ATTIC AND WALL-MOUNTED UNITS

RCV RANGE

Function

All units are equipped with easy-access filter slots behind the upper front cover. The control panel with LED light indicators is located in an opening in the front cover.

Cabinet

The RCV insulation is made of expanded polystyrene (EPS) with outer surface is made of 0.8mm Aluzinc sheet metal. This has a high insulation level, and good air tightness, which permits location of the units in spaces with temperatures down to -12°C.

The RCV series complies with European fire safety requirements as specified in EN 13501 class E

The leakage rate of the unit (internal and external) is <2% as specified in EN13141-7 leakage class A1.

Installation

After installation of the unit, ducts and condensate hose, the unit needs to be calibrated to the specific environment. Appropriate initial adjustments are performed with Dantherm PC Tool.

Function

The unit ventilates residential homes by extracting the inside humid air, and replacing it with fresh outside air, which has been heated with the heat energy of the extracted air. This reduces energy consumption.

The air volume can be controlled by:

- Selecting a fixed fan speed from 0-4
- Demand mode, in which a built in RH sensor continuously adjusts the fan speed depending on any immediate demand, determined by the humidity of the extracted air
- Week timer program – the fan speed will increase or decrease according to an hourly time schedule, or specific demand

When very humid inside air is extracted, the humidity will condensate inside the heat exchanger and be collected by the embedded drip tray. This water is drained from the unit through the enclosed hose and then disposed of in the nearest drainage. ducts connected to the home (supply and extract) are always on the left-hand side of the unit. The condensation drain is located at the rear of the unit.

Maintenance

In general, the only regular maintenance required by the RCV residential ventilation units is to check/change the air filters twice a year when the alarm is triggered (flashing LED and acoustic alarm).

The user changes the filter by opening the filter cover, changing the filters and resetting the filter timer on the built-in control panel.

Apart from changing the air filters and cleaning the outside of the unit, any other form of service will have to be carried out by qualified personnel.

Local Dantherm partners are always available with support to solve any problem that might arise with the unit.

Removing the front cover gives access to all types of service and repair.

ATTIC AND WALL-MOUNTED UNITS

RCV RANGE

Flexible unit

The factory-mounted duct seals on the side of the unit can easily be removed using a side cutter and then used to seal off other ducts not to be used.

Mirroring all duct connections

2 set-up in 1 unit, easy change on site

The air flow direction can be electronically swapped, providing ability to route the connected ducts, either to the right or to the left. This means that the supply air duct connections can be either to the right or to the left hand side of the unit.

Unlike all other residential ventilation units on the market, the RCV offers a stunning 48 different ways of connecting ducts to the unit.

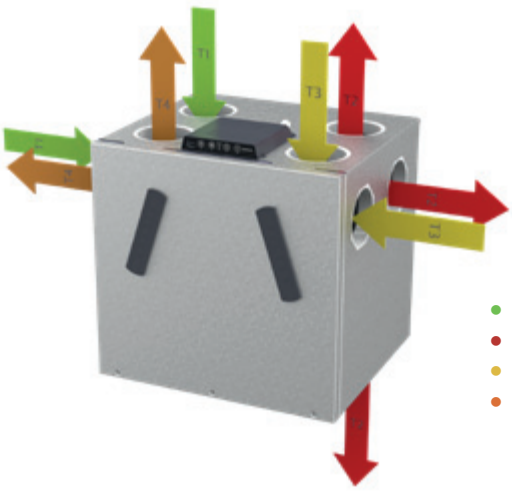
24 available combinations for left setups (A) and 24 for right setups (B). Simply choose whichever one is more convenient in terms of installation!

With this flexible unit, you'll be able to find a fast and cost-efficient way to finalise installation work, even in the trickiest of installation areas.

