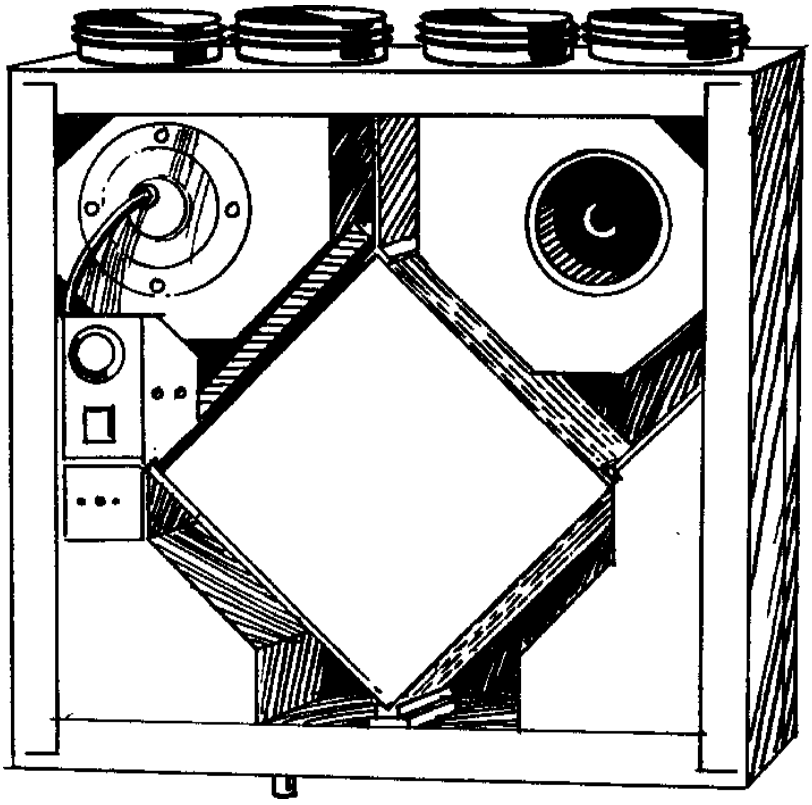
Flexit VGS 250

Ventilation unit with heat recovery

Technical data - Installation - Use

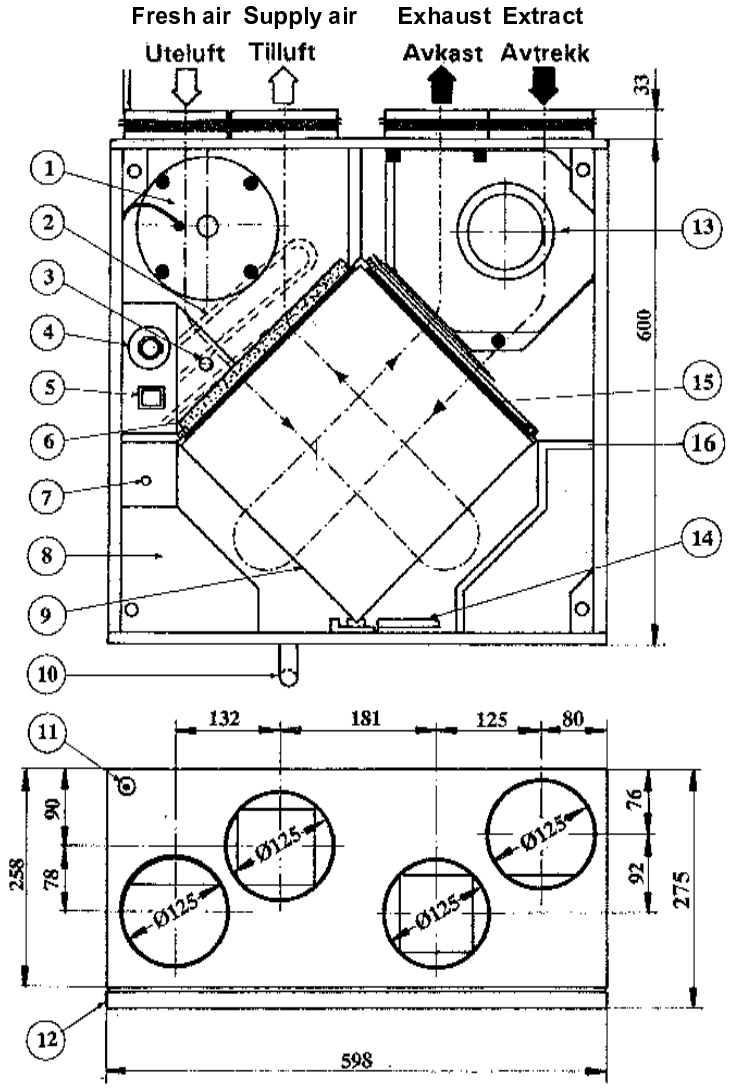


Take good care of these instructions

FLEXIT®
For a healthier indoor environment

GENERAL DRAWING

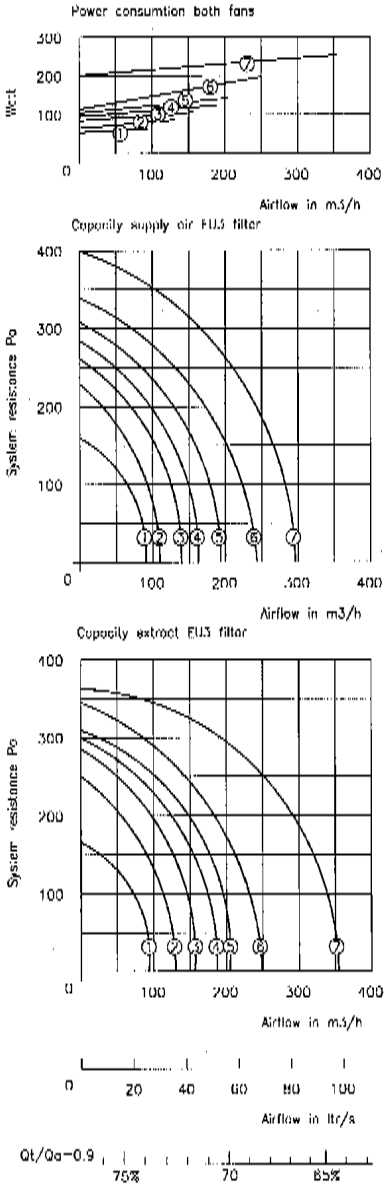
The fig. illustrates a left model. The unit is also available seen in reverse, as right model.



Item No.	Detail	System-Design.	Spare Part No.	Remarks
1	Supply air fan	M1	98029/98038	Respectively right and left version
2	Afterheating element	VE	55094	
3	Fire thermostat	BT	55083	
4	Adjustment of afterheating	T2	55085	
5	Main switch		55075	
6	Supply air filter EU 3	F2	12302	
7	Frost protection thermostat		56105	
8	Cover for el. junction			
9	Heat exchanger cassette	VV	55003	
10	Drainage outlet			
