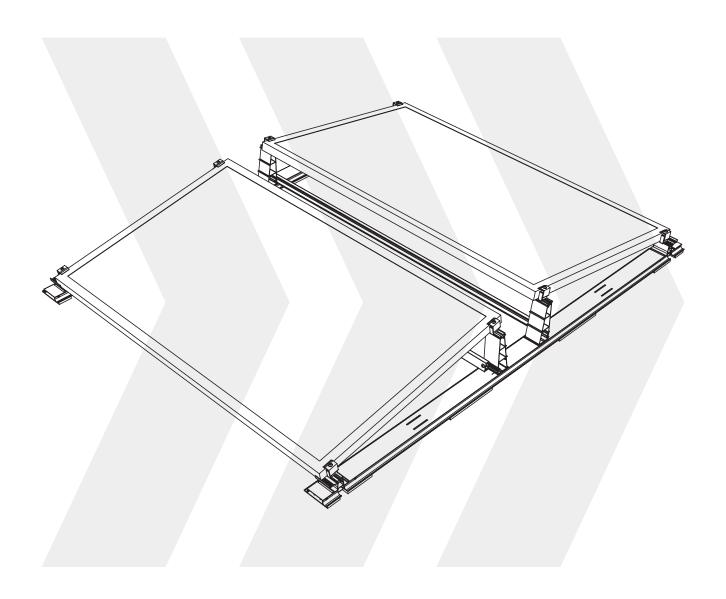
PMT



ASSEMBLY INSTRUCTIONS
PMT EVO 2.0 EW 10° / 15°

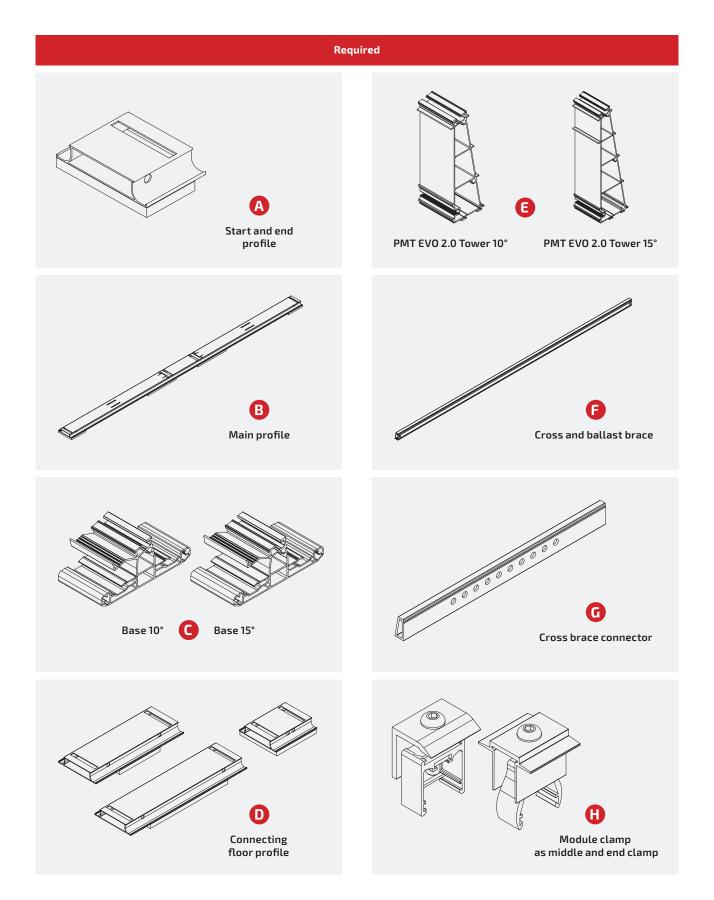
SAFETY INSTRUCTIONS	3
REQUIRED MATERIAL	4
REQUIRED TOOLS	6
ASSEMBLY	7-22



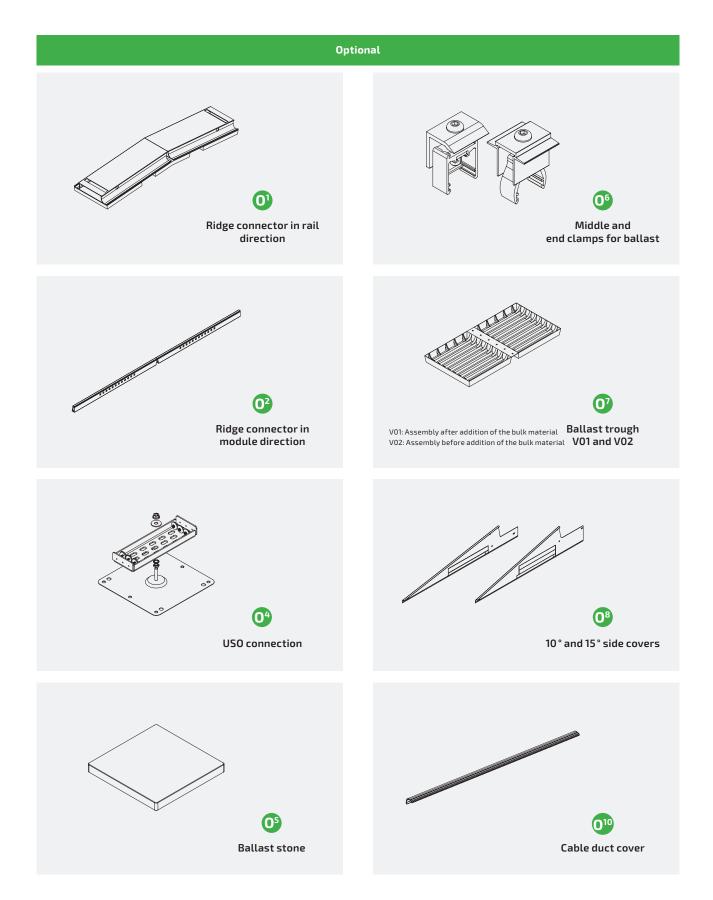
Please note that our general safety instructions must be complied with.

