

## ST-GPX

## SYSTEM DESCRIPTION

Triangular mounting system with **GP-XS** “guía perforada INDEXTRUT solar. Acero Atlantis C4-M”, para instalación de placas solares.



## 1. CHARACTERISTICS

<b>Description:</b>	Coplanar mounting system on GP-XS Atlantis C4-M perforated guide
<b>System inclination:</b>	Triangular mounting on pre-assembled triangles with adjustable inclination at 25°, 30° and 35°.
<b>System orientation:</b>	Facing SOUTH, EAST OR WEST depending on the roof orientation.
<b>System materials:</b>	Aluminium, stainless Steel and EPDM.
<b>Warranty:</b>	Until 10 years depending on environmental conditions (excluding environments exposed to hydrogen sulphide). The warranty is only valid if the complete ST-GPX system is used.
<b>Compatible solar panels:</b>	
<b>Solar panels type:</b>	Solar panels with frame height between 30mm and 40mm.
<b>Solar panels orientation:</b>	Mounting orientation of portrait (vertical)
<b>Solar panel size</b>	Panel length less than 1150 mm
<b>Application area:</b>	
<b>Application area:</b>	Flat and low-slope roofs.
<b>Roof slope:</b>	Up to 240 km/h. The structure and fixing must be calculated according to local and roof conditions.
<b>Wind load:</b>	Up to 2 kN/m². The structure and fixing must be calculated according to local and roof conditions.

## 2. COMPONENTES

Quick pre-assembled clamp	Simple clamp	INDEXTRUT quick nut	Gauge for solar frame	INDEXTRUT perforated guide	Connector for GP-XS guide	Pre-assembled and adjustable triangle INDEXTRUT
KFR-SC	PGS-A	TU-RXA2	GM-A	GP-XS	EMP-XS	TRP-XS

### 2.1 Components: Clamps y gauges for mounting solar panels

Lateral position clamp		Intermediate position clamp	
<p>KFR-SC GM-A</p>	<p>DIN 6921 A2 PGS-A GM-A TU-RX A2</p>	<p>KFR-SC</p>	<p>DIN 6921 A2 PGS-A TU-RX A2</p>
Option 1: Quick clamp	Option 2: Simple clamp	Option 1: Quick clamp	Option 2: Simple clamp


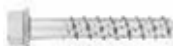
### 2.2 Components: Profiles, joints and guides for supporting structures

Longitudinal connection of profiles	Profile connection to the adjustable triangle
<p>DIN 6923 M8 DIN 603 (M8x20) GP-XS EMP-XS</p>	<p>GP-XS TU-RX A2 DIN 603 (M8x20) TRP-XS</p>

### 2.3 Components: mounting connectors for fixing accessories

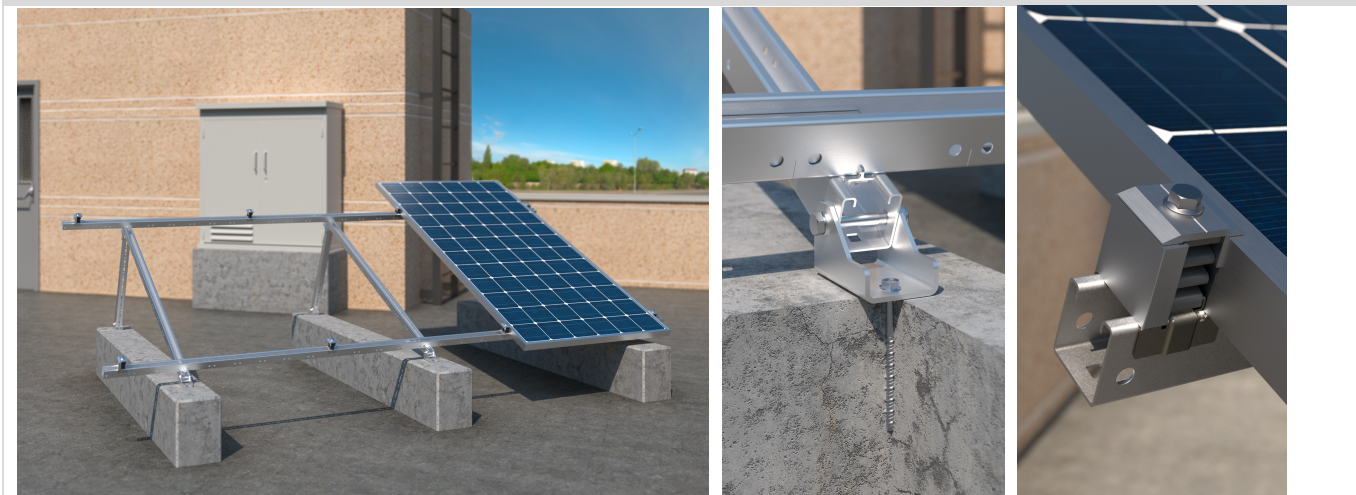
Lower connection
<p>ST-GPX THE (Tornillo de hormigón)</p>
Fixing with concrete screws

### 3. TYPES OF FIXINGS

TYPE 1					
	CONCRETE		THE Concrete screw anchor		

### 4. EXAMPLES OF APPLICATION

Example 1: Concrete cover / direct fixing in concrete with THE screws



## 5. INSTALLATION MANUAL

### ST-GPX

**Triangular mounting system with GP-XS  
“INDEXTRUT solar perforated guide.  
Atlantis C4-M steel” fixing on concrete**



Read these installation instructions before starting installation and familiarise yourself with the system components.  
Installation must only be carried out by qualified and experienced personnel.

