

Vallox
096_{MV}

Vallox
110_{MV}

Vallox
145_{MV}

Manual



Ventilation units

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**NOTE**

You can register your Vallox MV ventilation unit with the MyVallox Cloud service and sign in into your MyVallox Cloud account at www.myvallox.com.

SAFETY

Safe and appropriate handling requires knowledge of the basic safety regulations, and of the intended use of the ventilation system. Read this manual before operating the ventilation unit. Retain the manual for later reference. If you lose the manual, it can be downloaded from our website.

This user manual contains all the information necessary for safe operation of the system. All persons who operate and maintain the ventilation system must follow the instructions provided in this manual. Furthermore, all local accident prevention regulations must be observed.

Installation

Installation and setup should be carried out only by qualified experts. Electrical installations and connections must be carried out only by an electrician and in compliance with local regulations.

GUARANTEE

The guarantee and liability exclude damage resulting from:

- Inappropriate use of the ventilation system or the control unit
- Incorrect or inappropriate installation, setup or use
- Neglect of instructions concerning transportation, installation, use, or maintenance
- Structural or electronic modifications or changes made to the software

INTENDED USE

All Vallox ventilation units have been designed to provide appropriate and continuous ventilation so as to present no threat to health and to maintain structures in good condition.

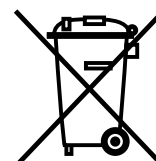


IMPORTANT

In order to ensure that the indoor air presents no harm to health and remains optimal also for the structures of the building, ventilation must be kept on without disruptions. It is recommended that ventilation be left turned on during long holidays also. This keeps the indoor air fresh and prevents humidity from condensing in the ventilation ducts and structures. It also reduces the risk of moisture damage.

DISPOSAL OF THE VENTILATION UNIT

Do not dispose of electronic devices with household waste. Follow local laws and regulations on safe and ecological disposal of the product.



NOTE

For further information, go to www.vallox.com



WARNING

The unit is not intended for use by children under 8 or by persons with reduced sensory, physical or mental capabilities, or whose lack of knowledge and experience do not ensure safe operation of the unit.

Such persons can use the unit under supervision, or by following the instructions of someone who is responsible for their safety.

Children must be supervised and not be allowed to play with the device.

SAFETY SIGNS USED IN THE INSTRUCTIONS



DANGER

Indicates a hazard that will result in death or serious injury if not avoided.



WARNING

Indicates a hazard that can result in death or serious injury if not avoided.



CAUTION

Indicates a hazard that can result in minor or moderate injury if not avoided.



IMPORTANT

Indicates a hazard that can result in damage to property or loss of data if not avoided.



NOTE

Indicates essential information about the product.



TIP

Provides additional information about the use of the product and its benefits.

DIFFERENCES BETWEEN THE MODELS

- Power
- Size and weight
- Vallox 096 MV does not have an additional heater. Vallox 110 MV and Vallox 145 MV have an additional heater.
- In Vallox 096 MV, there is a sealing tape at the bottom of the heat recovery cell. In other models, there is a separate sealing bar under the heat recovery cell.



NOTE

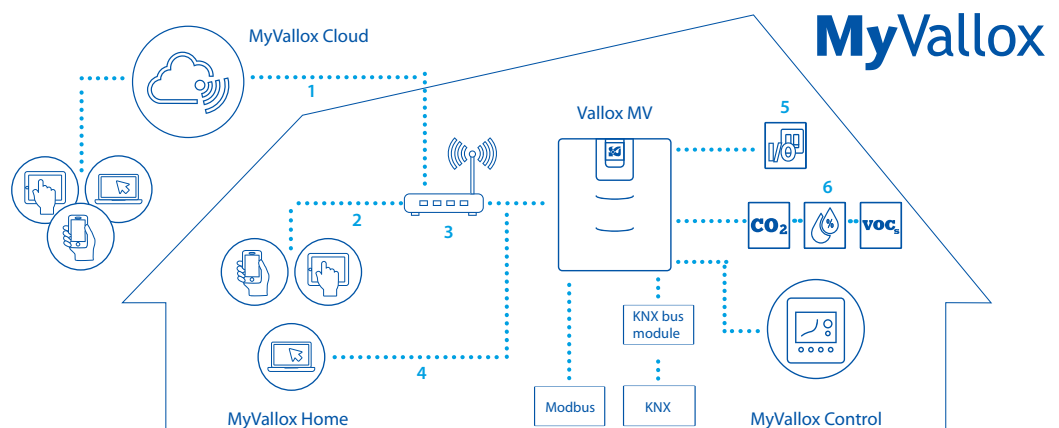
The standard equipment and available accessories vary from country to country.

INSTALLATION OPTIONS

- Models Vallox 096 MV and Vallox 110 MV can be mounted either on the wall, or on the ceiling by using a mounting plate (optional).
- Vallox 145 MV can be mounted either on the wall, or on the floor by using a floor rack (optional).
- Vallox 245 MV must always be installed on the floor by using a floor rack.

SYSTEM DESCRIPTION

1. Internet
2. WLAN
3. Router
4. WLAN/LAN
5. Additional switch
6. Sensors



VENTILATION UNIT CONTROL

Ventilation unit control options

Operation of the Vallox ventilation unit can be controlled by the following means:

- Through the My Vallox Control panel installed in the building.
- Through the MyVallox Home local area network connection and the MyVallox Home/Cloud user interface.
- Through the MyVallox Cloud service and the MyVallox Home/Cloud user interface.
- Through a remote monitoring service or building automation that uses voltage signals or Modbus messages.

In addition to the integrated humidity and carbon dioxide sensor, ventilation can also be adjusted automatically by using the optional carbon dioxide, humidity, or VOC (air quality) sensor. When these are used, ventilation remains optimal even when the dwelling is unoccupied. Each user can use the week clock to adjust the ventilation to fit their individual lifestyle.

Filter reminder

The unit reminds the user of the need to change the filters through the MyVallox Control panel and the MyVallox Home/Cloud user interface, as well as by changing the relay status, if a signal light has been connected to the relay connectors of the unit.

The filter reminder can be acknowledged:

- From the MyVallox Control panel
- From the MyVallox Home/Cloud user interface
- From the Vallox Delico PTD EC and Vallox Capto PTC EC control hoods — Damper closed, then open-closed-open-closed. Press at a less than 1 second interval.

Ventilation unit setup without a MyVallox Control panel

The ventilation unit setup can also be completed without a MyVallox Control panel. For instructions, please go to <https://vallox.techmanuals.info/ValloxMV/FIN/onlinehelp/webhelp>

See instructions provided in the section Connecting the ventilation unit to the computer.

Connecting the ventilation unit to the cloud service

The ventilation unit can be connected to the MyVallox Cloud service. The cloud service allows for controlling ventilation remotely also, using e.g. a smartphone or tablet. Also the unit software is updated automatically through the cloud service. To connect to the cloud service, the ventilation unit must be connected to the Internet via LAN and registered with the cloud service. At the same time you create a MyVallox Cloud account for yourself. Read more about the service at www.myvallox.com.



NOTE

For the MyVallox Cloud/Home instructions, please go to www.techmanuals.info/ValloxMV/ENG/onlinehelp/webhelp



IMPORTANT

Prolonged overpressure can result in damage to the structures of the building.

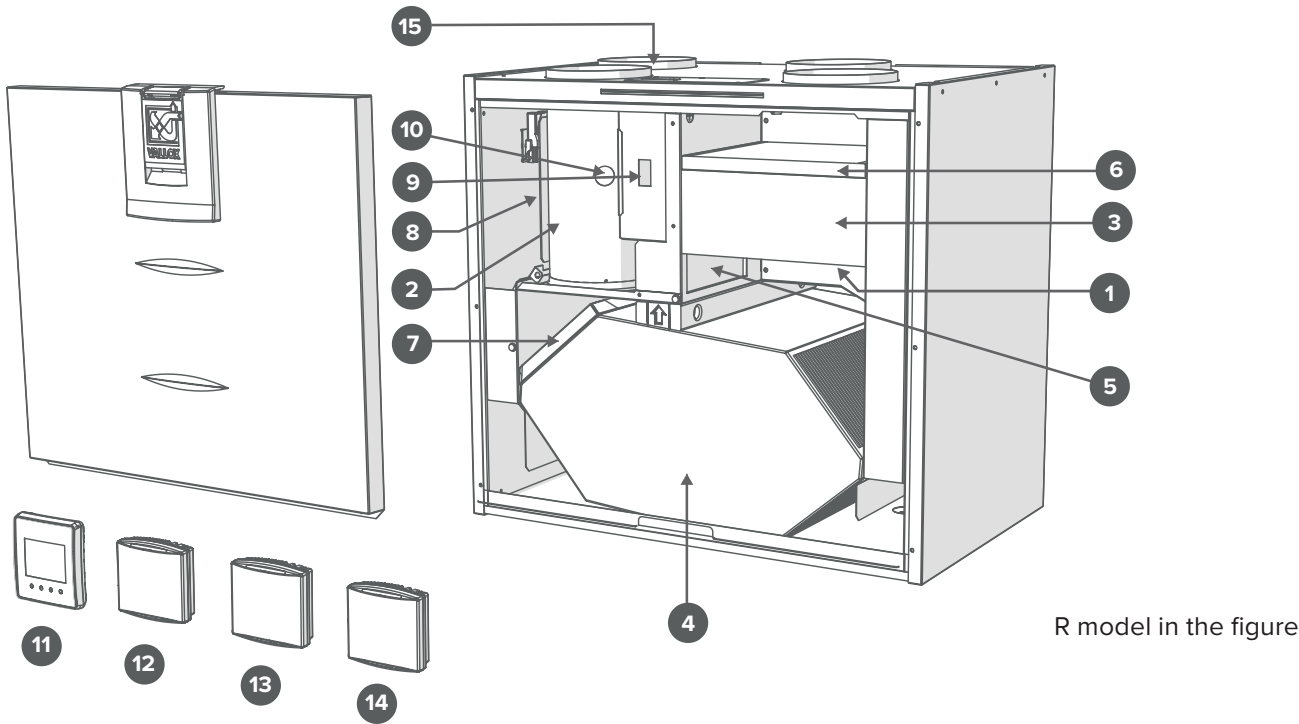






IMPORTANT

Apartment-specific ventilation units allows residents to adjust the ventilation efficiency. Ventilation is controlled based on the need e.g. through the cooker hood, ventilation control panel, or a separate control centre. In order to ensure that the indoor air presents no harm to health and remains optimal also for the structures of the building, **ventilation must be kept on without disruptions**. It is recommended that ventilation be left turned on during long holidays also. This keeps the indoor air fresh and prevents humidity from condensing in the ventilation ducts and structures. It also reduces the risk of moisture damage.

MAIN PARTS

Vallox 096 MV, Vallox 110 MV, and Vallox 145 MV



- | | |
|---|---|
|  Extract air fan (behind the protective cover) 1 |  Safety switch 9 |
|  Supply air fan (behind the protective cover) 2 |  Internal humidity sensor 10 |
|  Fine filter for supply air 3 |  Internal carbon dioxide sensor 10 |
|  Heat recovery cell 4 |  Control panel 11 |
|  Bypass damper of the HR cell 5 |  Humidity sensor (optional) 12 |
|  Coarse filter for supply air 6 |  Carbon dioxide sensor (optional) 13 |
|  Coarse filter for extract air 7 |  VOC sensor (Optional) 14 |
|  Post-heating resistor (behind the extract air duct) 8 |  Ceiling bushing for electric wires 15 |

MOUNTING ON THE WALL



NOTE

Avoid mounting the unit on a hollow, echoing partition wall or on a bedroom wall, or prevent the conduction of sound.

The minimum distance between the top of the unit and the finished ceiling surface is 30 mm. Note that during mounting the unit rises 10 mm higher than the final height.

Mount Vallox 096 MV, 110 MV, and Vallox 145 MV on the wall with a mounting plate, as shown in the adjacent figure. Make sure that the unit is horizontally level after mounting.

MOUNTING ON THE CEILING

Vallox 096 MV and Vallox 110 MV can be equipped with an optional ceiling mount plate. To attach the ceiling mounting plate:

- On rafter frames or other frame structure with M8 thread bars so that they withstand the weight of the unit.
- Ensure that the installation plate is horizontally level, as this determines the position of the unit.

Insulate the outdoor air and exhaust air duct against condensation also between the unit and the ceiling mounting plate.

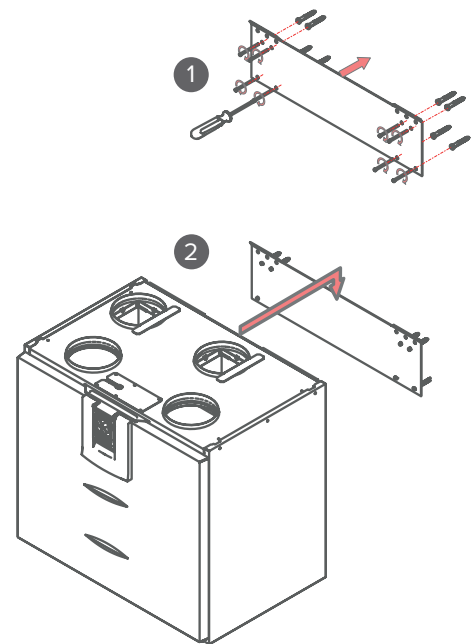
Mounting the ceiling mounting plate

1. Fasten the thread bars on the rafter frames or other frame structure, and screw the nuts onto the bars.
2. Lift the ceiling mounting plate in place.
3. Push a rubber damper and a washer onto each thread bar, and ensure that they touch the bottom of the cups of the plate (Vallox 096 MV).
4. Turn the nuts to make sure that the unit is horizontally level.
5. Shorten the lower ends of the thread bars so that they will be at no more than 10 mm from the lower surface of the ceiling mounting plate.



