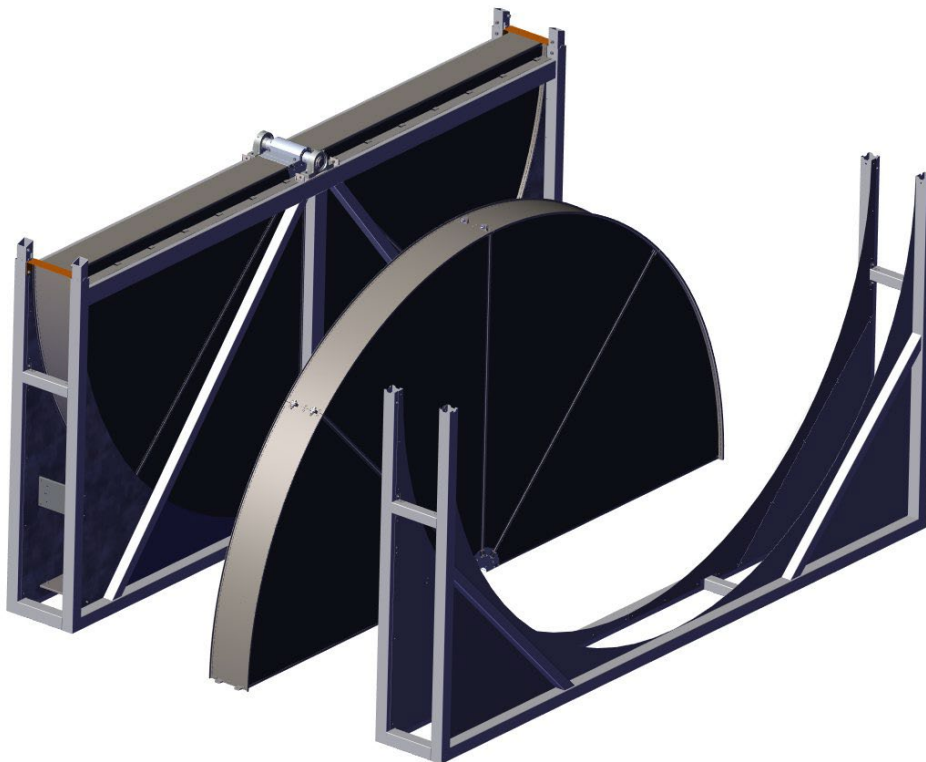


HEATEX MODEL ES

INSTALLATION & MAINTENANCE



Version 7

Updated 2026-06-22

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DECLARATION OF INCORPORATION

Description and identification of the partly completed machinery:

Rotary heat exchanger model ES with casing and with a drive unit.

The following essential requirements of EC Machinery Directive 2006/42/EC have been applied and fulfilled: 1.1.2, 1.2.1, 1.2.3, 1.2.4.1, 1.2.4.2, 1.2.4.3, 1.2.6, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.3.8, 1.3.8.1, 1.3.8.2, 1.4.1, 1.4.2.1, 1.4.2.2, 1.4.2.3, 1.4.3, 1.5.1, 1.5.2, 1.5.4, 1.5.5, 1.5.6, 1.6.1, 1.6.3, 1.7.1, 1.7.3, 1.7.4, 1.7.4.1, 1.7.4.2, 1.7.4.3

The relevant technical documentation has been compiled in accordance with Annex VII, Part B of EC Machinery Directive 2006/42/EC. We undertake, in response to a reasoned request, to supply it in electronic form to the market surveillance authorities within a reasonable period.

The party authorized to compile the technical documentation is: Johan Gidner, R&D Manager.

The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.

Malmö, 2025-11-11

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1 IMPORTANT INFORMATION

1.1 Delivery options

There are two delivery options, A and B.

- The instructions of delivery option A start on page 5
- The instructions of delivery option B start on page 18

1.2 Tools required

- Set of Allen keys
- Spanner key set
- Lifting gear

1.3 Spare parts

- 2x Segment lifting plate
- 2x Hub covers
- 4x Brush holders
- 4x Brush seal
- 4x Bearing shims

1.4 Fasteners

- Screws
- Self-drilling screws
- Washers
- Locking nuts

1.5 Storage

Aluminium wheels are sensitive to corrosion, epoxy wheels to sunlight, and hybrid/adsorption wheels to moisture. Store rotors accordingly.

- Place the unit on a flat, level surface to avoid rotor distortion.
- Ensure the heat exchanger is properly supported and secured during transport, handling, storage, and installation.
- Keep storage temperature above 0°C (32°F).
- Rotors without casing (Model ER) must be stored horizontally (fully supported) or hung by the shaft.

1.6 Safety

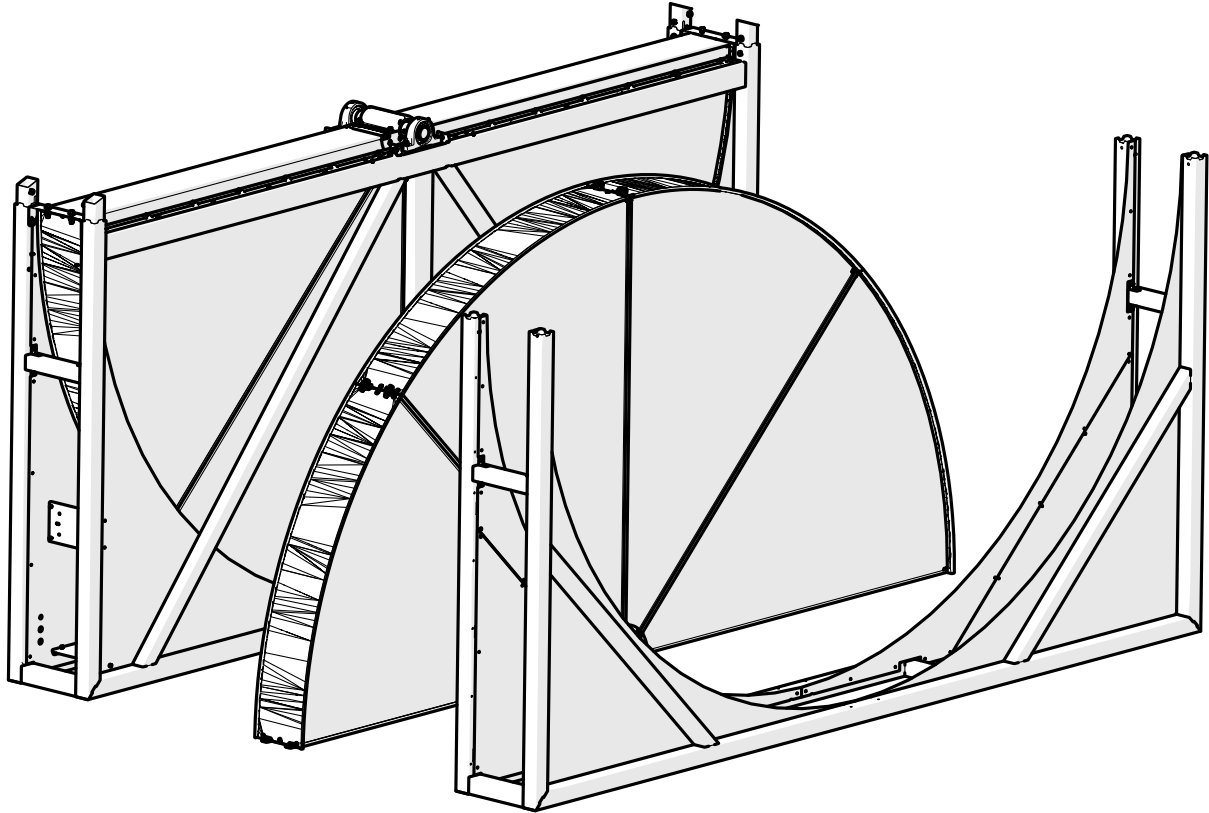
Take care when lifting and handling the various components, and ensure you wear suitable protective gear such as gloves, safety headwear, and protective footwear. Always adhere to local safety and accident prevention regulations and follow the assembly procedure exactly as provided. Do not modify or reconfigure the heat exchanger unless you have received explicit authorization from Heatex.

Please be aware of danger from:

- Suspended load
- Trapping of body parts
- Tilting
- Falling objects
- Sharp objects

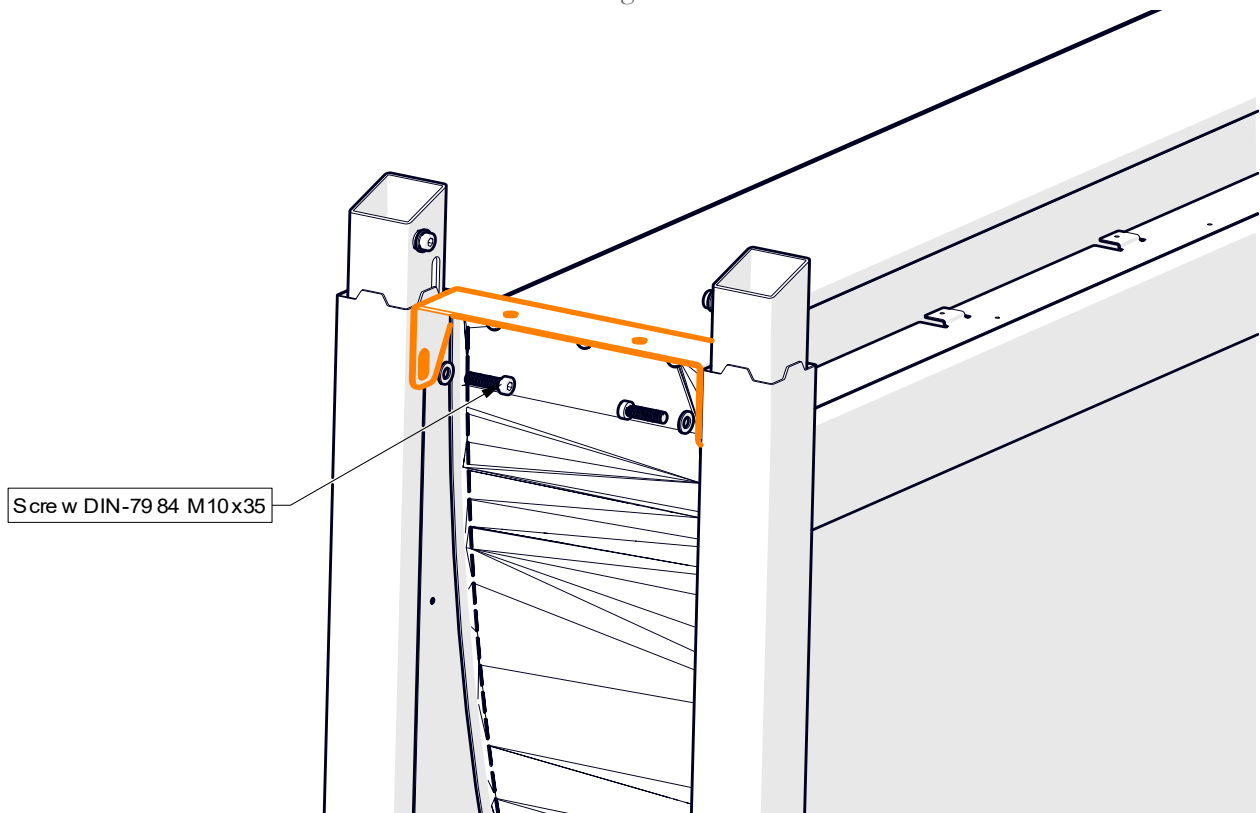
2 DELIVERY OPTION A

The rotary heat exchanger is delivered partially assembled, with one half of the unit pre-assembled, and the top half casing and top half of the wheel supplied separately.

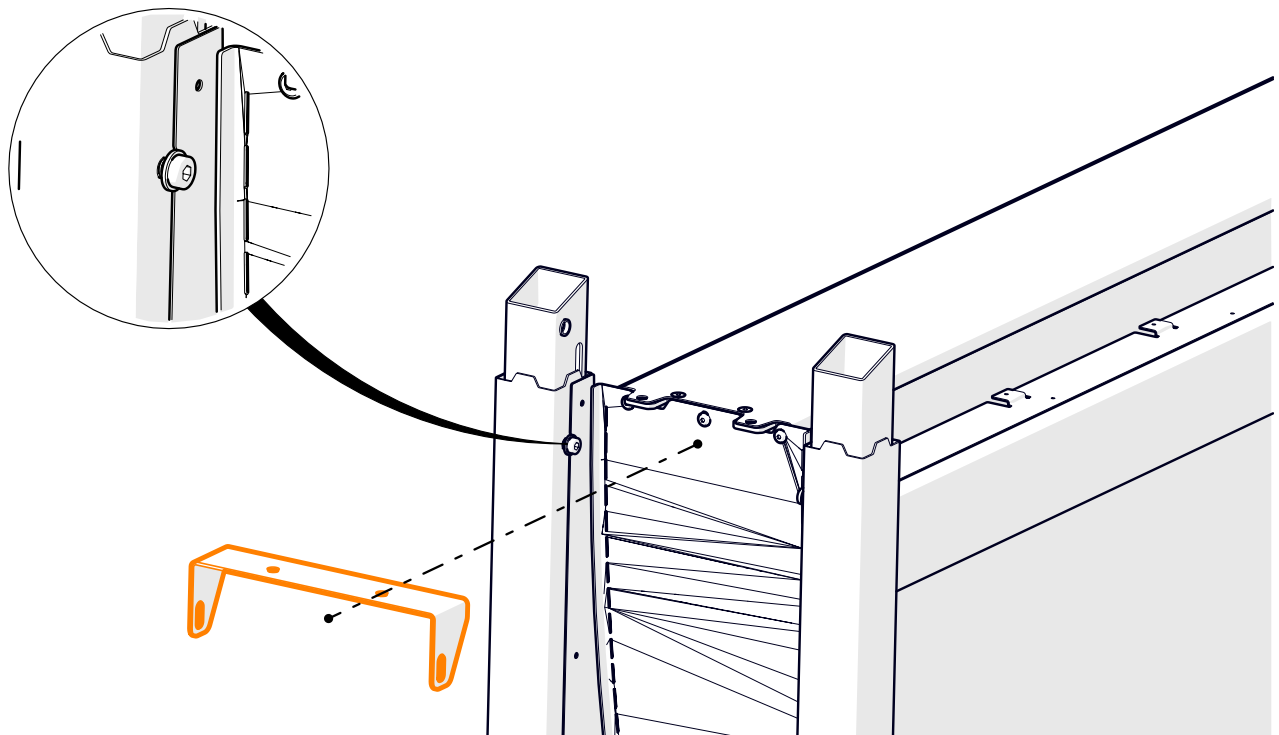


2.1 Remove brackets

Unfasten screws and washers from the bottom half casing

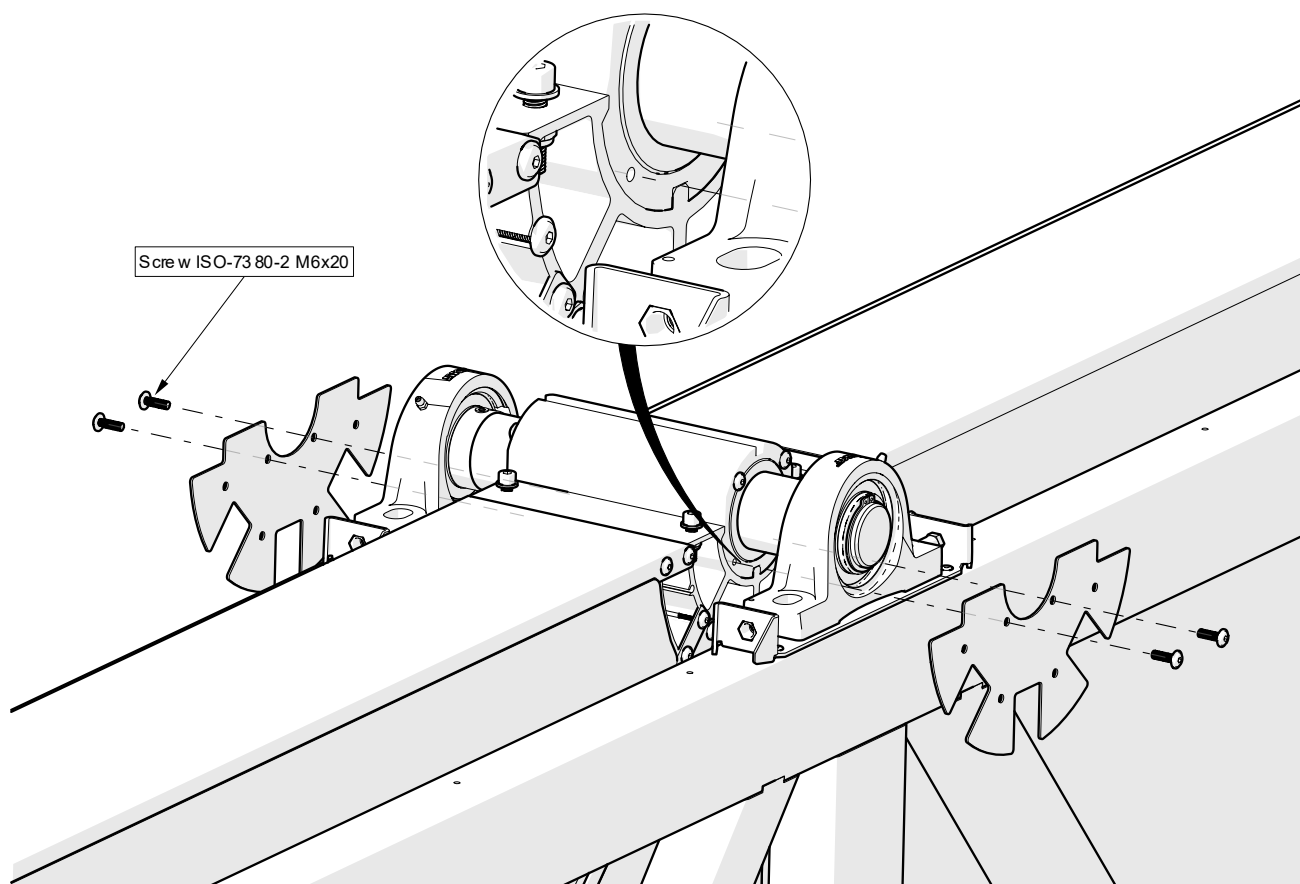


After removing the bracket, reattach the screws and washers that were previously fastened to the casing, but leave them loosely secured. The screws that were attached to the wheel should be removed and kept for later reassembly. Ensure that the screws positioned toward the wheel are also left loosely attached.



2.2 Remove hub covers

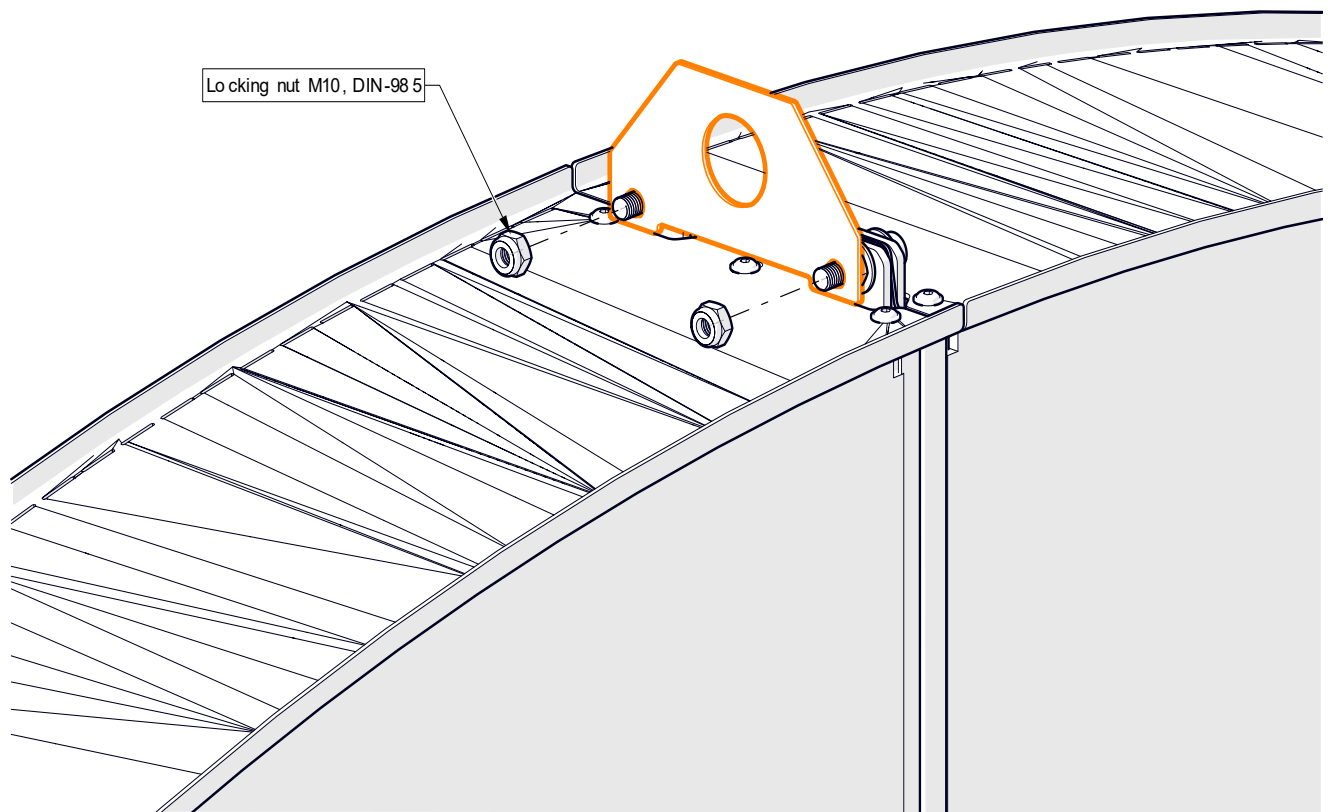
Remove the hub cover from the bottom wheel half. The hub covers for the top wheel half are supplied separately. Keep all fasteners for use during reassembly.



2.3 Assemble top half rotor

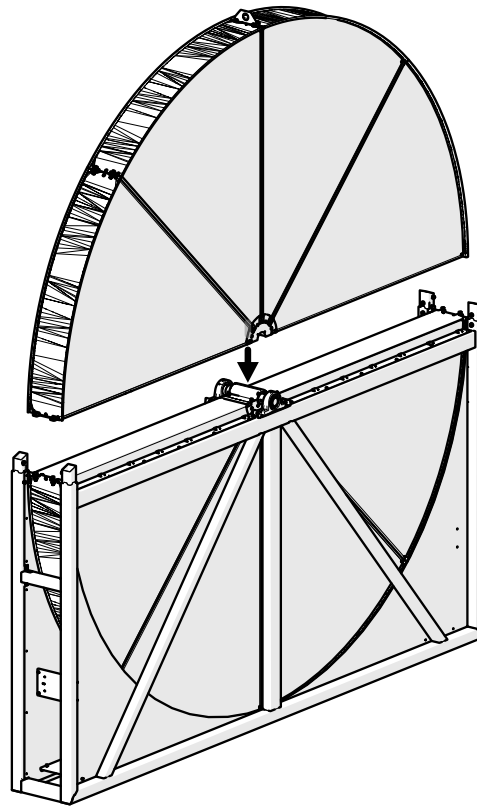
2.3.1 Mount lifting eye

Fasten the segment lifting eye on the top wheel half.

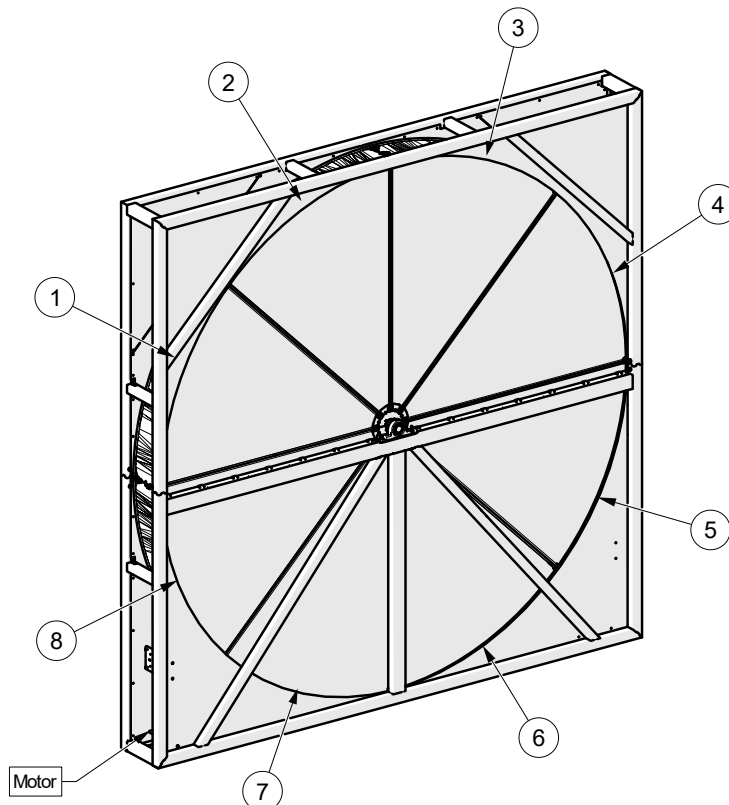


2.3.2 Assemble wheel half

Carefully lower the top wheel half onto the bottom wheel half using the wheel bracket attached in the previous step. Make sure the wheel is correctly oriented—wheel segments 1 and 8, as well as segments 4 and 5, should be positioned against each other.

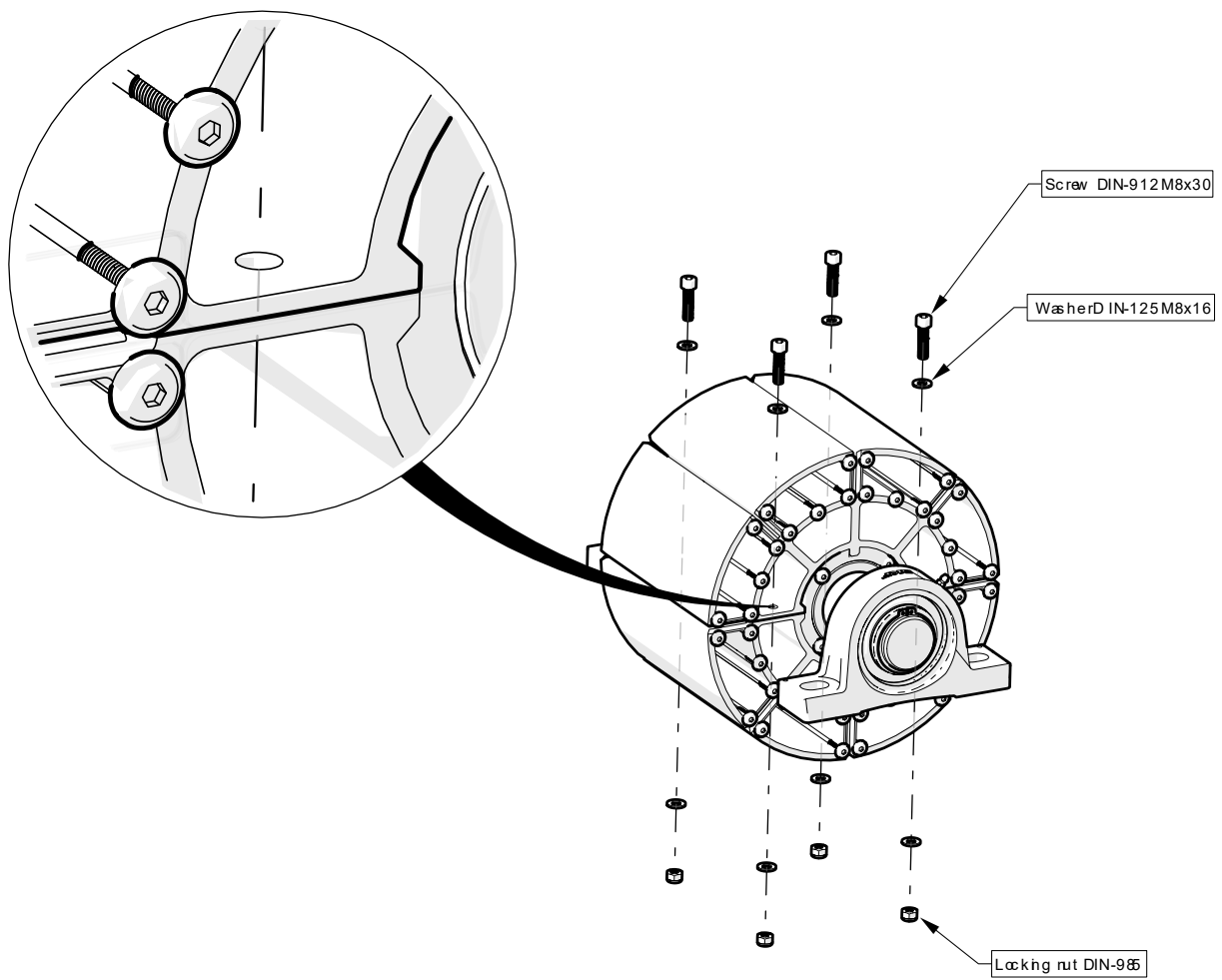


Segment orientation.



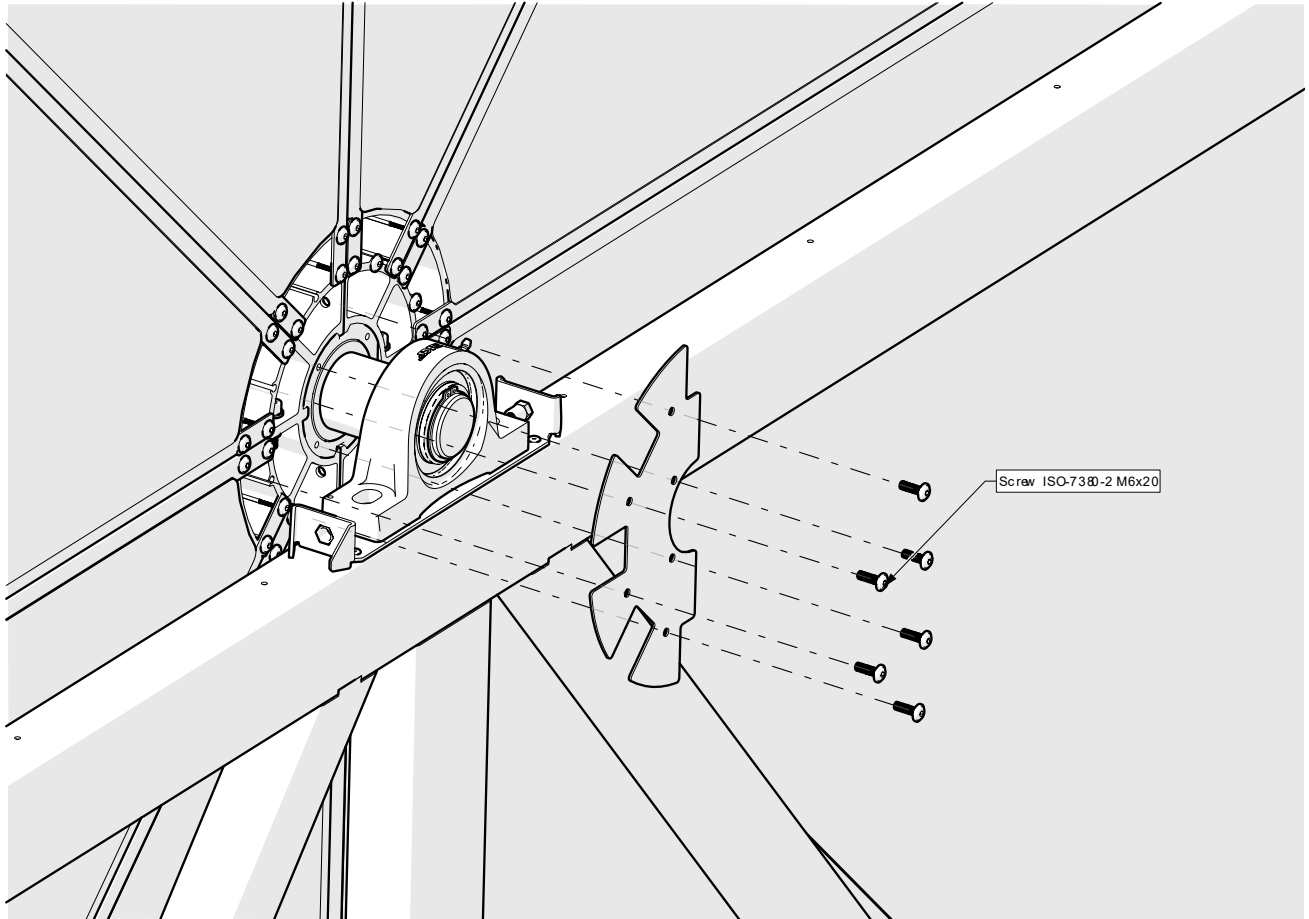
2.4 Fasten hub halves

Fasten hub halves together with screws, washers and locking nuts.



