



Improve profitability and  
animal welfare in  
poultry farming

with the all-in-one heat recovery solution from Munters!



# Effective heat recovery with rotary heat exchanger

case study in Vester  
Snogboæk, Denmark:



The air-air heat exchanger »Heat-X« Rotate is used for the heat recovery of the exhaust air of poultry stables. The design is very compact due to the straightforward construction with direct air flow and without preliminary filtration and generally differentiates itself from the solutions of our competitors.

## Heat-X rotate means healthier animals

The core of the system is formed by a rotary heat exchanger, which with its fully automatic rotor cleaning safeguards optimal efficiency even in the event of a high degree of dust generation. Thanks to the easy access via service doors, hygienic and quick cleaning is possible at the end of the fattening period. The suction of fresh air is performed via a generously dimensioned weather protection grid with streamline designed lamellas, which prevents the penetration of rain as well as leaves and birds.

»Heat-X« Rotate is available in different variants. The smaller variant offers a fresh and exhaust air flow of 10,000 m<sup>3</sup>/h, the larger variant of 20,000 m<sup>3</sup>/h. Depending on the design, both sizes are suitable for standard truck as well as container transports.

- Healthy animals with a strengthened immune system: clean air, no germ formation and dry bedding
- Higher profit margins due to lower heating costs and electricity consumption
- Lower environmental impact due to reduced CO<sub>2</sub> emissions
- Up to 44% less ammonia emissions



# Saving potential

Calculate your personal saving potential:



With our Heat-X Rotate savings calculator you can easily calculate your heating cost savings from home. The Heat-X Rotate offers an innovative solution for effective heat recovery of exhaust air from poultry houses. This saves up to 70% on heating costs and improves animal health. Take advantage of the government funding opportunities for your investment in a heat exchanger!

Send us an email to [info.reventa@munters.de](mailto:info.reventa@munters.de) and we will calculate the heating cost savings for you or help yourself by scanning the QR code.

## Example calculation for cost savings in poultry farming (42 days)

Average heating capacity per fattening period: e.g. 250,000 kWh  
 Average gas price: 0.060 € to 0.085 €/kWh  
 Average higher electricity consumption per fattening period: e.g. 8,100 kWh  
 Average price of electricity: € 0.24 to € 0.29/kWh

Annual cost savings through heat recovery with 7.4 fattening periods:

Electricity price	€ 0.060 / kWh	€ 0.065 / kWh	€ 0.070 / kWh	€ 0.075 / kWh	€ 0.080 / kWh	€ 0.085 / kWh
€ 0.24 / kWh	€ 8.724	€ 9.599	€ 10.474	€ 11.349	€ 12.224	€ 13.099
€ 0.25 / kWh	€ 8.650	€ 9.525	€ 10.400	€ 11.275	€ 12.150	€ 13.025
€ 0.26 / kWh	€ 8.576	€ 9.451	€ 10.326	€ 11.201	€ 12.076	€ 12.877
€ 0.27 / kWh	€ 8.502	€ 9.377	€ 10.252	€ 11.127	€ 12.002	€ 12.803
€ 0.28 / kWh	€ 8.428	€ 9.303	€ 10.178	€ 11.053	€ 11.928	€ 12.803
€ 0.29 / kWh	€ 8.354	€ 9.229	€ 10.104	€ 10.979	€ 11.854	€ 12.729

In total, up to 45t of CO<sub>2</sub> will be saved.

# Functional principle of »Heat-X« Rotate with inlet nozzles

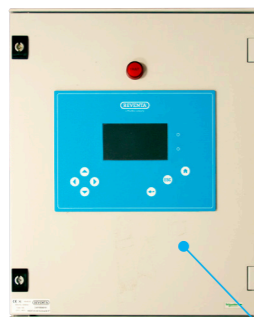
There is no doubt that farmers see the main benefit of heat recovery as being that less heat is wasted, which in turn means less money spent on heating costs. Munters Heat-X Rotate not only saves on heating costs, but also ensures farm profitability by reducing energy consumption, CO<sub>2</sub> and ammonia emissions and labour, as well as improving air quality.

## Advantages

- Compact design, low transportation costs
- High heat recovery ( $\approx 70\%$ )
- Low energy consumption due to low pressure loss + EC-fans
- Condensation free
- Easy maintenance and cleaning - high hygiene



