



The Ventilation Specialists Ltd

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Energy efficient design - High quality products - Experienced in installation

Breathe Easy

High efficiency heat recovery ventilation



The Ventilation Specialists Ltd

are a family company who are specialists in offering energy efficient ventilation for the home and business. As we are not tied to any particular manufacturer or have 'exclusive' trading agreements we are able to use the product that best suits the required application and the clients needs.

One of our major suppliers for home ventilation products is Ubbink (UK) Ltd and we are approved as designers, suppliers and installers of Ubbink space ventilation products. This leaflet shows some of their products and gives some helpful information on heat recovery systems.

Grande, Medio and Compact Units

The HR Grande and Medio provides high efficiency heat recovery ventilation to improve indoor air quality throughout larger houses and protects the fabric of the building. The Compact unit suits flats and smaller dwellings

The two EC/DC motors and sophisticated electronic controls ensure high performance with constant air flow and quiet efficient operation.

Energy positive ventilation

The complete range uses counter-flow heat exchangers to recover up to 95%* of the heat from the exhaust air and return it to the supply air. This helps to minimise the difference in temperature between the internal environment and the incoming air, thus reducing energy loss. All Ubbink HRV units are Appendix Q approved by The Building Research Establishment (BRE) helping to achieve improved SAP results.

Operation

All Ubbink - Brink Climate Systems heat recovery units are powered by two vibration-free low noise EC/DC motors for quiet and cost-effective operation. They have three variable speed settings which can be adjusted from the control panel. The selected speeds can be easily controlled using the three speed switch. The standard three speed switch includes a filter change and fault indicator. All these units can be used with a complete range of sensors (via a relay interphase) available from TVS Ltd, including humidistats, timers and PIR detectors.

The incoming air is filtered to reduce pollen and dust and the outgoing air is filtered to protect the heat exchanger. All the units have an integral condensate drain for the safe and effective removal of condensation.

Options

Options (some of which are factory orders) to satisfy clients requirements include: automatic bypass damper (not Compact unit), pre and post heating and comfort cooling, wireless switching of speeds and links (via a relay) to humidistats, PIRs and other controls.



Ubbink - Brink Climate Systems Grande and Medio heat recovery units

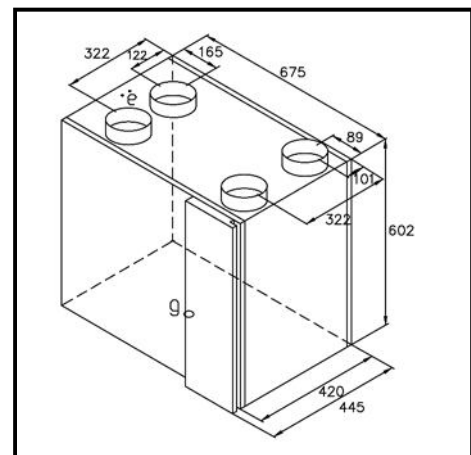
The Grande and Medio units can easily be installed into lofts, cupboards or utility rooms and are wall mounted using the brackets supplied.

They are suitable for houses up to 320 square metres.

The constant velocity fans driven by EC/DC motors mean that it is not necessary to balance the incoming and outgoing air volumes as the unit automatically sets this balance. Low resistance ducting available from TVS Ltd should be used to minimise power consumption. Very little maintenance is required. Simply remove and clean the filters when the 'filter dirty' indicator illuminates on the 3 speed switch. The heat exchanger should be examined every two years and if dusty should be cleaned with warm water.

The units have easy to use, yet sophisticated, controls which among many functions will self diagnose faults, use a proportional anti freeze system to protect the heat exchanger from icing up in cold weather and settings that allow an imbalance to be built into the system either creating a negative or positive pressure.

