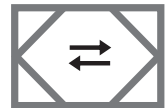


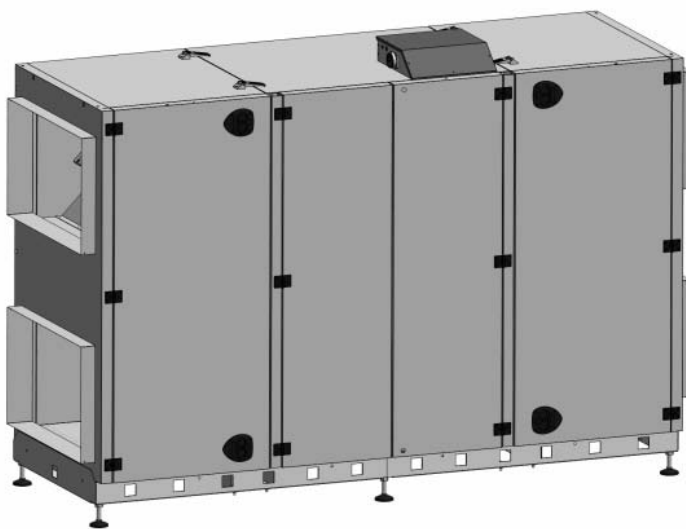
GB

VEX360HX

counter flow heat exchanger, for 3rd party control system



VEX300
R A N G E
COUNTER FLOW
HEAT EXCHANGER



RD12721-01

Unit supplied with (factory fitted):

- FB bag filter
- FP compact filter
- OD - roof for outdoor
- Mounting base (unassembled)
- Frequency converter
- MLON





The following accessories are supplied separately:

- HCW external heating coil (water)
- HCE external heating coil, _____ kW
- CCW cold water coil
- Closing damper, LS500 (LSA exhaust air)
- Closing damper, LS500, (LSF outdoor air)
- Closing damper, LSR500, with spring-return (LSAR exhaust air)
- closing damper, LSR500, with spring-return (LSFR outdoor air)
- _____

Serial no.: _____

Prod. order no.: _____

Sales order no.: _____

-  Product information..... Chapter 1 + 6
-  Mechanical assembly..... Chapter 2 + 3
-  Electrical installation..... Chapter 4
-  Maintenance..... Chapter 5

Original instructions



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Symbols, terms and warnings

Prohibition symbol



Failure to observe instructions marked with a prohibition symbol may result in serious or fatal injury.

Danger symbol



Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the unit.

Scope

This instruction manual is for use with EXHAUSTO VEX-type air handling units. Please refer to the product instructions regarding accessories and extra equipment.

The instructions must be fully observed to ensure personal safety and to protect the equipment and ensure its correct operation. EXHAUSTO A/S accepts no liability for accidents caused by equipment not used in accordance with the manual's instructions and recommendations.

Supply air/extract air

These instructions use the following terms as given in DS447-2013:

- Supply air (air blown in)
- Extract air (air removed)
- Outdoor air
- Exhaust air

Left/Right

The term R for Right, indicates the supply air is to the right of the cooling unit, as seen from the operating side. The term L for Left, indicates the supply air is to the left.

Front page: Accessories

The front page of the instruction manual contains a checklist, detailing the accessories delivered with the VEX unit.

NB

When retrofitting EXHAUSTO accessories, please update the checklist on the front page.

Warnings

No duct connection

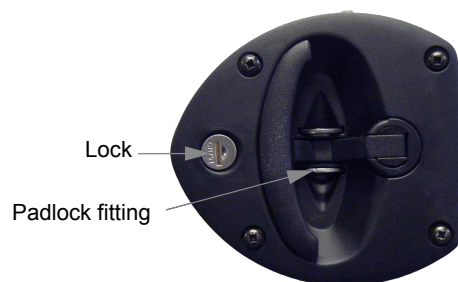


If one or more of the spigots is not connected to a duct: Fit a protective net to the spigots with a maximum mesh width of 20 mm (in accordance with EN294).

Lock the air handling unit during operation

The VEX unit must always be locked during operation:



- Use the cylinder lock in the handle. **Remember** to remove the key from the lock.
- Or use a padlock. Use the handle's built-in padlock fixture.



Information plate

The VEX unit information plate shows:

- VEX model type (1)
- Unit production no. (2)

| | | | |
|---|---|---|--|
|  | |  | |
| Type | V350HREC | Icu = 10kA | |
| | No./Year 1234567/2011 | | |
| Supply | Voltage: 3x230V+PE/3x400V+N+PE ~50Hz | Current: 15A/15A | |
| | | | |
| | | | |

Arrows point from the text 'VEX model type (1)' to the 'Type' field and 'Unit production no. (2)' to the 'No./Year' field.

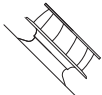


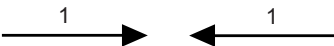
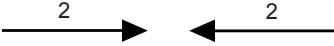
NB:**Have the production number ready at all times when contacting EXHAUSTO A/S.**



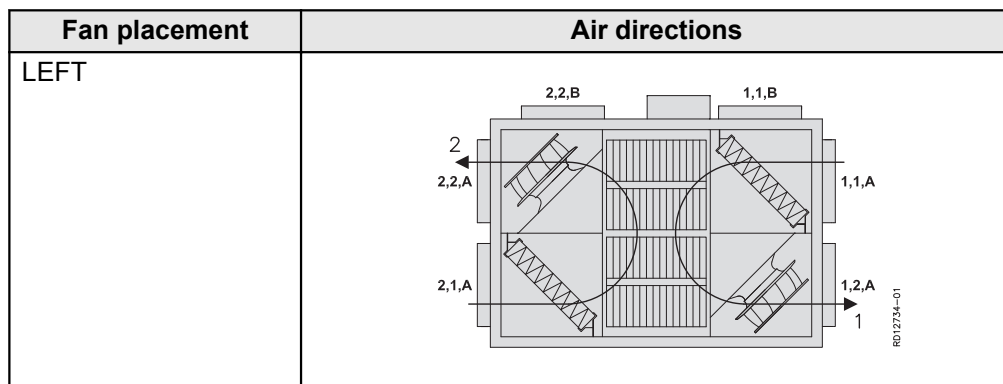
1. Product information

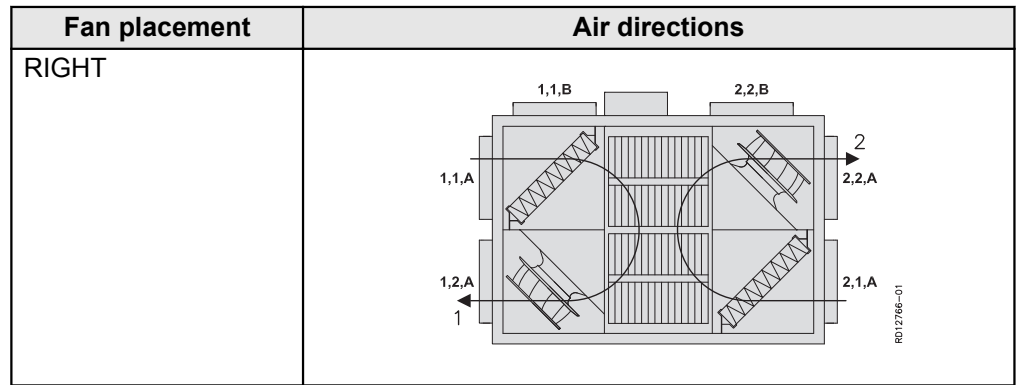
1.1 Designations used in these instructions

1.1.1 Model overview

| Elements | Explanation |
|---|----------------------------|
|  | Fan |
|  | Compact filter |
|  | Bag filter |
| 1,1,A or B | Extract air spigot |
| 1,2,A | Exhaust air spigot |
| 2,1,A | Outdoor air spigot |
| 2,2,A or B | Supply air spigot |
|  | Air direction, extract air |
|  | Air direction, supply air |

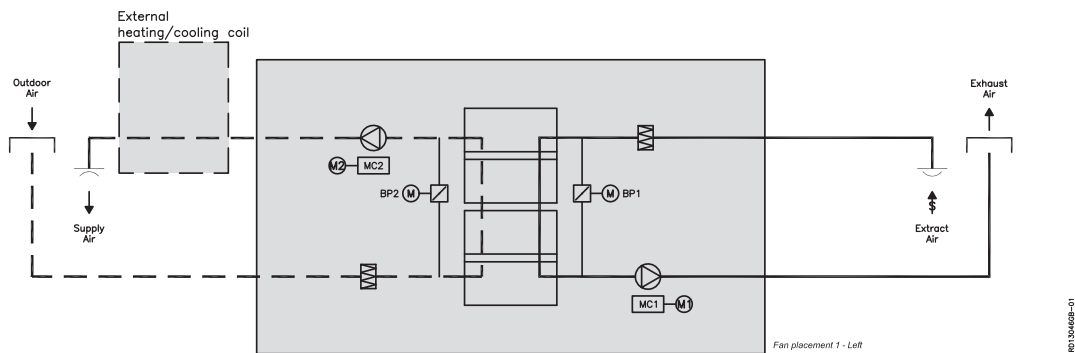
NB The sketch shows compact filters





NB Spigot location B option not available with outdoor models.

1.1.2 Terms used in these instructions



The simplified diagram shows a VEX unit with LEFT fan placement.

| Component | Function |
|-----------|--|
| MC1 | Motor control, motor 1 (exhaust air) |
| MC2 | Motor control, motor 2 (supply air) |
| M1 | Exhaust motor |
| M2 | Supply air motor |
| BP1 M | Bypass damper with motor (extract air - exhaust air) |
| BP2 M | Bypass damper with motor (outdoor air - supply air) |

1.2 Application

Comfort ventilation EXHAUSTO VEX is used for comfort ventilation tasks. Operating temperature range for the unit – see section "Technical data".

Prohibited uses The VEX unit is not to be used to transport solid particles or in areas where there is a risk of explosive gases.

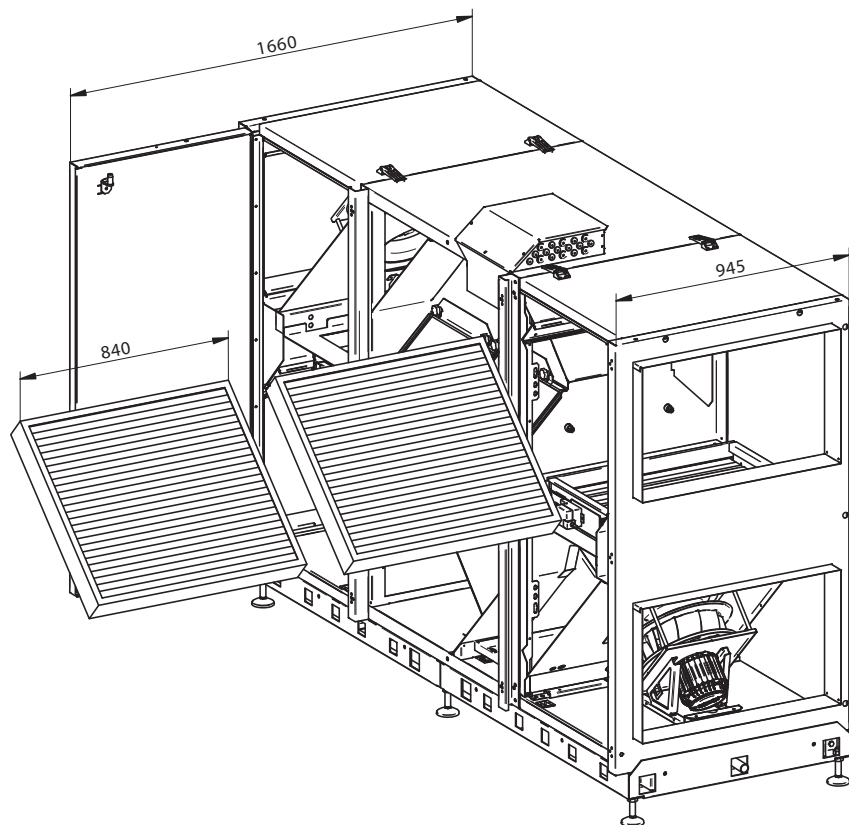
1.3 Location requirements

Positioning

The air handling unit is designed for indoor fitting. The air handling unit can be ordered for outdoor installation (accessory Outdoor, OD).

