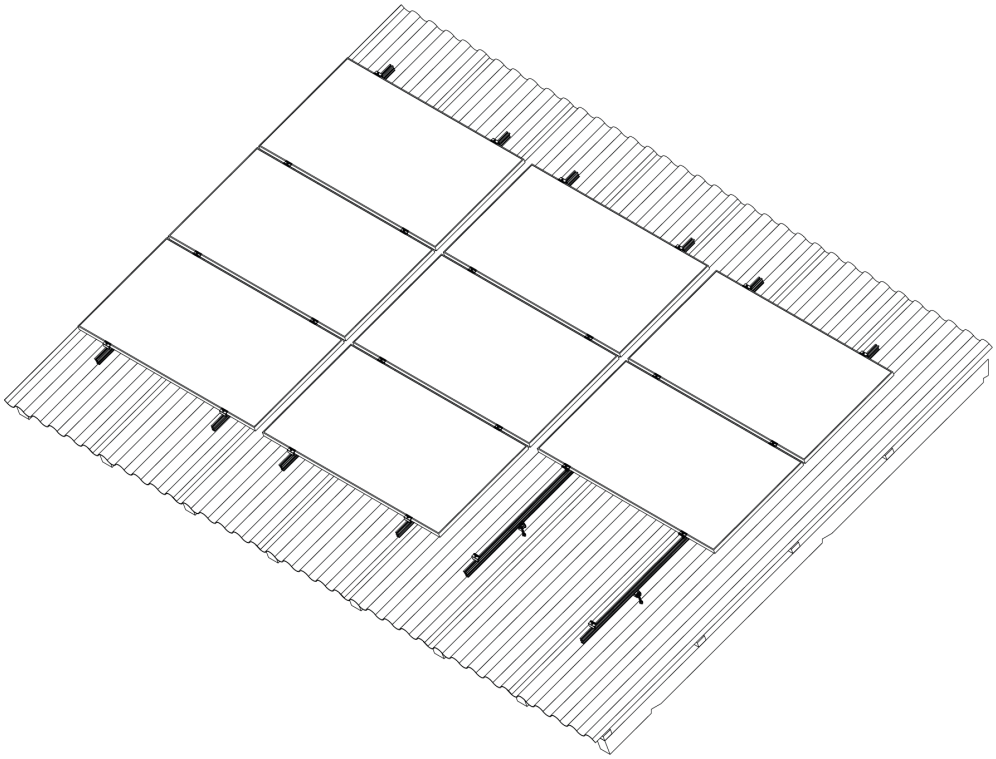
AEROCOMPACT®

ENGLISH



Assembly Instruction

COMPACT**PITCH** XW

Document Version : 07 | Document reference number : AI_XW_07
Language : English
Important! Read carefully before installation!

Legal Notice

Manufacturer

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TOC

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.

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 conditions 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


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 hazards that can occur when installing these products. There is no liability for the completeness of the risks presented. A concrete check of the necessary safety measures is to be carried out by an entrusted specialist company prior to installation.

APPROPRIATE USE

The COMPACTPITCH XW system is intended exclusively for the installation of PV modules on corrugated fiber cement roofing. Proper use also includes correct installation in accordance with these installation instructions. The installer is responsible for the watertight installation of Aerocompact products with third-party products; this is the only way to ensure that the roof is watertight for both systems. Approval from the module manufacturer is required for the use of PV modules with the COMPACTPITCH XW system. AEROCOMPACT accepts no liability for loss of performance or damage of any kind to the PV modules. Any other use of the COMPACTPITCH XW system is considered improper use.

PERSONNEL REQUIREMENTS

Installation may only be carried out by a specialist company and must be carried out strictly in accordance with the installation instructions. 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 exerts 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

