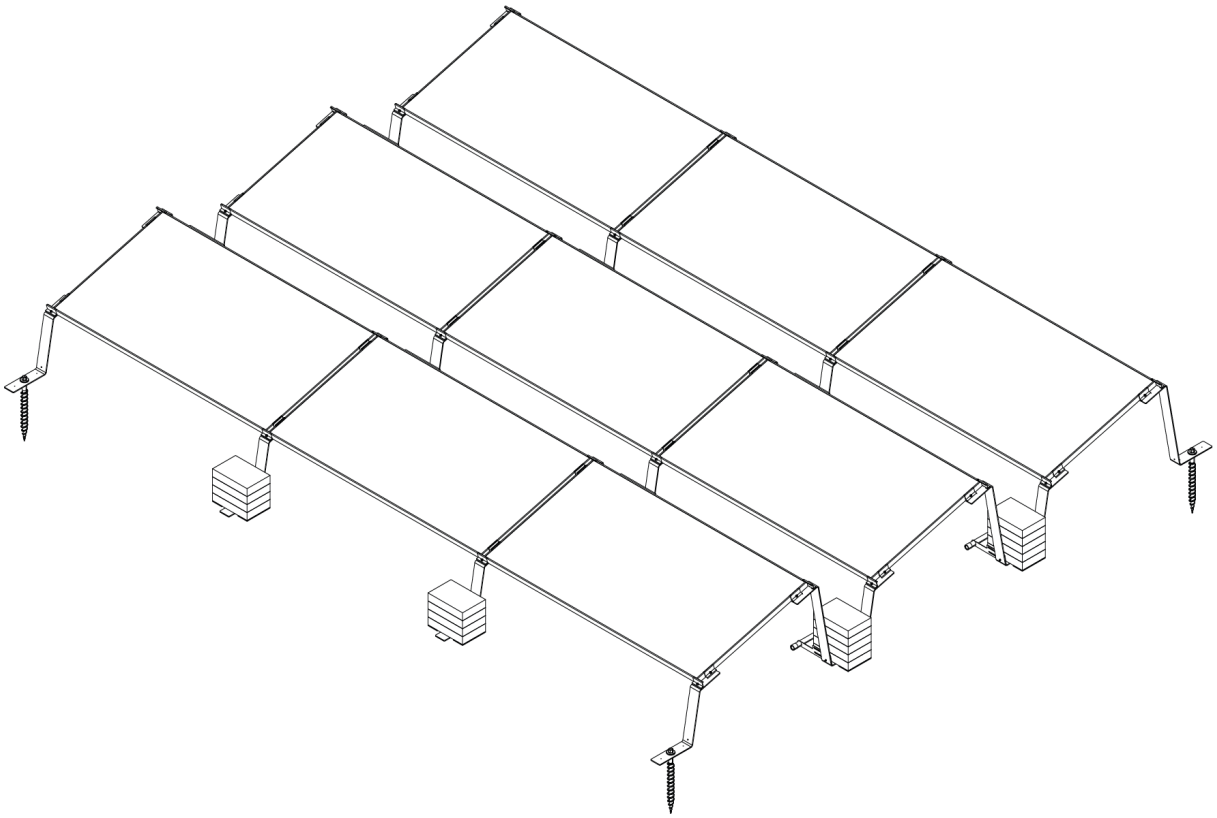
AEROCOMPACT®

ENGLISH



ASSEMBLY INSTRUCTION

COMPACT**GROUND** G15 | G20

VERSION: 05
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

09/2023

TOC

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


Step by step action instruction


Results of action steps


This note provides useful information for proper assembly

SYMBOLS IN ILLUSTRATIONS -ACTIVITIES


Consult AEROTOOL project report or planning documents


Visual inspection


Activity by hand


Observe right angle


Optional component,
optional mounting variation

SYMBOLS IN ILLUSTRATIONS - TOOLS


Measuring tape, measure


Cordless screwdriver, screwdriver


Pencil, mark


Use a torque wrench,
Observe torque


Chalk line


Use Allen key


Scissors, tin snips, cut to size

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 CompactGROUND ground-mounted system is designed for installing PV modules on the ground. The slope must not exceed 10° (ballasting with ballast stones and/or ground screws). A project specific clarification is required for a slope inclination of more than 10°. The system must be properly installed in accordance with these installation instructions and the planning documents supplied. PV modules used with the CompactGROUND 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 CompactGROUND 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 safety boots.

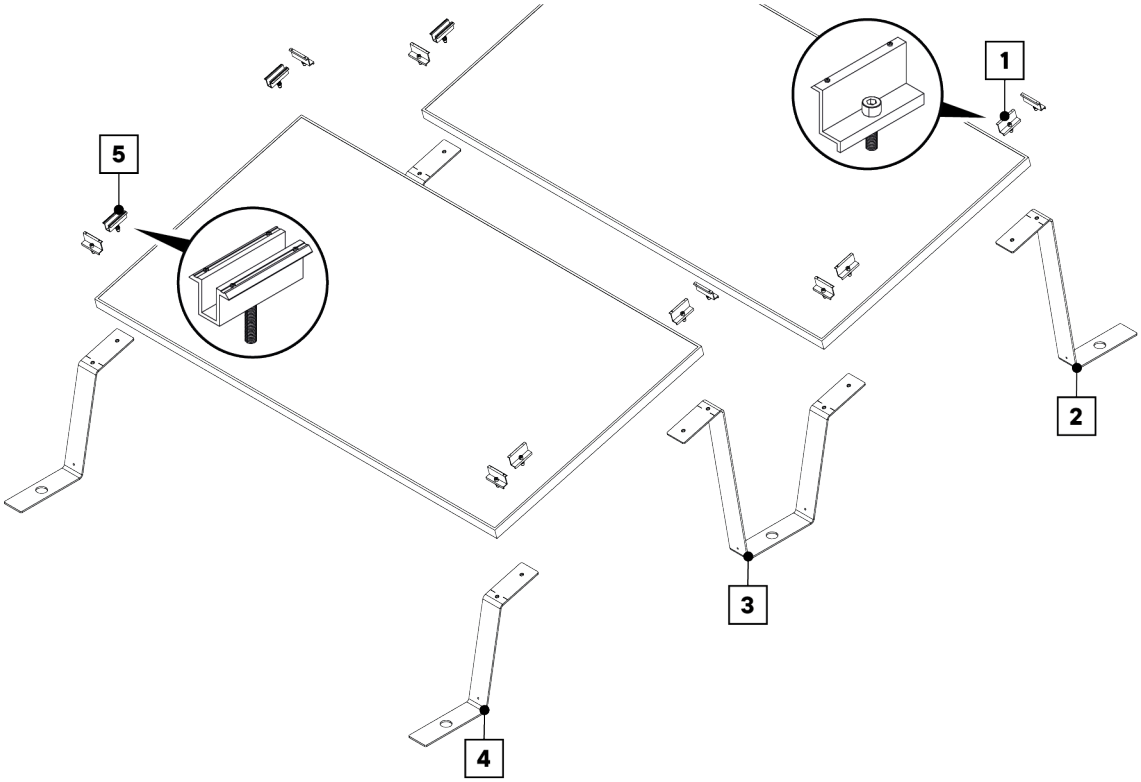
Helmets are required for all persons involved on the construction site.

