VALLOX

Model
Vallox 101 MC R
Vallox 101 MC L

Type
C3740

Document
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MANUAL

Vallox 101 MC

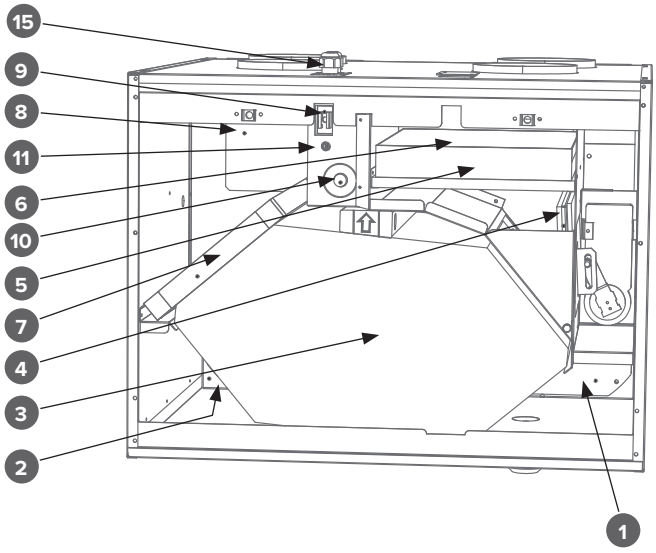
Manual

Ventilation unit

- Extract air fan 1
- Supply air fan 2
- Heat recovery cell 3
- Bypass damper of the HR cell 4
- Fine filter for supply air 5
- Coarse filter for supply air 6
- Coarse filter for extract air 7
- Post-heating resistor (in the supply air duct) 8
- Safety switch 9
- Supply air heating adjustment 10
- Supply/extract air flow adjustment 11
- Vallox Simple Control panel (ordered separately) 12
- Vallox ProControl panel (ordered separately) 13
- Vallox Delico PTD EC control hood, Vallox X-Line PTXP MC control hood, or Vallox X-Line PTXPA MC control hood (ordered separately) 14
- Ceiling bushing for electric wires 15

R model in the figure.

In the L model, the parts are mirrored



12

(optional)

13

(optional)

14

Vallox Delico PTD EC
(optional)

14

Vallox X-Line PTXP MC
Vallox X-Line PTXPA MC
(optional)

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.

FAN SPEED ADJUSTMENT

The fan speed of the Vallox ventilation unit is adjusted using a four-step control.

The available speed options of the control switch are 1, 2, 3, and 4:

1. Away mode. The ventilation efficiency can be temporarily reduced when the apartment is unoccupied.
2-3. Standard mode. In standard mode, the air inside the apartment is replaced once every two hours.
4. Boost mode. Cooking, sauna, bathing, drying of clothes, guests, and other similar situations can require that ventilation be increased from the standard setting.

The fan speed can also be controlled through a separate Vallox control hood, the Vallox ProControl panel, or directly through voltage messages (0-10 V).

Vallox Simple Control panel

ADJUSTING THE SUPPLY AIR TEMPERATURE AND SUMMER/WINTER FUNCTION

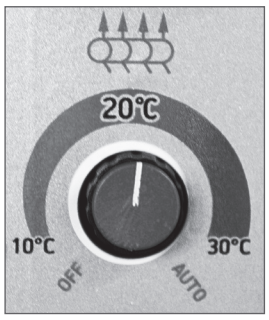
The temperature of the air blown into the apartment can be adjusted approximately between +10 °C and +30 °C. The unit has an automatic summer/winter function (a bypass flap).

- When the adjusted temperature is between +10 °C and +30 °C, the heat recovery cell is not bypassed, i.e. the unit is in winter mode.
- In the OFF position, the unit is in the summer mode, i.e. post-heating is turned off and the heat recovery cell is bypassed when the outdoor temperature is above +14 °C. The heat recovery will be turned on when the outdoor temperature falls below +12 °C.
- In the AUTO position, the unit will operate as follows around the year: The default post-heating setting is +17 °C. The unit will bypass the heat recovery cell when the temperature of the outdoor air exceeds +14 °C. The heat recovery will be turned on when the outdoor temperature falls below +12 °C. During the bypass, post-heating is turned off.

The winter function of the ventilation unit

The limit value has been set in the factory for freezing of the heat recovery cell. When this limit value is exceeded, the ventilation unit starts to defrost the heat recovery cell by directing the outdoor air past the heat recovery cell.

The duration of the defrost cycle is 15-45 min depending on the amount of ice accumulated in the heat recovery cell and on the extract air flow. The factory settings ensure optimal operation in standard living and detached house conditions. Even though the winter operation parameters can be adjusted for certain extreme conditions, such as swimming pool facilities, it is always advisable to contact Vallox maintenance services.



Adjusting supply air temperature

FIREPLACE SWITCH

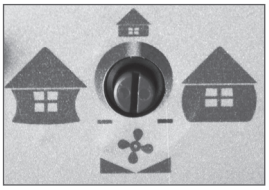
A switch with timer functions can be connected to the unit. The switch stops the extract air fan when the fireplace is being used. NOTE! Starting up the extract air fan can reduce the draw of the fireplace! In winter, this can disturb the winter mode of the ventilation unit. The situation will return to normal soon after the fireplace mode is turned off.

Concealed installation of the fireplace switch (optional)

ADJUSTING THE SUPPLY AND EXTRACT AIR RATIO

This function might be needed when the air flows are adjusted at the valves during installation. The user does not need to adjust this function once the valves have been adjusted, and indeed should not adjust it at all. A potentiometer can be used to reduce the supply or extract air flow as required.

When the potentiometer is set roughly in the centre position, neither the supply nor the extract air flow has been reduced. When the potentiometer is turned anti-clockwise, the supply air flow is reduced, and when the potentiometer is turned clockwise, the extract air flow is reduced.



The potentiometer for adjusting the supply and extract air flows

MAINTENANCE REMINDER

If a signal light is connected to the connectors of the unit's error relay, the unit will send a reminder of service need every six months,. If connected, the signal light will flash every second. Sounds made by the relay can then be heard from inside the unit. The maintenance reminder will be set off automatically when the door of the ventilation unit is opened or the power is turned off. The maintenance reminder can also be set off manually.

The Vallox Simple Control panel, and the Vallox X-Line PTXP MC and PTXPA MC control hoods, VAK 0-10 VDC:

- The low speed is turned on, then higher-lower-higher
  - Low speed under 4 V
  - High speed over 6 V
  - The selected speed will always be turned on for 1-5 seconds

Vallox Delico PTD EC control hood:

- The damper is closed, then open-closed-open
- Press at a 1-5 second interval.

The service reminder will only be set off if it has been activated. Refer to the maintenance instructions for the necessary maintenance measures.

TROUBLESHOOTING TABLE

If the ventilation unit is affected by any of the errors listed in the table, the unit will report the error through the error relay, signal light, and circuit board LEDS. The number of flashes indicates the nature of the error.

The error relay can be connected to remote monitoring.
NOTE! When remote monitoring is used, the signal light of the control panel cannot be turned on.

TROUBLESHOOTING		
Flashing LED	Problem	Correction
1	NTC sensor of the supply air from the cell is faulty	Check the sensor and the wires, replace as required
2	NTC sensor of the extract air is faulty	Check the sensor and the wires, replace as required
3	NTC sensor of the extract air is faulty	Check the sensor and the wires, replace as required
4	NTC sensor of the exhaust air is faulty	Check the sensor and the wires, replace as required
5	NTC sensor of the outdoor air is faulty	Check the sensor and the wires, replace as required
6	The supply air fan has stopped	Check the wiring of the fan, replace the fan as required
7	The extract air fan has stopped	Check the wiring of the fan, replace the fan as required
8	EEPROM is faulty	Replace the circuit board

BEFORE BEGINNING MAINTENANCE WORK

When you open the door of Vallox 101 MC, the safety switch (S) cuts the power. Despite this, disconnect the power supply plug anyway. Always disconnect the power plug before starting maintenance on the Vallox 101 MC.

