

Assembly Instructions

Envistar Top

Size 04-28



Assembly Instructions Envistar Top



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1 SAFETY

This section addresses important safety aspects of assembly, with the aim of raising safety awareness and avoiding personal injuries and damage to surroundings and units.



- 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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1.1 Intended use

Intended use

The product is intended to be used air handling unit for comfort ventilation in properties.

Intended users

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

Intended user environment

- The unit is usually placed indoors, but is also available as an outdoor version.
- When installed indoors, the unit must be installed in a ventilated area that maintains a temperature between +7 and +30 °C, and that maintains a moisture content of <3.5 g/kg in dry air in the winter.
- The unit can also be equipped for assembly in cold attics.

Unintended uses

Any use other than specified in Intended use is prohibited unless specifically permitted by IV Produkt. It is not permitted to use the unit in potentially explosive environments.

1.2 General safety

Failure to comply with the safety precautions may result in injury to persons or damage to air handling units. To avoid personal injuries and damage to surroundings or units:

- Follow national and local laws/regulations for safe work, e.g. fall protection when working at a height.
- Do not wear loose clothing or jewellery that may get fasten.
- Do not step or climb on the unit.
- Use appropriate tools.
- Use appropriate personal protective equipment.

Note the unit's markings: product signs, information and warning stickers.

Personal protective equipment

Personal protective equipment must always be used based on the risks present in the work-place. For example, wear protective shoes with steel toecaps, hearing protection, protective helmet, gloves, safety glasses or goggles, fully-covering clothing, safety overalls, mouthguard/protective mask and/or fall protection where the work and work environment requires it.



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Warning notices

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



The warning symbol indicates that a risk exists.

WARNING! indicates a potential risk that, if not avoided, can cause **life-threatening or serious** situations that can lead to death or personal injury.

CAUTION! indicates a potential risk that, if not avoided, could cause **material damage** to the product or surroundings as well as impairment of product function.

"Risk of xxxxxx." Indicates the risk in a short risk title.

A description in italics provides more detailed information about what the risk entails.

- The bullet points indicate how the user avoids harm.

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.

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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.

00180

WARNING!

Risk of cutting.

Sharp edges can cause cuts.



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

00181

Safety symbols, signs on the unit

Keep signs and stickers free of dirt. Replace missing, damaged or unreadable signs and stickers on the machine. Contact IV Produkt for replacement stickers by specifying the article number.

Type plate

The unit and any associated cooling unit/reversible heat pump have a type plate affixed to the front. The type plate is used, among other things, for identification of the product.



00043

Figure: Example of a unit type plate

- | | |
|-----------------------|-------------------------|
| 1. Order number | 5. Place of manufacture |
| 2. Product name/model | 6. Date of manufacture |
| 3. Product code | 7. QR code |
| 4. Unit designation | |

Report accidents, incidents

Accidents or incidents are reported to IV Produkt.



1.3 Product liability

The unit complies with industry requirements for quiet air handling units with high-efficiency recovery systems for heating and cooling.



CE marking (EU) and UKCA marking (UK)

The air handling unit is CE and UKCA marked and meets the applicable requirements according to specified directives and standards in the Declaration of Conformity. The marking covers the assembly in the design in which it was delivered and provided that it has been assembled and put into operation in accordance with IV Produkt instructions. The declaration does not cover assemblies that have been modified, components that have subsequently been added or other plants in which the assembly may be included. The unit may not be put into service until the plant in which it is incorporated complies with the requirements for CE and UKCA marking, which apply in the country where the unit is installed.

The declaration of conformity can be downloaded from IV Produkt's order portal, "[2.1 IV Produkt's order portal, support](#)", page 10.

Manufacturer

The air handling unit is manufactured by:

IV Produkt AB, Sjöuddevägen 7, SE-350 43 VÄXJÖ

Warranty

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

Extended warranty

Extended warranty is a supplement to the order and to claim extended warranty (5 years), according to ABM 07 with Appendix ABM-V 07 or according to NL 17 with Appendix VU 20, a complete documented and signed IV Produkt Service and Warranty book must be presented.

Disclaimer

Continuous product development may give rise to specification changes without notice.

1.4 Receive, unpack

Check the goods on arrival, to ensure that no damage has occurred during transport.

When delivered, the product is packaged with plastic to protect against rain and dirt. The packaging should be kept on as long as possible to avoid penetration of dirt and dust into the unit. Duct connections on outdoor units are protected with a sheet metal covering.

1.5 Storage, transport

For temporary storage, the product should be placed on a flat surface, in a dry environment. The original packaging should be unbroken. Condensation water, which can occur during storage in fluctuating temperatures, normally dries up when the unit is installed and in operation. For extended periods of storage outdoors, the packaging should be opened to ensure ventilation inside the parts. The parts of the unit should be protected from rain, snow and sunlight.

1.6 Lifting the unit, unit parts

Lifting should be carried out according to lifting instructions in this document, ["4 LIFT THE UNIT", page 15](#) as well as according to markings and signs on the unit. If there are no lifting instructions or markings, lifting must be carried out according to lifting methods prepared by the transport industry.

1.7 After the lifetime of the product

For dismantling and decommissioning of air handling units, follow the instruction "Air handling unit, dismantling and decommissioning" on IV Produkt's order portal. See ["2.1 IV Produkt's order portal, support", page 10](#).



2 GENERAL INFORMATION

This section contains general information that is not safety-related. For safety-related information, see "[1 SAFETY](#)", [page 5](#).

2.1 IV Produkt's order portal, support

All documentation associated with an order can be downloaded from IV Produkt's order portal. Approximately two weeks after delivery, the documentation should be complete. If you have any questions, contact the appropriate department for support. See contact details on the last page of the manual.

1. Scan the QR code in the header of the manual.
or
Type ivprodukt.docfactory.com in your browser and select YOUR AIR HANDLING UNIT.
2. Enter order number.
3. Click the magnifying glass.

General documentation that is not order-specific is retrieved under "ALL DOCUMENTATION".

For further explanations of drawing symbols and descriptions of assembly functions, see Assembly instructions and Operation and care for each unit.

2.2 Information messages, not safety-related



Symbol together with information text highlights difficulties and also gives tips and recommendations.

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2.3 Tools for assembly

A bag of screws, nuts, corner fittings and other items to be used for assembly is supplied with each unit. The following tools are suitable for assembly:

- Power screwdriver with 16-socket, 13-socket, 1/4-inch bit and star bit
- Screwdriver
- Spirit level
- Putty syringe
- Rubber mallet
- Scissors
- Polygrip pliers
- Ring Keys 13, 16, 18, 19
- Wooden blocks to lay between support and road
- Pop riveter
- Lubricating grease in spray bottle
- Pipe cutter

2.4 Spare parts

Spare parts and accessories for this unit are ordered from IV Produkt's nearest sales office. State the order number and unit designation. These can be found on a model identification label, affixed to each part/component. Download separate spare parts list on IV Produkt's order portal. See "[2.1 IV Produkt's order portal, support](#)", [page 10](#).

2.5 Symbols on drawings and in manual

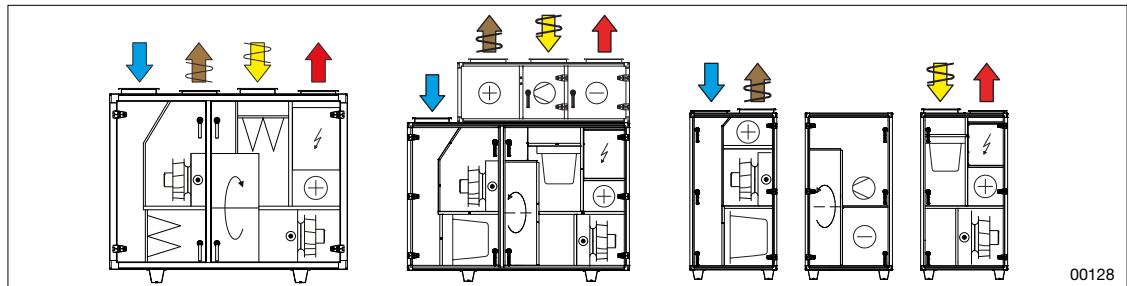




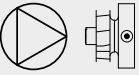









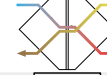




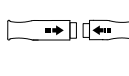


Figure: Example of a layout drawing

| | | | |
|---|-----------------------------|---|---------------------------|
|  | Outdoor air |  | Extract air |
|  | Supply air |  | Exhaust air |
|  | Fan |  | Filter |
|  | Shut-off damper |  | Trim damper |
|  | Cooling coil water |  | Heating coil water |
|  | Heating coil electric |  | Sound attenuator |
|  | Rotary heat exchanger |  | Cross-flow heat exchanger |
|  | Counter-flow heat exchanger |  | Compressor |
|  | Cooling unit |  | Cooling/heating pump |
|  | Media section |  | Quick connector |



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3 DESCRIPTION OF THE UNIT

3.1 Configuration of the unit

The unit can be supplied with or without control and adjustment equipment. See "10 CONNECT CONTROL EQUIPMENT", page 36.

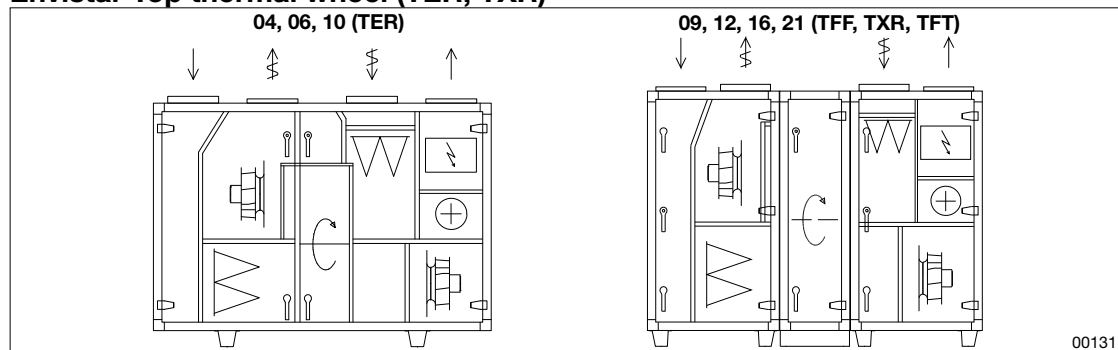
The unit is supplied as a complete unit (unit version) or in blocks/parts (block version). Units in block version require assembly.

The units are on legs (hat profiles) that can be equipped with adjustable feet (accessories), adjustable to different heights.

