

VENTILATION

HEAT AND ENERGY RECOVERY

**THE PROMISE
THE PROOF
HEATEX**

AIR-TO-AIR HEAT EXCHANGERS

HEATEX

INDOOR AIR QUALITY AND AIR POLLUTION CONTROL

Proper ventilation is essential for healthy indoor air quality. Adequate indoor air quality involves many factors including heating or cooling depending on the local situation and climate, humidity control and filtration of pollutants. Health issues, such as breathing problems, can arise from air contaminated with dust, pollen or other contaminants. A poor indoor climate can also result in damages to the buildings. The indoor air quality is equally important for residential as for commercial buildings such as shopping centers, schools and offices. In industrial buildings the air can also contain harmful pollutants such as adhesives, paints and welding fumes.

AIR-TO-AIR HEAT EXCHANGERS

A well-functioning ventilation system cleans, conditions and transports the air in a building to provide a comfortable indoor climate. The incoming air must have the correct temperature and be supplied to the building without creating disturbing noise or turbulence. An air-to-air heat exchanger is an ultimate solution for recovering otherwise wasted energy. It reduces the load on the central HVAC system and thereby significantly reduce energy costs for either heating or cooling.



THE PROMISE: REDUCED ENERGY CONSUMPTION

There are many systems for heating and/or cooling air with greater or lesser energy consumption. Usually a large part of the used energy is discarded when leaving the system together with its waste products (e.g. exhaust air in ventilation systems). Implementing a Heatex air-to-air heat exchanger is an excellent way to take use of this waste energy.

Usually the exhaust air is warmer than the outdoor air, especially during winter. An air-to-air heat exchanger uses the temperature of the exhaust air to heat the temperature of the incoming cold air. In areas of the world where the conditions are the opposite, the system can be used to cool the supply air instead. Depending on application, it is possible to save between 40 and 75 % of the energy used with regular systems for heating or cooling air.

THE PROOF: RELIABLE AND EFFICIENT

Heatex exchangers are ideal for providing comfortable interior environments. We have decades of experience in designing and manufacturing heat exchangers. This expertise allows us to design heat exchangers with unique features required for buildings in various climate and environmental situations. We have also have solutions for dehumidification of the air through condensation to eliminate the risk of dampness and mold growth, and solutions suitable in buildings where corrosive gasses are mixed into the air.

Reducing energy costs is also a way of reducing one's carbon foot print. We can rightly claim that our commitment for energy efficient heat exchangers makes a valuable contribution to alleviating the worldwide environmental issues.



COMMERCIAL VENTILATION

Adequate indoor air quality involves many factors, including heating or cooling, depending on the local situation and climate, humidity control, and filtration of pollutants. Health issues, such as breathing problems, can arise from air contaminated with dust, pollen, or other contaminants. A poor indoor climate can also result in damages to the buildings. The indoor air quality is equally important for residential as for commercial buildings such as shopping centers, schools, and offices.

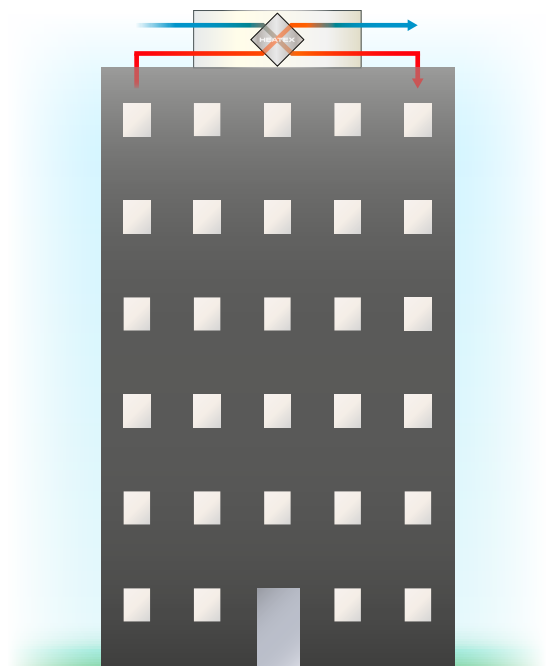
Ventilation systems play a key role to maintain healthy and comfortable indoor air quality (IAQ) in almost all buildings.

The challenge is to reach a comfortable IAQ with as little energy input as possible. This means, pressure drop should be low (less fan power is needed) and the thermal/humidity efficiency high (less energy for heating/cooling and humidity control is consumed).