11	Supply cable with socket			
12	Door			
13	Extract air fan	M2	98029/98038	Respectively right and left version
14	Locking handle			
15	Extract air filter EU 3	F1	12302	
16	Damper kitchen air			

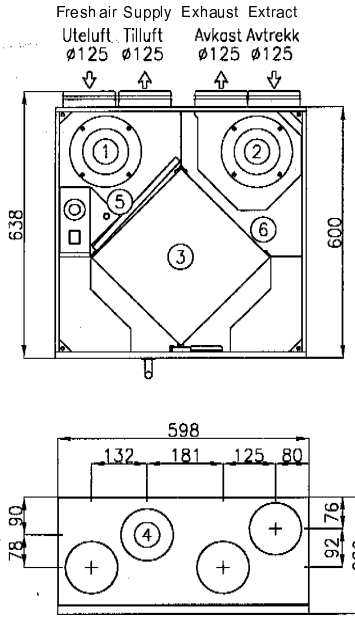
TECHNICAL DATA

Capacity diagram

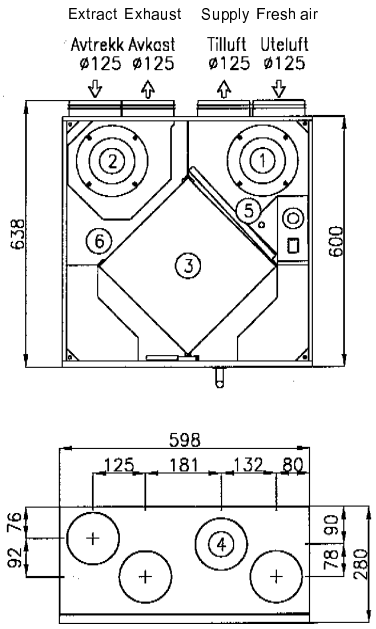


Dimensioned sketch

Left model



Right model



1 Supply air fan
2 Extract air fan
3 Heat exchanger
4 After heating element
5 Supply air filter
6 Extract air filter

Capacity adjustment

The speed selector on the control unit has steps: Min - Normal - Max
The voltage can be adjusted individually for the fans on the transformer inside the unit:
Min = 85 V
Normal = Adjustable between 105 - 160 V
Max = 230 V
The figures surrounded in the diagrams show the voltage to the fans at the different capacities.

