Assembly instructions

Rotary heat exchanger

Dismountable configuration

PRODUKT

Documentation for your unit

1. Go to IV Produkt's order portal, *docs.ivprodukt.com* or scan the QR code.
2. Enter your order number.
3. Press ENTER or click search.
4. Select your order.

Is documentation missing?

See information in section

"1 SAFETY", page 5.

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Assembly instructions
Rotary heat exchanger

1 SAFETY

This section addresses important safety aspects during assembly, with the aim of increasing safety awareness and avoiding injury to people or damage to the environment and the unit. Failure to follow the safety instructions may result in personal injury or damage to the air handling unit.

- This manual contains important instructions. Read it carefully and follow the instructions.
- Pay special attention to warning and information messages, as well as markings on the product.
- Keep the manual for future use.

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To perform all the steps of these instructions, the following AHU documentation is also required:

- Assembly instructions
- Operation and maintenance
- Connection instructions

The documentation for your unit is available at IV Produkt's order portal. See *"Documentation for your unit", page 2*

1.1 Intended application

Intended use

The product is intended to be used Air handling unit as comfort ventilation in residential properties.

Intended users

The contents of this manual are intended for personnel who install the unit on site.

1.2 Structure of warning messages

Warning messages in the instructions warn of risks when handling and assembling the product. Carefully follow the instructions in the warning messages.

The warning symbol indicates that a risk exists.

WARNING! indicates a potential hazard which, if not avoided, could result in death or **serious** injury.

CAUTION! indicates a potential hazard which, if not avoided, could result in **material damage** to the product or its surroundings, as well as impaired product function.

"Risk for xxxxxx." indicates the risk in a short risk title.

Descriptions in italics provide more detailed information about what the risk entails.

- The points indicate how the user can avoid harm.

1.3 General warning notices

WARNING!
Risk of life-threatening or serious personal injury.
Electrical voltage can cause electric shock, burns and death. The product must not be energised during assembly.

- Electrical connection and electrical work may only be carried out by a qualified electrician.
- For initial start-up of the unit, see Operation and Maintenance of the unit on IV Produkt's Order portal.

00176

WARNING!
Risk of life-threatening or serious crushing or compression injury.
High unit parts, as well as unit parts with a high or offset centre of gravity, mean a greater risk of tipping.

- Follow the lifting and assembly instructions in this manual.
- Use lifting equipment where available.
- Use appropriate protective equipment.
- Exercise caution when working between unit parts.
- Exercise caution when placing unit parts on the support.
- Use the support to secure the parts against possible tipping risk.

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WARNING!
Risk of life-threatening or serious crushing or compression injury.
The unit parts are often heavy and cannot be lifted by hand. See weights indicated on the layout drawing.

- Follow the lifting and assembly instructions in this manual.
- Use lifting equipment where available.
- Use appropriate protective equipment.

00179

WARNING!
Risk of serious crushing injury.
A falling unit when lifting can cause crushing injuries.

- Follow the instructions for lifting in this manual.
- Never exceed the specified weight for the respective lifting method or lifting equipment.
- Slide stops must be fitted when lifting, if bracket is used.
- Replace used T-bolts and nuts with new ones after each lift (EMMT-12).

00180

WARNING!
Risk of cutting.
Sharp edges can cause cuts.

- Use appropriate personal protective equipment when the work requires it.

00181

CAUTION!
Risk of damage to the product.
Touch and contact may damage the surface layer of the rotary heat exchanger.
- Make sure that the surface does not come in contact with tools or any part of the body.
- When working with the rotary heat exchanger, wear protective gloves. 00270

1.4 Product liability

CE marking

The air handling unit is CE marked and meets the applicable requirements according to specified directives and standards in the Declaration of Conformity. The marking covers the unit in the version in which it was delivered and provided that it has been assembled and put into operation according to IV Produkt's instructions. This does not cover units that have been modified, components that have been added later, or other systems in which the unit may be included. The unit may not be put into service until the system in which it is included complies with the requirements for CE marking.

The Declaration of Conformity can be downloaded from IV Produkt's order portal, *"Documentation for your unit", page 2*.

Manufacturer

The air handling unit is manufactured by IV Produkt AB, Sjöuddevägen 7, S-350 43 VÄXJÖ.

Warranty

For proper function and for the warranty to apply, the assembly instructions must be followed.

Disclaimer

Ongoing product development may result in changes without prior notice.

1.5 Lifting unit, functional parts

Lifting should be carried out according to the instructions in the assembly instructions for the AHU (air handling unit).

