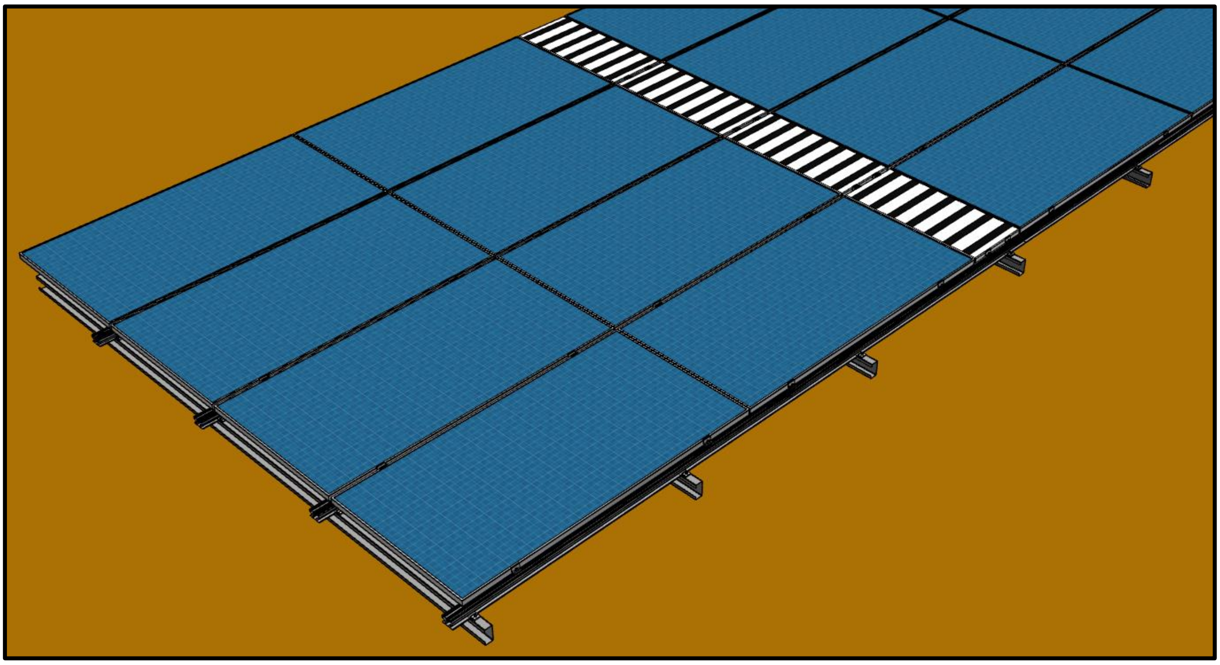
`www.axestruct.com VAT no.: 4470284136 Reg. no.: 2018/528173/07

Installation Manual

IM_AXE_RT_IR

Flush Mount Roof Top Inroof System



Declaration

- Only the highest quality components are used in the mounting system in order to ensure a trouble-free operation of your solar power system. The following information explains the proper setup of the Axe Struct inroof mounting system flat on a steel substructure.
- Any unique structural features must be documented so that the unique features of the roof can be considered when planning the layout.
- Always fasten the bolted connection by turning the bolt head. Do not turn the nut, just hold it.

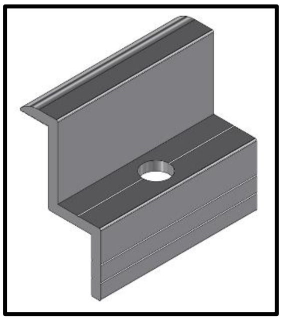
Contents

① Components

End Clamp

AXE_AL_CE_AP

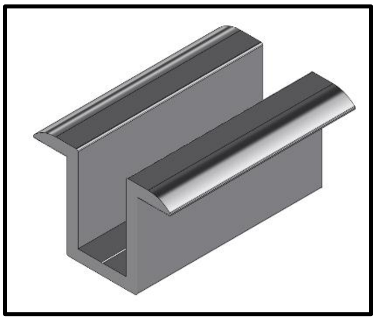
For PV modules with 30mm, 35mm and 40mm frame heights



