fresh-r®

In-the-wall

Installation manual

CE

IMPORTANT: Read this manual carefully before using the fresh-r!

BY Vaventis

Installation manual

Foreword

Installation manual for the contractor

Dear contractor,

Thank you for purchasing the VAVENTIS fresh-r IN-THE-WALL. This manual is intended for professionals and contains all the necessary installation information.

To install the fresh-r correctly and safely, it is essential that you read this information carefully and familiarize yourself with the fresh-r before you start. The fresh-r requires a 240v mains electricity supply and must be connected by a qualified electrician.

Other information relating to the target group can be found in chapter 2.

The information in this manual is important for the correct and safe installation of the fresh-r. With the table of contents you'll be able to find the right information in the manual quickly. This is the installation manual. Besides this manual there is also an user manual available.

Content

1. Intended use

The Vaventis fresh-r In-The-Wall (ITW) is a decentral ventilation unit with heat recovery. The fresh-r takes heat from the stale air it expells and uses it to warm up the fresh air it brings in from outside.

It improves air quality for a healthy indoor air quality and at the same time reduces your energy bill. No ducting is needed for this unit which makes installation easier as a conventional HRV system. The fresh-r is equipped with CO_2, RH and Temperature sensors and has an intelligent control system and other than conventional HRV's the fresh-r also works efficient at sub zero temperatures.

2. Target group

The manual describes how to install the fresh-r. The installation must be done by contractors who:

1. are familiar with local building regulations, and
2. are qualified to connect the unit to a mains electricity supply.

3. Symbols used in this manual

3.1 Safety symbols

⚠ DANGER	Indicates an immediate risk of irreversible injury or death when not observed.
⚠ WARNING	Indicates a risk of severe personal injury and/or serious damage to the product if the procedures are not followed carefully.
⚠ CAUTION	Indicates that the product may be damaged if the procedures are not followed carefully.
NOTICE	Alerts the user to additional information and possible problems.

3.2 Other symbols

CE marking: This is the CE logo indicating that the fresh-r meets the legal requirements.

4. General safety instructions

⚠ DANGER

- Only a qualified electrician should connect the fresh-r to the mains supply.
- The electricity supply must be switched off at the mains before connecting the unit.
- The person responsible for installing the fresh-r should be familiar with the local building regulations.

5. Main components

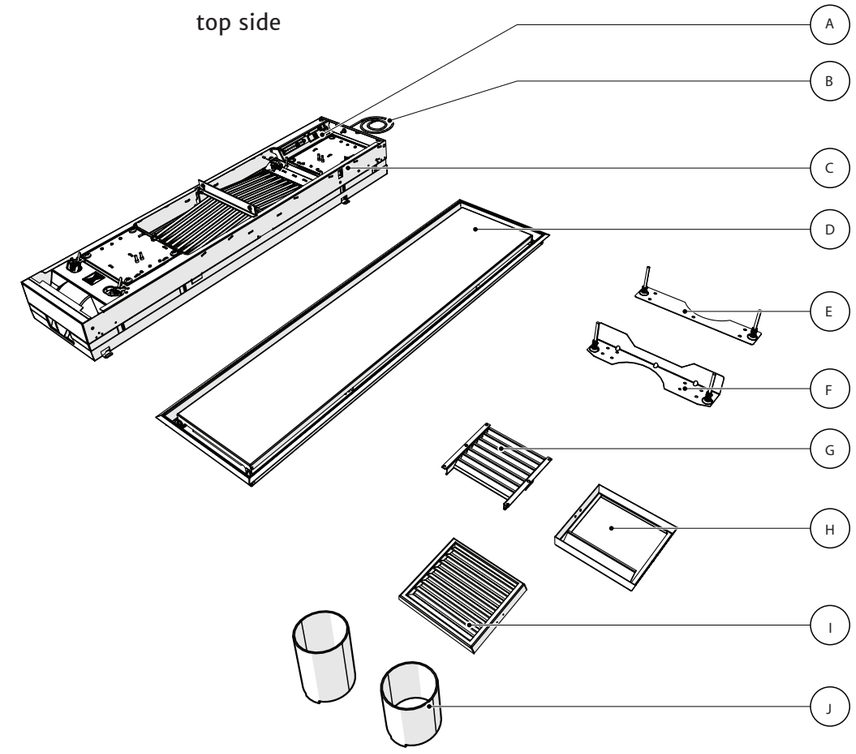


fig. 1 Main components

A. ON/OFF switch
B. Power connection wire
C. Unibody
D. Front panel (door + door frame)
E. Upper bracket
F. Lower bracket
G. Grilles
H. Grilles cover
I. Grilles assembly (2pcs)
J. Duct pipes (2pcs)

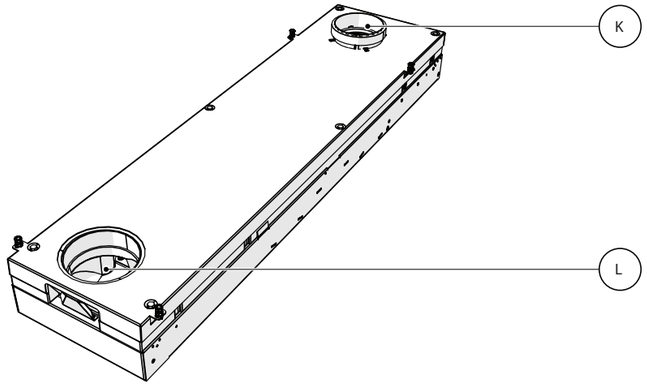


fig. 2 Main components

K. Fresh air input socket (for upper duct pipe)
L. Old air output socket (for lower duct pipe)

6. Tools needed for the installation

- Equipment to drill rectangular hole in the inner wall;
- Equipment to drill 2 round holes in the outer wall;
- cross head screw driver;
- 8mm drill;
- M6 nut driver with 160 mm shaft or tube spanner.

7. How to install the fresh-r?

⚠ DANGER

- The person responsible for installing the fresh-r should be familiar with the local building regulations.

Please follow steps 1 to 10:

1 Check the contents

1 × Cardboard wall-cut/drilling template
1 × Unibody
1 × Front panel (door + door frame)
2 × Duct pipe
1 × User manual
1 × Installation manual
2 × Grilles assembly
2 × Brackets
3 × Bags with content:
- Bag A, Mounting kit for upper and lower bracket;
- Bag B, Mounting kit for front panel and grilles;
- Bag C, Spare parts kit.

2 Prepare the wall

You will need a rectangular hole in the inner wall of the building, to house the unibody (C) of the fresh-r, and two round holes in the outer wall of the building, for the air pipes; the lowest hole needs to have a slope of 2 degrees.

For efficient ventilation place the unit centrally in the room, ideally at least at 80 cm from the floor level, but not too high to be able to see the controls easily

Mark the openings using the cardboard wall-cut/drilling template supplied

Rectangular hole
To draw the rectangular hole do the following:

1. Make sure the template is unfolded
2. Place the template on the wall.
   Make sure “UP” is visible and is pointing upwards.
   Make sure the template is well leveled.
3. Mark the template cut-outs (6x).
   Use a pencil.
4. Remove the template.
5. Draw the complete rectangle.
   Use a ruler.

Round holes
To draw the round holes do the following:

1. Fold the template to a tray.
2. Place the template in the rectangular hole, against the outer wall, and tape it.
   Make sure “UP” is visible and is pointing upwards.
   Use removable tape in the corners.
3. Mark the centres of the round holes (NOTICE: the holes are the holes are 16.25 mm OFF center to the right).
   Use a pencil and a ruler to make a cross. The cross determines the centre.
4. Remove the template.

