

**An optimum indoor environment with  
Renovent HR**



**BRINK**

**Climate Systems**

# High-comfort, low-energy ventilation

Brink balanced ventilation brings comfort and health to your home throughout the year. After all, wouldn't you like to always have plenty of clean, fresh air in your home? Renovent HR ensures that the indoor air is continuously being refreshed. The incoming and outgoing air flows are equal. In other words, balanced ventilation. At an efficiency of roughly 95%, Renovent HR transfers the thermal energy from the output air to the fresh, colder outdoor air. That means draught-free and unnoticed ventilation at only 10% of traditional ventilation costs.

## A COMPACT APPLIANCE IN 3 TYPES

Renovent HR has a reputation for being a compact appliance. The appliance comes in three types: Renovent HR Small, Medium and Large with capacities of approx. 180, 300 and 400 m<sup>3</sup>/h respectively at 150 Pa. The appliances can easily be rotated and ex factory they are available in a right-handed and a left-handed version.

## EVERY SITUATION REQUIRES ITS OWN APPLIANCE

Renovent HR Medium and Large are available in three versions: four air connections at the top (4b), two connections at the top and two at the bottom (2b/2o) and three connections at the top and one at the bottom (3b/1o). Renovent HR Small is only available with four air connections at the top (4b). The air output spigots to the atmosphere and the air input from the atmosphere are always at the top. All air connections come with a groove for sealing rings. Dependent on the air flow rate, Renovent HR Small is suitable for connecting ducts with Ø 125 mm, Medium for ducts of Ø 150 or Ø 160

mm (from approx. 260 m<sup>3</sup>/h) and Large for ducts of Ø 160 (up to approx. 325 m<sup>3</sup>/h) and Ø 180 mm. That allows for installation of a low-resistance ducts system directly from the appliance.

## CONSTANT FLOW FANS

At the chosen ventilation setting, the constant flow fans keep the air flow rate constant under all conditions. This results in a permanently high efficiency while reducing initial adjustments to the minimum. The air flow rate is not influenced by filter fouling either.

## FROST PROTECTION

The frost protection system provides optimum protection from freezing. That preserves the high efficiency to the extreme.

## LOW VOLTAGE AS WELL AS PERILEX

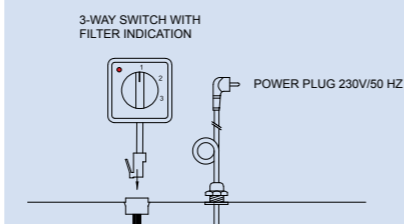
The appliances come as standard with a 230 V power cable and a low-voltage control connection. The control data cable is easily plugged in with a data communication connector. On request, the appliances can also be supplied with a Perilex connector.



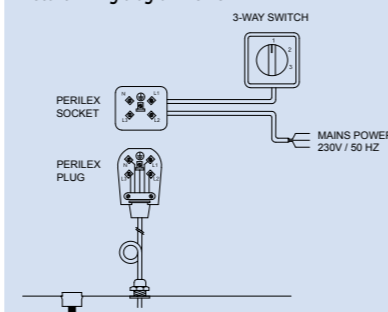
### Constant filtering

The appliances come with two standard filters that can easily be taken out. These filters remove 95% of the dust from the air. A high-performance fine dust filter is optionally available (see bottom filter on the photograph). Ideal for people with sensitive respiratory organs.

