Plug in Solar Hoymiles HiFlow Assembly Instructions

VERSION 06/2026 | VALID FROM JUN 1ST 2026

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Preliminary Restrictions:

Electrical & Circuit Restrictions

- **Do not plug in more than one device** per household ring circuit or household.
- **Do not use adaptors or extensions:** The use of extension cables, multi-way adaptors, travel adaptors, RCD adaptors, and plug converters is strictly prohibited.
- **Do not connect to non-socket circuits:** Plug-in solar must only be plugged into dedicated socket circuits—never into lighting circuits or spur circuits supplying fixed equipment (e.g., cookers or boilers).
- **Do not disconnect DC connectors under load:** The AC supply must always be turned off before disconnecting any DC connections to prevent arcing.
- **Do not plug into unsafe outlets:** Connecting to damaged, degraded, or non-compliant sockets is forbidden.

Prohibited Installation Locations & Fire Risks

- **Do not install on restricted cladding systems:** Mounting is prohibited on Aluminium Composite Material (ACM), Metal Composite Material (MCM), High-Pressure Laminate (HPL), or timber cladding systems.
- **Do not install on timber balconies** or structures.
- **Do not install on remediated buildings:** Devices must not be installed on buildings subject to external wall or building safety remediation works.

- **Do not attach to property boundaries:** PV modules must not be fixed to walls or structures that form a property boundary between separate dwellings.
- **Do not obstruct safety routes:** Systems must not block or endanger emergency escape and rescue paths.
- Verify that the intended socket circuit is protected by a modern RCD or RCBO in your consumer unit. Consult a qualified electrician if you are unsure.

Prohibited Mounting & Hardware Practices

- **Do not use makeshift fixings:** Mounting arrangements relying solely on cable ties, rope, string, adhesive tape, bungee cords, or straps are not permitted.
- **Do not use Y-connectors** on the DC side of the system.
- **Do not modify the device:** Unauthorized modifications or installing components in ways not specified by the manufacturer are prohibited.
- **Please check with your home insurance provider on your current policy to ensure that installation does not void warranty, installations are always advised to be installed on an outside 3 pin socket.**

System & Technical Limitations

- **Do not combine with batteries:** The plug-in solar device is not intended to be operated with or connected to a battery energy storage system.
- **Do not exceed voltage/string limits:** DC open-circuit voltage at inverter inputs must not exceed 120 V DC, and no more than two PV modules may be wired in series within a string.

1 Product Introduction

1.1 Product Overview

The Plug in Solar Mounting Kit 2.0 is a lightweight and durable solar mounting solution designed for residential balcony wall and ground photovoltaic applications.

The system enables PV modules to be securely installed on balcony railings without requiring extensive structural modification.

The mounting system adopts high-strength aluminum alloy profiles combined with stainless steel fasteners, providing excellent corrosion resistance and long-term outdoor durability.

The system is designed for quick installation, reliable fixing, and compatibility with mainstream PV modules.

1.2 Product Features

- High mechanical strength
- Excellent corrosion resistance
- All hardware provided in one box for an efficient install
- Suitable for mounting solar modules and micro-inverters

2 Technical Specifications

Compatible PV Modules

- Compatible with mainstream framed solar modules
- Maximum module size: 2384 × 1134 mm
- Maximum module weight: 35 kg

Flexible Installation Surfaces

- Balcony railings (Square Railings, Circular Railings up to max diameter ϕ72 mm)
- Brick walls
- Concrete walls
- Other structurally approved mounting surfaces

Recommended Railing Types

- Steel railing
- Aluminum railing
- Concrete balcony structure

Note: Railings must maintain a stable structure with no visible corrosion, cracks, or deformation.

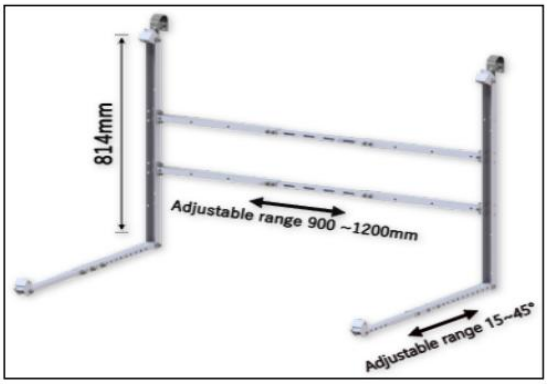
Installation Height & High-Rise Conditions