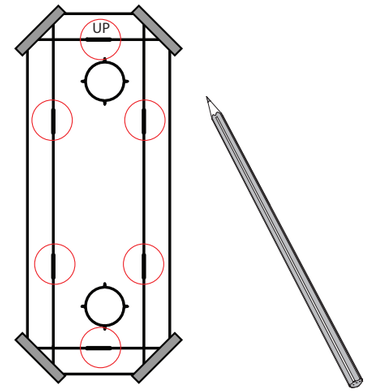


fig. 3 Draw a rectangle using the template

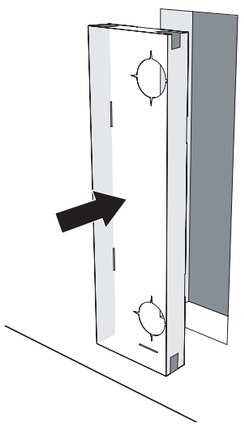


fig. 4 Draw two holes using the template

NOTICE

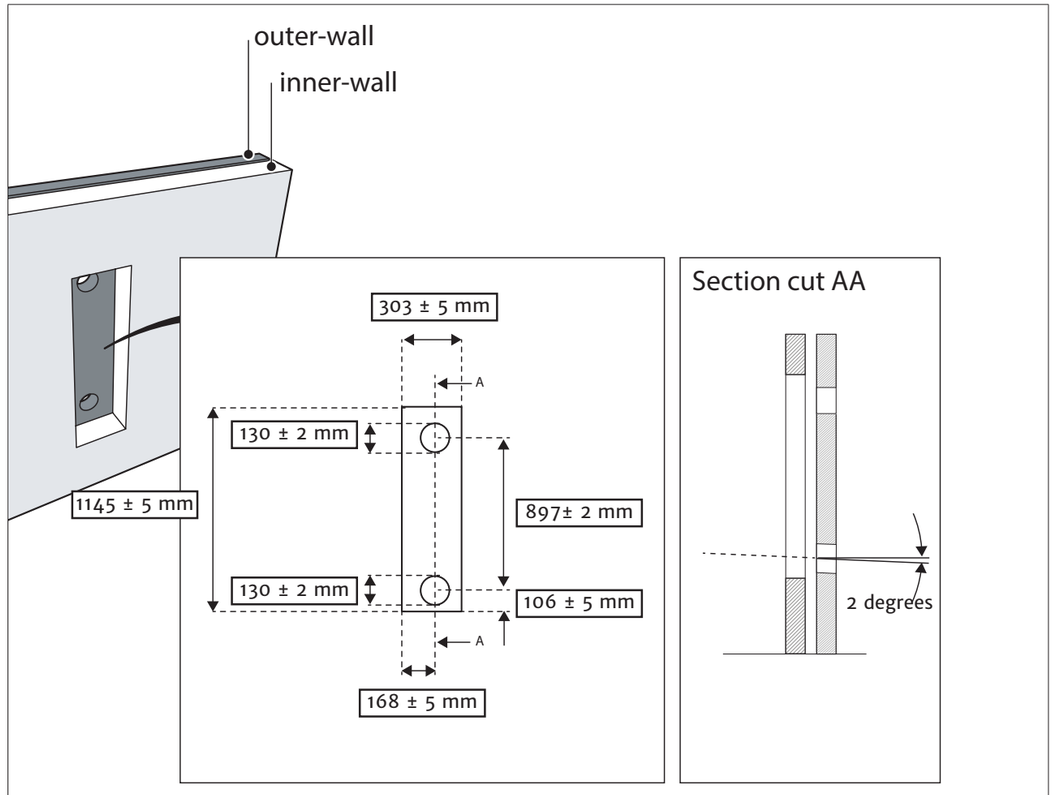
- First drill the lower hole, then drill the upper hole.

To drill the **lower** hole, do the following:

1. Mark the hole.
2. Check the dimensions (please also see fig. 5 for measurements).
3. Drill through the outer wall at a the slight downward angle of 2 degrees. This is to allow the condensate to drain.

To drill the **upper** hole, the the following:

1. Mark the hole.
2. Check the dimensions relative to the lower hole (please also see fig. 5 for measurements).
3. Drill straight through the outer wall.



For more dimensions, see the technical drawings in chapter 13.1.2 and 13.1.3.

fig. 5 Make sure the wall is well prepared

3 Fit the brackets (from Bag A)

Clean the inside of the outer wall and place the brackets.
The brackets must follow the shape of the round holes.

