



Vallox 90K_{SC}

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Product code A3522-1/2

Models

VALLOX 90K SC R

VALLOX 90K SC L



TECHNICAL SPECIFICATION

- Heat recovery efficiency of the cross-counter flow cell up to 80%
- Energy-efficient integrated directcurrent fans
- 4-step Simple Control adjustment
- Preheating with electricity (option)
- Equipped with Slim Line cooker hood

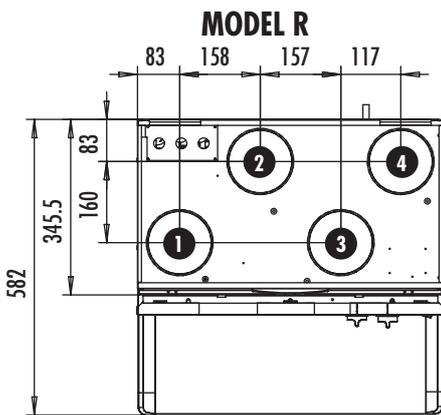
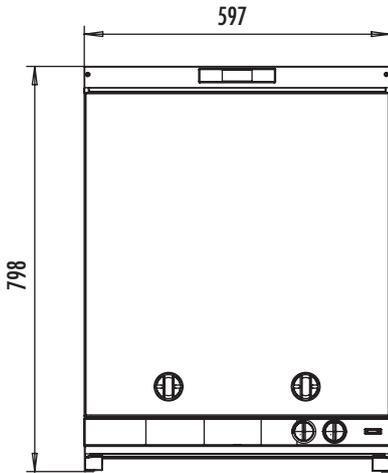
Electrical connection	230 V, 50 Hz, ≈ 1.8 A (+ preheating unit 4.3 A, option)
Class of protection	IP 30
Fans	Extract air 0,119 kW 0,9 A
direct current (DC) Supply air	0,119 kW 0,9 A
	92 dm ³ /s 50 Pa
	75 dm ³ /s 50 Pa
Heat recovery	Cross-counter flow cell, $\eta > 80\%$
Heat recovery bypass	Summer/winter damper
Preheating radiator (option)	1000 W, 4,3 A
Filter	Extract air
	Supply air
	G4
	G4, F7 (F7 option)
Weight	52 kg
Power adjustment of ventilation	– cooker hood
Options	– Electric preheating unit max. 1000 W – Supply air filter F7 – Insulated attic floor penetration plate



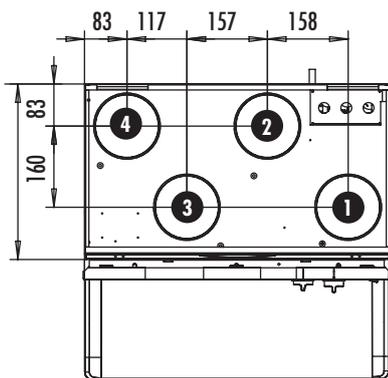
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DIMENSIONS AND MAIN PARTS

Dimensions and duct outlets

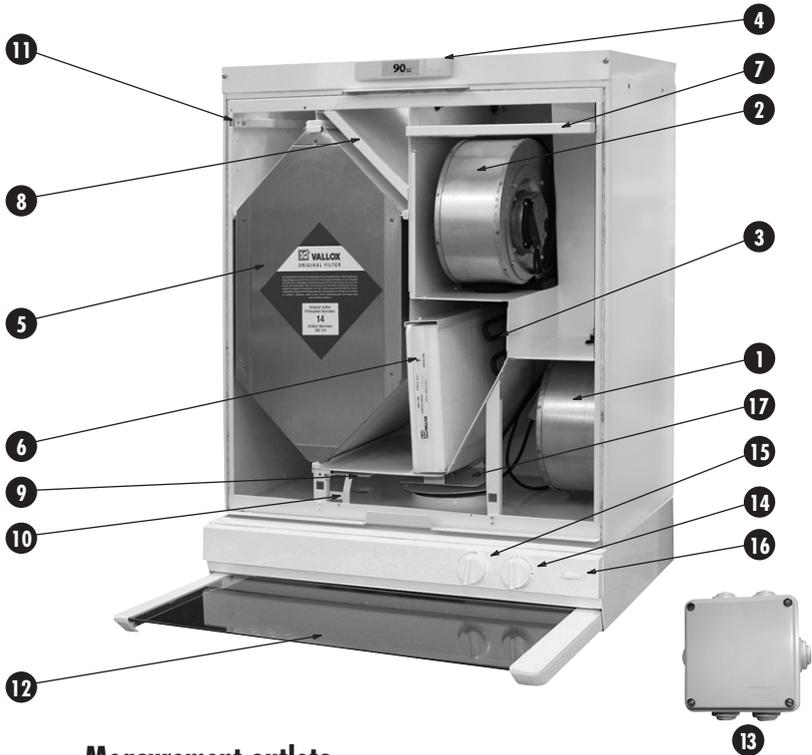


MODEL L



Duct outlets, inner diameter of collar
Ø 125 mm

- 1 Supply air to the dwelling
- 2 Extract air from the dwelling
- 3 2 Outdoor air to the unit
- 4 Exhaust air outside



Measurement outlets



Measurement outlets are located behind the machine plate. Detach the machine plate by pushing it to the left and pull the outlets out.

