

INSTALLATION MANUAL

Jolywood N-type Mono-crystalline Double Glass Module

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1.0 Introduction for User Manual

The Manual applies to the installation, maintenance and use of the PV modules of Jolywood Solar Technology Co., Ltd. (hereinafter abbreviated as “modules”).Now includes standard components JW-D60N,JW-D72N, JW-HD120N/P,JW-HD144N/P,JW-HD156N, if standard components are added later, they will be updated in time. Jolywood Solar Technology Co., Ltd. referred to as "Jolywood ". Failure to follow these safety instructions can result in personal injury or property damage.

Please read the “Safety and Installation Instructions” carefully before using and operating the modules. If you have any problems, please contact our customer service department or our local representative for more detailed information. The installer must follow all safety precautions, requirements of local authorities and legal provisions or requirements of the authorized agencies as described in the Manual. Before installing the solar photovoltaic system, installers shall be familiar with their mechanical and electrical requirements. The operation of a photovoltaic system requires relevant expertise and must be systematically installed and maintained by qualified personnel with specialized knowledge.

Please keep the Manual in good place for further reference, (maintenance and service) or present it when selling or processing the modules.

Jolywood’ smodules have passed the tests of the global testing and certification bodies, so please feel free to use in compliance with the requirements of the Installation Manual.

The solar installers must inform the end customer (or consumer) of the above.

1.1 Disclaimer

Jolywood reserves the right to change this installation manual without prior notice. Jolywood does not guarantee any express or implied information contained in this manual. Failure of the customer to follow the requirements outlined in this Manual during the installation of the module will result in the invalidity of product's limited warranty.

1.2 Limitation of Liability

Jolywood is not responsible for any form of damage, including but not limited to module operation and system installation error, and personnel injury, hurt, and property loss resulted from failure to follow the instructions in this Manual.

2 Safety precautions

2.1 Warning

Read and understand all safety rules before installing, wiring, operating or maintaining modules. Direct current is generated when the battery surface of the module is exposed to direct sunlight or other light sources, and direct contact with the live parts of the module, such as terminals, may result in death of personnel whether connected to the module or not .

2.2 General Safety

2.2.1

All installation work must comply with the local codes and the relevant international electrical standards. The operation of a photovoltaic system requires relevant expertise and must be systematically installed and maintained by

qualified personnel with specialized knowledge. Personnel without authorization and related training should not touch the photovoltaic modules and access the installation area or module storage area.

2.2.2

Do not use modules with broken glass. Damaged modules must not be repaired as any contact with the modules may result in electric shock. Do not disassemble modules or any parts of the modules. Do not artificially collect sunlight onto solar modules.

2.2.3

Do not connect the positive polarity of any single PV module with that of the cable. Do not connect the positive polarity of any single photovoltaic module with that of the cable. Make sure that the insulation gaskets of the joints are closed and tightened without any gaps in case of the risk of fire and/or electric shock.

2.2.4

According to the National Electrical Code, the maximum system voltage shall not exceed 1500V.

2.2.5

Do not install or operate modules during wet or windy weather.

2.3 Handling Safety

2.3.1

Avoid damaging modules, scratching or striking the modules. Do not use paint or adhesive on the front and back of the module. Avoid scratching or cutting cables or exposing the connectors to sunlight for a long time to maintain

the good insulation of module. Do not drop the module or let anything fall down onto the unit. Do not place any heavy objects or sharp objects on the modules.

2.3.2

Do not use water to extinguish fires of an electrical origin.

2.3.3

Only work in a dry environment with dry tools. Do not work in a humid environment without wearing any protective measures. Do not touch the terminal box or the ends of the output cables (connectors) with bare hands under sunlight, regardless of whether the PV module is connected or disconnected from the system. Do not climb, step on, stand, walk or jump directly on the package or modules.

2.3.4

Direct climbing, trampling, standing, walking or jumping on packaging or modules is prohibited”

3.0

Unload Transportation and Storage

Preventive measures and general safety rules:

The modules should be stored in the original box before installation. Please protect the package from damage. Transport the modules and unpack the modules according to the recommended shipping method and unpacking procedure. Avoid damaging modules, scratching or striking the modules. Do not apply pressure directly on the unit during transportation. Improper transportation or installation may damage the modules, which is excluded from the warranty. Do not stand, climb, walk or jump on unpacked pallets of modules.

Only work in a dry environment, ensuring that all modules and electrical contacts are clean and dry prior to installation. If it is necessary to store the unmounted modules outdoors for a certain period time, always cover the modules and ensure that the glass is facing down on the soft surface to prevent water from entering inside the module and connectors damaged.

When unpacking, it must be operated by two or more people at the same time. Do not lift the module by grasping the module terminal box or lead wires. Use both hands to carry the module and do not stack the modules. Do not place modules in an environment without reliable support or unfixed. Do not place any heavy objects or sharp objects on the modules.

3.1 Marks on Outer Packaging



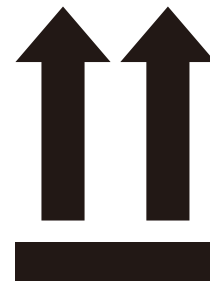
3.1.1 Prohibit modules from discarded at random, need special recycling



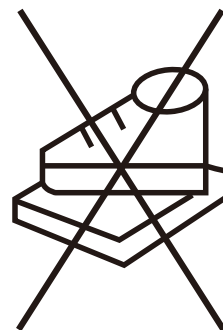
3.1.2 Prohibit modules from rain or



3.1.3 Modules in carton are fragile items, which shall handle with care



3.1.4 The package should be vertically up when transported



3.1.5 Do not step on or stand above the package and modules



3.1.6 Do not stack the modules on the outer packaging. The highest number of

3.2 Unloading Warning

3.2.1

When unloading the modules from the transport vehicle, use a reasonable lifting fixture to allow up to two brackets per sling. Before lifting, make sure that the trays and cartons are not damaged, skewed, and that the hoisting ropes are durable. When the hoisting is on the ground, the two men put the carton gently on the project in a relatively flat position. Using a forklift to remove the components from the truck, and the unloaded modules placed on a level surface.

