Big Dutchman®

Cooling systems

for ideal temperatures in your pig house

Cooling systems to control the temperature inside your pig house

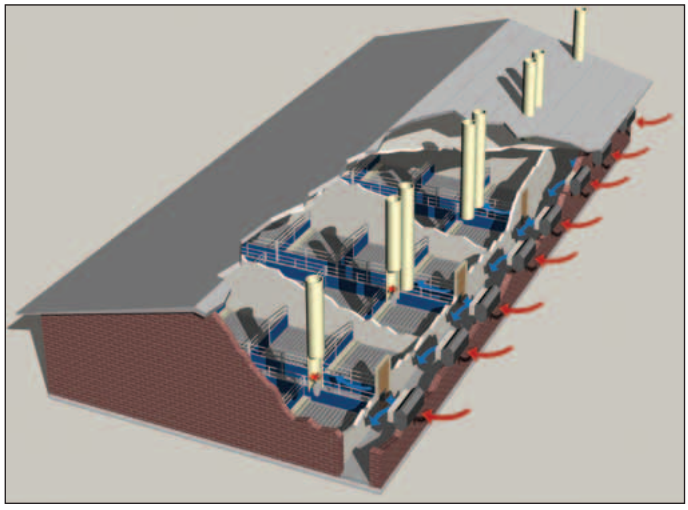
In addition to appropriate feed and water supply systems, ideal in-house climate conditions play an important role in achieving economic success in modern pig management.
Computer-controlled climate control does more than just bringing in fresh air and exhausting stale air. Keeping the in-house temperature at an ideal level is becoming more and more important, especially on hot sommer days. To achieve this, Big Dutchman's product range includes several systems:

- Coolbox
- CombiCool
- RainMaker

Coolbox – decentralized cooling system made of high-quality plastic

Big Dutchman's **Coolbox** is an innovative cooling system, which is perfectly suited for pig houses with a central corridor. Moreover, in the case of poor water quality Coolbox is a better alternative compared to conventional cellulose pad cooling systems. Coolbox consists of a high-quality plastic pad and a frame made of glass fibre reinforced plastic (GRP).

Coolbox is available in different sizes with different air capacities: 5 000 m³/h, 10 000 m³/h and 20 000 m³/h.



Implementation of Coolbox in a house with central corridor

The advantages at a glance

- the plastic pad is resistant to poor quality water (salts, iron, algae) so there is no negative influence on the system's efficiency;
- the plastic pad lasts a lot longer than comparable pad systems made of cellulose;
- the large surface area of the plastic material guarantees high cooling capacities;
- Coolbox is delivered ready-mounted. Thus there is no time-consuming assembly;
- easy installation and maintenance.

Mode of operation

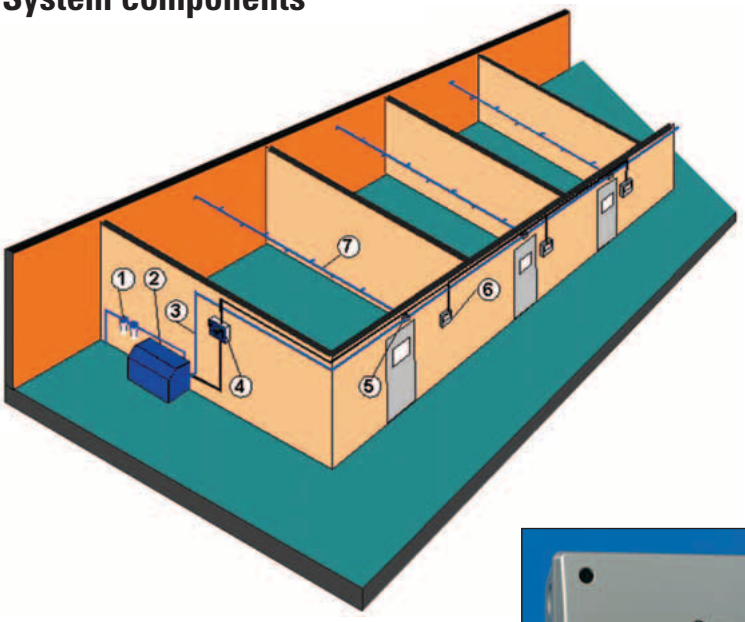
The plastic material of Coolbox is watered from above. When hot outside air is sucked into the house through Coolbox, it comes into contact with the large, wet surface area which absorbs humidity. This has a very good cooling effect, lowering the in-house temperature. The system is controlled by means of a climate computer.

Implementation of a submerged pump for the water supply of Coolbox

CombiCool – effective high-pressure fogging system

CombiCool is a specially designed high-pressure fogging system for cooling, humidifying and wetting the pigs, especially in compartmentalised houses. The special SST nozzles are characterized by very low passage rates but an extremely high passage speed. This creates a very fine aerosol fog that is distributed evenly all over the compartment and is immediately absorbed by the hot air and so secures a comfortable temperature. Furthermore, CombiCool can be used for humidifying the in-house air throughout the whole year providing optimum humidity conditions.

