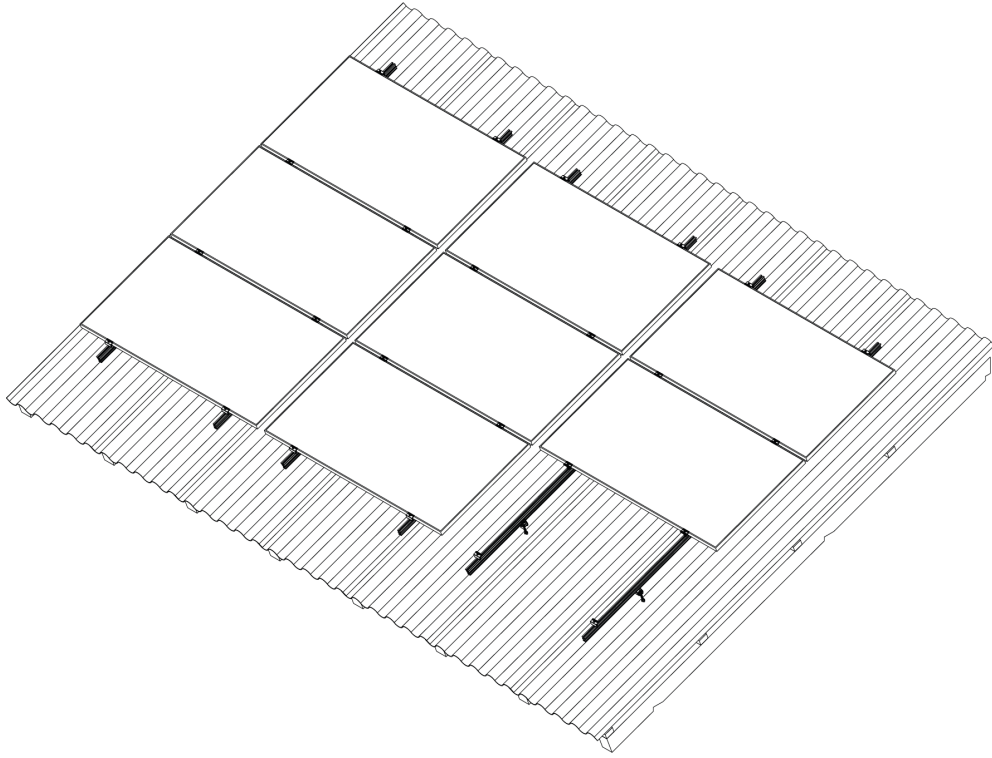




Assembly Instruction

COMPACTPITCH XW

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 assembly instructions are protected by copyright. The assembly instructions may not be copied, reproduced, microfilmed, translated or converted for storage and processing in EDP systems, either in part or in full, without the written permission of the company AEROCOMPACT Europe GmbH.

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CREATION DATE

02/2024

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GENERAL

These assembly instructions describe the assembly procedure and must be strictly observed. Read these assembly instructions carefully before starting the assembly. The personnel must have carefully read and understood these instructions before starting any work. The basic prerequisite for safe working is compliance with all the safety notes and handling instructions given in these assembly instructions. Furthermore, the local accident prevention regulations and general safety regulations for the product's area of application apply. Illustrations in this manual 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 notes in these installation 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 **GTC** and can be found 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 proper assembly

SYMBOLS IN ILLUSTRATIONS - ACTIVITIES



Consult AEROTOOL project report or planning documents



Activity by hand



Optional component,
optional mounting variation



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 flat roof system is designed exclusively for mounting PV modules on corrugated fiber cement roofing or similar roofing materials. The system should be properly installed in accordance with these installation instructions. The COMPACTPITCH XW system can be used on slate roofs in combination with suitable metal roof panels. The metal tile obtained on site must be installed according to the manufacturer's instructions. Waterproof installation of Aerocompact products with third-party products is the responsibility of the installer. This is the only way to ensure tightness of the roof in relation to both systems. PV modules used with the COMPACTPITCH XW system should be approved by the module manufacturer. 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.

REQUIREMENTS OF PERSONNEL

Installation may only be carried out by a specialist company and must be carried out strictly in accordance with the specifications in the installation instructions, the project report and the planning documents. A specialized company is one that is familiar with the installation and maintenance of photovoltaic systems as part of its normal business operations. National and site-specific building codes, standards and environmental protection must be strictly adhered to. The assembly personnel must never be under the influence of medication, alcohol, drugs or in any other condition that impairs consciousness (e.g. overtiredness). Trainee personnel may only perform work under the instruction and supervision of skilled personnel who are authorized to train personnel.