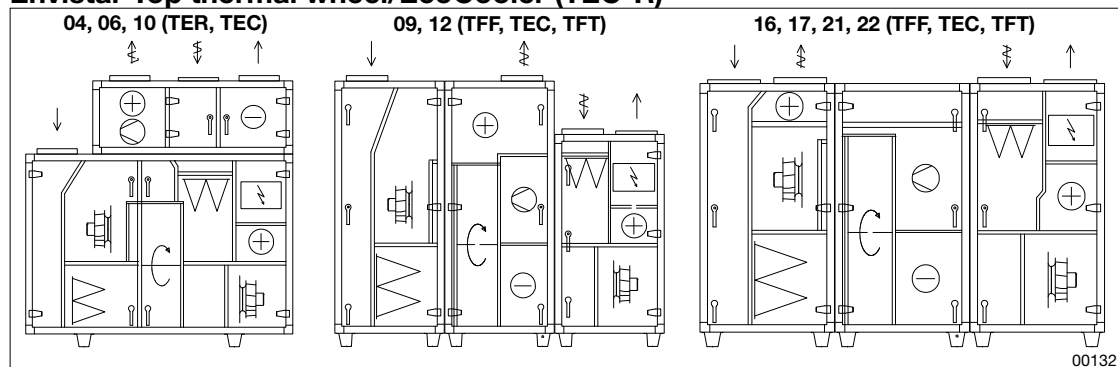
The unit's framework consists of aluminium profiles, 50 x 50 mm (50 profile).

The counter-flow exchanger (TXM) can be delivered in block form (sectioned configuration) and must be assembled before being put in place with the other unit parts.

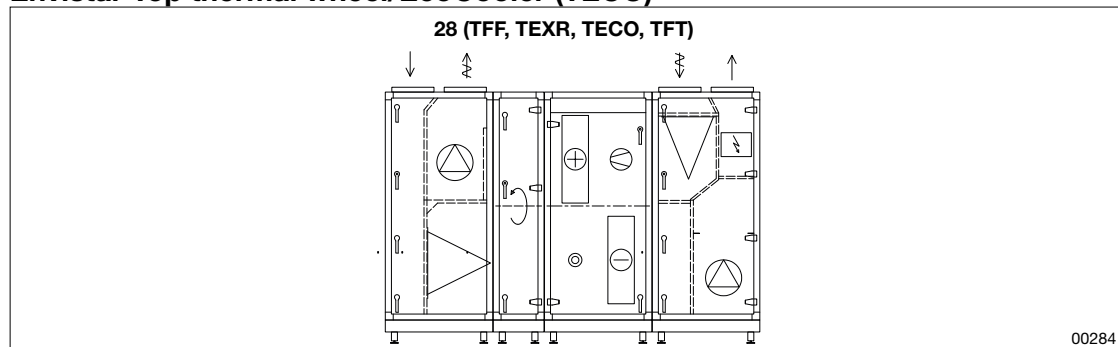
Envistar Top thermal wheel (TER, TXR)



Envistar Top thermal wheel/EcoCooler (TEC-R)



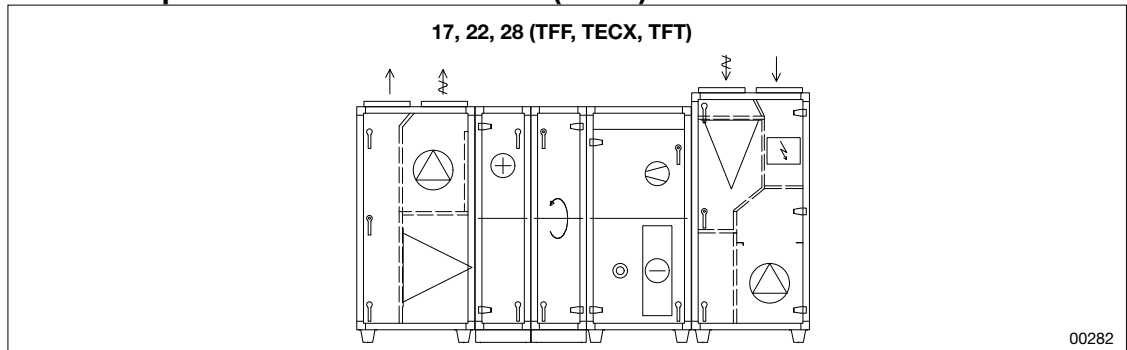
Envistar Top thermal wheel/EcoCooler (TECO)



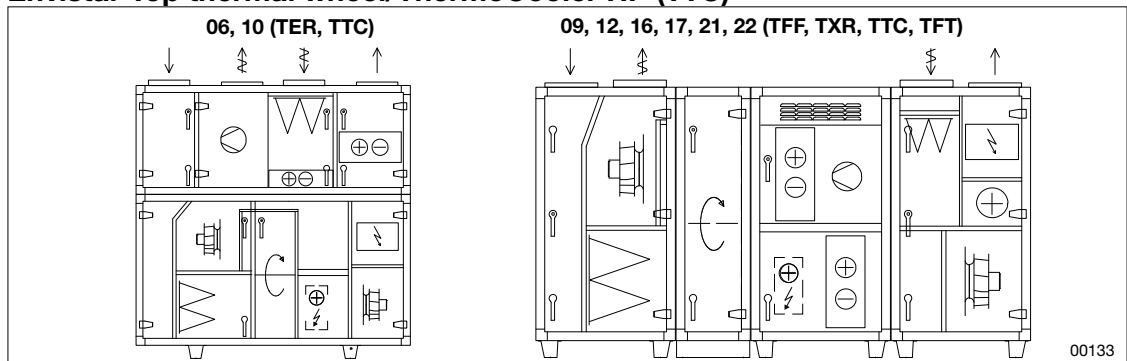
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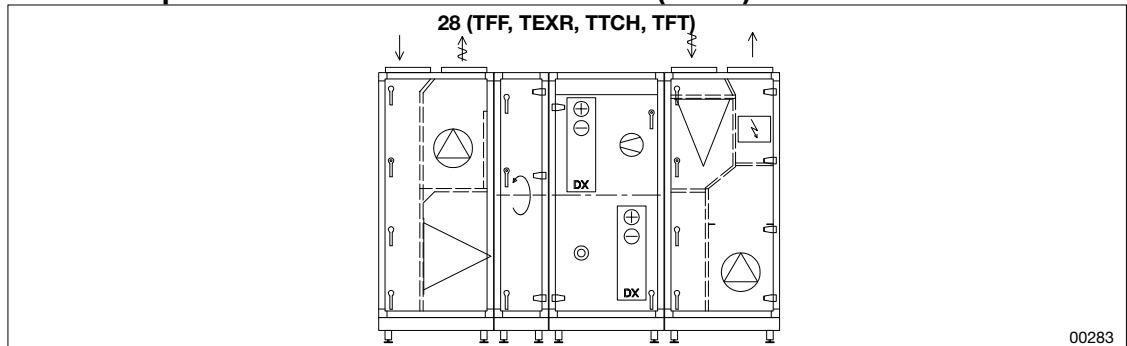
Envistar Top thermal wheel/EcoCooler (TECX)



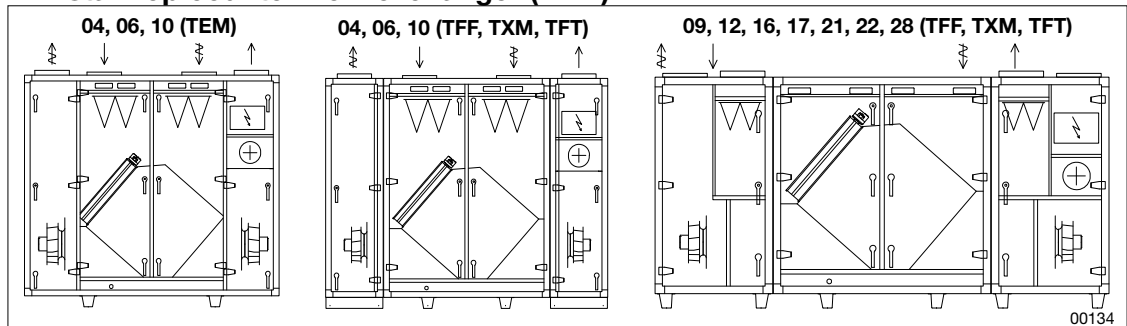
Envistar Top thermal wheel/ThermoCooler HP (TTC)



Envistar Top thermal wheel/ThermoCooler HP (TTCH)



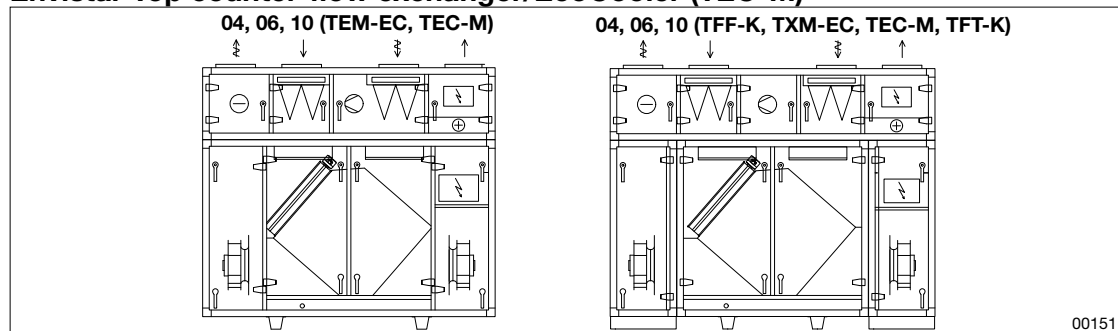
Envistar Top counter-flow exchanger (TEM)



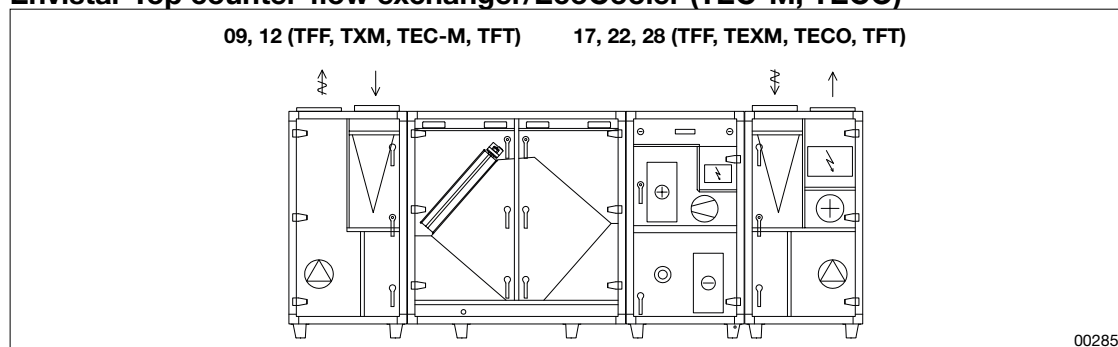


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Envistar Top counter-flow exchanger/EcoCooler (TEC-M)



Envistar Top counter-flow exchanger/EcoCooler (TEC-M, TECO)



3.2 Orientation of the unit's sides/parts

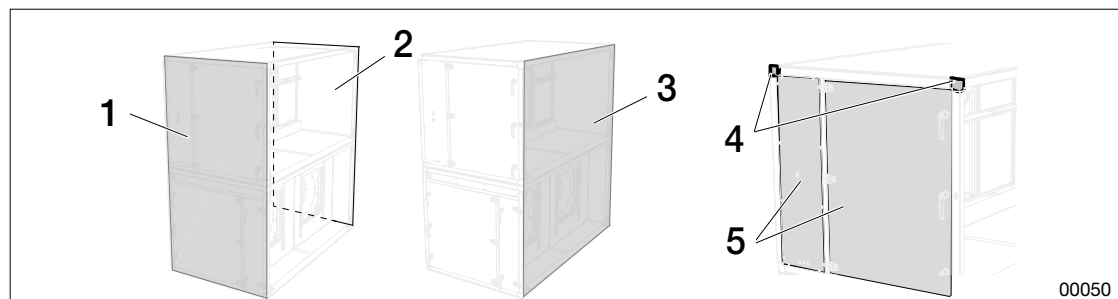


Figure: Parts of the unit

1. Access side
2. Back
3. Gable side
4. Corner fitting
5. Covers

4 LIFT THE UNIT



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.