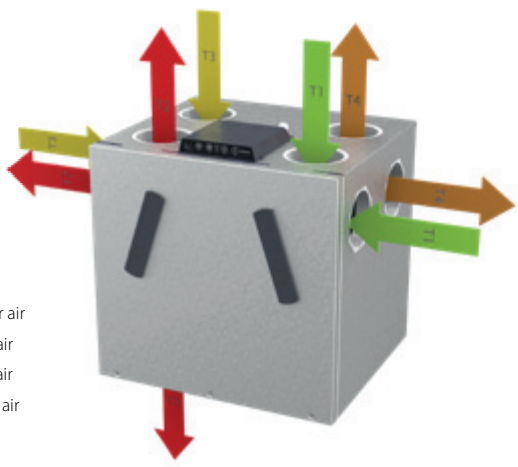
On the RCV 320 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

DUCT CONNECTIONS

(A) LEFT SET-UP
Factory set-up



(B) RIGHT SET-UP Optional -
easy change on site



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

On the RCV 320 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

WALL AND ATTIC-MOUNTED UNITS

RCV 320$_{P1}$

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which the supply fan is stopped, thereby reducing power consumption. Open windows will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Ducts can be connected through the top of the unit, either side or the bottom as preferred
- Compact design
- External pre-heater as accessory
- Free smartphone App available

The 320$_{P1}$ is a highly efficient and very compact residential ventilation unit for houses, villas, and apartments. Based on patent-pending technology and an ingenious design, it is delivered as a true plug and play solution with a built-in control panel and all necessary parts for on-site wall installation.

Heat recovery takes place in a highly efficient counter-flow heat exchanger, which is able to achieve optimum efficiency with the least possible loss of pressure in connection with the low air volumes used in housing.

All units come with an Aluzinc surface finish and will be packaged four units on a pallet at a time to ease handling at building sites.

Third party testing and certification

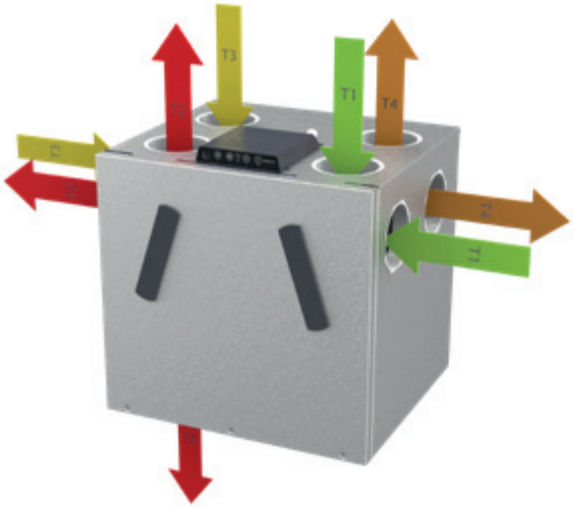
Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings
PCDB listed SAP App. Q	Pending: Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
PHI	Passivhaus certified
EPB	Pending: Listed in the database for Energy Performance of Buildings in Belgium

WALL AND ATTIC-MOUNTED UNITS

RCV 320$_{P1}$

Flexible unit

The factory-mounted duct seals on the side of the unit can easily be removed using a side cutter and then used to seal off other ducts not to be used.

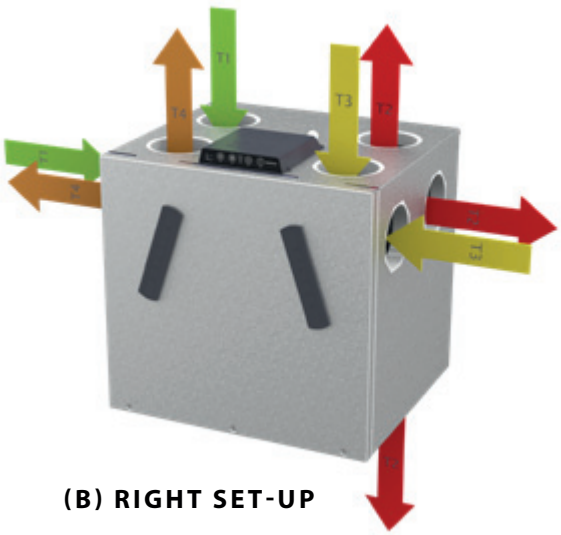


(A) LEFT SET-UP

Tired of having to redo ducting to fit ventilation units?

Unlike all other residential ventilation units on the market, the RCV offers a stunning 48 different ways of connecting ducts to the unit. 24 available combinations for left setups (A) and 24 for right setups (B). Simply choose whichever one is more convenient in terms of installation!

With this flexible unit, you'll be able to find a fast and cost-efficient way to finalise installation work, even in the trickiest of installation areas.