- **)** The current project report must be used for all specifications concerning ballasting, dimensions of the module surface and roof surface area.
- It is possible to build over a pitch change at the peak of the roof up to a roof pitch of 1.5° without additional components. The prerequisite for this is that the transition from base to connecting floor profile runs exactly above the peak and can act as a "joint".
- **>** Peaks with a gradient >1.5° must be built over using ridge connectors or be left free. Low points must not be built over. Otherwise the roof cladding may be damaged. In the event of noncompliance, PMT reserves the right to exclude liability.
- The building data provided within the project must be compared with the actual building data. Deviations shall be agreed upon with PMT, and the planning shall be adjusted accordingly. In the event of non-compliance, PMT reserves the right to exclude liability.
-) Before installation, the compatibility of the system with the roof must be determined.
- **>** Systems may only be installed and commissioned by persons who can guarantee that the work will be carried out in accordance with regulations on account of their professional competence (e.g.training or current work) or experience.
- **>** Before installation, verify whether the product meets the static requirements applicable on site. For roof systems, also check the load-bearing capacity of the roof. National and local building regulations, standards, and environmental protection regulations must be complied with.
-) For roof pitches greater than 1°, we strongly recommend that the system be connected to the roof structure in order to prevent a "caterpillar effect" caused by thermal linear expansion. For roof pitches of 5° and above, it is imperative that the system must be structurally fixed to the roof.
- Occupational safety and accident prevention regulations, corresponding standards, and trade association regulations must be complied with.
-) The module manufacturers' assembly instructions must be complied with.
-) In the event of non-compliance with our general safety instructions or assembly instructions or not using all system components, including installation and upgrading using components that have not been supplied by us, we accept no liability for resulting defects and damages and warranty is rendered void in this instance.





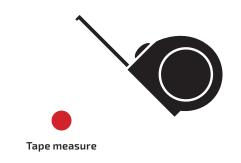






Required

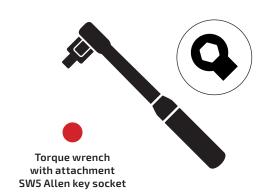
Optional

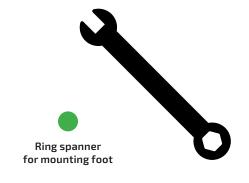






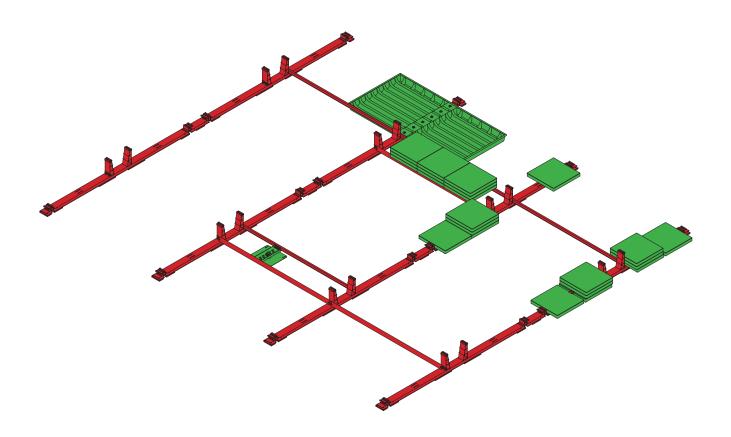








Completed in only 4 steps

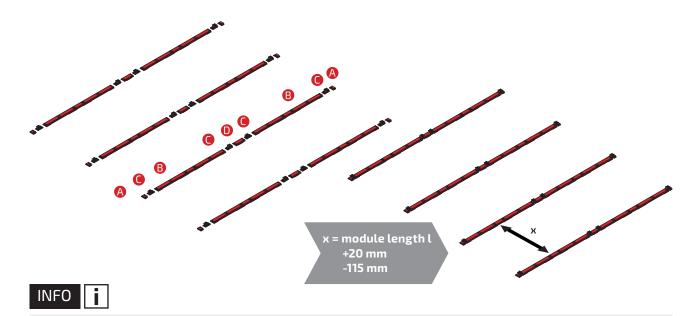


Required Optional

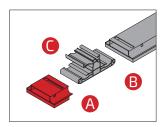


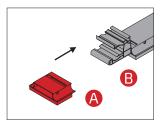
STEP

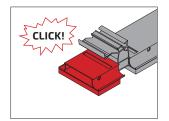
LAY OUT, CONNECT AND SET UP THE FLOOR PROFILES **A**, **B**, **D** AND THE BASE **C**

