rekupex

ENTHALPY EXCHANGERS

OPERATIONAL AND INSTALATION MANUAL

CLEANING MANUAL

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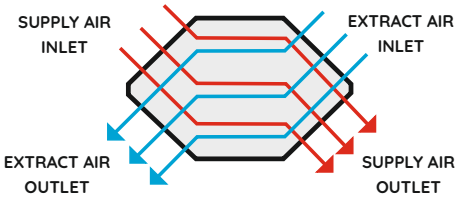
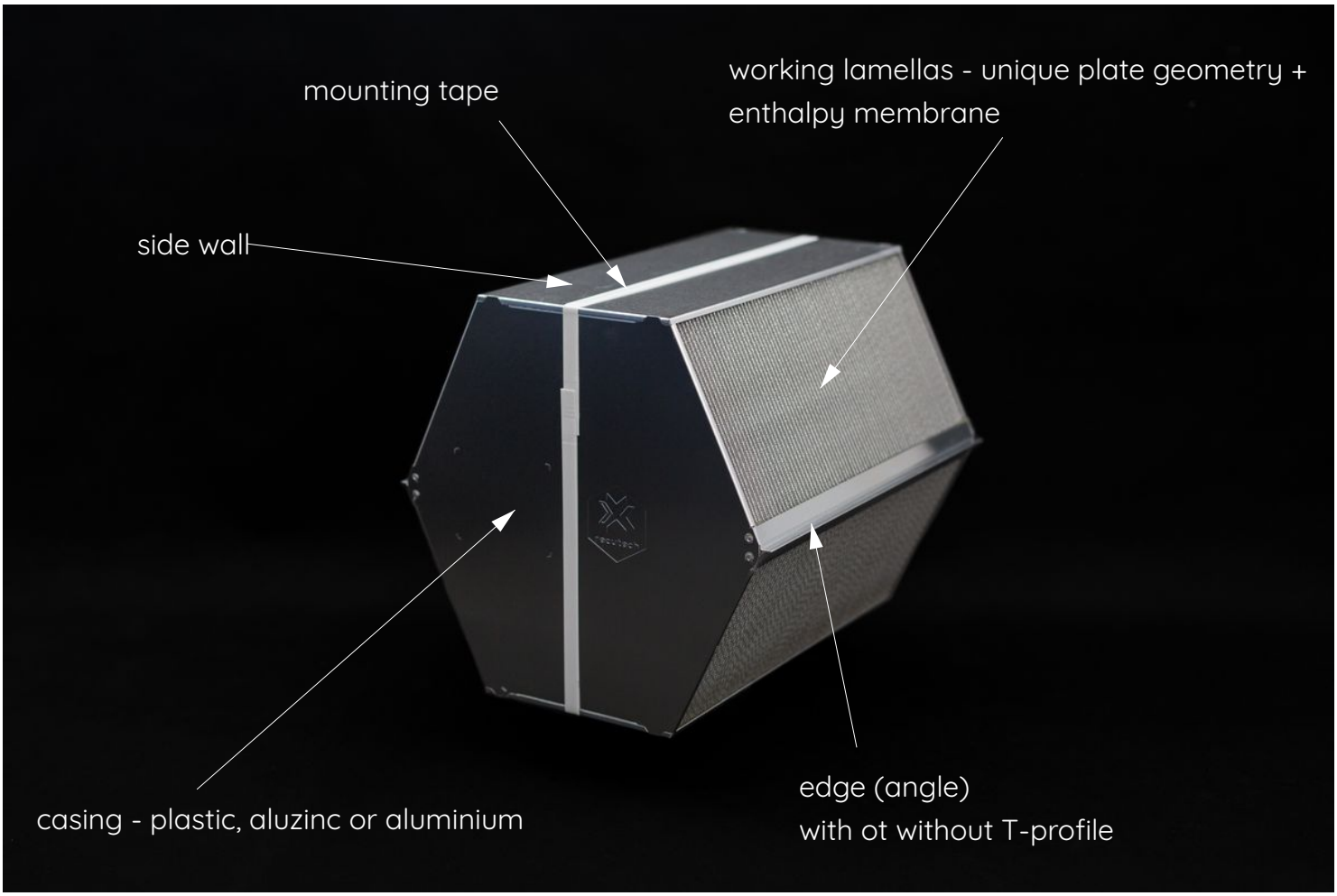
DESCRIPTION

The air-to-air plate exchanger is utilized in heat recovery units to transfer both heat and moisture from exhaust air. The recovered heat is redirected back into the space, contributing significantly to reducing energy consumption. In the case of an enthalpy air-to-air exchanger, moisture is transferred through a specialized membrane, which helps retain humidity in the ventilated area.