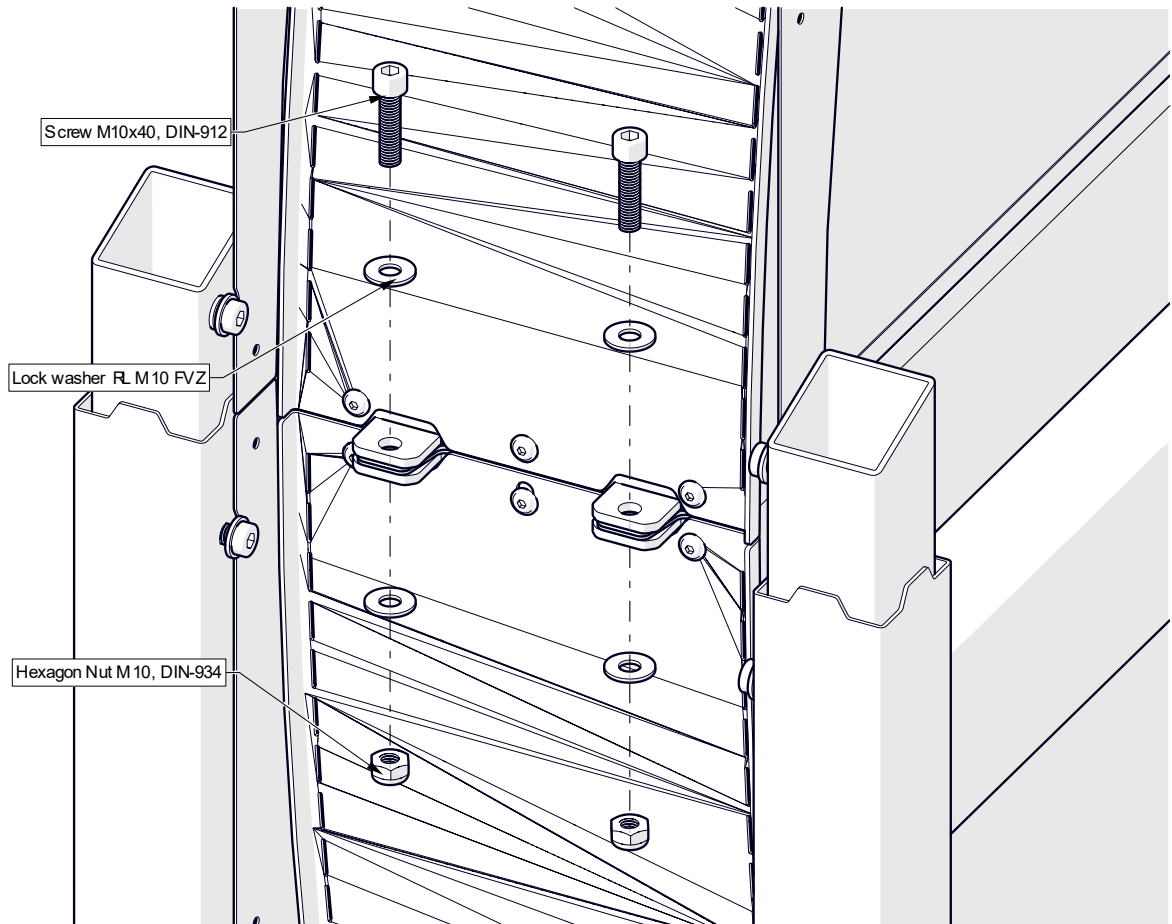
2.5 Reattach hub covers

Reattach the hub covers to the wheel, ensuring that all four covers—two for the bottom wheel half and two for the top wheel half—are properly installed. Each cover should be positioned to connect securely across both halves of the wheel.



2.6 Fasten sweeps between wheel halves

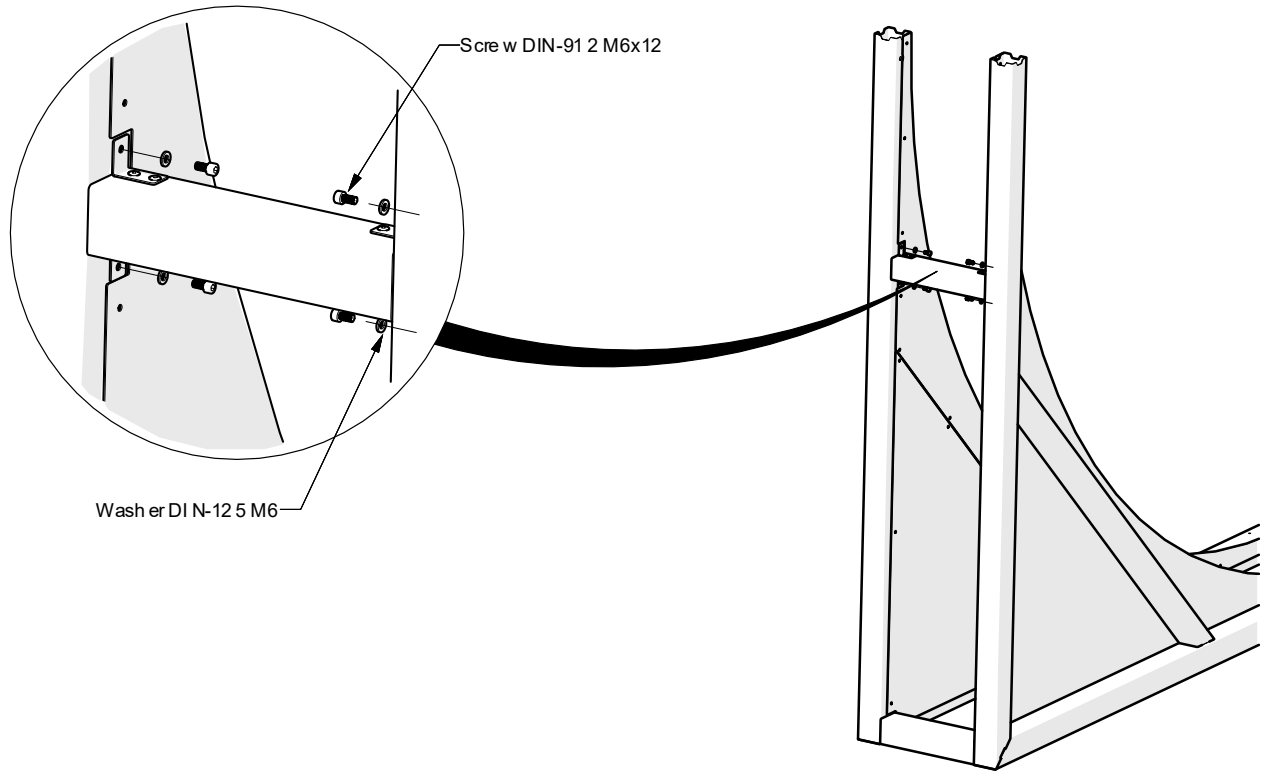
Fasten the two-wheel halves together using screws, washers, and locking nuts. Tighten alternately on both sides of the wheel to ensure an even connection. Secure the sweep joints on the opposite side as well. Once the sweeps are joined, remove the segment lifting plate. Refer to step 4 for guidance.



2.7 Assemble top casing

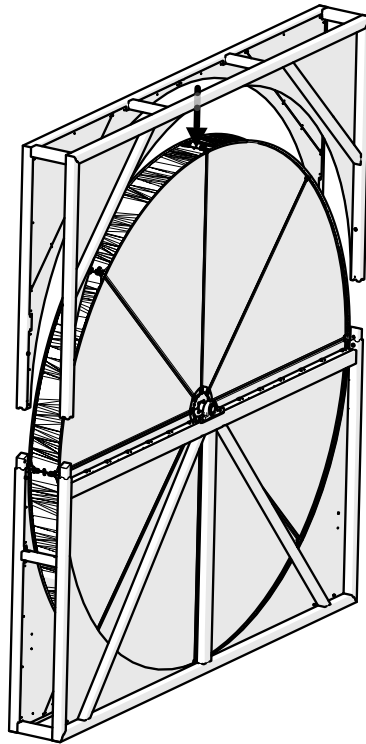
2.7.1 Remove horizontal beams

To simplify the installation of the top casing half, remove both horizontal beams. First, unfasten the screws located on the inside of the top half casing. Then, temporarily remove the horizontal beams and save the screws and washers for later reattachment.

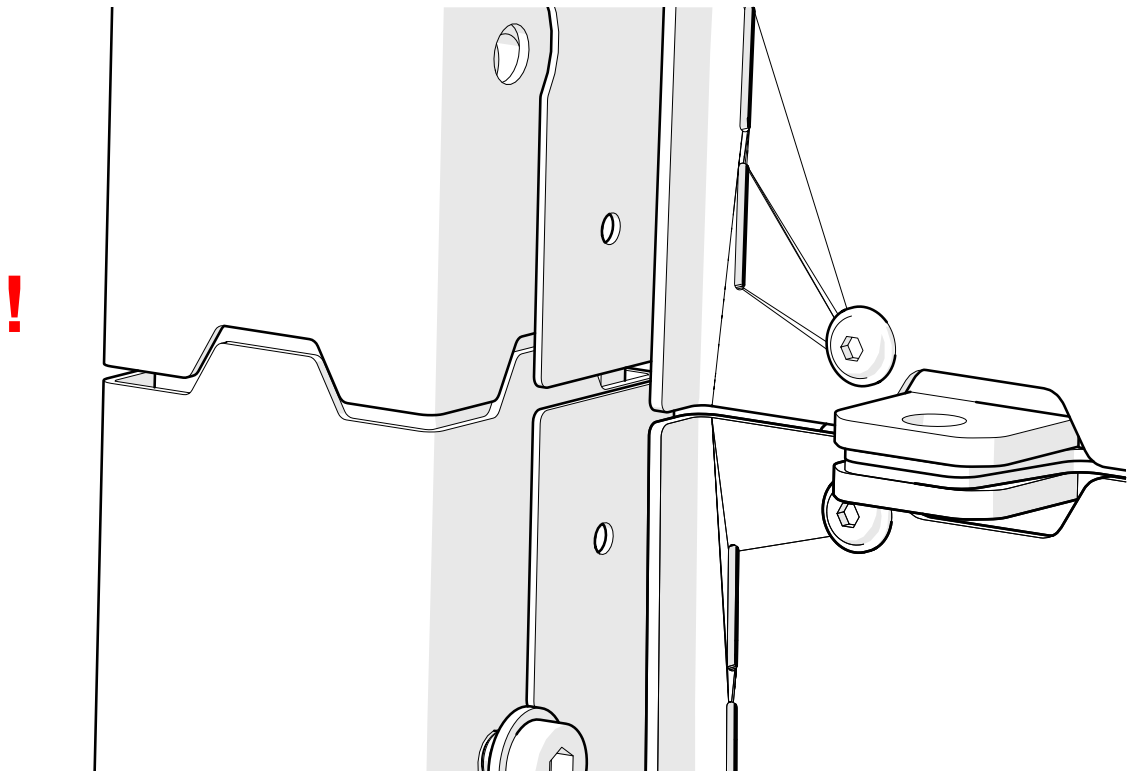


2.7.2 Mount top half casing

Carefully lower the top casing half onto the bottom casing half. Keep the lifting strap centered on the top casing half to facilitate proper alignment. Take care when sliding the profiles together to avoid damage or misalignment.

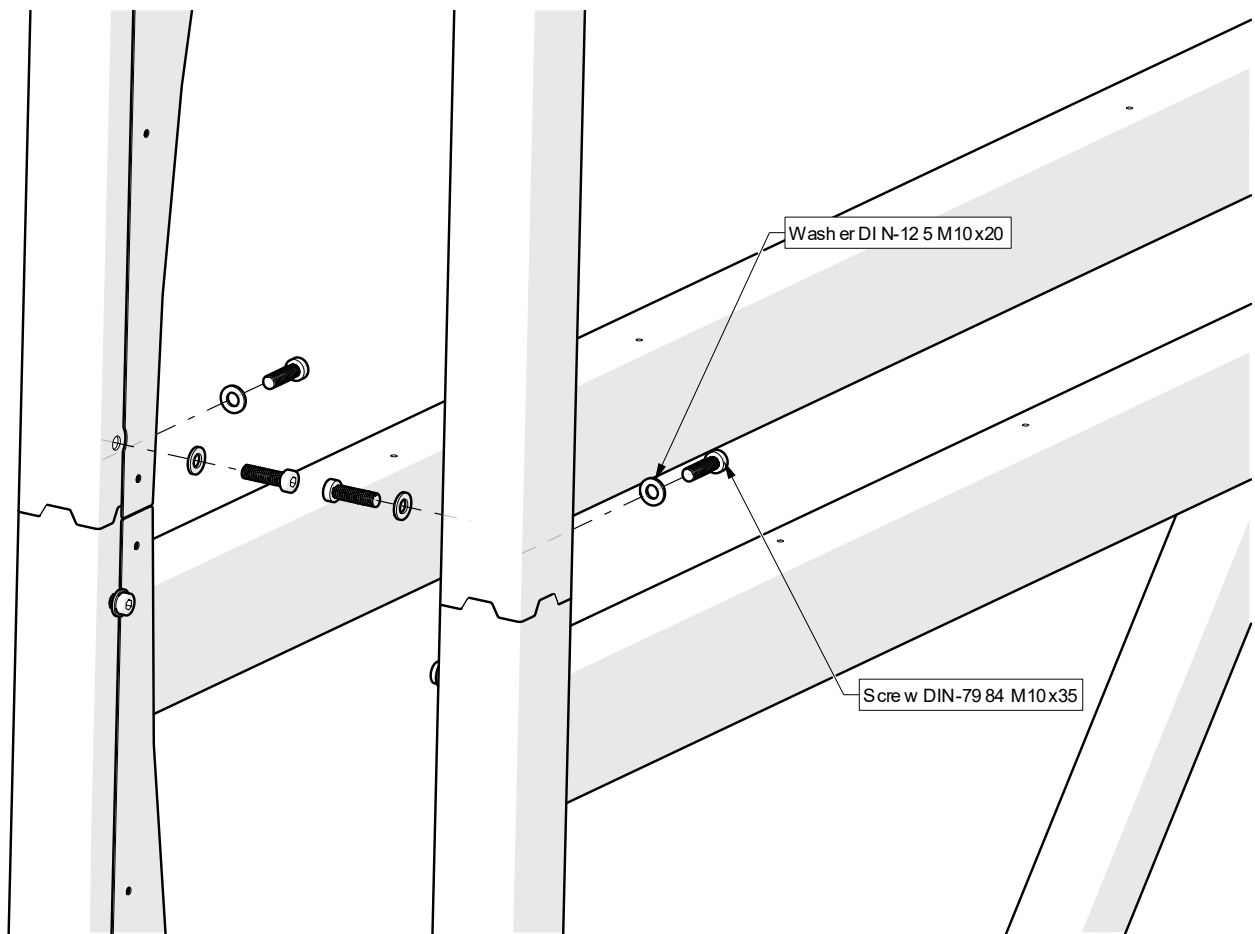


Make sure that the vertical beams align properly.



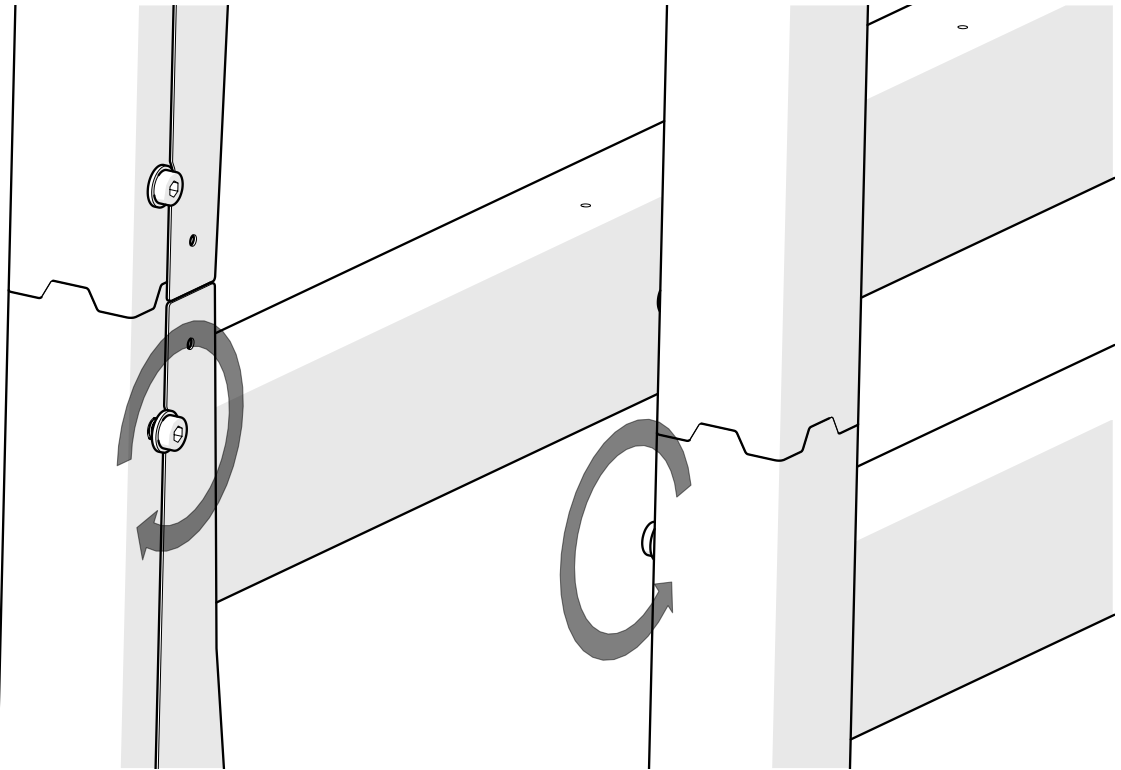
2.7.3 Fasten top half casing screws

Fasten the screws and washers on both sides of the top half casing. Ensure that all screws are securely tightened to maintain structural integrity.

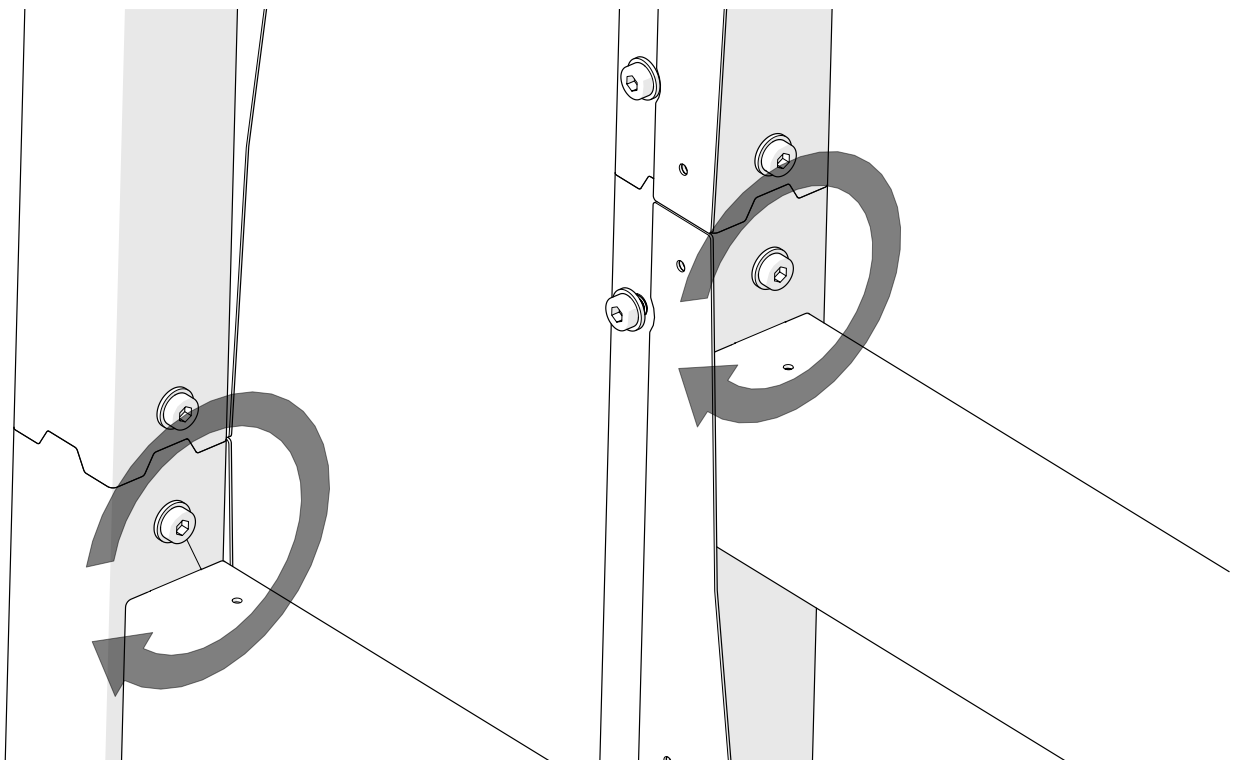


2.7.4 Tighten bottom half casing screws

Reattach and securely tighten the previously loosened screws on both sides of the bottom casing half. Ensure that all screws are firmly fastened to maintain structural integrity.

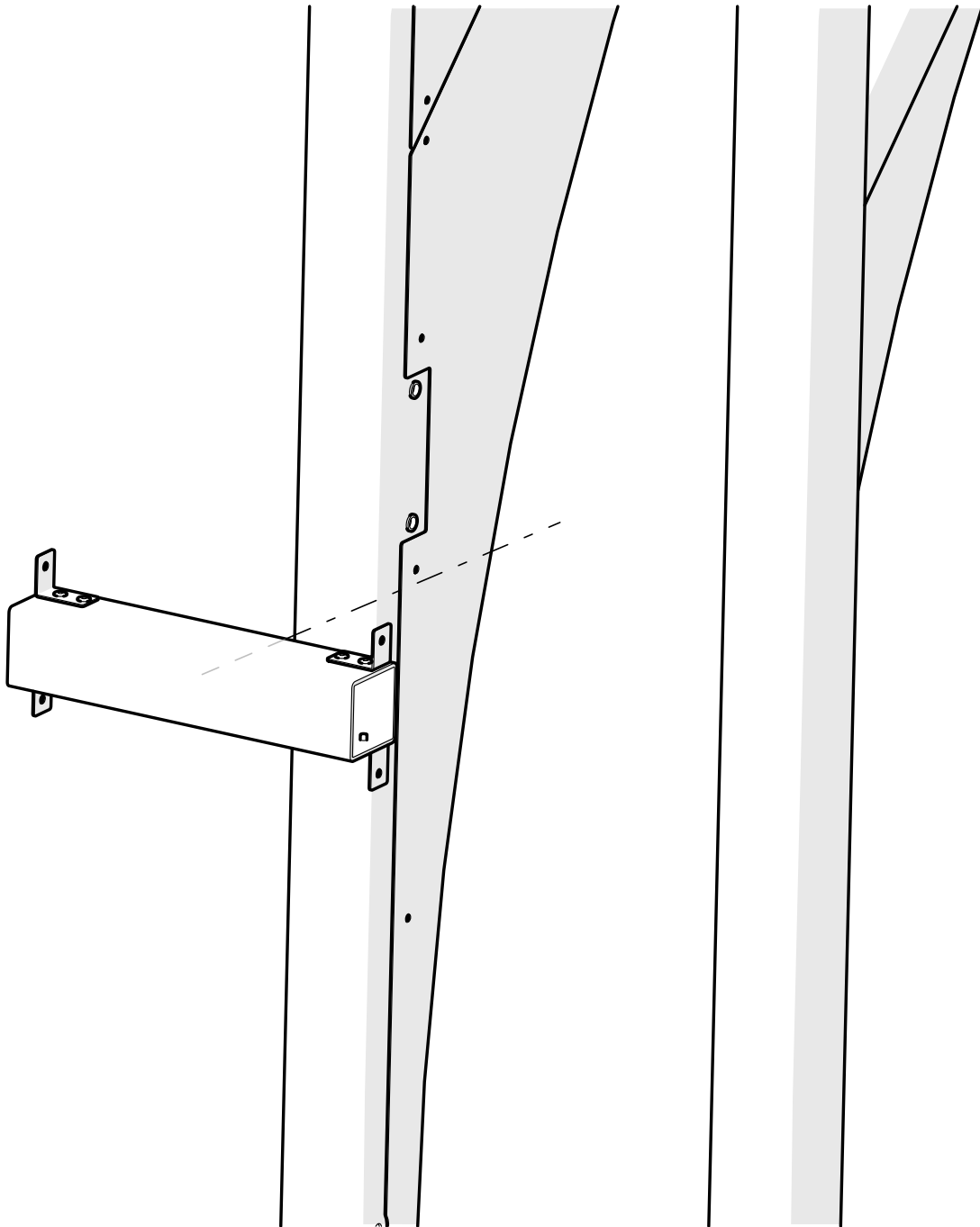


Tighten the previously loosened screws on both sides of the bottom casing half. Ensure that all screws are securely fastened.



2.7.5 Reassemble horizontal beams

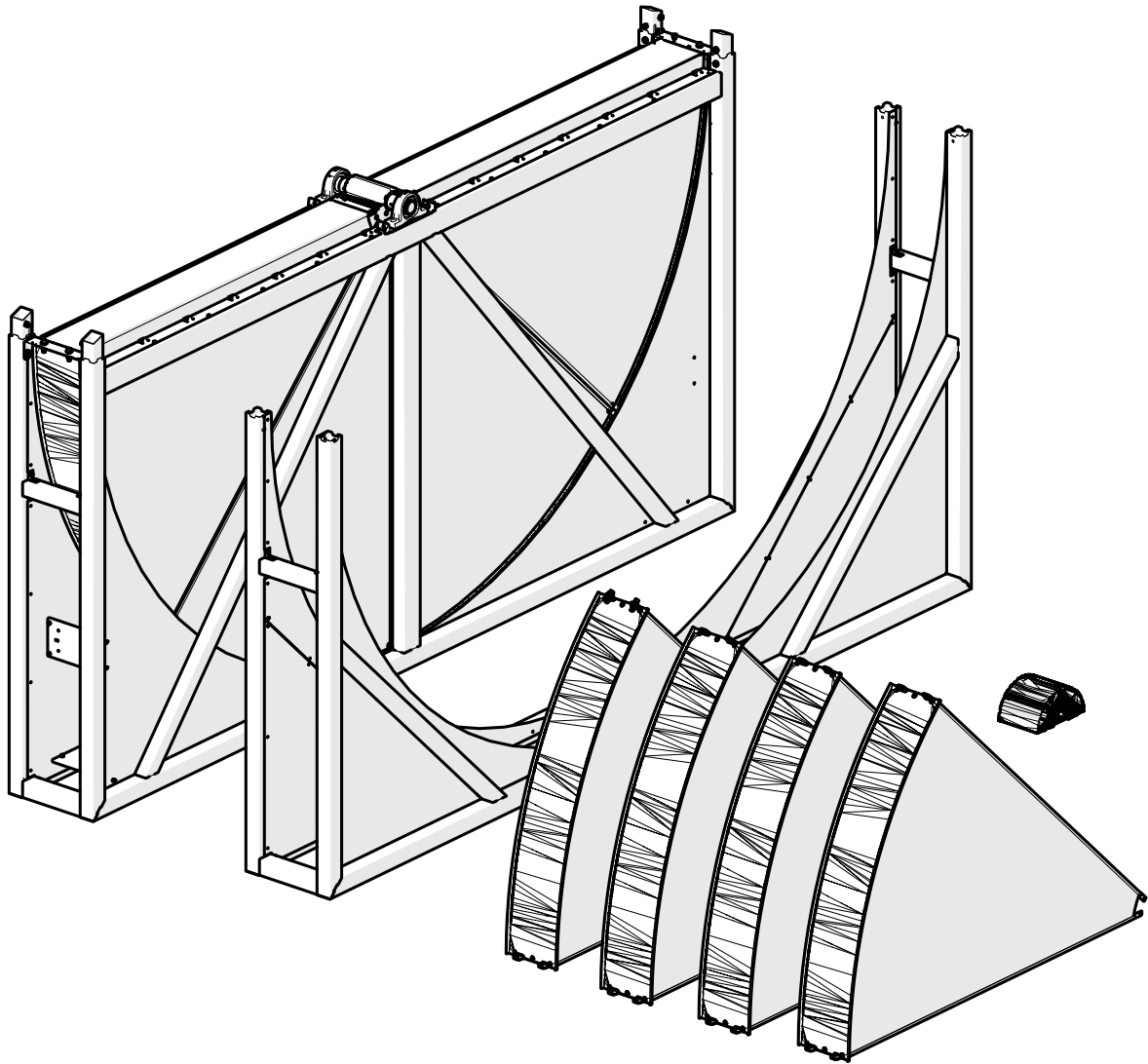
Reattach the horizontal beams to the top casing half using the same fasteners. Refer to step 8 for guidance. The casing assembly is now complete—proceed to page 54 for the final steps.



ASSEMBLY DELIVERY OPTION A COMPLETED!

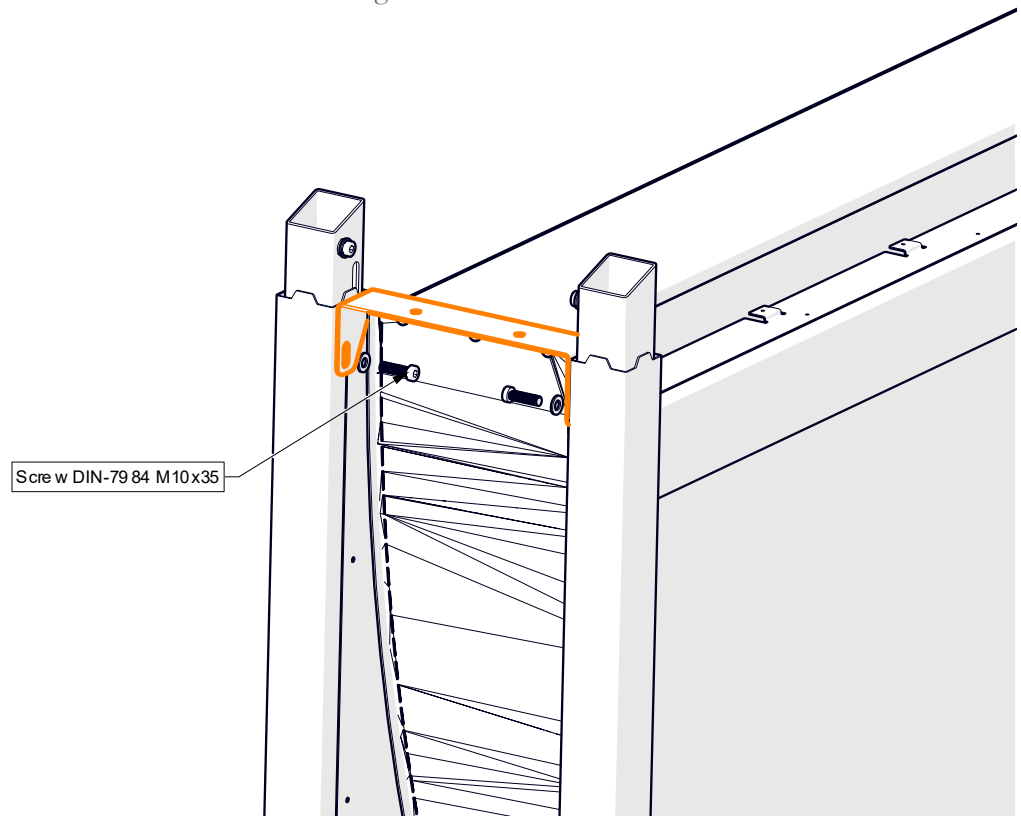
3 DELIVERY OPTION B

The rotary heat exchanger is delivered partially assembled, with one half of the unit pre-installed. The top casing half and the top rotor half are supplied separately. Before assembly, the separate rotor half must be disassembled into individual segments, as described in step 21.

