

ENESTAND VELGA

Installation Guide



※EST-150RT2DA-625のイメージです

製品	型式
ENESTAND VELGA	EST-150RT※DA-625
	EST-150R ※DA-625
	EST-150RX※DA-625

**This installation manual contains important information and safety notes.
Please make sure to read it before starting installation.**

**※Prepare the following three documents before beginning: Installation Manual,
Foundation Reference Drawing, and Dimensional Drawing.**

**※Specific dimensions are not included in this manual. Please refer to the
dimensional drawings.**

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Safety & Installation Precautions – Pre-Installation ①

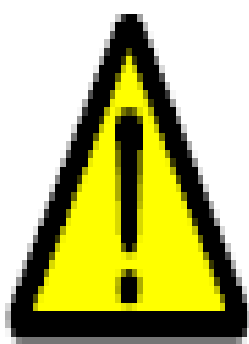
- ① Check ground conditions.
For the following types of soil, a ground survey is required:
 - Sandy soil: Check for groundwater accumulation.
 - Clayey soil: Check if soil does not stick to the bucket.
 - Organic soil: Check for high content of leaf mold
- ② Check for interference with other structures on the site.
 - There is no strict clearance requirement from the manufacturer, but we recommend avoiding contact with nearby buildings or trees.
 - Install in consideration of fire spread lines as defined by the Building Standards Act.**
- ③ Confirm the site boundary conditions.
 - Ensure there is enough distance from the boundary.
 - Make sure the roof does not extend beyond the property line.
 - Install according to the approved building permit.**
- ④ Check for any elevation differences and drainage routes on the site.
 - Will water pool inside the carport?
 - Is the downspout drainage point appropriate? (Beware of winter freezing)
- ⑤ Check for underground structures.
 - Ensure there is no interference with drainage pipes or underground cables.
 - Construct the foundation in accordance with the approved building application.**
- ⑥ Avoid installing near heat sources such as water heaters or boilers.
 - Follow the installation standards, and ensure exhaust gases do not directly hit the structure. This can cause rust or discoloration.



<Installation Notes>

If the ground bearing capacity is insufficient (If the ground bearing capacity is insufficient)、
or if ground freezing is expected during winter, proper foundation design is required

Note: Construction is the responsibility of the installer.



Please carry out the foundation work appropriately according to the site conditions.

Since ground conditions vary depending on site leveling, slope, and soil type, foundation work should be appropriately carried out by the installer based on the actual site conditions.

Installation & Safety Precautions – Pre-Installation ②

Pre-Work Preparation & Basics

- ◆ **Clothing Check**
Wear safe and clean clothing.
For safety, gloves and a helmet must be worn.
Even during summer, it is recommended to wear long sleeves if possible.
- ◆ **Confirm Installation Position**
Verify installation location based on the approved building plan.
Before starting, always confirm the following with the property owner:
 - Exact location for the main unit and power conditioner
 - Foundation excavation area
 - Drilling positions, if holes in walls are needed
- ◆ **Vehicle Instructions**
 - All deliveries require vehicles 4-ton trucks. Confirm the access route to the delivery location in advance.**
 - Ensure construction vehicles do not obstruct traffic.
- ◆ **High-Access Work Safety**
It is recommended to use proper working platforms with safety in mind.
Follow the site supervisor's instructions.
For work above 2 meters in height, take necessary precautions in accordance with occupational safety and health regulations.
If securing safety harnesses to the post, ensure protection (e.g., with soft cloth) to avoid damaging the product.

Pre-Work Precautions

- Do not perform construction during severe weather.
This may cause damage to the product or result in injury.
Do not step on the solar modules.
This can damage the panels and affect power generation.
- Always use the designated set of parts.
Using incorrect parts may cause the product to collapse or create serious hazards.
- Use only the specified tools.
Improper module installation or loose bolts can lead to collapse or falling parts.
- Installation must be performed by personnel who have acquired a certified installation ID and fully understand the procedure.
- Warranty claims cannot be accepted if the installation is done by unauthorized persons.
Improper installation may cause the product to fall or pose a danger.
- **Please handle the product with great care.**
- **The main body is made of aluminum and is easily scratched.**
- **Be careful not to overtighten bolts and nuts.**
- **Excessive tightening may deform, dent, or damage the aluminum parts.**

- ※ **Before starting, always check the product for any scratches or damage.**
- ※ **If any parts are missing or defective, immediately contact your distributor or Sky Japan Co., Ltd.**
- ※ **Foundation-related materials are not included with the product. Please prepare them as required for your site.**
- ※ **Any parts not listed in the included component list must be arranged by the contractor. Ensure necessary tools and additional materials are prepared based on site conditions.**

STEP 1

Post, Reinforcement Plate & Connector Installation



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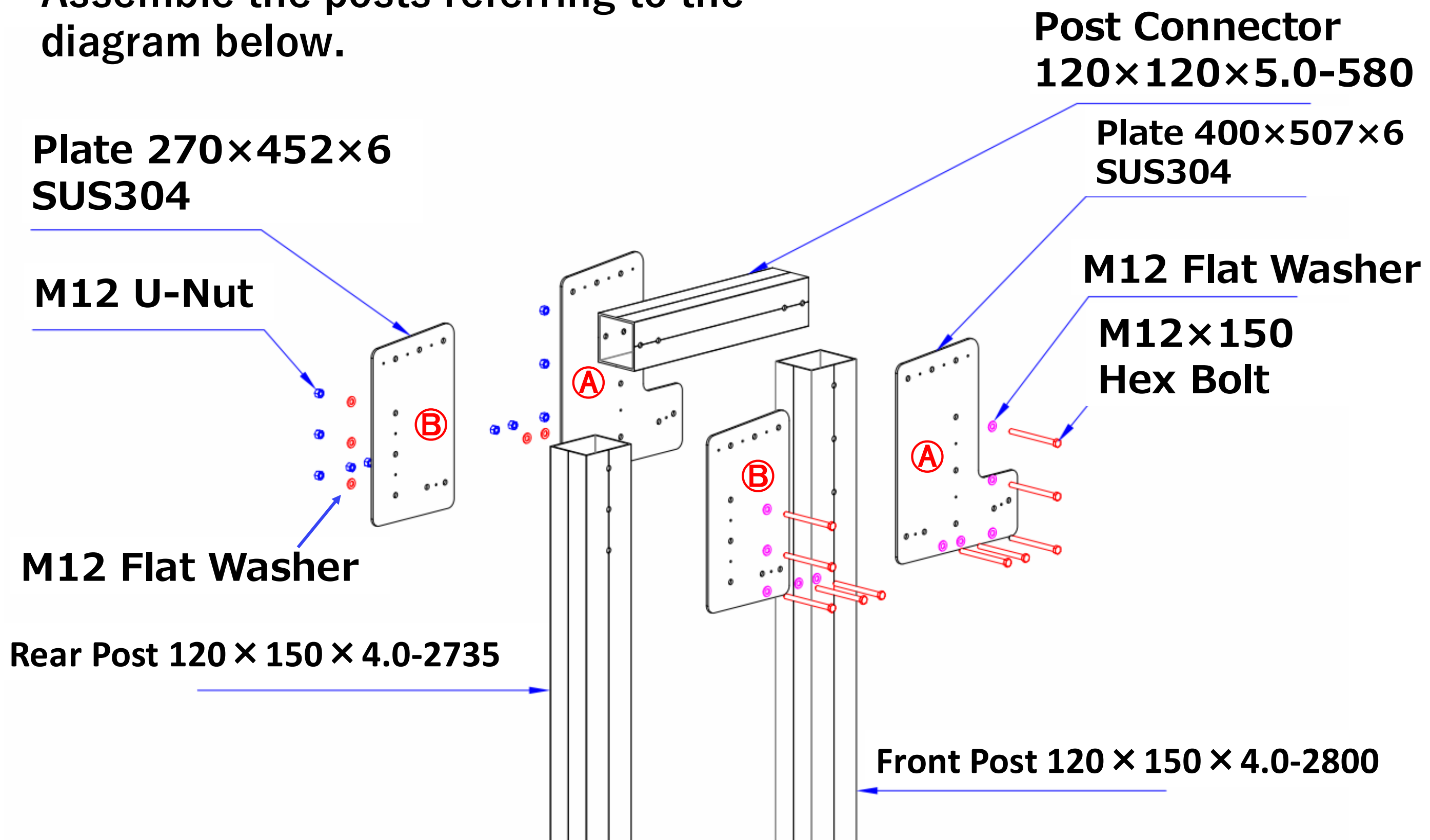
STEP 1

Post, Reinforcement Plate & Connector Installation

※Dimensions may vary depending on the product.
Please refer to the product drawing for details.

3 Assembly of Front and Rear Posts

Assemble the posts referring to the diagram below.



※Ensure bolt heads are on the outside and nuts on the inside when assembling.

STEP 1

Post, Reinforcement Plate & Connector Installation

As the reinforcement plate (stainless steel) is heavy, please attach it to the post before erection.



※The photo shown is of a sample 150R type.

Due to structural design, there may be gaps at the connection points. This is not a problem.



STEP 2

Concrete Pouring



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Post Position & Level Adjustment

Confirm the installation position and use blinding concrete at the base of the foundation to adjust the level.



Example: Some contractors have installed using paving blocks as foundation leveling support.。



STEP 2

Post Installation

Securing the Posts

After confirming the post positions, use wood or other materials to hold them in place.

If the posts are not secured before pouring concrete, they may shift due to concrete pressure.



Make sure to perform level adjustment accurately. This is a critical step for the overall structure assembly.

STEP 3

Main Beam & Lower Beam Installation



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STEP 3

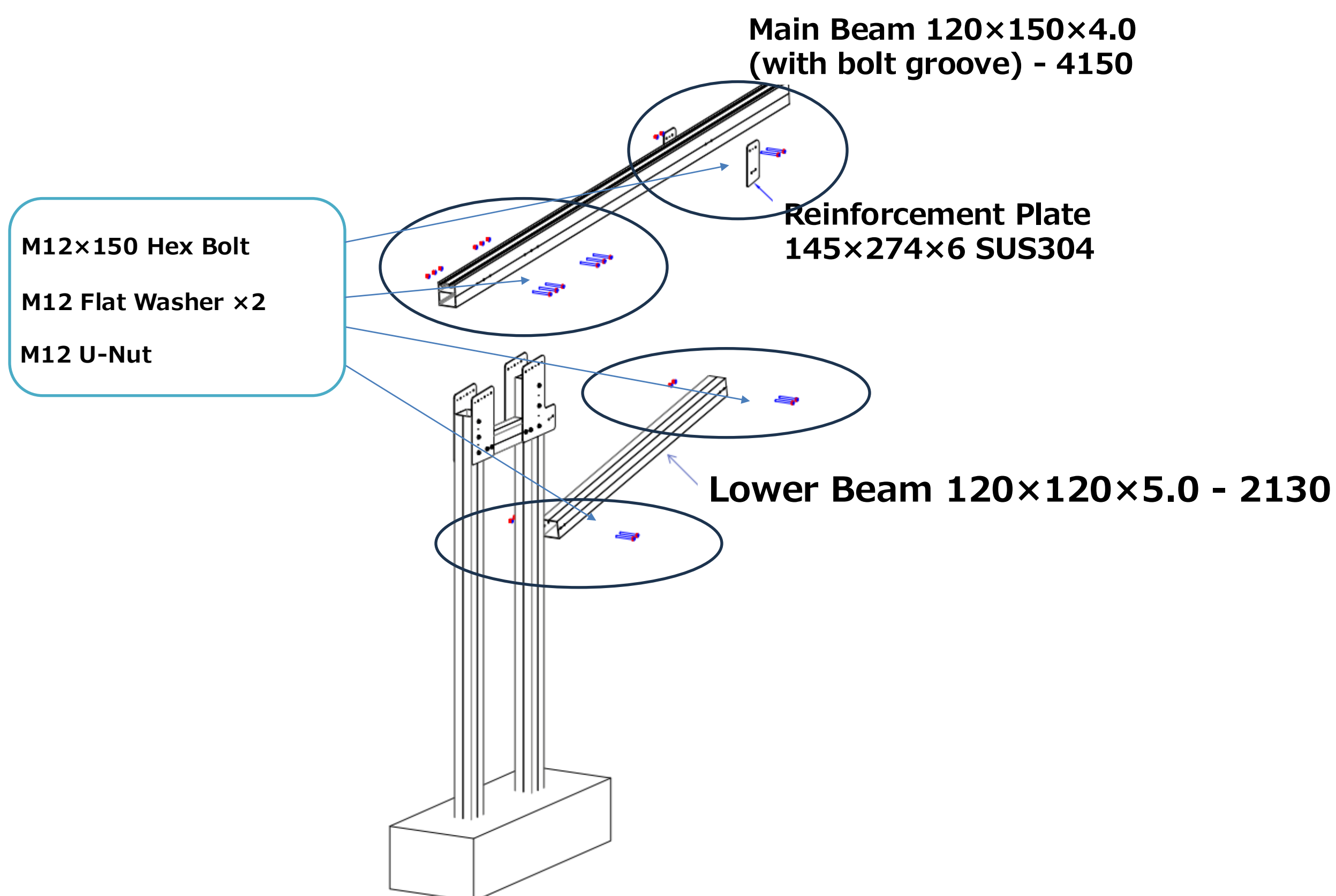
Main Beam & Lower Beam Installation

※Dimensions may vary depending on the product.
Please refer to the product drawings for details.

1 Main Beam & Lower Beam Installation

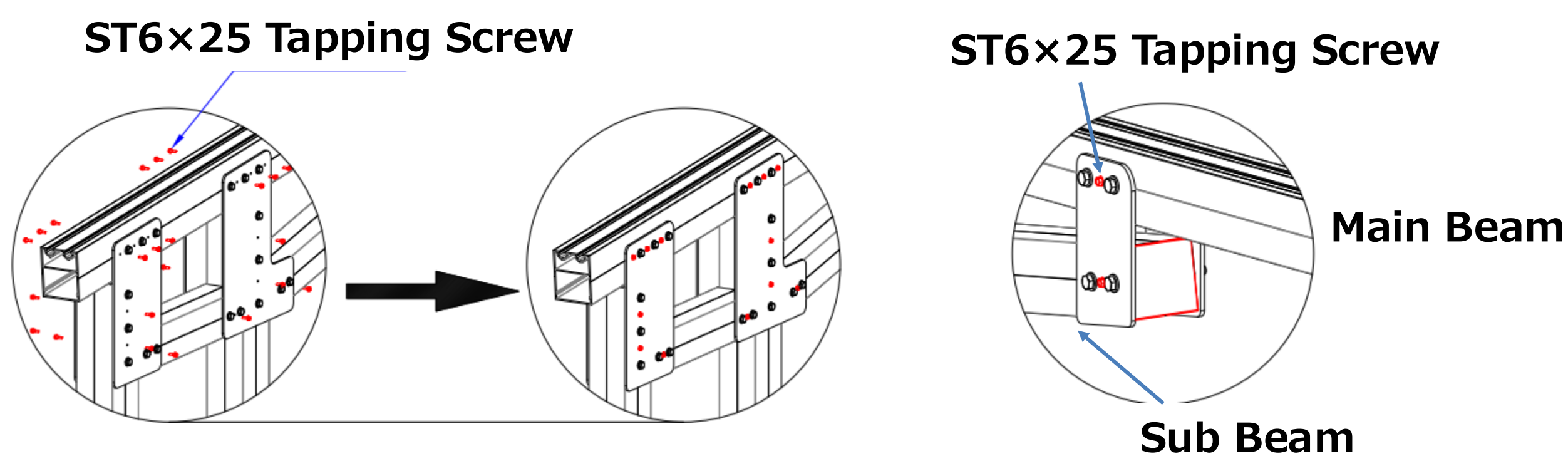
Attach the main and lower beams to the reinforcement plate on the erected posts.