Mid Clamp

AXE_AL_CM_AP

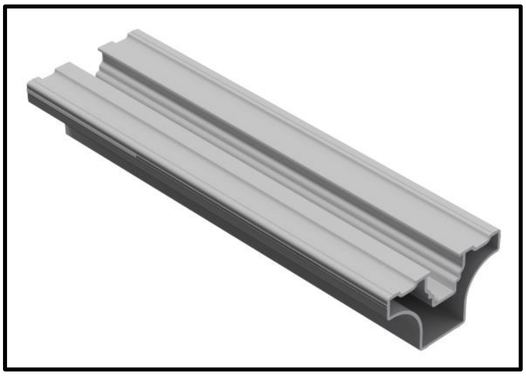
Clamping down any framed PV modules



Rail Splice

AXE_AL_EX_45_80

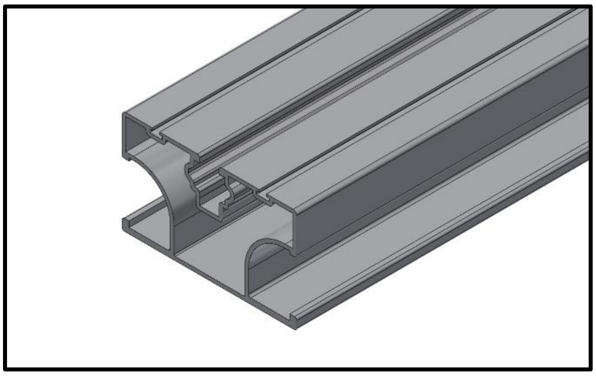
Extending Rails



Rail

AXE_AL_L_R_45_80

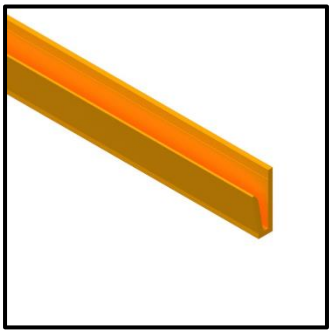
2 to 6.6m lengths



U_Gasket

AXE_PT_UG

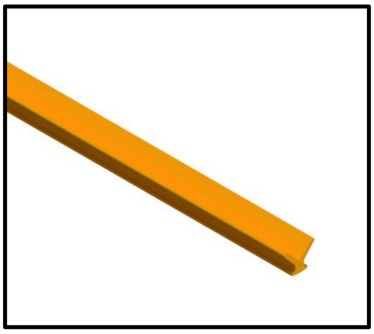
Panel Waterproofing Gasket



Y_Gasket

AXE_PT_YG

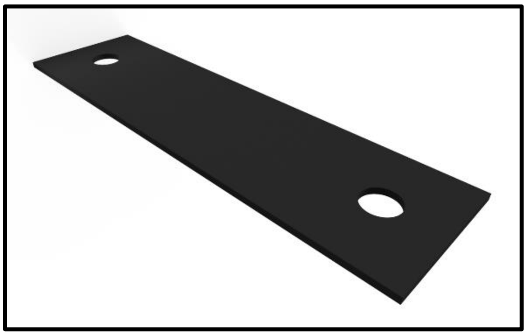
Rail Waterproofing Gasket



Isolation Pad

AXE_PP_ISO_98

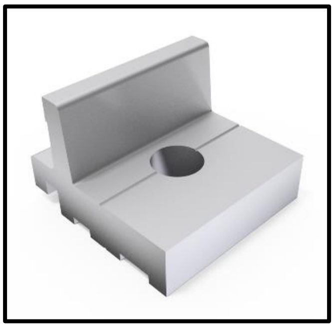
Isolation between rail and rafter



Rail Clip Roof Mount

AXE_AL_CP_RM

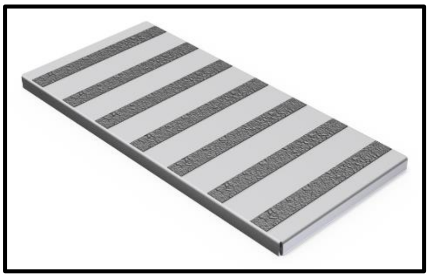
Roof access Walkway Panels



Walkway Panel

AXE_AL_WW

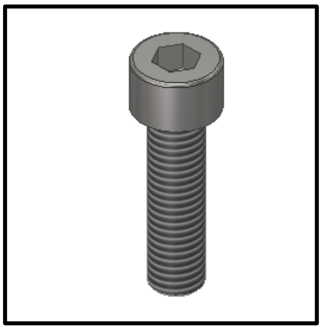
Roof access Walkway Panels



M8 Hex-cap Screw

AXE_SS_CS_8

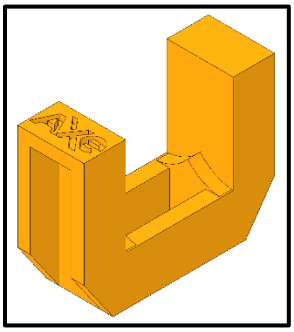