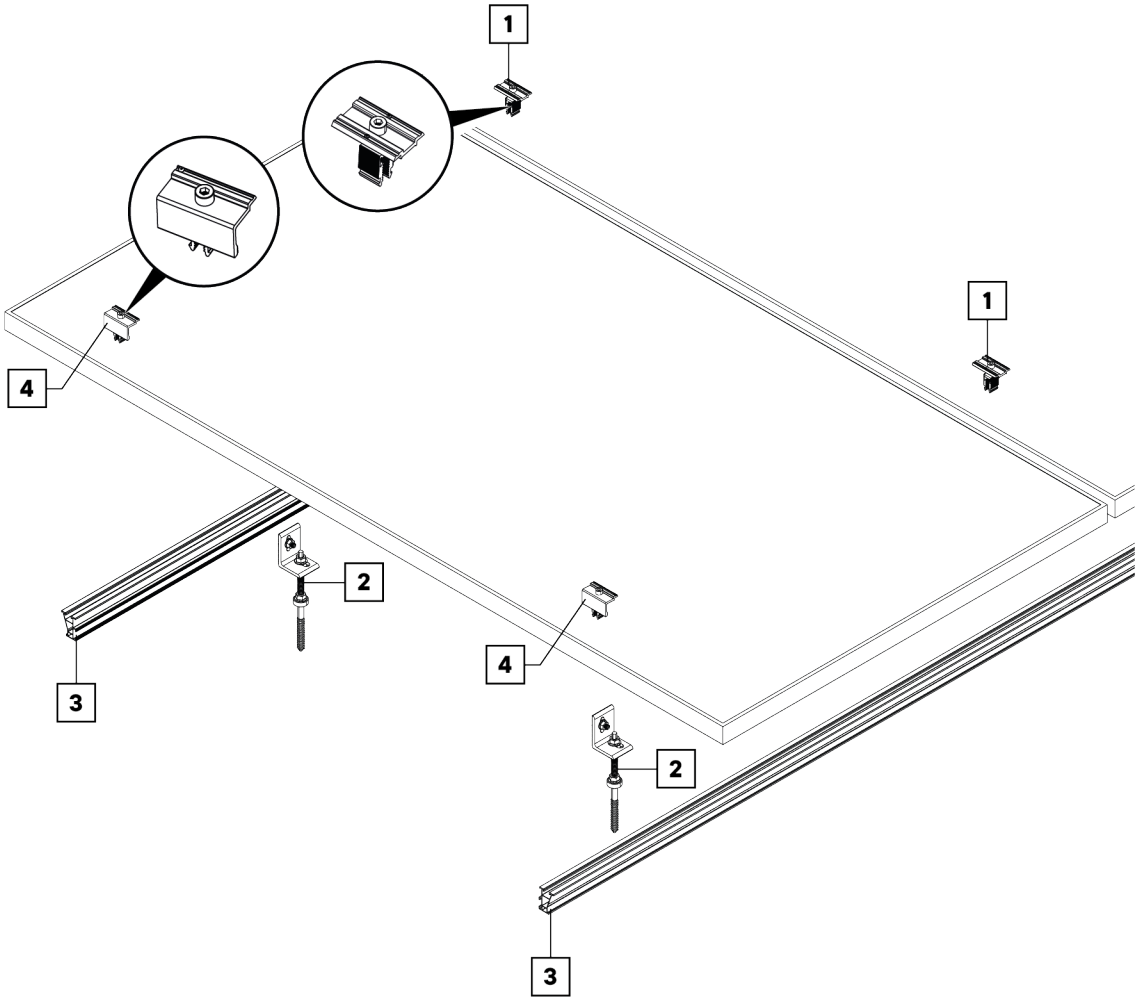
Use fall protection

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

Wear hearing protection

SYSTEM OVERVIEW

BASIC COMPONENTS XW HANGER BOLTS



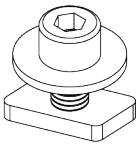
1 **CLM10**
Middle clamp Click 30 - 46 mm

2 **XW10300**
Hanger bolt M10x300

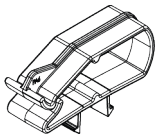
3 **X40**
Mounting rail X40 | 1980 mm | 3300 mm | 3550 mm | 4400 mm | 4750 mm | 5500 mm | 5850 mm

