CORE ERV - General Product Information 1

Introduction

Congratulations on purchasing your new CORE ERV - Energy Recovery Ventilation. The exchanger is classed as an Enthalpy Exchanger. In this system, in addition to the heat that is recovered from two air currents, the moisture is also automatically recovered. This takes place via a membrane inside the ERV and, in addition to exchanging energy, ensures a comfortable room climate.

The ERV is a component for energy recovery (recuperation) for ventilation devices that are designed for living spaces. The ERV is not designed for any other operating mode.

Notes on packaging and shipping

Even though an ERV appears to give the impression of being robust and sturdy, applying heavy weight to pallets whilst storing or transporting, especially in combination with high temperatures, can lead to distortion and damage.

For shipment of larger quantities, it is recommended:

- Pallets with sufficient load capacity
- No stacking over 1.6 m high
- **contactless** packaging with foil
- securing the ERV on the pallet with a lid (cardboard) and straps made of polypropylene.

For shipment of single ERV, it is recommended:

- A box suitable for parcel shipping
- - Appropriate stabilization as a transport safeguard (e.g. **very coarse (> 10 mm), non-dusting filling material, no bubble wrap!**)

The weight of your ERV varies greatly depending on the type and height. In the following table you will find the minimum requirements we recommend for cardboard packaging for each weight:

Weight [kg]	Composition	Corrugation	Width [mm]
2	135TL / 100WS / 100WS	1-fluted	4,0
3	120TL / 100WS / 120TL	1-fluted	4,0
4	135TL / 100WS / 100WS	1-fluted	2,5
5	135TL / 100WS / 135TL	1-fluted	2,5
9	120KLw / 100WS / 135TL	1-fluted	2,5
9	140TLw / 100WS / 140TLw	1-fluted	2,5
14	140KLw / 100WS / 140KLw	1-fluted	2,5
14	140KLw / 100WS / 170TL	1-fluted	2,5
18	186KL / 140WS / 135TL	1-fluted	2,5
8	135TL / 100WS / 135TL	1-fluted	4,0
9	125KL / 100WS / 135TL	1-fluted	4,0
8	125KL / 100WS / 135TL	1-fluted	1,5
14	140KL / 100WS / 170TL	1-fluted	4,0
14	140KLw / 100WS / 170TL	1-fluted	4,0
18	186KL / 140WS / 135TL	1-fluted	4,0
10	120TL / 100WS / 100WS / 100WS / 120TL	2-fluted	6,5
23	135TL / 100WS / 100WS / 100WS / 135TL	2-fluted	6,5

TL = test liner, KL = kraft liner, WS = Fluting

Additional note:

Please contact your cardboard supplier for the exact composition of the cardboard.

Notes on storage

The temperatures during the entire life cycle of the ERV must be within the limits of - 20 ° C to + 50 ° C. Otherwise there is

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a risk of distortion, the odour formation, the occurrence of leaks or other kind of damage. All of this reduces the high performance of your ERV.
Never stack multiple ERVs higher than 1.6 m and do not load an ERV with more than 30 kg. Do not load an ERV unevenly.
Always place an ERV on one of its closed surfaces.

If you replace an ERV during the summer time with an HRV, please make sure to store the ERV in a dark, cool place and take in account the maximum load mentioned above.

Notes for handling and installation
The ERV is completely ready for installation. Please do not use any additional oils, sprays, talc or other lubricants for installation in order to make the ERV easier to slide into the socket.
Please do not let the ERV fall and avoid strong forces.

The strapping attached at the factory is important. It is not packaging material and should **NOT** be removed. It is used to facilitate installation and maintenance of the ERV. The strapping is not designed to carry the weight of the ERV during continuous transport!

Due to the manufacturing process and to maintain the high technical performance, the side surfaces of the ERV are permanently sticky.
Especially at temperatures > 30 ° C, it is possible that materials, especially foils, stick to the sticky surfaces.
Avoid forcefully pressing the packaging materials to the ERV unit whilst in storage or during transport.

Notes on usage
The ERV is designed for living areas.

If you want to operate an ERV in a ventilation device, **please check beforehand whether the ventilation device is suitable for use with an ERV!**

Before an ERV can be put into operation in a ventilation device, the corresponding device settings must be made. Your ventilation unit manufacturer will inform you about the corresponding settings.
The ERV has a very high technical performance, which is due to the latest membrane technology. Thus, in contrast to the HRV, an ERV is a high-tech product due to the membrane, which reacts more sensitively to environmental influences. The membrane is highly selective regarding the substances that are transferred and is resistant to surfactants (washing chemicals). However, due to the complex composition of the membrane, there is always a risk of reaction with chemicals and a 100 % selectivity for the transmission regarding chemicals cannot be guaranteed.

If you carry out renovation work, use strong cleaners or oils for floors and furniture or other chemicals, including biologically produced, biodegradable and bio-based chemicals, in quantities > 50 ml, we recommend removing the ERV from the ventilation unit, switching off the ventilation unit and, at least for the time of work, better still a few days to a week afterwards, to replace with an HRV and to ventilate the affected area extensively with open windows and doors.

In this way, you avoid the transfer of odours (see chapter Odour) and possible damage to the membrane, which cannot be restored using the recommended cleaning procedure. The influence of chemicals can reduce the high technical performance of your ERV.
The ERV is not designed for applications in areas with a high chemical load, including workshops and production halls. The ERV may only be used in office and living areas!

We recommend cleaning the ERV with water once a year so that the high degree of moisture transmission is maintained.

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The temperatures during the entire life cycle of the ERV must be within the limits of - 20 ° C to + 50 ° C. Otherwise there is a risk of distortion, Odour formation and the occurrence of leaks. All of this reduces the high performance of your ERV.