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

Using original Vallox filters ensures the best operation of the ventilation unit and the best filtering results. The filter replacement interval depends on the ambient dust concentration. It is recommended that the filters be replaced every spring and autumn, or at the very least once a year.

HEAT RECOVERY CELL

Check that the heat recovery cell (D) is clean roughly once a year when the filters are being replaced. Clean by washing as required.

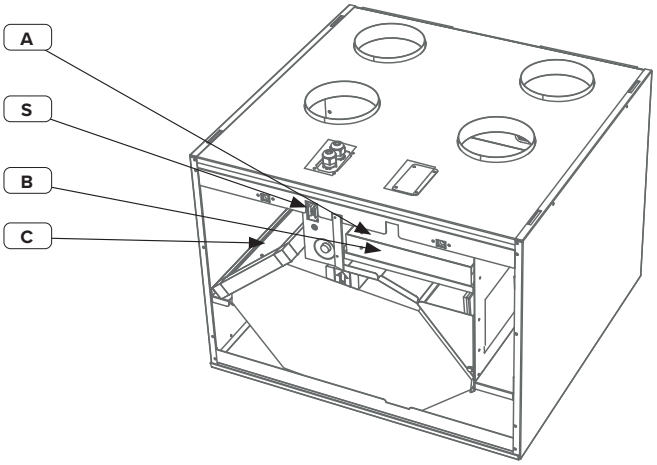
- Remove the sealing strip (E) above the heat recovery cell in the direction of the arrow. Also remove the extract air filter (C).
- Lift the heat recovery cell and pull it out of the unit.

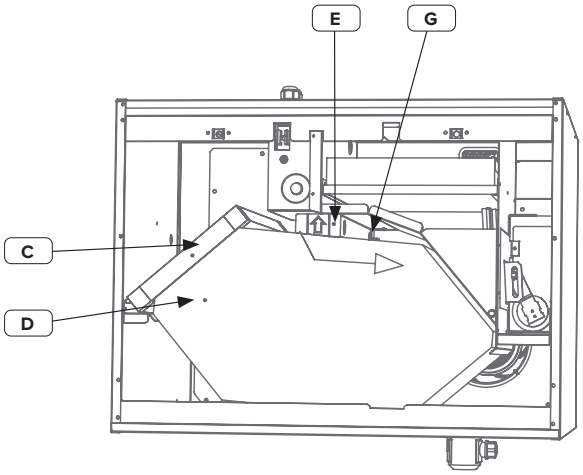
IMPORTANT! Handle the cell carefully! For example, do not lift the cell by the layers. The cell layers are very thin and easily damaged.

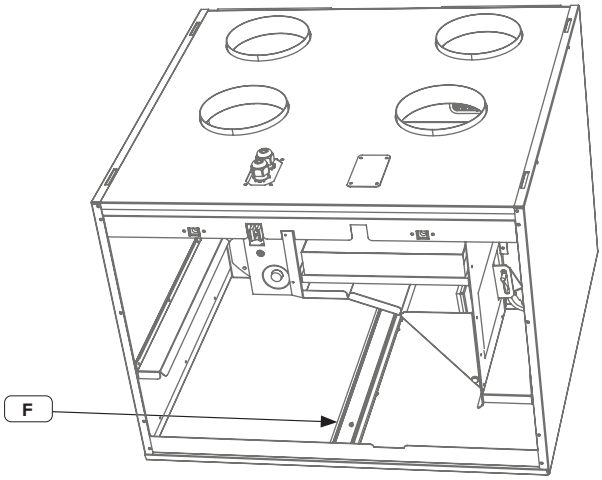
If the heat recovery cell is dirty, clean it by immersing it in water containing a small amount of a mild detergent. Rinse the heat recovery cell clean with a water spray. When all the water has drained from between the layers, the heat recovery cell can be installed.

- Ensure that the lower support (F) is in place between the knobs at the bottom of the unit before the heat recovery cell is installed.
- Push the heat recovery cell in place. Also push the sealing strip (E) in place so that the strip is supported by the corner bracket (G) at the rear. Lastly, install the extract air filter (C) in place.

The R model is shown in the figures.
In the L model, the parts are mirrored.







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.

To clean the fan:

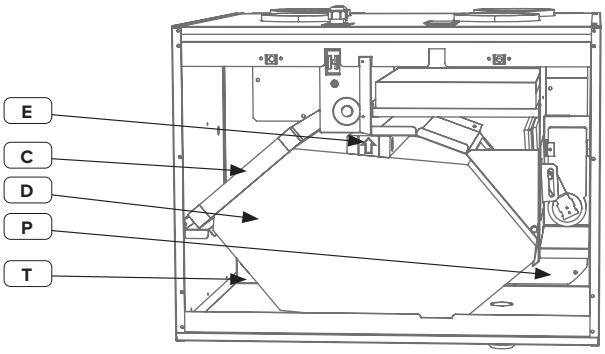
1. Disconnect the ventilation unit from the mains electricity supply.
2. Open the door of the Vallox ventilation unit by undoing the finger screws.
3. Lift the door off.

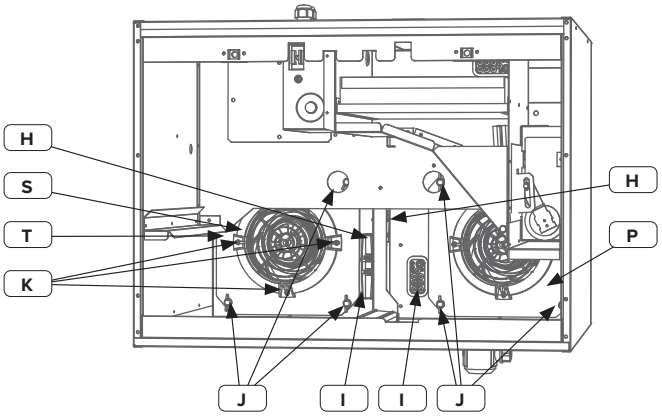
CAUTION! The door is heavy.

4. Remove the extract air filter (C), the sealing strip (E) and the heat recovery cell (D). See chapters “Replacing the filters” and “Cleaning the heat recovery cell”.
5. Disconnect the quick connector (H) of the supply air fan (T) and/or the extract air fan (P) cables.
6. Push the fan cables and the rubber feed through (I) into the fan chamber.
7. Remove the screws used to fasten the fans (J) (3 screws per fan). Undo the mounting screws (K) (3 screws per fan) of the air flow control grille of the fan and remove the grille (S).
8. Remove the fan from the unit by pulling it forward and by tilting it slightly backwards at the same time.
9. You can now clean the fan. You can clean the fan blades with compressed air (wear protective goggles) or by brushing them gently.
10. Reassemble in reverse order after cleaning. Ensure that the rubber feed throughs set in place when reinstalling the fan. Ensure that the air flow control grilles are in place.
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 fan has now been checked and cleaned.

The R model is shown in the figures.
In the L model, the parts are mirrored.

