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

Installation Manual

IM_AXE_GM_ECO

Economical Tilted Ground Mount System

For framed PV modules in portrait orientation

V4



Declaration

- Only the highest quality components are used in the mounting system to ensure trouble-free operation of your solar power system. The following information explains the proper setup of the Axe Struct Ground Mount system.
- Any unique structural features must be documented so that the surrounding unique features can be considered when planning the layout.
- Always fasten the bolted connection by turning the bolt head. Do not turn the nut; hold it in position. Do not use an impact driver. Use a calibrated torque wrench to fasten the connection to the specified torque.

Contents

1. Components 3
2. Torque Specifications 9
3. Configuration Options 10
4. Layout Positioning 11
5. Foundation Fixings 12
6. Foundation Specifications 14
7. Foundation Anchorage 16
8. Post Connections 18
9. Mounting Rafters 19
10. Bracing Installation 21
11. Mounting Rails 27
12. Joining Rails 31
13. Purlin Cable Tray Installation 35
14. PV Module Installation 36
15. End Caps Installation 44
16. Maintenance 46
17. Liability 47

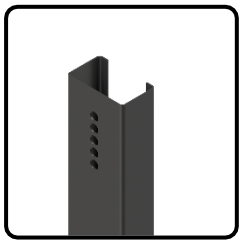
1. Components

Posts / Rafters

Post

AXE_L_LC

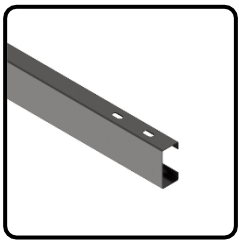
Vertical support member



Rafter

AXE_L_LC

Rail support

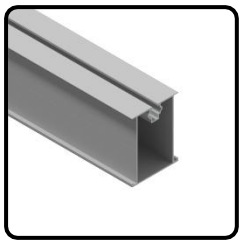


Rail Profiles

Rail

AXE_L_R_90_60_AL

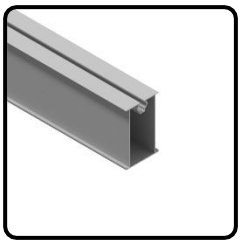
PV module support
2.5, 4.5 & 6 m lengths



Rail

AXE_L_R_110_60_AL

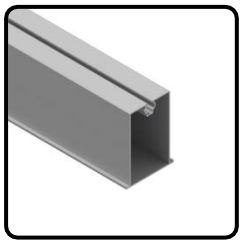
PV module support
2.5, 4.5 & 6 m lengths



Rail

AXE_L_R_120_80_AL

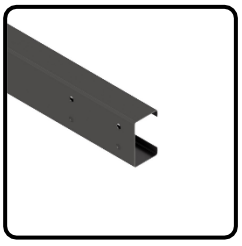
PV module support
2.5, 4.5 & 6 m lengths



Steel Rail

AXE_L_LC

PV module support
Custom length

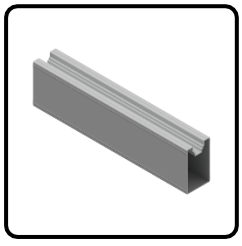


Rafter / Rail Extensions

Rail Extension

AXE_EX_90_60_AL

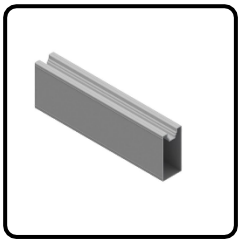
Rail connection



Rail Extension

AXE_EX_110_60_AL

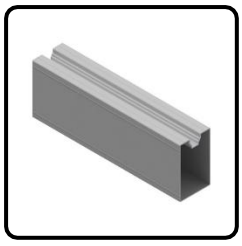
Rail connection



Rail Extension

AXE_EX_120_80_AL

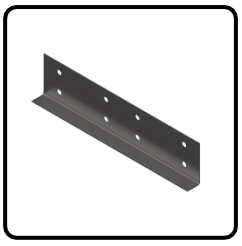
Rail connection



Steel Extension

AXE_EX

Rail and Rafter connection

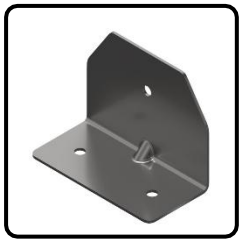


Base Slot / Base Fix Brackets

Base Fix Bracket

AXE_BR_BF_S_12_SH

Foundation connection



Base Fix Bracket

AXE_BR_BF_D_12_SH

Foundation connection



Ground Screws

Ground Screw Pile

AXE_GSP_F_F_SH

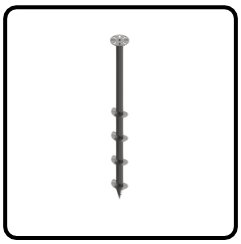
Structure foundation



Ground Screw Pile

AXE_GSP_W_F_SH

Structure foundation



Ground Screw Pile

AXE_GSP_F_T_SH

Structure foundation

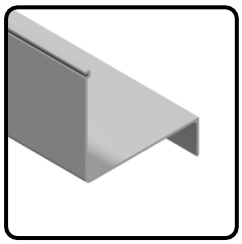


Cable Trays

Cable Tray Housing

AXE_L_CT_H_60_70_AL

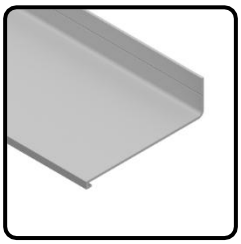
Cable management



Cable Tray Cover

AXE_L_CT_C_60_70_AL

Cable management

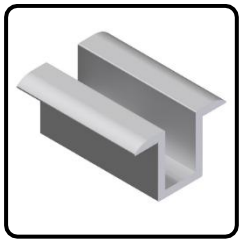


PV Module Clamps

Mid Clamp

AXE_CM_AP_AL

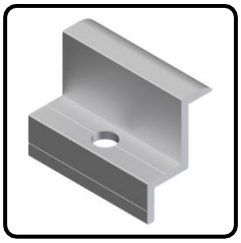
For PV modules with 30, 35 & 40mm frames



End Clamp

AXE_CE_AP_AL

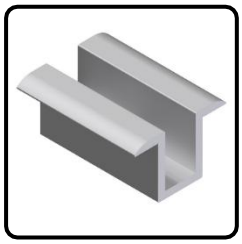
For PV modules with 30, 35 & 40mm frames



Mid Clamp

AXE_CM_CP_AL

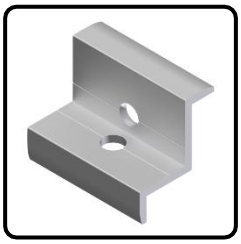
For PV modules with 30 & 35 frames



End Clamp

AXE_CE_CP_30_35_AL

For PV modules with 30 & 35 frames



Mid Clamp

AXE_CM_CF_AL

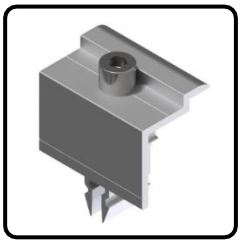
For PV modules with 30 & 35 mm frames



End Clamp

AXE_CE_CF_AL

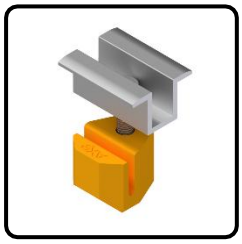
For PV modules with 30 & 35 mm frames



Mid Clamp, Lip Fix

AXE_CM_LF_30_AL

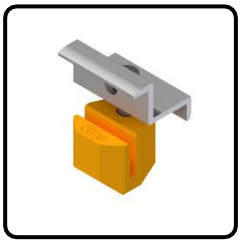
Preassembled for PV modules with 30 & 35 mm frames



End Clamp, Lip Fix

AXE_CE_LF_30_AL

Preassembled for PV modules with 30 or 35 mm frames

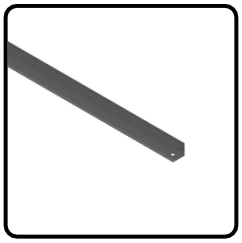


Bracing

Equal Angle

AXE_L_AE_50_50_3

Bracing member



Wire Rope Length

AXE_RW_L_8_SH

Bracing cable



Wire Rope Turnbuckle

AXE_RW_B_10_SE

Bracing tensioning



Wire Rope Eyelet

AXE_RW_E_12_SH

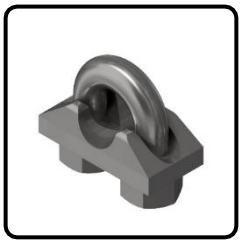
Bracing connection



Wire Rope Clamp

AXE_RW_C_8_SE

Wire rope fastening

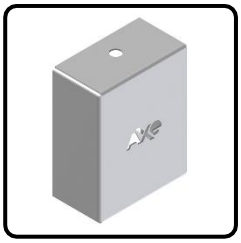


End Caps

End Cap

AXE_EC_90_60_AL

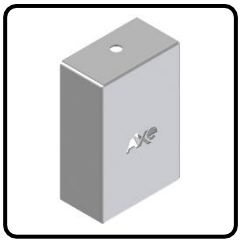
Protective finishing



End Cap

AXE_EC_110_60_AL

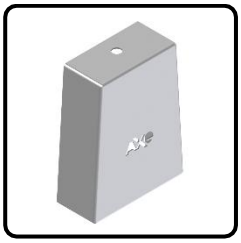
Protective finishing



End Cap

AXE_EC_120_80_AL

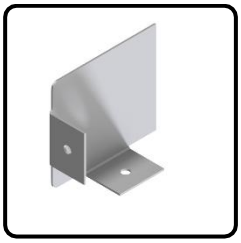
Protective finishing



End Cap

AXE_EC_60_70_AL

Protective finishing



Fasteners

Wedge Clip

AXE_CW_LC_SH

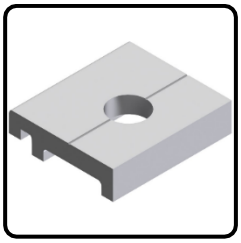
Rail connection



Rails Clip

AXE_CP_GM_AL

Rail connection



Clamp Washer

AXE_WC_12_SH

Rail connection



Bolt Hexagon

AXE_BH_10/12_SS/SH

Structural fastening



Cap Screw Hexagon

AXE_CS_8_SS

PV clamp connections



Self-Drilling Tek Screw

AXE_ST_6.3_22_SC

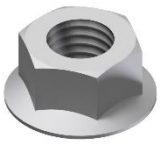
Rail Extension connection



Hex Flange Nut

AXE_NHF_10_SS

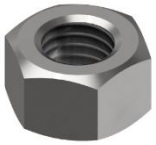
Rail and Rafter connection



Hex Nut

AXE_NH_12_SH

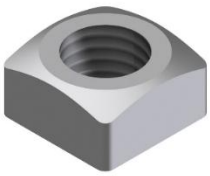
Structural fastening



Square Nut

AXE_NSQ_8_SS

Rail and PV module connection



Spring Washer

AXE_WS_8/10/12_SS/SH

Structural fastening



Plain Washer

AXE_WP_12_SH

Structural fastening



Isolation Pad

AXE_ISO_92/112_PR

Dissimilar metal isolation



Nut Stopper

AXE_NST_8/10_PP

Fastener positioning



Nut Holder

AXE_NHD_8_PN

Clamp fastening



Accessories

Cable Clip

AXE_CC_SS

Cable management



Earthing Lug

AXE_EL_AL

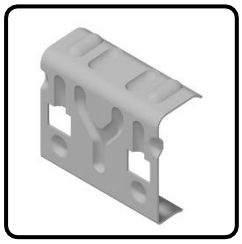
Earthing connection



Drainage Clip

AXE_CD_AL

Water drainage



Earthing Plate

AXE_EP_SM

Module earthing



2. Torque Specifications

The specified settings below are assumed to have a dry application. Should a lubrication agent or anti-seizing be used, 80% of the below-listed values would apply. Do not exceed the specified tightening torque values, as excessive tightening may cause deformation of aluminium components.

Size	Stainless Steel (N.m)	Galvanised Grade 8.8
M8	18 N.m	N/A
M10	38 N.m	N/A
M12	60 N.m	93 N.m
M16	150 N.m	230 N.m
M20	300 N.m	464 N.m
M24	N/A	798 N.m

Seizing (Galling) Prevention

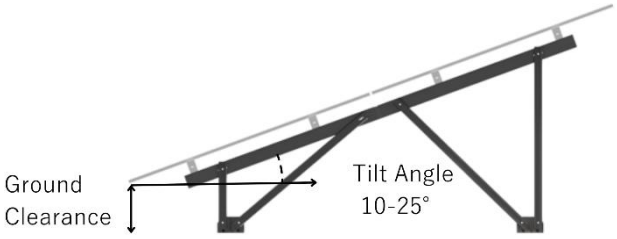
Anti-Seize compound should be applied to all threaded connections, specifically stainless-steel fasteners. This will prevent fasteners from seizing and promote good practice. A further step to prevent seizing is to tighten fasteners at low rpm, without interruptions and apply steady pressure.

3. Configuration Options

Ground Mounts are available in two configurations: two panels in portrait (2P) or three panels in portrait (3P), with post variation depending on the fixing method.

Side views of the Economical structure:

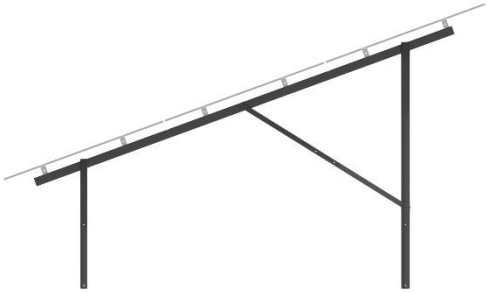
- *2P Mono Pitch*:



- *2P Mono Pitch – Single Vertical Post*:



- *3P Mono Pitch*:



4. Layout Positioning

The spacing between posts, as well as the profile cross-sections of the structural members, are determined through structural analysis. The outcome of the analysis is dependent on the site conditions and project-specific design criteria, including:

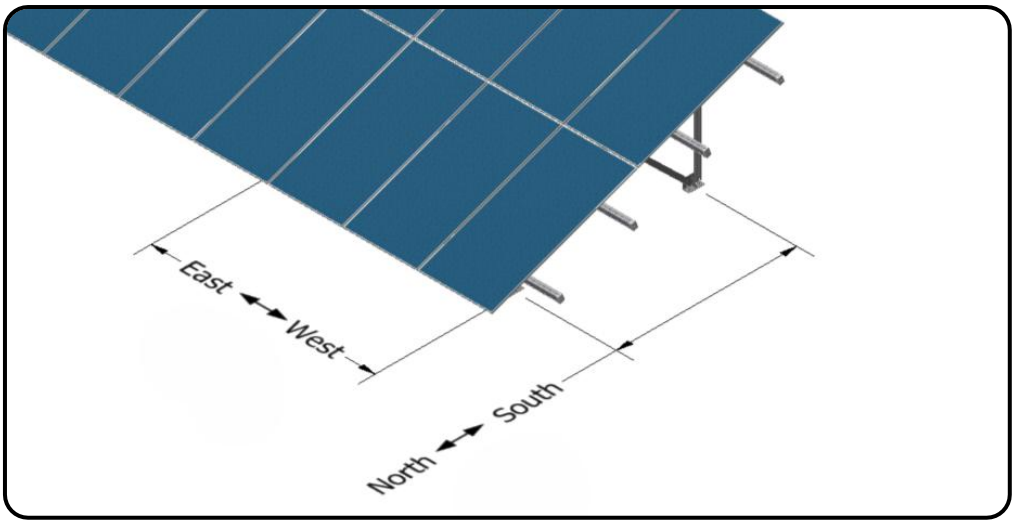
- Site location (altitude and wind speed)
- PV module type and layout configuration
- Table slope
- Front PV module ground clearance height
- Method of installation

Accurate project information is essential to ensure the correct structural design. Providing incorrect or incomplete information may result in an unsuitable structure.