4 **CLE10**
End clamp Click 30-46

SYSTEM ACCESSORIES

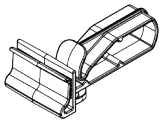


SCR-MA
Bolting set module accessories



CLP-R
Cable clip rail

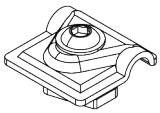
MODULE ACCESSORIES



CLP-U
Cable clip universal

CLP-M
Cable tie clip module

ACCESSORIES FOR EQUIPOTENTIAL BONDING



WCL8-10
Wire clamp 8 - 10 mm

ASSEMBLY

ASSEMBLY PREPARATION

Required tools for assembly

ⓘ 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 TORX T40

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

Measuring tape

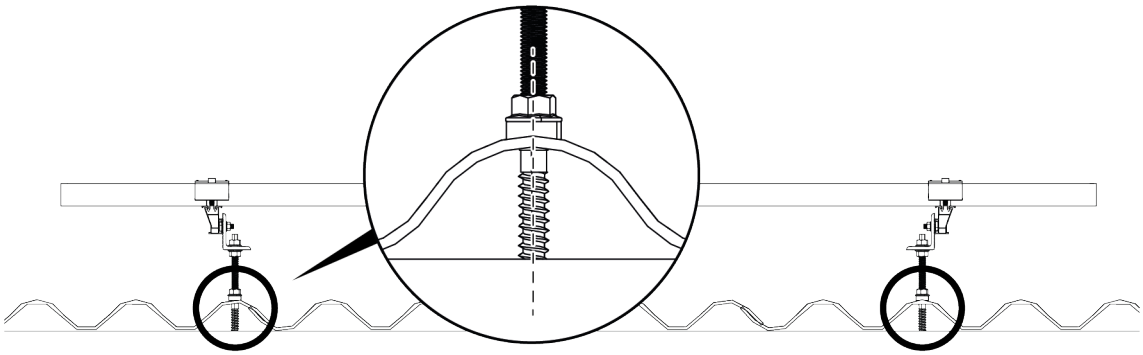
Cordless screwdriver

Torque wrench 10 - 30 Nm with socket for WS 13

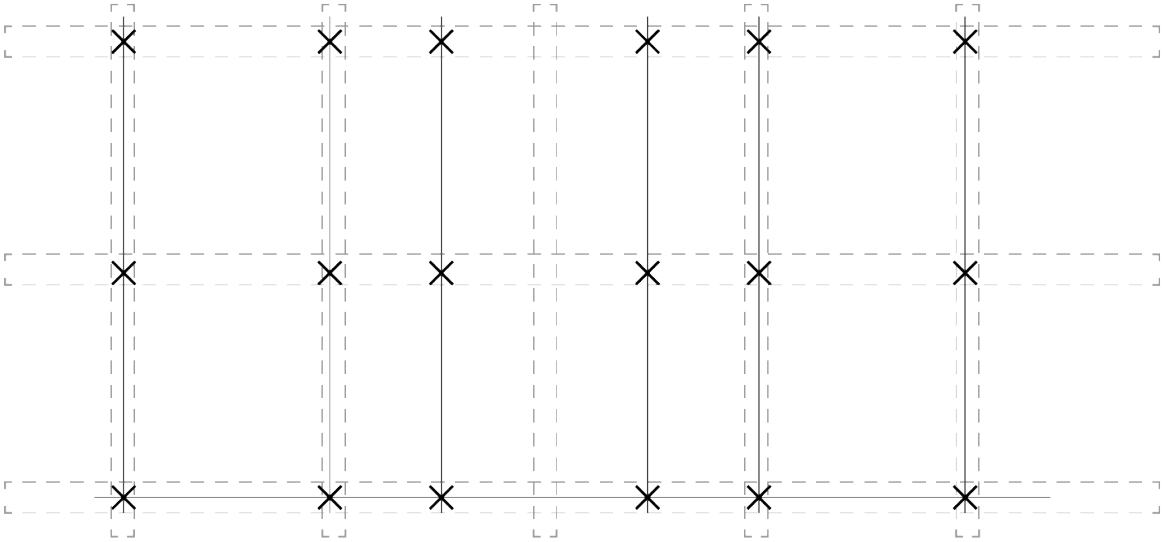
Open-end wrench SW15

MEASURE THE AREA

ⓘ The hanger bolts are positioned as centered as possible on top of the crest and attached as straight as possible.



ⓘ The hanger bolts are screwed to the roof purlins and/or rafters .



☐ Determine module size.
☐ Determine the distances between the rafters
☐ Determine and mark the positions of the hanger bolts.

FASTENING AND POSITIONING OF HANGER BOLTS AND CLAMPS

GENERAL

A module must be clamped at least twice along its long sides. For the purpose of clarity, two modules require at least two mounting rails, eight hanger bolts, four end clamps, and two middle clamps.

HORIZONTAL X-AXIS

The horizontal (X axis) spacing between hanger bolts (measured from the center of hanger bolt) is determined by the gaps between the sheet crowns, the length of the module as well as the corresponding allowable clamping zones. Modules should only be clamped in the designated clamping sections. The following module clamping limitations must be met: the minimum distance between the center of the module clamp and the nearest outer short edge of the module is 250 mm, and the maximum is 330 mm.

VERTICAL Y-AXIS

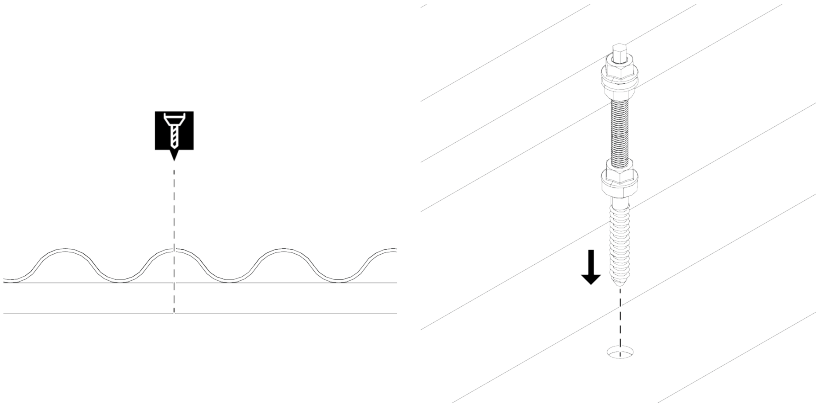
The vertical (Y axis) spacing between hanger bolts is determined by the width of the module. The maximum vertical (Y axis) hanger bolt spacing is 600 mm (measured from the hanger bolt center), whereas, the minimum distance of hanger bolts from the outer long module edge is 276.53 mm and to the inner is 277 mm (as measured from centre of the hanger bolt to the center of module end clamp/ middle clamp bolt).

