FläktGroup

DENCO HAPPEL SEMCO FLÄKT WOODS DELBAG ILOXAIR

AIRTREND Ltd
Predstavništvo u Beogradu
Kumanovska 14, 11000 Beograd
Tel: 011/3836886, 3085740
Faks: 011/3444113
e-mail: gobrid@eunet.rs
web: www.airtrend.rs

AIR TREATMENT

REGASORP

eQ AIR HANDLING UNITS®

» WITH REGASORP ROTARY HEAT EXCHANGER

eQ WITH REGASORP ROTARY HEAT EXCHANGER – REDUCES COST UP TO 50%

Two of the most important factors affecting indoor air climate are the air temperature and the humidity. Achieving comfort conditions can be very expensive, but our RegAsorp rotary heat exchanger radically reduces that cost by up to 50%.

Rotary heat exchangers offer high efficiency in a compact design and often provide the best return on investment. We offer two types of rotary heat exchangers: REGOTERM for sensible energy transfer and RegAsorp for both latent and sensible energy transfer.

BETTER ENERGY RECOVERY DURING SUMMER
The main feature of the RegAsorp rotor is that it can not only transfer heat energy but also moisture.

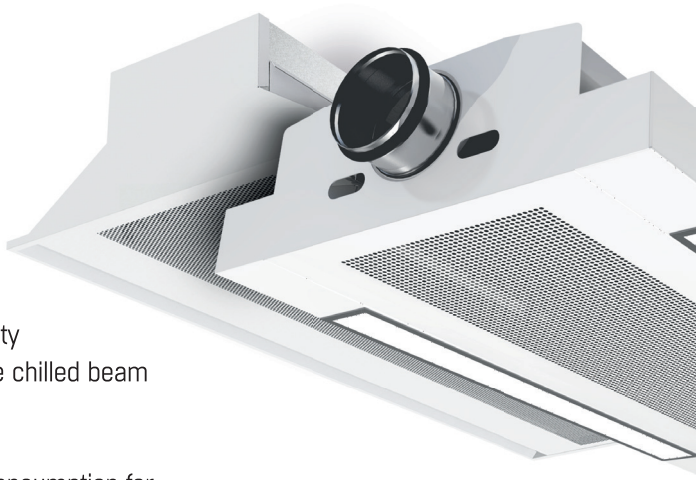
When warm outdoor air is cooled, the moisture in the air condenses to water when the air reaches the dew point. This takes a lot of energy and requires that the chiller is designed to cope with it.

The RegAsorp rotor will support by transferring a large part of the moisture in the outdoor air and exhausting it directly through the exhaust fan. This means the size of the cooling system is reduced.

BETTER HUMIDITY LEVEL DURING THE WINTER
In the winter time, the outdoor air contains very little moisture and when it is heated to room temperature it will cause very dry conditions indoors. By recovering the moisture in the extract air with our RegAsorp rotor, the supply air is humidified and we maintain a higher level of moisture indoors than we would have with other heat recovery systems.

BETTER ENERGY RECOVERY DURING THE WINTER
On very cold days, normal heat exchangers can become frosted and performance drops rapidly. To avoid this it is necessary to employ defrosting systems which will cost additional energy in one way or another. When using the RegAsorp rotor the moisture in the extract air is recovered and transferred to the supply air.

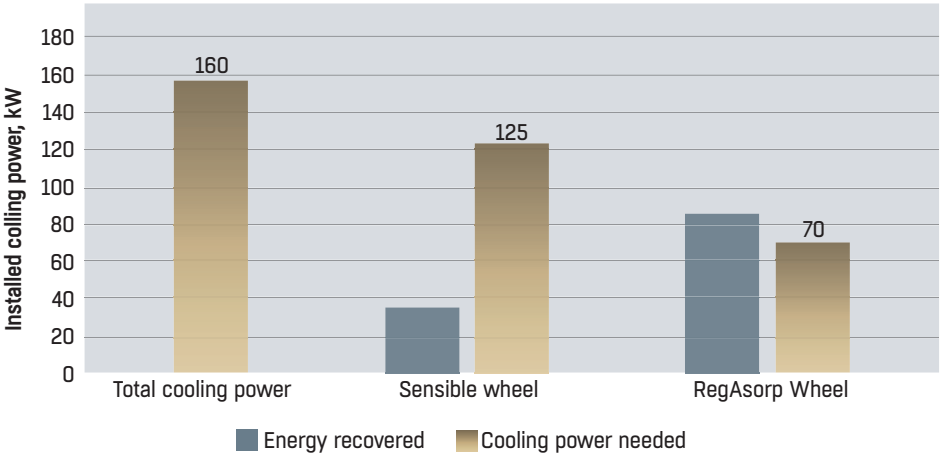
Frost will not accumulate in the wheel and maximum heat recovery will be available all the way down to around -24°C saving both energy costs and installation costs.



