

FD3-EW Premium Line Installation Manual



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1. Introduction

1.1 Short description

The FD3-EW flat roof system is a heavy-duty frame solution designed for mounting PV modules on flat roofs. Several rows of modules in an east-west orientation can be connected with the FD3-EW system. The system is tilted by 10° as standard. The FD3-EW system is built in connection with the total area of modules of at least 10 m². This solution has been specially developed for applications on flat roofs with a low permissible load. All elements have been designed as easy to assemble. The selected materials used for the system guarantees a high resistance to corrosion, while at the same time offering the possibility of full disposal.

1.2 About these instructions

Subject of instructions

These instructions describe the installation of the FD3-EW system for flat roofs and contain all the information for this solution in terms of planning, components and safety instructions. The pictures in the first part of the manual show installation with frame modules locked in the corners.

Co-binding documents

In addition to this document, each delivery includes the 'Montageanleitung allgemein' [General Assembly Instructions], which can be found at www.mounting-systems.com, this document provides general information on standards, safety, transportation, maintenance, disassembly, and disposal for systems of Mounting systems. Both these instructions and the aforementioned document comprise a permanent part of the FD3-EW assembly system and must be observed during all assembly work.

Please read both this installation manual and the above mentioned documents carefully prior to any installation, maintenance or disassembly work. You will be provided with all information for safe and complete installation, maintenance and disassembly. However, if you have any questions after having read these documents, please contact Mounting Systems GmbH.

User group

These installation instructions are intended for the following persons (user group):

- Skilled personnel
- Instructed personnel

Skilled personnel

Skilled personnel are persons who, on the basis of their professional training, are able to execute installation, maintenance and disassembly work properly.

Instructed personnel

Instructed personnel are persons who have been instructed and taught appropriately regarding the assigned tasks and the possible risks in the event of improper conduct. An instructed person must have received instructions regarding the required safety devices, precautions, relevant regulations, accident prevention regulations as well as operating conditions and must have demonstrated their competence. The implemented work must be inspected and accepted by skilled personnel.

Guidance notes

The following guidance notes enhance the orientation when handling this installation manual:

Pictograms:



This symbol indicates important information and useful tips.



This symbol indicates ways and means to make the installation process easier.

1.3 Warnings

The following warnings are used in these Installation Instructions to indicate safety-related information. They include:

- Warning symbols (pictograms)
- Signal words which identify the hazard level
- Information about the type and source of the hazard
- Information about the potential consequences if the hazard is disregarded
- Measures for the prevention of hazards and the prevention of injuries or damage to property.

The signal words of the warnings respectively indicate one of the following hazard levels:



Danger!

Indicates a potentially mortal danger, disregard for which may result in death or serious injury.



Attention!

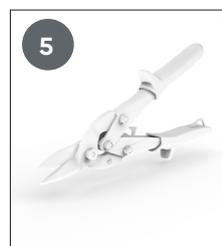
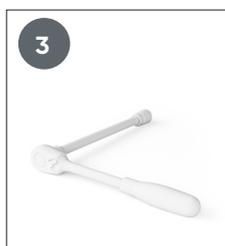
Indicates a potentially dangerous situation which may result in serious injury or damage to property.

1.4 Safety

All universally valid safety instructions for products of Mounting Systems GmbH are listed in the document 'Montageanleitung für PV-Gestellssysteme: allgemeiner Teil' ["Installation manual for PV mounting systems – general part". Please read this document carefully and observe the instructions given therein: Do not use the product in a manner other than intended, please comply with the obligations of the owner and observe all general and specific safety instructions.

In addition, please observe the specific safety instructions given in this installation manual for all installation work. The specific safety instructions are positioned in each case directly with the respective installation step.

1.5 Tools



1 Tape measure

2 String

3 Torque wrench with Allen socket

4 Measure of distance (optional)

5 Sheet metal shears



2. Basic information about the system

FD3-EW 10°

Modulsize

Min. width: 990mm

Min. length: 1649mm

Max. width: 1134mm

Max. length: 2300mm

Distance between the rows: 446mm



FD3-East-West 4x4



2.1 Elements and components



Base rail 2147mm (720-1920)

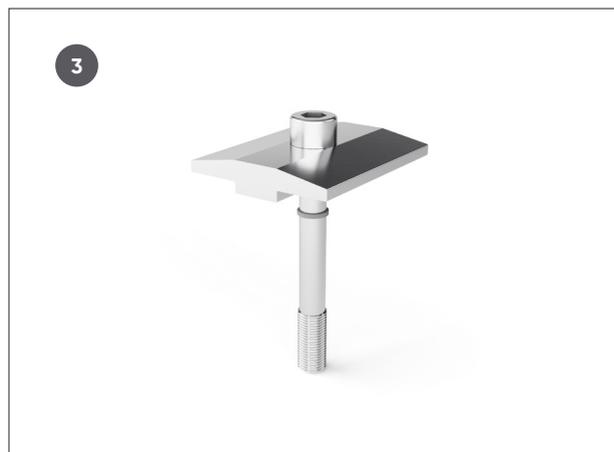
Base rail 2287mm (720-1922)



End clamp

30-40mm (720-1855)

40-50mm (720-1856)



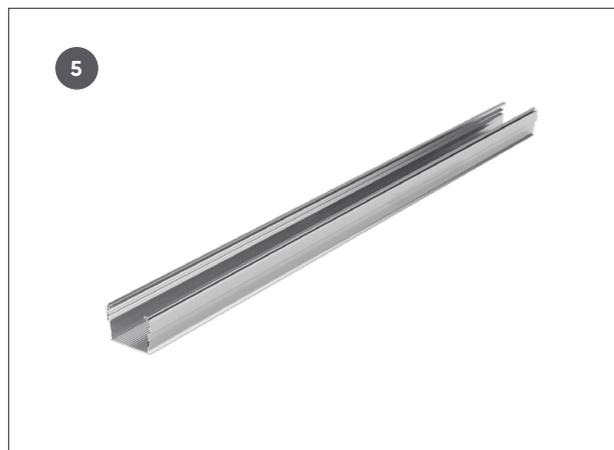
Middle clamp

30-40mm (720-1857)

40-50mm (720-1858)



Start and end rail 250mm (720-1915)



Connecting rail 800mm (720-1916)



Universal middle- and end support (720-1873)



Ball locking pin 6x50 (720-1892)



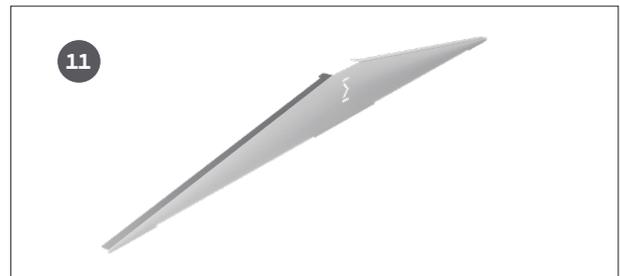
Front support (720-1874)



Ballast tray 1831mm, max. 120kg (720-1889)
Ballast tray 2037mm, max. 120kg (720-1890)
Ballast tray 2171mm, max. 120kg (720-1891)
Ballast tray 2327mm, max. 100kg (720-1932)



Rail cover (720-1870)



Side wind deflector east west (720-1869)
Side wind deflector east west XL (720-1924)

