



# Big Dutchman®



## **MC 135 & MC 235**

The computers for an optimum climate  
in every pig house

# An ideal climate in the pig house. With Big Dutchman's comprehensive product

## Intake air

In order to ensure stable negative pressure ventilation, it is very important to select the right type of ventilation system. Big Dutchman can help you to achieve this goal by offering the following equipment:

### Diffuse fresh air supply: 1. Diff-Air spray cooling ceiling

The Diff-Air spray cooling ceiling consists of glass fibre-reinforced plastic (GRP) trapezoid sheeting plates and a two-ply layer of glass wool installed at a height of 2.40 to 3 m. It serves both as a diffuse intake air system as well as cost-effective ceiling insulation. Air enters uniformly through the entire house ceiling, thus ensuring an equal distribution of intake air whilst maintaining the maximum permitted air speed in the animal area.



### Diffuse fresh air supply: 2. Spray-cooling channel/ Spray-cooling ceiling

Thanks to their modular construction, spray-cooling channels are suitable for nearly every house type with an underdrawn ceiling. They are available in 5 different widths and consist of heat-insulated polyurethane plates. The individual hole pattern of the spray-cooling plate ensures optimum fresh air ventilation in the entire house and allows for efficient adaptation to the correct maximum summer air rates. The PU plates are used as a partial or completely perforated ceiling for spray-cooling.



### Local fresh air supply with the wall inlet CL 1200

This universal fresh air inlet is fitted into the wall of new houses (in older existing houses flange inlets can be used). The insulated inlet flap is kept in the closed position by stainless steel springs, thus making the entire house airtight. The corresponding control set allows you to open all fresh air inlets at once or individually.



## Heating

Optimum temperatures in the house have a crucial influence on the animals' health and metabolic efficiency. Big Dutchman offers the following heating systems:

### 1. Delta pipe/twin pipe or ribbed heaters

These warm-water heating systems are especially well-suited for diffuse fresh air supply systems (such as Diff-Air, spray-cooling channels, below-floor passage ventilation). Delta and twin pipes consist of aluminium for a good thermal conductivity (180-200 Watt/m) and low weights. With up to 600 Watt/m, the ribbed heaters have a high heat output. All systems are easy to install.



### 2. JET MASTER or gas convector

Both heaters can be operated with natural gas or propane. A connection to a chimney is not required. The heat generated is 100 % beneficial to the animals.



# range of intake and exhaust air technology and our climate computers MC 135 and MC 235

A reliable ventilation system is a must for any successful pig operation whether it involves sows, piglets or finishing pigs.

Besides the air inlet and exhaust air elements, the computer is the core part of efficient climate control. Big Dutchman's innovative climate computers **MC 135** and **MC 235** set entirely new standards comprising exact control, security and user-friendliness. They are available for houses with one or two compartments and control the entire house climate. In addition to temperature and humidity control, control of humidification, cooling and wetting are also included in their program range. The most important characteristics at a glance:

- MC 135/MC 235 are **PID climate computers**, i.e. the house temperature can be adjusted easily and exactly to the required temperature level;

- MC 135/MC 235 are equipped with a **Compact Flash Card**, which simplifies the installation of new software and user-adapted configurations, and also enables the farmer to store a backup copy of settings of his climate computer;
- MC 135/MC 235 have a **large display**, which graphically displays any relevant curve progression. The menu allows for immediate access to daily-used functions = user friendliness;
- MC 135/MC 235 provide **different user levels**, which are protected by passwords; non-authorized persons therefore are not able to change the computer settings;
- The hardware is designed as a **modular system**, i.e. whenever new house functions are needed, the MC 135/MC 235 can be expanded without difficulty.



## Temperature-controlled emergency opening fail-safe system MC 278 T

Special attention must be paid to the operational reliability of the ventilation system. Therefore an emergency opening system should be installed.

Big Dutchman's temperature-controlled MC 278 T emergency opening system ensures survival of the animals in case of power failure or technical breakdowns. The system comprises a 24 V DC power supply unit with built-in maintenance-free battery and charger and a separate temperature probe.



The temperature at which the system is to react can be adjusted manually. This means that in an emergency, the intake and exhaust air elements will not open fully at once, but gradually – depending on the temperature. The emergency opening function itself is built into the MC 135/ MC 235, i.e. the climate computer surveys the MC 278 T and will immediately trigger off an alarm if, for instance, the temperature limit for the emergency opening is set too high.

# MC 235, we can offer you an unparalleled ventilation system for every house

## Exhaust air

Special exhaust air elements including fans are essential to ensure stable negative pressure ventilation. To meet these requirements, Big Dutchman offers the following:



### 1. PU exhaust air chimney with incorporated fan

These chimneys consist of 30 or 50 mm-thick polyurethane tubes. Installation of the fans can be carried out easily thanks to the stable inside and outside coating of smooth glass fibre reinforced polyester. The intake nozzle and diffuser permit zero-loss intake and exhaustion of air.