CAUTION

The ventilation unit is very heavy. Do not perform this procedure alone.



NOTE

When installing the unit, reserve a sufficient space in front of the unit for servicing purposes.

Mount the ventilation unit in a place where the temperature does not fall below +10°C.

Vallox 096 MV: The service space in front of the unit must be at least 400 mm.

Vallox 110 MV:
The service space in front of the unit must be at least 450 mm.

Vallox 145 MV:
The service space in front of the unit must be at least 550 mm.

Installing the ventilation unit to the ceiling mounting plate

1. Install the ceiling mounting plate with M8 thread bars so that it is horizontally level.



NOTE

The end of the thread bars must be 5 mm or less below the fastening nut. Do not fasten the ceiling mounting plate too tight to the ceiling. Ensure that the sliding bars move and restore to their original position by pulling from the operating levers (A). The top edge of the white covering strip of the ceiling mounting plate can be installed against the ceiling. Alternatively, a concealed mounting method can be used, in which case the ceiling can be 20 mm below the top of the white covering strip.

2. 096 - Install the insulation washers into the outlet collars of the ventilation unit.
110 - Ensure that the insulation washers are in place in the outlet collars below the ceiling mounting plate.
3. Remove the door before installing the ventilation unit to the ceiling mounting plate.
4. Lift the ventilation unit close to the ceiling mounting plate and feed the cables and the connection box through the hole in the ceiling mounting plate on top of the ceiling.



NOTE

Remember to make a service door in the ceiling so that the cables and the connection box can be accessed. The distance between the service door and the ceiling mounting plate must be around 500 mm.

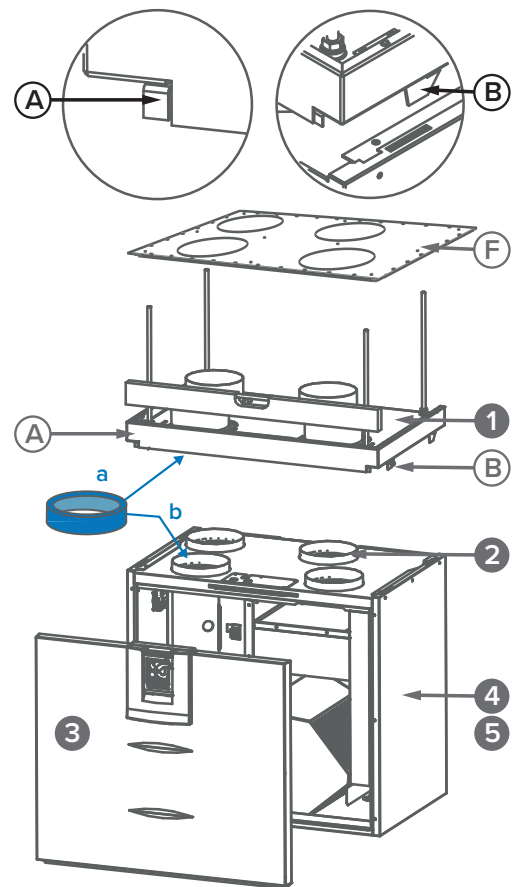
Alternatively, the cables can be fed between the ceiling mounting plate and the ventilation unit to the rear wall. When the ventilation unit is lifted against the ceiling mounting plate, the unit locks in place. Where needed, guide the mounting hooks on the ceiling mounting plate (B) to the grooves on the side panels of the ventilation unit. There are operating levers (A) on the front bottom corners of the ceiling mounting plate. When the levers have been restored to the same level with the white covering strip of the ceiling mounting plate, the unit has been locked in place.

5. Where required, the unit can be detached from the ceiling mounting plate. Remove the door of the unit. Lift the unit slightly upwards and pull simultaneously from both operating levers (A) of the ceiling mounting plate to detach the unit from the ceiling mounting plate.

Attic floor penetration plate

The attic floor penetration plate (F) is optional. When an attic floor penetration plate is used, the tightness of the vapour barrier has to be ensured.

The minimum distance of the attic floor penetration plate from the rear wall is 5mm. The minimum distance of the attic floor penetration plate from the side walls is 15mm.



NOTE

Mount the ventilation unit in a place where the temperature does not fall below +10°C.



TIP

You can detach the unit from the ceiling mounting plate by pulling the spring-loaded moulding to the direction shown by the arrow (more detailed information provided with the ceiling mounting plate).

MOUNTING ON A BASE



NOTE

Vallox 145 MV must always be installed on a base on the floor, or on the wall using a mounting plate.

The base is optional. Adjust the base with adjusting legs to level it. Remove the (4 pcs) rubber plugs at the bottom of the unit. Place the unit on top of the base so that the bars of the base fit in the holes at the bottom of the unit. Mount the ventilation unit on the wall with a mounting plate, as shown in the adjacent figure. Make sure that the unit is horizontally level after mounting.

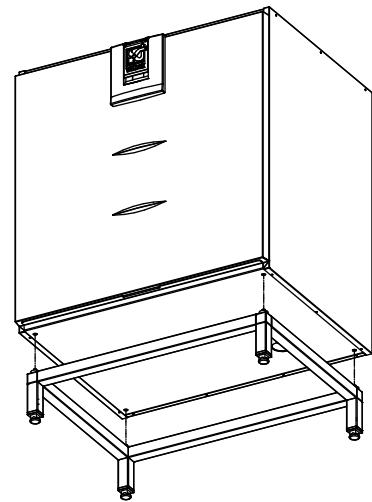
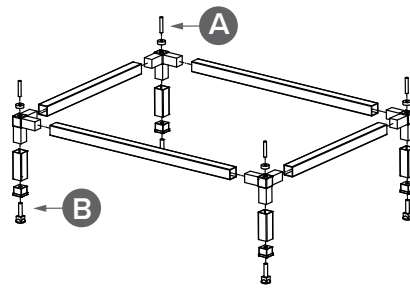
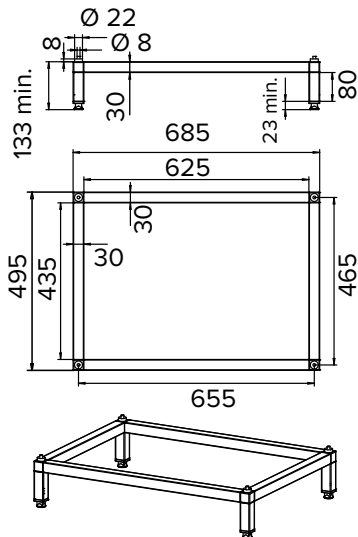


NOTE

Mount the ventilation unit in a place where the temperature does not fall below +10°C.

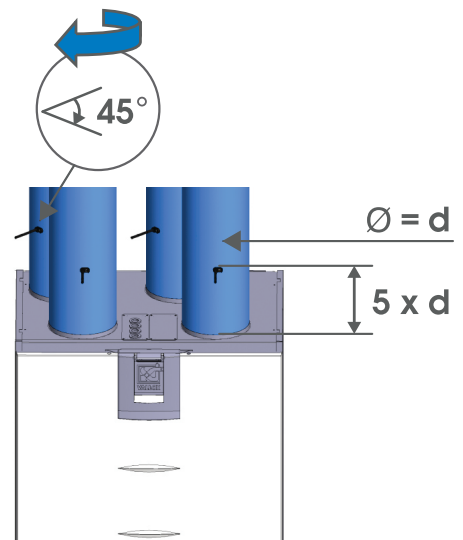
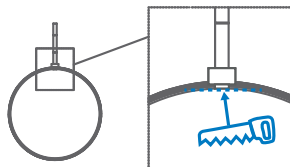
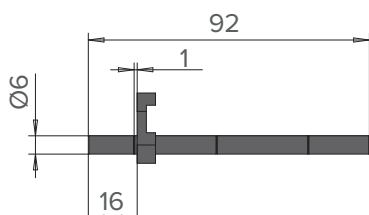
A Thread bar M8 x 35, shorter thread upward

B The length of the adjusting screw is 37mm.



MEASURING AND ADJUSTING THE AIR FLOWS OF THE VENTILATION UNIT

The accessories delivered with the unit include four (4) air flow measuring tubes. These can be inserted in the ducts to allow for easier ventilation adjustment.



REMOVAL OF CONDENSING WATER



NOTE

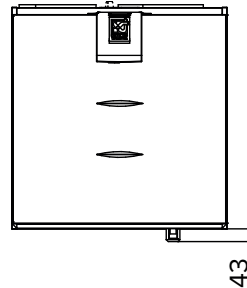
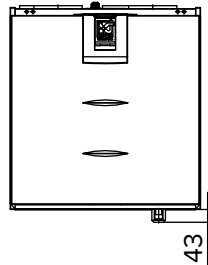
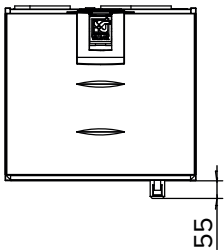
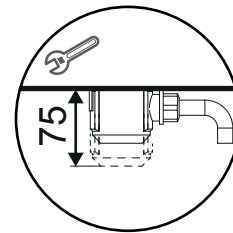
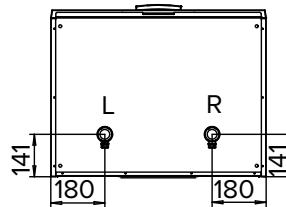
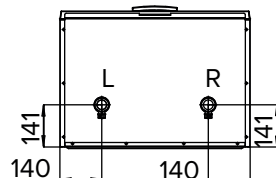
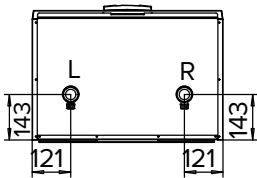
The Vallox Silent Klick siphon package is delivered with the unit. Installation instructions for the siphon are enclosed with the packaging, and can also be found online at www.vallox.com. When the alternative siphon installation method is used, the ring seal and the locking part must be moved to the pipe connection part that is mounted on the wall.

Dimensioning figure and space required for installation of the Vallox Silent Klick siphon

Vallox 096 MV

Vallox 110 MV

Vallox 145 MV

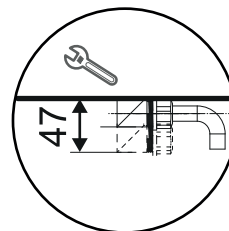
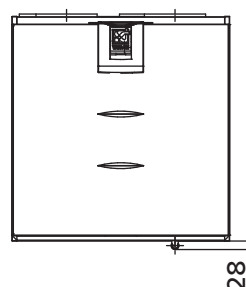
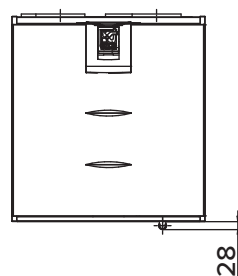
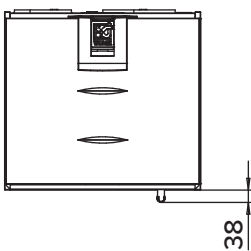


Space required by the alternative Vallox Silent Klick siphon installation method (elbow)

Vallox 096 MV

Vallox 110 MV

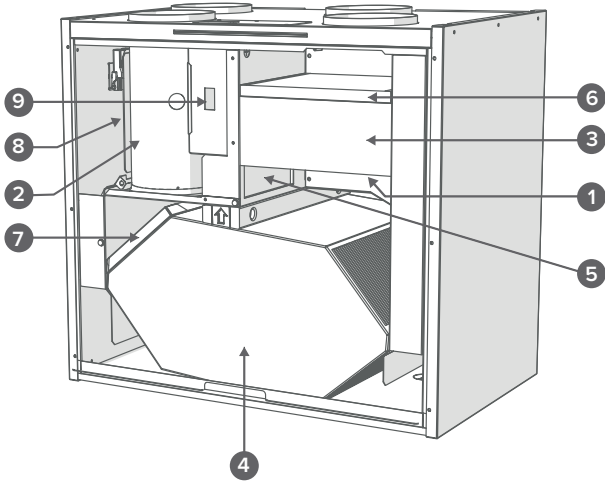
Vallox 145 MV



DIMENSIONS AND DUCT OUTLETS

Vallox 096 MV

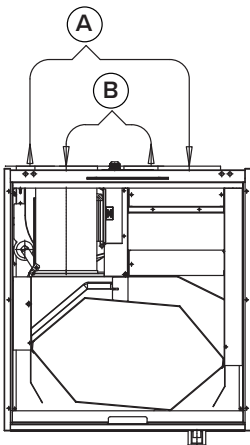
Main parts



R model in the figure.
In the L model, the parts are mirrored

- | | |
|---|---|
| 1. Extract air fan
(behind the protective cover) | 5. Bypass damper of the HR cell |
| 2. Supply air fan
(behind the extract air duct) | 6. Coarse filter for supply air |
| 3. Fine filter for supply air | 7. Coarse filter for extract air |
| 4. Heat recovery cell | 8. Post-heating resistor
(behind the extract air duct) |
| | 9. Safety switch |

Air flow measurement points

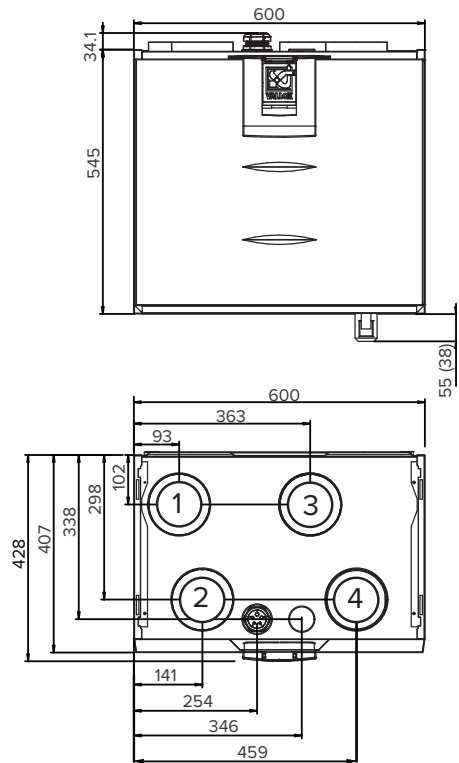


- A Supply air
B Extract air

Measurement points after the outlet collar. The fan curves indicate the total pressure accounted for by duct losses.