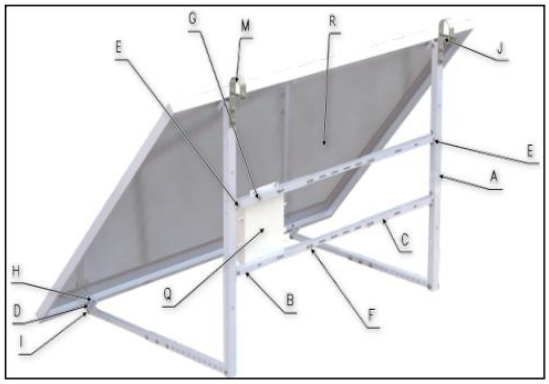
- Standard Installation: ≤ 20 m
- Recommended Height: ≤ 15 m
- Above 15 m: Project-specific wind verification required
- Additional engineering verification required for buildings higher than 20 m, exposed coastal locations, tall isolated structures, or sites with high wind exposure.

Forbidden Mounting Surfaces

- Hollow bricks
- Plasterboard
- External thermal insulation walls
- Hollow tiled walls
- Lightweight partition panels

3 System Components





- A: Brackets × 2
- B: Cross Beam a × 2
- C: Cross Beam b × 2
- D: Block × 2
- E: Hex Socket Cap Screw × 8 (M6×12)
- F: Hex Socket Cap Screw/Nut × 8 (M6×40)
- G: Hex Socket Cap Screw/Flat Washer/Nut × 2 (M6×40)
- H: Hex Socket Cap Screw/Nut × 8 (M8×20)
- I: Hex Socket Cap Screw/Nut × 8 (M8×45)
- J: Hex Socket Cap Screw/Nut × 2 (M8×55)
- K: Hex Socket Cap Screw/Nut × 2 (M8×95)
- L: Allen Wrench / Open-end Wrench × 1
- M: Expansion Bolt × 4 (M8×80)
- N: Round Hook × 2
- O: Square Hook × 2
- P: Wire Rope × 2
- Q: Hoymiles Micro-inverter
- R: Solar Panels

4 Required Tools

- Open-end spanners (inside box)
- M6/M8 hex key set
- Torque wrench
- Dual-bubble spirit level

- Tape measure
- Marker pen
- Light-duty hammer drill
- M8 drill bit

5 Safety Instructions

Please read this manual carefully before installation. Incorrect installation may result in structural failure, PV module damage, personal injury, or property damage.

Before Installation:

- Check balcony structure condition
- Confirm railing load capacity
- Check installation environment
- Ensure all components are complete

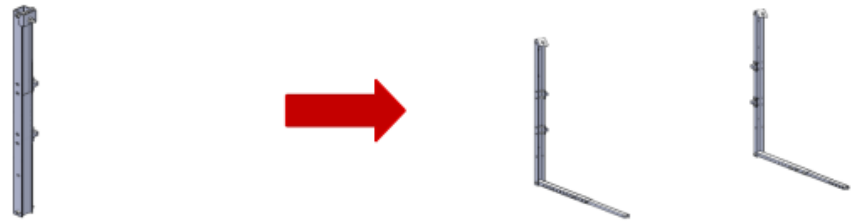
DO NOT Install:

- On damaged balcony structures
- On unstable railings
- In extreme weather conditions
- Without proper fixing components

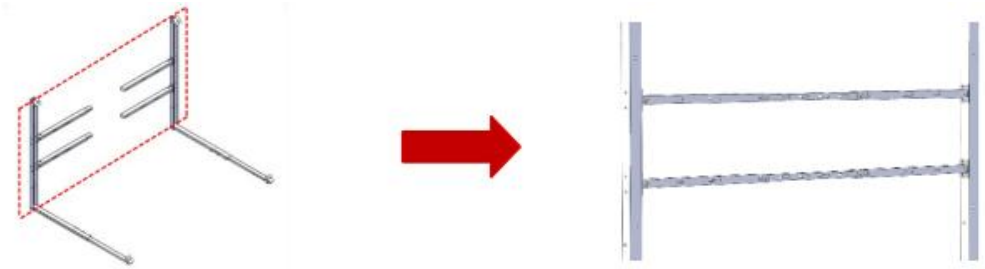
6 Installation Guide

6.1 Balcony Scenario

1. Use PV module dimensions to determine installation position and fixing points; mark the positions of hook brackets and fixing ropes on the railing.