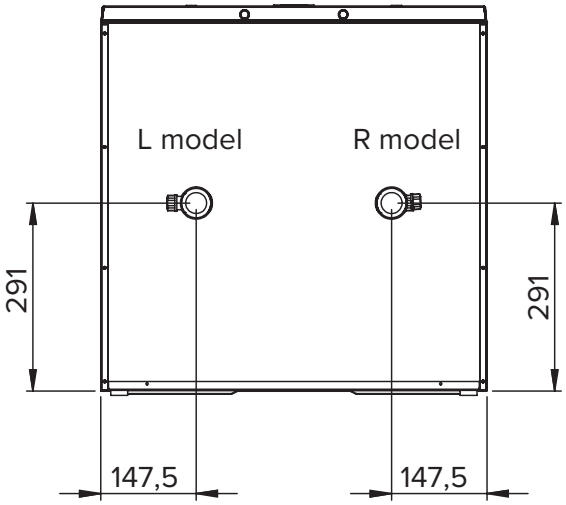


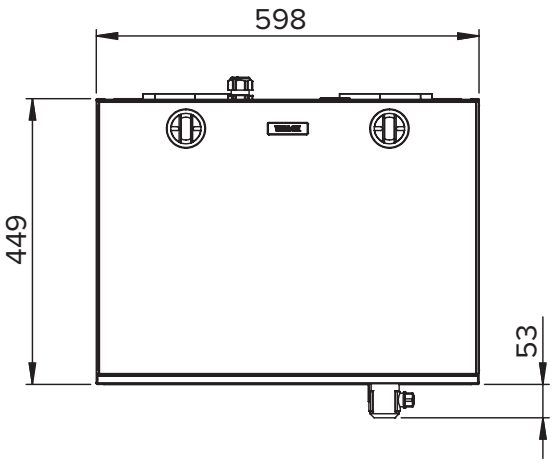


CONDENSING WATER

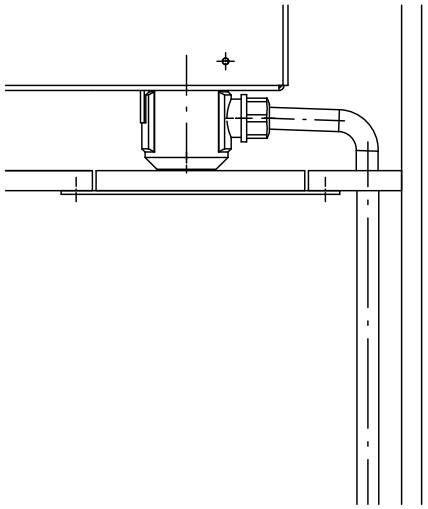
In the heating season, the extract air humidity condenses to water. In new buildings, condensation runoff can form rapidly. Condensed water must be able to freely leave the unit. At some time before the heating season begins (e.g. during autumn maintenance), check that the condensing water outlets in the bottom pool are not clogged. To check this, pour some water into the pool. Clean as required. Water must at all times be kept out of the electrical system.

See the condensing water connections on page 15.

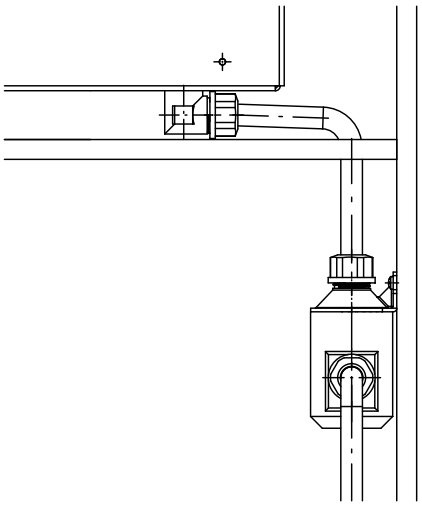




Installation of the Vallox Silent Klick siphon on the bottom pool

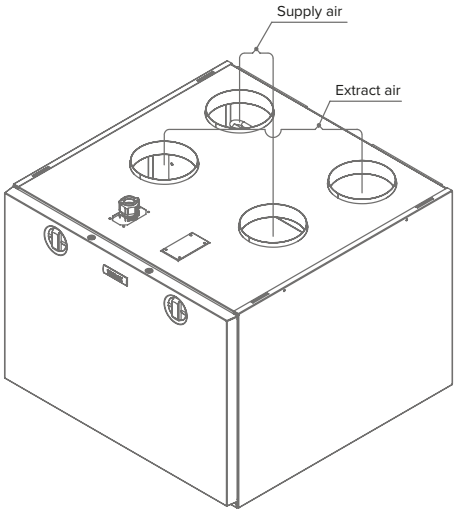


Installation of the Vallox Silent Klick siphon on the wall.



Air flow measurement points

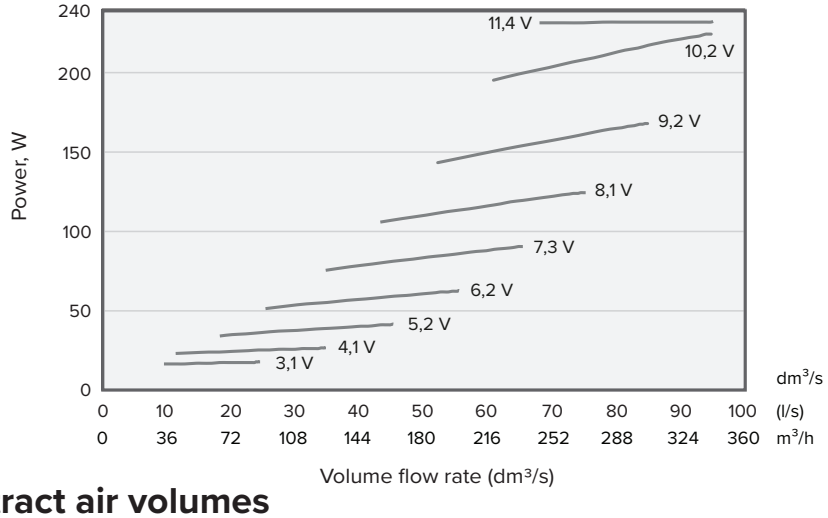
Measurement points after the outlet collar. The fan curves indicate the total pressure accounted for by duct losses.



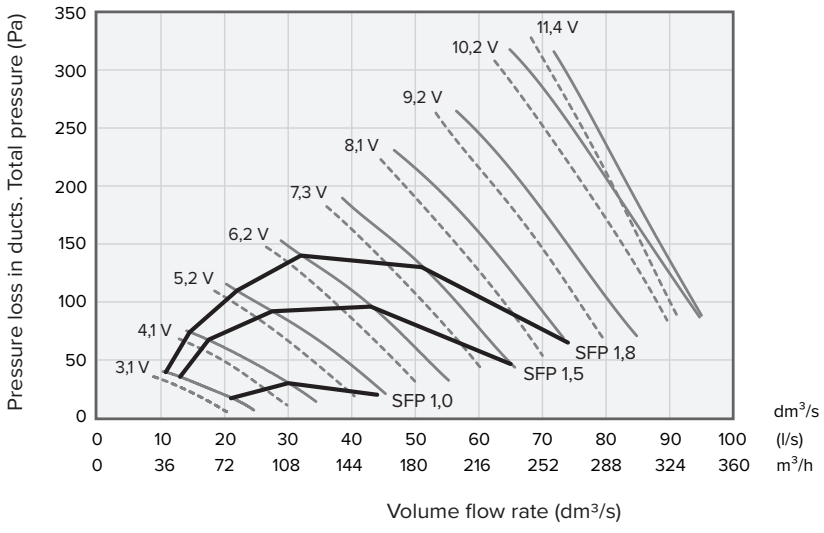
TECHNICAL SPECIFICATIONS		
Nimike **Vallox 101 MC R** **Vallox 101 MC L**		Product number 4102638 4102629
Air volumes	Supply air Extract air	90 dm³/s, 100 Pa 94 dm³/s, 100 Pa
Electrical Connection		230 V, 50 Hz, 8.3 A power plug
Enclosure protection class		IP 34
Post-heating		Electrical resistor, 1500 W
Pre-heating		–
Additional heating		–
Fans	Supply air Extract air	0.115 kW 0.95 A EC 0.115 kW 0.95 A EC
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		 75 % 82 % 1.33 kW/m³/h (63 dm³/s)
Filters	Supply air Extract air	ISO Coarse > 75 % + ISO ePM_1 ISO Coarse > 75 %
Heat recovery bypass		Automatic
Dimensions (w x h x d) and weight		598 x 449 x 596 I 58 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