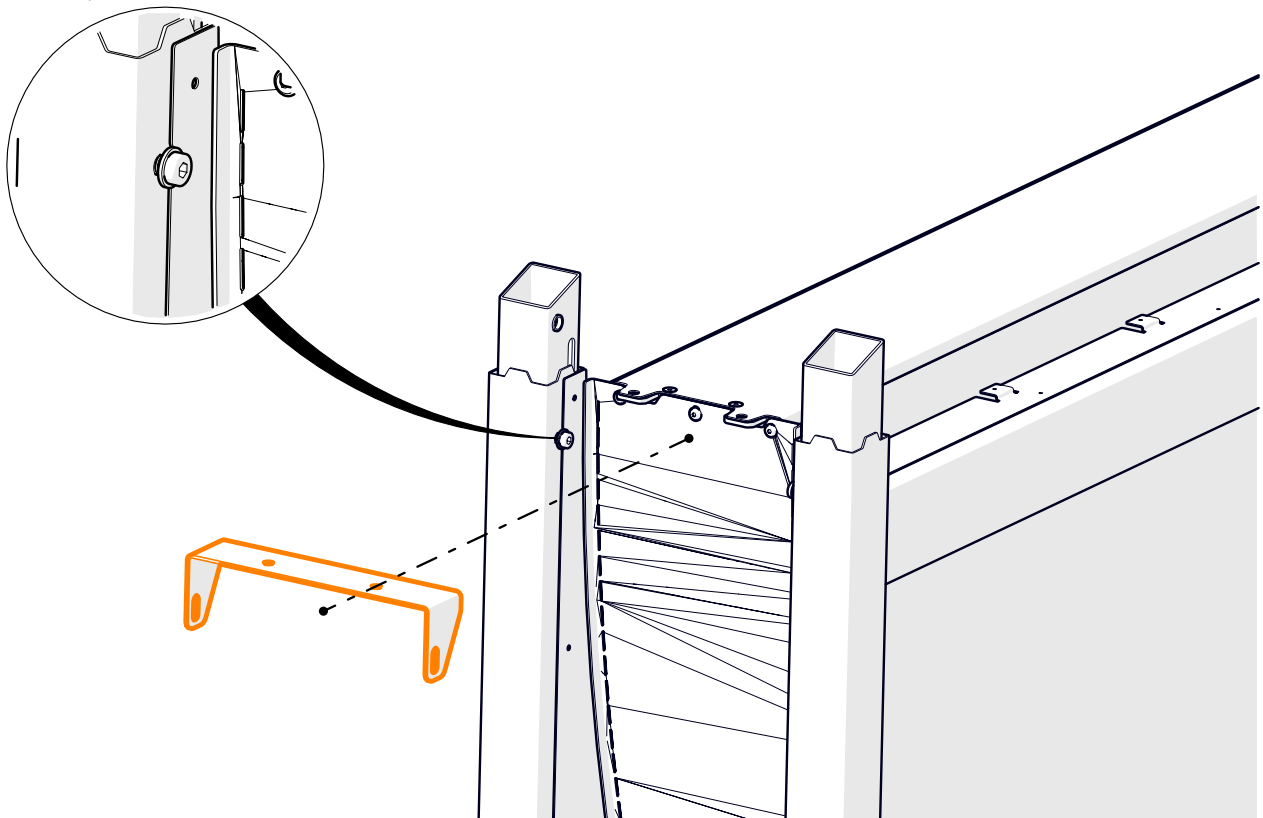


3.1 Remove brackets

Unfasten screws and washers from inside of bottom casing half.



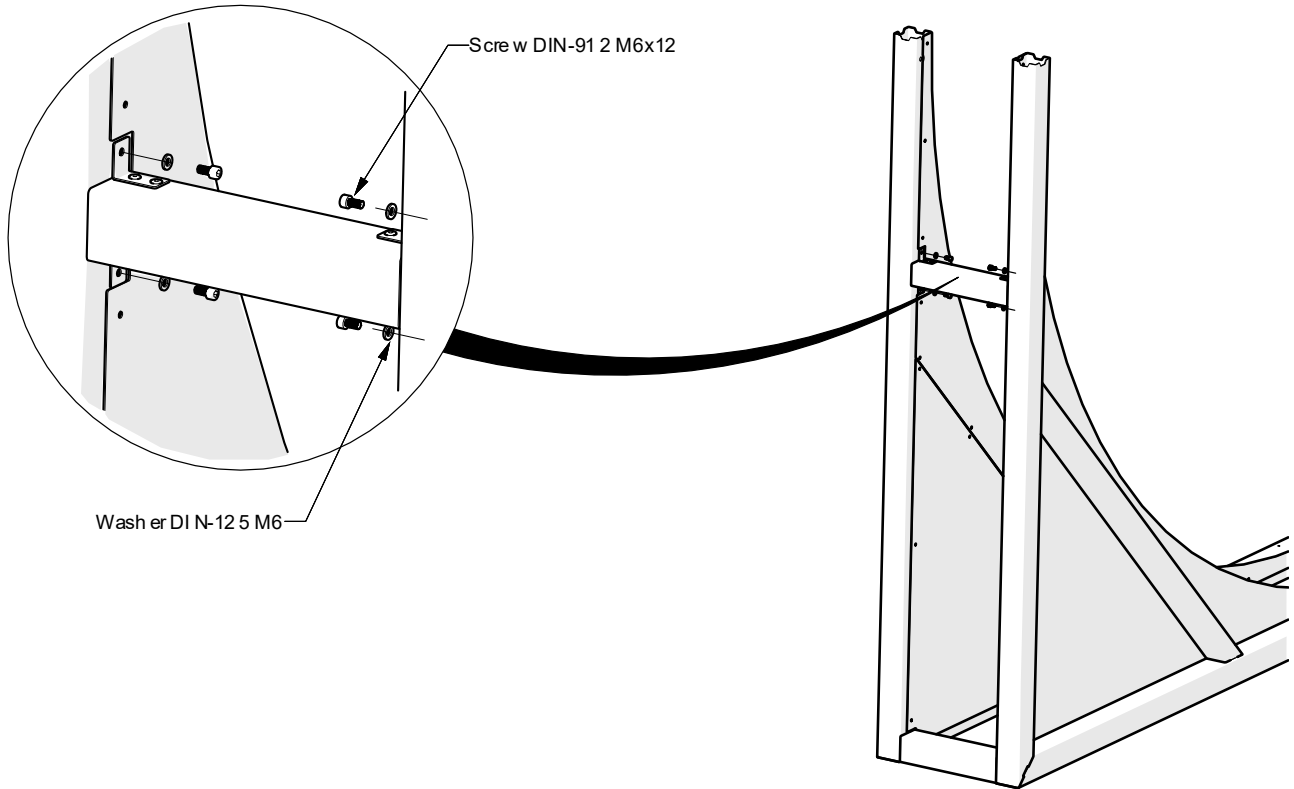
After removing the bracket, reattach the screws and washers that were previously fastened to the casing, leaving them loosely secured. The screws that were attached to the wheel should be removed and saved for later reassembly.



3.2 Assemble top casing

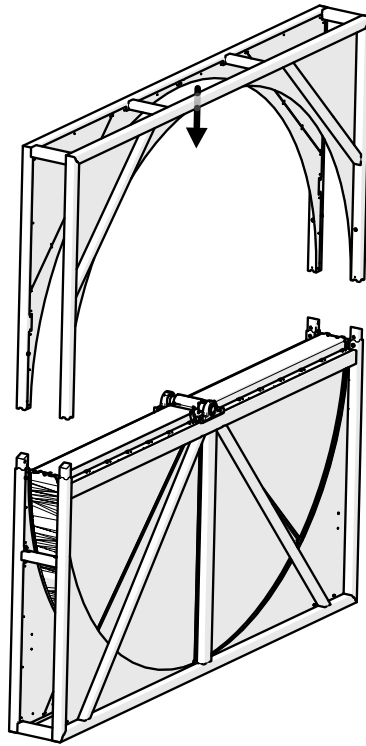
3.2.1 Remove horizontal beams

To simplify the installation of the top casing half, temporarily remove the horizontal beams. Begin by unfastening the screws located on the inside of the top casing half. Save the screws and washers for later reattachment.

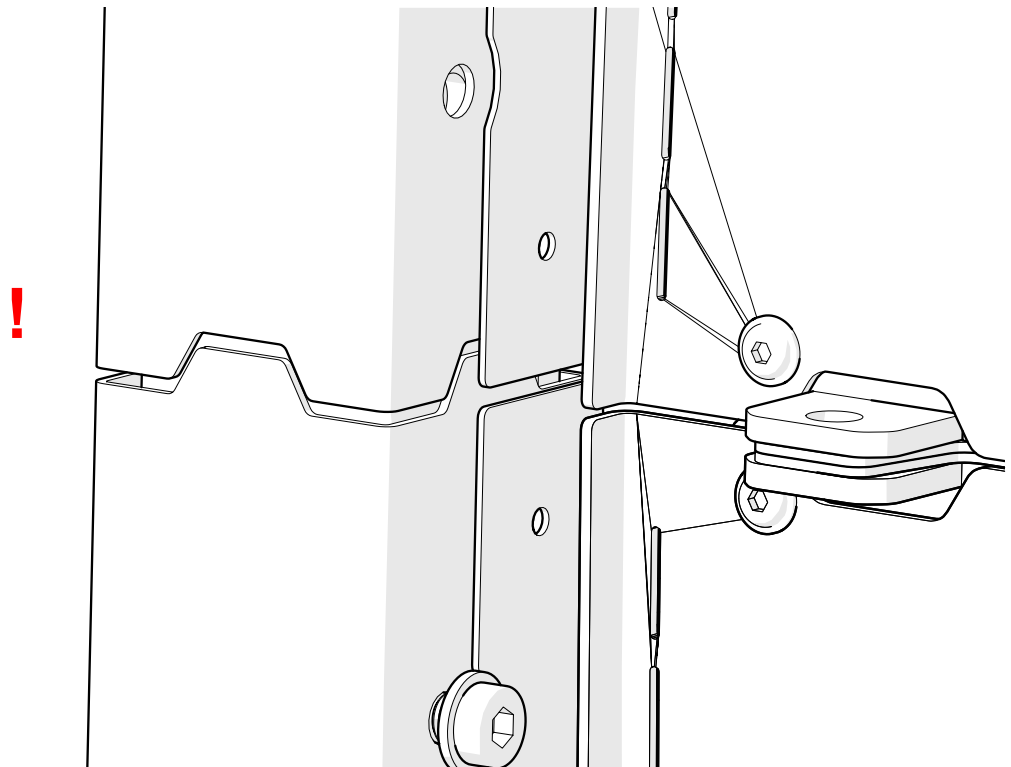


3.2.2 Mount top half casing

Carefully lower the top casing half onto the bottom casing half. Keep the lifting strap centered on the top casing half to aid in proper alignment. Take care when sliding the profiles together to avoid damage or misalignment.

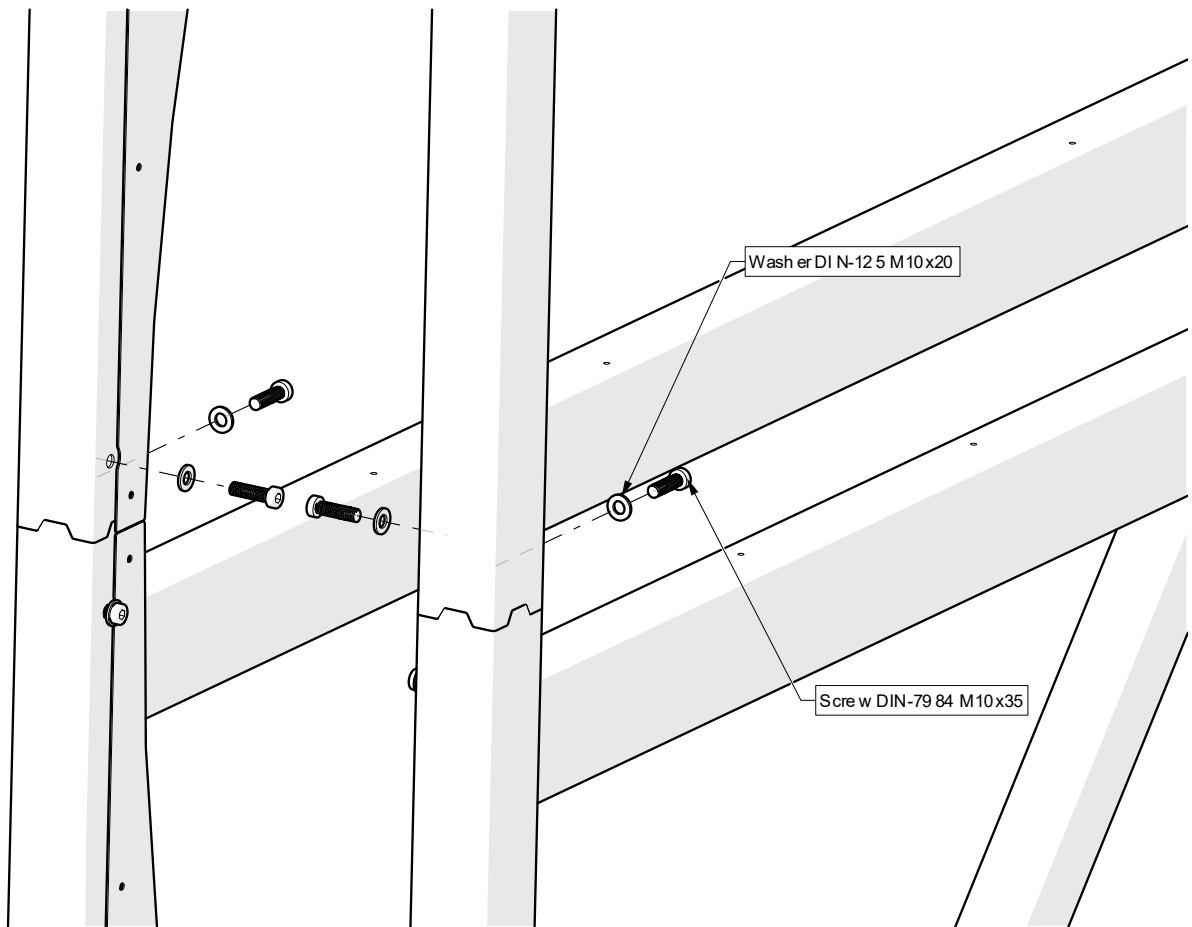


Ensure that the vertical beams are properly aligned. The bottom casing half is delivered with its screws slightly loosened to allow for easier adjustment during assembly.



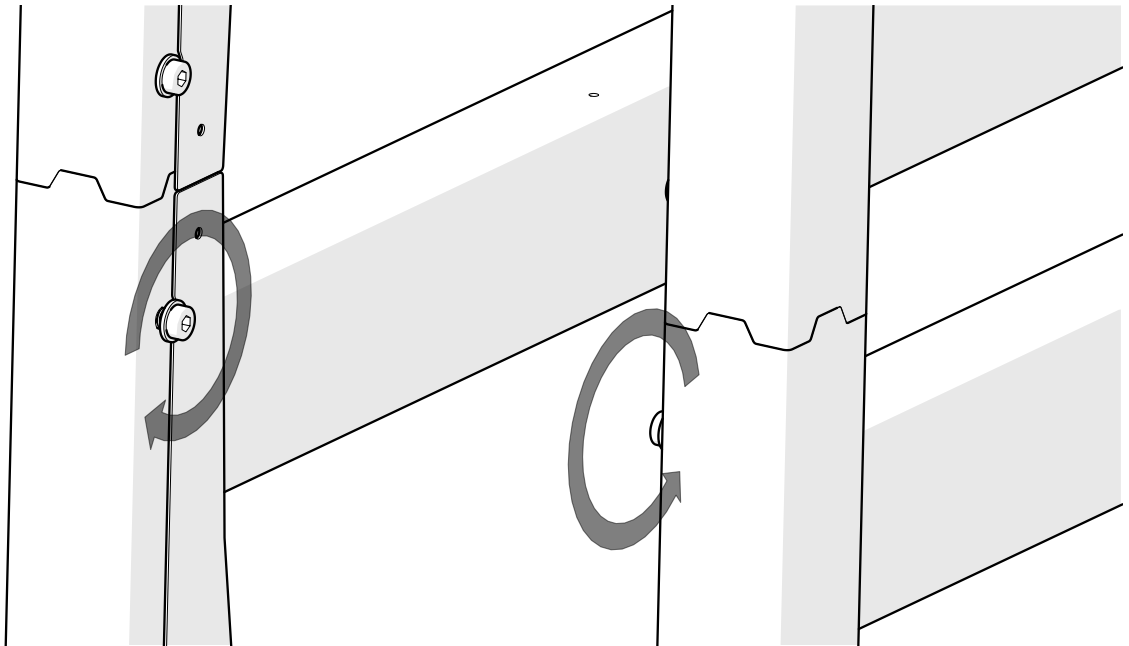
3.2.3 Fasten top casing half screws

Fasten the screws and washers on both sides of the top casing half. Ensure that all screws are securely tightened to complete the assembly.

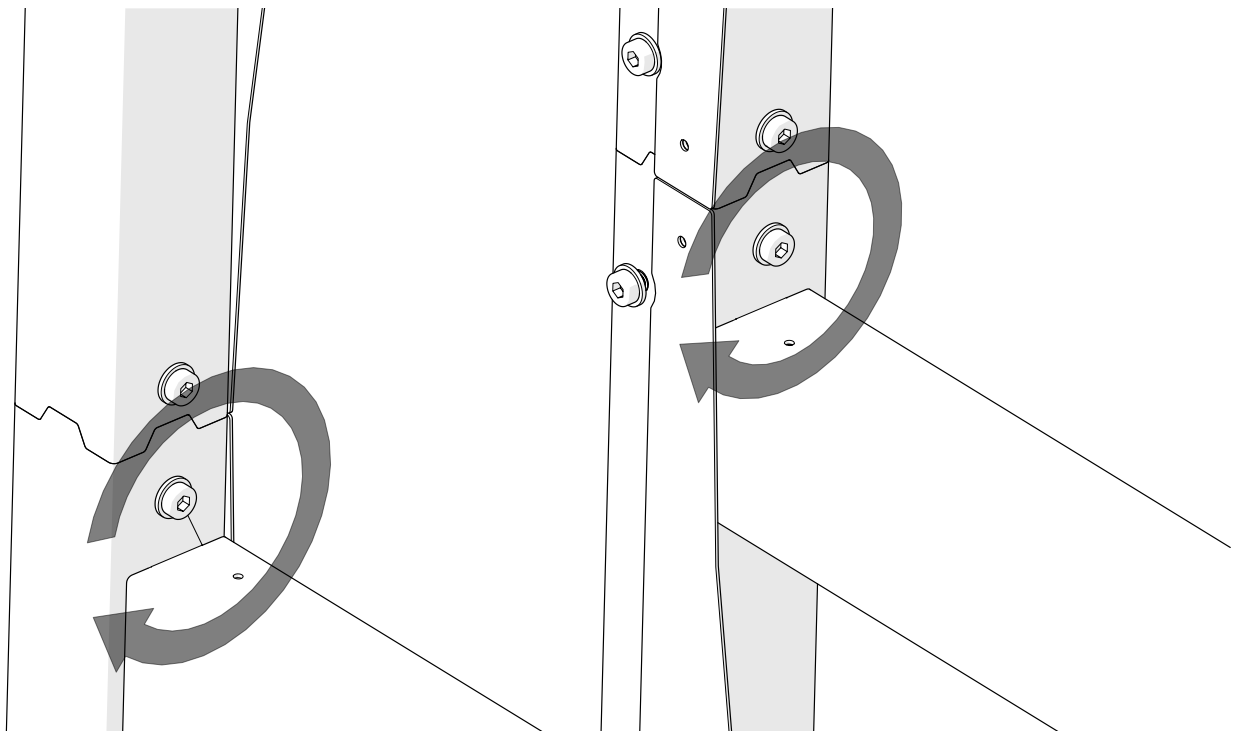


3.2.4 Tighten bottom casing half screws

Tighten the previously loosened screws on both sides of the bottom casing half. Ensure that all screws are securely fastened to complete the assembly and maintain structural integrity.

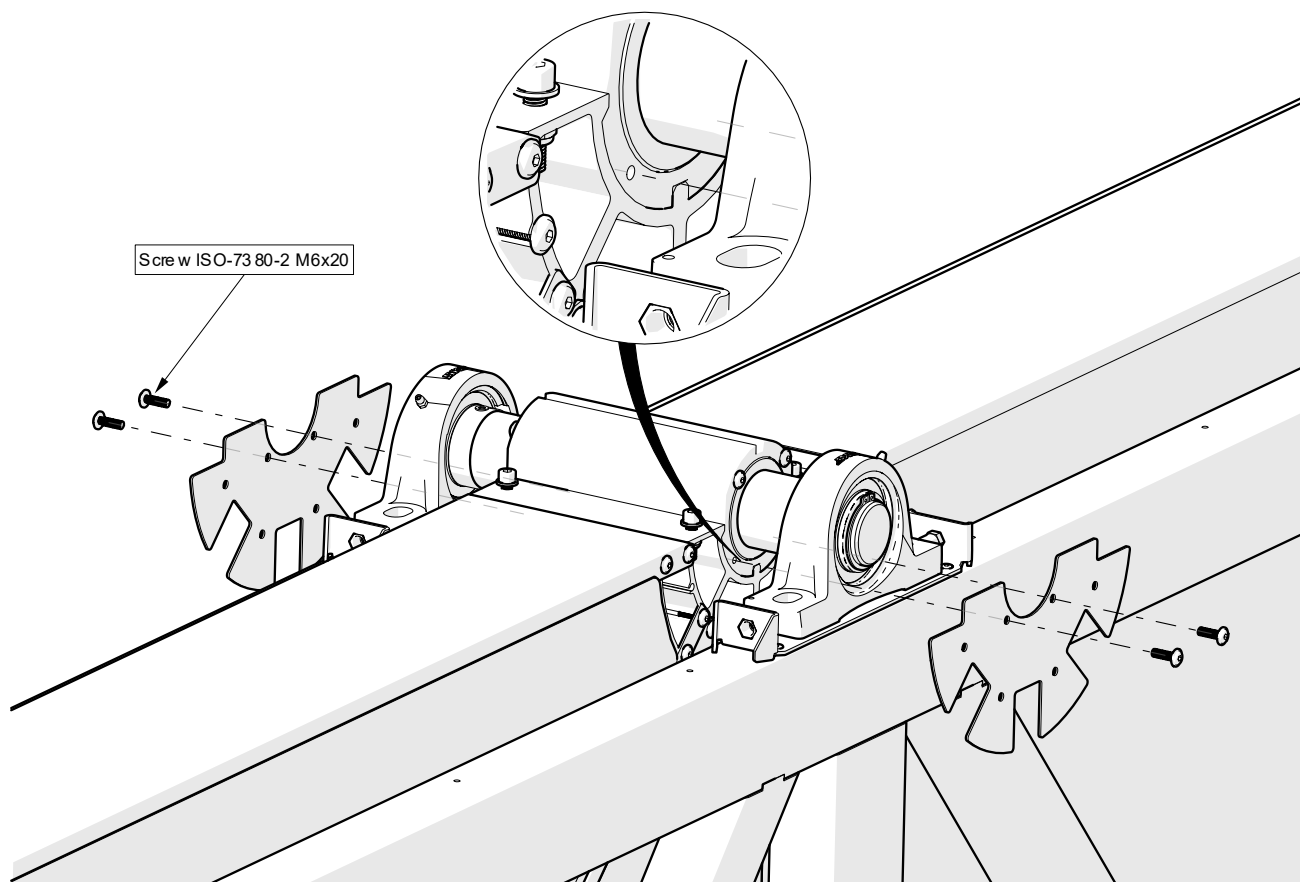


Tighten the previously loosened screws on both sides of the bottom casing half. Ensure that all screws are securely fastened to complete the assembly and maintain structural stability.



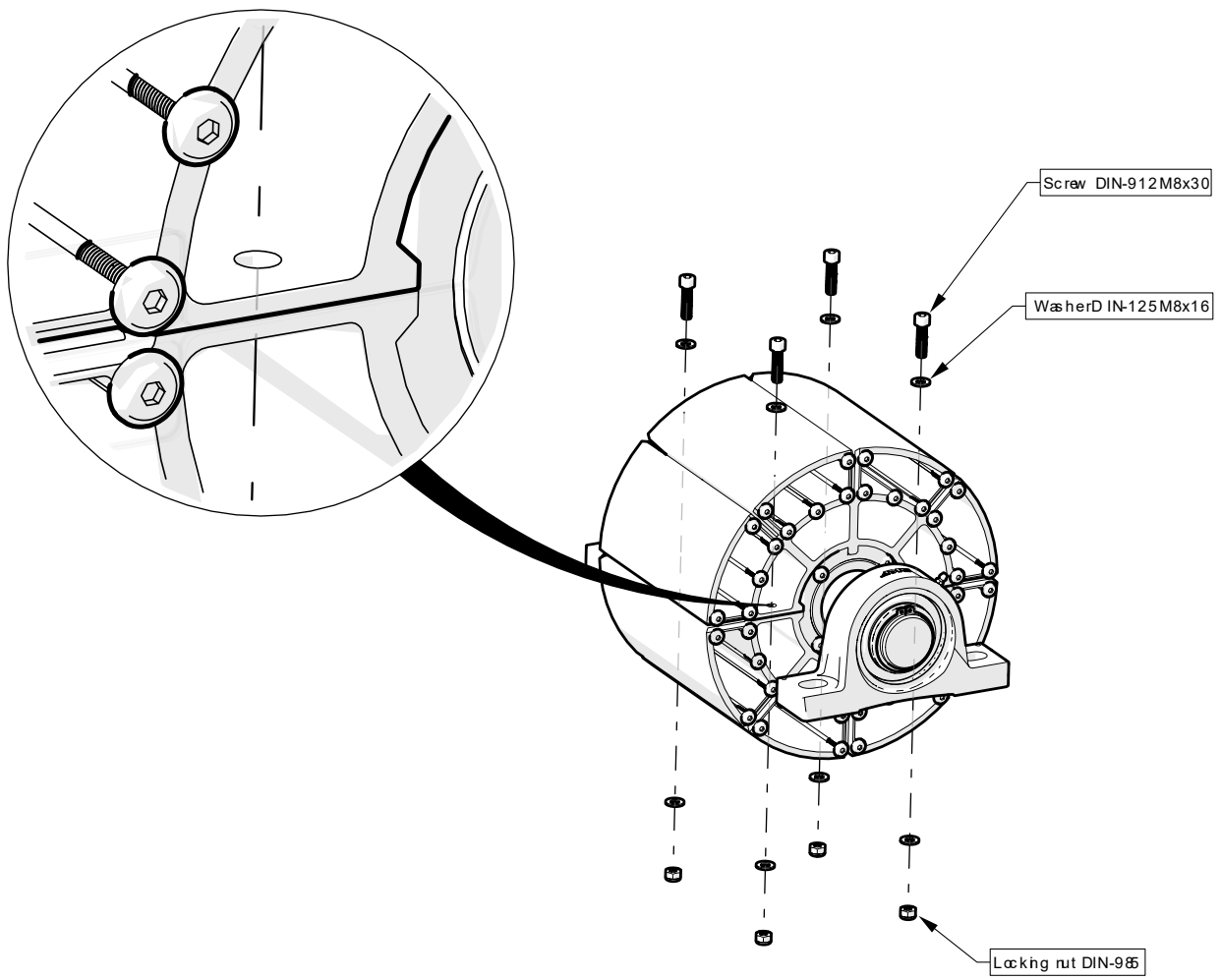
3.3 REMOVE HUB COVERS

Remove the hub cover from the bottom rotor half. The hub cover for the top rotor half are delivered separately. Retain all fasteners for use during reassembly.



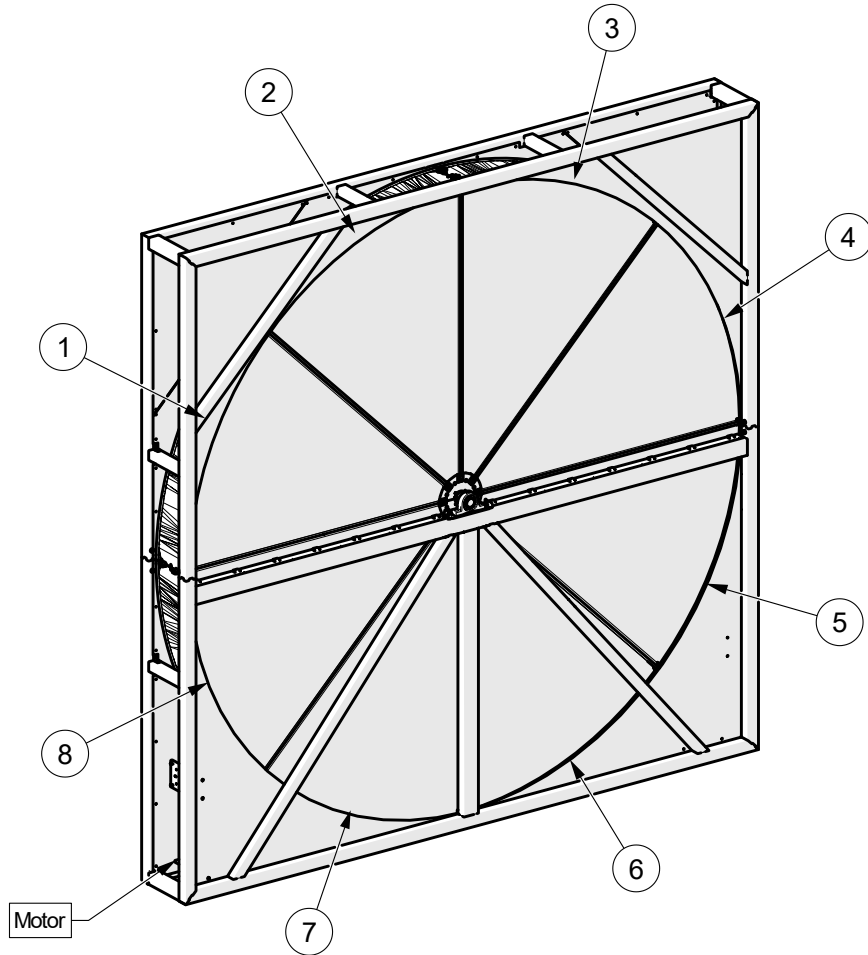
3.4 Mount disassembled hub half

Fasten hub halves together with screws, washers and locking nuts.



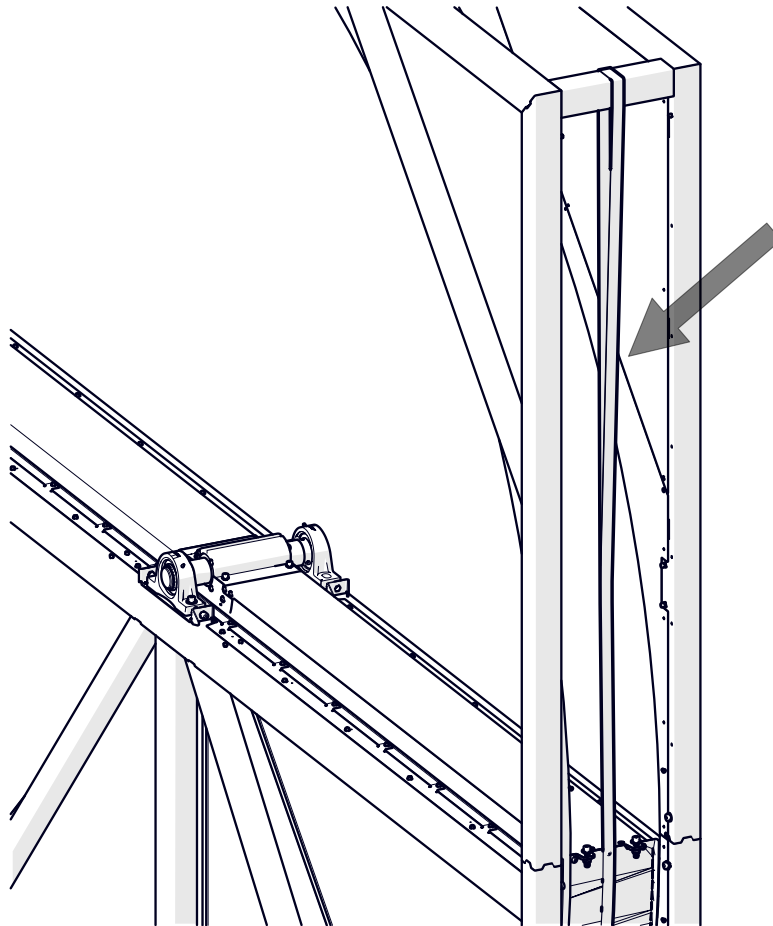
3.5 Assemble disassembled wheel segments

Take note of the assembly order of the wheel segments, as shown in the reference image. Pay special attention to the motor placement indicated. For a wheel consisting of eight segments, segments 1–4 are to be mounted during this step. Segments 5–8 are already assembled in the bottom casing half.