1.3.1 Space requirements

The drawing below indicates how much space is required to open the side-mounted doors for servicing, replacing filters, cleaning, etc. The drawing shows compact fil-



ters.

NB

For servicing purposes, a free height of at least 200 mm is required above the unit's connection box.

1.3.2 Requirements for underlying surface

When floor-mounting the unit, the surface must be:

- level (+/- 10 mm per metre)
- hard
- resistant to vibration

The VEX unit leg height can be adjusted: 55–110 mm.


1.3.3 Outlet

A condensation outlet must be installed in the immediate vicinity of the unit. See also "Mechanical fitting" section.

1.3.4 Requirements for duct system


Silencers The duct system must be fitted with silencers specified by the Project Manager, which meet the requirements of the operating area.

Bends A duct bend may be fitted immediately after the unit, because the airflow in the spigot has a uniformly moderate speed profile, which results in negligible system pressure loss.

Insulation  **The duct system must be insulated against:**

- condensation
- sound leakage
- heating/cooling losses

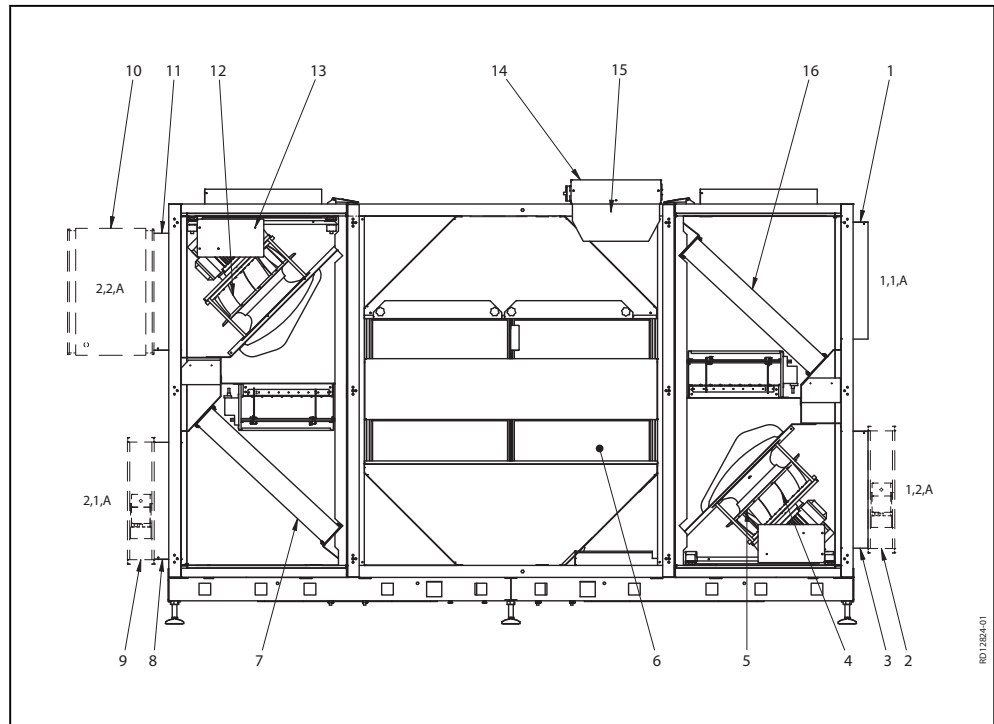
Condensation Condensation in the ducts may occur when the exhaust/outdoor air has high humidity. EXHAUSTO recommends a condensation outlet is also fitted at the lowest point in the ducts.

No duct connection  **If one or more of the spigots is not connected to a duct: Fit a protective net to the spigots with a maximum mesh width of 20 mm.**

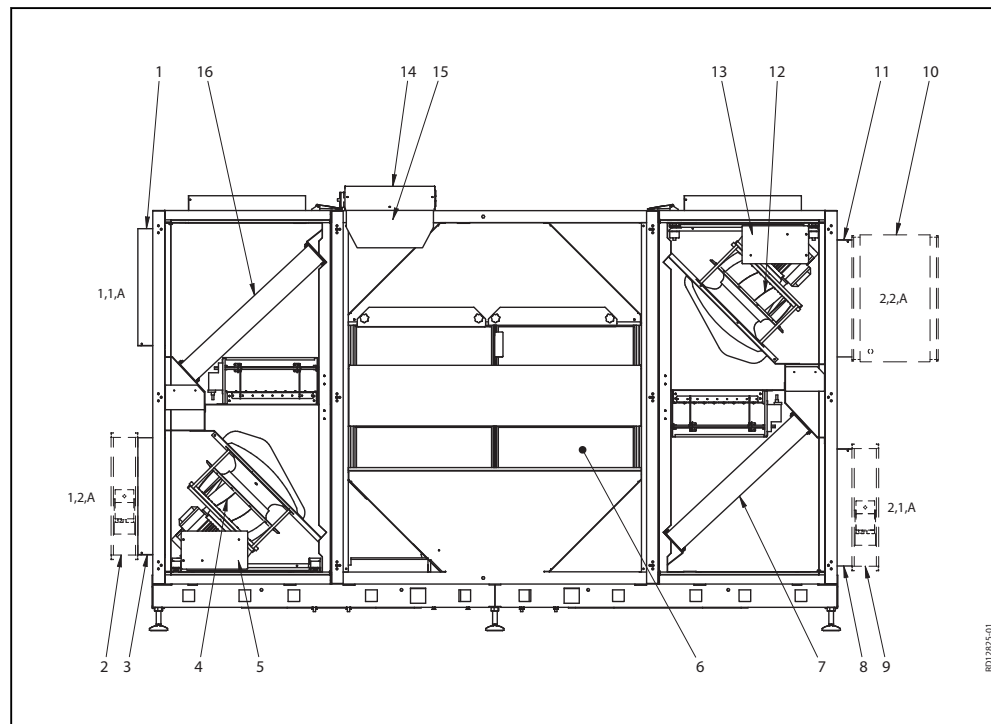
1.4 Description

1.4.1 VEX unit construction

Layout drawing, Left model The drawing below illustrates the construction of the unit, without doors: The drawing shows compact filters.



**Layout drawing,
Right model**



| Pos. no. | Part | Function |
|----------|--------------------------------|---|
| 1 | Spigot 1,1,A | Extract air spigot The spigot can also be positioned on the top of the unit (1,1,B). Does not apply to units designed for outdoor fitting |
| 2 | Closing damper LS | Closing damper, exhaust air, LSA (accessory). |
| 3 | Spigot 1,2,A | Exhaust air spigot |
| 4 | Fan unit, exhaust air | Removes "stale" air |
| 5 | Motor control, extract air fan | Variably adjusts fan |
| 6 | Counterflow heat exchanger | Four aluminium counter flow heat exchangers |
| 7 | Outdoor air filter | Filters outdoor air |
| 8 | Spigot 2,1,A | Outdoor air spigot |
| 9 | Closing damper LS | Closing damper, outdoor air, LSF (accessory). |
| 10 | Heating coil | Heats supply air if heat recovery is insufficient (accessory). |
| 11 | Spigot 2,2,A | Supply air spigot. The spigot can also be positioned in the top of the unit (2,2,B). Does not apply to units designed for outdoor fitting |
| 12 | Fan unit, supply air | Blows air into the room |
| 13 | Motor control, extract air fan | Variably adjusts fan |
| 14 | Connection box | Connection terminal board |
| 15 | Connection box | Cover plate |
| 16 | Extract air filter | Filters extract air |

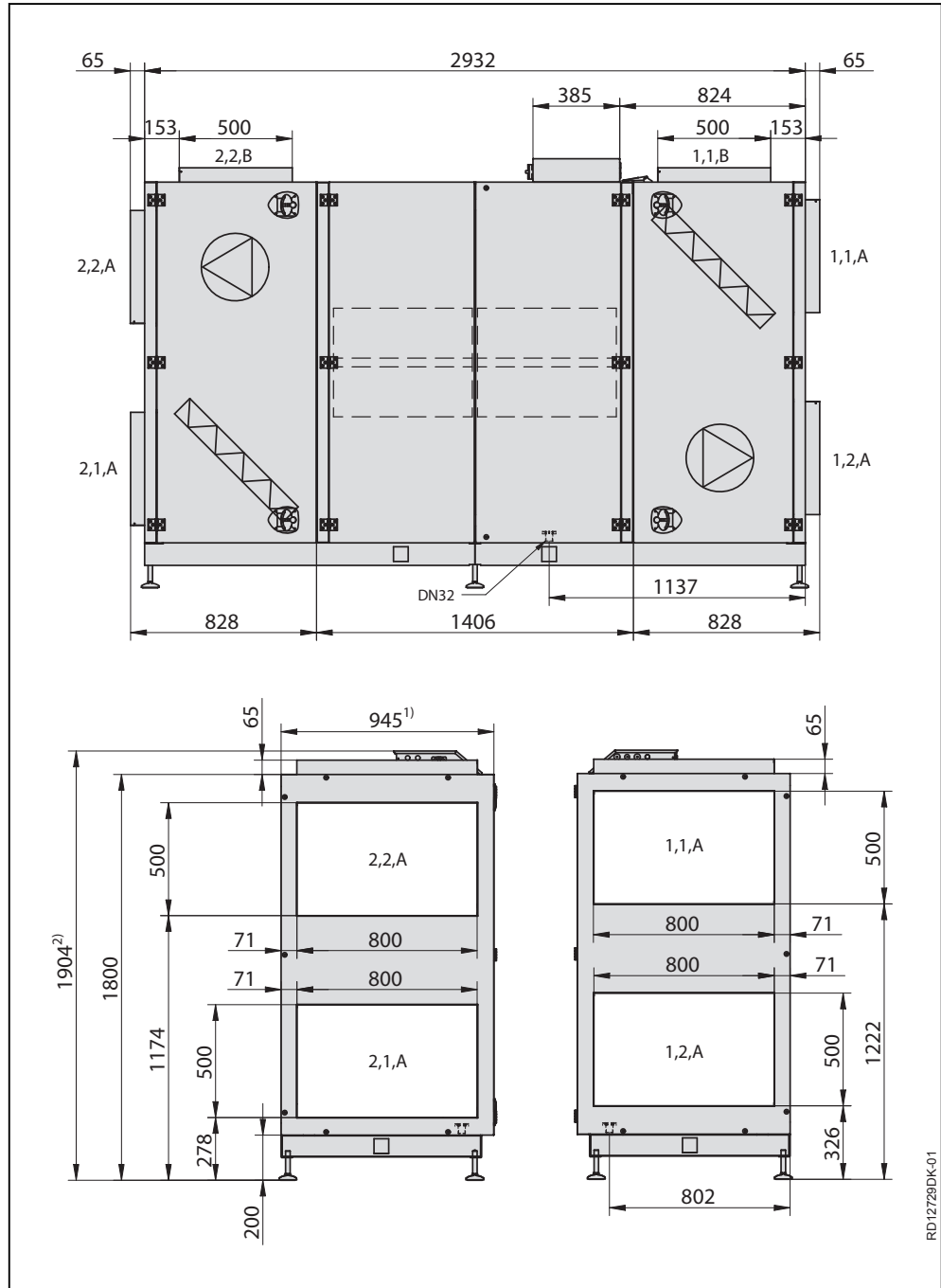
| | |
|-------------------------------------|---|
| Cabinet | The inside and outside of the cabinet is made of Aluzinc® The cabinet is insulated with 50 mm mineral wool. |
| Fans | The unit contains two centrifugal fans for exhaust air and supply air. |
| Counter flow heat exchangers | The unit's counterflow heat exchangers are made of aluminium and are highly efficient. The counterflow heat exchangers can be taken out and cleaned. See section "Servicing". |
| Filters | There are integral panel filters on both the extract air and outdoor air sides. |
| Bypass design | The unit has a built-in double modulating bypass. |

1.5 Main aim

1.5.1 Dimensional drawing

The sketches show compact filters.