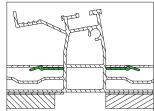


All PMT floor profiles are equipped with an 11 mm thick high-tech protective mat. This ensures unobstructed water drainage and prevents damage to the roof cladding from mechanical influences and long-term damage due to plasticiser migration. Furthermore, all profiles are equipped with drainage holes on the undersides to prevent water accumulation and frost damage.









PRELIMINARY TASKS:

Clean the roof surface and remove any interfering objects; measure the roof surface and compare the results with the project report; mark out the system corner dimensions.

SEQUENCE:

Lay out the start and end floor profile (a), base (c), main floor profile (c), base (c) and connecting floor profile (c) in succession according to the project report. The order stated above runs from east to west: (a) + (c) + (



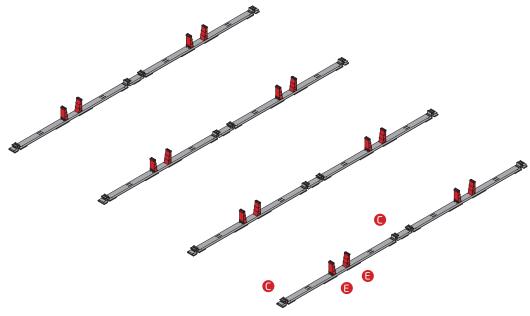
Using the assembly jig (PMT Art. No. 52215-1728) between the inner sides of the floor profile rows is helpful in this regard. Setting: module length l + 20 mm – 115 mm; Example: 1650 mm + 20 mm – 115 mm = 1555 mm

The assembly jig must always rest on the roof cladding and be placed against the outer edge of the floor profile.

Always place the assembly jig in the tower area where the cross and ballast braces will later be fastened.

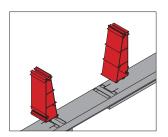
NOTE: Always check the current project report for the size / variant of the **connecting floor profile 1**. Incorrectly installed **base components** that have to be removed must be replaced with new components.

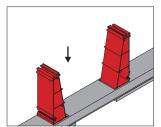


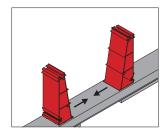


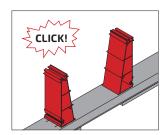


The **Tower components (e)** serve as upper support elements for the modules.





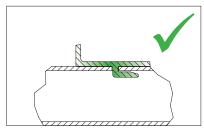




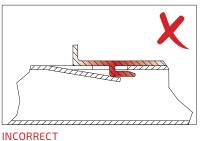
SEQUENCE:

Press the two central **tower** (a) components, with the latching lugs pointing towards the centre of the rail, vertically into the two narrow recesses of the **main floor profile** (b) and push towards the middle of the rail until the click latch engages with an audible noise.

Ensure that the slope falls towards the **base** (straight side of the **tower** facing towards the **base**). Check the snap-in connection to ensure a clean and positive-locking fit (snap-in latch must be flush with the surface).



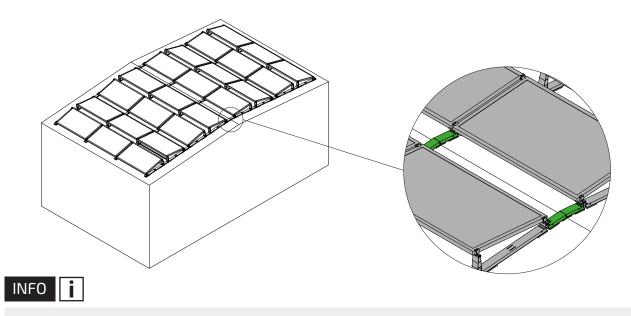




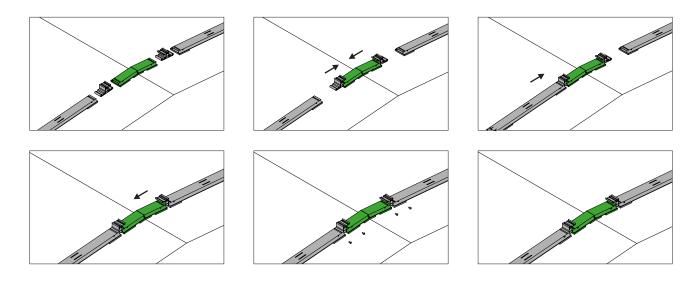
CORRECT



RIDGE CONNECTOR ASSEMBLY IN THE DIRECTION OF THE RAIL **0**¹



A pitch change / ridge on the roof can be built over up to a roof pitch of 1.5° without additional components. The prerequisite for this is that the transition from **base** to **connecting floor profile** runs exactly above the peak and can act as a "joint". For roof pitches >1.5°, the change of pitch must be covered with the **ridge connector**.