The efficiency of the exchanger depends on the external temperature and the specific type of exchanger



The working principle of a counterflow plate heat exchanger is straightforward. Within the exchanger core, two air streams flow along adjacent lamellas in opposite, crosswise directions, as illustrated beside



GENERAL GUIDELINES

> Avoid direct UV rays.
> Avoid exposing the product to aggressive environments: acids, abrasives, etc.
> Avoid exposure to high temperatures and fire.
> Avoid heavy mechanical impacts on the product.
> Do not apply force or mechanical stress to the core plates.
> Do not toss or drop the product.
> Do not twist or crush the product.
> To remove/mount and move the product, carefully use the mounting tape.
> Do not use any lubricants during installation/dismantling of the product.
> Do not completely switch off the ventilation unit during winter—keep it running at minimum airflow for continuous ventilation.

OPERATING CONDITIONS::

Operating Temperature [°C]: -25 to +50*
Maximum Pressure Drop [Pa]: 300
Relative Humidity [%]: 0 to 100
Maximum Recommended Flow Rate [m/s]: 3*

Your heat recovery unit must be equipped with protection against the exchanger freezing.

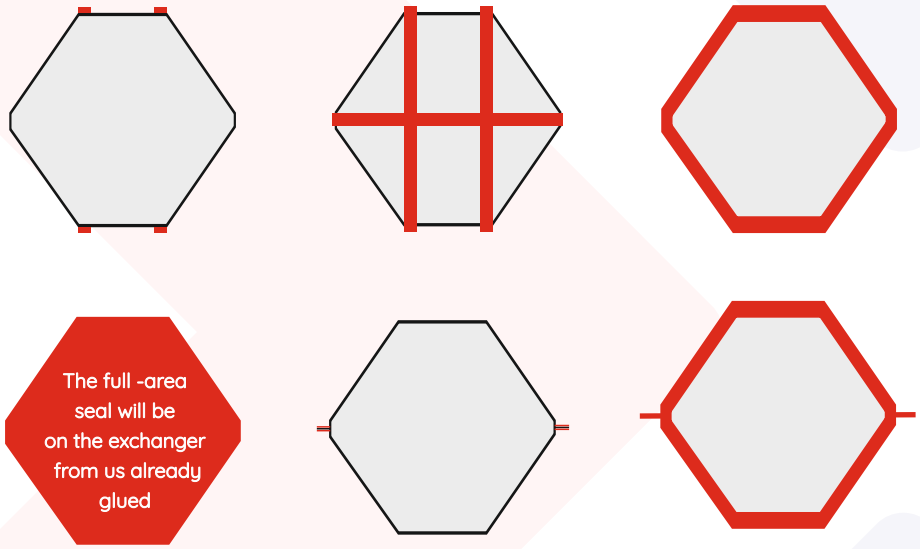
STORAGE GUIDELINES:

Storage temperature should be between 5°C and 25°C.
Avoid exposure to direct UV rays.Store in a dry, dust-free environment.
Maintain a minimum distance of 1 meter from any heat source.
Do not store near solvents or chemicals that may react with the product.
Do not place other pallets or objects on top of the box, as the products are not designed to withstand mechanical stress.
Ensure the products and packaging are securely fastened when moving.
Unpack the product carefully to avoid damage.
Do not tilt or store the pallet with heat exchangers more than 5° from the vertical axis.

SPECIAL MODIFICATION AND SEALING TAPES

Individual ventilation equipment manufacturers adjust the exchangers and seal with sealing tapes.
The sealing tapes have either a sealing function on the exchangers or as a drip edge.If the heat exchanger has a sealing tape glued in your device, you will get it attached in the shipment.

POSSIBLE POSITION OF SEALING TAPE



HOW TO STICK THE SEALING TAPE?

Sticking the tape to your new enthalpy heat exchanger is primitive.

Proceed as follow:

> Prepare the sealing tape, scissors, ruler, marker and knife.

> First measure the position of the sealing tape on your original (non enthalpy) exchanger.

