

Assembly Instruction

COMPACTPITCH XT35 VLOW

Version : 3.2

Language : English

Important! Read carefully before installation!



Legal Notice

Subject to change due to technical modifications! These assembly instructions correspond to the technical status of the delivered product and not to the current development status at the manufacturer. If pages or parts of the assembly instructions are missing, please contact the manufacturer's address given below. The original language of these assembly instructions is German. Any assembly instructions in another language are a translation of the assembly instructions in German. Therefore, in case of doubt or contradiction, the authentic German version shall prevail. The installation instructions are protected by copyright. The installation instructions may not be copied, reproduced, microfilmed, translated or converted for storage and processing in computer systems, either in part or in full, without the written permission of AEROCOMPACT Europe GmbH

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GENERAL

These assembly instructions describe the assembly procedure and must be strictly adhered to. Read these installation instructions carefully before starting installation. The basic prerequisite for safe working is compliance with all the safety and handling instructions in these installation instructions. In addition, the local accident prevention regulations and general safety regulations for the area of application of the product apply. Illustrations in these instructions are for basic understanding and may differ from the actual design.

APPLICABLE DOCUMENTS

In addition to this manual, you have received an AEROTOOL project report, planning documents and drawings. Always comply with the instructions and notes contained therein.

LIMITATION OF LIABILITY

All information and instructions in these assembly instructions have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience. Liability provisions are stated in our **terms** and can be accessed at www.aerocompact.com/downloads.

EXPLANATION OF SYMBOLS

SYMBOLS FOR INSTRUCTIONS



Prerequisites for action instruction



Results of action steps



Step by step action instruction



This note provides useful information for smooth installation

SYMBOLS IN ILLUSTRATIONS - ACTIVITIES



Optional component, optional mounting variation



Activity by hand



Check AEROTOOL project report or planning documents



Visual inspection



Observe right angle

SYMBOLS IN ILLUSTRATIONS - TOOLS



Measuring tape, measure



Pencil, mark



Chalk line



Scissors, tin snips, cut to size



Cordless screwdriver, screwdriver



Use a torque wrench, Observe torque



Use Allen key

SAFETY

The following list serves as an indication of the most common safety risks that can occur when installing these products. There is no liability for the completeness of the risks presented. A specific check of the necessary safety measures must be carried out by an authorized specialist company before installation.

APPROPRIATE USE

The CompactPITCH pitched roof system is intended exclusively for the installation of PV modules on tiled roofs or similar roof coverings. Proper use also includes correct installation in accordance with these installation instructions. Approval from the module manufacturer is required for the use of PV modules with the CompactPITCH system. AEROCOMPACT accepts no liability for loss of performance or damage of any kind to the PV modules. Any other use of the CompactPITCH system is considered improper use. Do not enter the mounting rails during installation. It is strictly forbidden to place any objects, such as pallets, on the mounting rails.

ENSURING TIGHTNESS DURING INSTALLATION

i The following instructions are essential to ensure that the roof is watertight during the installation of roof hooks and hanger bolts and to prevent subsequent damage due to leaks.

Correct positioning: Roof hooks and hanger bolts must be positioned exactly in accordance with the planning documents and local building regulations. Incorrect positioning can impair the roof waterproofing and lead to water ingress. It is particularly important to look out for sharp-edged or protruding noses on roof tiles, which may need to be removed to ensure tightness - this applies especially when using replacement roof tiles.

Correct torque setting: Great care must be taken when tightening the fastening screws of both the roof hooks and the hanger bolts. Excessive tightening can damage the roof waterproofing and cause leaks. It is essential to adhere exactly to the torques specified in these installation instructions in order to maintain the structural integrity of the roof and the seal.

Final check and inspection: After the roof hooks and hanger bolts have been installed, a comprehensive inspection of the installed components must be carried out. Pay attention to damage to sealing materials or potential leaks. Incorrect installation can cause serious consequential damage to the building fabric and interior fittings.

Legal notice: By adhering to these installation instructions, responsibility is assumed for the correct installation of roof hooks and hanger bolts in accordance with regulations. Damage, in particular due to improper installation and resulting leaks, may result in liability claims. Careful observance of these recommendations makes a decisive contribution to the longevity and tightness of the roof.

NOTE ON THE PROCESSING OF THIN SHEET METAL SCREWS

i The attachment of thin sheet metal screws with impulse or impact screwdrivers is not permitted. The high speeds can cause damage to the screw bodies, the flashing and the sealing. Thin sheet metal screws may **only** be used **once**, as their performance is not guaranteed if they are reused.

- Apply pressure to the thin sheet metal screw and screw in at low speed (< 500 rpm).
- Then reduce the pressure and screw in the thin sheet screw at a higher speed.

PERSONNEL REQUIREMENTS

Installation may only be carried out by a specialist company and must be carried out strictly in accordance with the installation instructions, the project report and the planning documents. A specialist company is a company that is familiar with the installation and maintenance of photovoltaic systems as part of its normal business operations. National and local building regulations, standards and environmental protection must be complied with. Under no circumstances may the assembly personnel be under the influence of medication, alcohol, drugs or in any other condition that impairs consciousness (e.g. overtiredness). Trainee personnel may only carry out work under the instruction and supervision of specialist personnel who are authorized to train personnel.

WORKING SAFELY

The contractual partner must ensure that the necessary safety measures and the relevant labor law and occupational safety regulations are observed when installing products from AEROCOMPACT Europe GmbH. Information from AEROCOMPACT Europe GmbH on the need to comply with security measures is provided without guarantee and without any claim to completeness and serves only to support the contractual partner. The contractual partner is obliged to inform himself about all relevant regulations concerning working safety and to comply with them. AEROCOMPACT Europe GmbH expressly assumes no responsibility and consequently no liability. Areas below the roof on which work is being carried out must be protected from falling objects. Where this is not possible, the affected areas must be closed to the public and unauthorized personnel. If the weather is unsuitable, work on the roof must not be continued for longer than necessary or must not be started at all. Never carry out installation work in strong winds. Strong winds exert particular enormous forces on the large-area PV modules. There is a risk of a module being torn off the roof and people being injured. Never work in wet conditions or at temperatures below freezing. Depending on the roof pitch, there is a risk of slipping. Only use suitable, intact and tested ladders. Set up and secure ladders according to specifications. Separate rules apply to mechanical climbing aids (elevators, cherry pickers, etc.). Never use the PV mounting system as a climbing support. Keep sufficient distance from overhead power lines. Equipotential bonding between the individual system components must be carried out in accordance with the respective country-specific regulations. When cutting materials to size, make sure there are no burrs, especially on edges and corners where there is a risk of injury.

BREAKTHROUGH PROTECTION

Roof windows, skylights, large ventilation flaps, etc. generally cannot withstand the weight or impact of a person. Such objects must be secured in a similar way to the roof edge. Corrugated fiber-cement roofs can be at risk of breakthrough over the entire surface. Define routes and secure them with load distribution measures. Always use load distribution aids on roof coverings or roof structures (e.g. thin sheet metal, corrugated fiber cement) with insufficient load-bearing capacity.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment is used to protect people from health and safety hazards at work. Personnel must wear personal protective equipment during installation. Personal protective equipment is explained below:



Wear safety goggles when drilling and sawing



Wear cut-resistant work gloves during assembly



Wear safety shoes



Use fall protection



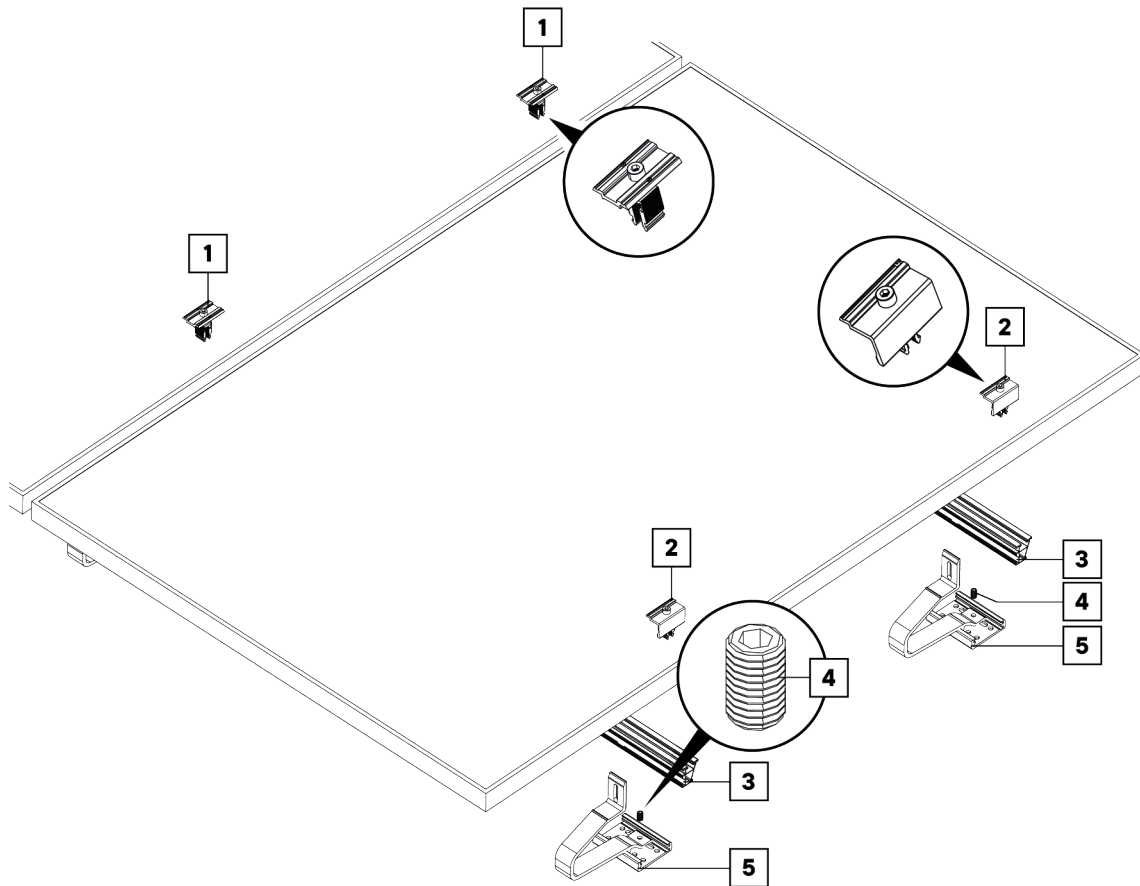
Helmets must be worn by all persons working on the construction site



Wear hearing protection

SYSTEM OVERVIEW

BASIC COMPONENTS CONCRETE ROOF



1 CLM10

Middle clamp Click 30 - 46 mm

3 X40 | X50 | X60

Mounting rail

5 XT35-VLOW

Roof hook very low 35x8

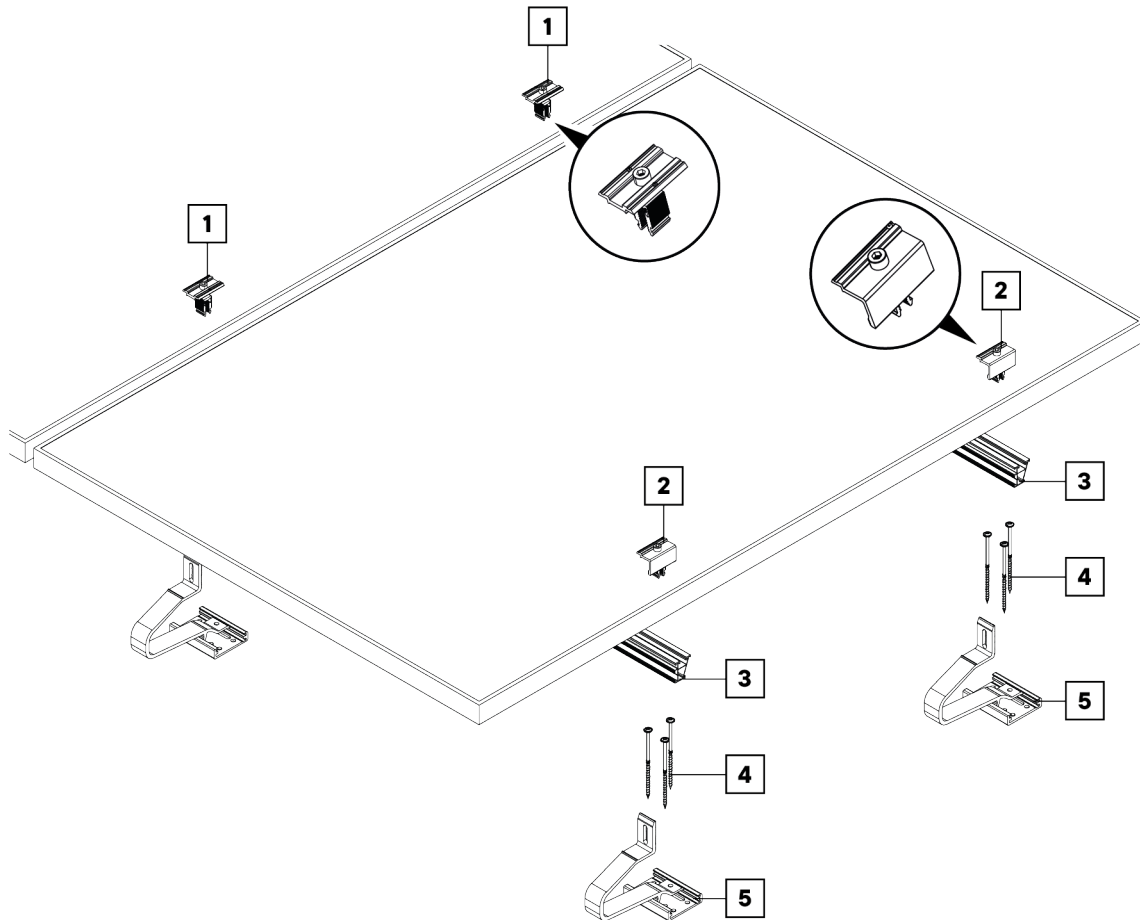
2 CLE10

End clamp Click 30-46

4 GSC10x16

Grub screw M10x16

BASIC COMPONENTS RAFTER ROOF



- 1 CLM10**
Middle clamp Click 30 - 46 mm
- 3 X40 | X50 | X60**
Mounting rail
- 5 XT35-VLOW**
Roof hook very low 35x8

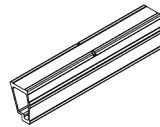
- 2 CLE10**
End clamp Click 30-46
- 4 SDS-W-6*XXX | SDS-W-8*XXX**
Self-drilling screws*

*Screw length must be selected so that **sufficient** load-bearing thread length is screwed into the wood.

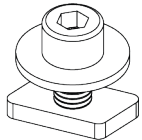
SYSTEM ACCESSORIES



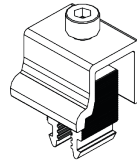
XPCN-XX
Rail connector X40, X50



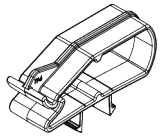
XPCN60
Rail connector X60



SCR-MA
Bolting set module accessories

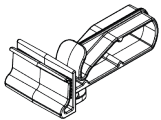


XDL
Cross connector X40, X50, X60

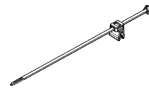


CLP-R
Cable clip rail

MODULE ACCESSORIES

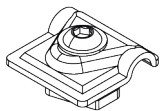


CLP-U
Cable clip universal



CLP-M
Cable tie clip for module frames with a thickness of 1 - 3 mm

POTENTIAL EQUALIZATION



WCL8-10
Wire clamp 8 - 10 mm

ASSEMBLY

ASSEMBLY PREPARATION

Required tools for assembly

i Before starting the assembly, make sure that the assembly personnel are familiar with the proper use of the listed tools.



Bit hexagon socket 6 mm



Bit hexagon socket 5 mm



Measuring tape



Bit TORX T40



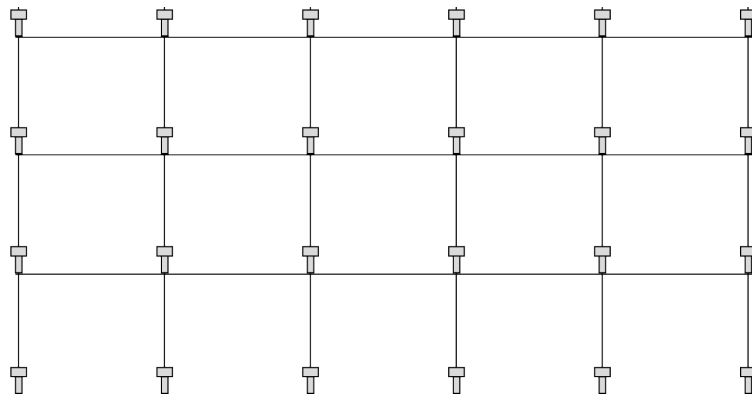
Torque wrench 10 - 30 Nm with hexagon socket bit 6mm



Cordless screwdriver

MEASURE AREA

i The roof hooks are screwed to the rafters.



