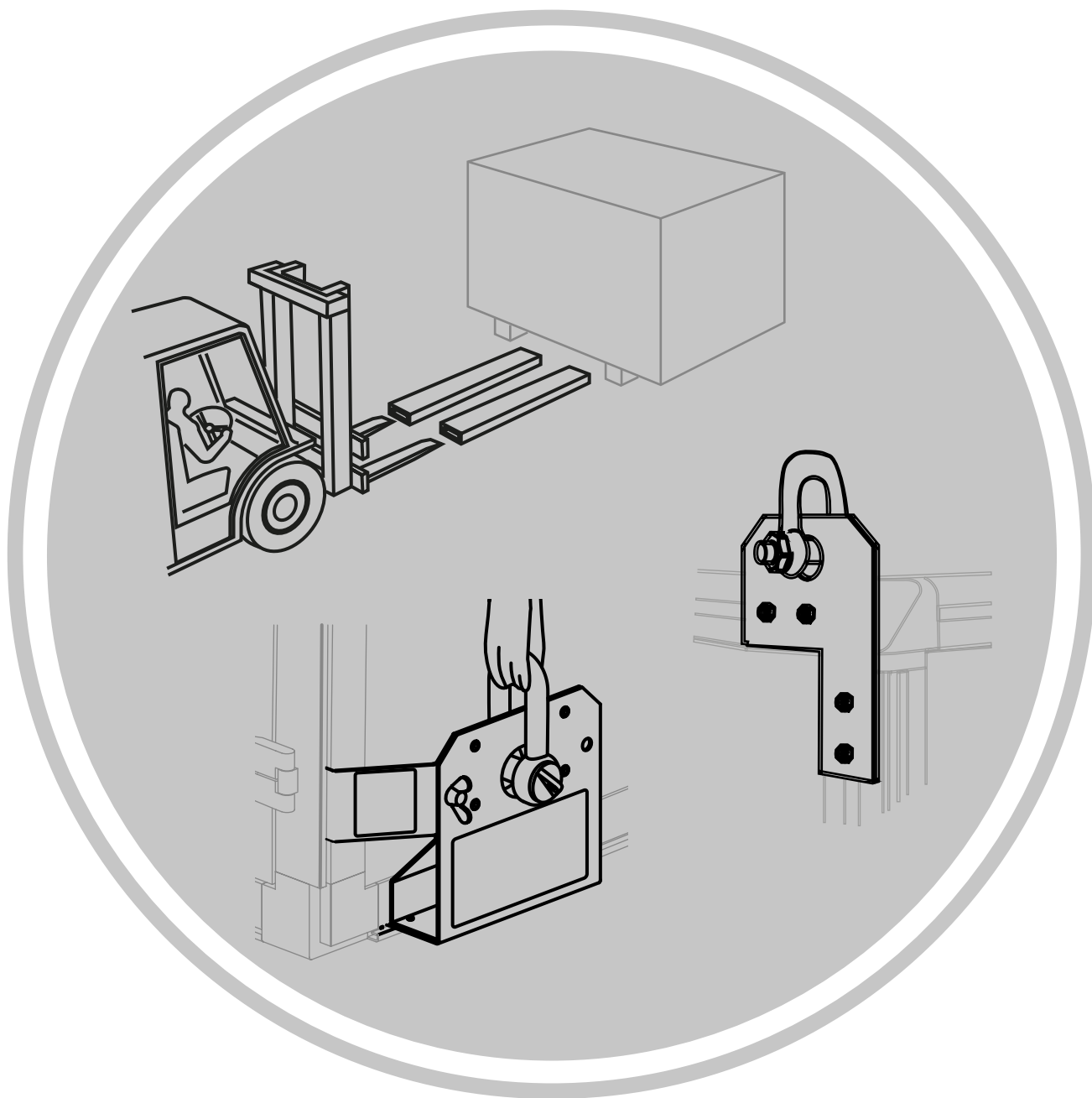




Lifting instructions

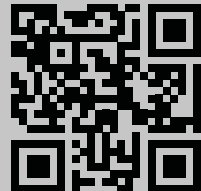
All Air handling units





Documentation for your unit

1. Scan the QR code or enter orderdocs.ivprodukt.com in your browser.
2. Enter your order number.
3. Press ENTER or click search.
4. Select your order.



