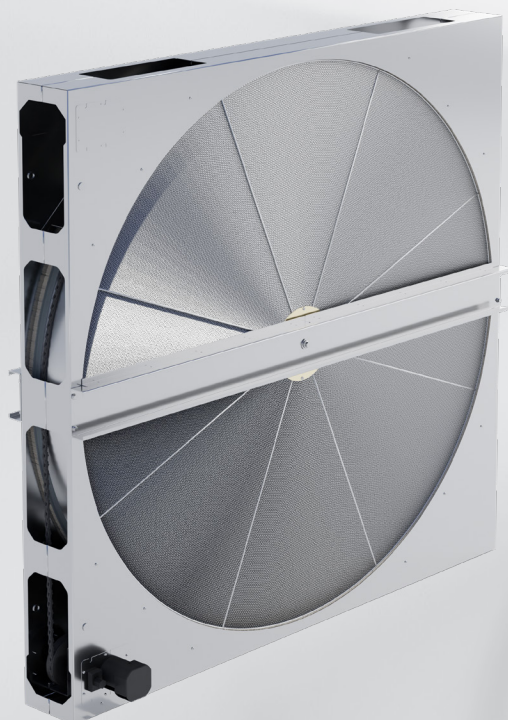




**SWISS  
ROTORS**

**RT**

**Energy Recovery Wheel**



## 200 mm Energy Recovery Wheels

### Overview

200 mm Energy Recovery Wheel equipped with housing, wheel drive system (motor & reduction), segmented belt and speed controller (optional).

Monlyth wheel design (Swiss Rotors patented design).

Wheel hub made of extruded aluminum, diameter between 150 and 250 mm (depending on wheel size).

For larger wheels (1200 size), 500 mm rods are applied to reinforce the wheel structure.

Fully enclosed and factory lubricated ball bearings, designed for over 200 000 hours of live time ( $L_{10} = 20\ 000$  hours at 1 000 RPM, 3 000 kg).  
Maintenance free.

Working temperature range for motor and gear: -10 to +50 °C

### Design

Housing type: Double wall.

Frame material: 1 to 1.5mm prime G90 hot-dip galvanized steel (DX51D+Z275), tested for corrosion resistance of 400 hours of salt spray.

### Sealing

Housing type: Double wall.

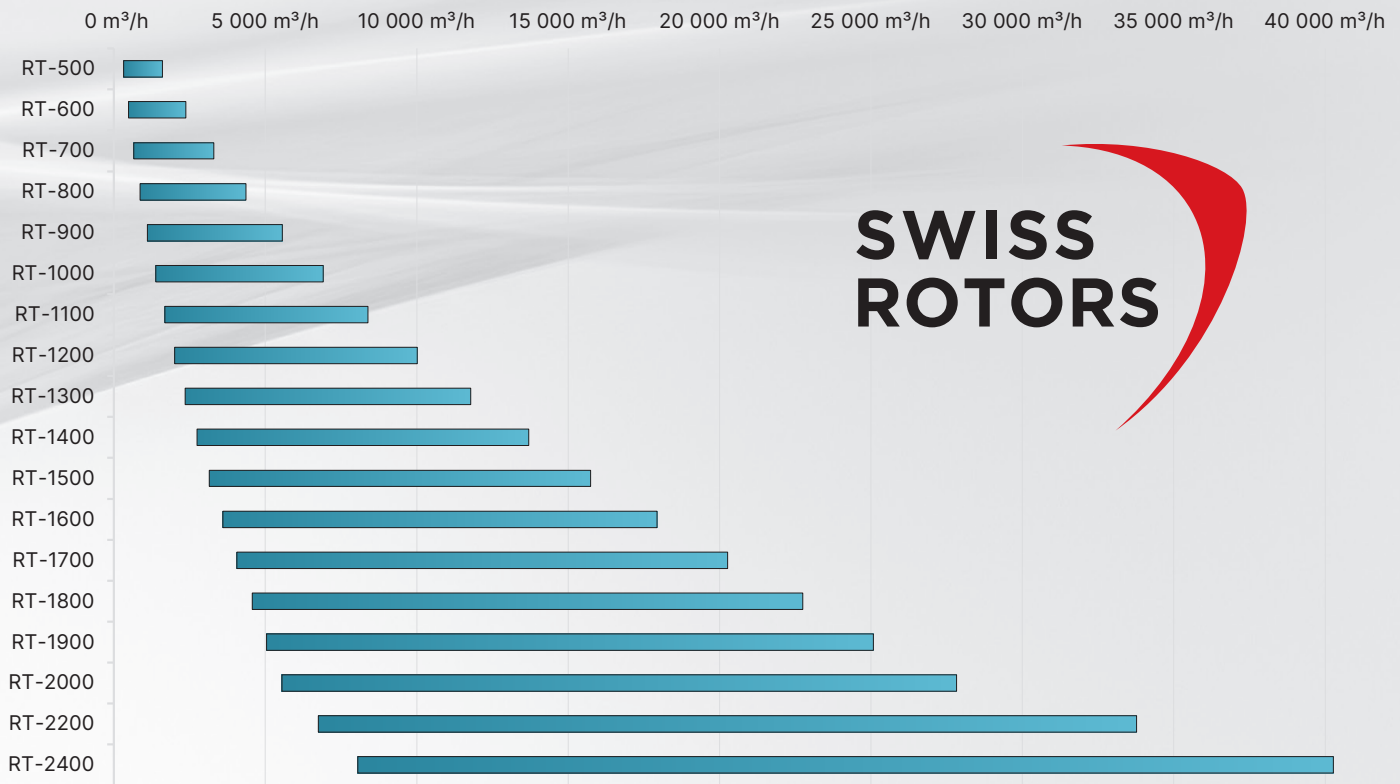
Frame material: 1 to 1.5mm prime G90 hot-dip galvanized steel (DX51D+Z275), tested for corrosion resistance of 400 hours of salt spray test.

