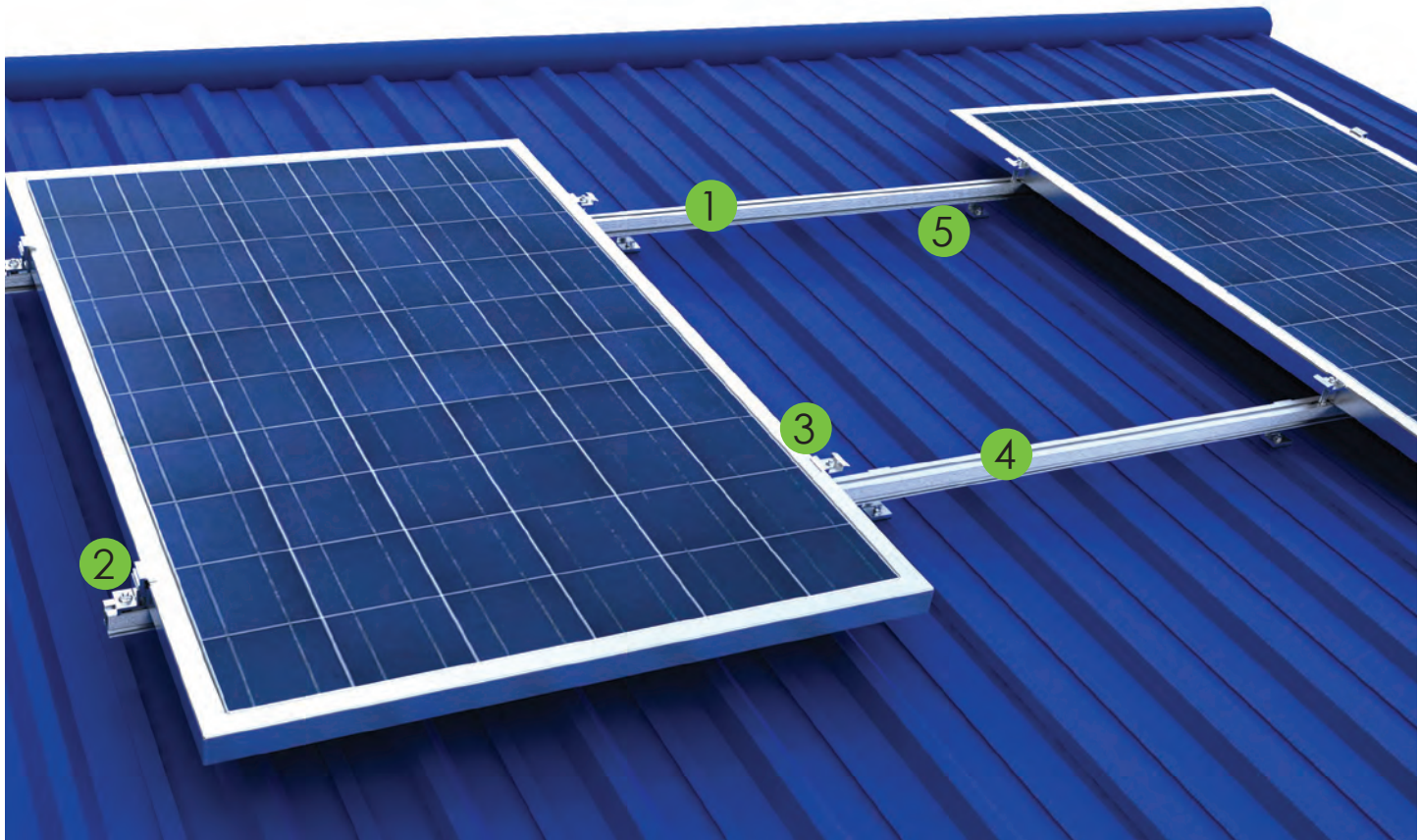
Hook B(thickness 6mm) Technical Parameters							
Angle α°	0	10	20	30	40	50	60
Bending Resistance(KN)	1.2	1.02	0.89	0.84	0.81	0.8	0.81
Stretching Resistance(KN)	1.1	0.95	0.83	0.79	0.76	0.75	0.76

Note: Angle α°is the angle between action F and the direction perpendicular to the batten.

III 、 Tightening Torque for Screws

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

C series Tin Roof Mounting System

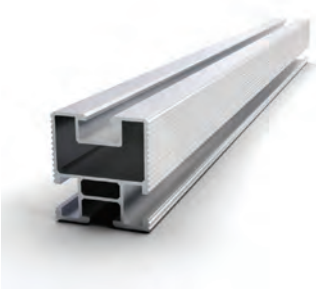


5 C series Tin Roof Mounting System further divide into 5 types, namely: C-A, C-B, C-C, C-D and C-E for your choice.

The material of C series Tin Roof Mounting System is aluminum alloy (6063-T6). It with light weight, 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. According to the demands from power stations, our designers can customize the best PV mounting system solution for your individual needs.

Components List for C-A



1

318-71091-00 Rail D

- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



2

760-30034-00 Adjustable End Clamp Assembly - A01

- Material : AL 6063-T6 / SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm.



3

760-30056-00 Middle Clamp Assembly - A01

- Material : AL 6063-T6/sus304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm.



4

760-30086-00 Rail Connector Assembly - A01

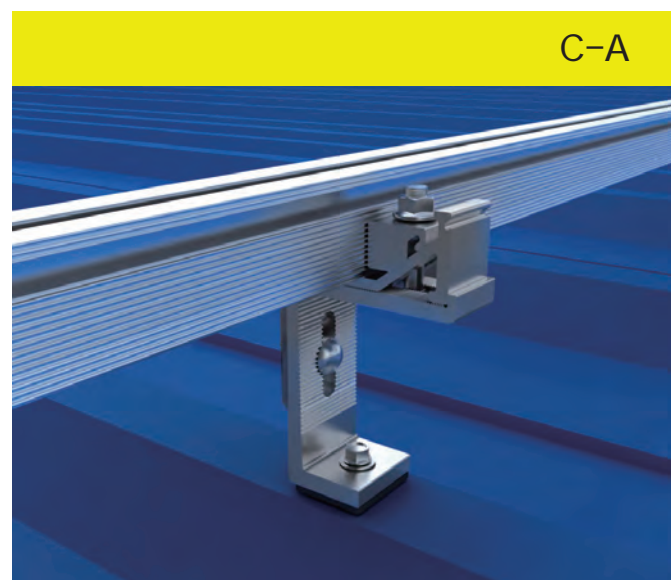
- Material : AL 6063-T6/ SUS304
- Screw: Hex screw M8*10mm



5

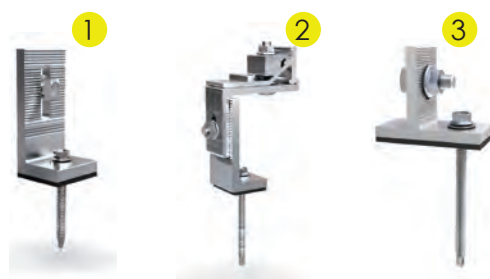
760-30041-00 L foot - A01

- Material : AL 6063-T6/ SUS304
- Screw: Self-drilling screw ST6.3*63mm



Features:

1. Thanks to the snap on design, the whole system is installed from the upper, require 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, ensure safety and stability of the whole system.