Wear cut-resistant work gloves during assembly.

Use fall protection.

SYSTEM OVERVIEW

BASIC COMPONENTS G15



1 End clamp, varying clamp height for 30 - 50 mm frame heights | CLEG10-XX

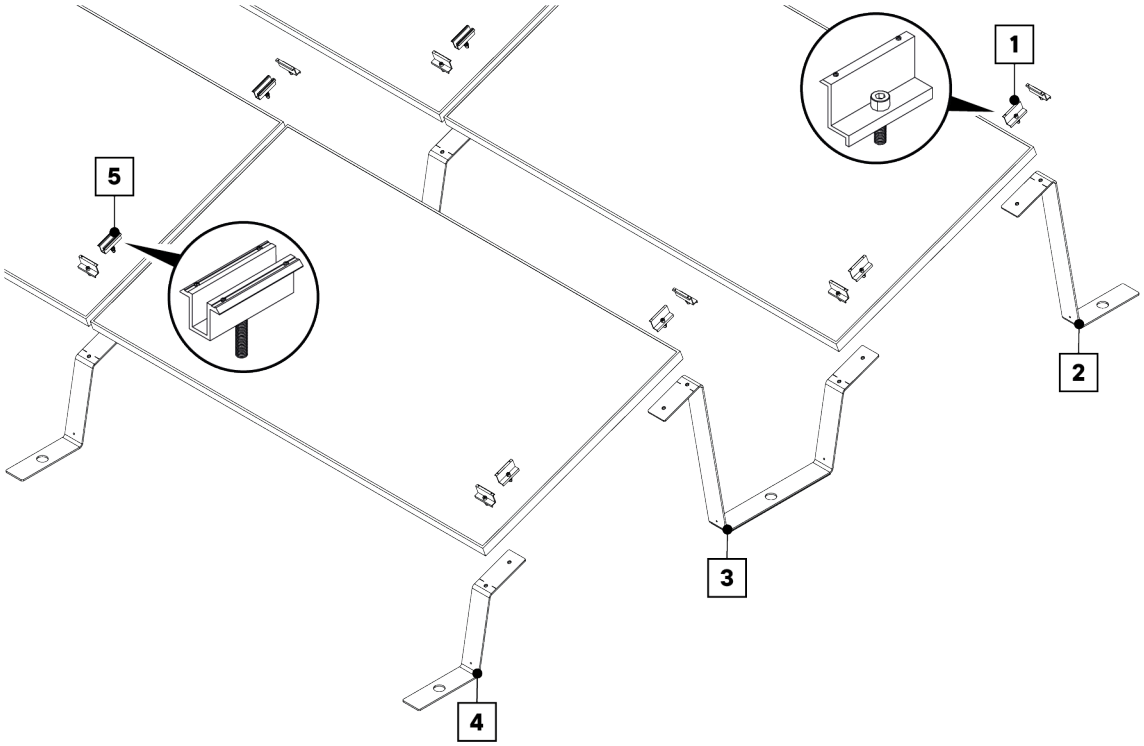
2 Back foot G15 | G15EB

3 Connector G15, shading angle EU18°/US25° | G15CNL, G15CNS

4 Front foot G15, | G15FB

5 Middle clamp, for 30 - 50 mm frame heights | CLMG10

BASIC COMPONENTS G20



1 End clamp, varying clamp height for 30 - 50 mm frame heights | CLEG10-XX

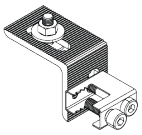
2 Back foot G20 | G20EB

3 Connector G20, shading angle EU18°/US25° | G20CNL, G20CNS

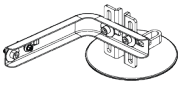
4 Front foot G20, | G20FB

5 Mid clamp, for 30 - 50 mm frame height | CLMG10

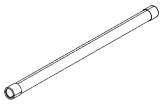
SYSTEM ACCESSORIES



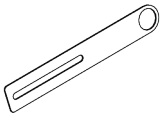
MA-BR
Mounting bracket for MLPE



APA
Roof anchor connection

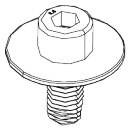


CP-430 | CP-620 | CP-840
Cable pipe

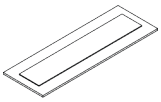


BR-CP
Bracket for cable pipe

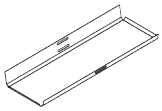
ACCESSORIES BALLASTING



SCS8x20
Furrow combination screw M8x20