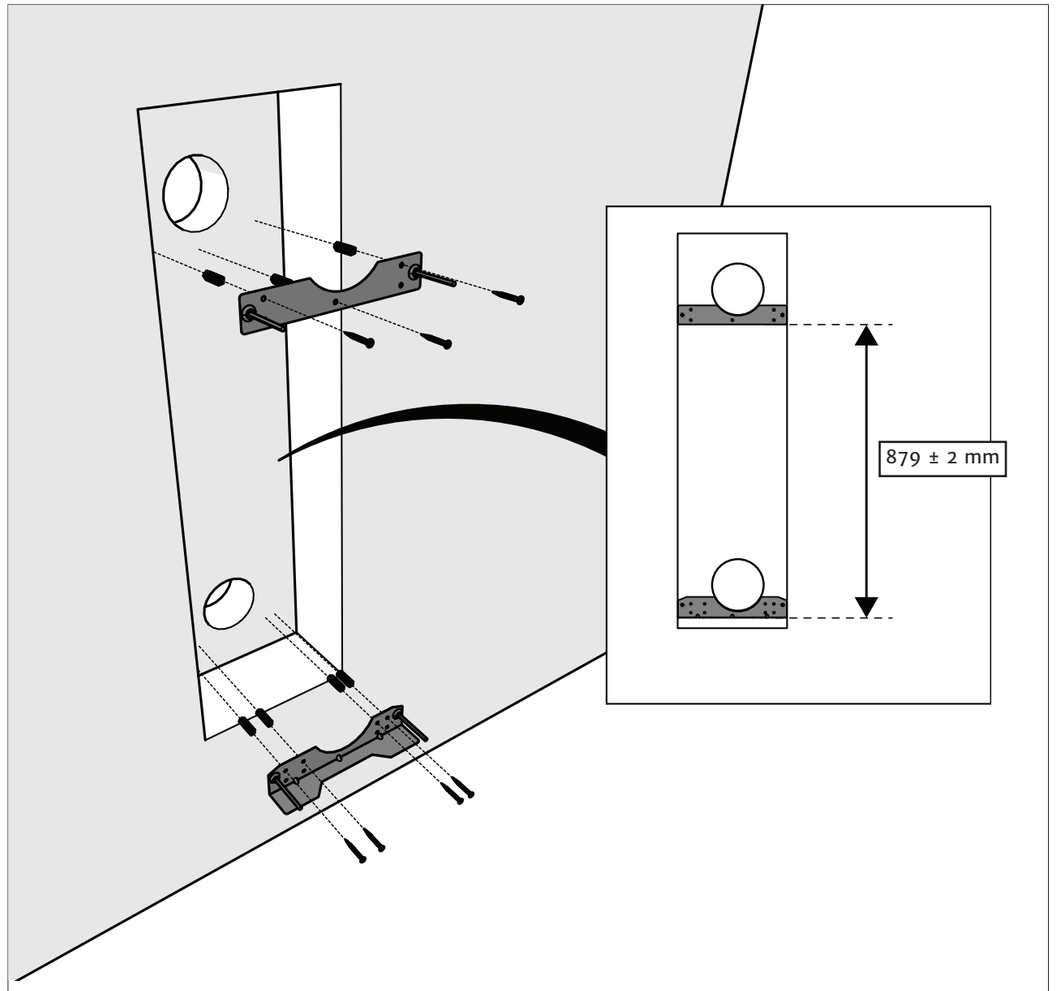


fig. 6 Place the brackets

4 Place four limit nuts (from Bag A)

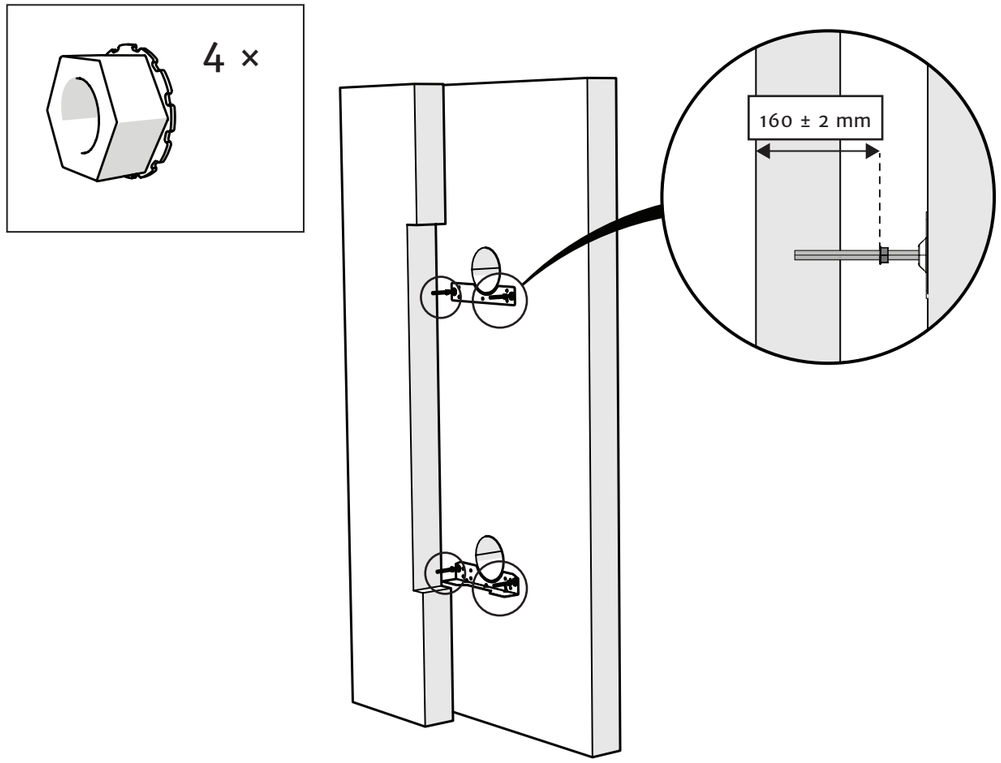


fig. 7 Place the brackets

5 Cut the duct pipes to the correct size

- Cut one duct pipe (input fresh air) to L1 ± 2.
- Cut one duct pipe (output old air) to L2 ± 2.

Tip: Use a wide tape to mark the duct pipes and get a perpendicular cut.

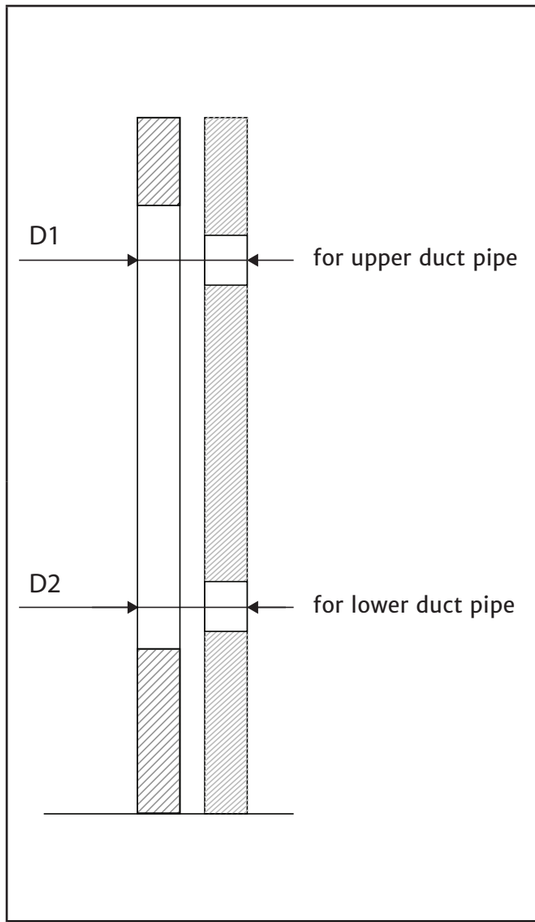


fig. 8 Determine D1 and D2

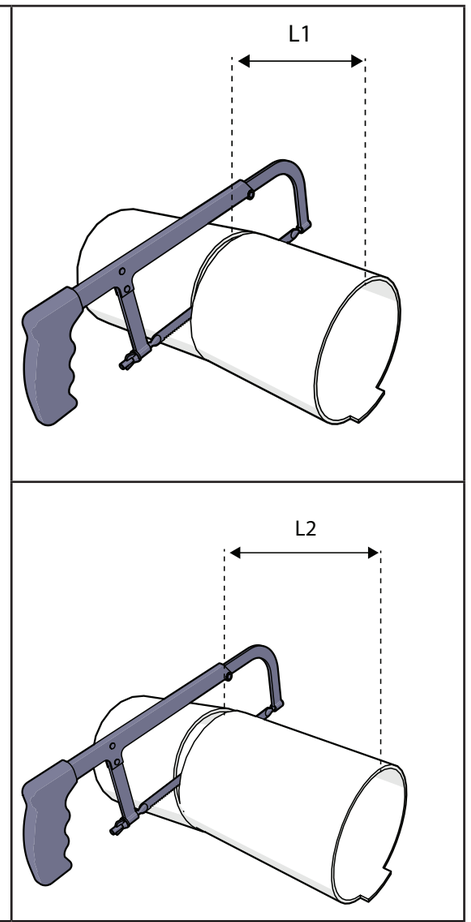


fig. 9 Make the duct pipes to the correct size

To determine length L1 (the upper duct pipe), do the following:

4. Measure the distance D1 between the front face of the inner-wall and the outside face of the outer-wall.
5. Calculate the length → L1 = D1 – 160 mm.

To determine length L2 (the lower duct pipe), do the following:

1. Measure the distance D2 between the front face of the inner-wall and the outside face of the outer-wall.
2. Calculate the length → L2 = D2 – 125 mm.

6 Place the duct pipes in the unibody

NOTICE

Use PVC glue for the lower duct pipe. The lower duct pipe is the condensate drain and needs to be water tight.

