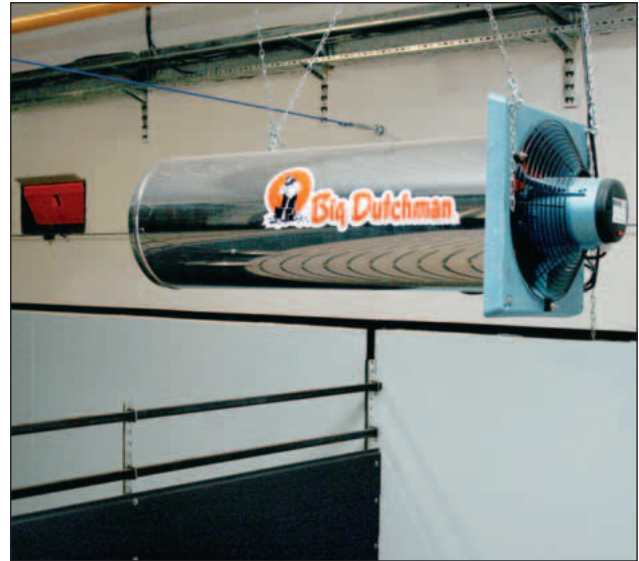




# Big Dutchman®



## **Heating systems**

for ideal temperatures  
in your pig house

# Heating systems – ideal house temperatures enhance performance

Ideal house temperatures have a substantial influence on pig health and performance. Therefore, adequate heating systems are required in many climate zones. The overall goal is to maximise the thermal yield and transfer it to the pigs in the best possible way to keep energy costs at a minimum.

Big Dutchman offers several different systems for full-space or zone heating supplied by gas, oil or warm-water heaters. Please let our experts advise you to find the ideal heating system for your house.

## JET MASTER – gas-powered heaters with 100 % thermal yield

JET MASTER are available for operation with natural gas or propane. They are controlled by means of a thermostat and are flame-proof. If for some reason the device does not ignite or the flame is extinguished, the gas supply is immediately shut down so that no unburnt gas escapes.

The built-in fan provides a large working range and an ideal distribution of warm air. The new BCU (Burner Control Unit) makes it possible to balance uneven temperatures inside the house using the JET MASTER's air circulation mode by switching it to »ventilate only«. A connection to a chimney is not required. The heat generated is 100 % beneficial to the animals. Depending on the house size and type of equipment, different models are available.



JET MASTER GP 70

ERA 33

Type	ERA 33*	GP 14	GP 40	GP 70	GP 95
power (kW)	33	14	40	70	95
gas consumption: - natural gas (m <sup>3</sup> /h)	3.0	1.3	3.6	6.1	8.4
- propane gas (kg/h)	2.4	1.1	3.1	5.0	6.8
inlet pressure: - natural gas (mbar)	25	20	20	20	20
- propane gas (mbar)	50	50	50	50	50
burner pressure: - natural gas (mbar)	11.2	8.0	8.1	9.1	13.3
- propane gas (mbar)	29	28	49	46	24.8
gas supply	Rp 1/2"	Rp 1/2"	Rp 3/4"	Rp 3/4"	Rp 3/4"
air circulation (m <sup>3</sup> /h)	1700	1200	3900	5000	6500
safety device in case of deficiency of air	microswitch	-	microswitch	microswitch	microswitch
flameguard	thermoelectric	ionization	ionization	ionization	ionization
working range (m)	30	15	40	50	40
weight (kg)	17	13	36	36	48

connexion values: 220-230 V, 50 Hz for all models

\* atmospheric burners should not be used in houses with high dust levels

## RGA heating devices with flue gas exhaust



RGA heating device with chimney for flue gas exhaust

RGA heating devices are powered by fuel oil. They operate with a closed combustion process, which means the house air remains free of flue gas and pollution gas. The essential fresh air is sucked in from the outside and burnt air is removed from the house by means of a chimney.

Type	RGA 60	RGA 95
power (kW)	60	95
fuel consumption (l/h)	6	10
air circulation (m <sup>3</sup> /h)	5600	7000
working range (m)	35	50
weight (kg)	100	115
tank content (l)	160	160

connexion values: 230 V, 50-60 Hz

# Warm-water heating systems – no open combustion inside the house

Warm-water heating systems are becoming increasingly popular, since they significantly improve the house environment (reduced CO<sub>2</sub> concentration in house air). The objective is to maximise the heat output. This is achieved by a radiator with a large surface area. The heating elements are mounted

directly beneath the air inlets to heat the incoming air. In piglet rearing houses with two-climate system, twin pipes and ribbed radiators are installed directly inside the piglets' resting area. This saves energy costs as temperatures in the other pens can be a lot lower.