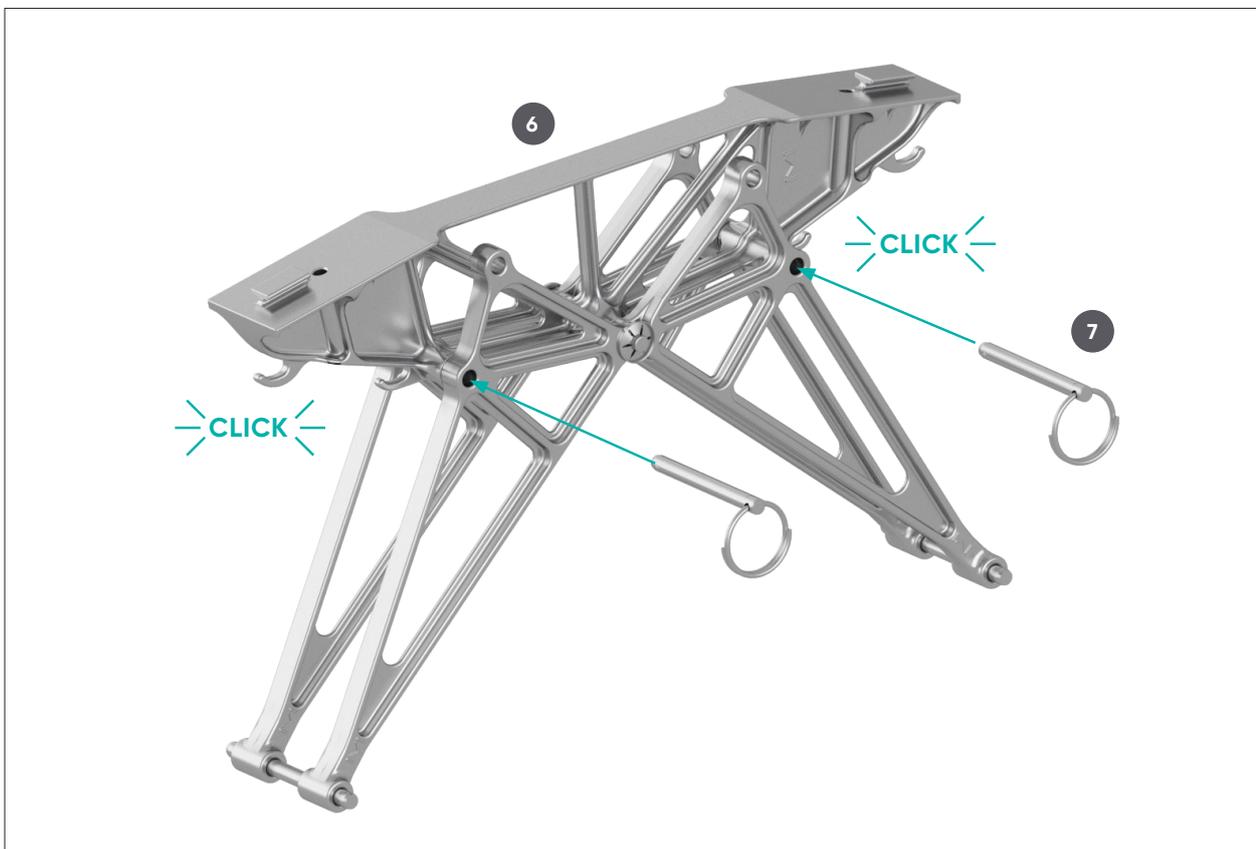
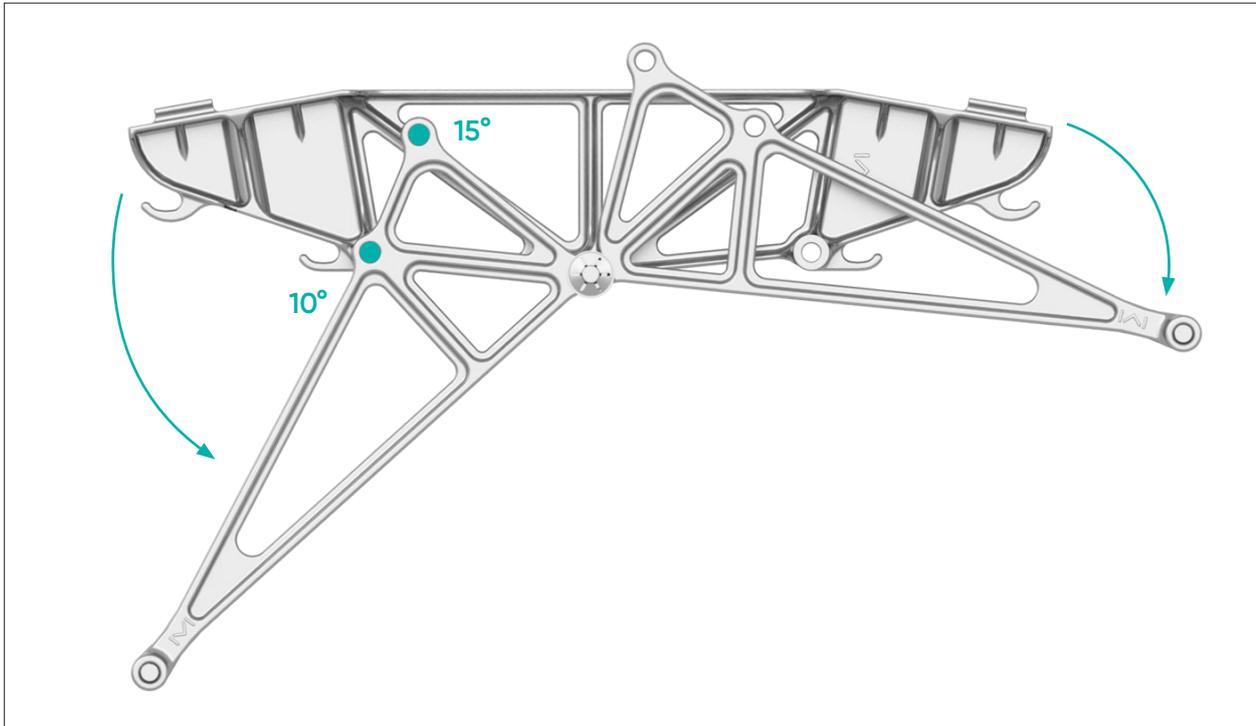


Protection mat 250mm (720-1921)

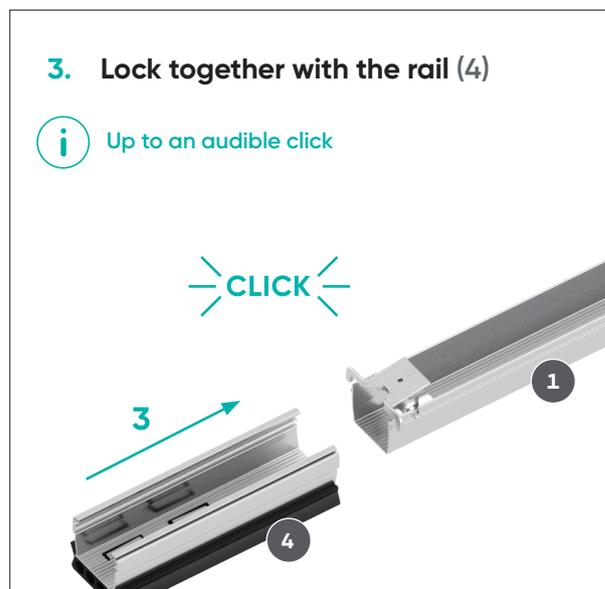
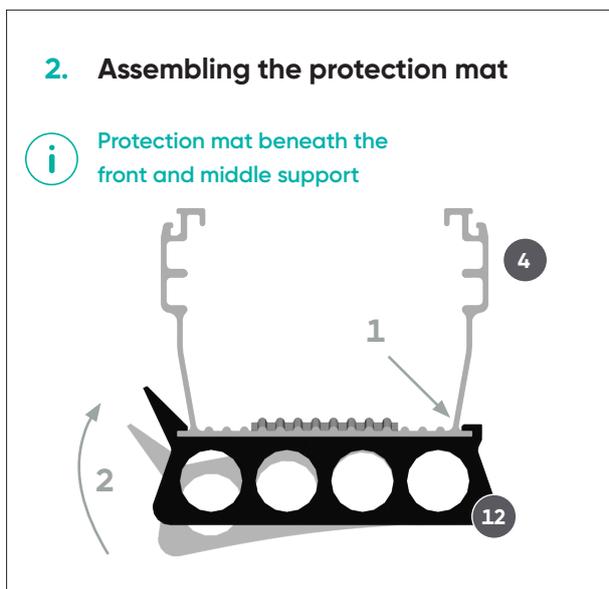
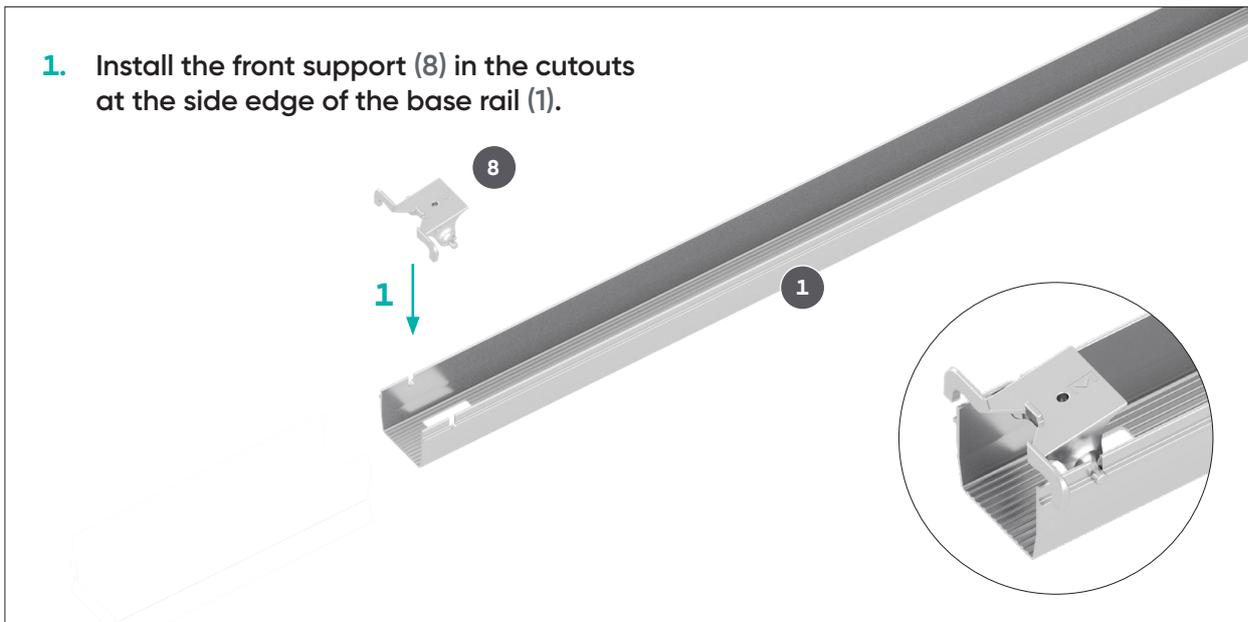
3. Assembly