3.2.2

When the module is temporarily stored in the project, place the module in a dry and ventilated place. Do not stack modules at the project site. Cover the modules with a tarpaulin and use a curtain or mesh belt to reinforce the tarpaulin to protect the modules from moisture and rain.

3.3 Secondary Transportation and Precautions

3.3.1

If the module requires two longdistance transportation or longterm storage, it is forbidden to remove the original packaging. The finished product packaged in the package can be transported by land, sea or air. During transportation, secure the box to the transport platform to ensure that the package does not roll over. Take land transportation as an example. When transporting a normal truck, stack up to two layers. It is forbidden to cut the strap.

3.3.2

It is not to allow remove the original

packaging when the project checked at the site. One layer stacking for transport only allowed at project site. During transport, secure the box to the transport platform to ensure that the package does not roll over. Do not use tricycle transport modules. Do not handle the module with rope. Singleback modules are prohibited, and it is prohibited to carry or drag components through the wires or junction boxes of the modules.

3.4 Storage

3.4.1

It is forbidden to let the modules rain or get wet. If it is necessary to store the unmounted modules outdoors for a certain period time, always cover the modules and ensure that the glass is facing down on the soft surface to prevent water from entering inside the module and connectors being damaged.

3.4.2

It is forbidden to let the modules rain or get wet. If it is necessary to store the unmounted modules outdoors for a certain period time, always cover the modules and ensure that the glass is facing down on the soft surface to prevent water from entering inside the module and connectors being damaged.

3.4.3

Project warehouse storage (Humidity <70%; Temperature: -20°C ~+50°C): 60 pieces of double glass modules, 72 pieces of double glass modules and 78 pieces of double glass modules static stacking stack 2 tray. Normal warehouse storage (humidity <70%; temperature: -20°C ~+50°C): 60 pieces of double glass modules, 72 pieces of double glass modules and 78 pieces

of double glass modules can be stacked up to 2 layers.

4.0 Unpacking instruction

4.1 Unpacking safety

4.1.1

When unpacking outdoors, it is forbidden to work under the conditions of rain. Because the carton will become soft and open after the rain, the photovoltaic modules inside will come out and cause damage to the modules or bruises. If there is wind on the site, special attention should be paid to safety. Especially in the case of high winds, it is recommended not to carry the modules and properly fix the modules that have been unpacked.

4.1.2

The work floor needs to ensure that the package can be placed horizontally and stably. Use a supportive removal tool when disassembling the carton to prevent the modules from falling down.

4.1.3

Wear protective gloves during unpacking to avoid injury and fingerprints on the glass surface.

4.1.4

The outer package can query the modules information, please read it carefully before unpacking.

4.1.5

Each module needs to be lifted by 2 people. Do not lift the module by grasping the module terminal box or lead wires. Use both hands to carry the module and do not stack the modules.

4.1.6

The unpacked modules must completely be assembled and prohibited from being stacked at the project site.

4.2 Unpacking steps

4.2.1

Before unpacking, please check the product name and serial number on the A4 paper of the outer box, and prohibit the custom unpacking method.

4.2.2

When unpacking, cut all vertical packing belts with a blade or scissors, first cut the long side packing belt, then cut the short side packing belt; remove the upper cover of the carton and take out two or three upper lifting brackets.

4.2.3

When removing the modules from the box, two people must stand on either side of the box while lifting the assembly, one hand grasping the corner of the assembly, and the other hand grasping the short side while removing the assembly. If unpacking on a horizontal floor, remove the modules

from the side of the package to the other side, and then carry them. If unpacking on a nonhorizontal floor, use a supportive removal tool when removing the carton to prevent the module from falling down.

4.2.4

Modules removed from the box are prohibited from leaning against the mounting post and placed in an environment without reliable support or unfixed.

5.0 Installation

Double Glass Series modules product by Jolywood can be used for more than 30 years according to the following conditions. Photovoltaic modules with expired life shall be reasonably disposed in accordance with local laws and regulations. In addition to the required IEC certification, the product has been tested to verify its resistance to ammonia that may be present near the cowshed and whether it is suitable for installation in wet (coastal) areas and areas where sandstorms occur frequently.

5.1 Installation Safety

5.1.1

The solar modules of Jolywood can be installed horizontally or vertically, but the lateral installation can minimize the influence of dust on the shading of the modules.

5.1.2

Do not remove the module packaging

and leave the modules in the carton before installation.

5.1.3

When installing modules, only work in a dry environment with dry tools. Do not work in a humid environment without wearing any protective measures. Do not install modules under any rainy, snowy or windy conditions. Keep the connectors dry and clean when installing modules to avoid the risk of electric shock. If the terminal of the module is wet, no work can be done to avoid electric shock. Please install it immediately after unpacking.

5.1.4

Do not wear metal rings, wristwatches, earrings, nose rings, lip rings, or other metal materials when installing or repairing PV systems.

5.1.5

Use on-transparent material to completely cover the module during installation to prevent power loss. Do not open the electrical connection or pull out the connector while the circuit is under load. Do not touch the modules during installation unless necessary. Glazed surfaces and brackets may generate high temperatures, which might impose the risk or hazards of burns and electric shock.

5.1.6

Do not damage the back glass of the assembly while bolting the assembly to the bracket during assembly. If you need to replace

components, do not damage the surrounding components or mounting structure.

5.1.7

When installing components, do not work alone, and keep working with teams of two or more people.

5.1.8

After the modules are installed, the cables should be fixed or tied so that they are not exposed to direct sunlight after installation and can prevent the cable from aging. Low-hanging cables can cause various problems, such as electric leakage and fire in the water.

5.1.9

The application level of Jolywood is Class A. Different color modules avoid from installing in the same array or roof.

