



# Big Dutchman®



## Heating Systems

An ideal temperature in every poultry house

# Heating systems for ideal house temperatures

Ideal house temperatures have a substantial influence on bird health and performance. Adequate heating systems are therefore required in many climate zones. The overall goal is to maximise the thermal

yield and transfer it to the birds in the best possible way to keep energy costs as low as possible. Big Dutchman offers several different heating systems powered by gas, oil or

hot water and used with or without chimney. Please let our experts advise you to find the ideal heating system for your house!

## JetMaster – heaters with 100 % heat output

JetMaster is available for operation with natural gas or propane as well as fuel oil. It is controlled by means of a thermostat and equipped with a flame guard. If the heater 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 wide throwing range and distributes the warm air ideally in the house. The Burner Control Unit (BCU, for the GP series) makes it possible to balance uneven temperatures inside the house using the JetMaster's air circulation mode

by switching it to "ventilate only". The heat generated is 100 percent beneficial to the animals → no heat loss.



JetMaster GP 70



JetMaster NG-L 80

Type		GP 14	GP 40	GP 70	NG-L 80	GP 95	NG-L 100	GP 120
Output	kW	14	40	70	80	95	100	120
Gas consumption:								
- Natural gas	m³/h	1.5	3.9	6.8	7.7	9.2	9.7	11.7
- Propane gas	kg/h	1.1	2.9	5.0	5.7	6.8	7.2	8.6
Gas connection	"	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Air capacity	m³/h	1200	3900	4500	4100	6500	7500	8000
Air pressure monitoring		-	Microswitch	Microswitch	Pressure switch	Microswitch	Pressure switch	Microswitch
Flame monitoring		Ionisation	Ionisation	Ionisation	Photocell	Ionisation	Photocell	Ionisation
Throwing range	m	15	40	50	50	40	60	40
Weight	kg	13	24	27	49	37	56	45

Connection values: 230 V, 50 Hz for all types;

Connection pressure: 20 mbar for natural gas and 50 mbar for propane gas



JetMaster type P 100 for operation with fuel oil

Type		P 40	P 60	P 80	P 100	P 120
Output	kW	40	60	80	100	120
Fuel consumption	l/h	4	6	8	10	12
Air capacity	m³/h	4400	6200	7700	7700	7700
Throwing range	m	30	40	50	50	50
Weight	kg	48	51	55	55	65

Connection values: 230 V, 50 Hz for all types;

Flame monitoring by means of a photocell



# Heating devices with flue gas exhaust and low energy consumption

Heating devices with flue gas exhaust are available for operation with fuel oil or gas. They are operated by a closed combustion process. This means that the house air remains free of flue gas and harmful gases

as these are guided towards the outside via a chimney. The built-in fan provides a wide throwing range and distributes the warm air ideally in the house. With RGA 100 and TR 75, fresh air required

for combustion is drawn in from the outside through a double-walled chimney, thus ensuring that the fresh air is already pre-heated and increasing efficiency.



RGA 100 – gas-powered heater with chimney



Thermorizer TR 75 – gas-powered heater with chimney



RGA 100



Thermorizer TR 75

Type		RGA 95	RGA 100	TR 75
Output	kW	95	100	75
Combustible		Fuel oil	Natural/propane gas	Natural/propane gas
Air capacity	m³/h	7000	7000	8000
Air pressure monitoring		-	Pressure switch	Pressure switch
Flame monitoring		Photocell	Ionisation	Ionisation
Throwing range	m	50	40	50
Weight	kg	132	110	130

Connection values: RGA 230 V, 50 Hz; TR 75 400 V, 50 Hz, 3 phases; gas connection for RGA 100 and TR 75: 3/4"

## Circulation fans for an improved distribution of warm air in the house

In houses of an unusual length, circulation fans can be used to distribute the warm air evenly in the entire house. They are installed at a distance of approx. 20 to 30

m to the heating devices. The powerful FC050-4EQ circulation fan is additionally equipped with a guide vane. Thanks to its large throwing range and

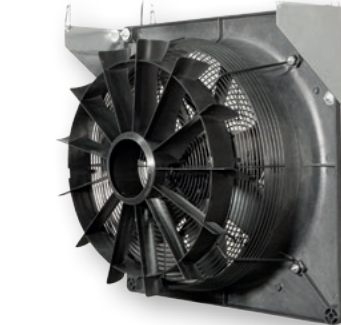
the bundled air jet it produces, this fan is especially well-suited for narrow and low houses as well as the use of the Earny heat exchanger.