Is documentation missing?

See information in section

"2.1 Documentation and support", page 6.

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Lifting instructions All Air handling units

1 SAFETY



This manual contains extracts from manuals and is intended as supplementary information.

For more details and other safety precautions regarding lifting, positioning and storage as well as other safety precautions, refer to the assembly instructions for each AHU/unit part.



- 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.

00177

1.1 Intended application

Intended users/use

The content of this manual is intended for personnel lifting or moving AHUs or unit parts. The information must be used together with assembly instructions for the respective AHU/unit part.

1.2 General safety

Personal protective equipment

Personal protective equipment should always be used based on the risks that occur in the workplace. For example, use safety shoes with steel toecaps, hearing protection, a hard hat, gloves, safety glasses, covering clothing, protective overalls, a face mask/protective mask and/or fall protection where the work and work environment require it.

1.3 Lifting equipment and lifting details

The AHU must be lifted in the lifting lugs and using the lifting brackets provided by IV Produkt.

Lifting should be carried out according to the lifting instructions in this document as well as according to the markings and signs on the AHU/unit part. If there are no lifting instructions or markings, lifting must be carried out according to lifting methods developed by the transport industry.

1.4 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.

1.5 General warnings



WARNING!

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

The unit parts are in many cases heavy and cannot be lifted by hand.

- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- For correct lifting and choice of lifting equipment, refer to the weights indicated on the installation drawing.
- Use appropriate lifting equipment.
- Use appropriate protective equipment.
- Lift only one part at a time.

00681



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 higher risk of tipping.

- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- Use appropriate lifting equipment.
- Use appropriate protective equipment.
- Exercise caution when working between unit parts.
- Take care when placing unit parts on the support.
- Use the support to secure the parts against possible tipping risk.

00680



Lifting instructions All Air handling units

2 GENERAL INFORMATION

2.1 Documentation and support

The documentation for your unit is available at IV Produkt's order portal. It may take up to two weeks before all documentation is available on IV Produkt's order portal. The text "Documentation in progress" is displayed until the documentation is complete. If documentation is missing or incorrect, please contact DU/Documentation. For other support, contact the department to which the case applies. See contact information on the back of the manual.

2.2 Informational message, not safety-related



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

00182

2.3 Spare parts

Spare parts list is available at IV Produkt's order portal. Order spare parts and accessories from IV Produkt. See contact information on the back of the manual. Please state the order number and AHU designation from the type plate, located on the unit.

2.4 Abbreviations in the manual

Term	Explanation
Thermal wheel	Rotary heat exchanger
Unit part	Part of the unit. May contain function (for example fan, media etc) but may also be an empty part.



Before lifting, carefully read the SAFETY section. Pay particular attention to the warnings.

2.5 Terms in the manual

2.5.1 Framework

Indoor units mounted on supports (aluminium profiles) have either lifting lugs mounted on the longitudinal beams of the support or strap guides under the cross beams of the support.

Outdoor units are mounted on base frames (aluminium profiles) and have lifting lugs mounted on the longitudinal beams of the base frame. The base frame is available in two heights, 100 mm and 160 mm, depending on the length and weight of the outdoor unit.

The framework of the unit consists of aluminium profiles:

- Size 060-980: 50 x 50 mm (50 profile)
- Size 1080-3150: 60 x 60 mm (60 profile).


2.5.2 Lifting brackets

IV Produkt's brackets are ordered as separate accessories. Each kit consists of four brackets including screws. IV Produkt recommends a kit for each unit part to be lifted.