RELEVANT APPROVED DISTANCES

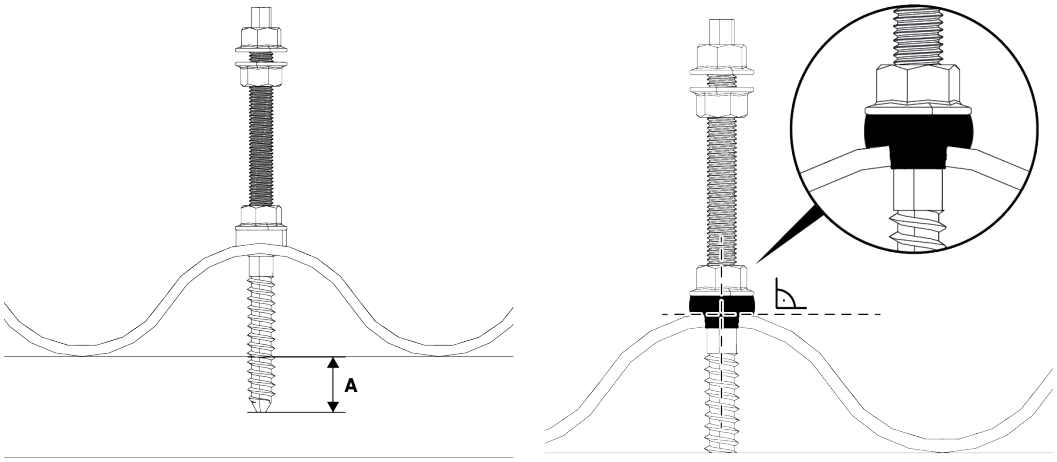
Item	Distance in mm
Minimum distance from the centre of the module end clamp bolt to the end of the rail	**54 mm**
Maximum distance from the roof hook center to the centre of the module end clamp bolt on the cantilevered section of rail	**276.53 mm**
Maximum distance from the centre of the hanger bolt to the centre of the module middle clamp bolt	**277 mm**
Minimum and maximum distance from the centre of the hanger bolt to the end of the cantilevered section of rail	**330.53 mm to unlimited**
Minimum horizontal (X axis) spacing between hanger bolt centres	**1102 mm**
Maximum horizontal (X axis) spacing between hanger bolt centres	**1262 mm**
Maximum vertical (Y axis) spacing between hanger bolt centres	**600 mm**

XW MOUNT HANGER BOLTS

☒ If the fastening screw of the roof covering overlaps with the position of the hanger bolt: Remove fastening screw.



☒ Drill a Ø13 mm hole in the corrugated fiber cement sheet and a Ø7 mm hole in the wood rafter substructure.
☒ Screw in the hanger bolts slowly and straight.



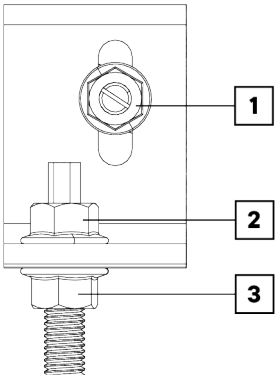
☒ Observe the minimum screw-in depth of the thread (A) in the load-bearing timber:
Hanger bolt M10: at least **40 mm**
☒ Tighten the lower nut until the rubber seal bulges slightly outward (tightening torque: 15 Nm or 11 lb-ft).

Mount and align angle adapter

XW

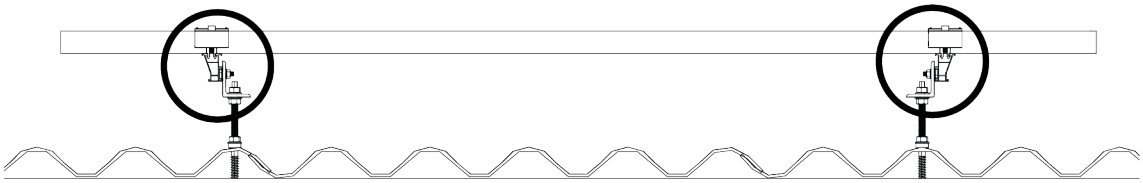
- Remove the nut (2) and guide the angle adapter.
- **Align the universal adapter:**
  Loosen and tighten nuts (2) and (3) until the desired position is reached.
- Align all angle adapters at the same height.

Small height differences can be compensated with the nut (1) on the hammerhead bolt.