SEQUENCE:

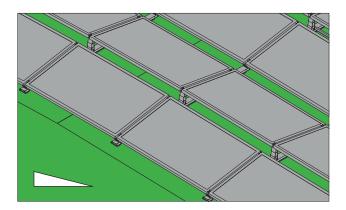
The first step is to determine the ridge line. Next, the main floor profiles are assembled and the **ridge connector** ① is installed in place of the connecting floor profiles ①. The order here is $(A \rightarrow (B \rightarrow B) \rightarrow (B \rightarrow C) \rightarrow (B \rightarrow C) \rightarrow (D \rightarrow$

NOTE:

Always check the current project report for the orientation and position of ridge connector ①.

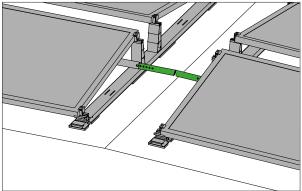


RIDGE CONNECTOR ASSEMBLY IN THE DIRECTION OF THE RAIL **O**²



Assembly without additional components

Requirements: Module positioned centrally over the ridge and a roof pitch $\!<\!1.5^\circ$

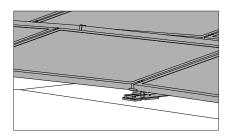


Assembly with floor rails running parallel to the ridge Ridge connector O²

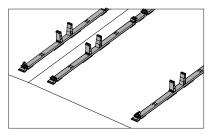




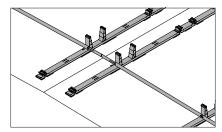
A pitch change / ridge on the roof can be built over up to a roof pitch of 1.5° without additional components. The prerequisite for this is that the uppermost module is positioned centrally over the ridge.



Building over the pitch angle without additional components (only possible with a roof pitch of up to 1.5°)



Positioning of the floor profile rows



Attaching the ridge connector O^2 and the cross and ballast braces F

SEQUENCE:

The first step is to determine the ridge line. The main floor profiles are then assembled (parallel to the ridge), as described in step 1.

The cross and ballast braces are inserted into the hook-in lugs centrally between the tower components.

In place of the **cross brace connector** (f), the **ridge connector** (i) is installed. The **ridge connector** (ii) must be ordered pre-bent to match the pitch of the roof. Ideally, the assembly should be performed uniformly on both sides to prevent one-sided stress and thus slipping.

NOTE:

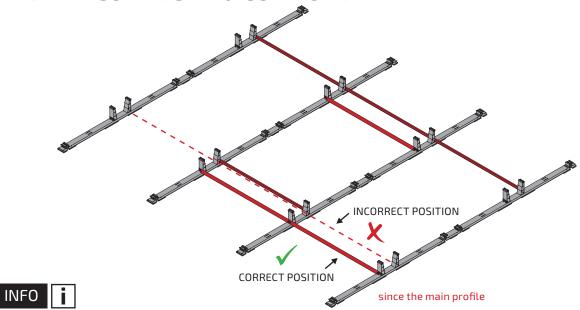
Always check the current project report for the orientation and position of the **ridge connector** \odot .

Instead of aligning the **ridge connector in the module direction** (a), the system can also be connected in a straight line without a change of pitch in order to accommodate obstacles. The assembly is identical to that of the **ridge connector** (b).



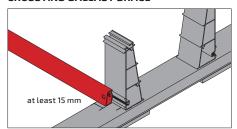
STEP

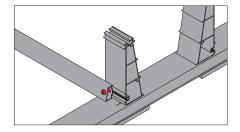
ASSEMBLY OF THE CROSS AND BALLAST BRACE CONNECTING COMPONENT **F**



The brace has two functions. When the single version is installed, it increases the static bond of the system and facilitates further work such as laying the cables and installation of the modules, since the floor profile rows are less likely to slip. In the double version, it serves to accommodate additional ballast. (see optional step 4 (green))

CROSS AND BALLAST BRACE

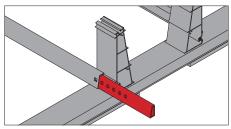


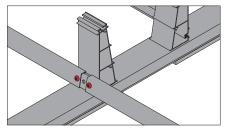


SEOUENCE:

Insert the cross and ballast brace in the hook-in lugs centrally between the tower components. Fasten the cross and ballast brace to the stop using the two Allen screws. Do not exceed a tightening torque of 10 Nm. (Please note the MAINTENANCE information.)