Dimensions and duct outlets

Dimensions



Duct outlets

R model

Inner diameter of the female collar: 125mm

1. Supply air from the unit to the apartment
2. Extract air from the apartment to the unit
3. Exhaust air flowing outdoors from the unit
4. Outdoor air to the unit

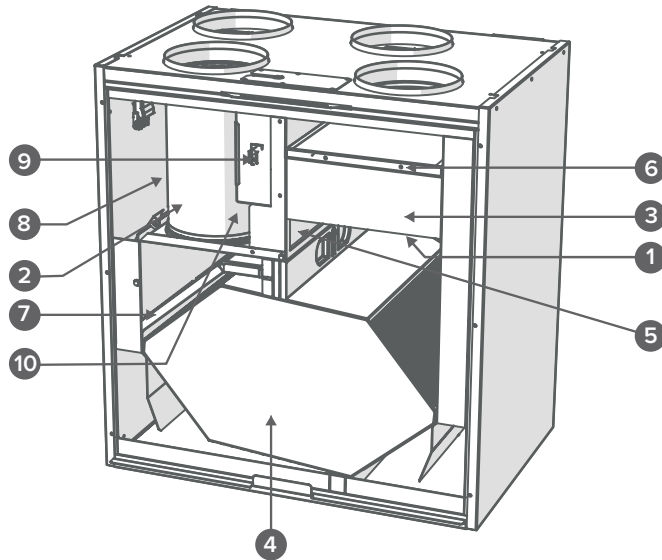
L model

Inner diameter of the female collar: 125mm

1. Exhaust air flowing outdoors from the unit
2. Outdoor air to the unit
3. Supply air from the unit to the apartment
4. Extract air from the apartment to the unit

Vallox 110 MV

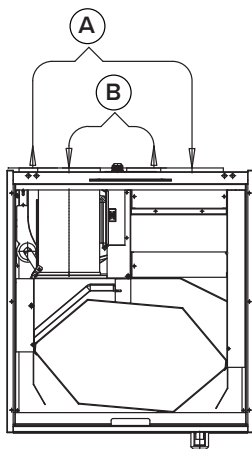
Main parts



R model in the figure.
In the L model, the parts are mirrored

- | | |
|---|--|
| 1. Extract air fan
(behind the protective cover) | 6. Coarse filter for supply air |
| 2. Supply air fan
(behind the extract air duct) | 7. Coarse filter for extract air |
| 3. Fine filter for supply air | 8. Post-heating resistor
(behind the extract air duct) |
| 4. Heat recovery cell | 9. Safety switch |
| 5. Bypass damper of the HR
cell | 10. Additional heating resistor
(behind the extract air duct) |

Air flow measurement points

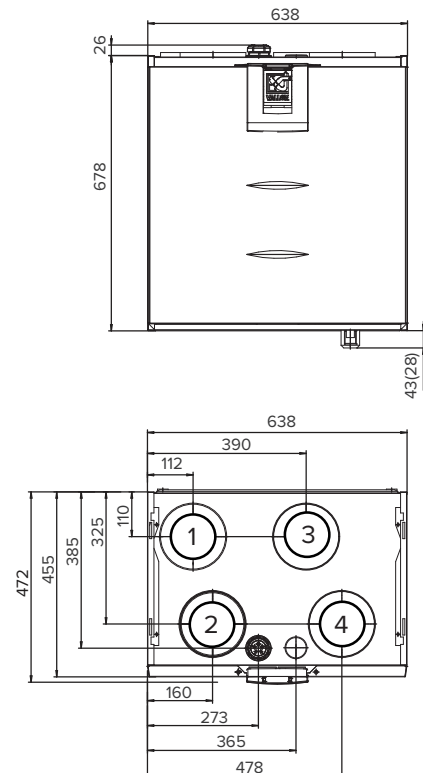


- A Supply air
B Extract air

Measurement points after the outlet collar. The fan curves indicate the total pressure accounted for by duct losses.

Dimensions and duct outlets

Dimensions



Duct outlets

R model

Inner diameter of the female collar: 160mm

1. Supply air from the unit to the apartment
2. Extract air from the apartment to the unit
3. Exhaust air flowing outdoors from the unit
4. Outdoor air to the unit

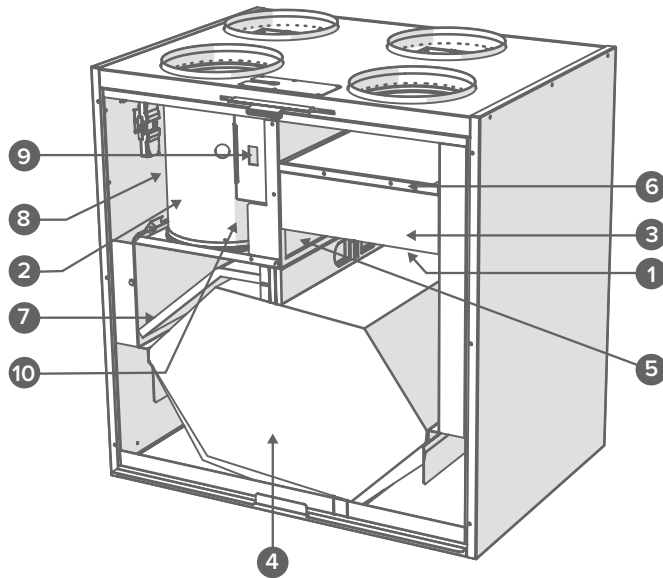
L model

Inner diameter of the female collar: 160mm

1. Exhaust air flowing outdoors from the unit
2. Outdoor air to the unit
3. Supply air from the unit to the apartment
4. Extract air from the apartment to the unit

Vallox 145 MV

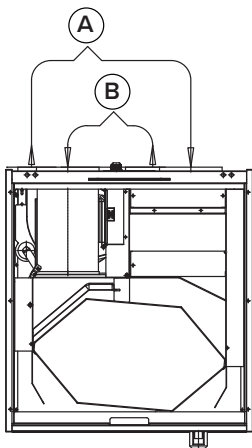
Main parts



R model in the figure.
In the L model, the parts are mirrored

- | | |
|---|--|
| 1. Extract air fan
(behind the protective cover) | 6. Coarse filter for supply air |
| 2. Supply air fan
(behind the extract air duct) | 7. Coarse filter for extract air |
| 3. Fine filter for supply air | 8. Post-heating resistor
(behind the extract air duct) |
| 4. Heat recovery cell | 9. Safety switch |
| 5. Bypass damper of the HR cell | 10. Additional heating resistor
(behind the extract air duct) |

Air flow measurement points

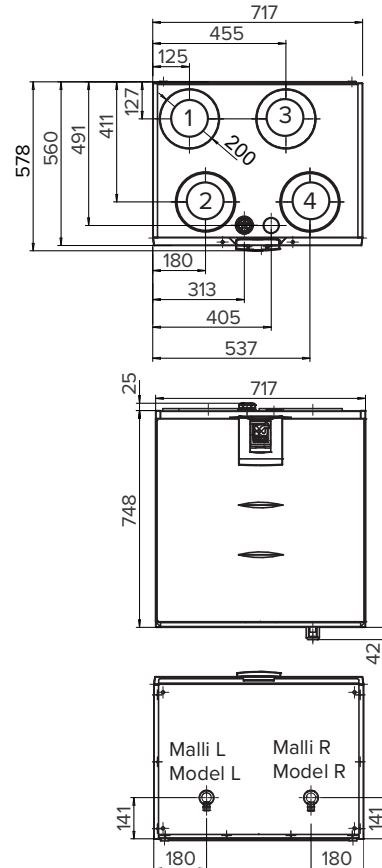


- A Supply air
B Extract air

Measurement points after the outlet collar. The fan curves indicate the total pressure accounted for by duct losses.

Dimensions and duct outlets

Dimensions



Duct outlets

R model

Inner diameter of the female collar: 200mm

1. Supply air from the unit to the apartment
2. Extract air from the apartment to the unit
3. Exhaust air flowing outdoors from the unit
4. Outdoor air to the unit

L model

Inner diameter of the female collar: 200mm

1. Exhaust air flowing outdoors from the unit
2. Outdoor air to the unit
3. Supply air from the unit to the apartment
4. Extract air from the apartment to the unit

BEFORE BEGINNING MAINTENANCE WORK

The safety switch (S) automatically turns off the power when the door of the unit is opened.

WARNING
Always disconnect the power plug before starting the ventilation unit maintenance.

There are two unit models, left- (L) and right-handed (R). The figure shows the right-handed model.

CHANGING THE FILTERS

When the maintenance reminder becomes activated, check the cleanliness of the filters and replace them if required.

The Vallox ventilation unit has three air filters:

- Coarse filter for supply air filters insects, heavy pollen and other relatively large foreign objects out of the outdoor air.
- Fine filter for supply air filters microscopic pollen and dust particles out of the supply air.
- Coarse filter for extract air filters the extract air and keeps the heat recovery cell clean.

The filter replacement interval depends on the ambient particle concentration. It is recommended that the filters be replaced every spring and autumn, or at the very least once a year.

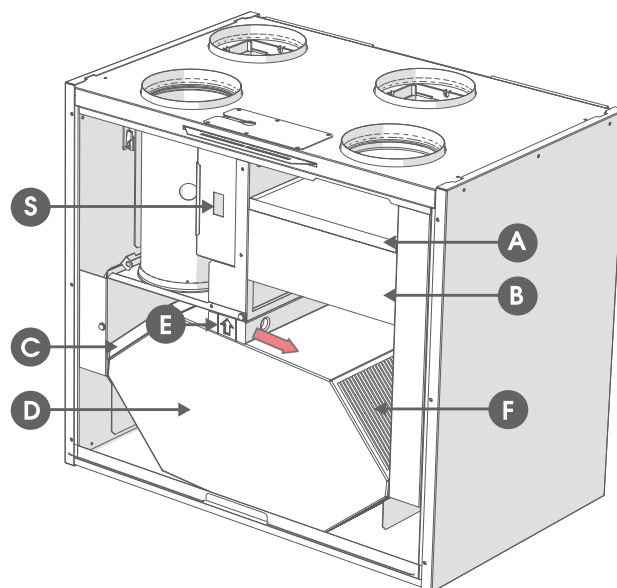
To replace the filters:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Lift the latch to open the door of the Vallox ventilation unit.
3. Lift the door off.

CAUTION
The door is heavy.

4. Remove the old filters (A, B, C) and discard them.
5. Install the new filters (A, B, C).
6. Close the door of the unit. Ensure that the safety switch catch of the door is touching the safety switch, allowing the unit to be turned on.
7. Plug the ventilation unit back into the mains.

The filters have now been successfully replaced.



TIP
Using original Vallox filters ensures that the ventilation unit remains in top condition, giving the best results. To select and order filter packages, please go to: filters.vallox.com



NOTE

Vallox 096 MV: The service space in front of the unit must be at least 400 mm.

Vallox 110 MV:

The service space in front of the unit must be at least 450 mm.

Vallox 145 MV:

The service space in front of the unit must be at least 550 mm.

CLEANING THE HEAT RECOVERY CELL

Check that the heat recovery cell is clean roughly once a year, or whenever the filters are being replaced. Clean by washing as required.

To check and clean the heat recovery cell:

1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the Vallox ventilation unit door by first lifting the latch fully up and then lowering it back a little way.
3. Lift the door off.



CAUTION

The door is heavy.

4. Remove the filters (A, B, C).
5. Remove the sealing strip (E) above the cell in the direction of the arrow.
6. Lift and pull the cell (D) out of the unit.



IMPORTANT

Handle the cell carefully! For example, do not lift the cell by the layers. The cell layers are very thin and easily damaged.