- 1 760-30041-00 L-foot - A01
- 2 760-30042-00 L-foot - A02
- 3 760-30043-00 L-foot - A03

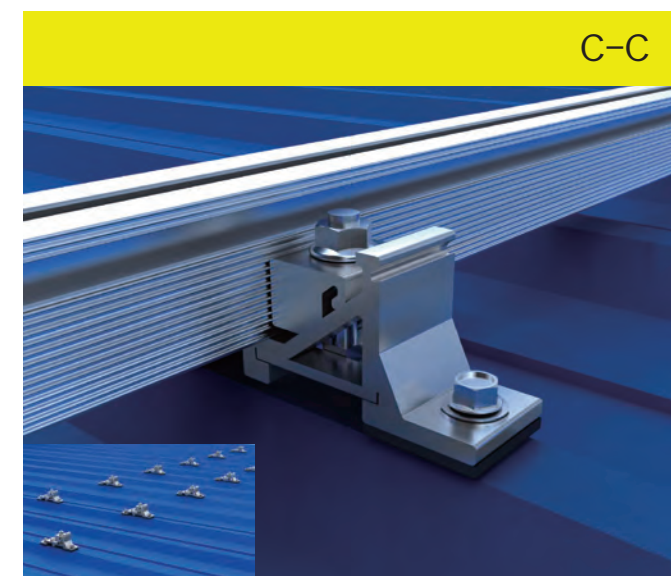


Features:

1. A wide range of metal sheet clamps, suitable for different Tin Roofs.
2. Dual EPDM sealing cushion ensures 100% water proof.



- 1 760-30081-00 Metal Sheet Clamp Assembly - A01
- 2 760-30087-00 Metal Sheet Clamp Assembly - B01
- 3 760-30088-00 Metal Sheet Clamp Assembly - C01

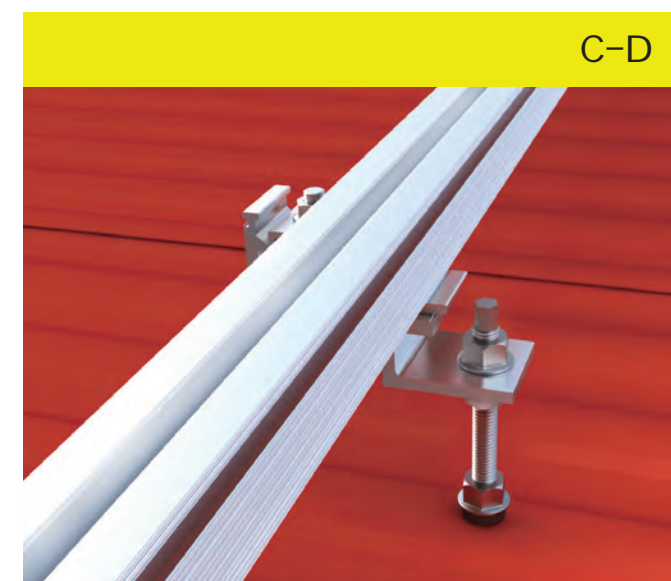


Features:

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.

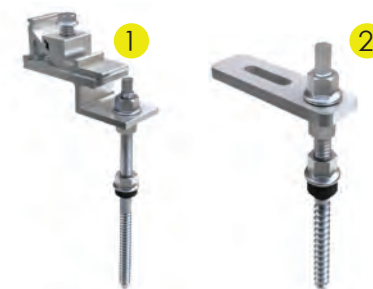


- 1 760-30091-00 Dual Self-drilling Screw Clamp Assembly - C01



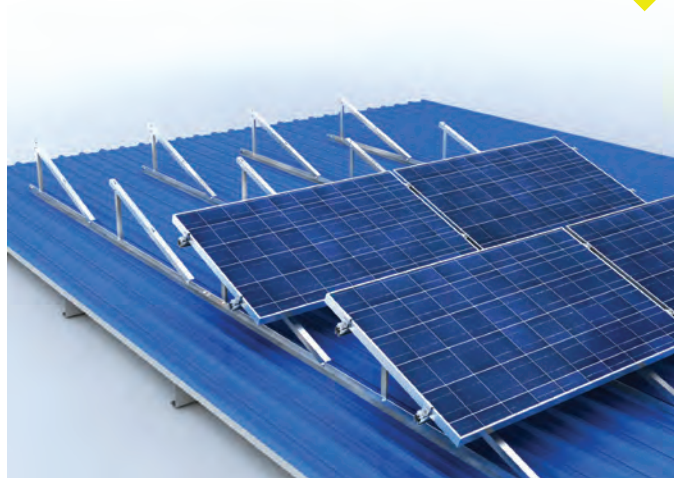
Features:

1. Adjustable of double end screws hanger bolt fit 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 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

C-E



Features:

1. Suitable for tin roof, angle adjustable, ranges from 5° to 30°
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

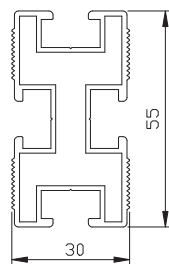


1 760-30098-00 AL Triangle Assembly

Optional Components



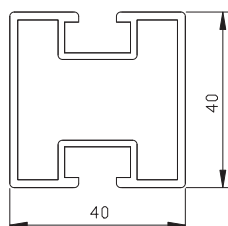
318-72001-01 Rail A



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm

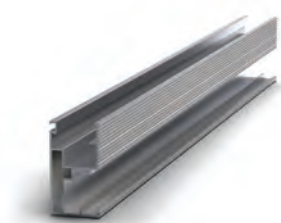


318-72002-00 Rail B

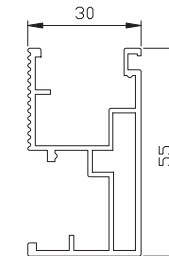


- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm

Optional Components



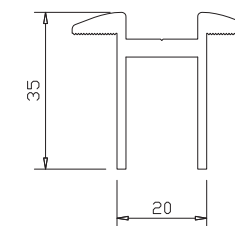
318-72004-00 Rail C



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



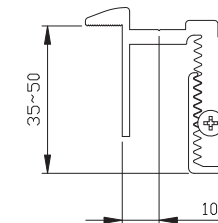
318-74012-00 Middle Clamp - B01



- Material : AL 6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



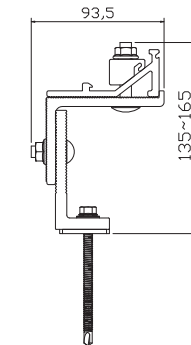
760-30003-00 Adjustable End Clamp - B01



- Material : AL 6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



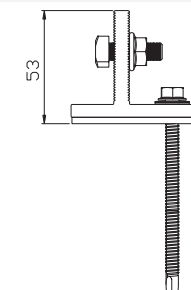
760-30042-00 L foot Assembly - A02



- Material : AL 6063-T6/SUS304
- Snap on components design enable the quick installation, vertical and horizontal height is adjustable