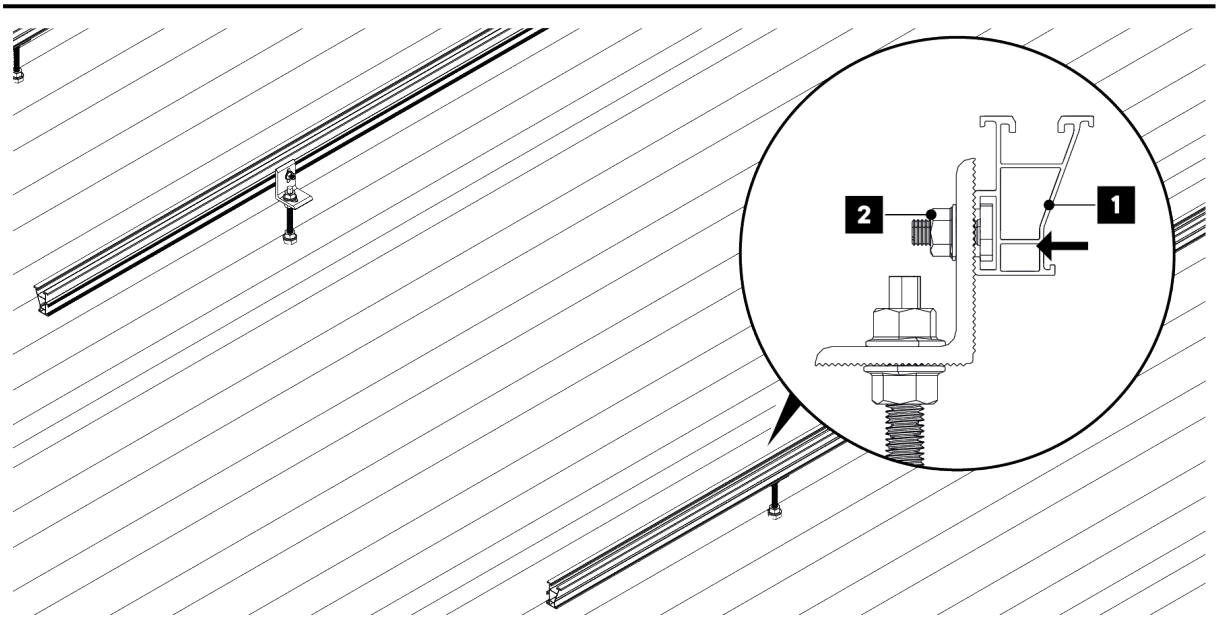


MOUNT MOUNTING RAIL

Hanger bolts XW with hammerhead screw



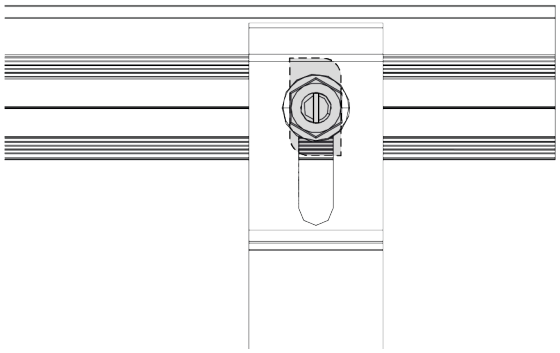
Make sure that the universal adapters per module row are each aligned inwards.



- Fasten the mounting rail (1) with the hammerhead screw in each case.
- Tighten the nuts (2) with a torque of 15 Nm or 11 lb-ft.

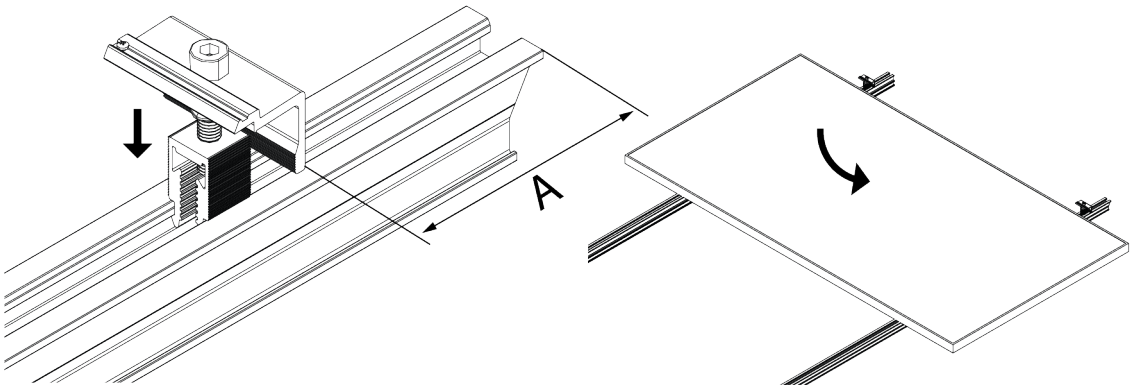
Mount T-Bolt screws correctly: Notch must be aligned vertically.

Establish a force-fit and form-fit connection between hook and rail.