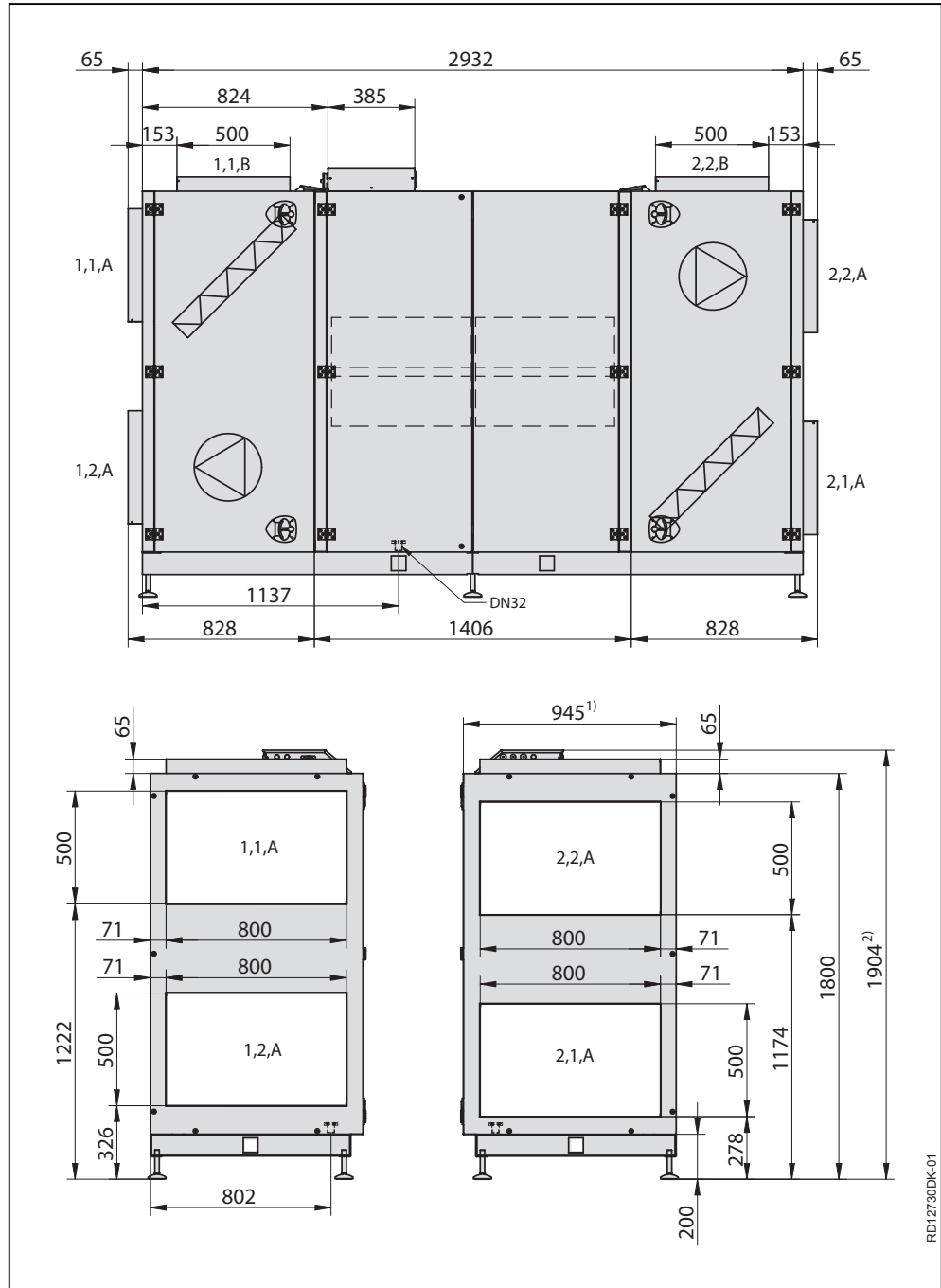
VEX360H, Left



- 1) Allow for space in front of the VEX unit, so the doors can be opened
 - 2) Allow for free height over the VEX unit, so the connection box can be serviced
- See the section on "Space requirements".

RD12729DK-01

VEX360H, Right



RD12730DK-01

- 1) Allow for space in front of the VEX unit, so the doors can be opened
- 2) Allow for free height over the VEX unit, so the connection box can be serviced
See the section on "Space requirements".



2. Handling

2.1 Unpacking

| | |
|--|---|
| Supplied components | <p>The following components are supplied:</p> <ul style="list-style-type: none"> ● VEX unit with associated base. ● Supplied accessories (as indicated in the checklist on the front page of the instructions) |
| Packaging | <p>The unit is delivered in three sections on separate disposable pallets; packed in cardboard and clear plastic. The base is packed in a wooden box.</p> |
| Unpacking | <p>Depending on the installation site's spatial limitations, unpacking can be done in the following manner:</p> <ul style="list-style-type: none"> ● Unpack and assemble the base and sections and subsequently transport the VEX unit to the site or ● set up the base at the installation side and mount the sections on the base afterwards. <p>Base assembly is described in section 3.1.</p> |
| NB | <p>Once the plastic has been removed, the unit must be protected against dirt and dust:</p> <ul style="list-style-type: none"> ● The covers on the spigots must not be removed until the spigots are connected to the ventilation ducts. ● Whenever possible, keep the unit closed during fitting. |
| The unit should be cleaned before it is used. | <p>Once the VEX unit is fitted, it must be checked and thoroughly cleaned. All dust, debris and metal shavings must be vacuumed up.</p> |

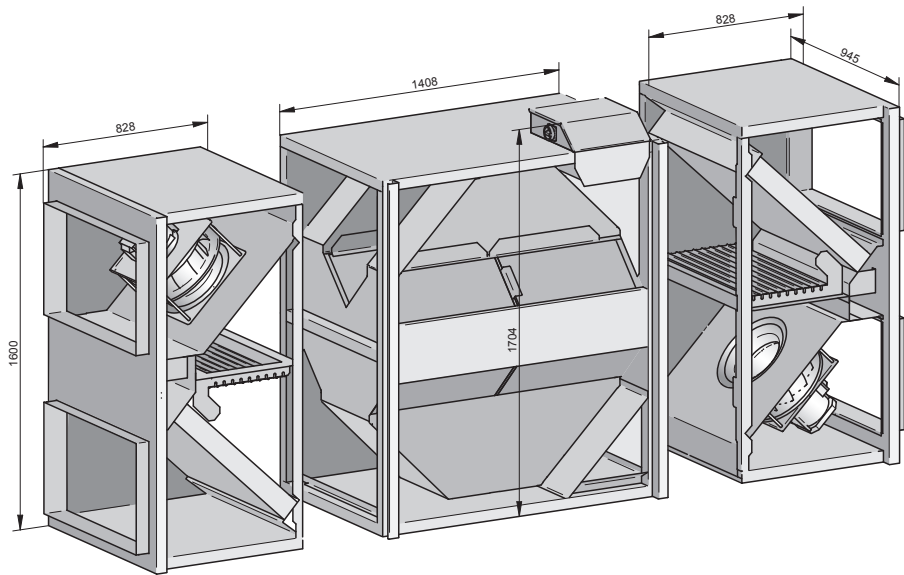
2.2 Transport

| | |
|----------------------------|---|
| Transport equipment | <p>Move the VEX unit using a lifting or fork-lift truck or crane, as described in the instructions "Transport of VEX350-360-370".</p> |
|----------------------------|---|

2.2.1 Passage through openings

| | |
|---|--|
| The sections' principal dimensions | <p>Measurements are based on the exact dimensions of the VEX unit.</p> |
|---|--|

The VEX unit is shown with compact filters.



RD12798-01

Width

The list below shows the unit's dimensions, and is intended to indicate how large an opening has to be for the unit to pass through:

| If the opening width is | Then |
|-------------------------|--|
| Less than 900 mm | The unit will not pass through |
| Between 900 - xxxx mm | Remove doors and the support bars which the central doors are fixed to – as described in section "Internal transport with reduced weight". |
| Greater than xxxx mm | The unit can pass through |

2.2.2 Internal transport with reduced weight

Weight reduction

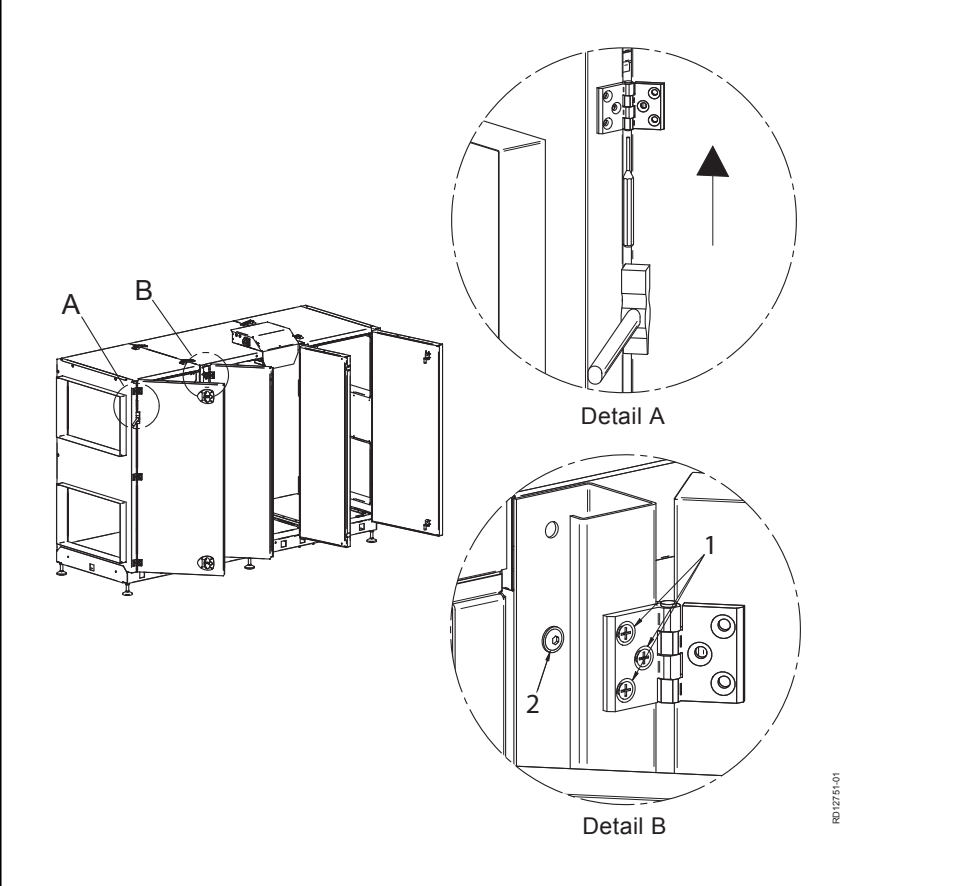
The weight can be reduced during transport by removing the service doors, fan units and counter flow heat exchanger. The table below shows the how much weight is reduced when the subcomponents are removed.