At the center of a ventilation system is the air handling unit (AHU). As a minimum, an AHU includes, one or several fans in each air channel to move the air through the unit.

Filters, on either side, remove dust, pollen, etc. and protect the fans. And finally, a heat exchanger to transfer the required heat or humidity at the same time as avoiding contamination of the clean airflow.

Depending on the geographical region, the primary purpose of the heat exchanger shift between heating or cooling (and maybe also dehumidifying) the outdoor air before it enters the building.

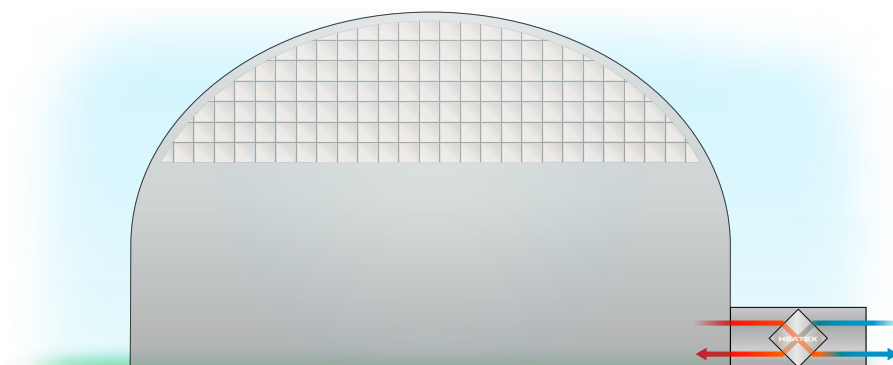




INDUSTRIAL VENTILATION

In processes where large amounts of waste heat are generated, Heatex crossflow heat exchangers can be employed to recover energy from contaminated airstreams. The recovered energy can then be used to pre-heat the incoming process air, significantly reducing overall operating and production costs. Heatex standard range keeps the internal leakage rate down below 0,1% of nominal airflow.

Many industrial and manufacturing finishing equipment, such as paint spray booths require large volumes of high-temperature air, at great energy consumption. Both Heatex crossflow and rotary exchangers are good choices for energy recovery, significantly reducing operating costs. The stability and open plate design of Heatex plate heat exchangers allows for good cleaning possibilities of built up paint contamination.





HEATEX HEAT EXCHANGERS

Our product range include many models, sizes and configurations. The application determines which Heatex heat exchanger (crossflow, counter flow or rotary) provides the best solution. Our heat exchangers are available in different materials to fit in different environments. This also applies to the sealing and coating materials.

Each exchanger is customized for its specific application to get the maximum efficiency and safe operation. There are many factors to take into consideration such as air quantities, temperatures, pressures and also the chemical composition and pollution in the exhausted air.

- **HIGH EFFICIENCY**

With Heatex exchangers, up to 90% of the heat in the exhaust air is transferred to the supply air.

- **ROBUST DESIGN**

Heatex heat exchangers are very stable and withstand high differential pressures without being damaged.

- **FULLY CUSTOMIZED**

All of our products are carefully designed to meet the demands for each specific application.

- **WIDE RANGE OF OPTIONS**

We offer an extensive range of design options regarding materials and sizes to suit various application and performance requirements.

- **TECHNICAL EXPERTISE**

Our application specialists are able to find the optimal solution for every project.

PLATE HEAT EXCHANGERS

The principles of plate heat exchangers are simple; Two neighboring plates create channels for the air to pass through. The supply air passes on one side of the plate and the exhaust air on the other side. The heat in the exhaust air is transferred through the plate from the warmer air to the colder air. The exhaust air is contaminated with humidity and pollutants, but the two airflows never mix, leaving the supply air fresh and clean.

The Heatex production concept, the double sealing concept with gluing and a mechanically fold, ensures airtight heat exchangers having low cross contamination and therefore supplying high indoor air quality. The design allows rapid and thorough cleaning and servicing. The strong aluminum plates in high standard alloy give the products a long lifetime and with no moving parts, the maintenance and service costs can be kept to a minimum. The plate exchangers are available in various material and configurations. We also have epoxy coated plates with painted frames for harsh and high corrosive areas.