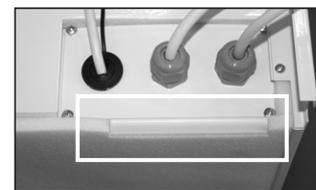
Condensing water outlet



Condensing water outlet above the grease filter of the cooker.



Fastening brackets



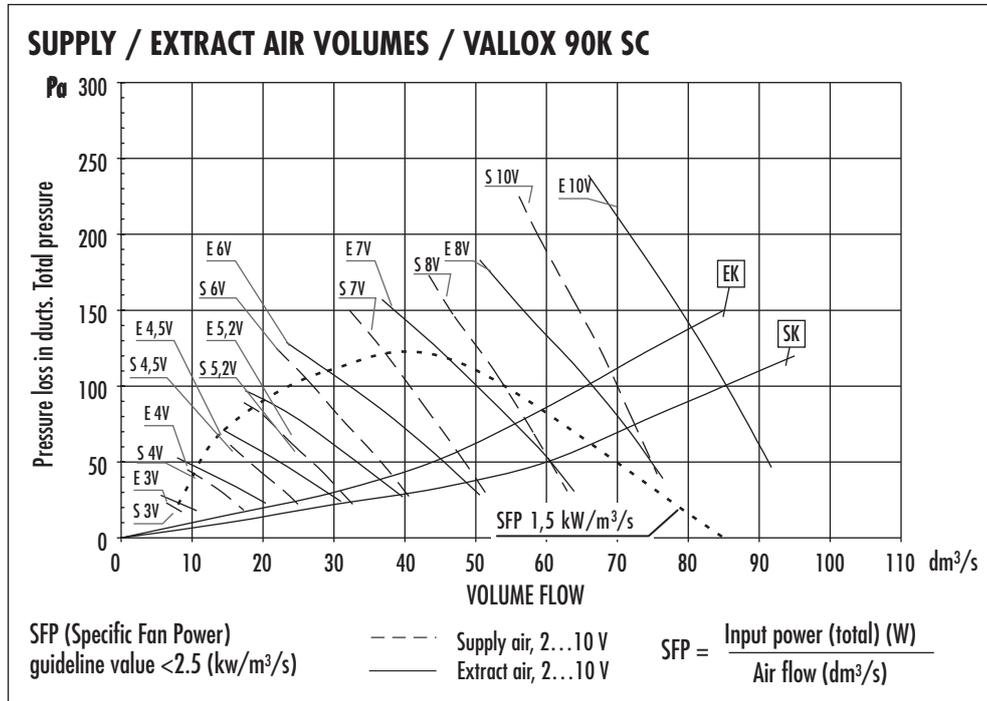
Fastening brackets are located up in the back of the unit.

Main parts

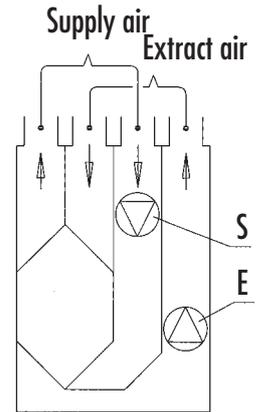
- | | | |
|----------------------------------|-----------------------------------|-----------------------------------|
| 1 Extract air fan | 7 Outdoor air filter G4 | 13 Connection box |
| 2 Supply air fan | 8 Extract air filter G4 | 14 Speed selector switch (forced) |
| 3 Preheating radiator (option) | 9 Summer / winter damper | 15 Cooker hood damper controller |
| 4 Measurement outlets | 10 Summer / winter damper release | 16 Light switch |
| 5 Heat recovery cell | 11 Safety switch | 17 Fire valve |
| 6 Outdoor air filter F7 (option) | 12 Cooker hood | |



Air volumes



Measuring points after the connection outlet.
Fan curves indicate the total pressure available for duct losses.