T = supply air
P = extract air

SFP rate (Specific Fan Power)
recommended value <1,8kW (m³/s)

$$SFP = \frac{\text{Combined input power of the fans (kW)}}{\text{Airflow specified in the ventilation plan (m}^3\text{/s)}}$$

Dimensions and duct outlets

Duct outlets

R model

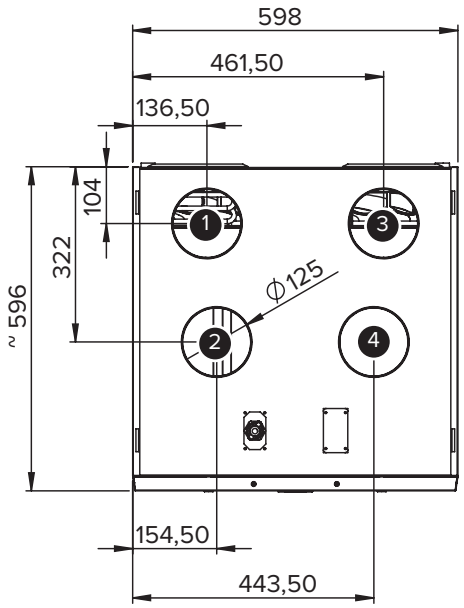
Inner diameter of the female collar: ø 125 mm

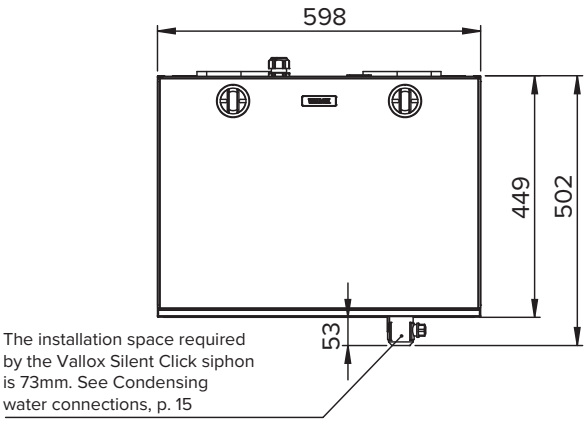
1. Supply air to the apartment
2. Exhaust air from the apartment to the unit
3. Exhaust air out
4. Outdoor air to the unit

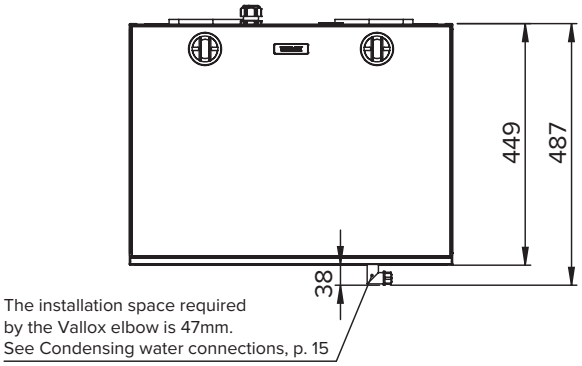
L model

Inner diameter of the female collar: ø 125 mm

1. Exhaust air out
2. Outdoor air to the unit
3. Supply air to the apartment
4. Exhaust air from the apartment to the unit