PV module or Bracket connection



Nut Stopper

AXE_PP_NST_8

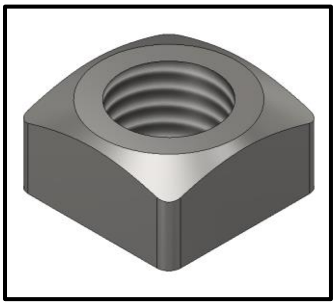
Guiding M8 Square nut into position



M8 Square Nut

AXE_SS_NSQ_8

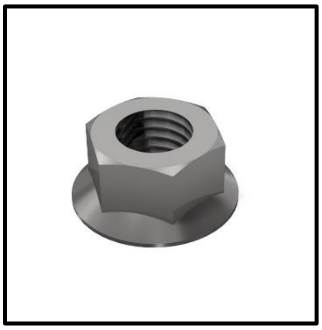
PV Module connection to Rails



M8 Hex Flange Nut

AXE_SS_NHF_8

PV module or Bracket connection



Self Drilling Tek Screw

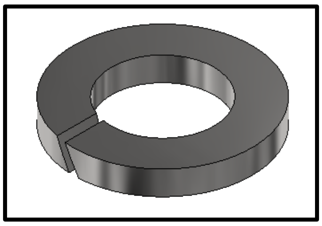
AXE_GS_ST_6.3

Bracket connection

M8 Spring Washer

AXE_GS_WS_8

PV module or Bracket connection



Seizing (Galling) Prevention

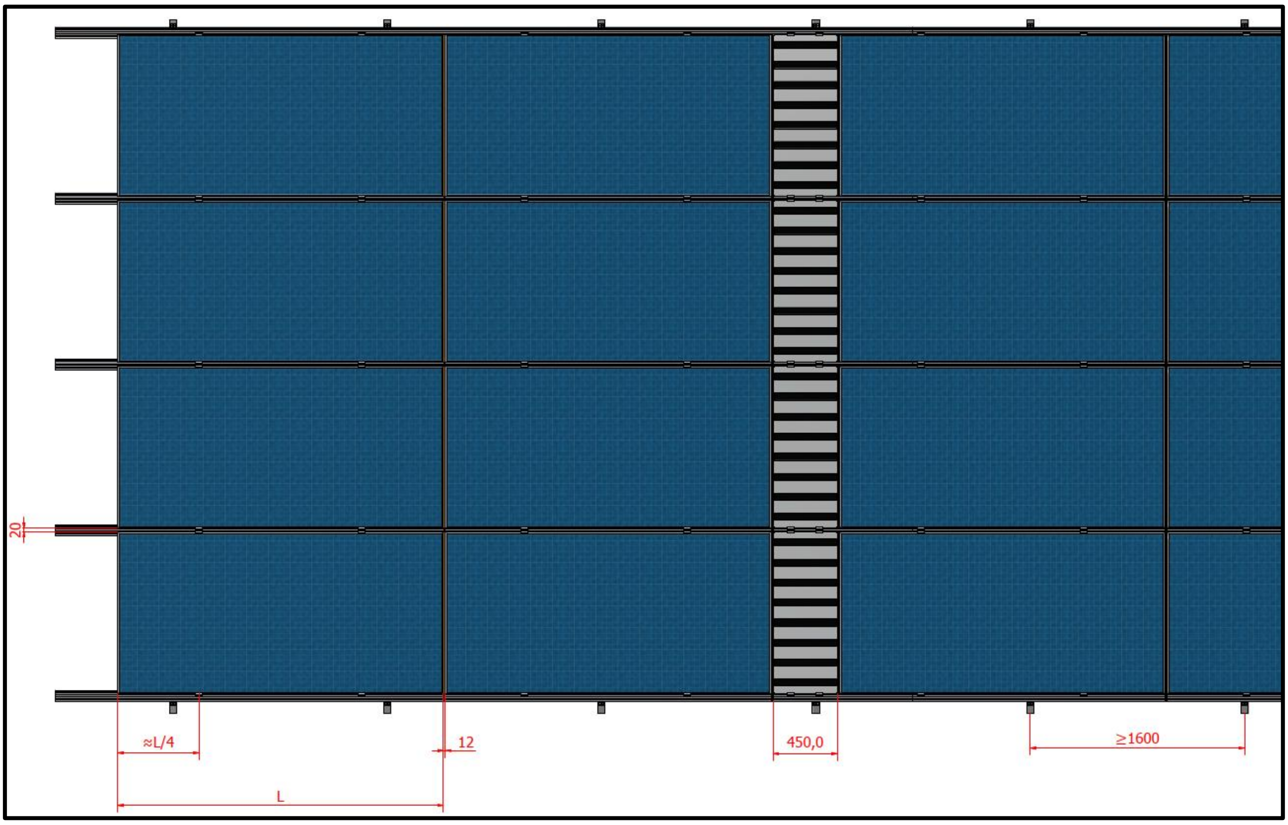
It is recommended that Copper Slip paste is applied in all threaded connections, specifically Stainless-Steel fasteners. This will prevent fasteners from seizing and promote good practice. A further step to prevent seizing is to tighten fasteners at low rpm, without interruptions and apply steady pressure.