5.2 Installation method

5.2.1 Mechanical installation and precautions

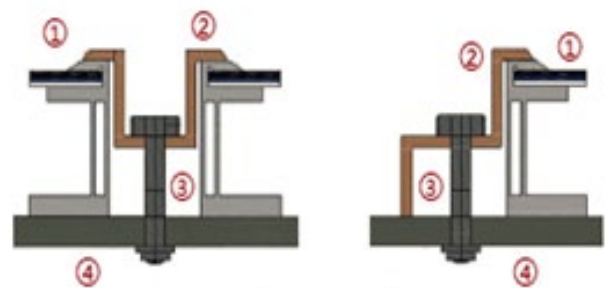
The connection of the module to the bracket system can be mounted using clamps or bezels. Installation modules must be carried out according to the following examples and recommendations. If the installation method is different from Jolywood, please consult Jolywood's local technical support or after-sales, and obtain the consent of Jolywood, otherwise the components will be damaged and the warranty will be invalid.

The mechanical load of the Jolywood (including snow and wind loads) depends on the way the Jolywood are installed. The mechanical load should be calculated by the professional system designer based on the actual conditions and environmental conditions. Moreover, it does not withstand the excessive force generated by the thermal expansion of the support structure.

The drain hole should not be blocked under any circumstances during installation or use.

5.2.2 Frameless Bifacial Single-Glass modules (Fixture installation)

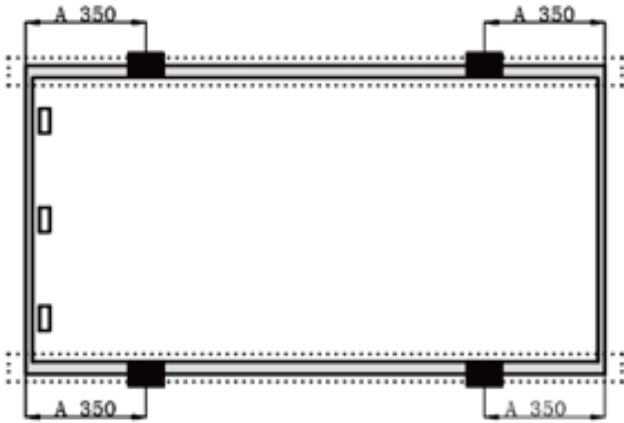
Middle Clamp & Edge Clamp:



① frame ② clip ③ M8 bolt ④ mounting rail

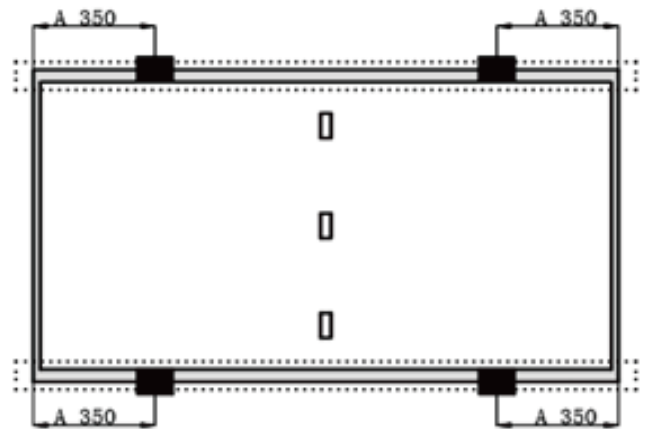
Fixture installation method:

JW-D60N



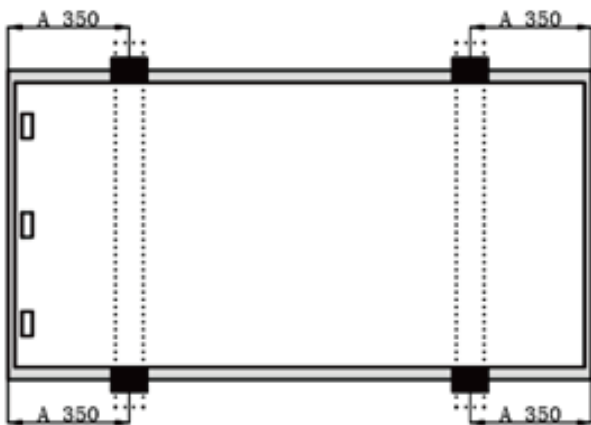
Four-point long-side installation
 C-shaped steel parallel long side
 Clamp is 30mm high and 40-50mm wide
 $A=350 \pm 20\text{mm}$
 Load Pressure: front $\leq 2400\text{pa}$ back $\leq 2400\text{pa}$

JW-HD120N/P



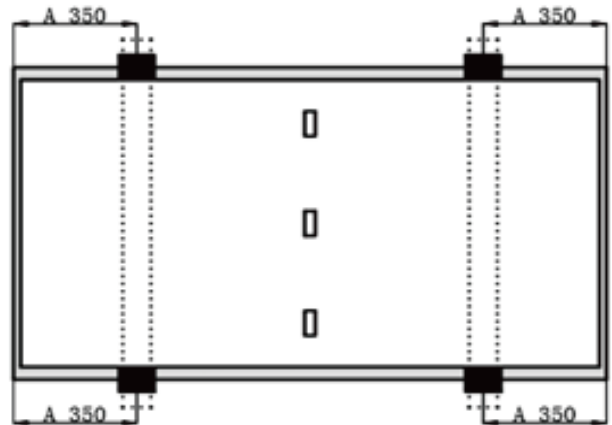
Four-point long-side installation
 C-shaped steel parallel long side
 Clamp is 30mm high and 40-50mm wide
 $A=350 \pm 20\text{mm}$
 Load Pressure: front $\leq 2400\text{pa}$ back $\leq 2400\text{pa}$