① = 85 V
② = 105 V
③ = 115 V
④ = 125 V
⑤ = 135 V
⑥ = 160 V
⑦ = 230 V

Specifications

Rated voltage:	230V/50Hz
Fuse size:	10 A - 1 fas
Rated current:	5,8 A
Rated power pre.heat.:	1330 W
Total power:	1000 W
Fan speed:	1900 r/min
Weight:	28 kg

Sound data

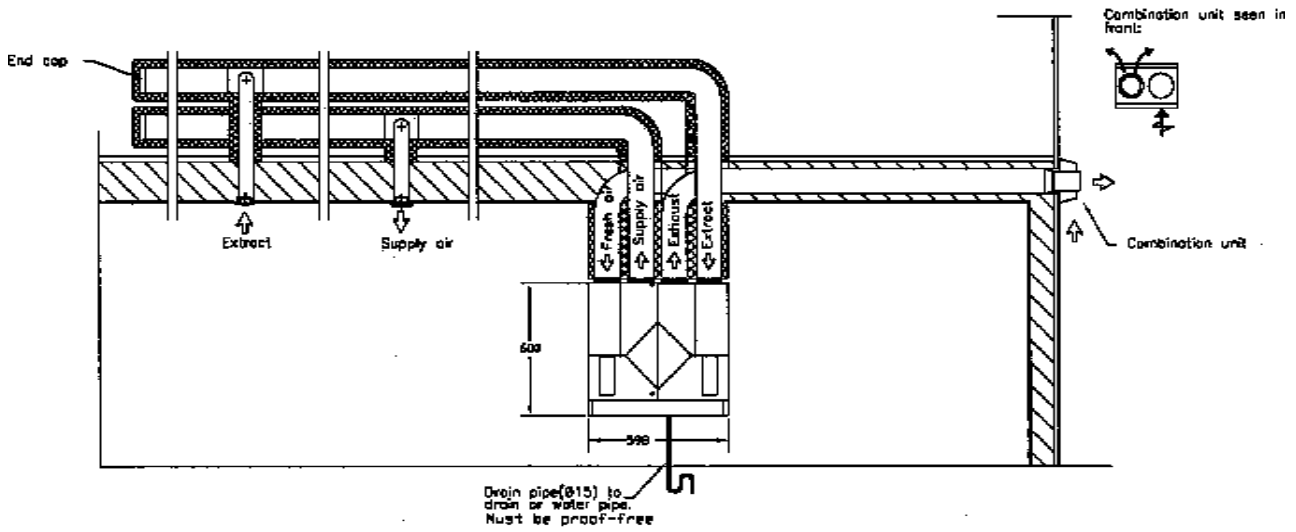
Speed step	Air flow m³/h	To the duct work: Soundeffect level L_w dB at octave band medium frequency, Hz 63	125	250	500	1000	2000	4000	8000	To the room: Sound pressure L_A dB(A)
1	80	54	45	38	43	45	41	34	26	30
2	150	57	53	48	54	57	55	50	45	35
3	240	61	60	56	62	64	65	60	68	41

*) The measurements are carried out with cased-in ducts and with the door mounted to the front.
Measuring equipment: Audiometer Bruel & Kjær type 2215
Method: Field measuring in a 10 m² room

