

INSTALLATION MANUAL



ECO 375

Mechanical ventilation with passive heat recovery

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SAFETY INFORMATION

This manual also describes installation and service work to be performed by a professional.

This appliance can be operated by children aged 8 and over, by persons with reduced physical, sensory and mental abilities, and by persons with a lack of experience and knowledge, provided they are supervised or have received guidance on using the appliance in a safe way and understand the dangers involved. Children must not play with the appliance. Cleaning and user maintenance must not be performed by children without supervision.

Subject to design changes.

Labelling

The CE mark represents Genvex's assurance that the product complies with all regulations laid down for the product in accordance with relevant EU directives. The CE mark is mandatory for most products sold in the EU, irrespective of where they are made.

FUNCTIONAL DESCRIPTION

The ECO 375 is a wall-mounted ventilation system for comfort ventilation of homes.

The system is equipped with a high-efficiency counter-current heat exchanger which recovers the heat from the exhaust air from the home and preheats the fresh supply air.

An integrated modulating electric preheating surface can be selected for the system, which ensures that balanced air volumes can be maintained – even during periods of very cold outdoor temperatures.

An integrated water level switch can also be purchased as an accessory, which ensures that the system is stopped and an alarm is shown in the display in the event of problems with the condensate drain (e.g. clogged floor drain).

The ECO 375 is designed for indoor installation, but – if specific country requirements allow – it can also be used outside the building envelope in areas protected against wind and weather.

When installing outside the building envelope, condensation may occur on the outside of the system under certain conditions. To reduce the risk of external condensation, it is recommended removing the steel front so that warm, moist air cannot build up under the front.

INSTALLATION

IMPORTANT:

Follow these instructions when installing the ECO 375:

1. Turn off the electricity before opening the unit.
2. Install an airtight water trap in a frost-free place to compensate for the fan pressure.
3. The water trap must have a height of at least 50 mm.
4. Make sure that the condensate drain has a sufficient slope (min. 1%) towards the sewer.
5. Pour 1 litre of water into the drip tray of the unit to check that it drains correctly. Make sure the condensate drain is filled with water before each heating season.
6. If the condensate drain is exposed to frost, a thermostat and an electric tracing unit must be installed to prevent the drain from freezing if the temperature drops below +2°C.
7. Initial calibration must be carried out on both the supply and exhaust air sides before using the unit.
It is important that the volumes of intake and exhaust air are balanced.
8. It is recommended keeping the ventilation ducts closed until the unit is started and the system has been commissioned.

These instructions must be followed. If the installation is not executed in accordance with these instructions, KVM-Genvex cannot be held liable for any further damage that is unrelated to the Genvex unit.

Important: The ECO 375 ventilation unit can only be mounted vertically.

The ECO 375 comes with a universal wall mounting kit.

KVM-Genvex A/S always recommends careful planning of the installation space for your Genvex product in relation to the location of living spaces. As this is a technical product that contains fans and/or a heat pump, in rare cases, and in combination with inappropriate installation conditions, it may cause unsatisfactory noise or vibration nuisances. As a general rule, it is always recommended installing the technical system so that it is not located in the immediate vicinity of a bedroom. Furthermore, when securing the Genvex system to the building structure, it is recommended attaching it to a heavy structural component such as concrete. It should also be ensured that no sound or vibrations can be transmitted through materials in contact with the technical system. If there is a risk of propagation of noise and vibrations, further installation of vibration-damping material and sound-damping of installation rooms are recommended.

Before starting the installation of the ventilation unit

Make sure that the wall used to hold the ventilation unit is built in such a way that it is able to support the weight of the unit. In addition, the wall must be straight and plumb. In this way, it is ensured that the condensate in the condensate tray runs to the drain.

Wall mounting (vertical)

1. Before attaching the mounting bracket to the wall, ensure that the bracket is in the correct position. A small notch in the middle of the bracket indicates the centre/top of the ventilation unit. The notch must be at the top of the bracket before the bracket is fixed to the wall.
2. Attach the bracket to the wall using screws in all 8 mounting holes.
3. Mount the ventilation unit by hanging it on the mounting bracket. The recess on the back of the unit is intended for this.
4. Once the installation unit has been properly attached to the mounting bracket, the ventilation unit must be locked in place by inserting the locking screw into the locking hole.