### Electric wiring diagram low voltage

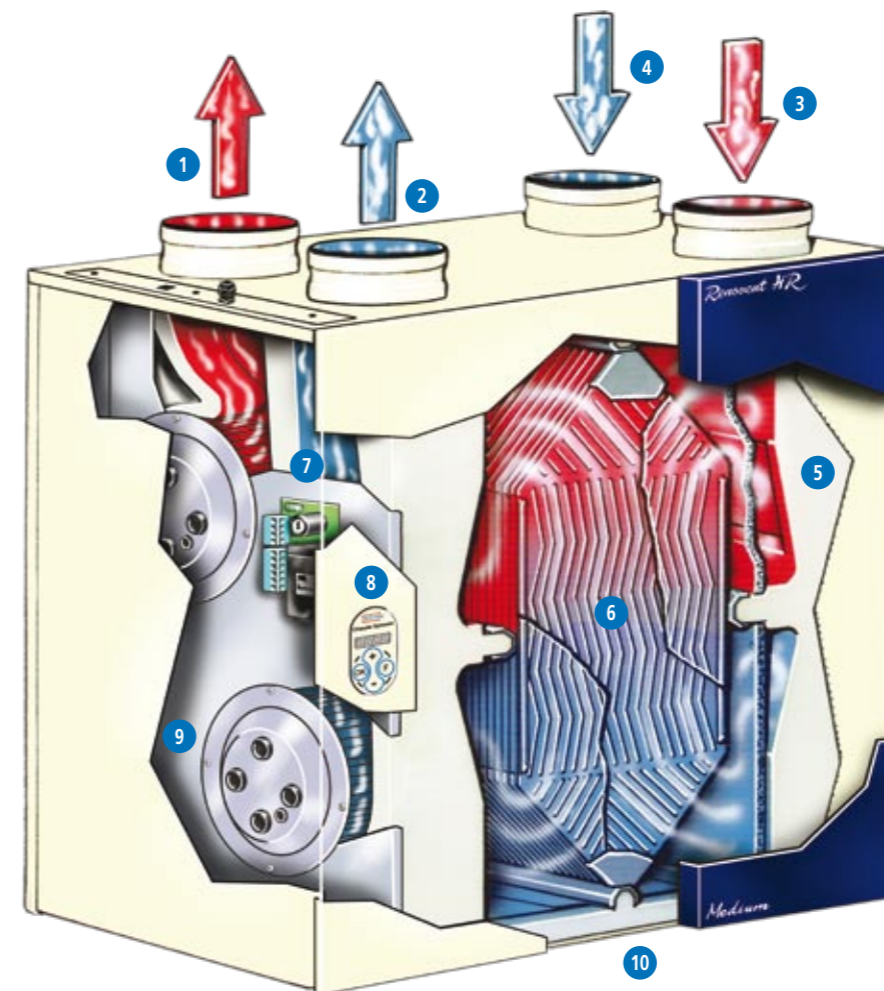


### Electric wiring diagram Perilex



## KEY

1. Heated outdoor air to the bedroom and the sitting room
2. Discharge foul air from kitchen, bathroom and toilet
3. Supply outdoor air
4. Filters
5. Heat exchanger
6. Control pcb
7. Display
8. Direct current fans for constant volume
9. Condensate discharge



The appliance in the picture is the Renovent HR Medium 4b R



### Settings display

The appliances come with a display for setting and reading out functions for increased ease of installation. A cable kit and a computer program are available for servicing purposes.

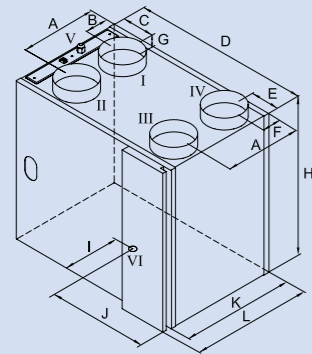


### Naturally 95% efficiency

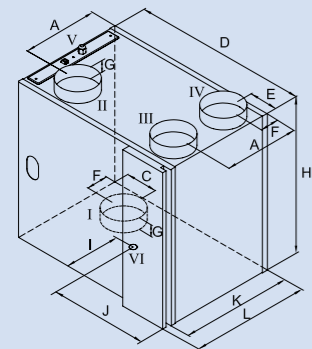
The synthetic heat exchanger transfers 95% of the heat, which makes further heating of the ventilation air superfluous (measured under NEN 5138). The EPS contribution is approx. 0.3.