JW-D60N



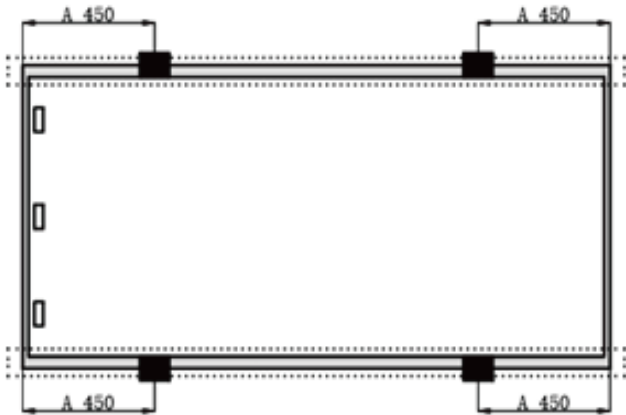
Four-point long-side installation
 C-shaped steel vertical long side
 Clamp is 30mm high and 40-50mm wide
 $A=350 \pm 20\text{mm}$
 Load Pressure: front $\leq 5400\text{pa}$ back $\leq 2400\text{pa}$

JW-HD120N/P



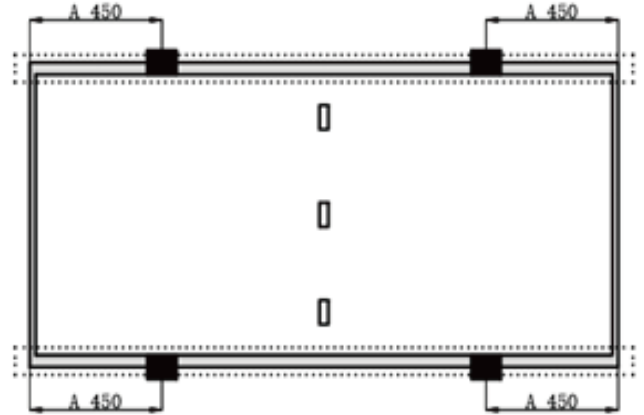
Four-point long-side installation
 C-shaped steel vertical long side
 Clamp is 30mm high and 40-50mm wide
 $A=350 \pm 20\text{mm}$
 Load Pressure: front $\leq 5400\text{pa}$ back $\leq 2400\text{pa}$

JW-D72N



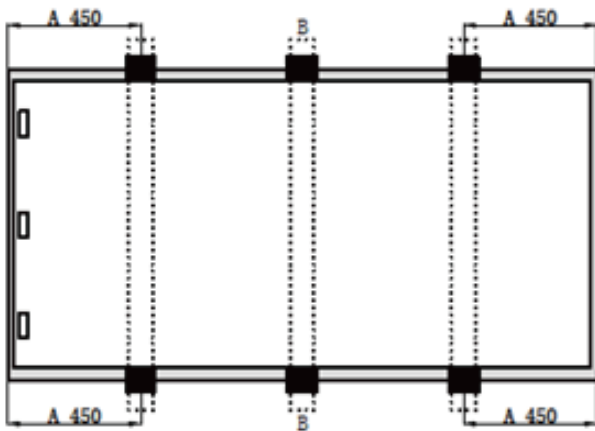
Four-point long-side installation
C-shaped steel parallel long side
Clamp is 30mm high and 40-50mm wide
 $A=450 \pm 20\text{mm}$
Load Pressure: front $\leq 2400\text{pa}$ back $\leq 2400\text{pa}$

JW-HD144N/P



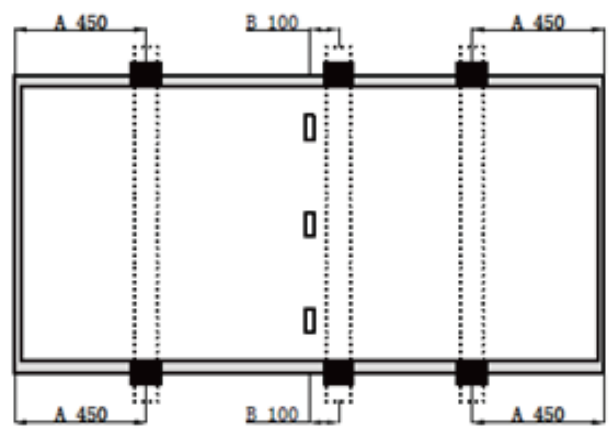
Four-point long-side installation
C-shaped steel parallel long side
Clamp is 30mm high and 40-50mm wide
 $A=450 \pm 20\text{mm}$
Load Pressure: front $\leq 2400\text{pa}$ back $\leq 2400\text{pa}$

JW-D72N



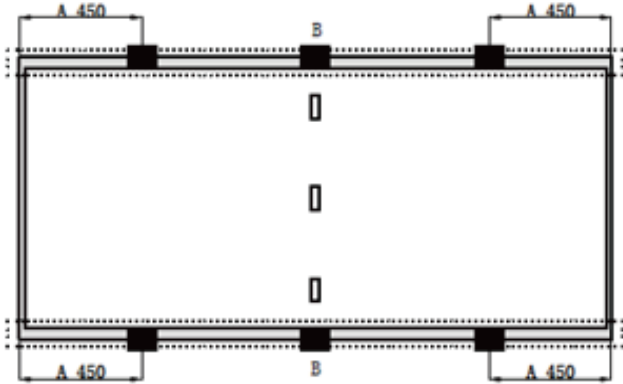
Six-point long-side installation
C-shaped steel vertical long side
Clamp is 30mm high and 40-50mm wide
 $A=450 \pm 20\text{mm}$ B=1008(intermediate)
Load Pressure: front $\leq 5400\text{pa}$ back $\leq 2400\text{pa}$