Specification			
Grande unit	High	Medium	Low
Air flow rate (m ³ /h) factory default settings	325	200	100
Sound power level (dB[A]):			
Break out	54	46	34
Extract air duct	47	40	32
Supply air duct	69	62	52
Power consumption (W)	132-175	55-67	21-23
Material	Powder-coated steel casing		
Colour	Cream and blue/red		
Weight (kg)	32		
Maximum air flow rate setting	400m ³ /h		
Maximum duct resistance	150pa at 400m ³ /h		



Medio and Grande dimensions

Specification			
Medio unit	High	Medium	Low
Air flow rate (m ³ /h) factory default settings	225	150	100
Sound power level (dB [A] @3m):			
Break out	49	41	34
Extract air duct	41	36	32
Supply air duct	64	57	52
Power consumption (W)	74-112	38-52	24-31
Material	Powder-coated steel casing		
Colour	Cream and blue/red		
Weight (kg)	31		
Maximum air flow rate setting	300m ³ /h		
Maximum duct resistance	150pa at 300m ³ /h		

Ductwork design

The configuration of the ductwork system is important and should be designed with a maximum system resistance of 150 pascals. The lower the system resistance the more quietly the unit will operate and the lower the electrical power consumption.

* Measured in accordance with Netherlands standard NEN 5128 at the output and input points of the heat recovery unit. The amount of heat recovered from the exhaust air depends on a number of factors including the air flow rate, the volume of water vapour in the air and resistance in the system. The temperature of the return air will also depend on duct runs and the level of insulation. As a general guide in normal operating conditions a high efficiency heat recovery system achieving 95% under NEN 5128 would be expected to recover a minimum of 80% of the heat from the exhaust air.

Ubbink - Brink Climate Systems

Compact model for flats and small houses

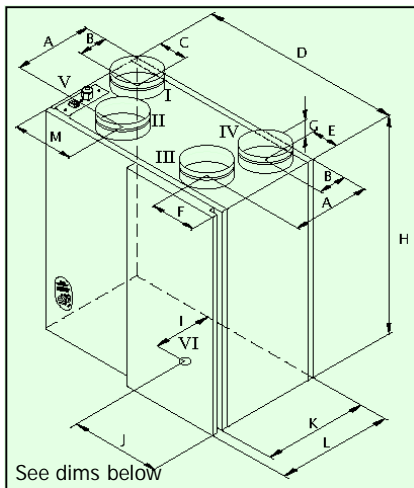


The new Compact heat recovery unit has been introduced to be installed in flats and small houses with floor areas of up to 130 square metres, depending on the number of wet rooms.

The dimensions make the unit suitable to install in small spaces and it will even fit into a standard kitchen cupboard.

The Compact unit uses smaller size duct connections (125 mm diameter) making it easy to transform the duct to a standard flat channel duct measuring a nominal 200 x 60.

This unit uses EC/DC motors and therefore uses minimal electrical energy and the dense insulation ensures quiet running.



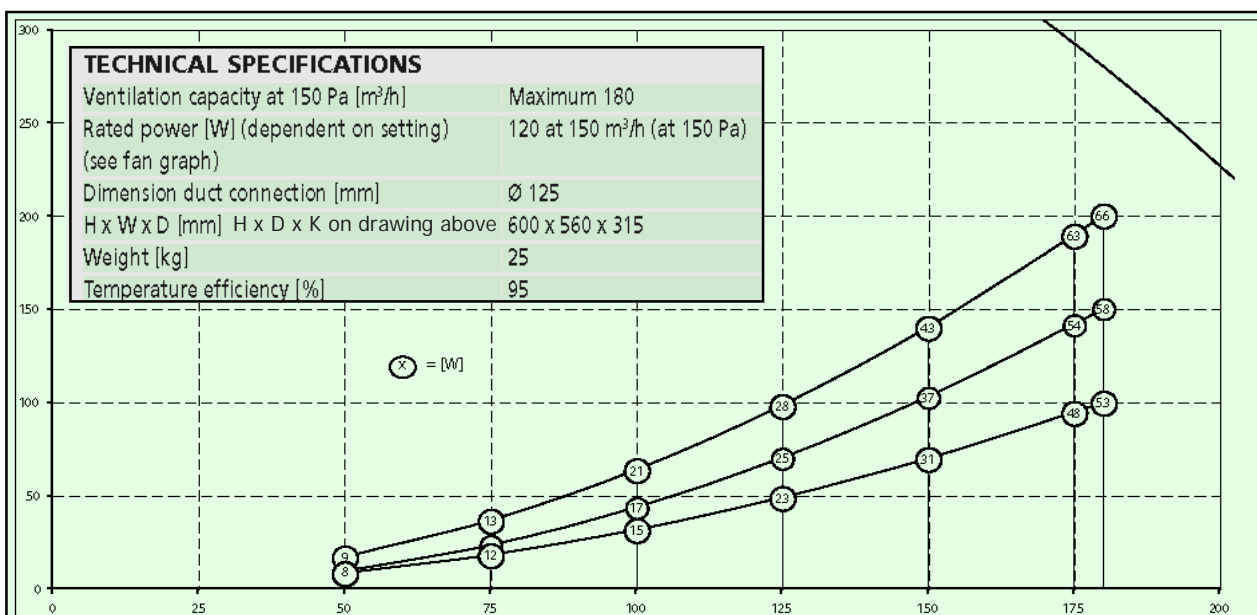
The Compact unit has many facilities not normally expected of such a small unit including progressive defrost (to stop the heat exchanger icing up in cold weather), filter change indication, self diagnostic fault functions and three individually settable speeds. No 'summer bypass' option is available on this model.