## TECHNICAL SPECIFICATIONS

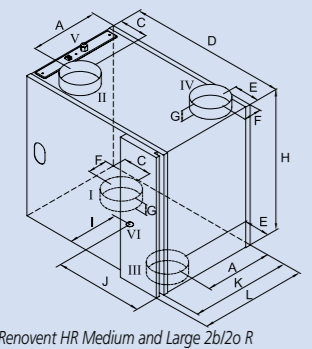
Appliance	Small	Medium	Large
Ventilation capacity at 150 Pa [m <sup>3</sup> /h]	Maximum 180	Maximum 300	Maximum 400
Rated power [W] (dependent on setting)	120 at 150 m <sup>3</sup> /h (at 150 Pa)	175 at 300 m <sup>3</sup> /h (at 150 Pa)	300 at 400 m <sup>3</sup> /h (at 150 Pa)
Dimension duct connection [mm]	Ø 125	Ø 150 and Ø 160	Ø 160 and Ø 180
H x W x D [mm]	600 x 560 x 290	602 x 675 x 420 (with bypass 500)	602 x 675 x 430 (with bypass 510)
Weight [kg]	25	31	32
Temperature efficiency [%]	95	95	95



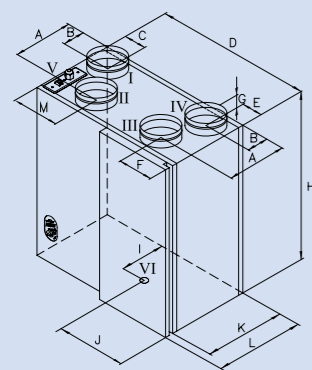
Renovent HR Medium and Large 4b R



Renovent HR Medium and Large 3b/1o R



Renovent HR Medium and Large 2b/2o R



Renovent HR Small 4b R

**KEY**

- I To dwelling
- II To atmosphere
- III From dwelling
- IV From atmosphere
- V Electric connections
- VI Condensate discharge

**DEMAND-CONTROLLED VENTILATION**

Usually the input ventilation air is divided on the basis of the size of the various rooms. The fresh outdoor air to those rooms is really needed. That can be achieved with demand-controlled ventilation based on occupation (CO<sub>2</sub> measurement) or time programming (clock function). A TNO certificate of equivalence indicates that the EPC advantage from such a controlled demand system is 0.072 (2-zone time control) to 0.081 (2-zone CO<sub>2</sub> control).

**HOW IT WORKS**

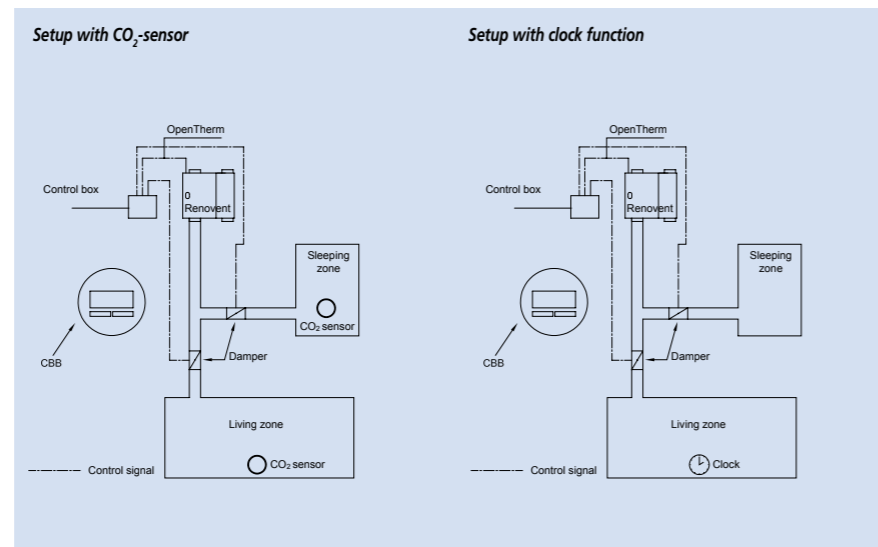
When the air quality is good, there is no need for ventilation. The air quality deteriorates when people are present, for instance in the living room. In that case, first the available ventilation air will be sent to the living room in an intelligent manner. Only when that appears to be insufficient, the quantity of ventilation air will be increased. That means customised ventilation; the available ventilation air is sent to the room where the ventilation air is needed. A lower ventilation flow rate means a lower energy consumption and a lower sound level.



**REMOTE CONTROL CBB**

Communication between the various components is arranged through the Zigbee protocol. The Zigbee protocol is a wireless communication system. All components, so also the remote control CBB (Control Panel Brink), are connected to a wall socket. Operation

- Automatic based on presence (CO<sub>2</sub> measurement). CO<sub>2</sub> sensors determine the ventilation air flow rate. At night, the ventilation in the living room is reduced to the minimum and, conversely, can be increased in the bedrooms, without the high flow rate causing additional noise nuisance.
- Automatic based on a time program (clock function). A menu enables adjustment of the control damper settings for every day. The user can set six time blocks per day.
- Manual control. The fan setting can directly be changed by turning the rotary knob on the remote control CBB.