JW-HD144N/P



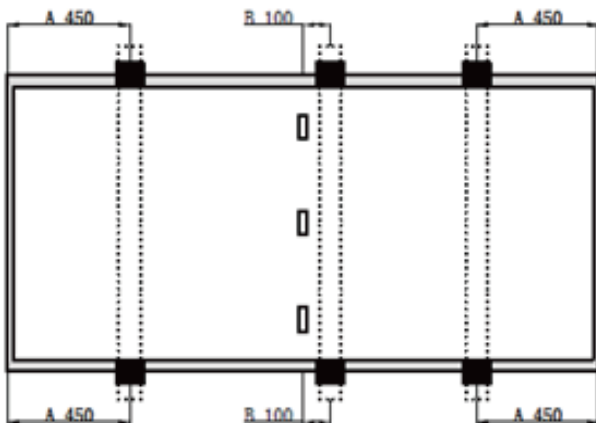
Six-point long-side installation
C-shaped steel vertical long side
Clamp is 30mm high and 40-50mm wide
 $A=450 \pm 20\text{mm}$ B is 100mm from the center
Load Pressure: front $\leq 5400\text{pa}$ back $\leq 2400\text{pa}$

JW-HD156N



Six-point long-side installation
 C-shaped steel parallel long side
 Clamp is 30mm high and 40-50mm wide
 A=450 ± 20mm B=1090(intermediate)
 Load Pressure: front ≤ 2400pa back ≤ 2400pa

JW-HD156N

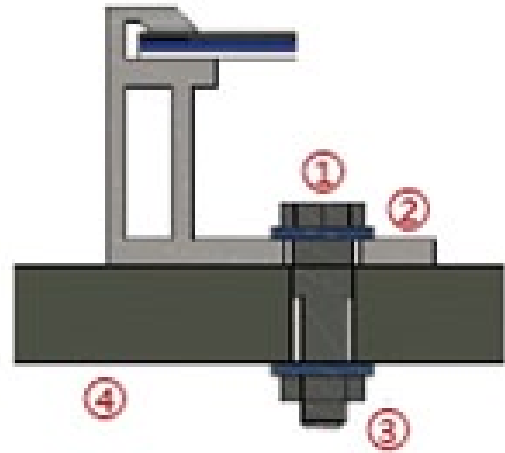


Six-point long-side installation
 C-shaped steel vertical long side
 Clamp is 30mm high and 40-50mm wide
 A=450 ± 20mm B is 100mm from the center
 Load Pressure: front ≤ 5400pa back ≤ 2400pa

Note: The above standard installation is used in the jolywood standard Clamp. For details, please refer to the jolywood standard clamp drawing.

5.2.3 Framed Bifacial Single-Glass modules (Conventional bolt mounting)

Bolt:

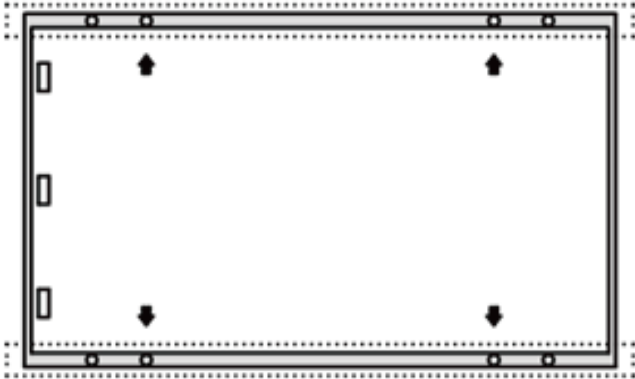


①M8 bolt ②washer ③ nut ④mounting rail

- a) The modules should be bolted to the support structure using the mounting holes on the back of the frame.
- b) Each modules needs to be fastened by at least 4 points on two opposite sides.
- c) M8 X 1.25 (5/16") bolts and nuts should be used. The yield strength of bolts and nuts should not be less than 450 MPa, and the recommended torque is 16-20 Newton meters.
- d) All parts in contact with the frame shall be made of stainless steel flat washers with a diameter of 16 mm and a minimum thickness of 1.6mm

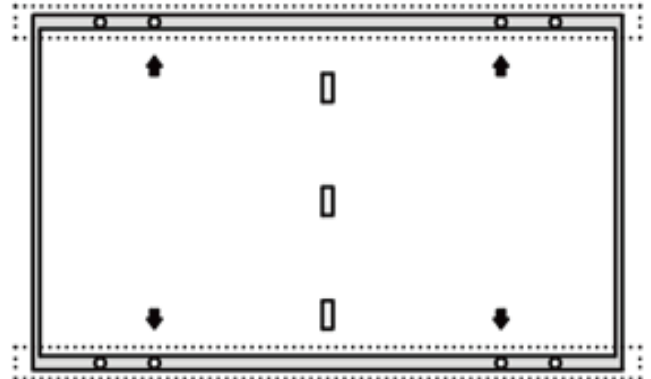
Bolt mounting method:

JW-D60N



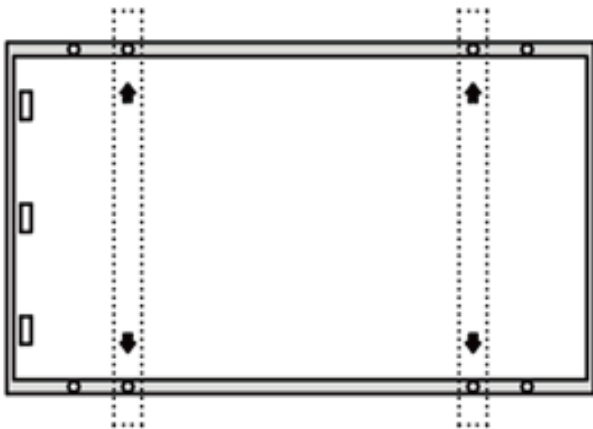
Long frame with inner four holes (990mm) for bolt mounting
 C-shaped steel parallel long side
 Load Pressure: front \leq 2400pa back \leq 2400pa