② Layout positioning

The structural stability of the PV system must be verified before installation. The building must be able to support the additional weight safely.

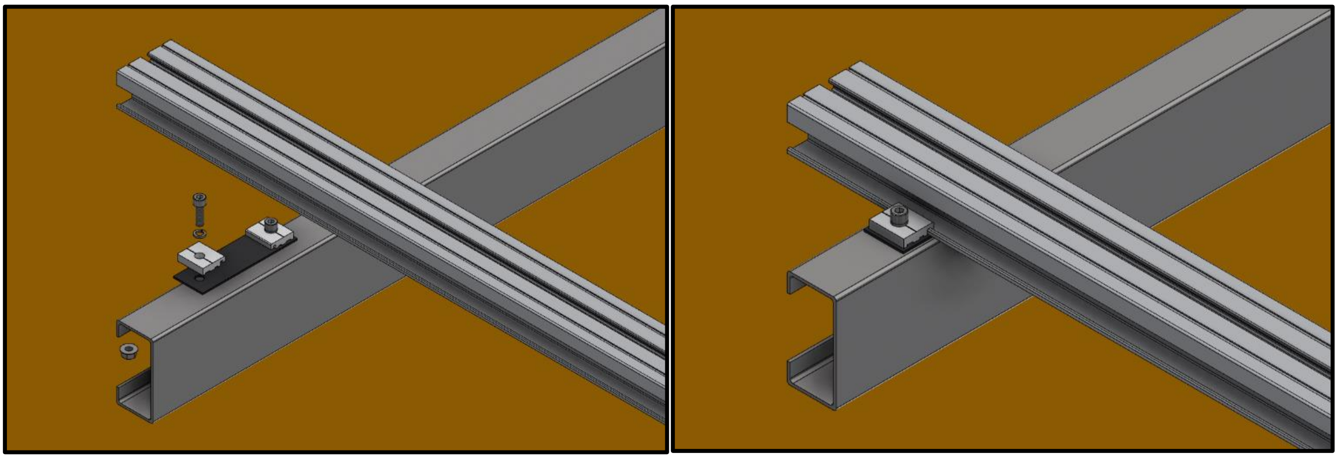
Bracket span varies per selected PV module and site conditions. The distance must be determined by structural analysis.

A minimum distance of 20 mm must be kept between PV modules. Mid Clamps can be used as spacing to maintain this distance.



③ Mounting Rails

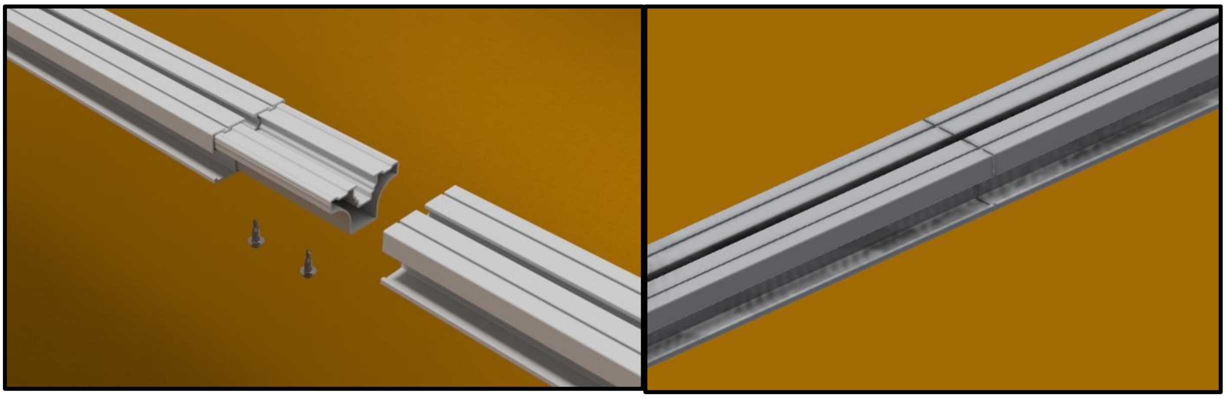
Position Rails on top of the Isolation Pads and place on the Rafters. Connect Rail Clips to rail and line up with holes drilled on-site on Rafters. Use M8x30 Hex Cap Screws, M8 Spring washers and M8 Hex Flange Nuts to tighten connection at 18 N.m. Spring washers are added to each connection configuration to ensure the connection will not loosen over time.



