



**ORCA MAXI**  
CENTRAL VENTILATION SYSTEM  
WITH HEAT RECOVERY

Product Catalogue



**Small change.  
Big savings.**



# Better ventilation. Healthier living.

Installation of the central ventilation system with heat recovery Orca Maxi will bring freshness to your home and set up better comfort for concentrated work and learning. It will also enable a healthy living environment without mould and respiratory problems or allergies.

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**New modern buildings demonstrate high airtightness due to reduction of heat loss, but this is precisely the main reason why ventilation is necessary. Air quality is one of the key features of the living or work space, crucial for everybody to feel well, sleep well and be able to concentrate. This is achieved by using a ventilation system.**

In rooms where ventilation is not well regulated, an elevated air temperature, a high concentration of carbon dioxide, moisture, often unpleasant odor, and in some cases even increased radon concentration can occur. Living in such spaces may not only be unpleasant, it can also be unhealthy.

## **NATURAL VENTILATION**

Medical research suggests that it is necessary to ensure the change of air at least once per two hours; practically speaking, we should leave a window open in each room from 5 to 7 minutes per hour. However, this is impossible, because the entire family is often away from home, as well as waking up during the night for ventilation would not be pleasant at all. Additionally, such practice would be energy wasteful, as during ventilation in winter the heat is lost.



## RECUPERATION

The heat is transferred from the exhaust air to the incoming air. The flows are not mixed with each other.



## BY-PASS

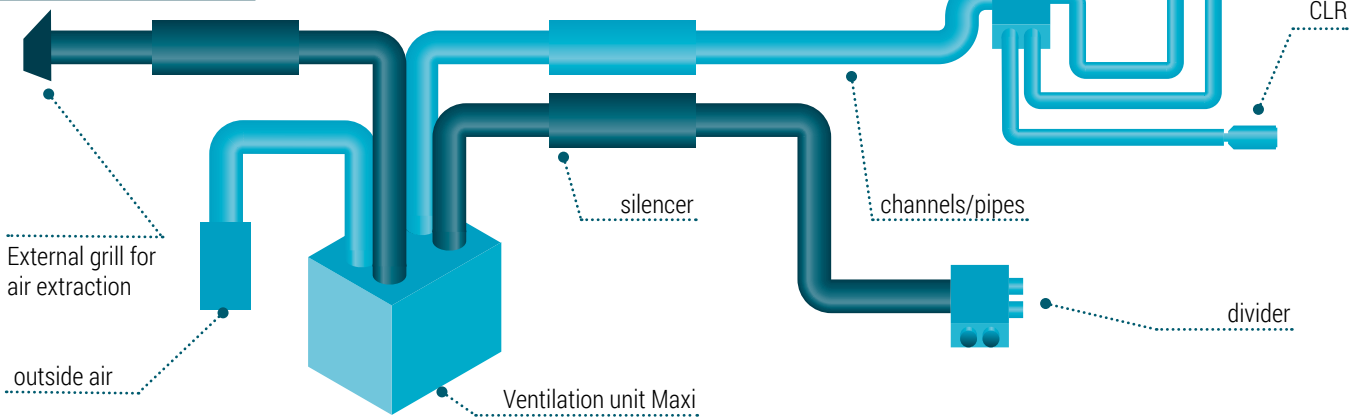
By activating the by-pass, the flap allows a passage of fresh air from the outside past the heat exchanger.

## HEAT RECOVERY

Since in winter we heat the rooms, we surely would not be comfortable with losing the energy we pay for to ventilation. Therefore, all Orca's ventilation systems include an installed recuperator - a system that returns heat from the exhaust air into the room.

The recuperator is actually a compact ventilation device, which, due to a special heat exchanger, returns up to 95% of heat of the exhaust air. With this kind of ventilation, fresh air is always provided in the room. With this we only lose about 5% of the heat energy. The electrical consumption for the operation of the recuperator is minimal in relation to the savings it generates.

The recuperator is a heat exchanger, where the outlet air transfers its heat onto the inlet air. The fan in the recuperator regulates the flow of the inlet and outlet air, and the filters regulate the purity of the air. If the outlet air cannot heat the inlet air sufficiently, the recuperator can be fitted with an electric preheater for inlet air.