Sound values

Hz	Sound power level from the ventilation unit to supply air ducts by octave band L _w , dB				Sound power level from the ventilation unit to extract air ducts by octave band L _w , dB				
	ADJUSTING VOLTAGE/AIR FLOW				ADJUSTING VOLTAGE/AIR FLOW				
	3,6 V 16,5 l/s	5,4 V 27,2 l/s	7,3 V 40,9 l/s	10,0 V 65,6 l/s	3,6 V 23,8 l/s	5,4 V 35,8 l/s	7,3 V 51,9 l/s	10,0 V 76,7 l/s	
Medium frequency of the octave band, Hz	63	61,7	67,2	73,1	82,1	56,9	63,9	69,6	75,6
	125	46,9	56,2	64,3	73,4	46,4	53,9	60,8	69,1
	250	39,6	47,0	54,4	63,5	39,5	44,6	52,2	61,0
	500	35,1	41,6	48,6	57,3	32,7	38,8	45,6	53,3
	1000	31,1	38,7	45,7	52,4	27,9	35,5	43,2	48,9
	2000	13,0	25,7	34,4	43,5	17,6	24,5	33,6	42,9
	4000		15,6	27,5	35,9		13,3	23,2	33,8
8000			20,0	22,6					
L _w dB	61,8	67,6	73,7	82,7	57,4	64,3	70,2	76,7	
L _{wA} dB(A)	38,5	46,1	53,3	61,9	36,4	43,5	50,5	58,2	
A-weighted sound pressure level dB (A) coming from the unit through the envelope to the rooms where the unit has been installed (10 m ² sound absorption)									
ADJUSTING VOLTAGE/AIR FLOWS (supply/extract)									
3,6 V 17/24 l/s 5,4 V 29/39 l/s 7,3 V 44/56 l/s 10,0 V 69/81 l/s									
L _{pA} dB(A)	23,9	30,6	38,0	45,3	VALLOX 90K SC				

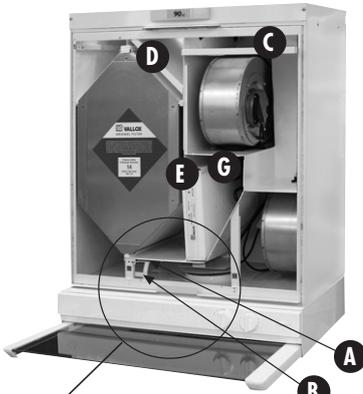
* Sound values measured **without** cooker hood, cover plate and top cabinets beside

Fan control voltage with SC controller (V)	Total input power W
3	9
4	15
4,5	22
5,2	31
6	47
7	72
8	114
10	182



VALLOX 90K SC

OPERATION



Summer/winter damper in winter position



Summer/winter damper in summer position

You can switch the summer/winter damper to winter position by pushing the damper behind the holder.

Preheating radiator (G) (option)

Note! The heating radiator is tubular and can be scalding hot.



Heat recovery bypass

In winter use the heat recovery cell of VALLOX 90K SC recovers heat from the air leaving the dwelling and uses it to heat the air coming from the outside.

In summer use when it is warm outside, it is unnecessary to heat outdoor air. The heat recovery cell is bypassed in VALLOX 90K SC with the standard damper (A). The position of the damper can be changed by opening the damper release (B) and then moving the summer/winter damper in another position. In the summer position air flow through the cell is prevented, and heat recovery bypass is activated.

Air filtering

VALLOX 90K SC features coarse filtering of both extract and supply air before the fans. The supply air side includes a G4 class coarse filter (C) and the extract air side a G4 class coarse filter (D). The unit can also be equipped with an F7 fine filter (E), which captures fine dust and pollen as well dust not seen to the eye. The filters need to be in place in the unit whenever ventilation is in operation.

Defrosting

Water condensing from extract air may freeze in the heat recovery cell. Freezing can be prevented by stopping the supply air fan, or the unit can be equipped with a preheating resistor, which is switched on as needed.

Stopping the supply air fan

Defrost thermostat T1 stops the supply air fan whenever the temperature of extract air goes below +5 °C after the cell. The fan restarts when temperature has risen by circa three degrees, i.e. to +8 °C. The limit of the thermostat (F) can be adjusted at the back of the heat recovery cell. If the unit includes a preheating radiator (G), the supply air fan cannot be stopped.

Outdoor air preheating

The unit may have been equipped with a preheating radiator at the factory. If this is the case, defrost thermostat T1 switches the preheating radiator on whenever the temperature of extract air goes below +5 °C after the cell. The preheating radiator switches off when temperature has risen by circa three degrees, i.e. to +8 °C. The preheating radiator heats outdoor air before the cell and prevents it from freezing. In very cold temperatures the preheating radiator is not enough to heat maximum air flow to a sufficient degree (at a temperature of -30 °C, maximum air flow is 30 dm³/s, which corresponds to speed 2). The limit of the thermostat can be adjusted at the back of the heat recovery cell.