| Section | Subcomponents | Weight |
|-------------------------------|--|--------|
| Fan section, 2 x 156 kg | | |
| | Fan section, empty cabinet | 101 kg |
| | Door | 19 kg |
| | Fan unit | 32 kg |
| | Compact or bag filters, 2 items of 2 kg weight | 4 kg |
| Exchanger section, 1 x 310 kg | | |
| | Exchanger section, empty cabinet | 197 kg |
| | Counter flow heat exchangers, 4 x 19 kg | 76 kg |
| | Doors, 2 x 18.5 kg | 37 kg |
| Base, 1 x 80 kg | | |

| Section | Subcomponents | Weight |
|--------------------------|---------------|--------|
| Total weight VEX360 unit | | 702 kg |

Removing the service doors

To remove the service doors:



A

How to remove the doors (2 in no.) to the fan sections:

- Open the door
- Tap the hinge door pin out from below using a small pin bolt or similar
- Lift the door off

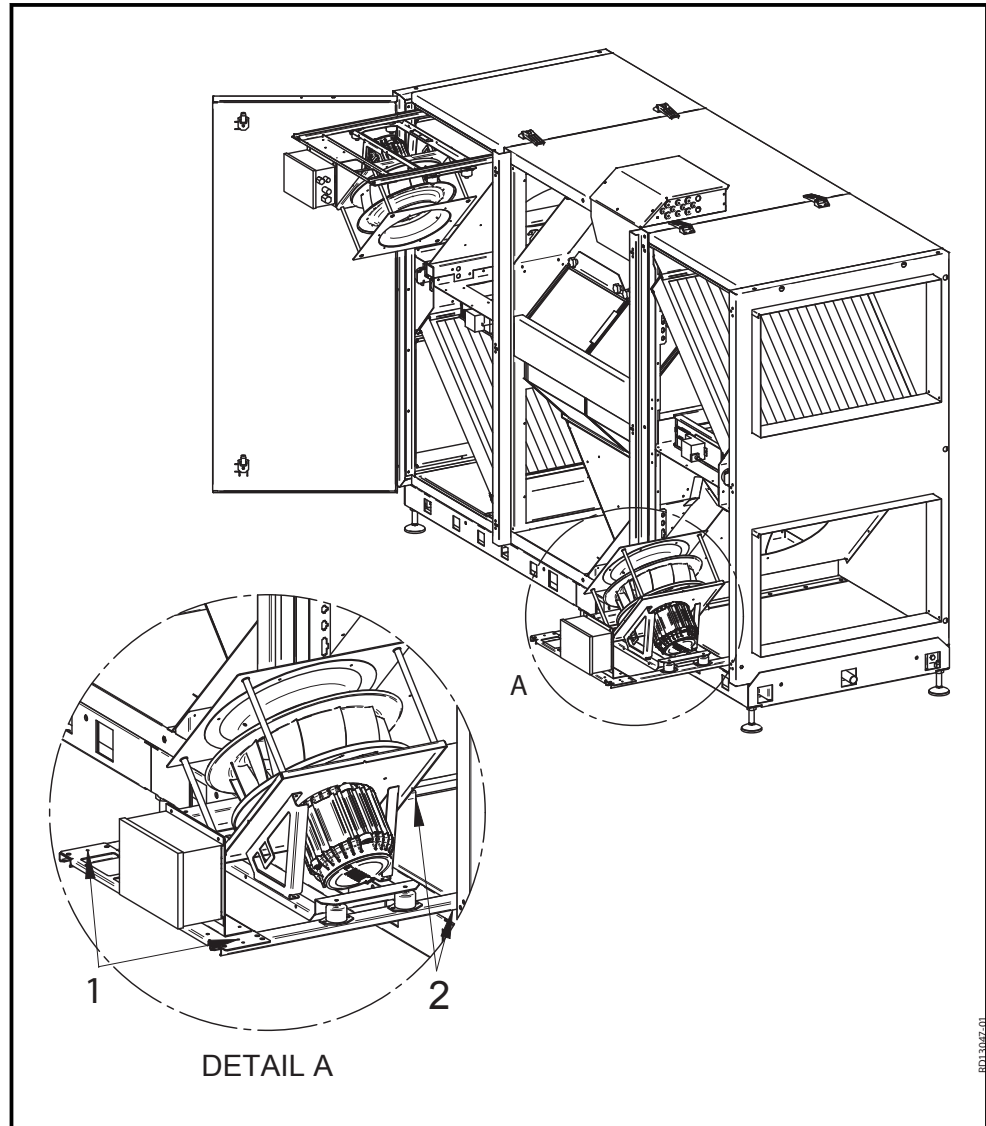
B

How to remove the doors (2 in no.) to the heat exchanger sections:

- Open the door
- Unscrew the door hinge from the support bar (1) and remove the door (**be careful as the door is heavy** - weighs nearly 19 kg).
- Unscrew the support bar (2)

RD12751-01

To remove the fan unit



| Step | Action |
|------|--|
| 1 | Remove the fixing screws (1) on the sliding rail (out towards the operating side) |
| 2 | Cut the cable ties holding the motor cable and the cable ties holding the measuring hose |
| 3 | Pull the fan unit out to the end-stop (a screw on each rail acts as a stop) |
| 4 | Remove the supply cable and the control cable in the motor control. |
| 5 | Remove the two end-stops (screws one on the sliding rail (2)). The fan unit can now be lifted off. |

NB: A single fan unit weighs 32 kg.

Removing the counter flow heat exchangers

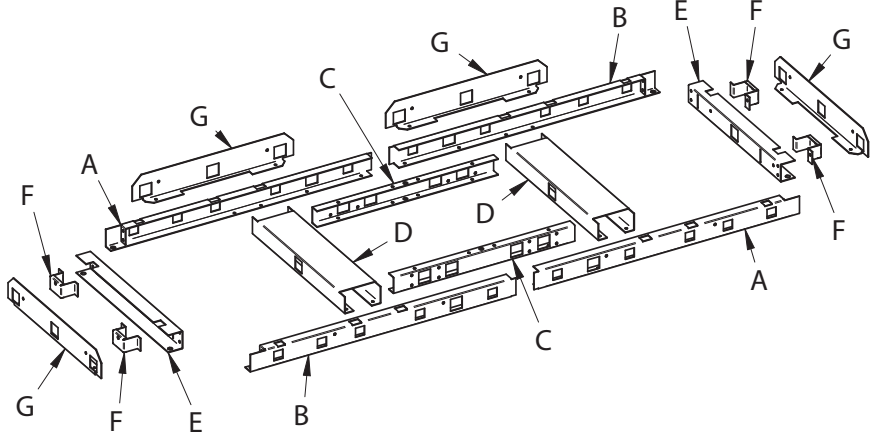
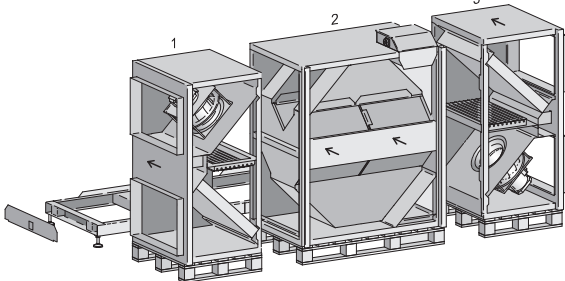
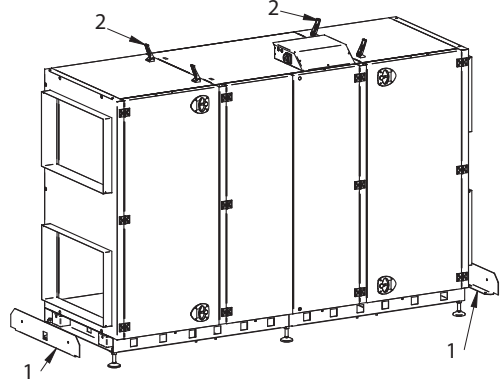
See section "Servicing"



3. Mechanical assembly

3.1 Installing the unit

3.1.1 Assembly instructions

| Step 1, assemble the base | |
|--|---|
|  <p style="text-align: right; font-size: small;">RD12759-01</p> | |
| Step 2, push the sections onto the base | Step 3-4, tighten the VEX together |
|  <p style="text-align: right; font-size: small;">RD12754-01</p> |  <p style="text-align: right; font-size: small;">RD12754-01</p> |









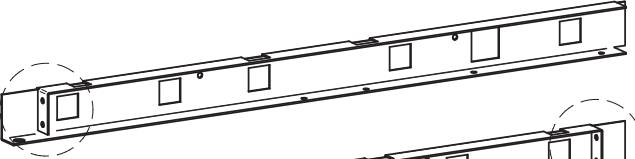
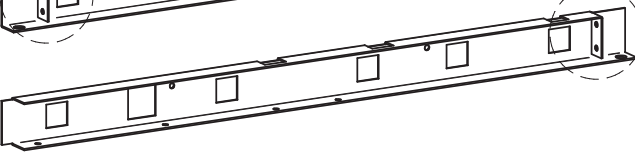
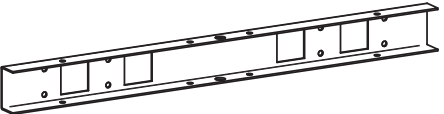
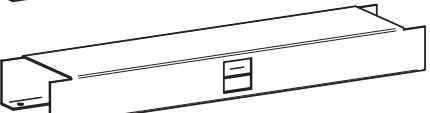
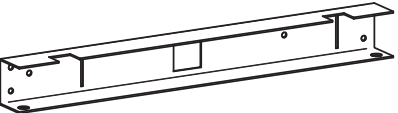