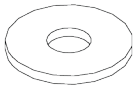


PP200
Building protection pad for ballast stones and ballast tray



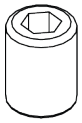
BT-880
Ballast tray short 880 mm

BT-1800 | BT-2050 | BT-2300
Ballast tray long

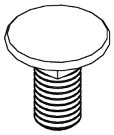


FW8.4
Washer 8,4x24

GSC45x460
Floor anchor 460 mm

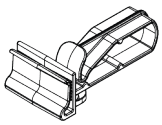


AN8x16
Allen nut M8x16



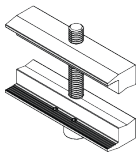
CB8x20
Carriage bolt M8x20

MODULE ACCESSORIES



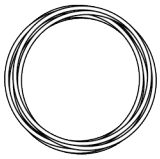
CLP-U
Cable clip universal

CLP-M
Cable tie clip module



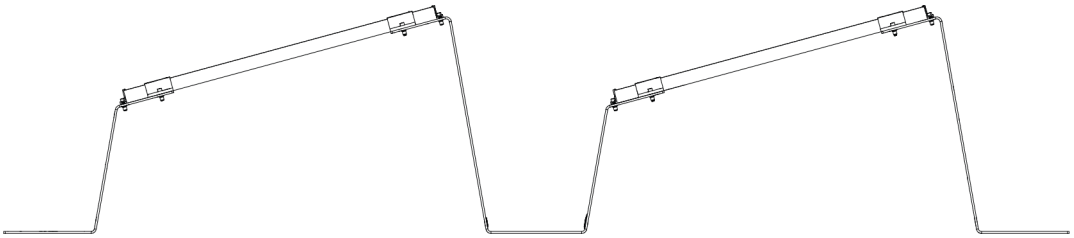
BR-MI
Mounting bracket for MLPE

POTENTIAL EQUALIZATION

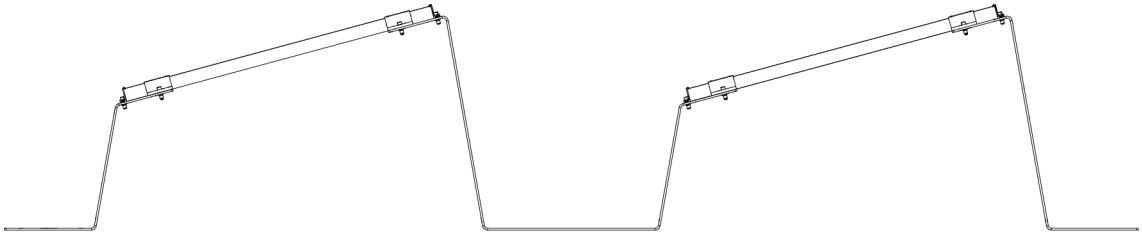


AWR8
Aluminum wire round 8 mm
for potential equalization

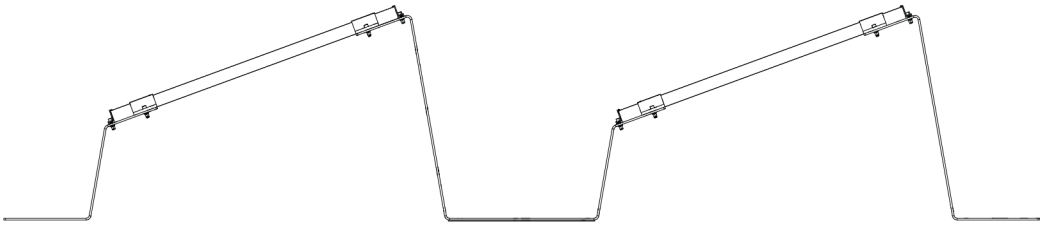
VARIANTS



System G15 21.85 in. inter-row | 25° shading angle | 15.75 in. ground clearance



System G15 31.38 in. inter-row | 18° shading angle | 15.75 in. ground clearance

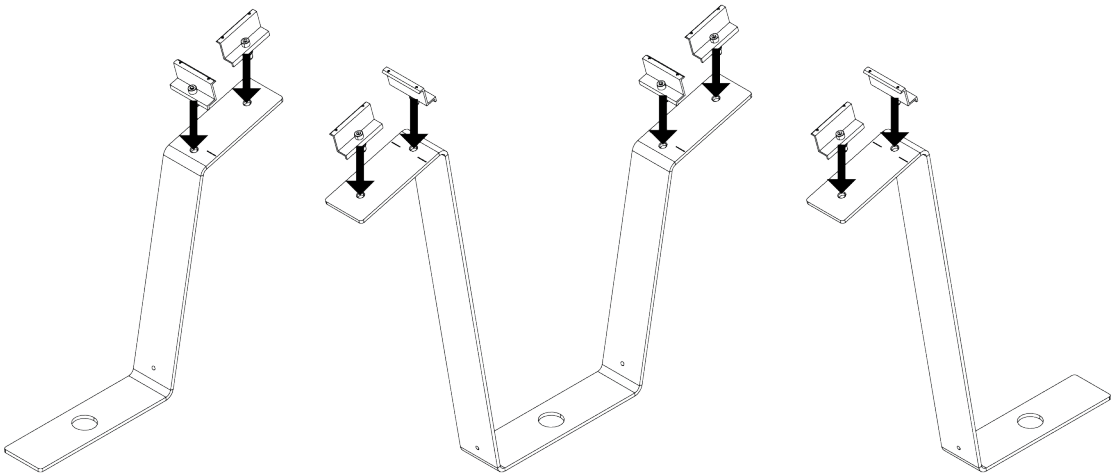


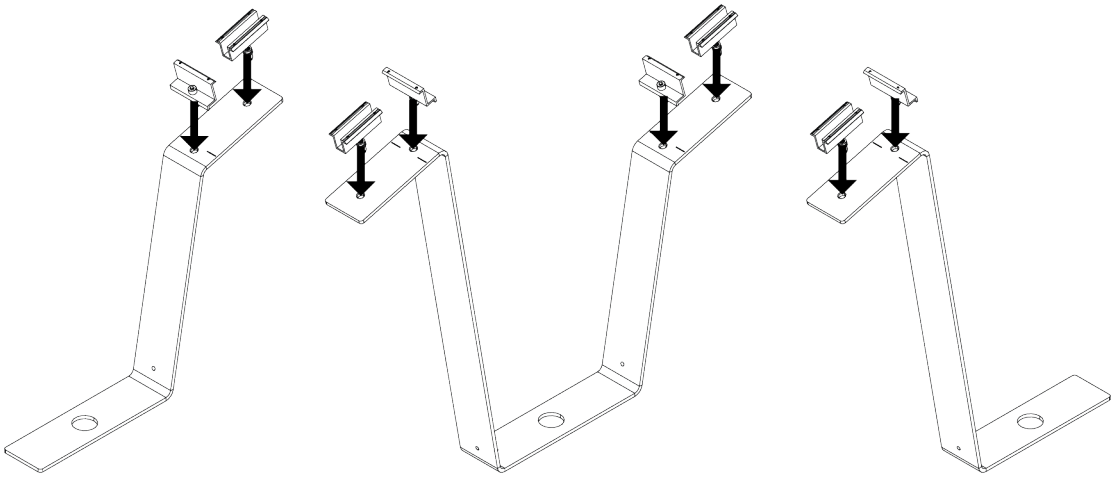
System G20 28.94 in. inter-row | 25° shading angle | 12.52 in. ground clearance