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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.

00180



CAUTION!

Risk of damage to the product

Chains/straps that are lying against the unit when lifting may damage the unit.

- Use spreader bars when lifting with bracket.
- Follow instructions for working with spreader bars.

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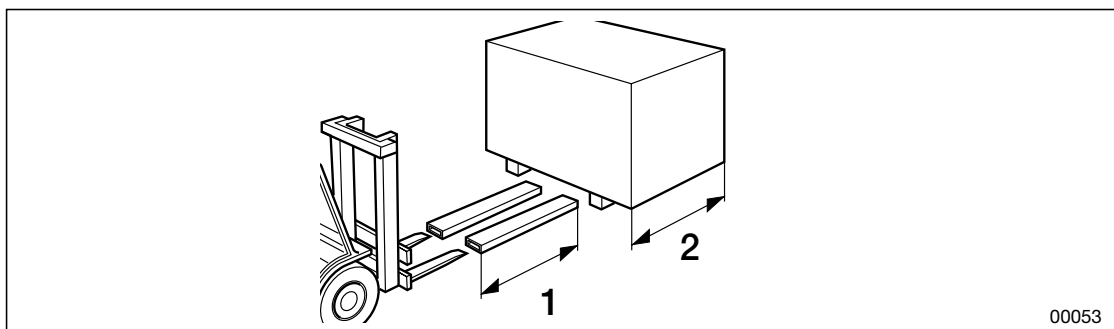


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4.1 Lifting with forklift



The lifting forks (1) must be the same length as the unit packaging (2) or longer.



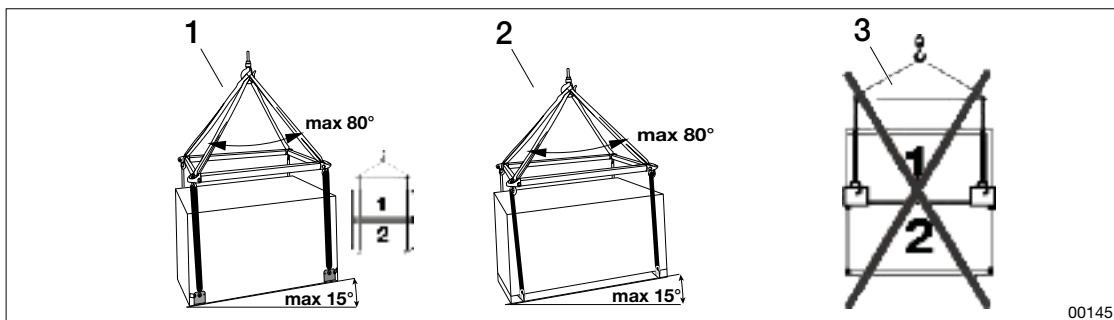
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Figure: Lifting with forklift

4.2 Lifting brackets, pre-mounted lifting lugs, spreader bar



- The maximum angle at the lift hook is 80°
- The inclination slope of unit parts when lifting is 15°. If the inclination is greater than 15°, the chains/straps must be shortened or extended until the angle is less than 15°.
- The spreader bar must be 100—400 mm wider than the unit.



00145

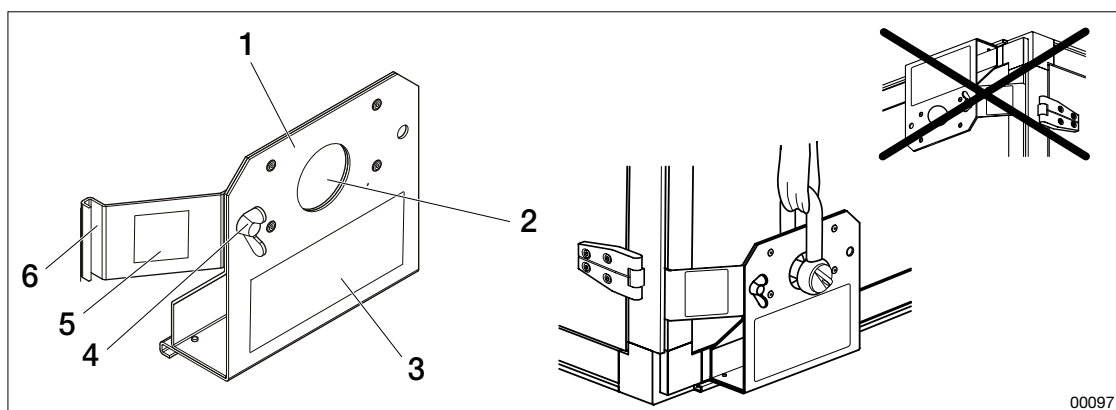
Figure: Illustration of lift with spreader bar and inclination

1. Lift with EMMT-08 with spreader bar
2. Lift in base frame with spreader bar
3. Incorrectly mounted lifting brackets in the centre profile

4.3 Lift with lifting bracket, EMMT-08, for 50 profile



- Load per lifting bracket ≤ 400 kg.
- Load if all four brackets are used ≤ 1600 kg.
- A safety factor of 1.6 has been utilised in static testing of the lifting bracket.
- Use shackle with safety factor 6:1.
- Brackets must not be mounted downwards or sideways.
- Lifting brackets must not be mounted in the middle profile of double stacked parts.



00097

Figure: Lifting bracket EMMT-08

- | | |
|----------------------------|-----------------------|
| 1. Lifting bracket EMMT-08 | 4. Wing nut |
| 2. Lifting lug | 5. Slide stop sticker |
| 3. Lift stop sticker | 6. Slide stop |

EMMT-08 is delivered in a set of four.

1. Place the lifting brackets in the bottom four corners of the unit or unit part (on the longest sides of the part), with the lifting lug upwards.
2. Push the brackets into the horizontal track in the unit's aluminium profile.
3. Push the slide stop into the vertical track in the unit's aluminium profile.
4. Lock by tightening the wing nut.



5 PREPARE ASSEMBLY



When setting up the unit, it shall be horizontal at the longitudinal leading edge, as well as slightly inclined forward (towards the inspection side) to create proper drainage of condensation water. See ["6.1 Assemble adjuster foot \(accessory\), adjust the height", page 19.](#)

Inlet grilles and duct systems shall be designed and installed so that:

- water is prevented from penetrating into the unit.
- recirculation and short-circuiting between the exhaust air and outdoor air is prevented.
- drainage cannot run backwards to the unit.

The duct system shall be designed and the control system configured to prevent pressure increase through filter/air ducts, for example by soft-starting fans and opening dampers when fans are operating. See ["12 DUCT CONNECTION, DUCT ACCESSORIES", page 40.](#)

Water trap is mounted as indicated. See ["11 CONNECT DRAINAGE, WATER TRAP", page 38.](#)

5.1 Sectioned configuration (Easy Access)

The counter-flow exchanger (TXM) can be delivered in pieces and must be assembled before being put in place on the support. See ["6 ASSEMBLY, GENERAL", page 19](#) and ["14. Ensure everything is properly assembled.", page 29](#)

5.2 Create service area, electrical safe distance



- The service area in front of the unit should be about 1.5 x the depth of the unit so as to allow for service, replacement of parts and cleaning.
- Follow the National Electrical Safety Board's recommendations regarding the free service space to be located in front of electrical connecting equipment.

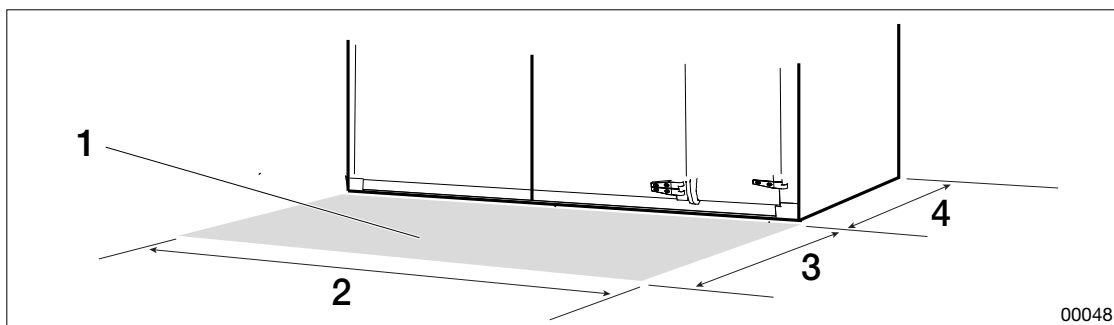


Figure: Service area on the inspection side

- | | |
|---|---|
| 1. Service area | 3. Service area depth (1.5 x depth of the unit) |
| 2. Service area width (width of the unit) | 4. Depth of the unit |

6 ASSEMBLY, GENERAL

Read and follow each step carefully to avoid making errors and causing personal injury or damage to surroundings or unit. See "[1 SAFETY](#)", [page 5](#), "[4 LIFT THE UNIT](#)", [page 15](#), "[5 PREPARE ASSEMBLY](#)", [page 18](#) and "[7 ASSEMBLE, VERSIONS](#)", [page 24](#).

For example of set-up drawing and explanations of drawing symbols, see "[2.5 Symbols on drawings and in manual](#)", [page 11](#).

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.

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WARNING!

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

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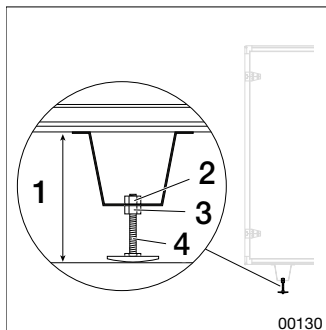
00178

6.1 Assemble adjuster foot (accessory), adjust the height



The unit should tilt slightly forward (towards the inspection side) for condensation runoff and drainage. The inclination may be a maximum of 3 mm/m.

1. Tighten the lower locking nut (3) on the support foot (4).



2. Insert the top of the support foot into the hole of the hat profile and tighten the upper locking nut (2). The distance between the floor and the bottom (1) shall be 120 to 160 mm.
3. Use a spirit level and make sure that the unit is level along the inspection side/back.
4. Adjust the height and inclination of the support by turning the upper and lower nuts.
5. Secure all support feet by tightening both the top and bottom nut.



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Envistar Top

6.2 Fit sealing strip



- For correct assembly of sealing strip on different parts, see also "[7 ASSEMBLE, VERSIONS](#)", page 24.
- The sealing strip is only fitted on one of two opposite parts.
- The sealing strip is not fitted on the rotary heat exchanger.
- For units in sectioned configuration, sealing strip must also be fitted in the division. Does not apply to ThermoCooler HP/EcoCooler.