2 GENERAL INFORMATION

2.1 Tools and fasteners

Each unit is supplied with a bag of screws, nuts, corner struts and other items to be used during assembly.

The following tools are suitable for disassembly and assembly:

- Screwdriver with 16-socket, 13-socket, 1/4-inch bit, star bit, PH2-long bits.
- Drill
- 4.2 mm drill
- Screwdriver for slotted, PH and cross-head screws
- Spirit level
- Torch/head lamp
- 2 mm punch
- Caulking gun for Sikaflex
- Rubber mallet
- Hammer
- Scissors
- Multi-grip pliers
- Side cutters
- Ring spanners 13, 16, 18, 19
- Hex key set
- Wooden blocks to lay between support and wall
- Boards/air cushion
- Pop rivet pliers
- Grease in spray bottle
- Tension belt suitable for the circumference of the thermal wheel

2.2 Terms and abbreviations in the manual

Term	Explanation
Thermal wheel	Rotary heat exchanger
Thermal wheel	The wheel of the rotary heat exchanger
Thermal wheel drive	Drive system for thermal wheel

3 OVERVIEW OF AHU PARTS

3.1 Thermal wheel casing parts

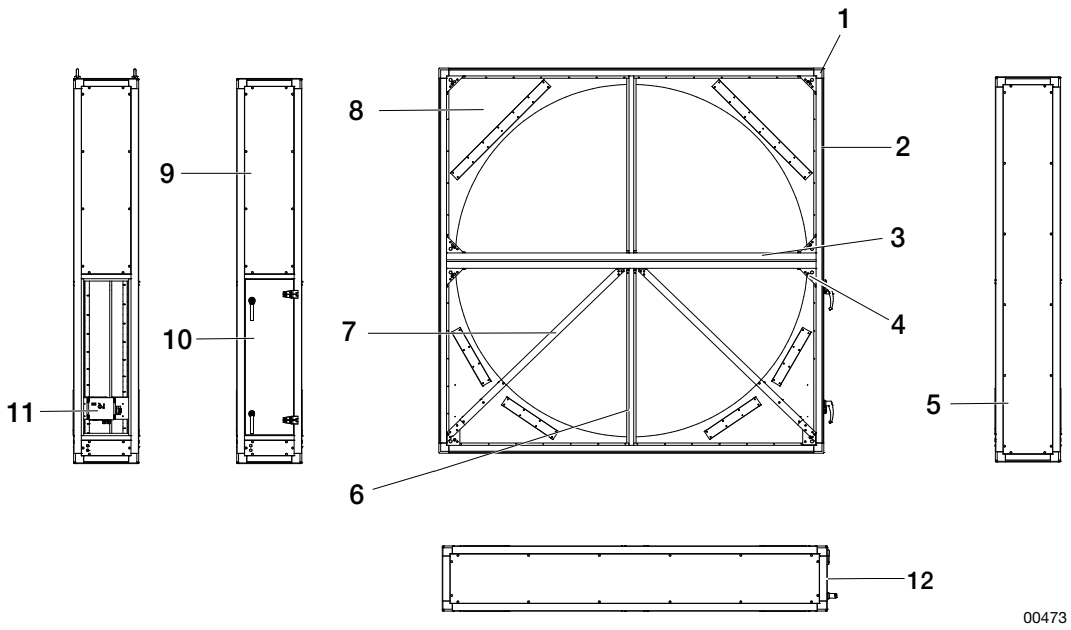


Figure: Casing parts

1. Joint
2. Frame profile
3. Centre profile
4. Corner strut
5. Rear cover hatch
6. Reinforcement profile (400-980)
7. Diagonal reinforcement (740-980)
8. Cover plate
9. Access side cover hatch
10. Inspection hatch
11. Thermal wheel drive
12. Top of the casing