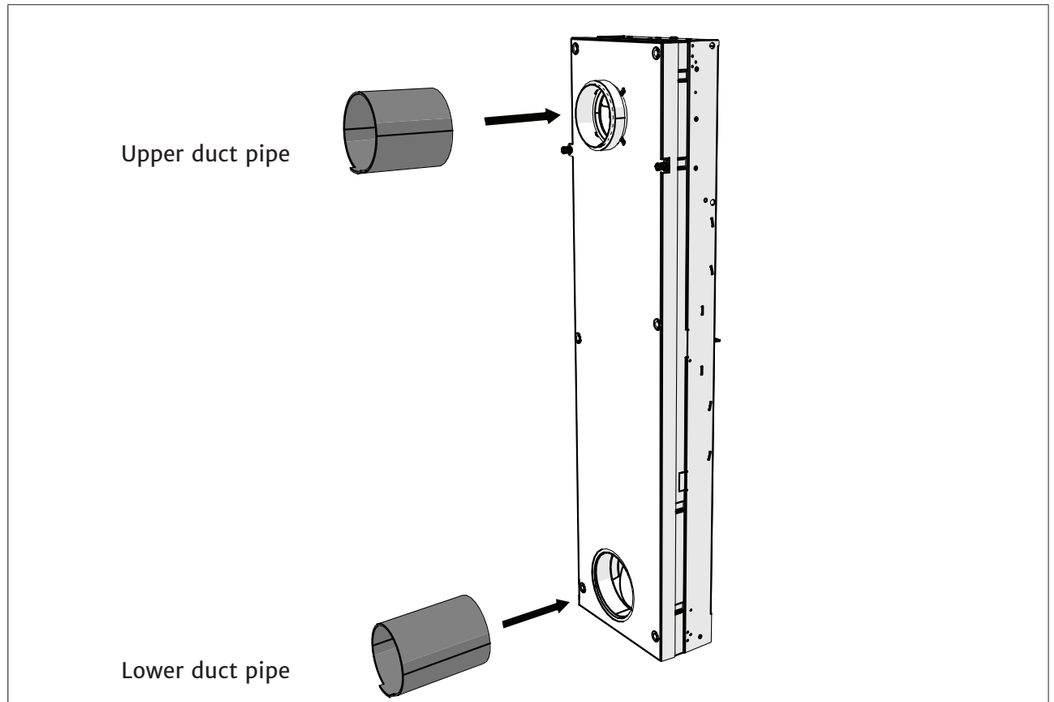


fig. 10 Place the duct pipes in the unibody

7 Place the unibody in the wall

Do the following:

1. Check the distance from the four limit nuts to the front face of the innter wall (see fig. 7). The distance should be 160 ± 2mm.
   You can adjust the distance by turning the nuts.
2. Place the unibody in the wall.
   Hold the unibody as shown in fig. 11.
3. Make sure the distance between the front side of the unibody and the front face of the inner-wall is 40 mm.
4. Mount the unibody on the brackets (4 ×).
   Use the M6 nut driver with 160 mm shaft or the tube spanner and the four nuts to from Bag A to fix the unibody.

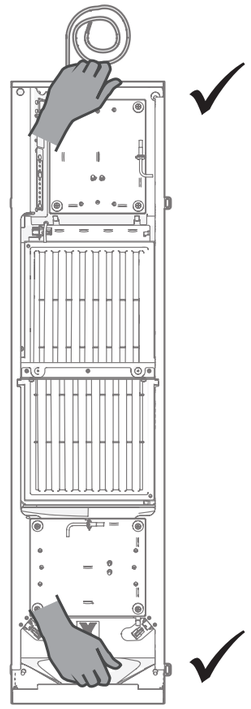


fig. 11 Hold the unibody as shown in this figure

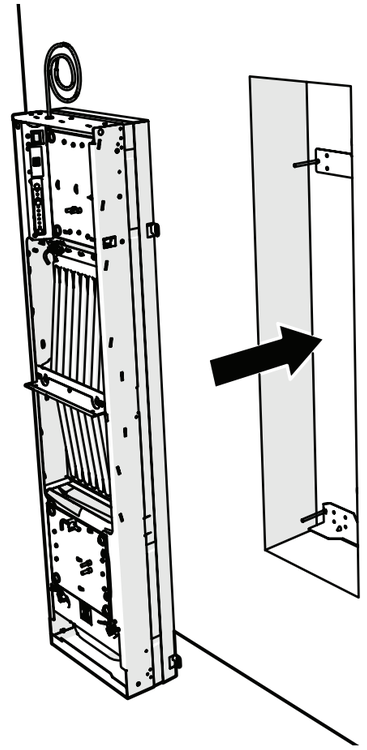


fig. 12 Place the unibody in de wall

8 Connect the fresh-r electrically and test its functionality

⚠ DANGER

- Only a qualified electrician should make this connection.
- Risk for electric shocks or electrocution. Turn off the power in the distribution box before connecting the fresh-r electrically.

Do the following:

1. Turn off the power in the distribution box before attempting to wire in the fresh-r.
2. Make the electrical connection while the fresh-r is turned OFF.
3. Turn the mains power ON again at the distribution box.
4. Turn the fresh-r ON.

   If you:
   - hear a sound AND;
   - see two working LED's AND;
   - notice two working fans.

   The product works well.

If not:

Check power supply. If the product still does not work, turn the unit OFF and contact your supplier

9 Make the side of the unibody airtight

Fill the entire space between the unibody and the exterior wall with expanding foam. The sides around the unibody should be airtight. At the same time the expanding foam should insulate the complete side of the unibody.

NOTICE

This seal needs to be airtight because air leaks will create unwanted condensation.
Add substantil insulation material around the unibody to minimise the cold bridge.