#### Installation guidelines:

- Ensure that the roof construction is suitable for the introduction of forces at the fixing points and their subsequent transmission. The building must be able to safely receive the additional loads.
- A structural calculation must be carried out based on the local conditions at the installation site.
- The planning of the layout of the fixing points must be adapted to the requirements of the system and the roof.
- To compensate for thermal expansion, include a spacing every 12m when planning the PV system.
- The solar modules must be installed according to the manufacturer's instructions.
- Follow your local building regulations.
- Make sure to work in accordance with the health and safety regulations in force in your region, during installation and during roof work.
- Do not use the system or fixings as stairs.

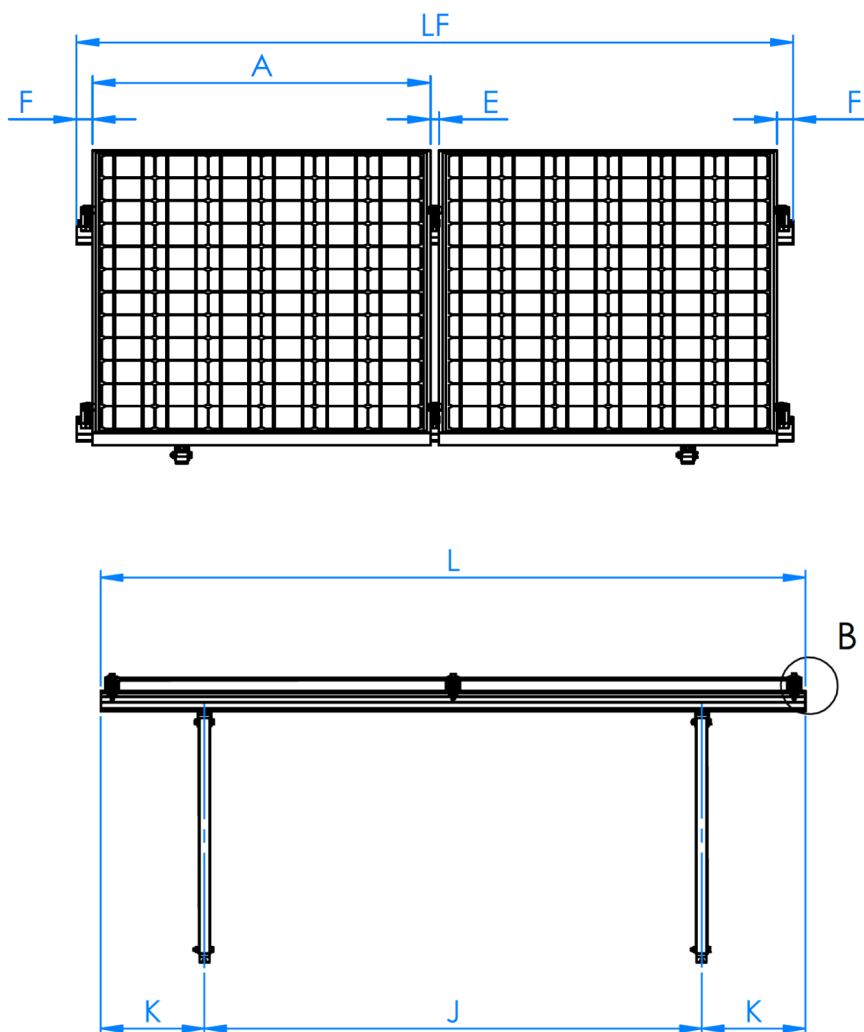


## INSTALLATION PROCESS

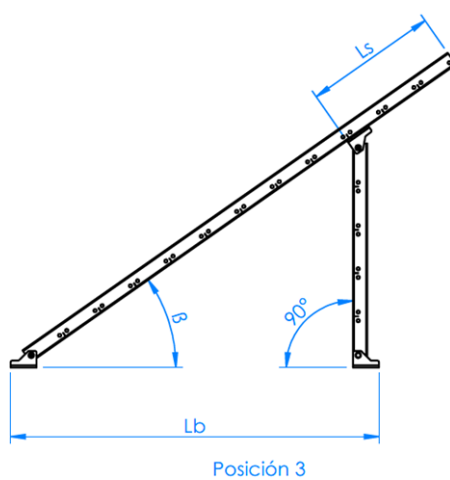
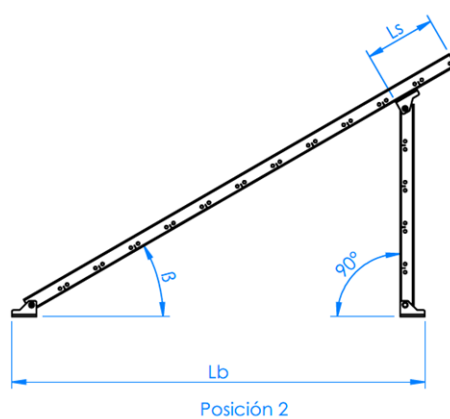
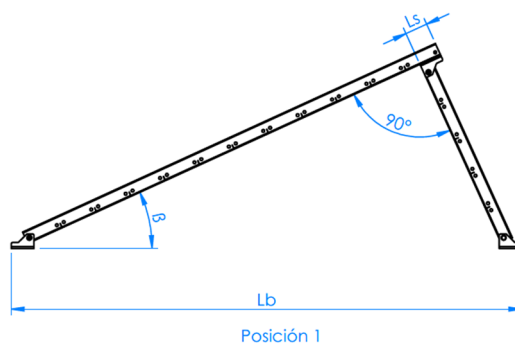
### STEP 1.- Consult installation drawing

