



HEAT RECOVERY AIR HANDLING UNIT



KOMFORT Roto EC S6K 200
KOMFORT Roto EC S6EK 200

EN

USER'S MANUAL



BLAUBERG
Ventilatoren

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the KOMFORT Roto EC S6(E)K 200 unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

SAFETY REQUIREMENTS

All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.

Disconnect the unit from the power supply prior to any connection, servicing, maintenance, and repair operations.

Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation. The present user's manual should be carefully read before beginning works.

Check the unit for any visible damage of the impeller, the casing, and the grille before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.

While mounting the unit, avoid compression of the casing! Deformation of the casing may result in motor jam and excessive noise.

Misuse of the unit and any unauthorised modifications are not allowed.

Do not expose the unit to adverse atmospheric agents (rain, sun, etc.).

Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.

Do not use the unit in a hazardous or explosive environment containing spirits, gasoline, insecticides, etc.

Do not close or block the intake or extract vents in order to ensure the efficient air flow.

Do not sit on the unit and do not put objects on it.

The information in this user's manual was correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

Never touch the unit with wet or damp hands.

Never touch the unit when barefoot.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a safety hazard.

Ensure that the unit is switched off from the supply mains before removing the guard.

Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.**


The unit is designed to ensure continuous mechanical air exchange in houses, offices, hotels, cafes, conference halls, and other utility and public spaces as well as to recover the heat energy contained in the air extracted from the premises to warm up the filtered stream of intake air.

The unit is not intended for organizing ventilation in swimming pools, saunas, greenhouses, summer gardens, and other spaces with high humidity.

Due to the ability to save heating energy by means of energy recovery, the unit is an important element of energy-efficient premises.

The unit is a component part and is not designed for stand-alone operation. It is rated for continuous operation.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

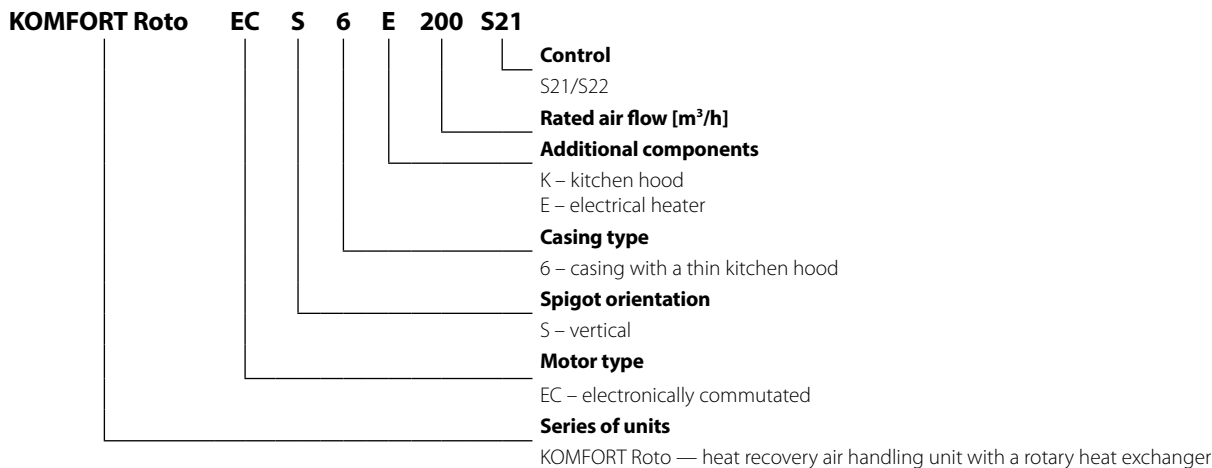
THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORISED ACCESS BY UNATTENDED CHILDREN.

DELIVERY SET

Name	Number
Air handling unit	1
User's manual	1
Control panel*	1
Decorative panel	1
Decorative panel mounting bracket	4
Fastening kit	1
Packing box	1

*The control panel is not included in the delivery set of the units with the S21 controller.

DESIGNATION KEY



TECHNICAL DATA

The unit is designed for indoor application with the ambient temperature ranging from +1 °C up to +40 °C and relative humidity up to 60 % without condensation. In cold, damp rooms, there is a possibility of freezing or condensation inside and outside the casing. In order to prevent condensation on the internal walls of the unit, it is necessary that the surface temperature of the casing is 2-3 °C above the dew point temperature of the transported air.

The unit should be operated continuously, and in cases where ventilation is not necessary, reduce the air flow of the fans to a minimum (20%). This will ensure a favorable indoor climate and reduce the amount of condensation inside the unit, which can damage electronic components. Never use the unit for dehumidification, for example, of new buildings.

The unit is rated as a Class I electrical appliance.