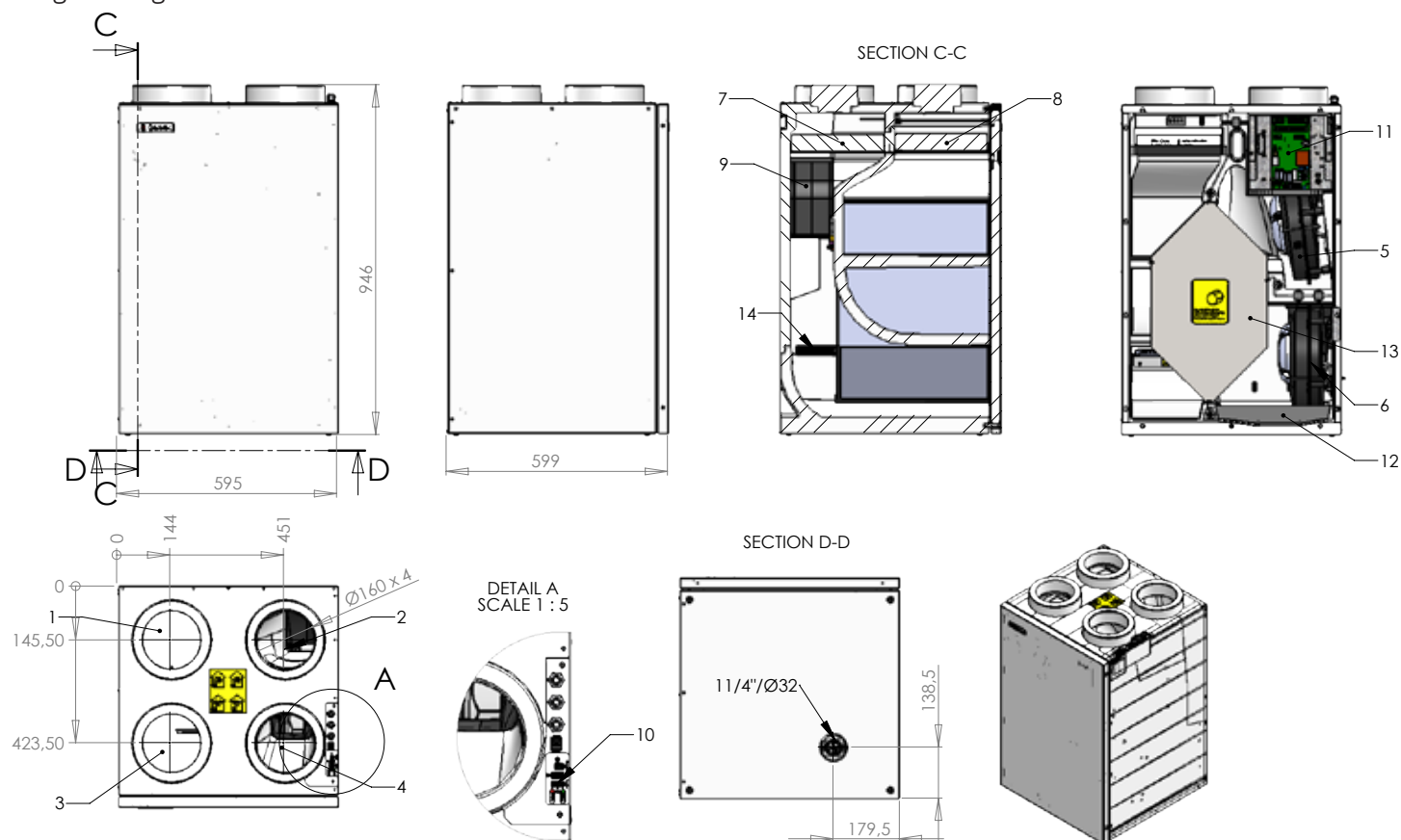


Dimensional sketch (in mm)

In order to allow access for servicing and maintenance, there must be a clearance of at least 600 mm in front of the unit and 300 mm below the unit (to access the condensate drain and the water trap).

The ECO 375 is available in a vertical version (as shown below).

Weight: 40 kg



1. Outdoor air
2. Exhaust
3. Extract air
4. Supply air
5. Supply air fan
6. Exhaust fan
7. Outdoor air filter
8. Extract filter
9. Bypass duct
10. IO control board
11. Control board
12. Condensate tray
13. Exchanger
14. PTC preheater (optional)



Duct connection

At all duct connections, a yellow sticker is affixed indicating which ventilation ducts are to be connected to the various connectors.

Supply air is connected



Duct system from unit to supply air in living room.

Exhaust air is connected



Duct system from damp rooms to the unit.

Outdoor air is connected



Duct system from outdoor air hood/outdoor air grille from outside or from earth exchanger to unit.

Extract is connected



Duct system from unit to exhaust hood/exhaust grille to the open air.

To start the duct installation, it is recommended using 4 x Ø160 mm connectors with double sealing lips.