3.2 Reinforcement profiles

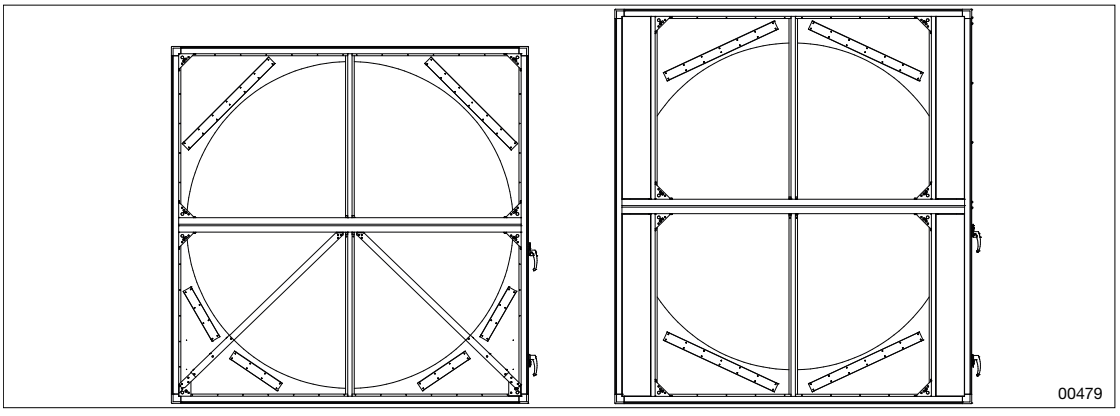


Figure: EXR 740-750

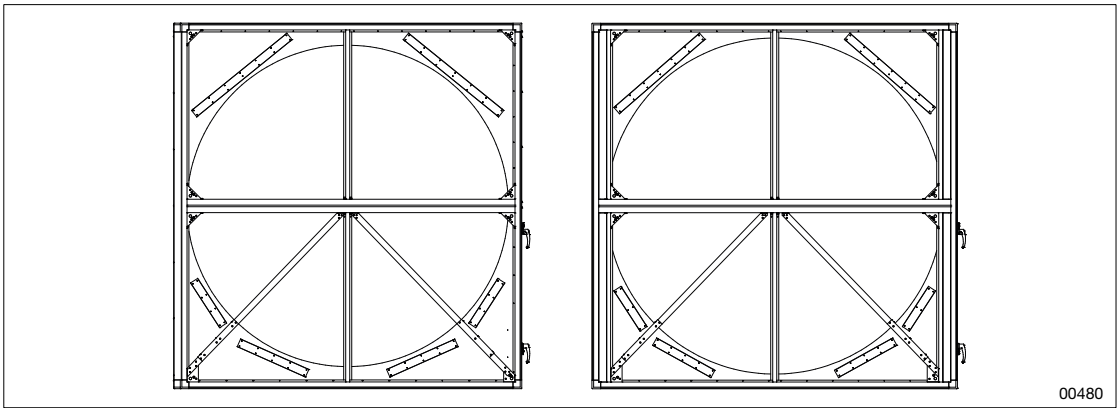


Figure: EXR 850 - D1/D2

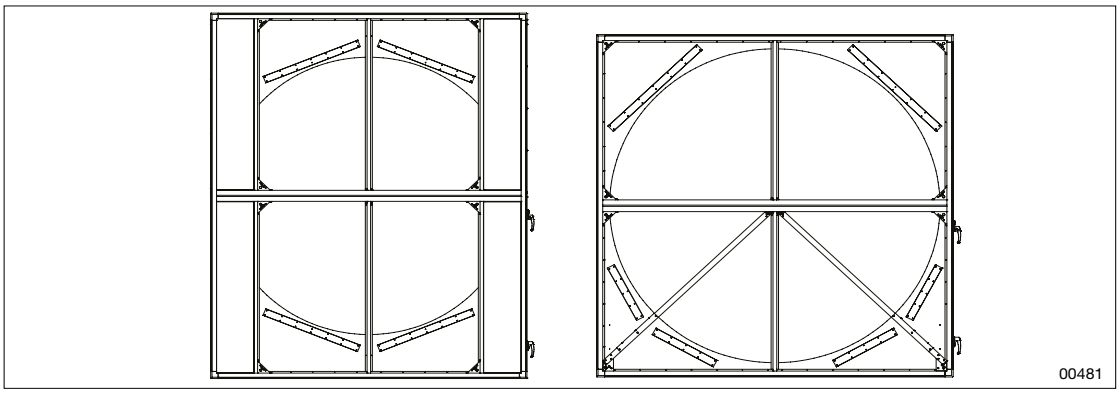


Figure: EXR 950-980

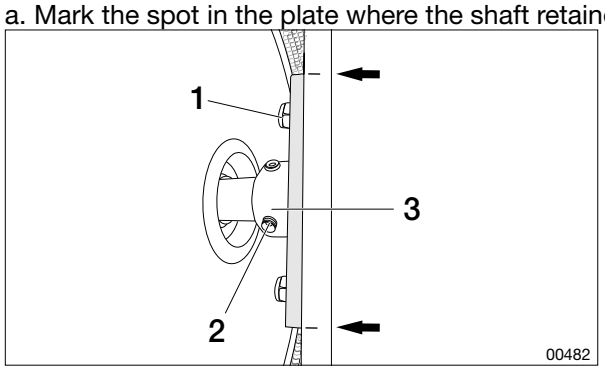
4 DISASSEMBLY

4.1 Remove the thermal wheel from the casing

CAUTION!
Risk of damage to the product.
Touch and contact may damage the surface layer of the rotary heat exchanger.
- Make sure that the surface does not come in contact with tools or any part of the body.
- When working with the rotary heat exchanger, wear protective gloves. 00270