- EMMT-08 is used for AHUs with 50 profile. The bracket is attached to the profile grooves at the bottom of the AHU. See "[6.1 Lift with lifting bracket, EMMT-08, for 50 profile](#)", page 13.
- EMMT-12 is used for AHUs with 60 profile. The bracket is fixed with screws at the top of the AHU. See "[6.2 Lift with lifting bracket, EMMT-12, for 60 profile](#)", page 14.
- A special variant of the EMMT-12 is used for lifting the large thermal wheel, see "[6.3.2 Lifting thermal wheel size 1580](#)", page 16.

2.5.3 Lifting lugs

Lifting lugs are used as attachment points for shackles and lifting hooks.



CAUTION!
Risk of damage to the product
Supports can be fitted with brackets that are only intended for anchoring during transport (transport protection). Using these for lifting may cause damage to the support or the AHU.

- Do not lift using brackets marked with sticker:

WARNING
NOT FOR LIFTING

THIS LIFTING EYE IS
- ONLY FOR ANCHORING ON TRUCK
- NOT FOR LIFTING THE AHU

00679

2.5.4 Shackle

Shackles are used between straps/chains and lifting lugs or between straps/chains and spreader bar.

2.5.5 Straps

Straps are threaded through a shackle/lifting hook or under the support through a strap guide.

2.5.6 Strap guide

Straps may be pre-mounted depending on the type of unit, unit size and unit part. They are not intended for lifting but serve as placeholders for straps. Threading the straps through the yokes keeps them in place during the lift and prevents them from slipping away causing the AHU to tip over.

2.5.7 Lifting hooks

Lifting hooks are used between straps/chains and lifting lugs or between straps/chains and spreader bars.

2.5.8 Spreader bar

Spreader bars are used to ensure that chains and straps do not rub against the surfaces of the AHU and protruding parts, such as outdoor roofs or dampers. Chains on the spreader bar should be adjustable to compensate for tilting of the AHU so that the AHU or unit parts do not become unstable or end up hanging too unevenly during lifting. See "[4.3 Lifting with lifting brackets, lifting lugs and spreader bar](#)", page 10.

2.5.9 Slip stop

Slip stops are part of the EMMT-08 lifting bracket that prevent the bracket from slipping or detaching during lifting.



Lifting instructions All Air handling units

3 DELIVERY RECEIPT / STOCKHOLDING

3.1 Receive, unpack

Upon receipt, check the goods and their packaging. Make sure there is no damage.

3.2 Packaging and protection

The product's packaging is intended to protect the product from rain and dirt during transport and storage.

The product should be stored in its original packaging for as long as appropriate. If the packaging is removed, the product must be protected so that particles (such as dust and dirt) or water do not enter the functional parts.

If the goods are dirty on arrival, rinse the unit with water and, if necessary, clean according to the operation and maintenance instructions for the relevant unit type.

3.3 Recommended storage

Before assembly, the product should be stored on a flat surface, preferably dry and warm.

If the product is stored outdoors, it must be protected from weather conditions such as rain, snow and direct sunlight. Ventilation inside the unit parts must be secured during storage. The product can be stored in both warm and cold conditions, temperature range -40 °C to +50 °C.



Small amounts of condensate, which occur during storage in changing temperatures, will dry up when the unit is put into operation, but make sure:

- good air circulation between packaging and unit and inside functional parts. Open the packaging to let in air if necessary.
- that the product is protected against extreme temperatures and weather conditions.
- that the product is protected against water penetration so that large amounts of stagnant water do not collect inside the unit.

4 LIFTING METHODS

4.1 Lifting with forklift



When lifting with a forklift, the lifting forks must be as long as the unit packaging or longer.