In chilled beam systems it is necessary to control the humidity of the air to avoid condensation. Usually this means reducing the supply air humidity to approx 8 g/kg in order to keep the air dew point in the room below the chilled beam temperature.

The following example compares the installed capacity and the energy consumption for a unit with a non hygroscopic wheel and a RegAsorp rotor. The same conditions are used in both cases.

The cooling power needed to cool air from 26°C, 60% (21°C wet bulb) is app 32 kW for each cubic meter per second of air. For 5 m^3/s that means 160 kW. Below we see how we can reduce that with a rotary heat exchanger.

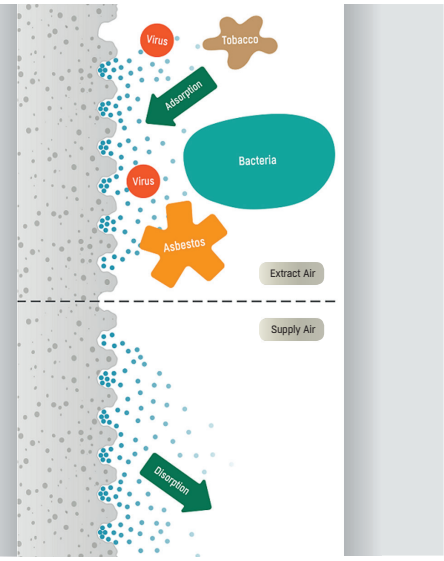


The installed cooling capacity is reduced from 160 kW to 70 kW and the energy consumption is reduced by 1700 kWh. This brings a significant reduction in the size of the chiller and cooling energy savings.

REGASORP - **MINIMAL** CARRY OVER

The RegAsorp rotor has minimal carry over on the rotor surface. It is treated with a Molecular Sieve desiccant, that captures water by using adsorption principle, but does not collect bacteria.

The pores on the rotor surface are just a couple of Ångström in diameter. A water molecule is able to be transferred in the desiccant but since bacterias are larger than 1000 Å they will not be transferred on the surface.



THE **REGASORP ROTOR** BRINGS BENEFITS IN ALL SEASONS

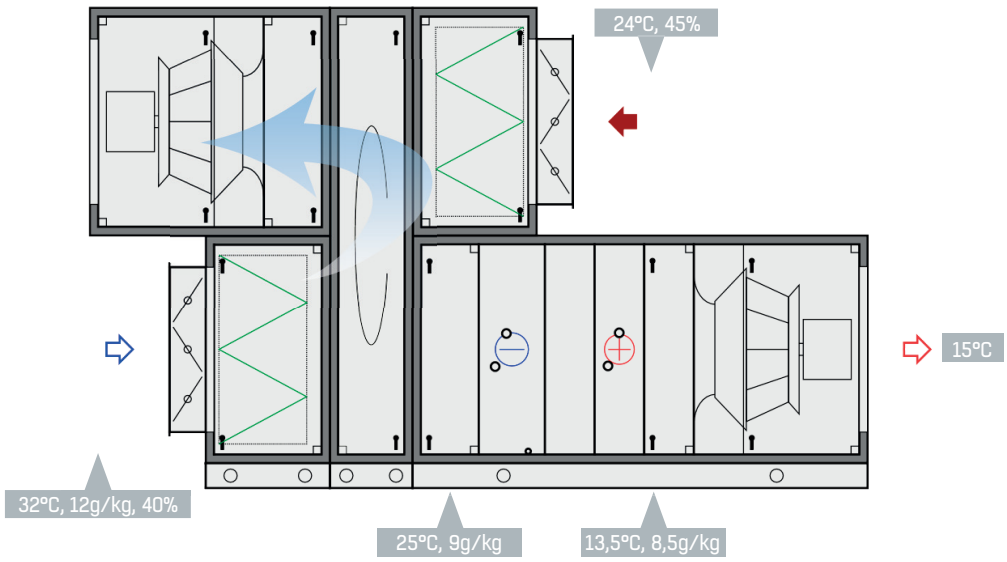
CASE 1 - SUMMER CONDITIONS

When cooling warm outdoor air, the moisture in the air condenses to water.
This takes a lot of energy and requires that the chiller is sized to managed that.