2. Unfold brackets from packaging, place on a stable surface, and pre-assemble before final adjustment.

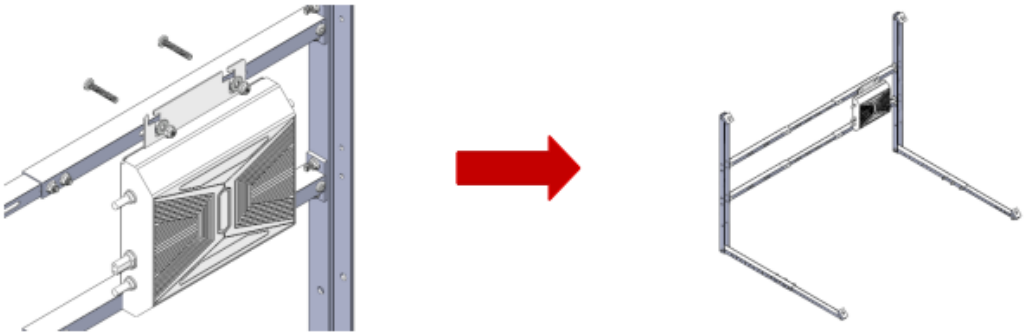


3. Adjust the cross beam according to PV module mounting hole positions. Ensure mounting holes align correctly with fixing points and tighten the 8pcs M6×40 bolts.

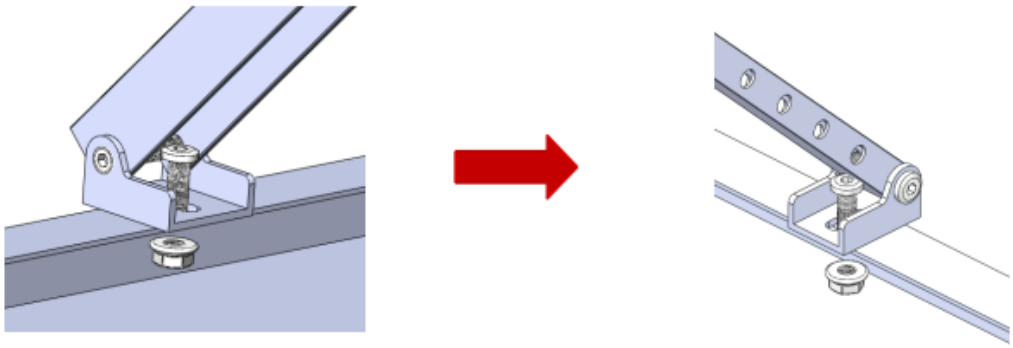
4. Adjust bottom brackets according to the required installation angle and secure with 3pcs M8×45 bolts.

5. Install bottom blocks with M8×55 bolts to brackets.

6. Select proper hooks according to balcony railings and install onto brackets prior to module assembly.

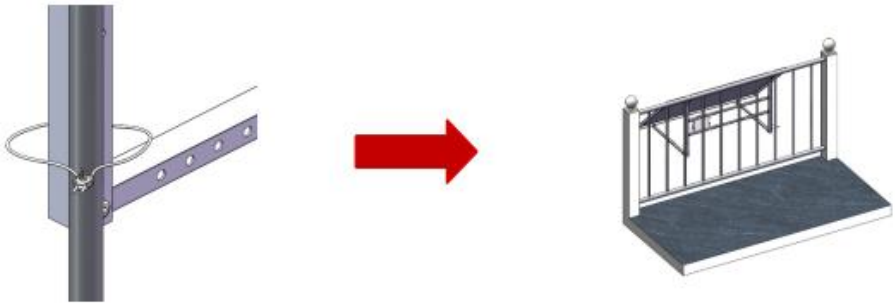


7. Adjust inverter fixing position on cross beam and secure with M6×40 bolts.

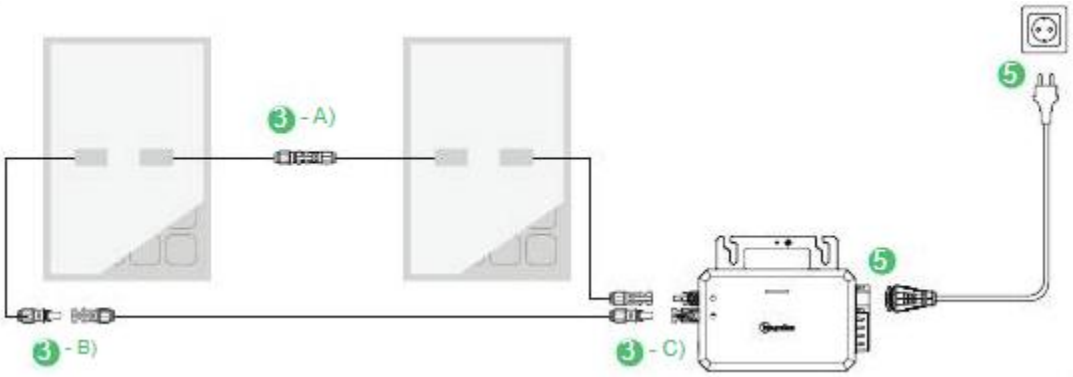


8. Install blocks with M8×55 bolts, align module frame, and secure PV module with M8×20 bolts.

9. Lift and position the assembled mounting system onto designated railing position (minimum 2 people required); engage hooks with M8×95 bolts.