Fix both beams using a reinforcement plate (145 × 276 × 6).



2 Installing Tapping Screws into the Reinforcement Plate

Secure the tapping screws into the reinforcement plate.



STEP 4

Horizontal Base Rail Installation

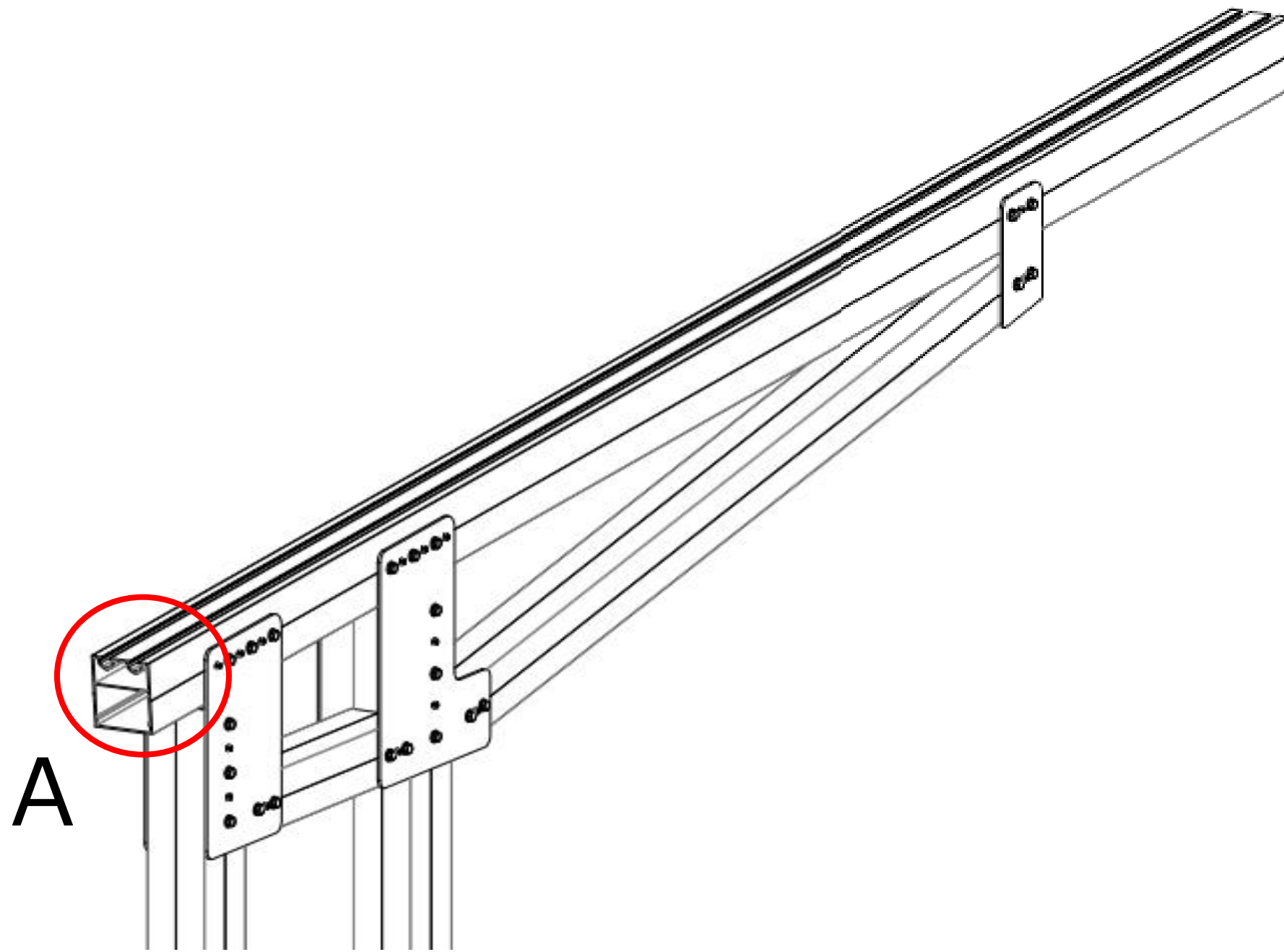


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STEP 4

Installing the Horizontal Base Rail

1 Installing Clamps for the Horizontal Base Rail



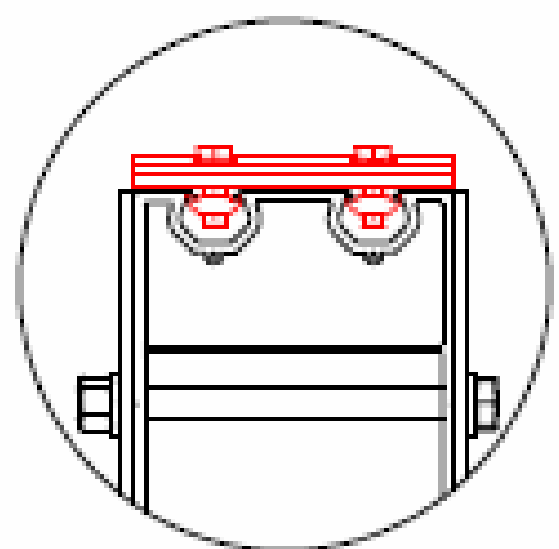
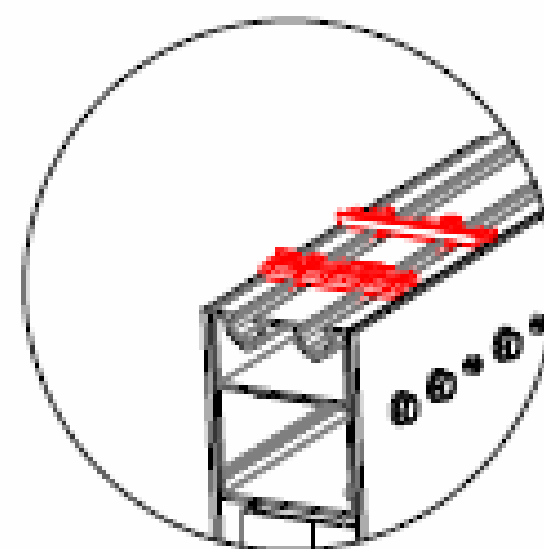
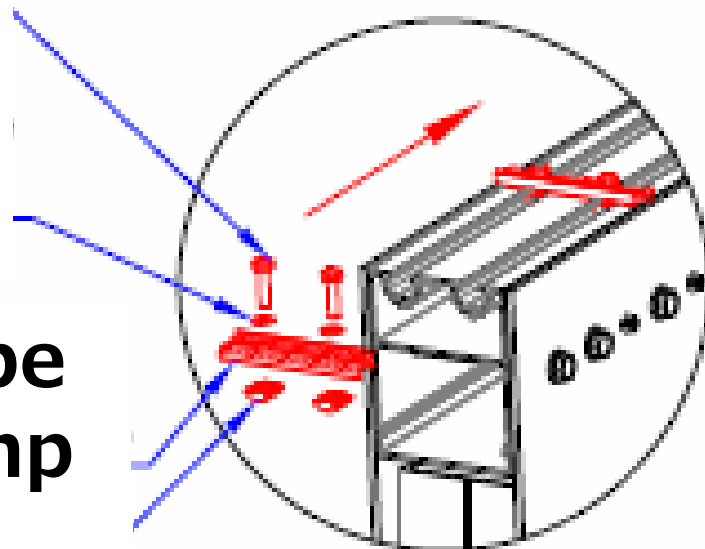
Attach the horizontal base rail fixing clamps to the main beam.

M8×25 Hex Bolt

M8 Spring Washer

M8 T-Type Rail Clamp

M8 F46 Block



A



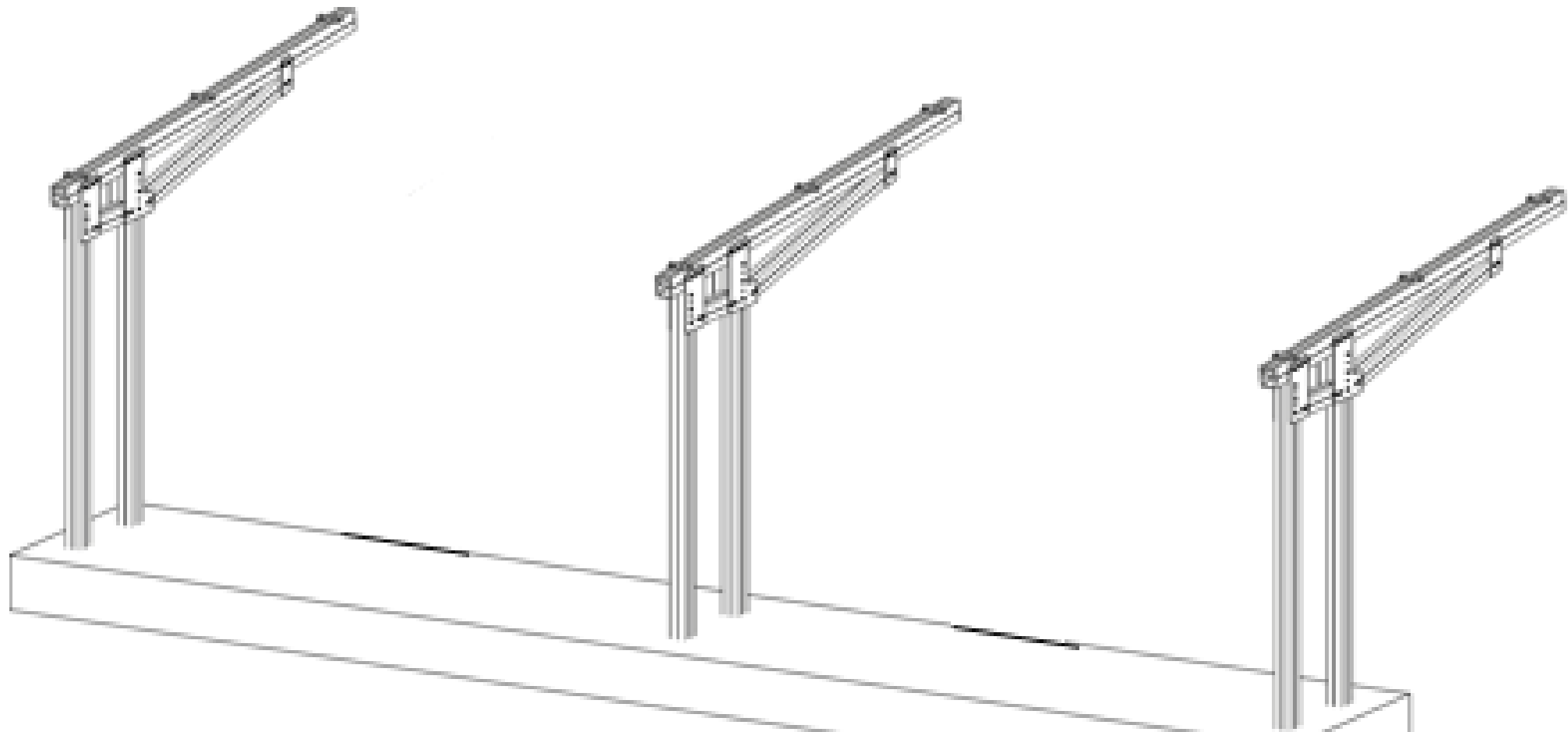
Temporarily secure the clamps until the final position of the horizontal base rail is confirmed.

STEP 4

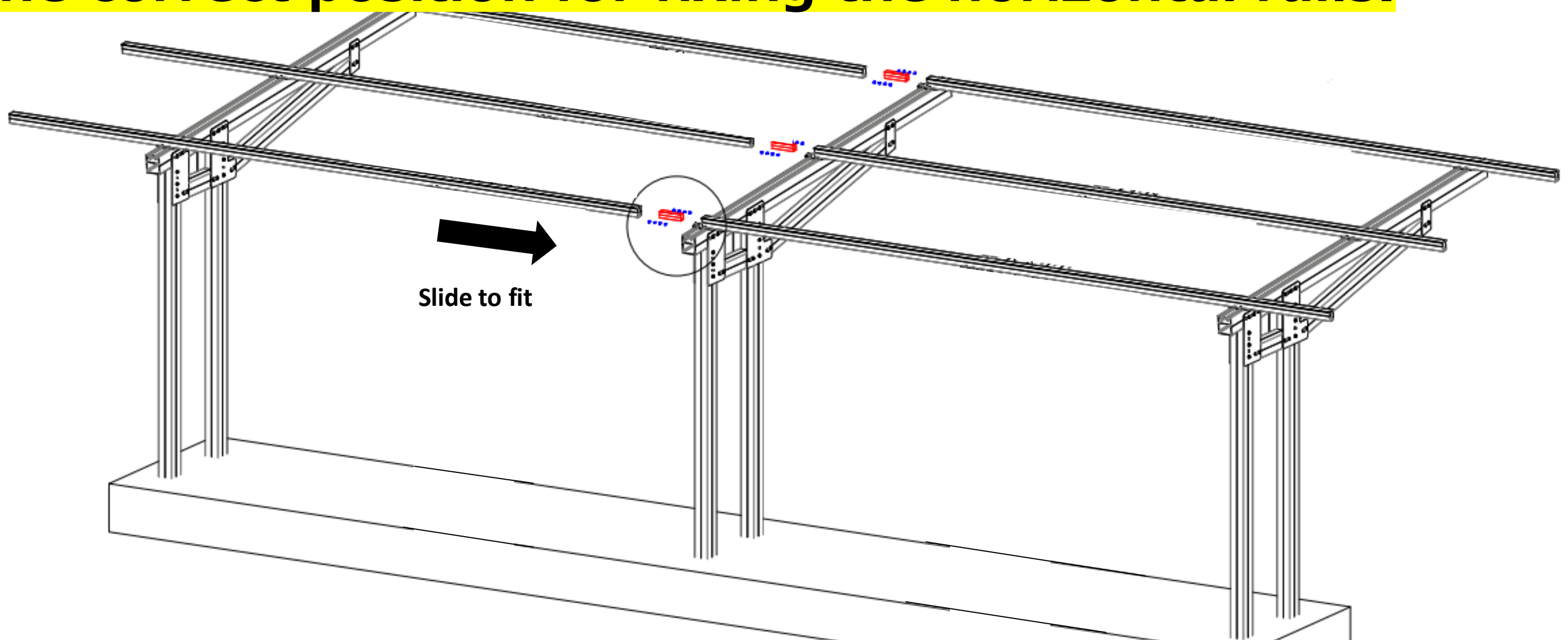
Installing the Horizontal Base Rail

2 Installing the Horizontal Base Rail

Install by sliding it into the groove of the horizontal base rail.

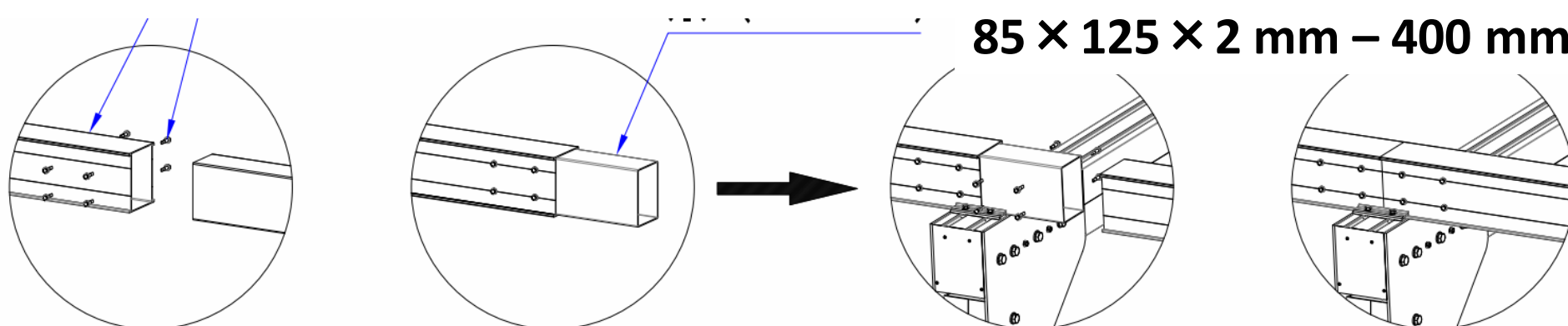


Check the product dimensional drawing to determine the correct position for fixing the horizontal rails.