7. If the cell is dirty, clean it by immersing it in warm water, to which a small amount of a mild detergent has been added.
8. Rinse the cell clean with a water spray. Do not use a high-pressure cleaner.
9. When all the water has drained from between the layers, reassemble the ventilation unit in the reverse order.
10. When reassembling Vallox 096 MV, check that the sealing strip below the cell is pressed against the bottom of the unit.
11. Close the door. Ensure that the safety switch catch of the door is touching the safety switch.
12. Plug the ventilation unit back into the mains.

The heat recovery cell has now been checked and cleaned.

CONDENSING WATER

In the heating season, the extract air humidity condenses to water. In new buildings, condensation runoff can form rapidly. Condensed water must be able to freely leave the unit.

At some time before the heating season begins (e.g. during autumn maintenance), check that the siphon or the condensing water outlet in the bottom pool are not clogged. To check this, pour some water into the pool. Clean as required.



NOTE

Some condensing water may have accumulated in the bottom pool of the unit; this is normal and requires no corrective action.



WARNING

Water must at all times be kept out of the electrical system.

CLEANING THE FANS

Check the cleanliness of the fans when servicing the filters and the heat recovery cell. Clean the fans as required.

You can clean the fan blades with compressed air (wear protective goggles) or by brushing them gently. Do not remove or move the fan blade balancing weights.



IMPORTANT

The fans are extremely sensitive to external shocks. It is recommended that the fans be cleaned in place, i.e. without attempting to remove them.

Handle the fan blades carefully. Do not remove or move the fan blade balancing weights.

Cleaning the supply air fan

To clean the supply air fan:

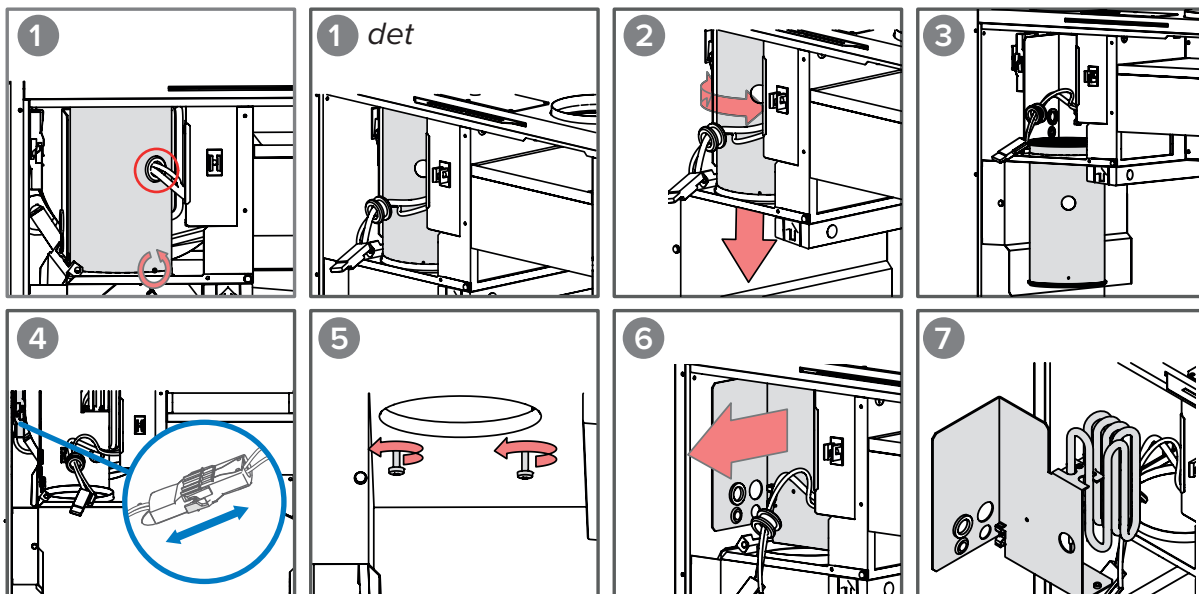
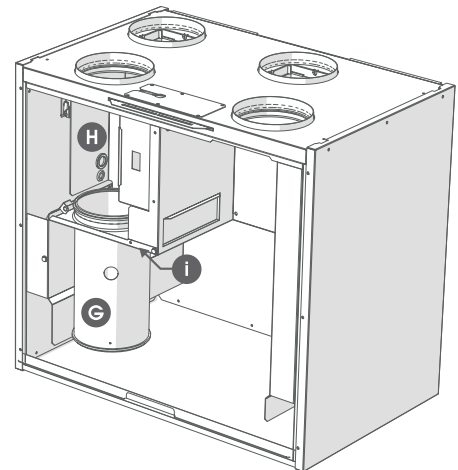
1. Disconnect the ventilation unit from the mains electricity supply.
2. Lift the latch to open the door of the Vallox ventilation unit.
3. Lift the door off.



CAUTION

The door is heavy.

4. Remove the extract air filter (C), the cell top bracket (E) and the heat recovery cell (D). See chapters “Replacing the filters” and “Cleaning the heat recovery cell”.
5. Pull out the temperature sensor (figure 1) located at the top of the extract air duct (G). Remove the stopper screw (I) at the bottom of the duct. The extract air duct now comes out by turning and pushing it downwards simultaneously (figure 2).
6. Remove the temperature sensor from the resistor support (figure 4).
7. Remove the additional and post-heating resistor support, which is attached by two wing nuts (Vallox 110 MV and Vallox 145 MV) or screws (Vallox 096 MV) from below (figure 5).



- Pull the radiator and the support out of the unit (figures 6 and 7) and remove the quick connector of the radiator wires.

**CAUTION**

Before removing the resistor from the unit, make sure it is not hot.

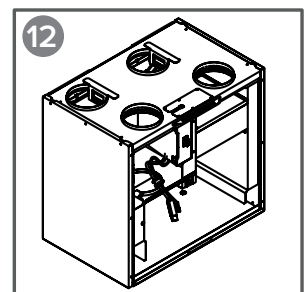
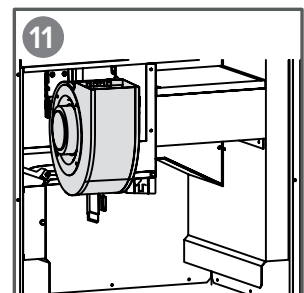
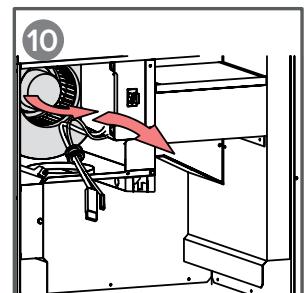
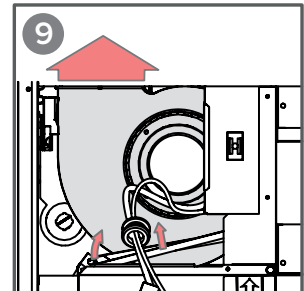
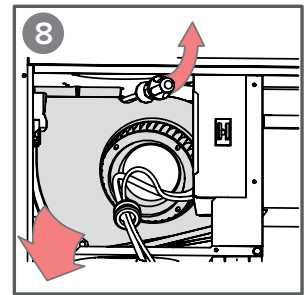
- The fan can now be cleaned in place. It is recommended that the fan be cleaned in place, i.e. without attempting to remove it.
- To remove the fan for cleaning:
 - If necessary, remove the arm pins. Use pliers to press the pins straight, so that they are easier to install back later.
 - Push the fan gently upward (figure 9).
 - Pry the plastic lock to the right of the fan with a screwdriver, for example (figure 10).
 - The fan falls downwards.
 - Pull the fan out of the unit (figure 11).
 - Disconnect the fan wire quick connector (figure 12).
The fan has now been removed for cleaning.
- To reassemble the ventilation unit, follow the above steps in reverse order.

**TIP**

When you re-install the temperature sensor, position it with the tip upward and pointing at the wall in such a way that it does not get squeezed between the HR cell bypass damper or lean against the radiator frame.

- Close the door. Ensure that the safety switch catch of the door is touching the safety switch.
- Plug the ventilation unit back into the mains.

The fan has now been checked and cleaned.



Cleaning the extract air fan

To clean the extract air fan, proceed as follows:

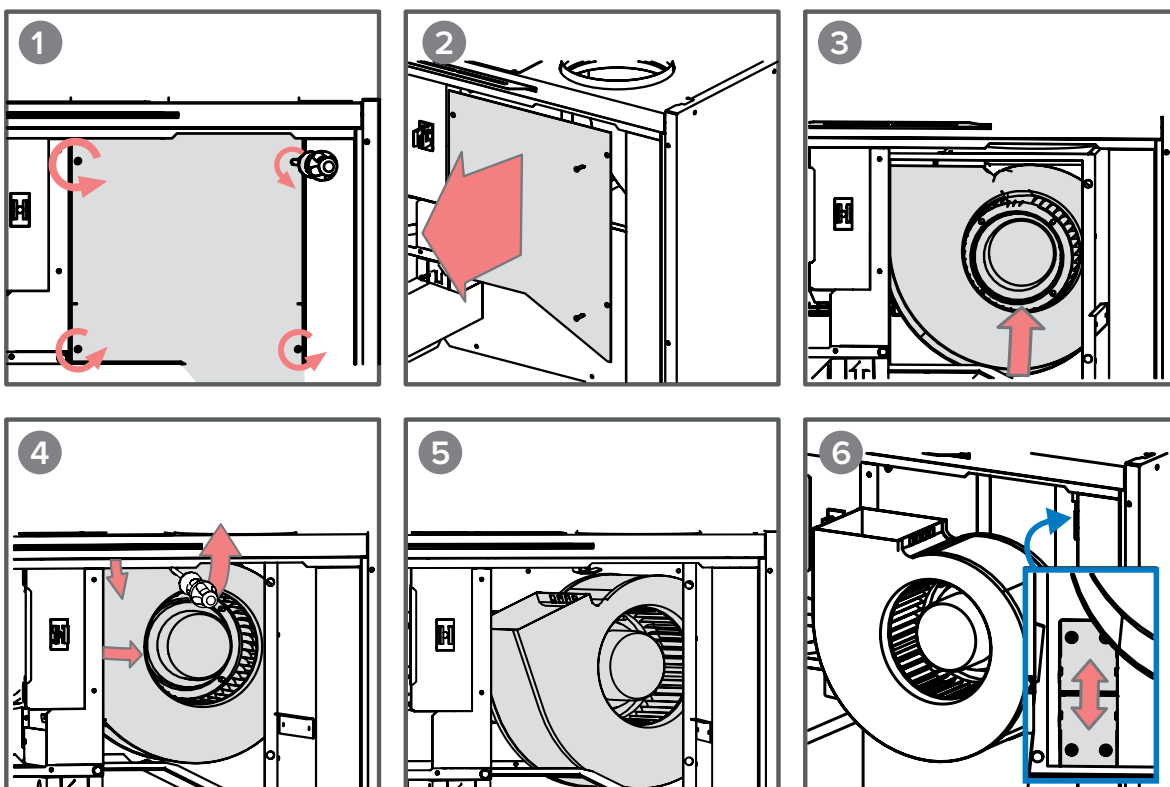
1. Disconnect the ventilation unit from the mains electricity supply.
2. Lift the latch to open the door of the Vallox ventilation unit.
3. Lift the door off.



CAUTION
The door is heavy.

4. Remove the filters (C), the cell top support (E) and the heat recovery cell (D). See chapters "Replacing the filters" and "Cleaning the heat recovery cell".
5. Open the four screws (figure 1) on the extract air fan cover and remove the cover (figure 2). The fan can now be cleaned in place.
6. To remove the fan for cleaning:
 - a. Push the fan gently upward (figure 3).
 - b. Pry the plastic lock to the right of the fan with a screwdriver, for example (figure 4).
 - c. The fan falls downwards (figure 5).
 - d. Pull the fan out of the unit.
 - e. Disconnect the fan wire quick connector (figure 6).
7. Clean the fan.
8. To reassemble the ventilation unit, follow the above steps in reverse order.
9. Close the door and plug the unit back into the mains.

The extract air fan has now been checked and cleaned.



TECHNICAL SPECIFICATIONS

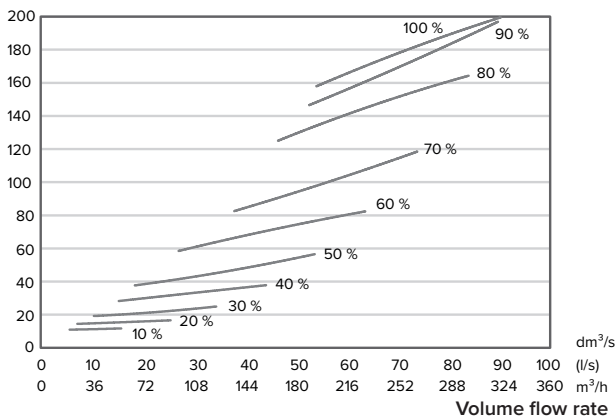
Product title	Vallox 096 MV R Vallox 096 MV L	Product number	3474450 3474550
Air volumes Supply air Extract air	84 dm ³ /s, 100 Pa 88 dm ³ /s, 100 Pa	Fans Supply air Extract air	0.119 kW 0.9 A EC 0.119 kW 0.9 A EC
Post-heating	Electrical resistor, 900 W	Electrical connection	230 V, 50 Hz, 5.1 A power plug
Pre-heating	–	Enclosure protection class	IP34
Additional heating	–	Heat recovery bypass	Automatic
Filters Supply air Extract air	ISO Coarse > 75 % + ISO ePM ₁ ISO Coarse > 75 %		
Specific energy consumption (SEC) in a cold climate in a temperate climate	A+ A	Operating efficiencies* Annual efficiency Supply air efficiency Specific Fan Power (SFP)	77 % 86 % 1.33 kW/m ³ /h (59 dm ³ /s)
Dimensions (w x h x d)	600 x 545 x 428 mm	Weight	53 kg

*Working point defined in the Ecodesign Directive (2009/125/EC), Southern Finland, Helsinki-Vantaa TRY year 2012.