JW-HD120N/P



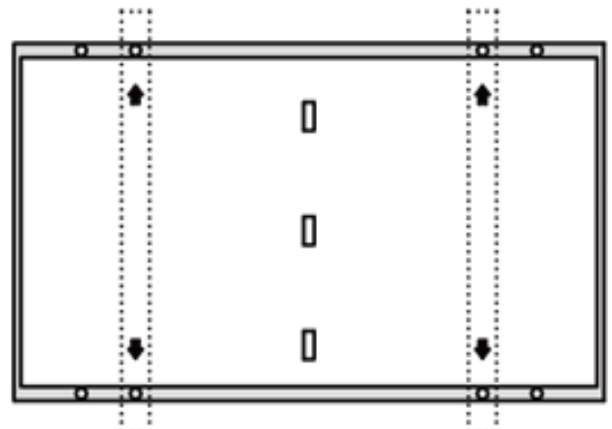
Long frame with inner four holes (990mm) for bolt mounting
 C-shaped steel parallel long side
 Load Pressure: front \leq 2400pa back \leq 2400pa

JW-D60N



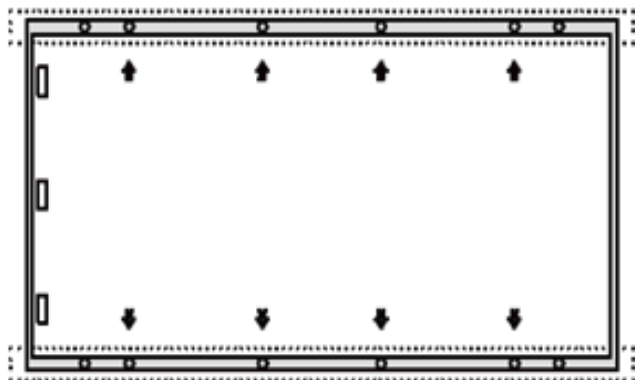
The inner side of the long frame is bolted with four holes (990mm)
 C-shaped steel vertical long side
 Load Pressure: front \leq 5400pa back \leq 2400pa

JW-HD120N/P



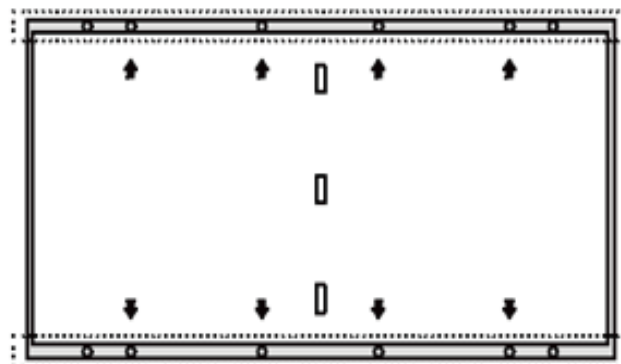
The inner side of the long frame is bolted with four holes (990mm)
 C-shaped steel vertical long side
 Load Pressure: front \leq 5400pa back \leq 2400pa

JW-D72N



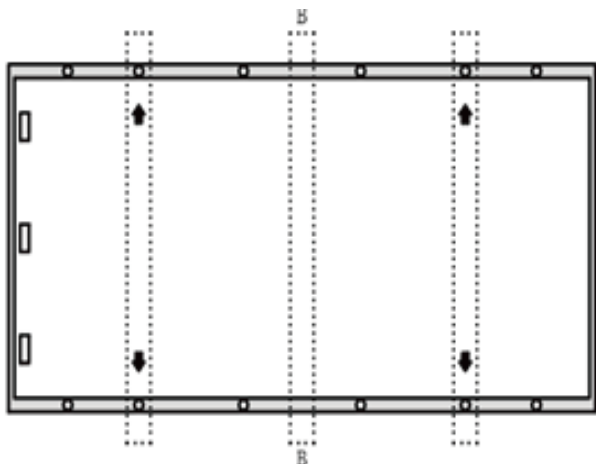
Long frame using inner four holes (1300mm) and central four holes (400mm) for bolt installation
C-shaped steel parallel long side
Load Pressure: front \leq 2400pa back \leq 2400pa

JW-HD144N/P



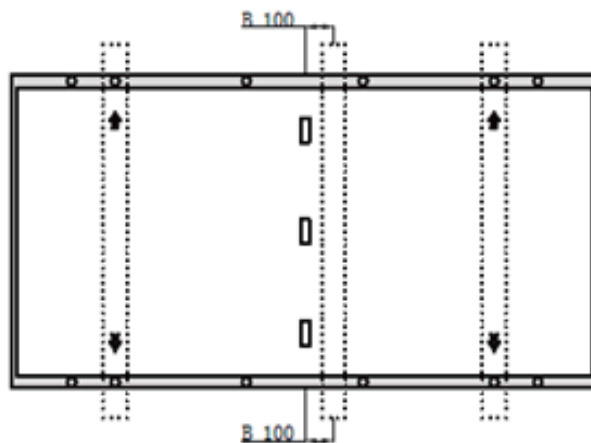
Long frame using inner four holes (1300mm) and central four holes (400mm) for bolt installation
C-shaped steel parallel long side
Load Pressure: front \leq 2400pa
back \leq 2400pa

JW-D72N



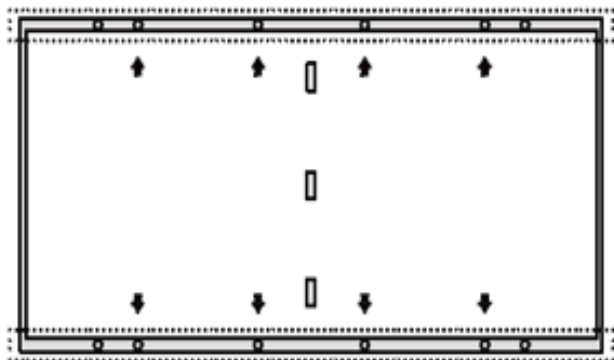
The inner side of the long frame is bolted with four holes (1300mm) and the middle side is boltless
C-shaped steel vertical long side
Load Pressure: front \leq 5400pa back \leq 2400pa