WORKING SAFELY

The contractual partner shall ensure that the necessary safety measures and the relevant provisions of labor law and occupational health and safety law are observed during the assembly of products from AEROCOMPACT Europe GmbH. References by AEROCOMPACT Europe GmbH to the necessity of compliance with security measures are made without guarantee and without claim to completeness and serve only to support the contractual partner. The contractual partner is obliged to inform himself about all relevant regulations concerning occupational safety and to comply with them. AEROCOMPACT Europe GmbH expressly assumes no responsibility here and consequently no liability. Areas below the roof on which work is being carried out must be protected from any falling objects. Where this fails, the affected areas shall be closed to the public and to unauthorized personnel. In case of unsuitable weather conditions, work on the roof must not be continued any longer than necessary - or not started at all. Never carry out assembly work in strong winds. Strong wind exerts enormous forces on the large-area PV modules. There is a risk that a module could be torn off the roof and people could be injured. Never work in wet conditions or at temperatures below the freezing point. 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 instructions. Separate rules apply to mechanical climbing aids (elevators, cherry pickers, etc.). Never use the PV mounting system as a climbing aid. Keep sufficient distance from overhead electrical lines. Equipotential bonding between the individual system parts must be carried out in accordance with the respective country-specific regulations. When cutting materials, make sure that there are no burrs, especially at edges and corners, as there is a risk of injury.

BREAKTHROUGH PROTECTION

Skylights, skylights, large vents, etc. usually cannot withstand the weight or impact of a person. Such objects must be secured in a similar way as the edge of the roof. Corrugated fibre cement roofs can be prone to breakthrough over the entire surface. Define walking routes and secure them with load distribution measures. On roofing or roof structures that do not have sufficient load-bearing capacity (e.g. thin sheets, corrugated fibre cement), always work with load distribution aids.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment is used to protect persons from impairment of safety and health at work. Personnel must wear personal protective equipment during assembly. Personal protective equipment is explained below:



Wear safety goggles when drilling and sawing.



Wear cut-resistant work gloves during assembly.



Wear safety boots.



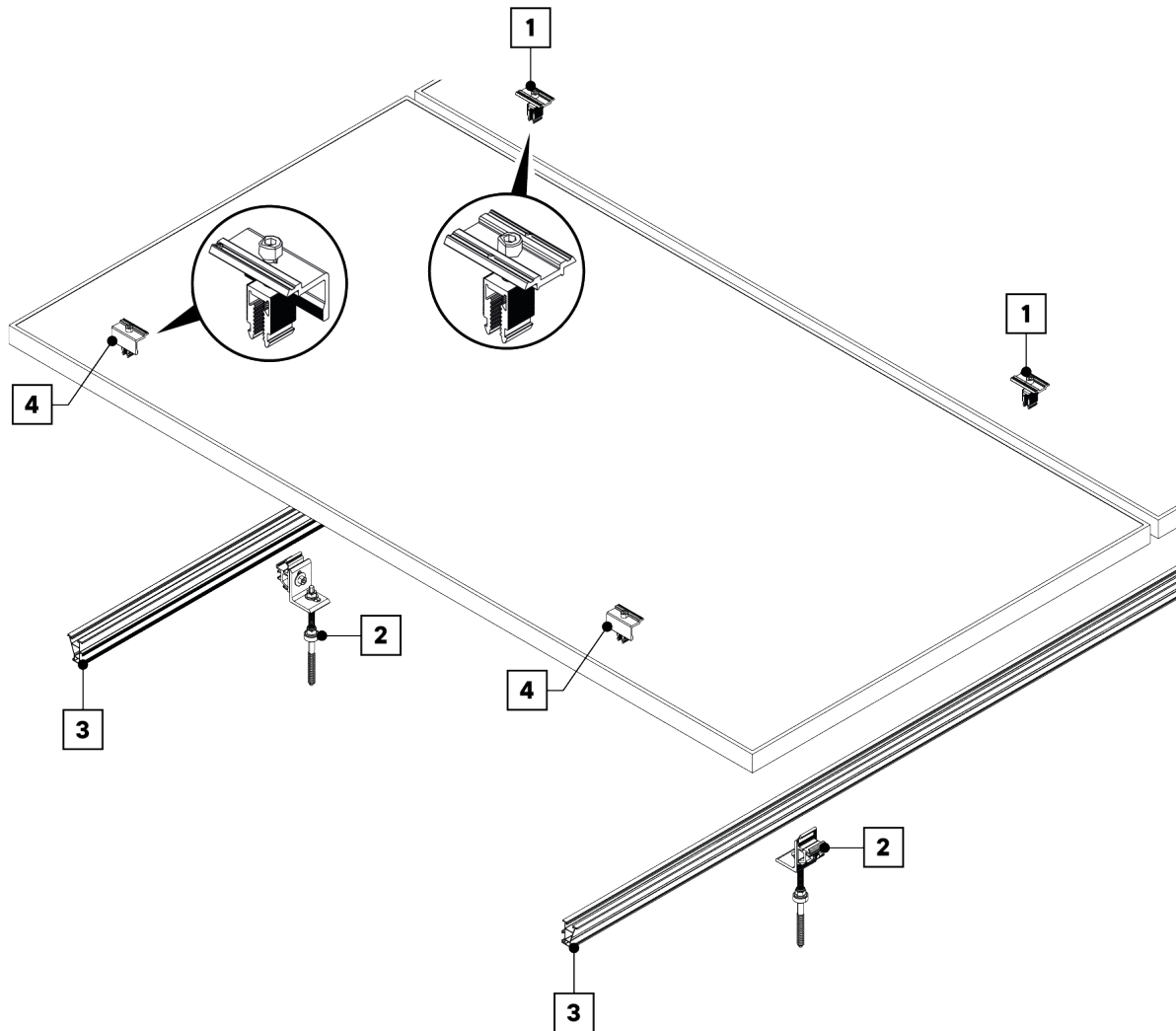
Use fall protection.