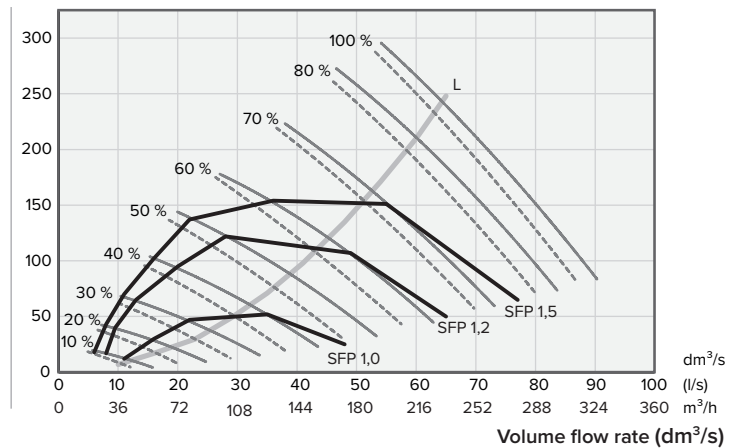
FAN INPUT POWER

SUPPLY/EXTRACT AIR VOLUMES

Power (W)



Pressure loss in ducts. Total pressure (Pa)



$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max) (dm}^3\text{/s)}}$$

SFP rate (Specific Fan Power)
recommended value <1.8 (kW m³/s)

————— extract air
- - - - - supply air

SOUND VALUES

		Sound power level in the supply air duct (one duct) by octave band L _w dB Adjustment position										Sound power level in the extract air duct (one duct) by octave band L _w dB Adjustment position									
Adjustment position (%)		10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100
Medium frequency of the octave band Hz	63	54	64	69	74	76	80	84	87	87	86	51	56	63	66	70	73	76	78	79	79
	125	50	56	62	66	70	73	77	80	82	81	43	46	52	55	60	63	66	68	71	71
	250	46	54	59	63	66	69	72	75	77	77	33	38	44	47	51	55	58	61	63	63
	500	40	48	54	57	61	63	66	68	70	71	29	38	44	47	51	54	57	59	61	61
	1000	34	44	51	55	60	62	64	66	68	68	24	32	38	42	46	49	52	55	57	57
	2000	21	35	44	49	54	57	61	63	66	66	13	17	24	29	33	36	39	42	44	44
	4000	17	23	34	41	47	51	55	58	61	61	17	17	18	20	23	26	29	32	34	34
8000	21	21	26	34	42	47	52	56	59	59	21	21	21	21	21	22	23	25	27	27	
L _w dB		56	65	70	75	78	81	85	88	89	88	52	56	64	66	71	74	76	79	80	80
L _{WA} dB(A)		42	50	57	61	64	67	70	73	75	75	33	39	45	48	52	55	58	61	63	63
Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m ² sound absorption)																					
Adjustment position																					
Adjustment position (%)		10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100
L _{pA} dB (A)		24	28	34	33	37	41	44	46	48	48	24	28	34	33	37	41	44	46	48	48

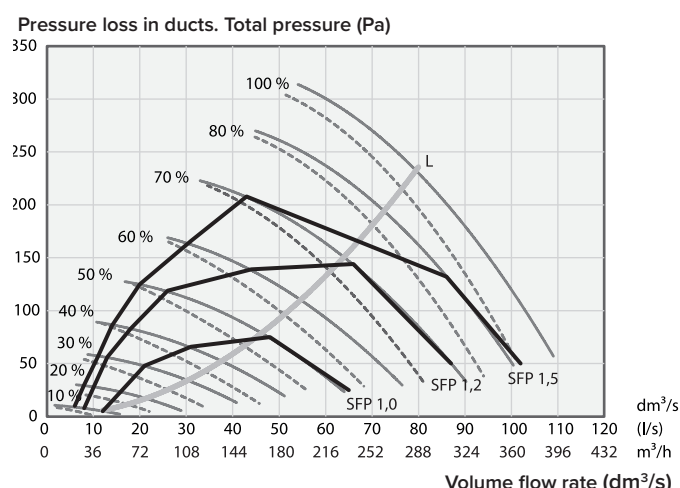
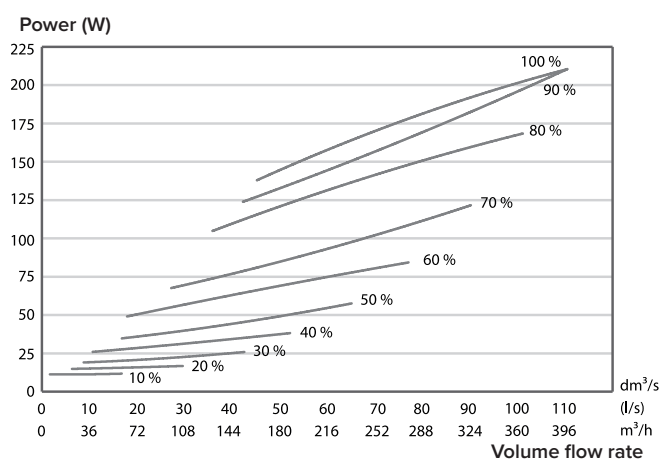
TECHNICAL SPECIFICATIONS

Product title	Vallox 110 MV R Vallox 110 MV L	Product number 3446650 3446750	
Air volumes Supply air Extract air	96 dm ³ /s, 100 Pa 103 dm ³ /s, 100 Pa	Fans Supply air Extract air	0.119 kW 1.0 A EC 0.119 kW 1.0 A EC
Post-heating	Electrical resistor, 900 W	Electrical connection	230 V, 50 Hz, 8.5 A power plug
Pre-heating	–	Enclosure protection class	IP 34
Additional heating	Electrical resistor, 900 W	Heat recovery bypass	Automatic
Filters Supply air Extract air	ISO Coarse > 75 % + ISO ePM ₁ ISO Coarse > 75 %		
Specific energy consumption (SEC) in a cold climate in a temperate climate	A+ A	Operating efficiencies* Annual efficiency Supply air efficiency Specific Fan Power (SFP)	79 % 86 % 1.15 kW/m ³ /h (71 dm ³ /s)
Dimensions (w x h x d)	638 x 678 x 472 mm	Weight	64 kg

*Working point defined in the Ecodesign Directive (2009/125/EC), Southern Finland, Helsinki-Vantaa TRY year 2012.

FAN INPUT POWER

SUPPLY/EXTRACT AIR VOLUMES



$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max) (dm}^3\text{/s)}}$$

SFP rate (Specific Fan Power)
recommended value <1.8 (kW m³/s)

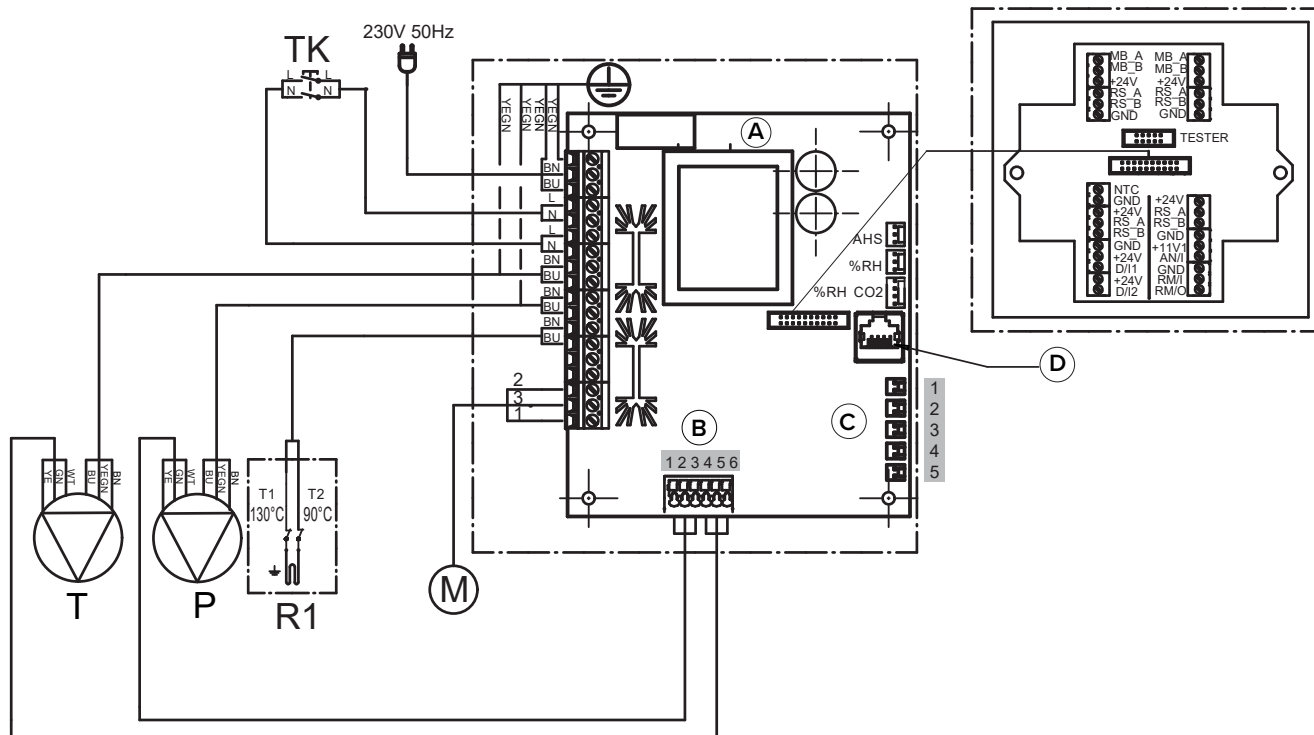
— extract air
- - - supply air

SOUND VALUES

		Sound power level in the supply air duct (one duct) by octave band L _w , dB										Sound power level in the extract air duct (one duct) by octave band L _w , dB									
		Adjustment position										Adjustment position									
Adjustment position (%)		10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100
Medium frequency of the octave band Hz	63	53	60	67	71	74	78	82	83	84	84	54	46	62	65	69	72	75	77	79	79
	125	48	56	61	66	70	74	76	78	80	80	42	44	50	53	58	61	64	66	68	68
	250	46	53	58	62	65	69	71	74	76	76	34	41	46	50	53	56	60	62	64	64
	500	40	48	56	57	60	62	65	67	68	69	26	35	40	43	46	49	52	55	57	57
	1000	31	42	50	55	58	61	64	65	67	67	18	28	34	38	41	45	47	50	52	51
	2000	18	32	40	46	52	56	60	62	64	64	13	17	24	29	33	36	39	42	44	44
	4000	17	20	30	38	44	49	53	56	59	59	17	17	18	19	21	24	27	31	33	33
	8000	21	21	25	34	42	48	53	57	59	60	21	21	21	21	21	22	24	26	29	29
L _w , dB		55	62	69	73	76	80	83	85	86	86	55	57	62	66	70	72	75	78	79	79
L _{WA} , dB(A)		41	49	56	60	63	67	69	72	73	73	33	38	43	46	50	53	56	59	60	60
Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m ² sound absorption)																					
Adjustment position																					
Adjustment position (%)		10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100
L _{PA} , dB (A)		21	24	30	32	35	39	42	45	47	47	21	24	30	32	35	39	42	45	47	47