System G20 41.50 in. inter-row | 18° shading angle | 12.52 in. ground clearance

ASSEMBLY

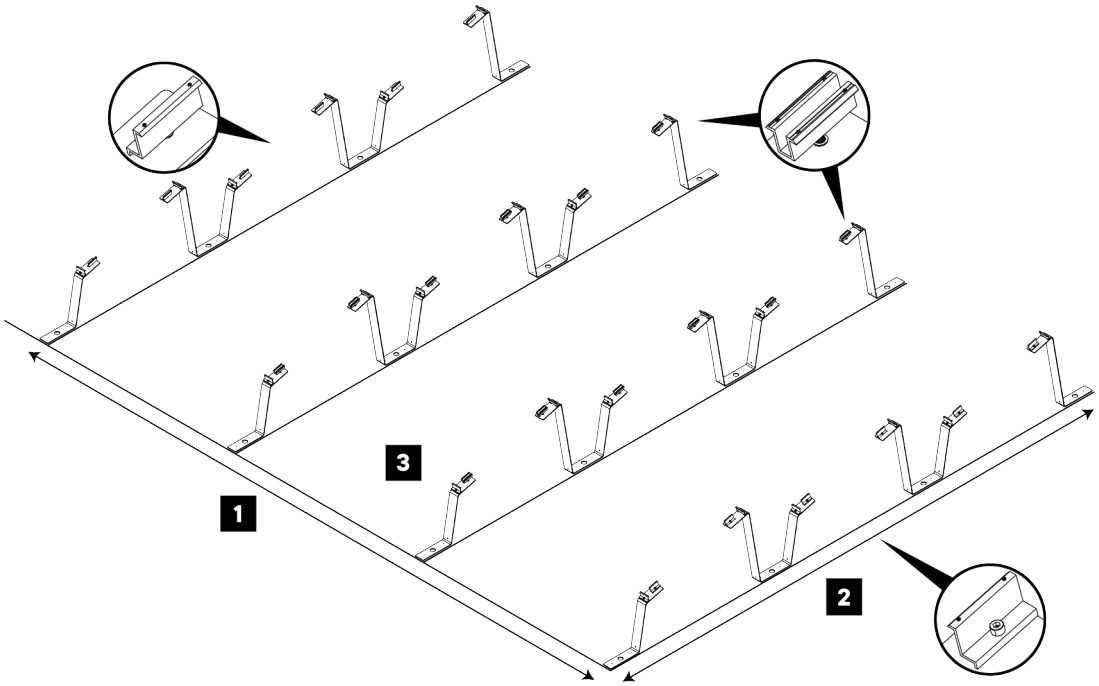
PRE-INSTALL THE CLAMPS





Attach the end or middle clamps to the starting bracket, end bracket and to the connectors.

MEASURE AREA, PLACE BRACKETS AND CONNECTOR BRACKETS



- Take the dimensions of the array field from the planning documents.
- Measure the length of the module field and mark the line.
- Measure the width of the array and mark the line.
- Place feets and connectors in the array field (3)

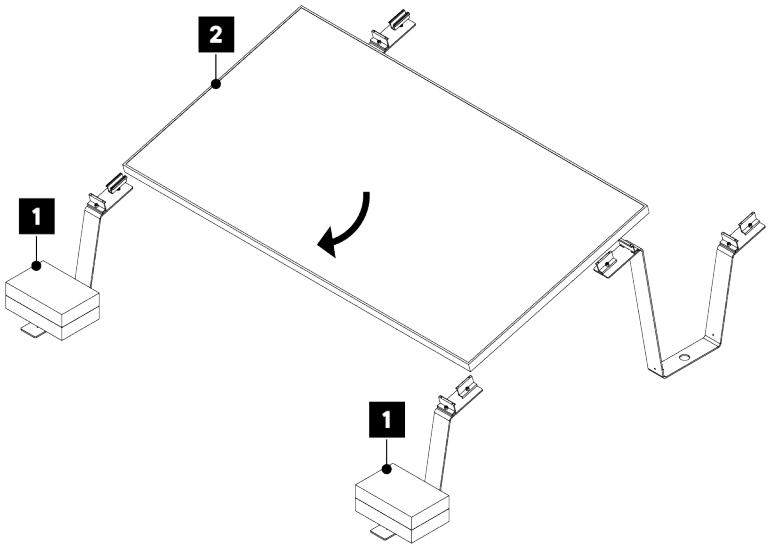
  :Vertical field edge: Place front brackets, end brackets and connector brackets with end-clamps pre-installed.

  Field interior: Place front brackets, end brackets and connector brackets with mid-clamps pre-installed.

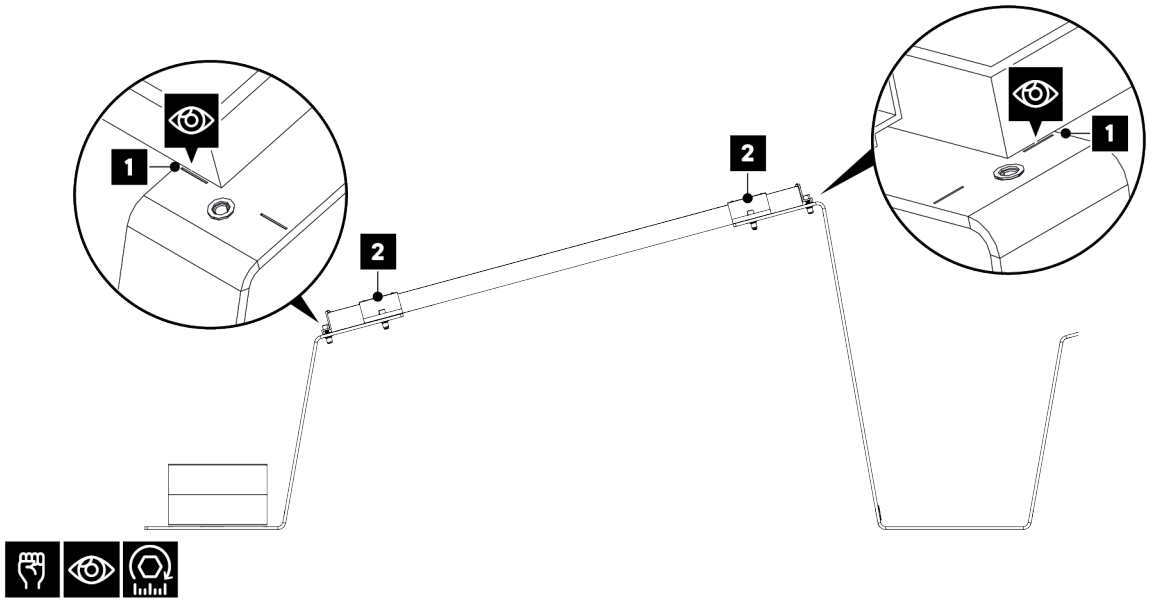
INSTALLING MODULES

Tip: When installing, wire the modules at the same time. The cables can be attached to the module with the cable tie clip (CLP-M).