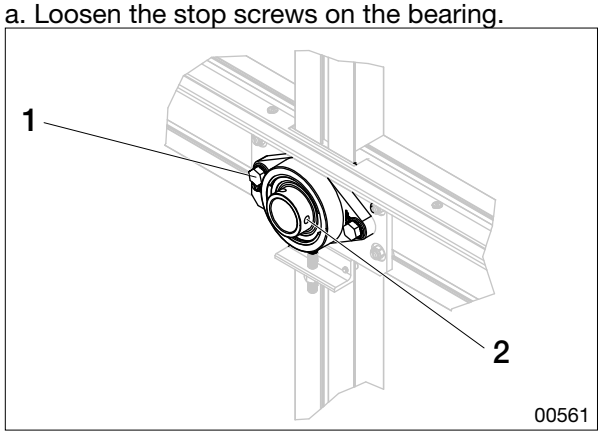
Take internal and external photos of the existing assembly to facilitate reassembly.

1. Remove the cover on the back. Use long PH2 bit. Exercise caution with the sealing strip.
2. Remove the inspection hatch. Use long PH2 bit.
3. Remove the thermal wheel belt:
   a. Remove the V-belt lock or cut the nipple that holds the thermal wheel belt together. b. Remove the belts.
4. Remove the thermal wheel motor, cable, cable fastening and control unit in one piece.
5. Unscrew and remove the brush strip.
6. Unscrew and remove the purging sector.
7. Place boards or an air cushion under the thermal wheel to bear the load.
8. Remove the shaft retainer:
   Size 060-600
   a. Mark the spot in the plate where the shaft retainer is placed



1. Nut 2. Stop screw 3. Shaft retainer

   b. Loosen the stop screws on the shaft retainer.
   Size 740-980
   a. Loosen the stop screws on the bearing.



1. Bearing bolt 2. Stop screw

9. Loosen the nuts/bolts on the shaft retainer/bearing on both sides of the thermal wheel.
10. In order to prevent the shaft retainer/bearing from jamming when the thermal wheel is

rolled out, push the shaft retainer/bearing towards the hub.

11. Roll out the thermal wheel through the access side.

4.2 Dismantle the casing

1. Unscrew and remove the corner struts from the centre beam.
2. Unscrew the cover plates from the inside and remove them.
3. Loosen and remove the roof in one piece by tapping the joints with a rubber mallet.
4. If necessary, remove other profiles, such as the centre beam and support profiles, by unscrewing the other corner struts. Any pop rivets are drilled and driven out with a driver.

4.3 Remove the thermal wheel

WARNING!

Risk of life-threatening or serious crushing or compression injury.

High unit parts, as well as unit parts with a high or offset centre of gravity, mean a greater risk of tipping.

- Follow the lifting and assembly instructions in this manual.
- Use lifting equipment where available.
- Use appropriate protective equipment.
- Exercise caution when working between unit parts.
- Exercise caution when placing unit parts on the support.
- Use the support to secure the parts against possible tipping risk.

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CAUTION!

Risk of damage to the product.

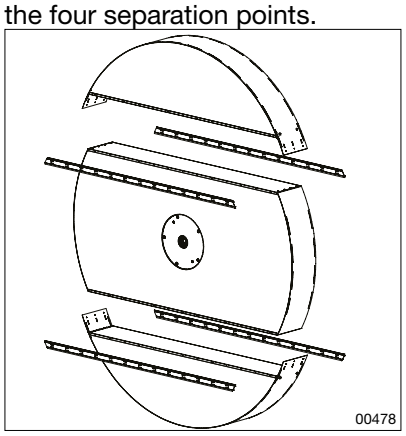
Touch and contact may damage the surface layer of the rotary heat exchanger.

- Make sure that the surface does not come in contact with tools or any part of the body.
- When working with the rotary heat exchanger, wear protective gloves.