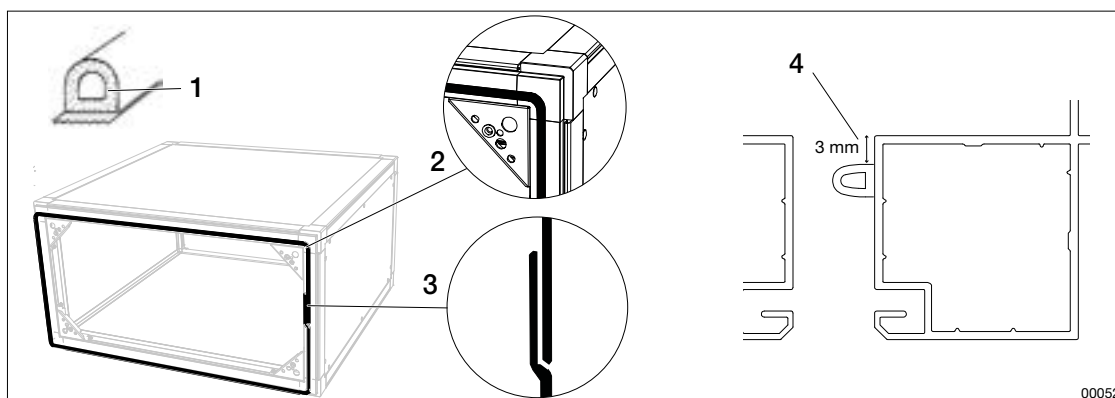


Figure: Sealing strips, location.

- | | |
|------------------------------------|-----------------------------|
| 1. Sealing strip of type D-profile | 3. Sealing strip joint |
| 2. Sealing strip in corner | 4. Profile in cross section |

1. Divide the strip into two.
2. Fit the strip in the middle surfaces of the unit, about 3 mm from the inner edge. Remove the protective layer over the adhesive, after which the strip is glued on. Bend the strip in the corners and join it on vertical sides.

6.2.1 Join with screw joints

1. Remove any cover plugs to access the screw joints.
2. Screw together the unit parts with bolts through each corner strut.

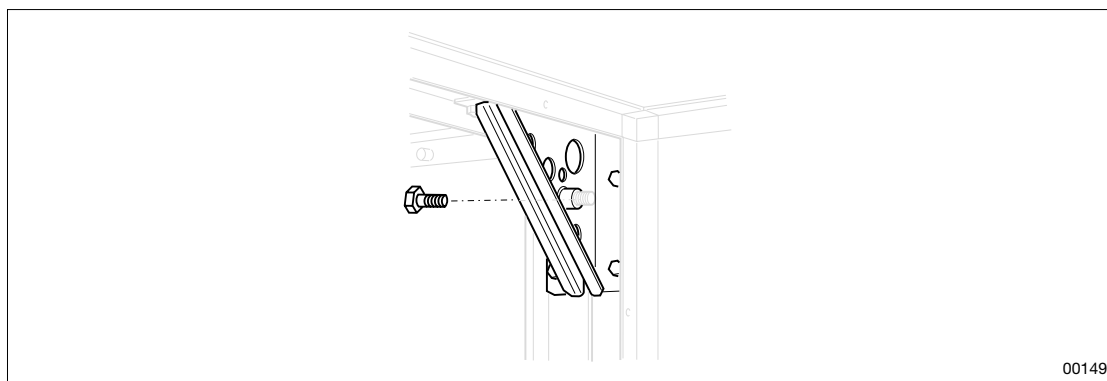


Figure: Screw joint

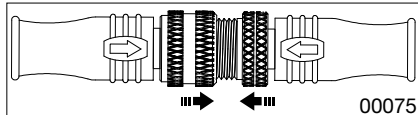
6.3 Quick connectors

See "[10 CONNECT CONTROL EQUIPMENT](#)", [page 36](#) and order-specific documentation (control diagram) on IV Produkt's order portal.

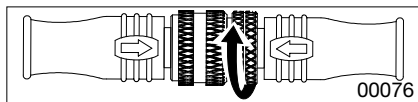
Quick connectors to be joined are marked with the same designation.

Quick connector, signal feed

1. Press together quick connectors according to marking (arrows or other).

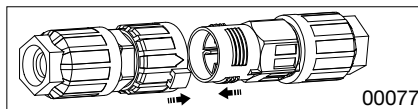


2. Screw together as hard as possible by hand.

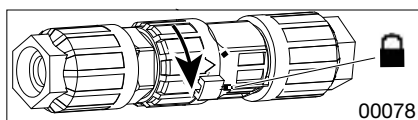


Quick connector, power supply

1. Press together quick connectors according to marking (arrows, dashes or similar).



2. Turn the arrow on the white cuff to the mark for closed (padlock).





Assembly Instructions Envistar Top

6.4 Disassemble/Reassemble/Refit Fan

For better access to the inner corner struts when joining adjacent unit parts, the fan can be disassembled.

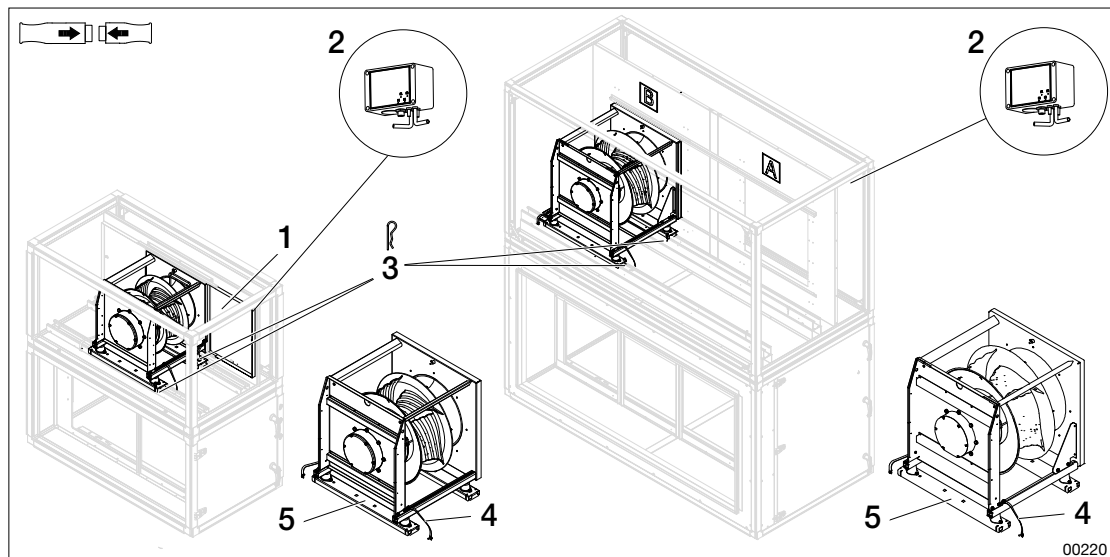


Figure: Remove the fan and reassemble

- | | |
|---------------------------|---------------------|
| 1. Cover plate | 4. Earthing braid |
| 2. Pressure sensor module | 5. Top sliding rail |
| 3. Pins/screws | |

6.4.1 Disassembling the fan

1. Unscrew the pressure sensor module, but make sure to not loosen hoses or cables attached to the module.
2. Unscrew the cover plate and lift it out (including the screws).
3. Unscrew the earthing braid from the rail on the unit part.
4. Loosen the temperature sensor and remove it through the hole on the fan frame.
5. Unscrew the quick connectors between the fan and the unit part. See "[6.3 Quick connectors](#)", [page 21](#).
6. Disconnect the pressure sensor hoses between the fan and pressure sensor module.
7. Pull the pins/screws out of the rails (two per fan) and pull the fan out.
8. Screw the corner struts together against the adjacent unit parts. See "[6.2.1 Join with screw joints](#)", [page 20](#).

6.4.2 Reassemble/Refit fan

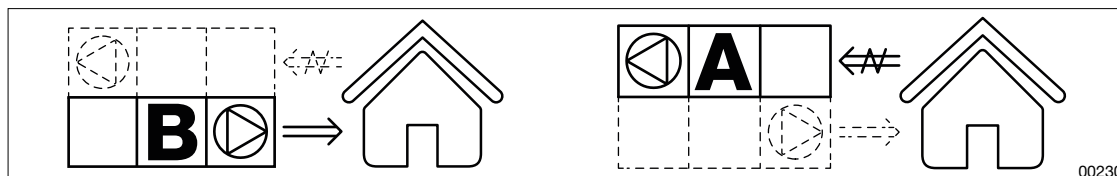


Figure: Fan label – the arrow direction indicates whether the fan is for supply air or extract air. For multi-fan installations, A/B/C, etc. indicates the fan position in the unit, as seen from the inspection door.

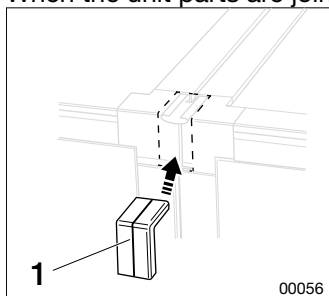


- Before inserting the fan, make sure that the pressure sensor module is not in the way. If necessary, remove it as per the instructions in "[6.4.1 Disassembling the fan](#)", page 22.
- Make sure that each fan is fitted in the correct place (supply air/extract air, and placement order). See fan label (pictured above).
- When connecting pressure sensor hoses, make sure that each hose is correctly connected to the pressure sensor module. The red (pink) hose must be connected to the red connector and the white (translucent) hose to the white connector.
- Ensure that hoses hang freely (not pinched).
- Ensure that hoses cannot be sucked into the fan.

1. Lift the fan onto the unit's rails and slide it to the far end of the unit part. Make sure the fan is turned correctly so that hoses and cables from the pressure sensor module can be connected.
2. Screw on the cover plate.
3. Screw the earthing braid to the unit's rail. If the fan is refitted, use the supplied self-tapping screw.
4. Insert the pins or self-tapping screw through the holes in the rails.
5. Firmly press the temperature sensor into the hole on the fan frame.
6. Screw the quick connectors together. See "[6.3 Quick connectors](#)", page 21.
7. Shorten the pressure sensor hoses to the correct length and assemble the hoses between the fan and the pressure sensor module. See information box above.
8. Gather the cables together and use cable ties to fasten them to the inner wall of the unit. Make sure that they are not pinched when the inspection door closes.
9. Gather the hoses together and use cable ties to fasten them to the cables. Make sure that they are not pressed together or pinched.
10. Screw on the pressure sensor module with the front facing outwards.

6.5 Fit cover detail on join

1. When the unit parts are joined together, put the cover detail (1) over the join.



2. Make sure it is really well fixed.



7 ASSEMBLE, VERSIONS



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.

00178



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.

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7.1 Before assembly

- See "[1 SAFETY](#)", [page 5](#)
- See "[4 LIFT THE UNIT](#)", [page 15](#)
- See "[5 PREPARE ASSEMBLY](#)", [page 18](#)
- See "[6 ASSEMBLY, GENERAL](#)", [page 19](#) for detailed instructions in the steps.
- Get the layout drawing on IV Produkt's order portal (Technical data). See "[2.1 IV Produkt's order portal, support](#)", [page 10](#).