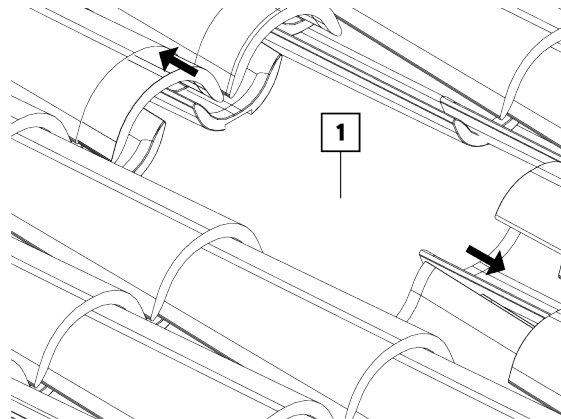
- Take over the dimensions of the module field from the Aerotool planning documents.
- Determine module dimensions.
- Determine the spacing of the rafters
- Determine and mark the positions of the roof hooks.

MOUNT ROOF HOOK

Concrete roof installation variant



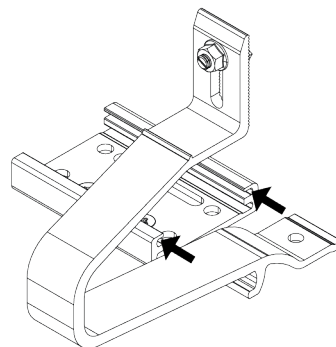
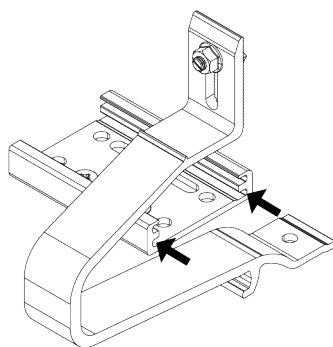
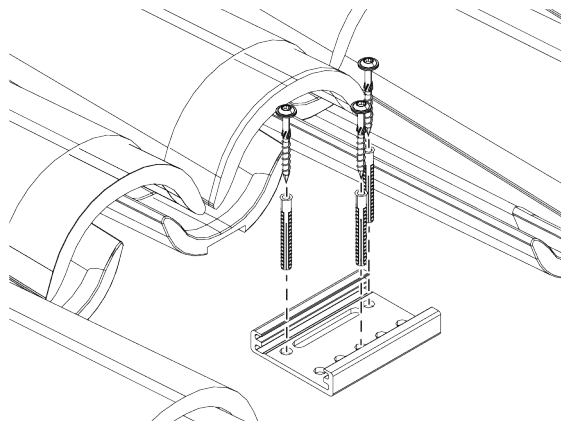
- Expose the concrete substrate (1).



FASTENING THE BASE PLATE

i The fixing material for the XT-Vlow must be provided by the customer. It is essential to ensure that all national and local building regulations are observed.

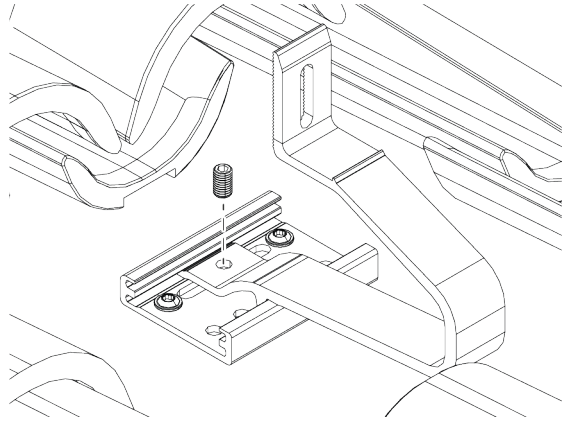
- Fix the base plate to the surface with three screws.



- Insert the bracket in the lower or upper height position according to the tile height provided by the customer.



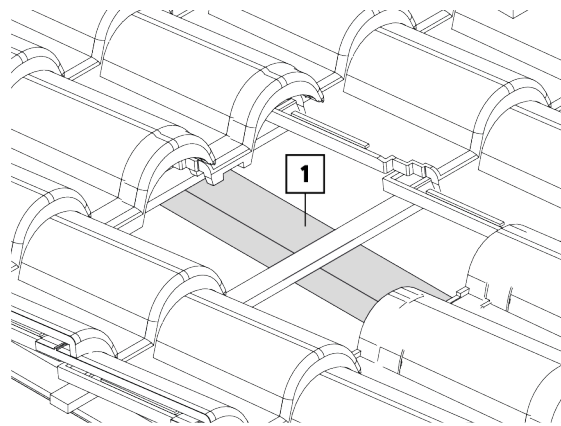
- ▶ Position the bracket in the valley of the tile.
- ▶ Then hand-tighten with the grub screw on the base plate.



Mounting variant rafters



- Expose the roof battens (1).



FASTENING THE BASE PLATE



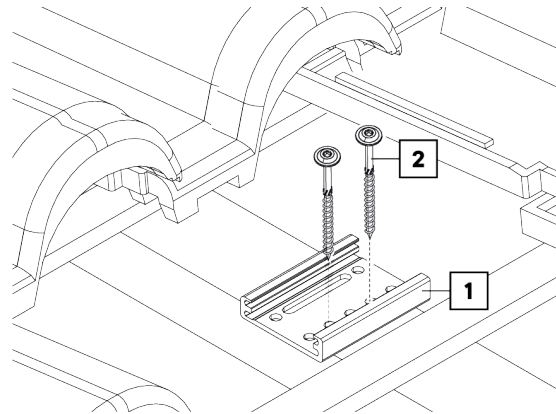
- Position the base plate (1) along the counter battens.
- Screw the first two wafer head screws (2) into the corresponding holes.
- Then check the **horizontal alignment**.

i Number of plate head screws per roof hook:

SDS-W-8*XXX - 2 pcs

SDS-W-6*XXX - 3 pcs

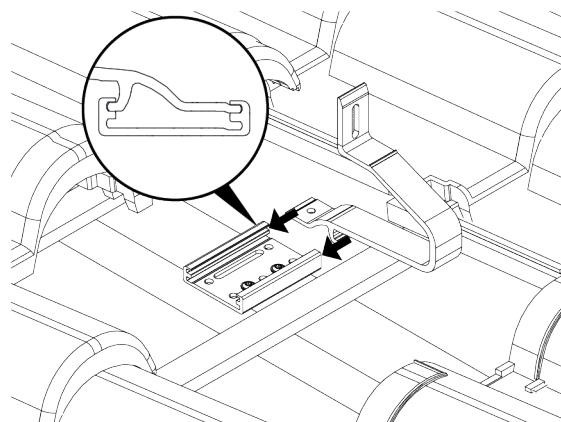
- i** Please select a suitable hole for fixing the base plate. Ensure that the minimum distance to the edges of the counter battens is maintained in accordance with the latest technical documentation from the manufacturer of the installed screws.



MOUNT BRACKET



- Depending on the height of the tile, the bracket can be inserted into either the lower or upper position of the base plate.

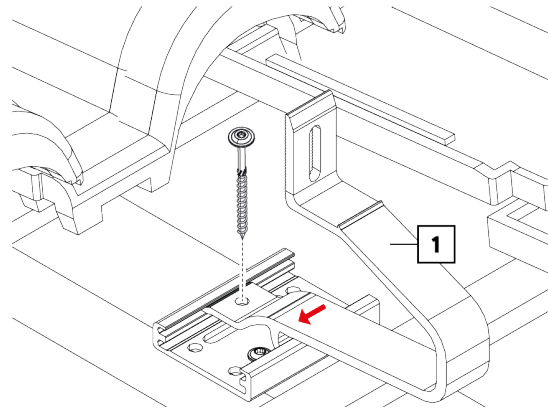




- Move the bracket (1) sideways so that it is centered in the corrugated trough of the tile.
- Screw in the second wafer head screw at the bracket.

i Attention:

Select the screw length according to the height position of the bracket! Care must be taken to ensure that **sufficient** load-bearing thread length is screwed into the wood.