760-30043-00 T foot Assembly - B01

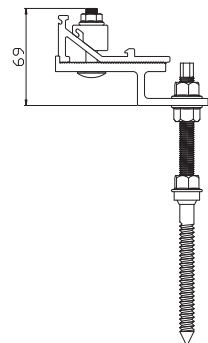


- Material : AL 6063-T6/SUS304
- T-bolt design, vertical height is adjustable

Optional Components



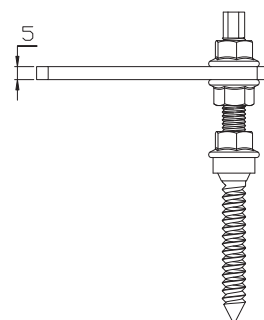
760-30047-00 Hanger Bolt Assembly M10 - A01



- Material : AL 6063-T6/SUS304
- Snap on components design enable the quick installation, vertical and horizontal height is adjustable
- Hanger Bolt:M10*(150~300)、M12*(150~300)



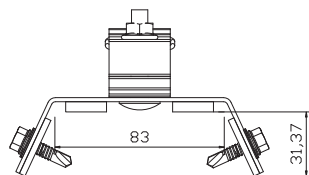
760-30090-00 Hanger Bolt Assembly M10 - A02



- Material : SUS304
- Snap on components design enable the quick installation, vertical and horizontal height is adjustable
- Hanger Bolt:M10*(150~300)、M12*(150~300)



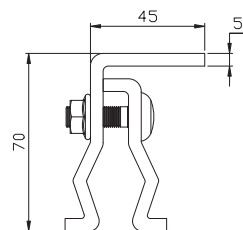
760-30081-00 Metal Sheet Clamp Assembly - A01



- Material : AL 6063-T6/Q235B
- Snap on components design enable the quick installation
- Suitable for tin roofs



760-30087-00 Metal Sheet Clamp Assembly - B01

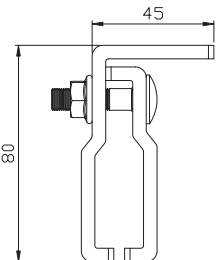


- Material : AL 6063-T6/SUS304
- Zero penetration to roof structure

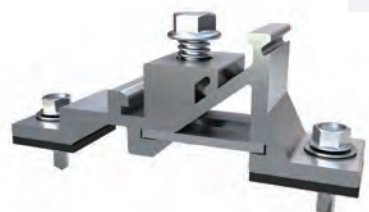
Optional Components



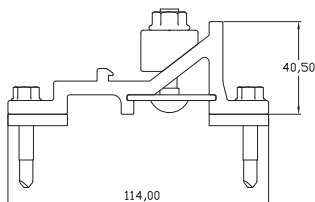
760-30088-00 Metal Sheet Clamp Assembly - C01



- Material : AL 6063-T6/SUS304
- Zero penetration to roof structure



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

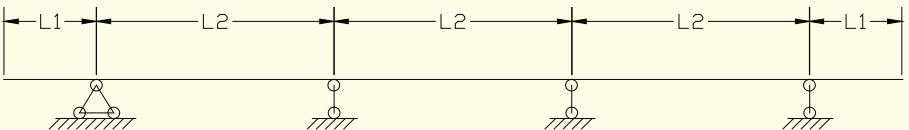


- Material : AL 6063-T6
- Snap on components design enable the quick installation
- Suitable for tin roofs

C series Mounting System Mechanical Parameters

I 、 Load Parameters

There are different types of rails, the connection methods may 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.Below is the datasheet of the bearing capacity of rail A, rail B, rail C and rail D with different junction parts.



Parameter Configuration	L1(mm)	L2(mm)	Wind Load (KN/ m²)	Wind Speed (m/s)	Snow Load (KN/ m²)	Installation Angle
L foot	300~400	≤900	0.8	30	0.8	Any
T foot	300~400	≤900	0.8	30	1.0	Any
Metal Sheet Clamp	300~400	≤900	0.8	30	1.2	Any
Hanger Bolt (M10)	300~400	≤900	1.0	32	1.0	Any
Hanger Bolt (M12)	300~400	≤900	1.5	40	1.5	Any

II 、 Tightening torque for screws

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

F-A Airflow Flat Roof Mounting System



Step 1:
Unfold the tripod

Step 2:
Fix back board and side board

Step 3:
Attach modules, finish the whole installation

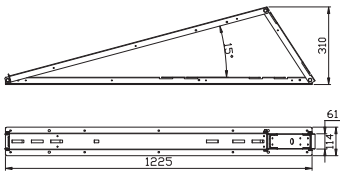


Components List for F-A

- 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.



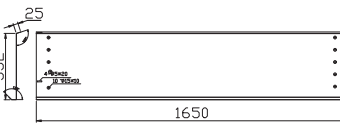
760-30099-00 Folding Tripod



- Material : AL 6063-T6
- Can be folded, angle adjustable, ranges from 15° to 25°



318-72161-00 Back Board

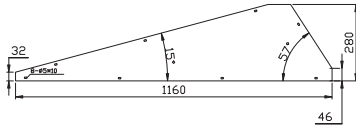


- Material : AL 6063-T6
- To resistant for wind load from the back

Components List for F-A



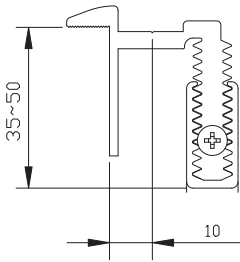
318-72160-00 Side Board



- Material : AL 6063-T6
- To resistant for wind load from the side



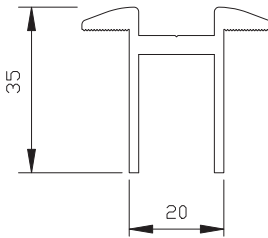
760-30038-00 End Clamp Assembly - B02



- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



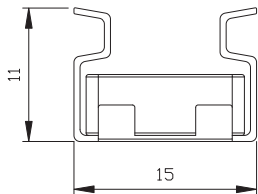
760-30058-00 Middle Clamp Assembly - B02



- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



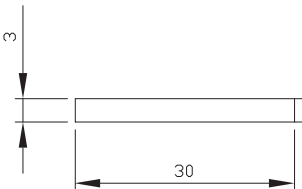
412-06030-00 Bolt Holder



- Material : SUS304



530-08060-00 EVA Cushion



- Material : EVA
- Add friction between mounting system to roof top

F-A series Mounting System Mechanical Parameters

I 、 Load Parameters

Below is the result of loading capacity according to GB 50009-2001 (building code):

Wind Load (KN/㎡)	Wind Speed (m/s)	Snow Load (KN/㎡)	Installation Angle
1.5	40	1.5	fixed/ adjustable

II 、 Ballast List

When wind is blocked by buildings or mounting system itself, there will exist eddy and low pressure area effect, and it will become negative pressure to modules. Therefore the whole system needs ballast to increase stability.