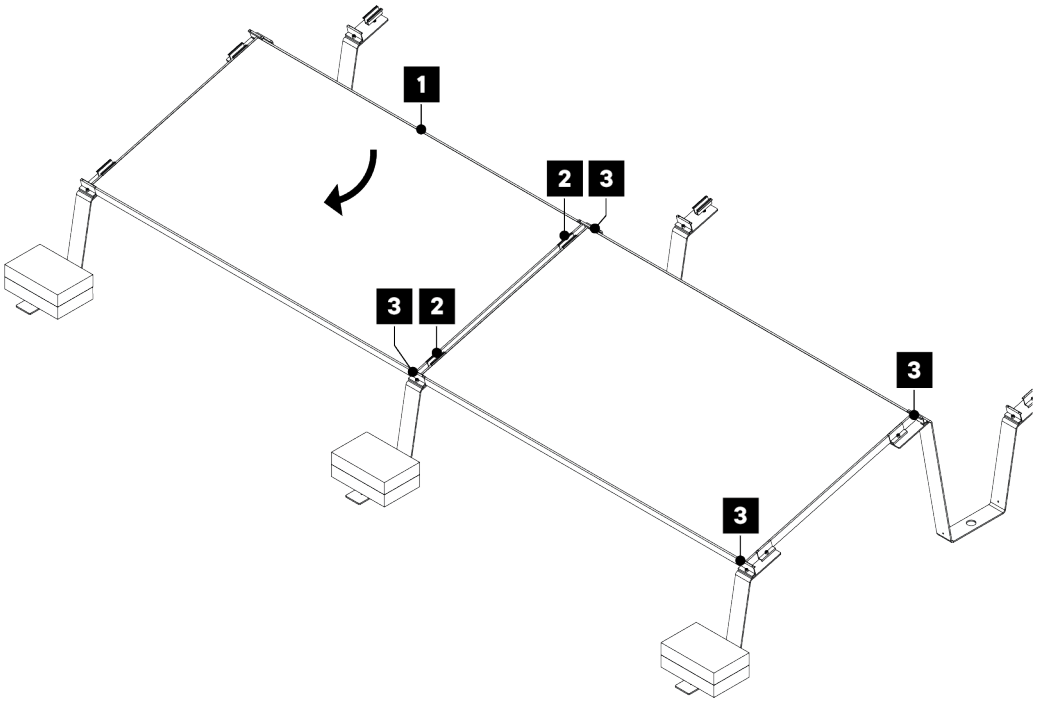
The distance between the clamps is determined by the brackets and connector brackets or by the module size.



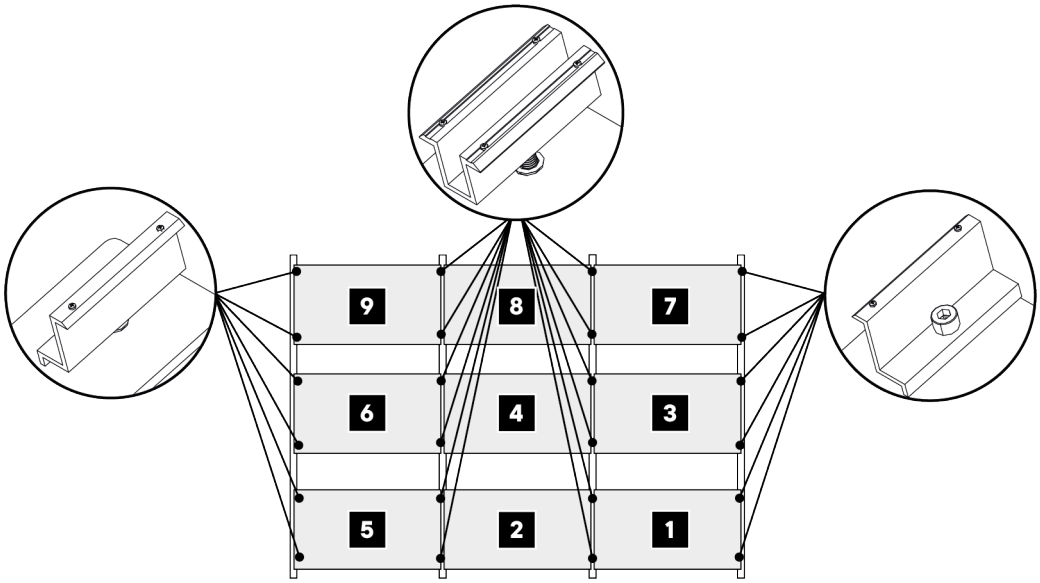
- Weight the initial feet with 1 - 2 ballast stones each (1).
- Place the module on the front feet and connectors (2).



- Align the module with the marks (1) on the feet/connectors.
- Tighten the screws of the side end-clamps (2) to 15 Nm or 11 ft lbs.



- [ ] Place the next module (1) .
- [ ] Tighten the screws of the mid clamps (2) of the previous module with 15 Nm or 11 ft lbs.
- [ ] Tighten the screws on the upper and lower end-clamps (3) of the previous module to 15 Nm or 11 ft lbs.



- [ ] Install remaining modules according to the recommended sequence.
- [ ] Tighten the screws of the end-clamps with 15 Nm or 11 ft lb each.

PLACE BALLAST

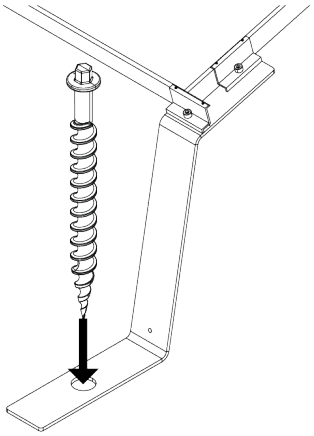
Depending on the circumstances, the system can be secured in various ways.

Option 1: Securing with ground screws

The ground screws are used to anchor the brackets or connector brackets to the ground.

Refer to the AEROTOOL planning documents for the exact number and position of the ground screws.

Make sure that the ground screws are fully anchored into the ground at the appropriate brackets and/or connector brackets.



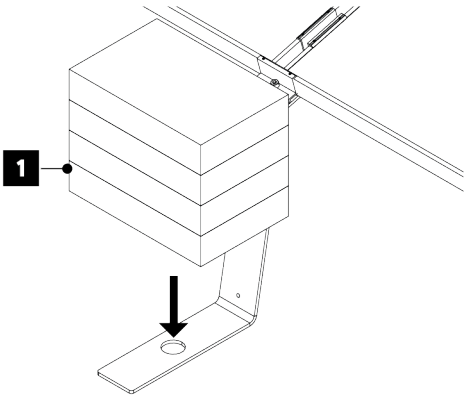
Option 2: Ballasting directly on the brackets or connector brackets

With this ballasting option, the ballast blocks are placed directly on the brackets or connector brackets.