00270

- The top of the thermal wheel must not be lifted into or placed onto the shell.
- Remove any lifting eye immediately after use.
- Use the attached self-tapping screws for joints.
- The rotary heat exchanger must be fully assembled before being placed on the support.

1. Make sure that the division points are marked with the letters A-D on the sides of the shell.
2. Break the wheel down into three parts by loosening the screws in the joining strips and in the four separation points.

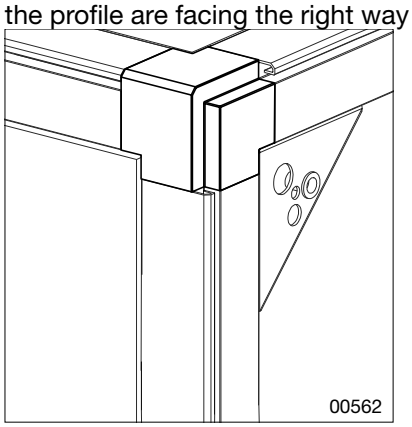


00478

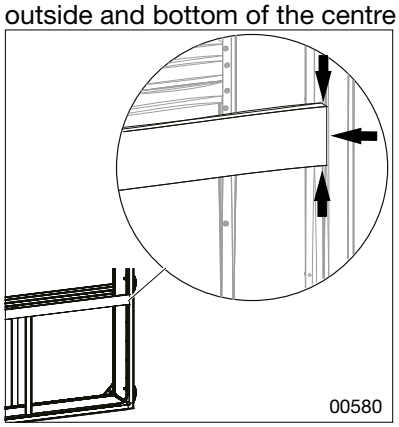
5 ASSEMBLE

5.1 Mount the casing

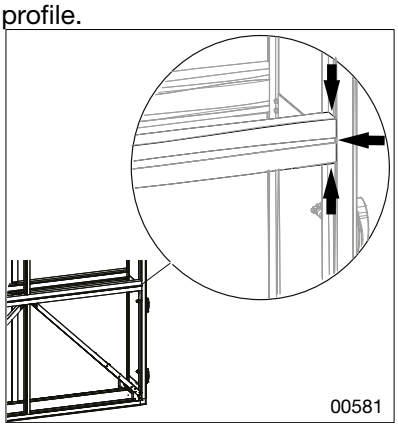
1. Start at the bottom and work upwards, using frame profiles and joints. Use a rubber mallet to knock the parts together. Finish with the roof at the top. Make sure that the grooves of the profile are facing the right way towards the joints.



2. Mount the centre profiles with pop rivets.
3. Seal the joints between the centre profile and the frame profile. Seal the joints at the top, outside and bottom of the centre profile.



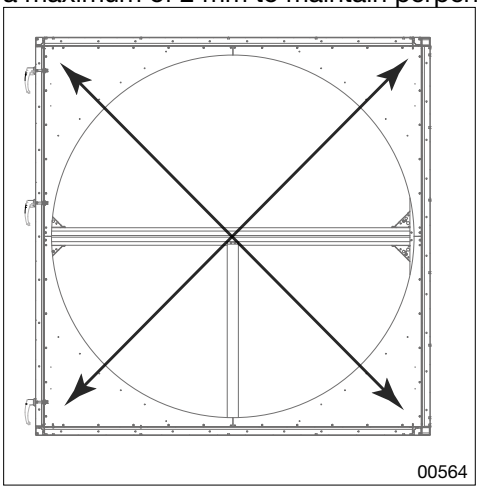
Sealant size 060-600



Sealant size 740-980

4. Fit the reinforcement profiles. Use screws against centre profiles and pop rivets against frame profiles. For sizes 740-980, fit the reinforcement profiles according to the models in the section *"3.2 Reinforcement profiles", page 9*. Diagonal reinforcement fastened to frame profile and centre beam with DK 5.5x19 screws.
5. Install corner struts on the underside of the centre beam and at all joints using DK 5.5x19 screws. Wait with the top corner strut until the brush strip is in place in chapter *"6.2 Final assembly", page 17*.

6. Screw the cover plates from the inside with self-tapping screw DK 4.2x14 PH2. Ensure, such as by cross-measuring, that the angular deviation of the gable section of the frame is a maximum of 2 mm to maintain perpendicularity.