Decentralized mounting of the base plate



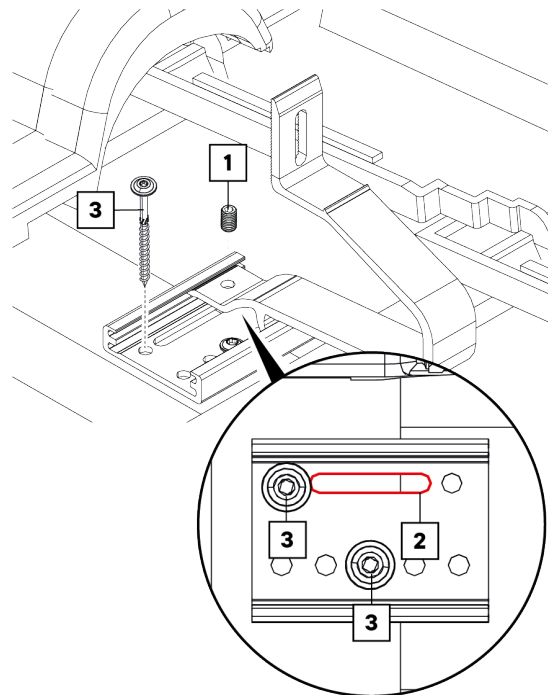
i The decentralized fastening of the base plate is used when the bracket cannot be positioned above the counter battens. In this mounting situation, the XT-Vlow bracket is attached to the base plate with a grub screw.

- Screw in the wafer head screws (3) on the base plate.
- Position the bracket in the valley of the tile.
- Screw the grub screw (1) into the roof hook and position it in the slotted hole (2) marked in red on the base plate.
- Then position the grub screw (1) precisely and tighten it hand-tight.

i Number of plate head screws per roof hook:

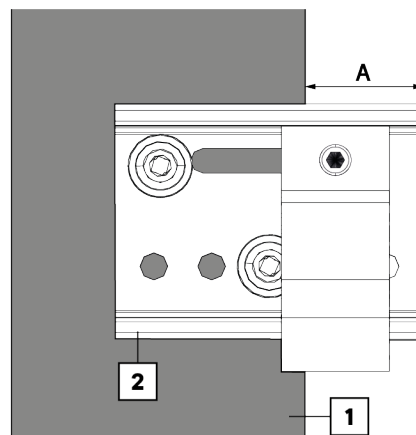
SDS-W-8*XXX - 2 pcs

SDS-W-6*XXX - 3 pcs



i Important:

With decentralized fastening, the base plate (2) may protrude a maximum of **A = 4 cm** from the counter battens (1).



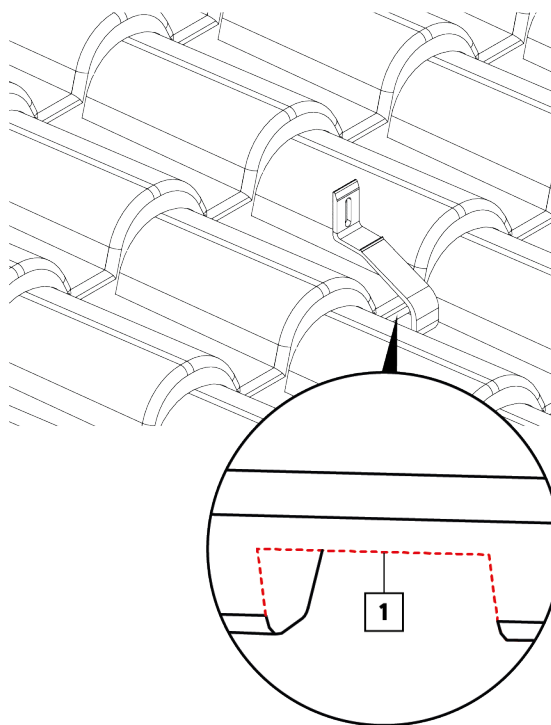
Complete roofing



- ✓ Complete the on-site roof covering again afterwards.
- If necessary, work on the roof tile located above the installed roof hook at the interlocking joint (1) so that the original position is restored.

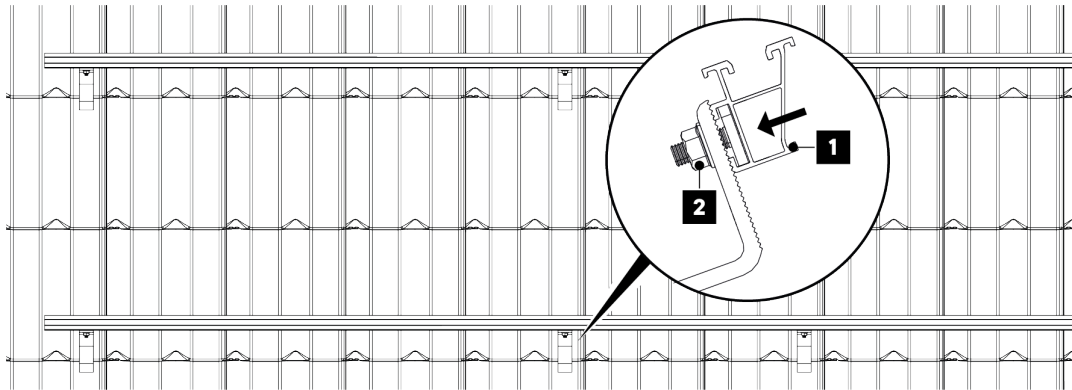
i Ensure roof tightness!

Ensure that the covering around the roof hook is correctly closed.



MOUNTING X40/X50 MOUNTING RAIL

Mount Hammerhead bolt

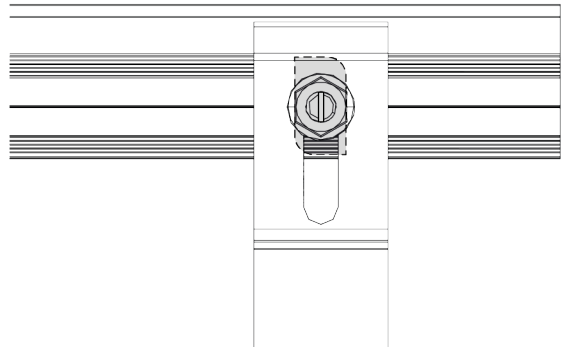


- ▶ Fasten the mounting rail (1) to the roof hook using the hammerhead screw.
- ▶ Tighten the nut (2) with a torque of 15 Nm or 11 lb-ft.

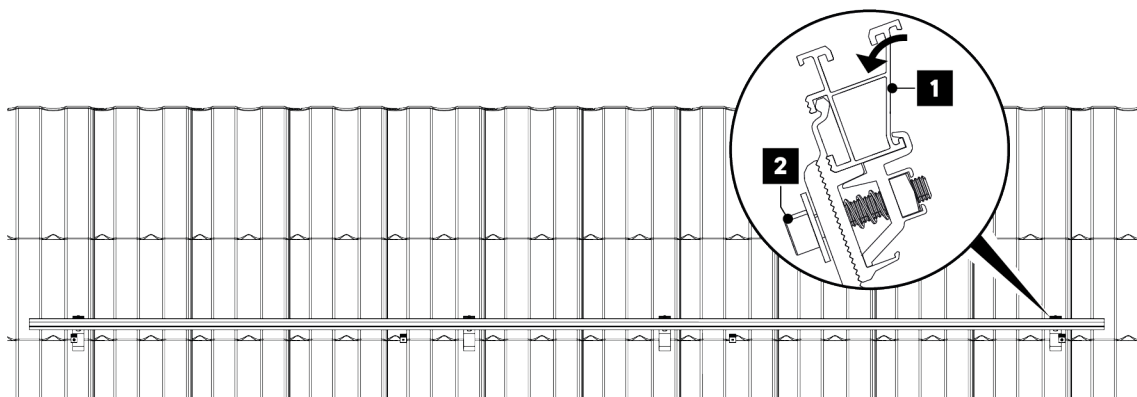
FITTING THE HAMMER-HEAD BOLT



- ▶ The notch must be aligned vertically as shown in the illustration. Create a force-fit and form-fit connection between the screw and the mounting rail.