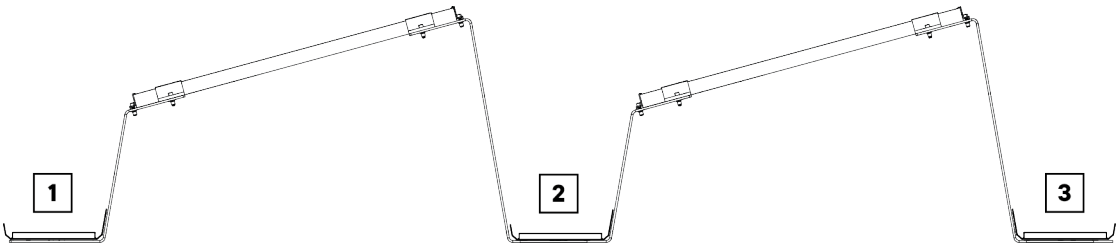
Take note of the exact number and position of the ballast blocks from the AEROTOOL planning documents.

For height compensation, position the protection pads (1) to the right and left of the bracket.

Place the ballast stone (2).



Option 3: Short ballast tray

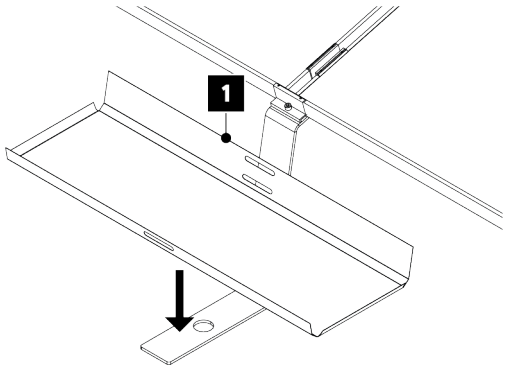


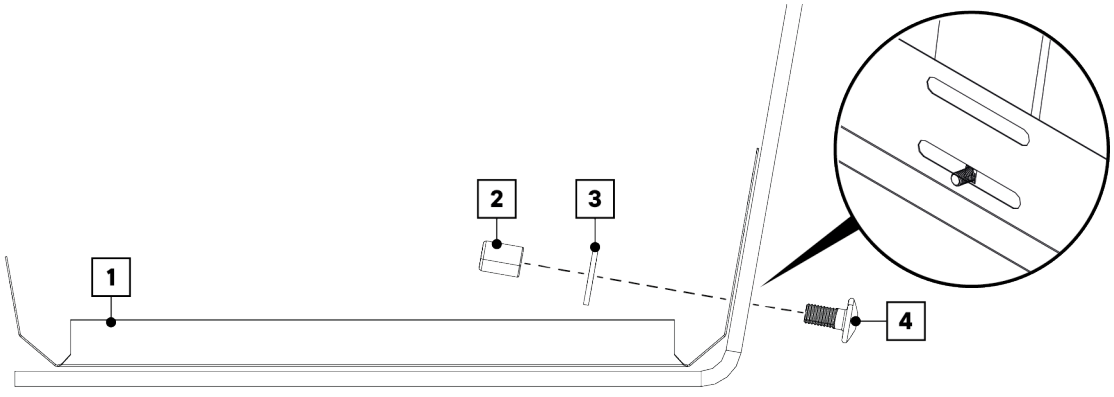
The short ballast tray can be installed in the following positions:
(1) at front bracket.
(2) at connector bracket.
(3) at end bracket

Refer to the Aerotool planning documents for the exact number and position of the short ballast trays.

INSTALLING THE SHORT BALLAST TRAY

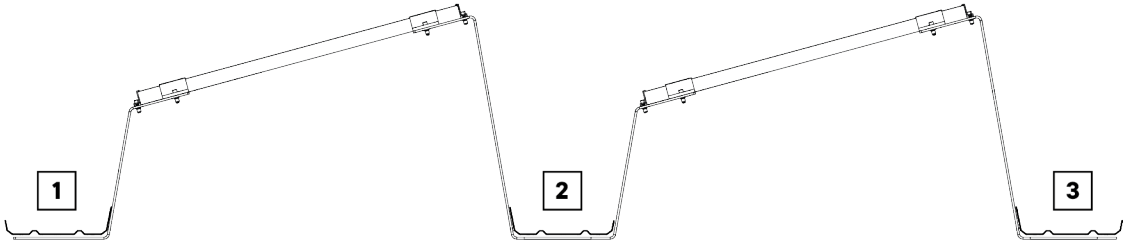
- Place the ballast tray (1) centered on the bracket or connector bracket.





- Screw the ballast tray (1) to the feet or connector bracket using the carriage bolt (4), washer (3) and socket nut (2).
- Tighten the screws with 15 Nm or 11 ft lb.

Option 4: Long ballast tray



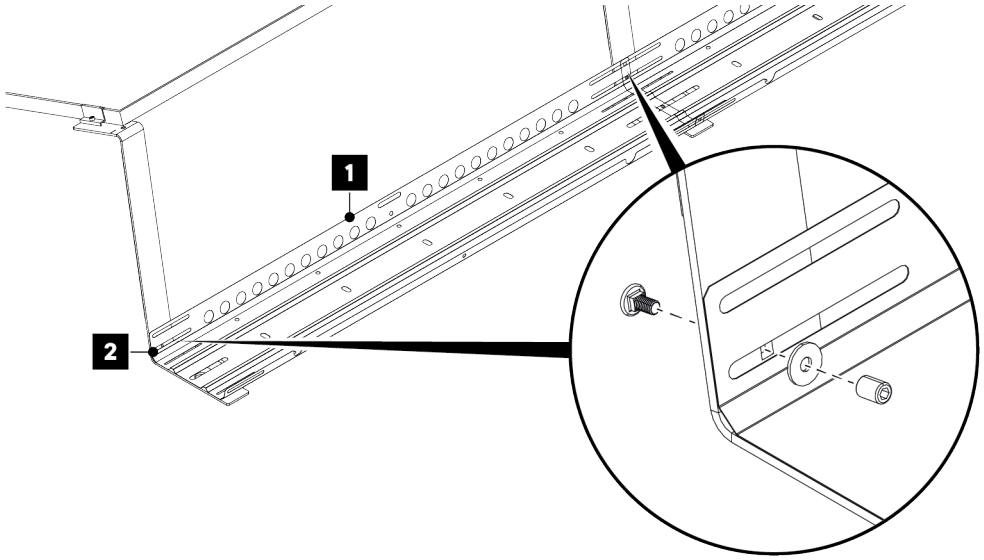
The long ballast tray can be installed in the following positions:

(1) at front brackets.

(2) at connector brackets.

(3) at end brackets.

