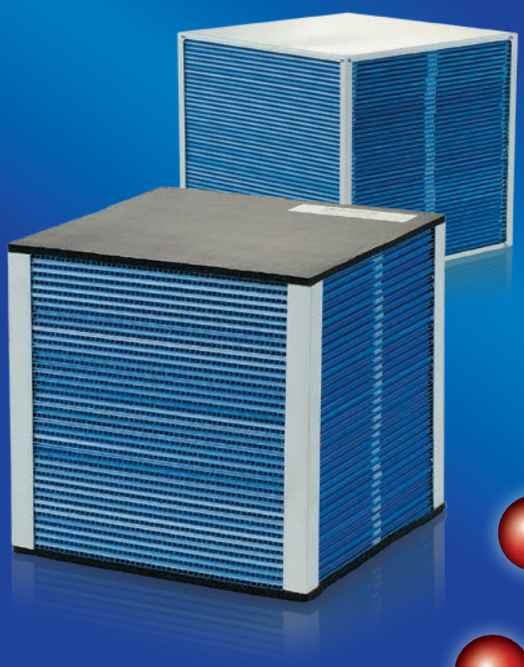
PLATE HEAT EXCHANGERS

cross-flow type

HRV Series



HRV plate cross flow heat exchangers are made of cellular plastic plates that are connected with a special glue. The heat exchangers are available in square- and diamond-shaped modifications.

The warm extract air and cold intake air streams are separated by the heat exchanger plates. This way these cross streams do not come in direct contact and no cross contamination by pollutants, odours and germs is possible.

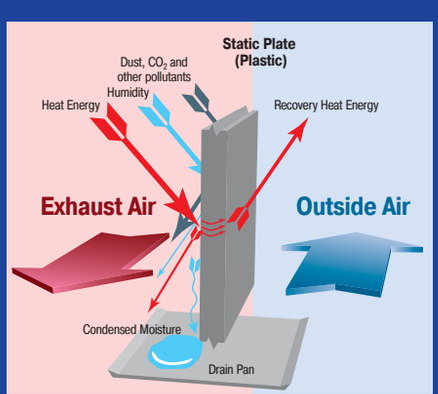
The heat exchanger material enables its operation at temperatures from -25 °C up to +50 °C. Air leakage at 100 Pa is less than 2%.

Frost-resistant heat exchangers preserve efficient operability after defrosting.

The heat exchangers require low maintenance. Easy cleaning with flushing if required.

- improved heat exchange efficiency due to decreased wall thickness
- increased heat exchanger surface area
- improved air mixing due to air migration inside the wide air duct
- minimized difference pressure loss between intake and extract streams
- sealants is solvent- and silicon- free
- heat recovery efficiency about 80% (according to EN308)

Cross-flow heat exchanger operating logic



Air flow interaction diagram
in the plate heat exchanger

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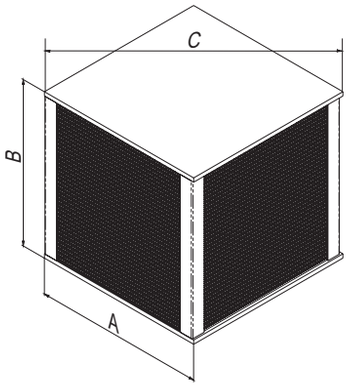
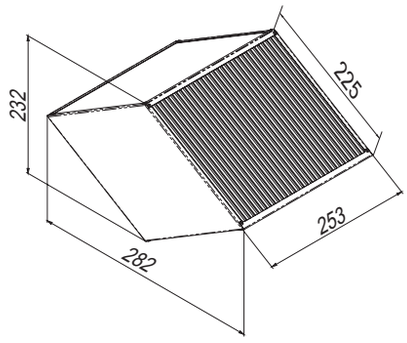
PLATE HEAT EXCHANGERS
cross-flow type

Overall dimensions of rectangular heat exchangers

Standard size	Dimensions [mm]		
	A	B	C
200/190	200	190	283
200/240	200	240	283
300/300	300	300	425
300/450	300	450	425
300/750	300	750	425