Condensate drain

The ventilation unit produces up to 6 litres of condensate per day. It is therefore important that the condensate drain is executed correctly and that the drain pipe slopes slightly towards the sewer connection.

An ordinary Ø32 mm water trap can be connected directly to the ventilation unit.

From the water trap and drain pipe, there must be a slope of 1% towards the sewer connection.

If the unit is installed in a cold attic, the condensate drain must be insulated to prevent the condensate from freezing in the pipe. However, it is recommended that the water trap should be installed in a heated area below to ensure that the water in it does not freeze.

If installation problems make it impossible to protect the condensate drain against frost by means of insulation, it is necessary to install a thermostatically controlled heating coil around the drain.



During operation, a negative pressure arises in the unit, making it necessary to install a water trap with a water column of at least 50 mm





Duct system

It is recommended that the duct system should be from spiral ducting assembled with fittings with rubber ring seals to ensure a tight and durable duct system. To achieve a satisfactorily low noise level from the unit, sound locks must always be fitted to the supply air and exhaust air duct system between the unit and the first supply air and exhaust air fittings.

It is recommended dimensioning the air speeds in the ducts at a sufficiently low level so that no noise is generated by supply air and exhaust air fittings.

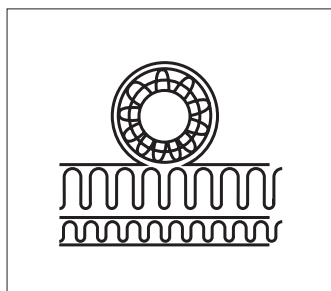
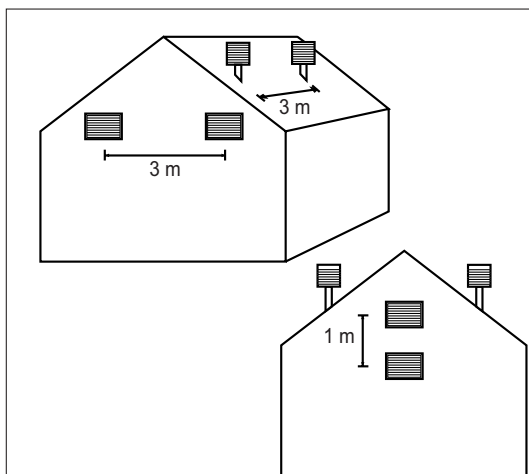
When positioning outdoor air and exhaust hoods/grates, ensure that the two air currents do not short-circuit, thereby preventing the exhaust air from being sucked in again. It is recommended that grates should be placed on the north or east side of the house to achieve optimal comfort in homes/flats.

It is recommended that the air intake should be placed on the north or east side of the house to achieve maximum comfort and minimal impact from the sun's heat.

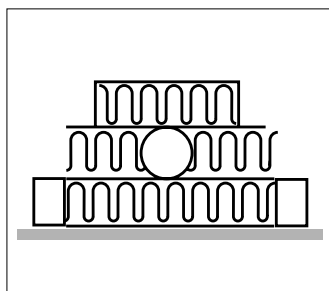
Recommended minimum horizontal distance between air intake and exhaust: 3 metres.

Recommended minimum vertical distance between air intake and exhaust: 1 metre.

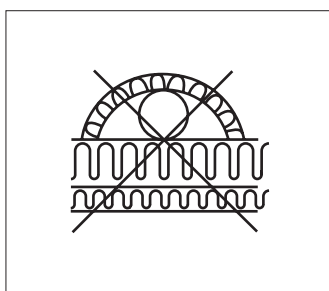
To connect ordinary galvanised steel ducts to the ECO 375 ventilation unit, you must first install 4 nipple connectors in the unit's Ø160 mm openings (double sealing lips). The unit is now ready for direct connection of ductwork to the nipple connector.



Kanalisolering, alt. A



Kanalisolering, alt. B



Forkert isolering

Insulation of ducts in cold attics

To benefit from the unit's high recovery potential (efficiency), the ducts must be correctly insulated.

Supply air and exhaust air ducts

In order to minimise heat loss from the duct system in cold attics, supply air and exhaust air ducts must be provided with at least 100 mm of insulation. If insulation from alternative A is used, it is recommended executing with two layers of 50 mm lamella mats with paper or foil externally and with staggered joints between the two layers. If the ducts are laid on the main beams of truss frames, alternative B can be used. The insulation must always be packed tightly around the ducts.

Fresh air and exhaust ducts in cold areas

It is recommended providing fresh air and exhaust ducts with at least 50 mm of insulation. The fresh air duct is insulated to prevent warm air in the attic from heating the fresh air in the summer. Be sure to seal the termination where the outgoing duct passes through the roof or gable to prevent condensation damage.