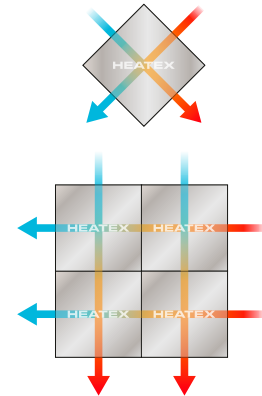
We have two kinds of plate heat exchangers, cross flow and counter flow. In a cross flow exchangers the cold and the warm air flow perpendicular to each other. In counter flow exchangers the two airstreams flow in opposite direction to one another. The longer the airstreams flow next to each other the better efficiency, which generally makes counter flow more temperature efficient than cross flow exchangers. However, the cross flow exchangers can be placed in two-step configurations which give results equivalent to those of the counter flows.

ROTATING HEAT EXCHANGERS

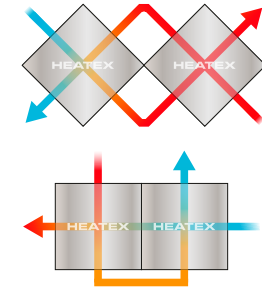
The rotating heat exchanger consist of a rotating wheel, casing and drive unit. As the wheel rotates slowly, the heat from the exhaust air is picked up by the aluminum in the matrix and transferred to the cool supply air. Rotary heat exchangers are often the preferred choice thanks to the low freezing risk as the wheels by definition defrost themselves, their small footprint and the high sensible efficiency that they provide. The possibility of adding coating to the wheel, which allows latent transfer, is another factor favoring these products.

Heatex offers a broad range of rotary heat exchangers covering the complete application span from small residential installations up to very large commercial installations. All models are made to measure to fit the specific air handling unit and there is a wide variety of well-heights to suit various performance requirements. Heatex rotary heat exchangers can be equipped with a purge sector in order to minimize the cross contamination of fresh air with exhaust air.

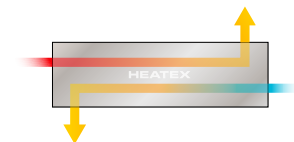
EXAMPLES CROSS FLOW ONE-STEP CONFIGURATIONS



EXAMPLES CROSS FLOW TWO-STEP CONFIGURATIONS



EXAMPLE COUNTER FLOW CONFIGURATION



AIR FLOW ROTATING EXCHANGER



TECHNOLOGY FOR THE GLOBAL CONSCIENCE

It is a known fact to all of us that the large energy consumption of today causes sincere environmental problems, for instance pollution and global warming. This gives us and coming generations not only a poorer environmental quality, but also an increase in costs for healthcare and social services as well as a devaluation of natural resources. Fortunately there is a great global environmental consciousness. Both consumers and businesses are interested in, not only reducing their expenses, but also finding environmentally friendly solutions.

On some markets, especially northern Europe, the focus on energy saving systems goes many decades back. A considerable part of the total energy consumption is used for either heating or cooling of air as such, or heating or cooling of other elements by air. Today a lot of effort is put into research for alternative and renewable energy and in various energy saving systems.

Systems using air-to-air heat exchangers give a very small carbon footprint with lower energy consumption and consequently reduced costs.

COST EFFICIENT SOLUTION

Heatex heat exchangers can reduce the energy costs significantly for all ventilation applications.

In an environment with an average annual temperature of +8 °C, the running costs of the ventilation system can be reduced to less than 20% when using a heat exchanger compared to other solutions. This calculation is based on 4 368 operating hours, an airflow of 1 m³/s and a heat exchanger with 80% efficiency.





THE PROMISE:

With Heatex as the leader of air-to-air heat exchangers and heat recovery ventilation solutions, you will have the best possible partner for your heat transfer applications.

THE PROOF:

With a global team of sales and technical support, Heatex responds quickly to inquiries with the optimized solution for your application.

All Heatex products are custom made and designed to match the customer's technical specifications. Heatex Select, always available on-line for free at heatex.com, enables accurate calculations of the performance of a product under different conditions.

We have a well established reputation of being honest and reliable and hold several certifications covering product and operation quality worldwide, for example Eurovent, GOST, AHRI, RLT-Hygiene and ISO 9001.

Moreover, our products are field tested and proven to have very high efficiency and a fast ROI.

Being the leader, Heatex will always provide the best expertise to find a solution for your application.



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Heatex is a global manufacturer of air-to-air heat exchangers. The company was founded in the 60's, and incorporated into Heatex AB in 1987.

The company uses advanced algorithms to design and improve its products. These are based on scientific calculations within fluid dynamics, the fundamentals of heat transfer and fifty years of practical experience of heat transfer processes.

Heatex products are well known for providing high energy recovery and for enabling a fast return on investment. The company has a history of steady growth and has over the years established itself as the market and technology leader of air-to-air heat transfer.