**DIMENSIONS RENOVENT HR SMALL, MEDIUM AND LARGE (IN MM)**

Type	A	B	C	D	E	F	G	H	I	J	K	L	M
Small	213	77	79	560	75	125	45	600	50	210	290	455	168
Medium	321	121	165	675	89	99	45	602	210	385	420	445	-
Large	336	126	165	675	89	114	53	602	220	385	430	455	-

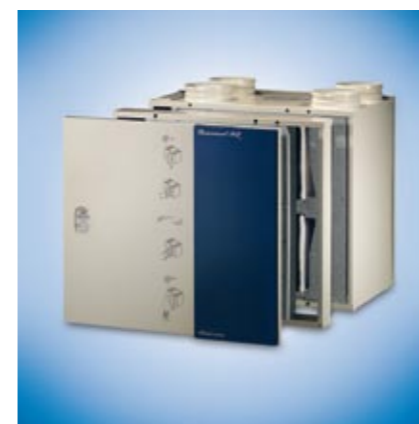
**ACCESSORIES FOR BALANCED VENTILATION WITH HEAT RECOVERY**

Brink Climate Systems has developed and selected appliance-specific accessories that can be used to create an excellent installation. Starting points are quality and ease of use and assembly.

**BYPASS UNIT FOR NIGHT VENTILATION**

Renovent HR Medium and Large are available ex factory with a bypass for night ventilation that shuts off almost completely. In summer, this bypass unit ensures that cool night air replaces in so far as possible the indoor air that has been heated during the day. The air is routed through the bypass unit. The appliance comes with an automatic control system that opens and closes the bypass valve.

A bypass unit can also be retrofitted by the installer or the user. This bypass unit leads roughly 70% of the input air around the Renovent HR heat exchanger.



**3-WAY SWITCH WITH FILTER INDICATION**

The 3-way switch allows the user to choose between three modes: 1. absence mode, 2. presence mode and 3. cooking/showering mode. The 3-way switch is connected quickly and easily on the outside of the appliance using a data cable and a connector. That makes connecting quick and easy. In addition, it is possible to connect several switches, for instance in the bathroom. For convenience of the occupant, a 3-way switch is available with a filter indicator light. That shows when the filter has to be cleaned.



**SOUND PRESSURE RENOVENT HR MEDIUM**

Frequency [Hz]	125	250	500	1000	2000	4000	Tot [dB(A)]
100 m <sup>3</sup> /h, 40 Pa	-5	-6,3	4,5	8,4	-13,2	-17,5	10,2
150 m <sup>3</sup> /h, 60 Pa	0,6	0	10,4	11,2	-5,3	-9,8	14,3
300 m <sup>3</sup> /h, 160 Pa	11,8	13,8	24	22,2	10,3	5	26,7

**SOUND PRESSURE RENOVENT HR LARGE**

Frequency [Hz]	125	250	500	1000	2000	4000	Tot [dB(A)]
100 m <sup>3</sup> /h, 40 Pa	-5	-6,3	4,5	8,4	-13,2	-17,5	10,2
200 m <sup>3</sup> /h, 80 Pa	5,7	6,2	14	15,2	2	-2,5	18,3
400 m <sup>3</sup> /h, 160 Pa	18,1	23,8	33,9	30,8	12,6	23,8	36,3

**CONTENTS CONNECTING KITS RENOVENT HR SMALL, MEDIUM AND LARGE**

	Ø 125 mm	Ø 150 mm	Ø 160 mm	Ø 180 mm
Finished section acoustic insulating hose	2 x 1 m	2 x 1 m	2 x 1 m	2 x 1,5 m
Thermally insulating hose	-	-	1 x 3 m	1 x 3 m
Universal clamping strips	4	4	8	8
Armaflex tape	1,25m	1,25 m	1,25 m	1,25 m

**WIRELESS REMOTE CONTROL**

A radiographically operated remote control is available as well. It can control the ventilation system from anywhere in the house without electric provisions. Several remote controls (transmitters) can be set for one receiver, for instance in the bathroom as well as in the kitchen.