Diamond-shaped heat exchanger overall dimensions



Designation key

Series	Heat exchanger type	Operating logic	Plate material	Energy recovery	Number of heat exchanger faces	Overall dimensions L/W [mm]	Inter-plate distance [mm]	Casing material
VENTS HRV	**P** – plate type	**C** – cross-flow	**S** – plastic	**R** – regular	4	200/190; 200/240 300/300; 300/384 300/450; 300/750	2; 3	1 - metal 2 - plastic

PLATE HEAT EXCHANGERS

enthalpy, cross-flow type

ERV Series

The ERV plate enthalpy cross-flow heat exchangers are made of aluminium foil and celled vapour-permeable membrane.

The warm extract air flow and cold intake air flows are separated with the heat exchanger plate walls. This way these cross flows do not come in direct contact and the impurities, odours and microbes contained in the extract air flow are not transferred to the supply air flow.

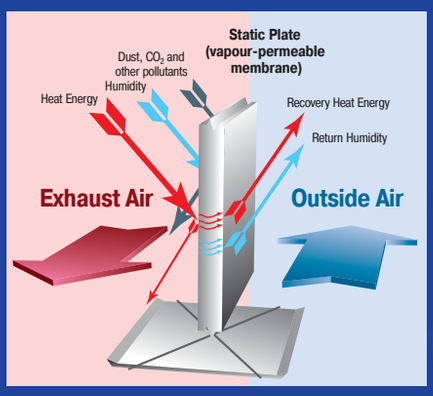
The enthalpy heat exchangers are able to recover sensible and latent heat energy. The units with enthalpy heat exchangers are recommended for use in air conditioned premises.

The heat exchanger material enables its operation at temperatures from -25 °C up to +50 °C. Air leakage at 100 Pa is less than 2%.

Due to the special heat exchanger design the heat exchangers require low maintenance.

Cross-flow heat exchanger operating logic

- heat recovery efficiency about 80% (according to EN308)



Air flow interaction diagram
in the plate enthalpy heat exchanger

- improved indoor microclimate due to preserving the set air heat and humidity points
- low frost limit (moisture transfer at the molecular level)
- no moving parts and electric connections
- sealant is solvent- and silicone- free

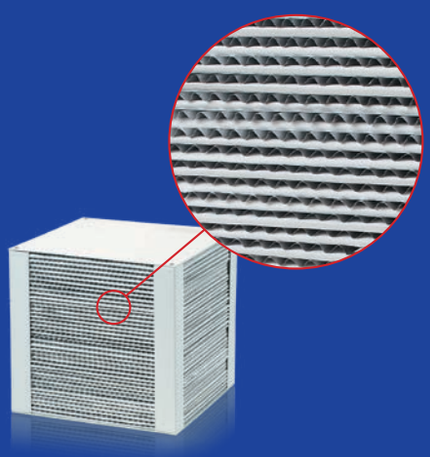


Plate-cross flow enthalpy
heat exchanger design

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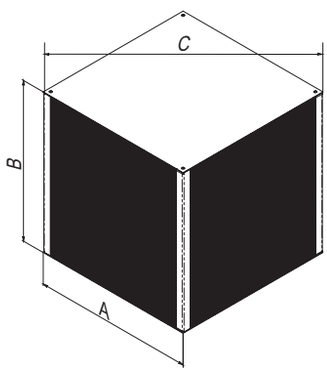
PLATE HEAT EXCHANGERS
enthalpy, cross-flow type