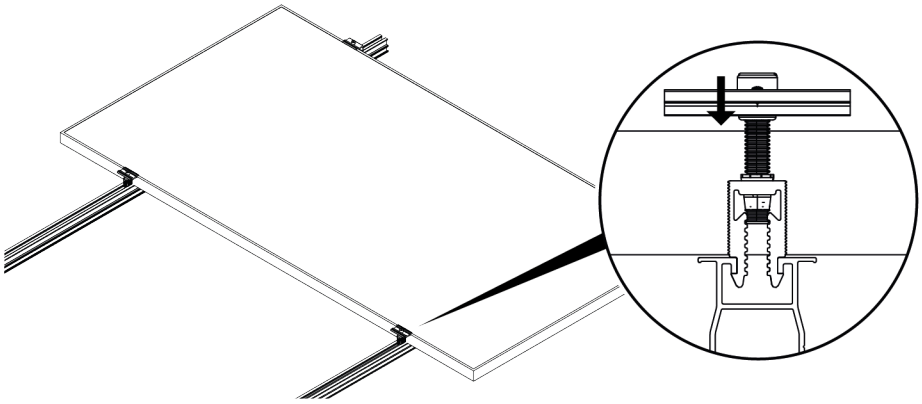


INSTALLING MODULES

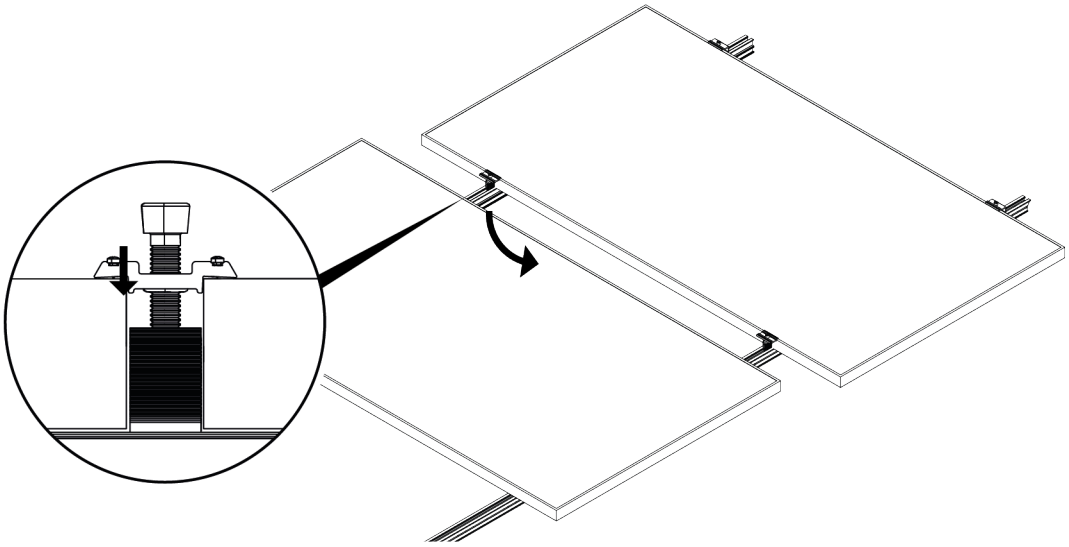
ⓘ Never step on the modules when installing them.



- The edge distance of the end clamp is **A ≥ 40 mm**.
- Click the end-clamps into the rails.
- Place the first module.
- Then tighten the end clamps with a torque of 15 Nm or 11 ft-lb.

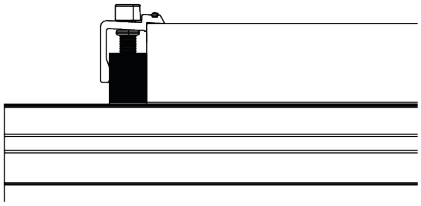


- After each module, click the mid-clamps into the rail.

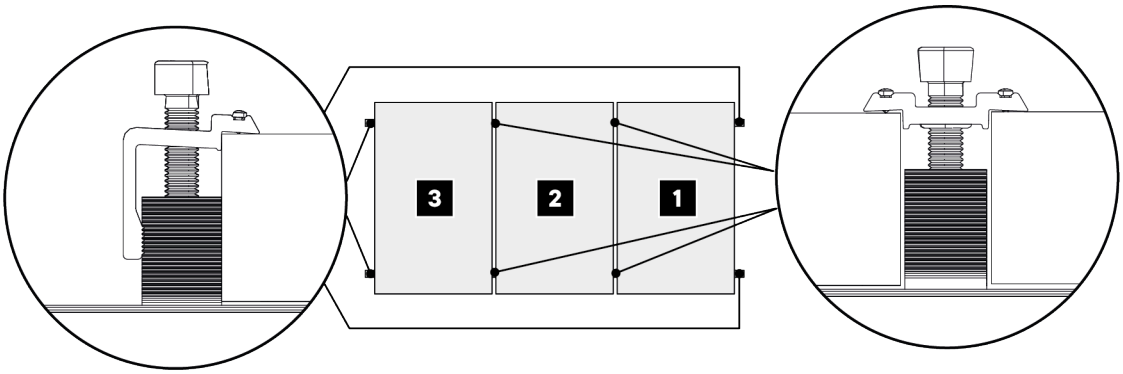


- Place the next module flush against the mid-clamps.
- Press the clamp onto the modules.
- Hand tighten the screws of the mid-clamps.