Notes on cleaning

A dirty ERV can be cleaned and disinfected. You can find detailed information on the washing and disinfection process in our cleaning instructions.

Notes on disposal

Please dispose of a visibly soiled ERV, which can no longer be cleaned, as well as a damaged ERV or those that are to be disposed of for reasons of age by putting them in the household waste bin.

Notes on shelf life

The ERV will lose a small part of its high technical performance in the course of its life cycle. This is due to the aging of the materials and different levels of environmental influences. The composition of the airflows have a strong influence on the aging of the ERV, which is why the ERV is only designed for residential areas.

An ERV **can be operated for up to 10 years without interruption** if the conditions under the instructions for handling, use and storage are complied with. In the case of storage, the storage time is deducted from the specified 10 years of operation life. The 10 years start from the date of manufacture (see type plate on the ERV).

Notes on materials

The ERV consists largely of high-quality polystyrene and a small part of adhesive and sealing material. Some ERV types have a metal housing and / or additional aluminum side grilles instead of the plastic housing, which do not affect the performance.

Some of the adhesives used are permanently sticky, which is why sticky surfaces or stickiness on the inside can still occur. This is not an indication of reduced quality or a manufacturing defect

Notes on conformities / certificates / standards

Our ERV comply to the following conformities / certificates / standards:

Hygiene standard:	DIN ISO 846
Fire standard:	EN DIN 13501, ISO 11925 (Class E)
Quality management:	DIN ISO 9001:2015

Notes on odour

An ERV consists exclusively of non-metabolizable plastics, tested in compliance with the hygiene standard DIN ISO 846. This means that no biofilms or mold shall be formed in an ERV under the conditions of use specified in the respective technical product data sheet. Therefore, odours due to mould and/or bacterial infestation shall not occur. However, if you suspect mould and/or bacterial infestation, please follow the necessary steps for disinfecting according to the cleaning instructions for ERV.

In addition to the odours caused by microorganisms, other odours may arise when using an ERV. Please find here the 4 main types of smells with the corresponding recommended actions.

1. Freshly produced
    a. Smell plastic
    b. Evaporates after a few days of ventilation
    c. Action: Set the ventilation device to the highest air exchange rate when you are not at home and repeat the process until the odour evaporates.

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2. Odour due to downtime / storage
    a. Smells Musty to "chemical"
    b. Evaporates after a few days of ventilation
    c. Action: Set the ventilation device to the highest air exchange rate when you are not at home and repeat the process until the odour evaporates.

3. Odour transmission (Exchange of odours in the air currents via the membrane)
    a. Smell depending on the smell transmitted and smells from outside or from other rooms (very critical onions and garlic, smoke? Tar?)
    b. Evaporates after a few days of ventilation
    c. Action: Set the ventilation device to the highest air exchange rate when you are not at home and repeat the process until the odour evaporates. (We recommend an extractor hood, especially if there are kitchen smells!)
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4. Odour due to unknown influences / damage
    a. Odour undetermined (source unknown)
    b. Builds up more and more over time and does not dissipate after a few days or weeks.
    c. Please contact your service technician. You can check a number of parameters yourself in advance: checking the device settings, air distribution and filter systems.

In addition to odours from the inside, odours from the outside can also get into the interior via the ventilation system. These odours can be "picked up" by the ERV and linger for a long time.
With the products HRV and ERV there can be a small amount of odour transmission due to air exchange through leakage. However, this exchange takes place to such a small extent that only substances with a very low odour threshold can be perceived.

The risk of odour transmission is slightly higher with ERV because, in addition to leakage, transmission via the membrane cannot be 100% ruled out. The membranes we use are technically of a very high standard and very selective with regard to water molecules. This makes it difficult for other molecules, e.g. VOC (volatile organic compounds), to pass through the membrane.
Measurements show that, depending on the chemical substance class and molecular size, organic compounds up to 99% are blocked by the membrane.

Notes radioactive noble gas radon
When uranium and radium are present in varying degrees in all soils and rocks decay, radon is produced, which spreads through the soil and finally reaches the earth's surface. Radon also reaches the interior of houses from the subsoil of buildings, where it can accumulate. This can lead to high radon concentrations, which are hazardous to health, especially if the room is not ventilated very often.

Radon concentrations in the soil, in the air and indoors vary locally and regionally.

The membrane of the ERV is permeable to air and thus also to noble gases such as radon to a certain extent. However, due to the membrane permeability, the exchange of radon from supply and exhaust air is far below the exchange of air-air due to the average leakage of an ERV or the ventilation system itself.
By using a ventilation system in general, you ensure that more fresh air gets into the interior and that accumulation with radon, which can lead to a health hazard, can be prevented. All of this is independent of whether you run an ERV or an HRV in your ventilation system.

Notes Use on ships, coastal areas and islands
The ERV is a component for energy recovery (recuperation) for ventilation units designed for living spaces. However, the composition of the airflows has a strong influence on the aging of the ERV.

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Due to the increased salt content of sea air, deposits can increase, which can affect the performance of the ERV. In general, heavily soiled heat exchangers show a significant reduction in moisture transfer. Previous studies give no indication that the membrane is damaged by the increased salt content in the air.
We recommend cleaning the ERV with water once a year so that the high degree of moisture transmission is maintained.
In addition to odours from the inside, odours from the outside can also get into the interior via the ventilation system. These odours can be "picked up" by the ERV and remain for a long time.

Notes on quality control
Every single CORE ERV exchanger goes through a 100% quality control check before it leaves our factory. Our company is certified according to DIN ISO 9001: 2015.

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