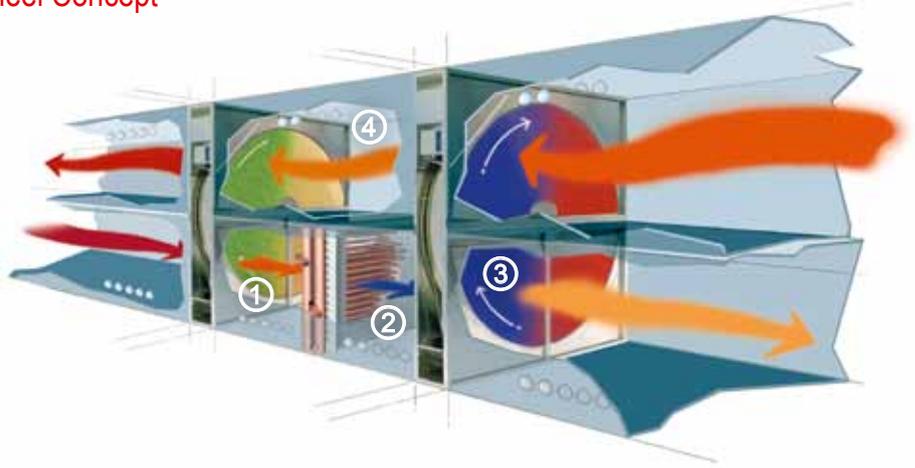


Benefits of Hoval Enventus Double Wheel Concept

- Up to 60% lower cooling capacity
- No additional reheating capacity
- Sensible wheel precools exhaust air, sorption rotor works even more efficient
- Good control of the supply air temperature
- Most energy effective solution for cooling and dehumidifying supply air in AHU
- Up to 90% temperature efficiency in heating case



In regions with high air temperature and humidity or buildings with dry cooling systems (chilled beams, chilled ceilings), the supply air needs to be cooled and dehumidified. Traditionally air dehumidification has been done by cooling the air to condense the humidity from the air and reheating it to the requested air temperature. Compared to traditional systems the Double Wheel Concept is cooling, dehumidifying and reheating the supply air more energy effective.

Principle and Components

- 1. Sorption rotors** (sensible + latent heat) are providing an excellent method to precool and dehumidify the fresh air before entering cooling coil.
- 2. Cooling coil:** After the sorption wheel, the supply air is passing the cooling coil and is cooled down to the dew point of the requested supply air conditions.
- 3. Reheating** is required to obtain requested supply air temperature. This can be done with:
 - Double Wheel Concept – The sensible wheel after the cooling coil reheats the supply air.
 - Water heating coil - Expensive due to piping and control investment cost
 - Electric heater - Very expensive running costs
 - Horse shoe heat pipe system with heating coil - Expensive running costs and difficult to control
- 4. Precooling:** The sensible wheel does not only reheat the supply air, it simultaneously precools the exhaust air and makes the sorption wheel work even more efficient.

Cost Saving Concept

The Hoval Enventus Double Wheel Concept saves up to 60% of the total cooling capacity and requires lower investment and running costs compared to traditional systems.

As rule of thumb, the additional cost of the sensible wheel can be saved in the lower investment compared to traditional system components, coils, chillers, cold and hot water piping installation, pumps, valves, controls and electric power supply costs. Accurate total investment costs analyze of the complete installation will show major savings in initial costs.

Both cooling and heating energy savings will be additional profit of the investment.

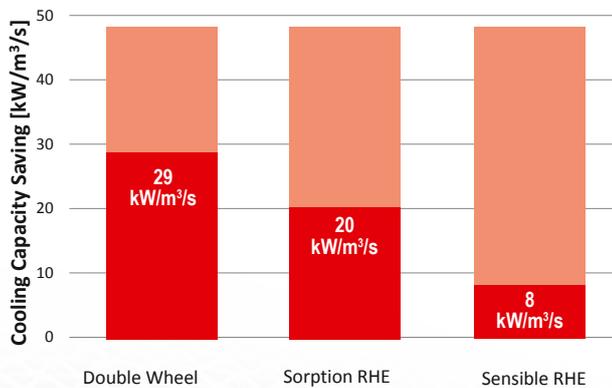
Double Wheel Concept Cooling Capacity Saving

The Double Wheel Concept recovers up to 60% of cooling capacity and is the best choice compared to traditional system solutions.

Benefits Double Wheel Concept

- Up to 60% lower cooling capacity
- No additional reheating capacity needed
- Most energy effective solution for cooling and dehumidifying supply air in AHU

COOLING CAPACITY SAVINGS



Required total cooling capacity 48 kW/m³/s
Supply and return air conditions according hx diagram