Helmets are required for all persons involved on the construction site.

SYSTEM OVERVIEW

BASIC COMPONENTS XW HANGER BOLTS



1 CLM10

Middle clamp Click 30 - 46 mm

3 X40

Mounting rail X40

4 CLE10

End clamp Click 30-46

2 XW10XXXCL | XW12XXXCL

Hanger bolt M10 (250, 300) | M12 (200, 250, 300)

3 X50

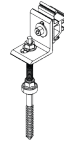
Mounting rail X50

SYSTEM ACCESSORIES



XW

M10 x 180 - 300 mm | M12 x 200 - 300 mm
XW10180 - XW10300 | XW12200 -
XW12300



XWCL

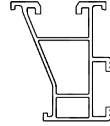
M10 x 200 - 300 mm | M12 x 200 - 300 mm
XW10200CL - XW10300CL | XW12200CL -
XW12300CL

MOUNTING RAILS AND ACCESSORIES



X40-XXXX

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



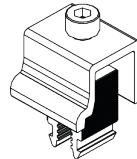
X50-XXXX

Mounting rail X50 1980 mm 3300 mm 3550
mm 4400 mm 4750 mm 5500 mm 5850
mm



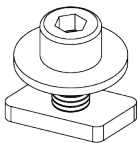
XPCN-XX

Rail connector X40, X50



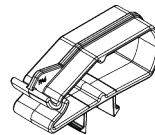
XDL

Cross connector X40, X50, X60



SCR-MA

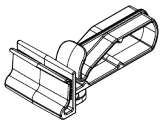
Bolting set module accessories



CLP-R

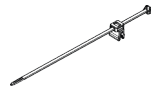
Cable clip rail

MODULE ACCESSORIES



CLP-U

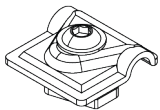
Cable clip universal



CLP-M

Cable tie clip module

ACCESSORIES FOR EQUIPOTENTIAL BONDING



WCL8-10

Wire clamp for potential equalization 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.



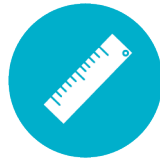
Bit hexagon socket 6 mm



Bit TORX T40



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



Measuring tape



Cordless screwdriver



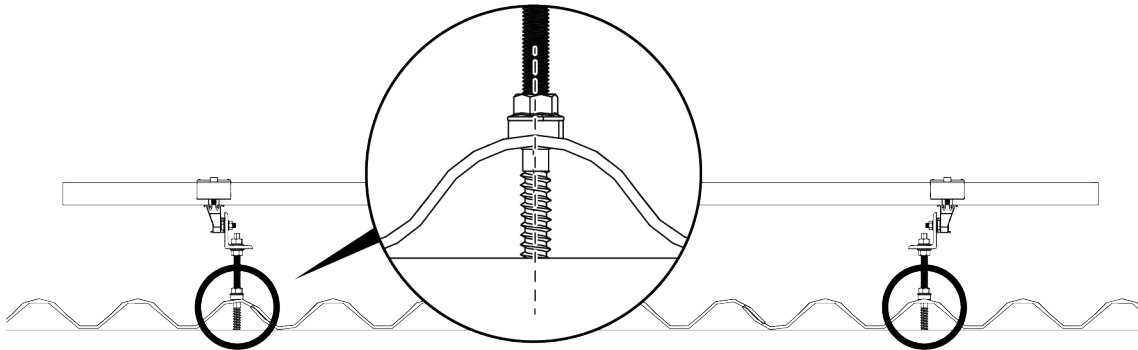
Torque wrench 10 - 30 Nm with socket for WS 13