JW-HD144N/P



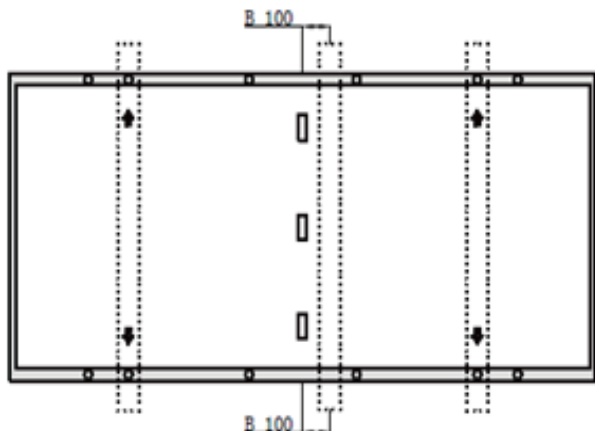
The inner side of the long frame is bolted with four holes (1300mm), B is 100mm from the center,
C-shaped steel without bolts is installed perpendicular to the long side
C-shaped steel vertical long side
Load Pressure: front \leq 5400pa back \leq 2400pa

JW-HD156N



Long frame using inner four holes (1300mm) and central four holes (400mm) for bolt installation
 C-shaped steel parallel long side
 Load Pressure: front \leq 2400pa
 back \leq 2400pa

JW-HD156N



The inner side of the long frame is bolted with four holes (1300mm), B is 100mm from the center,
 C-shaped steel without bolts is installed perpendicular to the long side
 C-shaped steel vertical long side
 Load Pressure: front \leq 5400pa back \leq 2400pa

5.2.4 Grounding

5.2.4.1

All component frames and mounting brackets must be properly grounded in accordance with the appropriate National Electrical Code. Proper grounding is achieved by continuously connecting the component frame and all metal structural members together using a suitable grounding conductor. The grounding conductor or grounding wire can be copper, copper alloy or other material used as an electrical conductor in accordance with the requirements of the corresponding National Electrical Code. The ground conductor must be connected to the ground through a suitable grounding electrode.

5.2.4.2

Jolywood's frame assembly can be grounded to the metal frame of the component using a grounding device listed by a third party. The equipment must be installed in accordance with the instructions given by the grounded equipment manufacturer.

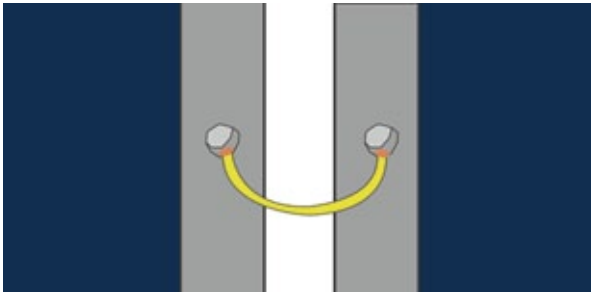
5.2.4.3

Please visit <http://www.jolywood.cn/> to view the "Product Catalog" link for detailed grounding holes locations and dimensions.

5.2.4.4

The electrical contact is formed by penetrating the anodized coating of the aluminum frame and tightening the ground

screw (together with the star washer) to the appropriate torque of 25 lbf.in. A properly sized ground wire (solid bare copper wire according to American Wire Gauge 6 to 12) should be selected and mounted under the connecting bolt.



Place the toothed washers, washers, and grounding wires in turn, and screw the screws into the grounding holes to connect the two adjacent components.

5.2.5 Electrical Installation

All wiring should be performed by qualified and trained personnel in accordance with local regulations and procedures. The modules can be connected in series to increase the operating voltage by inserting the positive plug of one component into the negative socket of the next component. Always ensure that the contact points are corrosion-resistant, clean, and dry before wiring modules. If the polarities of the modules are connected wrong, they may cause irreparable damage. Before connecting in parallel, be sure to check the voltage and polarity of each module array. If you want to measure the reverse polarity or different values exceeding 10V between the test module

systems, be sure to check the configuration of module array before wiring.

All cables and connectors used to connect the DC system must have similar (or higher) parameters. It suggested that all cables should run in proper cable ducts and should be located away from the water-prone area.

Each component has two standard 90°C blackout output cables with a plug-and-play connector on each terminal. Jolywood's modules are equipped with a DC copper cable with a cross-sectional area of four mm², rated voltage 1500V DC, insulation resistance up to 90° C and UV-resistant, and all cables used to connect the DC system must have similar or better parameters. We require all wiring and electrical connections to comply with the appropriate National Electrical Code.

Wiring

In order to ensure the normal operation of the system, when connecting components or connecting loads (such as inverters, batteries, etc.), observe that the polarity of the cables is properly connected (Figure 1 and Figure 2). If the modules are not connected properly, the bypass diode may be damaged. Modules can be wired in series to increase voltage. Connect the modules in series by inserting the positive terminal of one module into the negative terminal of the next module. Figure 1 shows the serial connection of the components. Modules can be connected in parallel to increase current (shown in Figure 2). Parallel connection is to connect the wiring from the positive terminal of one component to the

positive terminal of the next component. The number of components connected in series and parallel needs to be reasonably designed according to the system configuration. All instructions above must followed to meet the Jolywood’ s Warranty conditions.