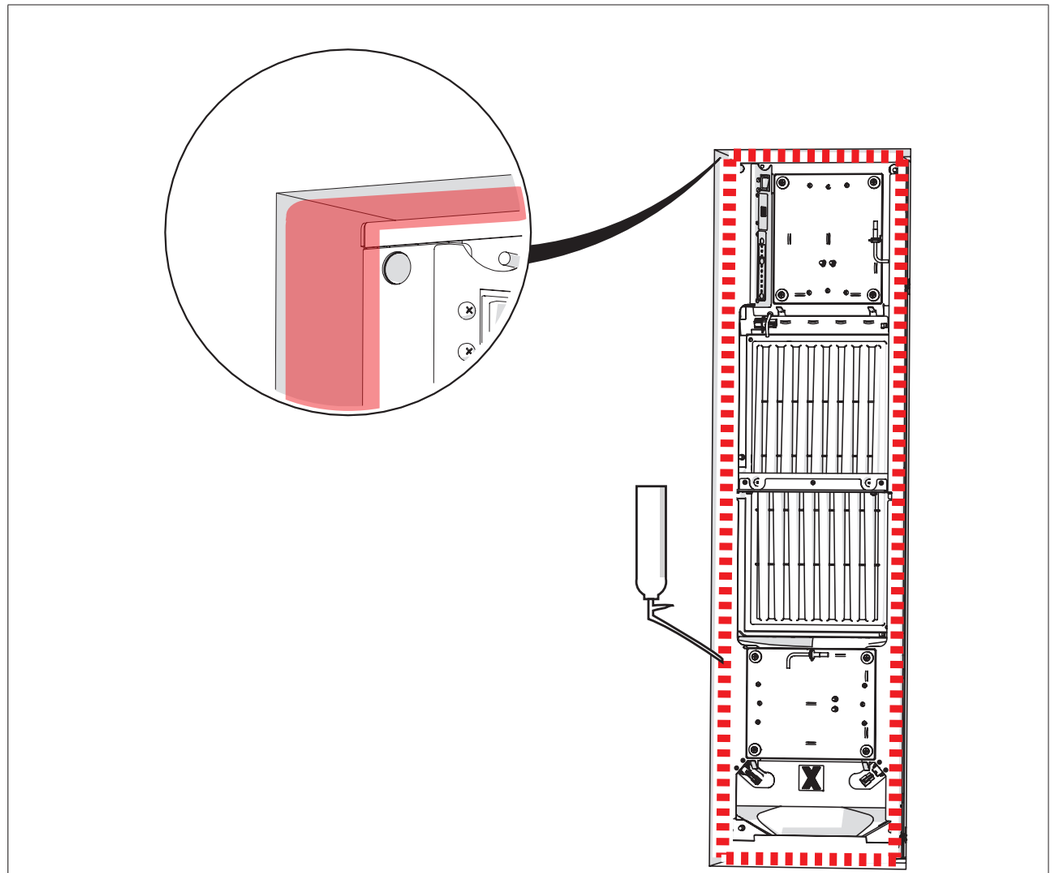


fig. 13 Make the edges air tight

10 Place and mount the door assembly (find the content in Bag B)

Do the following:

1. Place the door assembly in the rectangular gap.
2. Open the door to get acces to the four mounting holes.
3. Mount the door assembly with four screws.

Tip: Drill holes and use plugs if necessary.

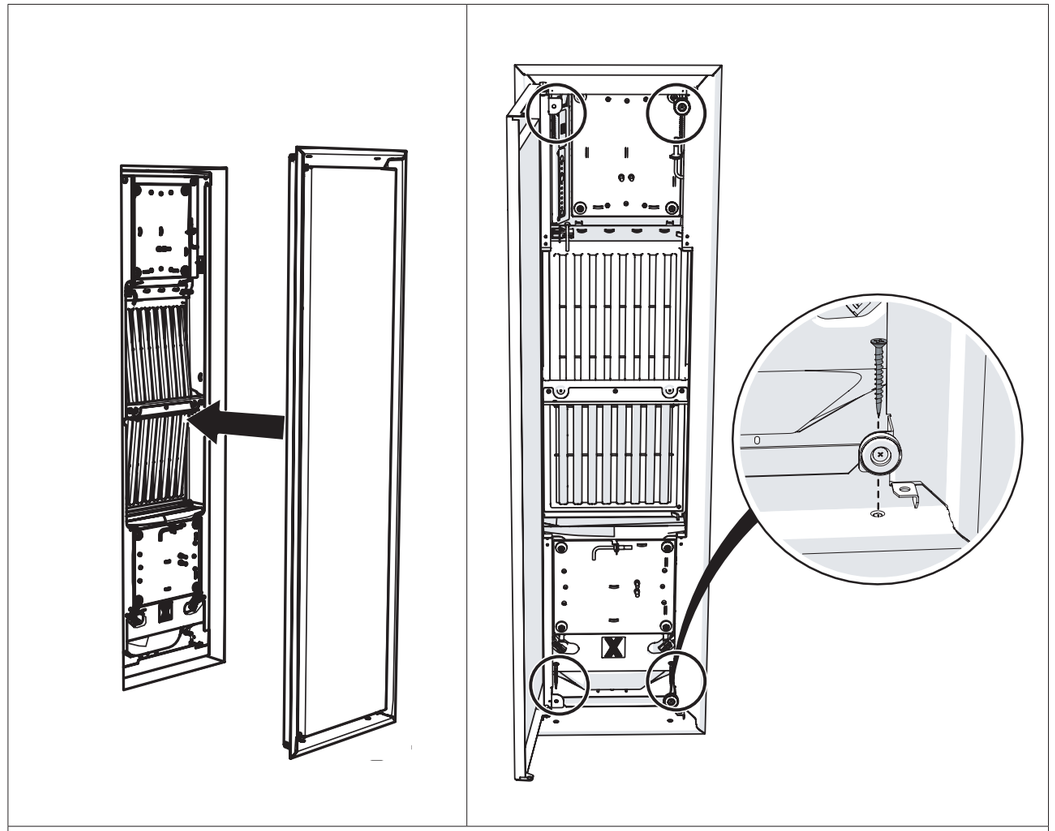


fig. 14 Place and mount the door assembly

11 Adjust the middle bar

The middle bar must rest against the middle bar, when the door is closed. This is needed to seperate the airstreams.

To adjust the middle bar do the following:

1. Turn the nuts clockwise to unlock the middle bar.
2. Move the middle bar.
3. Examine if the door rests against the middle bar.
4. If so, turn the nuts couterclockwise to lock the middle bar.

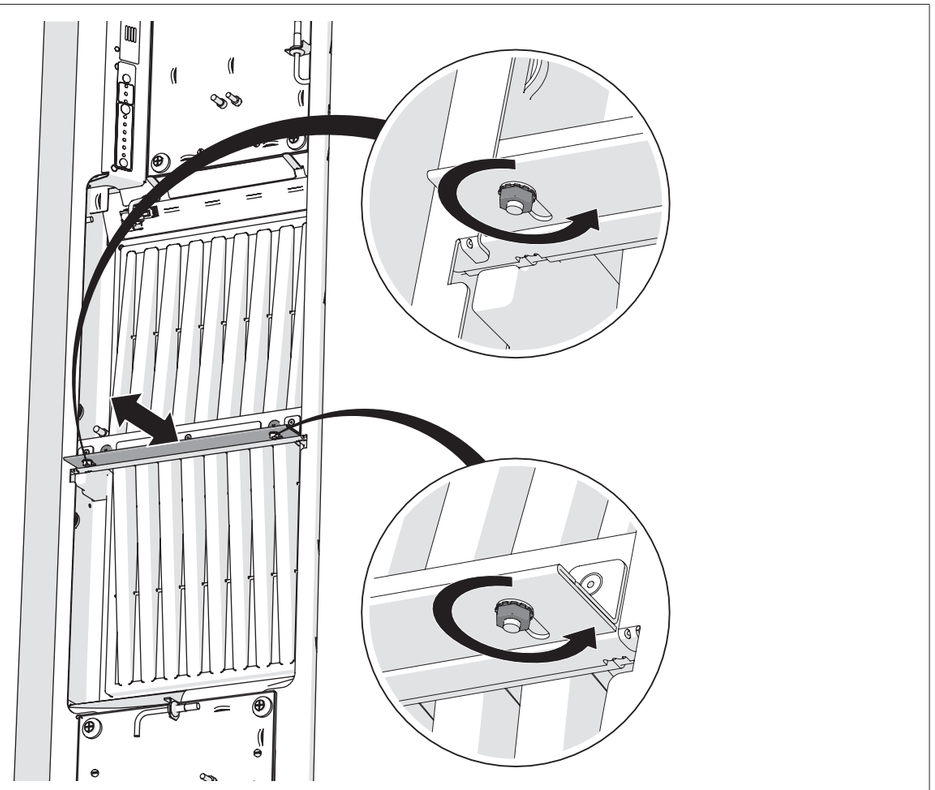


fig. 15 Move the middle bar and lock it

12 Place the grid assembly (find the content in Bag B)

Do the following:

1. Mount the grilles on the outer face of the outside-wall.
2. Place the covers.
3. Mount the covers with 4 screws. Two at each side.

NOTICE

The lip of the lower duct pipe should overlap with the edge of the grilles cover so condensate water is guided from the outer wall.

