

General Info for Rotary Heat Exchanger



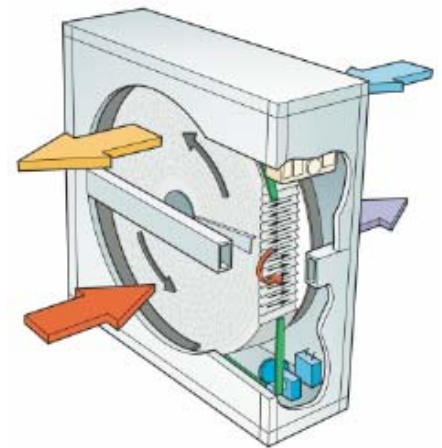
Munters International Inc.

We supply quality products for the indoor environment. The heat recovery unit is intended for fresh and exhaust air ventilation systems. In winter the warm exhaust air goes through one half of the casing, releases its heat to the rotor matrix and is thereby cooled. The heat thus stored in the rotor is released and transferred to the outdoor air, which passes through the outdoor air half of the casing. In that way the outdoor air is heated without energy costs. In summer the opposite process takes place.

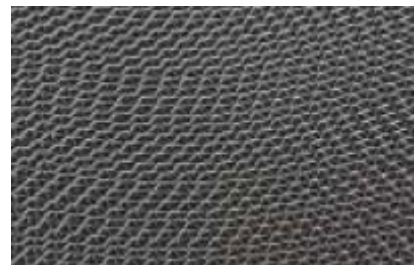
Essentially, the design consists of a rotor, containing thousands of small axial flutes. The rotor is installed in a casing with partition beams and is driven by a small motor to give it a slow rotation.

Thousands of installations equipped with ECONOVENT throughout the world give proof of the high efficiency and substantial energy savings made possible by the ECONOVENT rotary heat exchanger.

Thanks to its high efficiency, the ECONOVENT unit can reduce the annual energy consumption for heating or cooling supply air in your AHU by as much as 90% as compared to a similar AHU without energy recovery. This will lower your initial capital costs since your heating or cooling plant need not be rated as high as otherwise.



To transfer moisture in a rotary heat exchanger a "rough" (enlarged) surface is needed where the water molecules adhere to the peaks and valleys of the dry surface. The molecules are then exchanged to the dryer air stream. In more humid areas such as most of the Americas, parts of Asia and in marine applications a desiccant is used to ensure the moisture transfer. Most solid materials attract moisture. For instance, plastics like nylon can absorb up to 6% of their dry weight in water vapor. Gypsum building board, oxide layers on metals and other surface enlargements attract and hold water vapor.



The essential characteristic of desiccants is their low surface vapor pressure. If the desiccant is cool and dry, its surface vapor pressure is low. It can then attract moisture from the air which has a high vapor pressure when it is moist. After the desiccant becomes warm and moist its vapor pressure is high, and it will give off water vapor to the surrounding air.

- Latent Wheel – Transfers temperature and moisture
- Sensible Wheel – Transfers Sensible only
- Non-segmented – Continuously wound