ST6×25 Tapping Screw, SUS410

**Horizontal Base Rail Joint,
85 × 125 × 2 mm – 400 mm length**



※Joint Component
Installation Diagram

Once the joint components are installed, securely fix the horizontal rail.

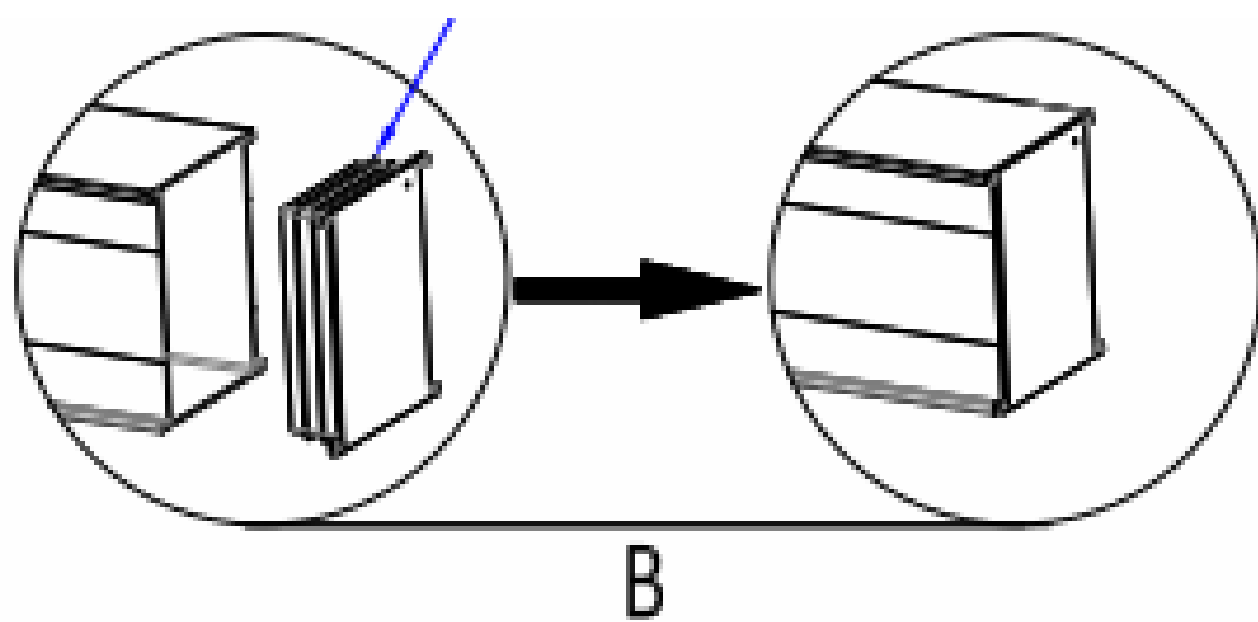
STEP 4

Installing the Horizontal Base Rail

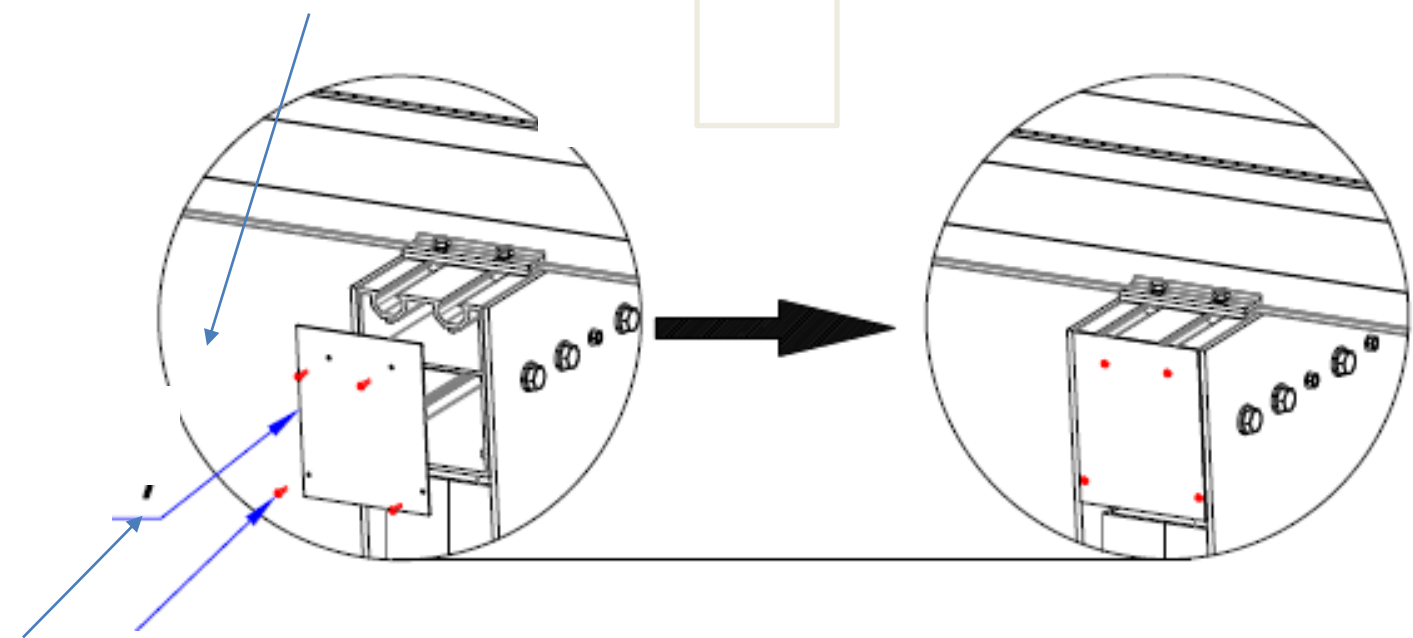
3 Installing the End Caps

Install the side caps on both the horizontal base rail and the main beam to complete the end finish.

the cap for the horizontal base rail

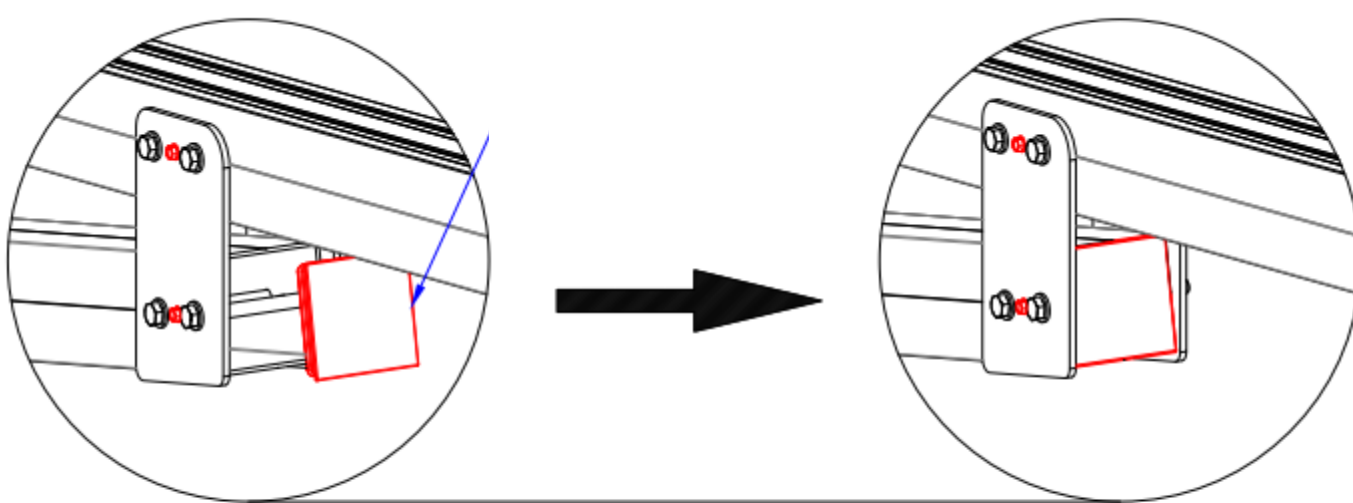


Main Beam Side Cap



**Secure using ST3×10
pan head tapping screw**

Sub Beam Side Cap



STEP 5

Vertical Rail Installation



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STEP 5

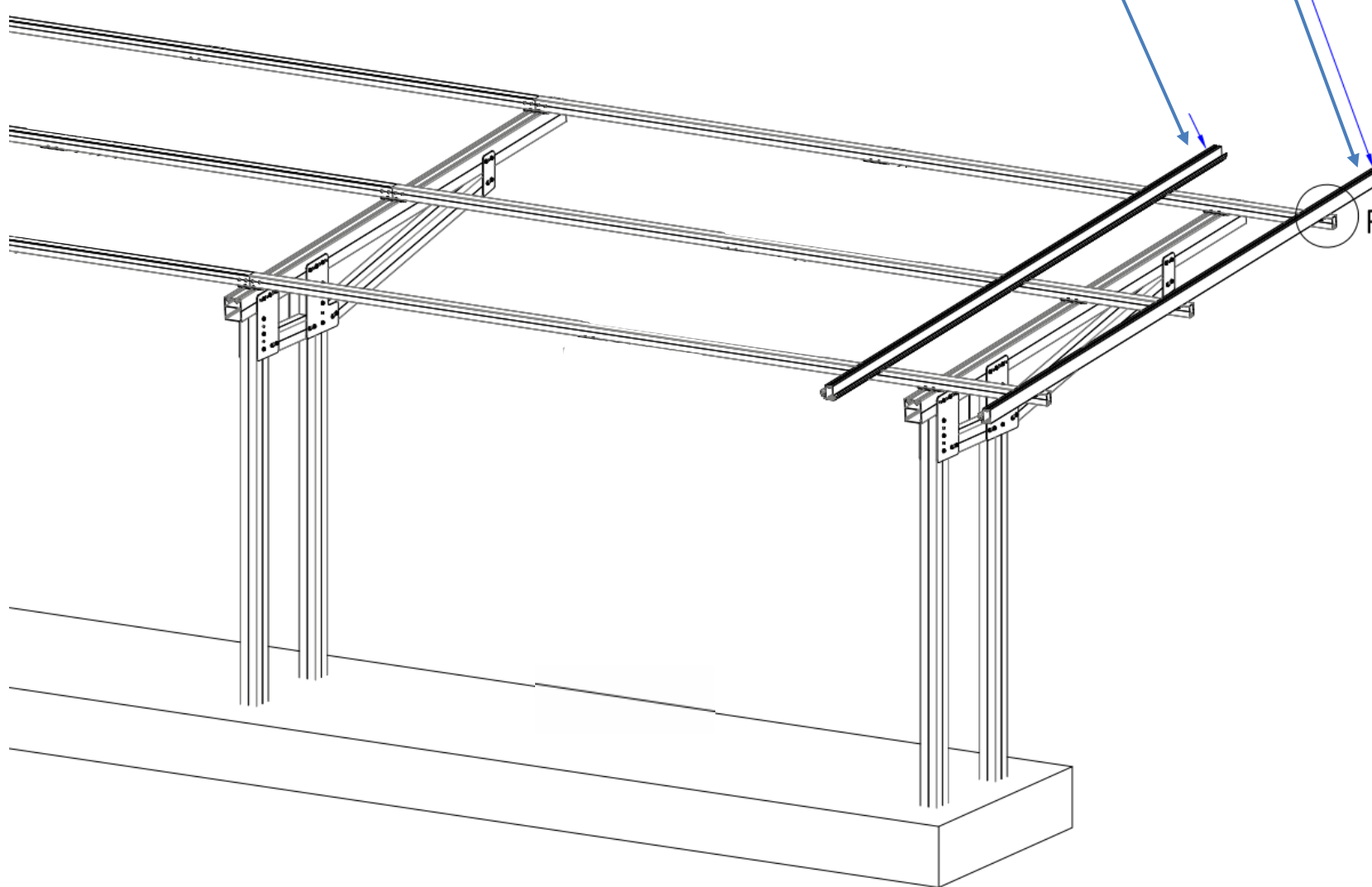
Vertical Rail Installation

1 Attach vertical rails to the horizontal base rail.

Use T-type rail clamps to secure the vertical rails to the horizontal base rail.

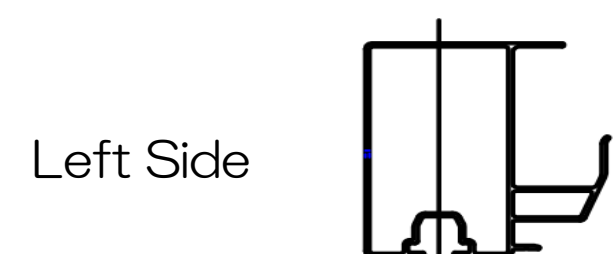
Back-mounted vertical rail for panel (drainage-integrated, right side)

Back-mounted vertical rail for panel (drainage-integrated, both sides)

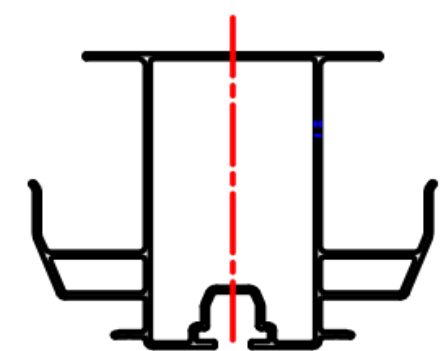


Vertical Cross-Section View

Vertical Rail (Single-Sided Type)

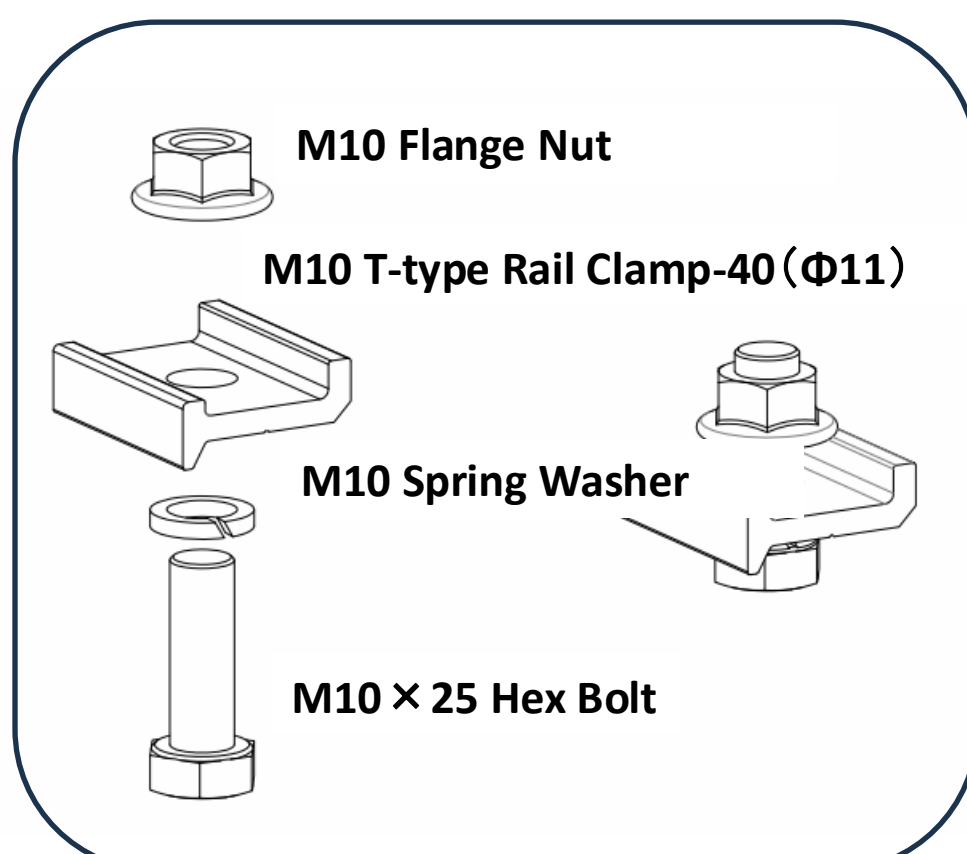


Vertical Rail (Double-Sided Type)