3.1 Universal central and end support – 10°

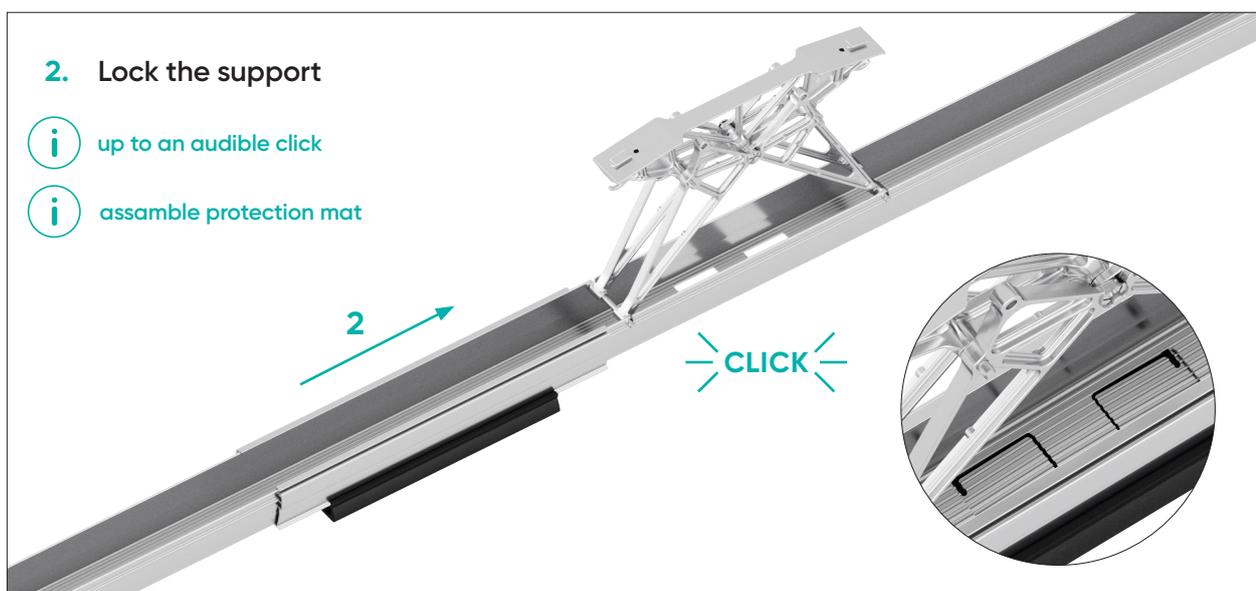
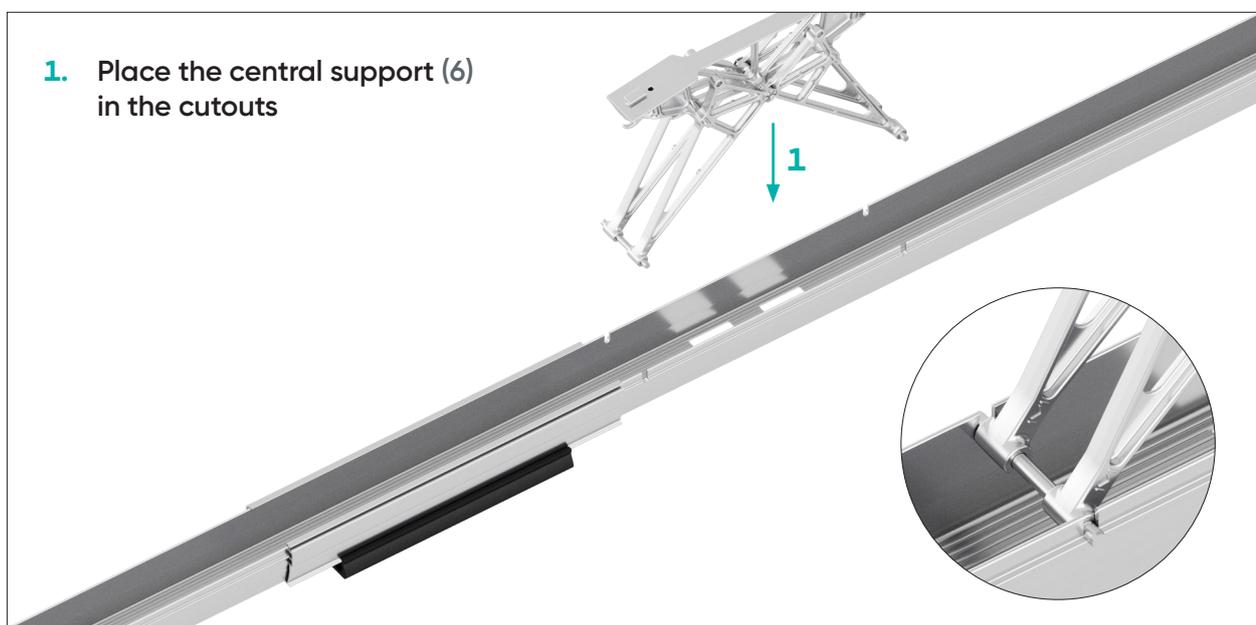
Fold the feet down and secure with two pins.
See designation.