**ADDITIONAL CONTROL OPTIONS**

Renovent HR Medium and Large can be extended with an option pcb. This pcb can be used to control various accessories, for instance a preheater and/or postheater (1000 W), a damper for sending extra ventilation air to certain rooms or an emergency contact. In addition, the option pcb has an input for a CO<sub>2</sub> sensor and a humidity sensor.

**ACOUSTIC FLEXIBLE HOSE**

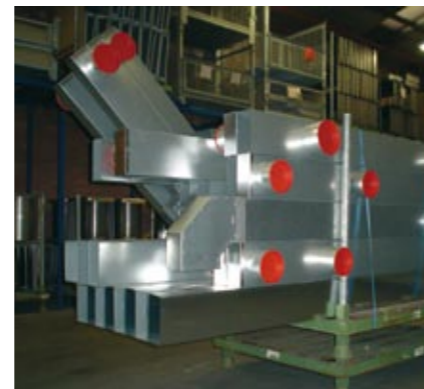
A good ventilation system should not cause noise nuisance. Based on laboratory and practice measurements, Brink can supply specially developed acoustic hoses that give the best results in combination with the Renovent HR. These hoses come in Ø 125 mm, Ø 150 mm, Ø 160 mm and Ø 180 mm in boxes of 10 m, but also in finished sections from 1 m. Connection kits have been composed for ease of assembly of the Renovent HR. We strongly advise against the use of other acoustic hoses.

**SOUND ENGINEERING DATA**

When using 1 m of Brink acoustic flexible hose, the following sound pressure can be expected in a living room (measured under ISO 7235), expressed in dB(A).

## HR HEAT RECOVERY DUCT SYSTEM

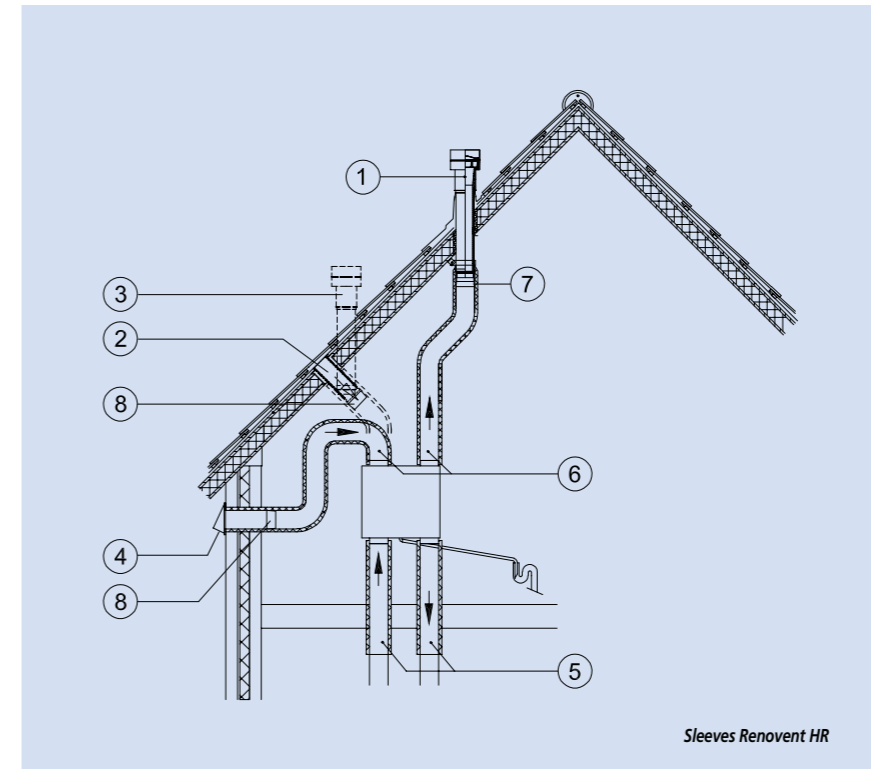
The revolutionary HR heat recovery synthetic duct system is available in Ø 125, Ø 150 and Ø 180 mm. The material insulates and allows creation of a neat system. The availability of long sections (2.25 m) makes the HR heat recovery duct system very quick and easy to assemble with only a little waste. Also under complicated assembly conditions, the flexible material offers practical possibilities. In addition, the long socket sleeves and compact bends (15°, 30°, 45° and 90°) take up less space and make the entire system look beautiful. The ducts are easy to inspect and clean through a special inspection sleeve that can also be used as fixation bracket. In addition, the supplied cutting template ensures that the ducts can always be cut simply and correctly. The HR heat recovery pipe is used for the ducts from and to the atmosphere.