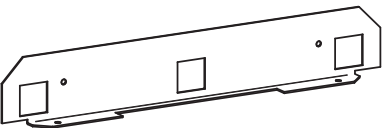
Base

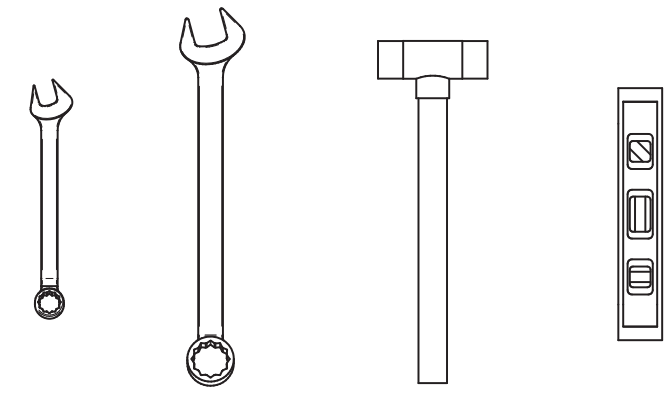
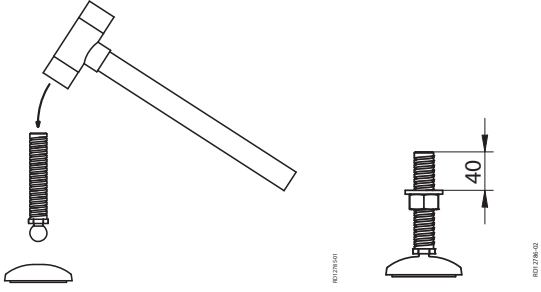
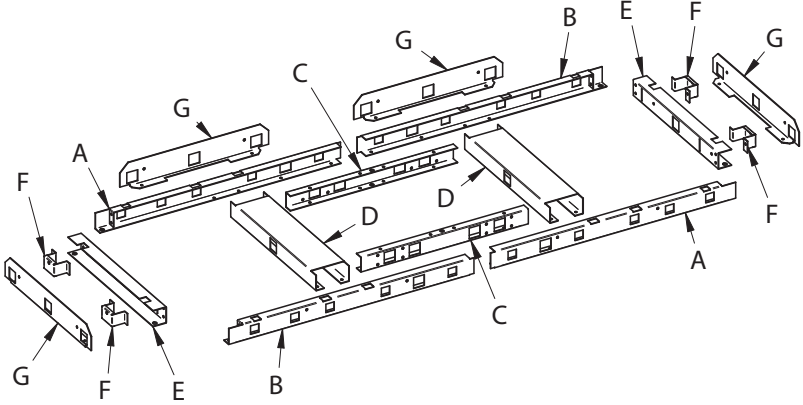


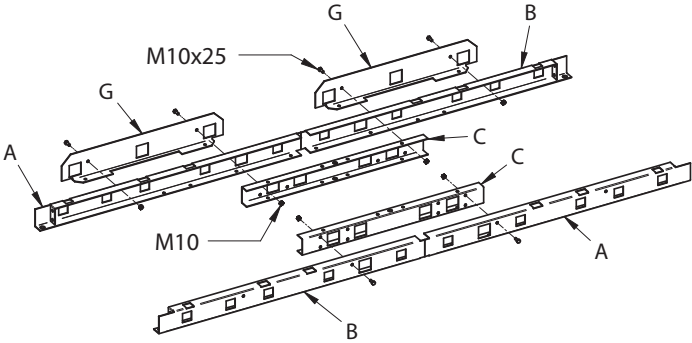
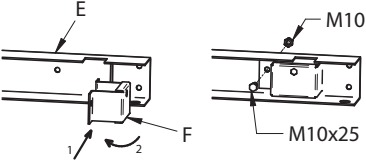
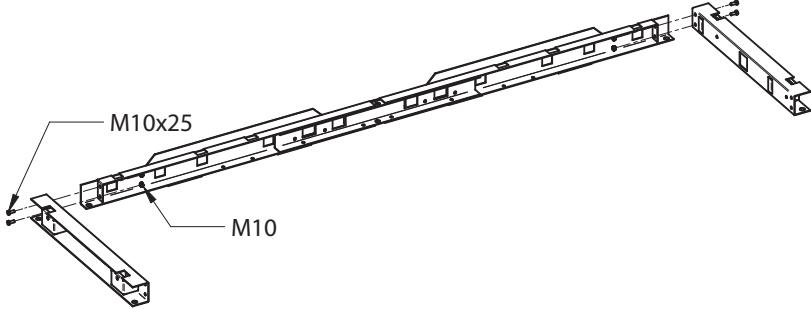
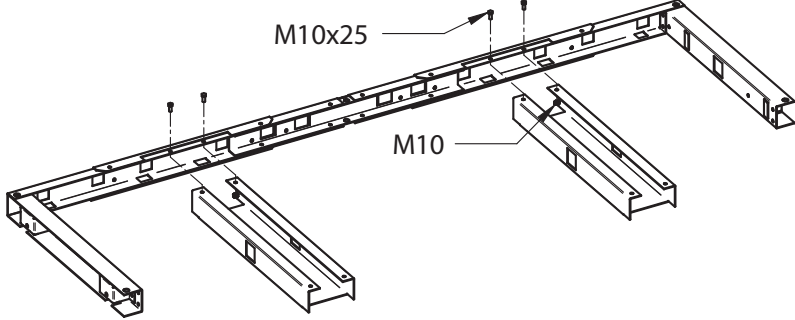
The unit must be assembled on the base – to ensure it is tightened correctly.

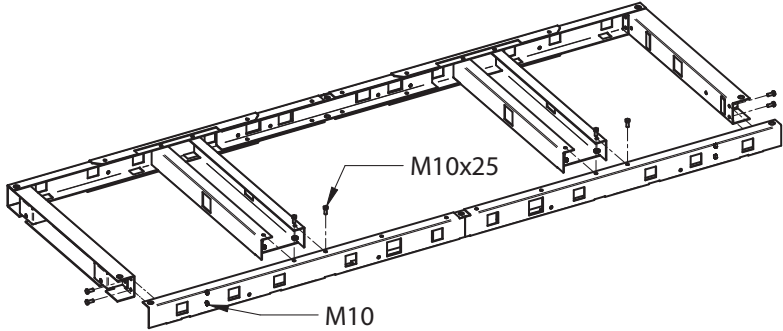
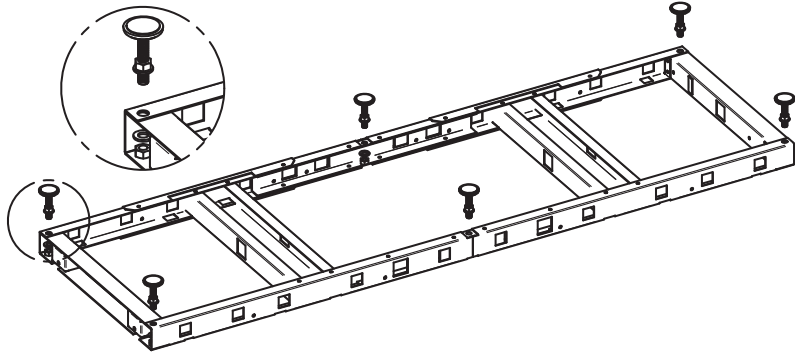
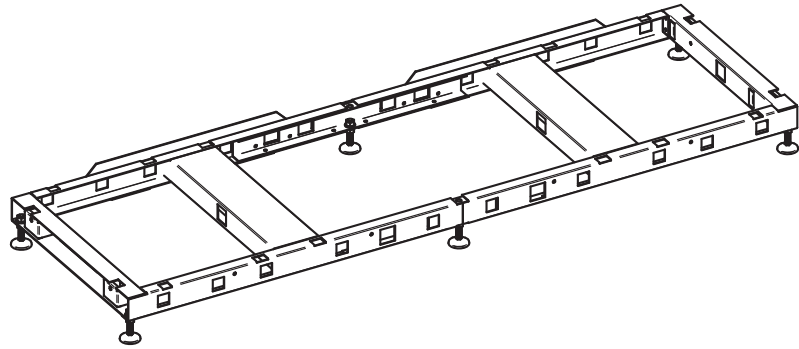
3.1.2 Step 1-4

Step 1, Base: Assemble the base as shown in the drawing below.

| Base assembly | Drawing |
|--|--|
| <p>The base consists of the following parts:</p> | <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>6x </p> </div> <div style="text-align: center;"> <p>6x </p> </div> <div style="text-align: center;"> <p>12x  M20</p> </div> <div style="text-align: center;"> <p>12x </p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;"> <p>34x  M10x25</p> </div> <div style="text-align: center;"> <p>34x  M10</p> </div> <div style="text-align: center;"> <p>4x  M10x35</p> </div> <div style="text-align: center;"> <p>4x </p> </div> </div> <div style="margin-top: 20px;"> <p>A)  2x</p> <p>B)  2x</p> <p>C)  2x</p> <p>D)  2x</p> <p>E)  2x</p> <p>F)  4x</p> <p>G)  4x</p> </div> <div style="text-align: right; margin-top: 20px;"> <p>RD12784-01</p> </div> |

| Base assembly | Drawing |
|--|---|
| <p>The following tools are required:</p> |  <p>2x17mm 2x30mm</p> <p style="text-align: right;">RD12781-01</p> |
| <p>Assemble the base levelling bolts, by tapping the threaded bar securely into the foot. Screw a nut onto the threaded bar and put a washer on.</p> |  <p style="text-align: right;">RD12781-02</p> |
| <p>Lay the base parts on the floor as shown in the illustration.</p> |  <p style="text-align: right;">RD12781-01</p> |

| Base assembly | Drawing |
|---|--|
| <p>Assemble the long pieces:</p> <ul style="list-style-type: none"> • Front long piece: Join A, B and C with nuts and bolts. • Rear long piece: Join A, B, C and G with bolts and nuts. |  |
| <p>Fit the two small tension fittings (F) on each side of the short members (G) and secure firmly using nuts and bolts.</p> |  |
| <p>Firmly screw the two short members (G) to one of the long pieces using nuts and bolts.</p> |  |
| <p>Turn the base top-side-down and screw the spacers on using nuts and bolts (M10).</p> |  |

| Base assembly | Drawing |
|--|---|
| Screw the last long piece on using nuts and bolts. |  <p style="text-align: right;">RD12794-01</p> |
| Screw the levelling bolts on the base with M20 nuts and washers |  <p style="text-align: right;">RD12792-01</p> |
| Turn the base with legs down and place it so that the tension fittings face away from the operating side |  <p style="text-align: right;">RD12792-01</p> |



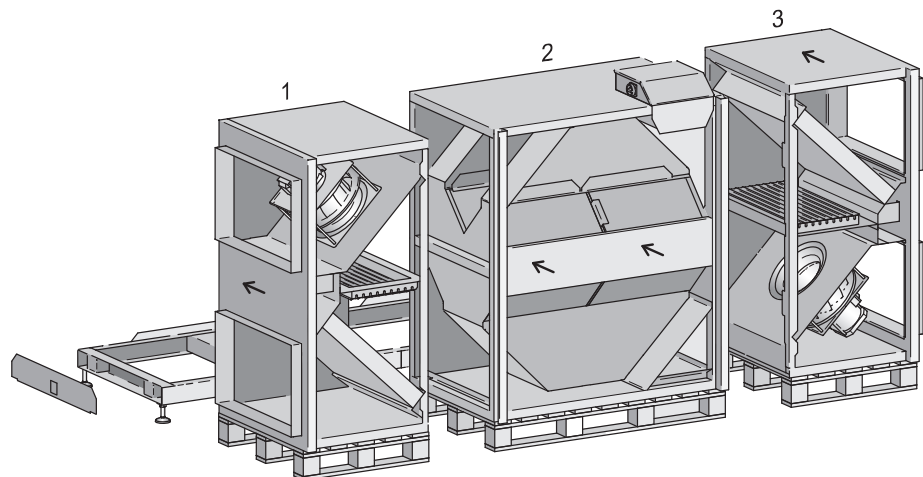
It is important that the base is levelled before the VEX unit is placed on the base. Adjust the levelling bolts, so that the base is horizontal.