INTERNAL ELECTRICAL CONNECTION

Vallox 096 MV

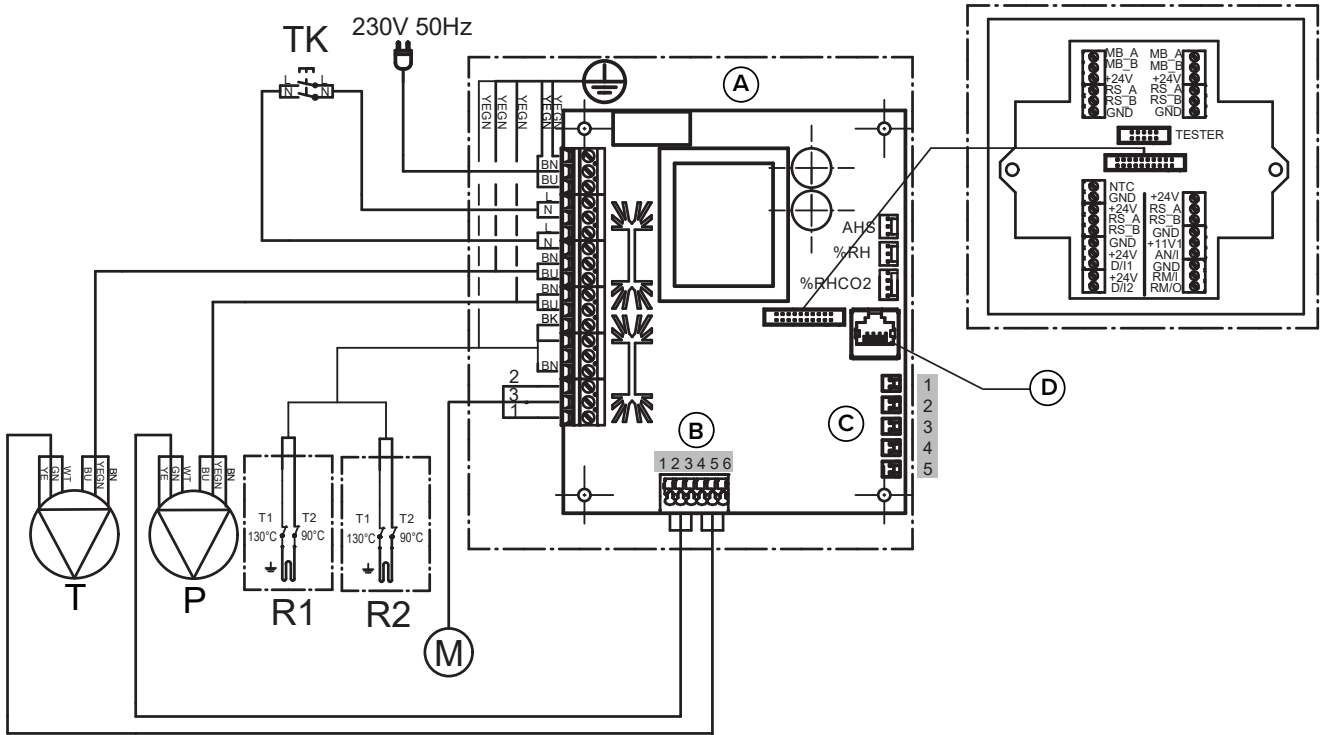


A	Motherboard	MB_A	External Modbus A signal	RM/I	24V relay input
B	1. Extract air fan tachometer (WT)	MB_B	External Modbus B signal	RM/O	24V relay output
	2. GND (GN)	+24V	+24V voltage (DC)	T	Supply air fan
	3. Extract air fan PWM (YE)	GND	Digital and analog ground potential	P	Extract air fan
	4. Supply air fan tachometer (WT)	RS_A	Local hardware Modbus A signal	M	Damper motor
	5. GND (GN)	RS_B	Local hardware Modbus B signal	TK	Safety switch
	6. Supply air fan PWM (YE)	NTC	External temperature sensor connector	AHS	Post-heating control
C	1. Extract air	D/I1	Digital input 1	%RH	Internal humidity sensor
	2. Outdoor air	D/I2	Digital input 2	%RH CO ₂	Internal humidity and carbon dioxide sensor
	3. Supply air	11V1	11.1 V operating voltage	R1	Post-heating resistor with 90°C and 130°C overheating protection
	4. Exhaust air	AN/I	Analog input 0-10VDC		
	5. Supply air from the HR cell				
D	LAN				

CABLE COLOURS

BK	Black
BU	Blue
BN	Brown
WT	White
GY	Grey
YE	Yellow
YEGN	Yellow-green

Vallox 110 MV, and Vallox 145 MV

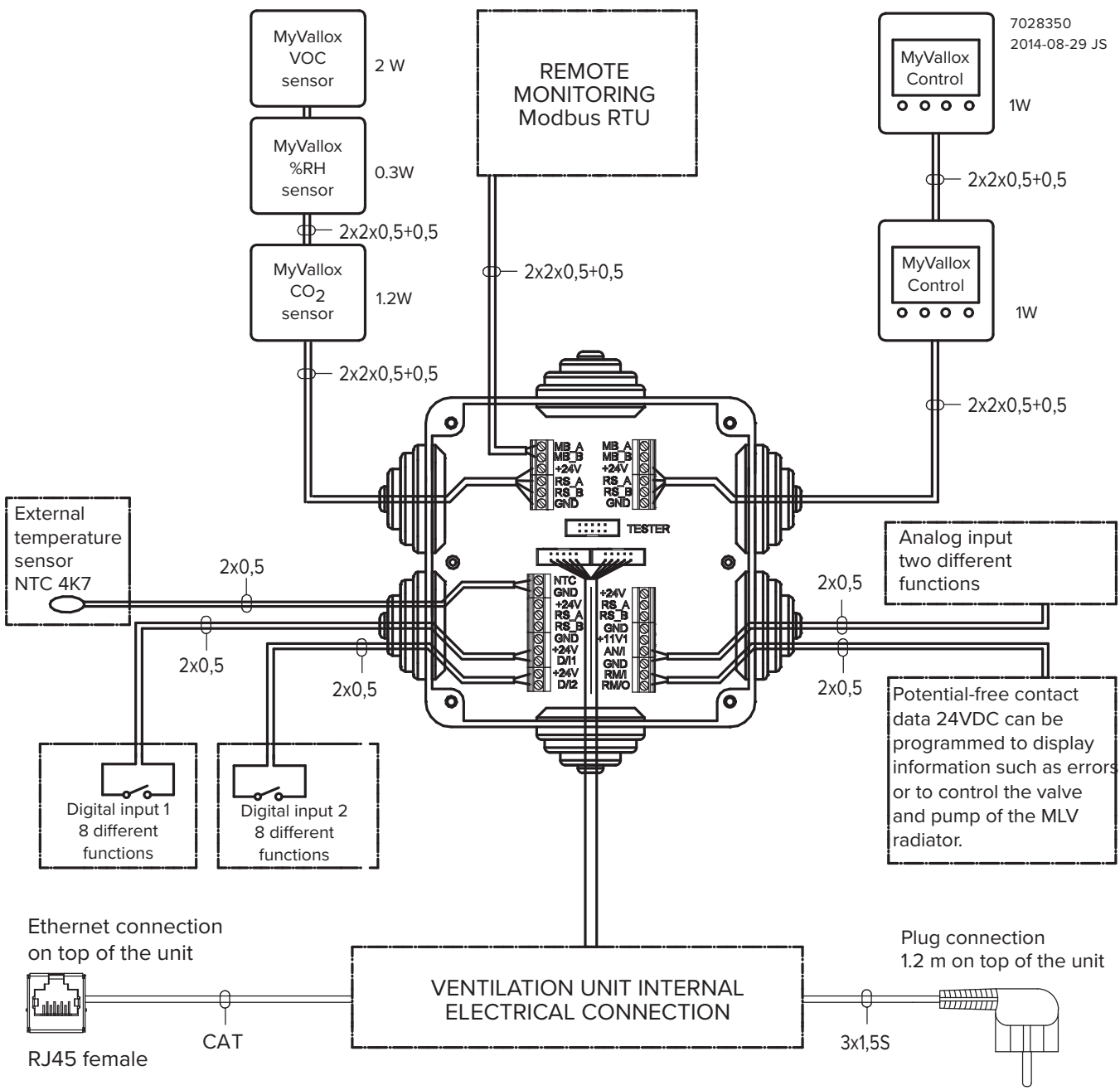


A	Motherboard	MB_A	External Modbus A signal	T	Supply air fan
B	1. Extract air fan tachometer (WT)	MB_B	External Modbus B signal	P	Extract air fan
	2. GND (GN)	+24V	+24V voltage (DC)	M	Damper motor
	3. Extract air fan PWM (YE)	GND	Digital and analog ground potential	TK	Safety switch
	4. Supply air fan tachometer (WT)	RS_A	Local hardware Modbus A signal	AHS	Post-heating control
	5. GND (GN)	RS_B	Local hardware Modbus B signal	%RH	Internal humidity sensor
	6. Supply air fan PWM (YE)	NTC	External temperature sensor connector	%RH CO ₂	Internal humidity and carbon dioxide sensor
C	1. Extract air	D/I1	Digital input 1	R1	Post-heating resistor with 90°C and 130°C overheating protection
	2. Outdoor air	D/I2	Digital input 2	R2	Additional heating resistor with 90°C and 130°C overheating protection
	3. Supply air	11V1	11.1 V operating voltage		
	4. Exhaust air	AN/I	Analog input 0-10VDC		
	5. Supply air from the HR cell	RM/I	24V relay input		
D	LAN	RM/O	24V relay output		

CABLE COLOURS

BK	Black
BU	Blue
BN	Brown
WT	White
GY	Grey
YE	Yellow
YEGN	Yellow-green

EXTERNAL ELECTRICAL CONNECTION



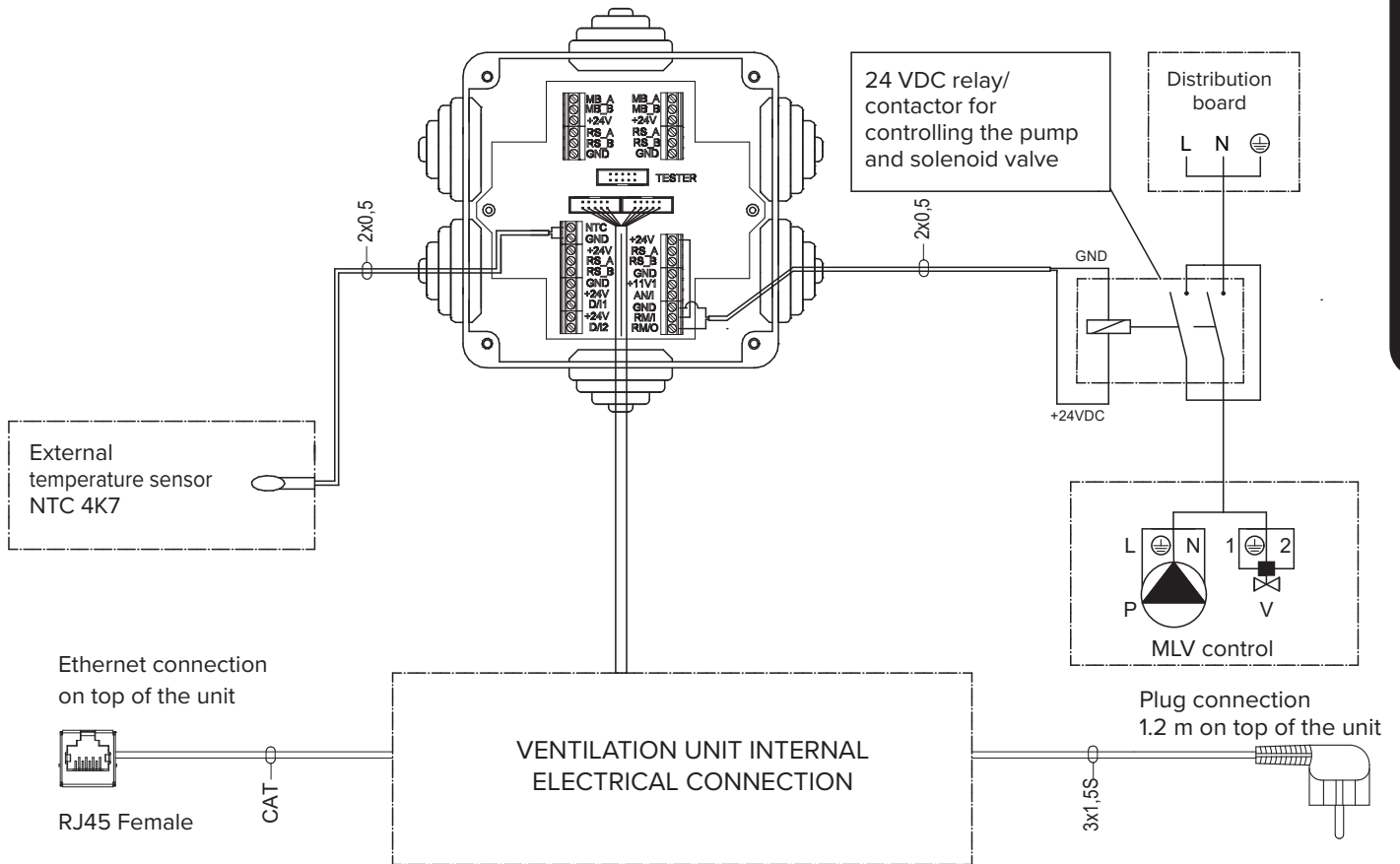
7028350
2014-08-29 JS

POWER SUPPLY	
Maximum	≤6W
MyVallox Control	1W
MyVallox %RH sensor	0.3W
MyVallox CO ₂ sensor	1.2W
MyVallox VOC sensor	2W
Voltage	24 VDC

MB_A	External Modbus A signal
MB_B	External Modbus B signal
+24V	+24V voltage (DC)
GND	Digital and analog ground potential
RS_A	Local hardware Modbus A signal
RS_B	Local hardware Modbus B signal
NTC	External temperature sensor connector

D/I1	Digital input 1
D/I2	Digital input 2
11V1	11.1 V operating voltage
AN/I	Analog input 0-10VDC
RM/I	24V relay input
RM/O	24V relay output

EXTERNAL ELECTRICAL CONNECTION FOR CONTROLLING THE MLV DUCT RADIATOR



MB_A	External Modbus A signal	D/I2	Digital input 2
MB_B	External Modbus B signal	11V1	11.1 V operating voltage
+24V	+24V voltage (DC)	AN/I	Analog input 0-10VDC
GND	Digital and analog ground potential	RM/I	24V relay input
RS_A	Local hardware Modbus A signal	RM/O	24V relay output
RS_B	Local hardware Modbus B signal	P	Circulation pump
NTC	External temperature sensor connector	V	Solenoid valve
D/I1	Digital input 1		

DUCT RADIATOR OPERATION

Always follow first and foremost the connection diagram provided by the HVAC designer or heat pump manufacturer. Also read the duct radiator manual.