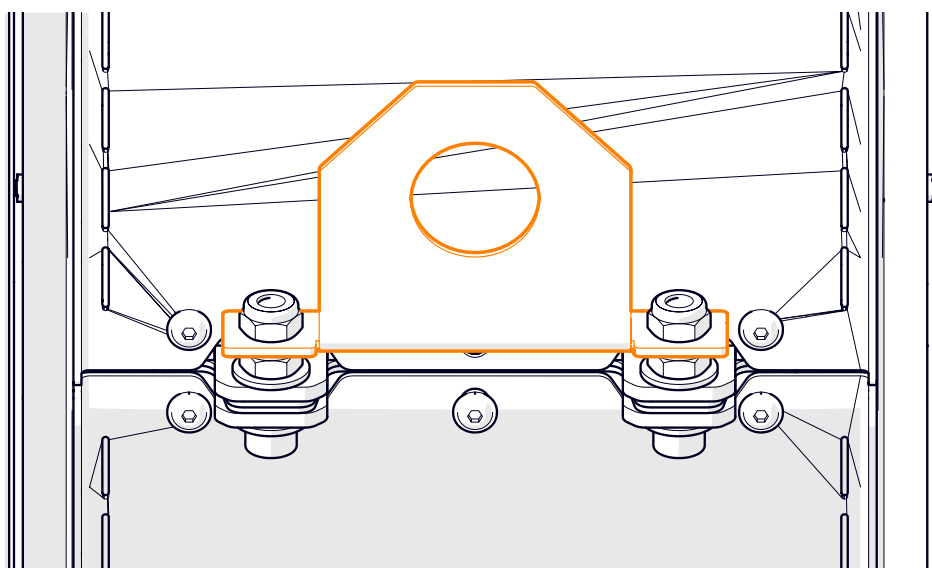


3.6 Suspend bottom half wheel

Suspend the bottom half of the wheel to prevent it from rotating during the installation of individual rotor segments. Use a strap between the top casing and the suspension brackets to secure the wheel in place. Ensure that the area where the rotor segment is to be inserted is positioned horizontally for proper alignment.

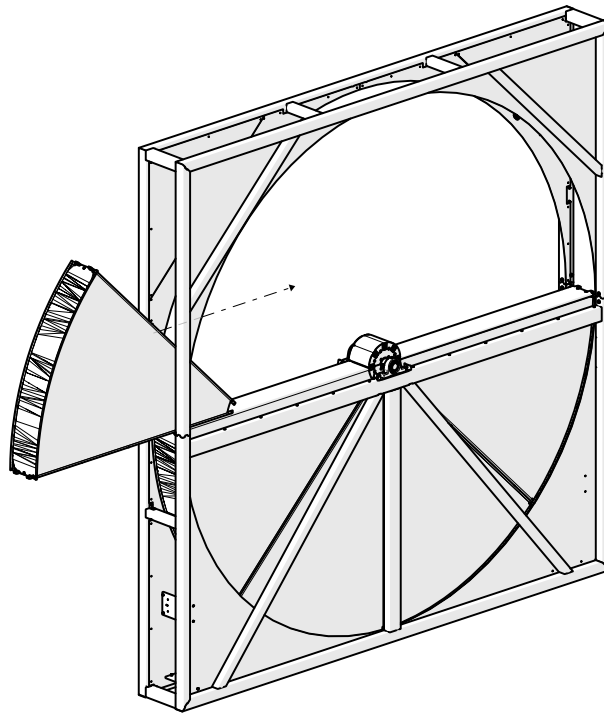


There are two suspension brackets mounted on the bottom wheel half.



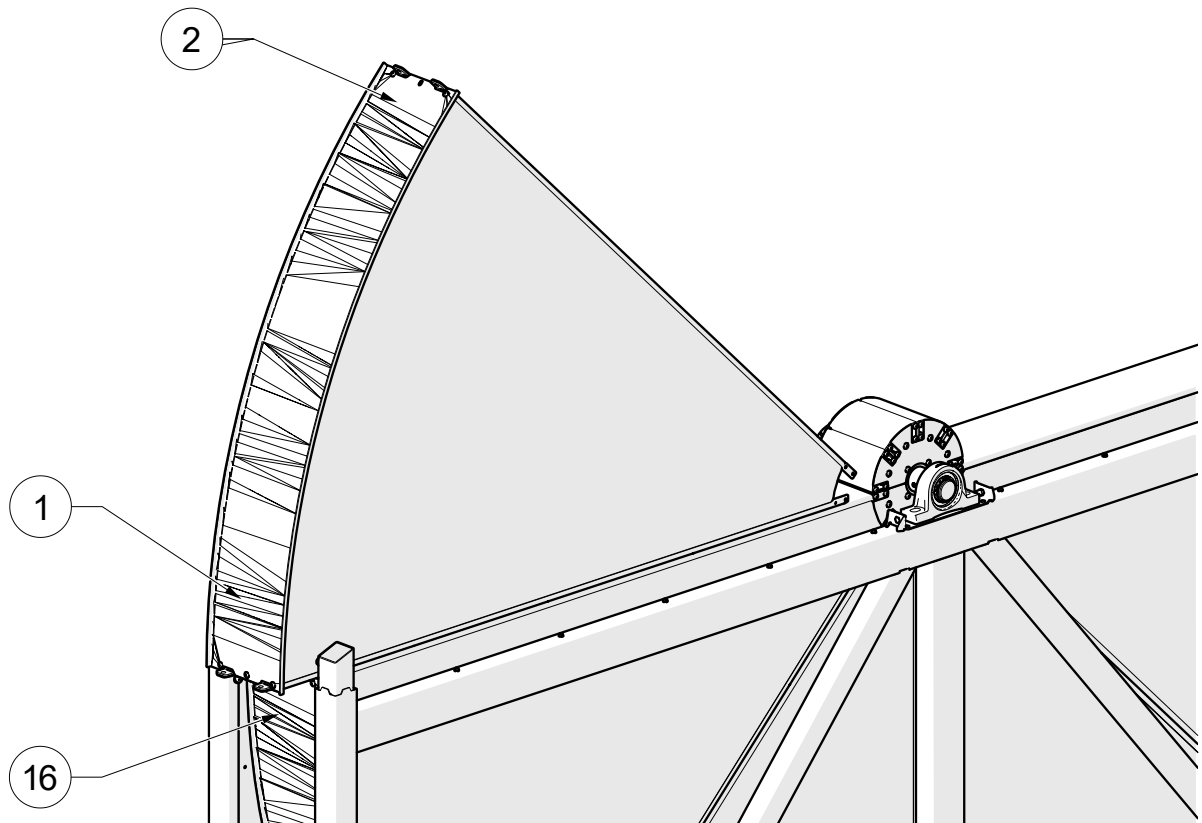
3.7 Insert wheel segment

Lift wheel segment into the casing.



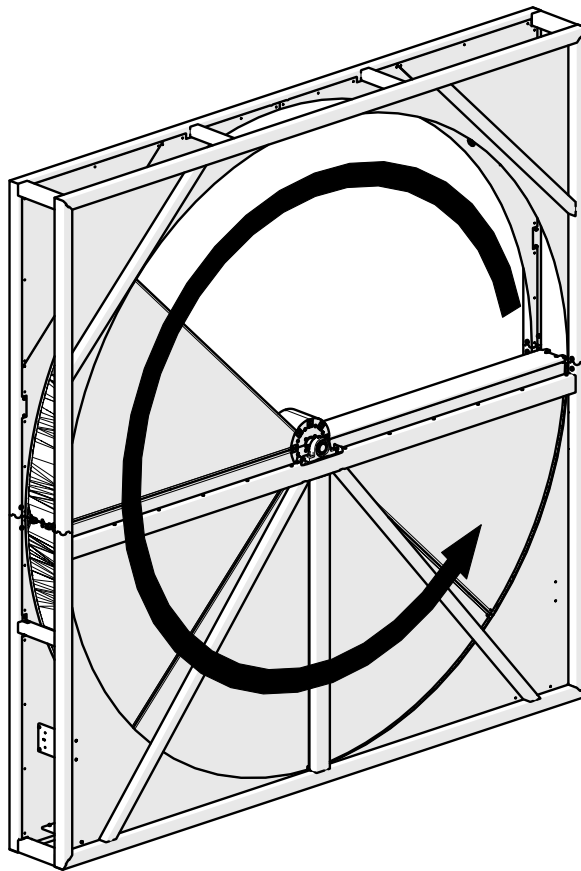
Observe the markings on the segment sweeps to ensure correct alignment. Rotor segments should be assembled so that the following numbers match: 16–1, 2–3, 4–5, 6–7, 8–9, and so on.

Slide the spoke into the HUB slot and secure segment to HUB with screws 8x M6x20. Attach and tighten lightly fasteners between spokes 1-16.



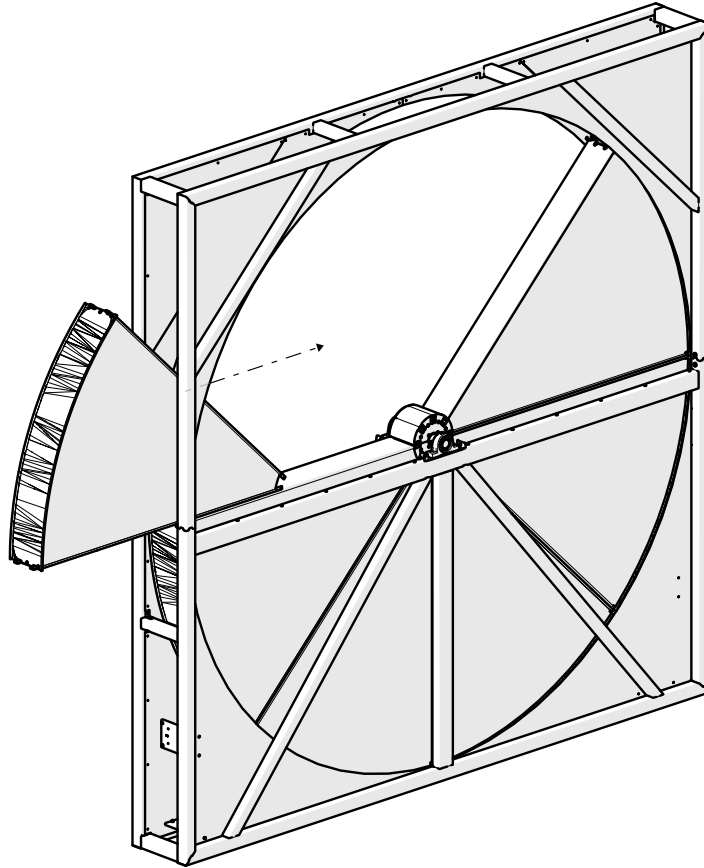
3.8 Rotate wheel

Rotate the wheel to allow for the assembly of the next wheel segment. Before rotating, temporarily remove the strap that was mounted in step 24.1.



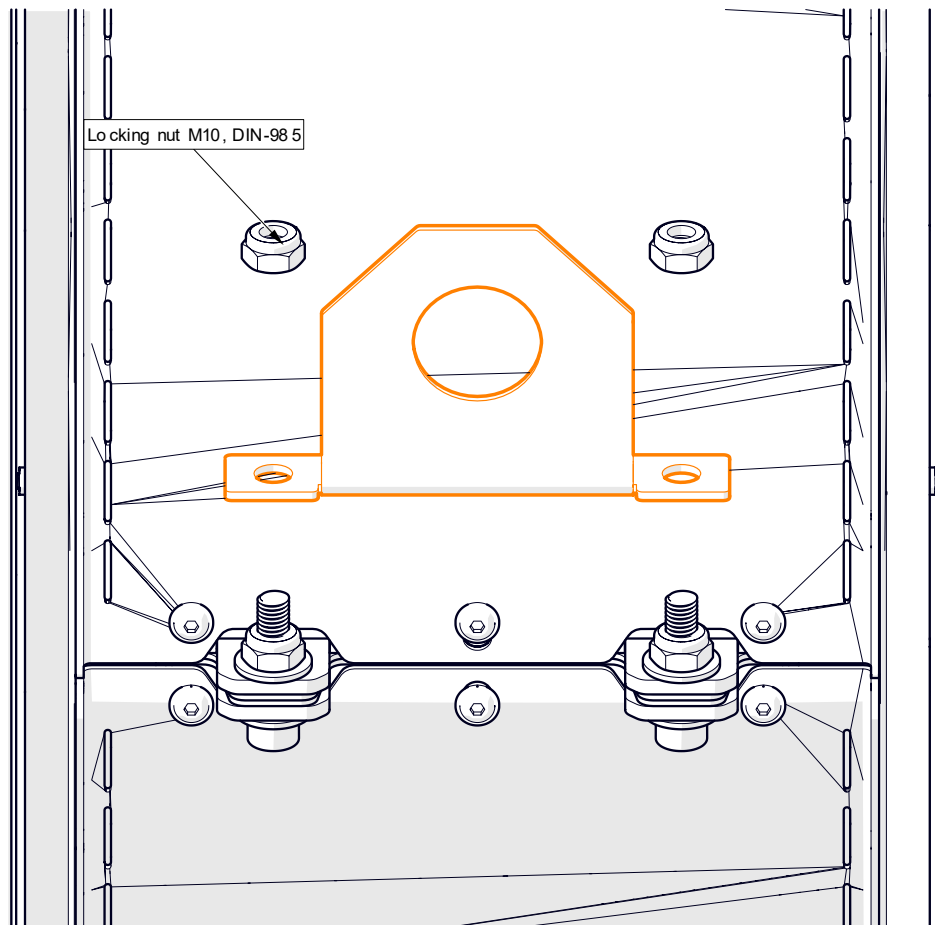
3.9 Repeat segment mounting process

Repeat the process for remaining wheel segments.



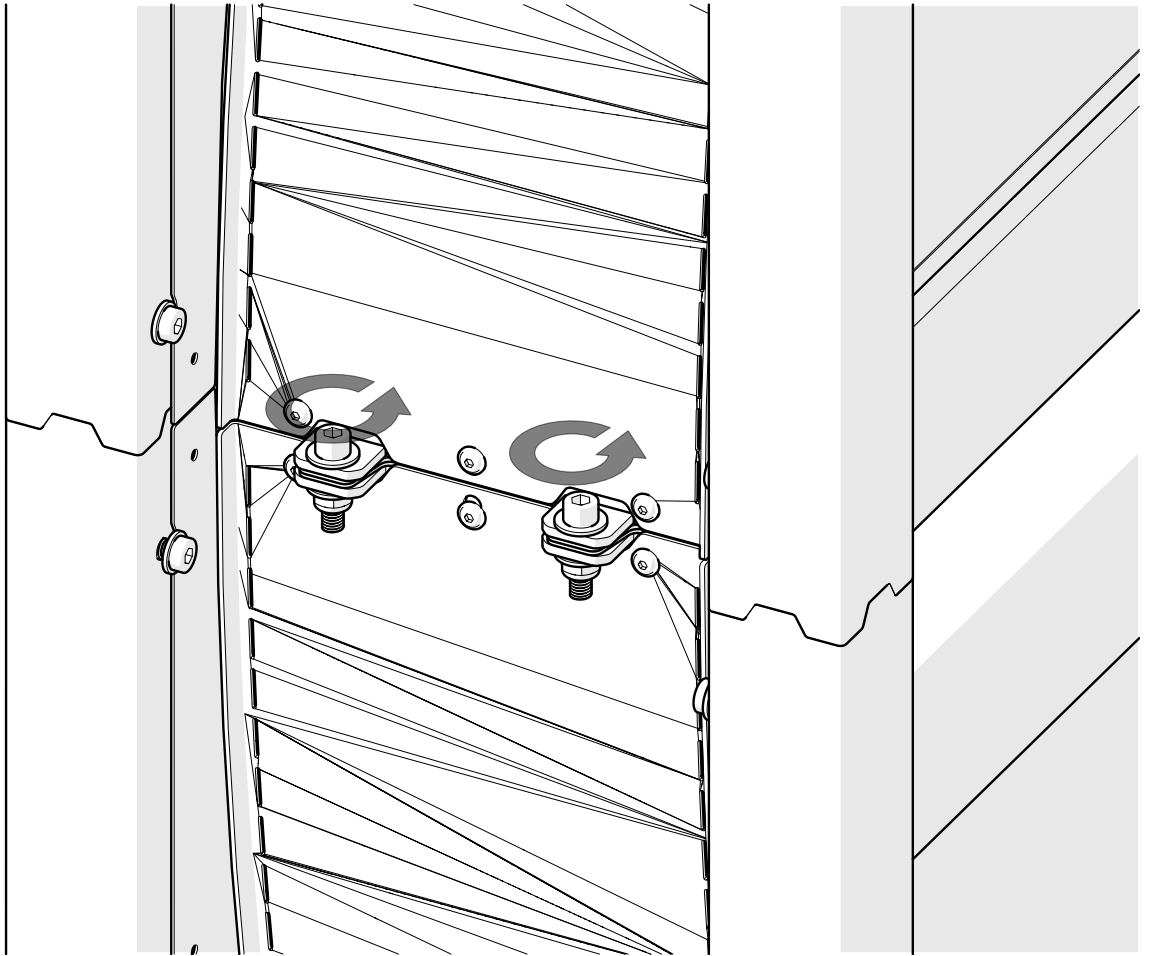
3.10 Remove suspension brackets

Once the wheel has been fully assembled, remove the suspension brackets. There are two suspension brackets mounted on the wheel that must be detached.



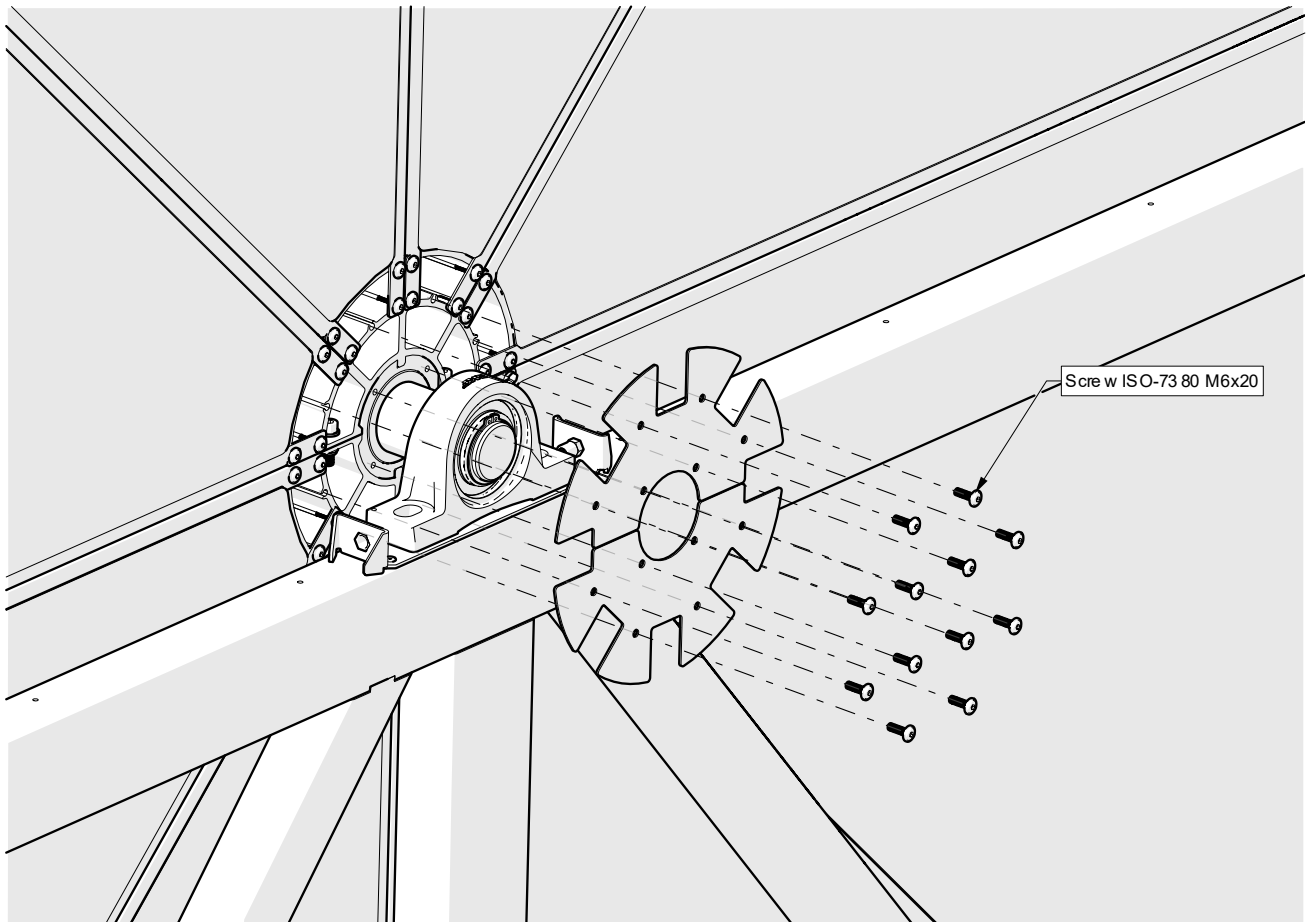
3.11 Tighten fasteners between sweeps

Once all wheel segments have been assembled, tighten the screws connecting the sweeps together. Also ensure that all screws securing the wheel segments mounted in step 9 are properly tightened.



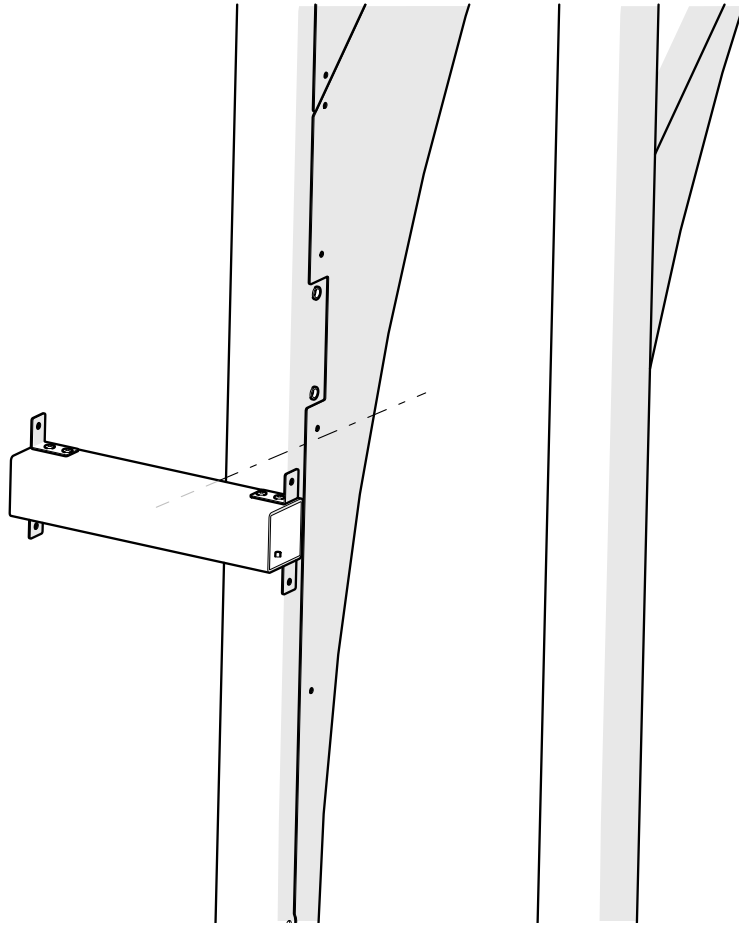
3.12 Reassemble hub covers

Reattach the hub covers to the wheel, ensuring that all four covers—two for the bottom wheel half and two for the top wheel half—are properly installed.



3.13 Reassemble horizontal beams

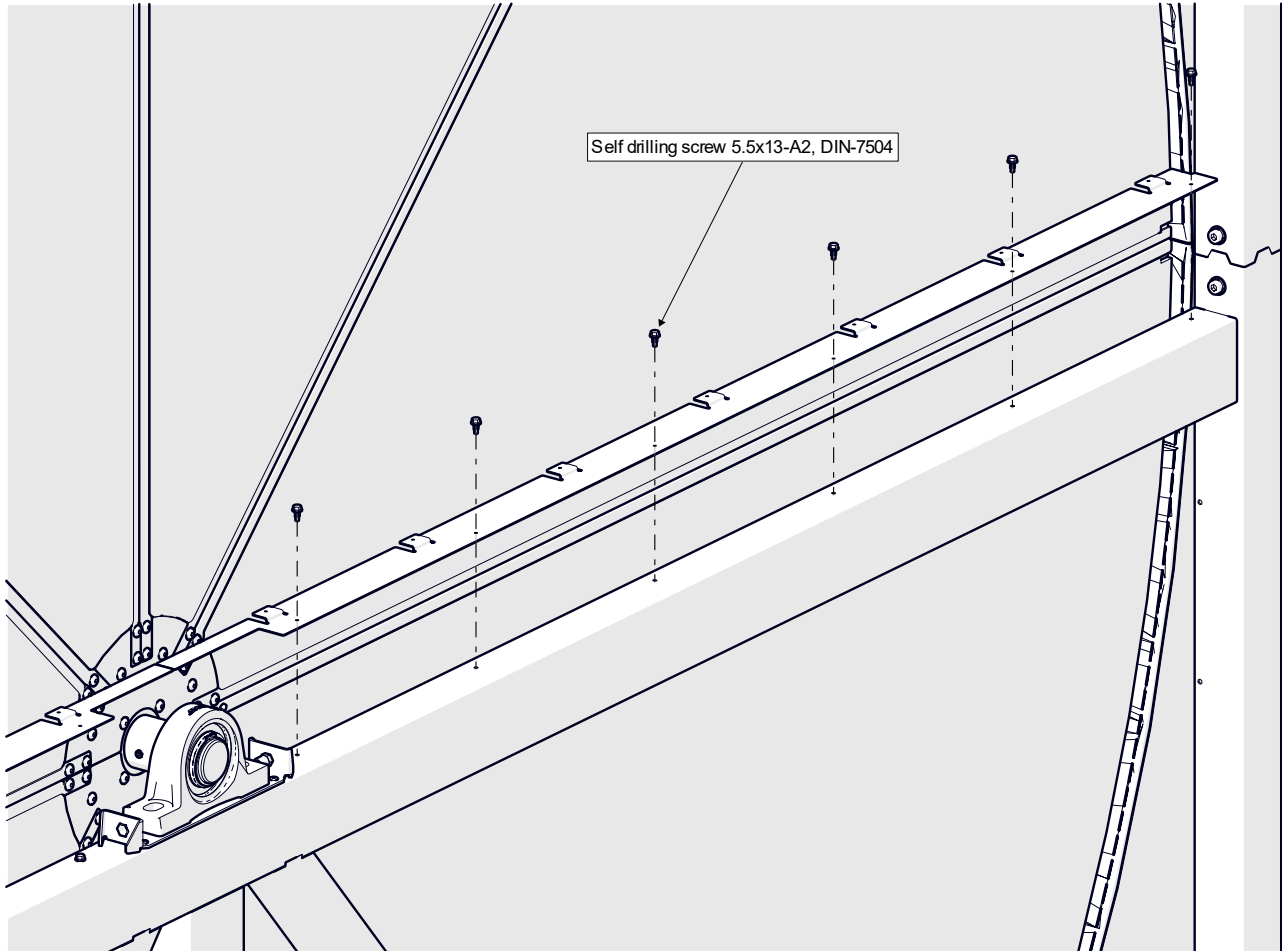
Reattach the horizontal beams to the top half of the casing using the same fasteners. Refer to Step 8 for guidance. Once completed, proceed to the final steps on page 54.



ASSEMBLY DELIVERY OPTION B COMPLETED!

4 ATTACH BRUSH HOLDERS

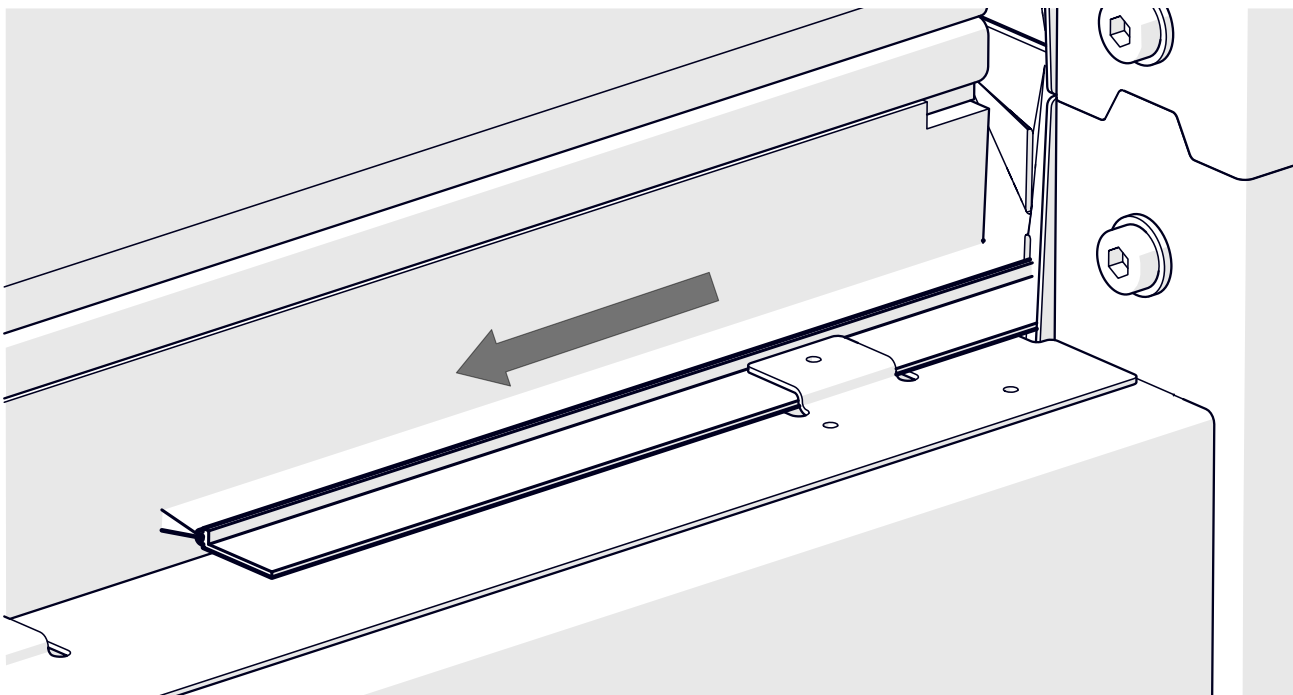
Attach the brush holders using self-drilling screws, ensuring correct orientation. The jogged flanges should face the wheel, and the purge sector ends with extensions should point toward the center of the heat exchanger. Use the guide holes in the horizontal beams for proper alignment.



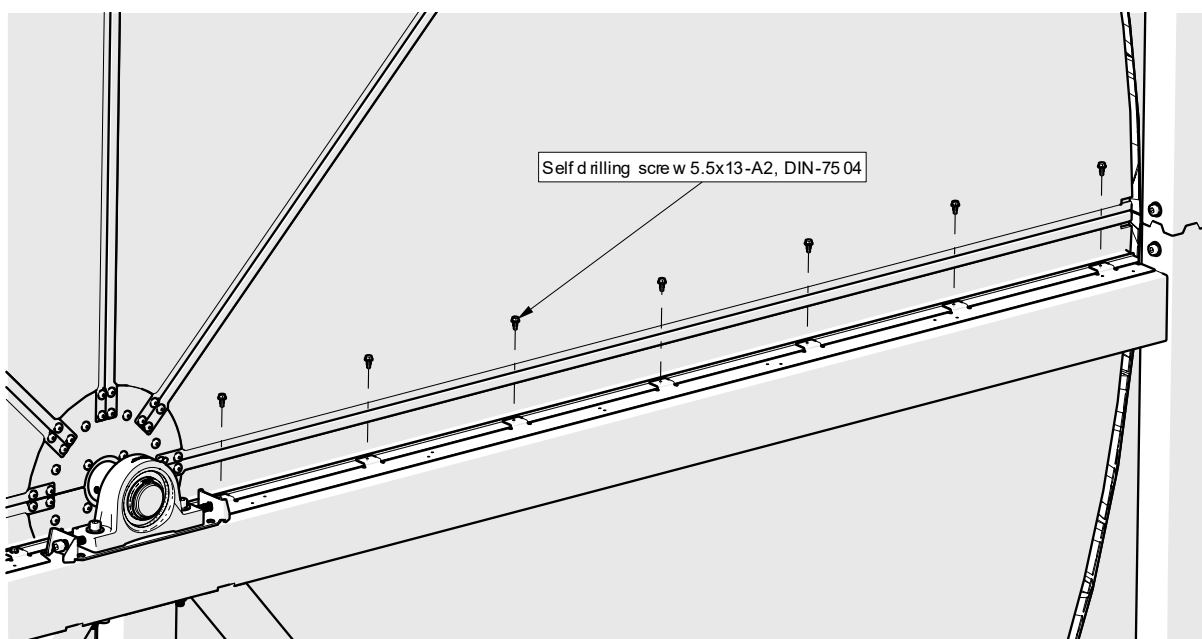
4.1 Mounting brush seals

4.1.1 Mounting brush seal on horizontal beam

Cut the brush seal to the appropriate length, which should be the rotor diameter minus 30 mm. Insert the brush seal into the brush holders by sliding it in from one end, positioning it between the jogged tabs. Ensure the brush side is facing the wheel. Repeat the insertion on both sides of the heat exchanger.