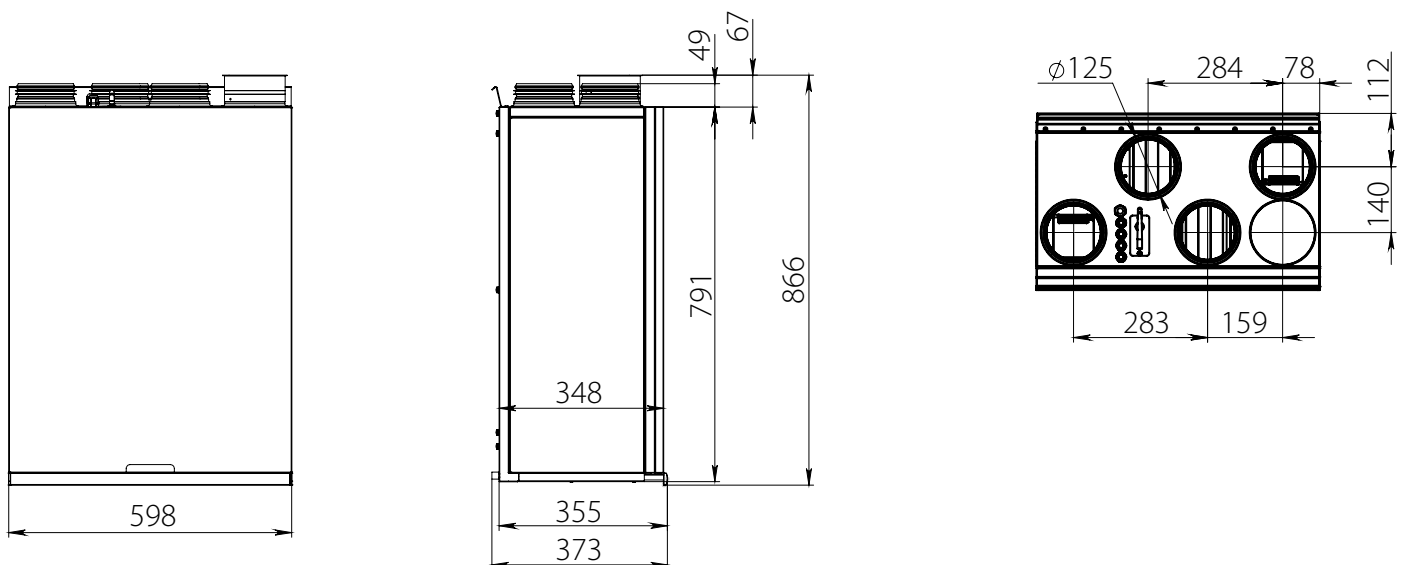
Hazardous parts access and water ingress protection rating:

IP22 for the unit connected to the air ducts

IP44 for the unit motors

The unit design is constantly being improved, thus some models may be slightly different from those described in this manual.

Parameter		KOMFORT Roto EC S6K 200	KOMFORT Roto EC S6EK 200
Unit voltage [V/50 (60) Hz]		1~ 230	
Maximum unit power (without a heater) [W]		118	
Maximum heater power [W]		-	700
Maximum unit power [W]		118	818
Maximum unit current (without a heater) [A]		1,0	
Maximum heater current [A]		-	3
Maximum unit current [A]		1	4
Maximum air flow [m ³ /h]		270	
RPM [min ⁻¹]		1800	
Sound pressure level at 3 m distance [dBA]		28	
Transported air temperature [°C]		-25...+40	
Casing material		painted steel	
Insulation		20 mm mineral wool	
Filter	extract	G4	
	supply	G4, F7	
Connected air ducts diameter [mm]		125	
Weight [kg]		47	48
Heat recovery efficiency [%]		75...92	
Heat exchanger type		rotary	
Heat exchanger material		Aluminium	
SEC class		A	



DESIGN AND OPERATING PRINCIPLE

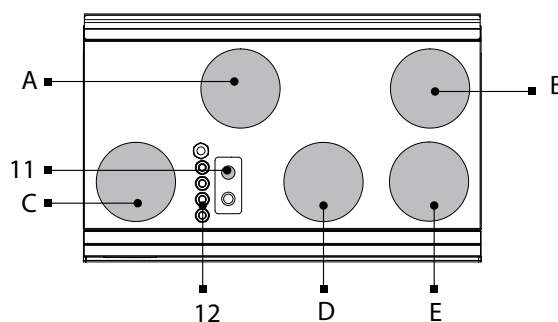
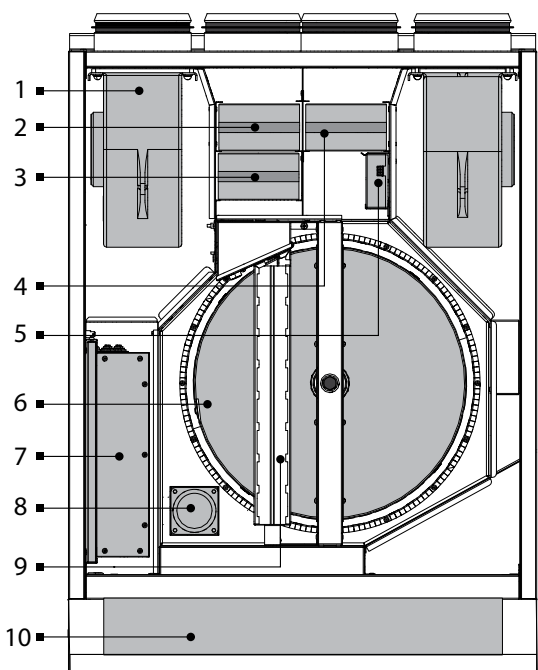
The unit has the following operating principle:

stale extract air from the room flows to the unit, where it is filtered. Then the air is moved through the rotary heat exchanger and is exhausted outside with the exhaust fan. Clean air from outside is moved to the supply filter. Then filtered air flows through the rotary heat exchanger and is moved to the room with the supply fan. Heat exchange between extract air and intake air takes place in the rotary heat exchanger. Heat recovery minimizes heat losses and space heating expenses in cold seasons and cooling expenses in warm seasons.

The KOMFORT Roto EC S6EK 200 unit is equipped with an electric heater for preheating the supply air.

The unit is equipped with an additional extract spigot for connecting a kitchen hood.

The air handling unit is equipped with quick-detachable service panels for scheduled repair and maintenance operations.



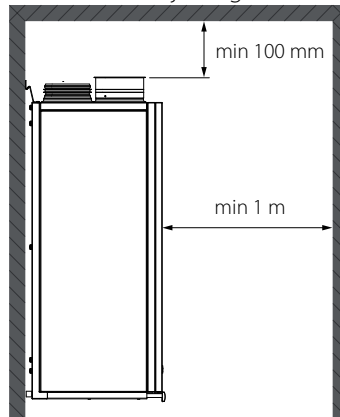
1 – supply fan 2 – supply filter 3 – supply filter with higher level of filtering 4 – extract filter 5 – humidity sensor (option) 6 – rotary heat exchanger 7 – control unit 8 – rotary heat exchanger drive 9 – electric PTC heater (for models equipped with a heater) 10 – kitchen hood 11 – Setup Mode button 12 – cable glands

A – spigot for intake air B – spigot for exhaust air C – spigot for supply air D – spigot for extract air E – additional spigot for optional remote connection of a kitchen hood

MOUNTING AND SET-UP**READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.****THE UNIT MUST BE MOUNTED BY A QUALIFIED EXPERT ONLY, PROPERLY TRAINED AND HAVING THE REQUIRED TOOLS AND MATERIALS.**

While mounting the unit provide enough access for maintenance or repair work.

The minimum recommended clearances between the unit and the adjoining walls are given in the figure below.



To attain the best performance of the unit and to minimise turbulence-induced air pressure losses, connect the straight air duct section to the spigots on both sides of the unit while mounting.

Minimum straight air duct length:

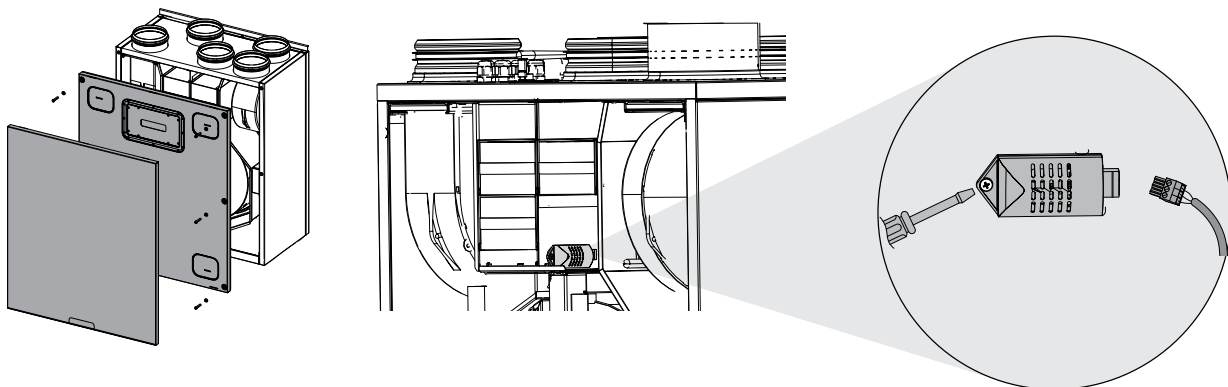
- equal to 1 air duct diameter on the intake side
- equal to 3 air duct diameters on outlet side

If the air ducts are too short or not connected, protect the unit parts from ingress of foreign objects. To prevent uncontrollable access to the fan, the spigots may be covered with a protecting grille or other protecting device with mesh width not more than 12.5 mm. The unit must be mounted on a plane wall. Installing the unit to an uneven surface could lead to the unit's casing distortion and operation disturbance.