10. Connect safety fixing ropes and verify structural stability.



10.3 Connect the PV modules

10.3a. Connect two PV modules in series as a string.

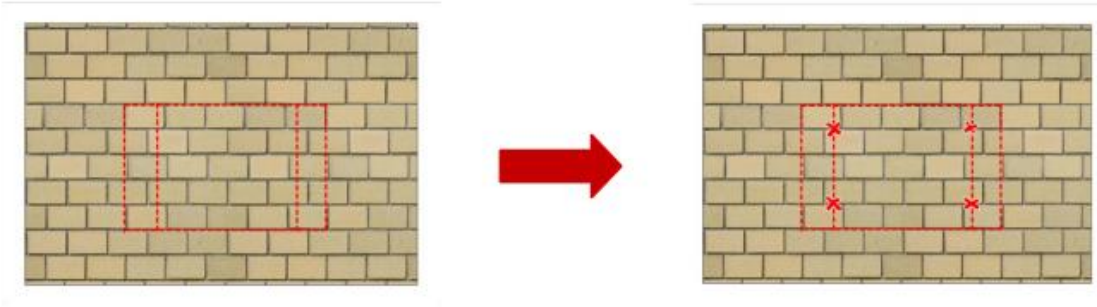
10.3b. (Optional) Connect one or more DC extension cable according to the distance between the PV modules & the microinverter

10.3c. Connect the microinverter' s positive (female MC4) connector to the PV module's positive (male MC4) terminal. Connect the microinverter's negative (male MC4) connector to the PV module' s negative (female MC4) terminal.

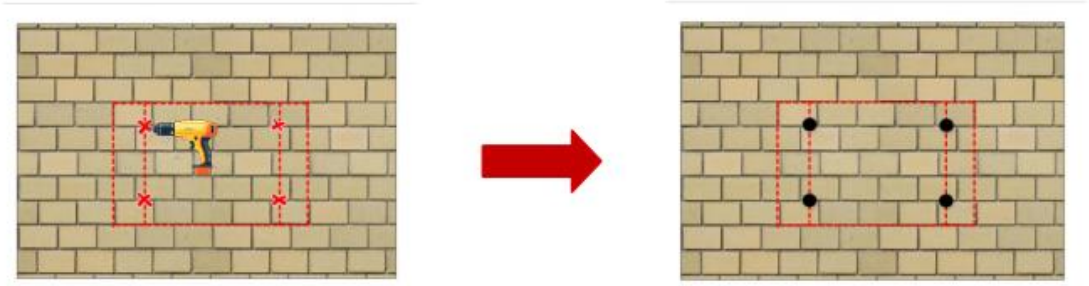
10.5a. Connect one end of the Flex-S3 Plug and Play-CEE7/7 to the microinverter and the other end to the socket.

10.5b. Wait five minutes for the system to start generating power.