The rail spacings are dependent on the dimensions of the PV module used. PV module installation manuals indicate supporting requirements.

Rail Joining.

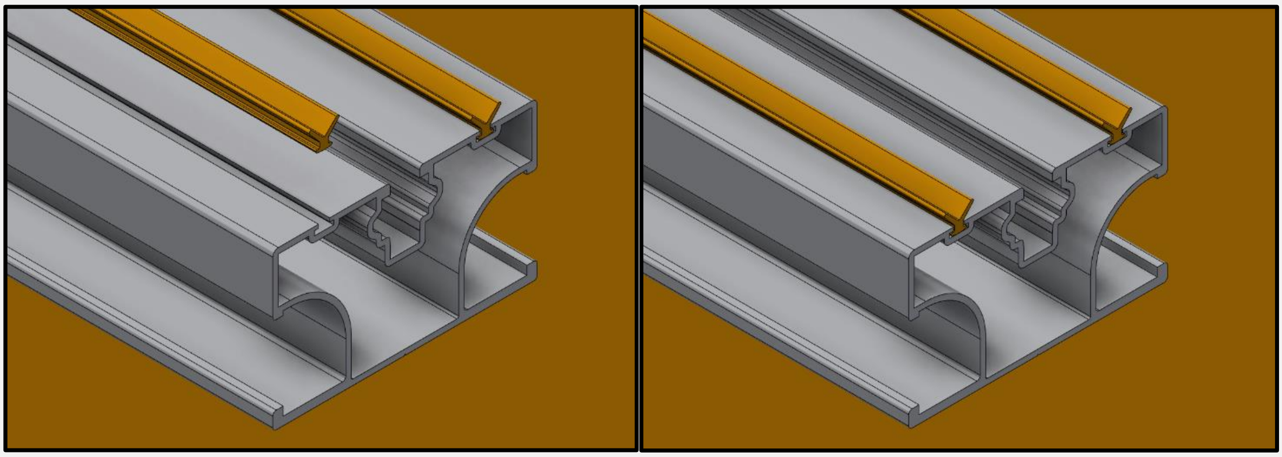
Mark the centre of the rail Extension 45x80 (rail Splice) with a Marker. Slide the extension into the first rail up until the marker. Secure from the bottom with a 6.3mm Tek Screw to keep the rail extension(splice) in place. Slide the second rail over the fixed extension part until firmly against the first rail. Drill in the second 6.3mm Tek Screw for the final step in the rail splicing.