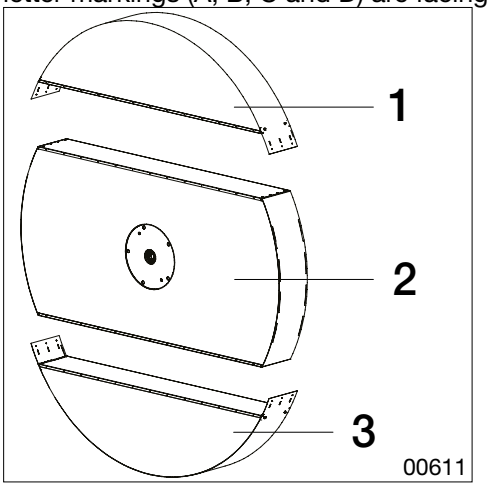


Cross measurement of the gable section of the frame

7. Seal the joints around the inside of the frame profile.
8. Seal other joints, for example between the profile and the red joints and in all joints between the cover plates.
9. Assemble the back:
   a. If an undamaged sealing strip is fitted, this can be used as a seal, or alternatively the sealing strip can be removed and replaced with sealant. b Mount the back with self-tapping screw DK 4.2x14 PH2. Cover the screw holes with grey plugs.

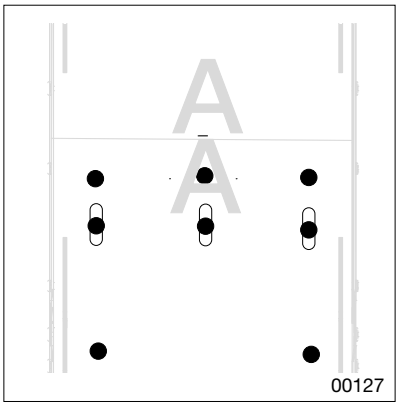
5.2 Mount the thermal wheel

1. Place one outer part of the thermal wheel against the centre section. Make sure that the letter markings (A, B, C and D) are facing the same direction as on the centre section.

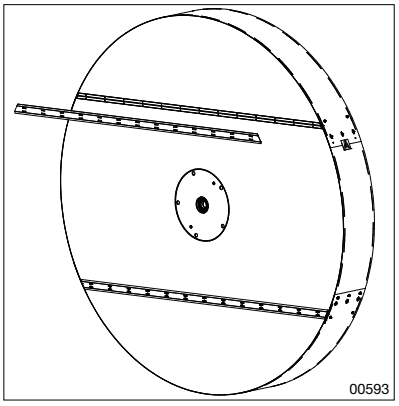


1. Outer part 2. Centre section 3. Outer part

2. Fix the shell of the outer section to the centre section with self-tapping screw JT2 5.5x35 in the oval holes. Do not overtighten, as it must be possible to make adjustments.
3. Rotate the wheel and fit the other outer part in the same way as described in points 1-2.
4. Place a belt around the thermal wheel and tighten it.
5. Tighten the screws in the oval holes in the shells.
6. Screw the JT2 5.5x35 self-tapping screws into the round holes.



7. Screw the joining strips, two on each side of the thermal wheel, with self-tapping screws MRTF M4x12. Screw in all screw holes.



8. Remove the tensioning belt.

5.3 Mount the thermal wheel in the frame

5.3.1 Mount thermal wheel size 060-600

WARNING!
Risk of life-threatening or serious crushing or compression injury.
High unit parts, as well as unit parts with a high or offset centre of gravity, mean a greater risk of tipping.

- Follow the lifting and assembly instructions in this manual.
- Use lifting equipment where available.
- Use appropriate protective equipment.
- Exercise caution when working between unit parts.
- Exercise caution when placing unit parts on the support.
- Use the support to secure the parts against possible tipping risk.

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CAUTION!
Risk of damage to the product.
Touch and contact may damage the surface layer of the rotary heat exchanger.

- Make sure that the surface does not come in contact with tools or any part of the body.
- When working with the rotary heat exchanger, wear protective gloves.

00270

1. Place suitably thick boards or an inflatable cushion in the bottom of the casing to bear the load of the thermal wheel.
2. Use a hoist or air cushion to lift/roll the thermal wheel in through the access side.
3. Raise the thermal wheel so that the shaft bracket is level with the centre beam at the markings in the plate.
4. Slide the shaft retainers out towards the centre beam.
5. Fasten the two M10 lock nuts of the shaft retainer a little loosely on each side of the shaft.
6. If the AHU (air handling unit) is equipped with control equipment, continue to *"5.4 Assemble control equipment", page 16*
7. Otherwise, proceed to *"6.1 Adjusting the thermal wheel", page 17*

5.3.2 Mount thermal wheel size 740-980

CAUTION!