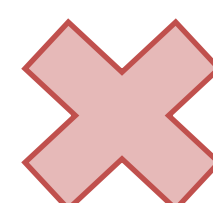
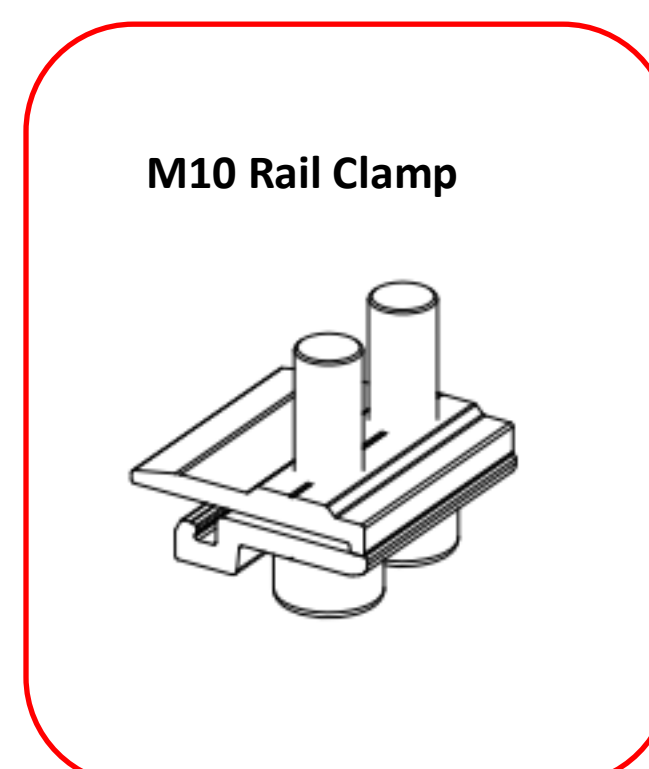


**❌ Do not use KCL151
(M10 Rail Clamp).**

For Vertical Rail Fixing



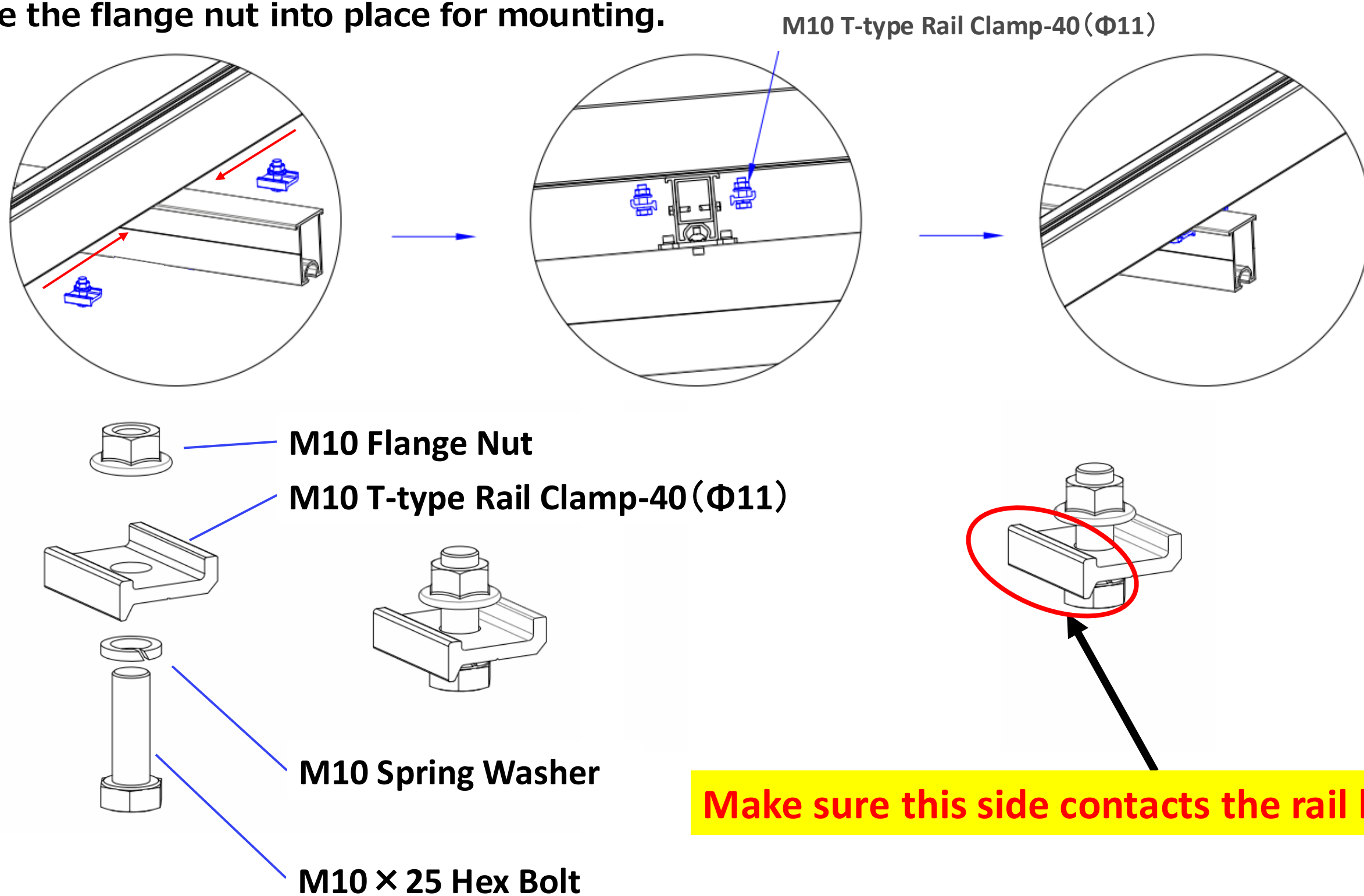
For Decorative Cover Fixing



STEP 5

Vertical Rail Fixing Guidelines

Slide the flange nut into place for mounting.



Even if the bolt touches the back of the rail, tighten it completely.

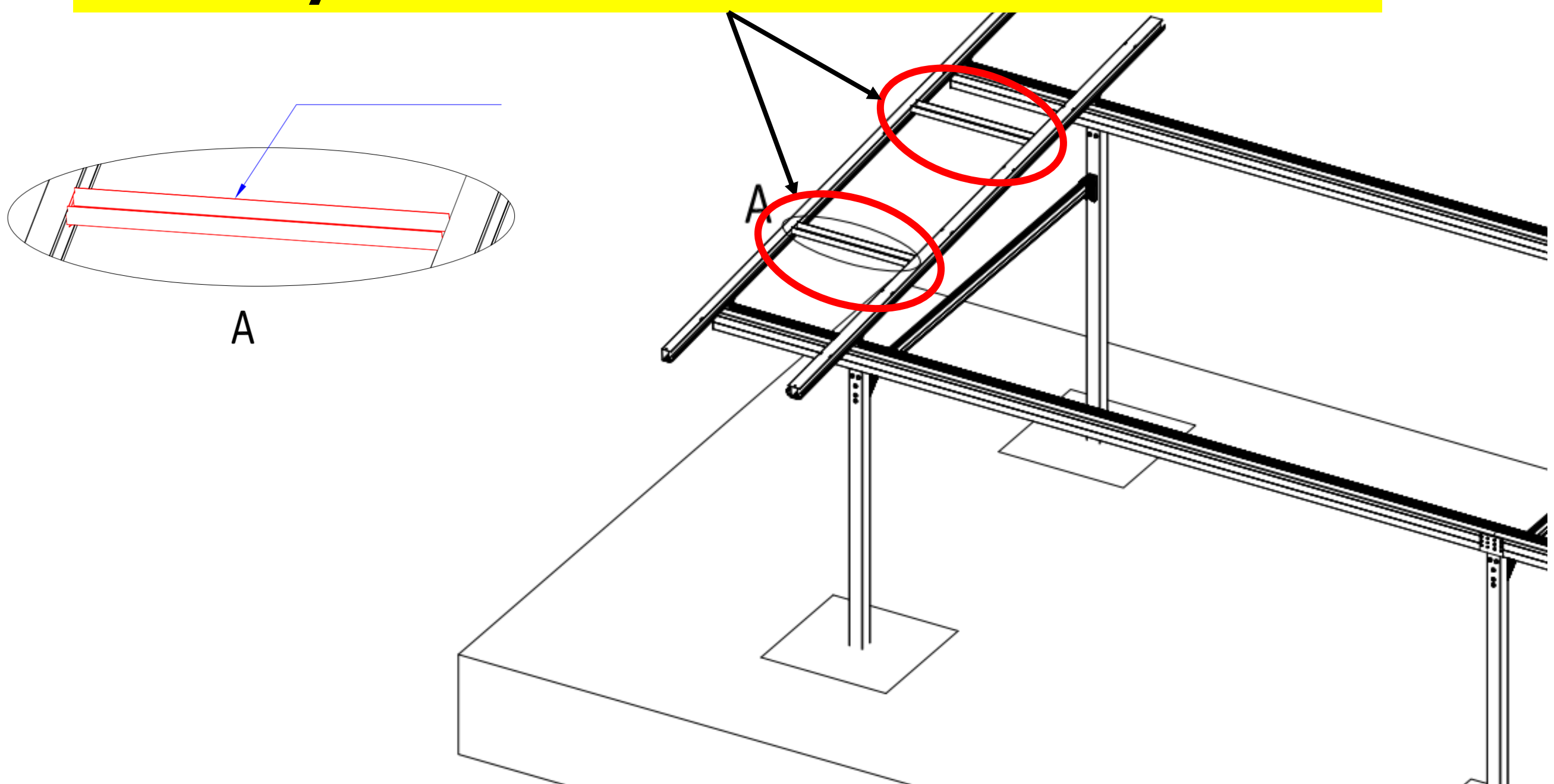
✗ Confirm that the spring washer is fully compressed.

STEP 5

Mounting of Vertical Rails and Installation of Waterproof Covers

It's recommended to install rail and panel one row at a time. Installing all rails first can cause misalignment between panel and rail holes.

Install the waterproof cover as a dummy bar in two locations.



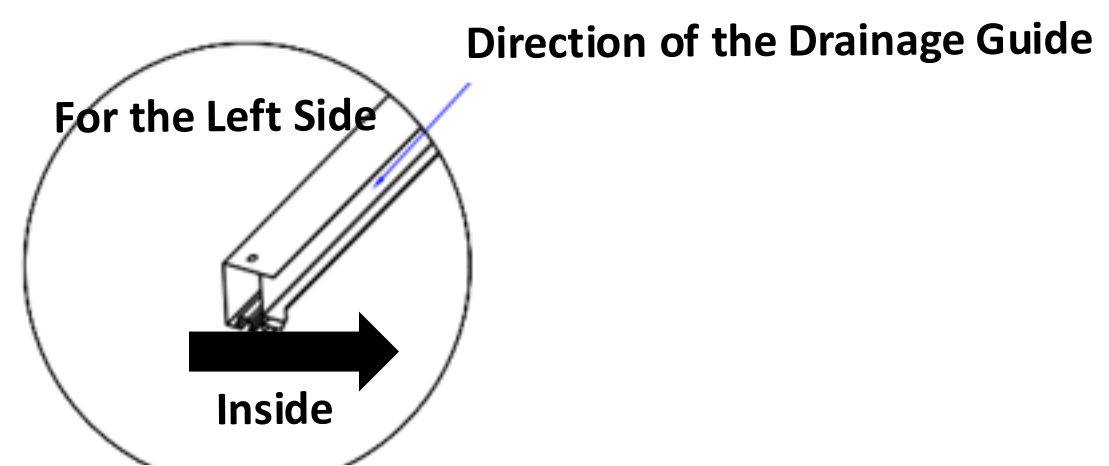
Use the waterproof cover as a dummy spacer to position the second vertical rail.
※The second rail is temporarily fastened at this stage.



Adjust the rails from both upstream and downstream sides with a two-person team.
※Keep the vertical rails temporarily fastened until the panels are fully secured.