Overall dimensions of enthalpy heat exchangers

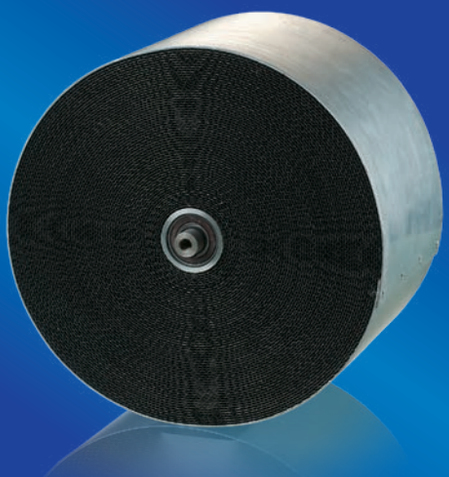
Standard size	Dimensions [mm]		
	A	B	C
200/190	200	190	283
200/240	200	240	283
300/300	300	300	425
300/450	300	450	425
300/750	300	750	425



Designation key

Series	Heat exchanger type	Operating logic	Plate material	Energy recovery	Number of heat exchanger faces	Overall dimensions L/W [mm]	Casing material
VENTS ERV	**P** – plate type	**C** – cross-flow	**M** – foil/membrane	**E** – energy	4	200/190; 200/240 300/300; 300/384 300/450; 300/750	1 - metal

ROTARY REGENERATORS

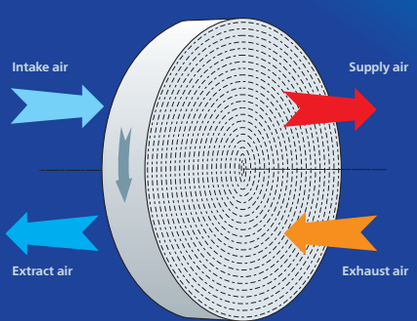


HRV-R Series

Rotary regenerator is a rotating short cylinder filled with corrugated aluminium plates laid in such a way as to enable supply and extract air flow pass through it.

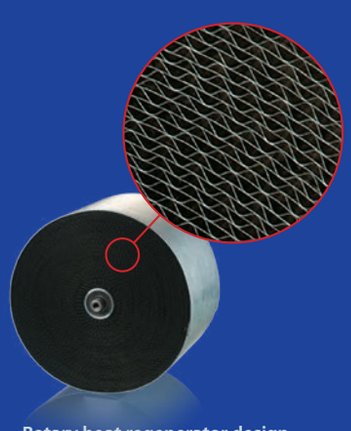
As the rotor moves the strip inside the regenerator first comes in contact with extract air flow and then with supply air flow.

- heat recovery efficiency about 85% (according to EN308)



Rotary heat regenerator operating logic

- the rotor speed control is performed by the asynchronous constant speed motor. The rotation speed is controlled by the inverter
- the gaps between the rotor and the casing are sealed with a special wear-resistant brush. Internal air stream mixing is less than 1.5%



Rotary heat regenerator design

- the total regenerator efficiency is regulated by the its rotation speed
- in normal operation conditions air flow constantly changes its direction, thus enabling the rotor self-cleaning effect

Assembled rotary heat regenerator

- due to using big amount of heat exchange area and massflow volume frames of units have small dimensions

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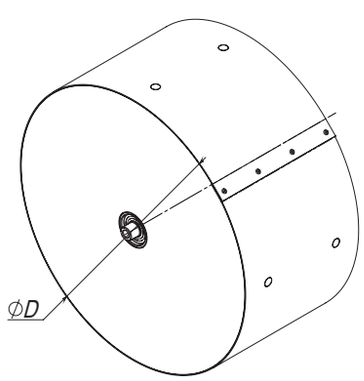
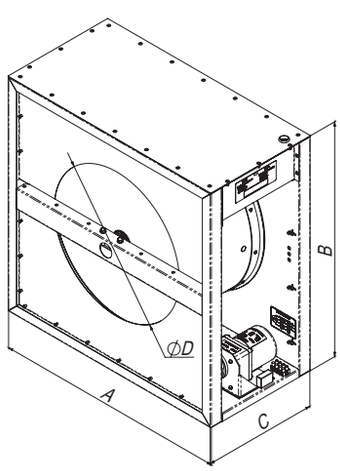
ROTARY REGENERATORS