Insulation of ducts in heated rooms

Genvex recommends the following:

Supply air and exhaust air ducts

In a warm attic, the supply air and exhaust air ducts must be provided with 50 mm of insulation finished with aluminium foil.

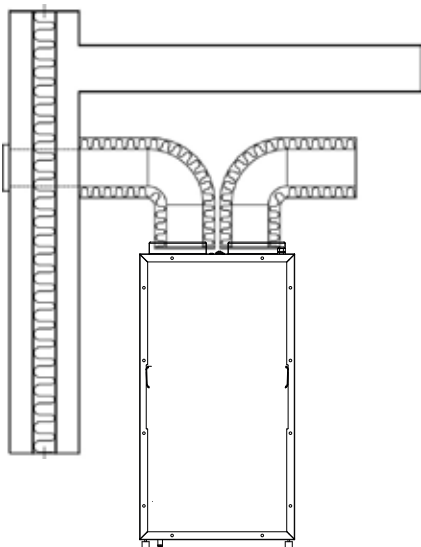
Supply air and exhaust air ducts routed through heated rooms in the home do not need to be insulated unless cooling, a bypass or a geothermal heat exchanger are used. In this case, the supply air duct must be insulated.

Outdoor air and exhaust ducts

In warm attics and heated rooms in the home, fresh air and exhaust ducts must be provided with a minimum of 50 mm of insulation. In addition, the insulation must be lined on the outside with plastic or aluminium foil to prevent condensation in the insulation.

Contact your local supplier for advice on national guidelines on insulation.

When using a geothermal heat exchanger, it is recommended adding 100 mm of insulation to the outdoor air duct.



Post-heating of the supply air

Since the countercurrent heat exchanger cannot recover all the heat from the exhaust air to the supply air, in the winter season the supply air will be approx. 1-4°C below the room temperature in the home. If the system is required to be used for heating, a water or electric heating surface can be fitted, which can heat the supply air to room temperature.

Electric preheater

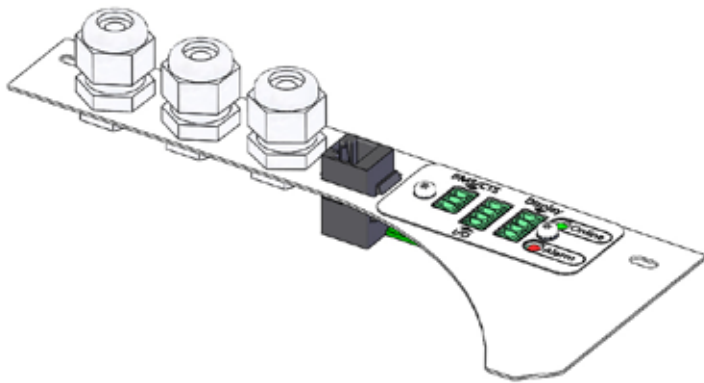
At outdoor temperatures below 0°C, and if software defrosting cannot be used, it is recommended installing an electric preheater to prevent ice accumulation in the countercurrent heat exchanger.

An integrated electric preheating surface can be used advantageously as shown below.



Electrical installation

The ECO 375 comes prepared for external connection of internet and display, BMS connection and Genvex accessories.



As standard, the system is supplied with a 2.5 metre 230V power supply cable with schuko connector.



See wiring diagrams and operating instructions for the Optima 270 for more information.

In general, all electrical connections to the ECO 375 must be executed by an authorised electrician.

Important!

For functional and safety reasons, the unit must be connected to a socket with grounding matched to the plug connection.

Control and calibration of the system

To achieve optimal operation of the system, it must be commissioned using specialist ventilation measuring equipment. If it is desired to put the system into operation before calibration, the following approach can be taken:

Before putting the system into operation

1. Check that the Genvex unit is correctly mounted and that all the ducts are properly insulated.
2. Check that the door can be opened so that it is possible to service and maintain the unit.
3. Check that the filters are clean (they may be dirty after installation).
4. Set all supply air valves so that the valve closest to the unit is opened 3 turns from the closed position and the outer one is opened 8 turns from the closed position. The intermediate valves are opened between 4 and 7 turns, depending on how close they are to the unit.

The system can now be put into operation and run until the system is commissioned using specialist ventilation measuring equipment.

Optimal initial calibration of the system

Genvex recommends that the ventilation unit should be commissioned by an authorised Genvex dealer before it is put into operation.

Before starting the initial calibration, check that the 4 points in the section on control and calibration of the system have been performed. Then start the unit: Set the initial basic ventilation value, which is speed 2. To reduce energy consumption as much as possible, first adjust the main air flows to the desired air flow by adjusting the speed of the fans via the control panel.