## A VENTILATION SYSTEM BENEFITS YOUR HEALTH

Without a ventilation system many unpleasant guests may appear in your apartment, possibly causing the development of various diseases:

- **Wall mold**, resulting from moisture in a single room of the apartment, from where its colonies rapidly expand to other spaces,
- **mites**, small and invisible organisms that can quickly cause respiratory problems,
- **pollen**, a well-known allergen, which we cannot get rid of in the spring, but we can at least resort to a ventilated house,
- **dust**, of course, is accumulating despite cleaning and is often the cause of respiratory problems, allergies, or even asthma,
- **harmful gases**, caused by the pollution of the outside air, which are produced mainly in winter, are also harmful for the respiratory system and can be very dangerous in the long term,
- **carbon dioxide**, that occurs as a result of the inhabitants' breathing in normal or increased activity,
- **other unwanted gases**, which occur as a result of the use of various adhesives and chemicals while building the building itself.

## WHAT DISTINGUISHES ORCA MAXI?

### RECIRCULATION / EXTRACTION OF AIR

Ventilation valves for intake and exhaust air with the possibility of adjusting the air flow.

### FLEXIBLE VENTILATION PIPES,

coated with a special antibacterial coating that prevents the formation of bacterial cultures within the pipelines.

### SILENCER

reduces the transmission of sound and vibrations from the ventilation system onto the air distribution system, thereby minimizing the spread of noise in the living areas.

### KITCHEN VENTILATION VALVE

minimizes the transition of fat vapors in the pipeline with the filter and prevents fat loading inside the pipeline.

## WHY CHOOSE ORCA MAXI

### Safety

- G4 outlet air filter for
- particle purification of 10  $\mu\text{m}$  or more (pollen, house dust, mist).
- Inlet air filter F7 for particles of size 1  $\mu\text{m}$  or more (black carbon, soot, fine powder and other foreign particles that are inhaled in the lungs).
- Top components ensure a long service life.
- Reliable assurance of a healthy environment.
- Automated indication in the event of operation fault.

### Savings

- Intelligent moisture control system that adjusts the performance according to the air humidity in rooms, where the touch screen is installed.
- Up to 95% efficiency in heat recovery.

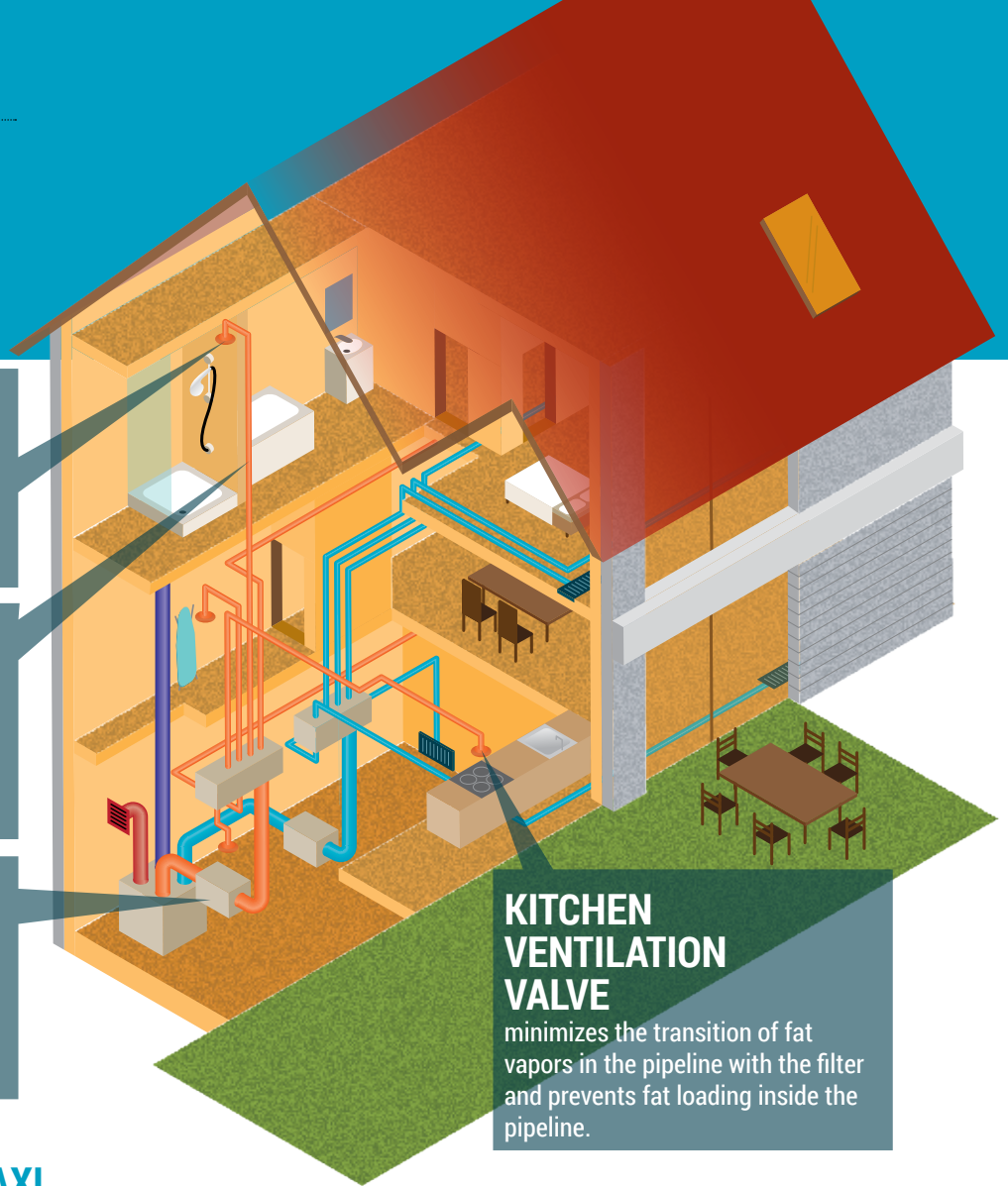
- Adjustable air flow and optimum energy consumption.
- EC motors that reduce energy consumption.
- Preservation of the property's value (due to mold prevention).
- The system holds the renowned Passiv Haus Institute certificate