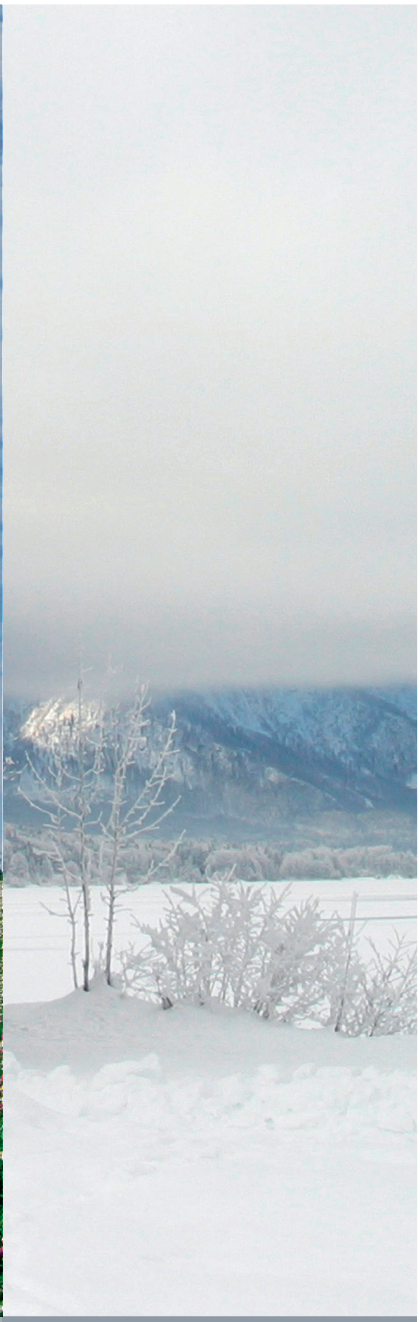
This is especially important in systems requiring special control of the humidity.
Chilled beam systems are a common example.

HOW?
The RegAsorp rotor is able to dehumidify and cool the outdoor air by transfering the heat and moisture to the exhaust air.

BENEFITS
- Reduced Cooling energy consumption
- Minimizing carry-over
- Downsizing of cooling system:
  - Smaller chiller installation
  - Smaller cooling circuit: pumps, valves, pipes etc
  - Reduces refrigerant quantities in buildings



Reduction of cooling peak load by more than 50% due to efficient cooling recovery



Supply air humidity increases from 15% to 30% with a RegAsorp rotor

CASE 2 - WINTER CONDITIONS

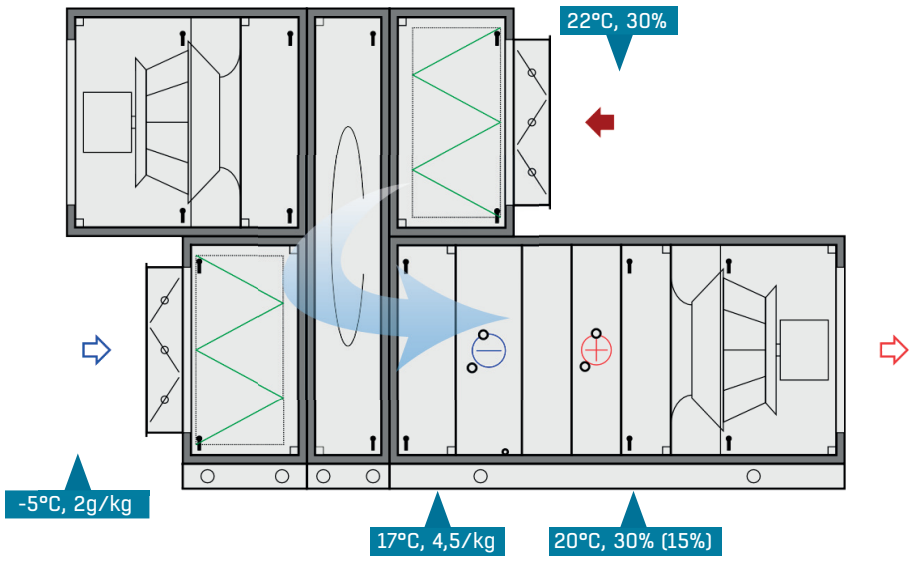
Heat recovery systems often face frost problems on cold winter days. The problem occurs when the humidity in the exhaust air condensates on the recovery system and turns into ice with the impact on reduced recovery and increased pressure losses in the device which in the end blocks the air flow totally in the AHU. To avoid this scenario most recovery systems are equipped with frost protection which cost energy and money. The RegAsorp rotor can solve the frost problem.