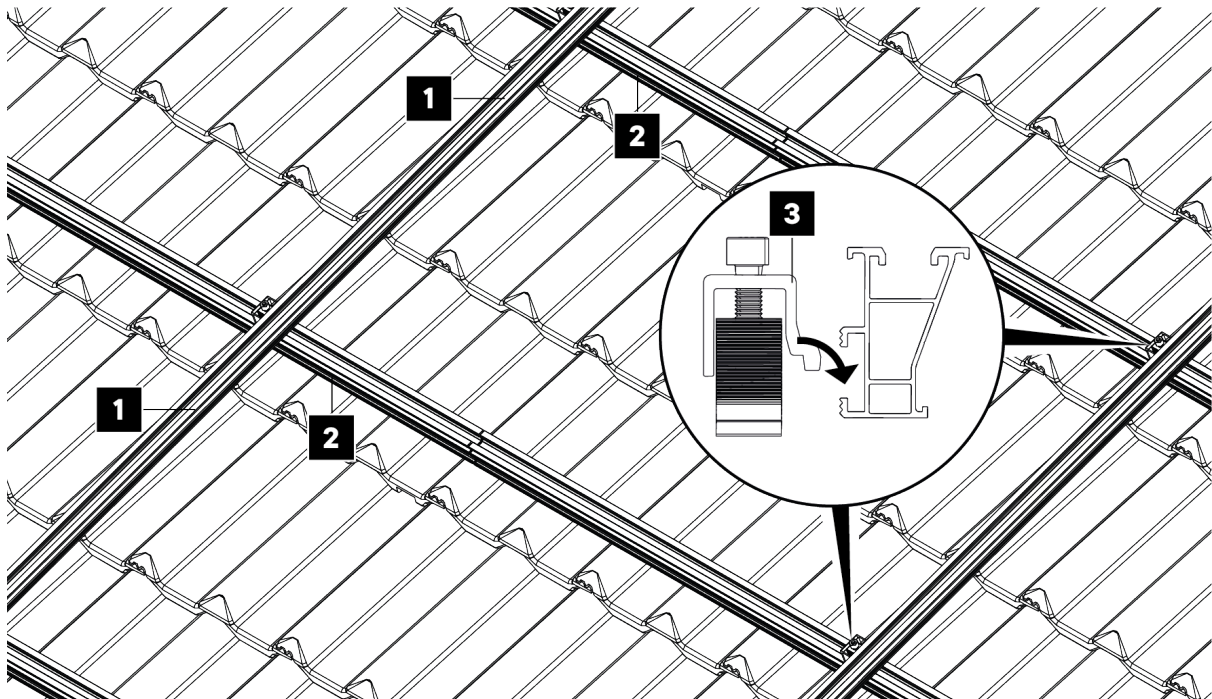
Mounting click quick mounting attachment



- ▶ Click the mounting rail (1) into place on the quick mounting attachment.
- ▶ Tighten the screw (2) with a torque of 15 Nm or 11 lb-ft.

ASSEMBLE MOUNTING RAIL IN CROSS CONNECTION

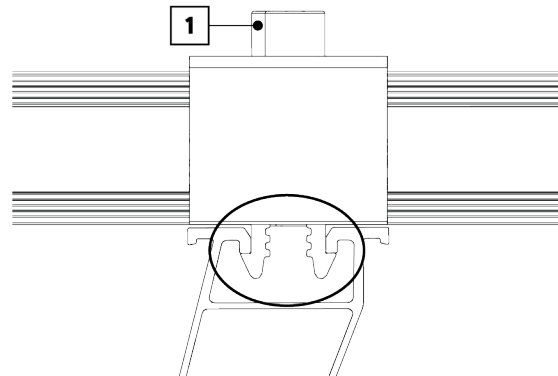
i At each point where the rails cross, the rails are joined together with a cross connector.



- ▷ Place the upper mounting rails (1) on the lower mounting rails (2).
- ▷ Then attach a cross connector (3) at each crossing point.

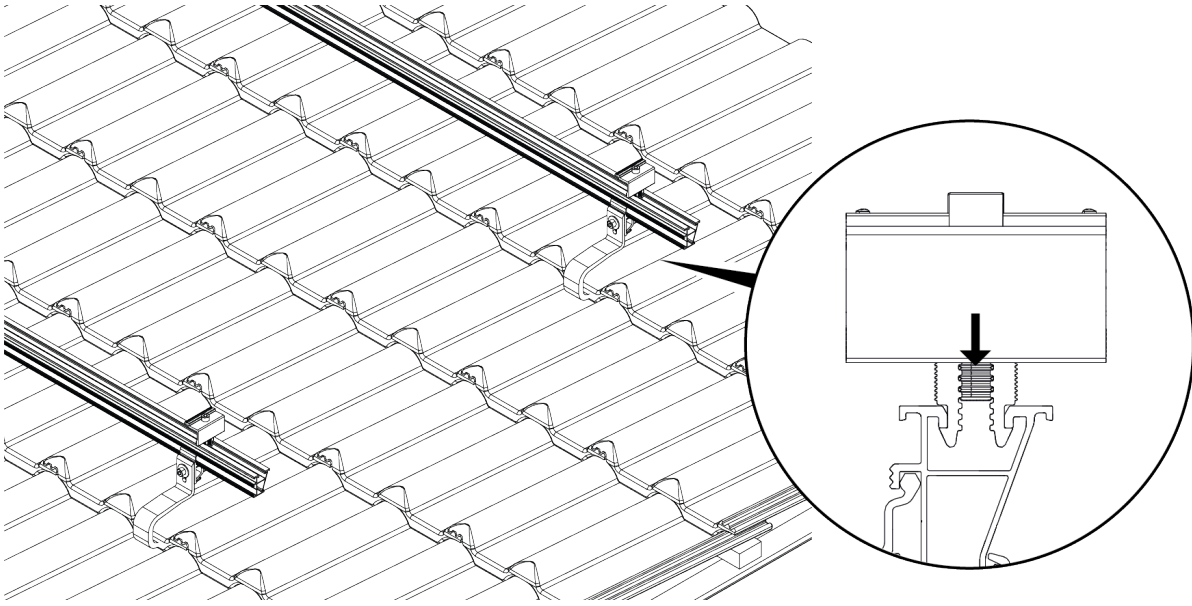


- ▷ Make sure that the cross connector is fully clicked into place.
- ▷ Tighten the Allen screw (1) with a torque of 15 Nm or 11 ft lb.