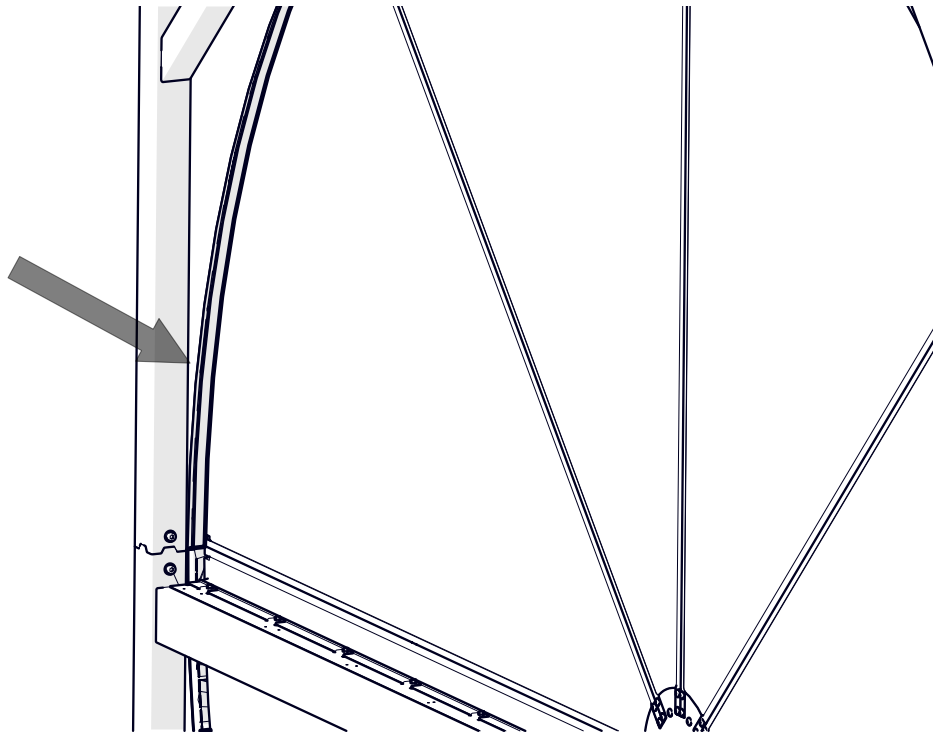


Fasten the brush seal to the brush holder using self-drilling screws in all designated locations. Make sure the brush seal is securely fastened on both sides of the heat exchanger.

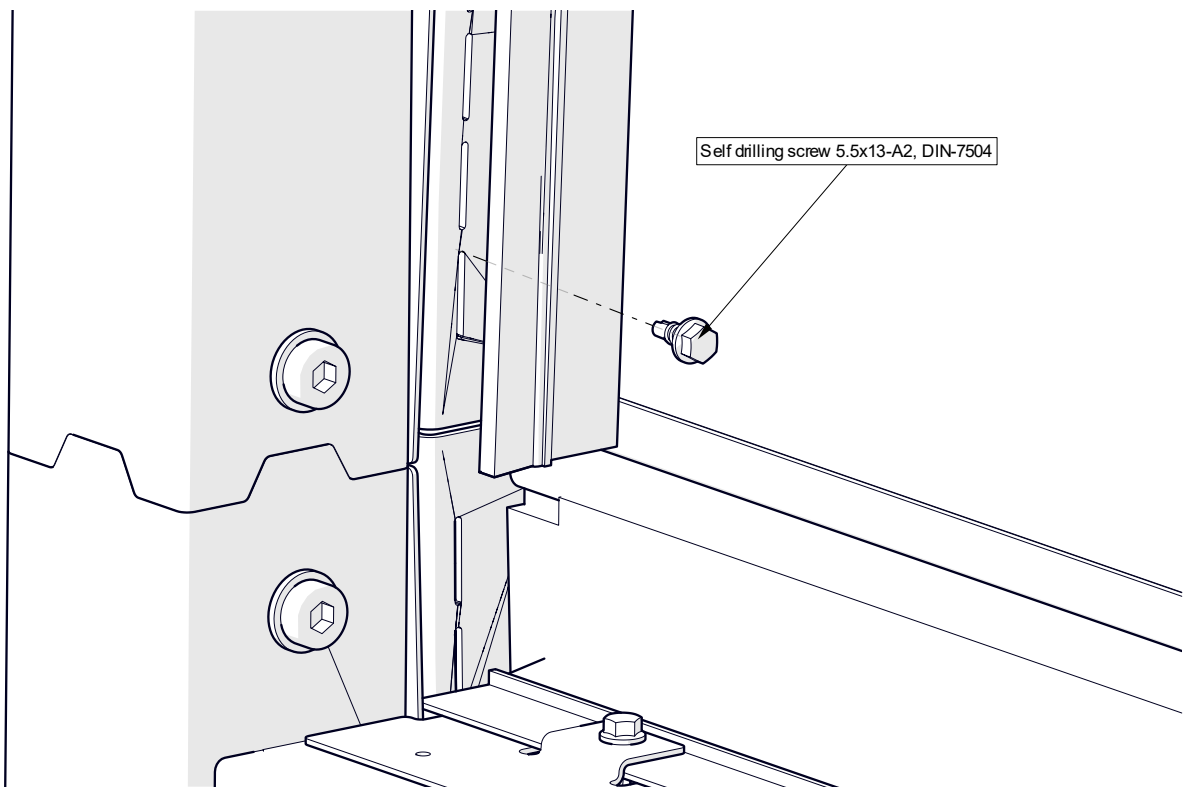


4.1.2 Mounting brush seal on wheel

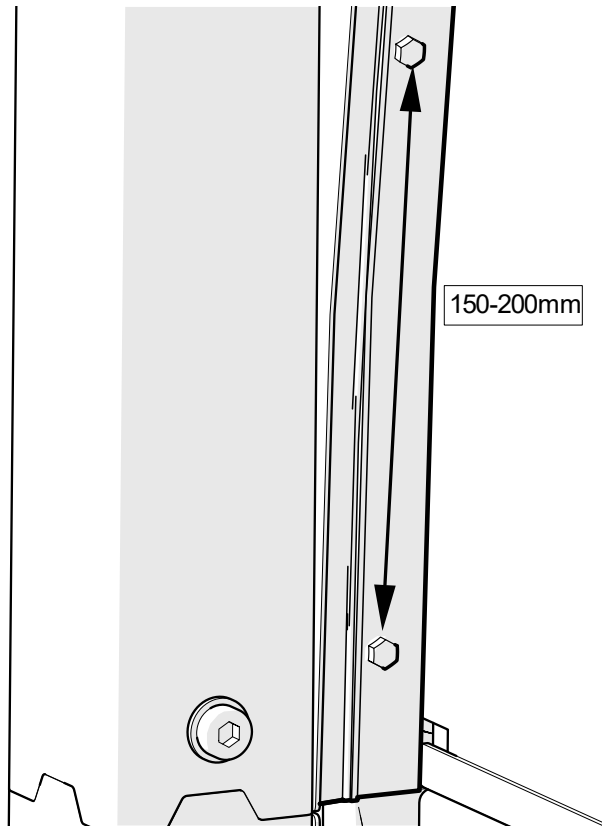
The brush seal for the wheel is fastened on the inside of the segment sweeps and must be attached to both sides of the wheel.



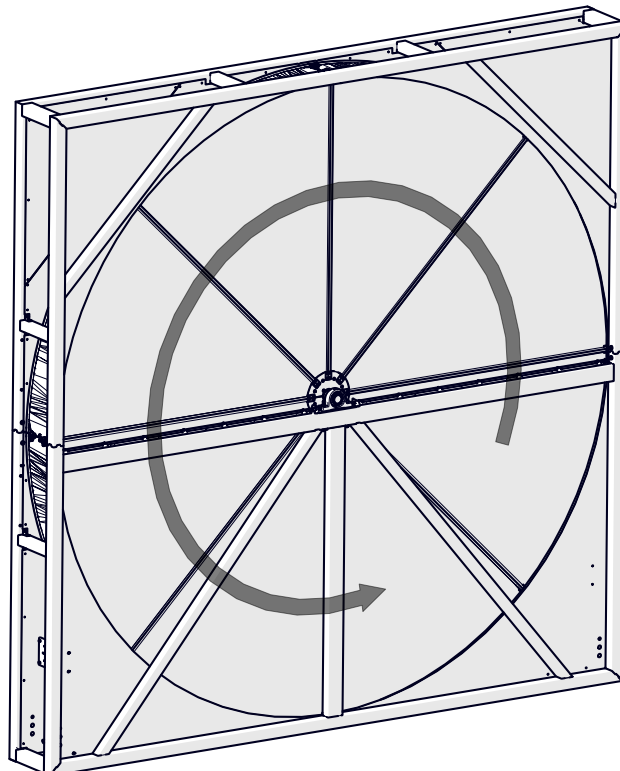
The brush seal is attached to the segment sweeps using self-drilling screws. Guiding slots on the sweeps indicate the correct screw placement.



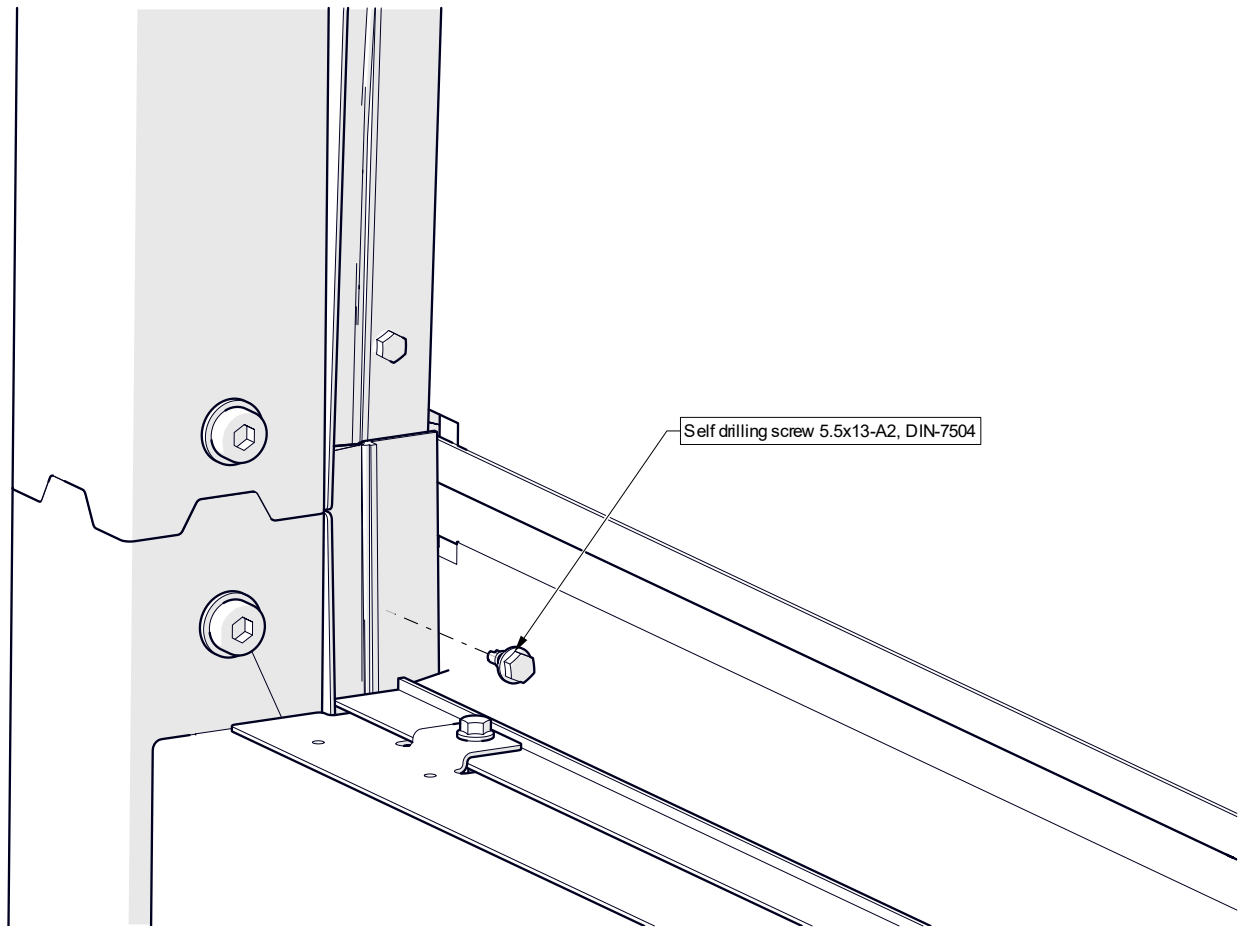
Fasten screws between the brush seal and the segment sweep for one wheel segment, spacing them evenly at intervals of 150–200 mm.



Rotate the wheel as needed to make brush seal installation easier. Repeat this process until the entire circumference of the wheel is fully covered with the brush seal.



Make sure the ends of the brush holders overlap by at least 100 mm when attaching the final length. Fasten a self-drilling screw through both overlapping ends to secure the connection.



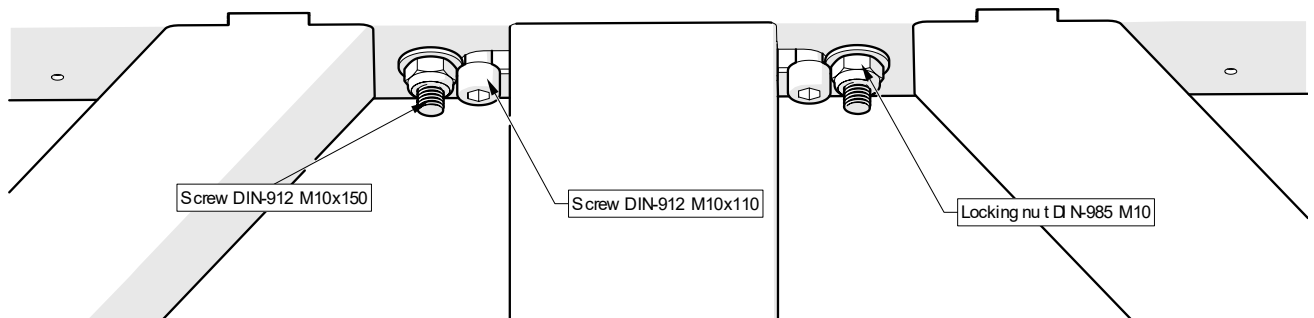
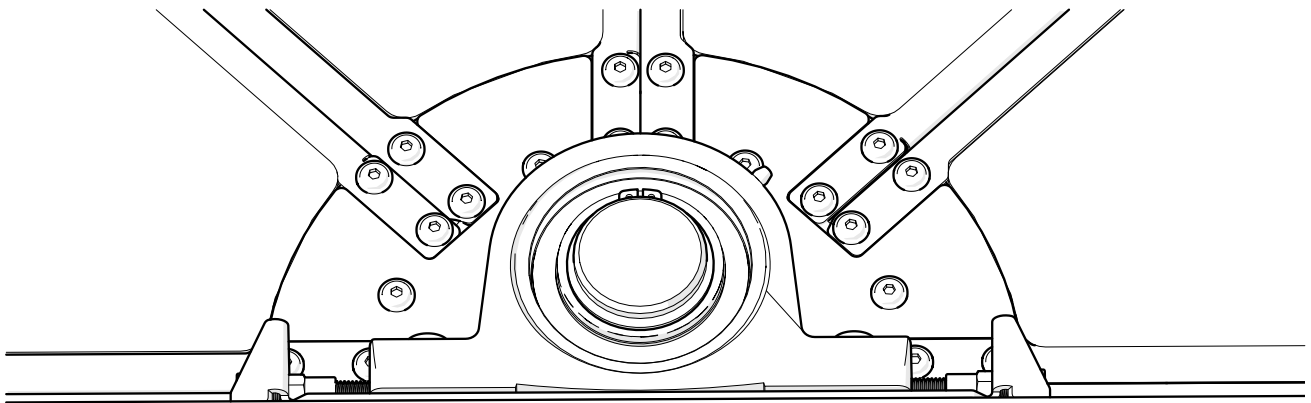
5 WHEEL ADJUSTMENT

5.1 Vertical adjustment

Vertical adjustment is performed by placing shims under the shaft assembly. Begin by loosening the DIN-912 M10x150 screws and DIN-985 M10 locking nuts that secure the bearing to the horizontal beam.

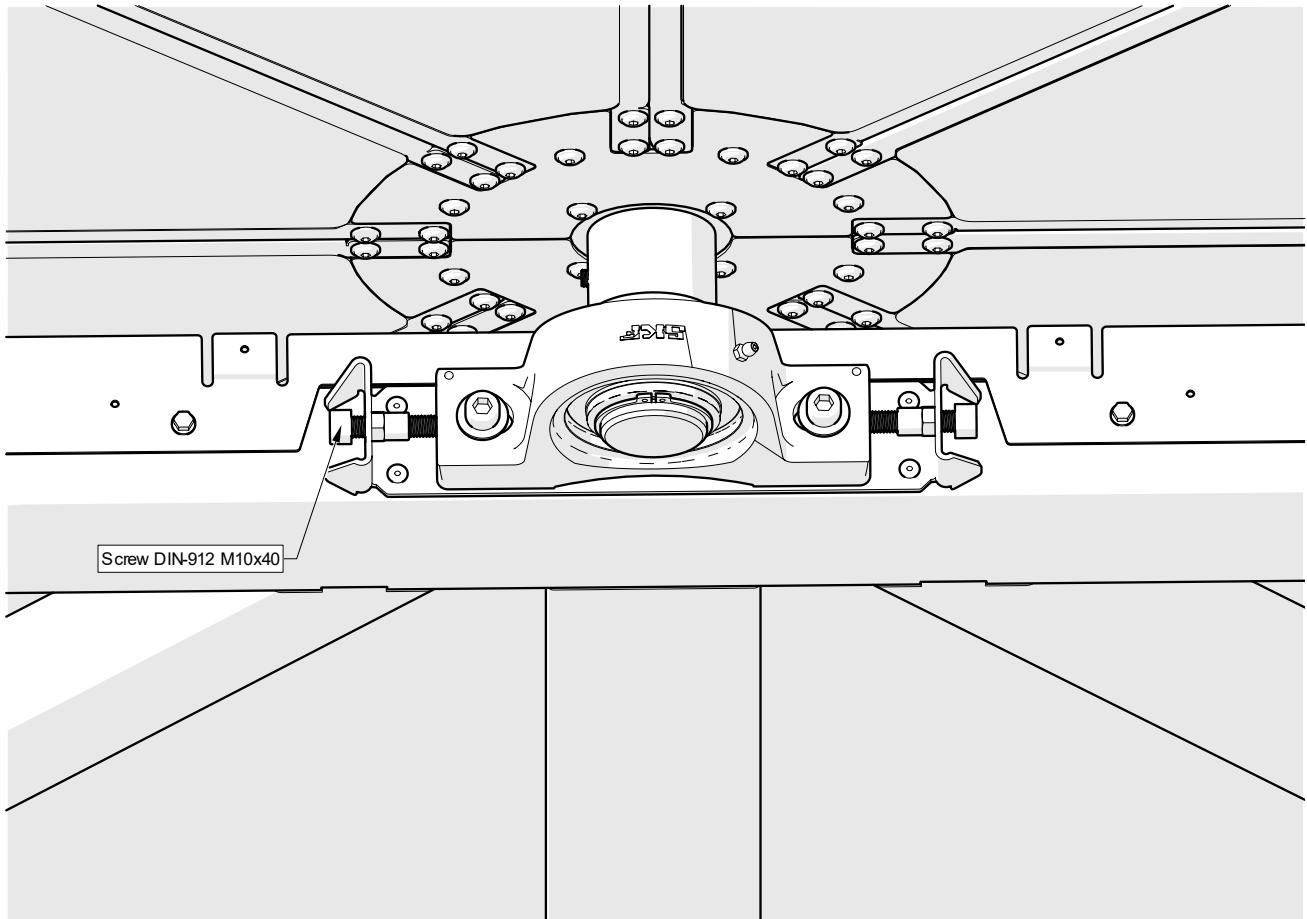
Then, lift the bearing assembly slightly by tightening the DIN-912 M10x110 screws. Once raised, insert shims between the bearing and the horizontal beam.

After the shims are in place, loosen the DIN-912 M10x110 screws and re-tighten the DIN-912 M10x150 screws along with the DIN-985 M10 locking nuts to secure the bearing assembly back to the horizontal beam.



5.2 Horizontal adjustment

To adjust the horizontal alignment, first loosen the DIN-912 M10x150 screw and the DIN-985 M10 locking nut on both sides of the shaft assembly. Once loosened, the horizontal position of the bearing can be adjusted by tightening or loosening the DIN-912 M10x40 screws.



6 ELECTRICAL INSTALLATION

Lock the main power switch in the OFF position before working on the electrical installation. Rotate the rotor by hand to ensure free movement without scraping or imbalance before switching it on.

6.1 Installing the Control Unit

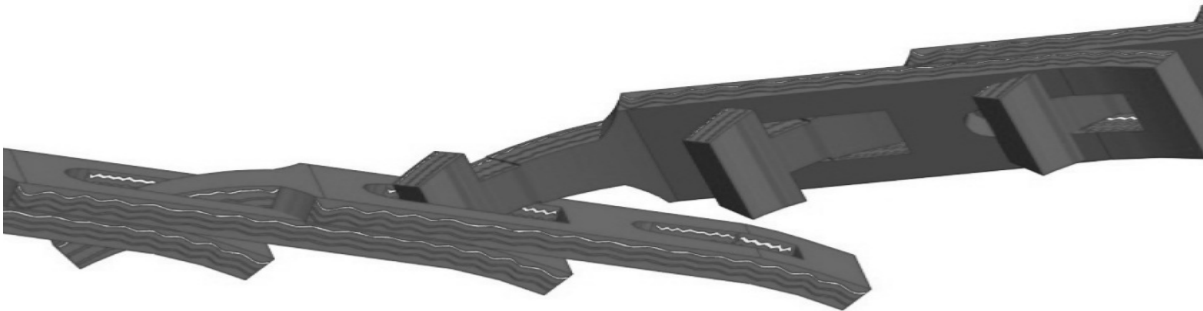
The electrical installation depends on whether a controller is installed or not:

- **Without controller:** Connect to 3-phase 230 V or 400 V using Δ or Y connection.
- **With controller:** Follow the controller installation manual.

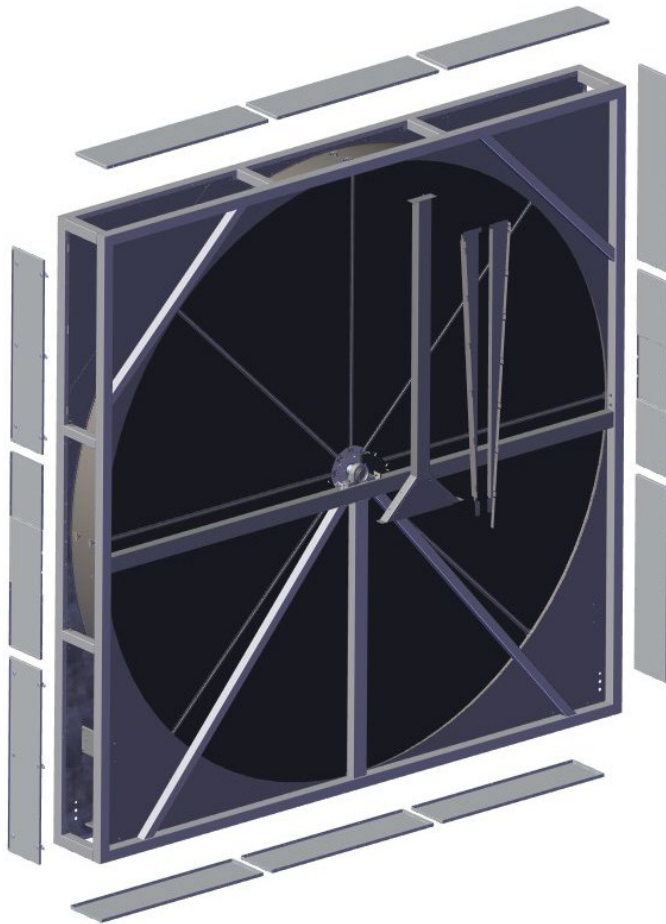
6.2 Mounting the Power Belt

Watch our video [Mounting the Power belt](#).

1. Check drive rotation (see arrow in motor compartment) and align the arrow on the belt with the rotation direction.
2. Fit the belt around wheel and pulley, mark overlap, remove excess links.
3. Connect both ends by inserting the end tab through two links by twisting 90°.
4. Roll the belt onto the pulley using a tool that allows you some leverage to stretch the belt.
5. Check tension after 5 minutes at full load; adjust if needed and recheck after 24-48 hours.



7 MODEL ES CASING OPTIONS



7.1 Included parts, side by side version

- 2x side by side vertical beam
- 2x side by side external cover plates
- 2x side by side internal cover plates
- 2x vertical brush holders

7.2 Included parts, purge sector

- 2x purge sectors
- 2x purge sector brush holders

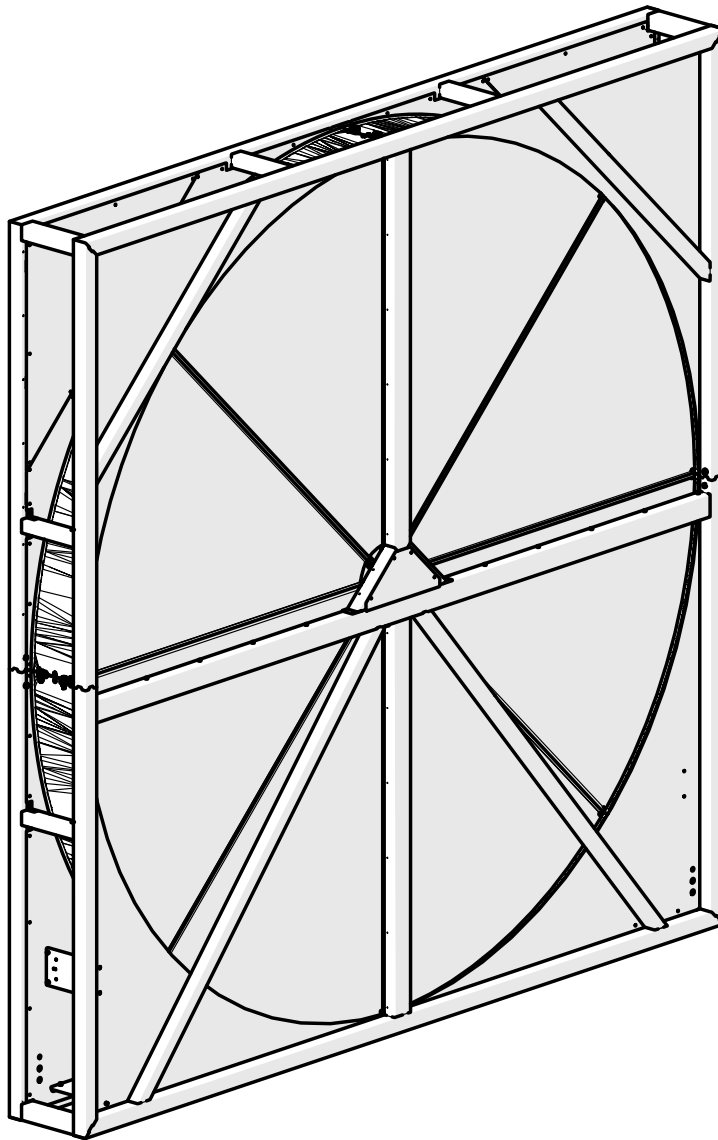
7.3 Included parts, covered casing

- 2x vertical motor covers
- 2x vertical casing A-covers
- 2x vertical casing C-covers
- 6x horizontal casing covers

This section covers the assembly of optional components for Model ES, which are only included if specified. Condensation trays come pre-attached to the bottom casing and require no further assembly. Optional features are added after the standard product is fully assembled.

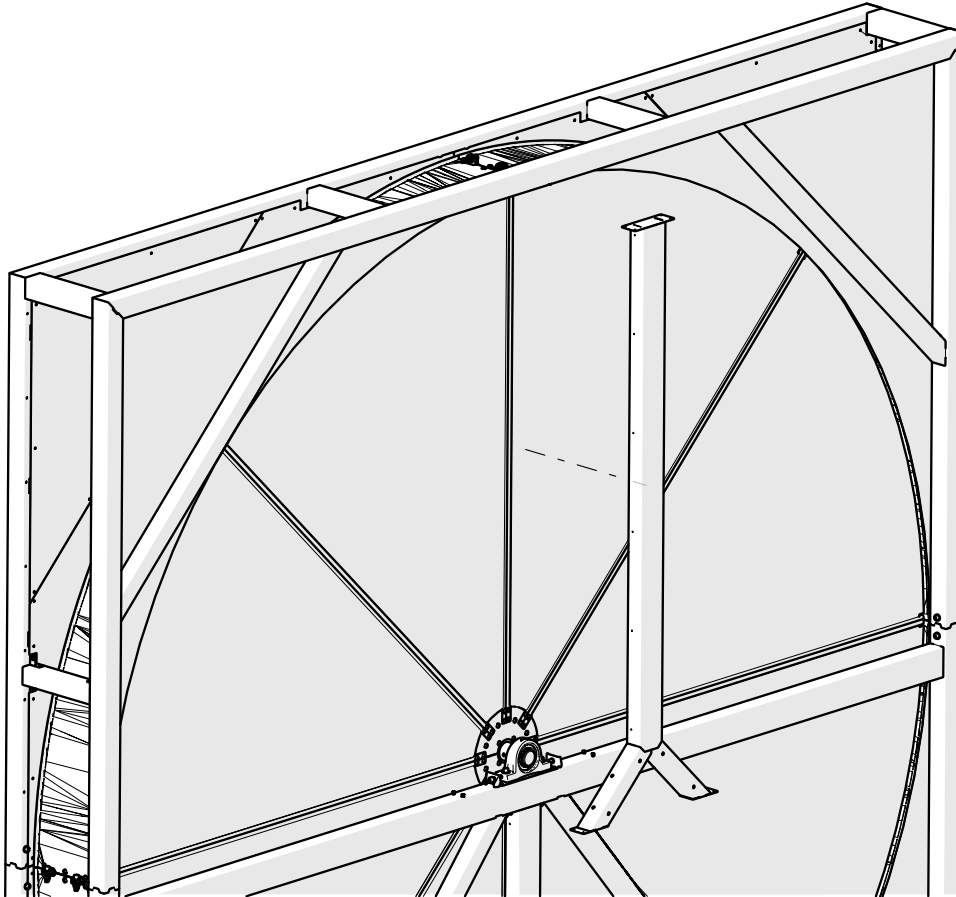
8 SIDE-BY-SIDE VERSION ASSEMBLY

If the heat exchanger is ordered as a side-by-side version, the vertical beam should be assembled once the wheel is in place. Note that no brush holders are to be mounted on the horizontal beam in this configuration. If both the side-by-side version and purge sector are specified, refer to Section 3 for the purge sector assembly process.