Selection of fan speed

Fan speed is selected by using the speed selector switch on the cooker hood.

Cooker hood speed selector switch

The speed selector can be used to select speeds 1, 2, 3 and 4:

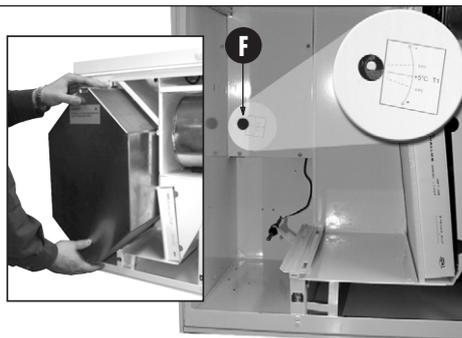
1. **Use during absence.** When the dwelling is empty, ventilation can temporarily be diminished.
- 2-3. **Normal use.** In normal conditions air needs to be replaced once in two hours.
4. **Boosted operation.** Cooking, bathing in the sauna or bathroom, drying clothes, using the toilet, having guests, overheat or a similar situation may cause a need for higher than normal ventilation.

Cooker hood damper controller

When cooking, open the cooker hood damper.

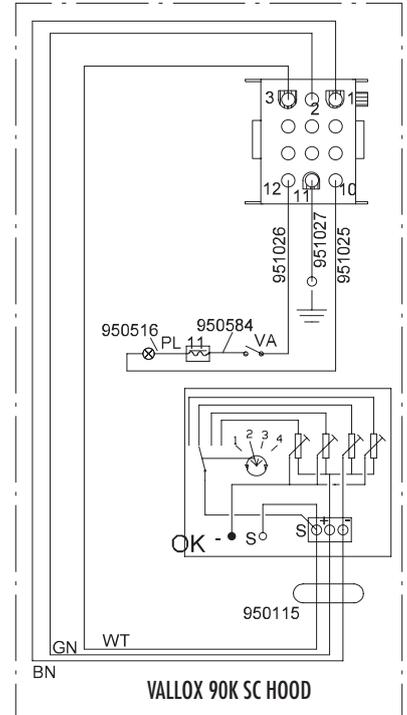
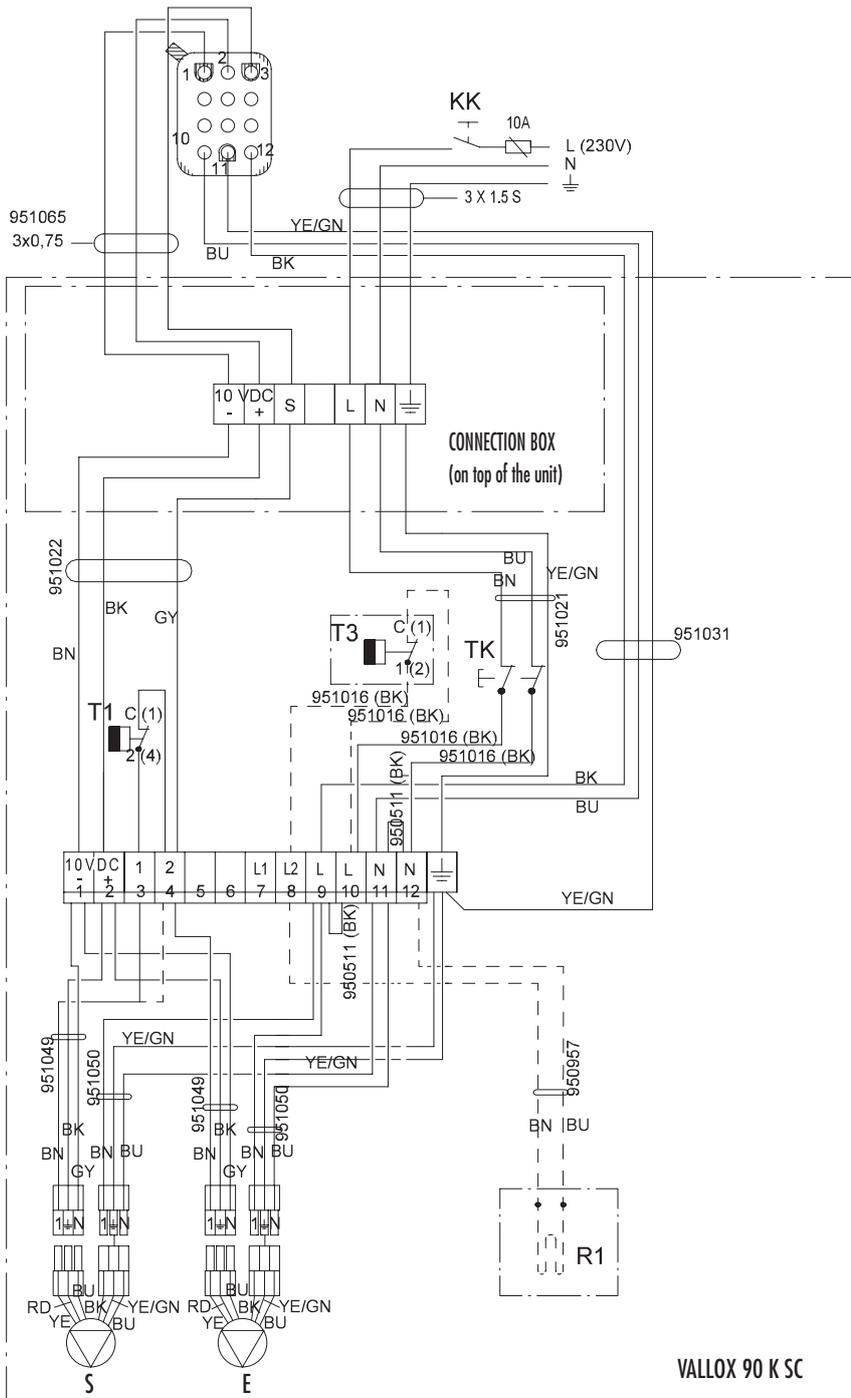
Defrost thermostat (F)