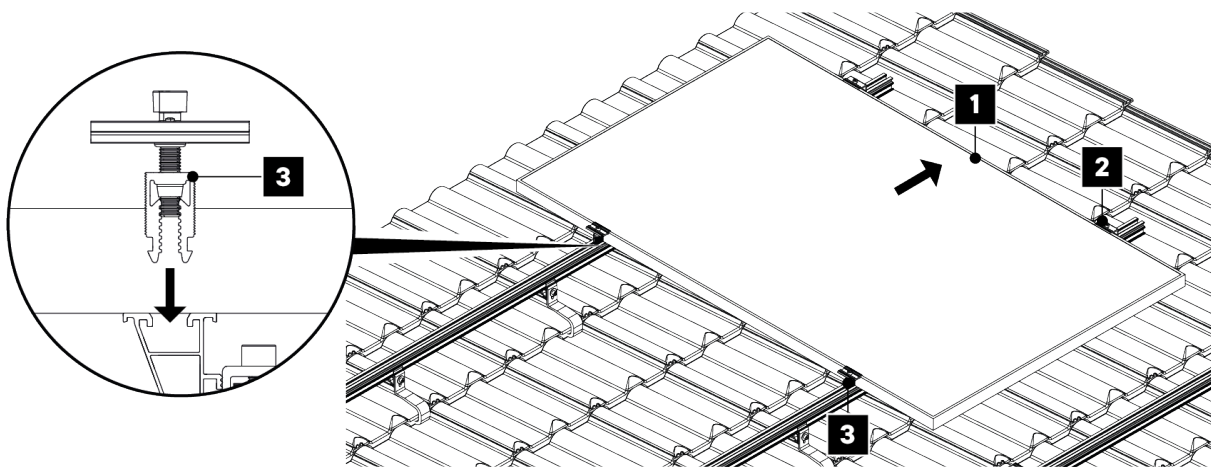


INSTALLING MODULES

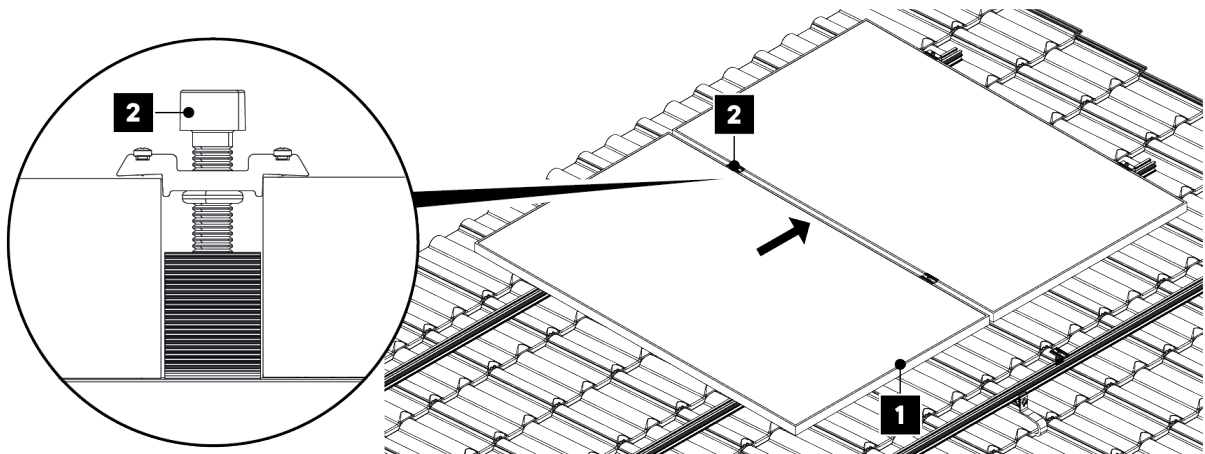
i Do not enter the modules under any circumstances.



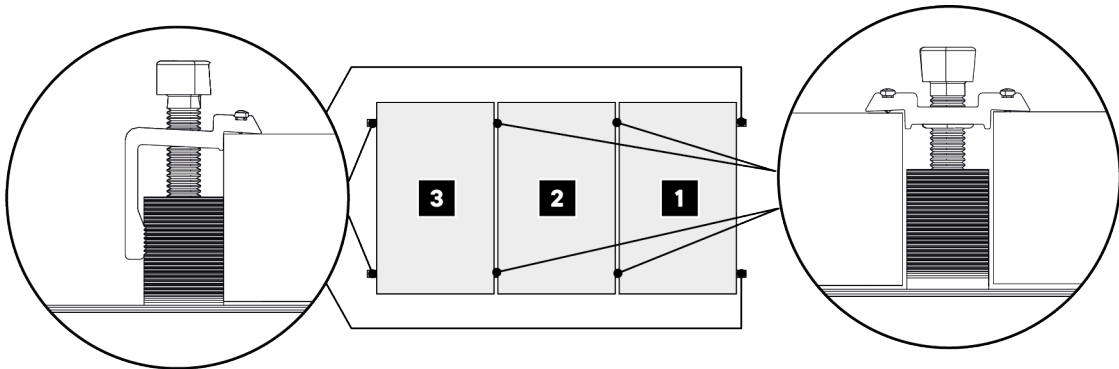
> Attach the end clamps to the mounting rails at the edge of the module field.



- >** Place the module (1).
- >** Tighten the screws (2) on the end clamps to 15 Nm or 11 lb-ft.
- >** Attach the middle clamps (3) after the first module.



- Position the second module (1).
- Tighten the screws (2) on the middle clamps to 15 Nm or 11 lb-ft.



i When installing the modules, make sure that they are properly aligned and parallel to the mounting rail. Use loose clamps as spacers if necessary.

- Install the modules row by row.
- Tighten the screws on the clamps to 15 Nm or 11 ft-lbs each.

REPOSITION / REPLACE CLAMPS

- Dismantle the mounted clamp: Unscrew the screw on the clamp completely.
- Depending on the installation situation, press the clamp together at the side and pull it out or pull it out of the rail at the side.

CABLE MANAGEMENT

CABLE CLIP CLP-M FOR MODULES

i The **CLP-M cable clip** is suitable for module frames with a sheet thickness of **1 - 3 mm**.



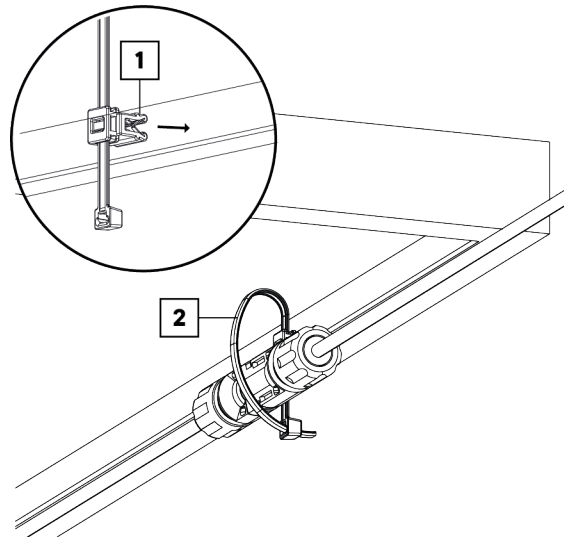
CLP-M

Cable tie clip for module frames with a thickness of 1 - 3 mm

ASSEMBLY

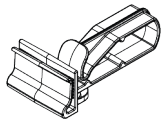


- ▶ Insert the CLP-M (1) into the module frame.
- ▶ The CLP-U is suitable for:
 - Solar plug (e.g. MC4)
 - Solar cable
- ▶ Then tighten the cable tie (2).



CABLE CLIP CLP-U FOR MODULES

i The **CLP-U cable clip** is suitable for module frames with a sheet thickness of **1.5 - 3 mm**.



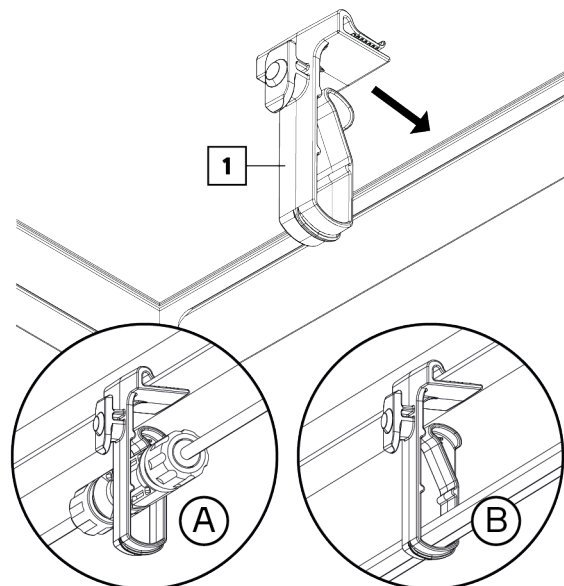
CLP-U

Cable clip universal

ASSEMBLY



- ▶ Insert the CLP-U (1) into the module frame.
- ▶ The CLP-U is suitable for:
 - A** - Solar connectors (e.g. MC4)
 - B** - Solar wire



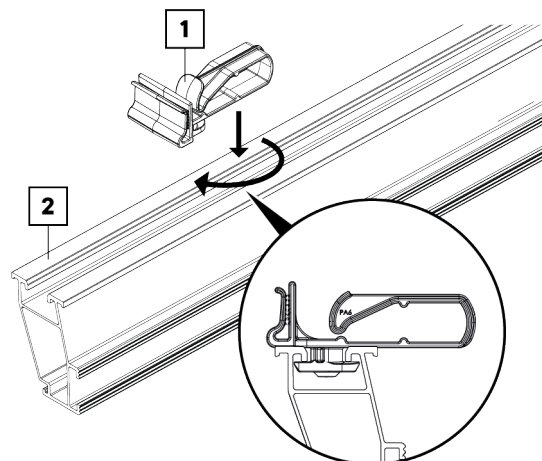
MOUNT THE CLP-U CABLE CLIP TO THE MOUNTING RAIL



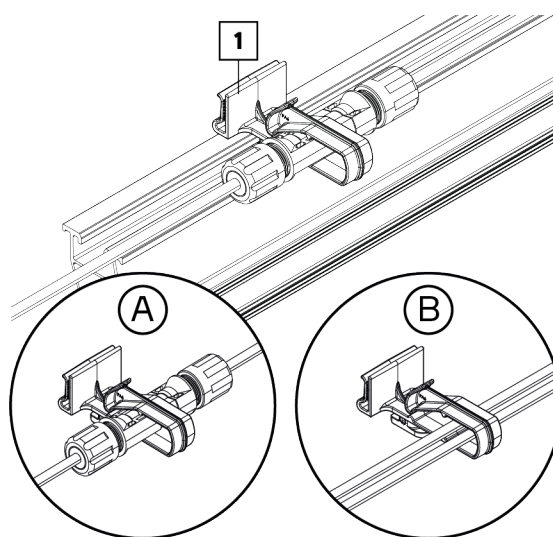
- Insert the cable clip (1) into the mounting rail (2) from above.
- Rotate the cable clip by 90°.

i Attention:

Make sure that the cable clip is fully engaged in the rail channel.



