INSTALLATION INSTRUCTIONS
TRITEC PMT EAST-WEST

Mounting system for PV systems with east-west orientation on flat roofs

- Short click components in small numbers
- Optimum load distribution and lowest ballasting
- No penetration of roofing cover
- Support angle of 10°/15°
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFETY INSTRUCTIONS</td>
<td>3</td>
</tr>
<tr>
<td>REQUIRED MATERIAL</td>
<td>4</td>
</tr>
<tr>
<td>REQUIRED TOOLS</td>
<td>5</td>
</tr>
<tr>
<td>ASSEMBLY</td>
<td>6-19</td>
</tr>
</tbody>
</table>
Please note that our general safety instructions must be observed. First read through the general safety instructions and the assembly instructions.

- The building data given in the project must be compared with the actual building data. Deviations shall be agreed upon with TRIENERGY Schweiz AG, and the planning shall be adjusted. In the event of non-compliance, TRIENERGY Schweiz AG reserves the right to exclude liability.

- Before installation, check the compatibility of the system with the roof.

- Systems may only be installed and commissioned by persons who can guarantee that they are carried out correctly because of their professional suitability (e.g. training or work) or experience.

- Before installation, it must be checked whether the product meets the static requirements on site. For roof systems, the load-bearing capacity of the roof must also be checked. National and site-specific building regulations, standards, and environmental protection regulations must be complied with.

- With a roof inclination more than 2.5°, we strongly recommend connecting the system to the roof structure in order to prevent the “caterpillar effect” caused by thermal linear expansion.

- Occupational safety and accident prevention regulations, corresponding standards, and regulations of the trade association must be observed.

- The assembly instructions of the module manufacturers must be observed.

- In the event of non-compliance with our General Safety Instructions as well as with the installation and mounting of components of the competition, TRIENERGY Schweiz AG reserves the right to exclude liability.
### REQUIRED MATERIAL

<table>
<thead>
<tr>
<th>Required</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Start and end rail</td>
<td><strong>H</strong> Module and ballast clamps as middle and end clamps</td>
</tr>
<tr>
<td><strong>B</strong> Main floor profile with pre-installed base</td>
<td><strong>O1</strong> Cable duct cover</td>
</tr>
<tr>
<td><strong>C</strong> Base</td>
<td><strong>O2</strong> Ballast stone</td>
</tr>
<tr>
<td><strong>D</strong> Connection rail</td>
<td><strong>O3</strong> Lightning protection screw</td>
</tr>
<tr>
<td><strong>E</strong> EVO 2.0 Tower</td>
<td><strong>O4</strong> Ballast trough V01/V02</td>
</tr>
<tr>
<td><strong>F</strong> Cross and ballast brace</td>
<td><strong>O5</strong> Side wall</td>
</tr>
<tr>
<td><strong>G</strong> Cross brace connector</td>
<td></td>
</tr>
</tbody>
</table>
### REQUIRED TOOLS

<table>
<thead>
<tr>
<th>Required</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape measure</td>
<td>Rubber hammer</td>
</tr>
<tr>
<td>Chalk line</td>
<td>Assembly jig</td>
</tr>
<tr>
<td>Torque wrench with SWS hexagon socket attachment</td>
<td></td>
</tr>
</tbody>
</table>
In only **4 steps** to the finished system
1. **STEP**

**FLOOR RAIL A AND B, COMPONENT BASE C AND CONNECTION RAIL D TO BE LAYED OUT, CONNECTED AND SET-UP**

**PRELIMINARY WORK:**
Clean roof surface and remove interfering objects; measure roof surface and compare with planning documents; mark system corner dimensions.

**SEQUENCE:**
Lay out the components of the start and end rails A, main floor rail B, base C and connection rail D one after the other according to the planning documents. The order here starts from East to West: A → B → C → D → C → B → C → D → ... → B → C → A
The sequence is the same in each row and always ends with component A at the end of the row. Rails A and B, base C and rail D must be pushed one into the other until the Click catch engages with audible noise (detailed image 3). The snap-fit connection must be checked for proper form fit and strength. The floor rail rows must now be set up at the distance specified in the planning documents (see ).

**ATTENTION:** The base C must always point away from the rail B with the latch!

**INFO**

All TRITEC PMT floor railes are equipped with an 11 mm thick high-tech protective mat. This ensures free water drainage and prevents damage to the roofing from mechanical influences and long-term damage from plasticiser migration. Furthermore, all railes are equipped with drainage holes on the undersides in order to prevent backwater and frost damage.

**EXPERTS ADVICE**

The use of the assembly jig (TRITEC PMT item no. 1502917) between the inner sides of the floor rails is helpful here.

**Setting:** Module length l − 95 mm; example: 1650 mm − 95 mm = 1555 mm

The assembly jig must always rest on the roof cladding and be placed on the outer edge of the floor rail. Always place the assembly jig in the area of the tower where the cross braces will later also be bolted.
2. STEP
POSITION MIDDLE PART TOWER E

**INFO**

The tower components serve as upper support elements for the modules in all TRITEC PMT systems.