First remove the heat recovery cell, then the cap protecting the adjusting screw of the thermostat.



Internal and external electrical diagram VALLOX 90K SC

Defrosting by stopping the supply air fan or with preheating radiator (option)



- S Supply air fan
- E Extract air fan
- TK Safety switch
- KK Operating switch
- T1 Antifreeze thermostat
Supply air fan stops at +4 °C
(alternative connection)
- T3 Preheating radiator on at +5 °C
- R1 Preheating radiator (option), with 90 °C
and 130 °C overheat protection
- OK Voltage switch (in the cooker hood)

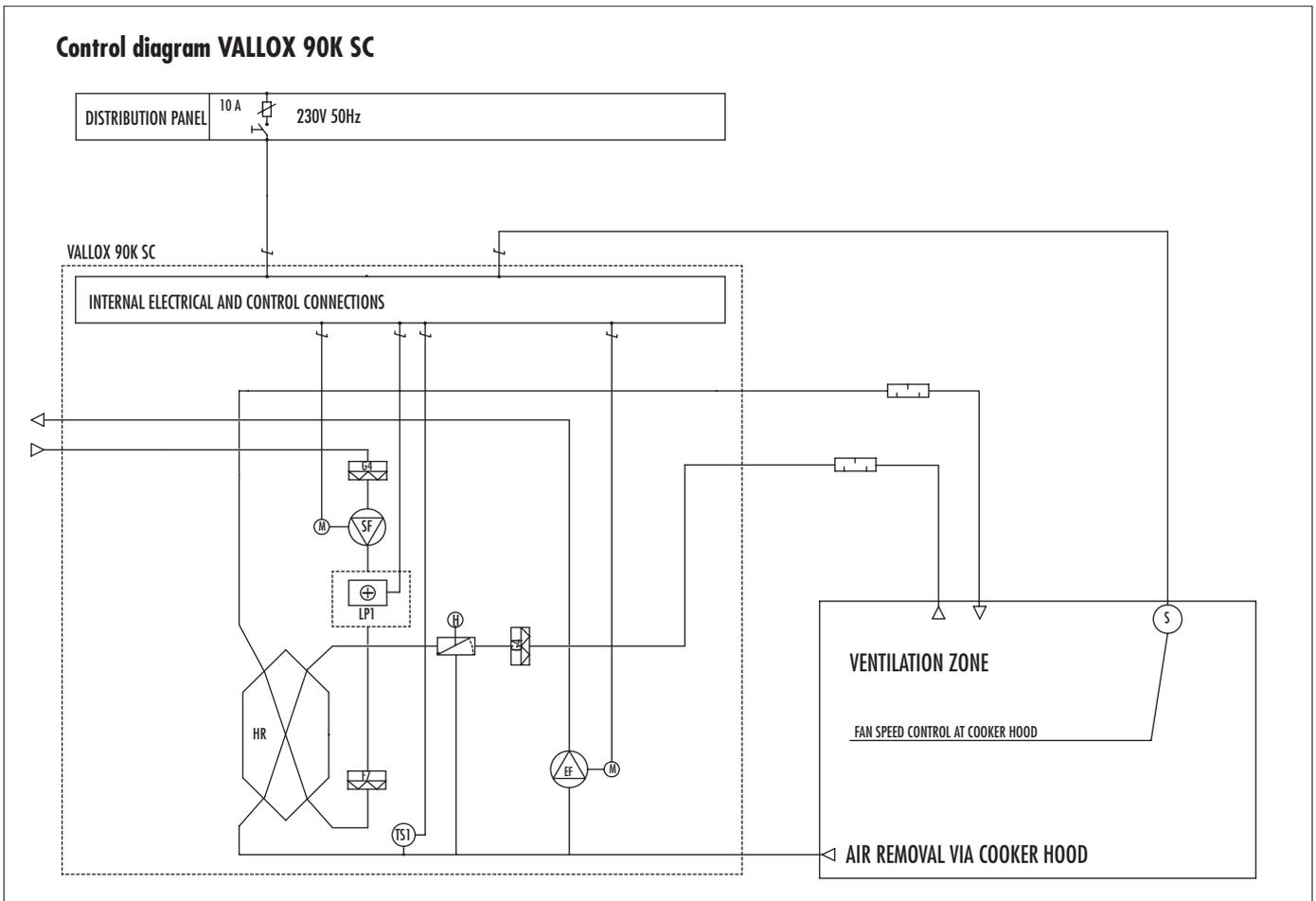
- Wires
- BK black
 - BN brown
 - BU blue
 - GN green
 - GY grey
 - WT white
 - YE/GN yellow/green
 - RD red