Then adjust the supply air and exhaust air valves with air measuring equipment (during the initial calibration of the valves, remember to lock them and to turn the baffle plate in the supply air valves so that the air blows in the right direction).

Then check the main air flows again and fine-tune them using the outdoor air and exhaust air valves (remember to lock the position of the valves after initial calibration).

Optimal initial calibration of the system

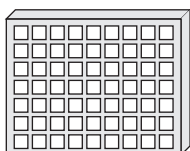
Genvex recommends that the ventilation unit should be commissioned by an authorised Genvex dealer before it is put into operation.

Before starting the initial calibration, check that the 6 points in the section “Control and calibration of the system” have been performed. Then start the unit:

Set the initial basic ventilation value, which is speed 2. To reduce energy consumption as much as possible, first adjust the main air volumes to the desired levels by adjusting the speed of the fans via the control panel.

Then adjust the supply air and exhaust air valves with air measuring equipment (during the initial calibration of the valves, remember to lock them and turn the baffle plate in the supply air valves so that the air blows in the right direction).

Then check the main air volumes again and fine-tune them using the fresh air and exhaust air valves (remember to lock the position of the valves after initial calibration).



G4/Coarse = Standard filter (coarse filter class G4)

F7/ePM1 = Pollen filter (fine filter class F7)

System maintenance

REMEMBER TO SWITCH OFF THE POWER BEFORE OPENING THE UNIT.

Filters

When the filter timer reaches the set value for a filter change, this will appear in the text of the Optima Touch display or in the Genvex app, or be indicated with a yellow flashing light in Optima Basic. This means that the filters must be replaced/cleaned.

The system is stopped by pulling the plug out of the socket or via the switch on the electrical panel. The front doors are opened and the filters removed. Once the filters have been cleaned/replaced, the front doors are closed and the filter alarm can now be reset via the display or app. The system then returns to normal operation.

If you want to replace the filters with a different time interval, this can be done via the user menu.



Do not vacuum or clean at high air pressure. This will damage the filter!



Condensate drain

When replacing the filter in August/September before the outdoor temperature drops to 5°C, check the condensate drain for dirt blockages and check for water in the water trap.

Pour 1 litre of water into the condensate tray and check that it can drain away without any problems. If the condensate drain does not work, this may result in water damage in the home.

Removing the front plate

When removing the EPS front plate, start by removing the filter drawer and filters.

Important: When putting the front plate back on the ventilation unit, do not use power tools to tighten the bolts, as this may result in damage to the threaded joints.

Carefully tighten all the front-plate bolts until the front plate is firmly seated on the housing of the ventilation unit.



Countercurrent heat exchanger

Inspect the countercurrent heat exchanger. If this is dirty, it should be removed and washed in warm soapy water and then rinsed, e.g. in the bathroom using the shower head.

When removing the heat exchanger, be careful not to touch the lamellae, as they are very fragile. Broken lamellae result in reduced heat recovery and higher pressure loss through the heat exchanger (see pictures to the right).

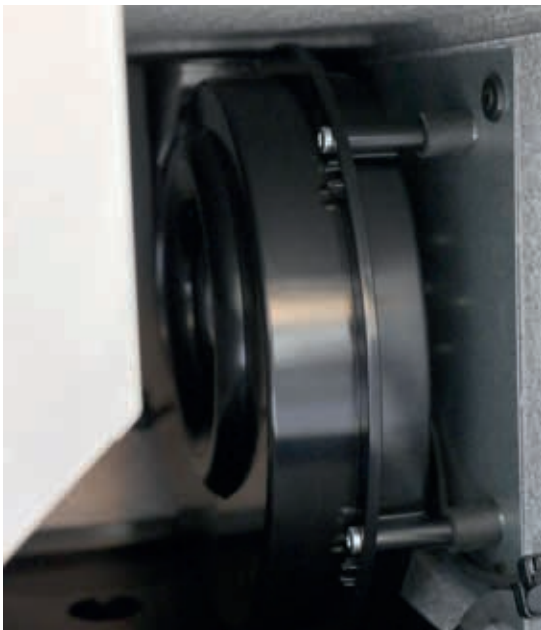
NOTE: Please note that the temperature sensor on the exhaust side of the exchanger must be pulled out of the exchanger before the exchanger can be removed. Remember to refit the sensor after cleaning the exchanger.

Fans

Check the two fans for dirt (see picture below the housing containing the fan wheels). If these are dirty, they can be cleaned with a brush, bottle washer, etc. Remember to disconnect the power supply to the ventilation unit.