### Comfort

- Extremely quiet operation, 70% quieter than normal bathroom fans and 80% quieter than other fans.
- Flows from 160 to 550  $\text{m}^3 / \text{h}$ . (depending on the model)
  - Easy operation via LCD touch screen.
  - Daily or weekly adjustable timers.
  - Easy maintenance.
  - Protection against external noise.
  - Separate air extraction from the kitchen (a kitchen hood is no longer needed)

### Health

- Greater freshness and thus a greater possibility of concentration for work or learning.
- Protection against allergies.
- Protection against dirt that transmits bacteria.
- Protection against carcinogenic gases.
- Protection against moisture caused by bathing, washing and even breathing, as well as preventing the formation of unhealthy wall mold.





# Orca Maxi is designed with high quality components.

## FANS

Fans are driven by extremely efficient and economical electric motors with external rotors and backward-curved blades.

## HEAT EXCHANGER

The countercurrent heat exchanger ensures high efficiency of heat recovery. The drainage tank underneath its block ensures the removal of condensate. Maxi has an optionally fitted anti-freeze equipment.

## FILTERS G4 AND F7

**The G4 outlet air filter** stops most of the particles larger than 10 µm or more, such as pollen, house dust, mist, scrap, hair or fat. At the same time, this filter protects the heat exchanger against impurities.

**The F7 inlet filter** stops particles of size 1 µm or more. Such particles are black carbon, soot, fine powder and other foreign particles that would otherwise be inhaled.

## ENTHALPY EXCHANGER (optional)

A certain amount of air humidity is recommended for healthy living, yet the ventilation system drains moisture. Therefore, an enthalpy exchanger can be installed optionally into the ventilation system, which returns moisture from the exhaust air.

- **Highly sensitive and latently effective advanced polymer membrane.**
- **Washable with water.**
- **Special membrane blocks odors and dirt.**
- **Excellent sealing.**
- **Optimal air flow with low pressure drops.**

## Recovering moisture

Moisture in the air, which is removed from the rooms, passes through the membrane into fresh, dry air from the outside. Water molecules travel through the membrane with warm water to the cold side.

Due to the size of the pores in the membrane, the transition of carbon dioxide, other gases or bacteria is not possible.

## Membrane properties

Despite the enthalpy membrane, the heat exchanger maintains a compact shape and is not dimensionally larger than a conventional heat exchanger. The pore sizes of the membrane allow the transfer of water molecules, whereas microorganisms cannot penetrate the membrane because of their size. Additional bacterial destruction is enabled by a special antibacterial coating of the membrane. The membrane does not contain nor is treated with salt.

## Handling

The handling of the device is exactly the same as using a conventional heat exchanger. During this operation, a part of the moisture passes through the air supplied from the outside.