Product video



## Controller

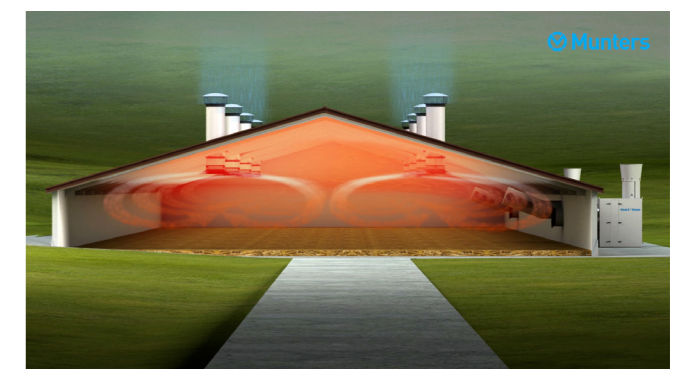
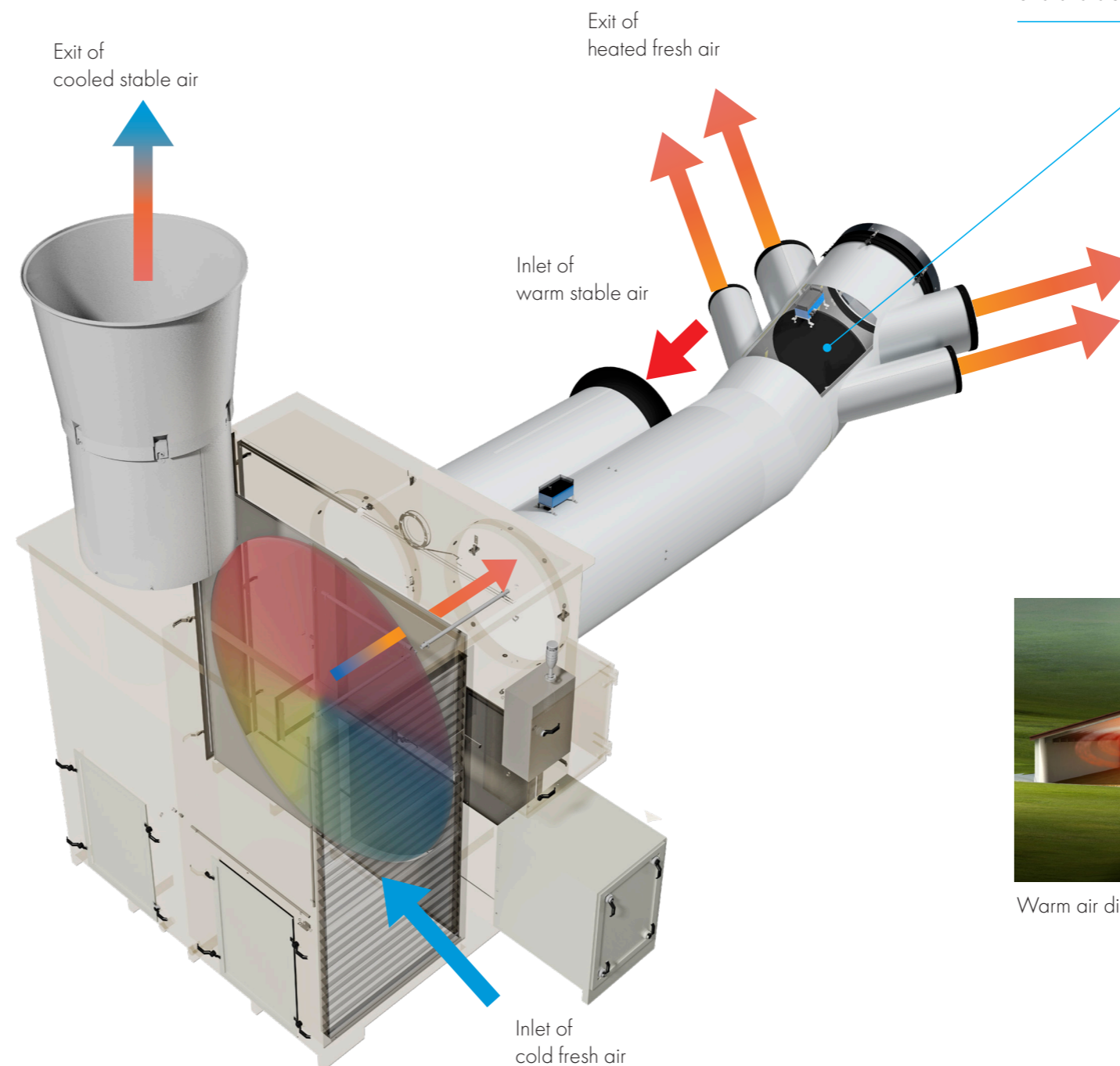
The included controller takes over the control of the corresponding fresh air flow. This ensures the optimum operating point for the heat exchanger.

In addition, the controller controls the cleaning, the monitoring of the door switch contacts, the manual operation as well as the fresh air temperature at the outlet of the heat exchanger and gives an alarm signal in case of malfunctions.

The weather guard for externally mounted control and regulation components for the »Heat-X« Rotate with removable cover for easy access is optional available.

## »Heat-X« Rotate inlet nozzles

In a poultry stable, the installation of the »Heat-X« Rotate is generally performed laterally to the building. The supply can take place e.g. via an inlet nozzle specially developed for this application. In this manner, sufficient throwing ranges and the avoidance of drafts in the animal area.



Warm air distribution of the inlet nozzle



## Control of the »Heat-X« Rotate

As standard, each system is delivered with a specifically developed control, which completely assumes control of the drive or the monitoring of the rotating storage mass and the control of the fresh air.

The exhaust air flow of the »Heat-X« Rotate is controlled by the stable climate computer via a 0-10 V signal. The controller included in the delivery assumes control of the corresponding fresh air flow. This guarantees the optimum operating point for the heat exchanger. Additionally, the control unit controls the cleaning, monitoring of the door switching contacts, the manual operation as well as the fresh air temperature at the outlet of the heat exchanger and provides an alarm signal in the event of malfunctions.

## Automatic cleaning



»Heat-X« Rotate possesses excellent self-cleaning properties due to smooth surfaces and the counterflow principle. In the poultry farming for example the amount of dust is very high. Therefore, the self-cleaning properties of the »Heat-X« Rotate are supported by a cleaning carriage, which is fitted with pneumatic nozzles. This cleaning carriage is activated in the event of the exceeding of an adjustable differential pressure. So the air flows unimpeded through the inlet or outlet sides of the rotating storage mass.

In the event that the cleaning of the rotor with water is desired in addition to this, e.g. after the animals are removed from the stable, the carriage is already fitted with a nozzle that can be connected to a high-pressure cleaner. The generated washing water can drain to the outside through the opened service openings.

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