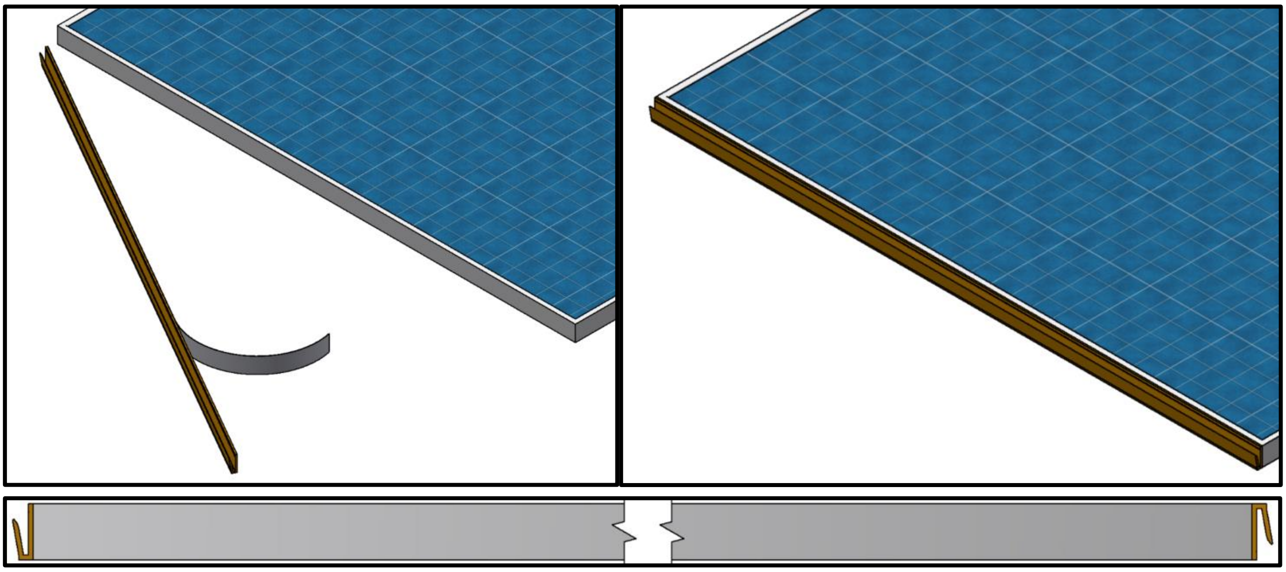
④ Gasket Installation

Y-Gasket insertion

Window-glass gasket technology is used to ensure a watertight PV module Inroof solution. These Y-Gaskets are inserted into the Rail Profile from above. PV modules are laid onto these Y-Gaskets which effectively seal the structure.



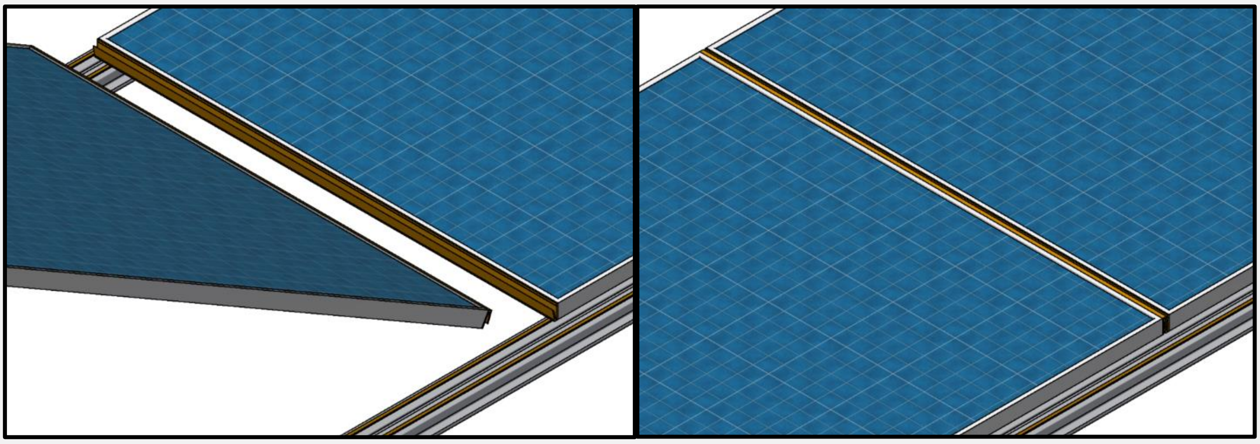
Ensure that the short sides of the panels where the U gaskets will be applied are clean and free from dust, grease, or other contaminants. Use a suitable cleaner if necessary and allow the surface to dry completely. Take the first piece of the U gasket and remove the protective film to expose the adhesive surface. Stick this U gasket along the short side of the first panel, ensuring it is aligned properly and pressed firmly to ensure good adhesion. Take the second piece of the U gasket and remove its protective film. Apply this second gasket to the adjacent panel, but in an upside-down orientation to interlock with the first gasket when the panels are joined.