System components



1 Filter unit – optionally with 2 or 4 filters
2 Central pump unit for up to 350 nozzles
3 High-pressure duct made of SST
4 Pump unit control
5 High-pressure valve 3/2 ways for max. 40 nozzles
6 Climate computer MC 235
7 Nozzle duct made of SST

Climate computer MC 235

Central pump unit with 4-step filter

The advantages at a glance

- **effective in-house cooling**, especially on hot summer days thus maintaining comfortable temperatures
- **humidification of the in-house air** throughout the whole year which provides constant optimal humidity
- **dust bonding** for increased well-being; this has a positive influence on the pigs' respiratory tract
- **preparatory soaking function** to allow easy cleaning
- **application of aerosols** (aromatics, drugs) and their ideal distribution

Mode of operation

If the temperature rises above the preset level, the climate computer MC 235 activates the cooling system. The pump switches on and the main duct is loaded with a pressure of approximately 60 bar. A high-pressure valve which is installed over every compartment opens and a fine aerosol fog is sprayed into the space through the nozzles. The multi-step filter unit which is installed in front of the pump prevents foreign matter from blocking the nozzles.

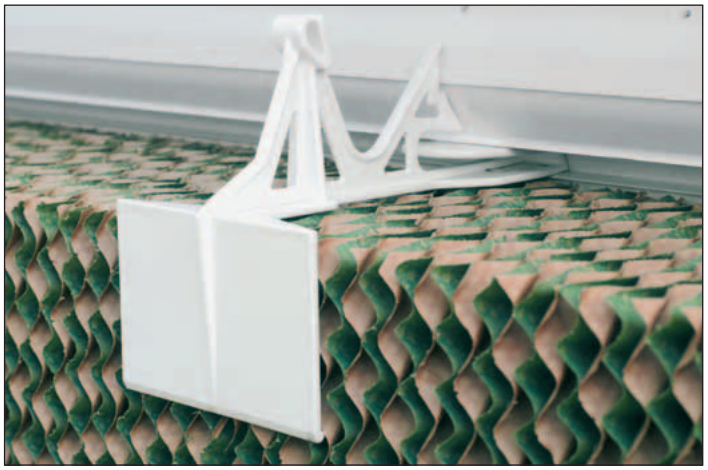
RainMaker – simple but highly effective cooling system

RainMaker is a cooling system which is mainly used in regions with hot and dry summers. It is based on the evaporation principle. The higher the temperature and the lower the relative air-humidity, the higher the cooling effect.

The pads are made of a special cellulose material that provides a large surface area, which gives a high cooling capacity. Chemical impregnation protects the pads from the influence of weather. Alternatively, there are also plastic pads available which are built for a longer service life.

The innovative frame system with top profile and pad retainer

Top profile with perforated pipe and deflector for an even distribution of water along the pads



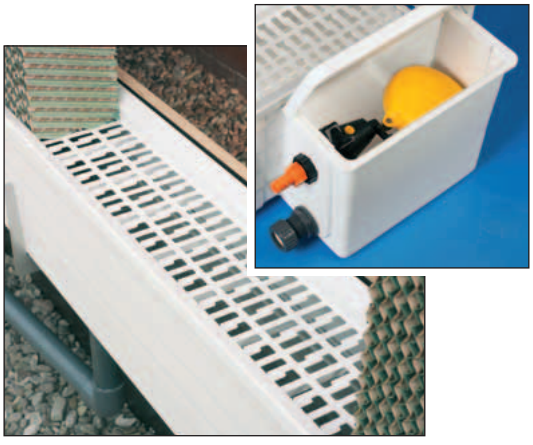
Practical snap-retainers alow for a simple and quick replacement of the pads

Core part of the new frame system is the top profile. The top profile is the complete upper part of the frame, made from one piece.

- designed as an open system, that means the water supply is always visible, there is no closed space available to serve as nesting place for rodents or other species;
- the perforated pipe which is integrated into the top profile distributes water down the pads and is visible to the operator so that any dirt and obstructions in the holes can immediately be recognized;
- a special deflector ensures that water is evenly spread along the pads to ensure an ideal wetting of the pads;
- the deflector is connected to the top profile by means of a plastic hinge which can easily be folded up for maintenance purposes with no tools or any parts to remove;

Water reservoir and supply unit with float valve

The pads are soaked from above. Thanks to negative pressure ventilation inside the house, the warm outside air is sucked into the house through the moist pads. This way the air takes up humidity and cools down. Excess water is collected at the bottom part of the frame – the so called water reservoir – and is then returned to the cycle. Together with a certain amount of fresh water it is pumped up by means of the centrifugal pump in order to wet the pads again. An additional water tank is not needed. The covering, which supports the pads, is simply mounted onto the water reservoir and can easily be removed for maintenance purposes. The special perforation ensures a back flow of excess water and, at the same time, prevents an invasion of rodents.
As an optional feature we offer an extended centre coupler. It facilitates maintenance as it provides easier access to the float valve.



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