## INCORPORATED DUCTS

Brink developed a comprehensive range of incorporated ducts for the ventilation market, complete with all required accessories such as couplings, end and sliding pieces, bends and connections. The sophisticated design, dimensions and spacers of the system result in a low air resistance, which is important for proper performance of the ventilation system.

All ducts have a height of 80 mm and they are available in widths of 165, 180, 205 and 240 mm. All parts are made of galvanised sheet steel.



Sleeves Renovent HR

## SLEEVES HEAT RECOVERY INSTALLATIONS

To prevent condensation problems, it is important to use sleeves that have specially been developed for ventilation systems with heat recovery. Brink developed a range of sleeves with internal insulation. These combine perfectly with the HR heat recovery duct system and with the thermal hose from the connection kits.

Please refer to our catalogue for specifications and prices.

## SOUND REDUCTION

The relatively soft EPE material offers additional sound absorption compared to more rigid materials such as metal and EPP. A comparative measurement of a 90° bend and 3 metres of duct on a heat recovery unit (at 225 m³/h) shows an additional sound absorption of EPE compared to metal and EPP of 6 and 5 dB(A) respectively.

### Installation example

Every situation requires its own appliance. For the above installation, the Renovent HR Medium 2b/2o R was opted for. The ducts from and to the atmosphere are from our range HR heat recovery duct system. The ducts from and to the dwelling are provided with acoustic flexible hose for sound absorption.

### Easy to assemble

The incorporated ducts can quickly and easily be assembled into a complete system. Branches of both 45° and 90° are available. The connections to a round pipe can also be used in combination with spiral-seam pipes. (See photograph: preassembled incorporated ducts waiting on pallets.)

### FLOW RESISTANCE VALUES (in Pa-static)

HR Heat recovery duct system	Ø 125 mm at 150 m³/h	Ø 150 mm at 225 m³/h	Ø 180 mm at 325 m³/h
Pipe per meter	1,6	1,3	1,1
Bend 90°	6,2	5,3	6,4
Bend 45°	3,6	3,5	3,2
Bend 30°	-	2,5	1,6
Bend 15°	-	0,4	1,2

### Parts

Synthetic pipe and bends (45° and 90°) with socket sleeves for the HR heat recovery duct system.



## KEY SLEEVES RENOVENT HR

Description	Ø 125 mm < 180 m³/h	Ø 150 mm < 250 m³/h	Ø 160 mm 250 - 325 m³/h	Ø 180 mm > 325 m³/h
1 = Ventilation roof sleeve (output) D125	•			
Ventilation roof sleeve (output) D150	•	•		
Ventilation roof sleeve (output) D166			•	•
2 = Ventilation input (under tiles) D125	•			
Ventilation input (under tiles) D150	•	•		
Ventilation input (under tiles) D180			•	•
3 = Ventilation roof sleeve (input) D125	•			
Ventilation roof sleeve (input) D150	•	•		
Ventilation roof sleeve (input) D180			•	•
4 = Ventilation input (wall) D125	•			
Ventilation input (wall) D150	•	•		
Ventilation input (wall) D180			•	•
5 = Acoustic hose D125 (1 m)	•			
Acoustic hose D150 (1 m)		•		
Acoustic hose D160 (1 m)			•	
Acoustic hose D180 (1.5 m)				•
6 = HR duct D125	•			
HR duct D150		•		
Thermally insulated hose (D160)			•	
HR duct D180				•
7 = Adapter 150-125 and coupler D125	•			
Adapter 180-150 and coupler D150				•
Adapter 160-150 and coupler D150			•	
8 = Adapter 150-125 and coupler D125	•			
Adapter 180-160 and coupler D180			•	

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