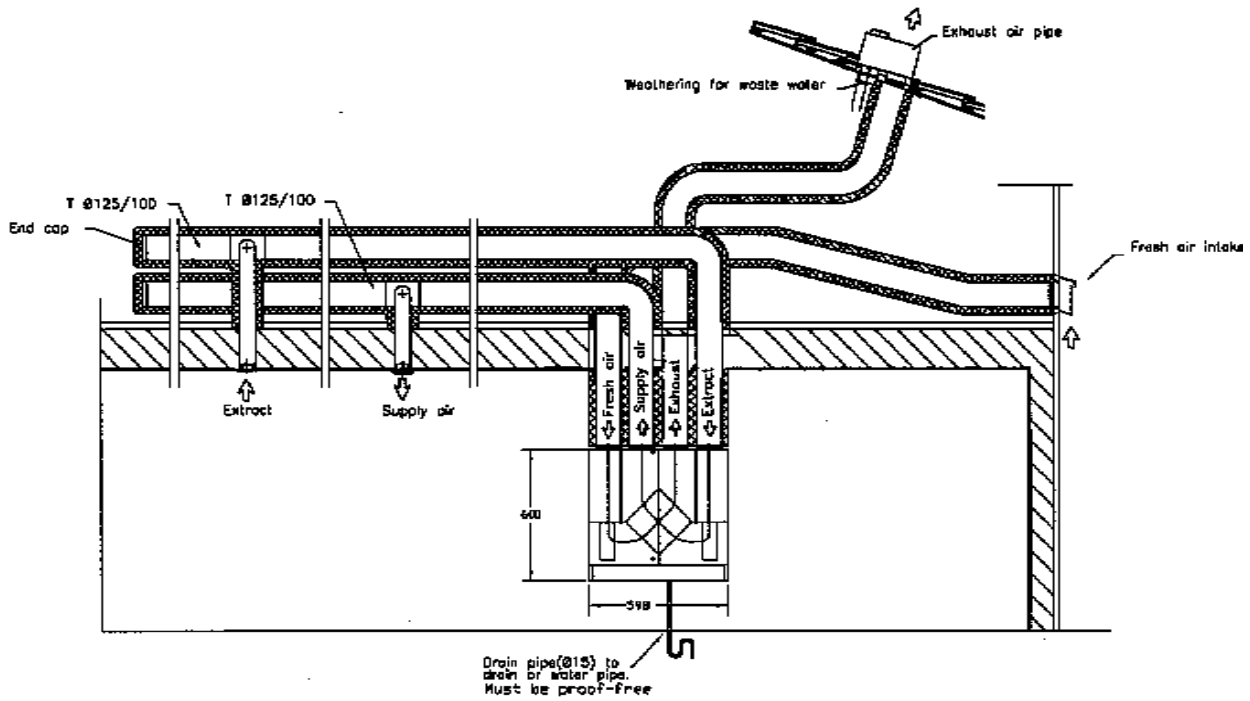
VGS 250 fulfils the requirements in the EU Directives 89/336/EEC, 73/23/EEC

INSTALLATION
Principle Drawing

Exhaust in wall



Exhaust on roof



INSTALLATION

Transport og lagring
Upon delivery, check the unit for possible transport damage which must be reported to the carrier immediately.
The unit must be stored dry and the electrical components must not be exposed to temperatures lower than -25°C or higher than +55°C.
The seals over the duct nipples must not be removed before the ducts are connected up.
The units weighs approx. 28 kg.

Placement
The VGS 250 is intended for placement in a washing accomodation, pent house or other suitable rooms which are frost free, for example technical rooms.
Concerning placement in a ktichen see also the following page.
The unit shall be mounted on the wall on attachment lugs on the top side by using the 2 screws enclosed. Ensure that there is a nailing strip for fastening of the screws. Min. 1 m space is required in front of the unit for future maintenance and service. VGS 250 is availabe in left- or right model (nippel for air intake on the left or right side) depending on the best possible placement of the ductwork. In washing accomodation the unit must be placed in zone 3 (min. 0,6 m from the edge of bath tub and 1,2 m from the shower head).

Drainage
The piping must be performed by an authorised pipe fitter.
A plastic hose (Ø 15mm, length 20 cm) with hose clip and socket joint are attached and shall be mounted to the bottom of the drainage outlet. If there is no sink in the room the drainage piping must be lead to nearest sink, ,weathering piping for waste water or waste water from the washing. In rooms where there is a risk of frost the drainage outlet must be insulated/ secured.

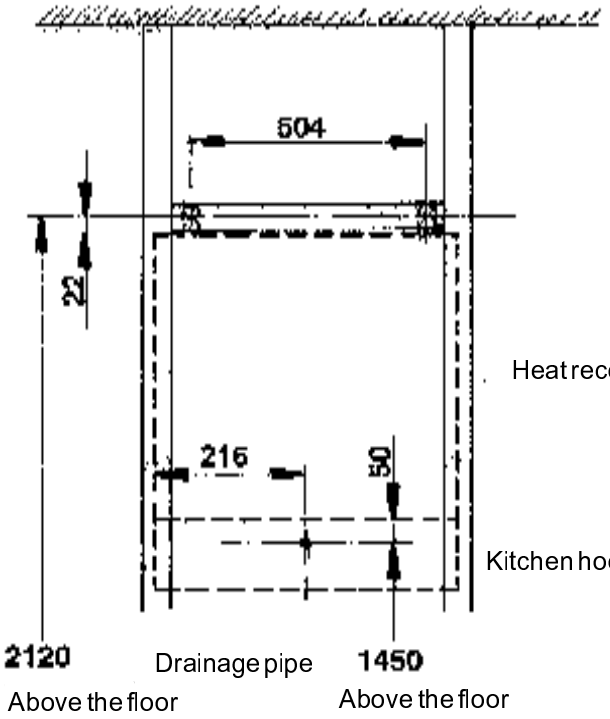
Important! Pour a little water into the bottom of the unit in order to fill up the water lock.