6E50 circulation fan  
Air capacity: 6400 m³/h, code no. 40-20-1095  
Throwing range: approx. 25 m



R20-9 circulation fan  
Air capacity: 5800 m³/h, code no. 40-20-1090  
Throwing range: approx. 25 m



FC050-4EQ circulation fan with guide vane  
Air capacity: 7100 m³/h, code no. 40-20-1085  
Throwing range: approx. 35 m

# Gas brooders for a directed supply of heat

Gas brooders are especially well-suited if it is necessary to supply birds with intensive heat for a defined amount of time and in a specific area, such as turkeys, ducks, broilers or pullets during the rearing phase.



Gas brooder type M8



Gas brooder type G12



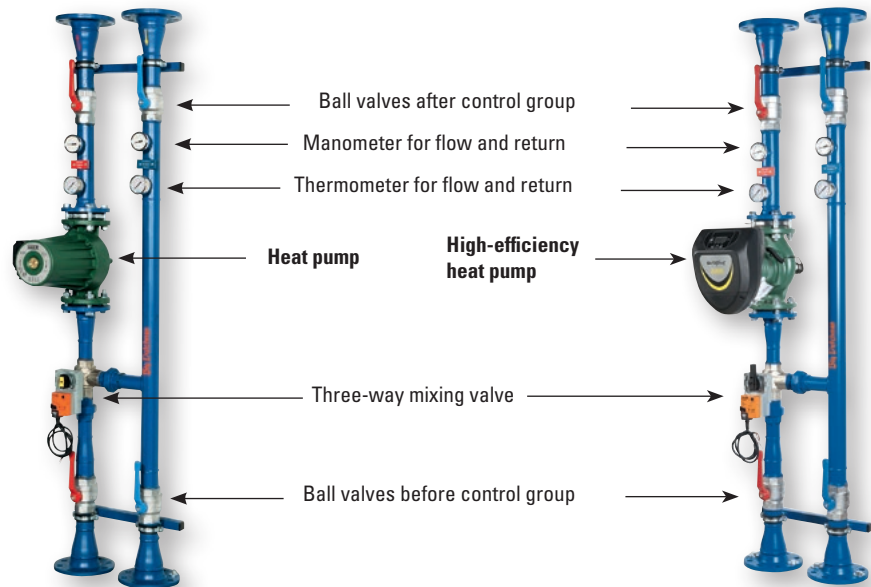
SOL 11600 gas brooder

Type		M 8	G 12	SOL 11600
Output	kW	5	12	11.6
Connection pressure:				
- Natural gas	mbar	20-50	28	270
- Propane gas	mbar	20-1400	28	1400
Pilot light			x	
Installation height	cm	90-150	130-170	130-170
Weight	kg	1.5	7	2.6

Connection values for the G12 gas brooder: 230 V, 50 Hz

## Hot-water convection heaters – no open combustion inside the house

Convection heaters are becoming increasingly popular, since they significantly improve the house climate (reduced CO<sub>2</sub> concentration in the house air). The objective is to maximise the heat output. This is achieved by a radiator with a large surface. The heating elements are either mounted directly beneath the air inlets (fin heater) to heat the incoming air, or they are suspended from the ceiling in the centre of the house (HeatMaster). The ViperTouch climate computer regulates the entire house climate, including the stepless three-way mixing group of the hot-water heaters from 0 to 100 percent. The birds thus do not have to suffer from fluctuating temperatures, an important benefit which maximises growth.



Powerful three-way mixing valve (300 kW), optionally with energy-saving high-efficiency heating pump

In combination with a climate computer, the powerful three-way mixing group from Big Dutchman ensures that the required temperature level is always maintained in houses with hot-water heating. To supply houses of different sizes, this control unit is available with 150, 300 and 600 kW. The temperature difference between flow and return is 20 K. The control group can be closed off by means of four ball valves.