Consult the installation drawing on the roof, where the distribution of the modules is defined as well as the structures that support them and their fixing points.

#### A. Plan view of ST-GPX system with vertical module orientation (portrait type)



A (mm)	E (mm)	F (mm)	J (mm)	K (mm)	LF
≥ 1150	26	≤ 35	1400 ÷ 1600	(LF-J) / 2	(n*B) + ((n-1) *E) + (2*F)
n: number of modules in the row.					

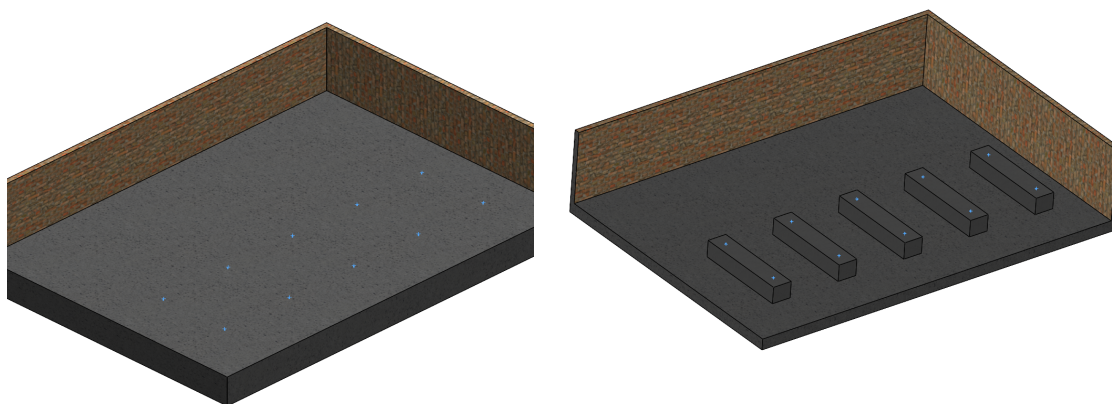
**B. ST-GPX system profile view**


Position 1			Position 2			Position 3		
$\beta$ (°C)	Ls (mm)	Lb (mm)	$\beta$ (°C)	Ls (mm)	Lb (mm)	$\beta$ (°C)	Ls (mm)	Lb (mm)
25	18	1696	30	118	1260	35	293	1052

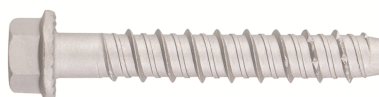
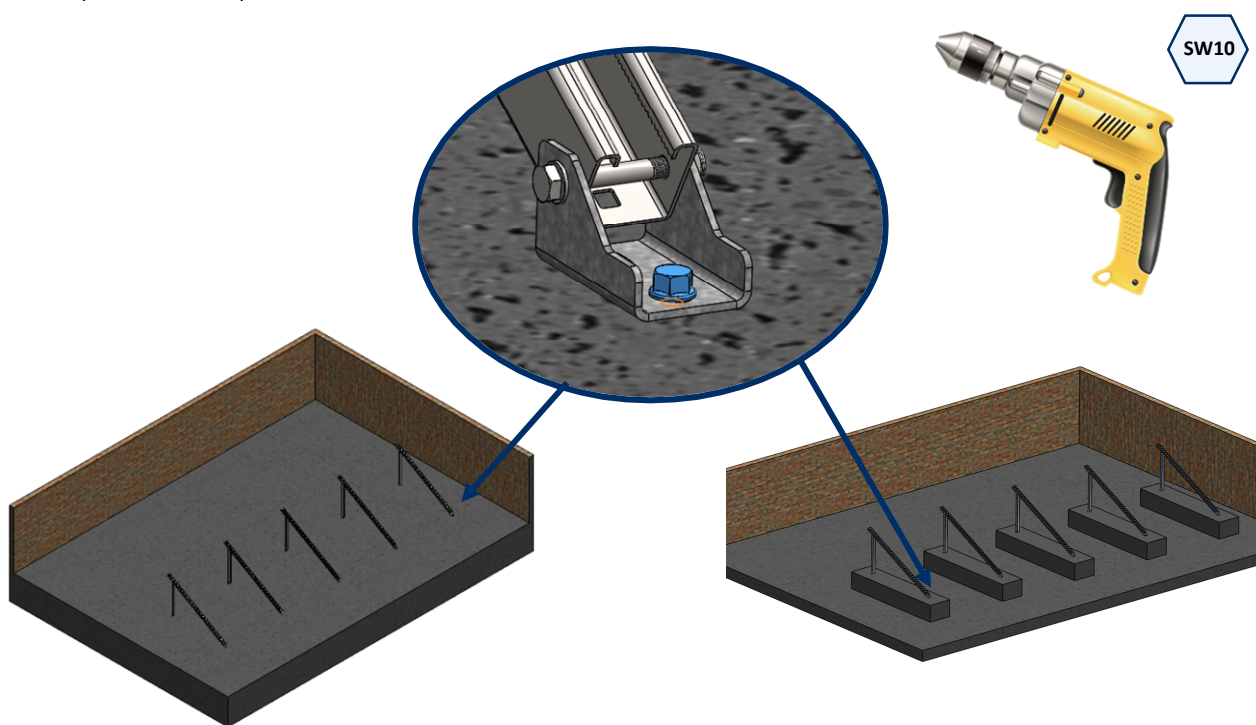
The type of fixing system and the location of its installation points shall be adapted to the needs of the supporting structures and at the same time to the needs of the roofs where they must be installed.