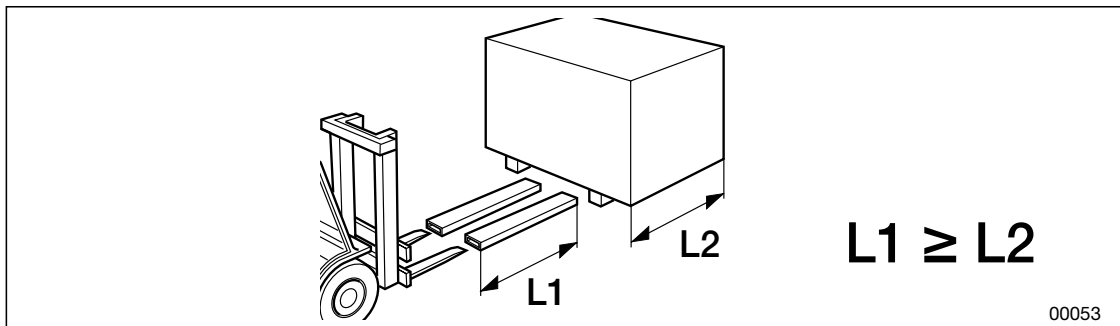


Figure: Lifting with forklift

1. Fork length

2. Aggregate packaging

4.2 Lifting double-stacked parts (parts on top of each other)



Applies to 50 profile.


- Total weight \leq 1600 kg - to be lifted with EMMT-08 lifting brackets mounted at the bottom of the lower part.
- Total weight $>$ 1600 kg - to be lifted with pre-mounted lifting lugs in the base frame.



Lifting instructions All Air handling units


4.3 Lifting with lifting brackets, lifting lugs and spreader bar

CAUTION!
Risk of damage to the product.
Chains/straps that are lying against the AHU may damage the surfaces on the unit and protruding sections.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- Use spreader bars when lifting with protruding sections.
- Maximum angle at lifting hook = 80°.
- Maximum tilt of AHU = 15°.
- The spreader bar should be 100-400 mm wider than the unit.

00682



- If the tilt is greater than the permissible tilt, the chains/straps must be shortened or extended until the tilt is reduced.

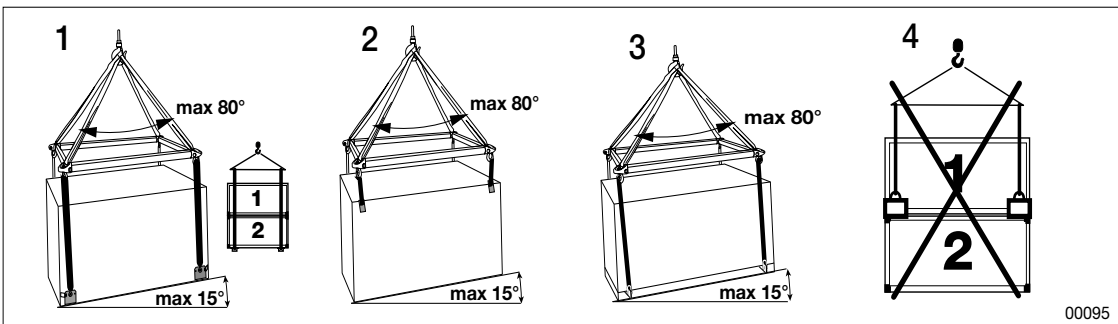


Figure: Example of lifting with spreader bar and tilt

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Lift with EMMT-08 with spreader bar 2. Lift with EMMT-12 with spreader bar | <ol style="list-style-type: none"> 3. Lift in base frame with spreader bar 4. Incorrectly mounted lifting brackets in the centre profile |
|--|--|