CROSS BRACE CONNECTOR



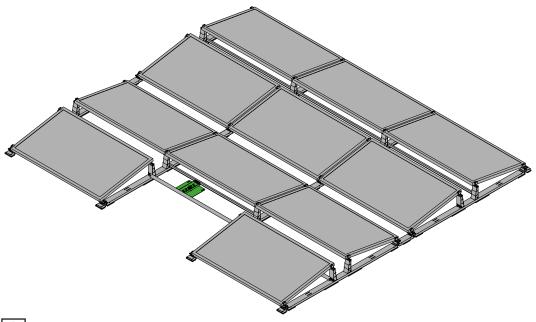


The cross brace connector (f) must be installed according to the project report. It must be inserted up to the halfway point into a cross and ballast brace (f). Slide the following cross and ballast brace (f) over the cross brace connector (f). The component combination is fastened to the tower (f) using two M8x30 screws. Do not exceed a tightening torque of 10 Nm. (Please note the MAINTENANCE information.)

NOTE: The **cross and ballast brace** must always be mounted on the tower in the direction of the outer edge of the module field. Always ensure that the **cross and ballast brace** on the **tower** has sufficient contact surface (at least 15 mm). Always check the current project report for the orientation / position of the **cross and ballast brace** and **ballast brace** are to be installed continuously in a continuous double module row, they must always be mounted on the same side of the **tower**.

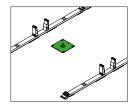


ASSEMBLY OF THE USO CONNECTION O4

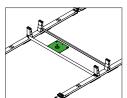




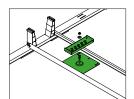
To secure the position against the thermally induced "caterpillar effect", the system can be structurally attached to the roof using a **USO connection** In addition, the **USO connection** can be used in place of ballast stones to keep the system weight and the additional load on the roof as low as possible.



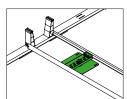
Pre-installed mounting foot



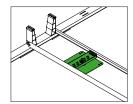
Fastening the cross and ballast braces according to specifications



Positioning and fastening the USO connection on the mounting foot



Fastening the USO connection to the cross and ballast braces, using three self-tapping screws on either side



Fully installed USO connection

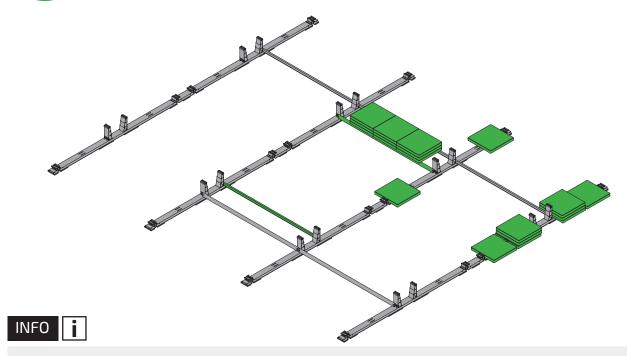
SEOUENCE:

Ideally, the attachment points of the USO connection should be mounted on to / integrated into the roof before the system is installed but, at the latest, prior to the mounting of the cross and ballast brace . The attachment point should be positioned as centrally as possible between the four surrounding towers . A flat nut and a serrated lock washer are fastened to the threaded bolt of the attachment point. The serrated lock washer later serves as a support for the USO connection . The USO connection is then pushed as centrally as possible over the threaded bolt. The lugs are directed upwards and rest against the two cross and ballast braces . The attachment point is then fixed from above with a washer and a self-locking nut and secured from below with the flat nut. The flat nut, serrated lock washer, washer and self-locking nut are included in the delivery. To fasten the attachment point to the system, three supplied self-tapping screws per side are bolted through the USO connection and into the cross and ballast braces .

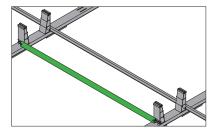
NOTE

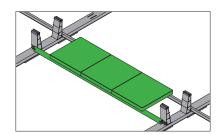
The orientation and position of the **USO** connection of the use found in the current project report, but is provided as an indication only. The exact position must be determined on site, as it depends on the course of the underlying roof construction.

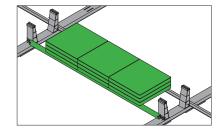




Additional ballasting of the system depends on parameters such as building height, location, environment, type of roofing. Depending on the conditions, no ballast or even more ballast may be required.







PRELIMINARY TASKS:

Mount the cross and ballast brace to both towers as described in step 3.

SEQUENCE:

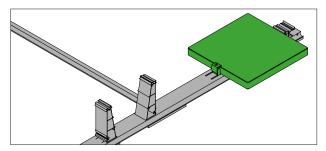
Evenly distribute the **ballast stones** placing them on the **cross and ballast braces**; maximum weight per ballast brace configuration: 135 kg

NOTE: The ballast stones must be positioned as described in the current project report.

ATTENTION !

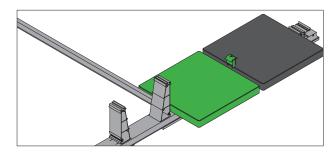
The ballasting must always be positioned strictly in accordance with the current project report. Deviating distribution or the omission of ballast elements can negatively affect the positional stability of the entire installation and pose an enormous risk. Deviations from the project report must be agreed upon with PMT and may only be performed subject to written approval. The position of the ballast elements must be selected so as to permanently prevent slipping, tipping, or wobbling. The entire surface of the ballast elements must lie on the roof surface. It is not sufficient to merely lean them. It is also possible to secure the ballast against tipping or slipping using ballast clamps. The current project report shows whether, and if so which, ballast stones are to be fixed by means of ballast clamps.