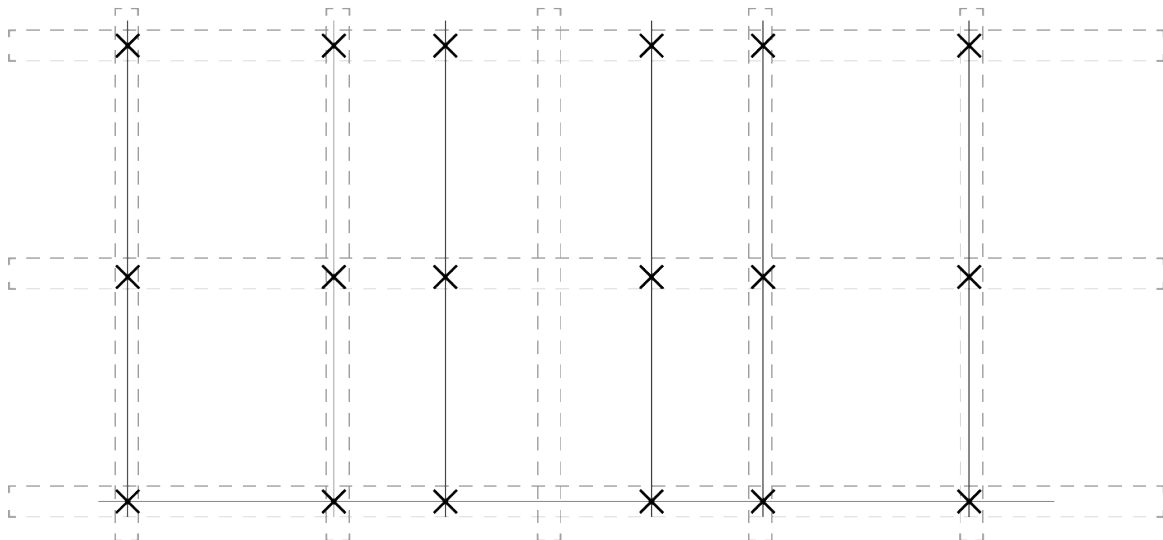
Open-end wrench SW15

MEASURE THE AREA

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



i The hanger bolts are each screwed into the purlins and/or rafters (see AEROTOOL planning documents).



- Refer to the dimensions of the module field from the AEROTOOL planning documents.
- Determine module size.
- Determine the distances between the rafters
- Determine and mark the positions of the hanger bolts.

XW MOUNT HANGER BOLTS

i The hanger bolts can be installed on slate roofs in combination with suitable metal roof panels. For the metal roof panels, make sure that the sealing level is higher than the water-bearing level. The metal roof panels are provided by the customer. Only qualified personnel may install the metal roof panels together with the hanger bolts. Only in this way can ensure tightness of the roof.

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

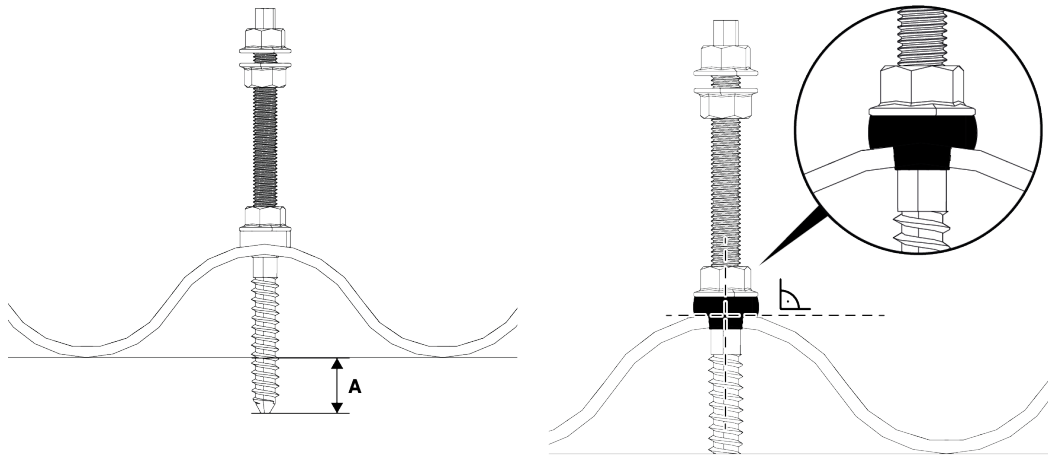


➤ Pre-drill holes at the marked positions:

M10 hanger bolt: Pre-drill wood rafters: Ø 7 mm, roofing material Ø 13 mm.

M12 hanger bolt: Pre-drill wood rafter: Ø 8.4 mm, roofing material Ø 15 mm.

➤ 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**

Hanger bolt M12: at least **48 mm**

➤ Tighten the lower nut until the rubber seal bulges slightly outward (tightening torque: 15 Nm or 11 lb-ft).

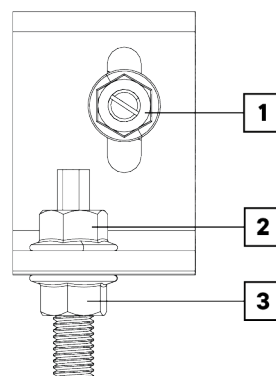
Mount and align angle adapter

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.

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

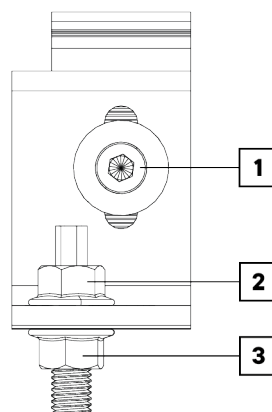


XWCL



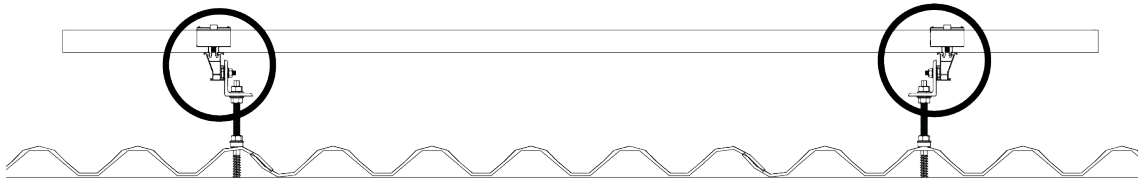
- Remove the nut (2) and guide the angle adapter.
- **Align the universal adapter:**
Loosen and tighten nuts (2) and (3) until the desired position is reached.
- Align all angle adapters at the same height.

i Small height differences can be compensated for with the screw (1) on the click-quick mounting attachment.