7.2 Assemble Envistar Top thermal wheel (TER, TXR)

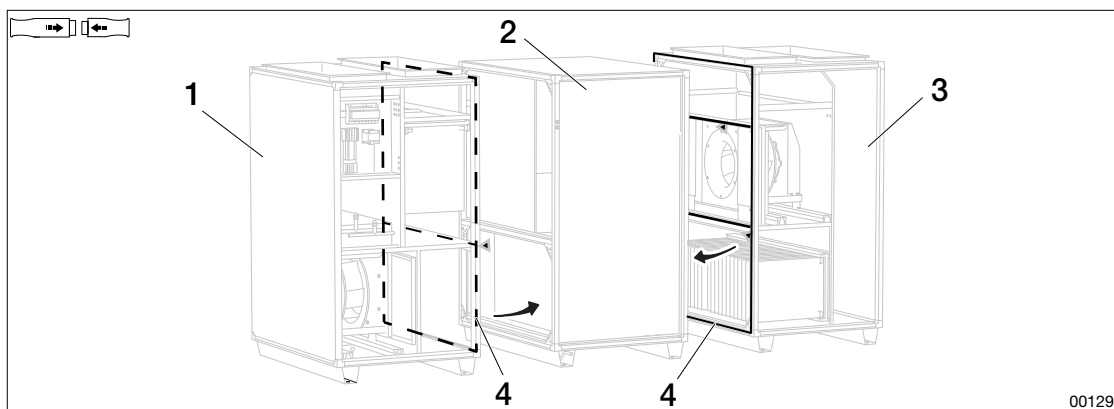


Figure: Envistar Top thermal wheel in left-hand version: location of sealing strips

- | | |
|--|---------------------|
| 1. Supply air part | 3. Exhaust air part |
| 2. Thermal wheel part (no sealing strip) | 4. Sealing strips |

1. Read ["7.1 Before assembly", page 24.](#)
2. Get out layout drawings and tools.
3. Assemble adjuster feet (accessories) if these are included.
4. Fit sealing strips. Note in particular the horizontal sealing strips on profile/plate edges, above and below fan inlet as shown in the previous figure.
5. Push and fit together the thermal wheel part and the exhaust air part.
6. Push and fit together the supply air part and the thermal wheel part.
7. Connect the unit parts together with quick connectors and assemble other control equipment.
8. Fit cover details at the joints.
9. Reassemble cover plugs to prevent internal leakage.
10. Connect drainage and water trap. See ["11.3 Connect drainage pipe to floor drain", page 39.](#)
11. Ensure everything is properly assembled.

7.3 Assemble Envistar Top thermal wheel/EcoCooler (TECO/TECX)

See ["6 ASSEMBLY, GENERAL", page 19.](#)



Assembly Instructions Envistar Top

7.4 Assemble Envistar Top thermal wheel/EcoCooler (TEC-R)



The drainage pipe must not cause a high pressure drop. Avoid long and/or thin pipeline or hose.

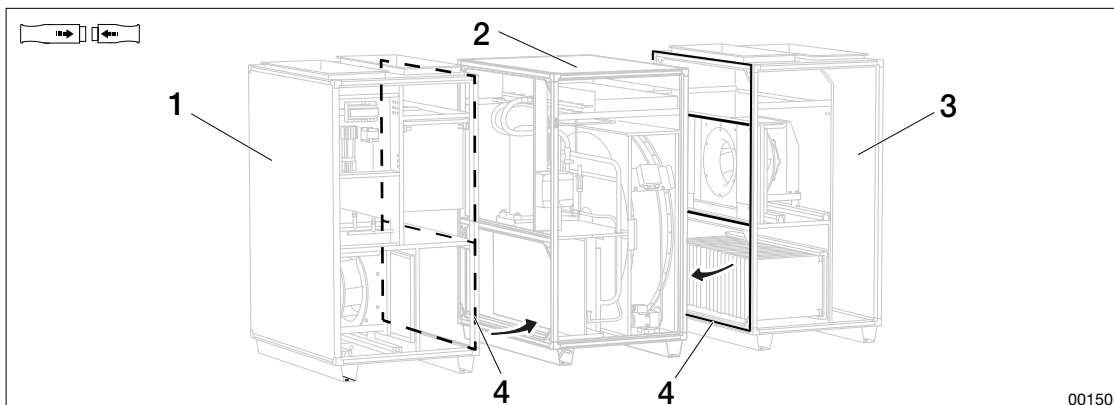


Figure: Envistar Top thermal wheel/EcoCooler in left-hand version: location of sealing strips

- | | |
|------------------------------------|---------------------|
| 1. Supply air part | 3. Exhaust air part |
| 2. Cooling part (no sealing strip) | 4. Sealing strips |

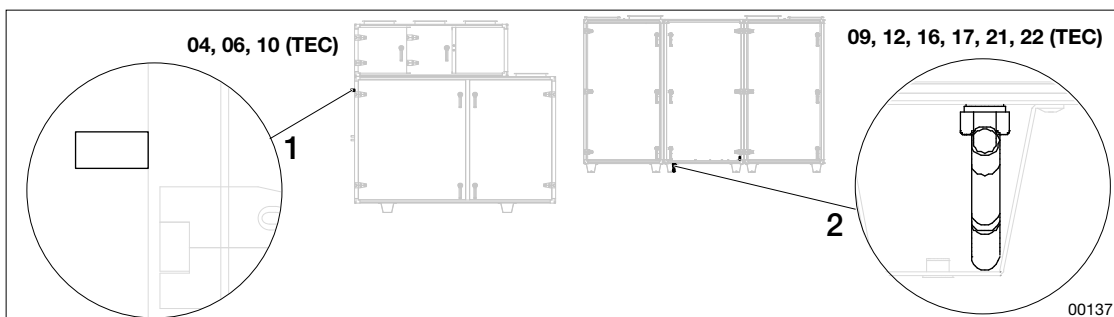


Figure: Envistar Top EcoCooler

- | | |
|--|--|
| 1. Condensation drains size 04, 06, 10 | 2. Integrated water trap on sizes 09, 12, 16, 17, 21, 22 |
|--|--|

1. Read "[7.1 Before assembly](#)", page 24.
2. Get out layout drawings and tools.
3. Assemble adjuster feet (accessories) if these are included.
4. Fit sealing strips. Note in particular the horizontal sealing strips on profile/plate edges, above and below fan inlet as shown in the previous figure.
5. Push and fit together the cooling part and the exhaust air part.
6. **For sizes 16, 17, 21, 22: Remove the transport safety (straps) that are on the condenser header and the unit's metal stay and slide the condenser over to the exhaust air part until it falls down and hooks into its final position. Ensure that the condenser is close against the sealing strips.**
7. Push and fit together the supply air part and the cooling part.
8. Connect the unit parts together with quick connectors and assemble other control equipment.
9. Size 04, 06, 10: Connect the condensation drain to the drain of the building, preferably via water trap in case of overpressure.
10. Fit cover details at the joints.
11. Reassemble cover plugs to prevent internal leakage.
12. Sizes 09, 12, 16, 17, 21, 22: Connect the integrated water trap to the drain.
13. Ensure everything is properly assembled.

7.5 Assemble

Envistar Top thermal wheel/ThermoCooler HP (TTC/TTCH)

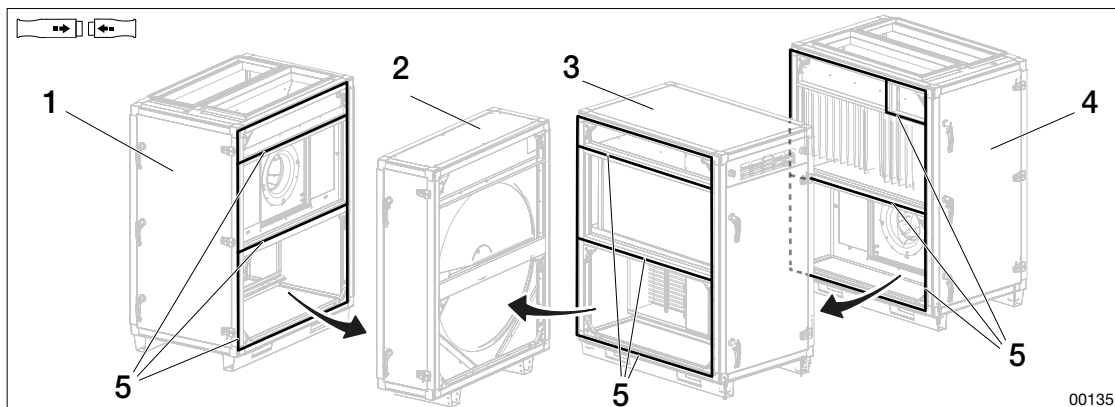


Figure: Envistar Top thermal wheel/ThermoCooler HP in right-hand version: location of sealing strips

- | | |
|--|--------------------|
| 1. Exhaust air part | 4. Supply air part |
| 2. Thermal wheel part (no sealing strip) | 5. Sealing strips |
| 3. ThermoCooler HP | |

1. Read ["7.1 Before assembly", page 24.](#)
2. Get out layout drawings and tools.
3. Assemble adjuster feet (accessories) if these are included.
4. Fit sealing strips. Note in particular the horizontal sealing strips on profile/plate edges, above and below fan inlet as shown in the previous figure.
5. Push and fit together the ThermoCooler HP with the supply air part.
6. Push and fit together the thermal wheel part and ThermoCooler HP.
7. Push and fit together the exhaust air part and the thermal wheel part.
8. Connect the unit parts together with quick connectors and assemble other control equipment.
9. Fit cover details at the joints.
10. Reassemble cover plugs to prevent internal leakage.
11. Connect drainage and water trap. See ["11.3 Connect drainage pipe to floor drain", page 39.](#)
12. Ensure everything is properly assembled.



Assembly Instructions

Envistar Top

7.6 Assemble Envistar Top counter-flow exchanger (TEM, TXM)

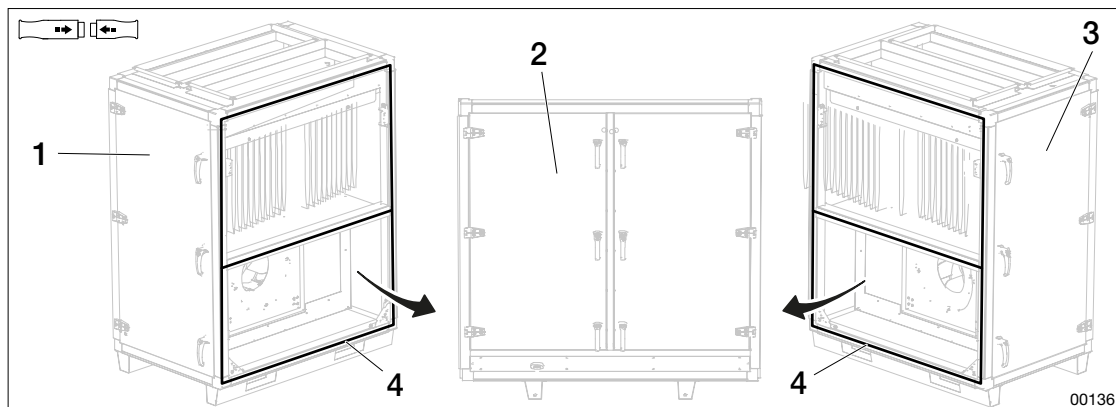


Figure: Envistar Top counter-flow exchanger in left-hand version: location of sealing strips

- | | |
|---|--------------------|
| 1. Exhaust air part | 3. Supply air part |
| 2. Counter-flow exchanger part (no sealing strip) | 4. Sealing strips |

1. Read "[7.1 Before assembly](#)", page 24.
2. Get out layout drawings and tools.
3. Assemble adjuster feet (accessories) if these are included.
4. Fit sealing strips.
5. If the counter-flow exchanger is in sectioned configuration, assemble the part according to "[14. Ensure everything is properly assembled](#)", page 29.
6. Push and fit together the exhaust air part and supply air part with the counter-flow exchanger part.
7. For sizes 04, 06 and 10 in block design: Pull the red hoses (plus) from the supply air part and the exhaust air part to the counter-flow exchanger part and connect with the respective hose ends up in the filter part.
8. Connect the unit parts together with quick connectors and assemble other control equipment.
9. Fit cover details at the joints.
10. Reassemble cover plugs to prevent internal leakage.
11. Connect drainage and water trap. See "[11.3 Connect drainage pipe to floor drain](#)", page 39.
12. Ensure everything is properly assembled.