The unit is designed for wall mounting with a fixing bracket that is fastened with four screws and dowels (not included in the delivery set). While choosing fasteners consider the material of the mounting surface as well as the weigh of the unit, refer to the "Technical data" section. Fasteners for unit mounting should be selected by a qualified specialist.

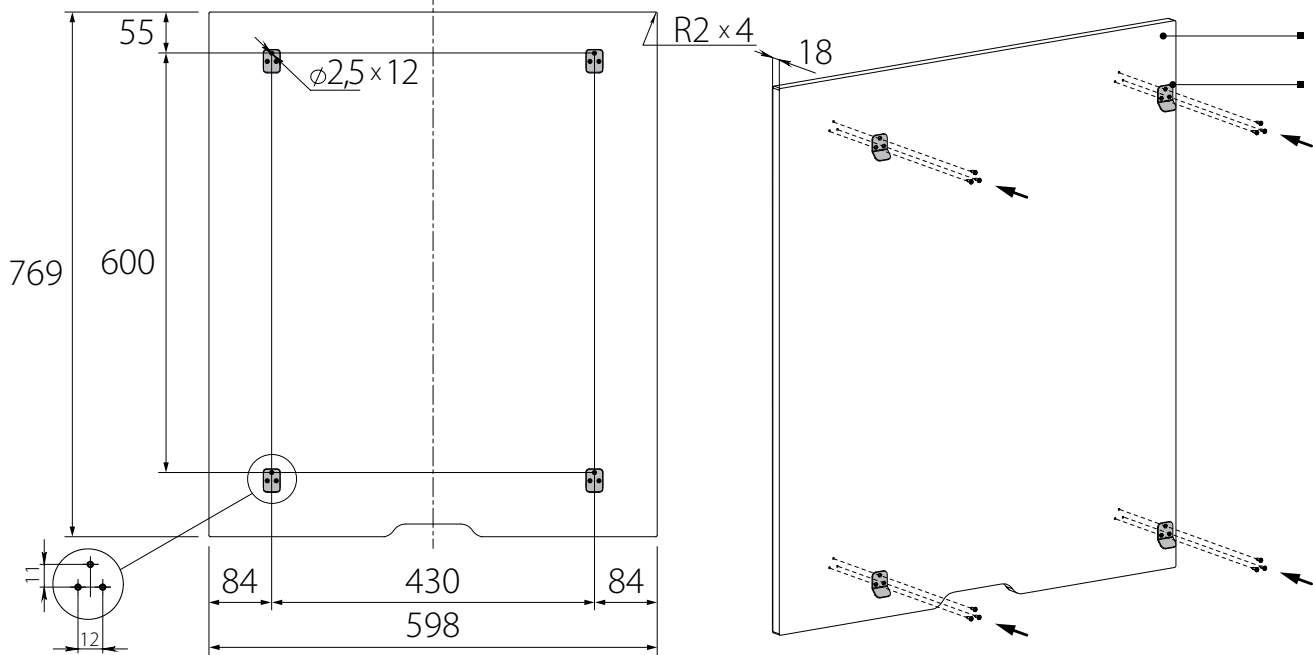
HUMIDITY SENSOR MOUNTING

The humidity sensor is not included in the delivery set and can be ordered separately. The humidity sensor must be installed prior to unit mounting. Remove the service panel and fix the humidity sensor to the wall of the exhaust air duct. Connect the connector to the sensor.

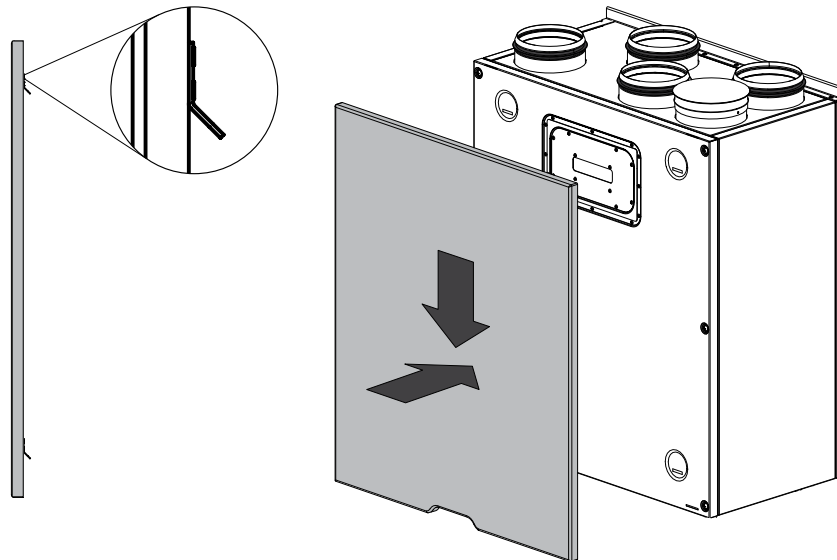


DECORATIVE PANEL MOUNTING

The decorative panel must be installed using the suspension brackets (included in the delivery set). Fix the suspension brackets on the decorative panel according to the drawing.