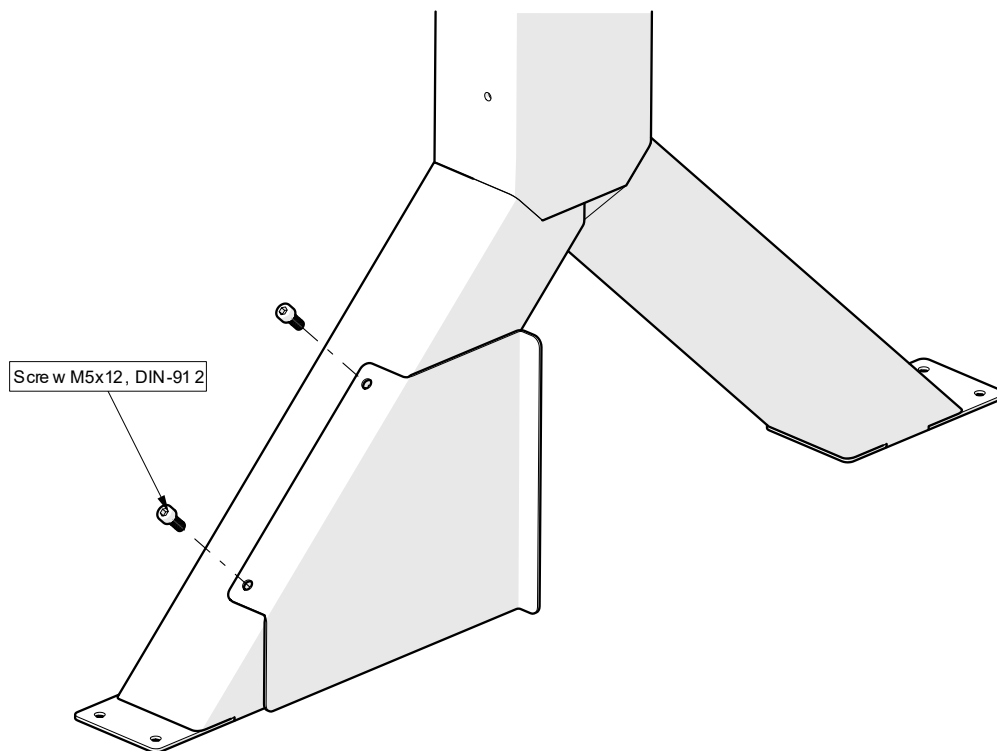
8.1 Mount vertical beam assembly

Install the vertical beam between the middle horizontal beam and the top casing. Ensure that the internal cover plate is oriented toward the wheel. Repeat the same placement and orientation on the opposite side of the heat exchanger.

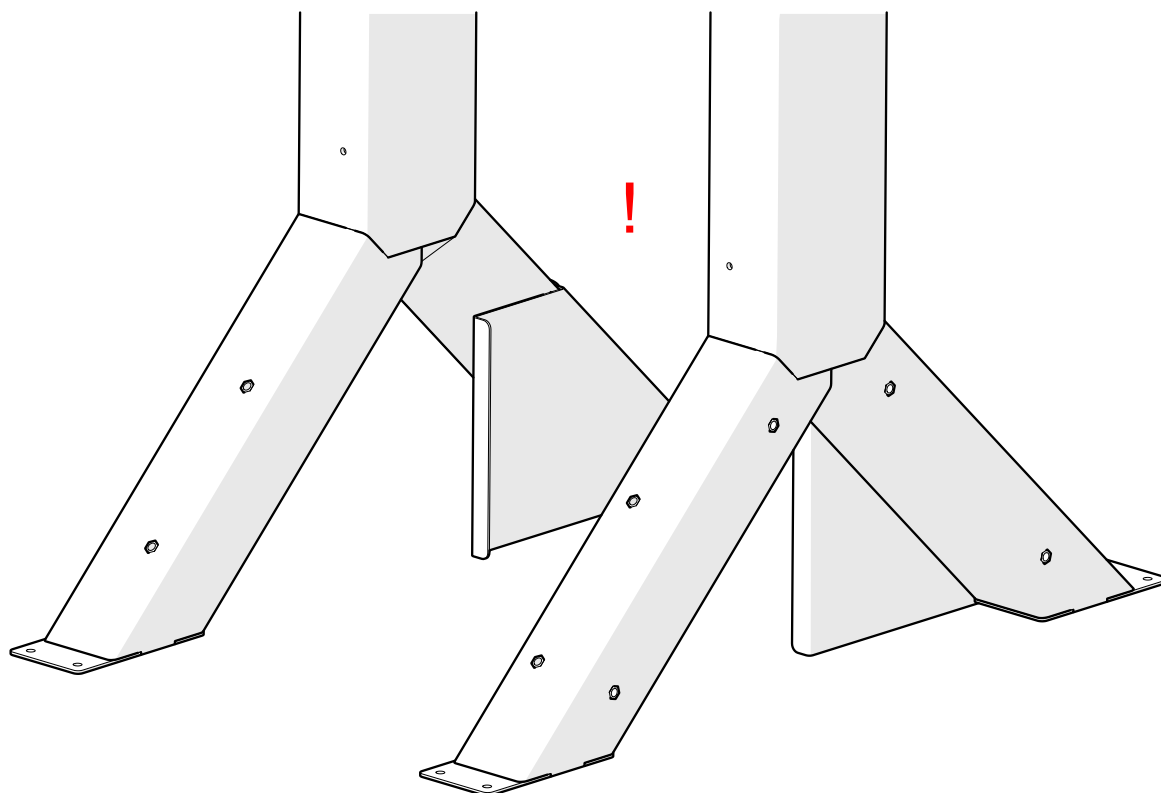


8.2 Mount internal cover plate

Attach internal cover plate onto vertical beam. Cover is to be mounted on the inside of beam, towards the wheel.

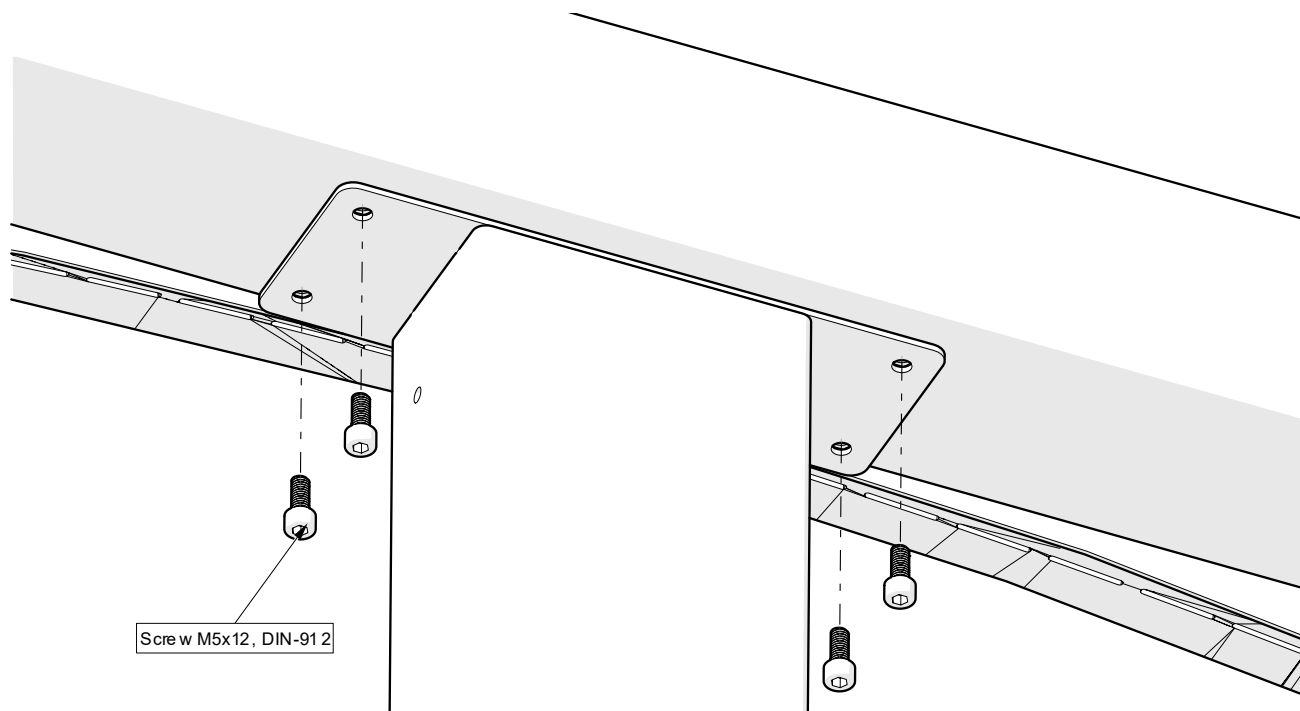


Attach internal cover plates on both vertical beams. Assemble the internal cover plates with mirrored positions.

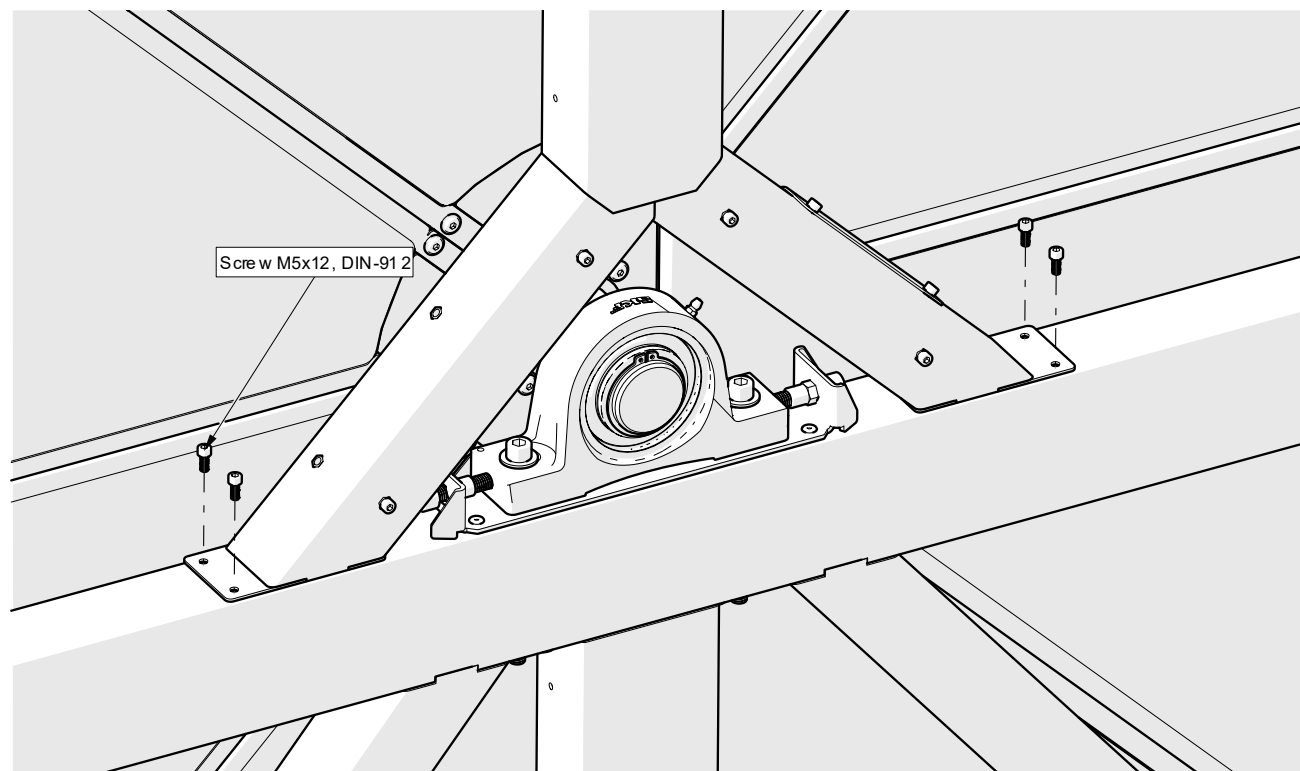


8.3 Fasten vertical beam

Attach vertical beam to top casing half by fastening screws. Fasten screws on both vertical beams.

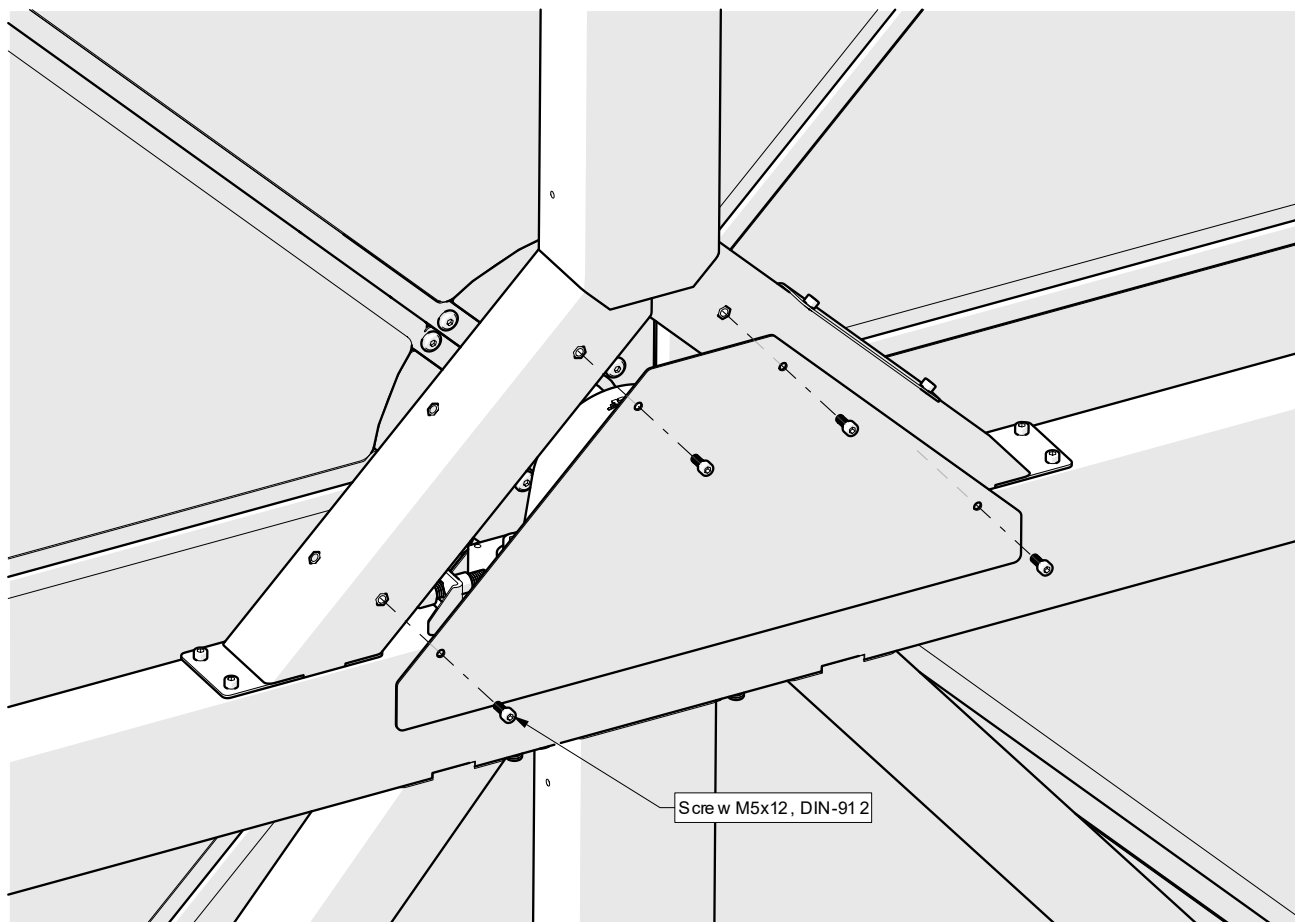


Attach vertical beam to horizontal beam by fastening screws. Fasten screws on both vertical beams.



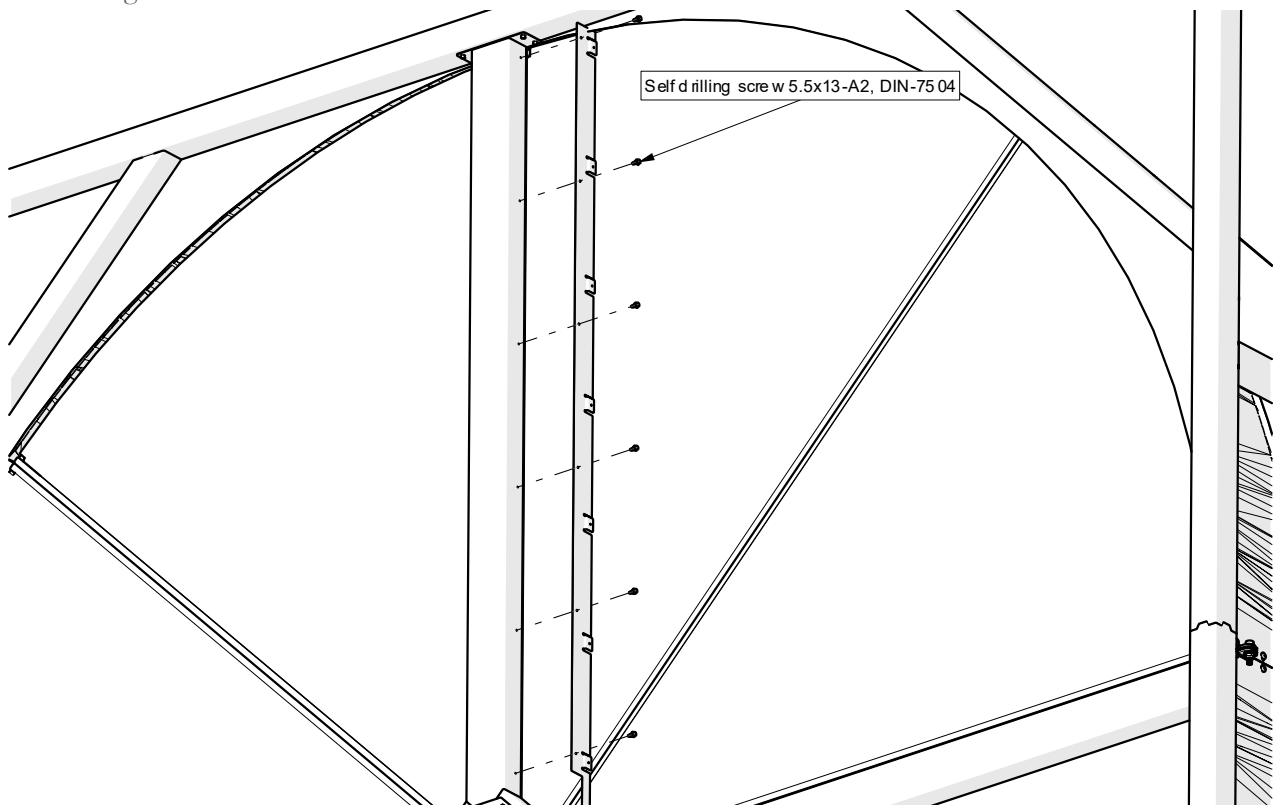
8.4 Mount cover plates

Attach the cover plate to the vertical beam. Also mount cover plate on the second vertical beam.

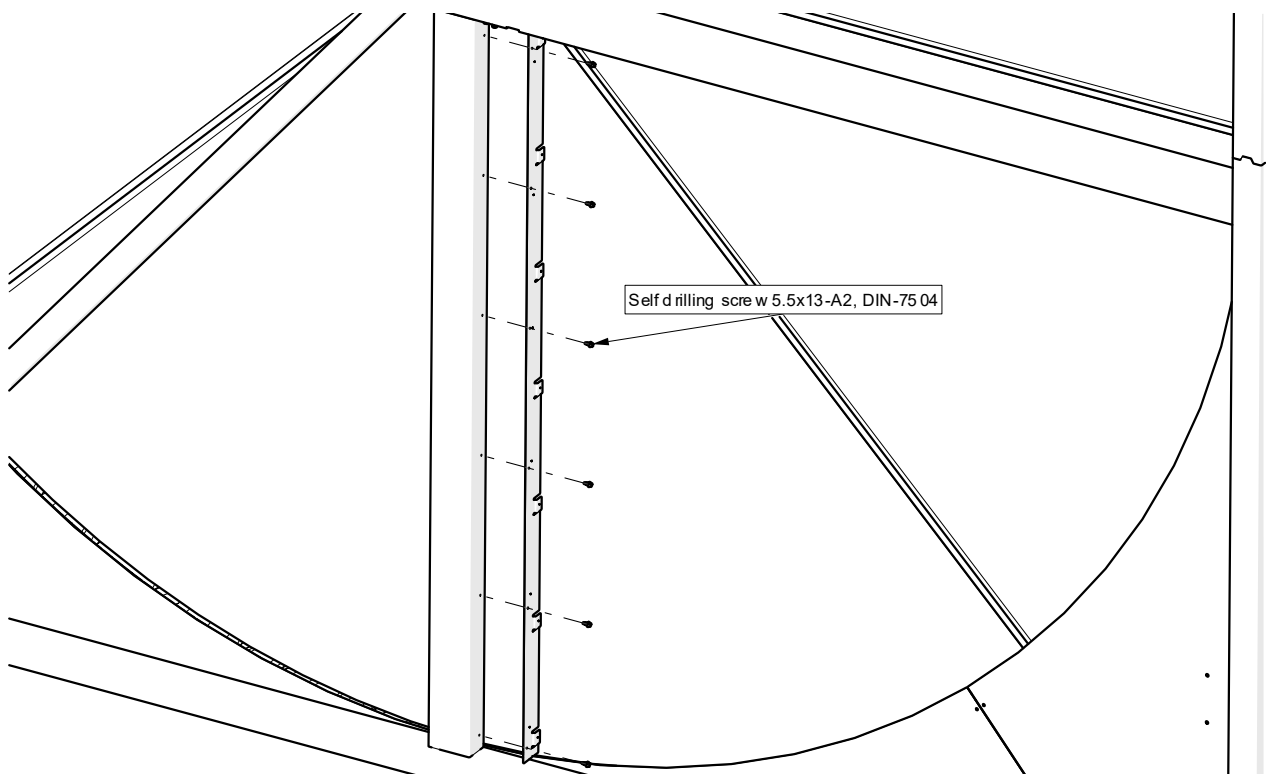


8.5 Mount vertical brush holders

Mount vertical brush holders on the vertical beam. The jogged flanges are to be positioned towards the wheel. There are guide holes on the beam.



Mount vertical brush holders on the bottom half casing vertical beam with self-drilling screws. The jogged flanges are to be positioned towards the wheel. There are guide holes on the beam.



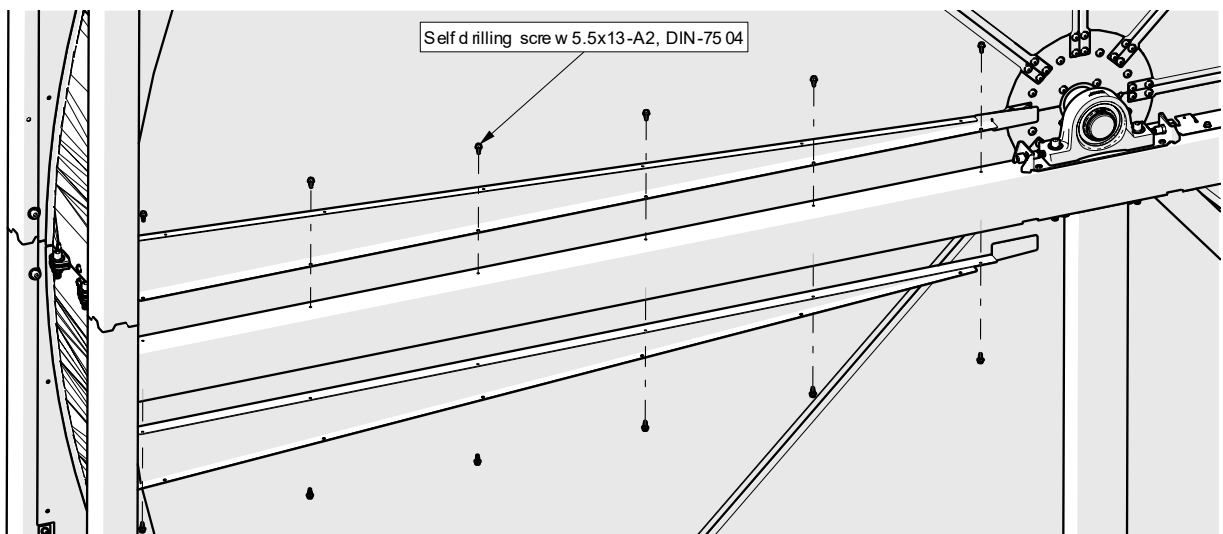
9 PURGE SECTOR ASSEMBLY

Take note of the product code before assembling the purge sectors. See position 9 of the product code to determine the orientation of the purge sectors.

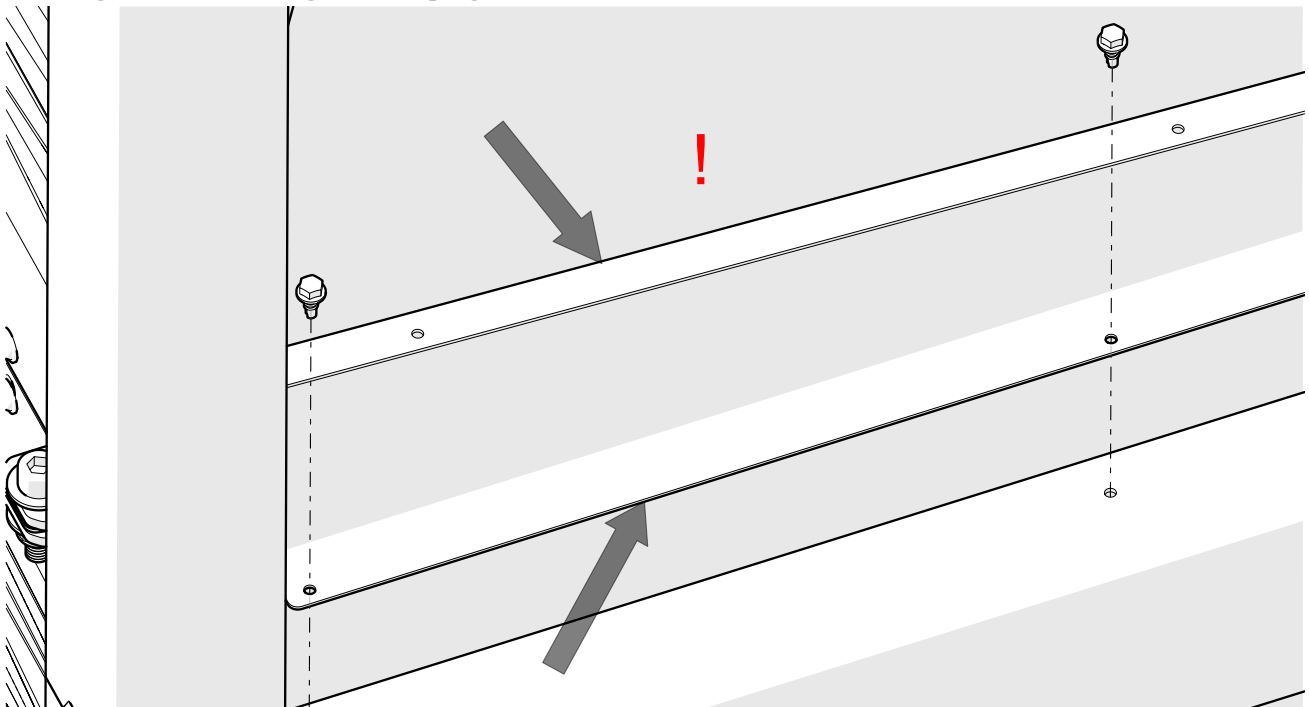
- A = Purge sector on front side to the right resp. front side upwards
- B = Purge sector on front side to the left resp. front side downwards
- C = Purge sector on back side to the right resp. back side upwards
- D = Purge sector on back side to the left resp. back side downwards

9.1 Mount purge sectors

Mount the purge sectors to the horizontal beam using self-drilling screws, with flanges facing away from the center. Align according to the motor position and use the guide holes for accurate placement. The angled beam is not visible in the image above.

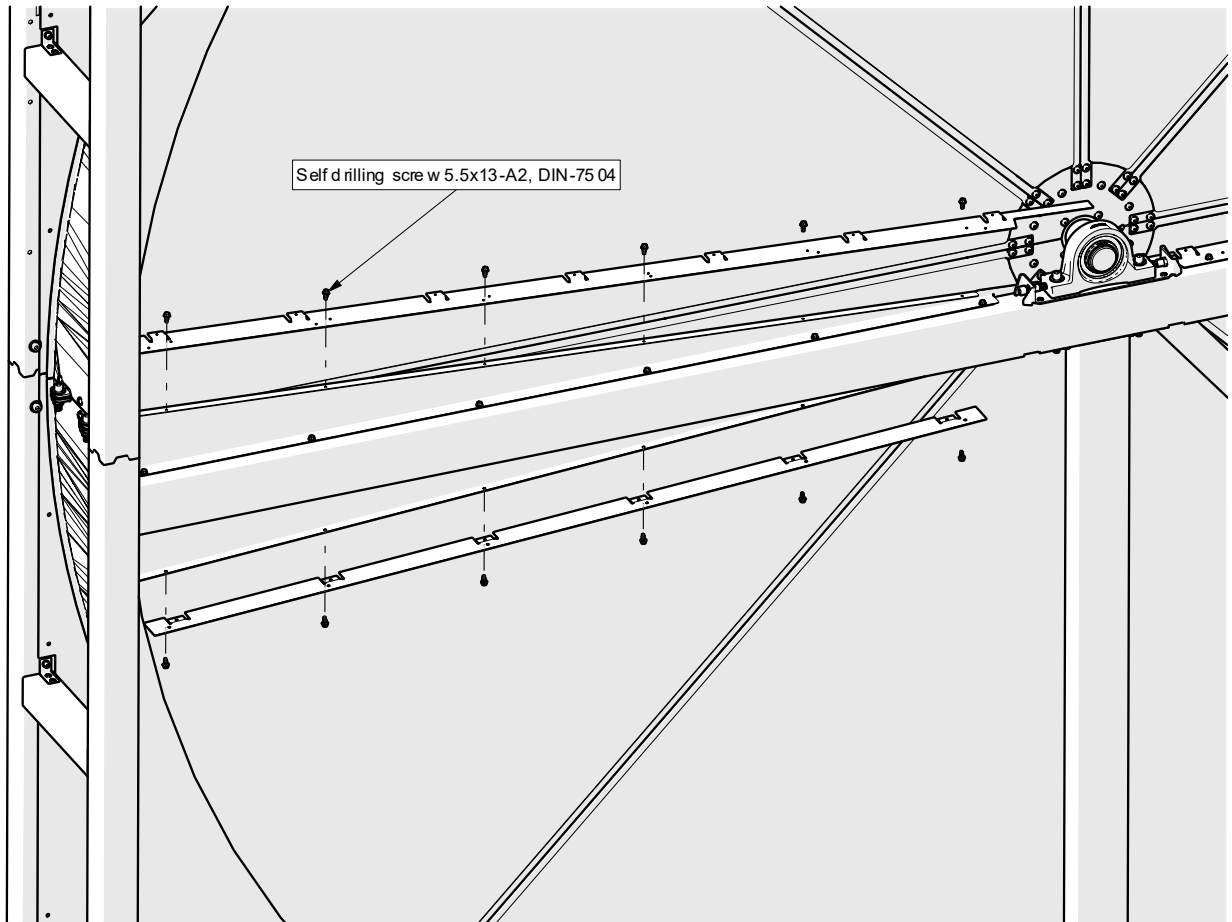


The longer of the two flanges on the purge sector is to be fastened to the horizontal beam.