7.7 Assemble Envistar Top counter-flow exchanger/EcoCooler (TEC-M)

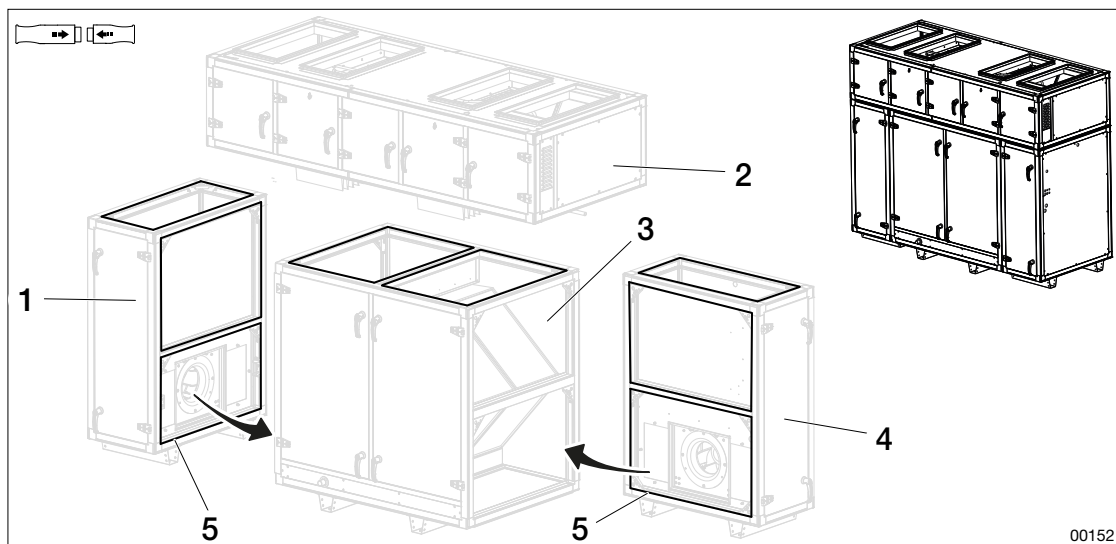


Figure: Envistar Top counter-flow exchanger/EcoCooler in left-hand version: location of sealing strips

- | | |
|---|--------------------|
| 1. Exhaust air part | 4. Supply air part |
| 2. Cooling part (no sealing strip) | 5. Sealing strips |
| 3. Counter-flow exchanger part (no sealing strip) | |

1. Read ["7.1 Before assembly", page 24.](#)
2. Get out layout drawings and tools.
3. Assemble adjuster feet (accessories) if these are included.
4. Fit sealing strips.
5. If the counter-flow exchanger is in sectioned configuration, assemble the part according to ["7.8 Assemble counter-flow exchanger in sectioned configuration", page 30](#)
6. Push and fit together the exhaust air part and supply air part with the counter-flow exchanger part.
7. For sizes 04, 06 and 10 in block design: Pull the red hoses (plus) from the supply air part and the exhaust air part to the counter-flow exchanger part and connect with the respective hose ends up in the filter part.
8. Lift up the cooling part and place over the other parts.
9. Attach the cooling part to the other parts.
10. Connect the unit parts together with quick connectors and assemble other control equipment.
11. Fit cover details at the joints.
12. Reassemble cover plugs to prevent internal leakage.
13. Connect drainage and water trap. See ["11.3 Connect drainage pipe to floor drain", page 39.](#)
14. Ensure everything is properly assembled.



7.8 Assemble counter-flow exchanger in sectioned configuration

The counter-flow exchanger can be disassembled for easier passage through confined spaces.

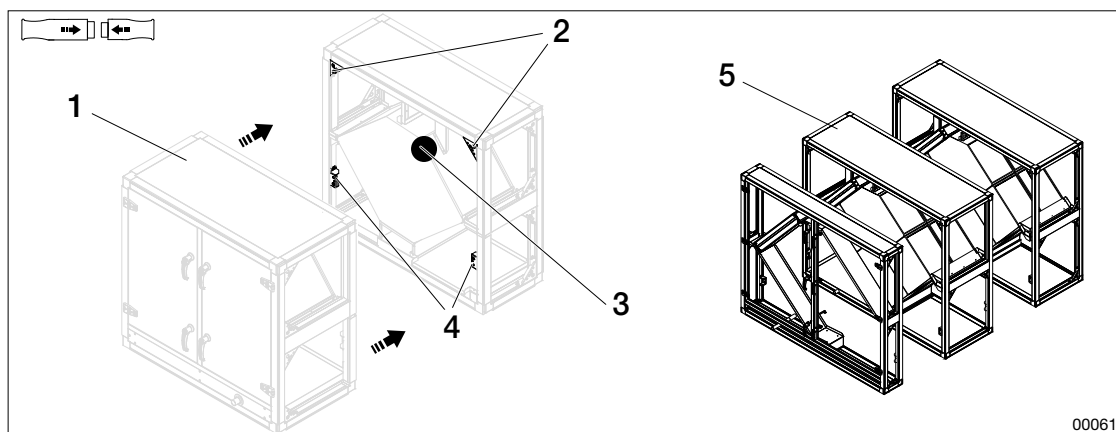


Figure: Counter-flow heat exchanger, sectioned configuration

- | | |
|---|------------------|
| 1. Corner strut | 3. Joint fixings |
| 2. Approximate location of quick connectors | |

Take apart counter-flow heat exchanger

1. Divide the electric quick connectors for the damper motors. See "[6.3 Quick connectors](#)", [page 21](#).
2. Loosen hoses.
3. Loosen and remove bolts and screws in corner struts and joint fixings.
4. Pull the parts apart without damaging the sealing strip between the parts.

Assemble counter-flow exchanger.

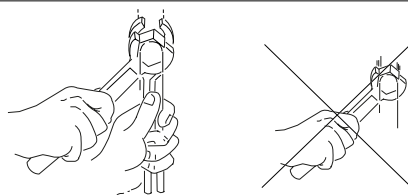
1. Slide the parts together without damaging the sealing strip.
2. Screw the parts together on the corner struts and joint fixings.
3. Fit back hoses.
4. Put together the quick connectors for the damper motors.
5. Connect drainage.

8 CONNECT COIL, WATER

8.1 Connect coil to pipelines



- In order not to damage the coil, always use a counterhold when connecting.
- Make sure that connecting pipes (including insulation) do not block inspection hatches.



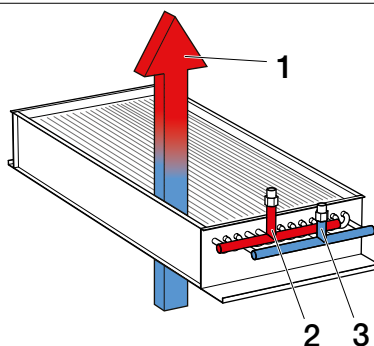
00066

Figure: Pipe connection counterhold

8.2 Connect heating coil, water

1. Connect coil to pipeline.
2. Connect frost protection on heating coil.
3. Connect bleeding and drainage.

8.2.1 Heating coil, water (ETAB-VV) in unit



00139

Figure: Connection coil, waterborne heating (ETAB-VV)

1. Air direction
2. Connection incoming pipes (heating water)
3. Connection return pipe (heating water)

Connection pipe for incoming hot water must be connected in the counter-flow direction.



Assembly Instructions Envistar Top

8.2.2 Heating coil, water (ETAB-TV) in unit



The pressure relief valve for excess fluid should be mounted vertically on the return pipe, in connection with drainage that cannot be closed off.

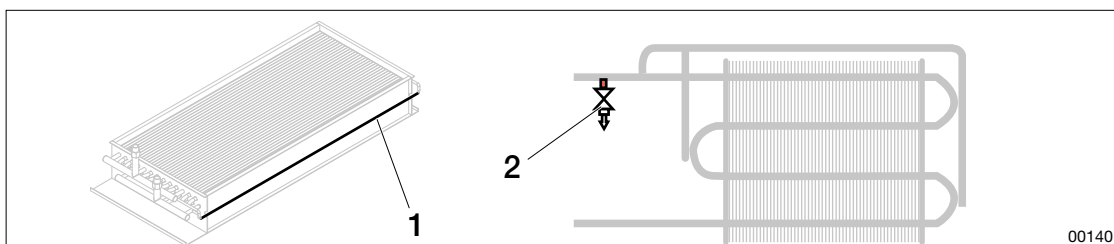


Figure: Connection Thermoguard configuration (ETAB-TV)

1. Pipe for excess fluid in case of risk of freezing
2. Pressure relief valve (Not included in IV Produkt delivery)

Thermoguard coils:

- are marked with inlet and outlet, respectively, on the fluid side, as well as air direction.
- delivered, as standard, for vertical assembly (horizontal air stream).
- must always have the possibility of pressure relief via the coil return line out to the expansion vessel, regardless of whether the control valve is open or closed. This applies to all kinds of control valves, shunt couplings and the like.

8.3 Connect cooling coil, water

1. Connect coil to pipeline.
2. Connect drainage. See "[11 CONNECT DRAINAGE, WATER TRAP](#)", page 38.
3. Connect bleeding and drainage.

8.3.1 Cooling coil, water (ETKB-VK) in duct

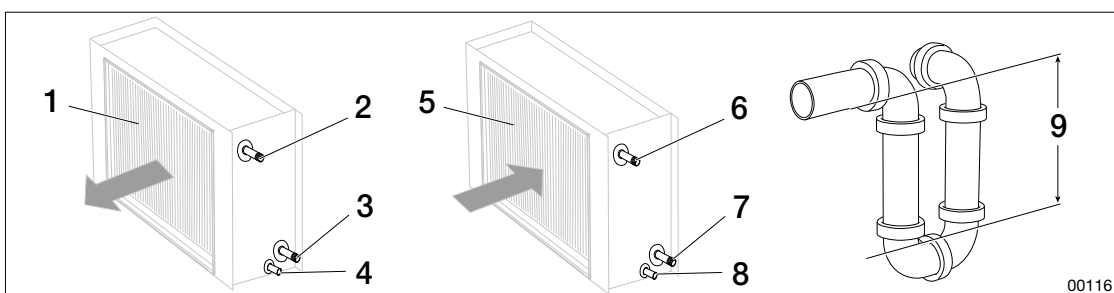


Figure: Cooling coil (ETKB-VK)

1. Cooling coil left-hand version
2. Inlet
3. Outlet
4. Connection water trap
5. Cooling coil right-hand version
6. Outlet
7. Inlet
8. Connection water trap
9. Water trap 100 mm (+ 10 mmvp/100Pa)

For duct assembly see "[12 DUCT CONNECTION, DUCT ACCESSORIES](#)", page 40.