- The CLP-U (1) is suitable for:
 - A** - Solar connectors (e.g. MC4)
 - B** - Solar wire



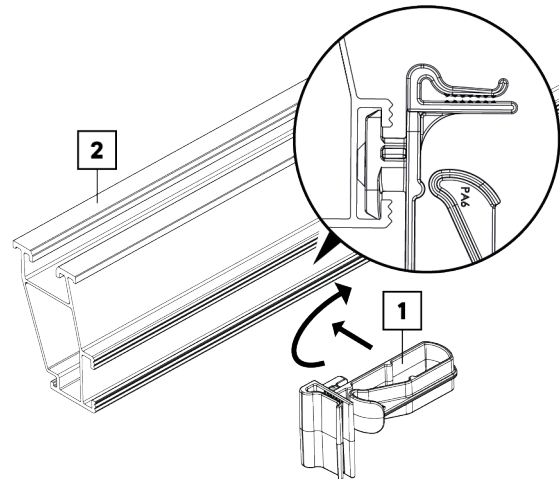
MOUNT THE CLP-U CABLE CLIP ON THE SIDE OF THE MOUNTING RAIL



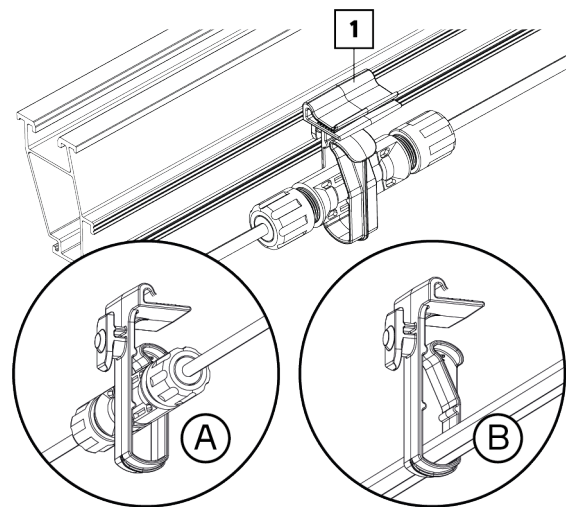
- Guide the cable clip (1) to the side of the mounting rail (2).
- Rotate the cable clip by 90°.

1 Attention:

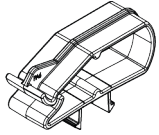
Make sure that the cable clip is fully engaged in the rail channel.



- The CLP-U (1) is suitable for:
 - A - Solar connectors (e.g. MC4)
 - B - Solar wire



MOUNT THE CLP-R CABLE CLIP TO THE MOUNTING RAIL



CLP-R
Cable clip rail

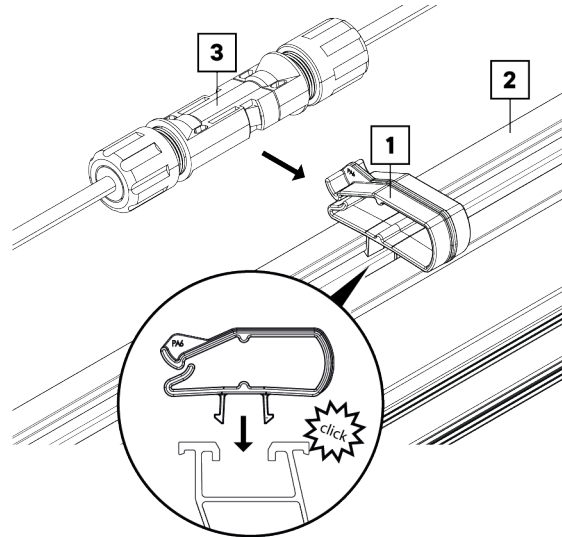
MOUNT THE CLP-R



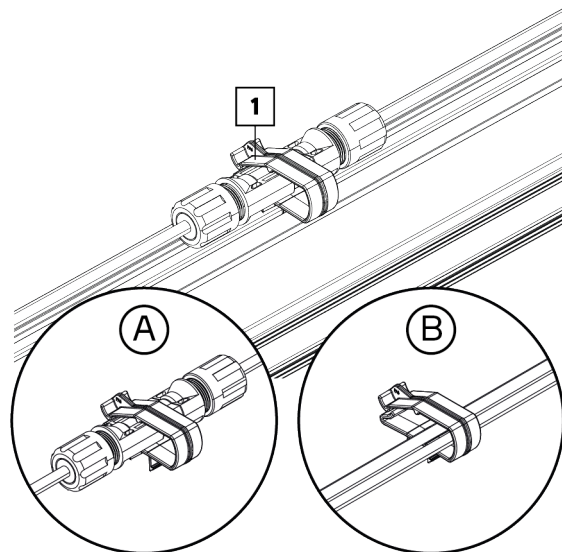
- ▶ Click the cable clip (1) into the mounting rail (2) from above.
- ▶ Insert the solar plug (3) from the side.

i Attention:

Make sure that the cable clip is fully engaged in the rail channel.



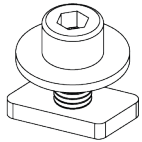
- ▶ The CLP-R (1) is suitable for:
 - A - Solar connectors (e.g. MC4)
 - B - Solar wire



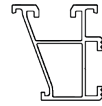
MLPE FOR MOUNTING MOUNTING RAIL (OPTIONAL)

i The **SCR-MA** screw connection is intended for the mounting rails **X40**, **X50** and **X60**. In the following steps, the assembly is shown using an **X40** mounting rail. The procedure is identical for **X50** and **X60** mounting rails.

NECESSARY COMPONENTS



SCR-MA
Bolting set module accessories

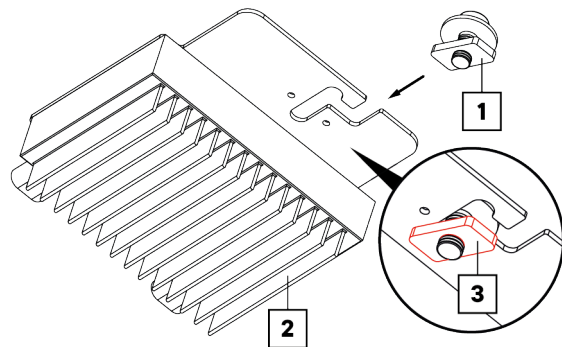


X40-XXXX
Mounting rail X40 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm

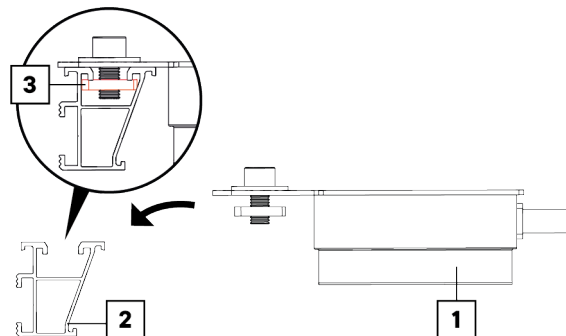
ASSEMBLY (EXAMPLE MOUNTING RAIL X40)



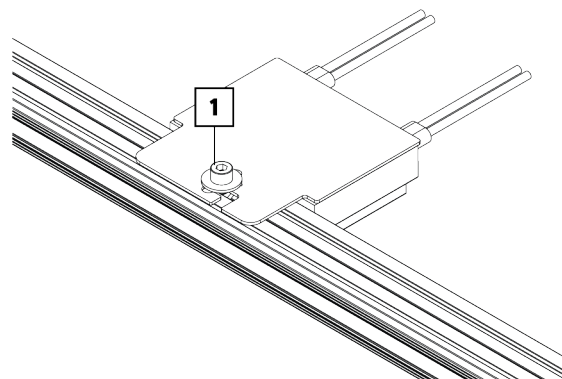
- Insert the screw connection (1) into the MLPE device (2) as shown in the illustration.
- Ensure that the plate (3) is pointing downwards.