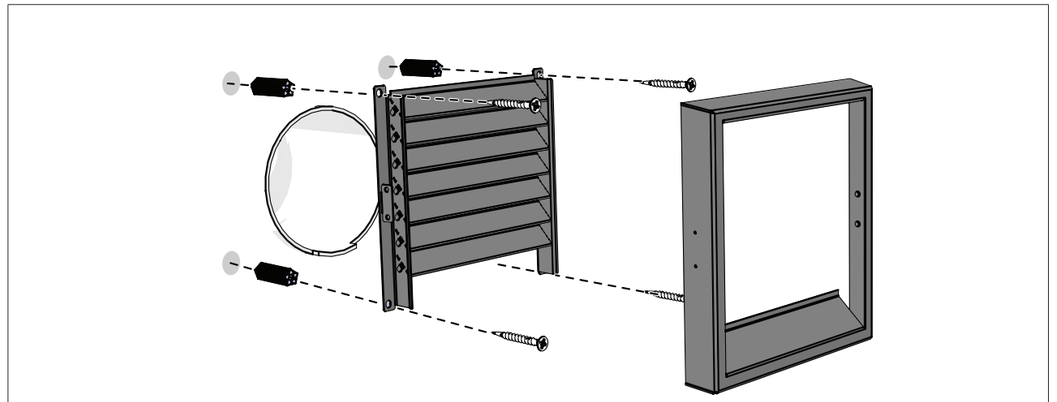


fig. 16 Place the grid assembly

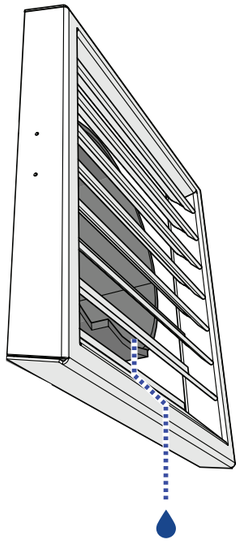


fig. 17 Lip should overlap with the edge of the grilles

8. Specifications

Type	In-The-Wall
Serial nr.	Can be found at the left side, above the middle
Flow range	0-120 m^3/hr
Working range*	-20°C to 50°C
Max. power consumption	60 Watt
Avg. power consumption	6 Watt
Noise	30 dB(A) at 80 m^3/hr according ISO3741
Efficiency (at 50m^3/hr)	90% true eff.
Control	automatic (on basis of CO_2 ppm)
Certification	CE
Weight	Less than 20 kg
Dimensions	1143 mm × 300 mm × 160 mm

9. Who can I contact for questions, spareparts or more information?

Vaventis
Achteromstraat 8a
1381 AV Weesp
support@vaventis.com
T +31 294 261 171
www.vaventis.com

10. Warranty

2 years as stated in the General terms and conditions of Vaventis B.V.

11. Frequently asked questions

Before installing

What size building can one fresh-r ventilate?
Up to 100 m^2, but this depends on the size, lay-out, number of people and the regulations, ask your supplier for details.

Where should I position the fresh-r in the building?
Centrally and ideally at least 80cm from the floor level, but not too high because you need to be able to see the controls easily. Make sure air distributes evenly between different rooms. Ask your supplier for details

Will the unit work in a bathroom?
We do not recommend to use a frehs-r in the bathroom, we recommend to use an alternatieve solution, ask your supplier for details.

Will the unit work in the toilet?
Yes, contact your supplier for details.

What should I do when the kitchen hood is on?
Make sure there is enough airflow towards the kitchen hood, we recommend a kitchen hood with a maximum capacity of 300 m3/hr, contact your supplier for details.

Will the air be distributed in the room?
Yes, CO_2 travels easily but proper air circulation is needed between the rooms, contact your supplier for details.

Can the fresh-r be installed horizontally?
No, the condensate will not be guided correctly, contact your supplier for details.

Can the fresh-r be mounted upside down?
No, the condensate will not be guided correctly, contact your supplier for details.

Where does the air enter the room?
From the bottom third of the front panel, contact your supplier for details.

Where is the air extracted from the room?
From the top third of the front panel, contact your supplier for details.

Why should we not mount the unit close to the ground?
Because it is more efficient to take warm air from the top of the room and it give better air circulation when bringing in fresh-r air in the middle of the room.

While installing

What distance is needed between the 2 duct holes?
897 +/- 2 mm from centre to centre.

Why does the area around the unibody need to be airtight?
In case of air leakage cold air could leak through and condensate on the unit.

Can we use airtight tape and insulation filler to insulate the area around the unibody?
Yes, as long as it insulates the complete side of the unibody and makes the area airtight.

Why does the lower duct need to be positioned in a 2 degree angle?
It needs to drain condensate to the outside.

Why does the lip of the lower duct pipe need to have overlap with the grilles?
In order to guide the water from the wall surface, so the condensate drops on the floor and not on the outer wall

Why does the lower duct pipe need a water tight connection with the unibody?
When heat is exchanged condensation can take place, this condensate is guided through the unibody through the lower duct pipe to the outside.

Does the upper duct pipe need to be positioned in a 2 degree angle?
No, this can be level but it is no problem to mount it under a 2 degree angle, the upper duct does not drain any condensate, it only guides incoming air.

Can we change the door to swing direction?
Yes, by removing the 2 hinge bolds & nuts and mounting them on the other side.

Should we first mount the upper and lower duct on the unit and then mount the unibody in the wall?
Yes, because the connection of the PVC needs to be checked visually before mounting the fresh-r in the wall.

There are more holes in the mounting brackets than plugs & screws provided, can we choose which mounting bracket holes to use?
Yes, you can choose the holes that give best mounting option.

How can we mount the mounting brackets in the correct position?
By using the the drilling template.

What should we do with bag C?
This is a spare part kit, store it at the bottom of the unit.

After installation

Does the fresh-r start in the automatic program?
Yes, it always runs in automatic mode, except when the fan speed is changed manually. After 100 minutes it will go back to automatic mode, refer to user manual.

How will the fresh-r determine at what rate the fresh-r needs to operate?
The higher the CO_2 level or the RH (relative humidity) levels the more it will ventilate, refer to user manual.

I feel cold air coming out of the bottom, is that correct?
Yes, moving air feels colder then stationary air, refer to user manual.

How can I operate the unit?
On the control panel, "A" for automatic. You can increase or decrease the fan speed manually using the fan buttons. Refer to the user manual. Increase or lower fans speed via the fan buttons; refer to user manual.

What does the smiley tell me?
They indicate the air quality, refer to user manual.

Does the unit measure RH or CO_2?
Yes, it measures both, please refer to user manual.

What maintenance should be done?
Rinse heat exchanger with cold water every 6 months, and clean upper and lower duct pipe every 2 years, refer to user manual.

The unit makes noise, is that correct?
If the orange or red face icon is lighted it is correct. The air quality is not good enough and it substantially increases the ventilation rate. If the green smiley is on and it makes more noise then 30 dB(A) it could be very humid inside, especially just after construction. If the green smiley is on and the building is not humid but the unit makes noise for more then 3 hours in a row, contact your supplier. Refer to user manual.

How can we reduce the noise?
Wait till the green light face lightens. If this takes too long, open a window. Refer to user manual.

The fresh-r suddenly starts to make noise, but no air is coming into the room, what happens?
If it is freezing outside, it is in defrost mode, it de-freezes the heat exchanger by blowing warm air out, so it can again work at optimum efficiency. If it is not freezing outside and the fresh-r suddenly starts to make noise, contact your supplier. Refer to user manual.