Supply air and outlet valves

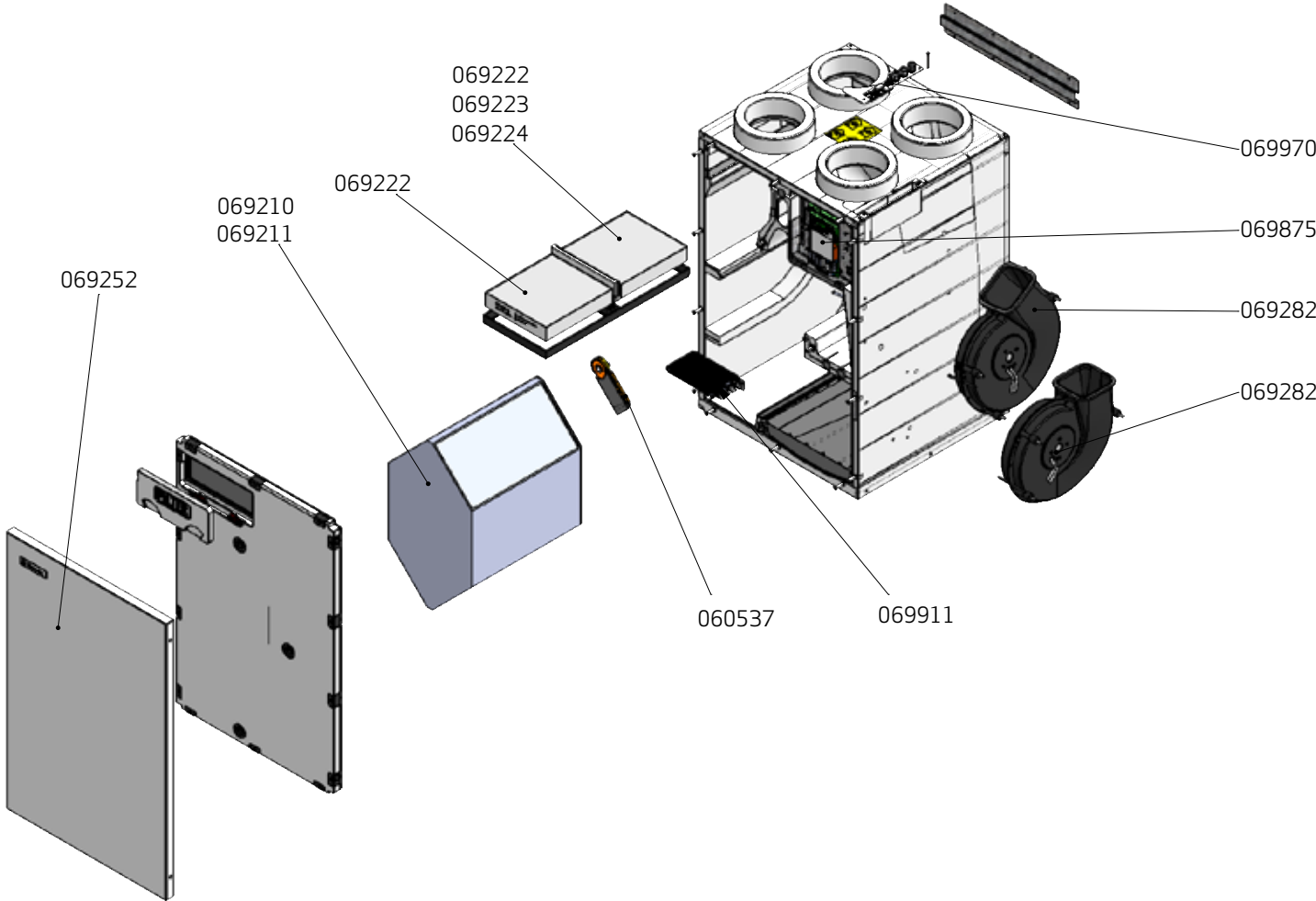
Clean the valves by wiping them with a dry cloth. Make sure the valve does not rotate and thus cause a change in the air volume.



Recommended maintenance intervals

Component	Action	Interval
Filter	Replaced at regular intervals so that full efficiency of the unit is achieved.	3–6 months
Fans	Fans are cleaned with a soft brush to ensure operational reliability and efficiency.	12 months
Countercurrent heat exchanger	Clean with water	12 months
Gaskets in general	Check gaskets on the unit and make sure they are intact	12 months
Supply air and exhaust air valves	Check for dirt in supply air and exhaust air valves. Clean as needed. Check that the valves have the desired setting in relation to air volumes.	12 months
Air intake	Check for dirt and grime in the air intake and exhaust, and clean as needed.	12 months
Ventilation ducts	Check the cleanliness of ducts and clean as needed.	10 years

SPARE PARTS



Item no.	Description
069282	TS fan housing
069252	Front cover RAL 9016
069231	Top plate for el. RAL 9016
069210	Exchanger, aluminium
069211	Exchanger, PET
069222	G4 filter

Item no.	Description
069223	M5 filter
069224	F7 filter
060537	Bypass motor
069911	Built-in electric preheating surface 1500 Watt (optional)
069875	Optima 270 control board

TROUBLESHOOTING

Safety thermostat in electric heating surface (accessory)

The built-in electric heating surface supplied by Genvex as an accessory contains a safety thermostat which automatically switches off the electric heating surface if the ambient temperature exceeds 90°C.