> Then measure the exact location on the new enthalpy heat exchanger (you can draw the exact position with a marker).

> Then take the sealing tape and stick the seal to the same position as the original non enthalpy exchanger according to the signs drawn.

> You can bend the seals into mild arches.
> Always end the seal into sharp angles with a knife and continue again with a close new piece.

EXAMPLE OF INSTALLING THE PRODUCT INTO A UNIT

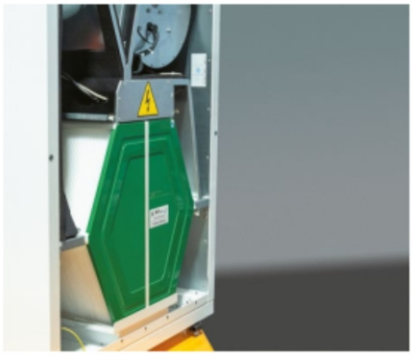
this is a general installation guide.
However, always follow the manufacturer's instructions for your particular ventilation unit.

> Align the heat exchanger with the mounting surface and carefully push it straight into the unit.

> Ensure there are no obstructions inside the unit that could interfere with the installation (e.g., resistance from internal components, damage, or unusual noises).

> Continue pushing the heat exchanger until it reaches its final position.Visually inspect the heat exchanger once installed to confirm a secure fit. Check for any looseness, potential unwanted vibrations during operation, or any mechanical damage to the stack or heat exchanger that may have occurred during installation.





> If you are not sure about the installation of the heat exchanger, please contact a professional company.
> If you have any problem during instalation please contact a professional company

CLEANING

> Please check properly filter cleanliness
> If your filters are always clean, just clean the heat exchanger once a year
> Use the mounting tape carefully when removing, installing, or moving the product.
> Avoid twisting or compressing the exchanger
> Avoid throwing or dropping the product.
> Do not use sharp tools or hard brushes during cleaning, as they may damage the exchanger
> Avoid using high-pressure washing for cleaning.
> Do not use cleaning chemicals that are not specifically suited for this procedure.
> Avoid using open flames or high temperatures when drying the product.
> Avoid applying force or mechanical stress to the core plates.

CLEANING PROCEDURE

> You can use a vacuum cleaner with a soft brush attachment to remove dust, dirt, and other impurities.
Adjust the suction power carefully to avoid causing mechanical damage to the core (plate stack), ensuring that dust and dirt are removed from all exposed surfaces in the working area (core, plate stack) mechanical damage to the stack or heat exchanger that may have occurred during installation.

If using a vacuum cleaner does not achieve the desired result, proceed to rinse the product with water by following the steps outlined below.

1. Place the product in a suitable container (basin, bathtub, shower tray, etc.).

2. Gently rinse the product under running clean water on all sides.
NOTE: Standard tap water pressure (0.3 – 6 bar; 0.03 – 0.6 Mpa)is recommended to avoid unintentional damage to the core.

3. For added effect, fill the container with water, dip the product in the water and with smooth reciprocating movements run the water through the core (plate stack) to remove any dust, dirt or other impurities.

4. Remove the product from the container.
It is allowed to dry the product planes with a dry cloth, except for the working space (stack of plates, core).

5. In the event that the membrane adheres during the cleaning procedure, allow the water to drain completely by alternately turning the product upside down.

Then use a domestic hair dryer of approx. 3000 W to blow through the core (working space) in coolingmode several times until you are sure that the membrane has stopped sticking.

6. Leave the product to dry in a well-ventilated room for 48 hours.
Before installing the product in the unit, make sure that there is no moisture left in it

Winter operation and unit shutdown

During winter, it is not recommended to completely switch off the ventilation unit. The unit should remain in operation at least at a minimum airflow level for continuous ventilation.An enthalpy heat exchanger transfers not only heat but also moisture. During normal operation, moisture is continuously managed. However, if the unit is suddenly switched off, residual moisture may remain inside the exchanger, including in the fresh air channels.

This may result in:

> mold growth
> unpleasant odors
> reduced hygiene of the ventilation system.

Recommendation:

> Keep the unit running at minimum airflow during winter.
> Ensure continuous air exchange even when the building is unoccupied.

Unit shutdown during winter:

Remove the enthalpy heat exchanger from the unit.