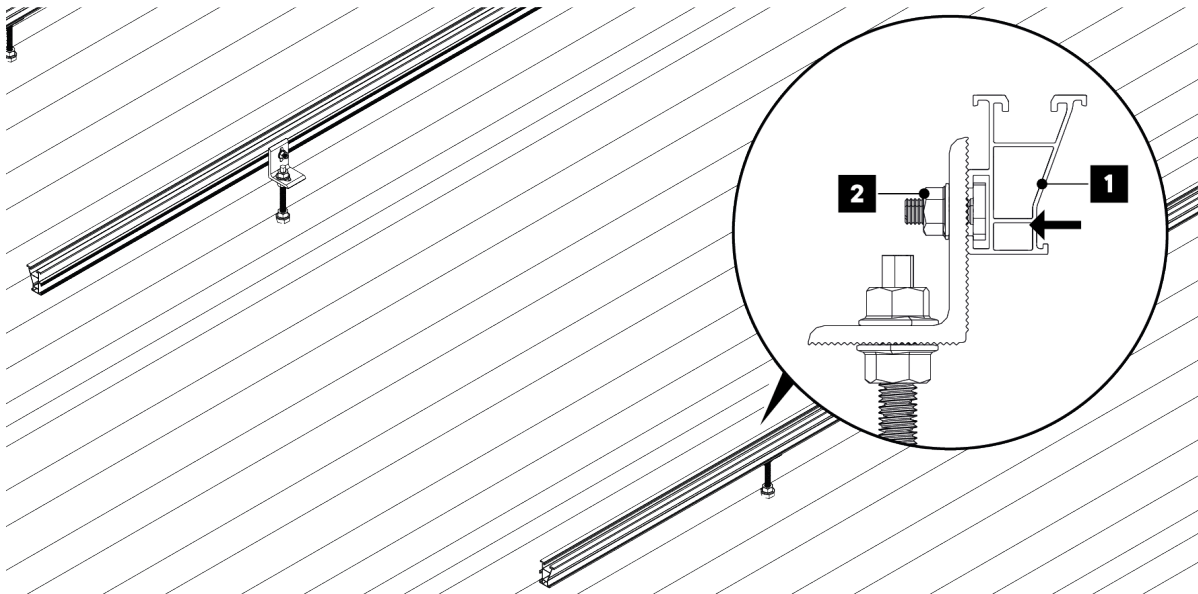


MOUNTING RAIL X40 | X50 MOUNT

Hanger bolts XW with hammerhead screw



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

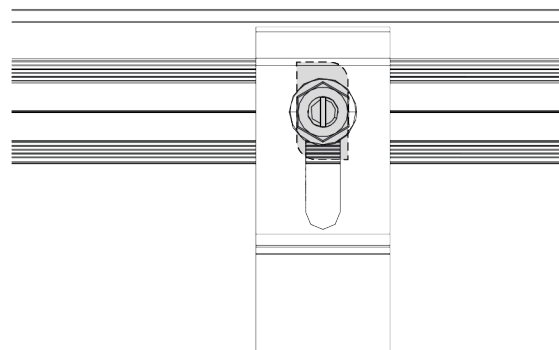


- Fasten the mounting rail (1) with the hammerhead screw in each case.
- Tighten the nuts (2) with a torque of 15 Nm or 11 lb-ft.

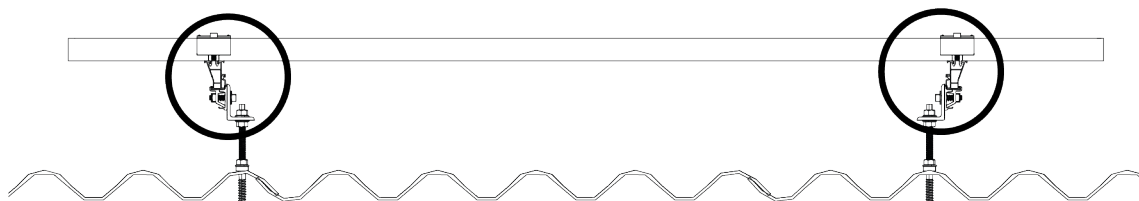


i Mount T-Bolt screws correctly: Notch must be aligned vertically.