Overall dimensions

Standard size	Rotor diameter [mm]	Dimensions [mm]		
		A	B	C
600	400	600	600	295
600	500	600	600	295
700	600	700	700	295
800	700	800	895	295
900	800	900	900	290
1100	900	1100	1100	290
1100	1000	1100	1100	290
1250	1100	1250	1250	290
1250	1150	1250	1250	290
1400	1300	1400	1400	310
1500	1400	1500	1500	310
1630	1510	1630	1630	330
1700	1600	1700	1700	310
2010	1700	2010	2010	330
2210	1900	2210	2210	330





Designation key

Series	Heat exchanger type	Coating	Diameter	Wave height [mm]	Foil thickness	Purge sector	Number of sections
VENTS HRV-R	**R** – Rotor type	**CT** – uncoated aluminium foil	1100, 1150 1300, 1400 1510, 1600 1700, 1900	2.1 1.6	/7 – 0.07	0 – no	1 4 8

PLATE HEAT EXCHANGERS

counter-flow type

HRV-COUNTER FLOW Series

HRV-COUNTER FLOW plate counter flow heat exchangers are made of specially designed corrugated plates.

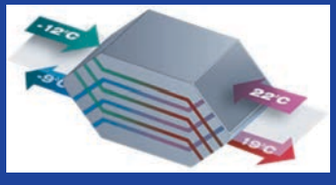
The warm extract air flow and cold intake air flows are separated with the heat exchanger plate walls. This way these cross flows do not come in direct contact and the impurities, odours and microbes contained in the extract air flow are not transferred to the supply air flow.

The heat exchanger material enables its operation at temperatures from -25 °C up to +50 °C. Air leakage at 100 Pa is less than 2%.

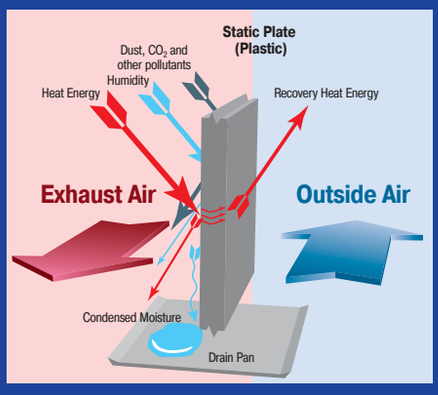
In cold period condensate formation on the heat exchanger plate surfaces may result in the heat exchanger freezing. After defrosting the heat exchanger preserves its characteristics and is suitable for further operation.

The heat exchangers require low maintenance.

- reduced pressure losses
- heat recovery efficiency about 90% and higher (according to EN308)
- increased heat exchanger surface area **(technical solution is patent-protected)**
- fully separated air streams
- easy cleaning with flushing and subsequent drying up
- frost-resistant heat exchangers, preserves efficient operability after defrosting



Counter-flow heat exchanger operating logic



Air flow interaction diagram in the heat exchanger

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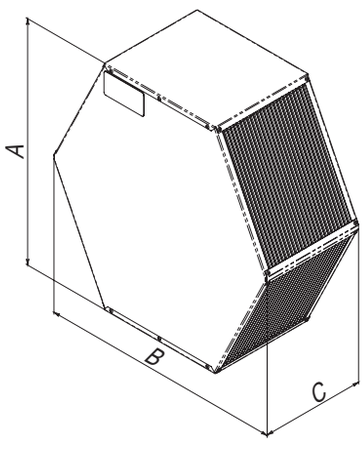
PLATE HEAT EXCHANGERS
counter-flow type

Overall dimensions

Standard size	Dimensions [mm]		
	A	B	C
366/160	366	366	160
366/190	366	366	190
366/314	366	366	314
366/384	366	366	384
366/500	366	366	500



Designation key

Series	Heat exchanger type	Operating logic	Plate material	Energy recovery	Number of heat exchanger faces	Overall dimensions L/W [mm]	Casing material
VENTS HRV-COUNTER FLOW	**P** – plate type	**R** – counter-flow	**S** – plastic **M** – foil/membrane	**R** – regular **E** – enthalpy	6	366/160; 366/190 366/314; 366/384 366/500	1- zinc aluminium 2 - plastic