ONE BALLAST STONE ON THE MAIN FLOOR PROFILE



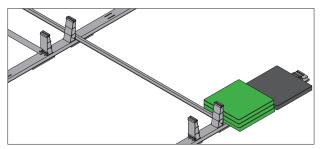
Place the **ballast stone** (a) centrally onto the **main floor profile** (b), push it to the **base** (c) and secure it using the end clamp (d).

TWO BALLAST STONES ON THE MAIN FLOOR PROFILE



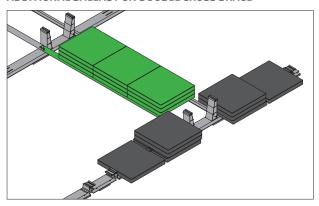
Place the **ballast stones** (1) centrally onto the **main floor profile** (3) and secure them using the **middle clamp** (1).

THREE-FOUR BALLAST STONES ON THE MAIN FLOOR PROFILE



Secure the first and second ballast stone onto the main floor profile (B) as shown in the previous illustrations. Then add the third and, if necessary, fourth ballast stone and secure them by pushing the ballast stones (B) along the main floor profile (B) towards the base (C) until they rest against the module frame.

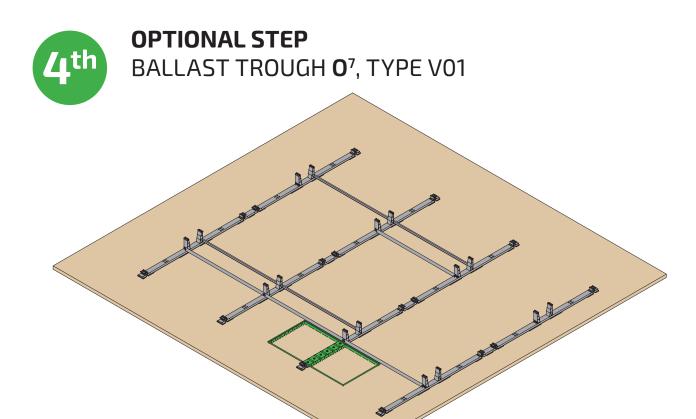
ADDITIONAL BALLAST ON DOUBLE CROSS BRACE



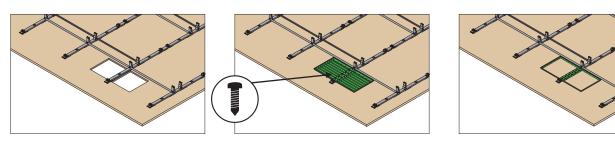
When placing the **ballast stones** ① onto the **cross and ballast brace** ①, first mount the second **cross and ballast brace** ② and then distribute the **ballast stones** ② evenly.



Check the current project report for the number and weight of the required ballast stones. The system is designed as default for stones with dimensions of 40x40x4 cm; in case of the use of stones with different dimensions, it may be necessary to make manual adjustments on the construction site.



Not all roof surfaces have sufficient load reserves to accommodate the required **ballast stones** . In particular, roofs with gravel or substrate fill are often not designed to bear additional loads. A **ballast trough** is installed to enable installation on such roofs.



PRELIMINARY WORK:

Remove gravel/substrate fill up to the inner edges of the main floor profiles (a) in the area between the base (a) and the tower (a). The excavation depth should be 50 mm from the top edge of the fill in order to ensure that the ballast trough (a) is placed over the entire surface of the residual fill or the roof surface.

If the **ballast trough** \bigcirc is placed directly on the roof cladding, make sure the substrate is clean to avoid long-term damage.

SEQUENCE:

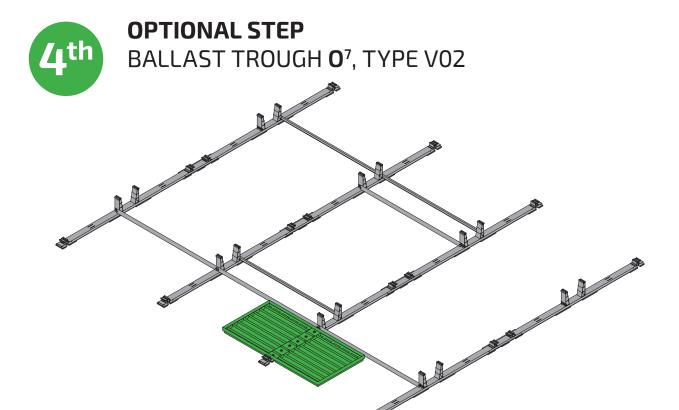
INFO

Place the **ballast trough** between the **tower** and the **base** centrally on the **main floor profile**. Check the current project report for the exact positions of the **ballast troughs**. Then fasten each **ballast trough** centrally positioned and evenly distributed on the **main profile** using the supplied self-tapping screws (6 pieces). Do not exceed the maximum torque of 5 Nm!