(B) RIGHT SET-UP

- T1 Outdoor air
- T2 Supply air
- T3 Extract air
- T4 Exhaust air

Dantherm® CLIMATE SOLUTIONS

RCV 320$_{P1}$

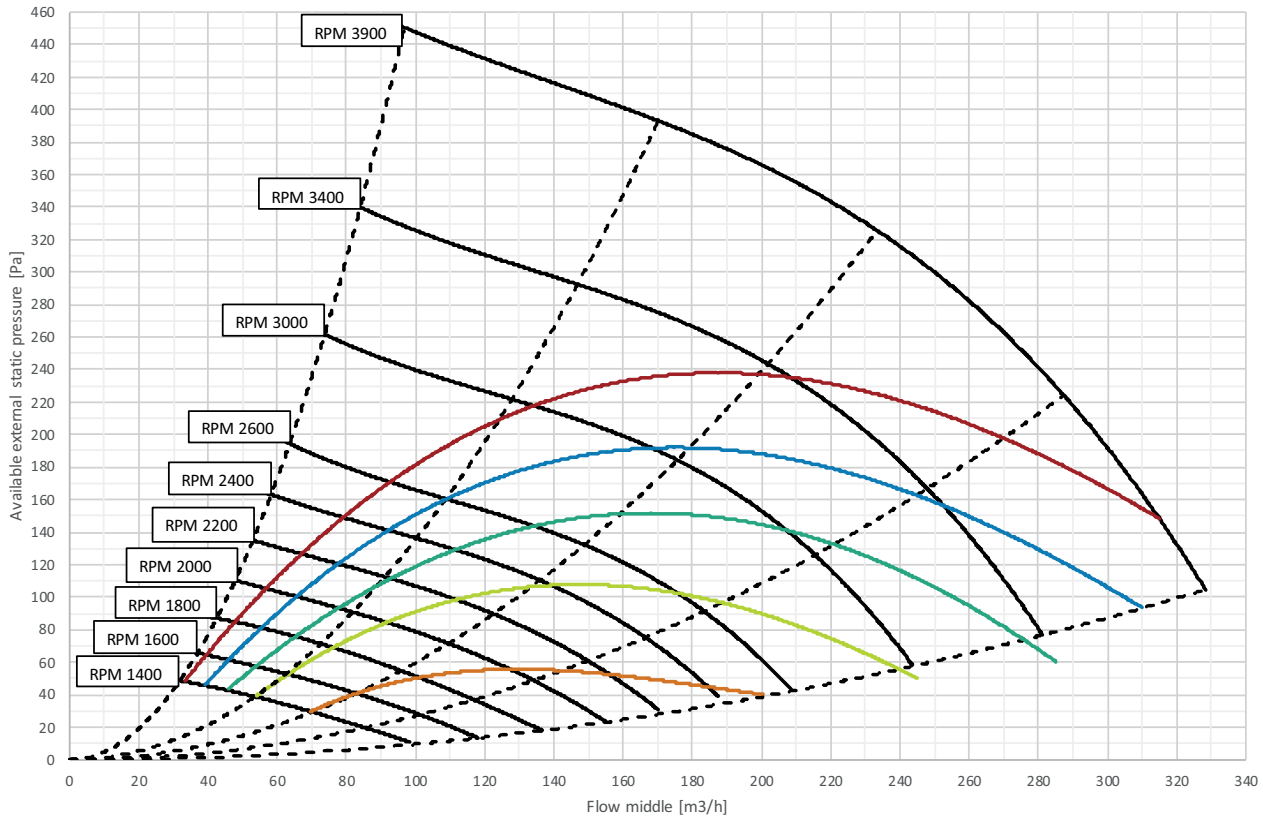
TECHNICAL DATA

Specifications	Units		RCV 320P1
Maximum flow at 100Pa	V_{100Pa}	m^3/h	320
Maximum rated flow at 100Pa	$V_{max.. nom.}$	m^3/h	200
Recommended operating range	V	m^3/h	50 - 200
Operating range Passivhaus at 100Pa	V_{PHI}	m^3/h	71 - 162
EN 13141-7 reference flow at 50Pa	V_{REF}	m^3/h	140
Performance			
Thermal efficiency in accordance with PHI	η_{SUP}	%	94
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	95
Leakage (external and internal) in accordance with EN 13141-7			<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779:2012			G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	-12 to +45
Outdoor temperature without preheater installed	t_{ODA}	°C	-12* to +45
Outdoor temperature with preheater installed	t_{ODA}	°C	-15 to +45
Maximum absolute humidity of extract air	x	g/kg	10
Cabinet			
Dimensions (without bracket)	w x h x d	mm	600 x 603 x 526**
Spigots/ducts connections	Ø	mm	8 pcs ø125 and 2 pcs oval (68 x 163) – female
Weight		kg	32
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	U<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose included	Ø/length	"/m	ø¾" – 1m
Cabinet colour	-	-	raw Alu-zinc
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1370
Frequency	f	Hz	50
Protection class	-	-	IP21

* *The use of preheating coil is recommended at outdoor temperature -3°C to ensure balanced operation.*
** *+20mm fitting.*

RCV 320$_{P1}$