The accompanying figure shows an example of the arrangement for connecting the heating/cooling radiator unit to the heat collection circuit.

Connect the radiator output pipe to the heat collection circuit return pipe. Direct the fluid returning from the radiator unit to the heat collection circuit return pipe. If you know that there is a large loss of internal pressure inside the heat pump, the heat pump should be bypassed. If this is done, the fluid circuit will come into operation when the heat pump comes to a halt. When this happens the pressure loss in the one-way bypass valve Y2 must be lower than the pressure loss in the heat pump.

Heating: The pump starts when the outdoor air temperature drops below the winter limit value set at the factory (-5 °C).

Cooling The supply air setpoint value for the active mode (for example, At home) controls the pump start-up. The pump starts when the supply air setting is below the temperature of the supply air that is blown into the apartment.

The duct radiator can be installed in both the supply air duct and the outdoor air duct. If the radiator is installed in the outdoor air duct, it can be used for both preheating and cooling. If the radiator is installed in the supply air duct, it can be used for heating or for cooling only.

The duct radiator can be set to function either automatically or manually.

- **Automatic** - In summer, the supply air temperature will be maintained at the level specified in the temperature setting. In winter, the duct radiator will turn on, when the outdoor temperature falls below the winter setting.
- **Manual** - In summer, the duct radiator will turn on, when the outdoor temperature rises above the summer setting. In winter, the duct radiator will turn on, when the outdoor temperature falls below the winter setting.

To prevent the risk of condensation in the supply air duct, you can set the adjustment of the supply air limit to automatic or manual.

- **Automatic** - The supply air limit is adjusted automatically based on the dew point of the extract air. When the supply air temperature falls too low, the duct radiator will turn off.
- **Manual** - The supply air limit can be set manually. When the supply air temperature falls down to the set value, the duct radiator will turn off.

If an external sensor is in use, it is selected from the settings of the external sensor whether it is used to control the outdoor air duct radiator or the supply air duct radiator. The temperature of the external sensor can be read from the service menu: **menu > service menu > unit information page 5 "External sensor"**.



NOTE: If the duct radiator is used in the supply air duct, it can only be used for cooling.



NOTE: When used to control the outdoor air duct radiator, the external NTC sensor is installed in the outdoor air duct before the radiator. When used to control the supply air duct radiator, the external NTC sensor is installed after the radiator.



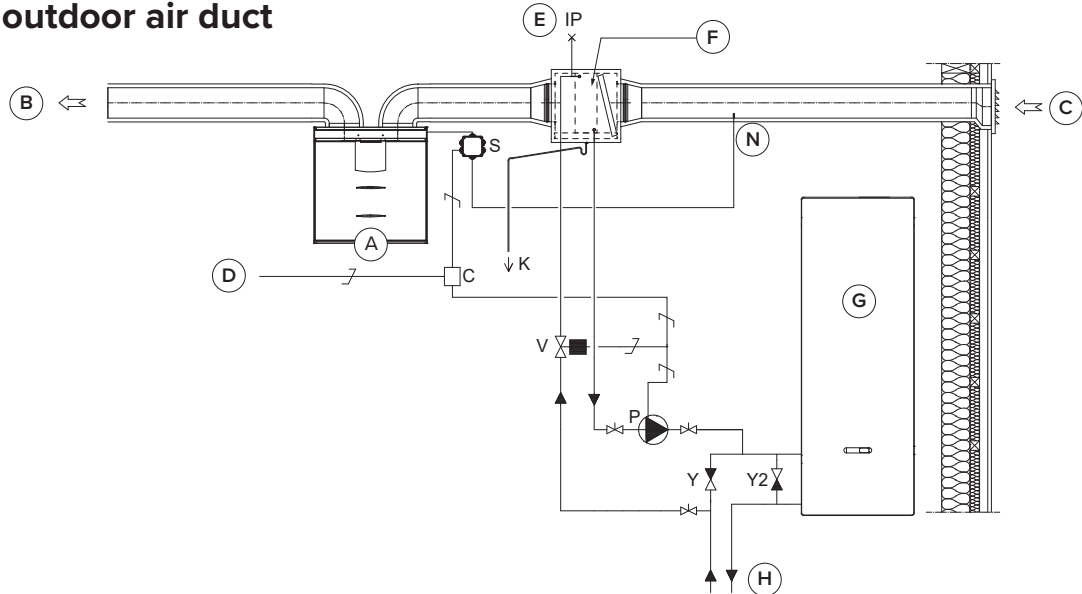
NOTE: When selecting the relay (C), take account of the maximum allowed combined power supply (6W) of the circuit board in the external MV electrical box, if the relay power supply comes from the circuit board's +24V connector.



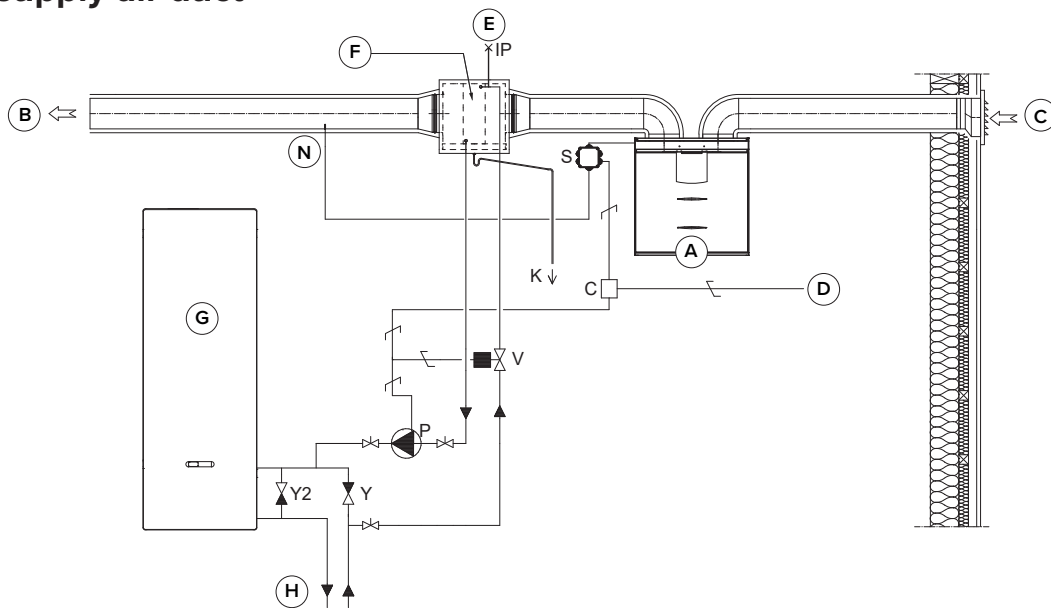
NOTE: Due to the risk of humidity damage, in a duct that has not been insulated for condensation the supply air temperature must not fall below +16 ... 20 °C.

DUCT RADIATOR OPERATION CHART

In the outdoor air duct



In the supply air duct

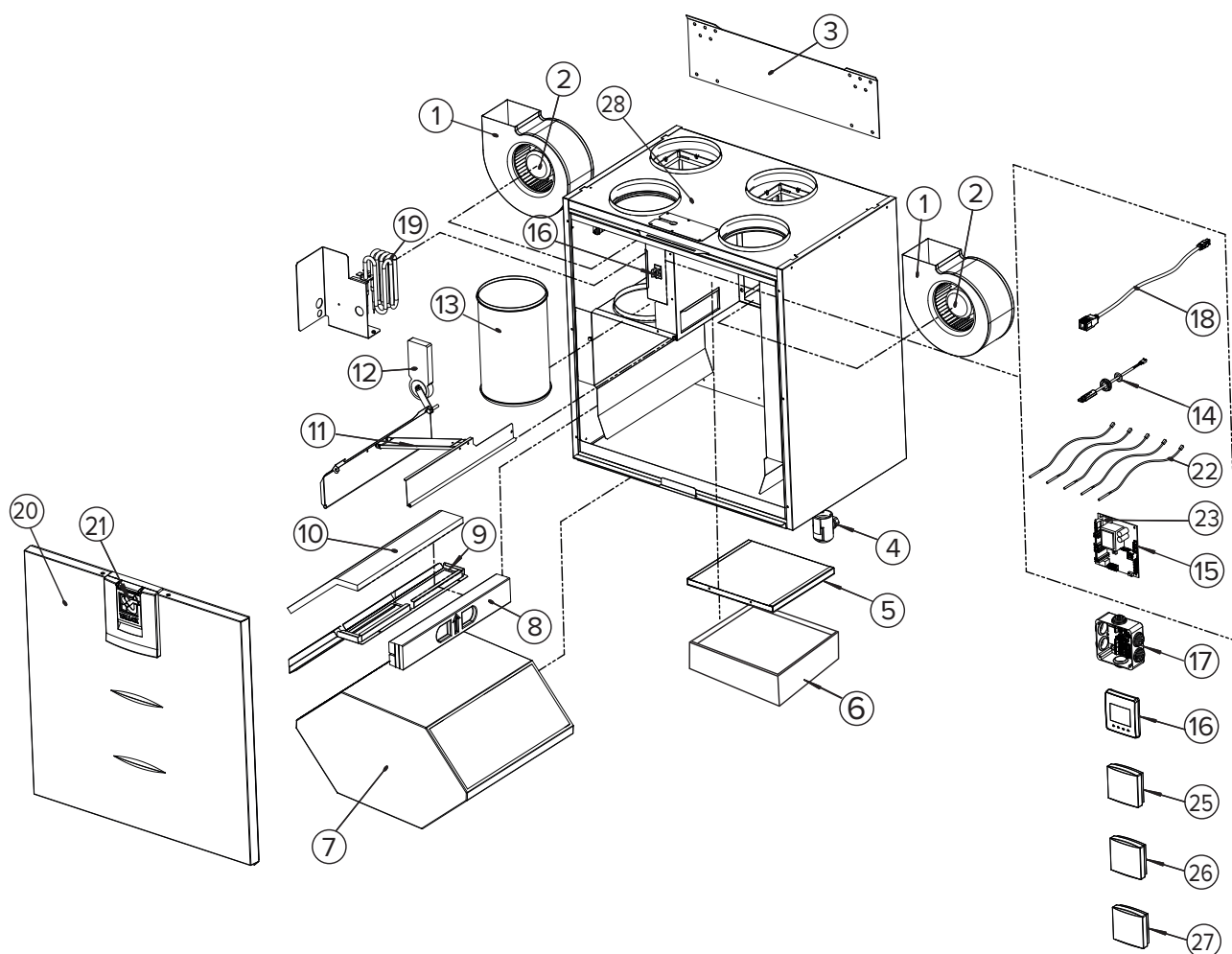


A	Ventilation unit
B	Supply air
C	Outdoor air
D	Feed from the distribution board
E	Air extraction
F	Duct radiator (reverse connection)
G	Heat pump
H	Heat collection circuit
N	External NTC sensor

P	Circulation pump. Not included in the delivery. The pump should be suited to pumping liquid colder than the surrounding air, due to risk of condensation (for example, Grundfos Magna 125-80).
V	Solenoid valve. Not included in the delivery. The valve that is chosen must be compatible with the heat collection circuit fluid (for example, Danfoss 032U161431).
K	Condensing water tube. Not included in the delivery.
IP	De-aerator. Not included in the delivery.
S	External electrical junction box for the MV
N	External NTC sensor for Vallox MV ventilation units
C	24 VDC relay/contacter for controlling the pump and the solenoid valve. Not included in the delivery. (For example, ABB CR-P024DC2)
Y	One-way valve. Not included in the delivery.
Y2	One-way valve. Not included in the delivery. The pressure loss must be less than the pressure loss of the heat pump.