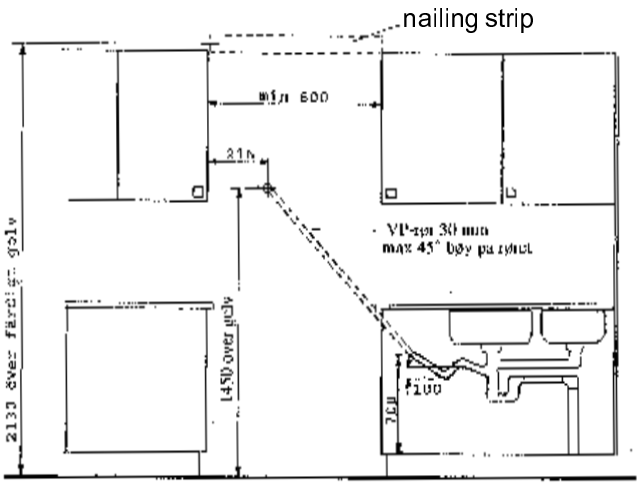
If the drainage riser pipe is not specified as being made of brass, leakage may occur.

Connection of ducts (see separate instructions for installing the system of ducts)
- Connect the ducts to the nipples on the ends of the unit.
- Make sure that the ducts are on the right nipple, see the markings on the unit (open the door).
- The VG 400 is equipped with 2 inspection doors in order to make it more flexible with respect to the duct connections.
- Pull the duct insulation well up against the unit.
- Place the exterior air duct with a slight fall to the exterior air hood so any possible water accumulation is drained out again.
- The exhaust duct must slope downwards to the unit so that any possible water condensation can run back to the unit.
- With a short distance between the unit and the discharge point, a sound absorber should be installed in order to ensure outdoor noise level requirements are met.

Electrical connection
The VGS 250 is furnished with a 1.8 m cord and plug (which also functions as a service switch). This is connected to a 230V 50 Hz single phase grounded electrical outlet which is placed nearby for easy access. For kitchen placement the outlet could be in a nearby cupboard.

ADDITIONAL INFORMATION FOR KITCHEN MOUNTING





The dimensional sketch is shown for a left model. For a right model the 216-dimension is to be measured in from the right side of the unit.

Installation
The unit shall be mounted to the wall with the two mounting lugs on the top. The kitchen hood is mounted to the unit.

Drainage
A hidden drainage pipe (15 mm copper pipe) is to be laid from the kitchen hood to the water lock on the drainage i.e. a sink. The pipe shall get out of the wall as shown on the figure and protrude ca 130 mm from the wall. This is to be connected to the drainage nipple in the bottom of the unit with a 15 mm plastic tube which is enclosed. A 30 mm VP-flexible tube inside the wall can be used as a guide for a reinforced 15 mm plastic tube.

Connection of ducts
Ses page 5.

Electrical connection
Ses page 5.

USE

Mode of operation

In the heat exchanger cassette the cold outdoor air crosses the warm extract air without there being direct contact between the two. By this principle, approx. 60 % of the heat in the extract air will be transferred to the supply air (see the capacity diagram). In addition, a thermostat-controlled heating element will see to it that the supply air maintains the desired temperature. This supply air is conducted via ducts and valves to living rooms and bedrooms.
The extract air is drawn out from either the same room or via door gaps/overflow grills in the bathroom or utility room. The used air is conducted back to the unit by the system of ducts, returning its heat as mentioned, and then blown out of the building via a vent pipe guard or wall louvre.

This is purely a ventilation system and not a heating system. The dwelling must be heated in a normal manner. The benefit of the heat recovery must be viewed in relation to if the extract air were to be blown straight out of the dwelling without recovery.

Important safety instructions

Note! In order to minimise the risks of fire, electric shock or injury, read all safety instructions and warning texts before placing the unit into service.

- This unit is only intended for processing ventilation air in buildings.
- It must not be used for evacuation of flammable or highly combustible gasses.
- Pull out the electrical plug before performing all service and maintenance work.
- Before the door is opened, the unit must be powerless and the fans must have time to come to a stop (min. 2 minutes).
- The unit contains heating elements which must not be touched when they are hot.
- The unit must not be operated without the filters installed.
- Follow the user instructions precisely.