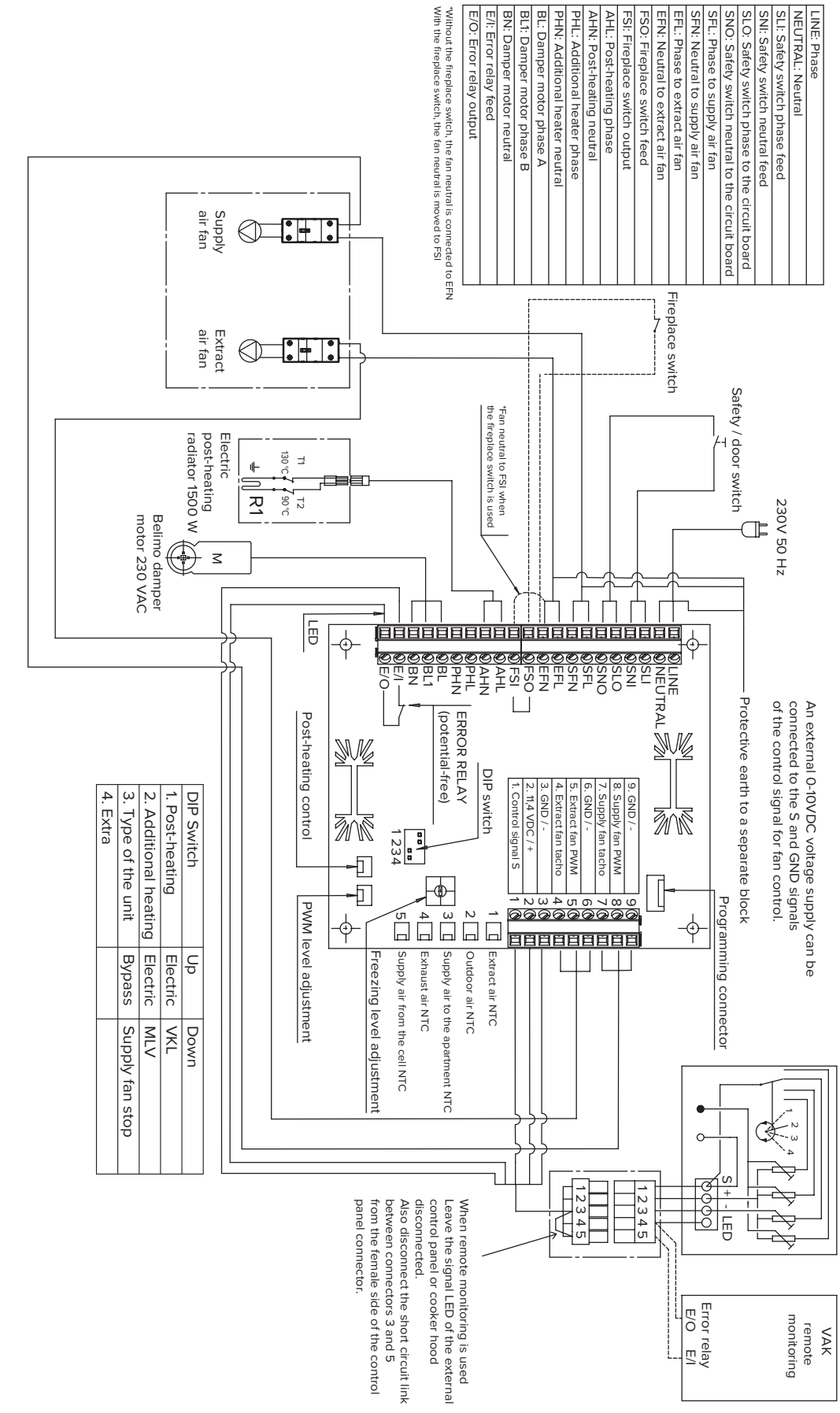


SOUND VALUES

		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 (V)		3,1	4,1	5,2	6,2	7,3	8,1	9,2	10,2		11,4	3,1	4,1	5,2	6,2	7,3	8,1	9,2	10,2		11,4
Air flow dm^3/s		15	24	34	42	51	62	69	77		83	23	31	41	50	60	70	78	86		92
Air flow m^3/h		54	86	122	151	184	223	248	277		299	83	112	148	180	216	252	281	310		331
Medium frequency of the octave band Hz	63	62	64	69	73	77	82	84	87		88	54	55	62	66	69	75	78	79		80
	125	53	63	65	65	67	71	74	76		78	46	50	53	56	59	62	65	67		68
	250	48	56	60	65	70	71	73	75		75	39	45	51	55	60	59	61	62		64
	500	43	49	56	60	64	67	69	71		73	29	35	40	44	47	50	55	54		56
	1000	35	43	49	53	56	61	64	65		67	16	24	30	34	37	40	43	46		46
	2000	25	36	44	49	52	56	58	61		62	13	17	23	28	32	36	38	41		42
	4000	18	23	32	38	43	48	51	54		55	17	17	18	20	24	28	30	33		35
	8000	21	22	29	37	43	49	52	55		57	21	21	21	21	22	23	25	28		29
L_W, dB		63	67	71	74	78	83	85	88		88	54	57	63	66	70	75	78	79		80
L_{WA}, dB (A)		43	53	57	61	65	68	71	72		74	35	40	45	49	53	55	58	59		60

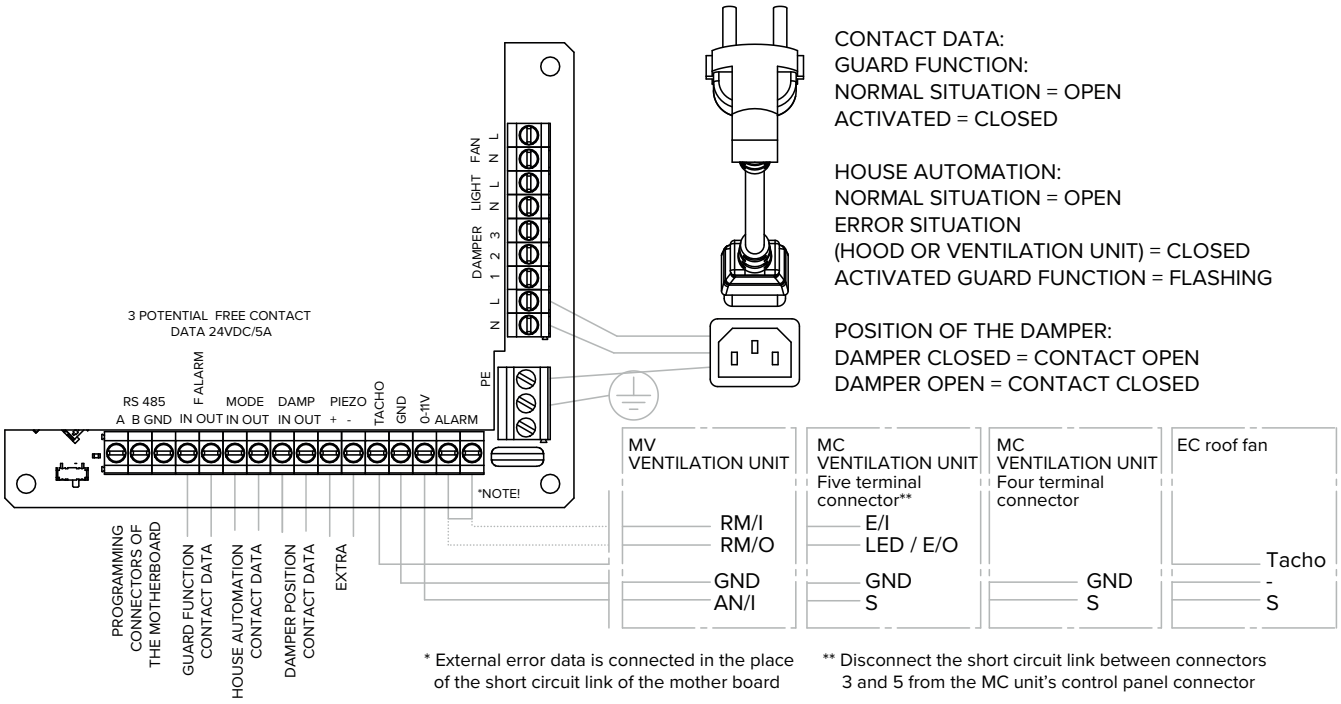
	Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m^2 sound absorption) Adjustment position / Air flows (supply/extract)									
Adjustment position (V)	3,1	4,1	5,2	6,2	7,3	8,1	9,2	10,2		11,4
Air flow dm^3/s	15/20	24/30	33/40	42/48	52/58	61/68	70/76	78/84		83/89
Air flow m^3/h	54/72	86/108	119/144	151/173	187/209	220/245	252/274	281/302		299/320
L_{pA}, dB (A)	22	27	32	35	38	43	44	46		47

INTERNAL ELECTRICAL CONNECTION



EXTERNAL ELECTRICAL CONNECTION

With Vallox Delico PTD EC control hood

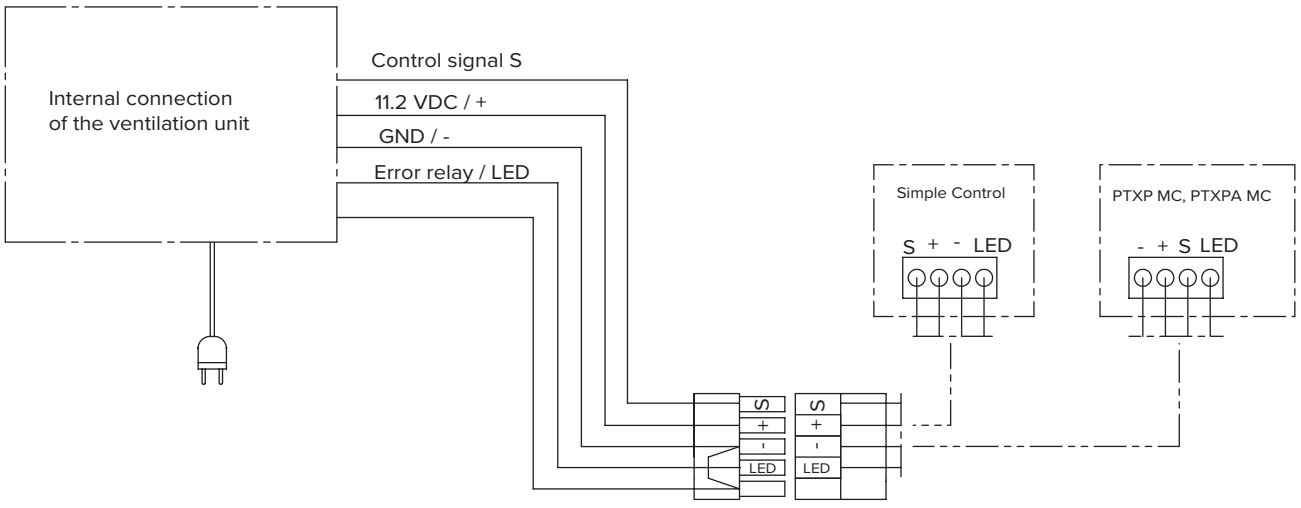


* External error data is connected in the place of the short circuit link of the mother board