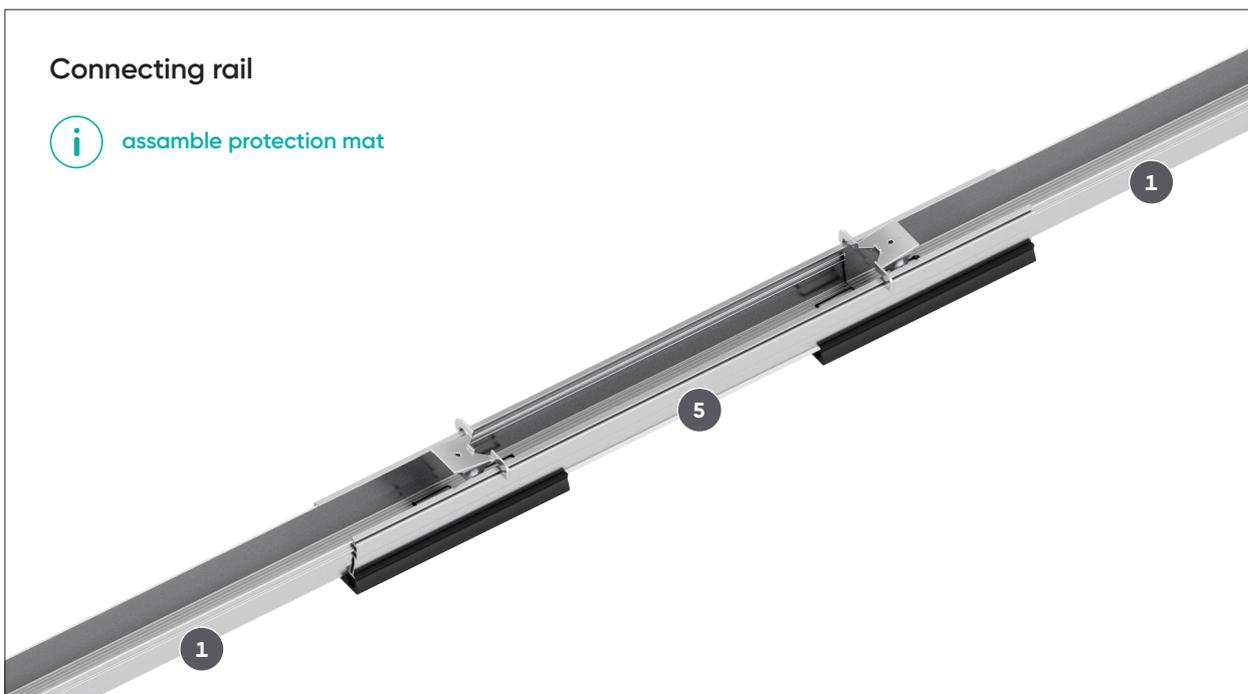
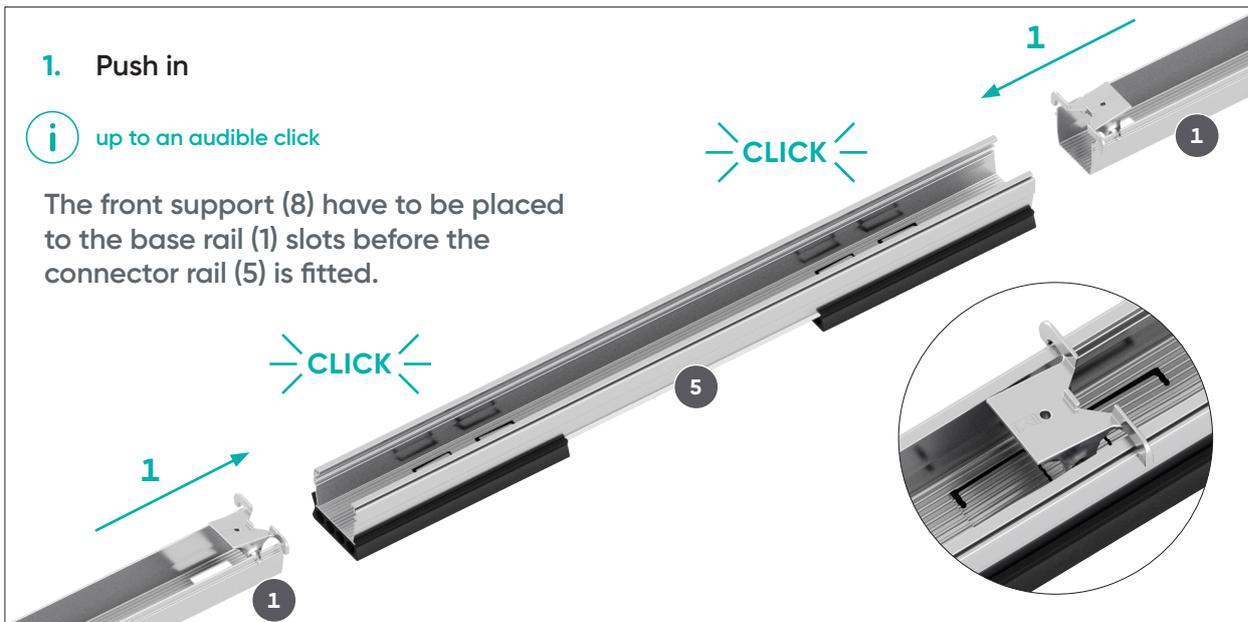
3.2 Front support



3.3 Middle support



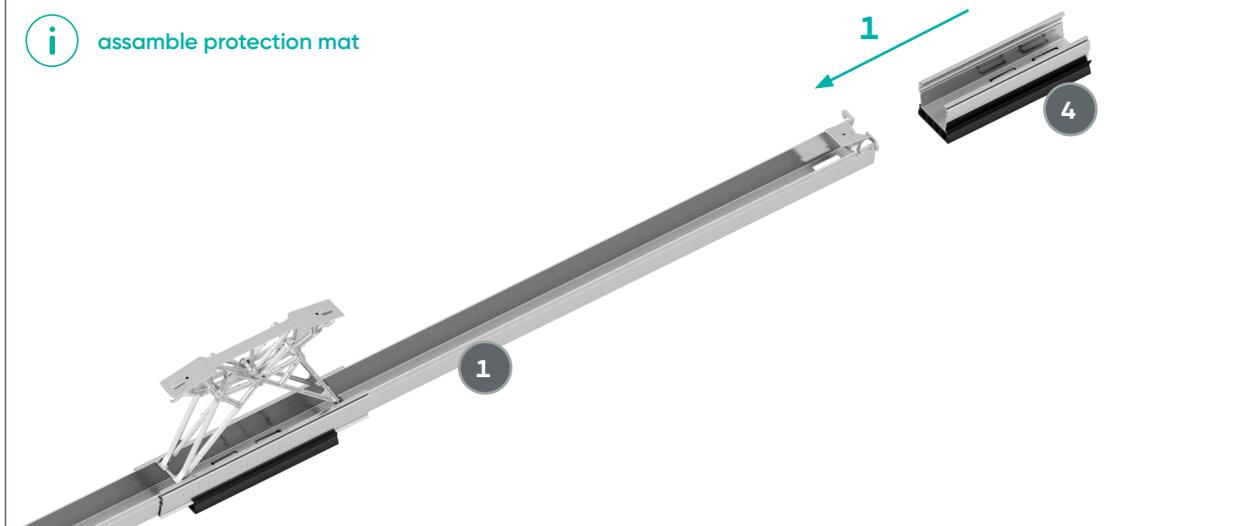
3.4 Connecting rails



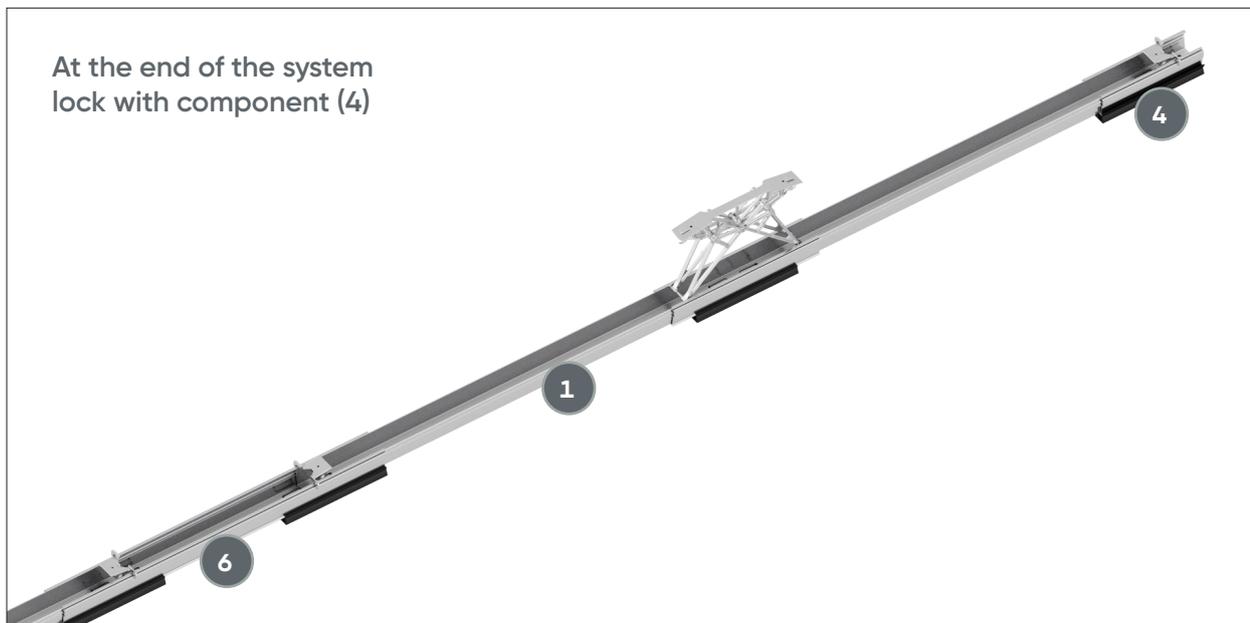
3.5 End of the rail connection

1. Lock together with the locking rear support (4)

 assemble protection mat



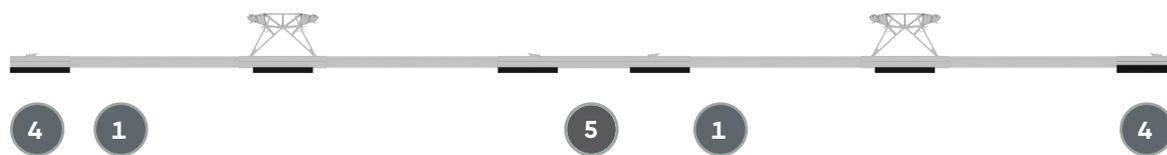
At the end of the system
lock with component (4)