The drainage guides on both sides have different orientations



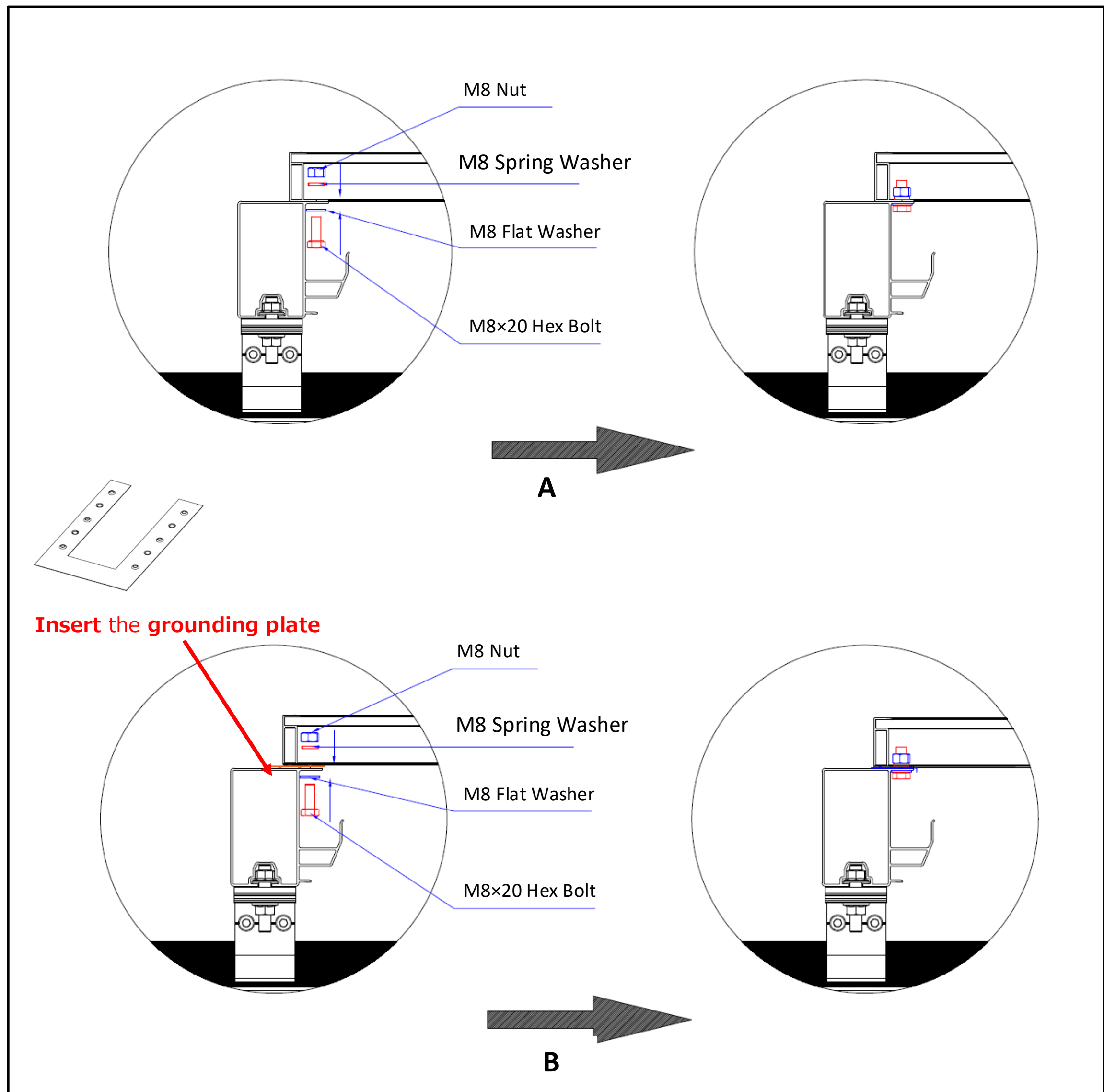
STEP6

Module Installation



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Rear-Mounted Panel Fixing



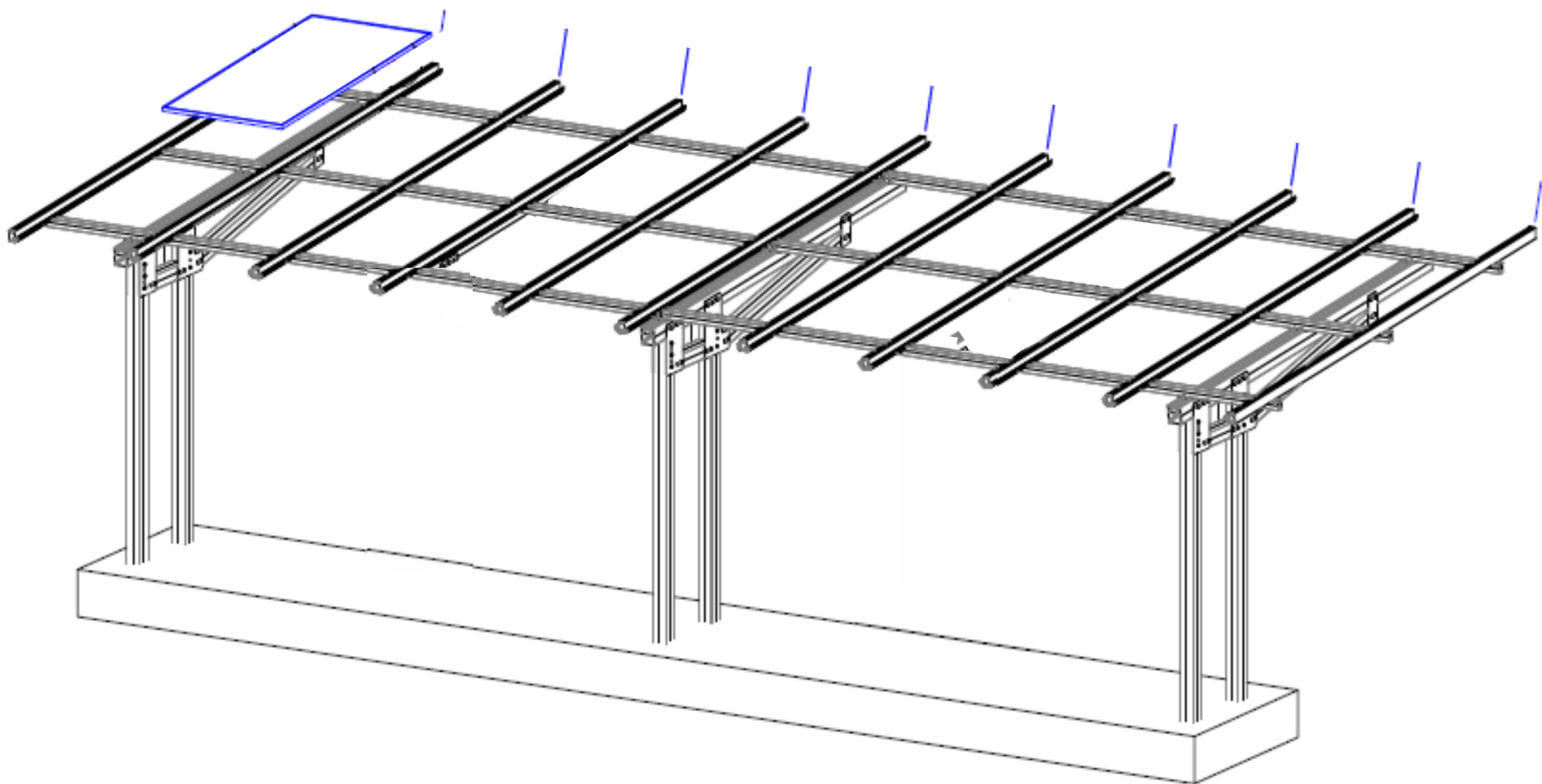
Install grounding plates on both sides of each panel.

STEP 6

Mounting the Solar Module

1 Mount the solar module to the vertical rails.

Align the frame hole of the module with the bolt hole on the vertical rail and secure it with bolts.



Key Points for Securing the Module

※Always press the panel toward the downstream (drainage) side before securing it.

(The elongated holes in the panel frame and rail allow for precise adjustment.)

After adjusting the waterproof cover position, finally tighten the upper clamp on the second vertical rail.



Make sure the waterproof cover is centered between the panels.

The waterproof cover does not require screws—simply place it between the rails to complete the installation.

STEP7

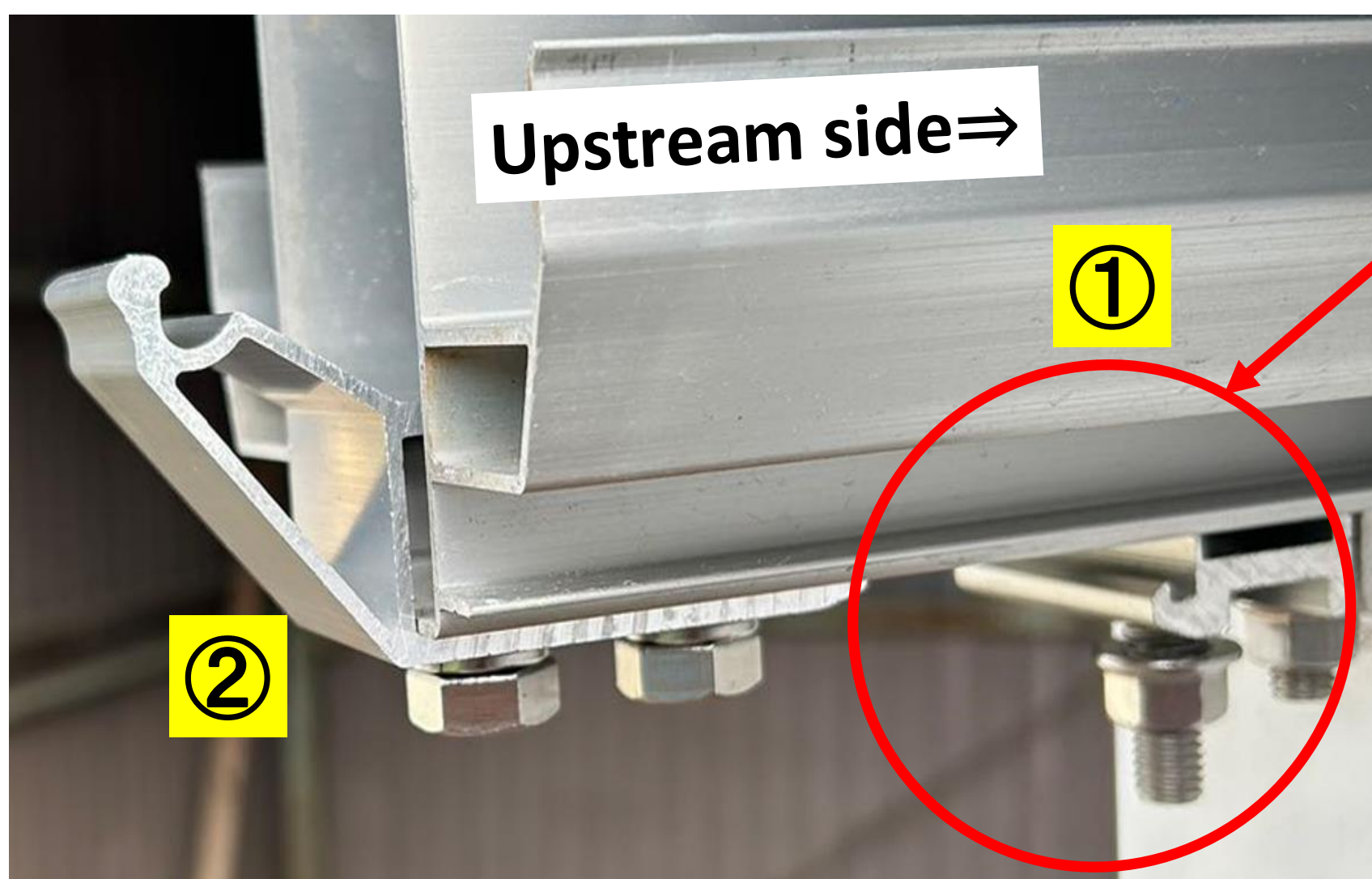
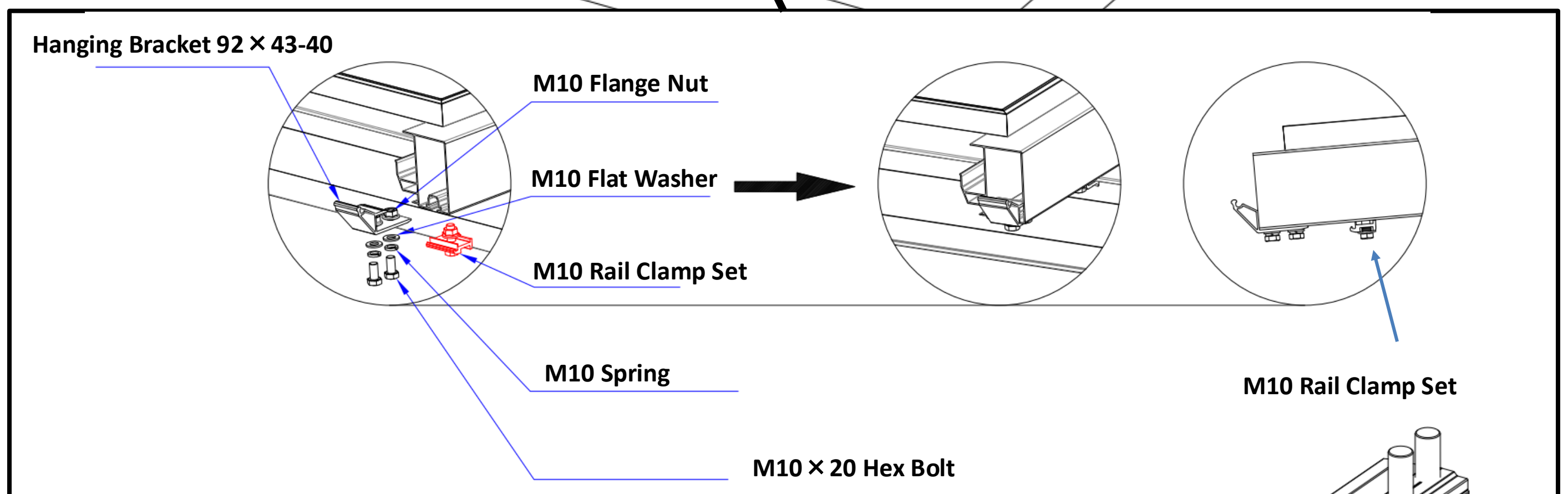
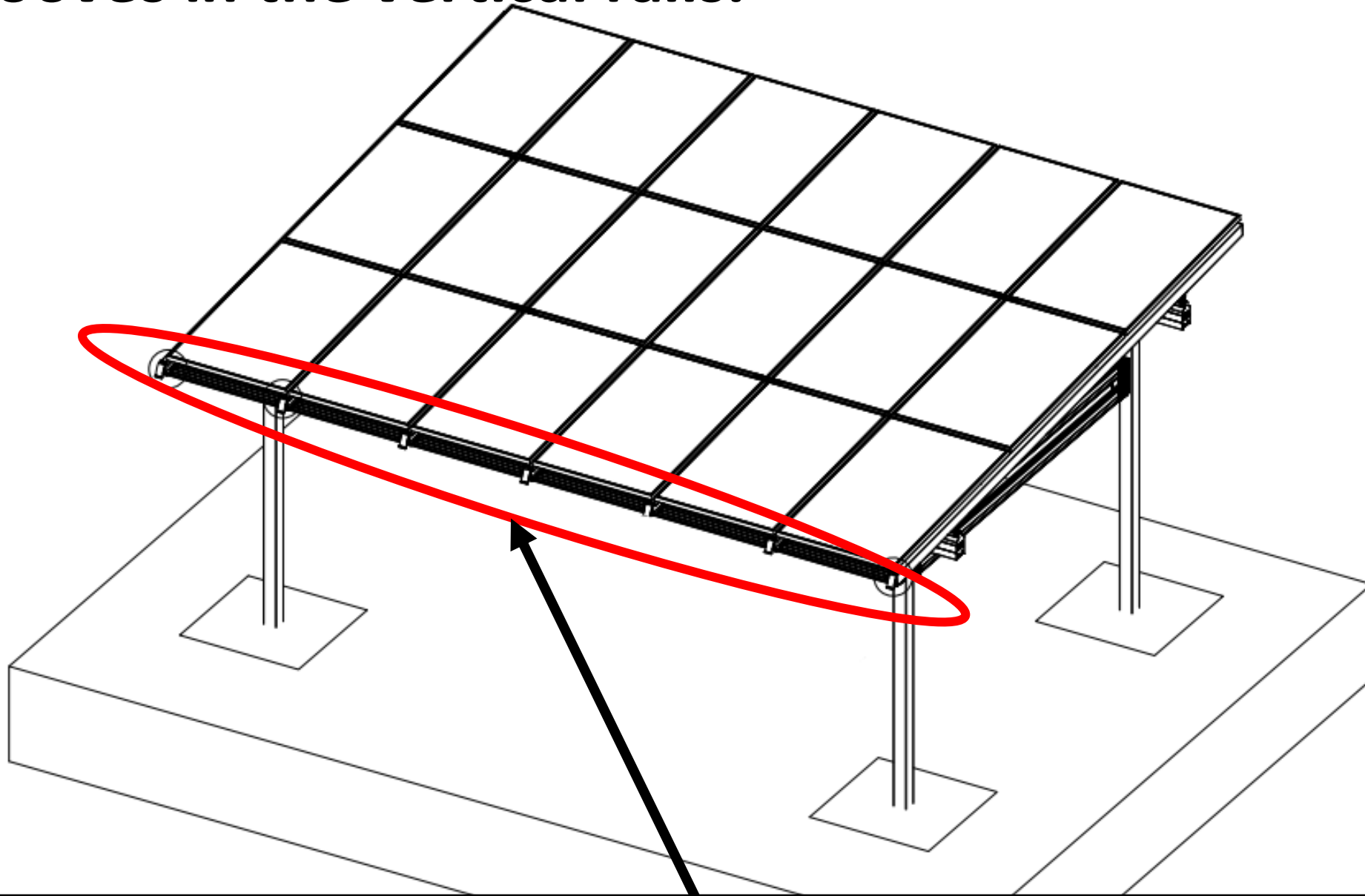
Decorative Cover Installation



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Installation of Decorative Cover

Install the hanging brackets for the decorative cover using the grooves in the vertical rails.