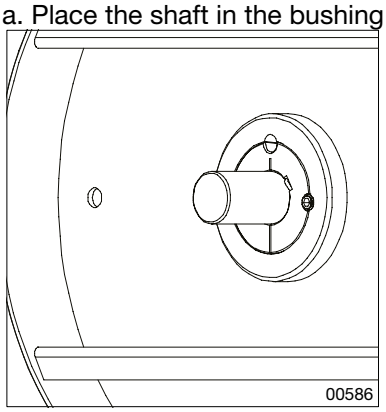
Risk of damage to the product.

Touch and contact may damage the surface layer of the rotary heat exchanger.

- Make sure that the surface does not come in contact with tools or any part of the body.
- When working with the rotary heat exchanger, wear protective gloves.

00270

1. Place suitably thick boards or an inflatable cushion in the bottom of the casing to bear the load of the thermal wheel.
2. If the wheel is supplied in the casing, then the shaft and bearings are already fitted. Proceed to point 3. If the wheel is supplied in a box, the shaft must be fitted:
   a. Place the shaft in the bushing in the hub.



   b. Loosen the screws in the bushing.
   c. Centre the shaft so that it extends equally on both sides.
   d. Lock the shaft by alternating the screws to the bushing with a torque of 50 Nm. The screws must not be glued.
   e. Fit a bearing on either side of the shaft.
3. Slide the bearings towards the hub.
4. Roll the thermal wheel in through the access side.
5. Raise the thermal wheel so that the bearings are level with the centre beam.
6. Slide the bearings out towards the brackets on the centre beams.
7. Screw the bolts onto the bearings on both sides of the wheel. They should be tight enough to hold the wheel in place, but loose enough to allow the shaft to be adjusted.
8. Adjust the thermal wheel according to the instructions in *"6.1 Adjusting the thermal wheel", page 17*
9. Remove the boards or inflatable cushion.

5.4 Assemble control equipment

If the AHU (air handling unit) is supplied with control equipment, download the order-specific drawings from IV Produkt's order portal. Connection of control equipment (e.g. power supply, fuse protection, other components and fans) must be carried out by an authorised technician as shown in the Connection Instructions and Operation and Maintenance for the AHU (air handling unit).

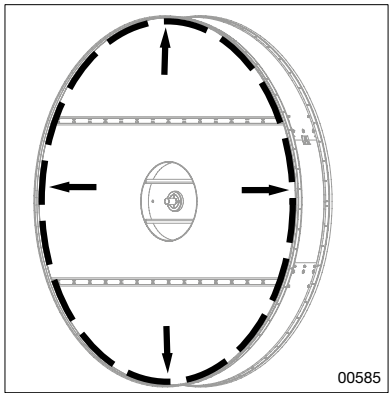
6 AFTER ASSEMBLY

6.1 Adjusting the thermal wheel

For instructions on adjusting the thermal wheel, see the Assembly instructions for the AHU (air handling unit).

6.2 Final assembly

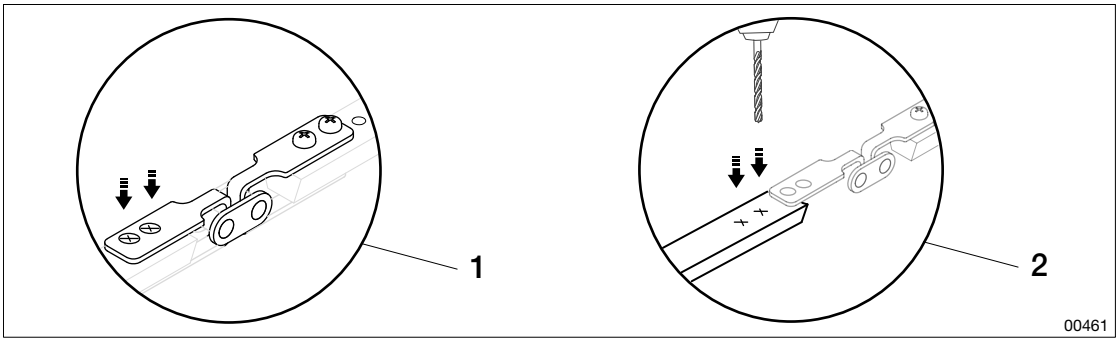
1. From the access side, fit the brush strip around the thermal wheel positioned in the same way as on delivery. Joints at the ends should be sealed or overlapped by 20 cm. Screw the brush strip into every other hole with self-tapping screws large flange 4.2x13.
2. Seal around the entire thermal wheel at the joint with the brush strip.