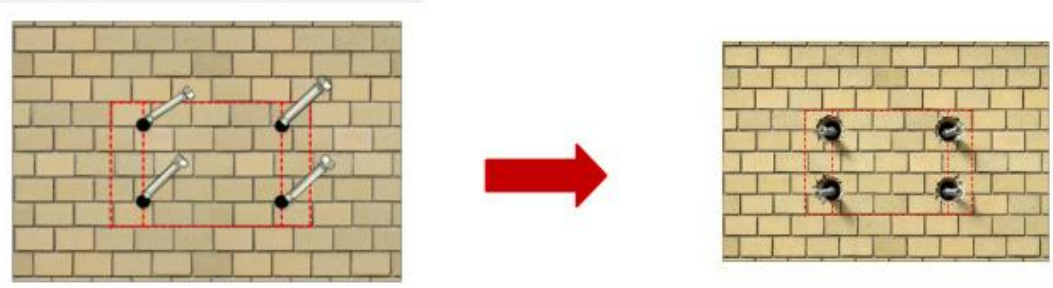
6.2 Wall Scenario



1. Use PV module dimensions to mark expansion bolt positions on wall.

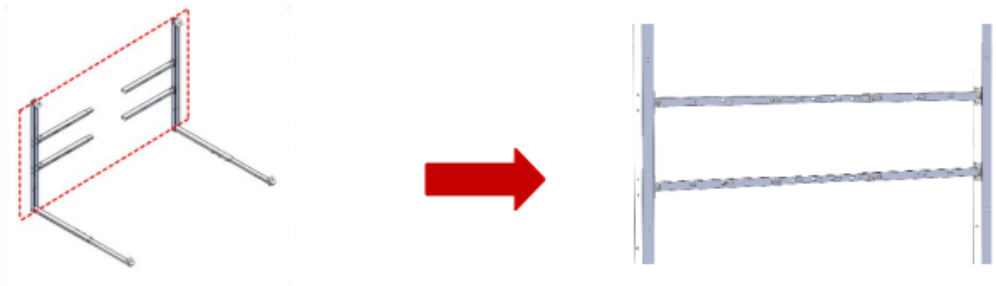


2. Drill vertically into wall with M8 drill bit to a depth of 80 mm and clean dust/debris.

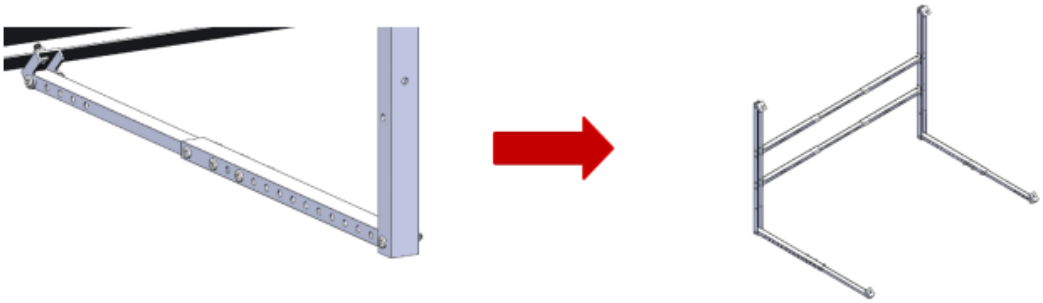


3. Hammer M8 expansion anchors fully into holes until sleeves are embedded tightly.

4. Pre-assemble bracket on a stable surface.