- ① Install the rail clamp using the groove at the bottom of the vertical rail. (Use one M10 bolt/nut)
✗ Temporarily fasten until the decorative cover is secured.
- ② Then install the hanging bracket. (Use two M10 bolts/nuts)

✗ Attach the hanging brackets and clamps to all rails

Installation of Decorative Cover



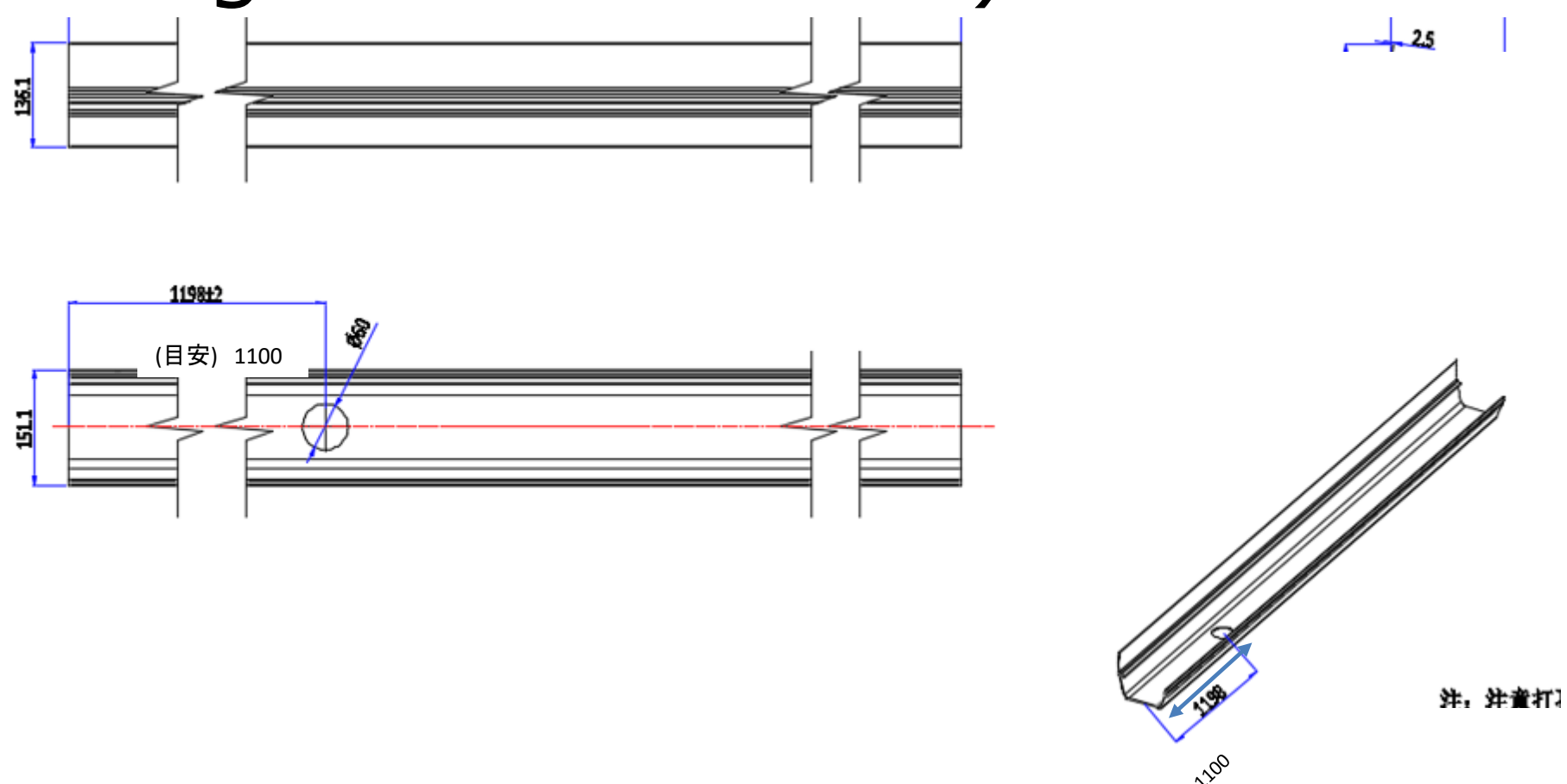
Before attaching the decorative cover, drill the drainage opening and attach the end caps.

- ① Drill a $\Phi 60$ hole on either the left or right side of the cover. (Each cover section includes one downspout.) Protect the surface during drilling to avoid scratches, and remove burrs after.

Drilling the Drain Hole



※(Guide Value): 1100mm from the end of the cover (if drilling on the left side)



※Adjust the opening position according to the site conditions.

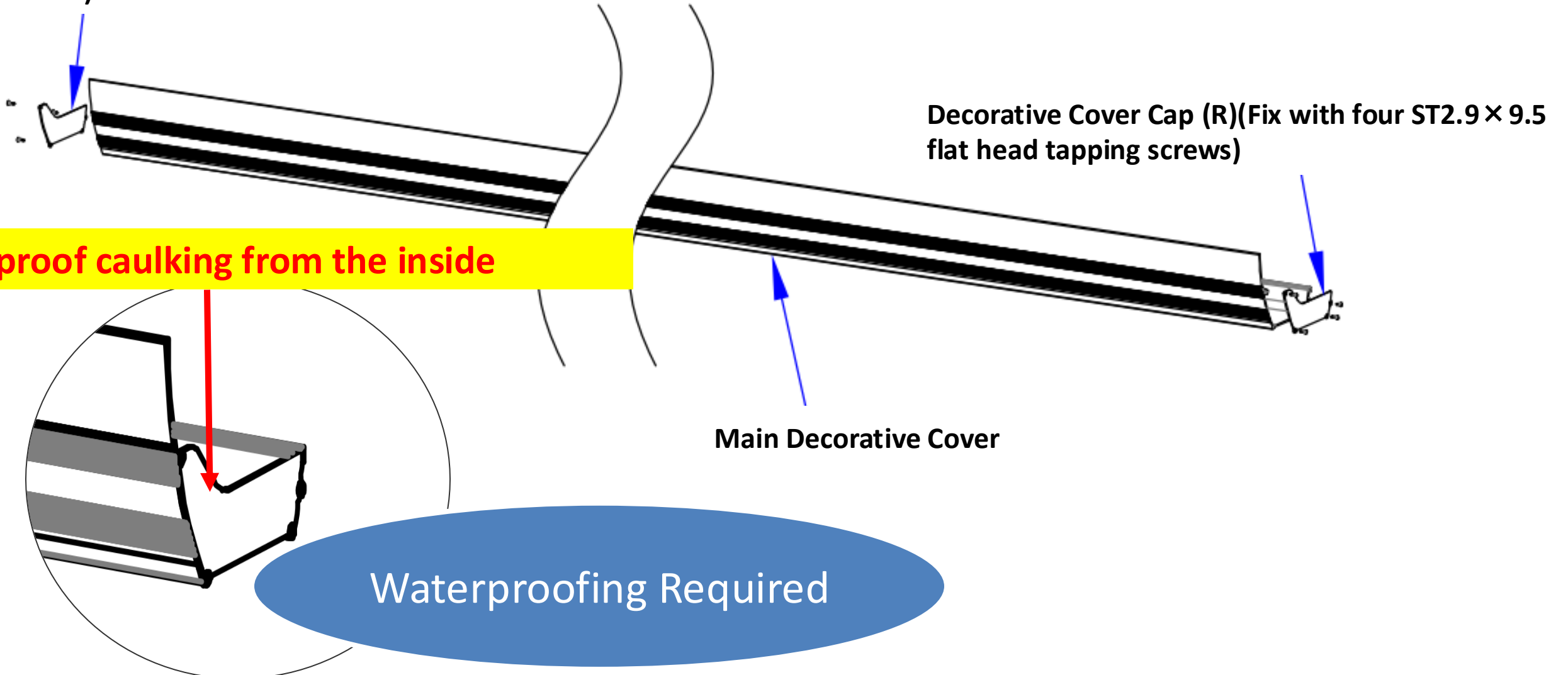
Check the position of the front post before fixing the downspout.

Installing the Decorative Cover

- ① Attach the decorative cover caps (L & R) with screws and apply sealant along the inner edge.

Decorative Cover Cap Installation & Interior Caulking Treatment

Decorative Cover Cap (L)(Fix with four ST2.9 × 9.5 flat head tapping screws)



At least two people are required for the installation

- ② Hook the decorative cover onto the tip of the hanging bracket.
- ③ Secure the cover using the M10 clamp.

②

Hook onto the projection of the hanging bracket



③

Secure the cover with a clamp



Decorative Cover Connection Method (For 4–10 Units)

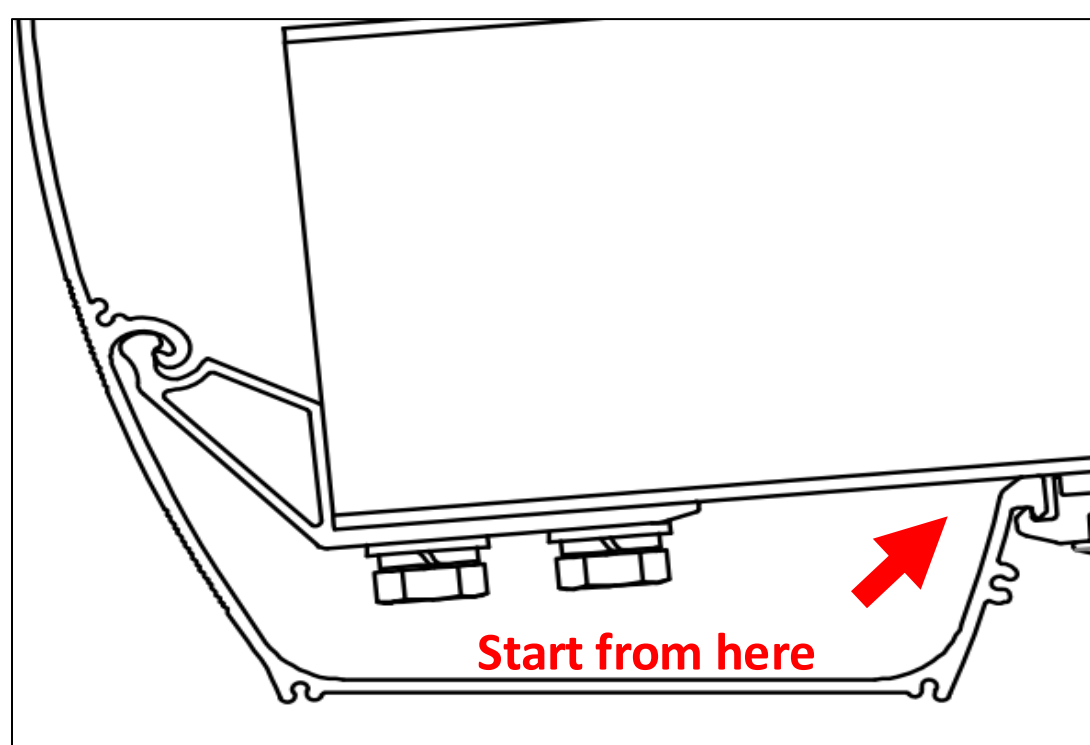
Decorative Cover Connection Method

- ① Connect covers using the included waterproof sheet.
- ② Always apply caulking at the connection joints.



How to Apply

Peel off the backing and apply starting from the lower side.



Make sure to press firmly to avoid leaks.

In cold temperatures, use a hot gun to soften the sheet for easier installation.

Use a roller or spatula for easier application.



STEP8

Downspout Installation



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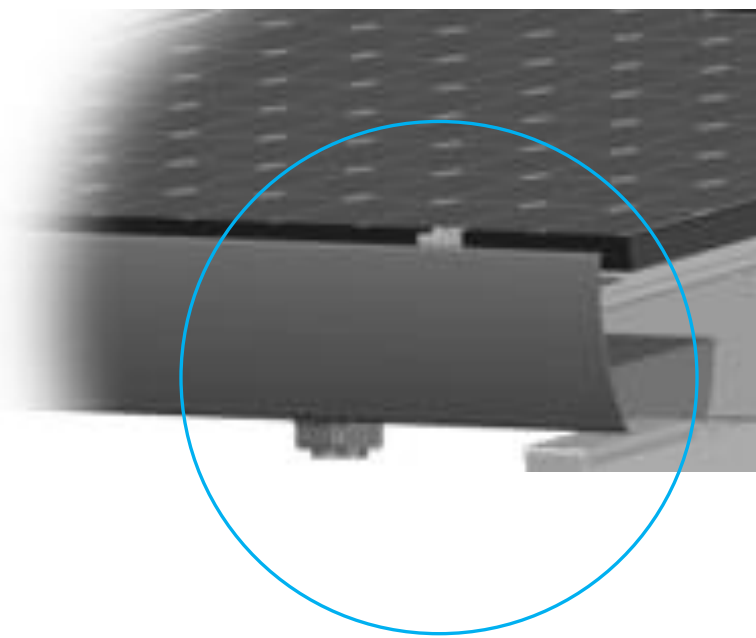
Downspout Overview