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



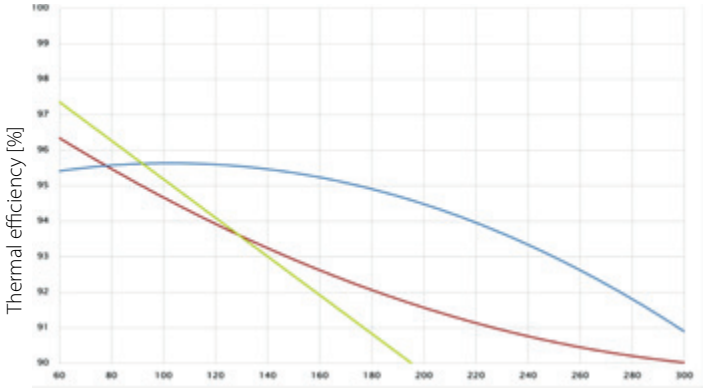
SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency acc. PassivHaus Institut
  Operational conditions: outdoor air: 4°C, 94% RH; extract air: 21°C, 30% RH

All values at balanced flow



Dantherm CLIMATE SOLUTIONS

RCV 320$_{P1}$

SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	23.6	33.1	32.8	34.0	30.0	20.8	13.3	18.5	39
	extract/outdoor	20.2	26.0	26.0	30.0	23.9	15.5	6.9	13.0	33
1400	supply/exhaust	26.2	36.1	37.0	37.2	34.4	24.6	19.0	18.6	42
	extract/outdoor	21.9	28.5	30.1	33.7	28.3	21.5	18.1	21.4	37
1600	supply/exhaust	27.8	36.7	41.0	40.2	37.6	28.8	22.0	19.1	45
	extract/outdoor	23.9	29.0	35.6	36.3	31.7	25.5	17.3	21.5	40
1800	supply/exhaust	30.2	38.1	46.1	43.1	40.6	32.1	24.9	13.3	49
	extract/outdoor	26.8	30.4	38.2	38.9	34.7	28.8	18.8	21.7	43
2000	supply/exhaust	32.0	39.8	49.4	45.8	43.5	35.2	28.5	13.0	52
	extract/outdoor	30.2	31.5	41.9	41.3	37.5	31.6	18.1	20.3	46
2200	supply/exhaust	34.2	40.9	51.0	48.1	46.0	38.1	31.8	12.7	54
	extract/outdoor	32.3	33.0	43.4	43.6	39.9	34.1	21.5	21.5	48
2400	supply/exhaust	35.4	42.3	54.4	50.1	47.6	40.6	34.7	18.7	57
	extract/outdoor	33.9	34.2	44.5	45.8	42.0	36.2	20.7	14.9	49
2600	supply/exhaust	38.6	43.9	55.8	52.4	49.7	43.1	37.5	19.7	58
	extract/outdoor	36.6	35.8	47.7	47.8	43.8	38.4	24.8	23.3	52
3000	supply/exhaust	40.1	45.6	59.0	62.5	53.1	47.0	41.9	26.9	65
	extract/outdoor	37.7	37.5	47.7	53.3	47.3	42.5	28.3	23.3	55
3400	supply/exhaust	43.8	51.4	62.4	68.8	57.0	50.2	45.7	31.9	70
	extract/outdoor	40.3	40.1	48.2	61.2	50.2	45.1	31.2	24.6	62