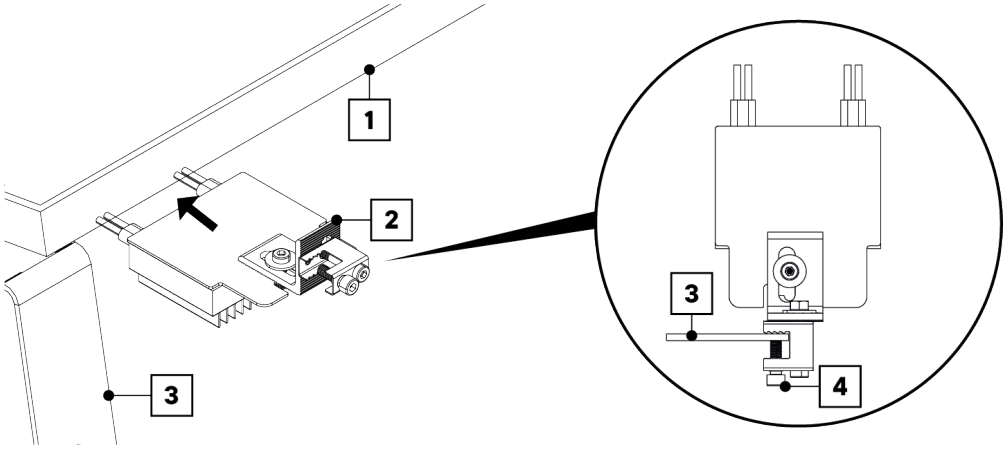
INSTALLING THE LONG BALLAST TRAY



- If several ballast trays are adjacent to each other: Lay out the ballast trays (1) so that they overlap at the connector brackets or end brackets.
- Fastening the ballast trays (2): Screw the ballast tray (1) to the front or connector bracket using the carriage bolt screw (1), washer (2) and socket nut (3).
- Tighten the screws with 15 Nm or 11 ft lb.

ASSEMBLE MLPE

The MLPE is mounted below the module on a foot or on a support.

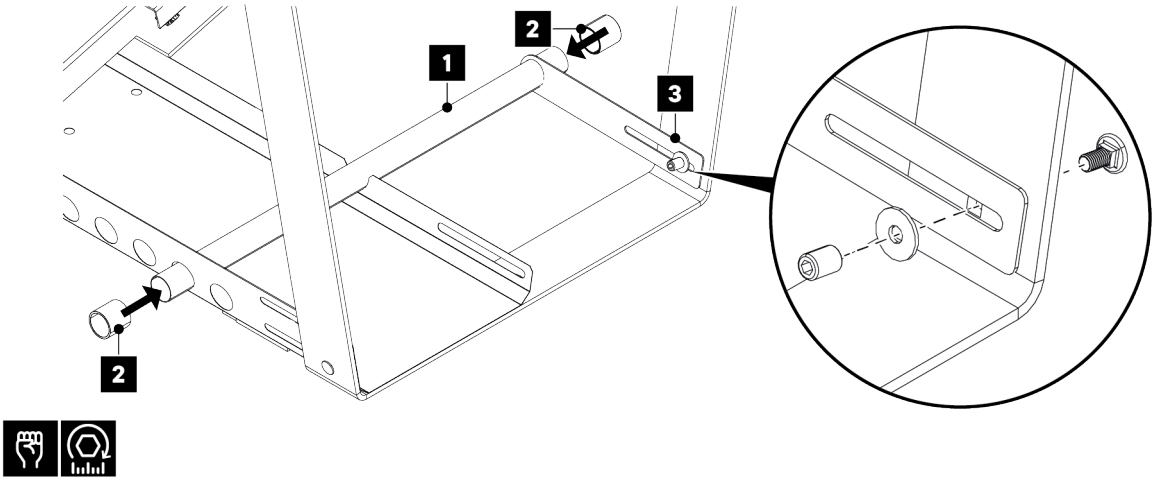


- Mount the MLPE on the bracket according to the manufacturer's specifications.
- In the next step, place the MLPE (2) below the module (1).
- Attach MLPE (2) to the support or foot (3) and hand-tighten the Allen screw (4).

INSTALL CABLE PIPE ASSEMBLY (OPTIONAL)

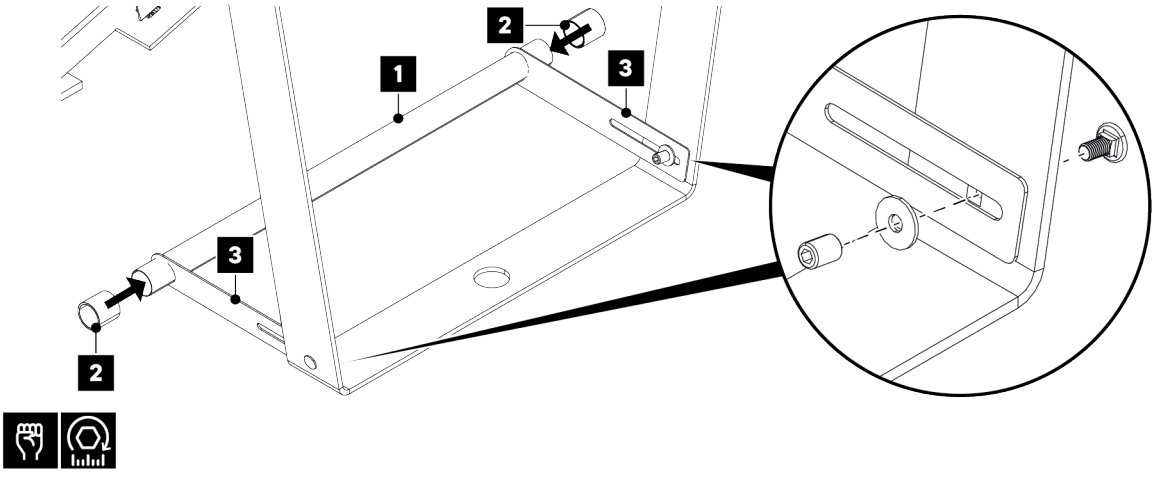
The cable pipes can be installed at the edges or interior of the module field. Depending on the situation, the cable pipes can be installed with the brackets provided or on the long ballast tray.

Mount cable pipe to ballast tray



- Attach the cable pipe (1) to the ballast tray and bracket.
- Attach the plastic caps (2) to the end of the cable pipe.
- Screw the bracket for cable pipe to the connector bracket (3).
- Tighten the screws with 15 Nm or 11 ft lb.

