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 summers. To achieve this, Big Dutchman’s product range includes several systems:

- Coolbox
- CombiCool
- Pad Cooling

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

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.
**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

### 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.
Pad Cooling – simple but highly effective cooling system

Pad Cooling is a cooling system which is mainly used in regions with hot, 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. A critical part of the whole system are the pads. They 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 giving very long service life. The frame for the pads is made of stainless steel and is thus corrosion-protected. Inside the frame lies a pipe which ensures an even distribution of water over the entire pad surface. This is important in achieving an ideal cooling effect.

The advantages at a glance

- improved living conditions for the animals provide higher performance, less mortality;
- the relative humidity of the house air is increased in a natural manner;
- cost-efficient system for large houses;
- the cooling water is in a closed circuit, which means that only the amount of water required is taken up.

Mode of operation

The pads are watered from above. Due to negative pressure ventilation, the hot outside air is sucked through the wet pads into the house. On close contact with the large pad surface, the outside air absorbs humidity and cools down. Thus a highly efficient cooling effect is achieved, especially for large compartments. The access water is collected in a tank and is recirculated. Together with a specific amount of fresh water, both are pumped up to the upper side of the pad and are once again used to wet the pad from above.