The chimneys are available in different sizes (Ø 370 to 920 mm) depending on the required air rate.



### 2. CL 600 exhaust air chimney

The CL 600 exhaust air chimney has an aerodynamic shape and thus guarantees good exhaust air performance. It is made of polypropylene and has a smooth, dirt-repelling surface. The self-supporting roof plate construction does not require any additional suspension or bracing. The plate is supplied dependent on the roof slope, the roof profile and the height above the roof. Its integrated fan is very easy to assemble and available in different versions. The exhaust air chimney is only available with a diameter of 650 mm.



### 3. Axial fan with frame

These fans are ideal for incorporating into a wall or ceiling. The frame has an aerodynamic shape and consists of high-quality cast steel. The paddles are made of diecast aluminium and hence highly durable.

Axial fans are characterised by high air performance with low energy consumption. They are easy to adjust, work at a low noise level and are available with a diameter of 350 to 910 mm.

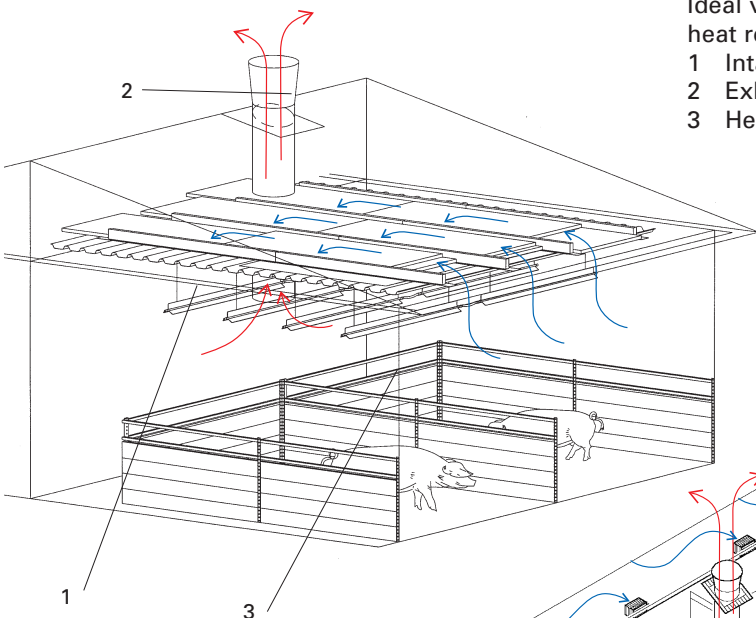


## CombiCool – cooling, humidifying, wetting

Big Dutchman's CombiCool is a specially designed high-pressure fogging system for cooling, humidifying and wetting the pigs. On hot summer days it provides efficient cooling for the house so as to secure comfort temperature. CombiCool can also be used for dampening the house air ensuring optimum air humidity. It also reduces dust formation and thus increases the well-being of the animals. Last but not least, the system can be used for preparatory soaking prior to thorough cleaning.

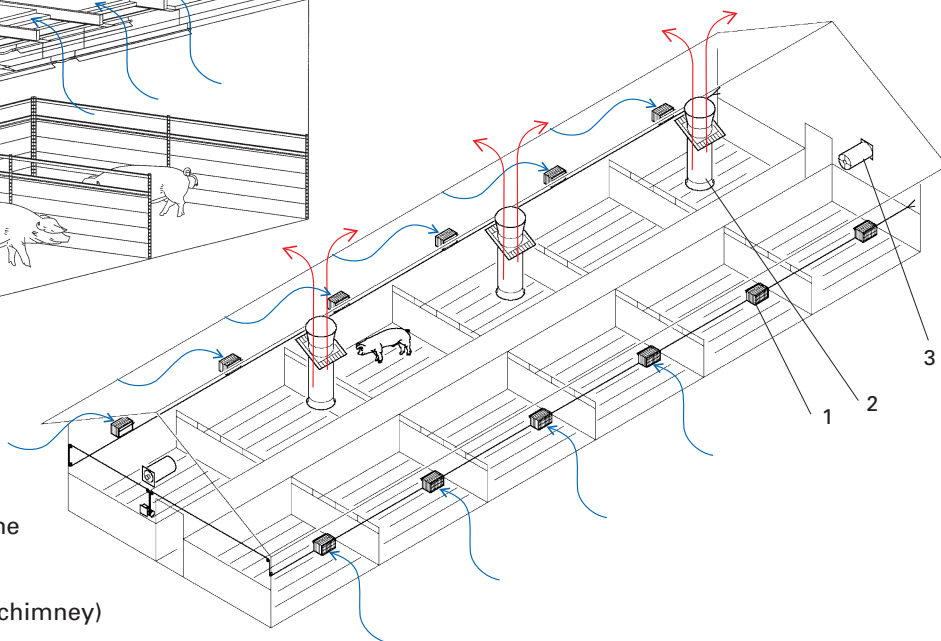
The special SST nozzles are characterized by very low passage rates but an extremely high passage speed. This creates a very fine aerosol fog that is distributed evenly all over the compartment. The entire system is controlled by the MC 135 or MC 235 climate computer.