U-Gasket application

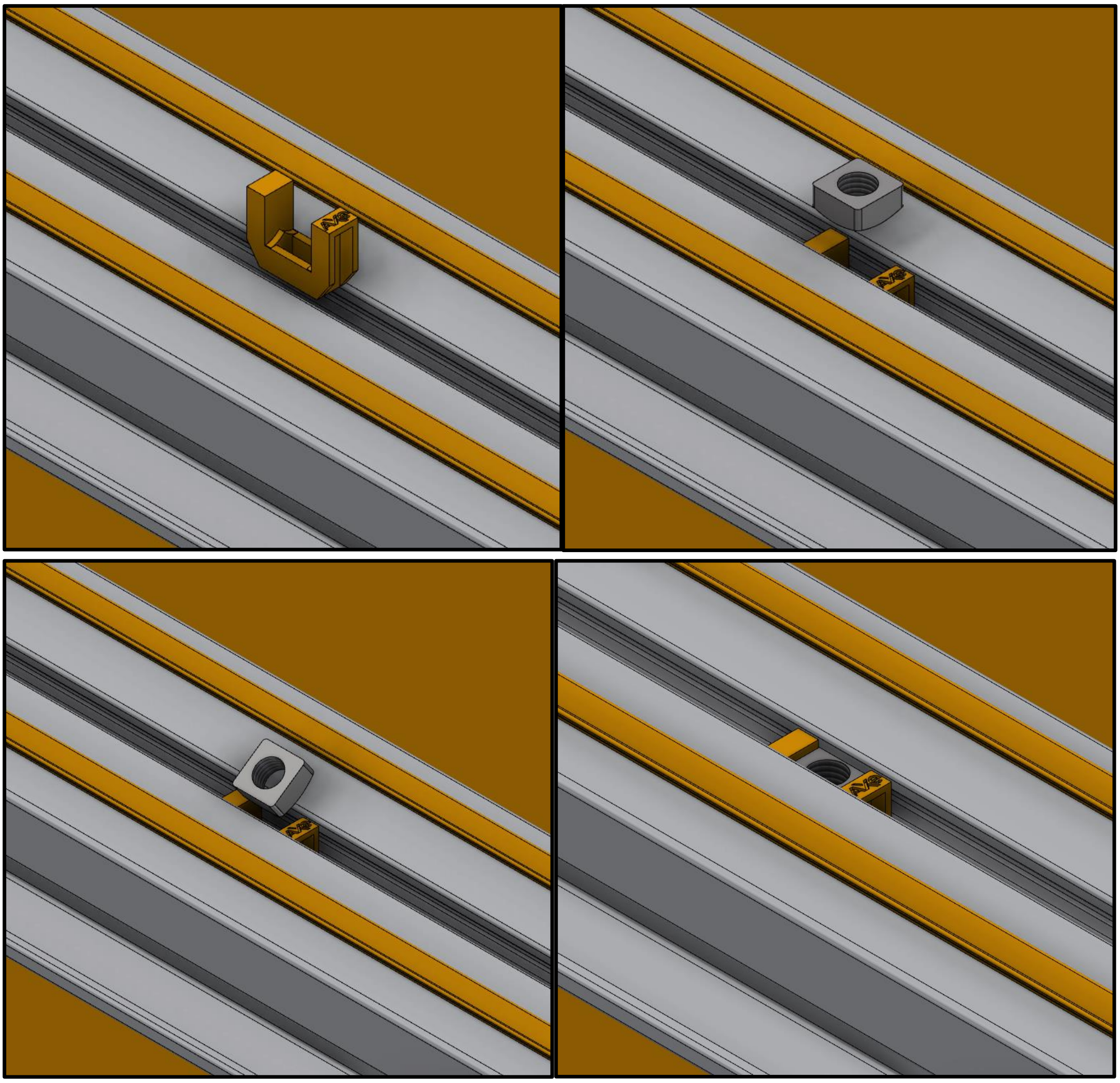
Bring the two panels together so the U gaskets interlock, forming a tight, waterproof seal. Ensure that the gaskets are properly aligned and interlocked along the entire length of the panels.

Apply pressure along the gasket edges to ensure a firm seal.