NOTE! In order to maintain a good indoor climate, adhere to regulations, and in order to avoid damage due to condensation, the unit should never be halted except for service/ maintenance or possible mishaps.

The following safety symbols are used on the unit:



Contains live components.



Dangerous to touch



Dangerous to touch, hot surfaces.

Control of the unit

Dependent on of the chosen solution/placement the fan speed can be controlled from a control unit on the control panel or from the kitchen hood.
Dependent on the mode of operation the fan speed is set at the requested level.

Step 1: Normal ventilation for apartments and small housings

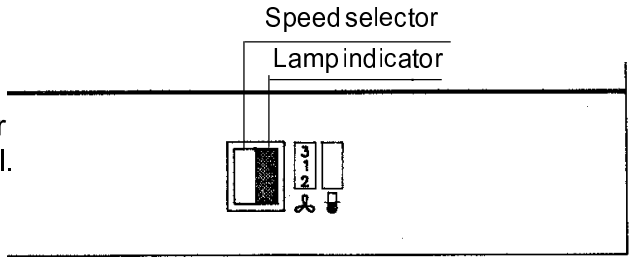
Step 2: Normal ventilation for single-unit dwellings

Step 3: To be used when there is a need for increased ventilation in the washing accomodation or in the entire apartment.
Must be used i.e. during and after showering and drying of clothes in order to avoid condensation in the ductwork.

A lamp indicator on the control unit indicates when afterheating is cut in.

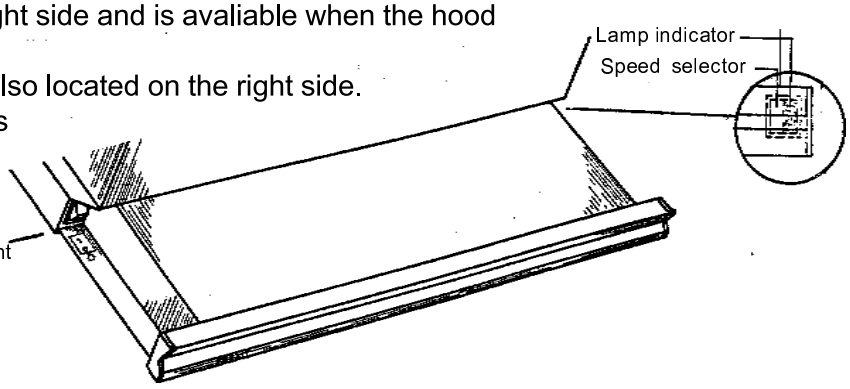
Control from the control panel

The speed selector and the lamp indicator for afterheating is located in the front of the panel.



Control from the kitchen hood

The speed selector is located on the right side and is avaliable when the hood is in pulled-out position.
The lamp indicator for after heating is also located on the right side.
The on/off-switch for the working light is located on the left side.
When the cooker is in operation the hood on the extract fan must be pulled out.
Beyond that the hood shall be pulled in.



Troubleshooting:

Problem:	Do the following:
If the fans are not working:	* Check that the plug for the power supply is seated properly in the wall outlet. * Check that the fuses in the electrical closet are switched in. * The fire thermostat(s) (Item. no.3) may have cut in. Remove the white plastic cover and press the red reset button.
If the supply air is recognised as being too cold:	* The control thermostat for afterheating (Item no.4) can be set to a higher temperature. * The fire thermostat(s) (Item. no.3) may have cut in. Remove the white plastic cover and press the red reset button. * Ducts in a cold attic should possibly be given additional insulation.
If the quantity of air is significantly reduced:	* Filters (Item nos. 6,15) can be clogged with dirt. Clean or replace, look under Cleaning - maintenance. * Fan wheel must be cleaned, look under Cleaning - maintenance.