- On the first module, tighten the screws of the end-clamps with 15 Nm or 11 ft-lb.



Mount other modules



- Continue mounting the modules row by row.
- Tighten the screws of all clamps with 15 Nm or 11 ft-lb each.

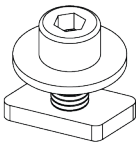
REPOSITION / REPLACE CLAMPS

- 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.

ASSEMBLE MLPE (MOUNTING RAIL)

ⓘ 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

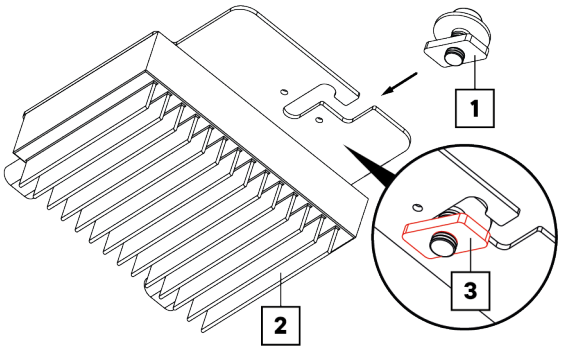


SCR-MA
Bolting set module accessories

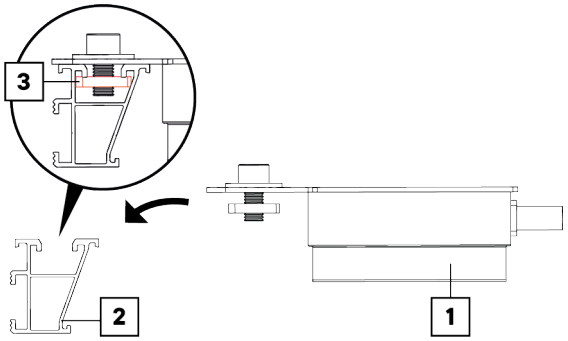
X40-XXXX
Mounting rail X40 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm

ASSEMBLY (EXAMPLE MOUNTING RAIL X40)

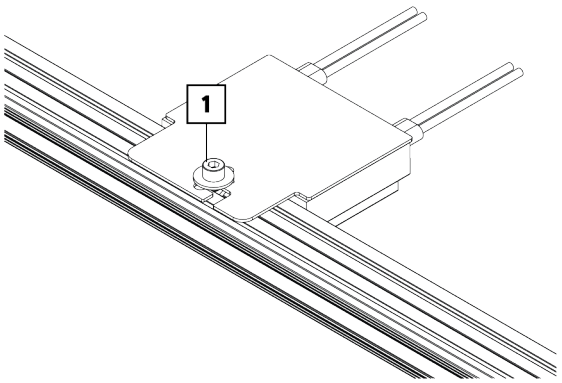
- ☐ Insert the screw connection (1) into the MLPE device (2) as shown in the illustration.
- ☐ Ensure that the plate (3) is pointing downwards.



- ☐ 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.



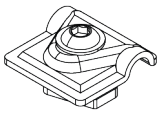
- ☐ Then tighten the Allen screw (1) with a torque of 15 Nm or 11 lb-ft.
- ☑ The MLPE is now mounted.



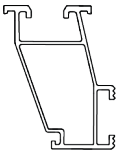
POTENTIAL EQUALIZATION

ⓘ 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.