Ensure that the correct project-specific layout drawing supplied by Axe Struct is used for installation. The layout drawing illustrates the position of structural members, reaction forces, and the side, back, and top views of the structure. It also specifies the design site conditions and structural member sections as determined by the structural analysis. Any modifications to the table length, PV module type, table slope, or configuration without prior consultation and approval may compromise the structural integrity of the system.

A minimum clearance of 20 mm must be maintained between PV modules. Mid Clamps may be utilised as spacers to ensure this distance is consistently achieved.

The terrain profile must be communicated to the designer to ensure that the required table slope and minimum PV module ground clearance are maintained. The East–West terrain slope shall not exceed a tolerance of 5%, while the North–South terrain slope shall be less than 30%.

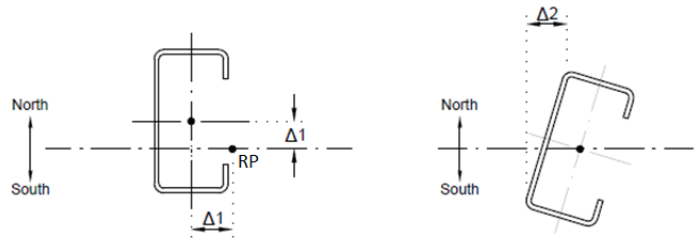
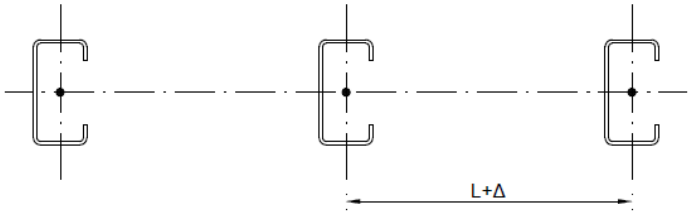
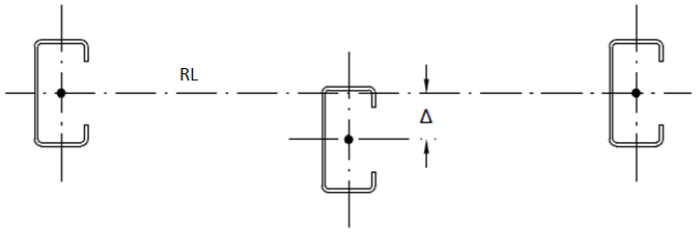
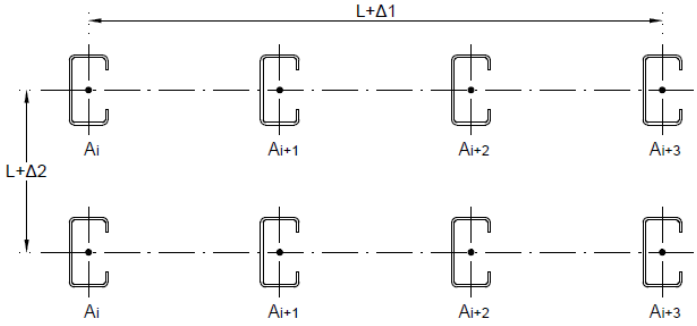


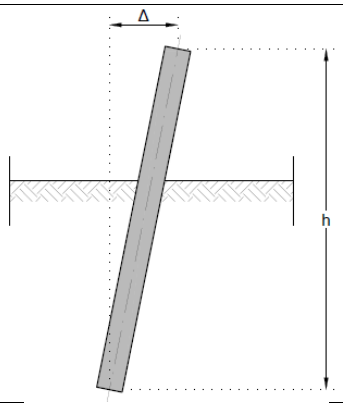
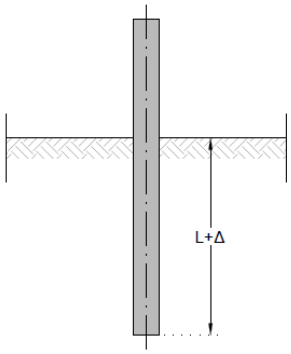
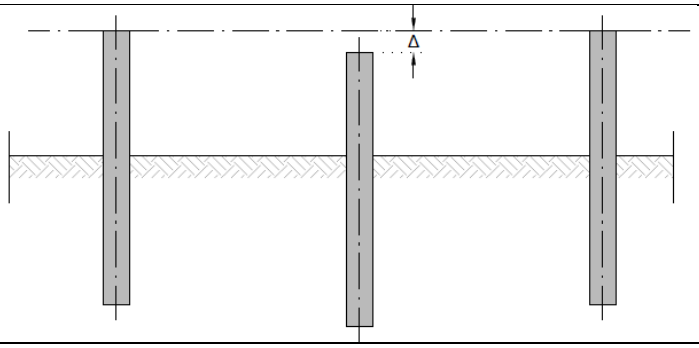
5. Foundation Fixings

Mark the positions of the pile locations. The open side direction of the pile is determined through the layout view, with the opening typically facing west. A frame guide rail can be used to ensure the required tolerances are met and to guarantee the perpendicular positioning of the piles.

> Recommendation
> Ensure the open side of the pile channel is facing a direction that accommodates the rafter orientation. The holes in the rafter that accommodate the rails must face upwards, and the overhang of the rafters must comply with the dimensions specified in the layout drawing.
> If unexpected obstacles obstruct pile driving operations, the target depth must be pre-drilled, filled in layers with compressed concrete of strength C16/20, and compacted before driving the pile into position.

Tolerances to consider when driving piles are as follows (measured at ground level):

Description	Depiction	Tolerance
Individual pile position relative to the reference point (RP)		Δ 1 = ±10 mm Δ 2 = ±10 mm
Individual pile spacing relative to the adjacent piles		Δ = ±10 mm
General pile alignment relative to the reference line (RL)		Δ = ±10 mm
Overall table length and North-South spacing		Δ 1 = ±20 mm Δ 2 = ±10 mm

Individual pile inclination		Δ = h/200
Individual pile depth		Δ = ±100 mm
Individual pile level relevant to the adjacent piles		Δ = ±20 mm

The images in the above table are based on pile driving; however, these principles can also be applied to posts that are cast into the concrete.

6. Foundation Specifications

Different fixation methods can be used on the ground mount, and the structure will be designed accordingly. The following sections outline essential guidelines for each method.

Driven Channel:
A suitable pile-driving hammer is used to drive the channel into the ground, typically to a depth of 1.4 m. This depth is standard for most installations, though the exact value may vary depending on project requirements and soil type.

Once the channel has been driven into position, protect the top of the ramming profile from damage caused during driving. Coat approximately 3 cm of the top of the profile with a protective layer of paint to prevent surface damage and corrosion.

Channel Embedded in Concrete:
Before embedding the channel in concrete, ensure the hole is free of loose dirt at the bottom. The hole is typically 1.0 m deep; its diameter must be determined through a physical pull test to confirm it can resist the forces outlined in the layout drawings, ensuring the channel remains securely anchored under the structural loads it will encounter.

It is highly recommended that each channel be integrated with rebar reinforcement for added stability. Insert securing rods through the drilled holes in the channel so they bond the channel to the surrounding concrete, improving its resistance to forces that could otherwise cause shifting or instability.

Before casting the concrete, position the channels within the tolerances specified in Section 5 to maintain alignment. After the concrete is poured, use a vibrator to remove air pockets and ensure the concrete fully surrounds the channel, achieving maximum strength once cured.

Ground Screw Foundation:
Conduct a thorough site survey to determine the soil type and ground conditions; this determines the appropriate ground screw type and dimensions. Mark the precise location of each ground screw from the layout drawings, and check accuracy before installation begins.

Use a ground screw driving machine to rotate and drive the ground screw into the ground, applying sufficient torque for it to penetrate evenly to the required depth. Keep the screw straight and vertical throughout installation, and confirm each one is installed to the correct depth and securely anchored.

Concrete Foundation (Threaded Rod):
Mark out the positions of all foundation locations accurately as per the layout drawings, and prepare the designated areas for the concrete bases, ensuring proper ground compaction before casting.

Use concrete with a minimum compressive strength of 30 MPa. It is crucial to allow sufficient time for proper concrete curing, with a minimum duration of 7 days.

When performing compaction, the following parameters should be targeted:

- 300 mm over excavations
- Compact 150 mm in-situ material to 93% Mod AASHTO
- 150 mm G5 compacted to 95% Mod AASHTO

The above parameters serve as a general reference and are subject to adjustment based on the results of the soil compaction assessment.

7. Foundation Anchorage

The foundation connections will vary depending on the site-specific design. Refer to the relevant layout drawings, which will indicate the applicable connection method.

Casting of Threaded Rods:

Utilise a guide plate to position the Threaded Rods accurately within each concrete foundation. Precast the threaded rods or dowel them into the concrete to provide secure anchorage for the posts. Ensure that all threaded rods are M12 and Hot-Dip Galvanised to achieve adequate corrosion protection.

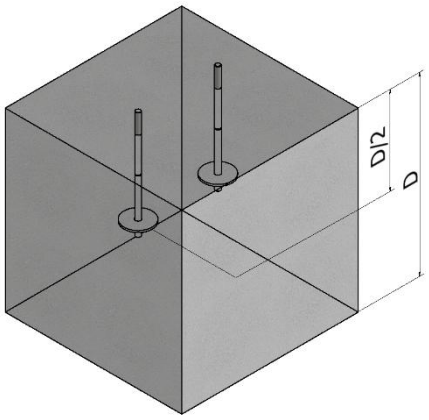
Threaded Rod Anchorage

It is strongly recommended to precast the M12 threaded rods into the concrete base, incorporating a bolted washer with an outer diameter of 80 mm and a thickness of 4 mm. The washer should be positioned below the midpoint of the base depth to ensure optimal anchorage.

Where chemical anchors are utilised, the installer shall ensure that the selected anchor system is suitable for the design loads and installed in accordance with the manufacturer's specifications.

The fasteners required per threaded rod are listed below. *(Anchoring fasteners included upon request.)*

No.	Product description	Size	Quantity
①	Threaded Rod, Hot Dip Galv Steel	M12	1
②	Fender Washer, Hot Dip Galv Steel	M12	1
③	Hex Nut, Hot Dip Galv Steel	M12	1

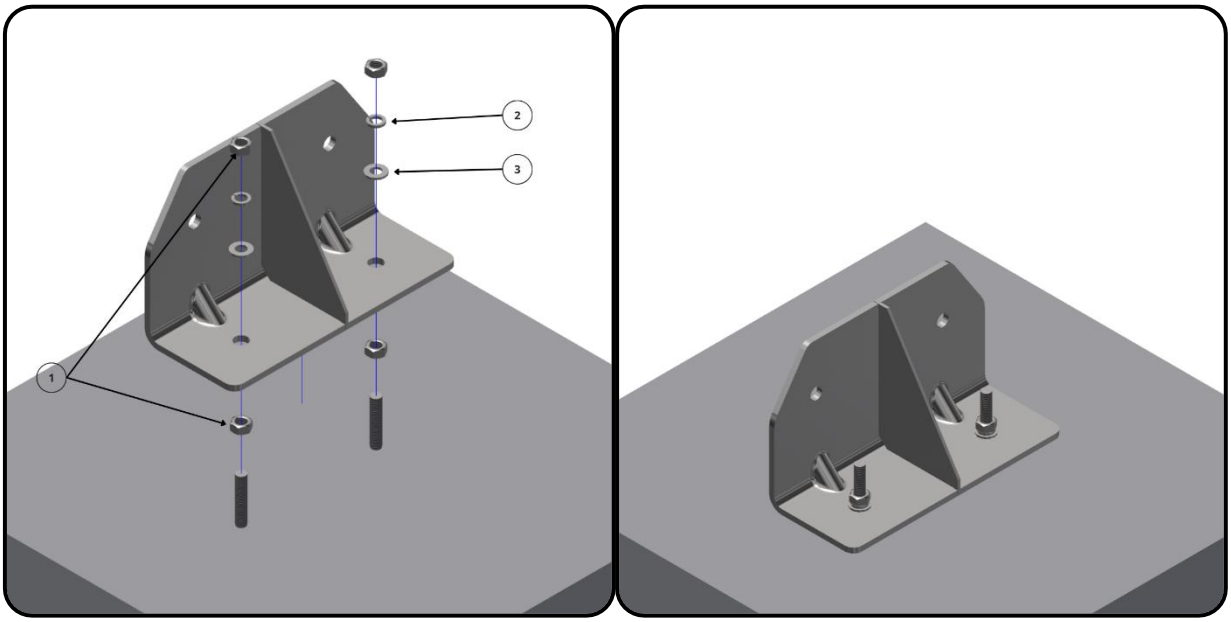


Base Fix Foundation Connection:

Anchor the Base Fix Brackets to the concrete foundations using the cast-in threaded rods. Level the brackets by adjusting the levelling nuts positioned beneath the base plates. Once the brackets are correctly aligned, secure the connection using the fasteners listed below. Once the Base Fix Brackets are aligned and secured, fill the void between the base plate and the foundation with non-shrink grout. Ensure that the grout thickness does not exceed 50 mm.

(Anchoring fasteners included upon request.)