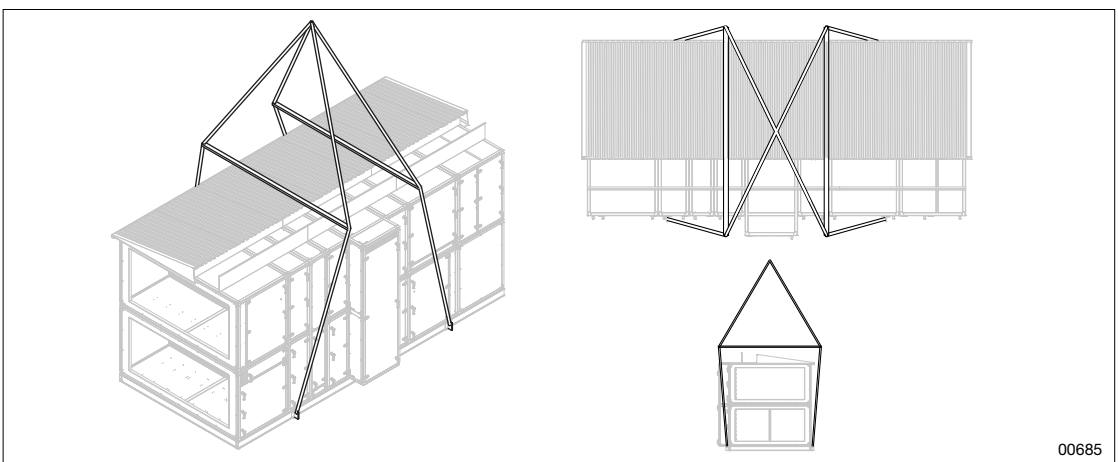


Figure: Example of lifting with spreader bar

5 LIFTING UNIT PARTS ON SUPPORT/BASE FRAME

5.1 Unit part mounted on support



WARNING!

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

Incorrect lifting may cause the AHU or unit parts to come loose and fall.

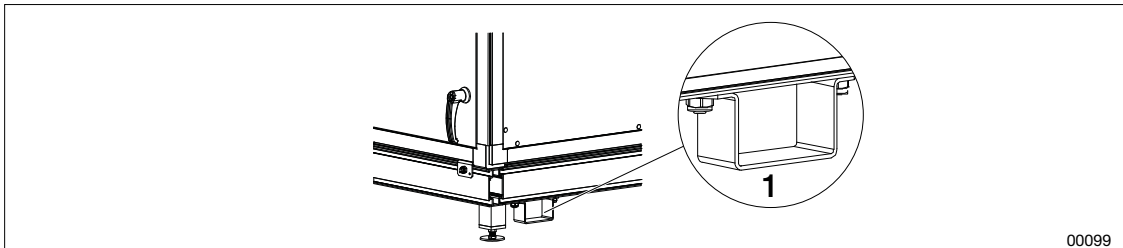
- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- Never exceed the specified weight for the respective lifting method or lifting equipment.
- Factory-fitted strap guides (yokes) must not be moved or loosened.
- The lifting straps must be pulled through the yokes to prevent the straps from slipping away. If the strap guides are not factory-fitted, the person making the lift must ensure that the straps do not slide together or apart during lifting.
- Strap guides (yokes) must not be used as lifting lugs.

00676



- Applies to supports with leg height of 100 mm or more.

1. Pull the straps under the unit support. Make sure that the straps go through the yokes.
2. Lift with suitable lifting equipment.



00099

Figure: Strap guides on support

1. Strap guides (yokes) for passing through straps (4)




Lifting instructions All Air handling units

5.2 Unit mounted on base frame

Lifting lugs are always mounted from the factory. When lifting with straps or chains, the lifting lugs must always be fitted with a shackle or lifting hook.

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

Incorrect lifting may cause the AHU or unit parts to come loose and fall.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- Never exceed the specified weight for the respective lifting method or lifting equipment:
 - Beam 100 mm = Maximum load 3000 kg (750 kg/bracket)
 - Beam 160 mm = Maximum load 5400 kg (1350 kg/bracket)
- Factory-fitted lifting brackets must not be moved or loosened.
- Lifting straps must not be pulled through the shackle/lifting hook.
- Use a shackle with a safety factor of 6:1.

00675

1. Fit a shackle in each of the pre-assembled lifting lugs.
2. Pull the straps through the shackle.
3. Lift with suitable lifting equipment.