## Cold Protection

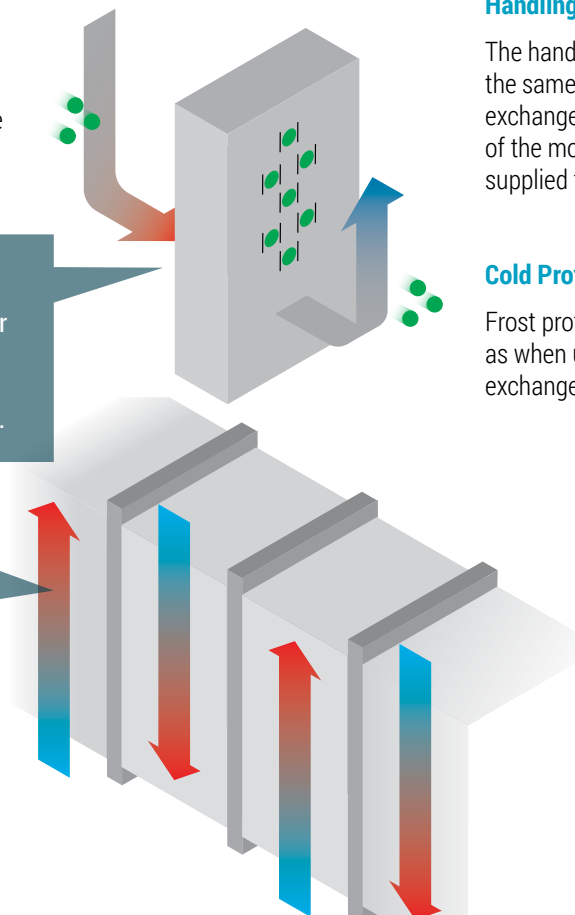
Frost protection is exactly the same as when using a conventional heat exchanger.

### MEMBRANE

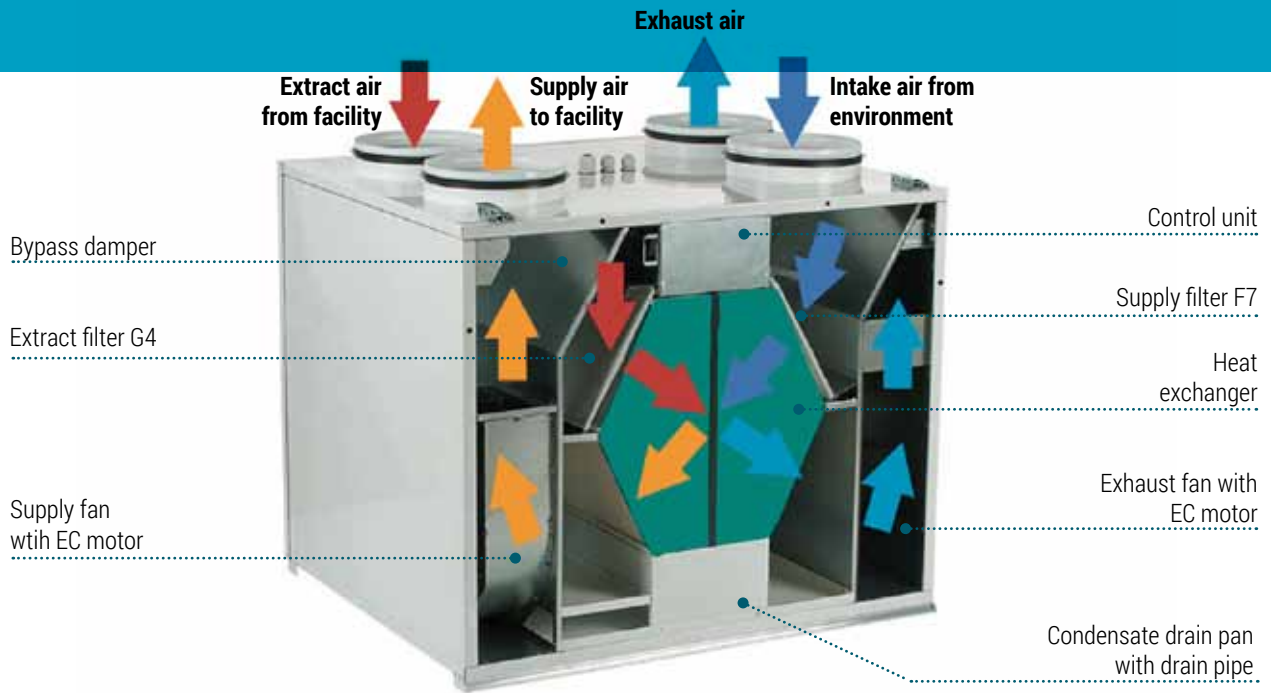
The membrane allows transfer of water molecules, but stops bacteria that are much larger compared to water molecules.