Wind speed (m/s)	25	30	35	40
Ballast(kg/㎡)	30	45	65	90

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

III 、 Tightening Torque for Screws

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.

Specification of Screws	M8	M10	M12	M14
Tightening Torque(Nm)	12~15	15~20	20~30	30~40

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 structure.

The cross type support structure makes the whole mounting system sturdy and durable. It 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 weighted, easy transportation and quick installation features. The installation angle can be adjustable among 25°, 30° or 35° for customers' preference. In addition, Samil Power provides customized design according to specific enquiries.

Components List for F-B

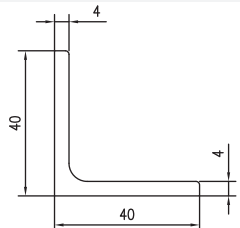
760-30095-00 AL Triangle Assembly

- Material : AL 6063-T6
- Can be folded, angle adjustable, ranges from 25° to 35°

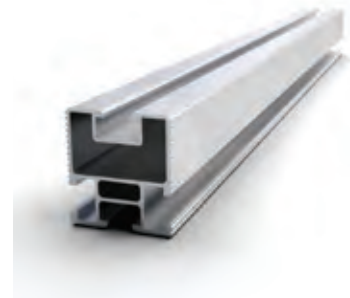


318-71104-00 Angle AL

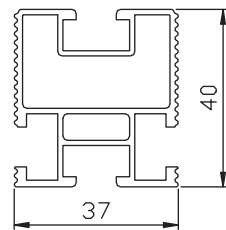
- Material :AL 6063-T6
- Increasing stability



Components List for F-B



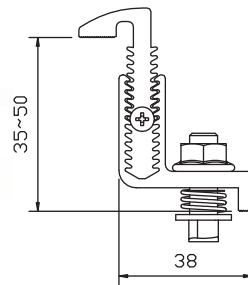
318-71091-00 Rail D



- Material : AL 6063-T6
- Supporting modules, suitable for variety of installations
- Standard types: 2120mm/3140mm/3420mm



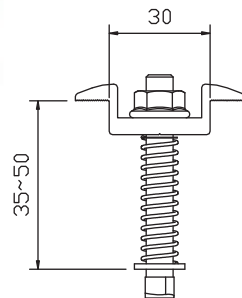
760-30034-00 Adjustable End Clamp Assembly - A01



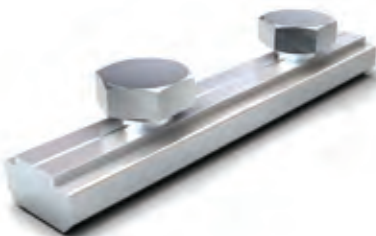
- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



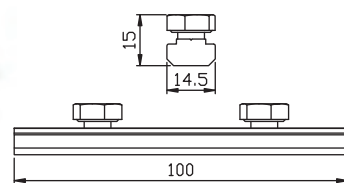
760-30056-00 Middle Clamp Assembly - A01



- Material : AL 6063-T6/SUS304
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



760-30086-00 Rail Connector Assembly - A01



- Material : AL 6063-T6/SUS304
- Screw: Hex screw M8*10mm

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) parameters.

1、 Span 1200mm load parameters: :

Parameter Section	Wind Load(Kn/㎡)	Wind Speed(M/s)	Snow Load(Kn/㎡)	Installation Angle
Angle AL 40x40x4	0.8	30	0.8	adjustable
Angle AL 40x40x5	1.0	32	1.0	adjustable

2、 Span 1500mm load parameters:

Parameter Section	Wind Load(Kn/㎡)	Wind Speed(M/s)	Snow Load(Kn/㎡)	Installation Angle
Angle AL 50x50x4	1.0	32	1.0	adjustable
Angle AL 50x50x5	1.2	35	1.2	adjustable

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:

Wind Speed(m/s)	≤20	25	30	35
Ballast(kg)	40	70	110	160

Notes: Such mounting system spans 1200mm, and Kg as 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 15-20Nm.

F-C-1 Concrete Ballast Flat Roof Mounting System



F-C-2 Concrete Base Flat Roof Mounting System

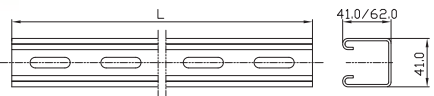


■ This mounting system is widely used for large-scale PV station. It takes advantage of concrete base to fix the mounting system, which is convenient and cost-effective. The main part of the system adopts Q235B steel materials with hot dip galvanized which ensures the MTBF 25 years at least. Instead of destroying the original waterproof surface, such solution could adjust the installation angle according to the specific demands.

Components list for F-C-1/F-C-2



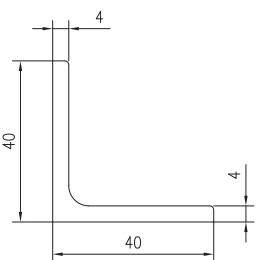
Rail, Sloped Support, Front Support, Side Support and Back Support



- Material: hot dip galvanized steel Q235B



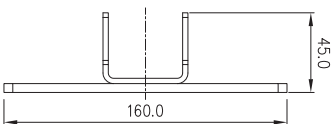
Angle Steel



- Material: hot dip galvanized steel Q235B
- Main part of the mounting system, supporting the whole stability



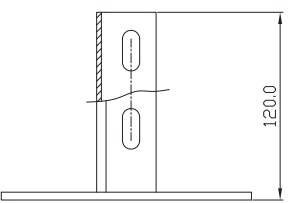
373-70205-00 Front Junction A



- Material: hot dip galvanized steel Q235B



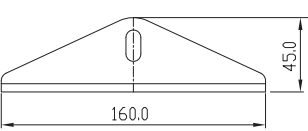
373-70129-00 Back Junction C



- Material: hot dip galvanized steel Q235B
- Increasing stability of the mounting system on the back



373-70125-00 Junction B

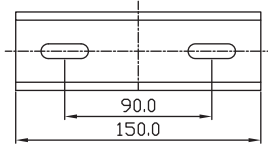


- Material: hot dip galvanized steel Q235B
- Supporting module connecting vertical and horizontal directions with adjustable angles

Components list for F-C-1/F-C-2



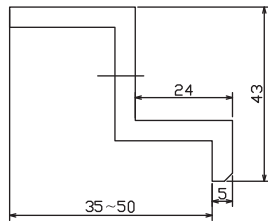
373-70232-00 Rail Connector



- Material: hot dip galvanized steel Q235B
- Connecting two steel rails nearby



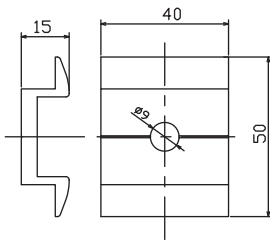
End Clamp 30mm-50mm



- Material: hot dip galvanized steel Q235B
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



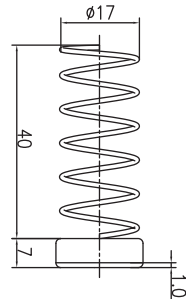
318-73003-00 Middle Clamp - A01



- Material: AL6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



412-06020-00 Spring Nuts



- Material: hot dip galvanized steel Q235B

Flat Roof 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) parameters.