Overview of the rails in a row

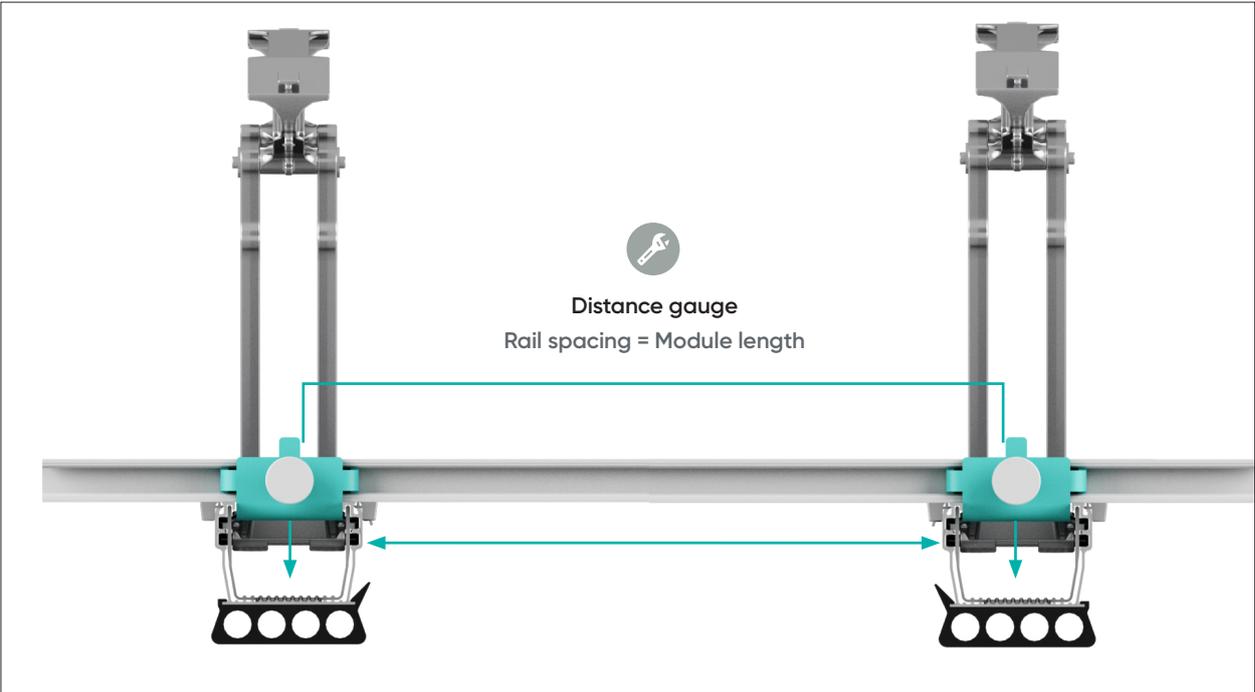
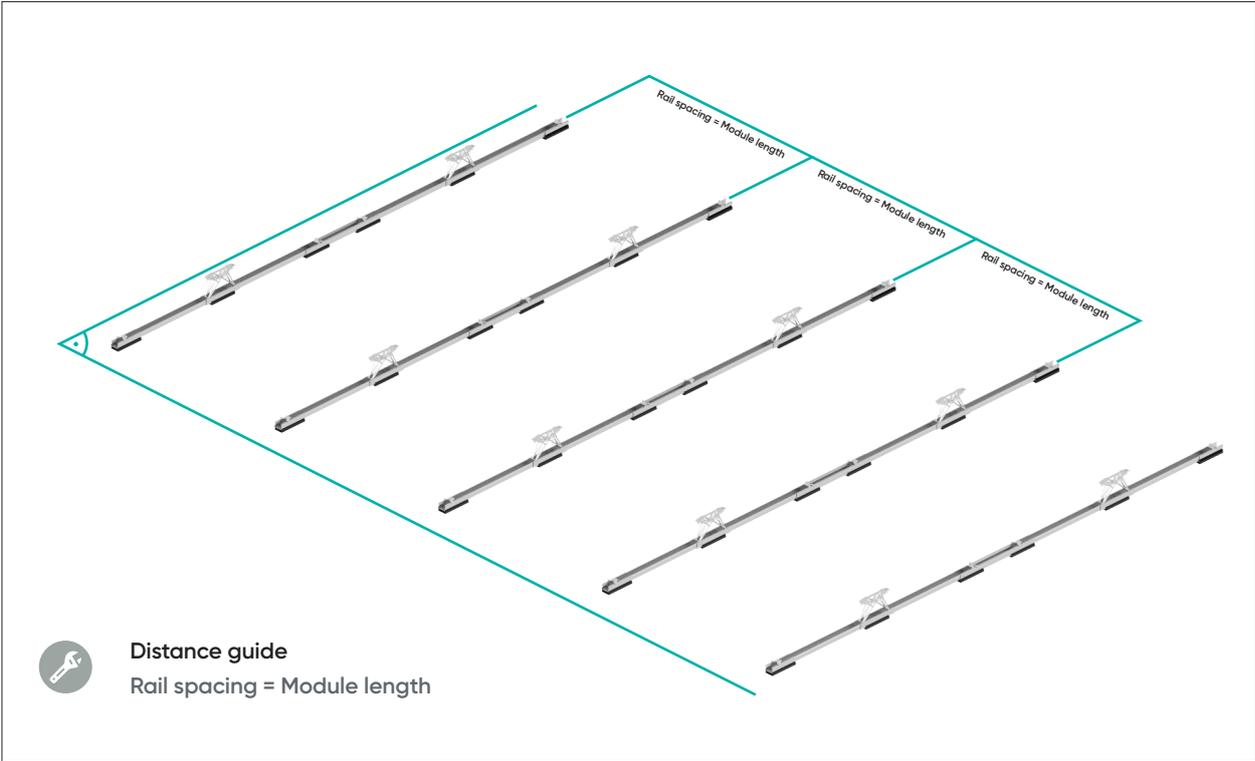
4 - 1 - 5 - 1 - 4

 for further rows always put (6) and (1) in a row



3.6 Disassembly of pre-assembled rails

Place the rails parallel to the length of the module.



3.7.1 Ballast tray for multi-row arrangement tray



Note the maximum weight per ballast tray



The number, position and weight of the necessary ballast (stones or gravel) should always be included in the project information

Order

First, place a narrow side on the outside

9

3 **2** **1**

i Hole marked the wide side.

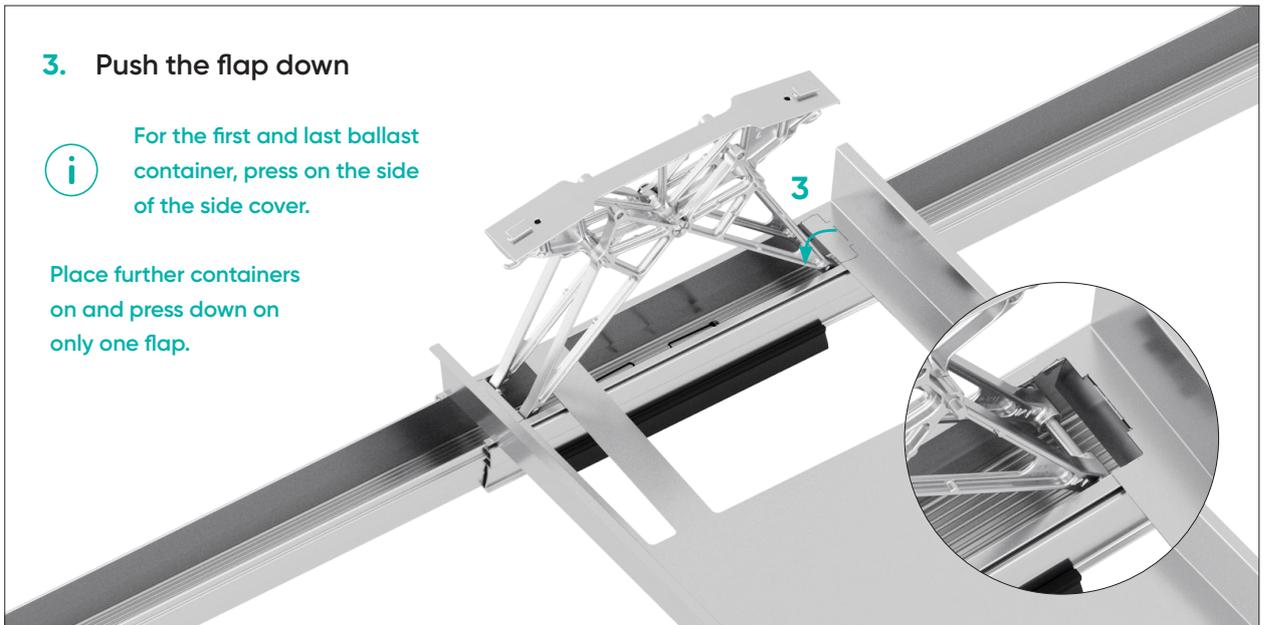
- 1.** Insert the ballast tray diagonally
- 2.** Slide in
- 3.** Fixing between support

3. Push the flap down



For the first and last ballast container, press on the side of the side cover.