### ENTHALPY EXCHANGER

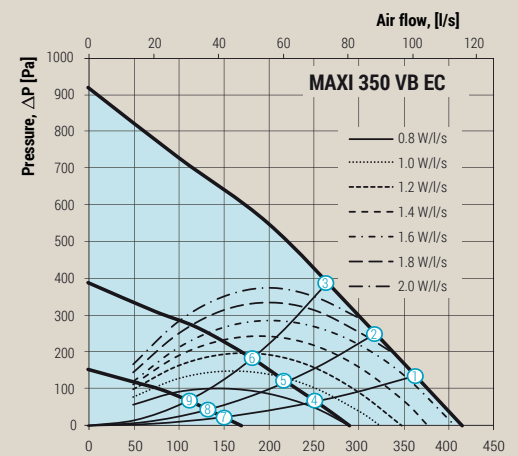
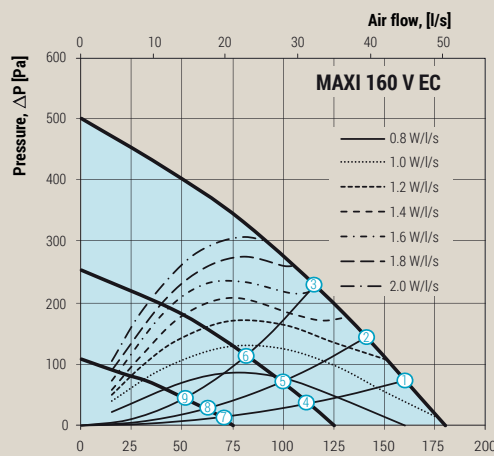
Air currents are completely separated among each other. The membrane allows the transfer of moisture from the extracted air to the fresh inlet air from the outside.



# TECHNICAL DATA



	MAXI	
Type	160 EC V	350 EC VB
Voltage [phase / V / Hz]	1 / 220-240 / 50-60	
Max. fan power [W]	51	166
Max. unit current [A]	0.4	1.3
Max. air capacity [m <sup>3</sup> /h]	180	415
RPM [min <sup>-1</sup> ]	3770	3200
Sound pressure level at 3m [dB(A)]	24	28
Transported air temperature [°C]	-25 do +60	
Casing material	polymer coated steel	
Insulation	20 mm mineral wool	40 mm mineral wool
Extract filter	G4	
Supply filter	G4 (F7*)	
Connected air duct diameter D [mm]	Ø 125	Ø 160
Weight [kg]	34	61
Heat recovery efficiency [%]	88 do 98	85 do 98
Heat exchanger type	Counter-flow	
SEC Class	A+	
Heat exchanger material	polystyrene	

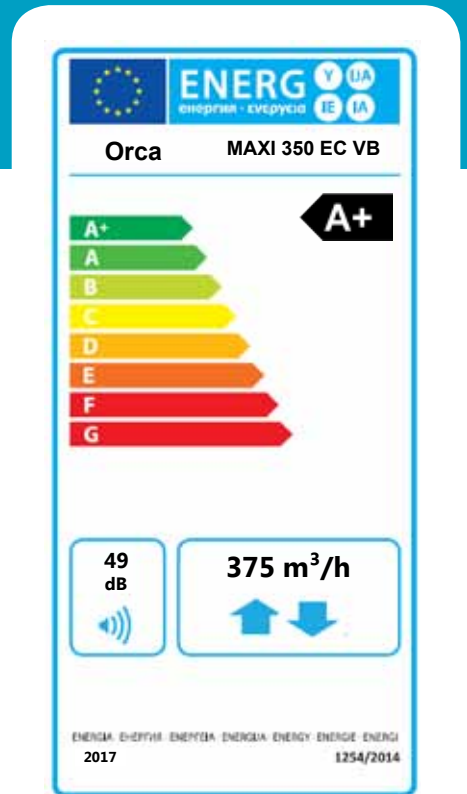


Point	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Power [W]	50	51	50	22	22	21	9	9	9	165	165	165	63	62	60	21	20	20
Sound pressure level at 3m	24	23	23	20	20	20	13	13	13	28	27	27	23	22	22	15	14	14
Sound pressure level at 1m	34	33	33	30	30	30	23	23	23	38	37	37	33	32	32	25	24	24
Dimensions [mm]	B1	H	H1	L	L1	L2	B1	H	H1	L	L1	L2	B1	H	H1	L	L1	L2
	160	330	650	650	600	388	350	592	758	675	775	426						



## TOUCH SCREEN CONTROL

The Orca Maxi systems can also be controlled via touch screen, where its exceptionally simple, colorful user interface enables many settings, including timer settings, fan speed, air humidity and more.