System: twin on both sides of wheel.

Sealing on wheel peripheries: non-contact sealing type around both diaphragms, reinforced and industrial-grade fabric.

Sealing on central beams: durable brush seals along both central beams.

Model	Wheel Diameter	Dimensions (WxHxD) [mm]	Minimum Airflow	Maximum Airflow
RT-500	500 mm	580×580×215	353 m <sup>3</sup> /h	1 767 m <sup>3</sup> /h
RT-600	600 mm	680×680×215	509 m <sup>3</sup> /h	2 545 m <sup>3</sup> /h
RT-700	700 mm	780×780×215	693 m <sup>3</sup> /h	3 464 m <sup>3</sup> /h
RT-800	800 mm	880×880×215	905 m <sup>3</sup> /h	4 524 m <sup>3</sup> /h
RT-900	900 mm	980×980×215	1 145 m <sup>3</sup> /h	5 726 m <sup>3</sup> /h
RT-1000	1 000 mm	1080×1080×215	1 414 m <sup>3</sup> /h	7 069 m <sup>3</sup> /h
RT-1100	1 100 mm	1180×1180×215	1 711 m <sup>3</sup> /h	8 553 m <sup>3</sup> /h
RT-1200	1 200 mm	1280×1280×215	2 036 m <sup>3</sup> /h	10 179 m <sup>3</sup> /h
RT-1300	1 300 mm	1380×1380×215	2 389 m <sup>3</sup> /h	11 946 m <sup>3</sup> /h
RT-1400	1 400 mm	1480×1480×215	2 771 m <sup>3</sup> /h	13 854 m <sup>3</sup> /h
RT-1500	1 500 mm	1580×1580×215	3 181 m <sup>3</sup> /h	15 904 m <sup>3</sup> /h
RT-1600	1 600 mm	1680×1680×215	3 619 m <sup>3</sup> /h	18 096 m <sup>3</sup> /h
RT-1700	1 700 mm	1780×1780×215	4 086 m <sup>3</sup> /h	20 428 m <sup>3</sup> /h
RT-1800	1 800 mm	1880×1880×215	4 580 m <sup>3</sup> /h	22 902 m <sup>3</sup> /h
RT-1900	1 900 mm	1980×1980×215	5 104 m <sup>3</sup> /h	25 518 m <sup>3</sup> /h
RT-2000	2 000 mm	2080×2080×215	5 655 m <sup>3</sup> /h	28 274 m <sup>3</sup> /h
RT-2200	2 200 mm	2280×2280×215	6 842 m <sup>3</sup> /h	34 212 m <sup>3</sup> /h
RT-2400	2 400 mm	2480×2480×215	8 143 m <sup>3</sup> /h	40 715 m <sup>3</sup> /h



## Heat Transfer Media

Corrugated Aluminum Foil – for the most efficient sensible heat transfer with humidity transfer based on condensation.

Humidity transfer coating based on 3Å molecular sieve for odor-free operations:

„**Condensation**” – supporting latent heat transfer based on condensation.

„**Enthalpy**” – supporting latent heat transfer (humidity) based on differences in the molecular pressure of water contained in the air and the coating.

„**Sorption**” coating – for the highest rate of latent heat transfer (humidity) between supply and return air.

Wave height – 1,6 mm (entire RT range).