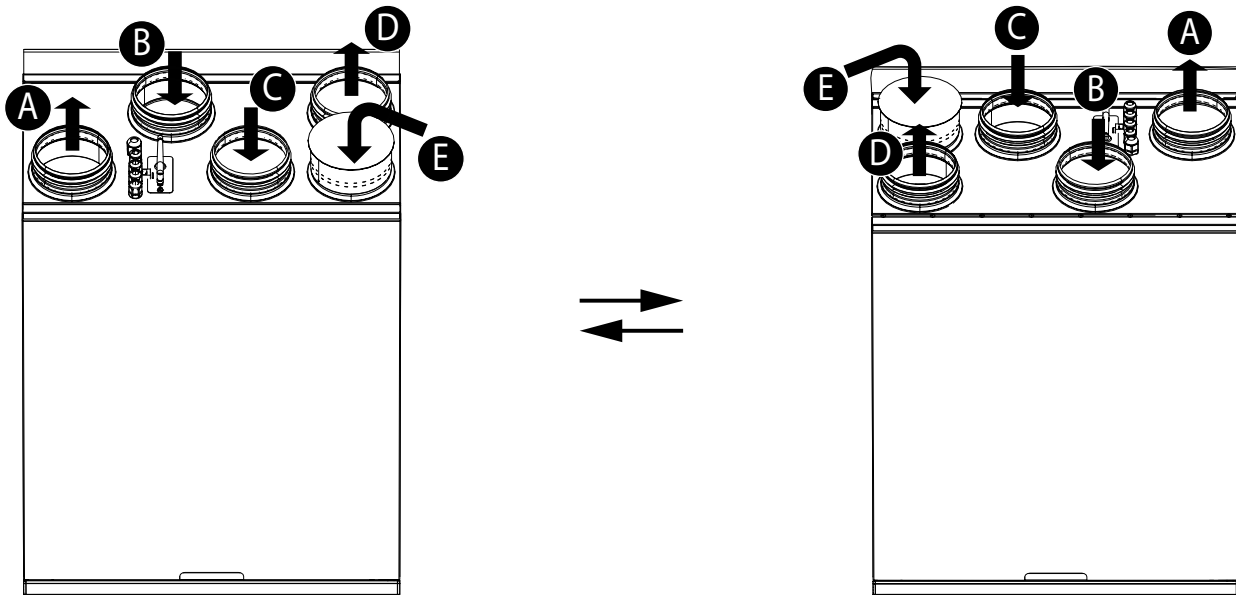


Install the decorative panel by inserting the brackets in special holes.



SERVICE SIDE CHANGE

The design of the unit allows changing the service side.

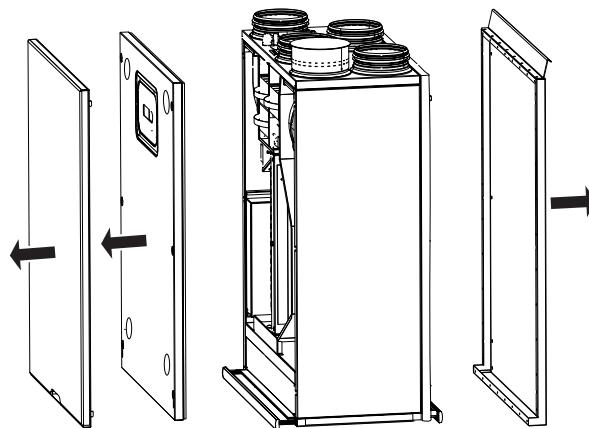


A – supply air B – intake air C – extract air D – exhaust air E – extract air from kitchen hood

Remove the decorative panel.

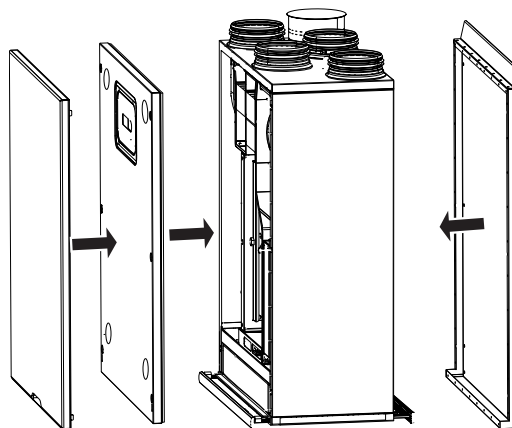
Remove the service panel (fixed with 6 screws). Disconnect the ground cable from the service panel.

Remove the rear panel of the unit (fixed with 6 screws). Disconnect the ground cable from the rear panel.