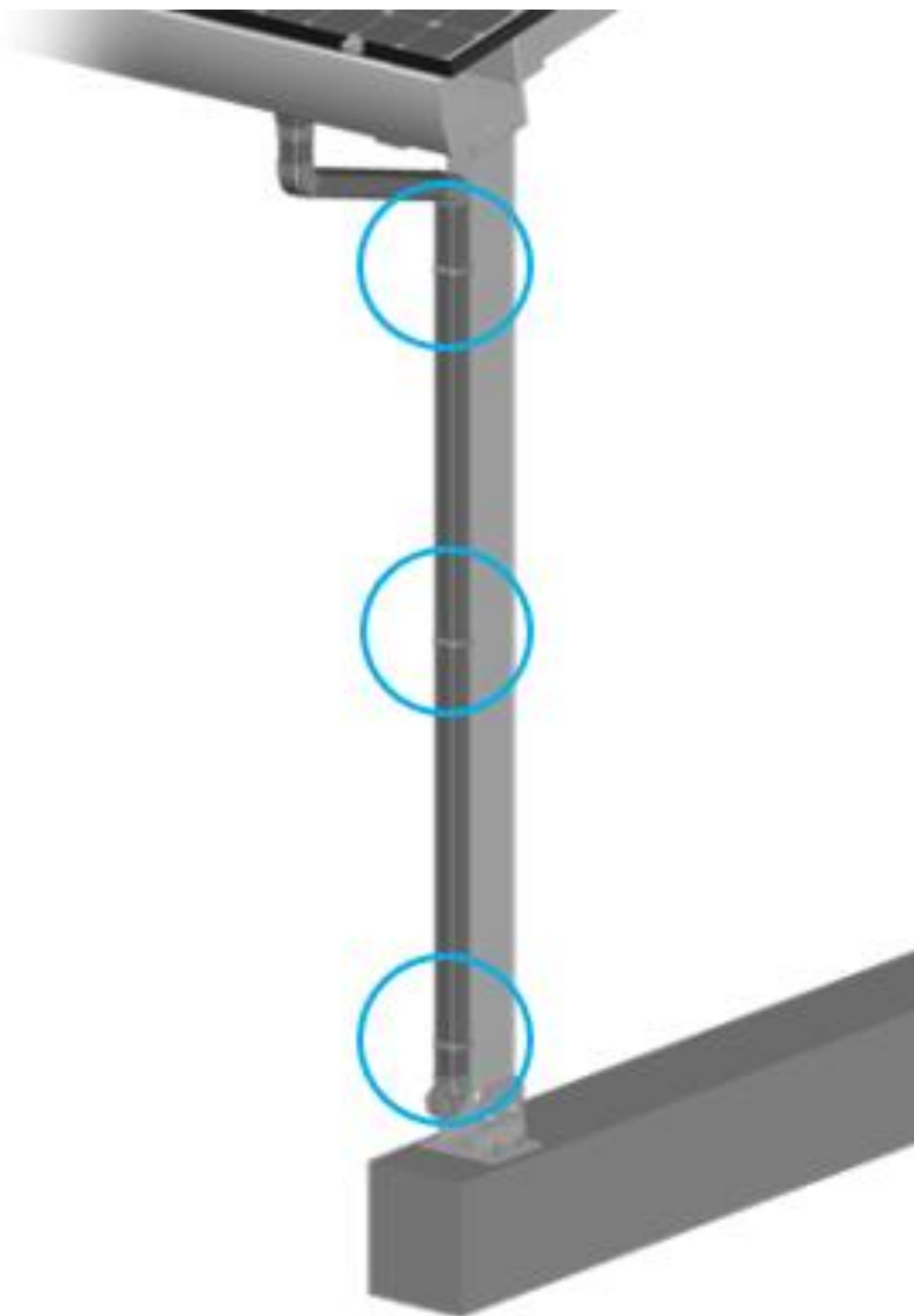
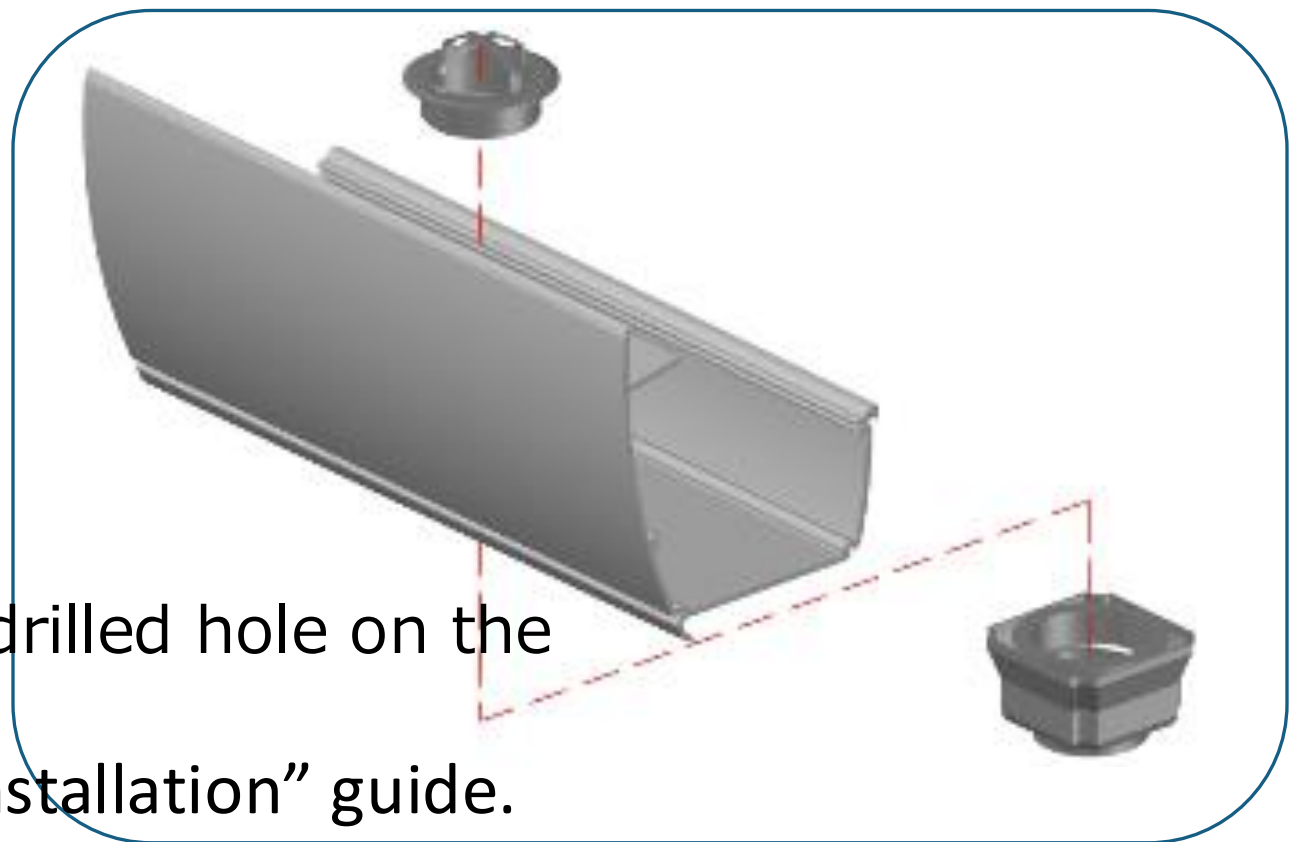
he decorative cover is not pre-drilled.
Drill a $\phi 60$ mm hole before installation.
(Prepare a $\Phi 60$ hole saw.)

Downspout Set

(Downspout, Adjustable Drain, 2 Adjustable Elbows, Square Elbow, Square Socket, 3 Pipe Hangers, Adhesive)



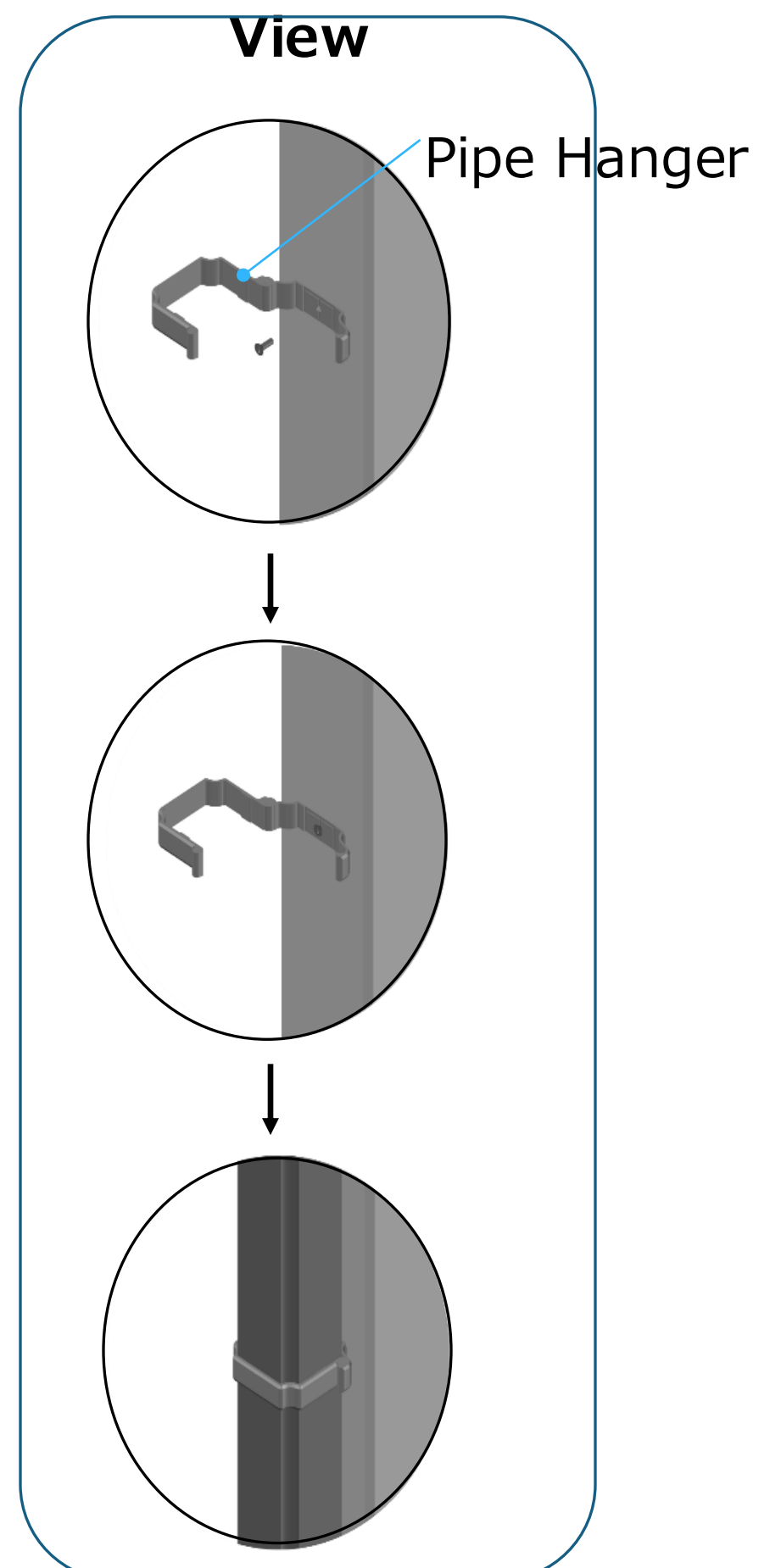
1. Install the universal drain into the pre-drilled hole on the decorative cover.
2. ※Refer to the specific "Universal Drain Installation" guide.



Mount the "Denden" brackets onto the front-left post and install the square downspout (rigid pipe). **(Screws not included; use 3.5 mm pan head screws)**

※ 1 : For downspout installation, please refer to the following pages.

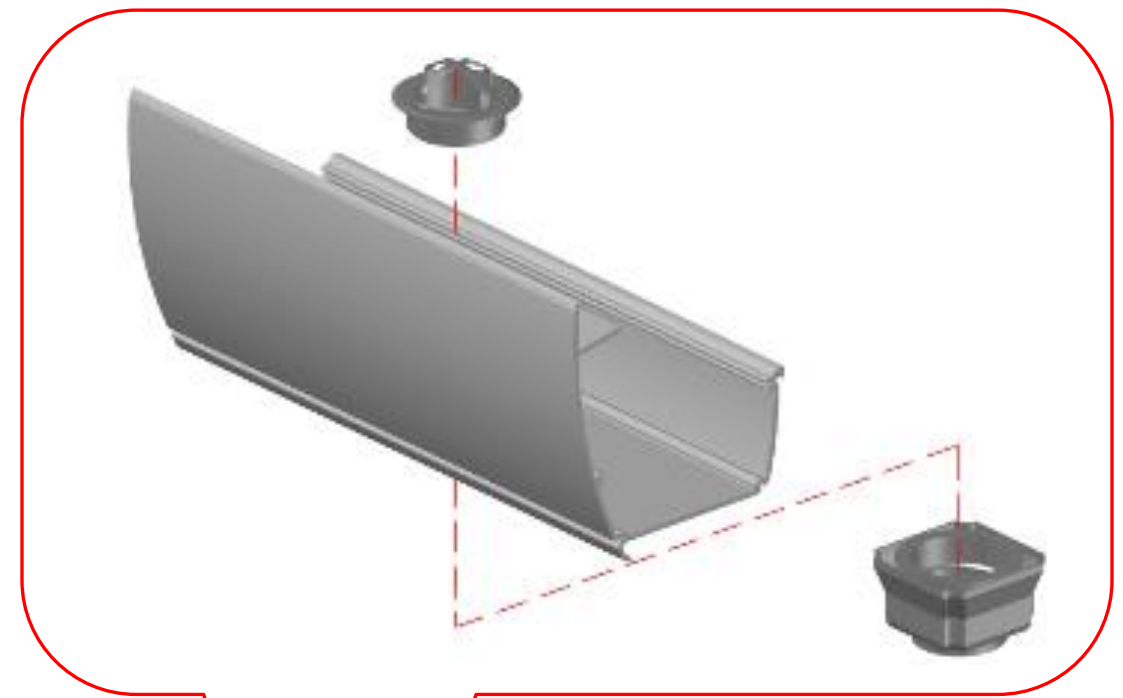
Detailed View



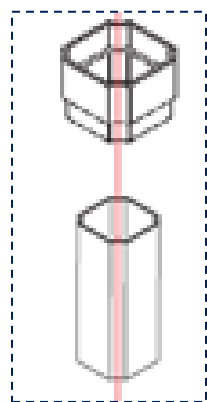
Downspout Overview

Downspout

Detailed Drawing
(Adjustable Drain)

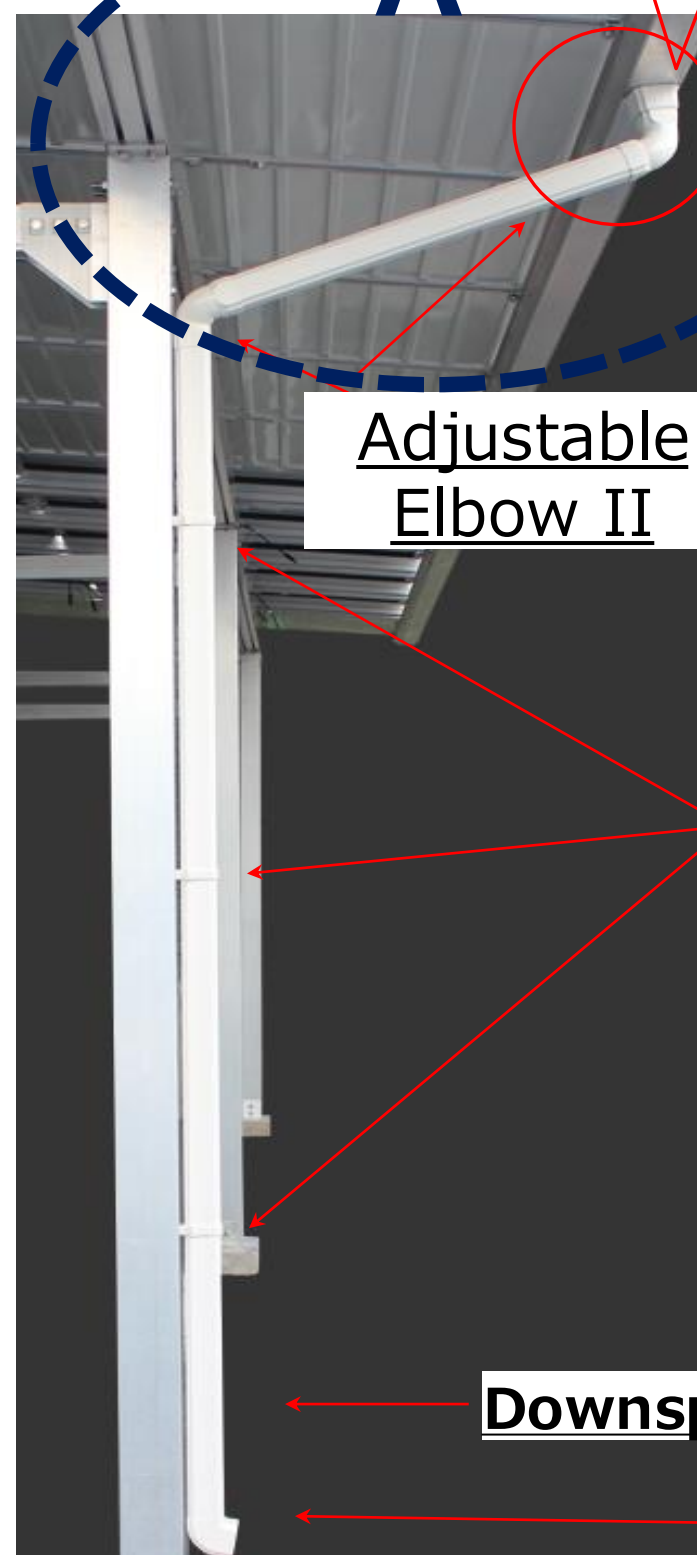
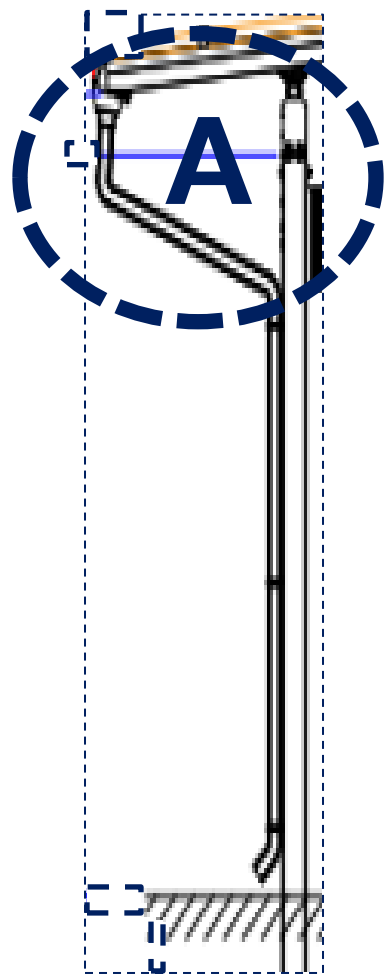


The included angular socket allows you to adjust the length of section A using the downspout.