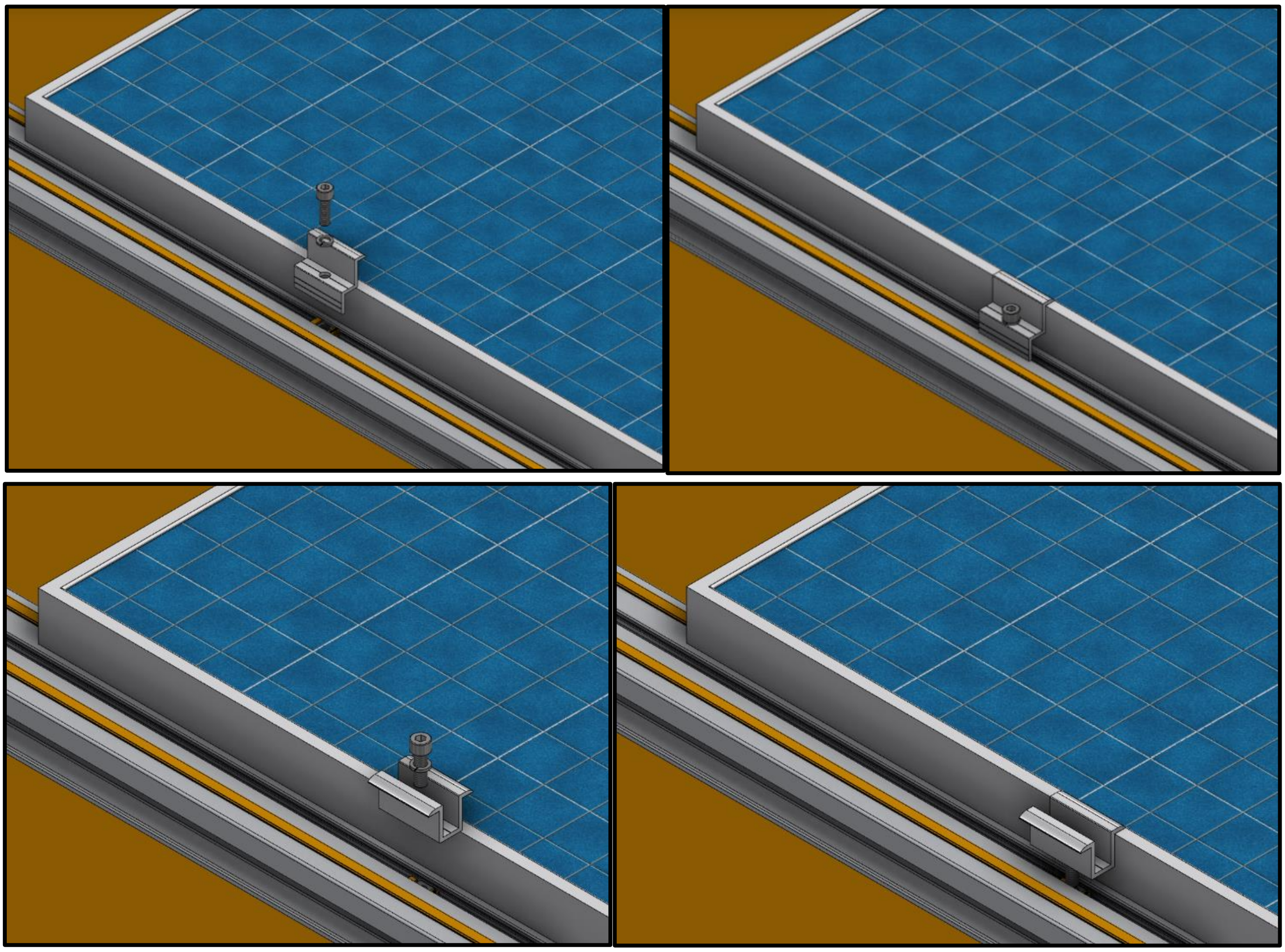


⑤ PV module clamping

Insert Nut Stoppers into Rail gap where the installation of PV module Clamps will be. Position an M8 Square Nut at each Nut Stopper. Slide M8 Square Nut at an angle into Rail cavity so that it falls vertically with the flat side facing upwards.



PV modules are laid onto Rails so that 2x Rail lengths support each PV module. A PV Module adjacent to another Module will share a Rail between them. Install PV module Clamps on the long sides of the PV module so that each PV module is fixed on 4x locations. 2x clamps per opposing long side will hold each PV module down to the Rails. The end-row must be fixed with End Clamps, where the intermediate Module will be clamped with a Mid Clamp. Torque M8 Hex-Cap Screws with M8 Spring Washer at 18 N.m.



⑤ Maintenance

The products are to be inspected annually in the form of a visual inspection of the whole installation. Axe Struct must be notified of any first appearances of rust and abnormal deformations.

Annual spot checks are to be done on fasteners to ensure that the minimum required torque moment specified in this Manual is met.

Cleaning of the product must be done with water with a pH between 6 and 10, and without chemicals.

⑥ Liability

Axe Struct can accept no liability for damage arising due to improper use, installation, operation or maintenance. Liability is further excluded if Axe Struct is not at fault due to gross negligence or intent.

The text and images in this Installation Manual correspond to state of the art upon printing. Subject to change.