The cooling coil must be connected for horizontal air stream and so that the water flows towards the air stream. The water trap must have a height of at least 100 mm (9) and be increased by 10 mm for every 100 Pa in addition to 1000 Pa.

8.4 Connect frost protection sensor



The sensor is placed at the coldest point of the coil, i.e. on the outgoing fluid assembly tubes.

Frost protection sensor is connected to prevent ice from forming in the pipe lines of the coil.

8.4.1 Contact clamp on detector



- The sensor must always be placed after any duct coils (heating/cooling) and not in a sound attenuator.
- Location of measuring sockets for pressure control should be at least 1 m from duct connection, so as to avoid disturbing turbulence.

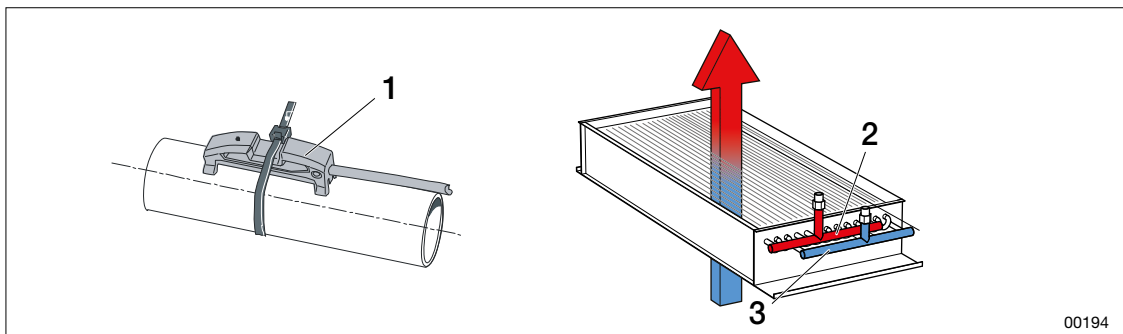


Figure: Clamp on detector

1. Clamp on detector placed on pipe
2. Outgoing fluid at top, clamp on sensor up

3. Outgoing fluid at bottom, clamp on sensor down

8.5 Connect bleeding and drainage

Connecting pipes shall be equipped with:

- venting at the highest point
- drainage at the lowest point

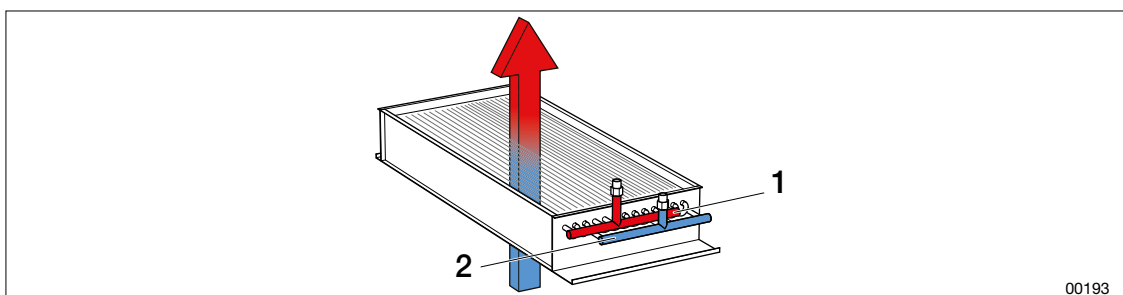


Figure: Bleeding and drainage

1. Nipple for bleeding

2. Nipple for drainage



Assembly Instructions Envistar Top

8.6 Assemble valve actuator

Assembly is carried out according to the accompanying instructions from IV Produkt's supplier. See order-specific documentation on IV Produkt's order portal.

The control valve (shunt valve), which regulates water temperature to heating or cooling systems is operated by a valve actuator attached to a control unit. The valve may be of two- or three-way type depending on the connected heating source.

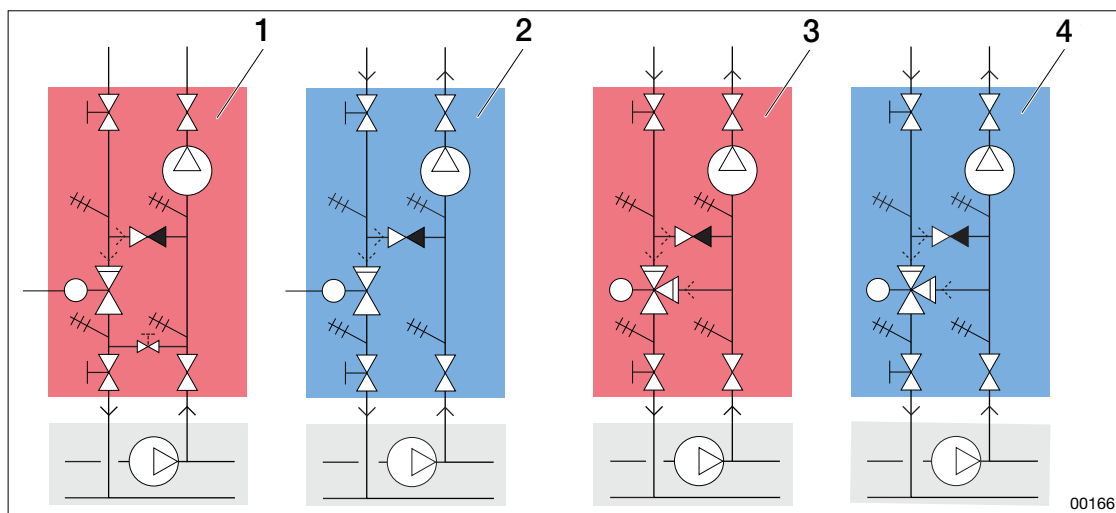


Figure: Control valve in different configurations

- | | |
|-------------------------------------|---|
| 1. District heating - two-way valve | 3. Own heating source - three-way valve |
| 2. District cooling - two-way valve | 4. Own cooling plant - three-way valve |

8.7 Assemble pump, pipework package

The pump is only included in IV Produkt Accessories: Pipework package. For information and assembly, see separate product sheet "Pipework package STD-05, specification and assembly instructions" at IV Produkt's order portal. Other pumps are provided by the customer and installed on the customer's responsibility.

9 CONNECT COIL, ELECTRIC

9.1 Connect heating coil, electric



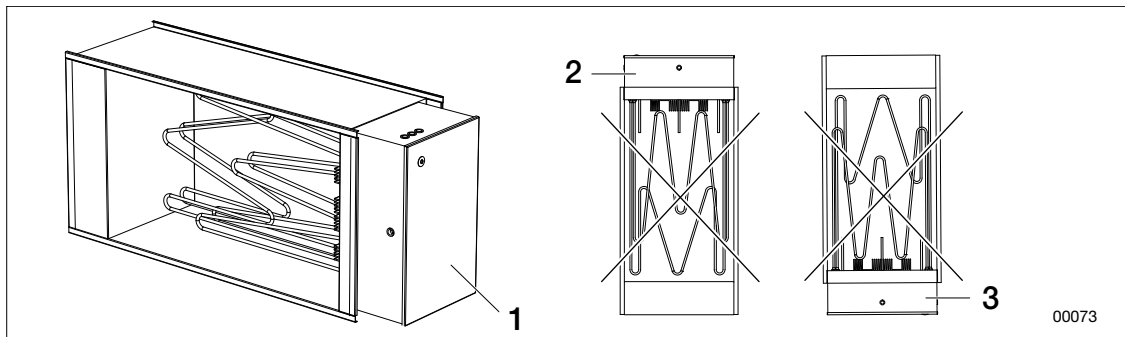
WARNING!

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



00073

Figure: Air heater electric

1. Cover for connection box
2. Connection box - not to be mounted upwards
3. Connection box - not to be mounted downwards

The distance from the sheet metal casing of the air heater to wood or other combustible material, must be 100 mm or more.

9.1.1 Heating coil, electric (ETKB-EV) in duct

The air heater, adapted for assembly in duct systems, requires separate connection. The air flow direction through the air heater must correspond with the direction arrow on the air heater. See "[12 DUCT CONNECTION, DUCT ACCESSORIES](#)", page 40.

The heater can be connected in horizontal or vertical ducts with the connection box to the side.

The distance from the air heater to duct elbows, dampers, filters or the like, should be at least the distance corresponding to the diagonal measurement of the heater (from corner to corner in the heater's duct section). If the distance is smaller, the air stream through the heater can become uneven and the overheat protection can be tripped.

The air heater is insulated according to the applicable rules for ventilation ducts/ventilation units and with non-combustible insulating material. The type plate and warning plate must be fully visible and the cover must be possible to open. The air heater must be accessible for replacement and servicing.



10 CONNECT CONTROL EQUIPMENT



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.

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If the unit is supplied with control equipment, obtain order-specific drawings from IV Produkt's order portal. Connection of control equipment (power supply, fuse protection other components, fans etc.) not specified in this section is done by a competent technician as instructed in Operation and Maintenance for the unit.

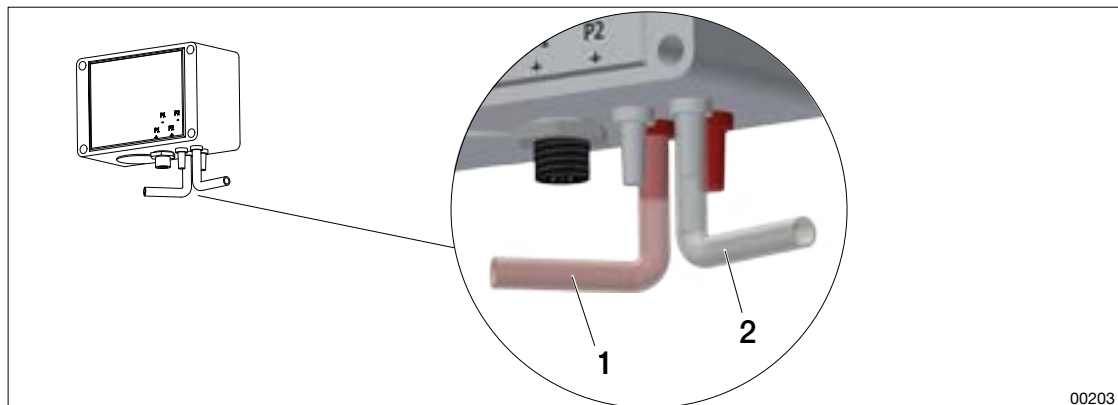
10.1 Connect quick connectors between unit parts

Connect together all quick connectors between unit parts. See "[6.3 Quick connectors](#)", [page 21](#) and "[11 CONNECT DRAINAGE, WATER TRAP](#)", [page 38](#).