VALLOX 90K SC

CONTROL DIAGRAM AND DESCRIPTION OF OPERATION

Control diagram VALLOX 90K SC



Control of operation

Power supply to the unit can be controlled with the 0/1 switch in the distribution panel if needed. After starting, the unit operates at the power selected on the fan speed adjustment switch. There is also a safety switch TK inside the unit. It stops power supply when the maintenance door of the unit is opened.

Fan speed adjustment

Cam switch

Fans SF and EF of the unit are controlled depending on operating conditions with a separate 4-step (1, 2, 3 and 4) speed selector switch located in the cooker hood.

Heat recovery bypass

Summer-time bypass (H) of the heat recovery (HR) cell is done manually by turning the HR damper in the bypass position for the summer.

Heat recovery defrosting

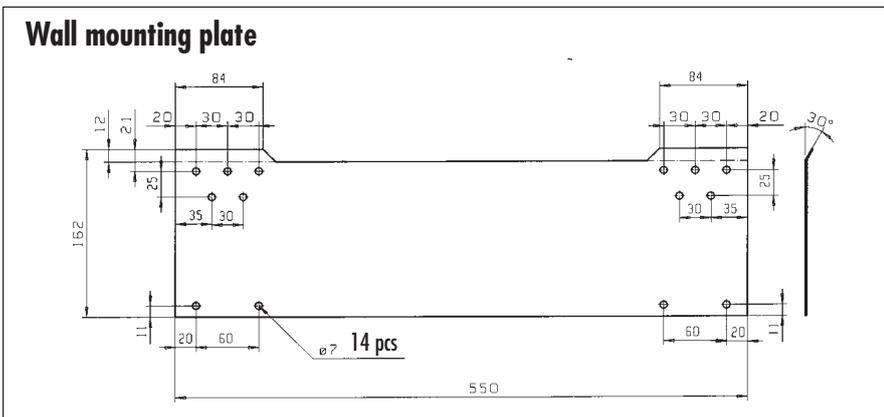
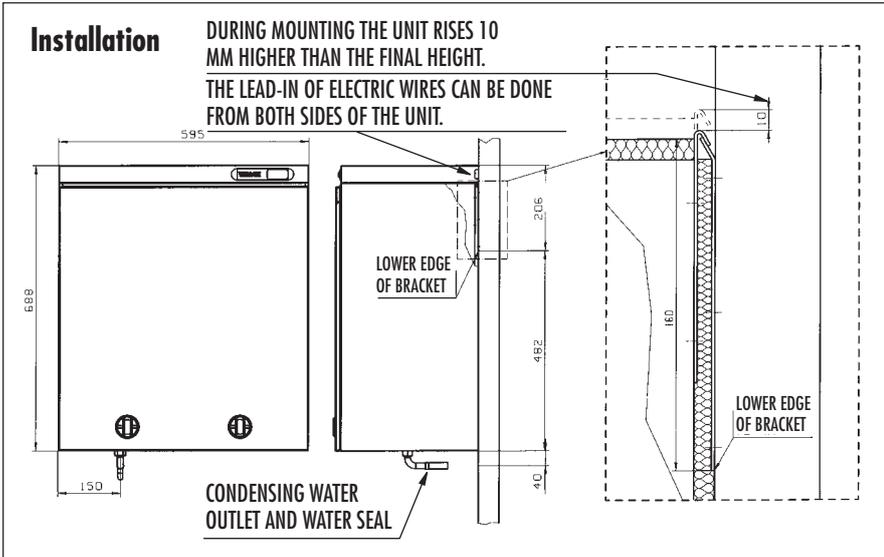
The defrost thermostat TS1 of the HR cell stops supply air fan SF, preventing the HR cell from freezing. The fan starts automatically as soon as the risk of freezing has passed. The operating point of the defrost thermostat can be changed, the factory setting is +5 °C.