**STEP 2.- Perform layout on the roof**

Lay out on the roof the fixing points of each structure, checking the viability of the installation of each one depending on the chosen fixing system and the characteristics of the roof.

**STEP 3.- Installation of the triangles**

Install the adjustable aluminium triangles and fix them on the deck at the agreed points with the help of the THE concrete screw. For the installation of THE screws an electric screwdriver equipped with hexagon socket SW-10 is required, an installation speed of 1800 rpm is recommended.

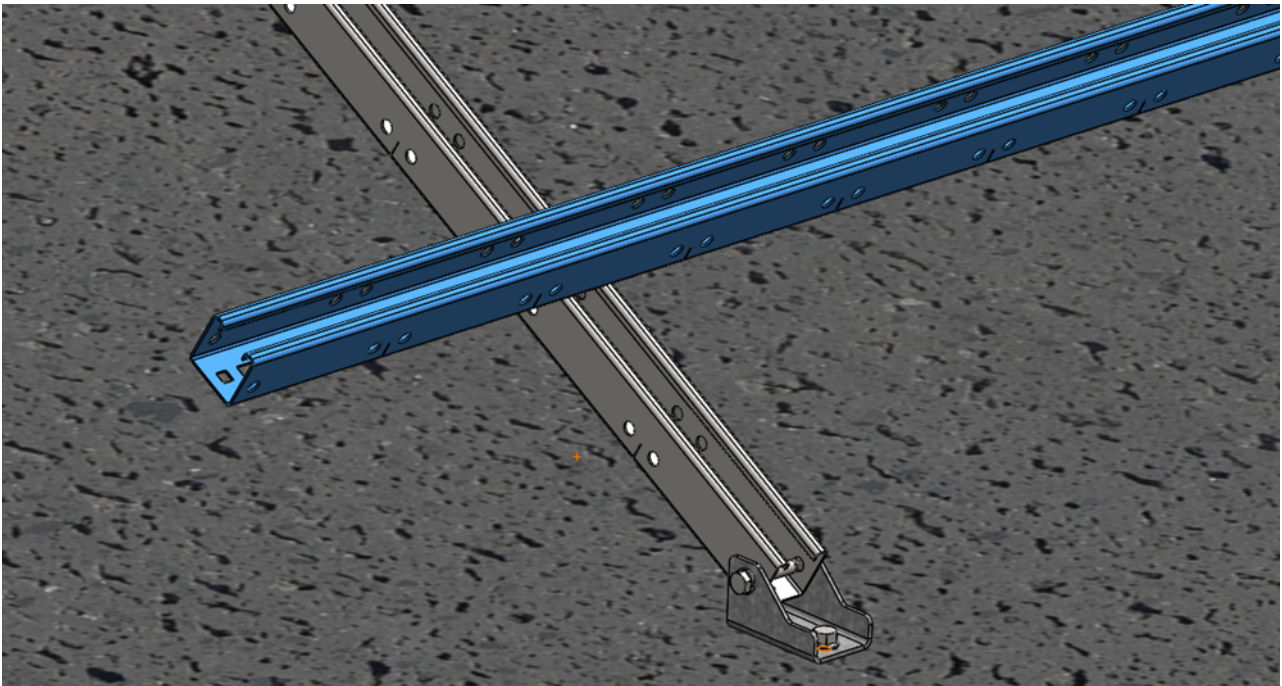


**THE**  
Concrete screw anchor

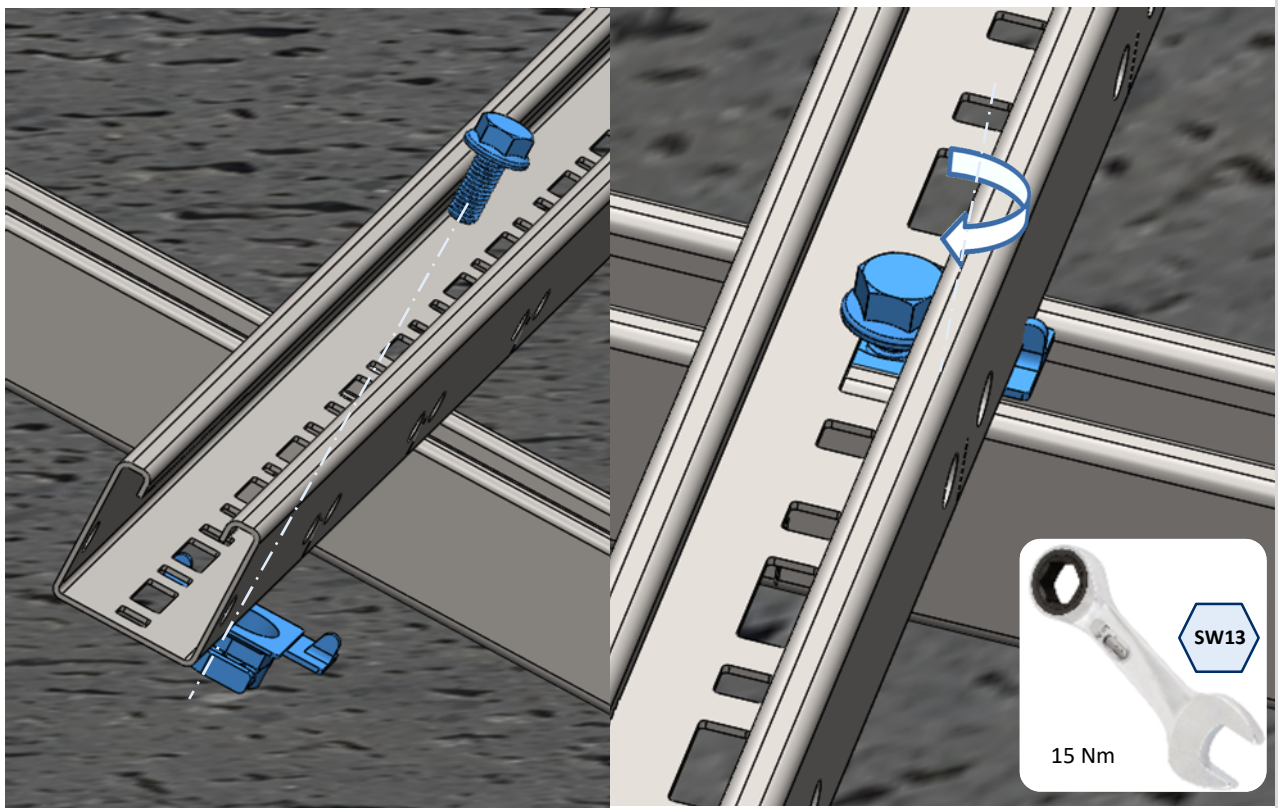
[Technical Data Sheet](#)

**STEP 4.- Installation of the profiles on the triangles**

- A.** Position the GP-XS aluminium profiles in the correct position for the installation of the panels.



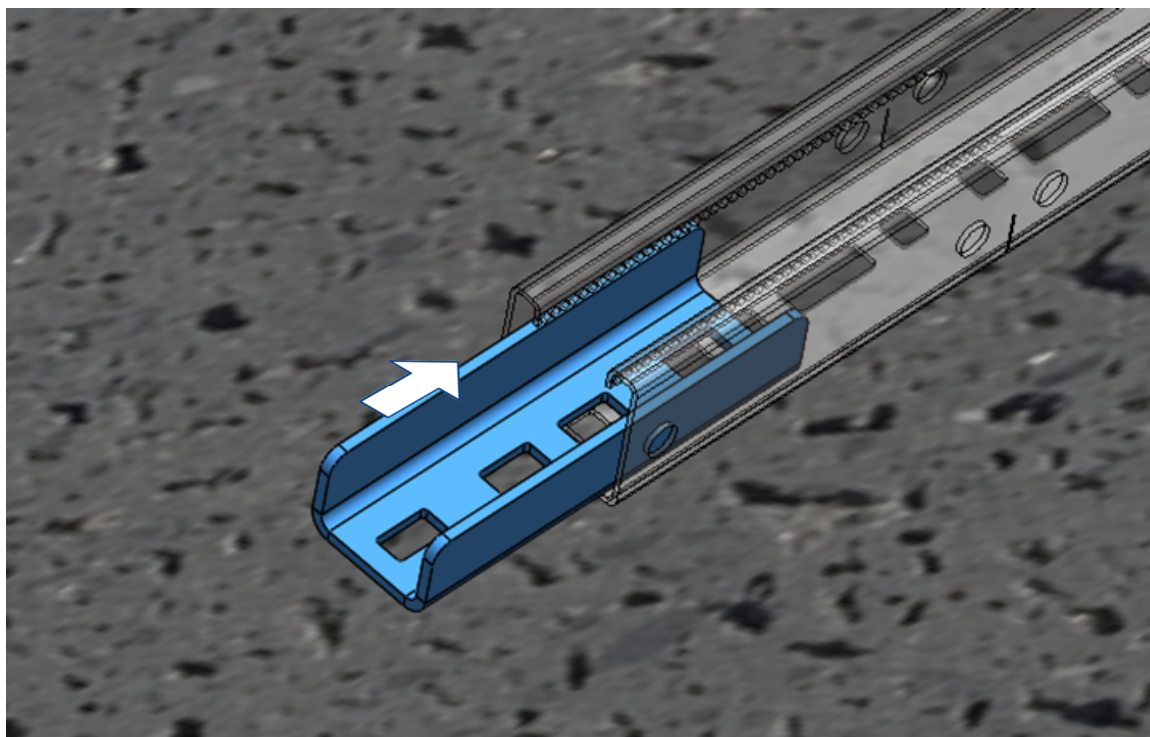
- B.** Fix the position by using a DIN 6921 M8x20 bolt and TU-RX A2 nut. Tighten to a maximum torque of 15 Nm using a SW-13 hexagon spanner.