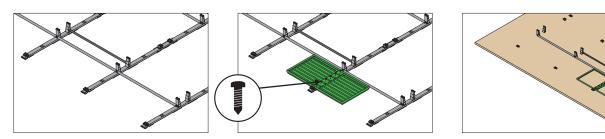
Refill the **ballast trough** in accordance with the specifications in the current project report. Ensure uniform coverage in the **ballast trough**.



Ensure minimum coverage in the ballast trough in accordance with the project report! The maximum fill height must not exceed 70 mm.



Not all roof surfaces have sufficient additional load reserves to accommodate the required **ballast stones** ①. In particular, roofs with gravel or substrate fill are often not designed to bear additional loads. A **ballast trough** ① is installed to enable the use of such roofs.



SEOUENCE:

INFO

The substructure is built directly onto the roof cladding. The **ballast troughs** ① are then positioned at the points indicated in the project report. When placing the **ballast trough** ① onto the roof cladding, make sure the substrate is clean to avoid long-term damage.

Place the **ballast trough** between the **tower** and the **base** centrally on the **main floor profile** . Check the current project report for the exact positions of the **ballast troughs** . Then fasten each **ballast trough** centrally positioned and evenly distributed on the **main profile** using the supplied self-tapping screws (6 pieces). Do not exceed the maximum torque of 5 Nm!

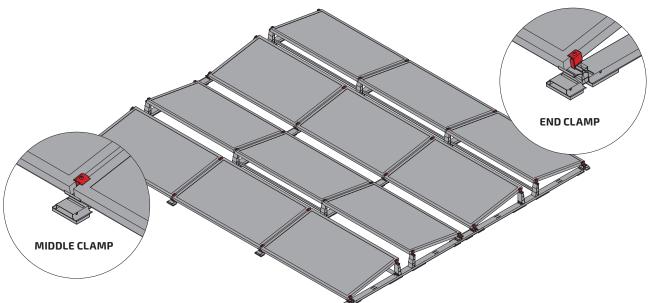
DIFFERENCE TO V01:

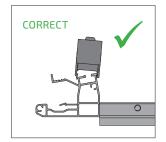
For VO2, the substructure is built directly onto the roof cladding before the fill is applied. The **start and end floor profiles** (a), the **main floor profile** (b) and the **connecting floor profiles** (d) are then covered by the fill.

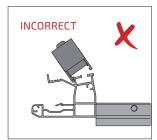


Ensure minimum coverage in the ballast trough in accordance with the project report! The maximum fill height must not exceed 70 mm.









PRELIMINARY WORK:

Place each module centrally on the **tower** and the **base**.

SEQUENCE:

Place the middle and end clamps (i) onto the side of the tower (ii) facing the base (iii) on the lower guide groove and press them onto the opposite guide groove until the click catch engages with an audible noise. Make sure that the middle and end clamps (iii) are securely in place and flush in the guide grooves.

Place the middle and end clamps \bigoplus onto the side of base \bigoplus facing the tower \bigoplus on the upper guide groove and press them onto the opposite guide groove until the click catch engages with an audible noise. Make sure that the middle and end clamps \bigoplus are securely in place and flush in the guide grooves.

Place the modules on top and make sure they are centred on the **tower** and **base** components. Make sure that the **middle and end clamps** rest flat and neatly on the module over the entire surface.

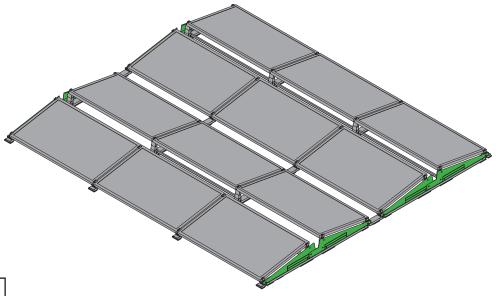
Tighten the locking screws. The module manufacturers' assembly instructions must be complied with. Do not exceed a tightening torque of 10 Nm. (Please note the maintenance information.)

NOTE:

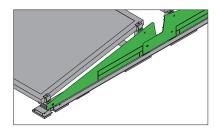
Incorrectly installed **middle** and end clamps ①, which have been removed again, must be replaced with new components. It must be ensured that the torque specification is complied with. Otherwise there is a risk of damaging components and impairing stability.

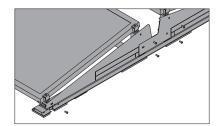


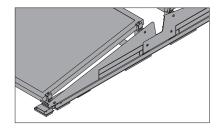
ASSEMBLY OF THE SIDE COVERS O⁸



The design of the system with side covers results in an improvement of the cp value. This has a positive effect on the required placed ballast and can reduce required additional weight on the system.







NOTE:

INFO

The **side covers** of are optional components and are not included in the routine planning. Please check the current project report for further information.