The unit can also be equipped with preheating radiator LPI, controlled by defrost thermostat TS1. When there is a risk of frosting, preheating radiator LPI starts to heat air coming from outside to the unit, thereby preventing the HR cell from freezing.

Note! The preheating radiator can be scalding hot, especially in winter.

Parts list VALLOX 90K SC

Code	Name	Technical data (factory settings in parentheses)	Standard / Option
G4	Filter	Supply air G4, extract air G4	Standard
F7	Filter	Supply air F7	Option
H	HR bypass damper	Manual	Standard
HR	Heat recovery cell	Cross-counter flow cell, efficiency ~ 80%	Standard
EF	Extract air fan (DC - direct current)	qv = 92 dm ³ /s (50 Pa)	Standard
TS1	HR defrost thermostat	Factory setting +5 °C	Standard
SF	Supply air fan (DC - direct current)	qv = 75 dm ³ /s (50 Pa)	Standard
S	4-step adjustment switch	1, 2, 3, 4 switch, on the cooker hood	Standard
LPI	Preheating radiator	PTC resistor max. 1.0 kW	Option



Wall mounting

VALLOX 90K SC is mounted in the kitchen above the cooker.

Observe!

Minimum distance of grease filter from cooker is 480 mm

VALLOX 90K SC is mounted on the wall with a mounting plate as shown in the adjacent figure.

Wall construction

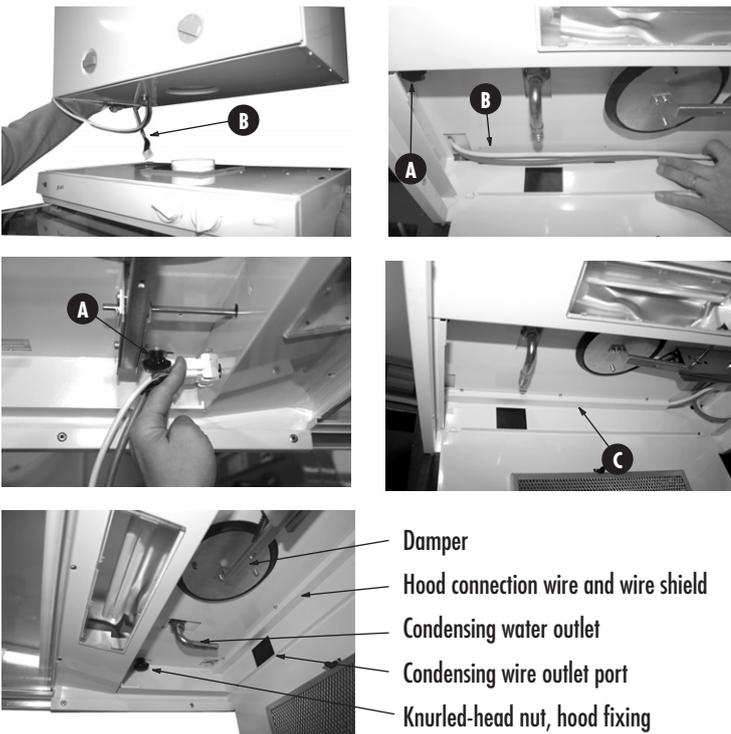
When fixing the unit, take the wall structure into account. Avoid mounting the unit on a hollow, echoing dividing wall and on a bedroom wall because of sound conduction, or prevent sound conduction.

Cooker hood mounting

The cooker hood is mounted at the bottom of the VALLOX 90K SC unit with knurled-head nuts (A), which are included in the accessory bag delivered with the unit.

Open the cooker hood's bottom plate, which has the grease filter attached to it, lift the hood against the bottom of the ventilation unit and fix the hood with the knurled-head nuts.