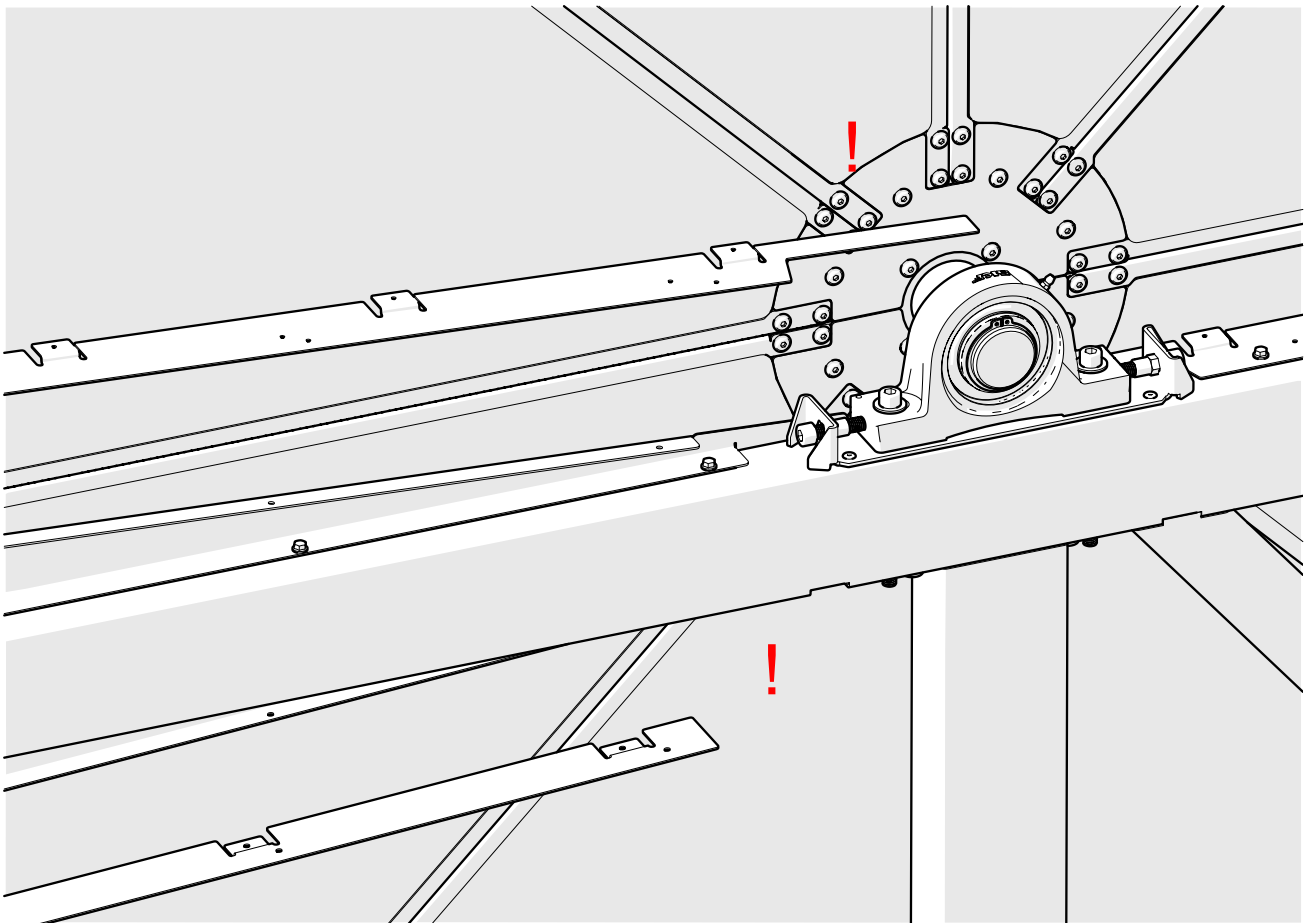


9.2 Mount purge sector brush holders

Mount the brush holders onto the purge sectors using self-drilling screws. Use the guide holes on the purge sectors to ensure correct positioning of the brush holders.

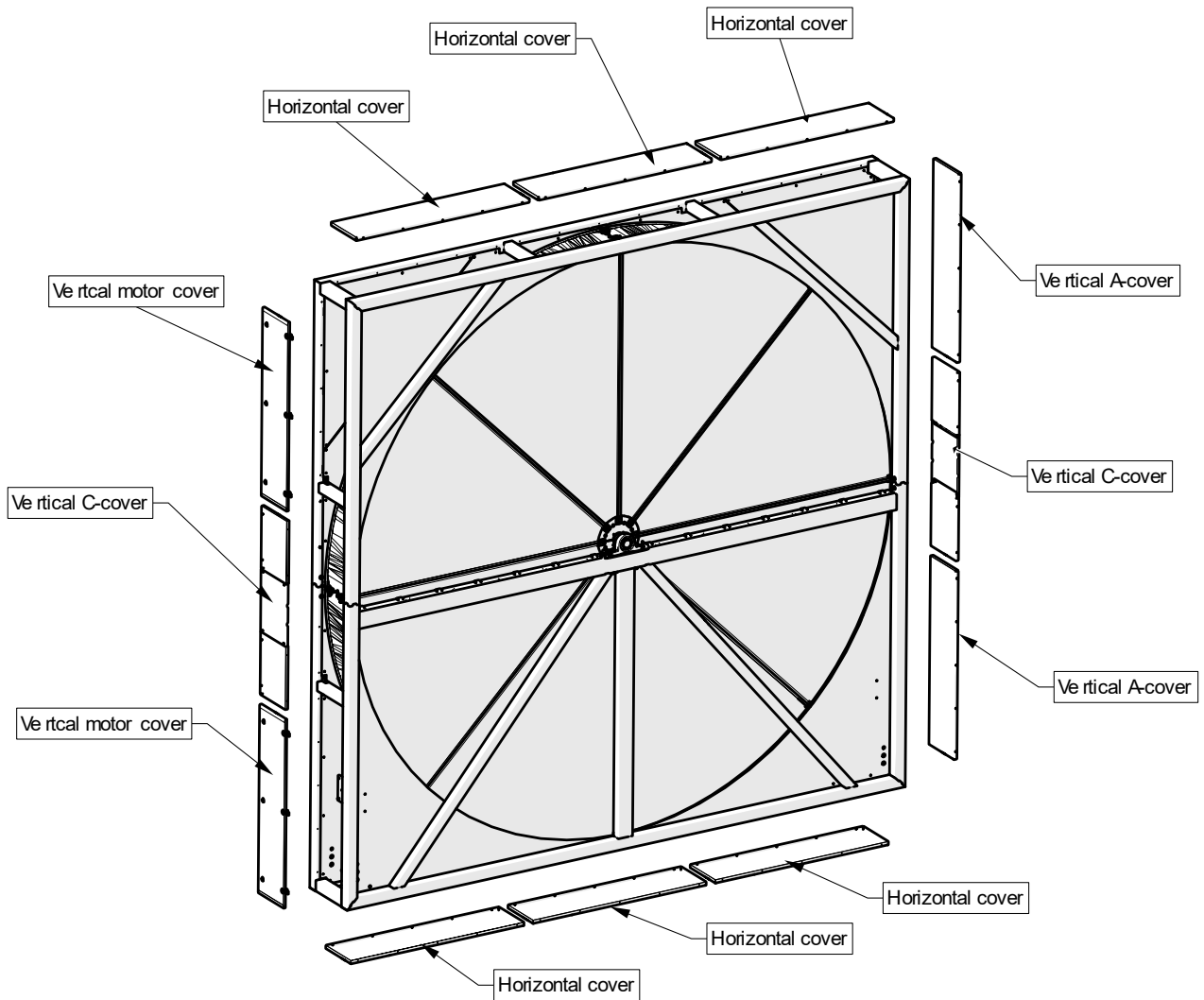


Take note of the position of the purge sector brush holder. The brush holder with an extension must be mounted on the top purge sector. Its extension should align with the extension of the opposite brush holder. If the purge sectors are to be installed on a casing specified as a side-by-side version, they must be mounted on the vertical beams instead of the horizontal beam.



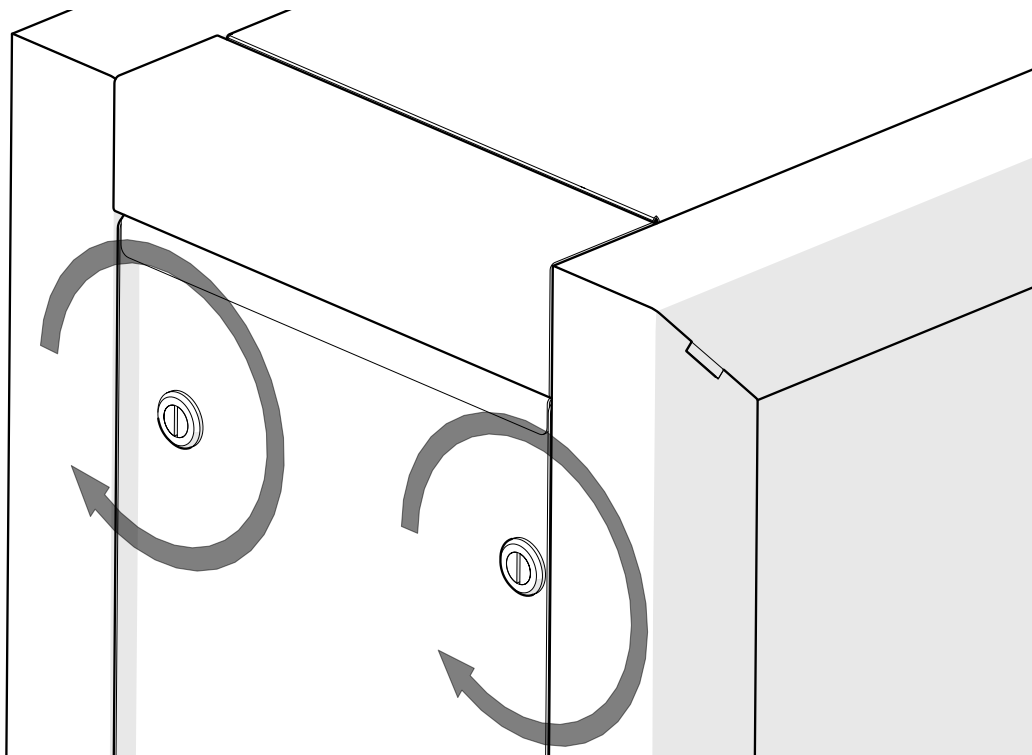
9.3 Casing cover mounting

The heat exchanger is delivered with casing covers pre-assembled. The horizontal covers are riveted to the casing, while the vertical covers are removable to allow for wheel installation.

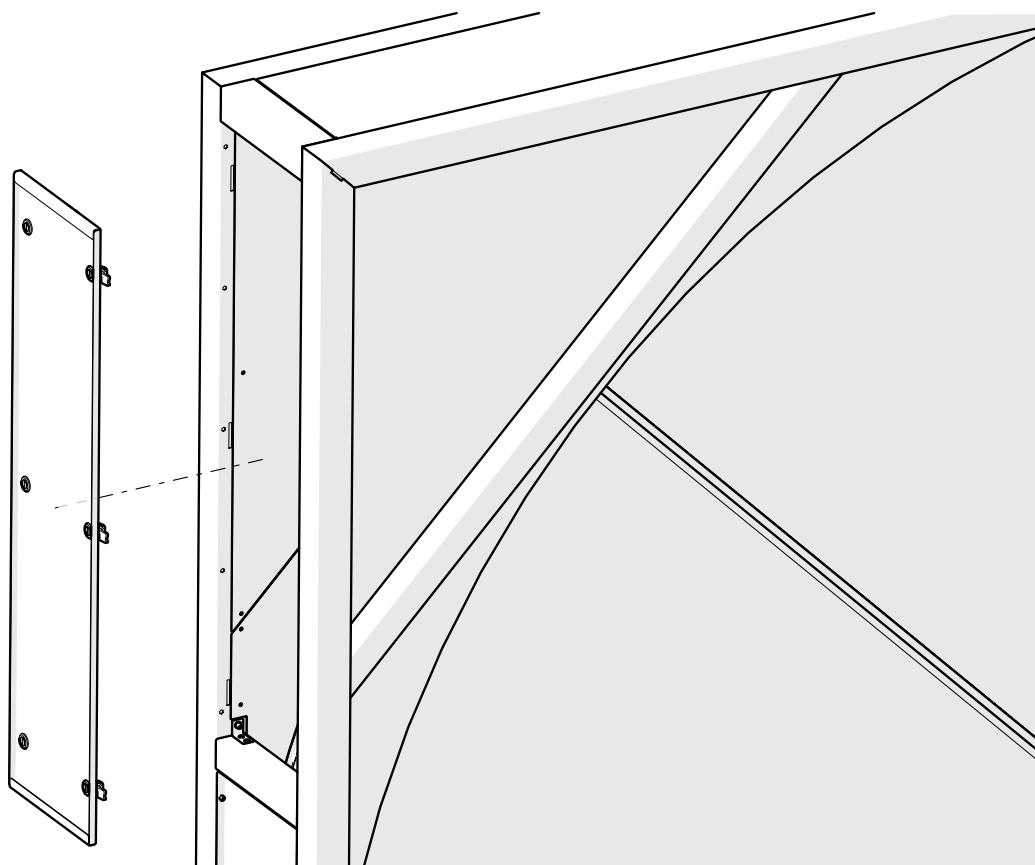


9.4 Vertical motor covers

Vertical motor covers can be removed by turning the locks. They are located on the same side as the motor.

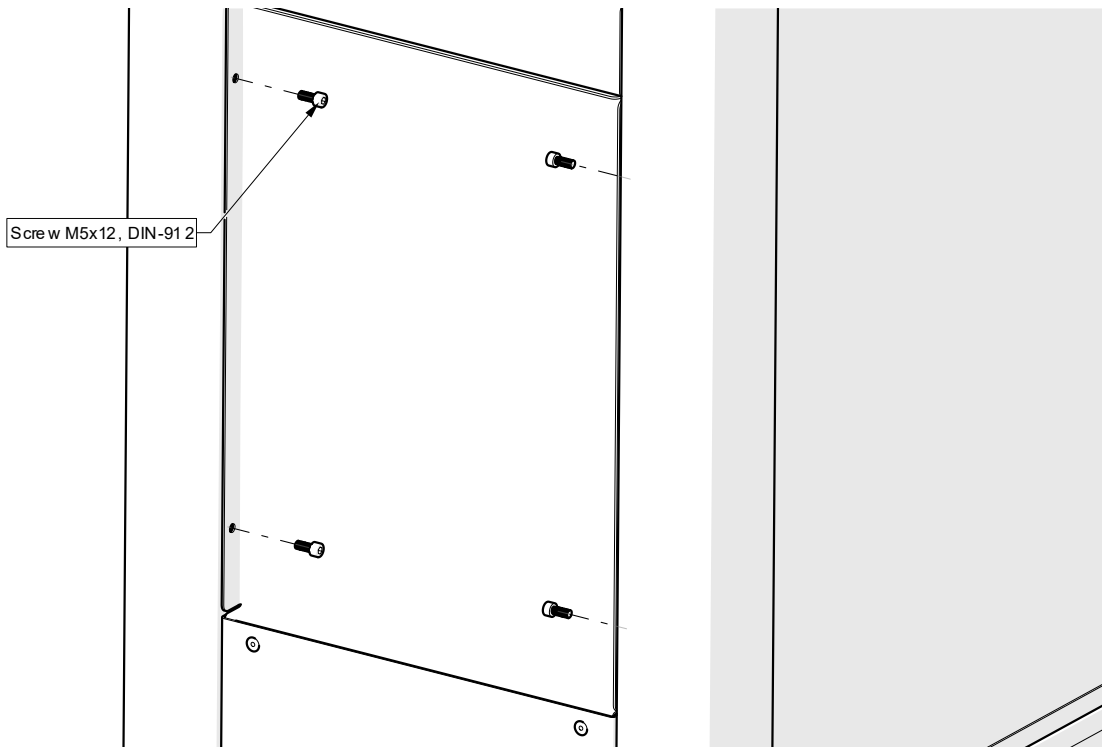


Both top and bottom vertical motor covers can be removed.

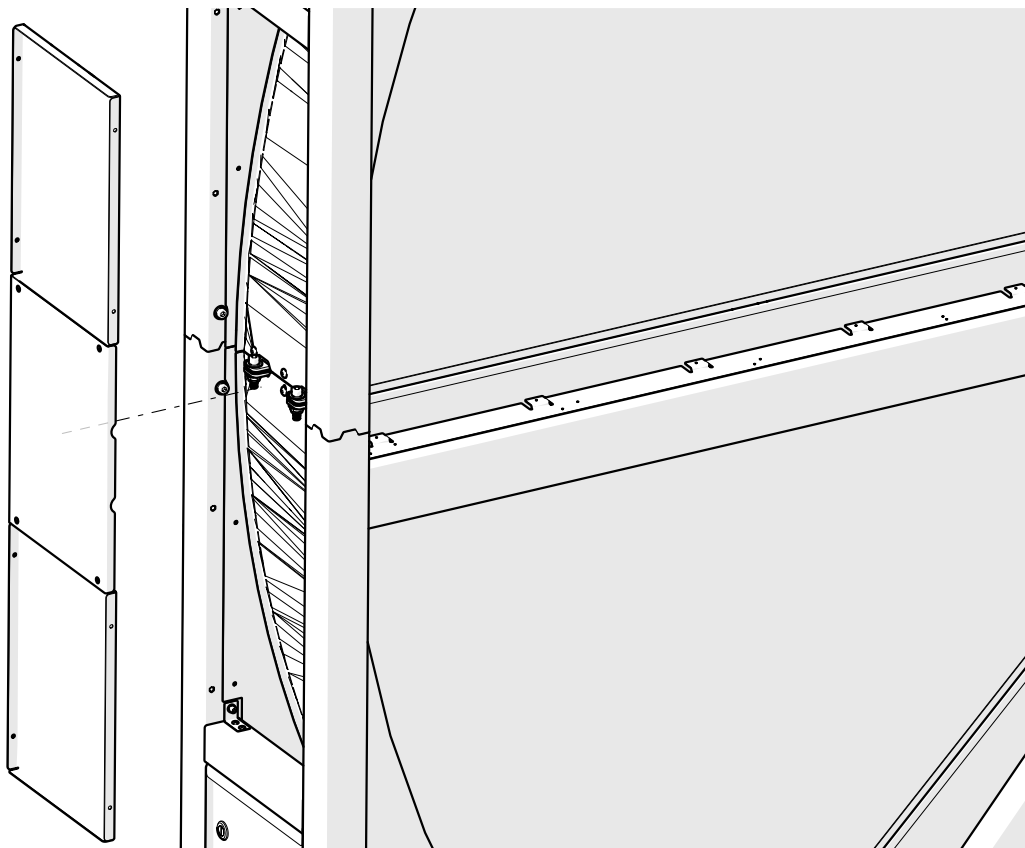


9.5 Vertical C-cover

Vertical C-covers can be removed by loosening the screws on both the upper and lower sections of the cover. C-covers are removable on both sides of the heat exchanger.

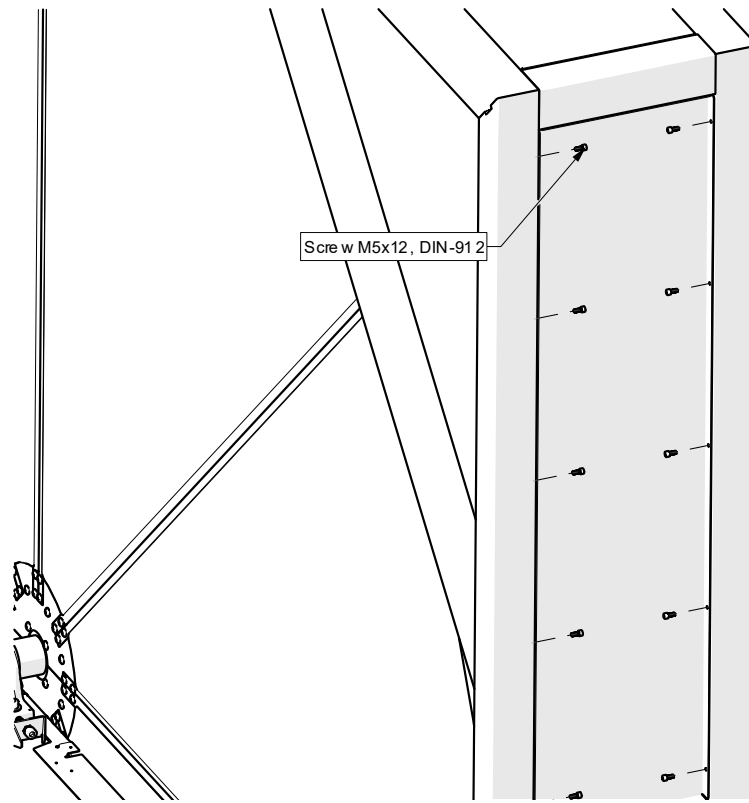


Both top and bottom vertical C-covers can be removed.

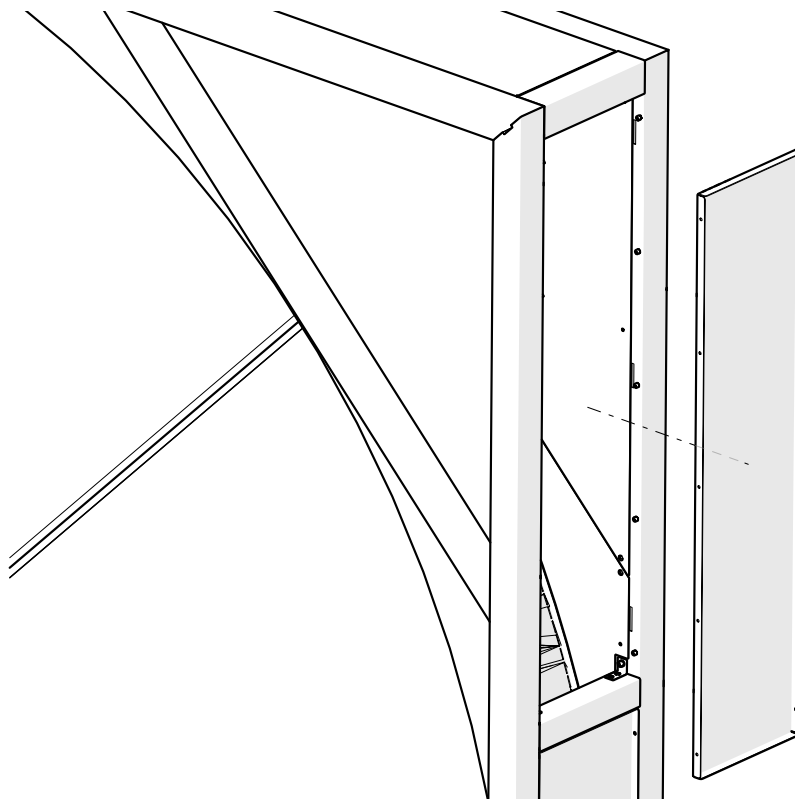


9.6 Vertical A-cover

Vertical A-covers can be removed by loosening the screws. They are located on the side opposite the motor.

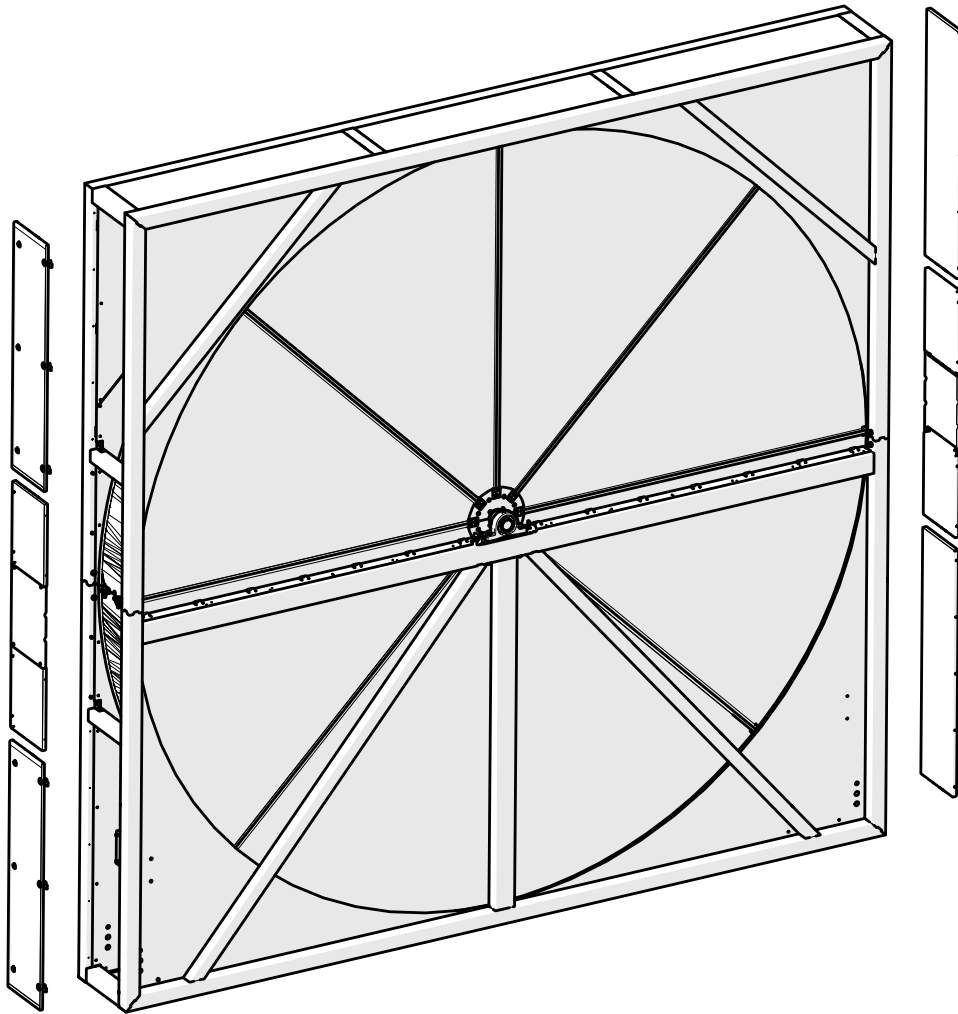


Both top and bottom vertical covers can be removed.



9.7 Reassembly of casing covers

All vertical casing covers can be reassembled by following the inverse of steps 33.1-33.3.

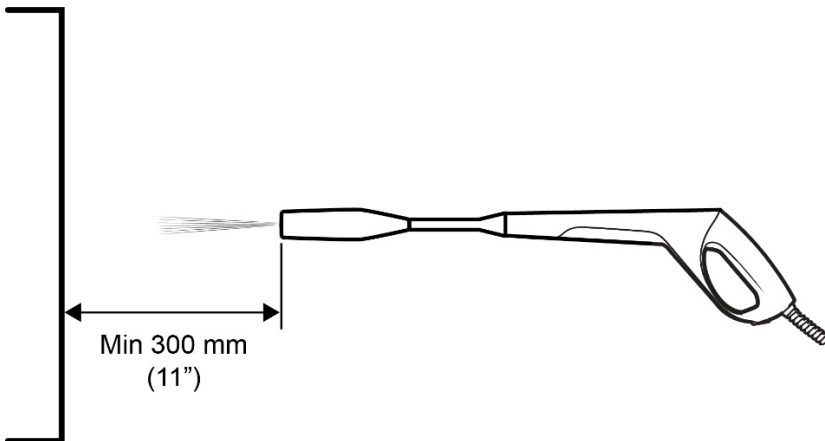


10 CLEANING THE HEAT EXCHANGER

Use YES/Fairy detergent for cleaning. Apply with a low-pressure sprayer and dilute with up to 75% water.

10.1 Cleaning process

1. Rinse the heat exchanger with water using a high-pressure cleaner.
2. Apply detergent (YES/Fairy) using a low-pressure sprayer.
3. Rinse thoroughly with water, repeating step 1 (nozzle adjusted to plain jet) to remove all detergent.
4. Allow the heat exchanger to air-dry.



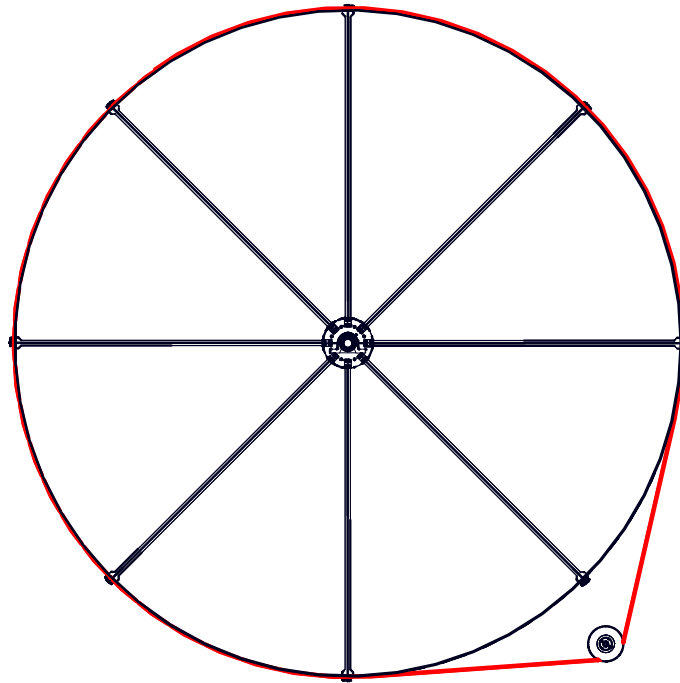
10.2 Disinfection process

Use LIV +45 for disinfection but beware that it contains flammable alcohol. Take precautions to avoid ignition.

1. Spray the heat exchanger with undiluted LIV +45 from a distance of 50–100 mm (2–4").
2. Let it dry for 30 minutes.
3. Rinse with a high-pressure water cleaner.
4. Allow the heat exchanger to air-dry.

11 BELT REPLACEMENT

11.1 Belt replacement step 1



1. Stretch belt over the wheel and pulley to determine appropriate belt length.
2. Mark where the belt ends meet.
3. Split the belt at the mark.
4. To achieve desired tension of belt, a few links must be removed from the belt.
5. Calculate the circumference of wheel, i.e $\varnothing * \pi$.
6. Remove one link from the belt per meter of the wheel circumference.

Example:

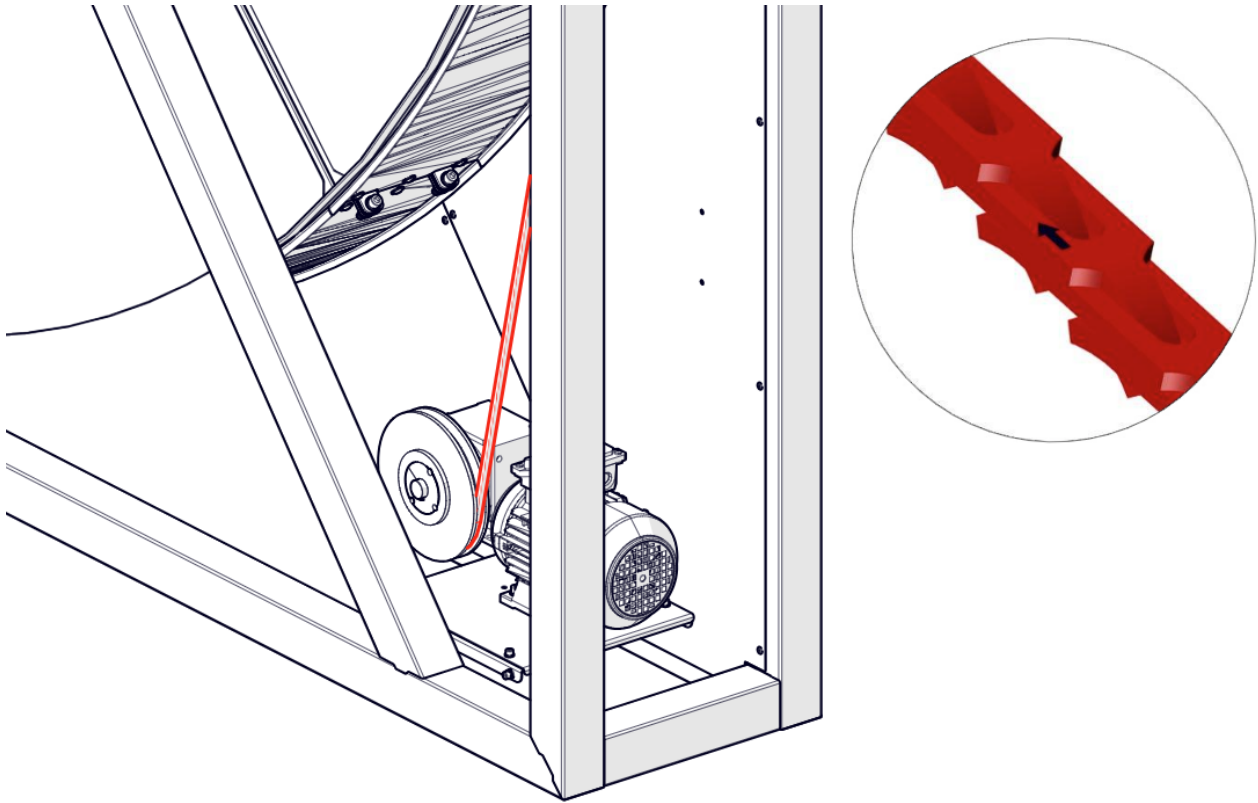
Wheel diameter: 3800mm. $\varnothing * \pi = 3800 * \pi = 11938mm = 12m$.

Wheel circumference is 12m, so 12 links is to be removed from belt to achieve final belt length.