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	4
②	Spring Washer, Hot Dip Galv Steel	M12	2
③	Plain Washer, Hot Dip Galv Steel	M12	2

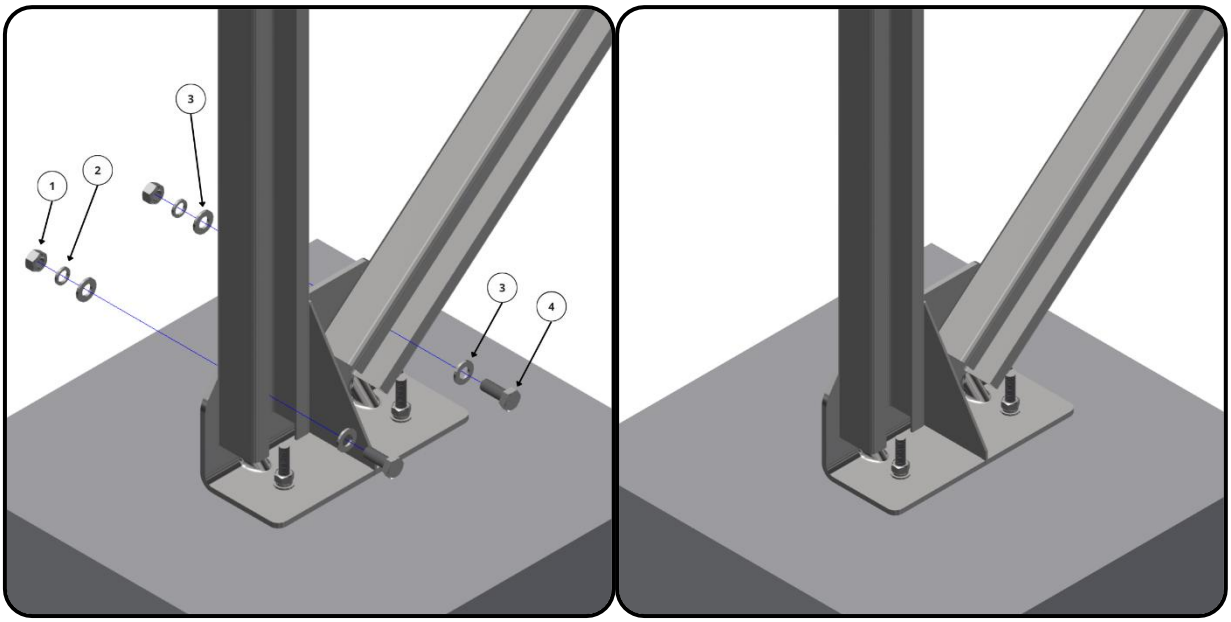


8. Post Connections

Base Fix Bracket Connection:

Position the Post against the Base Fix Bracket and align the holes. Secure the Posts to the Base Fix Brackets using the fasteners listed below. Refer to the project-specific layout drawings for the required post configuration.

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	2
②	Spring Washer, Hot Dip Galv Steel	M12	2
③	Plain Washer, Hot Dip Galv Steel	M12	4
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	2



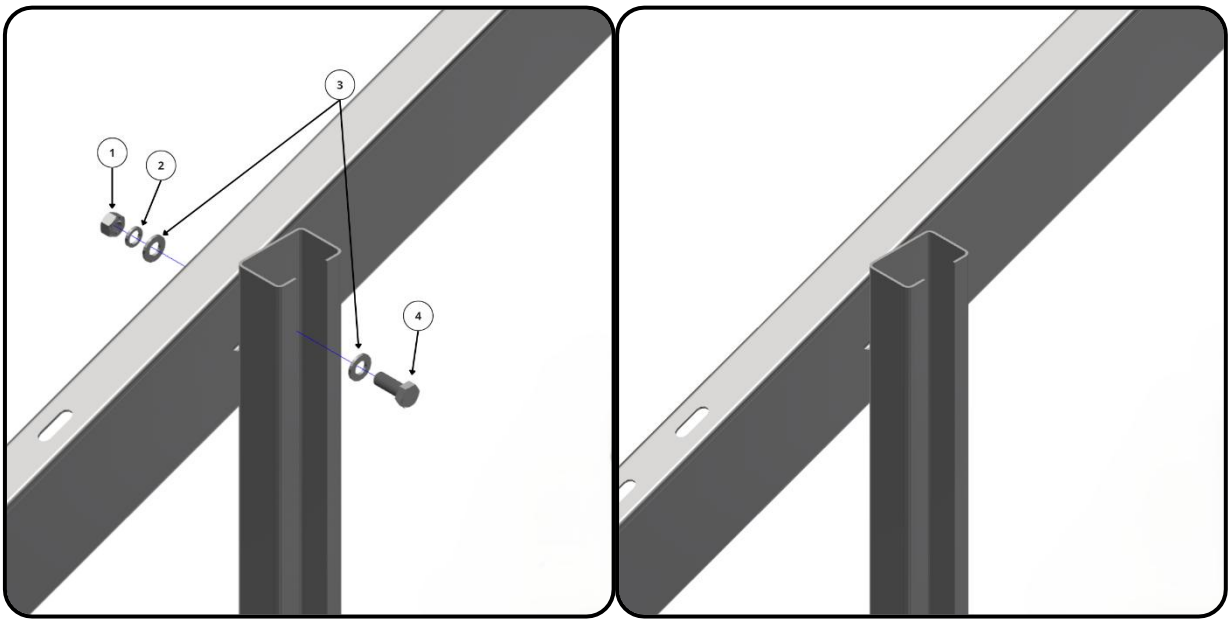
9. Mounting Rafters

Post Connection:

Align the bottom and top ends of the Rafters in both the vertical and horizontal planes, then secure the Rafters to the Posts. Ensure that the Rafters are aligned to prevent any stress on the PV modules during later installation.

(Refer to Bracing Installation if bracing is included.)

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	1
②	Spring Washer, Hot Dip Galv Steel	M12	1
③	Plain Washer, Hot Dip Galv Steel	M12	2
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	1



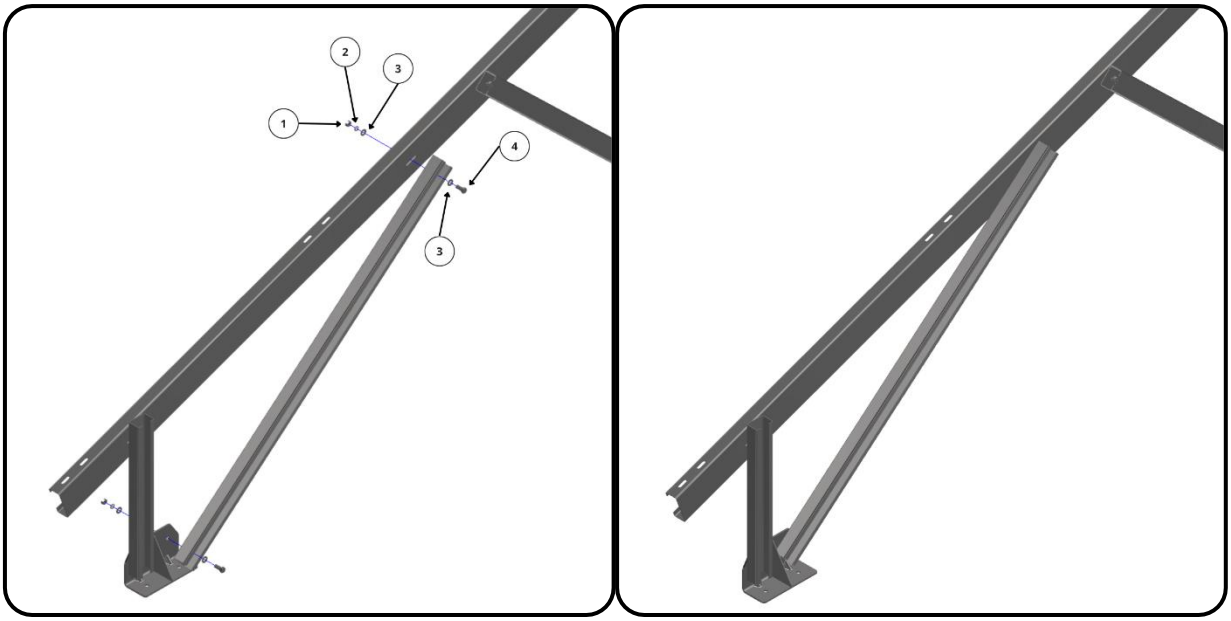
Recommendation

- Use the pre-drilled holes and slots on the Rafters to connect the first and last Rafters of each table. Once the outer Rafters are assembled, stretch a string line between them. Align the Base Fix Brackets in the middle of the table with the two outer Base Fix Brackets, using the string line as a reference.

Diagonal Support Connection:

Secure one end of the member to the Rafter and the other end to the Base Fix Bracket using the fasteners listed below.

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	4
②	Spring Washer, Hot Dip Galv Steel	M12	4
③	Plain Washer, Hot Dip Galv Steel	M12	8
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	4



10. Bracing Installation

Two different bracing options are available.

- X-Bracing
- Bracing Cables

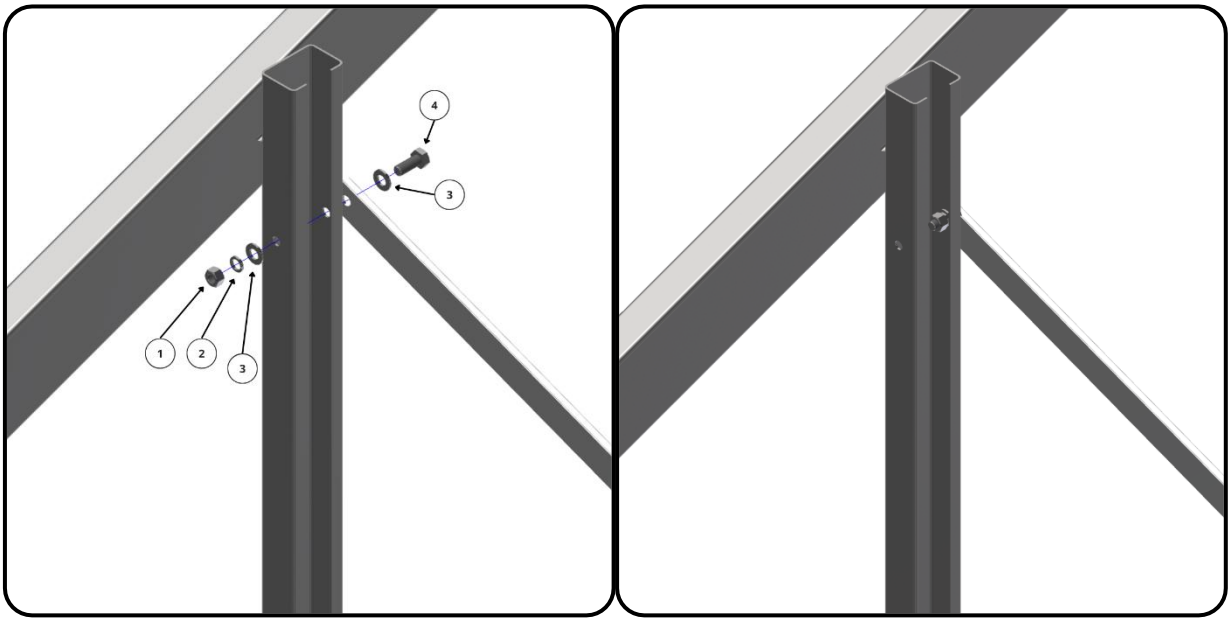
One of these options will be offered depending on the structure and site conditions.

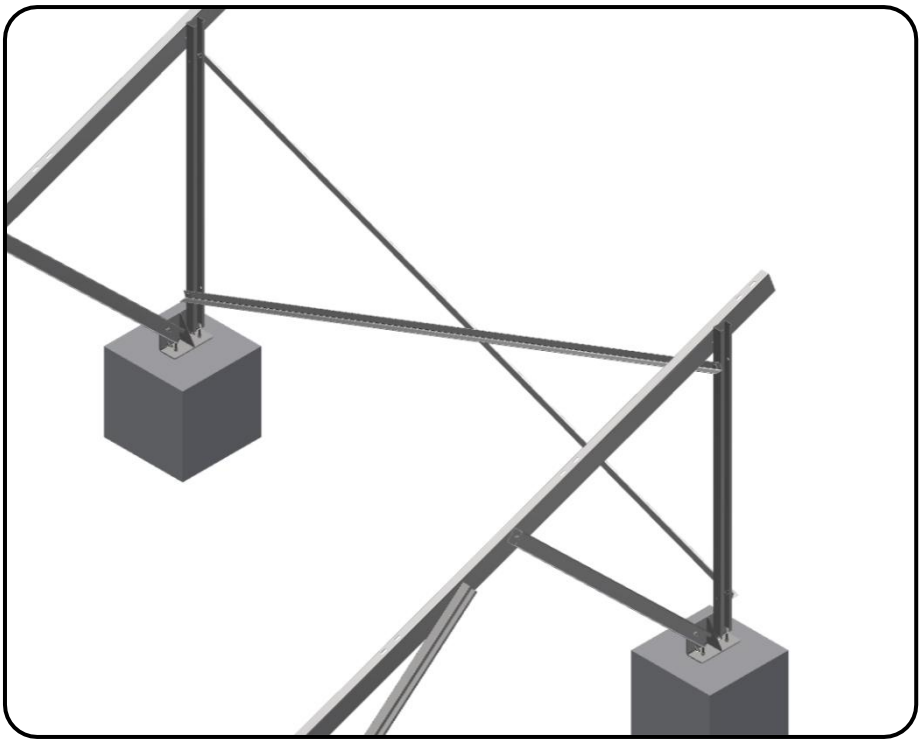
X-Bracing:

This method utilises Equal Angles connected to adjacent back supports to form an X-brace configuration.

The Equal Angles should be connected as close as possible to the end of the Posts. Connect the first Equal Angle to the front of the back Posts, one end to the top of the post and the other to the bottom of the adjacent Post. Connect the second Equal Angle to the back of the back Post to form an “X” shape. Secure the connection using the fasteners listed below. Holes for the bracing should be drilled on-site.

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	1
②	Spring Washer, Hot Dip Galv Steel	M12	1
③	Plain Washer, Hot Dip Galv Steel	M12	2
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	1





Equal Angle Delivery

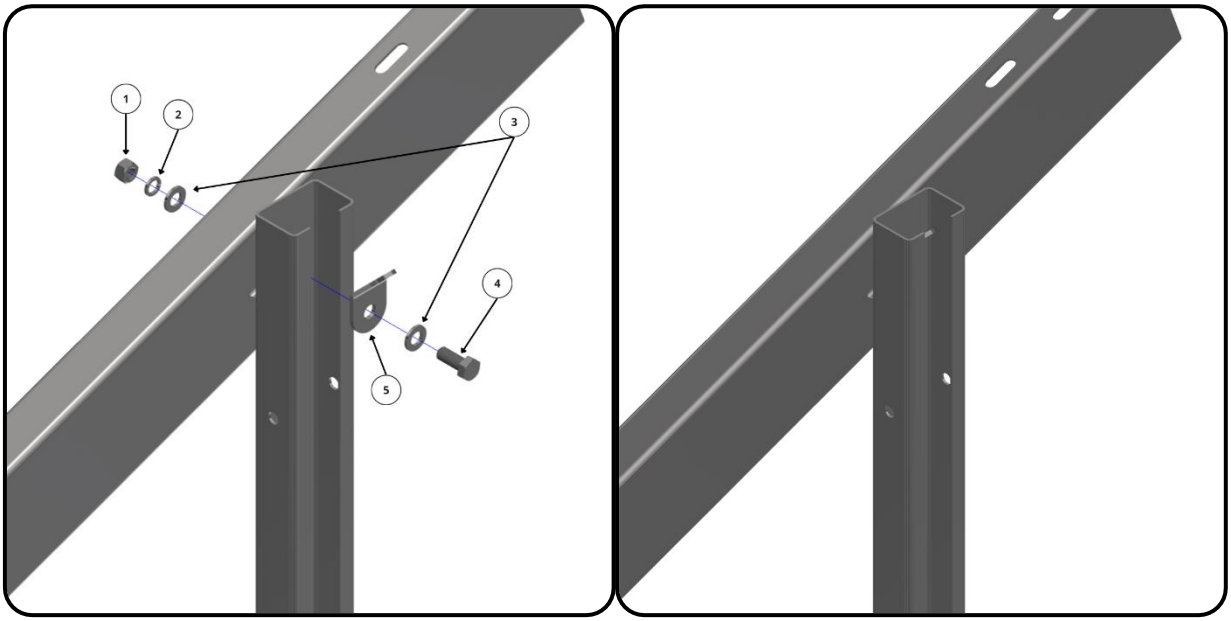
The Equal Angle sections will be delivered with one pre-drilled hole, while the second hole must be drilled on-site. Additionally, as the Equal Angle may not be the precise required length, it will need to be shortened on-site as needed.