Thread the connection wire (B) as shown in the picture, and use a wire shield (C) if needed.



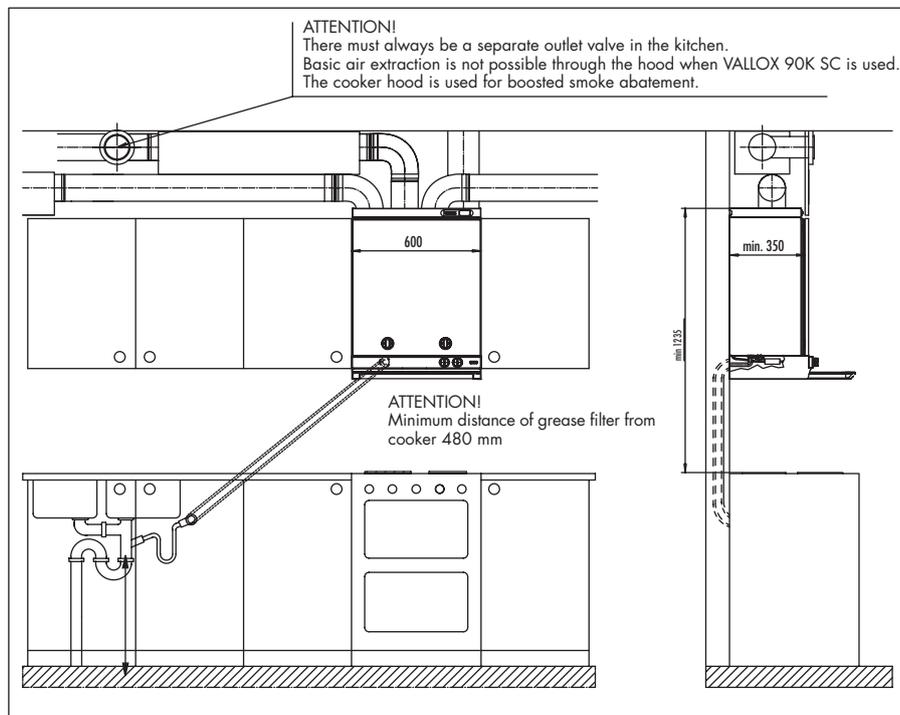


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CONDENSING WATER CONNECTION

Condensing water

The delivery includes a water seal. With a pipe connected to the water seal, water condensing from extract air can be led to a floor drain (not straight to the drain). The pipe must not rise after the water seal. The unit has to be mounted level with the horizontal in order to ensure that condensing water can get out of the unit.



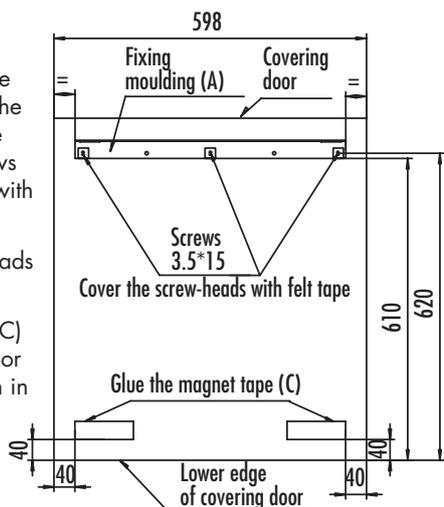
VALLOX 90K SC

Mounting of covering door brackets

Fasten the fixing moulding (A) to the covering door at the point shown in the figure, using screws 3.5*15 supplied with the unit.

Cover the screw-heads with felt tape.

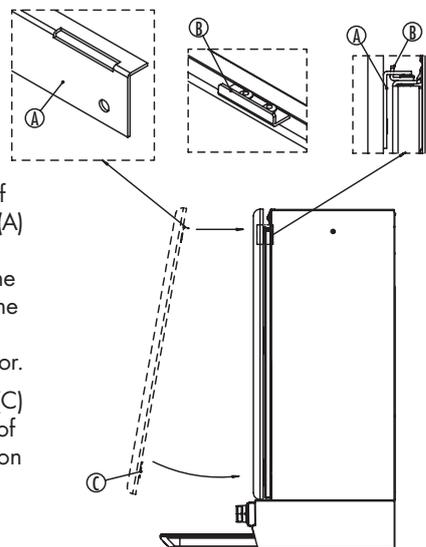
Glue the magnet (C) to the covering door at the point shown in the figure.



Mounting of covering door

Insert the groove of the fixing moulding (A) at the upper of the covering door to the projections (B) at the upper edge of the ventilation unit's door.

Press the magnets (C) at the lower edge of the covering door on the door of the ventilation unit.



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