NB

It is best to fit a condensation pipe to the base before the sections are pushed into position. See section "Condensation outlet".

Step 2, VEX sections

Manoeuvre the sections onto the base by pushing them directly from the pallet on to the base.



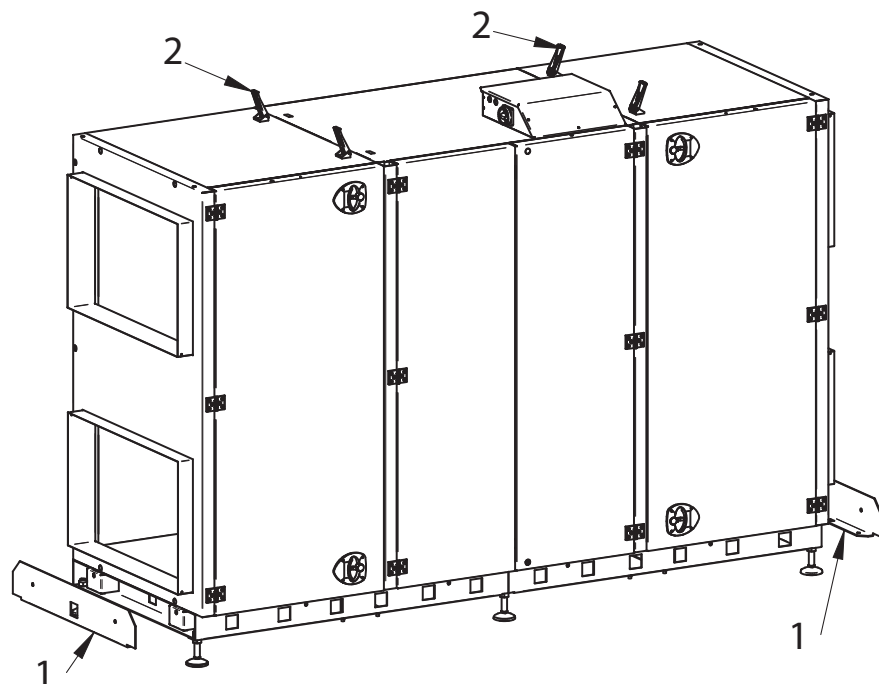
RD12816-01

1. Firstly, push a fan section onto the base.
2. Secondly, push the exchanger section onto the base
3. Lastly, push the last fan section onto the base.

Step 3, Assembly panels and fittings

When all three sections are on the base:


1. Tighten the two assembly panels against the VEX unit using the four bolts (M10 x 35)
2. Close the four fittings on the top of the VEX unit (2).



RD12754-01

Step 4, Smooth joints at the condensation tray

To ensure joints are sealed at the condensation tray, the transition between the bottom motor and the condensation tray must be sealed:

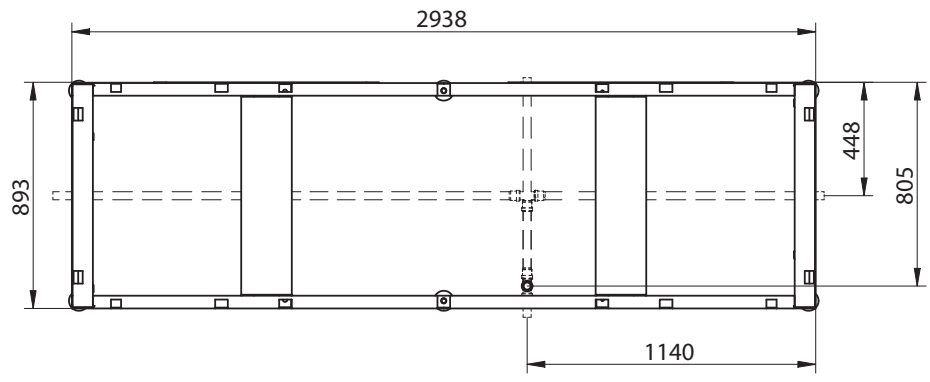
| Action | |
|--|--|
| Smooth the two joints (front and rear on the transition) with a finger. (The arrow shows the rear joint) |  |

3.2 Condensation drain

3.2.1 Condensation outlet

Connection

The condensation from the unit is collected and directed under the VEX. The condensation outlet can run out from the base as shown in the drawing below.



RD12814-01



Drain the condensation outlet into a floor gully or similar. The condensation outlet must be fitted with a water trap. See below.

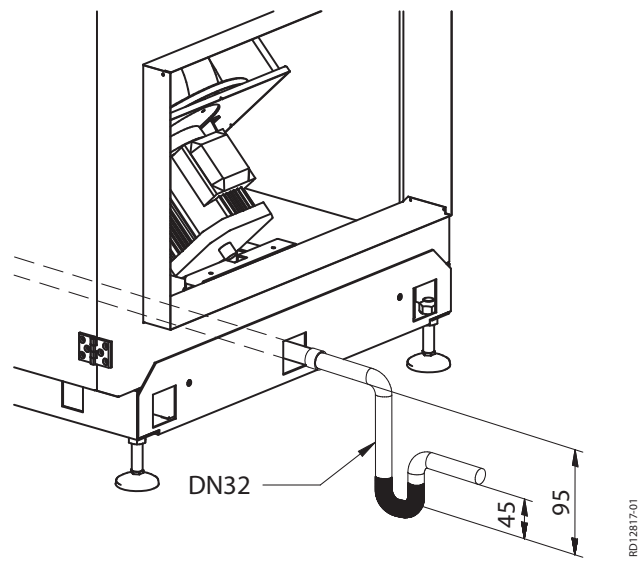
Risk of frost



Where there is a risk of frost: Insulate the condensation outlet and protect it against frost - if necessary, using a heating cable. Both the condensation pipe under the VEX unit and the condensation outlet need insulating.

Water trap

See the correct dimensions for the water trap on the drawing below.

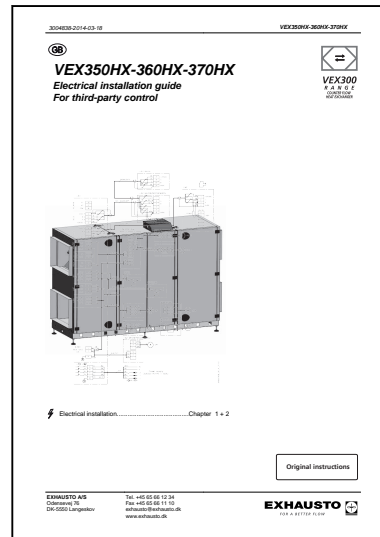




4. Electrical installation

4.1 Electrical installation

See the attached instructions "Electrical Installation Guide VEX350HX-VEX360HX-370HX for third-party control system".





5. Maintenance

5.1 Maintenance Schedule

Recommended intervals The following chart details the recommended maintenance intervals, under normal operating conditions. EXHAUSTO recommends maintenance is adjusted to suit the actual operating requirements.

| Component | Procedure | Once a year | Twice a year |
|---|--|-------------|--------------|
| Compact/bag filters* | The filter should be changed at least... Recommended that both filters are replaced at the same time. | | X |
| Filter monitor | Check that all the seals in the filter monitor are tight. | X | |
| Seals and sealing strips | Check that all the seals are tight. | X | |
| Fans and heating coil (accessories) | Check Dismantling of fan unit, see section "Internal transport with reduced weight" Cleaning, see following sections | X | |
| Counter flow heat exchanger | Check | X | |
| Closing damper | Function check | X | |
| Motor valve and circulation pump (accessories) | Function check | X | |

As and when required Following parts are cleaned as and when required

| Component | As and when required |
|-----------------------------------|--|
| Condensation tray | Cleaning and inspection of outlet and water trap |
| Counterflow heat exchanger | Cleaning. See next sections. |

***Filters**



Only use original filters

- The provided filter data and pressure loss graphs (section "Technical data") are based on the use of original filters
- EUROVENT certification is only valid if original filters are used
- Use of non-original filters may cause leakage in the VEX and impair filter function
- EXHAUSTO recommends that you register the filter replacement date to ensure filters are replaced at the correct intervals

5.2 Hygiene

VDI6022 air hygiene standard

To ensure that the VEX300 meets the requirements of the VDI 6022 hygiene standard, its design ensures that:

- bacterial growth and dirt accumulation are minimal
- conditions for cleaning are optimum

Filter F7

The outdoor air side of the unit must be fitted with a F7 filter to meet VDI 6022 requirements.

5.3 Service

5.3.1 Filter change



Disconnect power at the isolation switch before opening the door.

Pull the filters out. Remember to check the flow direction - see the arrows on the filter.

Redundant filters must be stored immediately in sealed plastic bags and disposed of responsibly.

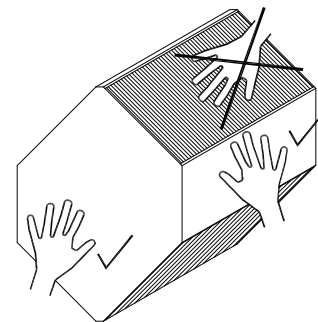
Removing the counter flow heat exchangers



Disconnect power at the isolation switch before opening the door.



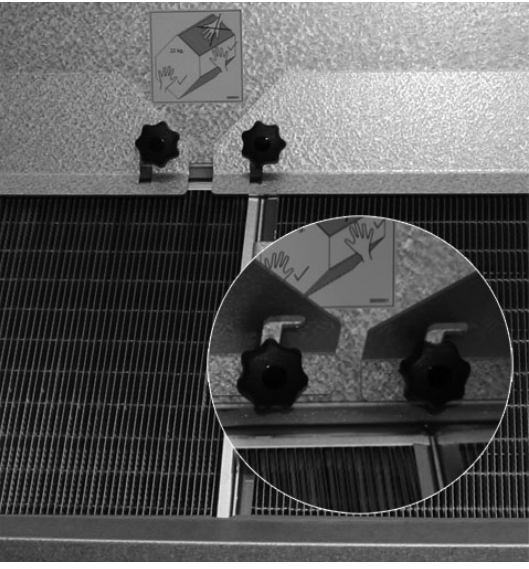





The counter flow heat exchanger fins can be easily damaged - avoid contact with the fins.



How to remove the counter flow heat exchangers

The following text describes how to remove the four counter flow heat exchangers.

| Step | | Action |
|------|--|---|
| 1 |  | <ul style="list-style-type: none"> ● In wall fan section, on panel facing exchanger section: turn the tensioner clockwise 7 times. |
| 2 |  | <ul style="list-style-type: none"> ● In exchanger section: Lift off the centre piece. |
| 3 |  | <ul style="list-style-type: none"> ● Loosen the finger screws on the bracket holding the counter flow exchanger. ● Slide the bracket to one side and down (follow the channel in the bracket). ● In the circle you can see how the bracket is located in the groove when released. |

| Step | | Action |
|------|--|--|
| 4 |  | <ul style="list-style-type: none"> Remove the panel by pulling on the handle. |
| 5 |  | <ul style="list-style-type: none"> Lift out the right-hand heat exchanger. Lift out the left-hand heat exchanger. <p>NB: A single counter flow heat exchanger weighs 19 kg.</p> |
| 6 | | <p>The rear exchangers can now be removed.</p> <ul style="list-style-type: none"> Turn the tensioner clockwise 7 times (See step 1) |
| 7 |  | <ul style="list-style-type: none"> Lift out the centre piece Repeat points 3-4-5 |

Refitting the counter flow heat exchangers

The following describes how to refit the counter flow heat exchangers and it refers directly to the above instructions for removing the heat exchangers.

| Step | Action |
|------|---|
| 1 | <ul style="list-style-type: none"> • Set the rear exchangers in place. • Push the handle into place (step 4). • Release the finger screws, insert the bracket and screw in the finger screws without tightening them (step 3). |
| 2 | <ul style="list-style-type: none"> • Turn the rear tensioner anticlockwise 7 times (step 1). • Tighten the finger screws. • Refit the front panel (step 7). |
| 3 | <ul style="list-style-type: none"> • Repeat steps 1 and 2 for the front exchangers. |

5.3.2 Servicing and cleaning

Cleaning the counter flow heat exchanger:

- Clean the exchanger by flushing with hot water
- Water temperature max. 90°C.