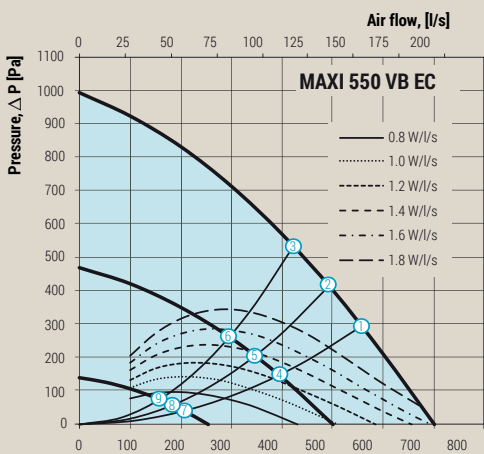


### 550 EC VB

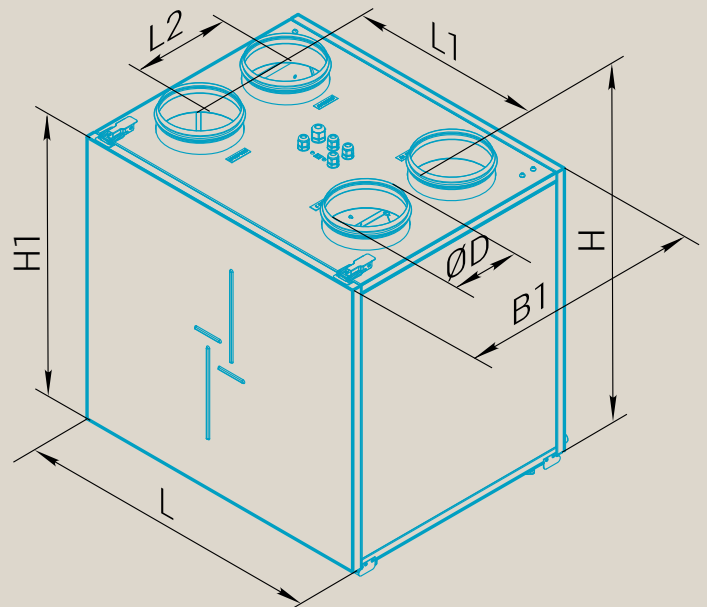
333  
2.3  
700  
3230  
28

40 mm mineral wool

Ø 200  
70  
81 do 97



1	2	3	4	5	6	7	8	9
332	331	332	133	129	126	32	31	30
28	28	27	23	23	22	15	15	14
38	38	37	33	33	32	25	25	24
B1	H	H1	L	L1	L2			
550	722	758	675	825	493			





## ORCA HEATS AND COOLS MORE THAN 15.000 HOMES ALL OVER EUROPE

Orcas are social beings that take exemplary care of their families. They seem so similar to humans in their behaviour, that even some tribes believed they were actually human spirits, trapped in these wonderful creatures. Orcas are not susceptible to cold or heat. They create a home for themselves in the extreme frost of the arctic sea and in the tropical waters near the equator. No matter the cold, they hunt there, socialize and love each other there.

### FREEDOM

You and your family would also like to be this independent from climate circumstances. This includes financially, right? We share those wishes and values with the orcas in our company and have thus proudly dubbed ourselves with the name of this free sea creature.

### QUALITY

We have collected the finest experts from the field of efficient heating in our development laboratory and have simultaneously devised a production of heating and cooling systems that, due to progressive technology and precise realization, leaves practically no room for errors. We realize that the purchase of our heating or cooling product is a long-term investment and that is why we keep a longstanding lifespan in mind from the first design to the final product.

### ENVIRONMENT

The use of green energy sources, used also in our products, represents a responsibility to the natural environment: the kind around us directly and the one distant, global. Together, we will make a small step towards ending climate change which endanger both humanity and the oceans, thus also endangering the orcas-our symbol.

Your vendor

**Small change.  
Big savings.**  
[www.orcaenergy.eu](http://www.orcaenergy.eu)