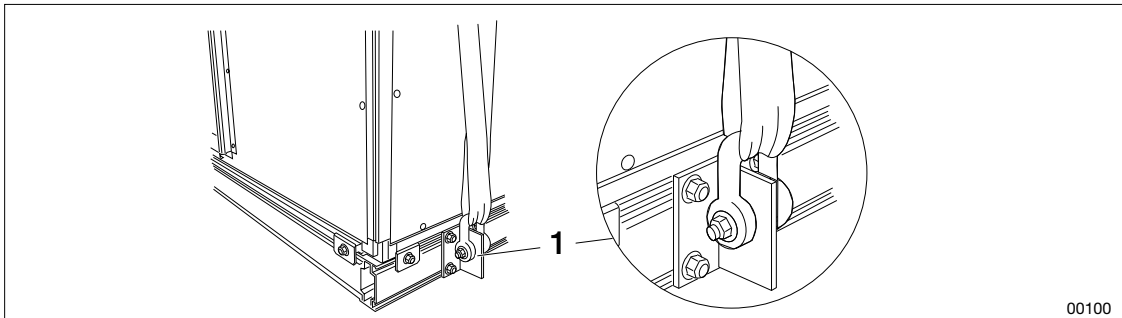


Figure: Lifting lugs pre-mounted on beam frame

1. Lifting lug with shackle (four pieces)

6 LIFTING UNIT PARTS

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

WARNING!

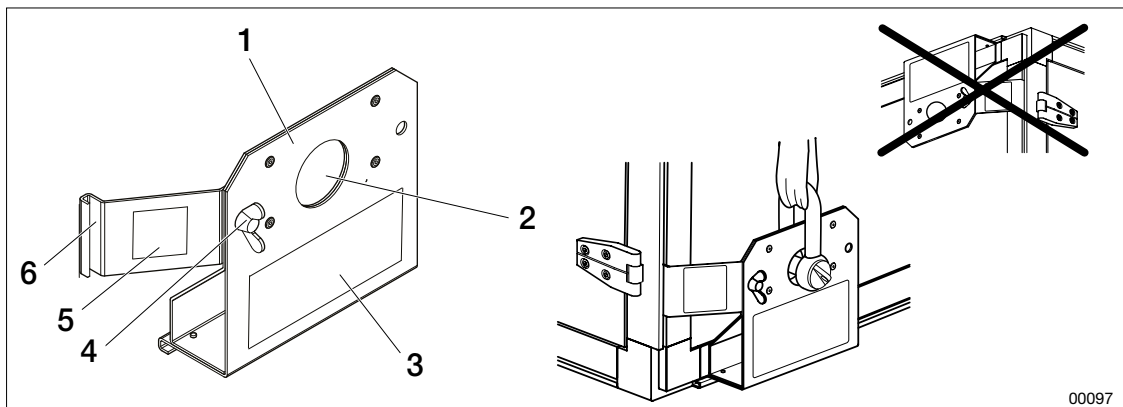
Risk of life-threatening or serious crushing or compression injury.

Incorrect lifting may cause the AHU or unit parts to come loose and fall.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual. See the specification on the sticker affixed to the bracket.
- Never exceed the specified weight for the respective lifting method or lifting equipment:
 - Maximum load 1600 kg (400 kg/bracket)
- The bracket must be mounted in the groove of the lower profile and must not be mounted in any other way.
- The bracket must not be mounted in the middle profile of double-stacked parts.
- Ensure that the bracket slide stop is correctly mounted in the groove of the side profile and secured with the wing nut.
- Use a shackle with safety factor 6:1.
- The bracket must not be used for 60 profiles.

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00097

Figure: Lifting bracket EMMT-08

- | | |
|----------------------------------|--------------------|
| 1. Lifting bracket EMMT-08 | 4. Wing nut |
| 2. Hole for shackle/lifting hook | 5. Decal slip stop |
| 3. Bracket for decal | 6. Slip stop |

EMMT-08 are delivered in sets of four.

1. Place a lifting bracket in the lower four corners of the unit part (ends). The shackle/lifting hook hole must be placed upwards.
2. Push the brackets into the horizontal groove in the unit's aluminium profile.
3. Push the slip stop into the vertical groove in the unit's aluminium profile.
4. Lock the slide stop/bracket by tightening the wing nut.
5. Mount a shackle in each of the marked lifting brackets.
6. Lift with suitable lifting equipment.