How to clean the fan

See section "Internal transport with reduced weight" for details on how to remove the fan units.

| Step | Action |
|------|---|
| 1 | Switch off the power supply to the unit at the isolation switch |
| 2 | Clean the fan impellers with a vacuum cleaner and by wiping with a damp cloth NB: Clean the impellers carefully to avoid disturbing the balance |
| 3 | Once re-fitted, check the unit operates without vibrating |

Cleaning cold water coil/heating coil

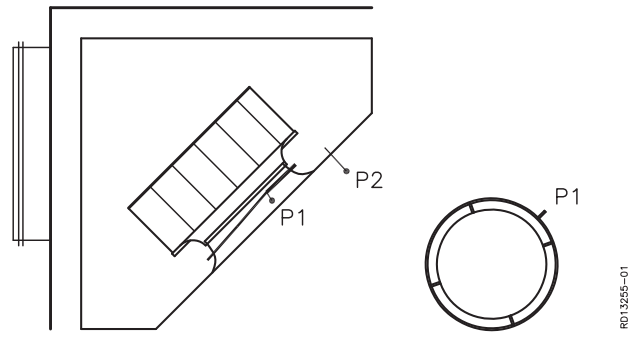
| Step | Action |
|------|---|
| 1 | Switch off the power supply to the unit at the isolation switch |
| 2 | Vacuum clean the heating coil |
| 3 | Cold water coil: clean the condensation tray |

5.4 Airflow measurement

5.4.1 Determination of airflow

Airflow in the unit can be determined by pressure measurements. In each ventilator inlet there are measurement spigots for use in pressure measurements, see drawing below:

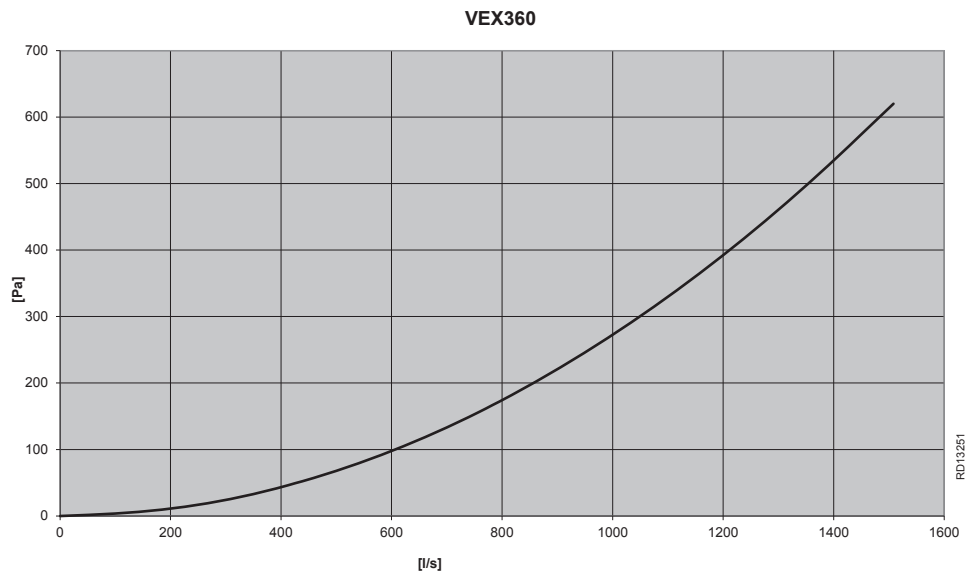
- Connect the inlet spigots to a measurement point P1
- Measure reference pressure P2
- Calculate Δp : $P1 - P2 = \Delta p$



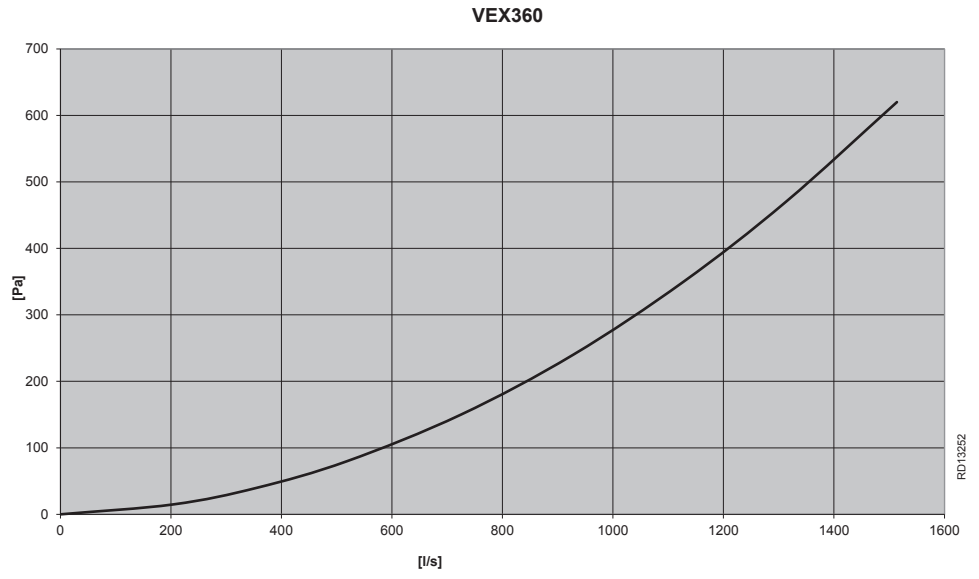
By using the value for Δp in the relevant diagram (either supply air or extract air), the airflow can be read off.

Pressure curves

Supply air:



Extract air:





6. Technical data

6.1 Weight, corrosion class, temperature ranges, etc.

Weight

| | |
|--------|--------|
| Weight | 702 kg |
|--------|--------|

Corrosion class

| | |
|-----------------|--|
| Corrosion class | Corrosion class C4 in accordance with EN ISO 12944-2 |
|-----------------|--|

Temperature ranges

| | |
|-------------------------|----------------|
| Outdoor air temperature | -40°C to +35°C |
| Ambient temperature | -30°C to +50°C |

At temperatures below -25°C (with outdoor installation), use of a thermostatically controlled heater in automated control box is recommended.

Motor damper

| Motor damper type | LS500x80024 | LSR500x80024 |
|---------------------------------|----------------|----------------------------|
| Designation | LSA/LSF | LSFR |
| Motor type | NM24-F | AF-24 |
| Rotation time | 75–150 s | open: 150 s close: 16 s |
| Ingress protection | IP42 | IP42 |
| Ambient temperature | -20°C to +50°C | -30°C to +50°C |
| Damper depth (LS rail system) | 115 mm | 115 mm |
| Damper depth (METU rail system) | 150 mm | 150 mm |

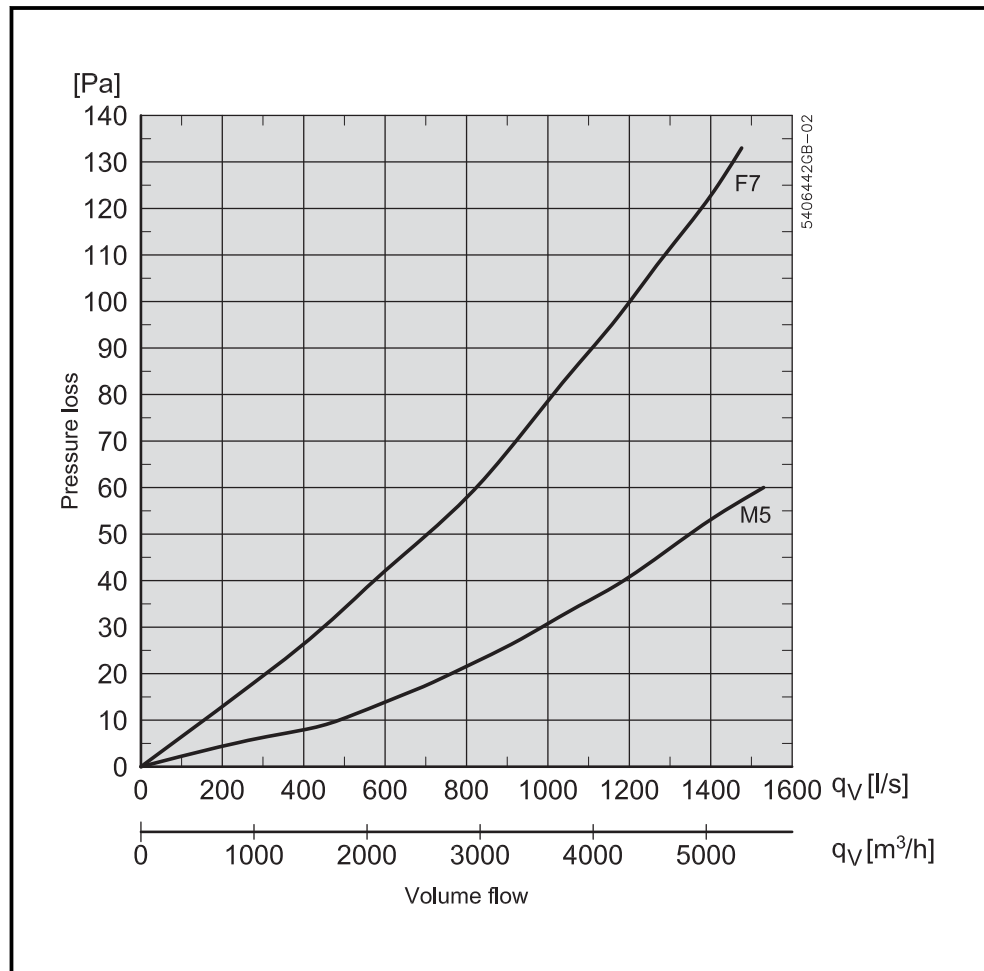
A maximum of two LSFR dampers or four LSA/LSF dampers may be connected.