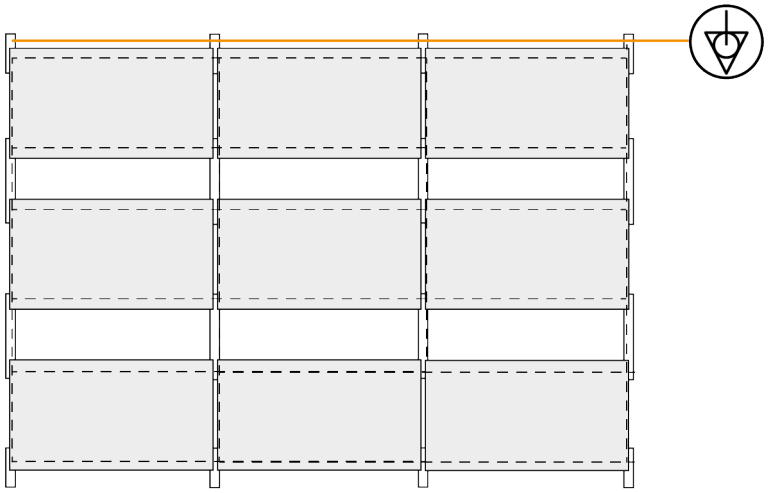
Fasten cable pipes with brackets



- Attach the brackets to the cable pipe (1).
- Attach the plastic caps (2) to the end of the cable pipe.
- Screw the brackets to the connector bracket (3).
- Tighten the screws with 15 Nm or 11 ft lb.

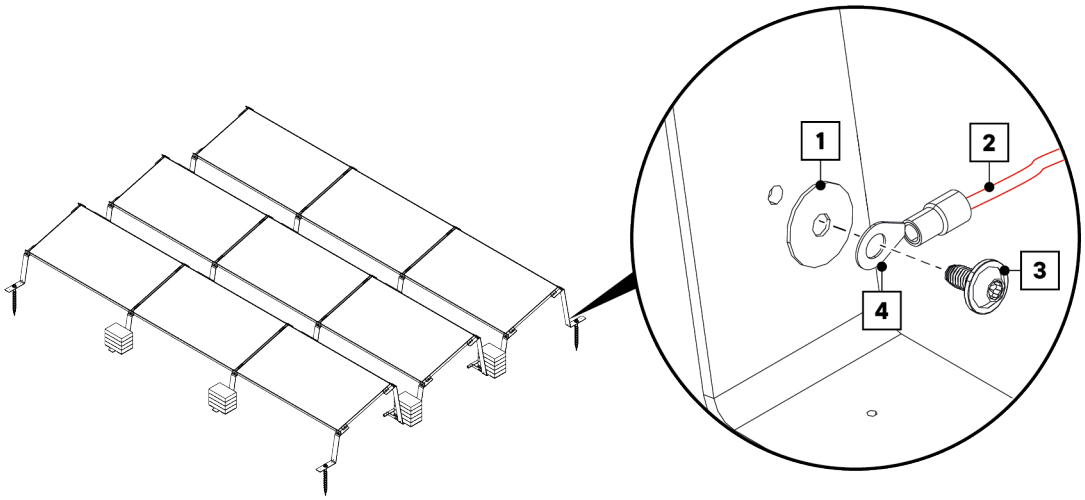
POTENTIAL EQUALIZATION

The modules of an array field are bonded to each other by the module clamps and brackets/ connector brackets.



MOUNT EQUIPOTENTIAL BONDING

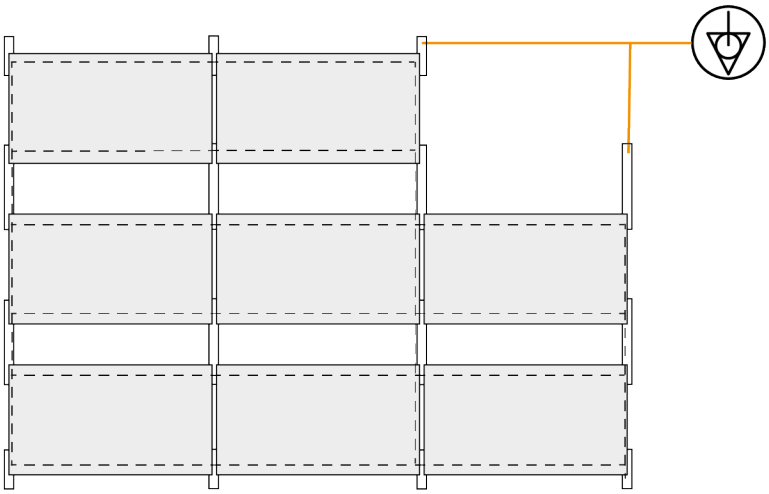
For grounding, use a commercially available cable lug in accordance with national regulations / certifications. Use a suitable bolt (M6), washer and self-locking nut. The grounding materials must be provided by the customer (cable lug, M6 screw, washer, self-locking nut, ground wire).



Attach the grounding to the bracket. If wind deflectors/ballast trays are available, they can be mounted together.

- Remove existing screw.
- Connect ground wire (2) firmly to cable lug (4).
- Fasten the cable lug (4) to the base with screw (3) and washer (1) and tighten with a torque of 15 Nm or 11 ft lb.

POTENTIAL EQUALIZATION DURING MAINTENANCE WORK



Heads up!

To ensure that the connection between the remaining modules and the equipotential bonding is guaranteed, additional grounding clamps and grounding wire must be attached when a module is removed.

MAINTENANCE, DEMOUNTING AND DISPOSAL

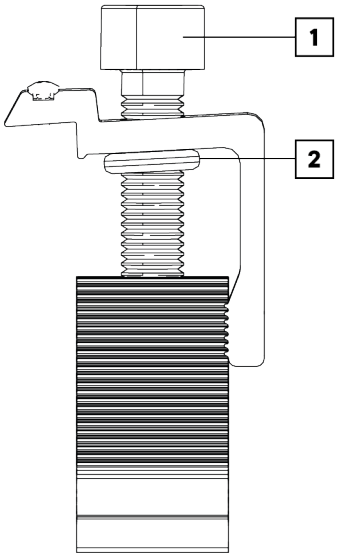
MAINTENANCE

To prevent personal injury and property damage, the system must be inspected regularly by qualified personnel; an annual visual inspection is recommended for this purpose.

- Check all components of the system for damage. In case of damage, replace the affected component as soon as possible.
- Check all screw connections. Tighten loose screw connections, observing the tightening torque according to the assembly instructions.
- Inspect all components for damage from weather, animals, dirt, debris, buildup, vegetation, roof penetrations, waterproofing, stability, corrosion. In case of damage, clean, repair or replace the affected component.

DISASSEMBLY

DISMOUNTING CLAMPS (EXAMPLE)



ⓘ For demounting the system, carry out the assembly steps in reverse order.

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

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