Lifting instructions All Air handling units

6.2 Lift with lifting bracket, EMMT-12, for 60 profile

WARNING!

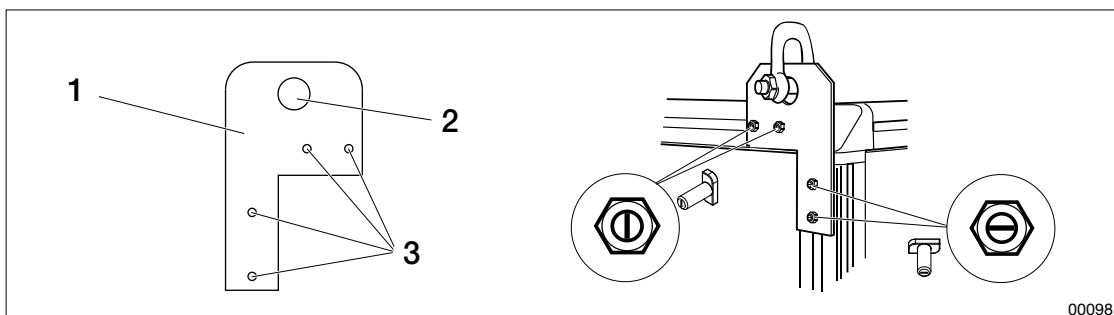
Risk of life-threatening or serious crushing or compression injury.

Incorrect lifting may cause the AHU or unit parts to come loose and fall.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual. See also the sticker affixed to the bracket.
- Never exceed the specified weight for the respective lifting method or lifting equipment:
 - Maximum load 2000 kg (500 kg/bracket)
- The bracket must be mounted in the upper profile with the lifting lug facing upwards and must not be mounted in any other way.
- The bracket must not be mounted in the middle profile of double-stacked parts.
- Ensure that screws are positioned correctly and that the correct tightening torque (24 Nm) is applied.
- T-bolts and nuts become worn during lifting and must be replaced with new ones each time the lifting bracket is moved.
- Use a shackle with a safety factor of 6:1.
- The bracket must not be used for 50 profiles.

00674



00098

Figure: Lifting bracket EMMT-12

1. Lifting bracket EMMT-12
2. Hole for shackle/lifting hook
3. Attachment holes

EMMT-12 are delivered in sets of four.

1. Place the lifting brackets over the top four corners of the AHU (on the longest sides), with the lifting lug upwards.
2. Insert the supplied M8 T-bolts (MB 8×19 FZB 8.8), through the brackets and into the groove in the aluminium profile.
3. Turn the T-bolts so that they are at 90° to the profile groove and are firmly secured under the edges of the groove.
4. Tighten the nuts with a tightening torque of 24 Nm.
5. Mount a shackle in each of the marked lifting brackets.
6. Lift with suitable lifting equipment.

6.3 Lifting rotary heat exchangers



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 higher risk of tipping.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual.
- Use appropriate lifting equipment.
- Use appropriate protective equipment.
- Exercise caution when working between unit parts.
- Take care when placing unit parts on the support.
- Use the support to secure the parts against possible tipping risk. 00680



Separately delivered thermal wheels must be lifted with the specified lifting equipment:

- Size 060-980, 50 profile: Lifting bracket EMMT-08
- Size 1080-1950, 60-profile: Lifting bracket EMMT-12

6.3.1 Lift thermal wheel from truck (wheel size 1250-D1, 1540-D1)

Lifting brackets are placed at different points on the thermal wheel depending on the kind of lift to be performed.