HOW?

The RegAsorp rotor recovers the moisture in the extract air and transfers it to the supply air which means frost will not accumulate on the rotor and maximum heat recovery will be available down to app -24°C saving both energy and installation costs..

BENEFITS

- Reduced heating energy cost by avoiding defrosting
- Reduced heating system size
- Higher moisture content in the supply air; which means better comfort and more hygienic indoor climate
- Enhanced reliability in the winter due to reduced frosting problem



ReCOOLER HP WITH REGASORP - THE **PERFECT COMBINATION**

Our ReCooler HP offers an air handling unit with an integrated DX cooling system. There is no need to mount cooling equipment on the roof of the building and installation is quick and simple as the ReCooler HP is factory tested and ready to run after local inspection requirements have been fulfilled.

With our RegAsorp rotor you you will get superior cooling recovery combined with an exceptionally high COP.

This product contains fluorinated greenhouse gas, R410A, with a GWP-factor of 2088. Refrigerant quantity: 3,8 – 11,8 kg, corresponding to 7,9 – 24,6 tonnes of CO_2 equivalent.

THE **EFFECTS** OF DRY AIR ON COMFORT AND HYGIENE

In winter time, especially in climates with low outdoor air temperature, there is an issue for most applications due to too dry indoor air.

Optimal humidity level indoors should be approximately 40-50%

The dry indoor air has an impact on humans in: Health problems like allergics, flu symptoms, dry throats etc.

ACON® SELECTION TOOL

Easy-to-use and powerful selection. ACON® is a powerful and easy product selection tool for air handling units. It is the best and most advanced of its kind on the web. It offers rapid product selection to specific project requirements and provides you with all the technical information.

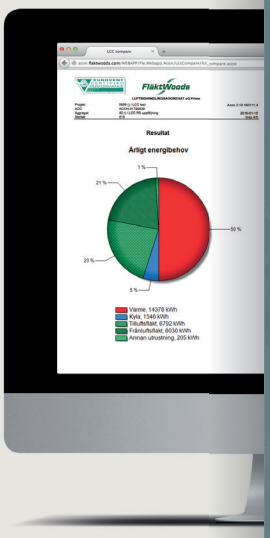
- Product dimensions
- Noise data
- Performance data
- Efficiency data
- Life cycle cost
- Product documentation
- Export of Dxf and Dwg files

LCC CALCULATIONS

To make an informed choice when making your investment in an air handling unit, the overall life cycle cost calculation is an important metric to consider.

FläktGroup has developed a sofisticated calculation tool that provides you with the yearly energy cost and life cycle cost. A large number of data sources are taken into account, including detailed climate information, heating and cooling recovery equipment and all relevant energy consumption points etc.

The LCC calculation tool is integrated in ACON for maximum ease of use.



Energy, Economy and Expertise with FläktGroup

Energy optimization is an important aspect of creating a healthy and cost-effective indoor climate, and an area in which FläktGroup have acclaimed expertise. We use the symbol e^3 to highlight products and solutions that are particularly effective. They serve a dual purpose of saving both your long-term economy and our environment.

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EXCELLENCE IN SOLUTIONS

WWW.FLAKTGROUP.COM | eQ WITH REGASORP

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

PRODUCT FUNCTIONS BY FLÄKTGROUP

Air Treatment | Air Movement | Air Diffusion | Air Distribution
Air Filtration | Air Management | Air Conditioning & Heating
Controls | Service

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or contact one of our offices