12. Declaration of conformity

as required by EC Directive

We

The manufacturer: Vaventis b.v.

Address: Achteromstraat 8a

1381 AV Weesp, The Netherlands

declare under our sole responsibility that the following product

E quipment: Air handling unit with heat recovery

Brand name: Vaventis

Model/type: Fresh-r

is in conformity with the following Directives

2006/95/EC Low Voltage (LVD)

the product bears the CE label

CE14

……..

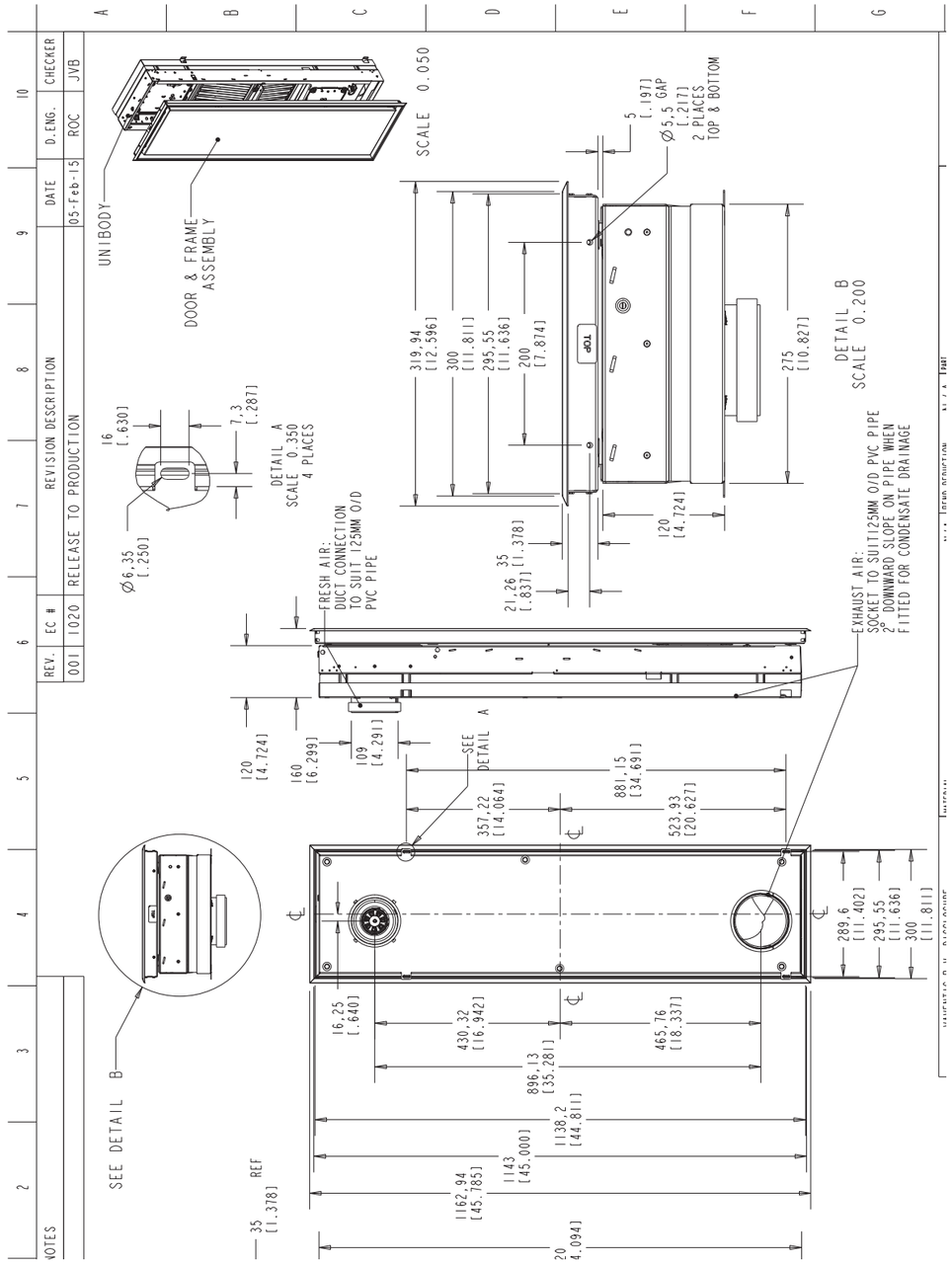
J. van Beuzekom (Managing Director)