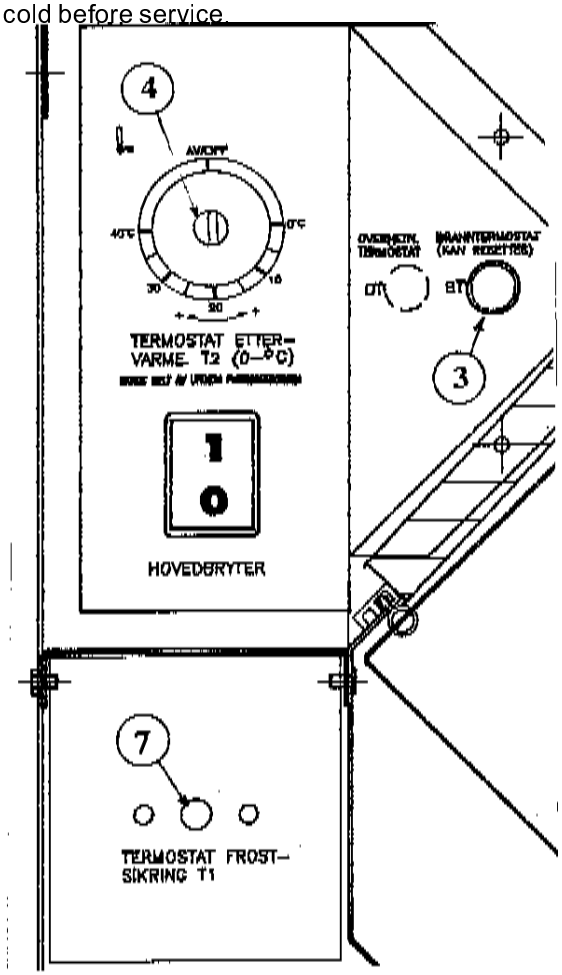
If none of this helps, please contact your supplier for service. Please state the serial number which is on the product label on the unit near where the power cord terminates.

OPERATING INSTRUCTIONS

Opening of door (12):
A heat recovery unit which is placed above a cooker can be placed behind a cupboard door. This door must be released. Release the door on the unit by loosening the 4 screws in the corners. NOTE! Hold the door when loosening the screws as it can fall down. When removing the door the main switch (5) becomes accessible. Immediately set the switch to "0" as the unit contains rotating fan and heating element.
Wait till the fans have come to a stop and the elements have become cold before service.

Adjustment of afterheating:
Remove the door and adjust the afterheating thermostat (4) to the requested temperature, which is the temperature out of the unit.
Some heat losses to the valves must be counted on where the ducts are lead through cold surroundings.
The after heating thermostat is set to 20° C.
A lamp indicator lights red when the heating element cuts in.

The heating elements are secured against overheating by 2 thermostats. The overheating thermostat cuts in at 65°C. As an extra precaution, the fire thermostat cuts in at 80°C. The fire thermostat(s) (Item no 3) must be reset manually by pressing in the red button.

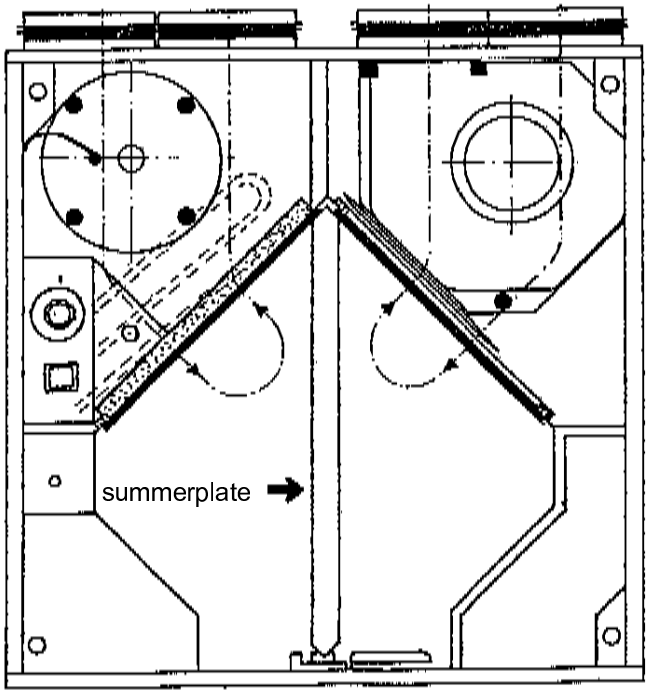


Frost proofing of the exchanger casing:
The sensor for the frostproofing thermostat is placed where the exhaust air leaves the heat exchanger casing.
The thermostat controls the supply air so that the exhaust air duct does not become dense from frost and ice. Heated air from bathrooms etc. contains much humidity which easily can condensate. The temperature in the heat exchanger can not go so low that the condensation water can freeze.
Gradually, as the fresh air temperature falls, the exhaust air temperature will also fall. When the exhaust air temperature reaches 2°C (fresh air temperature ca ÷8°C) the supply air fan will stop untill the heat exchanger is warmed up enough.

The frost proofing thermostat (7) is set at the factory and shall normally not be adjusted.