NECESSARY COMPONENTS



WCL8-10
Wire clamp 8 - 10 mm

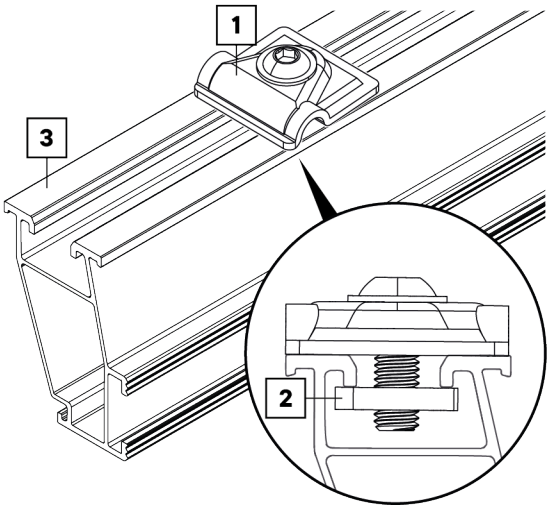


X60-XXXX
Mounting rail X60 1980 mm 3550 mm 4750 mm 5850 mm

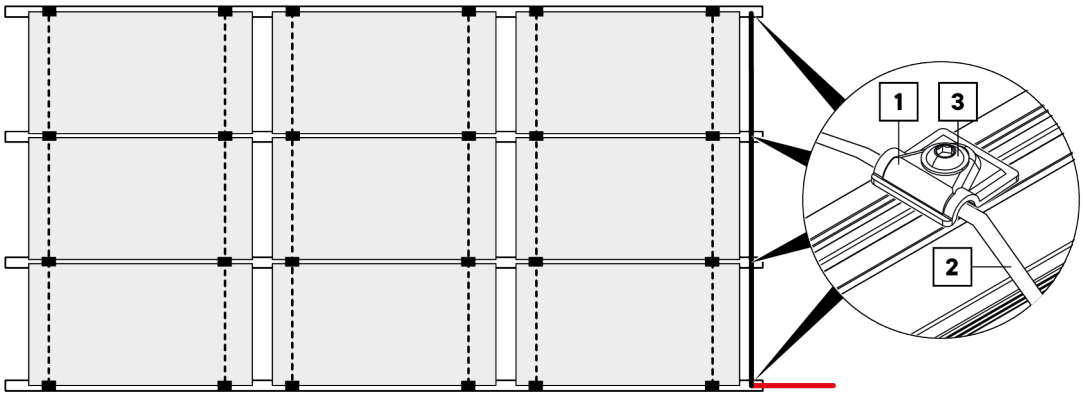
MOUNTING WIRE CLAMP (EXAMPLE MOUNTING RAIL X60)

- Insert the wire clamp (1) into the X60 mounting rail (3).
- Ensure that the threaded plate (2) is positioned as shown in the illustration.

ⓘ 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.



POTENTIAL EQUALIZATION



ⓘ Dotted lines - connection by module clamps
Continuous lines (black) - connection module rows
Continuous lines (red) - connection of equipotential bonding **on-site**

- Insert the wire (2) into the wire clamp (1).
- Tighten the screw (3) with a torque of 10 Nm or 7.37 ft lb.
- Connect the wire (2) to the on-site equipotential bonding.

MAINTENANCE, DEMOUNTING 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.

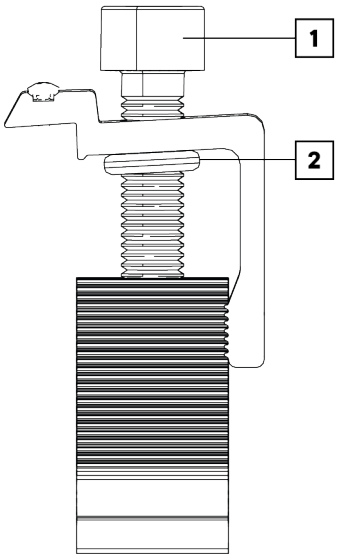
DISASSEMBLY

DISMANTLING THE CLAMPS (EXAMPLE)

ⓘ 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.

ⓘ 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.

ⓘ 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 XW

CE

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Manufacturer:	**AEROCOMPACT Europe GmbH**
Designation:	**Hanger bolt system CompactPITCH XW for corrugated fiber cement**
Identification code:	**XW**
Applied standard:	**EN 1090**
Certification body:	**2397**

For the declaration of performance

BASIC COMPONENTS OF THE MOUNTING SYSTEM COMPACTPITCH XW, SYSTEM REF. -NR: XW_1.0

Product name	Product number
Middle clamp Click 30 - 46 CLM10	707011
Middle clamp Click 30 - 46 CLMB10	707611
End clamp Click 30 - 46 CLE10	707003
End clamp Click 30 - 46 CLEB10	707603
Mounting rail X40-1980/3300/3550/4400/4750/5500/5850	705101-1980/3300/3550/4400/4750/5500/5850
Mounting rail X40B-1980/3300/3550/4400/4750/5500/5850	705151-1980/3300/3550/4400/4750/5500/5850
Hanger bolt M10x300 XW10300	705409

ⓘ The list above represents the certificated components of the single certificated system COMPACTPITCH XW. Please be advised that only the above-mentioned components are tested according to certification standards and therefore certified.

TECHNICAL DATA XW

Installation type	Above roof
Permissible panel orientation	Landscape
Max. solar panel size (Length x Width)	1762 mm x 1134 mm
Permissible solar panel thickness range	30 mm - 46 mm
Roof pitch range	5 ° - 45 °
Max. field size	Approx. 12 m, along continuous rail, otherwise unlimited
Min. field size	1 x 1 module
Wind load	Maximum design wind uplift resistance of 2083 Pa with 2 panels in landscape and 8 fixings, partial safety factor 1.1
Compatible roof substructure	Timber rafters - minimum dimensions 60/150 mm
Compatible roof coverings	Corrugated fibre cement sheet
Compatible roof type	Pitched roof

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