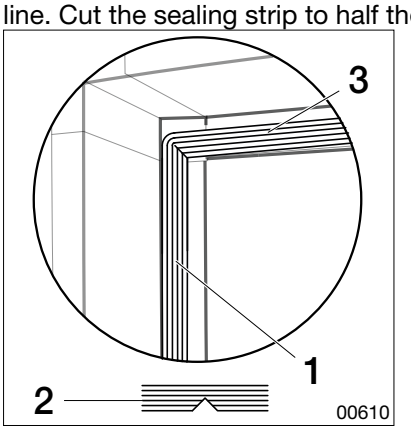
3. Install the purging sector positioned as on delivery. Insert it from the top down with the brush strip attached.
4. Screw the purging sector using screw DK 4.2x14 and make sure it is tight at the sides.
5. Mount the brush strip on the other half of the centre beam with screws, large flange 4.2x13.
6. Mount the corner struts on the top of the centre beam with screws DK 5.5x19.
7. Mount the brush strip along the entire centre beam on the other side of the thermal wheel with screw large flange 4.2x13.
8. Mount the corner struts on the top of the centre beam with screws DK 5.5x19.
9. Mount the thermal wheel drive and cable as on delivery.
10. Check that the length of the thermal wheel belt matches the table:

Size	Belt type	Length (mm)
EXR 060	Round belt	2420
EXR 100	Round belt	2960
EXR 150	Round belt	3350
EXR 190	Round belt	4120
EXR 240	Round belt	4220
EXR 300	Round belt	4780
EXR 360	Round belt	4920
EXR 400	Round belt	5450
EXR 480	Round belt	5940
EXR 600	Round belt	6600
EXR 740	V-belt	7320
EXR 850-D1	V-belt	7710
EXR 850-D2	V-belt	8070
EXR 980*	V-belt	8470

*For size 980, holes need to be marked and drilled in the V-belt with 2.5 mm drill, as shown below:



11. Fit the thermal wheel belt with the supplied pin or V-belt lock.
12. Mount the inspection hatch on the hinges with screw MC6S 5x16
13. Centre the inspection hatch using spacers. Approximately 2 mm offset towards the hinge side is required to prevent the door from impinging on the profile when opening and closing.
14. On the hinge side, fit the sealing strip at the bottom of the profile flange to prevent it from being pinched when closing the inspection hatch.
15. On the other sides, fit the sealing strip at the end of the profile flange to avoid leakage at the inspection hatch. Place the joint against the sealing strip in the centre of a straight line. Cut the sealing strip to half the width at the corners.



1. Sealing strip right in against the profile flange
2. Cut the joint at the sealing strip
3. Sealing strip right out against the profile flange

6.3 Post-inspection and maintenance

CAUTION!
Risk of damage to the product.
Swarf from drilling left behind after assembly can lead to corrosion and rust on the surface layer of the unit.

- Make sure that the surfaces of the unit are clean of swarf.

00195

CAUTION!
Risk of damage to the product.
Corrosive substances and strong cleaning agents can damage the surface layer.

- Never use strong cleaning agents or corrosive substances when cleaning the unit.

00183

Thermal wheels may need to be readjusted after commissioning or if the conditions in the plant change.

Area	Control	Comment
Covers	Make sure all covers/hatches are in place.	
Covers	Make sure that inspection hatches do not jam when opened.	Adjust the door hinges. If it is not enough, adjust with the support feet. After adjusting the support feet, make sure that the unit does not lean backwards towards the back.
Internal surfaces of the unit	Make sure the AHU is clean and free of dirt and debris.	Vacuum or brush as needed. Use a damp cloth.
Internal surfaces of the unit	Make sure the AHU has no residual swarf from drilling.	Vacuum or brush after assembly.
Thermal wheel	Check that the thermal wheel is balanced and correctly positioned on the shaft.	See "6.1 Adjusting the thermal wheel", page 17.

Feel free to contact us

IV Produkt AB, Sjöuddevägen 7, S-350 43 VÄXJÖ
+46 470 – 75 88 00
www.ivprodukt.se, www.ivprodukt.com

Support:

Control:	+46 470 – 75 89 00, styr@ivprodukt.se
Service:	+46 470 – 75 89 99, service@ivprodukt.se
Spare parts:	+46 470 – 75 86 00, reservdelar@ivprodukt.se
Documentation:	+46 470 – 75 88 00, du@ivprodukt.se

IV Produkt's order portal

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