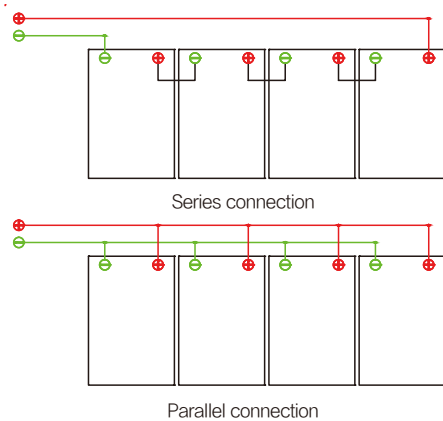


Figure 1

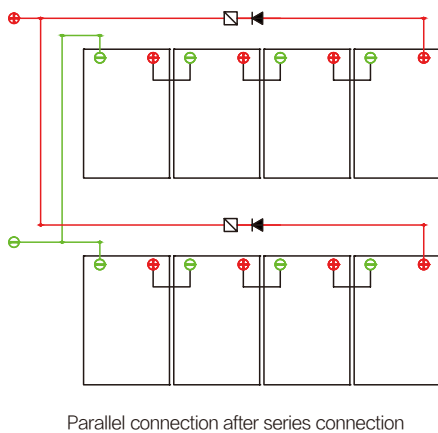


Figure 2

5.2.5.1 Fuse

When installing the fuse, connect its rated maximum DC voltage to each non-grounded pole of the array (in other words, if the system is not grounded, connect the fuse to the positive and negative terminals).

a) The maximum rating of the fuses connected in series with the array is typically 20A, but the actual component-specific ratings are available on the product label and product data sheet.

b) The fuse rating also corresponds to the maximum reverse current value that the component can withstand (when an array is shielded, the array is loaded into other parallel component arrays to generate current), thus affecting the number of parallel connected arrays.

c) It forbidden to connect two or more strings in parallel and then connect the fuses.

6.0 Maintenance for PV Modules

6.1 Module Visual Inspection and Replacement

The components in the PV array should regularly be inspected for damage. If damage is found, the same type of components must be replaced, such as broken glass, broken cables, damaged junction box, etc., resulting in functional and safety failure of the components.

Well-designed solar systems require minimal maintenance, but some simple steps can be taken to improve system performance and reliability.

6.1.1

Maintenance should be carried out at least once a year by trained personnel; at maximum operating voltage not less than 1500V DC, maintenance personnel should always wear rubber gloves and wear insulated boots during work, removing all possible shielding of the solar array and affecting the

power generation performance of the module array.

6.1.2

Check if the installed hardware is securely in place.

6.1.3

Check that all array fuses in each of the non-grounded poles are working properly.

6.1.4

If the component is damaged (glass breakage or scratches on the back glass), it needs to be replaced. Components must be replaced with the same type. Do not touch the live parts of the cables and connectors when replacing components. Use appropriate safety guards (insulation tools, insulated gloves, insulated boots, etc.) when handling components.

6.1.5

Cover the front surface of the assembly with an opaque material. Components exposed to the sun can be extremely dangerous to generate high voltages.

6.1.6

Jolywood's PV module junction box is equipped with a bypass diode to minimize component heating and current loss.

6.2 Connector and Cable Inspection

6.2.1

Check all cables to verify that they are securely connected; It is recommended that all cables operated in an appropriate pipeline and that the location should be kept away from

the easy catchment area.

6.2.2

Check the electrical, grounding, and mechanical connections every 6 months to ensure that they are clean, safe, free from damage, and rust-free; ensure that the mountings are properly tightened; check all cables to make sure they are tight.

6.3 Cleaning

The amount of electricity produced by a solar module is proportional to the amount of light that falls on it. A battery-blocked component produces relatively little power, so it is important to keep the components clean.

a) The PV module should be cleaned under the irradiance of less than 200W/m² to avoid the difference between the water temperature and the air temperature used in the cleaning to avoid cracking; the hard water needs to be softened, the components are cleaned, and the glass surface remains. The water is dried.

b) It is strictly forbidden to clean PV modules under meteorological conditions where the wind is greater than four, heavy rain or heavy snow.

c) When the pressure water is cleaned, the water pressure on the surface of the component glass shall not exceed 700 kPa (14619.80 lb/ft²), and the component is not allowed to withstand additional external force.

d) During the cleaning of PV modules, it is strictly forbidden to step on the components, splash water to the back of the components and cables, and ensure that the connectors are clean and dry to prevent electric shock.

and fire hazard; steam cleaners are strictly prohibited; soft parts should be used when cleaning components. Cloth and mild detergent and water, do not put the components directly into the water. Take care to avoid serious thermal shocks that could damage the components.

e) The surface of the PV module has difficult-to-clean substances such as oil. Use a non-friction neutral liquid cleaner. Do not use an organic solvent containing alkali or acid to clean the components. Do not use corrosive solvents or wipe the PV modules with a hard object.

f) If you are not sure if you need to clear the array or section, first select a column of particularly dirty arrays to begin cleaning. If the improvement percentage is less than 5%, cleaning is usually not required. The above verification should be carried out only with a constant sunshine rate (sunny, strong sunshine, no cloud).

g) Regularly trim the vegetation to prevent its shadow cast from affecting the power generation performance of the module array.

6.3.1 Water quality requirements

PH: 5 ~7;

Chloride or salt content: 0 – 3,000 mg/L

Turbidity: 0–30 NTU

Conductivity: 1500~3000 μ s/cm

Total dissolved solids: \leq 1000 mg/L

Water hardness: 0–40 mg/L

Non-alkaline water must be used, use demineralized water when conditions are available.

6.3.2 Component inspection after cleaning

6.3.2.1

The overall appearance of the visual component is clean, bright and free of stains; the surface of the component sampled for ash accumulation; there is no obvious scratch on the surface of the component; no cracking occurs on the surface of the component.

6.3.2.2

Whether the component bracket is tilted or bent after cleaning, whether the component terminals are disconnected or not.

6.3.2.3

After the PV module cleaned, complete the PV module cleaning record

6.3.3 Troubleshooting

If it does not work after installation, please notify the installer immediately.

7.0 Technical Issues or Claims

If you have any questions about technology or claims, please contact the installer.

Please visit <http://www.jolywood.cn/> to contact Jolywood's after-sales service team.

Please submit the Customer Feedback Information Form at <http://www.jolywood.cn/>. Our technical service representatives will contact you within 5 working days. The required username and password will be sent via the Customer Service link.

Please download the specifications or data sheets for the components at <http://www.jolywood.cn/>.