1. If the unit must be completely turned off, proceed as follows:

2. Clean it according to the maintenance instructions:

> vacuum with a soft brush
> rinse with clean water (max. 50 °C).

3. Allow the exchanger to dry completely.

4. Then:

> reinstall it into the unit, or
> store it in a dry and clean place.

Warning

Never leave a wet or dirty exchanger inside a non-operating unit.
This may lead to permanent damage and loss of performance

FAQ

HOW MUCH DOES MOISTURE INCREASE?

The values between 10-15% are real. In some cases it can be up to 30 %. Lower values can then be improved by measures such as humidifiers, plants or other moisture sources

HOW LONG DOES IT TAKE TO INCREASE THE HUMIDITY?

Increasing humidity can take up to several weeks. This depends on different factors.
1. How dry the building structure is. Dry walls, ceilings, etc. initially absorb a lot of moisture, which is only slowly released back into the atmosphere.
2. How much humidity is available for renewal. Make sure you bring a lot of moisture to the rooms. Dry with laundry, plants or humidifier.
3. What is the weather like? If it is moist, the effect can occur faster. If it is cold and dry outside, it will take longer, depending on the situation, it may take several weeks or months. However, it should certainly be reflected in the next heating period.

DOES IT MAKE SENSE TO USE AN ENTHALPY HEAT EXCHANGER ALSO IN SUMMER?

Yes, an enthalpy heat exchanger can be used efficiently throughout the year. While in winter it supplies dry inner air with moisture, in summer it is exactly the opposite. Enthalpy heat exchanger keeps the air humidity in the room at a pleasant level all year round. It is also recommended to remove the entalpical heat exchanger, clean it with water and re -insert it once a year.

IS IT NECESSARY TO ADJUST THE ELECTRONICS AFTER INSTALLATION OF THE ENTHALPY EXCHANGER?

No, you can start the system immediately after installation.

IS THE HEAT EXCHANGER HYGIENICALLY SAFE?

You can be sure that very high quality standards are set in the production process.
The product has been tested for this purpose, you will receive the appropriate certificate on request.

WHAT ABOUT MOLD FORMATION IN AN ENTHALPIC HEAT EXCHANGER?

Since an enthalpic heat exchanger also transfers humidity, it might seem that the risk of mold is higher. In reality, however, all moisture is carried away with the fresh air, so there is no risk of mold growth.
Our recommendation is to never switch off the unit during the winter months, so that moisture is continuously removed. If you still need to shut down the unit, remove the exchanger, rinse it with clean water, dry it thoroughly, and only then reinstall it.

MY HEAT EXCHANGER AFTER INSTALLATION SMELLS, WHAT CAN I DO?

Easily noticeable “new odor” in our exchangers is due to the fact that we use different materials that are connected to each other by means of a specific joining process. They have certain own odors that can sometimes be perceived more and sometimes less. This is not a reason for complaints because it is caused by our production process and materials used.

Set the ventilation device to the highest air exchange rate and repeat until the odor disappears

However, these odors disappear during use during a very short period of time if the exchangers flow through the air. We performed our own tests in which the smell (which is only slightly apparent) has reduced significantly after 24 hours. In addition, there must be enough moisture sources in the house (eg drying of laundry, showering, etc.) so that the entalpical heat exchanger can absorb this air and pass it to the outdoor air. This process reduces odor.

In addition to such odors, odors from the outside can also enter the interior through the ventilation equipment, transmission through the membrane cannot be ruled out. These odors can stick and last for a long time. It can also be odors from other rooms such as smoke, garlic, onions. The procedure is the same as for factory odors. (we recommend the use of a hood if it is about smells from the kitchen)

Unknown odor: If the odor accumulates and becomes prominent and does not evaporate after several days, contact your service technician. Before this step, check the air ducts and filters to see if the odor is coming from outside the heat exchanger.

THE HEAT EXCHANGER SURFACE IS A BIT STICKY, IS IT NORMAL?

Regarding the adhesion we can confirm that it is a melting adhesive that is also used in other industries and is hygienically harmless. Adhesion is caused by production and has no adverse effects.

WHY IS MY VENTILATION SYSTEM LOUDER FROM THE ENTHALPY EXCHANGER INSTALLATION?

Enthalpy heat exchanger has a different coating than a standard exchanger, creating more pressure in the ventilation system. This can affect the noise level of the entalpical heat exchanger.

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