PRELIMINARY WORK:

Remove the pre-punched recesses for the **ballast stones** of from the **side covers** according to the specifications in the latest project report. They are cut using a side cutter and can be removed by bending.

Attention: When using just one ballast stone (1), remove only the lower half. When using two ballast stones (2), remove both pre-punched recesses.

SEQUENCE:

Place the two side covers with the drill holes over the screw position on the tower and base. When mounting the side covers are mounted the right way round. The upper chamfers rest on the tower and point towards the module, the lower chamfers point away from the system. Once the two side covers are in position, they are fixed with six M8x16 screws (do not exceed a tightening torque of 10 Nm).

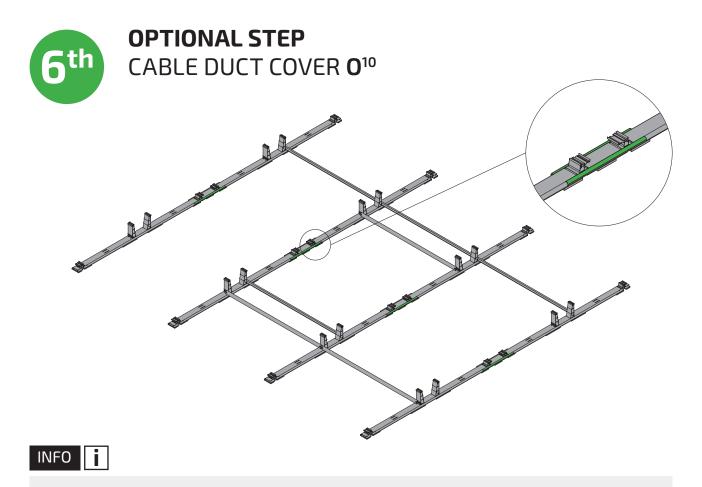
Attention: The two side covers 1 must be positioned and assembled together.



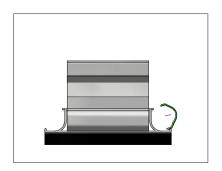
The side cover is a stability-relevant component. The omission of the side cover specified in the project report will, without exception, result in an exclusion of PMT's liability.

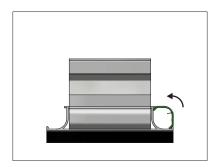
EXPERT TIP:

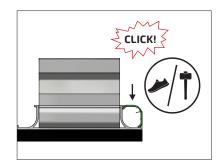
When positioning and fixing the modules, always ensure that there is a contact surface of at least 10mm at the end of each module row on the base and the tower.



In order to protect the string cables from permanent and damaging environmental influences – in particular UV radiation – all PMT floor rails are equipped with holders for cable duct covers. The cable duct covers can be mounted after each step of the system assembly.







PRELIMINARY TASKS:

Check the proper position of the string cables; ensure permanent and secure fastening of the string cables in order to prevent damage to the cables as a result of movement (wind).

As an option, additional fastening by means of MDC type 3 (12) can be executed to ensure secure positioning of the cables.

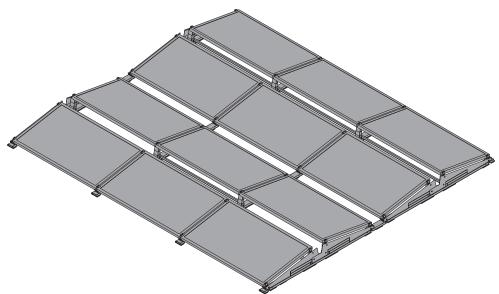
SEQUENCE:

Place the **cable duct cover** on the lower guide groove on the **main profile**; tilt the **cable duct cover** on the upper guide groove; press the **cable duct cover** of the upper guide groove; press the **cable duct cover** of the upper guide groove; press the **cable duct cover** of the upper guide groove; press the **cable duct cover** of the upper guide groove; press the



Ensure that the string cables are not damaged when attaching the cable duct.





FINAL CHECK

- Check that the entire system and all components have been installed according to the latest project report.
- Check that all screws are mounted at the intended locations and tightened to the specified torque.
- The tightening torque specifications can be found in the assembly instructions or on the packaging. ATTENTION! These specifications are relevant for safety and can result in considerable damage if not complied with!
- Check that all ballast components have been applied with the specified weights. The specifications can be found in the latest project report. Make sure that the ballast components are 100% permanently secured against slipping, tipping or wobbling.
 ATTENTION! This is relevant for safety and can result in considerable damage if not complied with!
- **)** Check that all click connections are properly engaged.

MAINTENANCE !

> The upper and lower limit of the tightening torque of the screw connections must be checked regularly within the scope of maintenance (maintenance interval at least once a year; observe maintenance protocol).

Changes and deviations from the project report must be agreed in writing with PMT - Premium Mounting Technologies GmbH & Co.KG.

Thank you for choosing PMT products!



The assembly instructions must be complied during assembly. You can find these at www.pmt.solutions/en/downloads or you can scan the QR code directly using your smartphone.

(Prerequisite: A corresponding app on your mobile device)

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