Place further containers on and press down on only one flap.



5. Apply ballast evenly, from the outside to the inside

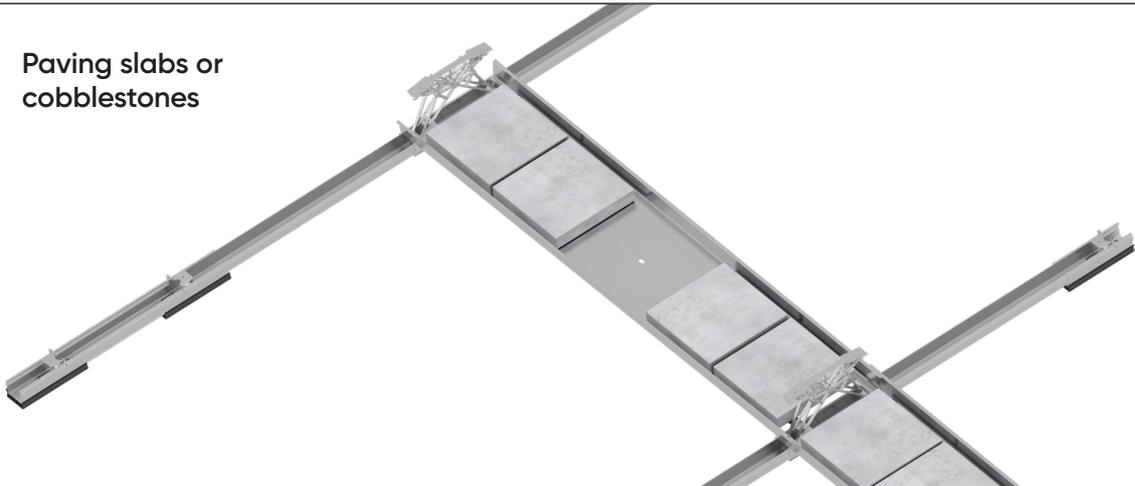


Note the maximum weight per ballast tray



Ballast must be put in the ballast tray starting from both ends in parallel at the same weight volume. Ballast must be evenly distributed.

Paving slabs or cobblestones



Gravel



Cover the openings with paving slabs



3.7.2 Ballast tray for single row arrangement



Note the maximum weight per ballast tray



The number, position and weight of the necessary ballast (stones or gravel) should always be included in the project information

Order

First, place a narrow side on the outside

Hole marked the wide side.

The overhang of the ballast tray depends on the module width

1. Insert the ballast tray (8) diagonally, see chapter 3.7.1

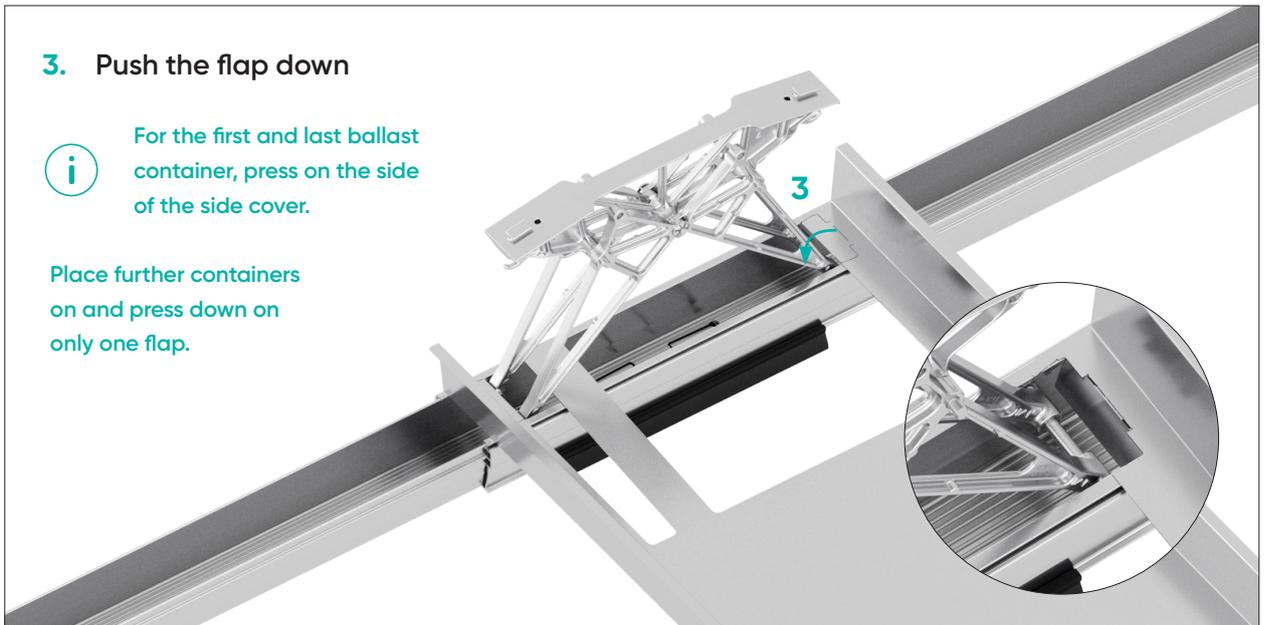
2. For later installation of the side plate, the ballast tray must be cut to length flush with the rail.

3. Push the flap down



For the first and last ballast container, press on the side of the side cover.

Place further containers on and press down on only one flap.



5. Apply ballast evenly, from the outside to the inside

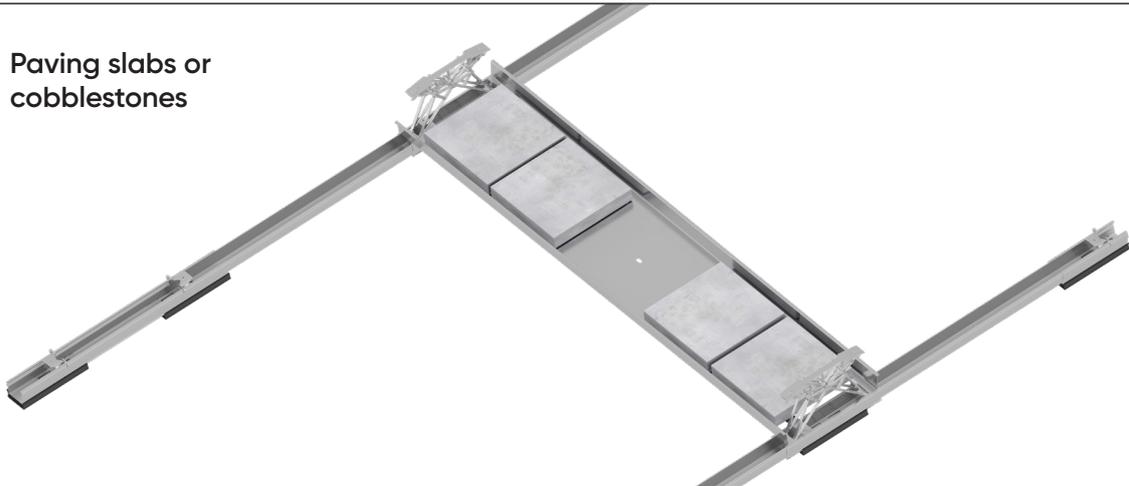


Note the maximum weight per ballast tray



Ballast must be put in the ballast tray starting from both ends in parallel at the same weight volume. Ballast must be evenly distributed.