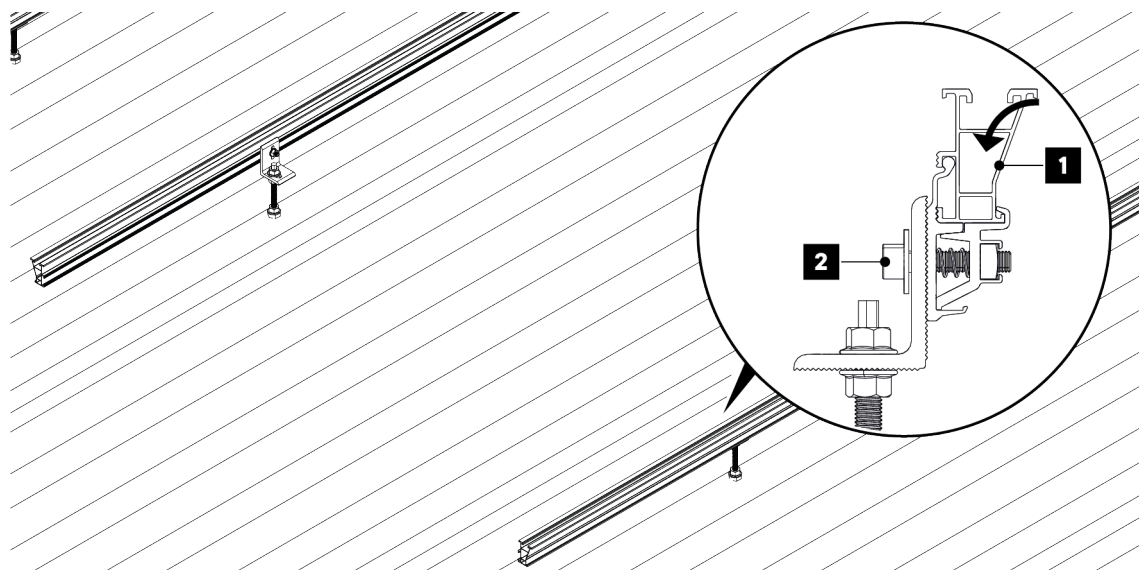
i Establish a force-fit and form-fit connection between hook and rail.



Hanger bolts XW with click-quick mounting attachment



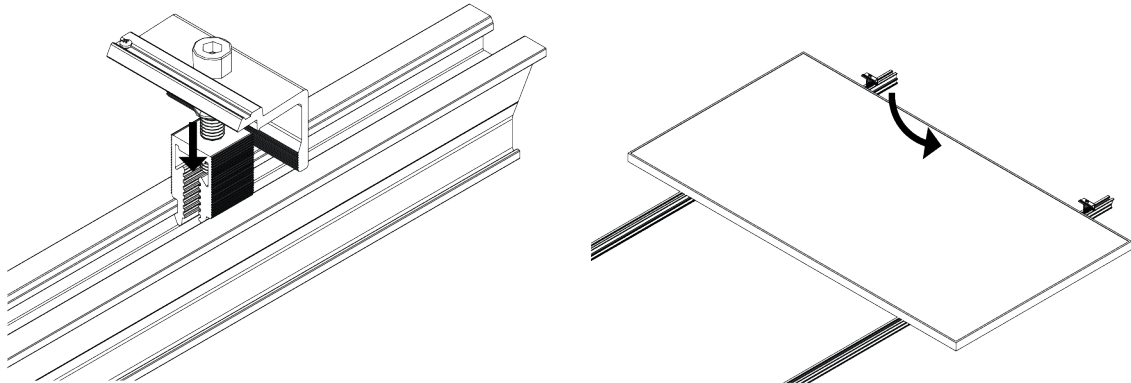
I Make sure that the universal adapters in a module row are each aligned inwards.



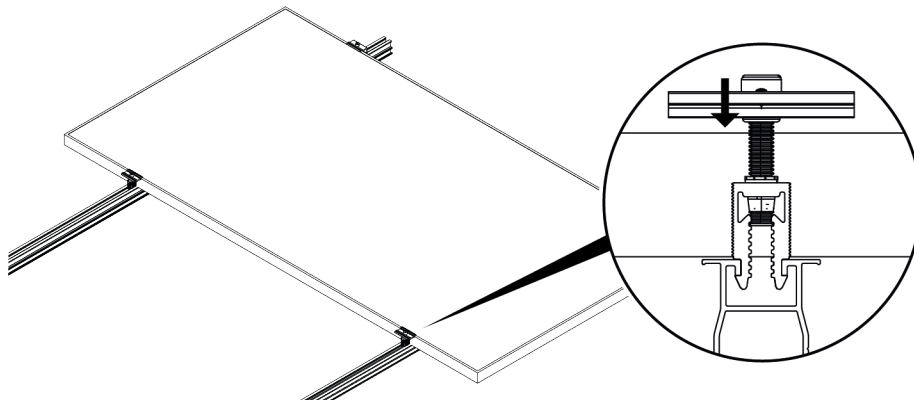
- Attach the mounting rail (1) to the quick mounting attachment in each case.
- Tighten the screw (2) with a torque of 15 Nm or 11 lb-ft.

INSTALLING MODULES

i Never step on the modules when mounting them. Spans and cantilevers need to be in accordance with the structural design as issued in the AEROTOOL report. Refer to the AEROTOOL report for the exact positions of the module clamps.