## Performance

Monolithic construction of the heat accumulation structure based on a patented foil forming technology that interlocks subsequent foil layers

Sensible / Latent / Energy Efficiency reaching: **84,5%** / **87,5%** / **83,7%\***

Air pressure drop (minimum / maximum airflow): **74** - **344** Pascals

Double peripheral sealing system to prevent cross-contamination and boost the heat recovery efficiency by additional 2%

## Compliance with standards

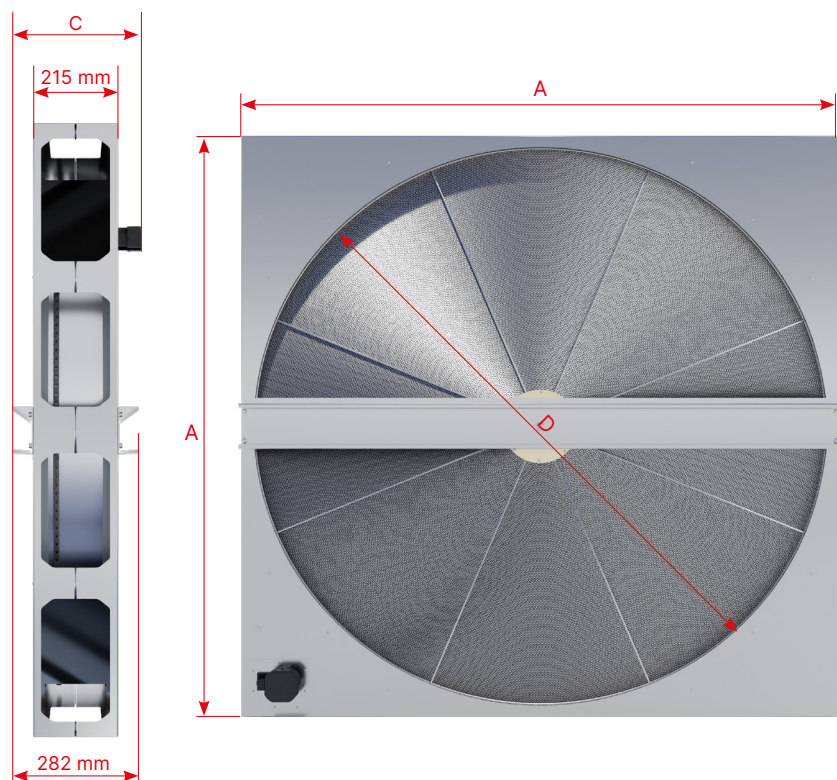
**COMMISSION REGULATION (EU) No 1253/2014** – minimum efficiencies for heat recovery systems applied to ventilation units

**VDI 6022, SWKI VA104-01** (hygienic standards)

**EN 308** – „Test Procedures For Establishing Performance Of Air To Air And Flue Gases Heat Recovery” Accordance certified by **EUROVENT CERTITA**



## Dimensions



Model	A	C	D
RT-500	580 mm	380 mm	500 mm
RT-600	680 mm	385 mm	600 mm
RT-700	780 mm	288 mm	700 mm
RT-800	880 mm	292 mm	800 mm
RT-900	980 mm	292 mm	900 mm
RT-1000	1 080 mm	299 mm	1 000 mm
RT-1100	1 180 mm	314 mm	1 100 mm
RT-1200	1 280 mm	314 mm	1 200 mm
RT-1300	1 380 mm	314 mm	1 300 mm
RT-1400	1 480 mm	314 mm	1 400 mm
RT-1500	1 580 mm	326 mm	1 500 mm
RT-1600	1 680 mm	326 mm	1 600 mm
RT-1700	1 780 mm	326 mm	1 700 mm
RT-1800	1 880 mm	386 mm	1 800 mm
RT-1900	1 980 mm	386 mm	1 900 mm
RT-2000	2 080 mm	386 mm	2 000 mm
RT-2200	2 280 mm	386 mm	2 200 mm
RT-2400	2 480 mm	404 mm	2 400 mm

### 3Å molecular sieve

### ...for pure moisture recovery

Avoiding the transfer of contaminants, bacteria and odors is a significant challenge for modern energy recovery wheels design. The essence of this challenge is to limit the ingress of these pollutants while maintaining high moisture recovery performance in winter and effective air dehumidification in summer.

What **principles of physics** did we use?

- We assumed that the only substance we want to transfer between air streams is **water**, whose kinetic diameter is 2.65 angstroms ( $1\text{\AA} = 1.0 \times 10^{-10}$  meters)
- We took advantage of the fact that virtually all other particles, which are undesirable odors, pollutants or bacteria, have a diameter much larger than water.

We have thus created the most technologically advanced Energy Recovery Wheel, with superb energy recovery performance, at the same time guaranteeing the best protection of ventilation systems hygiene.