When the temperature drops, the heating surface automatically switches back on.

Alerts

See Optima 270 operating instructions.

System not running

- Fuse in electric panel has blown, no voltage in the system.
- One of the fuses in the system's control board has blown.
- Loose wire, no voltage to the unit.
- Incorrectly set weekly program.
- Filter timer has switched off the system.
- No supply air
- Defective supply air fan.
- Clogged supply air filter.
- Outdoor air grille clogged with dirt and leaves in the autumn, or snow and ice in the winter.
- Fuse on control board has blown.
- Unit is defrosting (supply air fan runs at reduced speed)
- Incorrect setting of Optima controls
- No exhaust air
- Defective exhaust fan.
- Clogged exhaust filter.
- Fuse on control board has blown.

Cold supply air

Fault

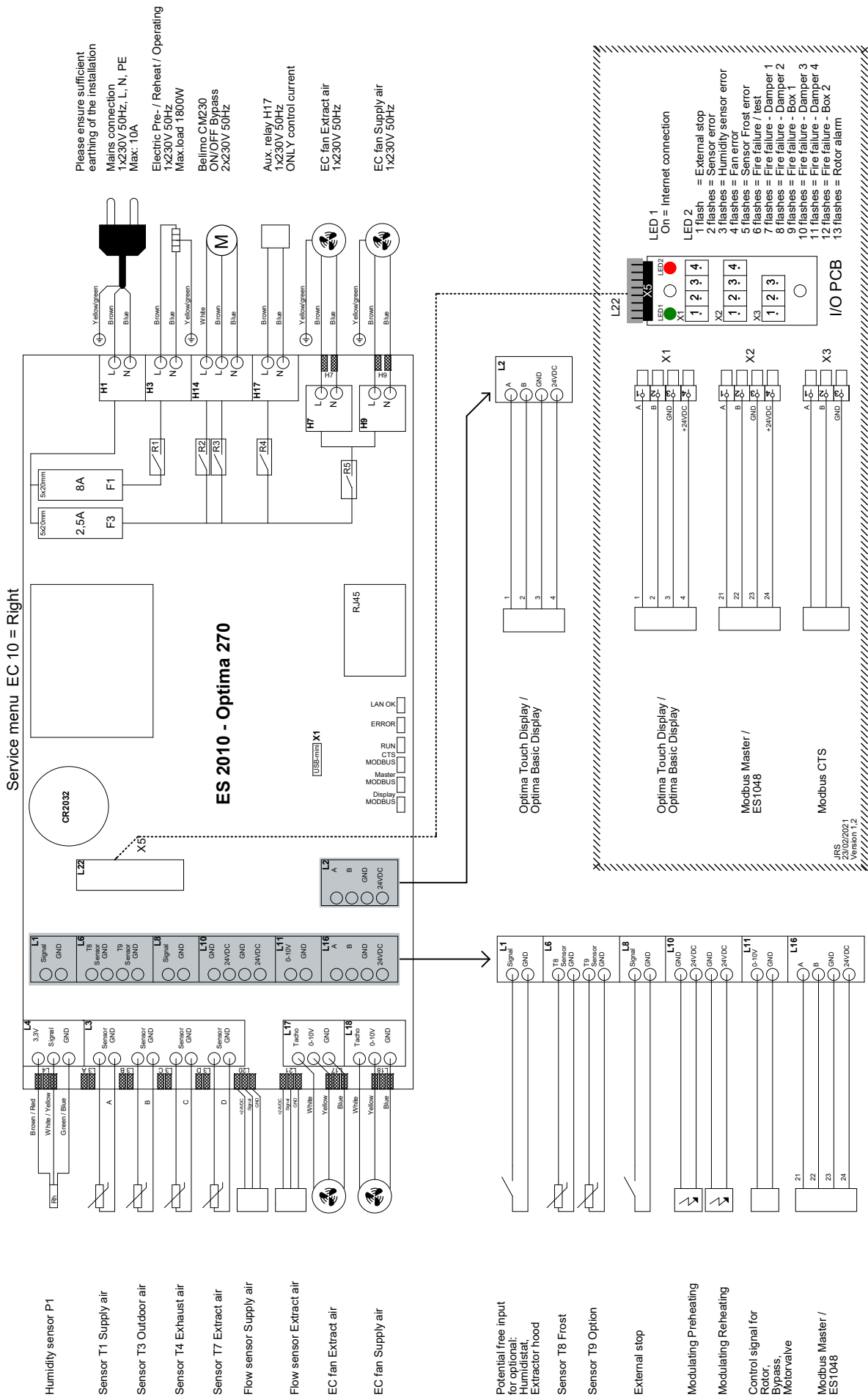
- Heat exchanger is clogged.
- The exhaust fan is defective.
- The exhaust air filter is clogged.
- The electric post-heating surface is switched off on the overheating thermostat (only systems with electric heating surface installed).
- Air in heating pipe, defective thermostat/motor valve, incorrect setting of control panel.