1、Spanning from 2000mm to 2400mm load parameters:

Parameters Section	Wind Load(kn/㎡)	Wind Speed(m/s)	Snow Load(kn/㎡)	Installation Angle
41x41x2	0.8	30	0.8	fixed
41x62x2	1.2	35	1.0	fixed

2、Spanning from 2400mm to 3000mm load parameters:

Parameters Section	Wind Load(kn/㎡)	Wind Speed(m/s)	Snow Load(kn/㎡)	Installation Angle
41x62x2	0.8	30	0.8	fixed
41x82x2	1.2	35	1.0	fixed

Notes: The data above are applied for rail parts of mounting system. Others are required to be calculated based on specific situation by engineers.

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 force analysis and proper configurations, achieving safety, solidity and stability. Load parameters are as below:

Wind Speed(m/s)	≤20	25	30	35
Ballast(kg)	40	70	110	160

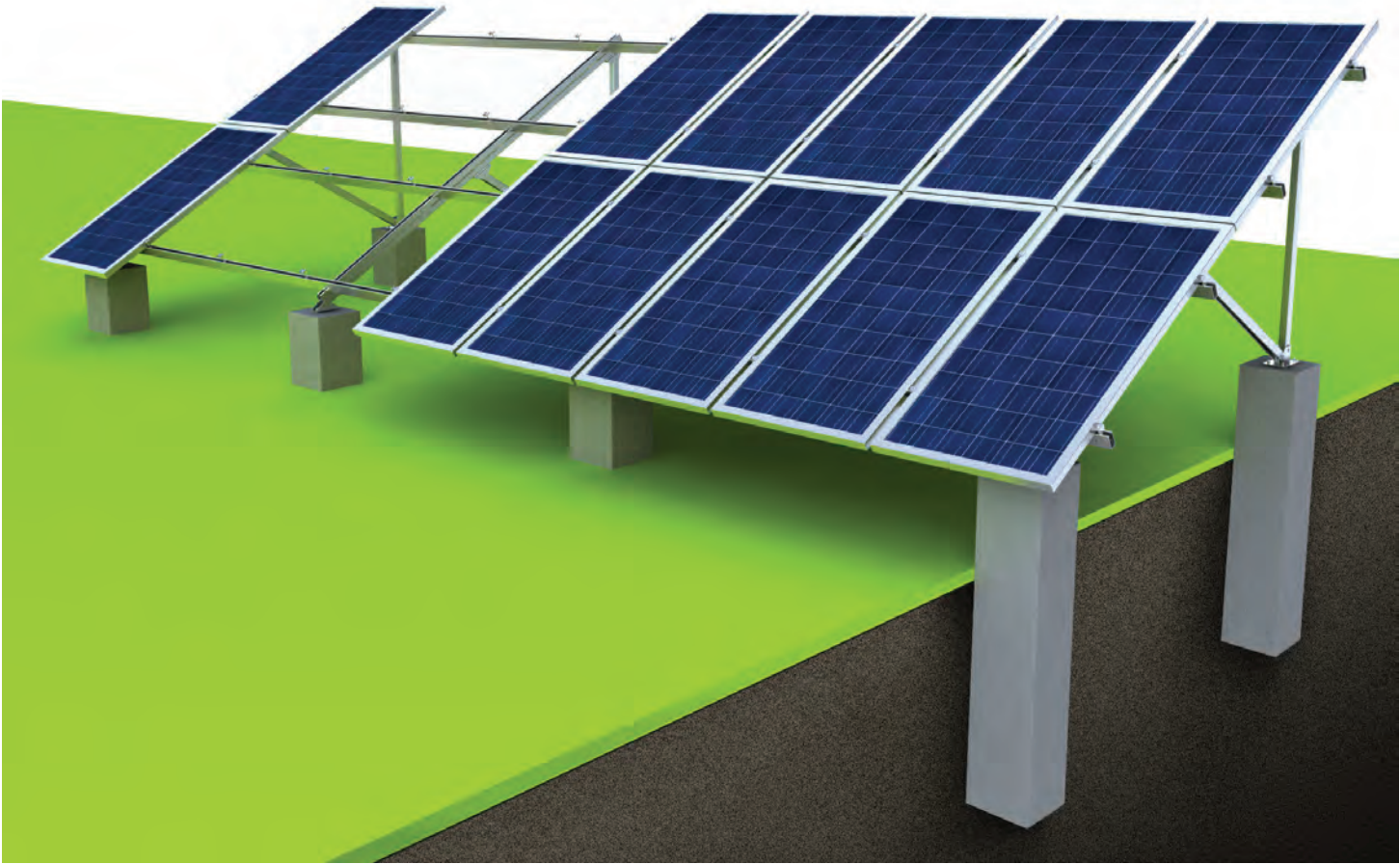
Notes: Such mounting system spans 1200mm, and Kg as the unit of the ballast for each module.

III 、 Tightening torque for screws

SUS304 or galvanized steel are raw materials of screws, the tightening torque of screws requested according to practical needs. Data of tightening torque can be referred to the table below.

Specification	M8	M10	M12	M14
Locking torque (Nm)	12~15	15~20	20~30	30~40

G-A Concrete Base Dual Module Ground Mounting System

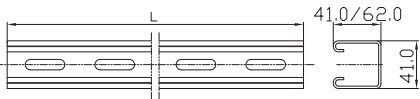


■ Such installation system fits for open ground and large-size PV plants. Cement columns penetrate into ground and tightly fixed. Screws are prepared on the cement columns, which are convenient for installing the footing of the mounting system. The main body adopts C-type galvanized steel, which offers elegance appearance and reliable quality.