## 1. Delta- and Twin pipe – ideally suitable for diffuse fresh air supply systems

Both types of heaters are especially well-suited for ceilings carrying spray cooling and Diff-Air ceilings. They consist of aluminium and work with hot water, of which they require only a limited amount, however. Due to their good thermal conductivity (heat emission of 180 - 200 watts/m) they ensure constant room tem-

peratures inside the house. These heating systems can also be used as pre-heating in the central corridor. The pipes have an anodic coating for a better protection against ammonia. They are of comparatively low weight and can be delivered in different sizes up to a length of 6 m. The pipes are easy to assemble.



Delta pipe for assembly beneath Diff-Air ceiling



Twin pipe for wall-assembly, less dust on pipes

## 2. Ribbed (fin) heaters – large surface area for high heat emission

The fin heater consists of an iron tube that is galvanized both from the inside and from the outside (inside diameter 1 or 1.5 inches). Hot water is pumped through the tube. Galvanized ribs are welded to the iron tube in form of a spiral, with a surface area of 1 m<sup>2</sup> per running metre. The warm air ascends between these ribs, creating a strong thermal up-

current. The heat emission can be as high as 600 watts/m. The ribs are arranged at an ideal distance so that no dust accumulates between the ribs. The tubes are fastened to the wall by means of angle brackets which facilitates assembly.



Fin heaters as full-space heating system for piglet rearing houses



Fin heaters – ideally suited in combination with CL 1200 air inlets

## Zone heating – ideally suitable for piglet rearing houses

Piglets need a lot of warmth especially during the first couple of days after moving to the rearing house so as to better cope with the critical weaning period. Ideally, the resting area should have a temperature of approximately 32°C.

Apart from traditional full-space heating, zone heating operated with hot water is becoming increasingly popular for piglet rearing houses. It consists of a covering plate or »hover« that is fixed at a distance

of 70 to 80 cm above the slatted floor. An edge of approx. 20 cm in the front area of the plate helps to create a heat blanket. The heating system (Twin pipe or fin heater) is installed directly below the covering plate. This system's main purpose is to heat the resting area of the piglets (0.11 m<sup>2</sup>/piglet). As the rest of the pen does not require as much heat, heating costs are significantly reduced.



Underneath the covering plate, plastic flooring with 10 % slatted area is used; twin pipes ensure optimum temperatures in the resting area

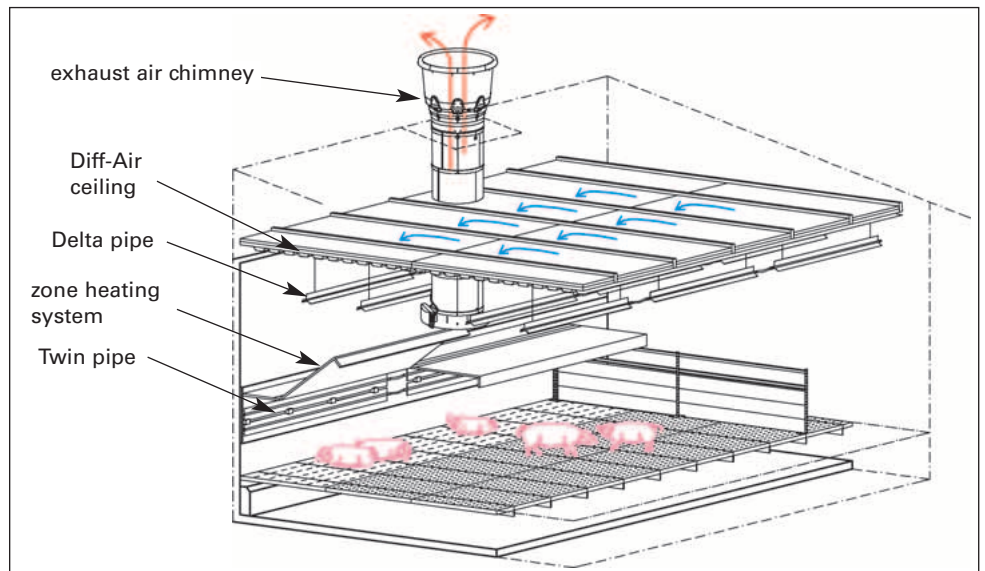


Climate computer MC 235 for control of the entire house climate; three-way control of warm-water heating system

## Two-climate system

We recommend connecting the set temperature values of full-space and zone heating. As a result, the heat requirements of the pigs can be met in an ideal manner, corresponding to their age.

The illustration on the right hand side shows a Diff-Air ceiling in combination with delta pipes to heat the incoming air (full-space heating), and a zone heating system to increase the heat requirement in the piglets' resting area.



# 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