Bracing Cables:

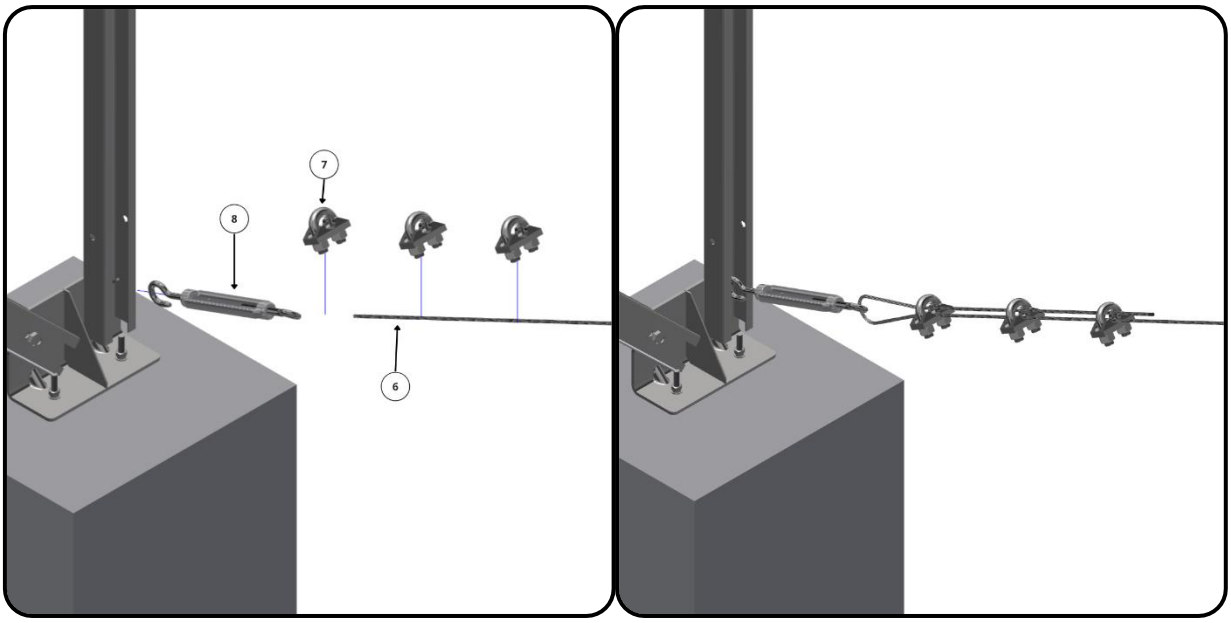
This method utilises a Wire Rope connected at the base of the bay to form a cross-brace configuration.

Connect the Eyelet to the Rafter using the same bolt that secures the Rafter to the Post. Secure the connection using the fasteners listed below.

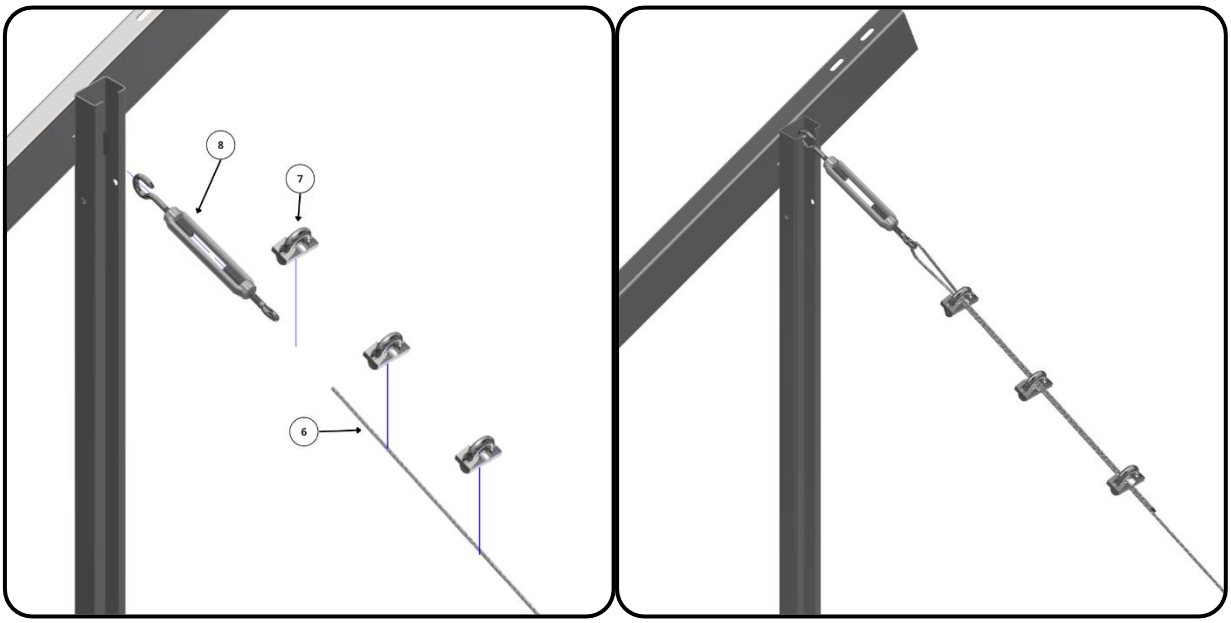
No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	1
②	Spring Washer, Hot Dip Galv Steel	M12	1
③	Plain Washer, Hot Dip Galv Steel	M12	2
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	1
⑤	Wire Rope Eyelet, Hot Dip Galv Steel	M12	1
⑥	Wire Rope Length, Hot Dip Galv Steel	8mm	-
⑦	Wire Rope Clamp, Electro Galv Steel	8mm	3
⑧	Wire Rope Turn Buckle, Electro Galv Steel	M10	1

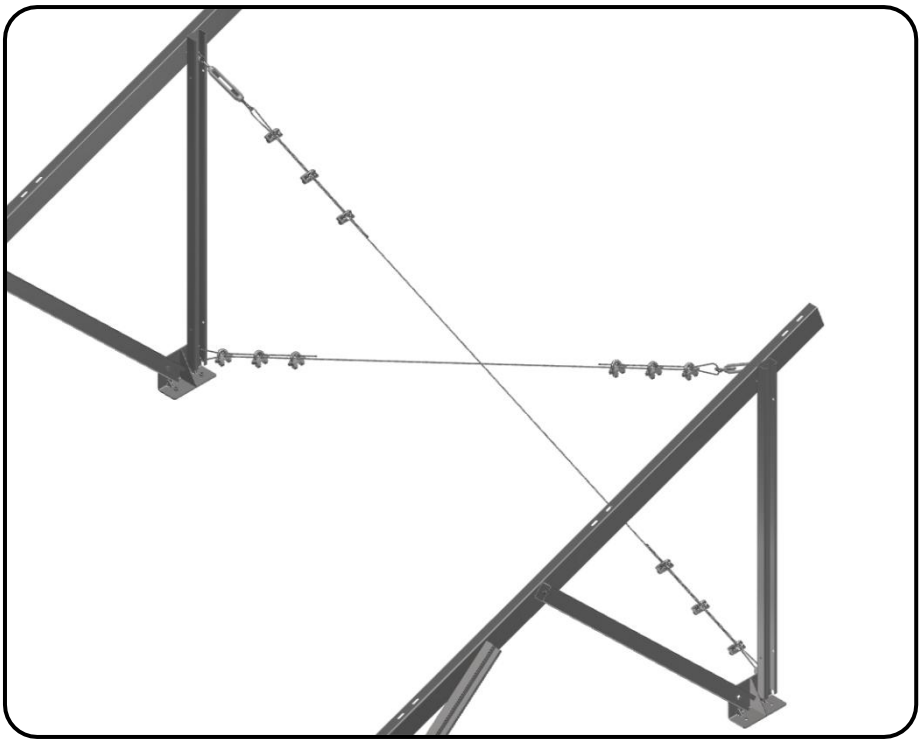


Connect the Eyelet to the Base Fix Bracket using the same bolt that secures the Post to the Base Fix Bracket. Secure the connection using the fasteners listed in the table above. Pull the Wire Rope through the Eyelet and clamp it together using the Wire Rope Clamps.



Ensure that the Wire Rope Turnbuckle is fully extended, then use the hook to connect the Wire Rope Turnbuckle to the Eyelet. Pull the Wire Rope through the eye of the Wire Rope Turnbuckle, tension the Wire Rope and clamp it with the Wire Rope Clamps. Complete the cable brace configuration by tensioning the Wire Rope using the Wire Rope Turnbuckle.

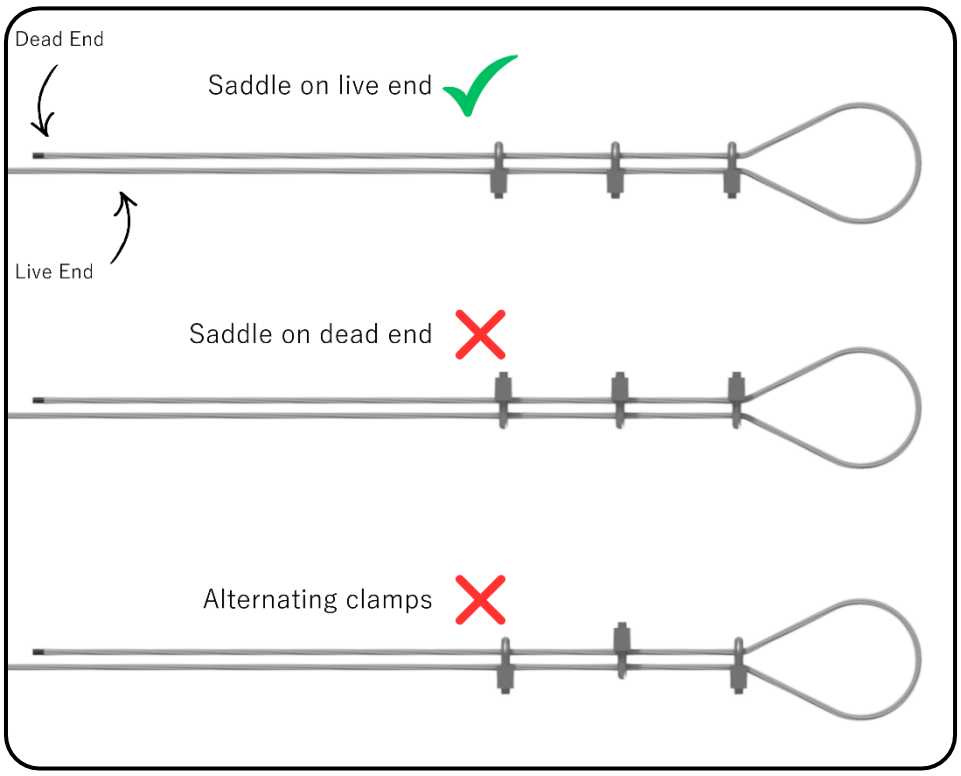




Bracing Cable Best Practice

The image below illustrates the best practice when installing the cable bracing. Take note of the following points.

- Position the Wire Rope Clamps with the saddle on the live end of the Wire Rope.
- Connect the Wire Rope Clamps by spacing them evenly at 50 mm intervals.



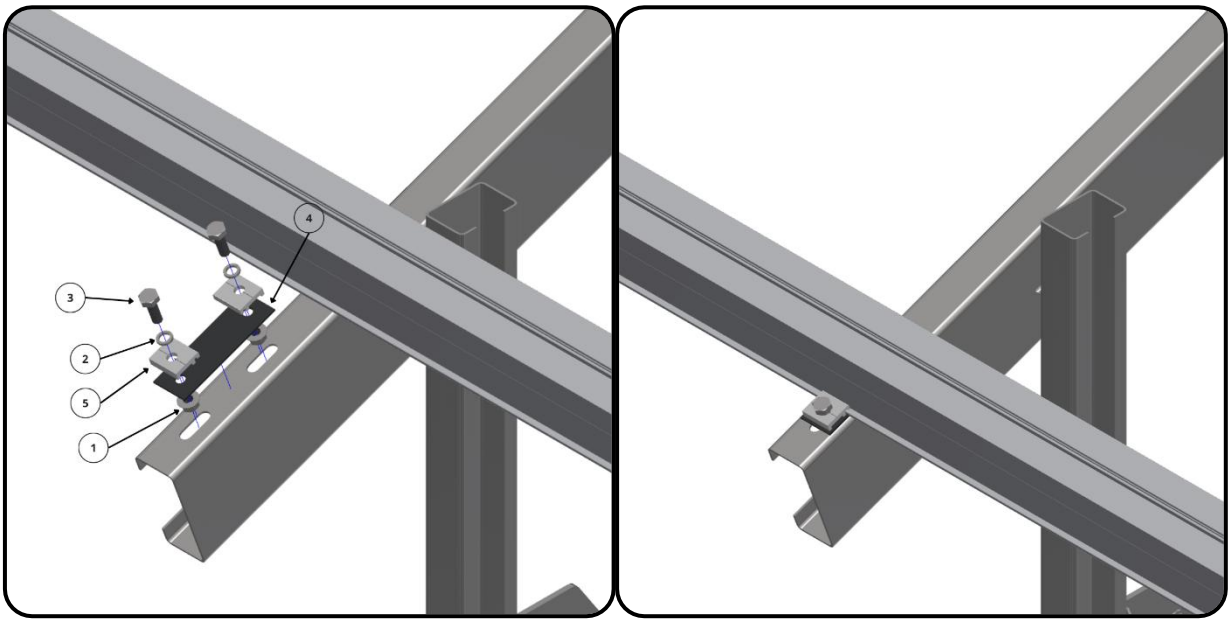
Wire Rope Delivery
The supplied length of the Wire Rope will depend on the layout of the structure. The Wire Rope should be trimmed on-site after installation.