**SEQUENCE:**
Push the two central components **tower E** with the latching lug pointing towards the middle of the rail vertically into the two narrow recesses of the **floor profile** and push them towards the middle of the rail until the click latch engages with audible noise.

It must be ensured that the inclination falls to the **base** (sloping sides of the tower "look at each other"). The snap-in connection must be checked for a clean fit and tight fit (snap-in latch must be flush with the surface).

**ATTENTION**

CORRECT

INCORRECT
3. **STEP**

**ASSEMBLING OF CROSS AND BALLAST BRACE F AS CONNECTING COMPONENT**

The brace has two functions. When installed in a simple version, it increases the static bond of the system and facilitates further work such as pulling the cables and laying the modules because the floor profiles can slip more easily. In the double version, it serves to take up additional ballast (see Option 2).

**CROSS AND BALLAST BRACE**

The cross brace connector \(G\) must be installed according to the planning documents. This is to be pushed into a cross and ballast brace \(F\) up to the middle. Slide the following cross and ballast brace \(F\) over the cross and ballast brace \(G\). The component combination must be fastened to the tower \(E\) using two M8x30 screws. Observe tightening torque of 10 Nm. (Please note the SERVICE information.)

**SEQUENCE:**
Insert the cross and ballast brace \(F\) in the middle between the tower \(E\) components in the suspension lugs. Screw the cross and ballast brace \(F\) together as far as they will go using the two M8x30 screws. Observe tightening torque of 10 Nm. (Please note the SERVICE information.)

**CROSS BRACE CONNECTOR**

\[\text{at least 15 mm}\]

\[\text{INCORRECT POSITION}\]

\[\text{CORRECT POSITION}\]

**NOTE:** The cross brace must always be mounted on the tower in the direction of the outer edge of the module field. Always make sure that the cross and ballast brace \(F\) on the tower \(E\) has sufficient contact surface (at least 15 mm).
In order to protect the string lines from permanent and harmful environmental influences – in particular UV radiation – all TRITEC PMT floor profiles are equipped with cable duct cover holders. The installation of the cable duct covers is possible after each working step of the system construction.

**OPTIONAL STEP**
CABLE DUCT COVER O1

**PRELIMINARY WORK:**
Check proper position of string lines; check permanent and safe fastening of string lines to prevent damage to lines by movements (wind).

Optionally, additional fastening by means of Edge-Clips on the floor profile in order to guarantee a secure positioning of the cables.

**SEQUENCE:**
Place the cable duct cover 1 in the lower guide groove on the base profile 2; tilt the cable duct cover 3 over to the upper guide groove; load the cable duct cover 4 in the middle until the click catch engages with an audible noise.

**INFO**

When attaching the cable duct, make sure that the cables are not damaged.
The additional weight on the system depends on many parameters such as building height, location, environment, and type of roofing. This means that no additional ballast or high ballast is required.

**INFO**

The stones must be positioned as described on page 12.

**PRELIMINARY WORK:**
Mount the cross and ballast brace 3 to both tower 1 as described in Step 3.

**SEQUENCE:**
Place the ballast stones 7 evenly distributed on the ballast braces 5; maximum weight per ballast brace arrangement: 135 kg.

**NOTE:** The stones must be positioned as described on page 12.

**ATTENTION**

The ballasting must always be positioned strictly in accordance with the planning documents. A different distribution or the omission of ballast elements can affect the positional stability of the entire installation and represent an enormous risk. Deviations from the planning must always be coordinated with TRIENERGY Schweiz AG and only be carried out after written approval. The position of the ballasting elements shall be chosen so as to permanently prevent slipping, tipping, or wobbling. The ballast must lie over the entire surface; leaning against the ballast is not sufficient.
2. **OPTIONAL STEP**

**POSITIONING OF THE BALLAST STONE O²**

1 BALLAST STONE

Place the ballast stone centrally on the rail, push it to the base and secure it with the end clamp.

2 BALLAST STONES

Place the ballast stones centrally on the rail and secure with the middle clamp.

3 - 4 BALLAST STONES

Secure ballast stone 1 + 2 as described in point 2, apply third and possibly fourth stone module frames must be pushed in the direction of the base.

5 - 8 BALLAST STONES

Ballast stones 5 - 8 are to be positioned like ballast stones 1 - 4.

9 - 17 BALLAST STONES

When ballasting with more than eight stones, the double cross brace is placed. The additional to secure to the stones, distribute evenly on the cross brace as described on page 11.

**ATTENTION**

The number and weight of the required ballast stones can always be found in the current project report.