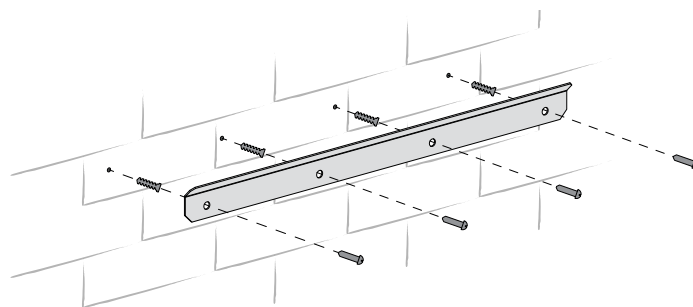
Turn the unit around.

Install the back panel instead of the service panel and the decorative and service panels instead of the back panel.

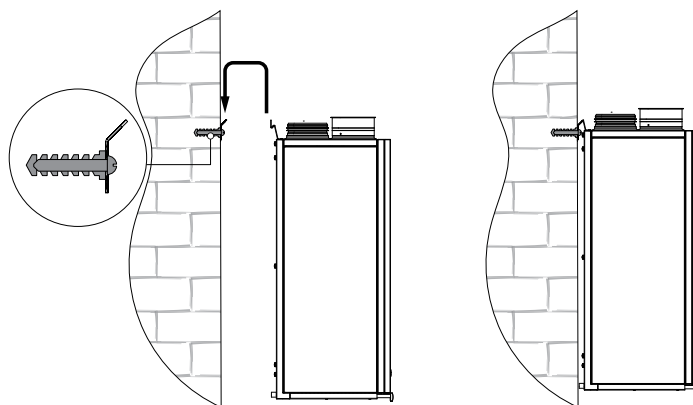


UNIT INSTALLATION

Attach the mounting bracket to the wall considering the wall material and the unit weight.



Install the unit on the mounting bracket. Suspend it carefully. Make sure the unit is fastened securely prior to operation.



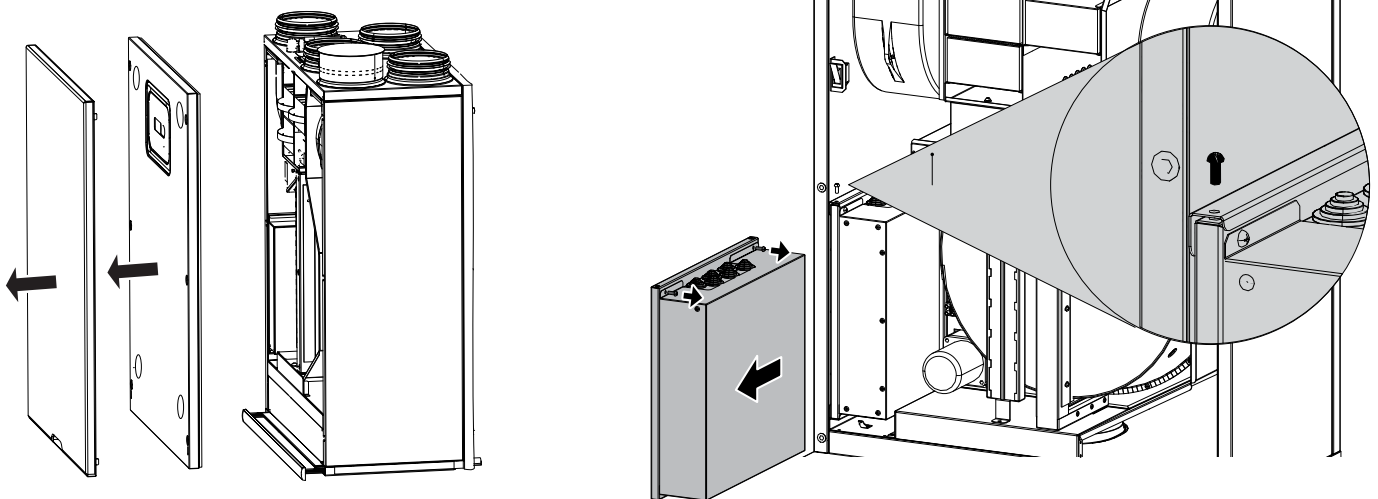
CONNECTION TO POWER MAINS

**POWER OFF THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.
THE UNIT MUST BE CONNECTED TO POWER SUPPLY BY A QUALIFIED ELECTRICIAN.
THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE
MANUFACTURER'S LABEL.**