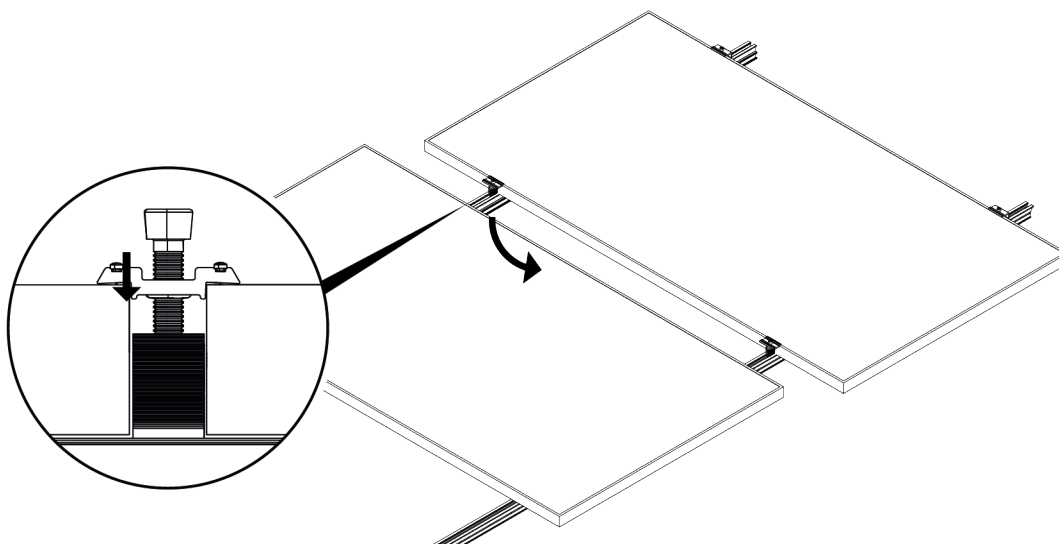


- Click the end-clamps into the rails.
- Mount the module.
- Hand tighten the screws of the end-clamps.



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

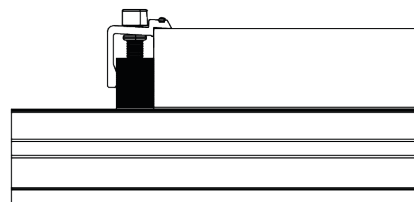
5



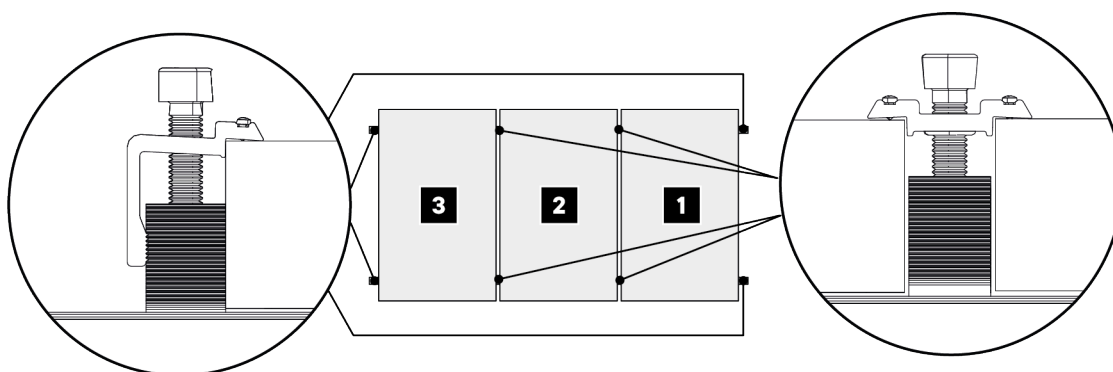
- Place the next module flush against the mid-clamps.
- Press the clamp onto the modules.
- Hand tighten the screws of the mid-clamps.



- 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.

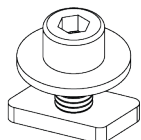
REPOSITION / REPLACE CLAMPS

- Demount clamp: Unscrew the screw at the clamp completely.
- Depending on the mounting situation, squeeze the clamp laterally and pull it out or pull it laterally out of the rail.

ASSEMBLE MLPE (MOUNTING RAIL)

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

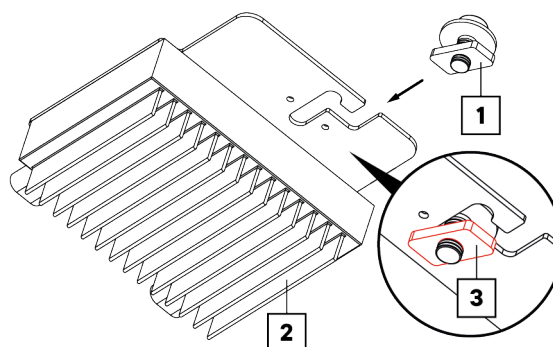


X40-XXXX
Mounting rail X40 1980 mm 3300 mm 3550 mm 4400 mm 4750 mm 5500 mm 5850 mm

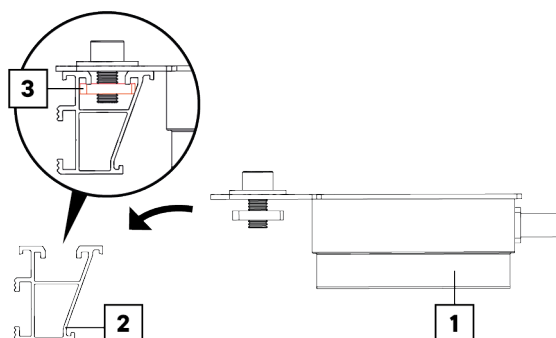
ASSEMBLY (EXAMPLE MOUNTING RAIL X40)