Components list for G-A



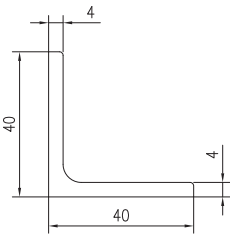
Rail, Sloped Support, Front Support, Side Support and Back Support



- Material: hot dip galvanized steel Q235B



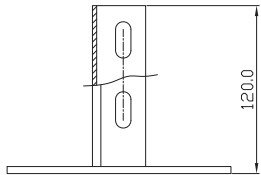
Angle Steel



- Material: hot dip galvanized steel Q235B
- Main part of the mounting system, supporting the whole stability



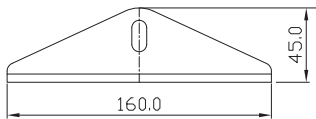
373-70129-00 Back Junction C



- Material: hot dip galvanized steel Q235B
- Increasing stability of the mounting system on the back



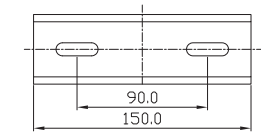
373-70125-00 Junction B



- Material: hot dip galvanized steel Q235B
- Supporting module connecting vertical and horizontal directions with adjustable angles



373-70232-00 Rail Connector

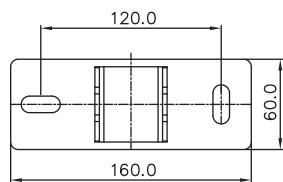


- Material: hot dip galvanized steel Q235B
- Connecting two nearby steel rails

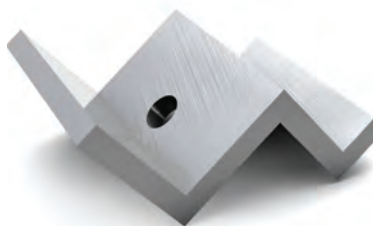
Components list for G-A



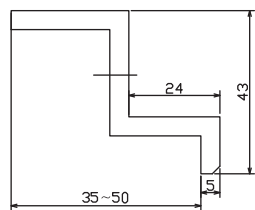
373-70205-00 Front Junction A



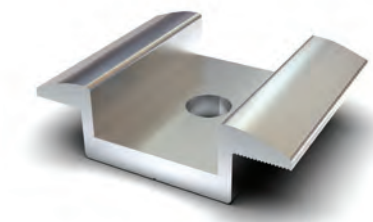
■ Material: hot dip galvanized steel Q235B



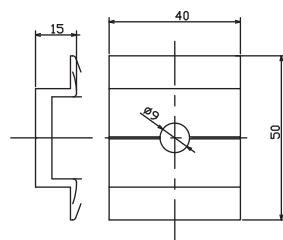
End Clamp 30mm-50mm



■ Material: hot dip galvanized steel Q235B
■ Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



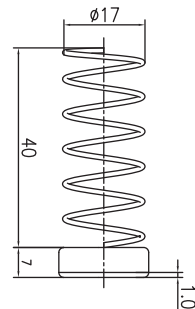
318-73003-00 Middle Clamp - A01



■ Material: AL6063-T6
■ Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



412-06020-00 Spring Nuts



■ Material: hot dip galvanized steel Q235B

Mechanical Parameters for G-A

I 、 Load Parameters

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

1、Spanning from 2000mm to 2400mm load parameters:

Parameter Section	Wind Load(kn/ m²)	Wind Speed(m/s)	Snow Load(kn/ m²)	Installation Angle
C type steel 41x41x2	0.8	30	0.8	fixed
C type steel 41x62x2	1.2	35	1.0	fixed

2、Spanning from 2400mm to 3000mm load parameters:

Parameter Section	Wind Load(kn/ m²)	Wind Speed(m/s)	Snow Load(kn/ m²)	Installation Angle
C type steel 41x62x2	0.8	30	0.8	fixed
C type steel 41x82x2	1.2	35	1.0	fixed

Notes: The data above are applied for rail parts of mounting system. Others are required to be calculated based on specific situation by engineers.

II 、 Foundation Parameter

The foundation bears the whole load passed from the mounting system, including pressure, shearing and bending moments (once fixed). Therefore, size of cement foundation should meet these demands, which requires basic depth is no less than 1m and size of cross side is no less than 300*300mm. According to the cross side shape, configuration should be at least four φ10 reinforcing bars which are at least above level two. Stirrups are φ6 with level one reinforcing bars, which span is less than 300mm. Concrete level is less than C20 and the thickness of rebar protection layer is no less than 30mm.

III 、 Tightening Torque for Screws

The Screw material is SUS304 or hot dip galvanized steel in all our mounting system, tightening torque see below table:

Specification	M8	M10	M12	M14
Locking Torque (Nm)	12~15	15~20	20~30	30~40

G-B-1 Ram Post Dual Module Ground Mounting System



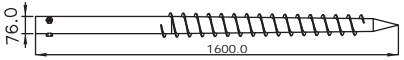
G-B-2 Ram Post Single Module Ground Mounting System



■ This solution takes advantage of cement tricks or chunks to fix the mounting system, which provides easy installation and saves the labour cost greatly, fitting for large-scale ground system and concrete flat roof mounting system. The main body of mounting system adopts structural steel shapes , coupled with galvanized processing.

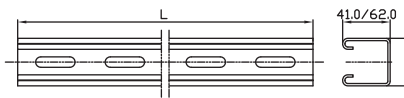
Components list for G-B-1/G-B-2

373-70038-00 Ram Post Ground Mounting System



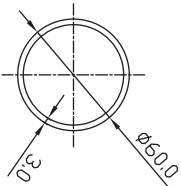
- Material: hot dip galvanized steel Q235B, which comply with ISO 1461:1991 standard
- Fixed underground, supporting the whole PV system
- Height: 1200-2000mm;
Diameter: $\Phi 50$ -130mm

Rail, Side Support and Back Support



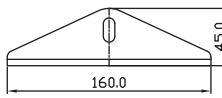
- Material: hot dip galvanized steel Q235B
- Main part of mounting system

Slopped Support, Front Support and Back Support



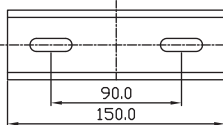
- Material: hot dip galvanized steel Q235B
- Main part of mounting system

373-70125-00 Junction B



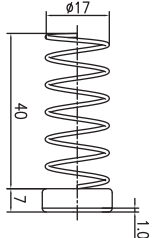
- Material: hot dip galvanized steel Q235B
- Supporting module connecting vertical and horizontal directions with adjustable angles

373-70232-00 Rail Connector



- Material: hot dip galvanized steel Q235B
- Connecting two nearby steel rails

412-06020-00 Spring Nuts

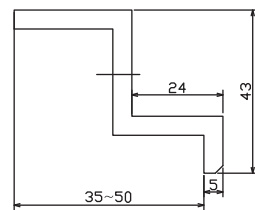


- Material: hot dip galvanized steel Q235B

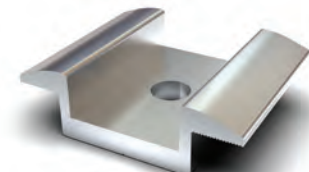
Components list for G-B-1/G-B-2



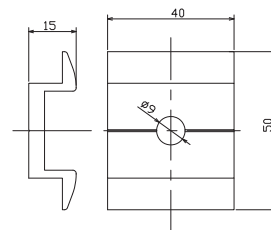
End Clamp 30mm-50mm



- Material: hot dip galvanized steel Q235B
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