Wireless connections between the heat recovery units and a number of remote 3 speed switches is available and using the most up to date technology the switch needs no external or internal power source.

CALCULATION EPS

Certificate of equivalence efficiency heat recovery appliance for calculation NEN 5128 (Energy Performance dwellings and residential buildings determination method).

heat recovery measured [%]	95,2
heat recovery NEN 5128 [%]	95,0
I [A]	0,290
V [V]	230
cos φ	0,622
Number of fans	2



Important things to remember

Mounting the unit

All Ubbink HRV units are wall mounted and should be installed on a thick board e.g. 25 mm ply or fixed to a brick wall.

Units must be installed to allow room for servicing and maintenance. At least a metre of free space at the front, 150 mm on the filter door side and 750 mm on the hinge side of the front panel.

Condensate drain

The condensate drain is on the bottom of the unit and space must be left under the unit for a plumber to make the connection onto the 22 mm drain supplied with the unit.

The condensate pipe work needs a water trap with 100 mm of water or a dry trap (Hepworth VO type) to stop smells from the waste water system being sucked back into the unit.

If the condensate evacuation pipe is routed through cold areas it could freeze therefore plumbing into the domestic waste water system is the preferred option.

Electrics

A 13 amp socket is required within a metre of the unit.

Air intake terminals

Care should be given to the position of the supply air terminal as smells, pollution and gases from boilers could potentially be circulated around the house.

Insulation

Heat recovery systems are designed to be installed in the warm (insulated) areas of dwellings. If installed in cold areas dense insulation must be used to cover all the ductwork components.

Heat recovery systems - Frequently Asked Questions

Q. Does the system really recover over 90% of the heat?

A. Yes...but...Tests vary from country to country. The same product can be 90% in one country yet only 80% in another because of the test criteria. The tests which give these results are generally tested on the unit not including the system. If the system is not designed and installed correctly there can be big thermal losses in the duct work. The efficiency of the system depends on the speed the air passes over the heat exchange block and the humidity of the air. In the UK the units tend to be the most efficient in the autumn and spring months. The UK test procedure is Appendix Q approved by the BRE. It is different to the established European tests and measures the efficiency of the complete system, not just the unit and therefore gives lower results.

Q. What is the saving?

A. It all depends on what you compare it against. It is reckoned that a conventional central extract system in a detached house can extract over 2 kW of energy an hour. If a system is running at 80% efficiency then the unit will recover 1600W of energy at a cost of less than 50W for the fans. Giving a nett saving of 1550W an hour. This equates to 1.5KW per hour at whatever price you pay. The savings are less in warmer weather.

Q. Are there any other benefits of whole house ventilation with heat recovery?

A. Yes. A draft free well ventilated house with much reduced pollution. The system will help to dry out newly built houses and reduce condensation throughout the home. People think long and hard about the financial investment but I have yet to meet somebody who has this type of system installed who would not insist on it being in a new home.

Q. Is whole house ventilation suitable for all homes?

A. No. Normally it suits new builds best when the system's ductwork can be designed in at the beginning.

Q. Can a domestic heat recovery unit be installed anywhere in a house?

A. No. HRV units should always be installed in insulated (warm) areas of a house. If this is not done extra insulation must be used or there will be high thermal losses and the possibility of a great deal of condensation.

Q. Do I need trickle vents?

A. No. The idea is to create a mechanical system where the home owner has full control (within the building regulations).

For information about heat transfer and wood burning stoves please see our website www.ventspecialists.co.uk and click the last question on the FAQ page.