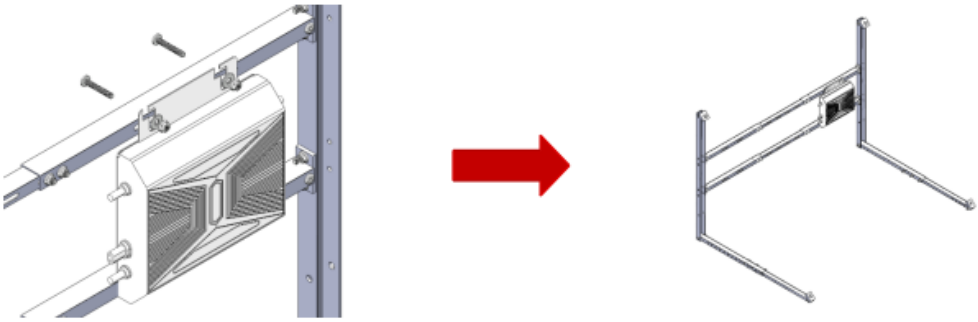


5. Align cross beam to anchoring positions and tighten 2pcs M6×40 bolts.

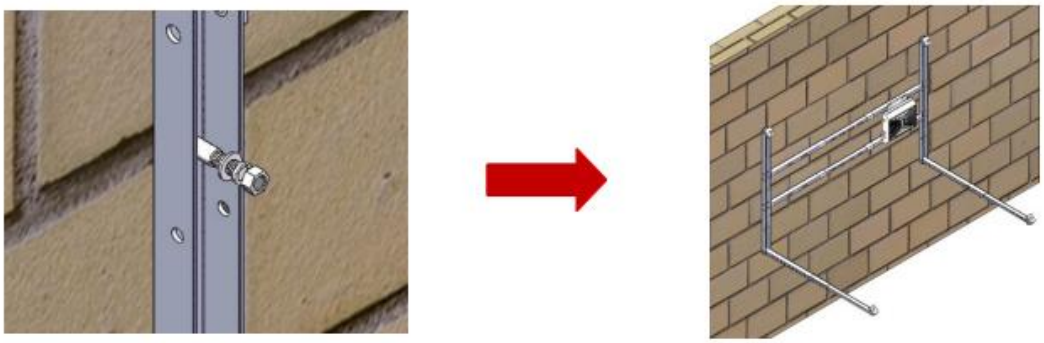


6. Assemble bottom brackets, adjust tilt, and lock angle slider with 3pcs M8×45 bolts.

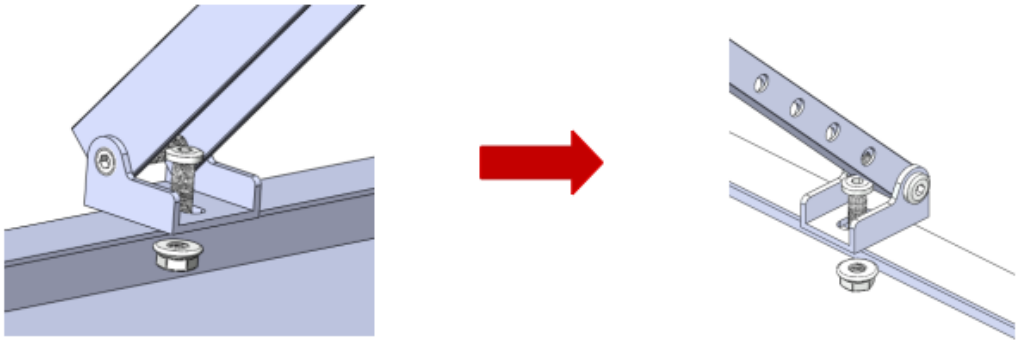
7. Install bottom blocks with M8×55 bolts.



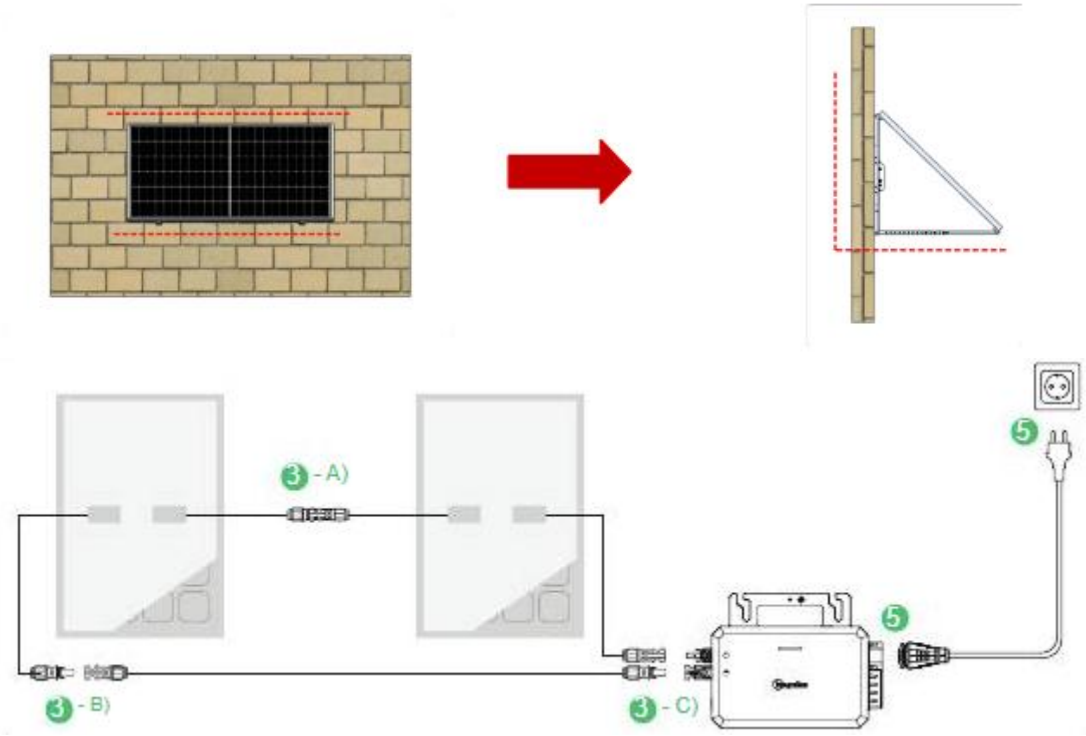
8. Mount micro-inverter to cross beam using M6×40 bolts.