Weesp, October 16th, 2014

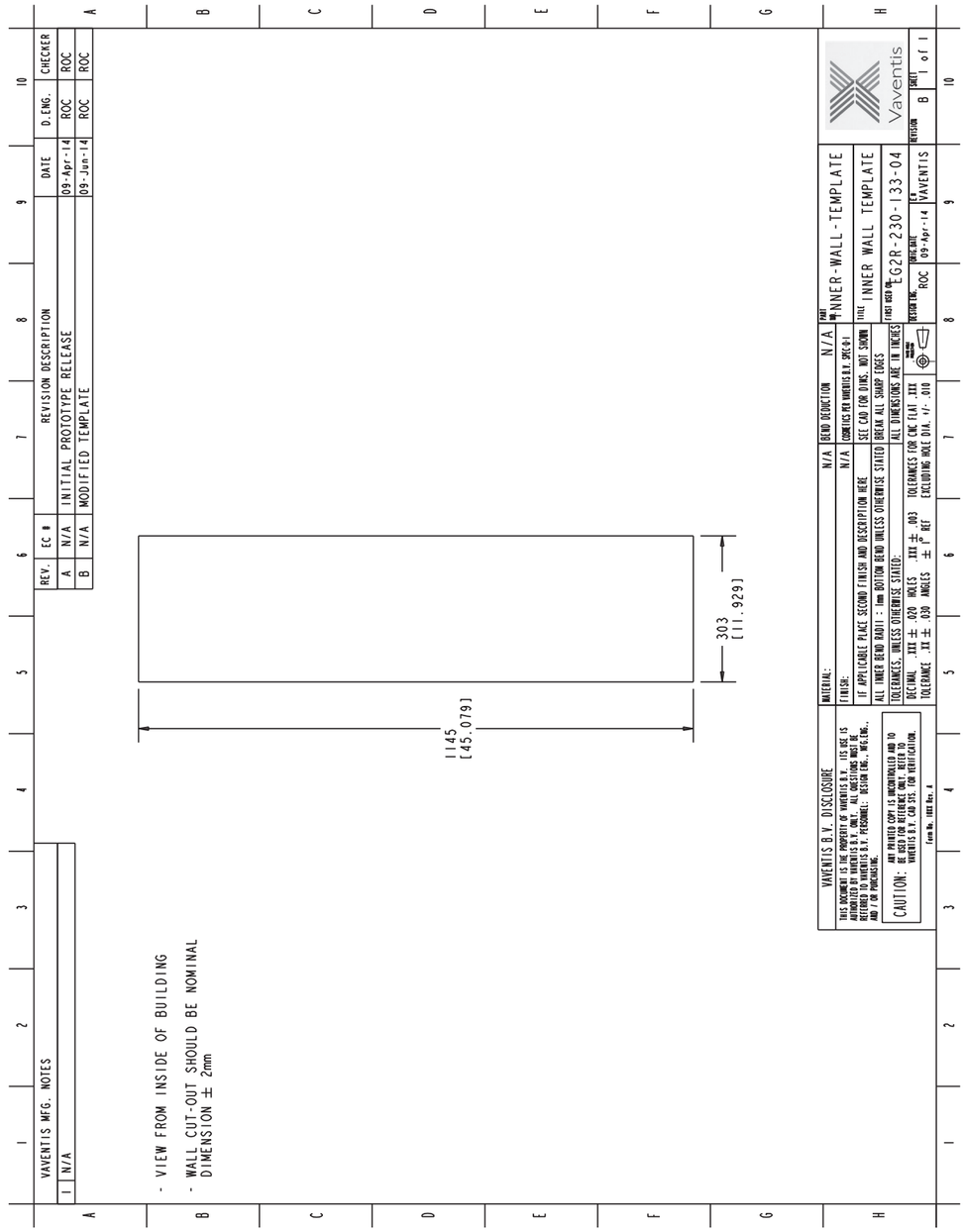
13. Appendix

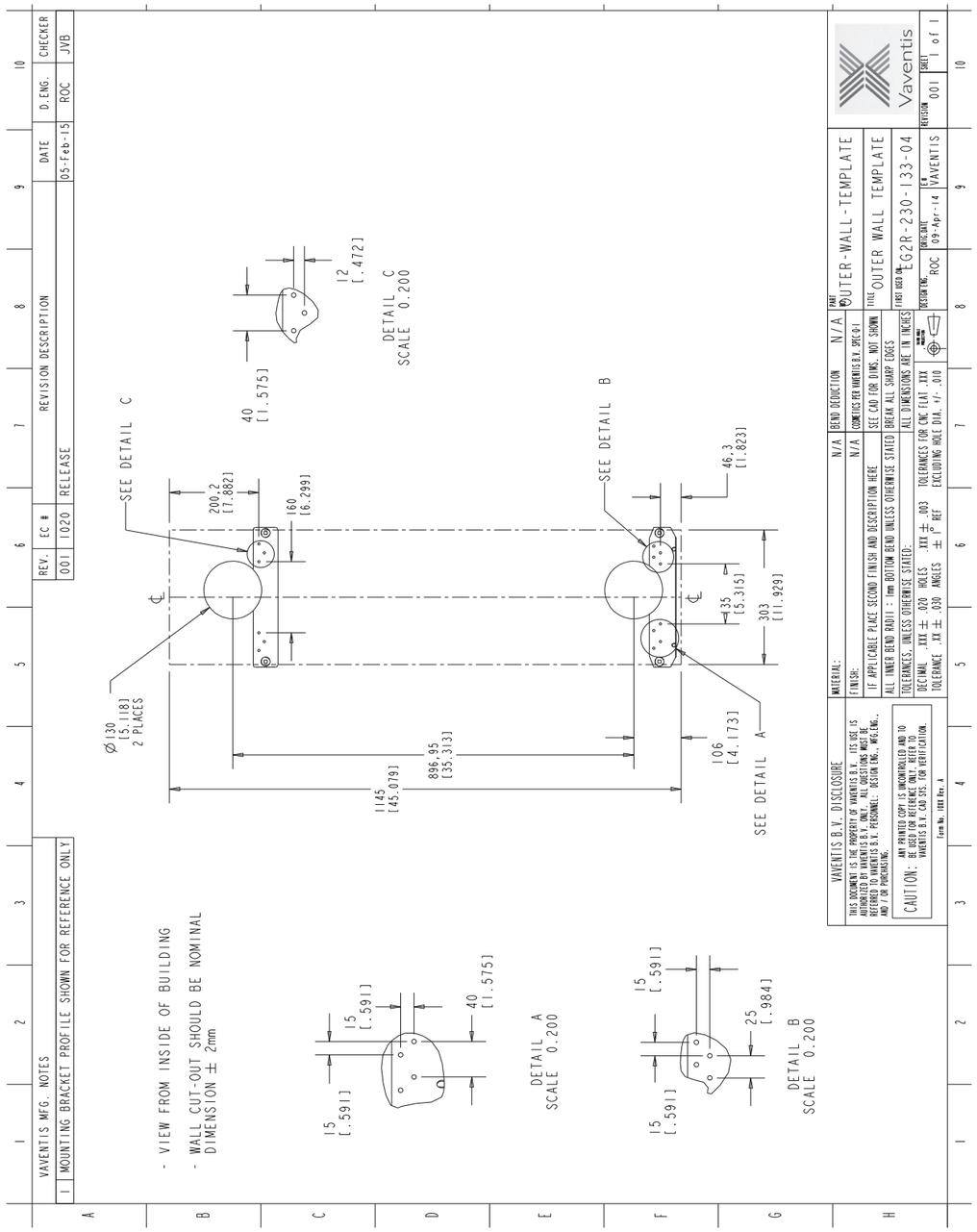
13.1 Technical drawings

13.1.1 fresh-r



13.1.2 Wall cut-out 1




REV. | EC # | REVISION DESCRIPTION | DATE | D.ENG. | CHECKER
001 | 1020 | RELEASE | 05-Feb-15 | ROC | JVB
VAVENTIS MFG. NOTES
1 | MOUNTING BRACKET PROFILE SHOWN FOR REFERENCE ONLY
- VIEW FROM INSIDE OF BUILDING
- WALL CUT-OUT SHOULD BE NOMINAL DIMENSION ± 2mm
SEE DETAIL C
SEE DETAIL B
SEE DETAIL A
200,2 [7.882]
160 [6.299]
40 [1.575]
12 [.472]
DETAIL C SCALE 0.200
46,3 [1.823]
35 [5.315]
303 [11.929]
Ø130 [5.118] 2 PLACES
1145 [45.079]
896,95 [35.313]
106 [4.173]
15 [.591]
40 [1.575]
DETAIL A SCALE 0.200
25 [.984]
DETAIL B SCALE 0.200
MATERIAL: N/A | BEND DEDUCTION N/A
FINISH: N/A | CONFIGS PER VARIANTS B.V. SPEC-01
IF APPLICABLE PLACE SECOND FINISH AND DESCRIPTION HERE | SEE CAD FOR DIMS. NOT SHOWN
ALL INNER BEND RADII = 1mm BOTTOM BEND UNLESS OTHERWISE STATED | BREAK ALL SHARP EDGES
TOLERANCES, UNLESS OTHERWISE STATED: | ALL DIMENSIONS ARE IN INCHES
DECIMAL .XXX ± .020 HOLES, .XXX ± .003 TOLERANCES FOR CNC FLAT .XXX
TOLERANCE .XX ± .030 ANGLES ± 1° REF EXCLUDING HOLE DIA. +/- .010
VAVENTIS B.V. DISCLOSURE
THIS DOCUMENT IS THE PROPERTY OF VAVENTIS B.V. ITS USE IS AUTHORIZED BY VAVENTIS B.V. ONLY. ALL QUESTIONS MUST BE REFERRED TO VAVENTIS B.V. PERSONNEL: DESIGN ENG., MFG.ENG., AND / OR PURCHASING.
CAUTION: ANY PRINTED COPY IS UNCONTROLLED AND TO BE USED ON REFERENCE ONLY. REFER TO VAVENTIS B.V. CAD SYS. FOR VERIFICATION.
Form No. 1001 Rev. A
PART OUTER-WALL-TEMPLATE
TITLE OUTER WALL TEMPLATE
FIRST USED ON EG2R-230-133-04
DESIGN ENG. ROC | DRAWN 09-Apr-14 | BY VAVENTIS
REVISION 001 | SHEET 1 of 1
Vaventis

www.vaventis.com