11. Mounting Rails

Rail Clips:

Align the Isolation Pad with the slotted holes in the Rafter and position the Rail on top of the Isolation Pad. Position the Rail Clips in the Rail and align them with the slots in the Rafter. Secure the connection using the fasteners listed below.

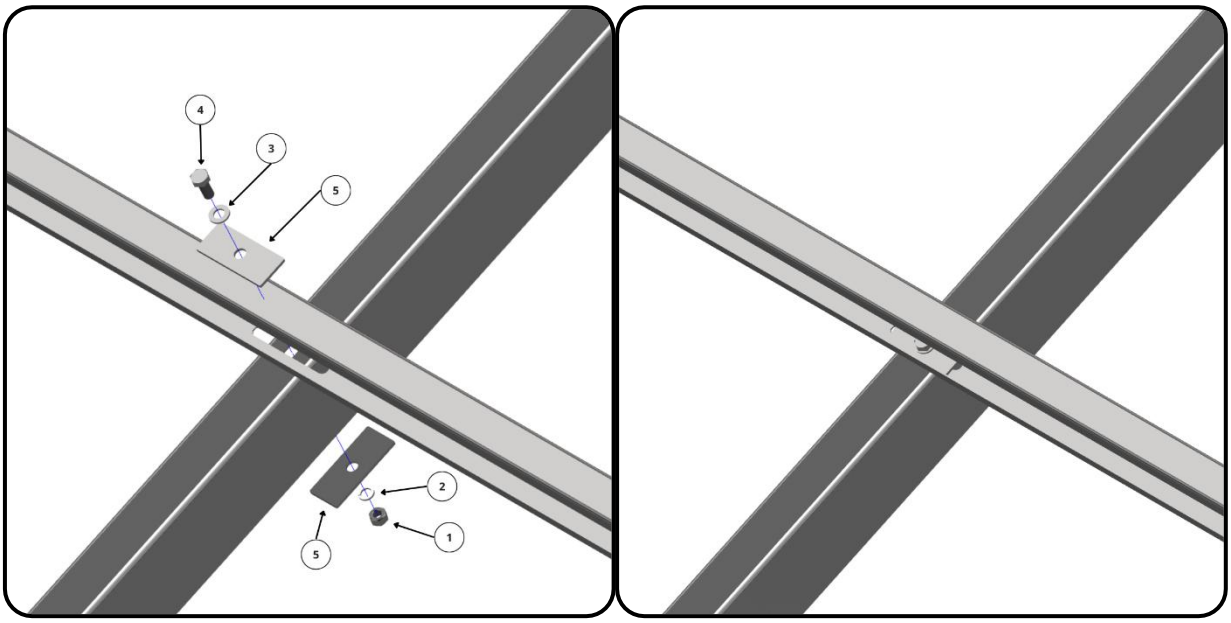
No.	Product description	Size	Quantity
①	Hex Flange Nut, Stainless Steel	M10	2
②	Spring Washer, Stainless Steel	M10	2
③	Bolt Hexagon, Hot Dip Galv Steel	M10x30	2
④	Isolation Pad, Rubber Polymer	92/112mm	1
⑤	Rail Clip, Ground Mount, Aluminium	-	2



Clamp Washer:

Place the Rails on top of the Rafters and align the slotted holes. Place a Clamp Washer inside the Rail and the Rafter. Secure the connection using the fasteners listed below.

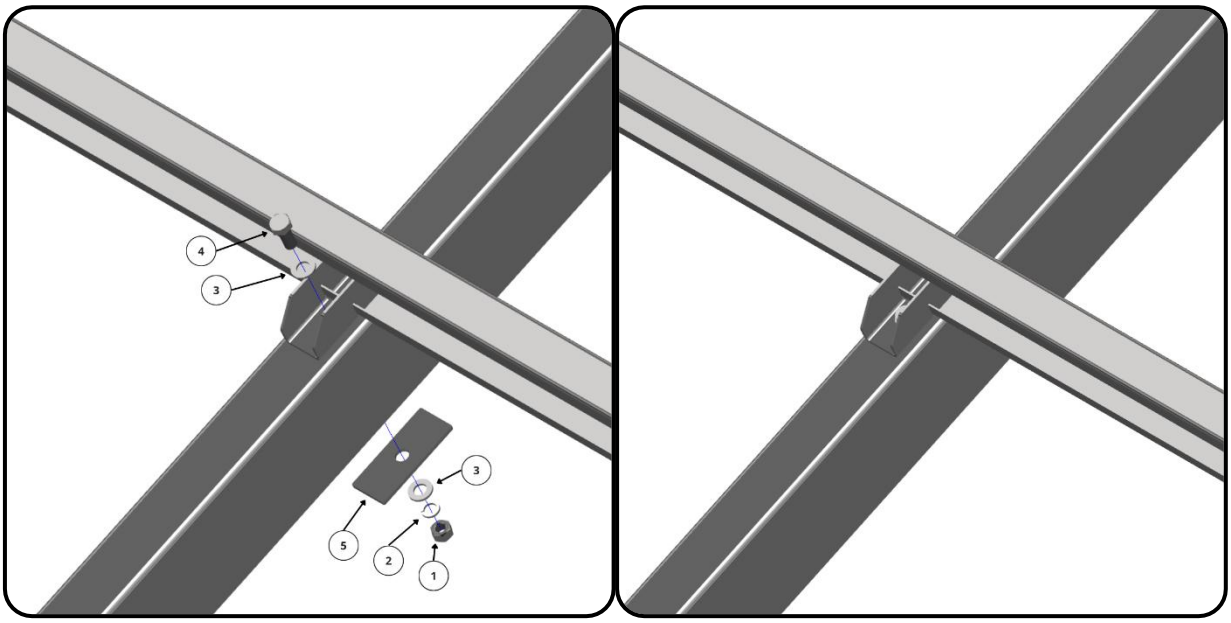
No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	1
②	Spring Washer, Hot Dip Galv Steel	M12	1
③	Plain Washer, Hot Dip Galv Steel	M12	2
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	1
⑤	Clamp Washer, Hot Dip Galv Steel	M12	2



Wedge Clips:

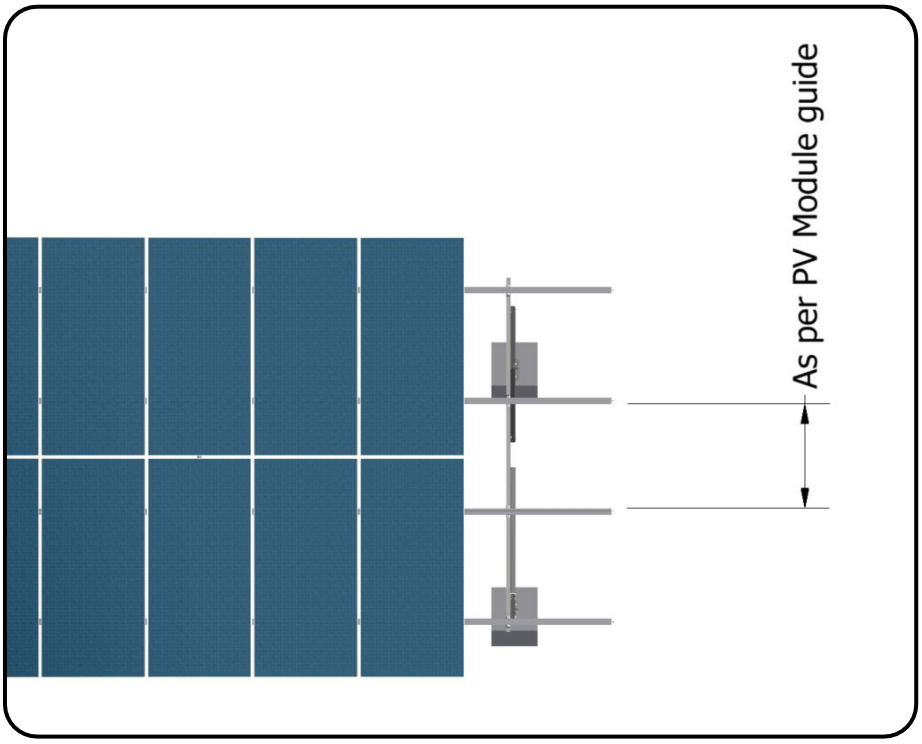
Place the Rails on top of the Rafters. Connect the Wedge Clip over the Rail lip. Secure the connection using the fasteners listed below.

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	1
②	Spring Washer, Hot Dip Galv Steel	M12	1
③	Plain Washer, Hot Dip Galv Steel	M12	2
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	1
⑤	Clamp Washer, Hot Dip Galv Steel	M12	1



Rail Spacing:

The Rail spacing is dependent on the dimensions of the PV module used. PV module installation manuals indicate supporting requirements.



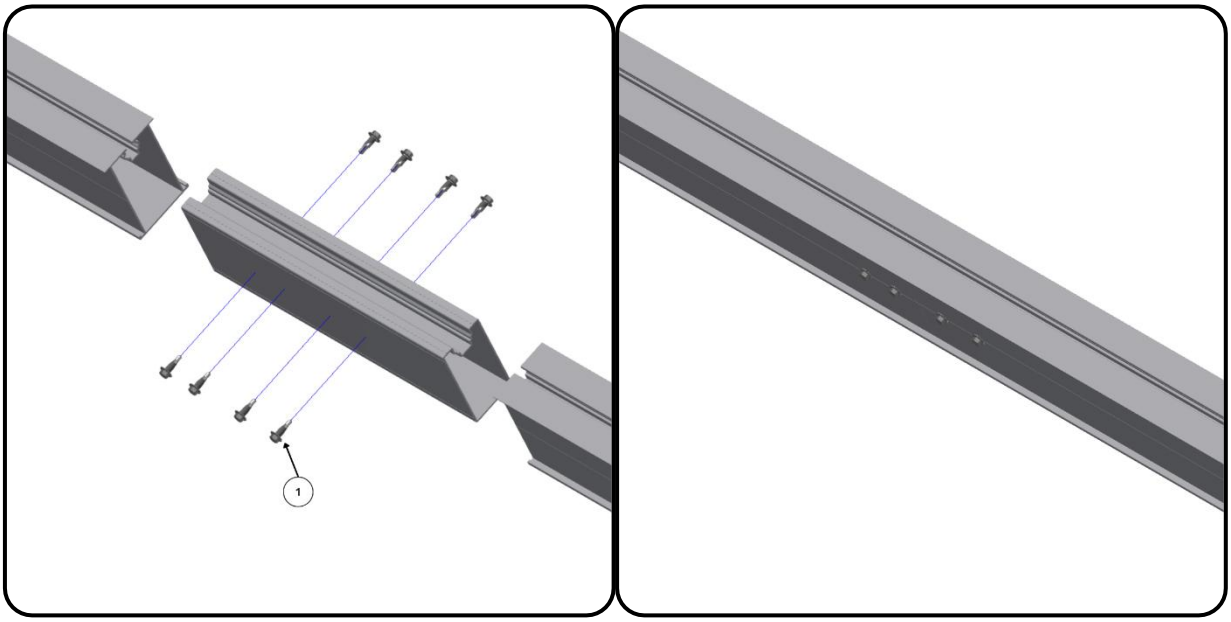
Please refer to the project-specific layout drawings for the Rail configuration. Standard Rail lengths of 2.5 m, 4.5 m, and 6.0 m will be used for the configuration of the top structure. The Rail length and position will be unique for every structure when Steel Rails are utilised. Refer to the project-specific layout drawings for Rail positions.

12. Joining Rails

Aluminium Rail:

Mark the midpoint of the Rail Extension, then slide the Rail Extension halfway into the adjoining Rails. Secure the connection by using the fasteners listed below.

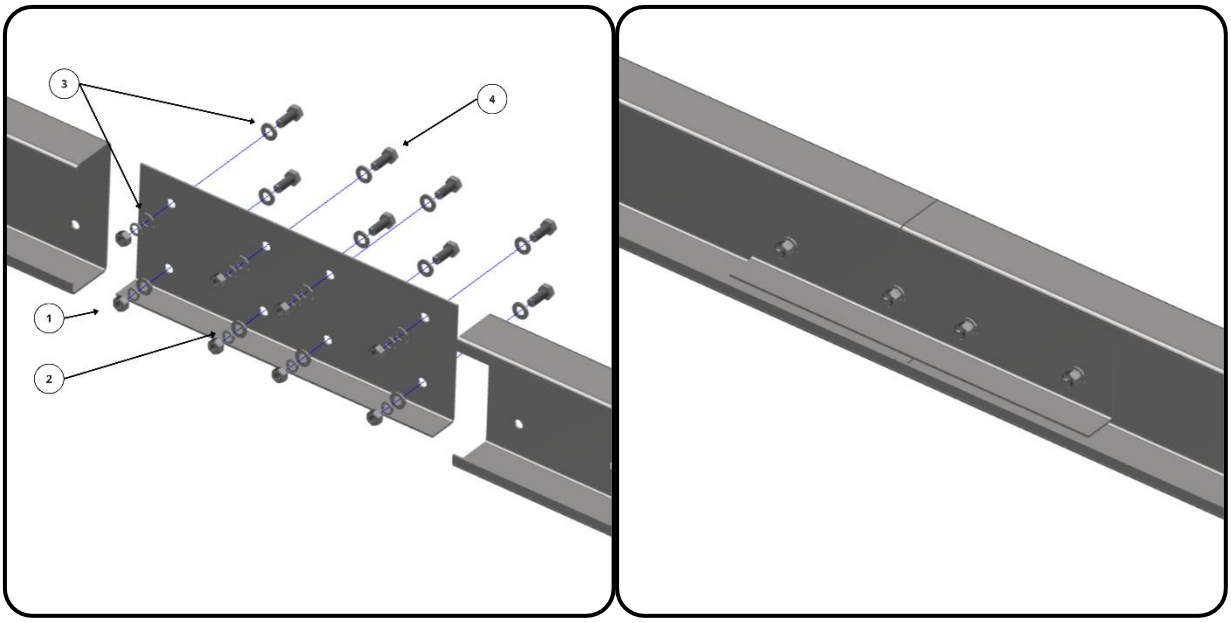
No.	Product description	Size	Quantity
①	Self-Drilling Tek Screw, Class 4 Coated Steel	M6.3x22	8



Steel Rail:

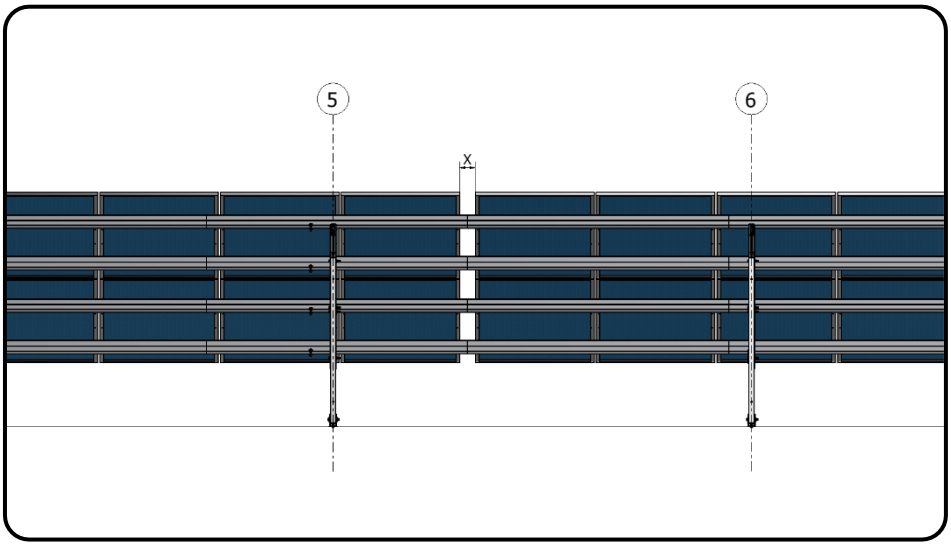
Insert the Extension into the Rail, align the holes and secure the connection with the fasteners listed below.