Paving slabs or cobblestones



Gravel

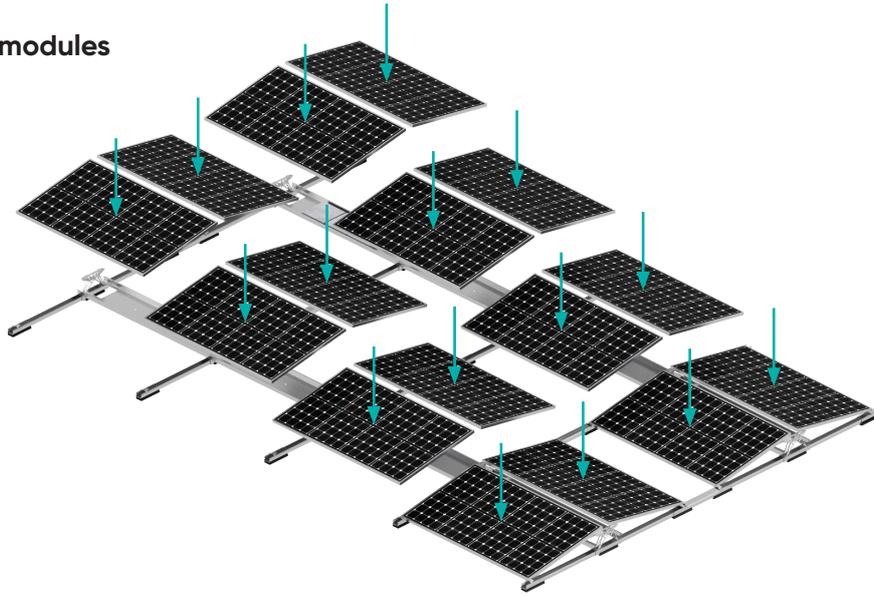


Cover the openings with paving slabs



3.8 Assembly of modules and side covers

1. Arrange modules



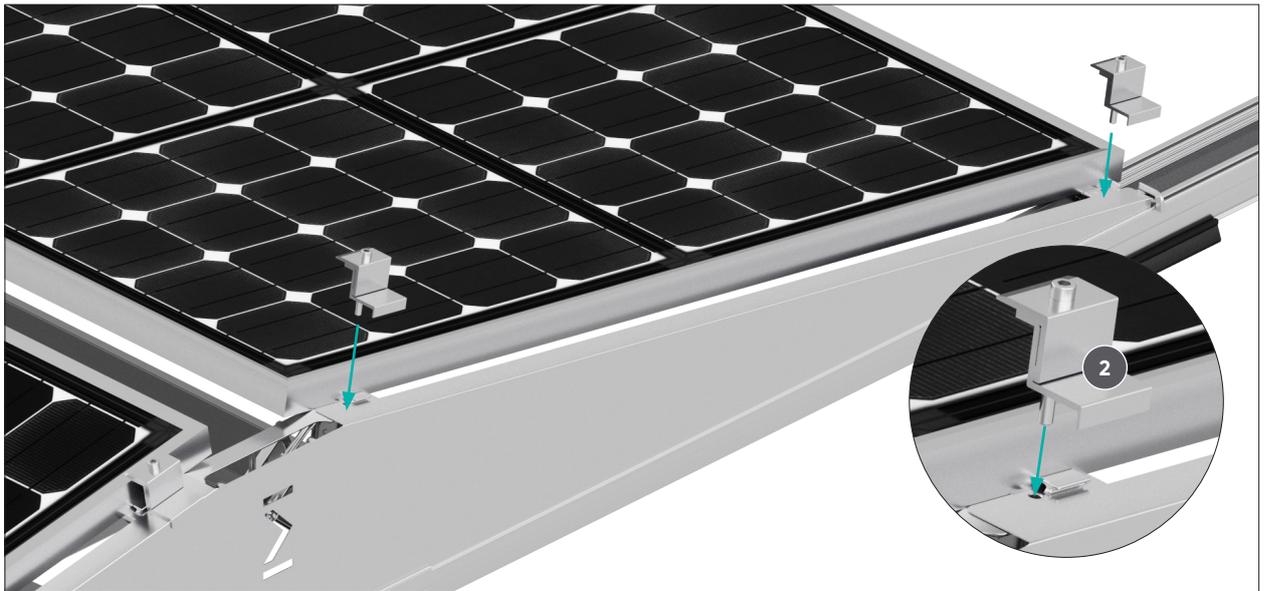
2. Hook in side deflector



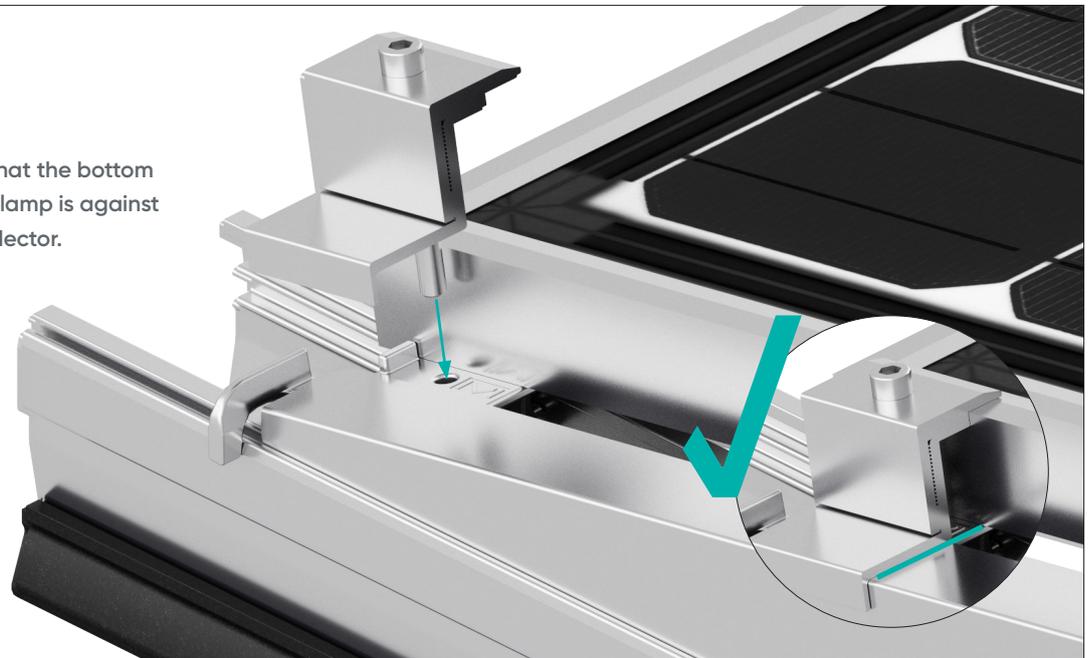
Make sure the noses of the side deflector have been placed in the correct position, to ensure a correct grip.

The side deflector is locked with the end clamp locked. See next page

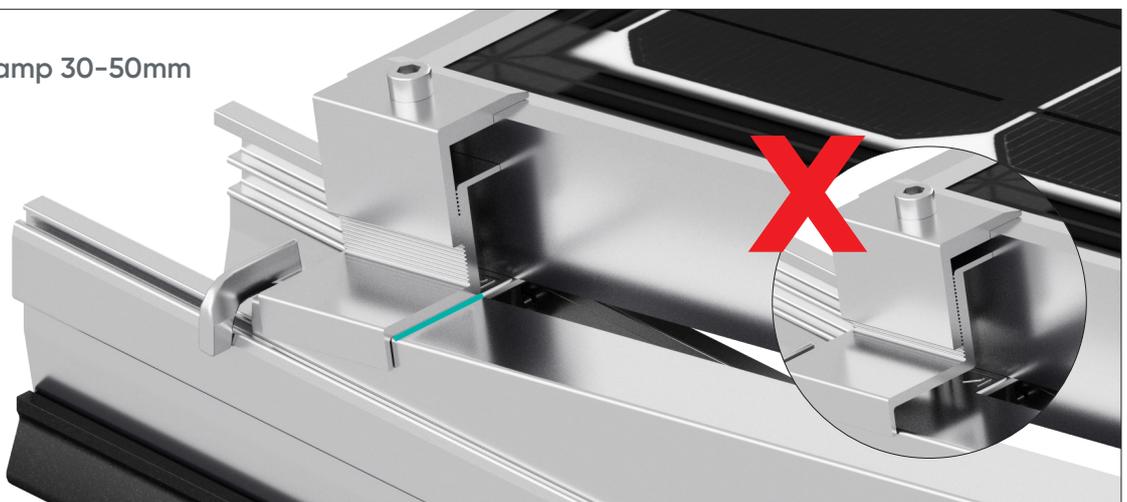
3.9 End clamp



Make sure that the bottom of the end clamp is against the side deflector.