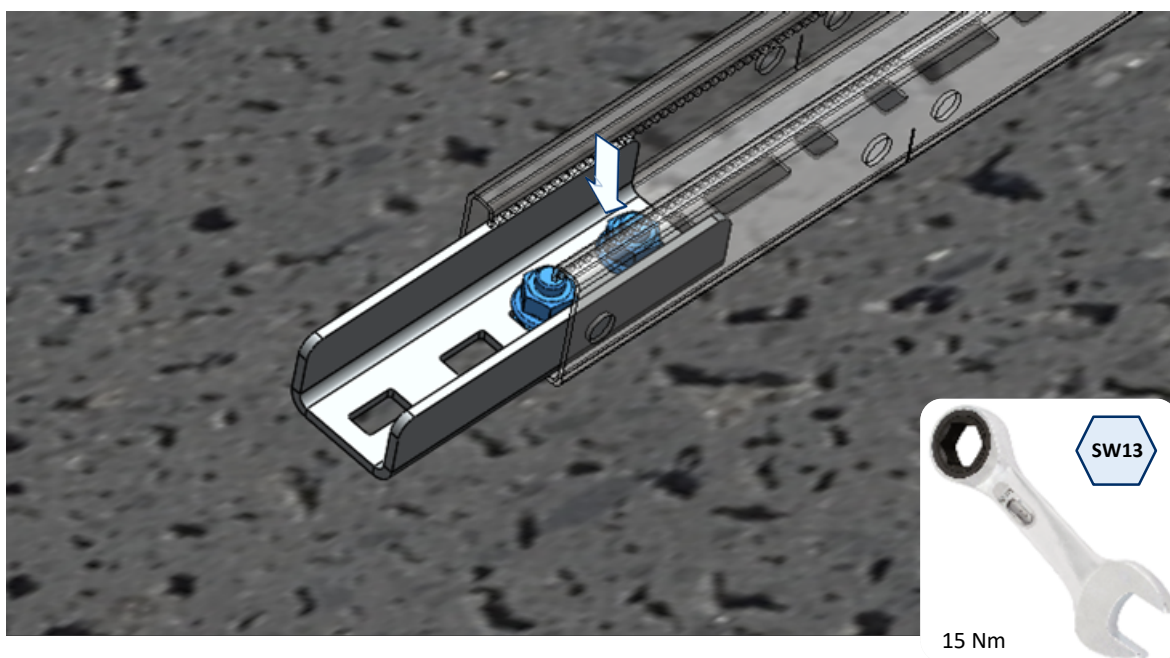


**STEP 5.- Longitudinal connection between guides**

- A.** Assemble the EMP-XS joint by inserting half of the length into one of the two GP-XS guides.