** Disconnect the short circuit link between connectors 3 and 5 from the MC unit's control panel connector

EXTERNAL ELECTRICAL CONNECTION

with the Vallox Simple Control panel / Vallox PTXP MC, Vallox PTXPA MC cooker hood



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EXTERNAL ELECTRICAL CONNECTION

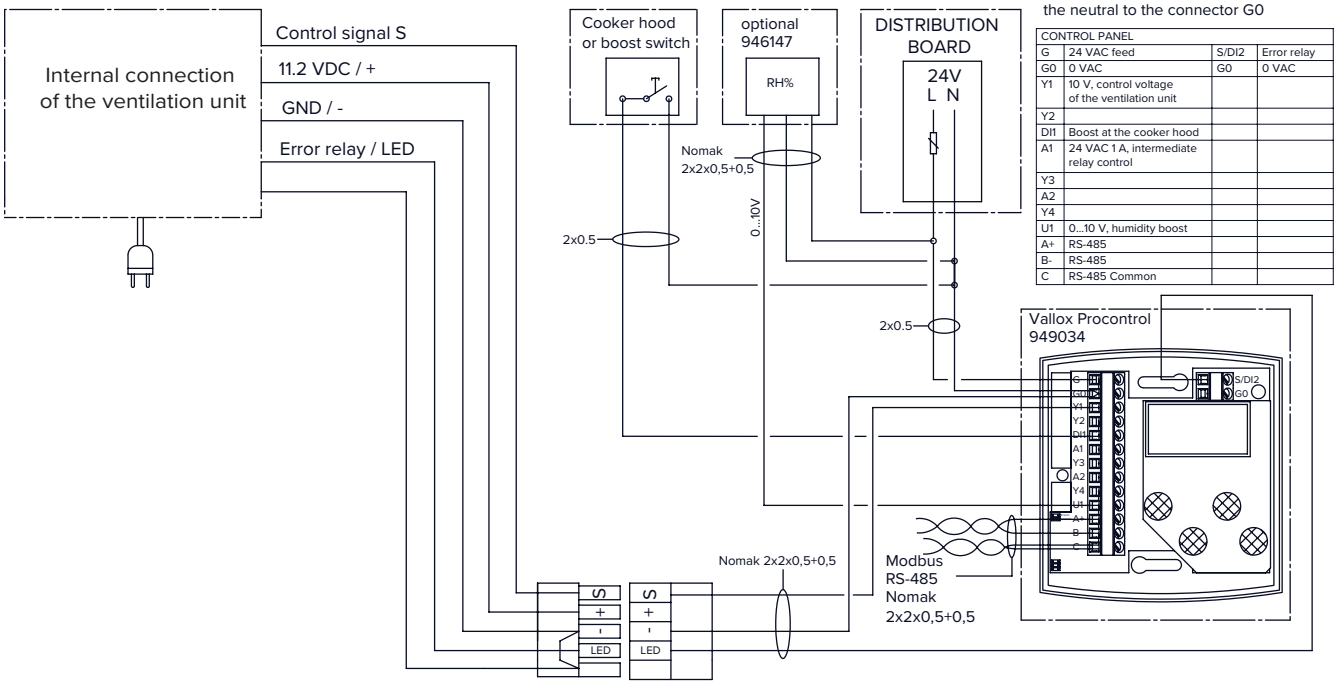
with Vallox ProControl panel

Wiring between the control panel and the ventilation unit, NOMAK 2x2x0.5+0.5	
Ventilation unit cable	Control panel connector
S	Y1
+	leave disconnected
-	G0
LED	S/DI2

Cable types specified in the drawing are indicative

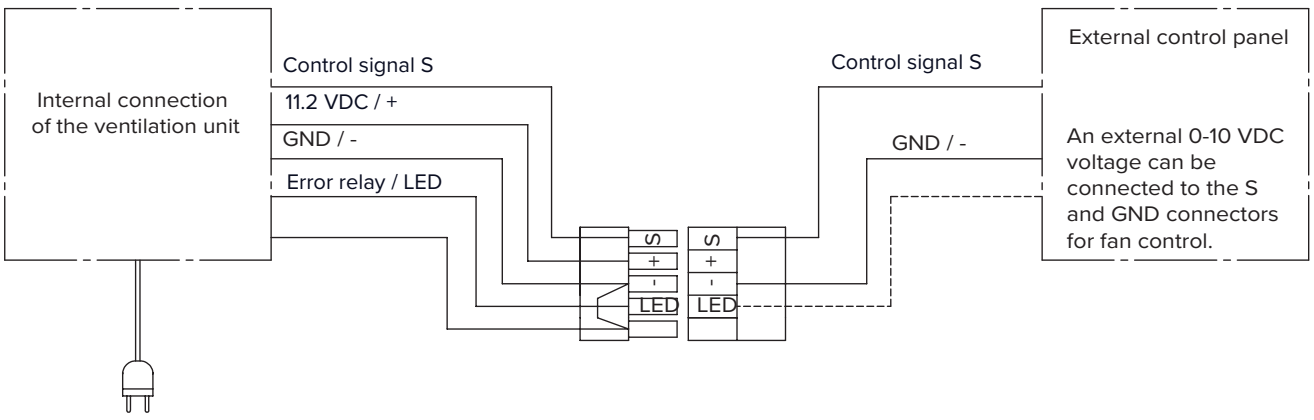
The phase of 24 VAC feed is connected to the control panel connector G and the neutral to the connector G0

CONTROL PANEL			
G	24 VAC feed	S/DI2	Error relay
G0	0 VAC	G0	0 VAC
Y1	10 V, control voltage of the ventilation unit		
Y2			
DI1	Boost at the cooker hood		
A1	24 VAC 1 A, intermediate relay control		
Y3			
A2			
Y4			
U1	0...10 V, humidity boost		
A+	RS-485		
B-	RS-485		
C	RS-485 Common		



EXTERNAL ELECTRICAL CONNECTION

With an external control panel

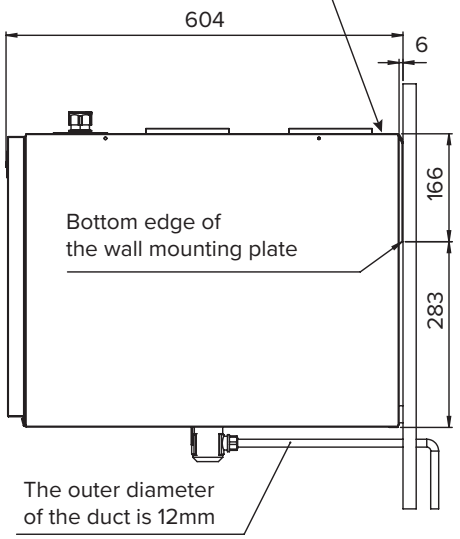


INSTALLATION SITE

Vallox 101 MC must be installed in a location where the temperature remains above +10 °C. When the unit is installed without a protective enclosure, the location must be chosen so that its noise does not cause any disturbance. Such locations include storage premises and technical spaces.

NOTE!
Remember to make a service door in the finished ceiling so that the connection cables can be accessed. The service door should be located roughly 500 mm from the unit door.

The top surface of the side panel of the unit can be installed against the finished ceiling surface. When the wall mounting plate is used, it must be observed that the ventilation unit will rise roughly 10mm above the final installation height!