No.	Product description	Size	Quantity
①	Hex Nut, Hot Dip Galv Steel	M12	8
②	Spring Washer, Hot Dip Galv Steel	M12	8
③	Plain Washer, Hot Dip Galv Steel	M12	16
④	Bolt Hexagon, Hot Dip Galv Steel	M12x35	8

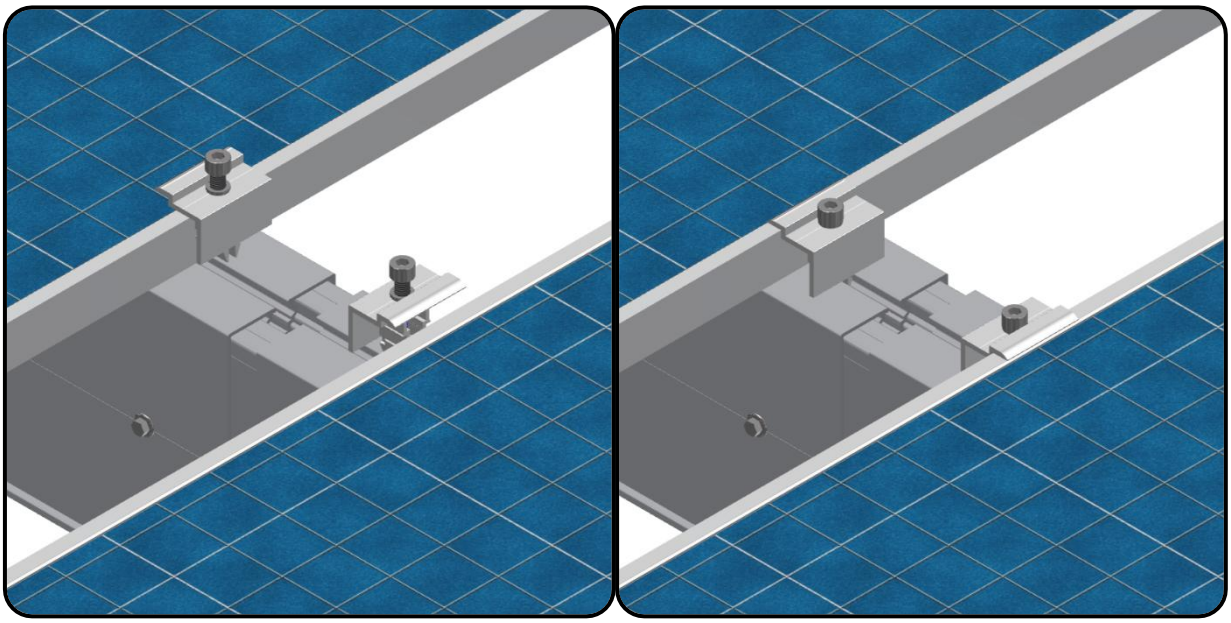


Thermal Expansion Gap:

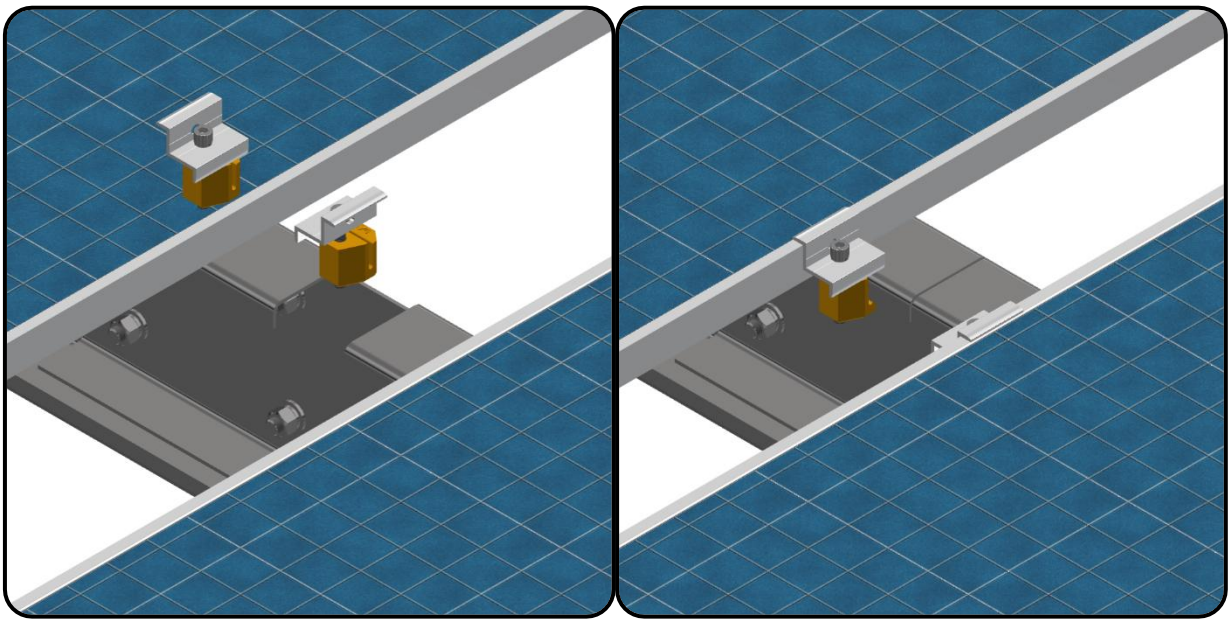
Table sections exceeding ±35 m will require a 150 mm thermal expansion gap between the PV modules. Refer to the project-specific layout drawings for the positioning of the expansion gap, if applicable.



The Extension will only be connected to the Rail on one side of the splice, leaving a 10mm gap between the Rails. PV modules should be fixed with End Clamps on both sides of the expansion gap.



When using Steel Rails, install the Rail Extension in the standard manner. Install End Clamps on both sides of the expansion gap to secure the adjacent PV modules.

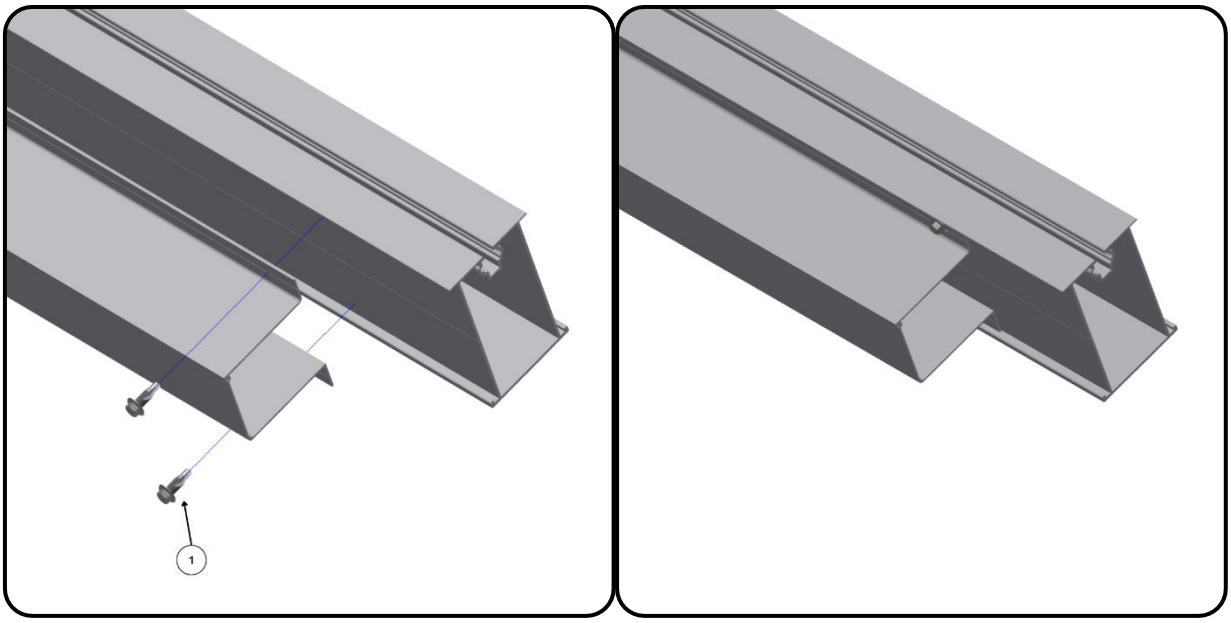


13. Purlin Cable Tray Installation

Position the Cable Tray Housing along the Rail. Use the fasteners listed below to secure the Cable Tray Housing to the Rail. Complete the installation by fitting the Cable Tray Cover over the cables. Interlock the Cover with the Housing and secure the Cover to the Rail.

(Aluminium purlin Cable Trays are supplied in 6m lengths only)

No.	Product description	Size	Quantity
①	Self-Drilling Tek Screw, Class 4 Coated Steel	M6.3x22	14

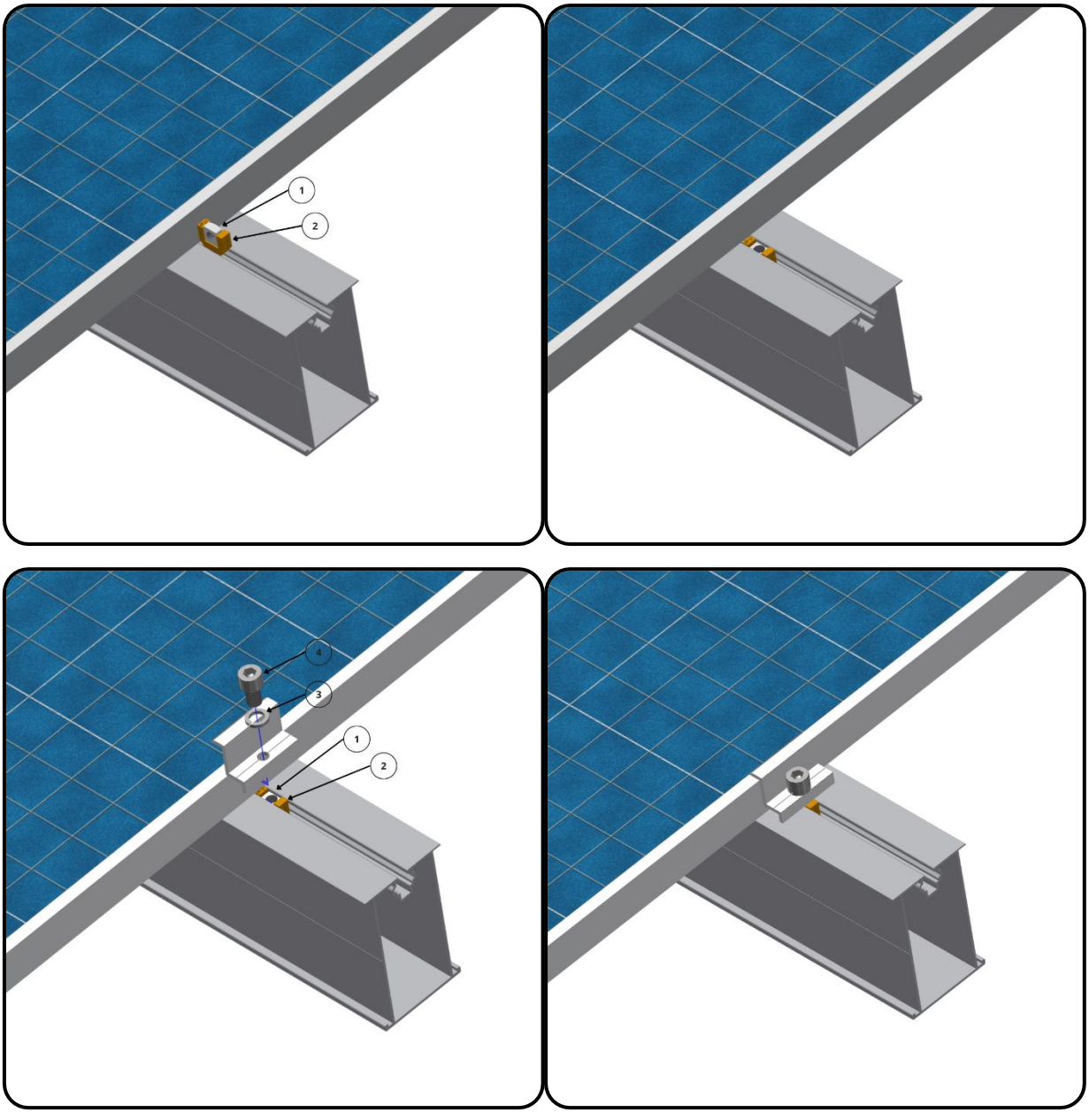


14. PV Module Installation

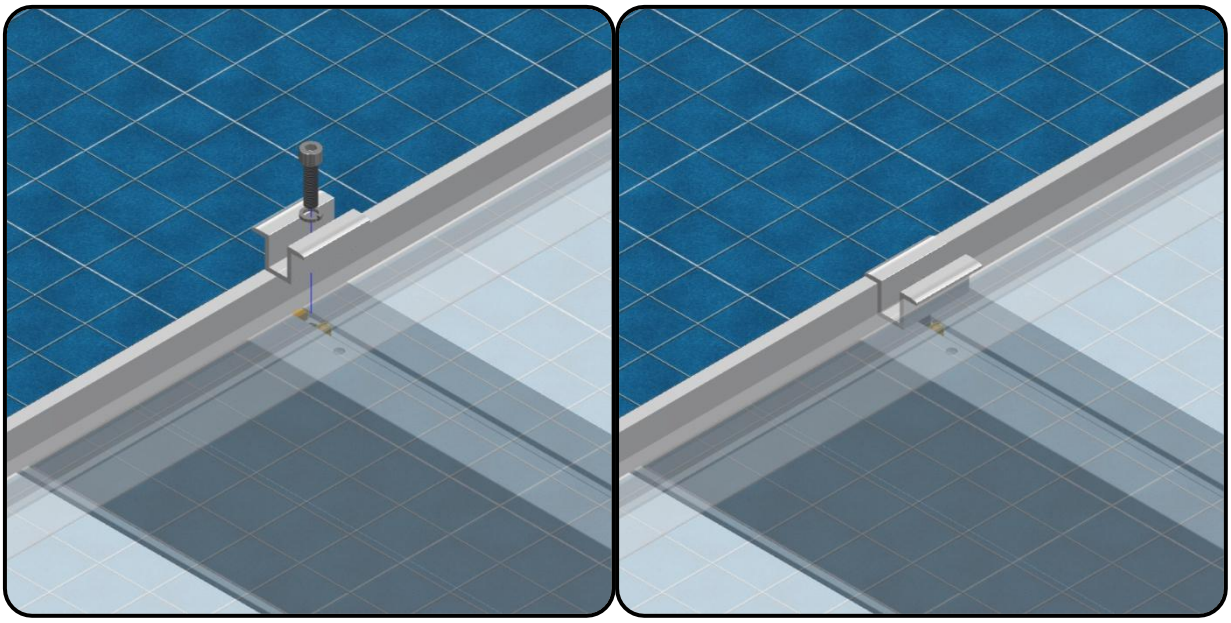
All Purpose and Classic:

Insert Nut Stoppers into the Rail where the installation of PV module Clamps will be. Insert the Square Nut into the Rail cavity and use the Nut Stopper to align the Square Nut. Secure the PV module using the Mid Clamp or End Clamp and the fasteners listed below.