The ballasting must always be positioned strictly in accordance with the planning documents. A different distribution or the omission of ballast elements can affect the positional stability of the entire installation and represent an enormous risk. Deviations from the planning must always be coordinated with TRIENERGY Schweiz AG and only be carried out after written approval. The position of the ballasting elements shall be chosen so as to permanently prevent slipping, tipping, or wobbling. The ballast must lie over the entire surface; leaning against the ballast is not sufficient.
The system has been tested according to DIN EN 62561-1 (VDE 0185-561-1):2013-02 and has lightning current carrying capacity. The system can therefore be integrated into the existing lightning protection system or the system to be installed. For integration into the existing system or the system to be built, the lightning protection concept must be adapted, and an internal lightning protection system must be designed by a certified lightning protection system planner.

**3. OPTIONAL STEP**

**SCREW CONNECTION LIGHTNING CURRENT CARRYING CAPACITY O³**

**INFO**

The system has been tested according to DIN EN 62561-1 (VDE 0185-561-1):2013-02 and has lightning current carrying capacity. The system can therefore be integrated into the existing lightning protection system or the system to be installed. For integration into the existing system or the system to be built, the lightning protection concept must be adapted, and an internal lightning protection system must be designed by a certified lightning protection system planner.

**SEQUENCE:**

- Screw M8x20 screws on the holes provided for this purpose on the floor and connecting floor profiles A, B, D.
- Observe tightening torque of 10 Nm.

**ATTENTION**

All floor and connecting floor profiles must be screwed together so that the system is capable of carrying lightning currents.
Not all roof surfaces have additional load reserves for the required location ballast. Especially roofs with additional filling by gravel or substrate are often not able to absorb additional loads. The ballast trough is used to make these roofs usable.

**INFO**

4.

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

When placing the **trough** directly on the roof covering, care must be taken to ensure that the substrate is clean in order to avoid long-term damage caused by objects lying between the **trough** and the roof covering.

Place **trough** between **tower** and **base** in the middle on the **floor profile**. Then screw the **trough** by means of **floor profile** Self-tapping screws. For each trough, six evenly distributed screws are to be inserted in the middle. Observe maximum torque of 5 Nm!

Put the fill back in the **trough**. Ensure even coverage in the **trough**.

**ATTENTION**

Ensure minimum coverage in the trough according to the planning documents! The maximum pouring height must not exceed 70 mm.
4. OPTIONAL STEP
BALLAST TROUGH TYPE O4

INFO

Not all roof surfaces have additional load reserves for the required location ballast. Especially roofs with additional filling by gravel or substrate are often not able to absorb additional loads. The ballast trough is used to make these roofs usable.

SEQUENCE:
Substructure is built directly onto the roof cladding. The troughs are then positioned at the positions specified in the project report.
When placing the trough on the roof covering, care must be taken to ensure that the substrate is clean in order to avoid long-term, damage caused by objects lying between the trough and the roof covering.

Place trough between tower and base in the middle on the floor profile. Then screw the trough to the floor profile by means of self-tapping screws. For each trough, six evenly distributed screws are to be inserted in the middle. Observe maximum torque of 5 Nm!

ATTENTION

Ensure minimum coverage in the trough according to the planning documents! The maximum pouring height must not exceed 70 mm.
STEP

ASSEMBLE MIDDLE AND END CLAMPS H AND SCREW MODULES TOGETHER

The assembly can be started both with the module and with the clamp. The order is freely selectable here.

SEQUENCE:
Place the middle and end clamps H on the outer side of the tower E on the lower guide groove and press them onto the opposite guide groove until the click catch engages with audible noise. Ensure that the clamps H are seated securely and flush in the guide grooves!

Place the middle and end clamps H on the inside of the base C on the upper guide groove and press them onto the opposite guide groove until the click catch engages with audible noise. Ensure that the clamps H are seated securely and flush in the guide grooves!

Place the modules on the base and make sure that they are centred on the tower E and base C components. Make sure that the middle and end clamps H of the module are in a flat and clean position. Tighten the locking screws. The assembly instructions of the module manufacturers must be observed. Observe tightening torque of 10 Nm. (Please note the SERVICE information.)

NOTE:
Make sure that the clamps are not pressed too much and that they are not bent as a result.
The design of the system with the side covers results in an improvement of the cp value, which has a positive influence on the required location ballast and can lead to a lower additional ballast.

NOTE:
The side covers are an optional component and are not necessarily planned. This information can always be found in the current project report. Place the side cover with the screw holes over the screw positions on the tower and base and fasten with three M8x20 screws. Observe tightening torque of 10 Nm.

ATTENTION
The side cover is a component relevant to stability. The omission of the side covers stated in the project report will inevitably lead to the exclusion of liability of TRIENERGY Schweiz AG.
Changes and deviations from the planning documents must be agreed to TRIENERGY Schweiz AG in writing!

Thanks for choosing a flat roof mounting system from TRITEC PMT!!!
The assembly instructions must be observed during assembly.
This assembly instruction can also be found in digital form under
www.tritec-energy.com or directly scan the QR code with your smart phone.
(Your mobile terminal must be equipped with an appropriate app)