Always round up to full meter (ex: 8200mm \rightarrow 9m).

Refer to [video](#) for detailed instructions of how to assemble and split the belt links.

11.2 Belt replacement step 2



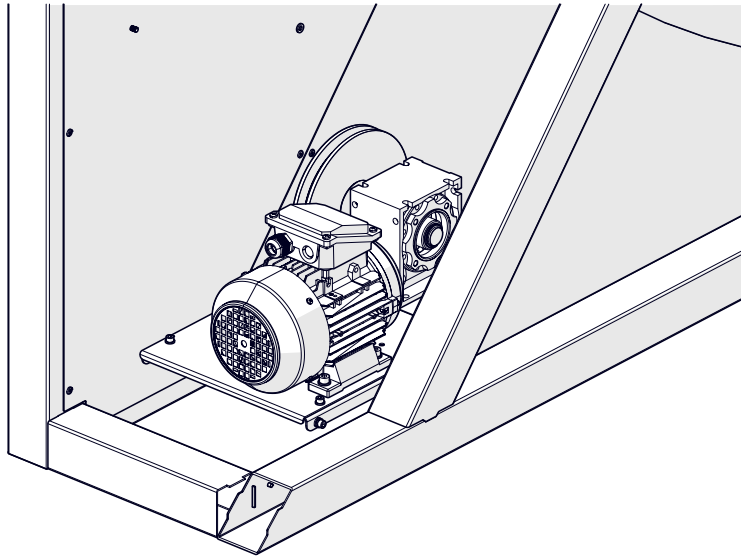
1. Mount belt on pulley and wheel.
2. Flat side of the belt is to face the wheel.
3. Opposite side of the belt with knobs is to face the pulley, so the belt must be twisted 180 degrees on the length between wheel and pulley.
4. Make sure that the belt does not run over the brush guard.
5. Take note of arrow on the belt. It is to be visible when mounted on the wheel and arrow is to indicate direction of which the wheel will rotate.

Note: 1x cover plate hidden in image.

Refer to [video](#) for detailed instructions of how to assemble and split the belt links, as well as how to mount the belt.

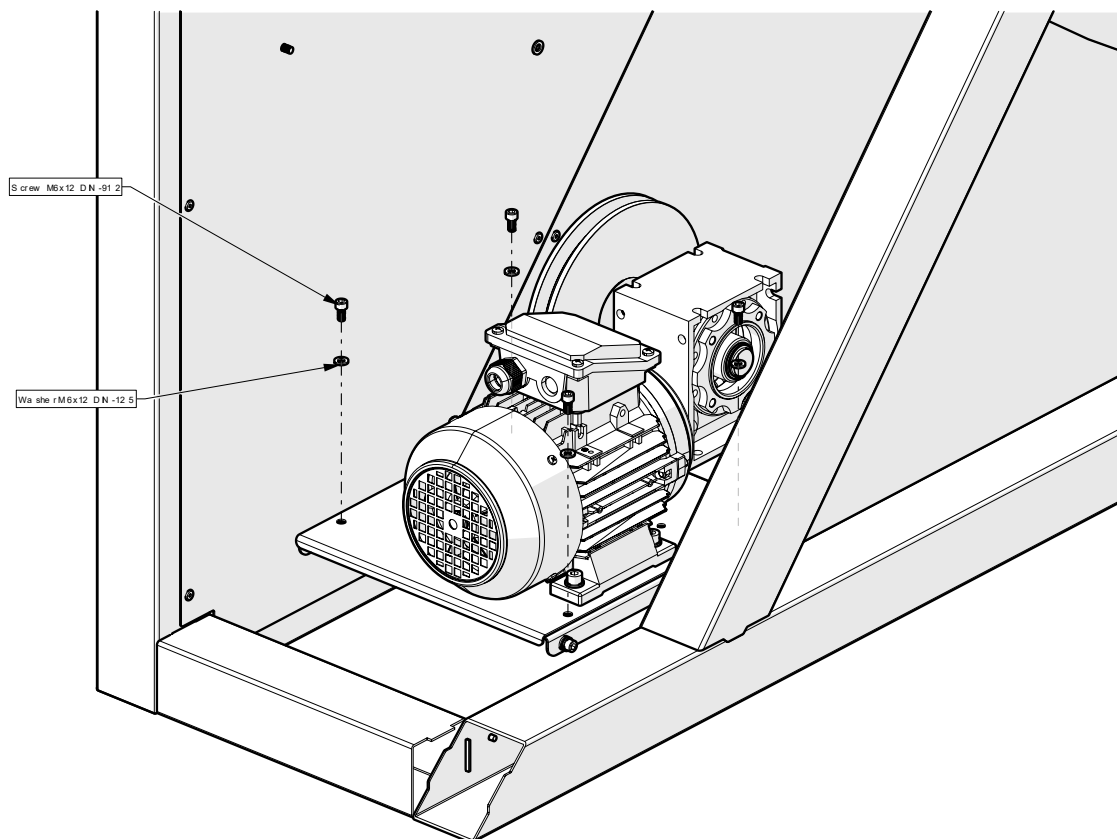
12 MOTOR REPLACEMENT

12.1 Motor replacement step 1



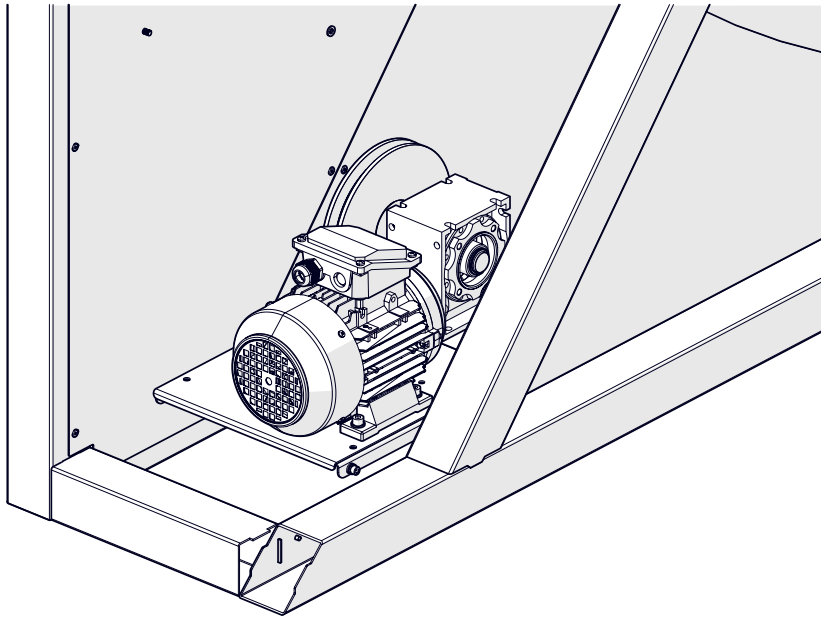
Note: 1x cover plate and 1x casing profile hidden in image.

12.2 Motor replacement step 2



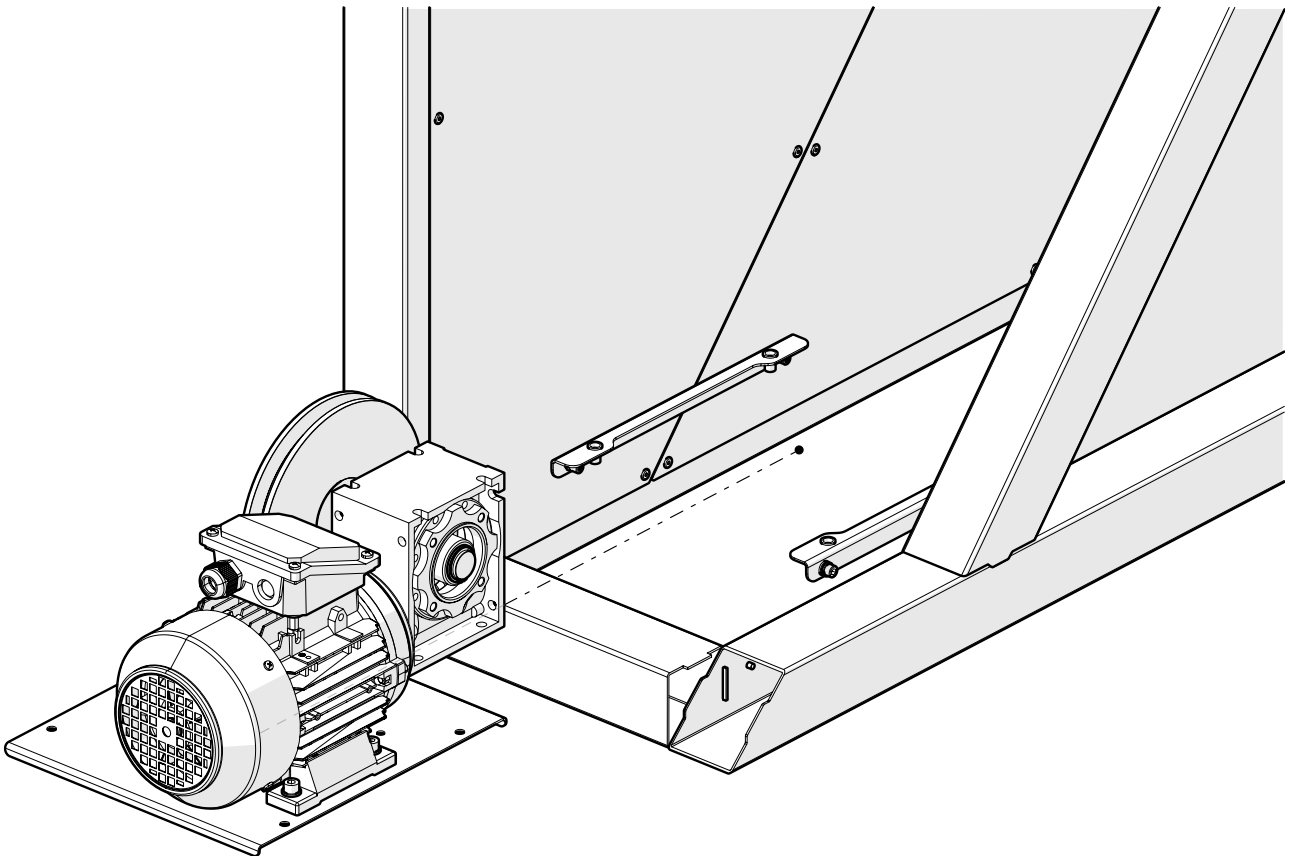
Remove screws and washers to disconnect motor plate from brackets.
Save fasteners for later reassembly.

12.3 Motor replacement step 3



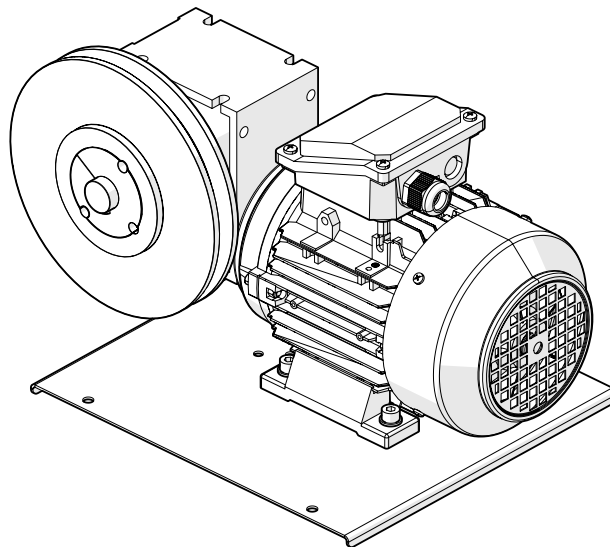
Fasteners removed.

12.4 Motor replacement step 4

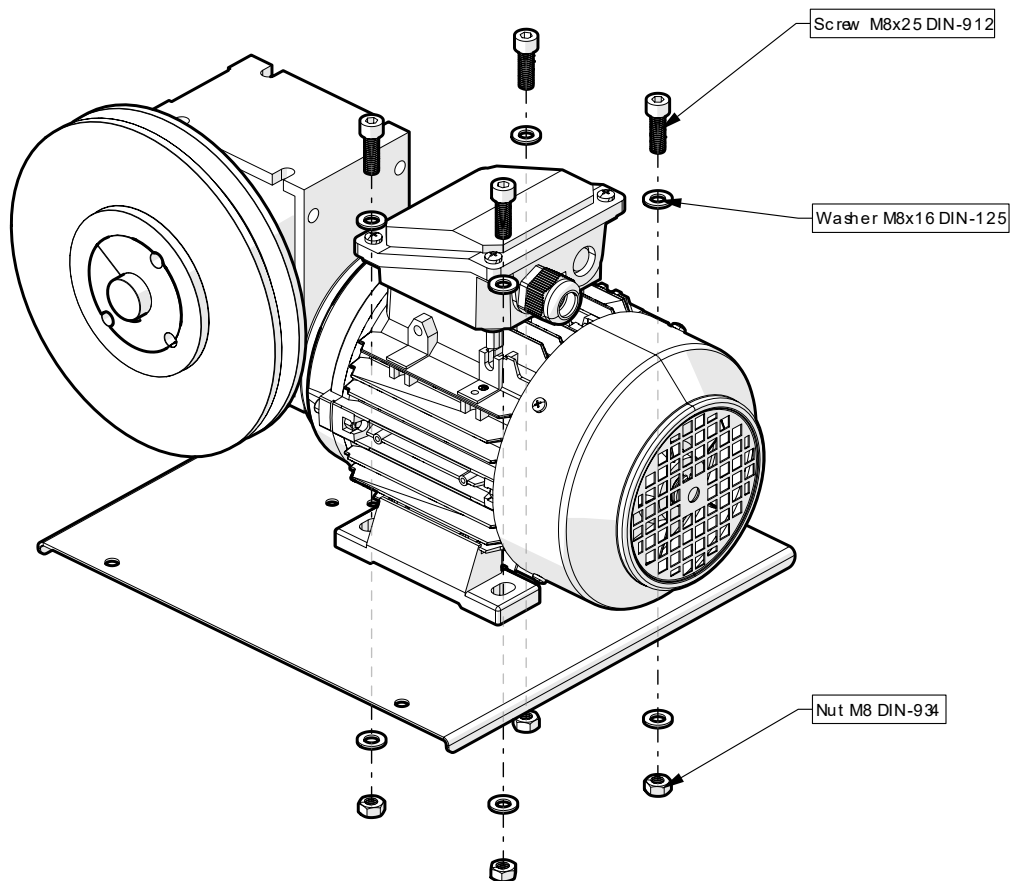


Remove motor plate with motor attached.
Motor can then be disconnected from motor plate by loosening screws.
Take note of cables connected to the motor.

12.5 Motor replacement step 5

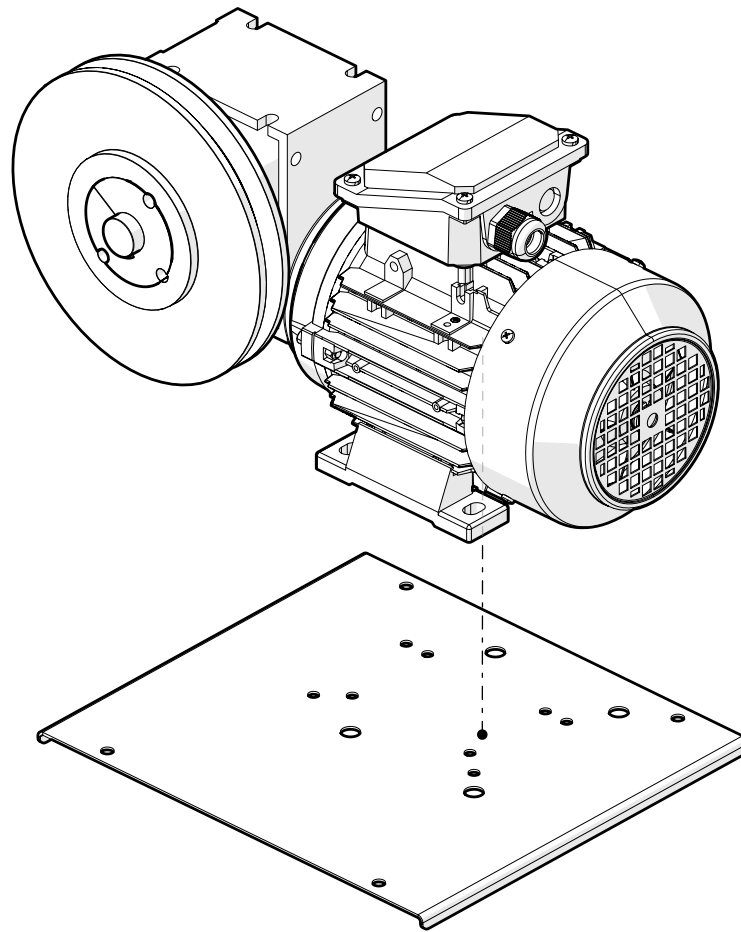


12.6 Motor replacement step 6



Remove fasteners to disconnect motor from motor plate.
Save fasteners for later reassembly.

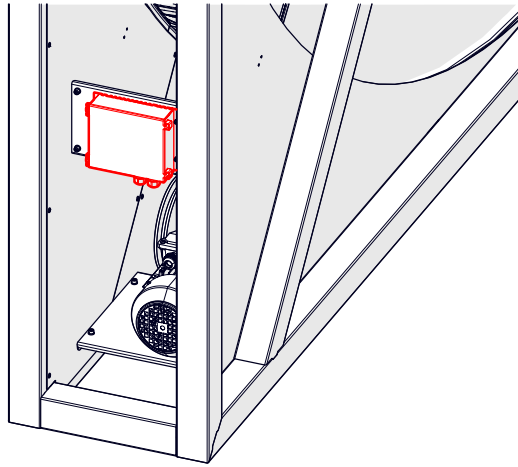
12.7 Motor replacement step 7



Motor can now be removed from motor plate and replaced.
Follow inverse of steps 2.1-2.7 to reassemble the motor.

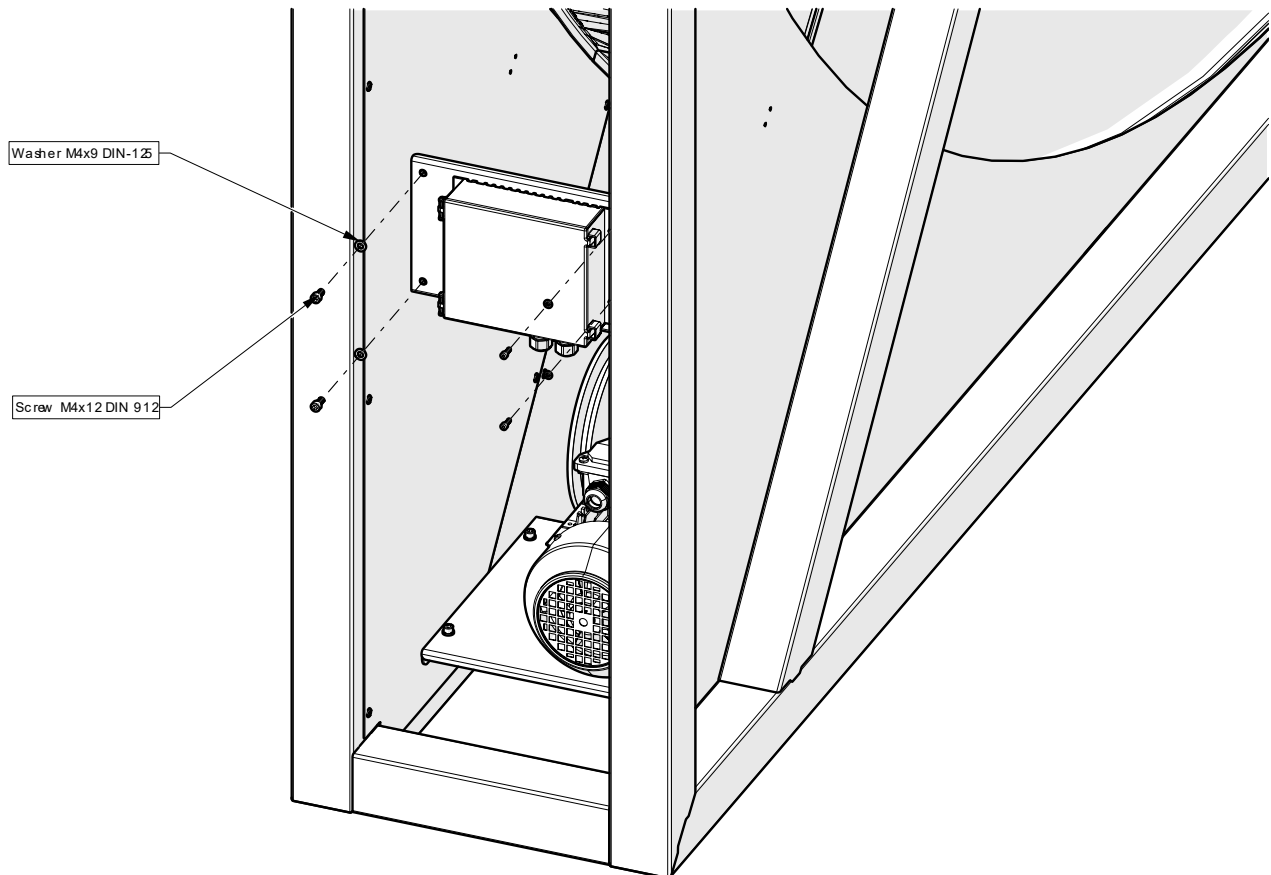
13 CONTROLLER REPLACEMENT

13.1 Controller replacement step 1



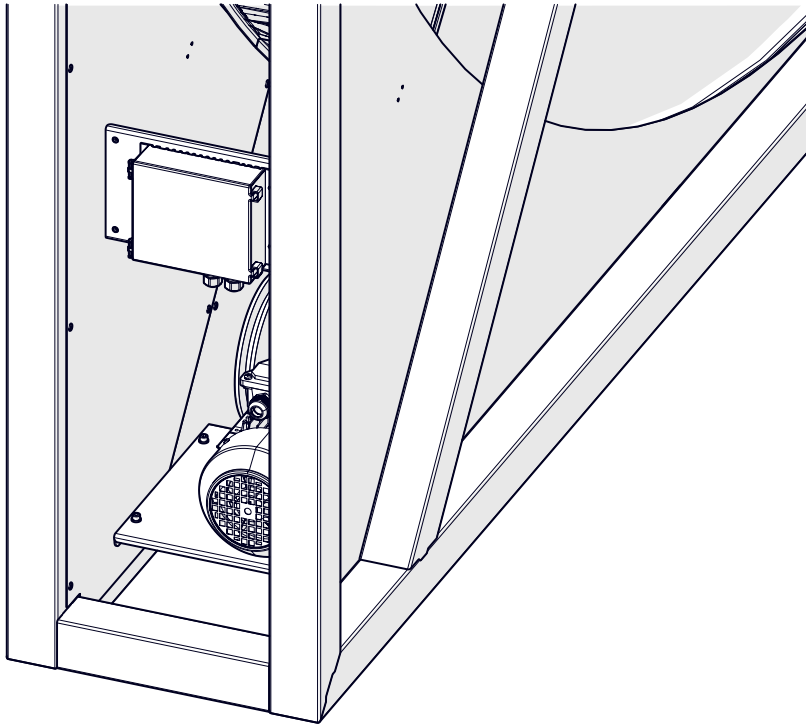
Note: Control unit is located in the top corner on the motor side of the rotor for model E heat exchangers. For model ES heat exchanger, the control unit is located as in image above.

13.2 Controller replacement step 2



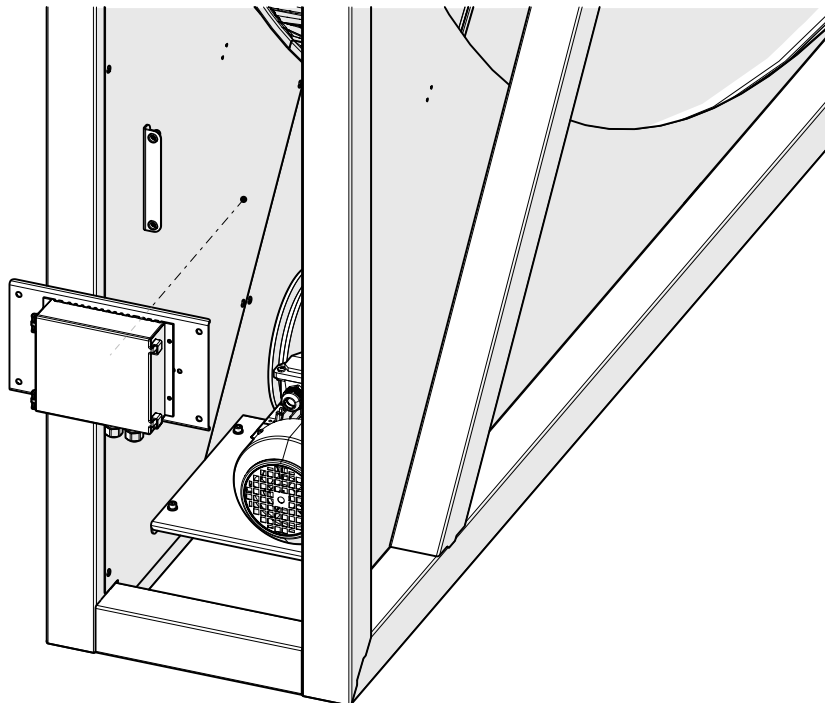
Remove screws and washer to disconnect control unit holder plate from brackets. Keep fasteners for later reassembly.

13.3 Controller replacement step 3



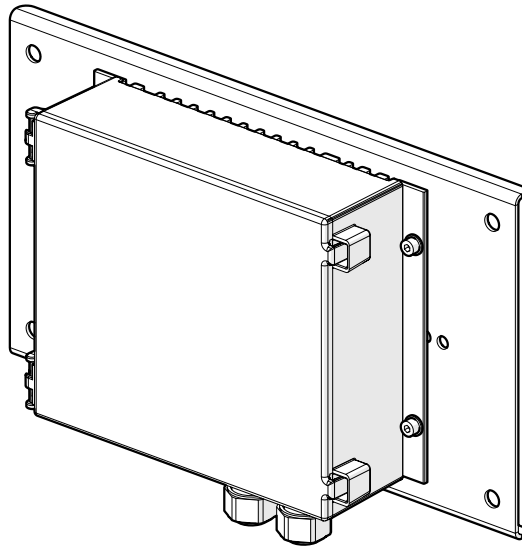
Fasteners removed.

13.4 Controller replacement step 4

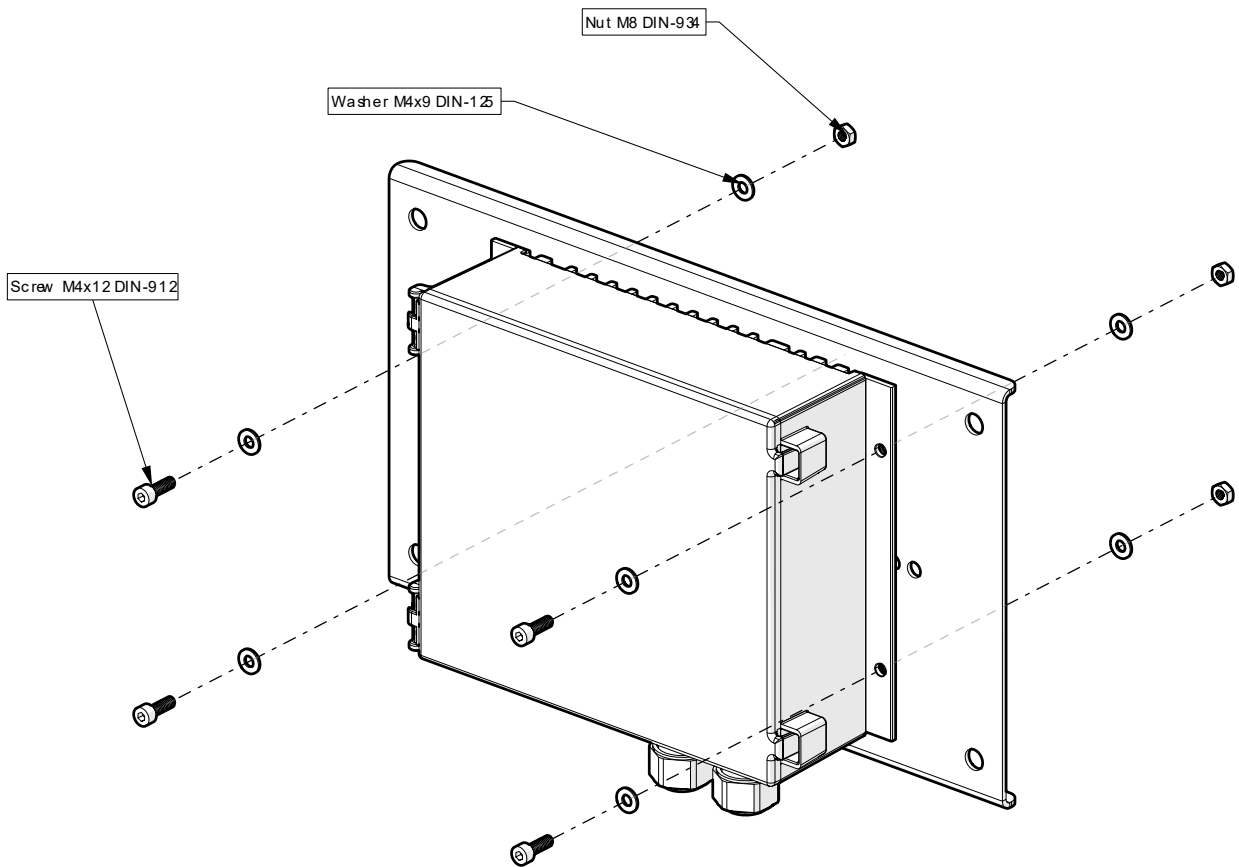


Remove control unit holder plate with control unit attached.
Control unit can then be disconnected from the plate by loosening screws.
Take note of cables connected to the control unit.

13.5 Controller replacement step 5

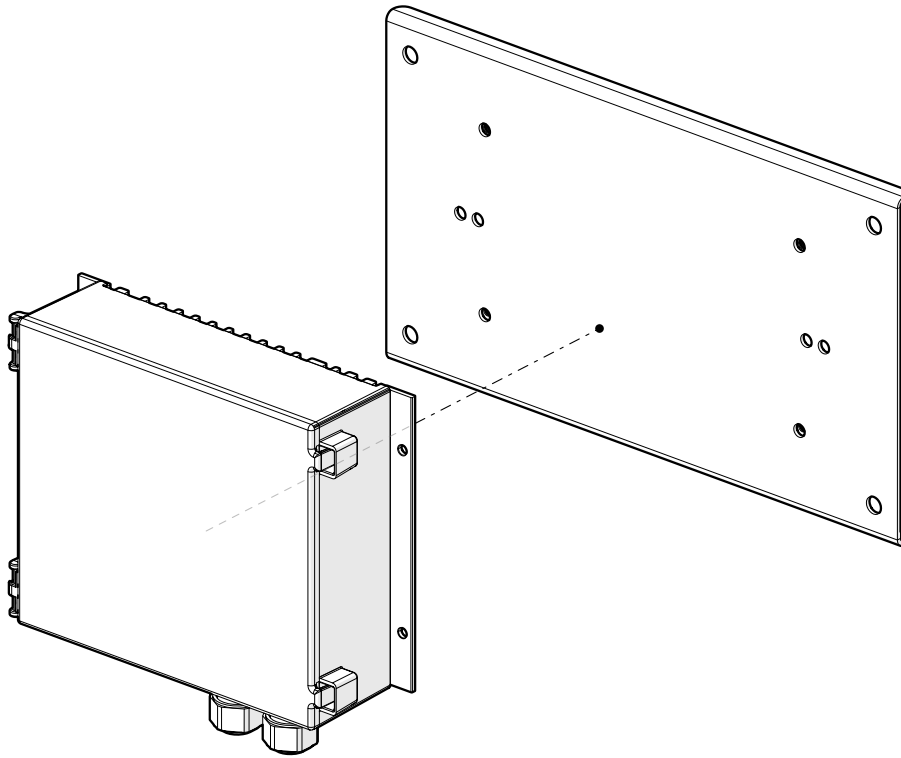


13.6 Controller replacement step 6



Remove fasteners to disconnect control unit from control unit holder plate.
Save fasteners for later reassembly.

13.7 Controller replacement step 7



Control unit can now be removed from control unit holder plate and replaced.
Follow inverse of steps 3.1-3.7 to reassemble the control unit.