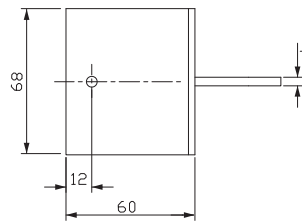
318-73003-00 Middle Clamp - A01



- Material: AL6063-T6
- Fixing modules, suitable for modules of which thickness ranges from 35mm to 50mm



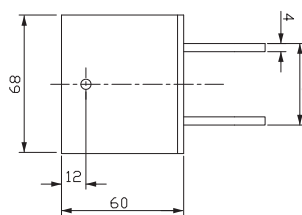
373-70265-00 Round Leg A



- Material: hot dip galvanized steel Q235B
- Connecting component



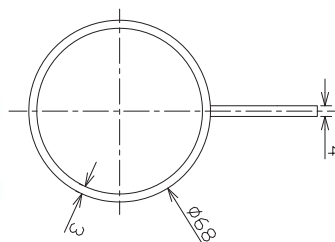
373-70266-00 Round Leg B



- Material: hot dip galvanized steel Q235B
- Connecting component



373-70267-00 Round Leg C



- Material: hot dip galvanized steel Q235B
- Connecting component

Mechanical Parameters for G-B-1/G-B-2

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) parameters.

1、Spanning from 2000mm to 2400mm load parameters:

Parameter Section	Wind Load(kn/㎡)	Wind Speed(m/s)	Snow Load(kn/㎡)	Installation Angle
41x41x2	0.8	30	0.8	fixed
41x62x2	1.2	35	1.0	fixed

2、Spanning from 2400mm to 3000mm load parameters

Parameter Section	Wind Load(kn/㎡)	Wind Speed(m/s)	Snow Load(kn/㎡)	Installation Angle
41x62x2	0.8	30	0.8	fixed
41x82x2	1.2	35	1.0	fixed

Notes: The data above is applied for rail parts of mounting system. Others are required to be calculated based on specific situation by engineers.

II 、Mechanical data for Ram post

1、Test data:

Parameter Section	Compression Test(KN)	Stretching Test(KN)	Lateral Load Test(KN)
Ram Post 800x76x2	13.5	7.0	3.5
Ram Post 1200x90x3	25.0	14.0	6.0
Ram Post 1400x114x3	35.0	18.0	8.0
Ram Post 1600x76x3	26.0	16.0	6.0
Ram Post 2000x90x3	48.0	28.0	12.0

2、Depth of Ram Post Ground Mounting System

The lode of Ram Post has direct relation with its depth and cross side dimension. The depth demands parameters such as soil analysis, wind load, snow load, earthquake load, arrangement and array of modules, ensuring safety and cost-effectiveness.

III 、Tightening Torque for Screws

The Screw material is SUS304 or hot dip galvanized steel in all our mounting system, tightening torque see below table:

Specification	M8	M10	M12	M14
Locking Torque (Nm)	12~15	15~20	20~30	30~40

Spiral Pile Drill



Data Sheet

Data Sheet		
Pile Diameter	mm	76
Pile Depth	mm	1800
Chassis		
Track Base	mm	1430
Gauge	mm	1150
Crawler Width	mm	250
Ground Clearance	mm	280
Blade Legth	mm	1400
Travelling		
Traction Force,max	KN	19
Travel Speed(Max/min)	Km/h	4.7/2.6
Hill Climbing Ability	°	20

Feed		
Length of Drillrig	mm	3400
Feed Length	mm	2000
Feed Speed	m/min	2
Rotary		
Rotary Torque ,max	N.m	1500
Rotary Speed, Max	kw/rpm	16/2200
Fuel Tank	L	42.5
Dimension (L*w*h)	mm	5500*1400*3000
Weight	kg	3000

Features:

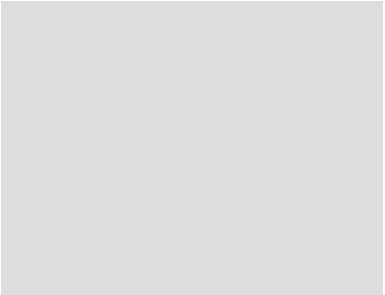
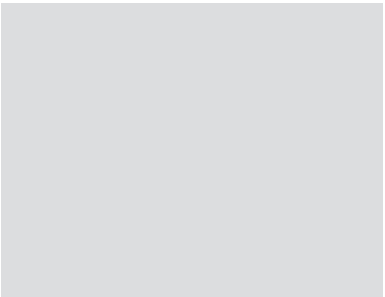
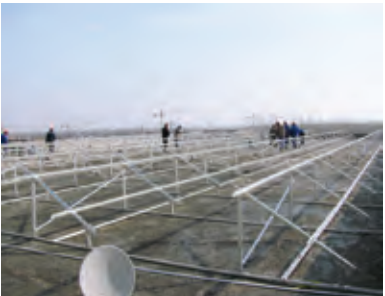
- According to the pile structure size, the machine is equipped with various pile connecting devices, which makes the disassembly flexible and efficient.
- In different stratum condition, the machine can be equipped with rock drilling, cutting short spiral and other tools to achieve full stratum drilling.
- Rotation and propulsion are matched exactly based on operating condition of stratum, which is easy to adjust and ensure high efficiency of drilling pile.
- The machine is equipped with a pile guide device to ensure verticality and high quality of drilling pile.
- The machine is based on excavator chassis, which assures large driving force and strong adaptability.

Reference

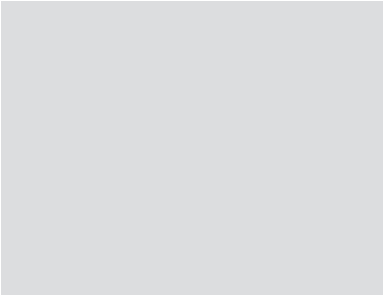
■ Project Site: Suqian, Jiangsu province
Load Capacity: 13.2 MW
Material: hot dip galvanized steel Q235B
Customer: Datang new energy
Time of Installation: November, 2011
Solution: F-C Flat Roof Mounting System