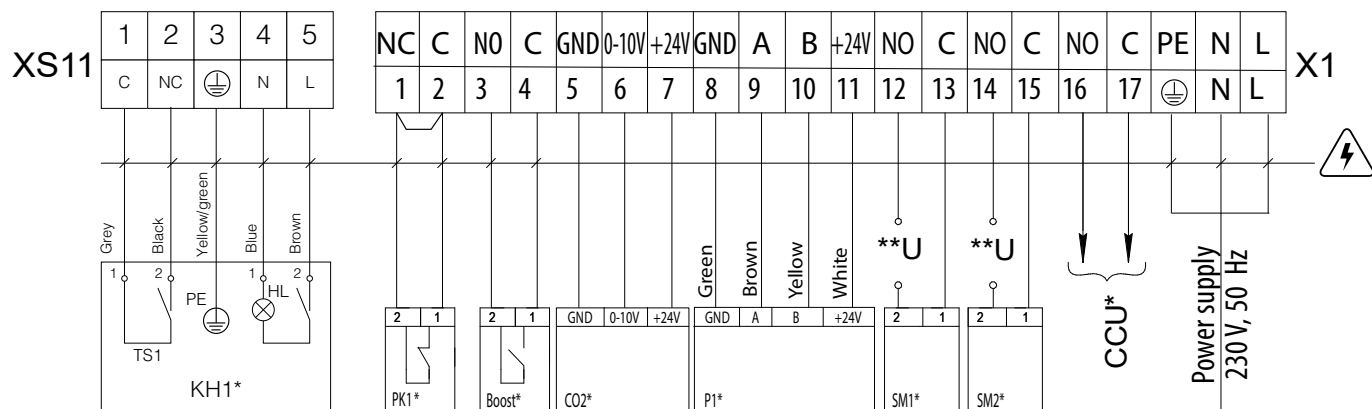


**ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED
AND WILL VOID THE WARRANTY.**

- The unit is rated for connection to 1~230 V/50 (60) Hz power mains according to the wiring diagram. The connection must be made using durable, insulated and heat-resistant conductors (cables, wires). The actual wire cross section selection must be based on the maximum load current, maximum conductor temperature depending on the wire type, insulation, length and installation method.
- The external power input must be equipped with an automatic circuit breaker built into the stationary wiring to open the circuit in the event of overload or short-circuit. The position of the external circuit breaker must ensure free access for quick unit power-off. The trip current of the automatic circuit breaker must exceed the maximum current consumption of the unit (refer to the "Technical data" section or to the unit label). It is recommended to select the nominal current of the circuit breaker from the standard series, following the maximum current of the connected unit.
- The circuit breaker is not included in the delivery set and can be ordered separately.

ACCESS TO THE CONTROL UNIT

EXTERNAL WIRING DIAGRAM



Electric shock hazard!

Designation	Name	Contact type	Cable type	Note
SM1*	Supply air damper actuator	NO	2 x 0.75 mm ²	3A, 30DC/~250 AC
SM2*	Extract air damper actuator	NO		3A, 30DC/~250 AC
PK1*	Contact from fire alarm panel	NC	2 x 0.75 mm ²	Remove the jumper
CCU*	CCU control	NO		3A, 30DC/~250 AC
P1*	External control panel			4 x 0.25 mm ²
Boost*	On/Off contacts of the Boost mode	NO	2 x 0.75 mm ²	
CO2*	Outdoor CO ₂ sensor		3 x 0.25 mm ²	
KH1*	Kitchen hood		5 x 0.75 mm ²	

*Is not included in the delivery set.

*The supply voltage U of the SM1, SM2 external dampers is selected depending on the type of dampers.

Output parameters: terminals 12-17 - 3 A, 30VDC / ~ 250VAC ("dry contact").

The maximum cable length from external devices to the terminal block should not exceed 100 meters. The recommended cable cross-section is shown in the table.

TECHNICAL MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!
MAKE SURE THE UNIT IS DISCONNECTED FROM POWER MAINS BEFORE REMOVING THE PROTECTION

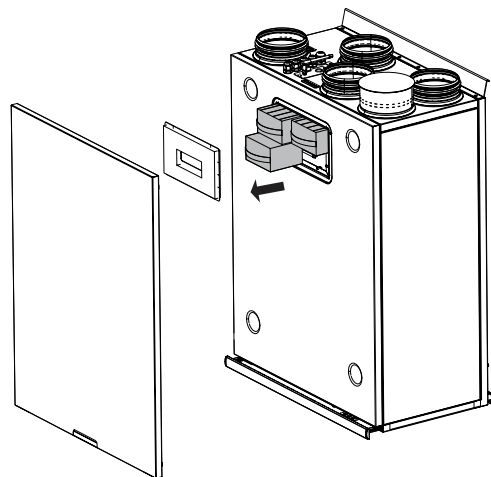
Maintenance operations of the unit are required 3-4 times per year. They include general cleaning of the unit and the following operations:

1. Filter maintenance.

Dirty filters increase air resistance in the system and reduce supply air volume. The filters require cleaning not less than 3-4 times per year. Clean the filter with a vacuum cleaner or replace it with a new one. For new filters contact the Seller.

To extract filters, do the following:

1. Disconnect the unit from power mains.
2. Remove the decorative panel.
3. Remove the service hatch.
3. Pull the filters to remove.