If none of the above errors are relevant, contact:

- During the warranty period (0-2 years), the installer from whom the unit was purchased.
- After the warranty period (2 years ->), the installer from whom the unit was purchased or the Genvex Customer Centre by calling 7353 2700.

Please have the data from the type plate ready (silver plate on the unit).

ELECTRICAL DIAGRAM - OPT270



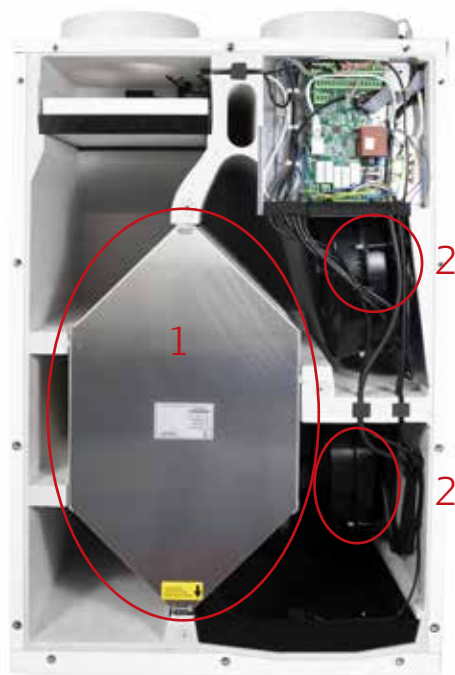
DECLARATION OF CONFORMITY

The declaration of conformity can be downloaded from www.genvex.com.

DE-COMMISSIONING INSTRUCTIONS



Remove filters



Remove countercurrent heat exchanger (1) and fans (2)



Remove control board



Remove bypass actuator



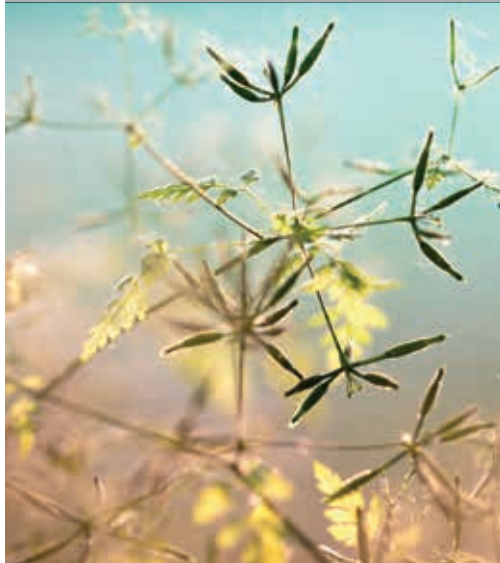
Remove built-in electric preheating surface
(optional)

THE AIR WE BREATHE

All
Genvex
systems are
rated with
energy label
A

The original Genvex units are assembled by skilled and experienced technicians and have a lifetime that in many cases is measured in decades. The units are approved by all applicable standards and are easy to operate and service. Last – but not least all Genvex systems are developed with focus on compact dimensions and ease of installation and can be integrated discreetly in all types of homes.

We are part of the NIBE Group – a family of companies that specialize in supplying hot water, heating and home comfort to homeowners worldwide.



Genvex – The original Danish Ventilation System

Genvex is a genuine Danish original. We invented the ventilation system more than 40 years ago, and we are still ahead of the pack when it comes to development and production of the strongest and most durable ventilation system.

Our unit is working in thousands of homes providing fresh clean air – free of pollen, dust and harmful particles. This helps to strengthen the health of the house and to make the indoor environment healthy and comfortable for lots of families. At the same time, our system is an important element when it comes to saving energy in homes and in society as a whole – in fact you can recover up to 95% of the heat energy with a Genvex system.

Please visit www.genvex.com to see a list of our distributors