Adjustment of the damper on kitchen models :
Beside the heat exchanger on the opposite side of the main switch the damper for kitchen air (16) is placed.
It can be adjusted in the following manner:
* Push the damper in: The kitchen air is by-passing the heat exchanger, less dirt in the heat exchanger, no exchange of the kitchen air (standard setting).
* Damper closed: The kitchen air goes through the heat exchanger and is being recovered, the exchanger is exposed for dirt.

On models not being used in kitchen, the damper shall be closed.



Summerplate:
To be used during the warm time of the year (exept for the heating season) when there is no need for heat recovery.
In that period the heat exchanger (9) is being replaced with a "summerplate" which comes with the unit and is being placed in vertical position. Thereby the fresh air will flow directly into the house without any heat recovery.

NOTE! When using the summerplate the afterheating thermostat (4) must always be set to 0 to avoid the afterheating element to cut in.

Remember to change back next autumn.

NOTE! The unit is also available as seen in reverse.

CLEANING - MAINTENANCE:

KITCHEN HOOD

For models used in a kitchen the grease filter inside the kitchen hood must be cleaned 1-2 times pr. month or when it is required.

For cleaning use fat-soluble detergent or dishwasher.

IMPORTANT! For lack of cleaning of the grease filter the risk of fire will increase in case of accidents.

HEAT RECOVERY UNIT

Before cleaning set the main switch (5) in position "0". The fans must have had time to come to a stop (min. 2 minutes) !

*** Fans:** Item nos. 1 and 13.

Check once annually for dirt which can stick to the fan blades. If there is a need for cleaning, use a small brush and possibly compressed air. Note! Do not use water. De-installation/installation is performed by pulling out the quick-release contacts for the power supply and taking out the fans in the following manner:

The fan which is sitting with the visible quick-release contact is removed by screwing out the 4 screws. The fan must be handeled carefully to avoid damages to the fan wheel.

*** Filter:** In order to maintain the healthiest possible indoor environment, it is important to clean/exchange filters when they are dirty. Dirty filters lead to:

Increased air resistance in the filter - less air in the dwelling - a risk of bacterial growth in the filter - and in the worst case, the system can be damaged.

Filtration mat EU 3 is cleaned 2 times per year and ought to be replaced every other year. It is cleaned by first vacuuming solely from the top side. Supply air filter (6) is easily accessible, but to get to the extract filter (15), the exchanger cassette must be pulled out. The filter is located up under and next to the back wall, wait for the heating element to cool down. Remove the filter by lifting at the bottom of the grill which the filter is leaning on.

Note! The filter must sit with the printed side down towards the exchanger cassette.

*** Exchanger cassette:**

Clean 1 time per year. Place it in a basin with warm soapy water (Note! **not** soda) and wash it through with hot water until finished. The cassette (9) is removed by loosening the locking handles (14). Pull the cassette out carefully. Push the locking handles in place when the cassette is in place again.

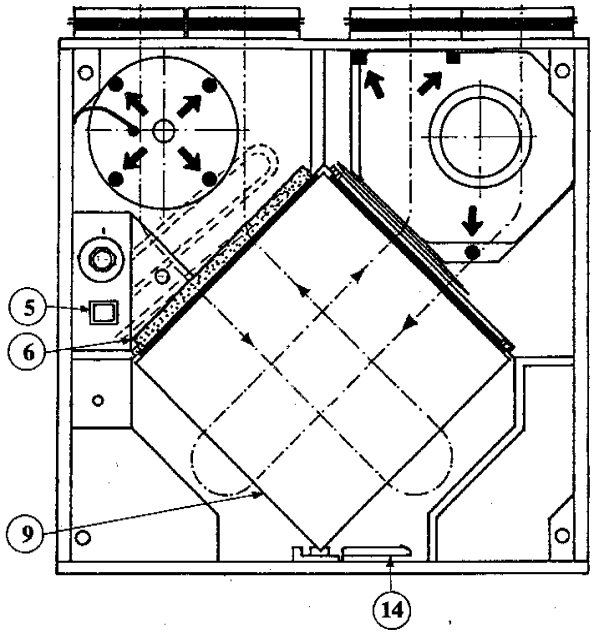
*** Valves and duct system:**

Valves are cleaned a minimum of once per year.

The duct system must be cleaned a minimum of every tenth year.

*** Fresh air intake:**

Check once per year that the grill has not been plugged by leaves, etc.



NOTE! The unit is also available as seen in reverse.

This product is encompassed by the regulations on the collection and proper handling of electric and electronic products and must when being disposed of in the future be delivered to a refuse depot for recycling.

MAINTENANCE JOURNAL

Date	Cleaned filter	Replaced filter	Remarks about other maintenance