End clamp 30-50mm



3.10 Middle clamp

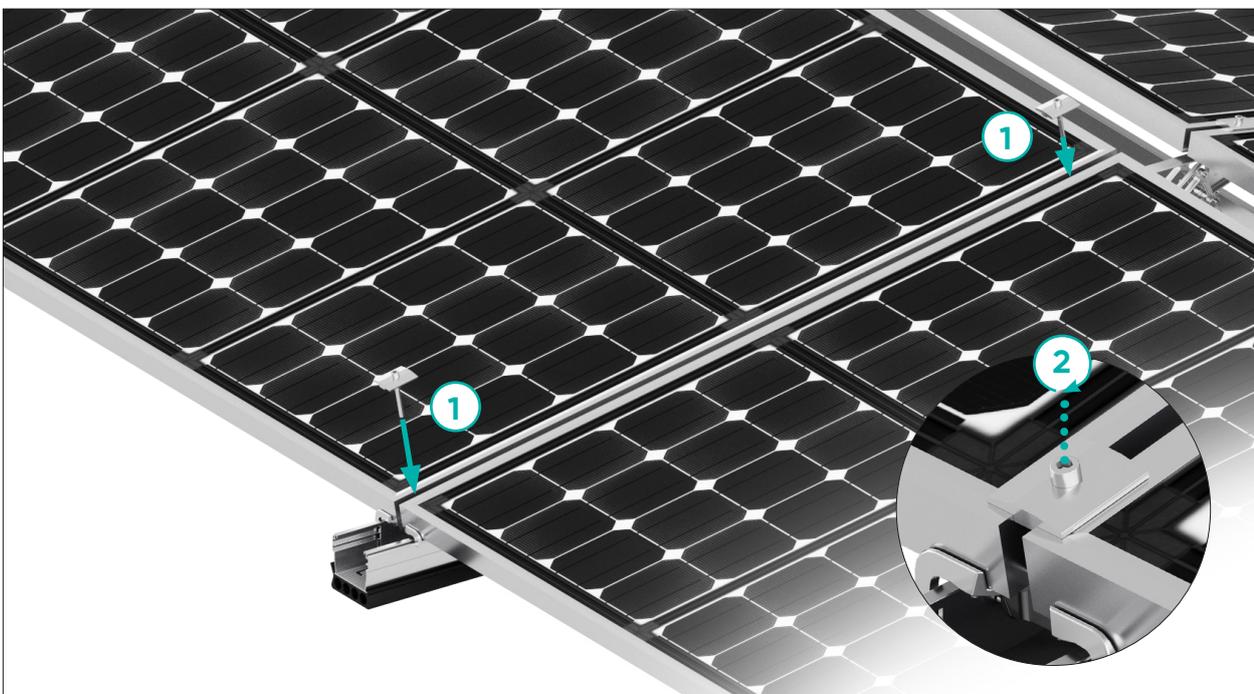
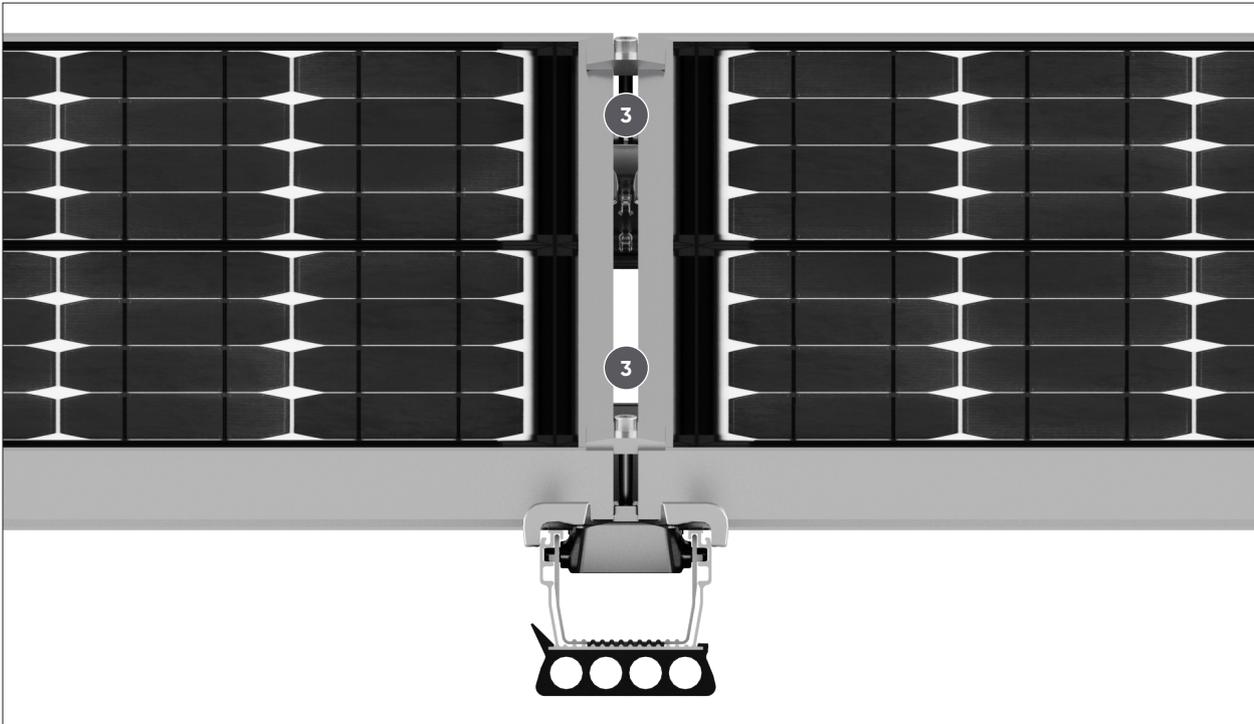
1. Insert module clamps.
2. Tighten



Torque wrench
Allen key torque ratchet wrench

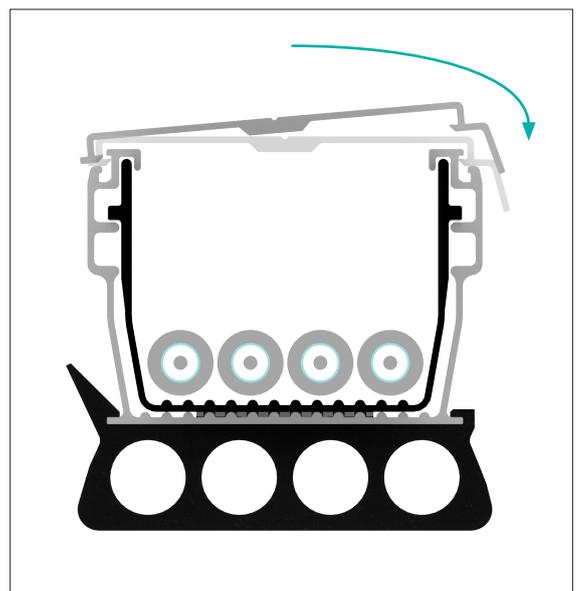
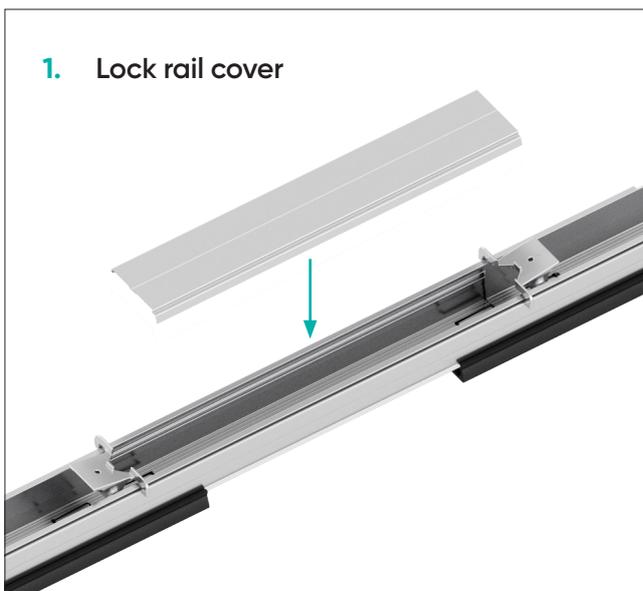


Tighten with a torque of 8 Nm.



3.11 Top rail cover

To be put only on the top cover after the cables have been passed through!





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