- Guide the MLPE (1) with the screw connection to the top of the mounting rail (2).
- Insert the plate (3) as shown in the illustration.



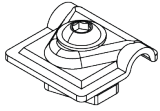
- Then tighten the Allen screw (1) with a torque of 15 Nm or 11 lb-ft.
- ☑ The MLPE is now mounted.



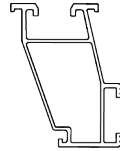
POTENTIAL EQUALIZATION

i For potential equalization, **AEROCOMPACT Europe GmbH** provides the wire clamp as an accessory. These are each mounted on the mounting rail, depending on the mounting situation, the module rows are connected to each other by the module clamps.

REQUIRED COMPONENTS



WCL8-10
Wire clamp 8 - 10 mm



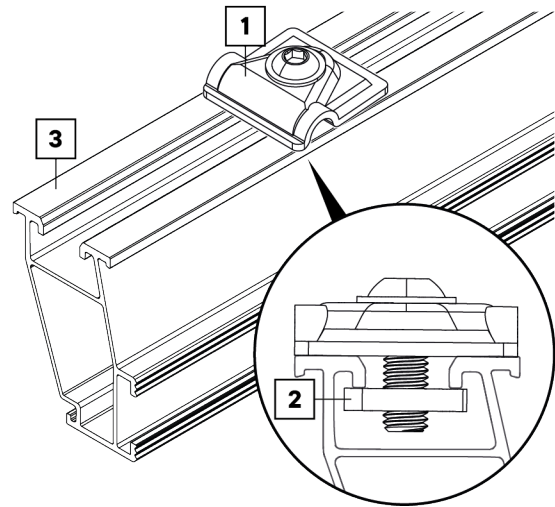
X60-XXXX
Mounting rail X60 1980 mm 3550 mm 4750 mm 5850 mm

MOUNTING WIRE CLAMP (EXAMPLE MOUNTING RAIL X60)



- Insert the wire clamp (1) into the mounting rail (3).
- Ensure that the threaded plate (2) is positioned as shown in the illustration.
- With the wire inserted, tighten the screw of the wire clamp (1) to a torque of 10 Nm or 7.38 lb-ft.

i In the following steps, the installation of the clamp is shown using an **X60** mounting rail. The procedure is identical for **X50** and **X40** mounting rails.



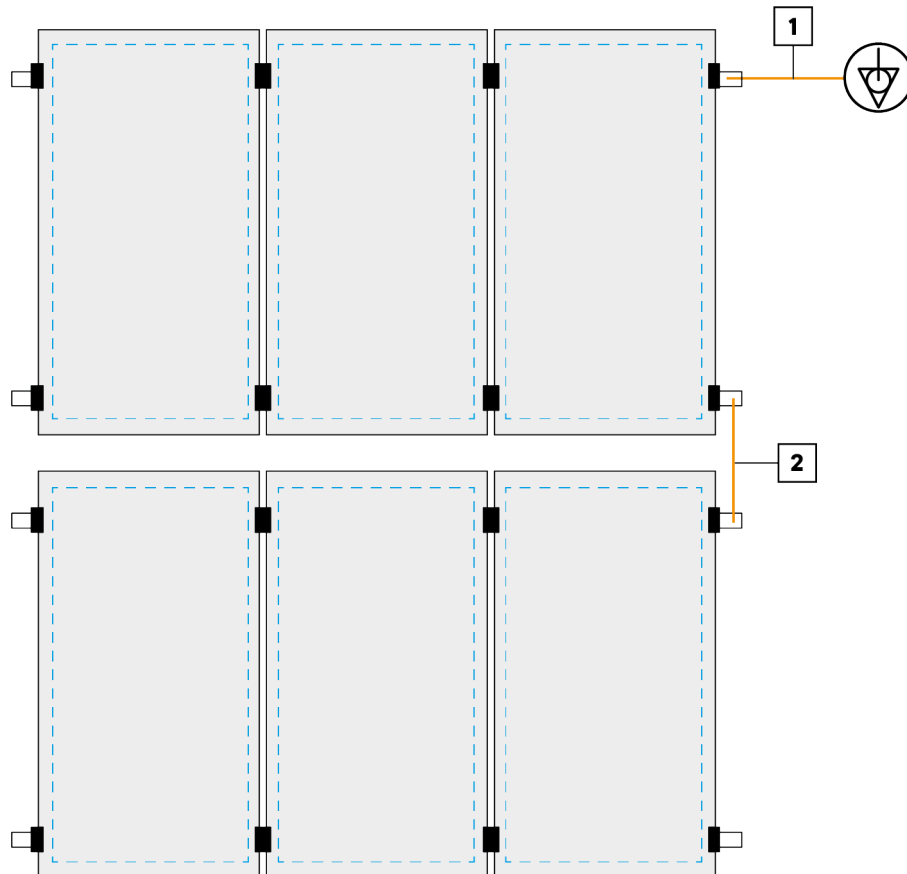
MINIMUM CROSS-SECTIONS FOR EQUIPOTENTIAL BONDING

i Caution!

The specialist planner, contractor or installer is responsible for specifying the minimum cross-sections for equipotential bonding in accordance with the applicable legal requirements and standards. AEROCOMPACT Europe GmbH assumes no liability for this.



WIRING DIAGRAM FOR EQUIPOTENTIAL BONDING



- ▶ Attach the on-site potential equalization (1) to a point on the system.
- ▶ Create a connection (2) for the module columns.

MAINTENANCE, DISASSEMBLY AND DISPOSAL

MAINTENANCE

To prevent personal injury and damage to property, the system must be checked regularly by qualified personnel and annual maintenance is required.

- Check all system components for damage. In the event of damage, replace the affected component immediately.
- Check all screw connections. Tighten loose screw connections, observing the tightening torque specified in the installation instructions.
- Checking all components for damage caused by the weather, animals, dirt, deposits, build-up, vegetation, roof penetrations, seals, stability and corrosion. In the event of damage, clean, repair or replace the affected component.

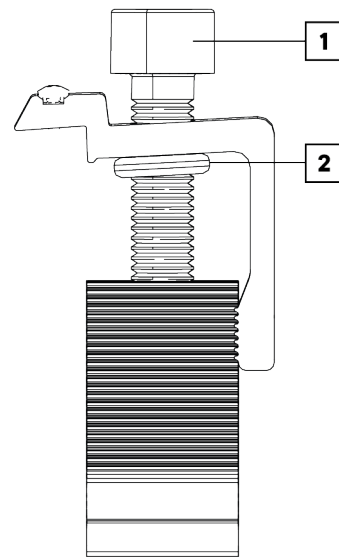
DISASSEMBLY

DISMANTLING THE CLAMPS (EXAMPLE)



i To disassemble the system, carry out the assembly steps in reverse order.

- ☒ Unscrew the screw (1) on the clamp.
- ☒ When reusing the clamp, ensure that the O-ring (2) is not lost.
- i** If the components are reused, it must be noted that these are wearing parts. Therefore, the AEROCOMPACT Europe GmbH cannot assume any responsibility for checking the degree of wear. For this reason, any liability or warranty of AEROCOMPACT Europe GmbH in case of reuse is excluded and reuse is at the installer's own responsibility.



DISPOSAL

Unless a take-back or disposal agreement has been made, disassembled components should be recycled:

- Give metals and plastic elements for recycling.
- Dispose of remaining components sorted according to material composition.

i Incorrect disposal may result in hazards to the environment. In case of doubt, obtain information on environmentally sound disposal from the local municipal authority or from specialized disposal companies.

APPENDIX

DECLARATION OF PERFORMANCE



Manufacturer: **AEROCOMPACT Europe GmbH**
Gewerbestr. 14
A-6822 Satteins

Designation: **CompactPITCH roof hook system XT35**
VLOW for pitched roofs

Identification code: **XT35 VLOW**

Applied standard: **EN 1090-1**

Certification body: **2397**



[For the declaration of performance](#)

REVISION HISTORY

Version	Chapter	Modification
v3.2	"Cable management" on page 21	New chapter added

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