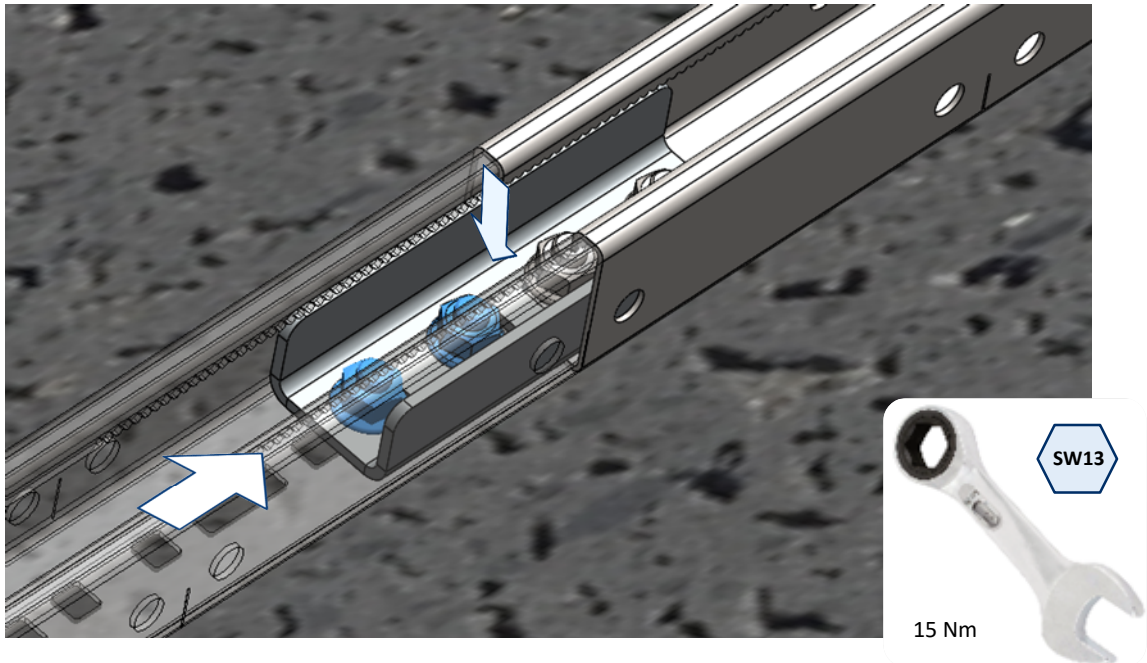


- B.** Fix the EMP-XS joint to the first GP-XS guide by installing 2 screws DIN 603 (M8x20) and nuts DIN 6923 M8, at a distance between 50 and 70mm from the end of the guide. Use a SW-13 hexagon spanner to tighten to a maximum torque of 15 Nm.

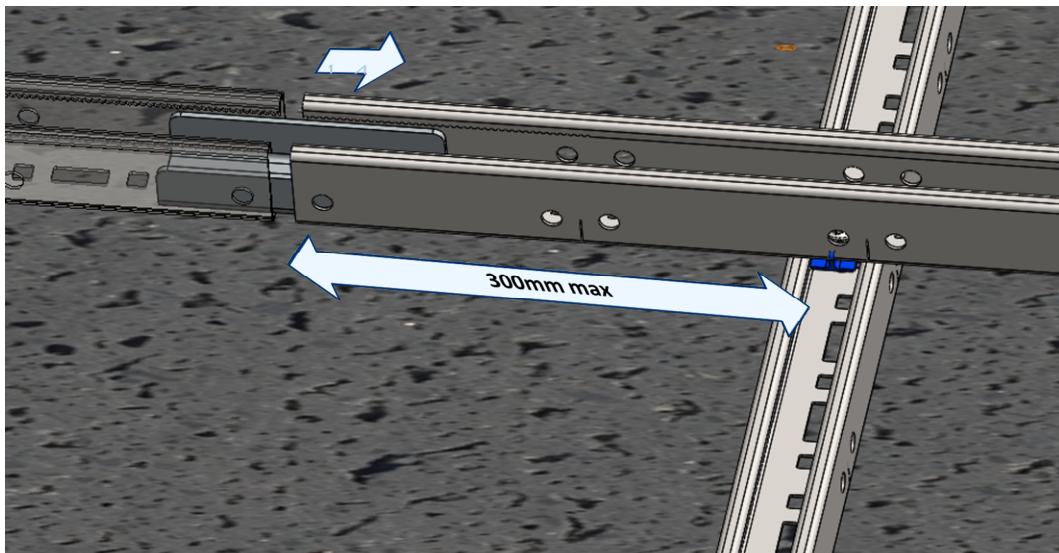


C. Insert the free end of the EMP-XS connector into the second GP-XS guide.

- **Option 1**, if a rigid connection is required: Insert the protruding part of the EMP-XS connection into the second guide GP-XS until it butts against the first guide, and then fix the connection to this second guide by installing 2 DIN 603 screws (M8x20) and DIN 6923 M8 nuts, as previously carried out on the first guide.



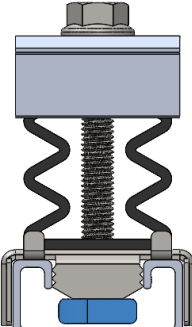
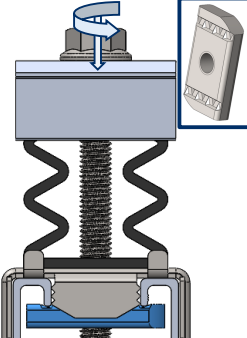
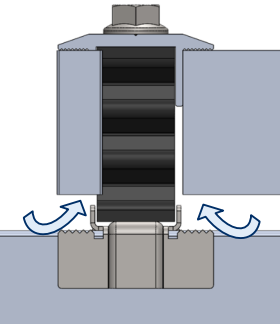
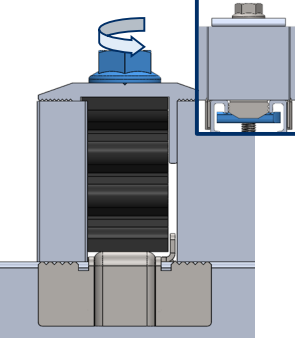
- **Option 2**, if a connection acting as an expansion joint is required: Insert the protruding part of the connection EMP-XS into the second guide GP-XS leaving a gap between the ends of both guides between 4 and 6 mm, in this case the screws are not installed to allow longitudinal displacements between the two guides.