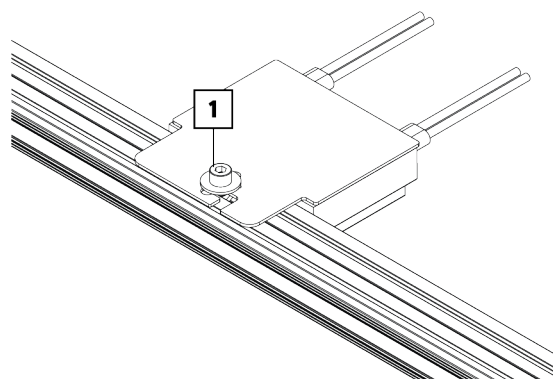
- Insert the screw connection (1) into the MLPE device (2) as shown in the illustration.
- Ensure that the plate (3) is pointing downwards.



- 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.



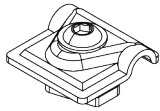
- Then tighten the Allen screw (1) with a torque of 15 Nm or 11 lb-ft.
- ✓ The MLPE is now mounted.



POTENTIAL EQUALIZATION

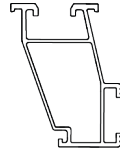
i For potential equalization, **AEROCOMPACT Europe GmbH** provides the wire clamp as an accessory. These are each mounted on the mounting rail, depending on the mounting situation, the module rows are connected to each other by the module clamps.

NECESSARY COMPONENTS



WCL8-10

Wire clamp for potential equalization 8 - 10 mm



X60-XXXX

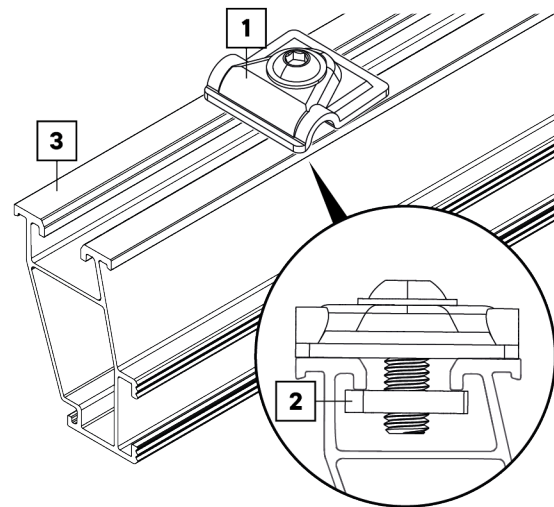
Mounting rail X60 1980 mm 3550 mm 4750 mm 5850 mm

MOUNTING WIRE CLAMP (EXAMPLE MOUNTING RAIL X60)

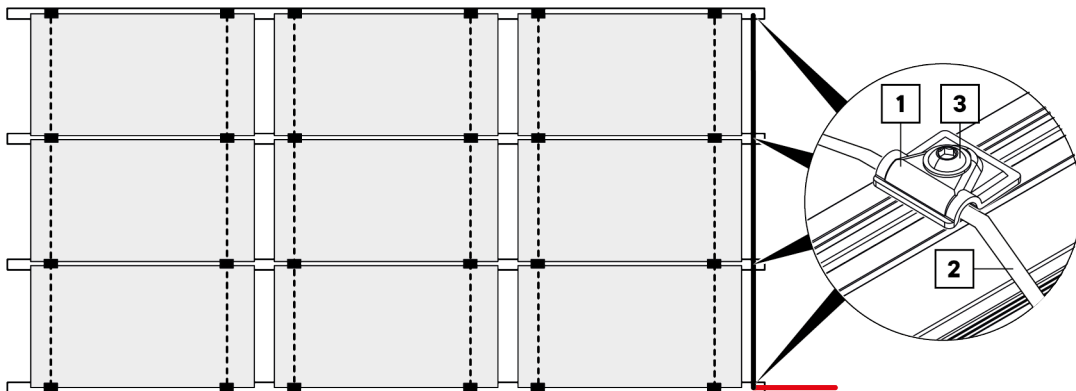


- Insert the wire clamp (1) into the X60 mounting rail (3).
- Ensure that the threaded plate (2) is positioned as shown in the illustration.

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



POTENTIAL EQUALIZATION



i 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) at the wire clamp.
- 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 inspected regularly by qualified personnel; an annual visual inspection is recommended.

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

DISASSEMBLY

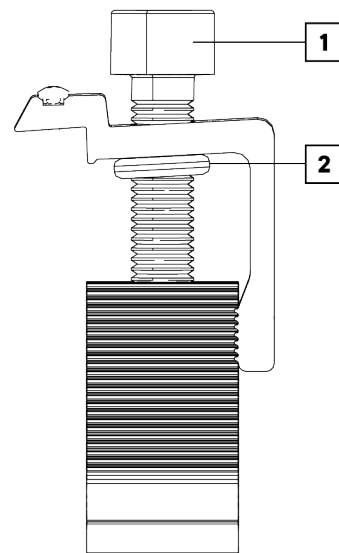
DISMANTLE CLAMPS (EXAMPLE)



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

- Unscrew the screw (1) on the clamp completely.
- When reusing the clamps, make sure 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 XW



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](#)