Mounting on the wall

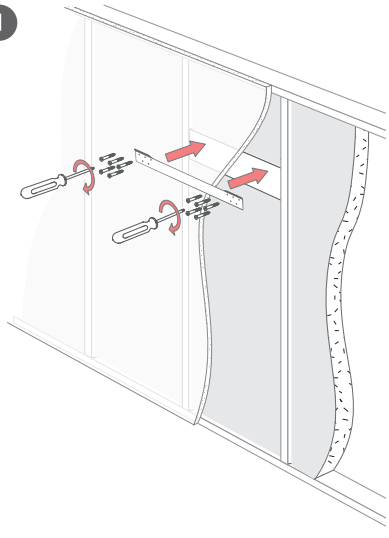
NOTE!

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

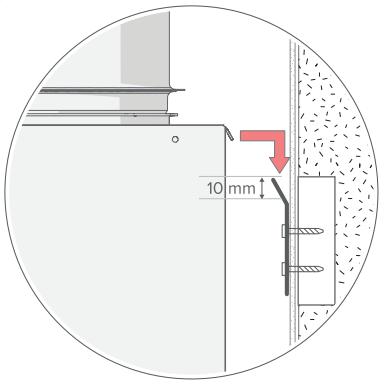
The minimum distance between the top of the unit and the finished ceiling surface is 30 mm. Note that during mounting the unit rises 10 mm higher than the final height.

Mount the ventilation unit on the wall with a mounting plate, as shown in the figures below. Make sure that the unit is horizontally level after mounting.

1



2



Ceiling mounting by using a ceiling mounting plate (optional)

The unit can be equipped with an optional ceiling mounting plate. The ceiling mounting plate must be fastened on rafter frames or other frame structure with M8 thread bars. The bars must be fastened so that they withstand the weight of the unit.

The ceiling mounting plate must be fastened horizontally to make sure that the unit is level. The ceiling mounting plate must be fastened so that there is a 10 mm gap between its rear edge and the finished wall. This way the ventilation unit will be installed as close to the wall as possible. The top edge of the white covering strip of the ceiling mounting plate can be installed against the finished ceiling. Alternatively, a concealed mounting method can be used, in which case the finished ceiling can be 30 mm or less from the top edge of the white covering strip.

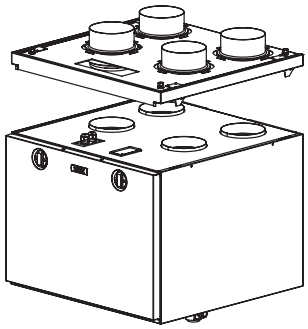
The ceiling mounting plate is fastened to the M8 thread bars with the mounting supplies delivered with the mounting plate. NOTE! The end of the thread bars must be 5 mm or less below the fastening nut (more detailed instructions are provided with the ceiling mounting plate).

Installing the ventilation unit to the ceiling mounting plate

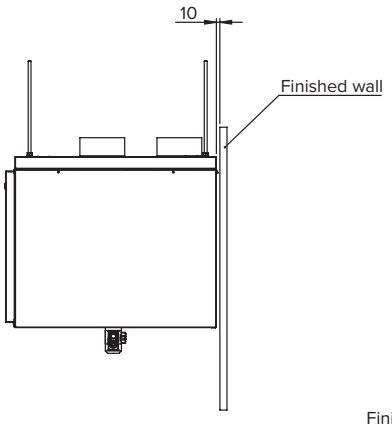
Remove the unit door. Lift the unit and take the wires through the opening in the ceiling mounting plate. Lift the ventilation unit against the ceiling mounting plate so that it locks in place. The unit has become locked on the ceiling mounting plate when the two operating levers on the mounting plate have been restored to the same level with the white covering strip of the ceiling mounting plate (more detailed instructions are provided with the ceiling mounting plate).

Ceiling mounting plate (optional)

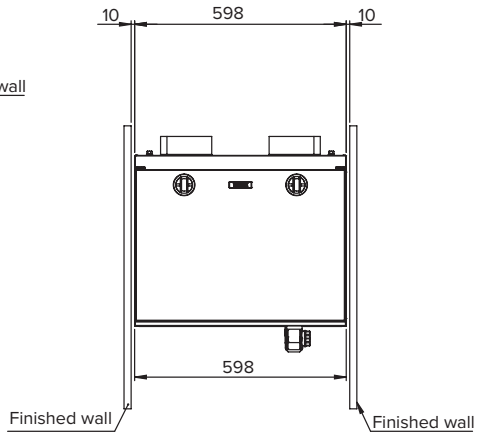
The top edge of the white covering strip of the ceiling mounting plate can be installed against the finished ceiling. Alternatively, a concealed mounting method can be used, in which case the finished ceiling can be 30 mm or less from the top edge of the white covering strip.

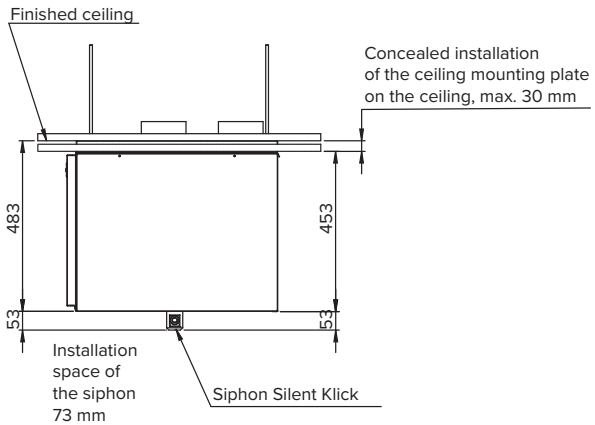


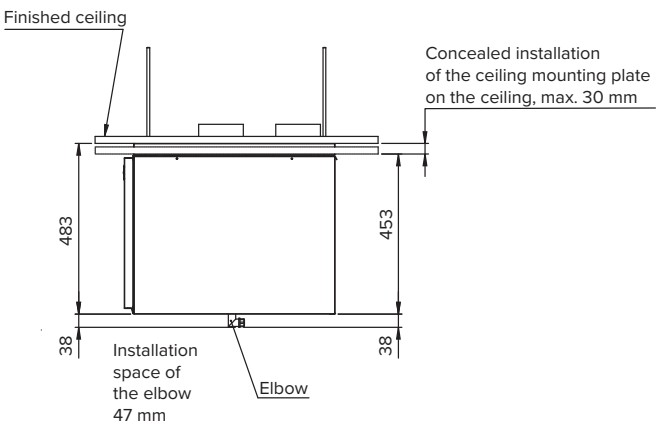
The minimum distance from the finished rear wall is 10 mm



The recommended distance from the finished side wall is 10 mm

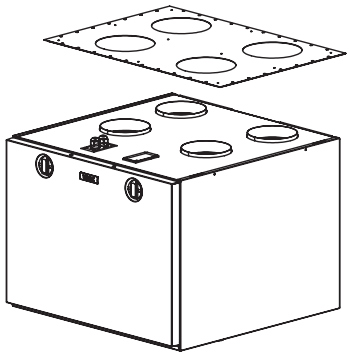


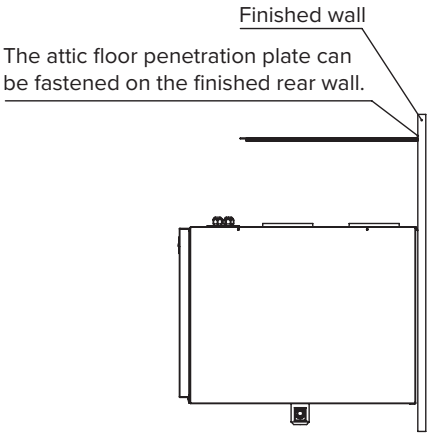


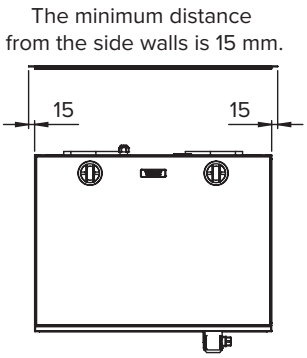


Attic floor penetration plate (optional)

When an attic floor penetration plate is used, the tightness of the vapour barrier has to be ensured.