SOUND PRESSURE LEVEL (Lp) – CABINET

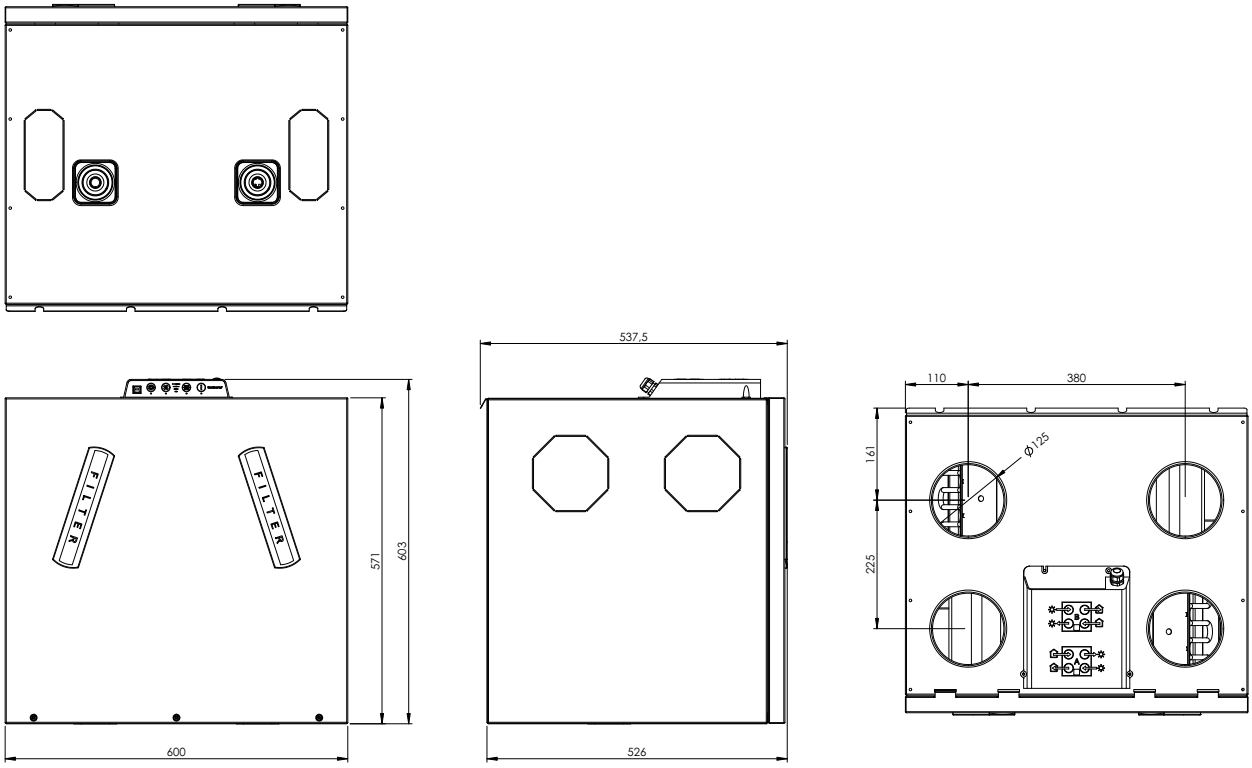
2m distance

	Without background noise weighted [dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	2.6	9.5	12.9	9.6	5.8	1.4	3.0	17
1200	-	4.0	11.1	15.8	16.3	12.6	9.4	4.1	21
1400	-	7.1	13.9	17.6	16.4	12.6	5.3	1.7	22
1600	-	8.5	18.0	20.8	17.7	13.2	6.0	-0.1	24
1800	-	10.0	21.9	23.6	20.2	16.3	9.4	4.9	27
2000	-	11.5	22.4	25.7	22.2	18.3	11.6	5.6	29
2200	-	13.3	26.5	28.2	24.6	20.7	13.3	5.6	32
2400	-	18.5	28.1	30.9	27.7	24.4	17.5	5.6	35
2600	11.0	20.1	29.9	34.6	29.5	25.6	18.9	5.6	37
3000	11.1	20.2	32.3	37.9	32.1	29.0	22.8	9.0	40

RCV 320$_{P1}$

DIMENSIONS

On the 320$_{P1}$, it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.



REVIT

Revit files are available for free on request.
Contact your local supplier or Dantherm for access.