10.2 Connect hoses for pressure control



- Location of measuring sockets for pressure control should be at least 1 m from duct connection, so as to avoid disturbing turbulence.



00203

Figure: Hoses for pressure control connected to pressure sensors

1. Pink/red hose for pressure control of supply air
2. White/transparent hose for pressure control of extract air

1. Connect pink/red hose from pressure sensor to supply air duct (red connection).
2. Connect white/transparent hose from pressure sensor to extract air duct (white connection).

10.3 Connect supply air temperature sensor



- The supply air temperature sensor must always be placed after any duct coils (heating/cooling)
- The supply air temperature sensor must not be placed in a sound attenuator.

The sensor is connected to the control cabinet before delivery and hangs under the cabinet in a pretzel form.

1. After the unit is fitted together: pull the sensor to an appropriate point in the supply air duct.
2. Screw the holder to the sensor, in the duct.
3. Connect the sensor in the holder.



11 CONNECT DRAINAGE, WATER TRAP

- All drainages must be connected to separate water traps, which after these can be connected to a common drain.
- Use separate drainage and water traps for negative pressure and positive pressure.

For instructional videos see IV Produkt's order portal:

[Water trap site-built assembly](#)

[Water trap prefabricated MIET-CL-04 assembly.](#)

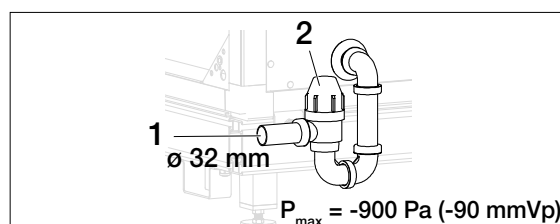
11.1 Connect water trap MIET-CL-04 (accessories)



MIET-CL-04 must not be used with outdoor version, in case of under-pressure. Heating cable pulled through drainage lines and water trap causes the ball not to seal.

- Water traps are always assembled with the cup facing up.

Underpressure (P-)



Overpressure (P+)

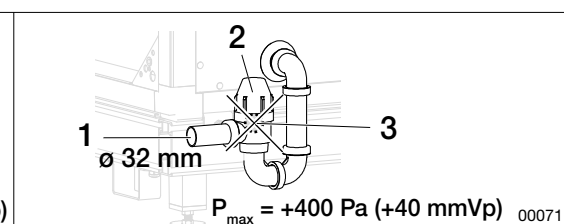


Figure: Water trap (accessory)

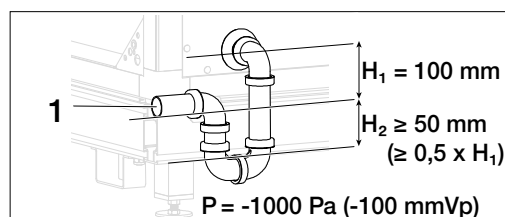
1. Outlet (connected to drain)
2. Cup

3. Ball (inside pipe) is removed with overpressure

11.2 Connect water trap (site built)

- Fill the water trap with water before starting the unit.
- For each additional 100 Pa (over 1000 Pa), H_1 and H_2 are increased by 10 mm.

Underpressure (P-)



Overpressure (P+)

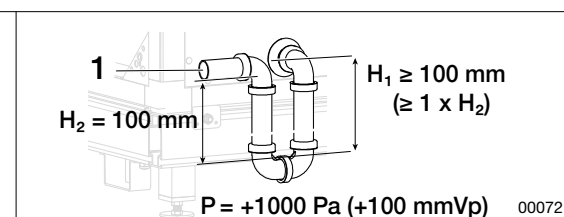


Figure: Water trap (site-built)

1. Outlet (connected to drain)

11.3 Connect drainage pipe to floor drain

The instruction applies to TEC (09, 12, 16, 17, 21, 22) and TTC (06, 09, 10, 12, 16, 17, 21, 22). The drainage pipe on the unit is connected to the floor drain pipe with an NC coupling, which is loosely taped inside the support foot (hat profile).

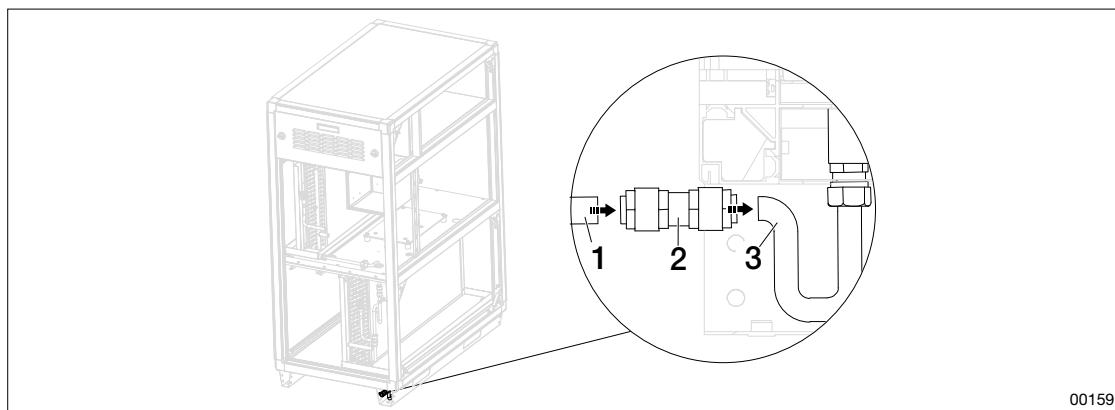


Figure: Drainage pipe and NC coupling

- | | |
|---|-------------------------|
| 1. Drainage pipe to floor drain (Ø 15 mm) | 3. Water trap (Ø 15 mm) |
| 2. NC coupling | |

1. Remove the loose NC coupling from the hat profile.
2. Push the NC coupling over the protruding drainage pipe on the unit until it stops, about 30 mm. If it is correctly positioned, it should not be possible to twist or remove with hand force.
3. Push the floor drain drainage pipe into the open end of the NC coupling.
4. Push the drainage pipe down into the floor drain.
5. Feel and make sure that everything is securely connected and that the drainage pipe cannot jump out of the floor drain.



Assembly Instructions Envistar Top

12 DUCT CONNECTION, DUCT ACCESSORIES

Duct accessories are placed according to set-up drawing. Order-specific drawings can be downloaded at IV Produkt's order portal (Technical Data). See ["2.1 IV Produkt's order portal, support", page 10.](#)

12.1 Connect to ducts

The unit is supplied with either rectangular or circular connection sleeves.

12.1.1 Connect to rectangular duct

Sleeve couplings on rectangular duct connections must be supplemented with sealing strip and connected with guide strips.

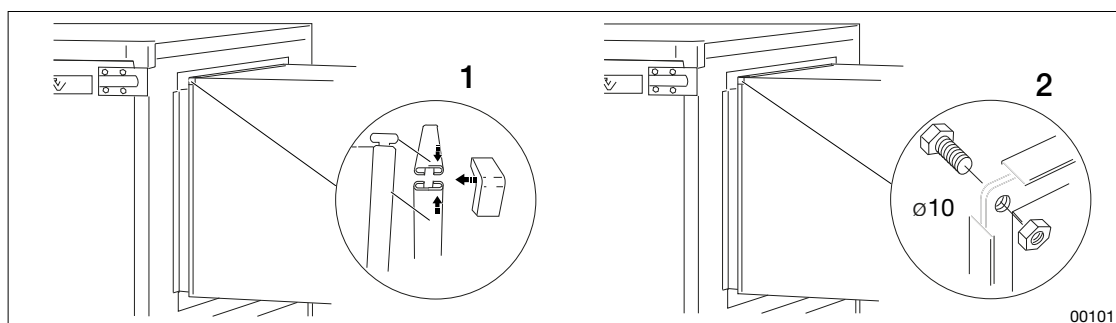


Figure: Rectangular duct connection

1. Option 1: The ducts are connected with a gasket, guide pin and outer corner.
2. Option 2: The ducts are connected with screws in the corners of the frame.

12.1.2 Connect to circular duct

Sleeve couplings on circular duct connections are equipped with rubber ring sealing.

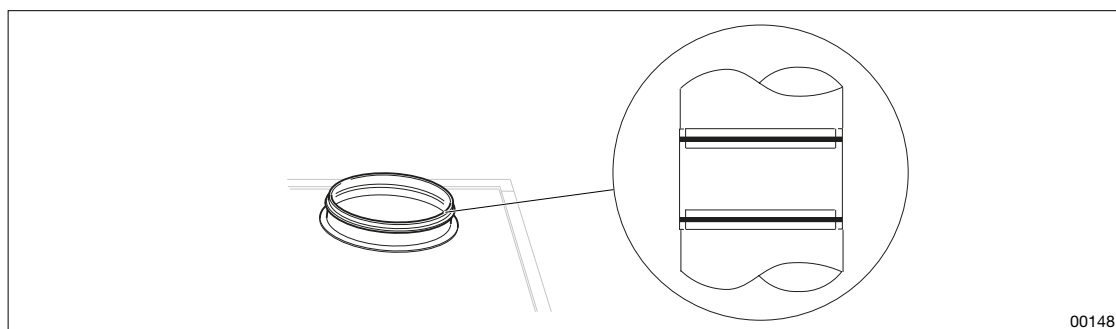


Figure: Circular duct connection with Spiro pipe

12.1.3 Connect sleeve (accessories)

If the duct sleeves are connected for dampening vibrations, the duct insulation is fitted over the entire connection.

12.2 Connect duct coils

The distance after a duct elbow, damper or similar must be at least three times the duct dimension to obtain smooth air distribution. See "8 CONNECT COIL, WATER", page 31 and "9 CONNECT COIL, ELECTRIC", page 35.

The coils have a rectangular connector for the guide system.

12.3 Connect damper (ETSP-UM, ETSP-TR)

Dampers can be fitted for horizontal or vertical air stream. Envistar Top supplied with rectangular or circular dampers, depending on the size of the unit and duct connection.

12.4 Connect sound attenuator (ETET-LD)

The unit is supplied with either a rectangular or circular sound attenuator depending on the size of unit and duct connections.



13 AFTER ASSEMBLY

13.1 Subsequent inspection and maintenance

**CAUTION!****Risk of damage to the product.**

Swarf from drilling left behind after assembly can lead to corrosion in 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

| Area | Inspection | Notes |
|-----------------------------------|--|--|
| Covers | Make sure all covers/hatches are in place. | All sides must have covers/hatches. |
| Covers | Ensure that inspection hatches do not jam when opening. | Adjust the hinges of the hatch. If that is not enough, adjust with the support feet. After adjusting with support feet, make sure that the unit does not tilt backwards. |
| The internal surfaces of the unit | Make sure the unit is clean and free of dirt and debris. | Vacuum or brush if necessary. Use a cloth moistened with water. |
| The internal surfaces of the unit | Make sure the unit has no remaining swarf from drilling. | Vacuum or brush after assembly. |

14 SUPPORT

For more support see "[2.1 IV Produkt's order portal, support](#)", [page 10](#) or contact IV Produkt on the telephone numbers and addresses on the last page.

Assembly Instructions Envistar Top



You are welcome to contact us



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Order Portal

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