## HeatMaster – hot-water convection heater

HeatMaster works on a hot-water basis. Hot water is supplied by an oil-powered or gas-powered boiler. The possibility to use waste heat produced by a CHP or biogas plant is a great advantage.

HeatMaster consists of a system of fins, a fan and a distribution unit. Big Dutchman offers three different models. The HeatMaster of the R and V series are suspended in a central position in the house at even intervals based

on their throwing range. They have a distance of approx. 1 m to the bird area and their height can be adjusted by means of a winch. The house air is drawn in from the upper part of the house and is then guided through the fin system, which is filled with hot water. For the R series, the fan distributes the warm air evenly in the bird area thanks to the hexagonal profile of its openings. In the case of the V series, a distribution plate with eight compartments ensures

the even distribution of the warm air. The HeatMaster models 2 H, 3 H and 4 H are either suspended along the side of the house at the height of the fresh air inlets or mounted by means of a wall bracket. The built-in fan provides a wide throwing range and distributes the warm air ideally in the house (similar to the functional principle of a gas blower).



HeatMaster 50 R in a broiler house



HeatMaster 3 V



HeatMaster 2 H

Type		40 R	50 R	60 R	3 V	4 V	2 H	3 H	4 H
Output*	kW	53	62	72	48	90	30	48	90
Output**	kW	43	50	60	37	72	22	37	72
Connection pipe thread	"	1	1	1¼	¾	1	¾	¾	1
Air capacity	m³/h	7000	9000	9000	5000	7500	3000	5000	7500
Throwing range	m	13/side	15/side	15/side	20	25	40	44	53

\* Flow temperature 90°C/return temperature 70°C and an intake air temperature of 35°C

\*\* Flow temperature 80°C/return temperature 60°C and an intake air temperature of 35°C; Connection values: 3 phases 400 V, 50 Hz

## Fin heater – large surface area for high heat output

The fin heater consists of an aluminium tube with epoxy powder coating through which hot water is pumped. Fins are welded to the tube like a spiral, creating a large surface of 1 m²/running metre of tube. Heat emerges from these fins and causes a strong thermal. The heat output can be as high as 600 watts/running metre. The spacing between the fins is large enough to ensure that dust does not accumulate. The tubes are fastened to the wall by means of angle brackets or suspended from the ceiling.

The fin heater is characterised by the following advantages:

- ✓ high heat output;
- ✓ reduced weight;

- ✓ automatic ventilation ensures a high functional reliability;
- ✓ simple, time-saving assembly by means of a special coupling with clamps.



Aluminium fin heater



Special coupling with clamps



# Infrared heaters – radiant heat similar to solar radiation

Infrared heaters are a gas-powered heating system giving off radiant heat. This radiant heat can be compared with solar radiation as it passes through air without significant losses. This means that heat rays become active only where they hit a surface and are then

converted into sensible heat. At cooler ambient temperatures, this creates a very comfortable temperature sensation for the birds.

The fresh air required for combustion is drawn in from outside. Flue gas is removed to the outside by means of a

double-walled chimney so that the house air remains free of harmful gases and the fresh air is pre-heated at the same time. Infrared heaters may reduce energy costs by up to 15 percent compared to direct heating system.



Use of an infrared heater in a broiler house



The fresh air is pre-heated → increased efficiency

Type		BD 25HE	BD 35HE	BD 40HET
Output	kW	25	35	2x35
Gas connection	"	1/2	1/2	1/2
Total length	m	10	13/16	25
Weight	kg	55	68	136

Connection values: 230 V, 50 Hz;

Connection pressure: 20 mbar for natural gas and 50 mbar for propane gas

Reducing energy costs will become more and more important in the future. The innovative Earny heat exchanger developed by Big Dutchman is used to recover heat from the exhaust air of poultry houses. Depending on the location and the respective conditions on site, it is possible

to save between 35 and 60 percent of heating costs! A separate leaflet provides more detailed information.



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