Motor data

| | |
|--|--------------------------------|
| Voltage | 3 x 400 V/ 3 x 230V |
| Max. rpm | 3,080 |
| Moment | 6.2 Nm |
| Motor class in accordance with IEC TS 60034-30-2 | IE5 (Ultra Premium efficiency) |

6.2 Compact filters

Pressure loss curves for M5 and F7 filters



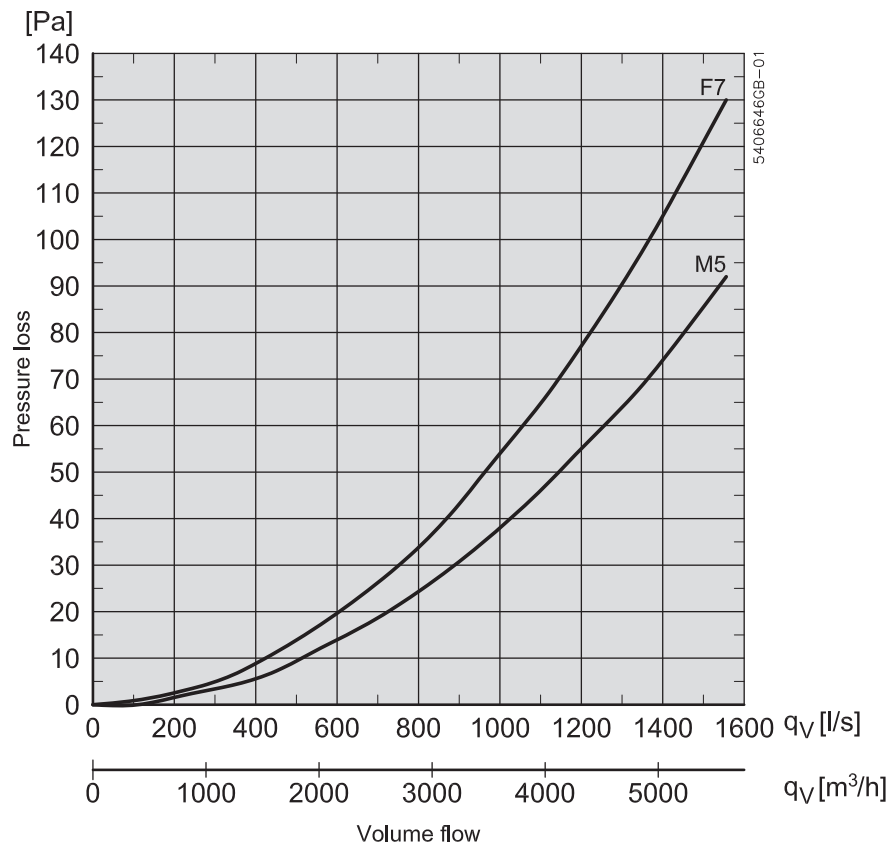
| Filter data | M5 | F7 |
|--|--------------|--------------|
| Filter panel h x b (qty. 2 per air direction) | 414 x 750 mm | 414 x 750 mm |
| Panel filter thickness | 96 | 96 |
| Efficiency | 45 % | 85 % |
| Recommended difference between final pressure drop and initial pressure drop | +100 Pa | +100 Pa |



EUROVENT certification is only valid if original filters are used. For more details about original filters, see section "Maintenance".

6.3 Bag filters

Pressure loss curves for M5 and F7 filters



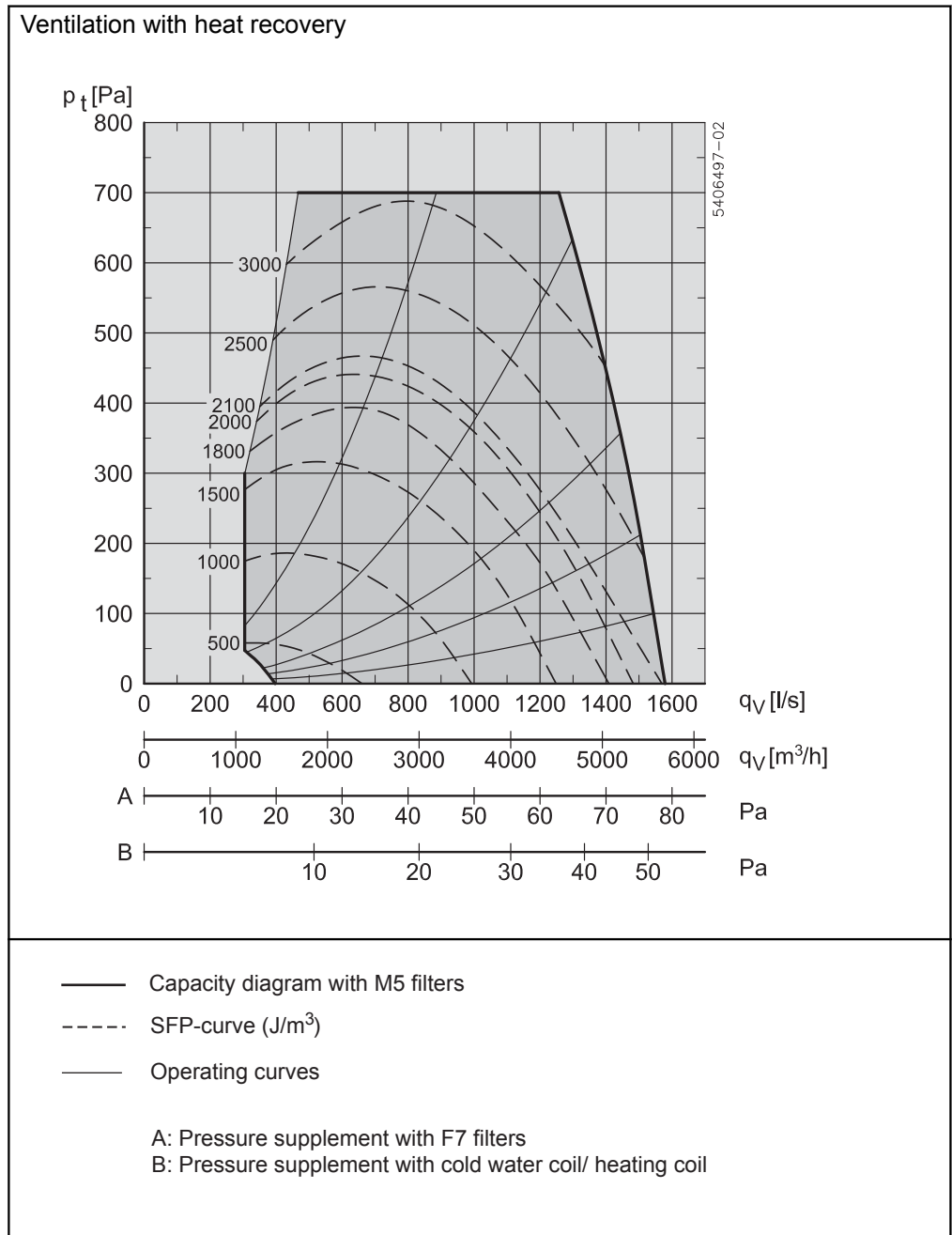
| Filter data | M5 | F7 |
|--|------------------------------------|------------------------------------|
| Filter area h x b (qty. 2 per air direction) | 1 x 592 x 490mm 1 x 592 x 287mm | 1 x 592 x 490mm 1 x 592 x 287mm |
| Total number bags x depth | 5 x 520mm 3 x 520mm | 8 x 520mm 5 x 520mm |
| Volume flow rate | 5000 m³/h | 5000 m³/h |
| Initial pressure drop | 58 Pa | 86 Pa |
| Recommended difference between final pressure drop and initial pressure drop | +100 Pa | +100 Pa |



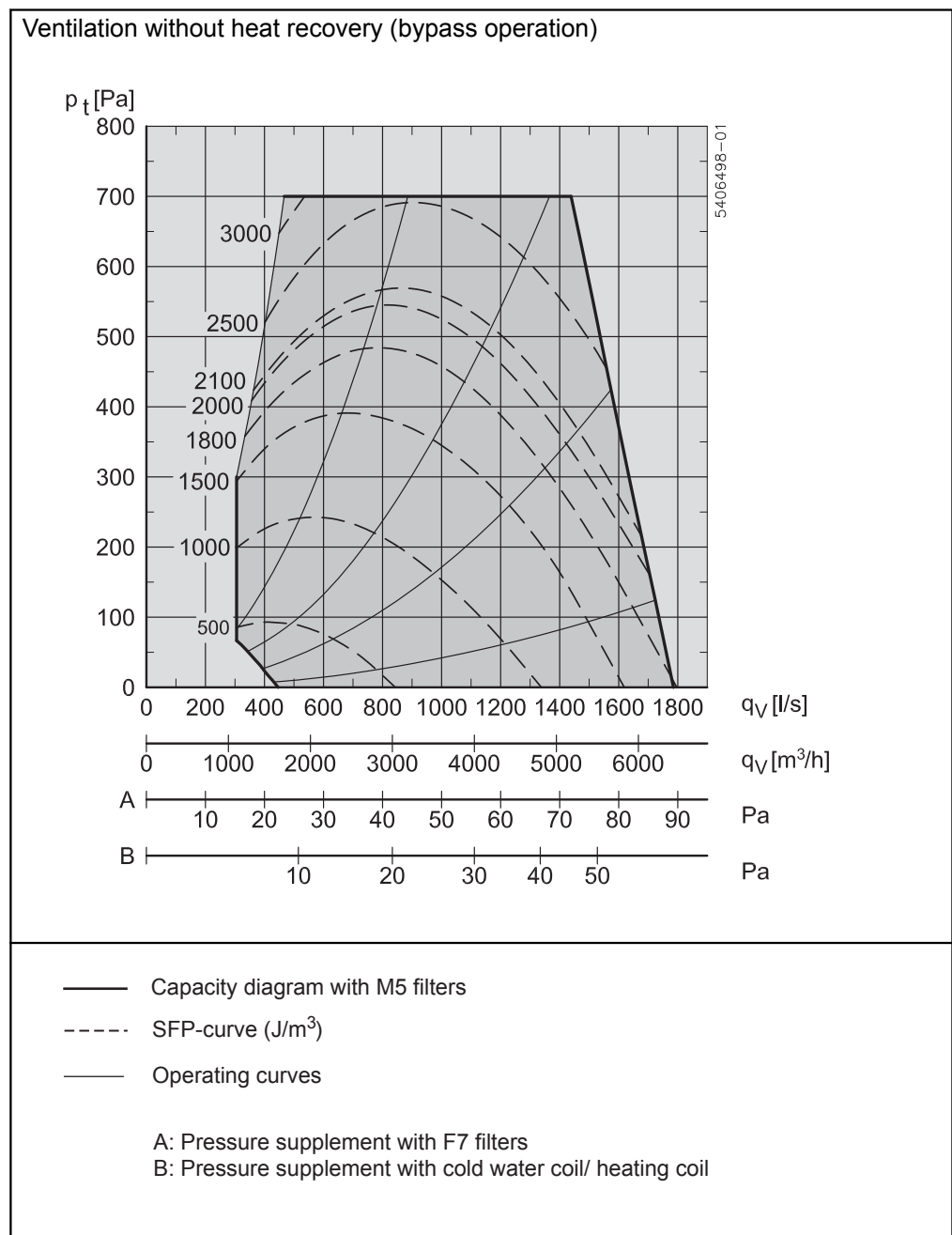
EUROVENT certification is only valid if original filters are used. For more details about original filters, see section "Maintenance".

6.4 Capacity diagram

6.4.1 Capacity diagram, ventilation with heat recovery



6.4.2 Capacity diagram, ventilation with bypass operation



6.5 Ordering spare parts

Find production number

When ordering spares, please state the relevant production part number. This will ensure that the correct parts are delivered. The production number is given on the front of the VEX guidelines and on the VEX rating plate.

Contact:

Contact your local EXHAUSTO office service department to order a spare part. Contact information is given on the back cover of these instructions. See also the "Layout" section for an overview of the position and designation of parts in the VEX.



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