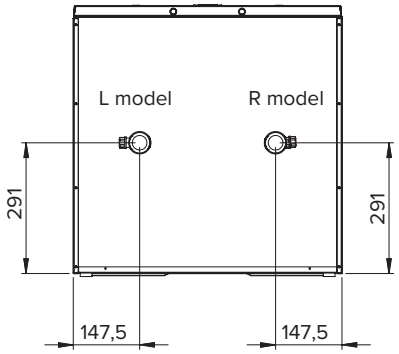




CONDENSING WATER CONNECTIONS

Installation of the Vallox Silent Klick siphon on the bottom pool

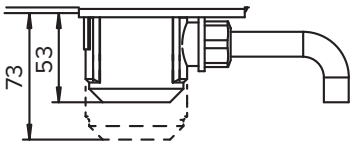
The delivery includes the Vallox Silent Klick siphon. A pipe will be connected to the siphon that leads the water that is condensed from the extract air to the floor drain (not directly into the sewer). The pipe must not rise after the siphon. The ventilation unit must be installed straight to ensure that condensing water can exit the unit unobstructed.



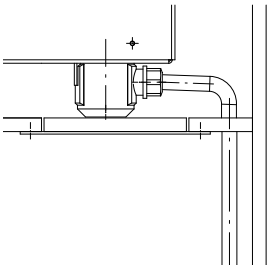
Location of the condensing water outlets, R and L models

Vallox Silent Klick siphon

Installation height 53 mm, installation space 73 mm, outer diameter of the duct 12 mm



Installation of the Vallox Silent Klick siphon on the bottom pool

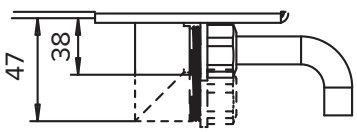


Installation of the Vallox Silent Klick siphon on the wall

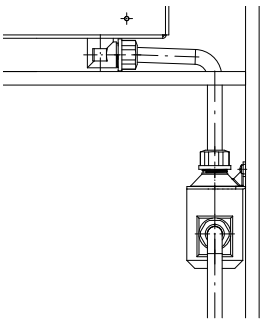
If the Vallox Silent Klick siphon does not fit into the unit directly, the elbow can be installed at the bottom, and the siphon can be installed on the wall. This installation method requires that there is a 47 mm space underneath the unit. The elbow requires a 38 mm space when installed.

Elbow

Installation height 38 mm, installation space 47 mm, outer diameter of the duct 12 mm



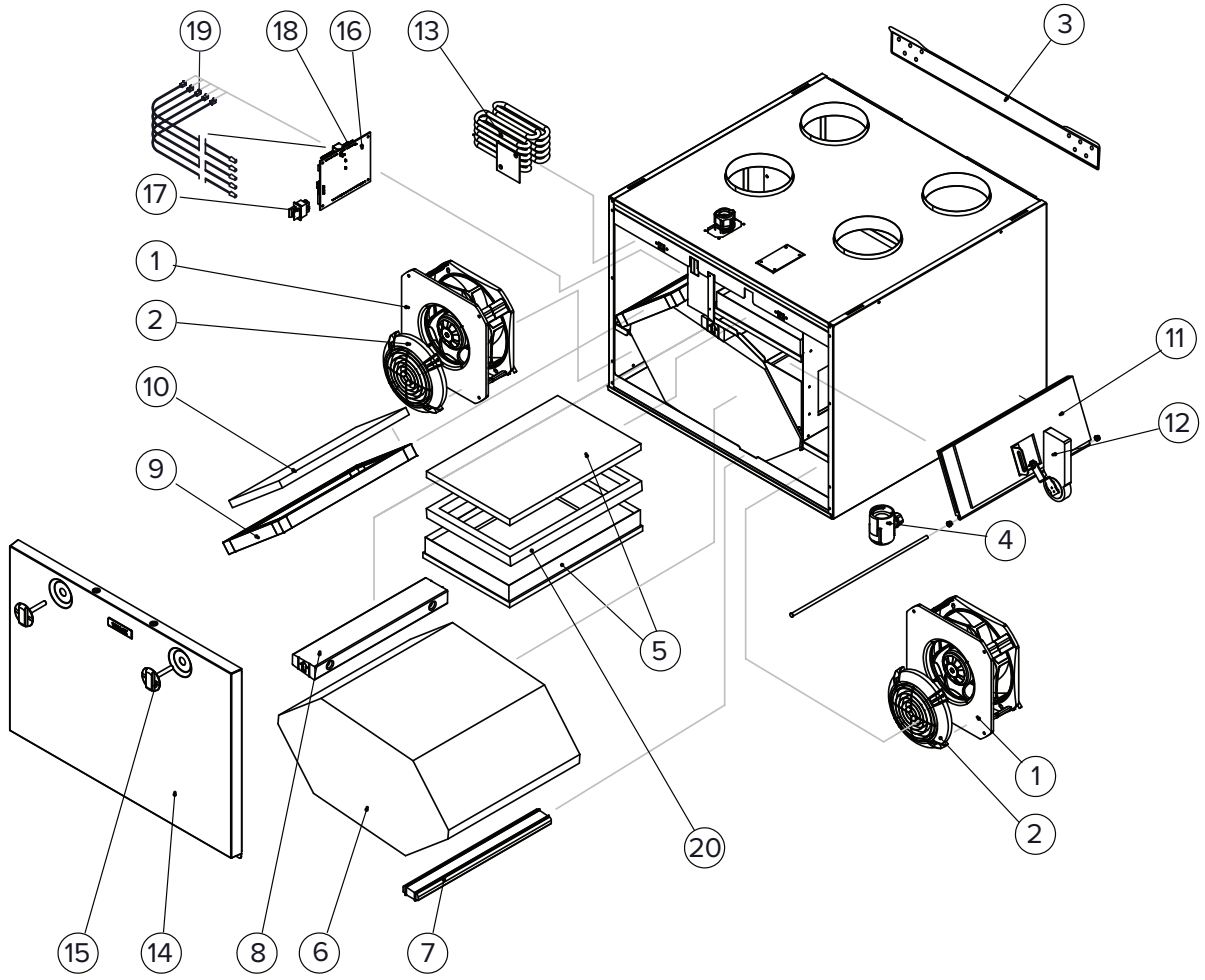
Installation of the Vallox Silent Klick siphon on the wall. The elbow underneath the unit takes less space than the siphon.



EXPLODED VIEW AND PARTS LIST

(Type C3740)

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



NO.	Part	Product number
1	Supply / extract air fan	935455
2	Supply air fan attenuation grid	935451.
3	Wall mounting plate	3080710
4	Siphon Vallox Silent Klick	3292500
5	Coarse and fine filter for supply air	978225
6	HR cell	933260
7	Lower support for the HR cell	4102504
8	Upper support for HR cell	3467200
9	Filter frame (extraction)	978226
10	Coarse filter for extract air	978227

NO.	Part	Product number
11	HR cell bypass damper assembly	4102523
12	Damper motor	930621
13	Post-heating resistor	942220
14	Door	4102334
15	Mounting screw of the door	990712
16	Motherboard	949035
17	Safety switch	948370
18	Glass tube fuse 320 mA slow 5x20 mm	952486
19	NTC sensor (specify the sensor reference number in the order)	946140
20	Supply air filter frame	4108194

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