Is recommended for this type of connection a maximum distance to the nearest fixing point of 300 mm

**PASO 6.- Pre-installation of clamps on the guides**

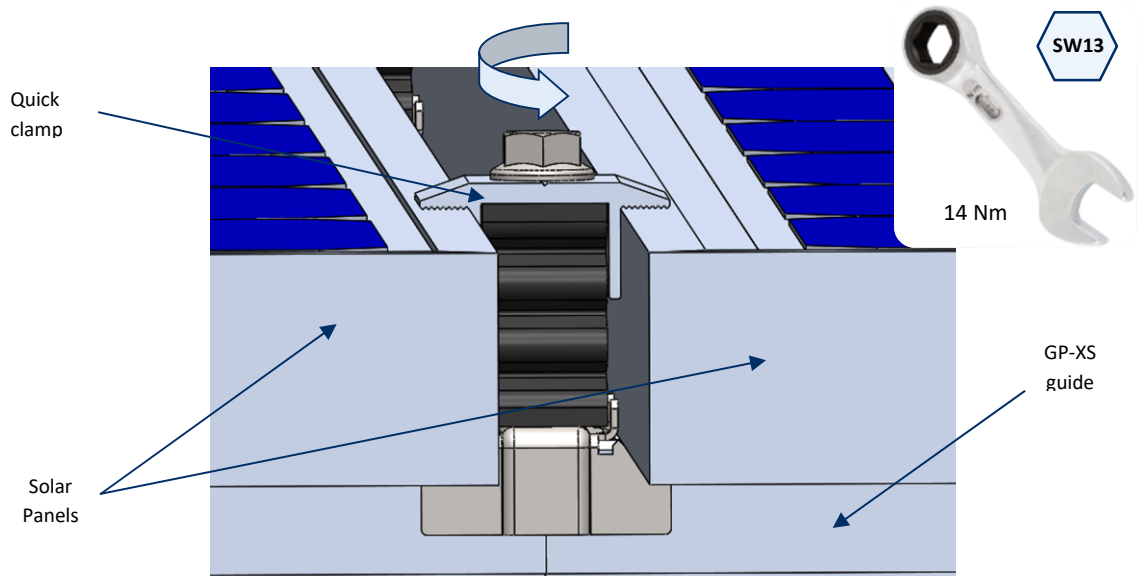
To mount the clamp on the guides, the following steps are necessary:

			
<p><b>1.</b> Place the clamp in the guide with the lower nut parallel to the guide.</p>	<p><b>2.</b> To fix the clamp to the guide, the lower nut must be turned perpendicular to the guide by means of the screw, the screw head is pressed down and turned. The nut has a serrated rail to secure the fixing.</p>	<p><b>3.</b> Insert the corresponding elements, two panels in the case of an intermediate clamp, or a panel and a gauge in the case of an end clamp.</p>	<p><b>4.</b> To fix the inserted elements it is necessary to turn the screw until they meet the guide. Check that the lower nut remains perpendicular to the guide.</p>

Type of clamp depending on its position:

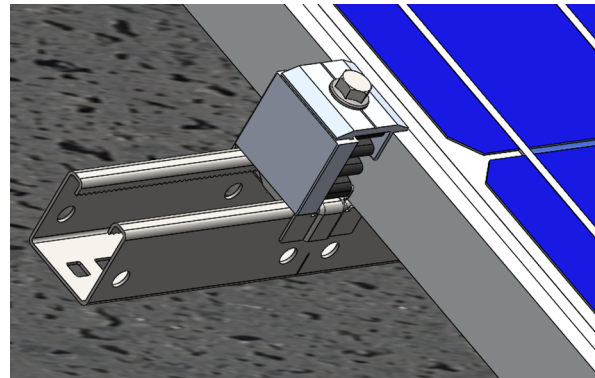
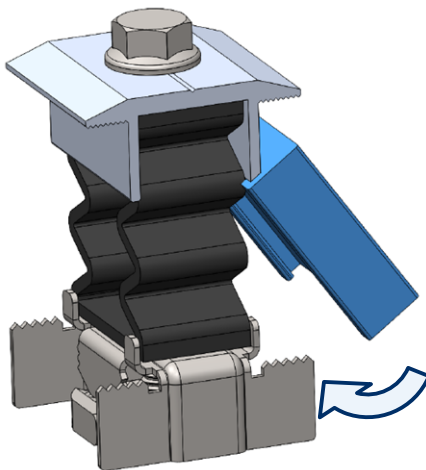
**A. Intermediate clamp**

- The intermediate clamp is used when passing from one module to another within the same row, fixing both panels to the structure. This assembly is carried out by means of the screw included in the clamp. A tightening torque of 14 Nm must be applied.



**B. Lateral clamp**

- Prepare 4 KFRSC3050 quick fixing clamps to be mounted at the ends of each row of panels. Each of these clamps is fitted with a GM-A gauge, mounted as shown in the figure:



The chosen gauge size must be equal to the frame height of the solar panels to be installed.