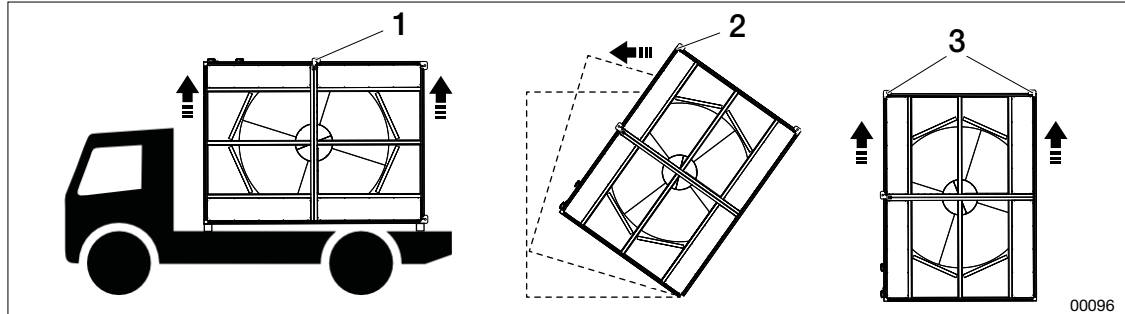


Figure: Lifting of thermal wheel from truck

1. Brackets when lifting from truck
2. Brackets to straighten the thermal wheel to standing
3. Brackets for lifting the thermal wheel to the AHU (air handling unit)





Lifting instructions All Air handling units

6.3.2 Lifting thermal wheel size 1580

The large thermal wheel is lifted with special brackets. See the assembly instructions for each AHU.

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

Incorrect lifting and transport may cause the thermal wheel to come loose and tip over/fall. The design and shape of the thermal wheel entails a high risk of tipping.



- Follow national lifting regulations and recommendations, as well as the instructions in this manual. See also the sticker affixed to the bracket.
- Do not lift the thermal wheel at the upper part of the casing.
- Do not use a forklift to transport the thermal wheel.
- The thermal wheel must be lifted in the factory-fitted brackets.
- Factory-fitted lifting brackets must not be moved or loosened.
- Take great care when lifting and transporting the thermal wheel.

00683

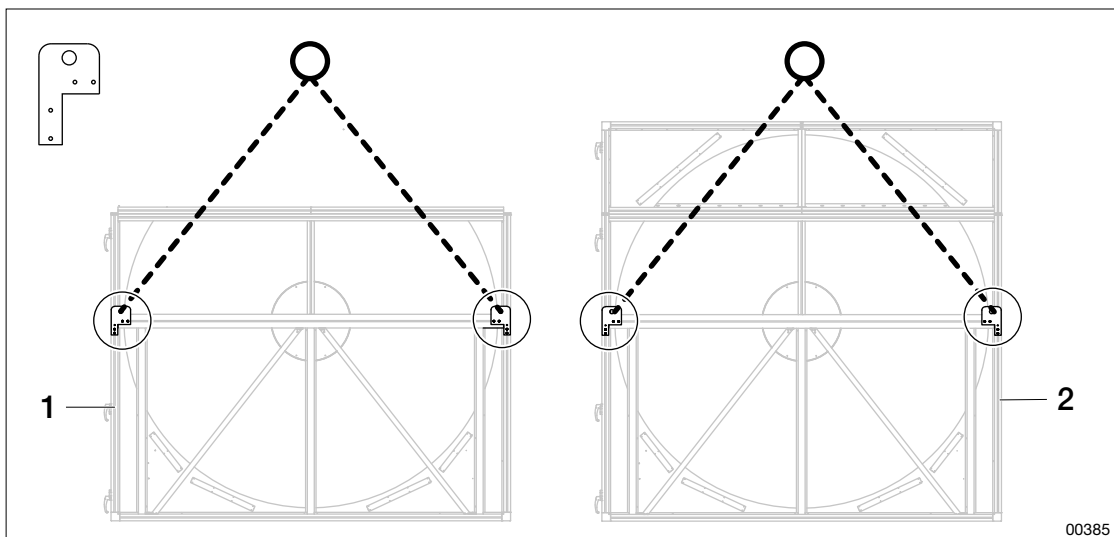


Figure: Lifting thermal wheel size 1580

1. Thermal wheel not assembled, without upper part
2. Thermal wheel assembled, with upper part

Lifting instructions All Air handling units



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
www.ivprodukt.no, www.ivprodukt.dk, www.ivprodukt.de



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