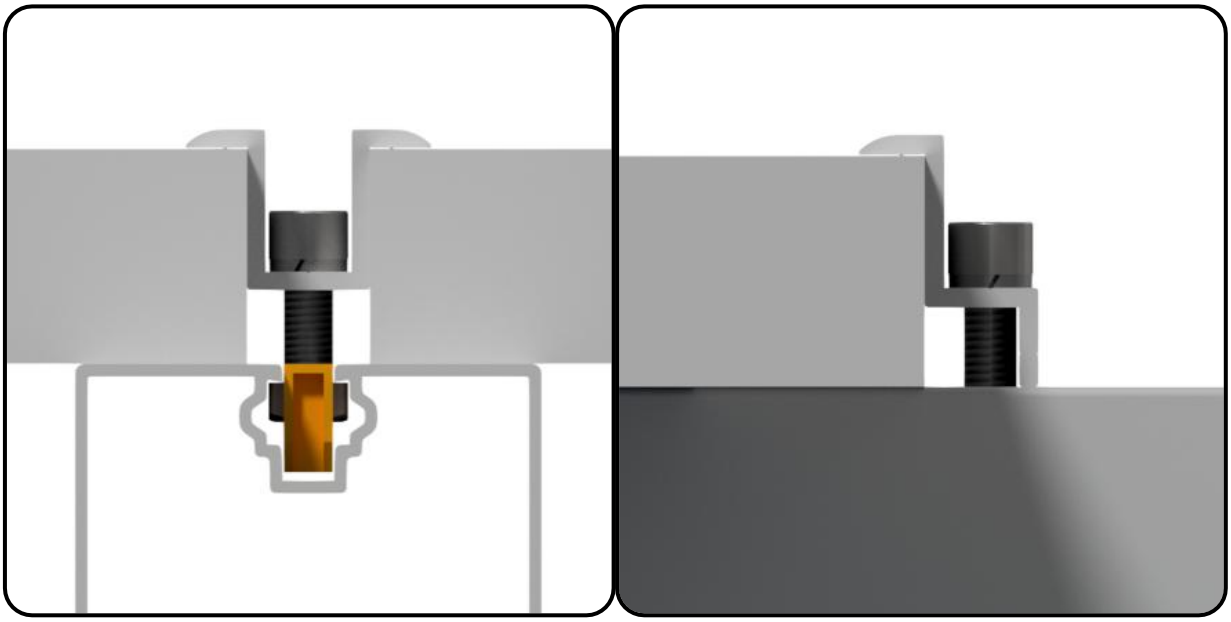
No.	Product description	Size	Quantity
①	Square Nut, Stainless Steel	M8	1
②	Nut Stopper, Polypropylene Polymer	M8	1
③	Spring Washer, Stainless Steel	M8	1
④	Cap Screws Hexagon, Stainless Steel	M8	1



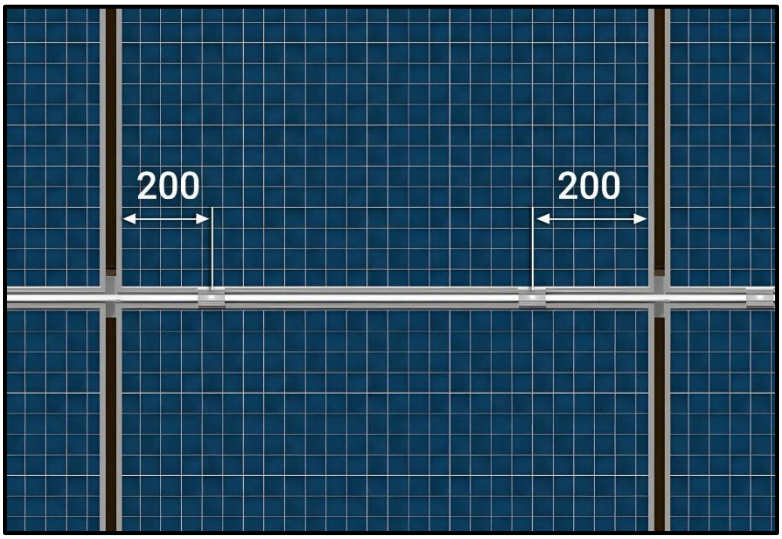
PV modules should be laid onto the Rails in a portrait orientation, ensuring each module is supported by two Rail lengths. Install PV module clamps at four points: two Clamps on each opposing long side of the module. These Clamps secure the PV modules firmly to the Rails.



Mid Clamps are installed between two adjacent PV modules to secure them, while End Clamps are used at the ends of each row of PV modules. Ensure all clamps are mounted flush against the sides of the PV modules for a secure and stable fit. Proper placement of clamps helps maintain alignment and structural integrity throughout the installation.



When installing Mid Clamps on the short sides of PV modules, ensure their centres are positioned approximately 200 mm from the module's side edges.



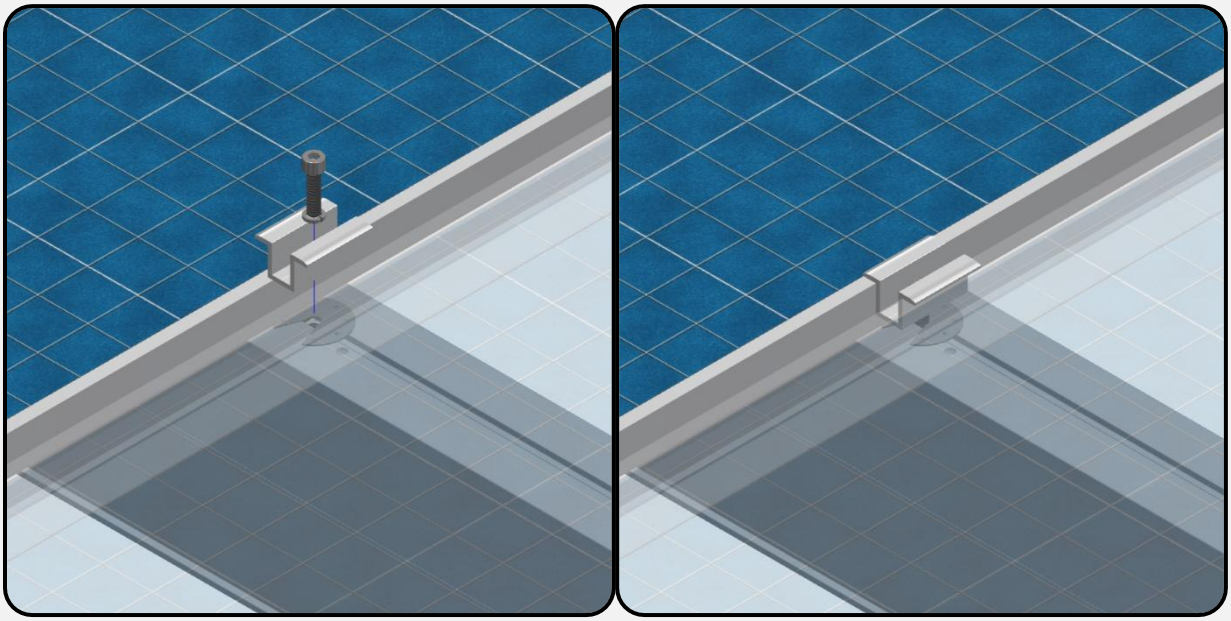
Earthing Continuity

Where Earthing Pins are not included, effective earthing of photovoltaic (PV) modules and electrical continuity must be achieved by breaching the anodised layer of the module frames using Earth Plates.

Begin by positioning the Nut Stopper and Square Nut within the Rail cavity in accordance with the PV module clamping configuration. Place the Earth Plate onto the Rail, ensuring that the long lip is securely seated inside the Rail cavity behind the Nut Stopper.

Carefully lift the PV module slightly and slide the Earth Plate along the Rail until the short lip contacts the side of the module frame. Lower the module onto the Earth Plate, allowing the spikes to pierce the anodised layer of the frame. Ensure the Square Nut is aligned with the central hole of the Earth Plate.

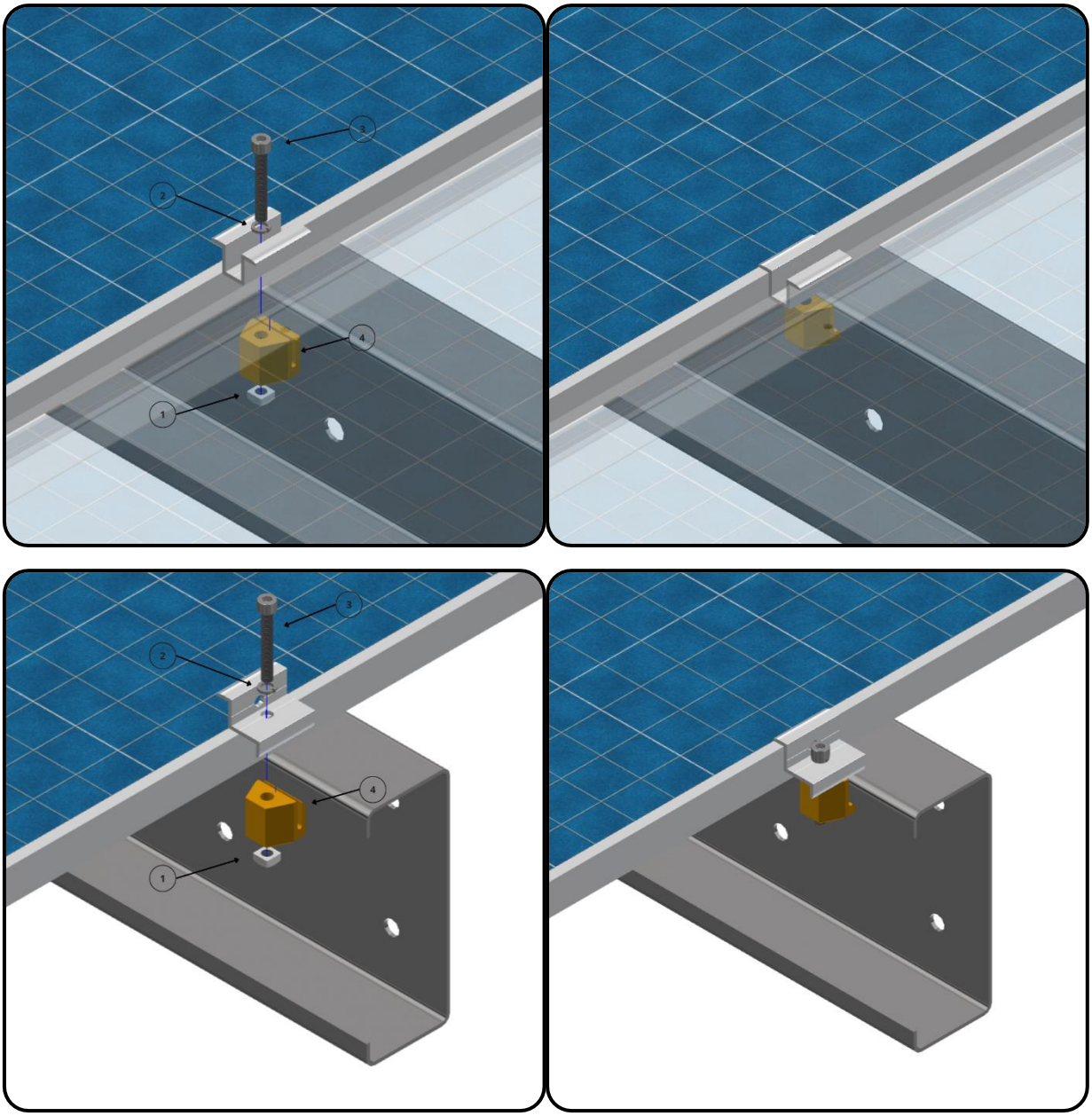
This procedure provides a secure mechanical connection and ensures reliable electrical continuity and earthing of the PV system.



Nut Holder:

With the PV module in position on the Steel Rail, position the Nut Holder over the Rail lip and in line with the module edge. Secure the PV module using the Mid Clamp or End Clamp and the fasteners listed below.