9. Align back bracket with anchors using flat washers and spring lock washers, then fix bracket.



10. Align module frame and secure PV module with M8×20 bolts (minimum 2 people required for lifting).



10.4 Connect the PV modules

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10.3b. (Optional) Connect one or more DC extension cable according to the distance between the PV modules & the microinverter
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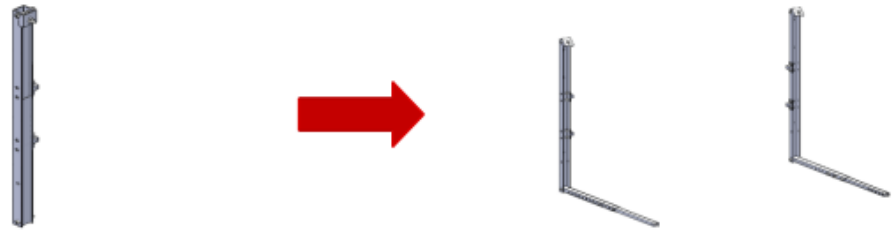
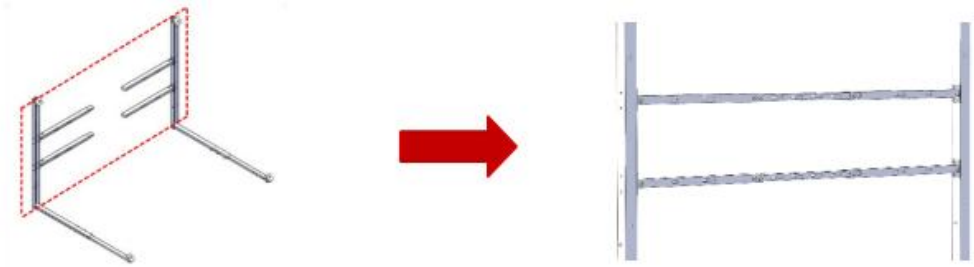
10.5a. Connect one end of the Flex-S3 Plug and Play-CEE7/7 to the microinverter and the other end to the socket.
10.5b. Wait five minutes for the system to start generating power.

6.3 Ground / Floor Scenario



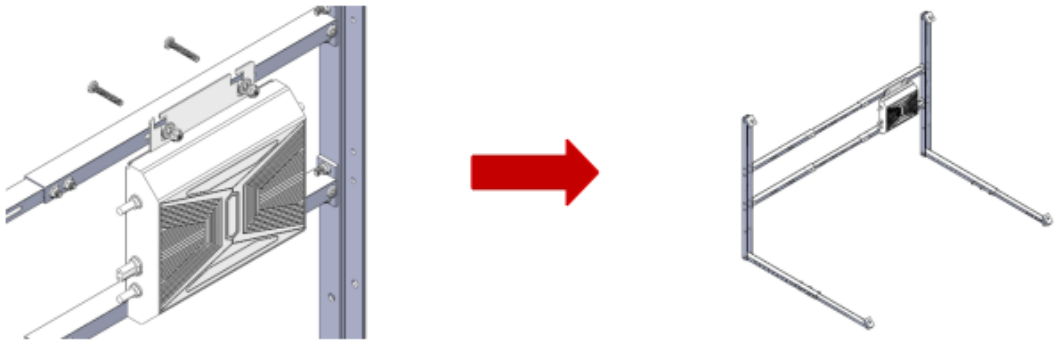
1. Unfold & Pre-Assemble: Unfold brackets on a stable surface and loosely pre-assemble components before final adjustment.



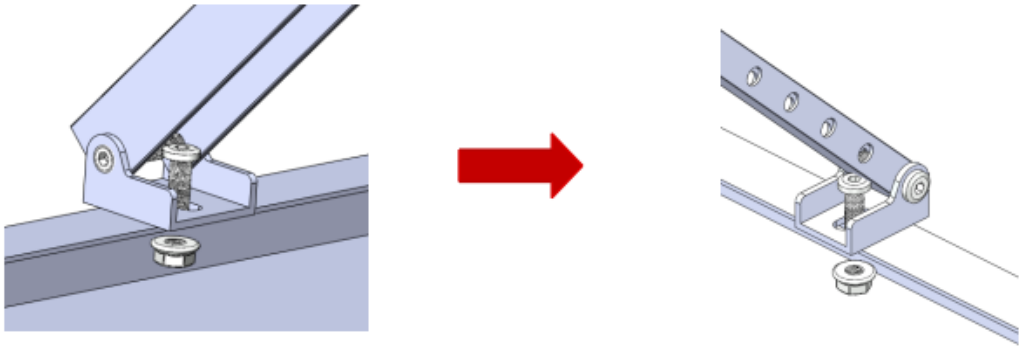
2. Align Cross Beam: Match the cross beam to the PV module mounting hole positions and secure by tightening the 8× M6×40 bolts

3. Set Installation Angle: Adjust bottom brackets to the required angle and fix with 3× M8×45 bolts.

4. Attach Bottom Blocks: Install bottom blocks onto the brackets using M8×55 bolts.



5. Set Inverter Position: Adjust cross beam fixing positions to fit your inverter's dimensions and tighten with M6×40 bolts.



6. Mount PV Module: Attach blocks to brackets using M8×55 bolts, align the module frame with the pre-adjusted points, and secure the module with M8×20 bolts.
7. Inspect System: Check the full assembly for proper alignment and tightness before ground placement.

6.3.1 Direct Placement

1. Select a stable, level, and structural surface.
2. Place the assembled structure directly in the planned position.
3. Verify the structure is stable, fully supported, and meets site-specific wind and environmental resistance standards.