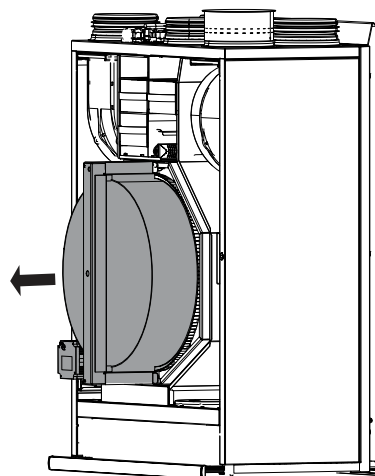


2. Heat exchanger maintenance (once per year).

Some dust may accumulate on the heat exchanger even in case of regular maintenance of the filters. To maintain the high heat recovery efficiency, regular cleaning is required. To clean the heat exchanger, remove it from the unit and clean the heat exchanger by using compressed air or a vacuum cleaner. After cleaning, re-install the heat exchanger into the unit.

To remove the heat exchanger, do the following:

1. Disconnect the unit from power mains.
2. Remove the decorative and the service panel.
3. Disconnect the ground cable from the service panel.
4. Disconnect the heat exchanger and then pull it to remove.



3. Fan maintenance (once per year).

Even in case of regular maintenance of the filters, some dust may accumulate inside the fans and reduce the fan performance and supply air flow. Fans should be cleaned selected by the service technician.

4. Supply air flow control (twice per year).

The supply duct grille may get clogged with leaves and other objects reducing the unit performance and supply air delivery. Check the supply grille twice per year and clean it as required.

6. Ductwork system maintenance (once in 5 years).

Even regular fulfilling of all the maintenance operations prescribed above may not completely prevent dirt accumulation in the air ducts, which leads to air pollution and reduces the unit capacity. Duct maintenance means regular cleaning or replacement.

TROUBLESHOOTING



IF UNIDENTIFIED NOISES OR ODOURS SHOULD ARISE AND IN CASE OF DEFORMATION OF ELEMENTS, VIBRATION, TERMINATION OF AIR SUPPLY/EXTRACTION OR REDUCED SYSTEM PERFORMANCE, IMMEDIATELY DISCONNECT THE UNIT FROM POWER SUPPLY AND CONTACT THE SELLER FOR THE VENTILATION SYSTEM DIAGNOSTICS.

DIAGNOSTICS MUST BE CARRIED OUT BY QUALIFIED SPECIALISTS.

Problem	Possible reasons	Troubleshooting
The fan(s) does (do) not start when the unit is on.	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot a connection error.
	The motor is jammed, the impeller blades are soiled.	Turn the unit off. Troubleshoot the motor jam and the impeller clogging. Clean the blades.
Automatic circuit breaker trips following the unit turning on.	High current consumption due to short circuit in power line.	Turn the unit off. Contact the Seller.
Low air flow.	Low set fan speed.	Set higher speed.
	The filters and the fans are clogged, the heat exchanger is clogged.	Clean or replace the filters, clean the fans, and the heat exchanger.
	Ventilation system elements (air ducts, diffusers, louver shutters, grilles) are clogged, damaged or closed.	Clean or replace the ventilation system elements, such as air ducts, diffusers, louver shutters, grilles.
Cold supply air.	The extract filter is soiled.	Clean or replace the extract filter.
Noise, vibration.	The impeller(s) is soiled.	Clean the impeller(s).
	The fan or casing screw connection is loose.	Tighten the screw connection of the fans or the casing against stop.
	No anti-vibration connectors on air duct pipe flanges.	Install anti-vibration connectors.

If troubleshooting steps have failed, contact the Seller of the product.

In case of faults not described in the table, contact the Seller for further information.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range +5...+40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



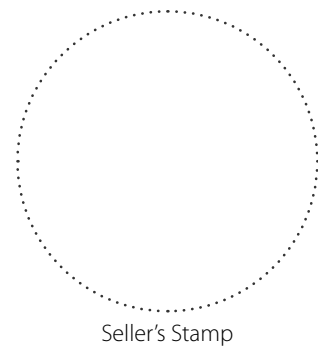
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Heat recovery air handling unit
Model	
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

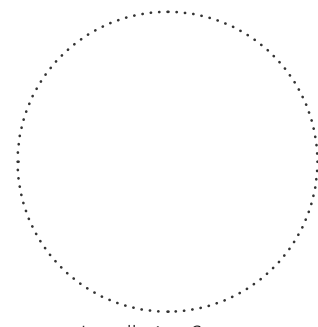
Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



Seller's Stamp

INSTALLATION CERTIFICATE

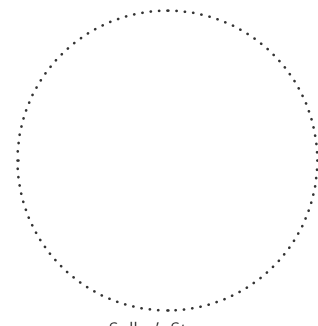
The _____ unit is installed pursuant to the requirements stated in the present user's manual.	
Company name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



Installation Stamp

WARRANTY CARD

Unit Type	Heat recovery air handling unit
Model	
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp



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