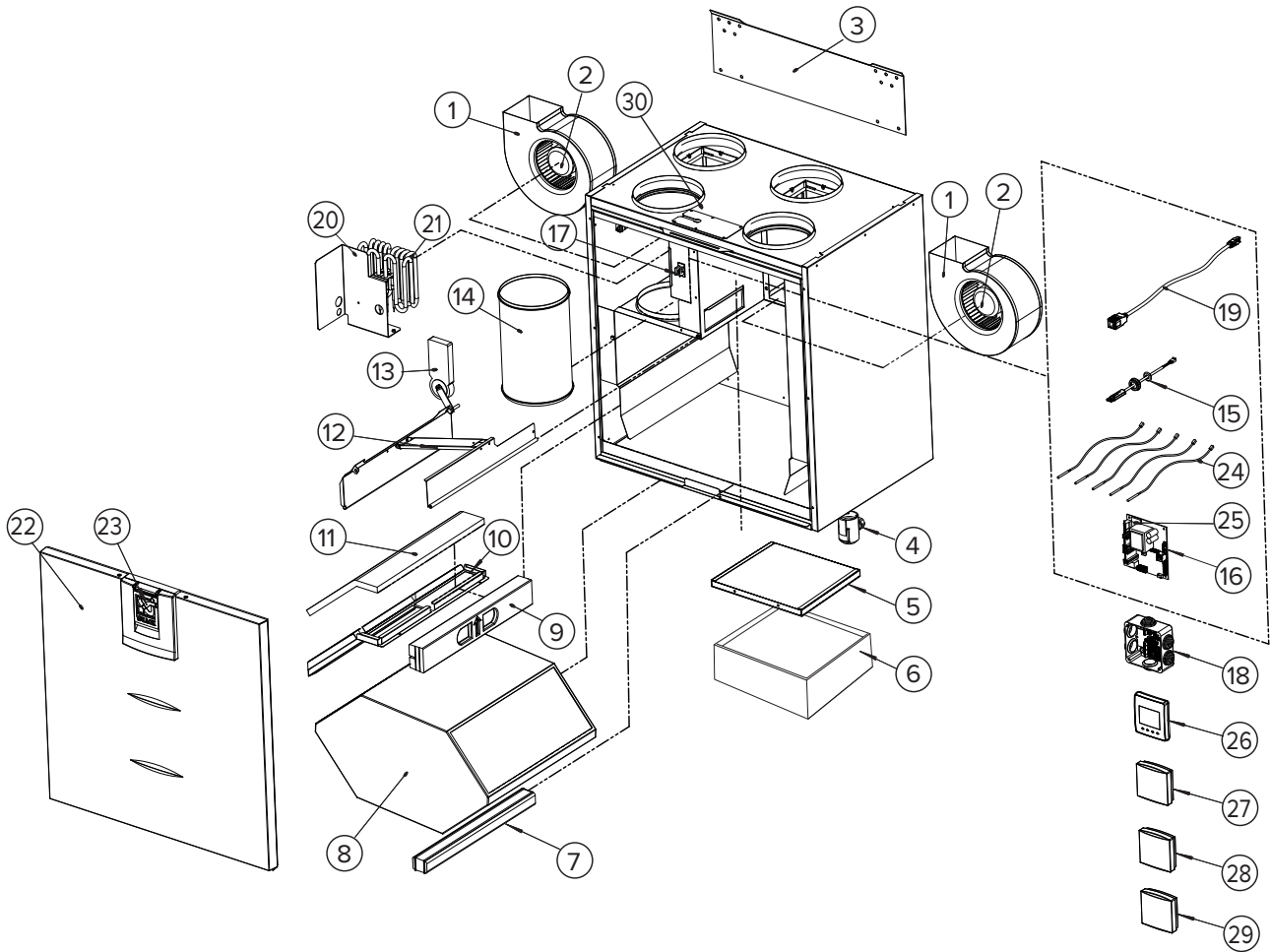
EXPLODED VIEW AND PARTS LIST

Vallox 096 MV



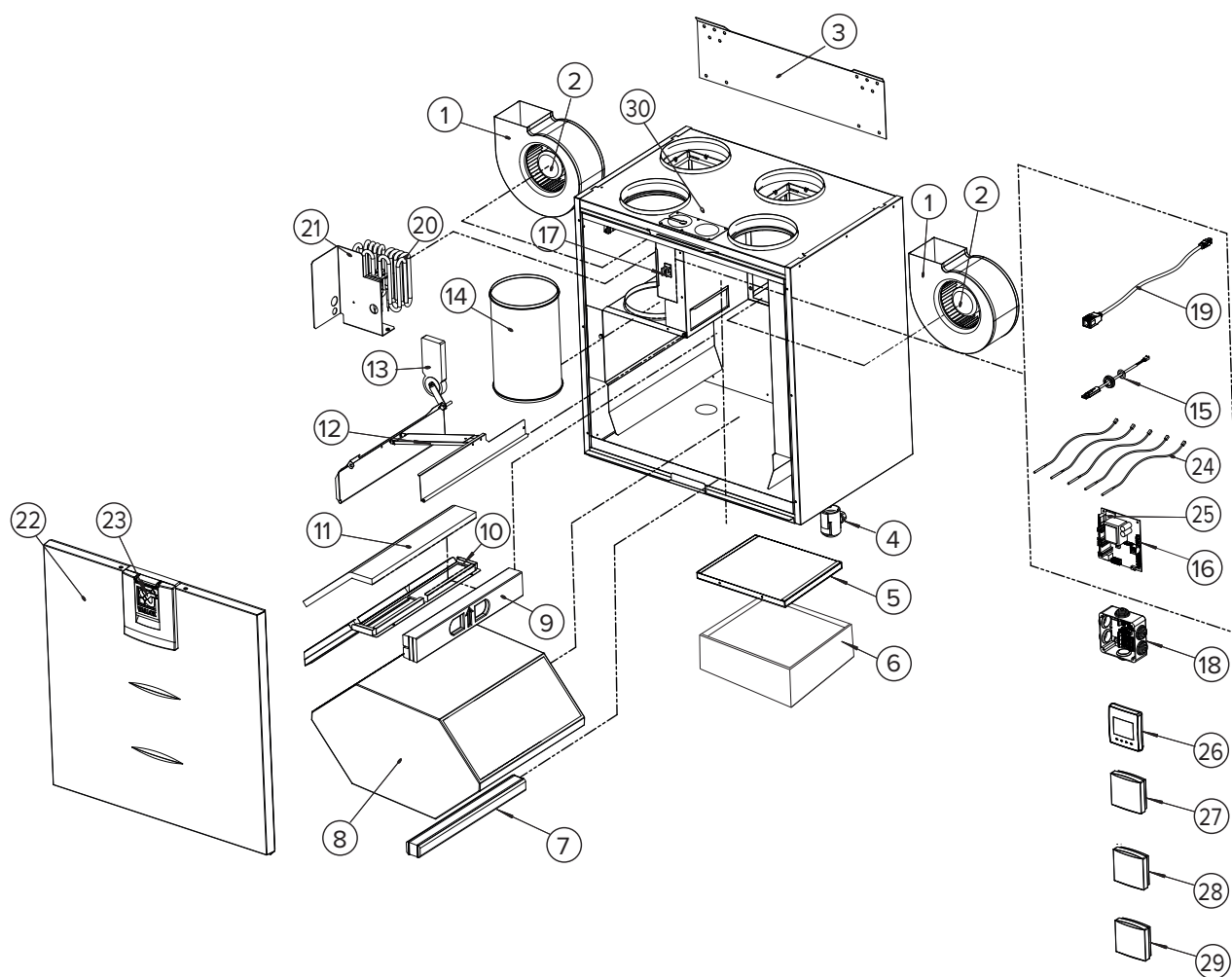
NO.	PART	CODE	NO.	PART	CODE	NO.	PART	CODE
1.	Supply / extract air fan (with a hood)	1108800	11.	HR cell bypass damper assembly		19.	Post-heating resistor 900W (R and L models)	942210
2.	Fan	935365		R model	3491200	20.	Door	3475200
3.	Wall mounting plate	3080700		L model	3491201	21.	Door latch	3355900
4.	Siphon Vallox Silent Klick	3494701	12.	Damper motor	930620	22.	NTC sensor kit	3480500
5.	Coarse filter for supply air	978044	13.	Extract air outlet	985026	23.	Glass tube fuse 63mA slow 5x20mm	952490
6.	Fine filter for supply air	978220	14.	Internal humidity and carbon dioxide sensor	4107982	24.	MyVallox Control panel	949033
7.	HR cell (aluminium) HR cell (enthalpy)	933260 933153	15.	Motherboard	949032-1	25.	MyVallox humidity sensor (optional)	946149
8.	Upper support for HR cell	3467200	16.	Safety switch	948377	26.	MyVallox carbon dioxide sensor (optional)	949111
9.	Filter stand	3464500	17.	Connection box	3526700	27.	MyVallox VOC sensor (optional)	949112
10.	Coarse filter for extract air	978045	18.	RJ45 extension cable	952196	28.	Ceiling bushing for electric wires Ceiling feed-through seal	950445 950446

Vallox 110 MV



NO.	PART	CODE	NO.	PART	CODE	NO.	PART	CODE
1.	Supply / extract air fan	1108800	12.	Bypass duct assembly		21.	Additional heating resistor 900W	
2.	Fan	935415		R model	3447200		R model	942210
3.	Wall mounting plate	3080700		L model	3447201		L model	942211
4.	Siphon Vallox Silent Klick	3494701	13.	Damper motor	930620	22.	Door	3447300
5.	Coarse filter for supply air	978042	14.	Extract air outlet	985025	23.	Door latch	3355900
6.	Fine filter for supply air	978157	15.	Internal humidity and carbon dioxide sensor	4107982	24.	NTC sensor kit	3457900
7.	Lower support for HR cell	3450100	16.	Motherboard	949032-1	25.	Glass tube fuse 63mA slow 5x20mm	952490
8.	HR cell (aluminium) HR cell (enthalpy)	933160 933170	17.	Safety switch	948377	26.	MyVallox Control panel	949033
9.	Upper support for HR cell	3426600	18.	Connection box	3526700	27.	MyVallox humidity sensor (optional)	946149
10.	Filter stand	3426800	19.	RJ45 extension cable	952196	28.	MyVallox carbon dioxide sensor (optional)	949111
11.	Coarse filter for extract air	978043	20.	Post-heating resistor 900W		29.	MyVallox VOC sensor (optional)	949112
				R model	942211	30.	Ceiling bushing for electric wires Ceiling feed-through seal	950445 950446
				L model	942210			

Vallox 145 MV



NO. PART	CODE	NO. PART	CODE	NO. PART	CODE
1. Supply / extract air fan (with a hood)	1109200	12. HR cell bypass damper assembly		21. Post-heating resistor 900W	
2. Fan	935530	R model	3475900	R model	942211
3. Wall mounting plate	3482100	L model	3475901	L model	942210
4. Siphon Vallox Silent Klick	3494701	13. Damper motor	930620	22. Door	3476000
5. Coarse filter for supply air	978046	14. Extract air outlet	985035	23. Door latch	3355900
6. Fine filter for supply air	978158	15. Internal humidity and carbon dioxide sensor	4107982	24. NTC sensor kit	3482300
7. Lower support for HR cell	3469000	16. Motherboard	949032-1	25. Glass tube fuse 63mA slow 5x20mm	952490
8. HR cell (aluminium) HR cell (enthalpy)	933270 933154	17. Safety switch	948377	26. MyVallox Control panel	949033
9. Upper support for HR cell	3468900	18. Connection box	3526700	27. MyVallox humidity sensor (optional)	946149
10. Filter stand	3466500	19. RJ45 extension cable	952196	28. MyVallox carbon dioxide sensor (optional)	949111
11. Coarse filter for extract air	978047	20. Additional heating resistor 1500W	942220	29. MyVallox VOC sensor (optional)	949112
				30. Ceiling bushing for electric wires Ceiling feed-through seal	950445 950446

DECLARATION OF CONFORMITY

Manufacturer	Vallox Oy
Address	Mylyskyläntie 9-11, FIN-32200 LOIMAA, FINLAND
Telephone number	+358 10 7732 200
Fax	+358 10 7732 201
The person who compiles the technical file	Petri Koivunen Vallox Oy Mylyskyläntie 9-11, FIN-32200 LOIMAA, FINLAND Tel. +358 10 7732 234 Fax +358 10 7732 201 Email petri.koivunen@vallox.com
Description of unit	Ventilation unit with heat recovery
Model	Vallox 51 MV R, Vallox 51 MV L, Vallox 51K MV R, Vallox 51K MV L, Vallox 90 MC R, Vallox 90 MC L, Vallox 90K MC R, Vallox 90K MC L, Vallox 90 MV R, Vallox 90 MV L, Vallox 90K MV R, Vallox 90K MV L, ValloPlus 240 MV R, ValloPlus 240 MV L, ValloPlus 240K MV R, ValloPlus 240K MV L, ValloPlus 240 SC R, ValloPlus 240 SC L, Vallox 096 MC R, Vallox 096 MC L, Vallox 096 MV R, Vallox 096 MV L, ValloPlus 270 SC R, ValloPlus 270 SC L, ValloPlus 270 MV R, ValloPlus 270 MV L, Vallox 101 MC R, Vallox 101 MC L, Vallox 101 MV R, Vallox 101 MV L, Vallox 110 MV R, Vallox 110 MV L, ValloPlus 350 SC R, ValloPlus 350 SC L, ValloPlus 350 MV R, ValloPlus 350 MV L, Vallox 145 MV R, Vallox 145 MV L, ValloPlus 510 SC R, ValloPlus 510 SC L, ValloPlus 510 MV R, ValloPlus 510 MV L

Declares that the ventilation unit for supply and extract air, equipped with heat recovery and operating as part of a ventilation system has been designed and manufactured to the following specifications:

1. Low Voltage Directive (2014/35/EU) – EN 60335-1:2012+ A11:2014, EN 62233:2008
2. EMC Directive (2014/30/EU) – EN 61000-6-1:2007, EN 61000-3.-2:2006 + A1:2009 + A2:2009, EN 61000-3-3:2008, EN 61000-6-3:2007 + A1:2011
3. Ecodesign Directive (2009/125/EY) – Commission regulation 1253/2014 – EN 13141-7 Annex B, EN 308, EN 13141-7, ISO 3741, ISO 5135

This is the original Declaration of Conformity

Loimaa, 14st May 2019



Jukka-Pekka Korja
Managing Director

VALLOX

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