6.3.2 Reverse Placement with Expansion Bolts

1. **Position the assembled system at the planned location.**
2. **Carefully flip the structure into a reversed orientation so the back bracket rests flat on the ground.**
3. **Mark anchor positions through the fixing holes and drill M8 holes to the proper substrate depth.**
4. **Align the structure, drive all expansion bolts, and verify a rigid mechanical connection.**

6.3.3 Reverse Placement with Ballast

1. Position the assembled system at the planned location.
2. Carefully flip the structure into a reversed orientation so the back bracket rests flat on the ground.
3. Calculate required ballast using site wind load, height, exposure, and module size (do not guess weights).
4. Distribute specified ballast weight evenly and symmetrically across designated support zones to prevent sliding or overturning.

THE REQUIRED BALLAST WEIGHT SHALL BE DETERMINED ACCORDING TO THE LOCATION OF THE INSTALLATION, IN ACCORDANCE TO:

- Wind load
- Building height
- Exposure conditions
- Installation location
- Ground/floor condition
- PV module dimensions

The ballast system shall be designed or verified to prevent sliding, overturning and displacement under the applicable environmental loads.

7 Post-Installation Acceptance Standards

The system can only be connected to grid power if all items are fully satisfied:

- All bolts tightened
- Module securely fixed
- Safety rope installed
- No loose components
- Module alignment correct

Notify your Distribution Network Operator (DNO). By UK law, you must submit a G98 notification form to your local DNO within 28 days of connecting the device.

8 Inspection & Maintenance

Every 12 Months:

- Bolt tightness
- Aluminum corrosion
- Safety wire condition
- Module fixing status

Immediate Inspection After Extreme Weather (Storm, Heavy Snow, Strong Wind):

- Structural integrity check
- Bracket alignment & fastener verification

8.1 Routine Care

- Periodically inspect the visible enclosure, approved cables, connectors and mounting for damage, looseness, corrosion, overheating or water ingress.
- Keep the ventilation space clear. Clean only with a soft dry brush or cloth after disconnecting the AC plug and preventing the PV modules from generating.
- Do not use solvents, corrosive cleaners, pressure washers or abrasive materials.
- Do not replace the AC lead or attempt an internal repair. Stop using damaged equipment and contact support.

9 Troubleshooting for Common Issues

• Minor bracket wobble: Insufficient bolt torque -> Loosen all nuts and retighten

• Left-right tilt of bracket: Uneven tightening force -> Re-calibrate with spirit level and fasten evenly

• Horizontal sliding of panels: Missing anti-slip stops -> Fit anti-slip stops

10 Warranty

- Warranty Period: 12-year warranty for brackets.
- Warranty Coverage: Free replacement of defective components for material cracking, anodising delamination, and factory component defects under compliant installation and normal usage.
- Exclusions: The manufacturer shall not be responsible for:

- Unauthorised cutting, welding, or structural modification of brackets
- Bracket damage or falling caused by non-compliant mounting substrates (hollow walls, hollow tiled walls)
- Deformation from overloading, man-made impact, or drop damage

11 Microinverter Specification

Parameter	Hoymiles HF-800-WB PDF
Model	HF-800-WB
Applicable PV module power	320 to 520+ W
MPPT voltage range	16 to 96 V DC
Maximum input voltage	100 V DC
Start-up voltage	22 V DC (Min. start voltage)
Maximum input current	16 A
Maximum input short-circuit current	25 A
MPPTs / strings per MPPT	1 / 1
Nominal AC output power	800 W / 800 VA
Maximum apparent output	800 VA
Maximum current for plug-in device	3.48 A
Nominal output voltage	230 V AC (184 to 276 V)
Nominal output frequency	50 Hz (45 to 55 Hz)
Power factor	>0.99 default (0.8 leading to 0.8 lagging adjustable)
Maximum total harmonic distortion	<3%

Maximum efficiency	97.00% peak (96.00% European weighted)
Nominal MPPT efficiency	99.80%
Dimensions (W × H × D)	213 × 182.5 × 36.5 mm (excluding connectors/brackets)
Weight	2.1 kg
Cooling	Natural convection — No fans
Ingress protection	Outdoor-IP67
Maximum operating altitude	Not specified in tech sheet
Operating temperature	-40 °C to +65 °C
Relative humidity	Not specified in tech sheet
Night-time consumption	<50 mW
Communication	2.4 GHz Wi-Fi & BLE
Isolation	Galvanically Isolated HF Transformer
Safety standards	IEC/EN 62109-1/-2
EMC standards	IEC/EN 61000-6-1 / -6-2 / -6-3 / -6-4; IEC/EN 61000-3-2 / -3-3