Elbow Socket

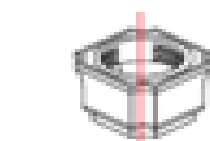
Downspout



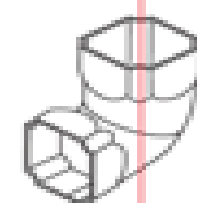
Adjustable
Elbow II

Pipe Clamp

Downspout



Adjustable
Drain



Adjustable
Elbow II

75° Angular
Elbow



✂ Cut the downspout to the appropriate length on-site.

✂ Set the spacing between Denden brackets to 1,200 mm or less.

✂ Screws for fixing the downspout are not included.

Use locally sourced screws such as M4 tapping screws for securing.

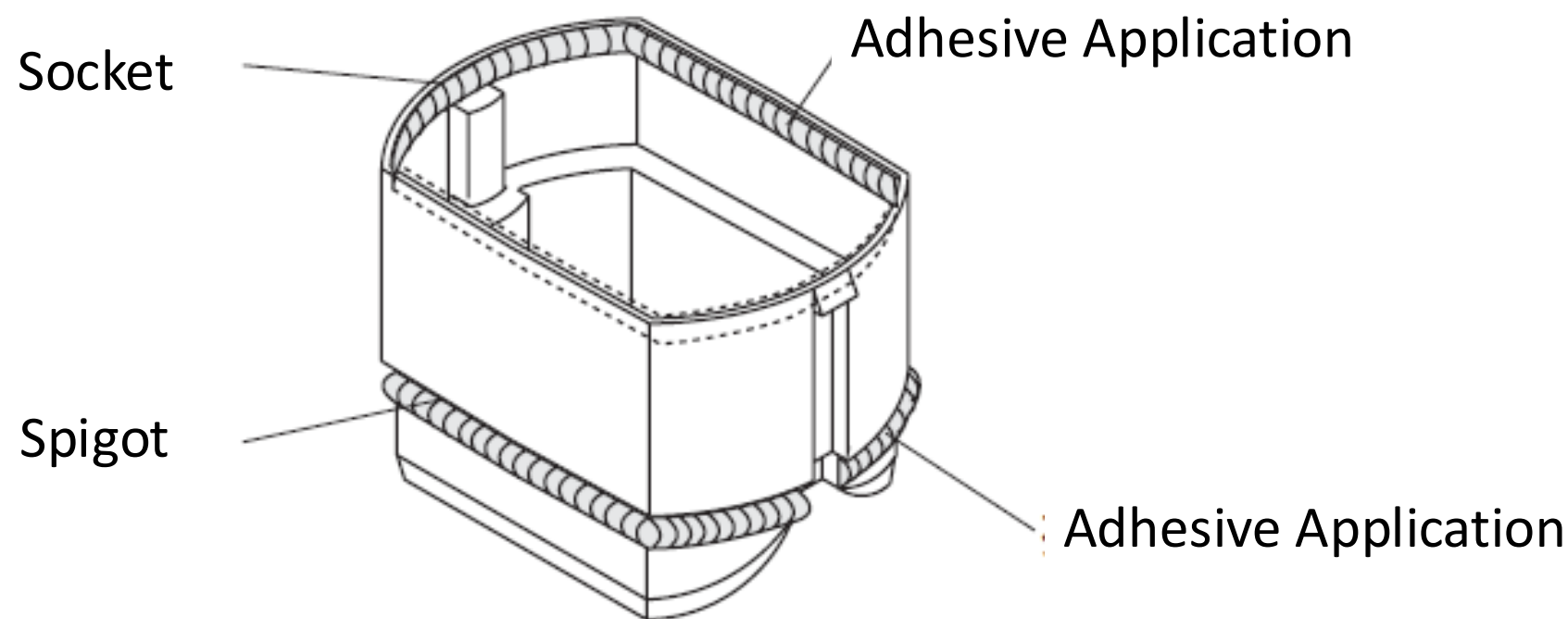
Downspout Assembly

Regarding Socket Adhesion

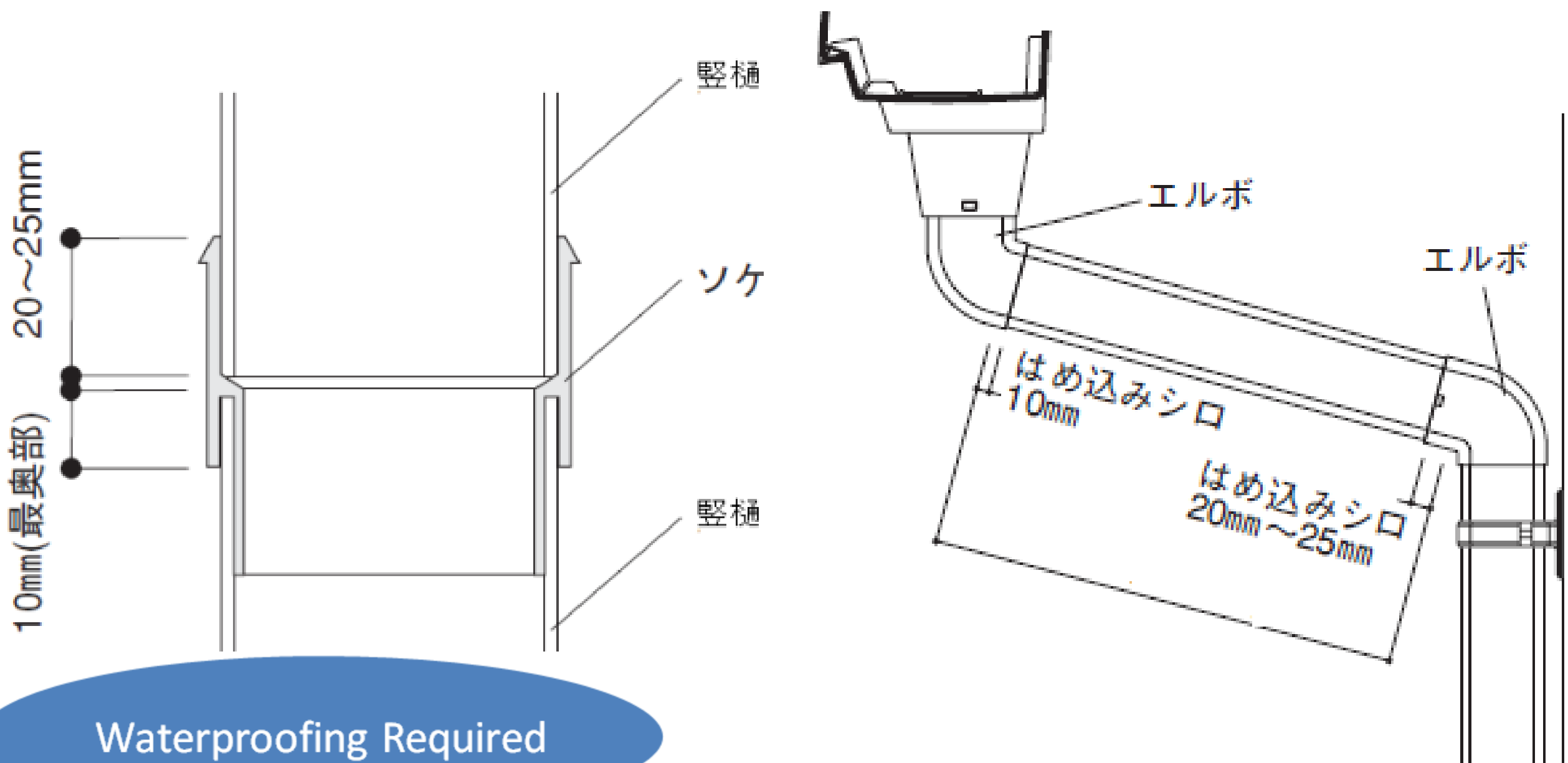
Waterproofing Required

Apply a continuous bead of adhesive in a string-like form: one line on the inside of the socket receiver, and one line on the insertion side within the bonding area.

※Please use the included adhesive.



When attaching to the downspout, insert 20–25 mm on the upper (inlet) side, and insert fully to the deepest part of the gap (10 mm) on the lower (outlet) side.



Always position the socket (receiving end) on the upper (inlet) side, and the spigot (inserting end) on the lower (outlet) side. Since the adjustable elbow has an insertion depth, make sure to cut the spare downspout pipe accordingly, taking this into account.

STEP9

Wiring Cover Installation



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Wiring Cover Installation

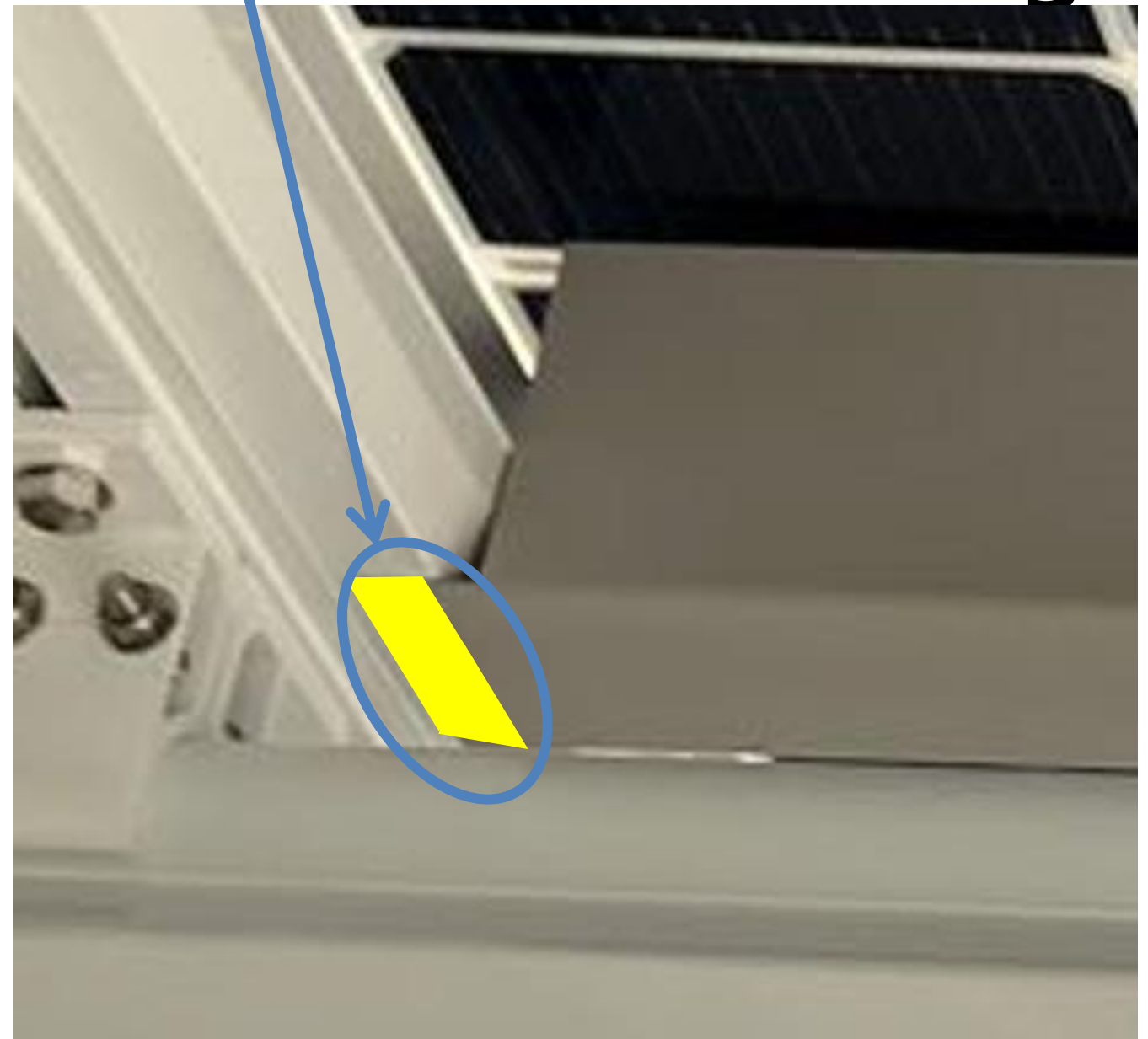
※Wiring cover is an optional component.

Use a string line (mizuito) to align the wiring cover straight for a clean finish.



Fix the wiring cover by overlapping it slightly with the vertical rail and screwing it in place.

※Use the screw holes on the wiring cover and secure it with ST3.5×10 pan head tapping screws.



Always use the included screws.
Using the wrong screws may damage the drainage rail and cause leaks.

Storage Instructions

- Cover the components securely with a blue tarp or similar for long-term storage.
- Do not place parts directly on the ground, as it may cause scratches or damage.
- Store in a location protected from direct exposure to outside air and rain.
- When unloading, always carry parts with two or more people and avoid dragging components.
 - ✘ Dragging may cause dents and scratches.



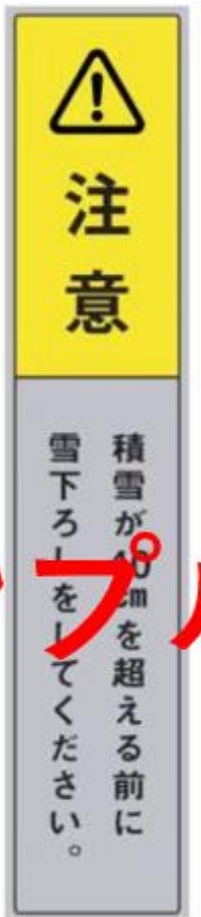
Finishing Work

★ About the Snow Removal Warning Sticker

Attach the included "Snow Removal Warning Sticker" to a post or visible surface.

※Clean the surface before applying the sticker.

サンプル



Final Touches & Cleanup Notes

Check for any scratches, stains, debris, screws, or nails left behind on exterior walls, pavement, or road surfaces.

If stains are found, get customer approval before wiping them off with a soft cloth.

For stubborn stains, lightly scrub using diluted neutral detergent.

Rinse thoroughly with water to remove any detergent residue, then wipe dry.

Before leaving the site, do a final check to ensure all waste is collected and the site is clean.

If minor scratches occur during work, repair discreetly using a touch-up pen with the customer's approval. Touch-up pens contain liquid. Be careful when opening to avoid spills.

※Avoid using compound or sandpaper for repairs, as they may cause haze or polishing marks.