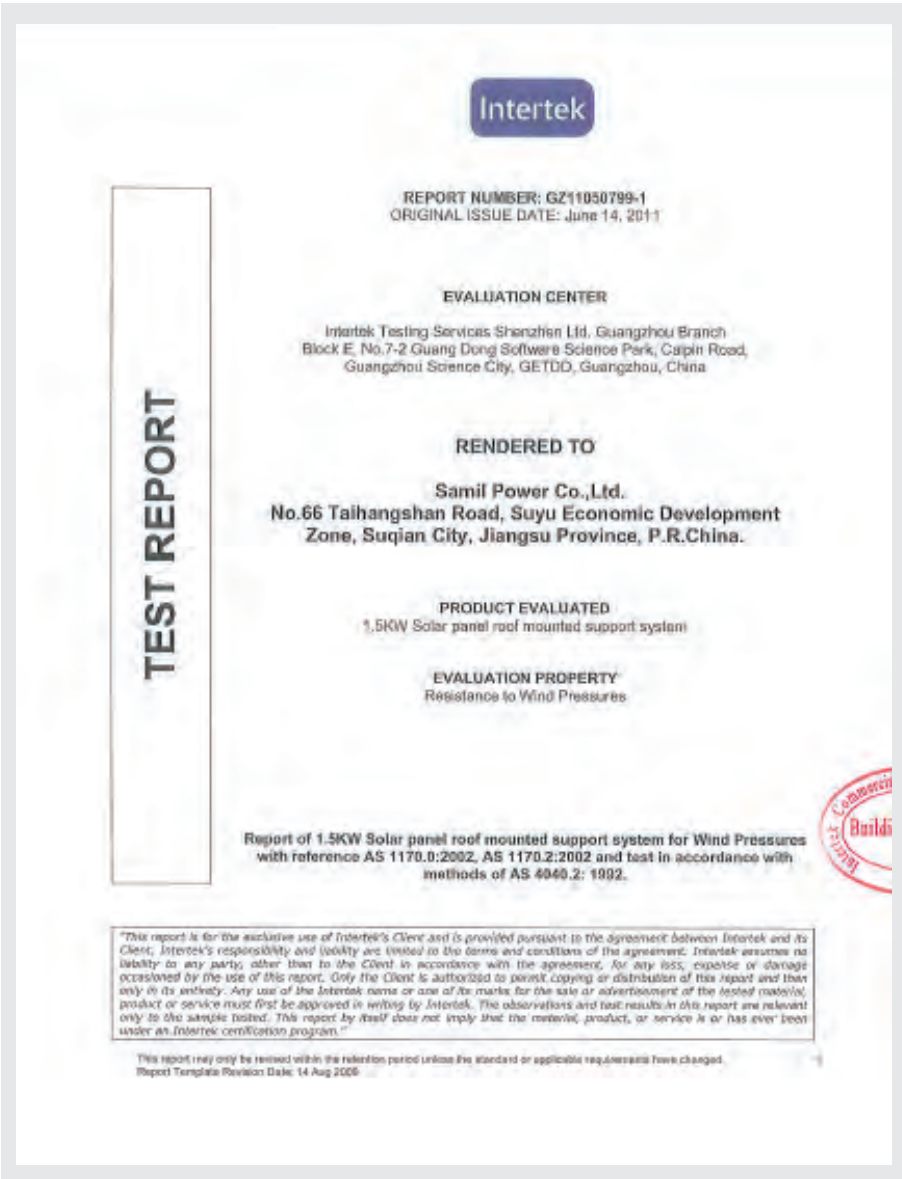
Project Site: Suqian, Jiangsu province
Load Capacity: 13.2 MW
Material: hot dip galvanized steel Q235B
Customer: Datang new energy
Time of Installation: November, 2011
Solution: F-C Flat Roof Mounting System



▲ Project Site: Jiangyin, Jiangsu province
Load Capacity : 1.5MW
Material: AL 6063-T6
Client: Jiangyin huaxi changxin Co.,Ltd
Time of installation: December, 2011
Solution: C-A Tin Roof Mounting



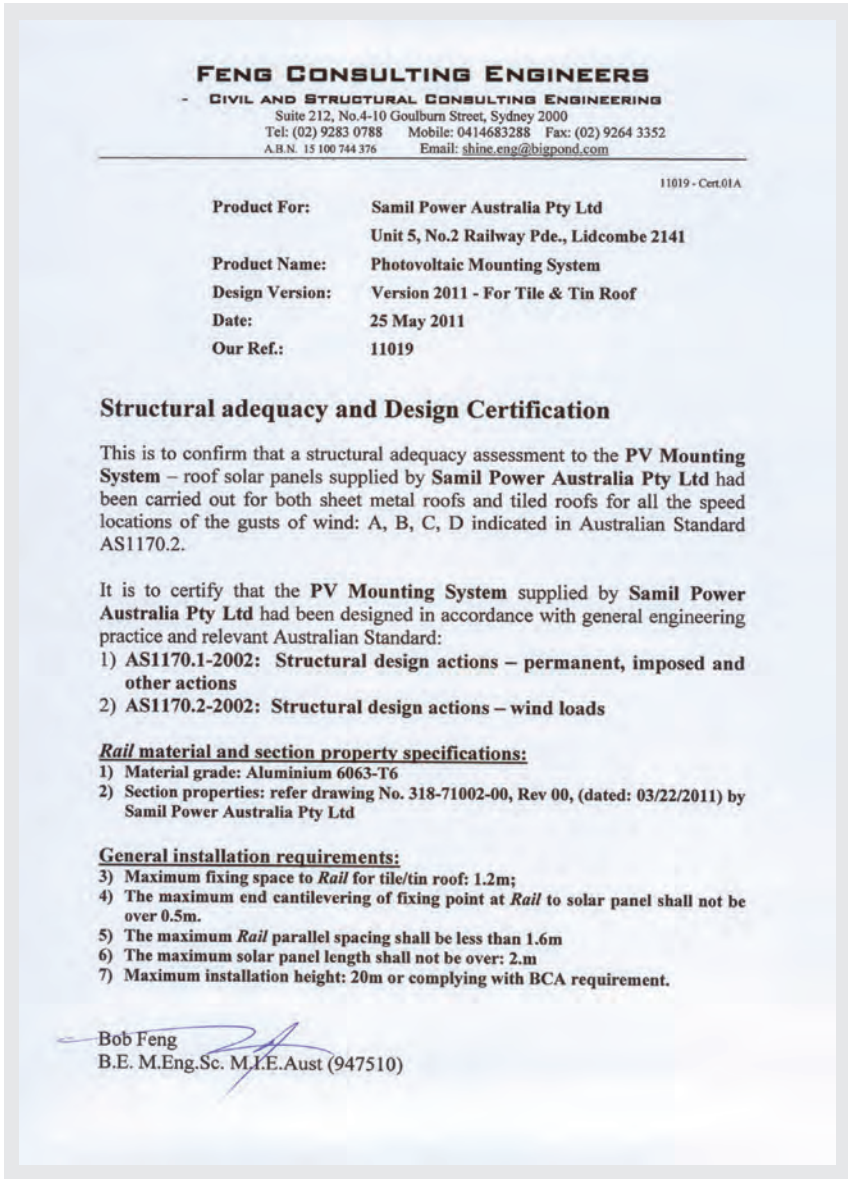
▲ Project Site: Macedonia
Load Capacity: 8MW
Material: hot dip galvanized steel Q235B
Client: Intebako doo
Time of installation: March, 2011
Solution: G-A Ground mounting



AS1170.2 Test Report



Hook Bending Test Report



AS1170.2 Engineering Report