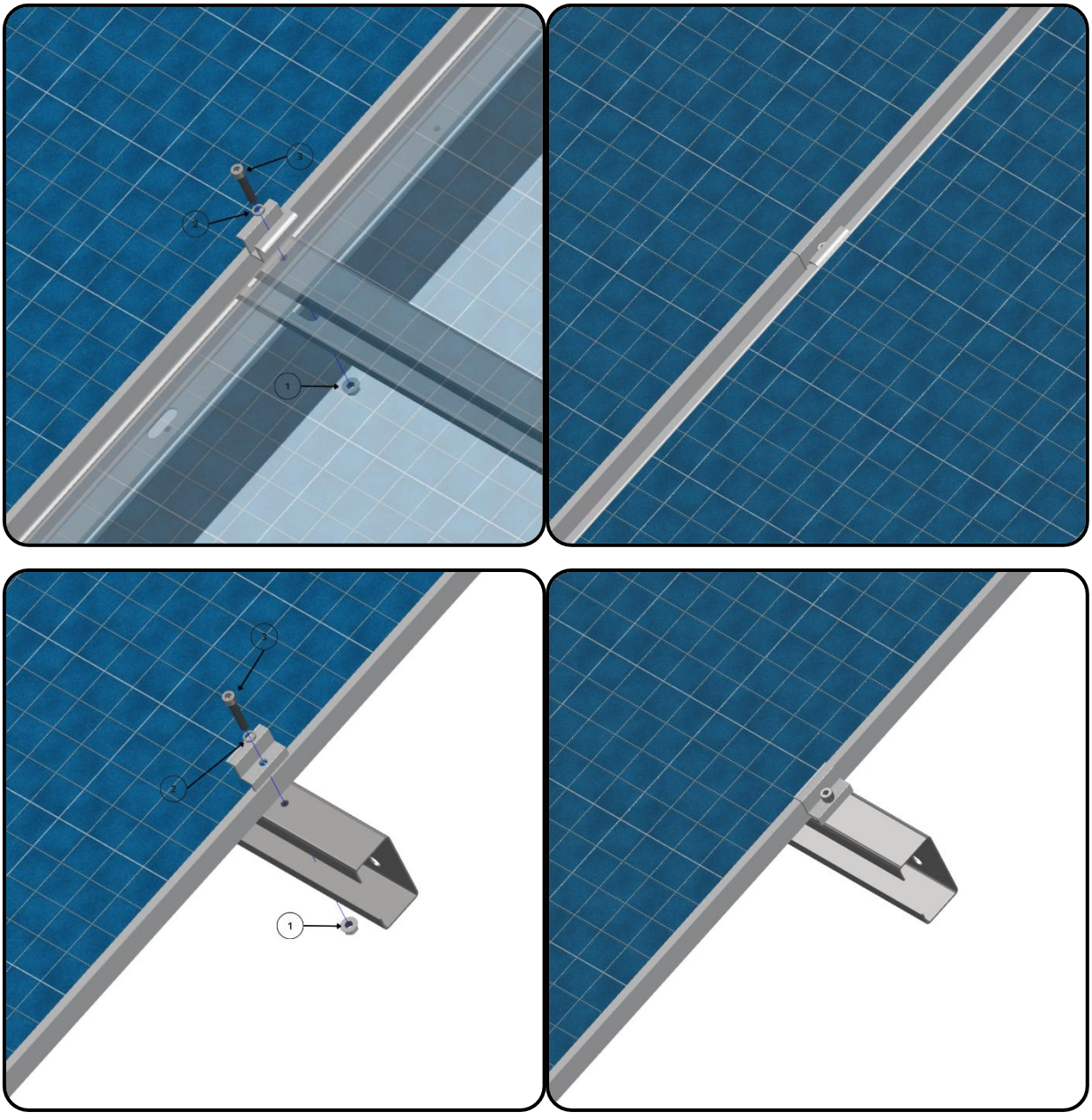
No.	Product description	Size	Quantity
①	Square Nut, Stainless Steel	M8	1
②	Spring Washer, Stainless Steel	M8	1
③	Cap Screws Hexagon, Stainless Steel	M8	1
④	Nut Holder, Nylon Polymer	M8	1



Rail Slot:

With the PV module in position on the Steel Rail, position the Clamp over the Rail slot. Secure the PV module using the Mid Clamp or End Clamp and the fasteners listed below.

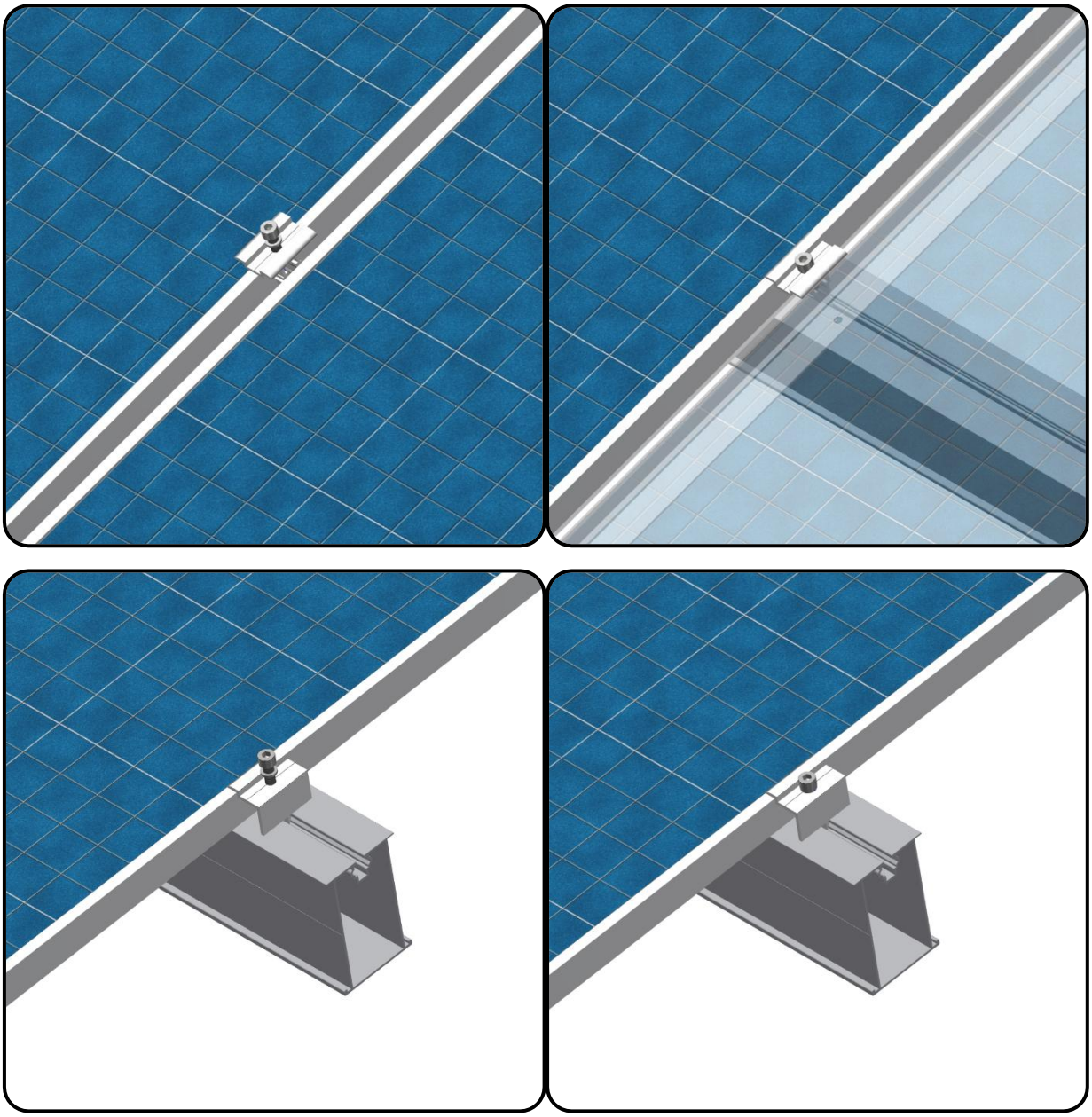
No.	Product description	Size	Quantity
①	Hex Flange Nut, Stainless Steel	M8	1
②	Spring Washer, Stainless Steel	M8	1
③	Cap Screws Hexagon, Stainless Steel	M8	1



Click Fix:

Loosen the Cap Screw to allow the pegs to click into the Rail. With the PV module in position on the aluminium Rail, push the clamp until it clicks into place, and ensure that the modules are aligned. Secure the modules in place by fastening the Cap Screws.

Do not repeatedly insert and remove the Click Fix clamps.



PV Module Clamps and Fasteners

It is essential to ensure that the appropriate clamps and fasteners are used according to the height of the PV module.

Aluminium Rails

Module height (mm)	End Clamps	Fasteners (Mid & End Clamp)
30	AXE_CM_CB_AL – Classic Base	M8x30 Hex Cap Screw
	AXE_CM_CP_AL – Classic Pin	M8x30 Hex Cap Screw
35	AXE_CM_CB_AL – Classic Base	M8x30 Hex Cap Screw
	AXE_CM_CP_AL – Classic Pin	M8x30 Hex Cap Screw
40	AXE_CE_AP_40_AL - All Purpose	M8x35 Hex Cap Screw

Steel Rails

Module height (mm)	End Clamps	Fasteners (Mid & End Clamp)
30	AXE_CM_CB_AL – Classic Base	M8x55 Hex Cap Screw
	AXE_CM_CP_AL – Classic Pin	M8x55 Hex Cap Screw
35	AXE_CM_CB_AL – Classic Base	M8x55 Hex Cap Screw
	AXE_CM_CP_AL – Classic Pin	M8x55 Hex Cap Screw
40	AXE_CE_AP_40_AL - All Purpose	M8x65 Hex Cap Screw

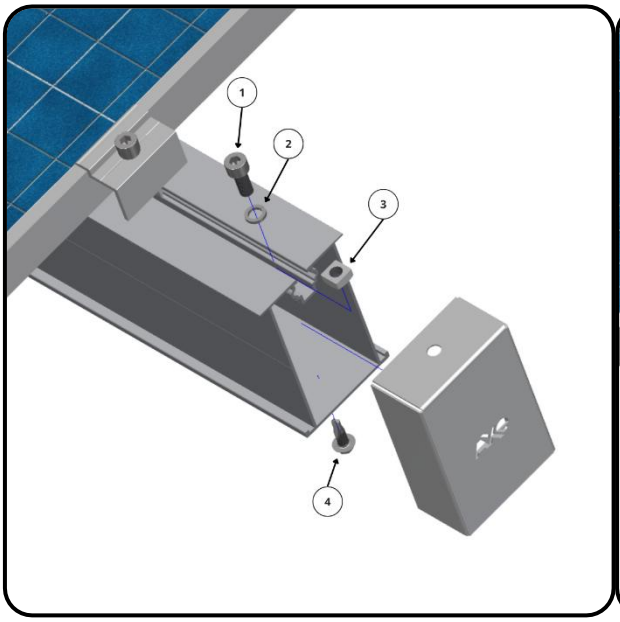
15. End Caps Installation

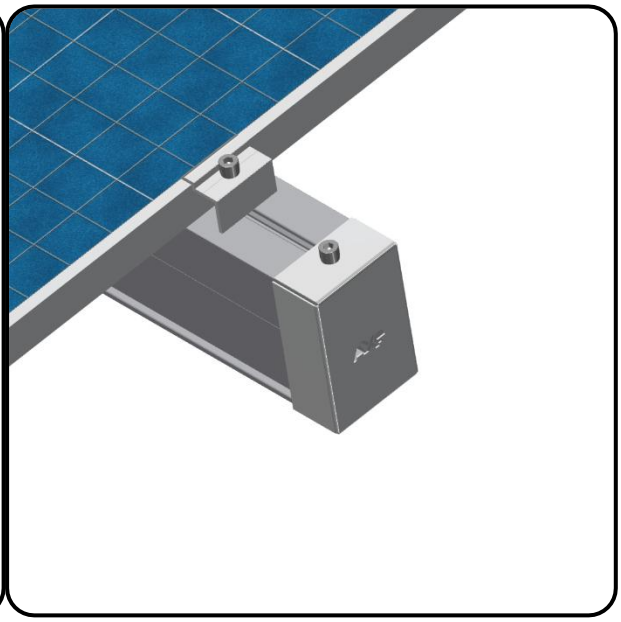
To achieve a neat finish, slide the End Caps over the ends of the Rails and secure with the fasteners listed below.

(Custom logo engraving available)

Rail End Caps:

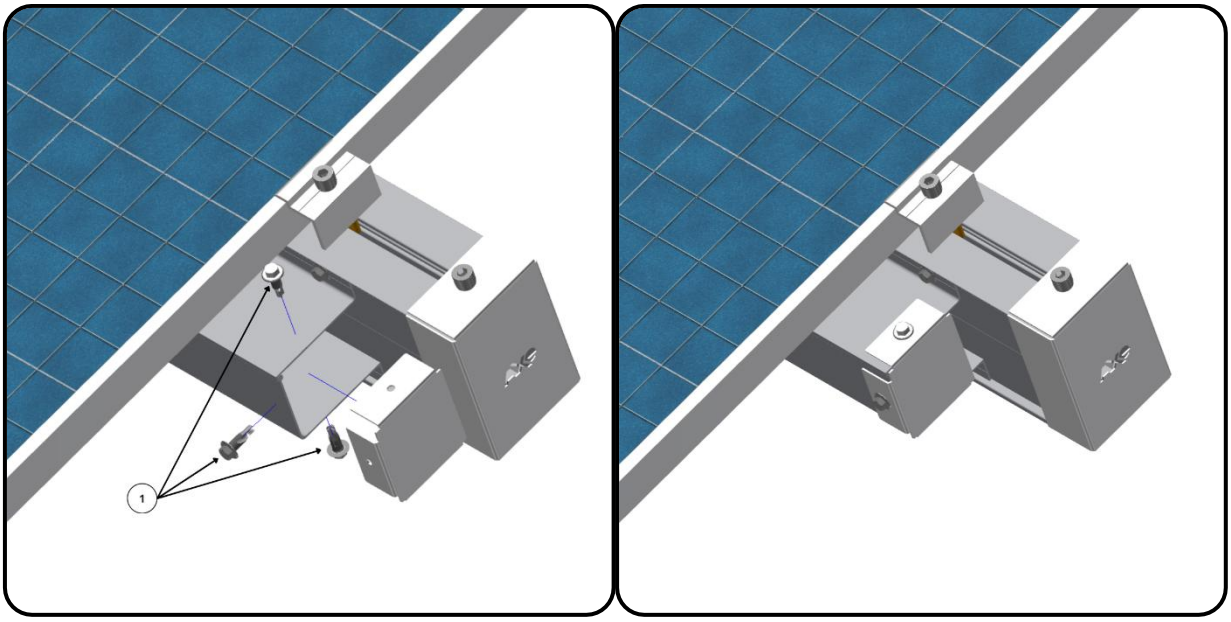
No.	Product description	Size	Quantity
①	Cap Screw Hexagon, Stainless Steel	M8x20	1
②	Spring Washer, Stainless Steel	M8	1
③	Square Nut, Stainless Steel	M8	1
④	Self-Drilling Tek Screw, Class 4 Coated Steel	M6.3x22	1





Purlin Cable Tray End Caps:

No.	Product description	Size	Quantity
①	Self-Drilling Tek Screw, Class 4 Coated Steel	M6.3x22	3



16. Maintenance

The products are to be inspected annually in the form of a visual inspection of the whole installation. Axe Struct must be notified at the first sign of corrosion or abnormal deformation.

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

Zinc paint touch-ups must be done where galvanising layers have been damaged.

The product must be cleaned using water with a pH between 6 and 10 and without chemical additives.

17. 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 the state of the art upon printing. This document is subject to change without notice.