# Examples of negative pressure ventilation systems for pig houses



Ideal ventilation system for piglet rearing houses with high heat requirements and minimum ventilation rates.

- 1 Intake air (Diff-Air spray-cooling ceiling)
- 2 Exhaust air (PU chimney)
- 3 Heating (delta pipe)



Ideal ventilation system for large finishing units (no compartment houses) with high exhaust air volume and lower heat requirements.

- 1 Intake air (CL 1200 wall inlet)
- 2 Exhaust air (CL 600 exhaust air chimney)
- 3 Heating (JET MASTER)

## InfoMatic – the PC program for a graphical display of your house

Big Dutchman's PC management program **InfoMatic** allows you to display the entire house climate graphically. To be precise:

- inside and outside temperature;
- air humidity in the house;
- flap position of intake and exhaust air elements.

**InfoMatic** runs under Windows and offers the user an excellent display of the connected houses and their in-house climate conditions. The house image is opened with a simple mouse click. Possible deviations can be analysed rapidly and the respective measures can be taken.

## Application possibilities of InfoMatic

- The PC is located within the house itself – the InfoMatic link connects PC and MC 135/MC 235 or
- the PC is located in the farmhouse – the InfoMatic link connects PC and MC 135/MC 235 via a modem.

## Advantages

- all operations and activities are recorded;
- unlimited modification of texts, colours and scale setting of all graphics;
- unlimited number of houses;
- simple and service-friendly data network;
- rapid data exchange between PC and house computer.



# MC 135 and MC 235 are available with different extension stages

Type		MC 135-S	MC 135-L	MC 235-S*	MC 235-L
Intake air:	fresh air inlet A	✓	✓	✓	✓
	fresh air inlet B	-	-	✓	✓
Exhaust air:	exhaust air flap A	✓	✓	✓	✓
	exhaust air flap B	-	-	✓	✓
	speed control exhaust air A	✓	✓	✓	✓
	speed control exhaust air B	-	-	✓	✓
	no. of MultiStep® groups	-	1	2	4
Central exhaust air system:	control of central exhaust air	-	✓	✓	✓
Emergency opening:	temperature-controlled emergency opening	✓	✓	✓	✓
	emergency air supply	✓	✓	✓	✓
Heating:	room heating	✓	✓	✓	✓
	zone heating	-	✓	✓	✓
Soaking:		✓	✓	✓	✓
Cooling, humidifying:		-	✓	✓	✓
Sensors:	temperature sensor room	✓	✓	✓	✓
	temperature sensor zone	-	✓	✓	✓
	humidification sensor room	-	✓	✓	✓
	differential pressure sensor	-	✓	✓	✓
	CO <sub>2</sub> sensor for minimum ventilation	-	✓	✓	✓
	other sensors	-	-	✓	✓
Timer:	A	-	✓	✓	✓
	B	-	-	✓	✓
	C	-	-	✓	✓
	D	-	-	✓	✓
Water metre:	pulse counter	-	-	✓	✓
InfoMatic:		✓	✓	✓	✓

\* in the basic version, the MC 235-S is equipped with 5 relays per compartment. Thus not all listed function are available at the same time.

## Important functions of MC 135/235 based on the extension stage

- "Real air" control => indication of exhaust air volume in m<sup>3</sup>/h;
- control of multiple heat sources;
- control of cooling and humidifying;
- humidity control with/without heat;
- exhaust air control via MultiStep® for minimum power consumption;
- control of underfloor-suction and floor heating;
- extended curve control (temperature, heat, humidity, floor heating, minimum and maximum ventilation);
- cycle-controlled ventilation during minimum ventilation;
- separate control of two winch motors;
- extra ventilation;
- light control;
- trend curves;
- pause-function (wetting/washing/drying);
- frost protection for empty houses;
- integration of PC program InfoMatic;
- log-file for fail-safe alarm and operational data;
- access codes.



# Big Dutchman®

**Big Dutchman Pig Equipment GmbH**  
 Postfach 1163 • 49360 Vechta • Germany  
 Tel. +49(0)4447-801-0 • Fax +49(0)4447-801-237  
 www.bigdutchman.de • E-Mail: big@bigdutchman.de

