Log fired heating system

YOUR RELIABLE PARTNER
Herz since 1896
Present on the market for over 110 years

firestar De Luxe 18

firestar De Luxe 20 - 40

firestar Lambda 20 - 40

Herz®

Competence is our success...

HERZ **FACTS:**

- 22 companies
- Group headquarters in Austria
- Research & development in Austria
- Austrian owned
- 2,400 employees in more than 85 countries
- 24 production sites

HERZ Armaturen GmbH – The company
Founded in 1896, Herz has been continuously active in the market for more than 118 years. With 9 sites within Austria, another 15 in Europe and more than 2,400 employees at home and abroad, HERZ Armaturen GmbH is the only Austrian manufacturer that produces equipment for the entire heating and installation industry and is one of the most important internationally.

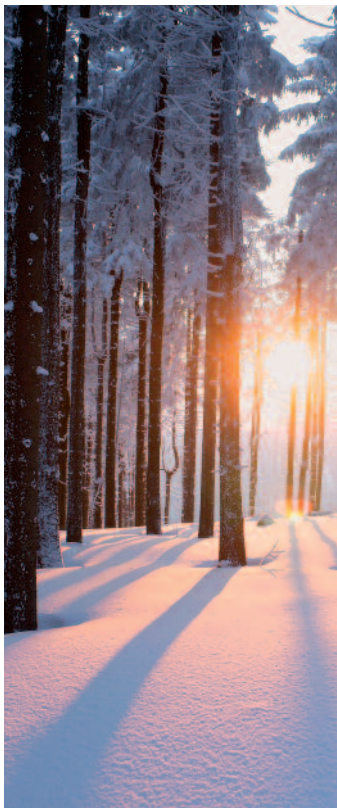
HERZ Energietechnik GmbH
HERZ Energietechnik employs more than 230 staff in production and sales. At the company sites in Pinkafeld, Burgenland and Sebersdorf, Styria, there is state-of-the-art production as well as a research institute for new, innovative products. For a number of years, HERZ has worked with local research and training institutes. Over the years, HERZ has established itself as a specialist in renewable energy systems. HERZ places a great importance on modern, cost-effective and environmentally friendly heating systems with the highest level of convenience and user-friendliness.

HERZ for the environment
All HERZ biomass boilers fall below the strictest emission regulations. Numerous environmental endorsements bear witness to this.

HERZ quality
HERZ designers are in constant contact with recognised research institutes in order to improve the very high standards even further.

Herz®

Convenient heating...



Efficient and convenient heating using wood

Simple, fast and user-friendly firing up without kindling.

The very quiet running of the boiler is due to high quality system components.

The large filling shaft for big logs guarantees a long burning time – of up to 8 hours with a full load (depending on boiler-type).

The greatest advantages of the HERZ firestar:

- Energy-saving combustion due to the unique double vortex combustion chamber
- Automatic cleaning of the heat exchanger - no work required
- Consistently high level of efficiency
- Simple removal of combustion & fly ash from the front – no side cleaning apertures
- Low ash accumulation due to optimum combustion

Innovative technology for the most natural fuel!

Logs & wood briquettes

Available models...

firestar De Luxe 18

firestar De Luxe 20 - 40

firestar Lambda 20 - 40

firestar 18 De Luxe:

Control unit BioControl 3000:

- burning control (lambda probe control)
- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- 2 controlled heating circuits (pump and mixer valve)
- domestic hot water preparation
- frost protection

- Option for internal modular extensions for solar circuit control as well as other heating circuits (total maximum 6 heating circuits, for solar-use maximum 5 circuits).

T-CONTROL

firestar 20-40 De Luxe:

Control unit T-CONTROL:

- burning control (lambda probe control)
- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- 1 controlled heating circuits (pump and mixer valve)
- domestic hot water preparation
- frost protection

- Simple screen design and convenient menu guide.
- Extension modules up to 55 modules possible (heating circuits, solar-use, second buffer etc.)

firestar 20-40 Lamda:

Control unit Lambda:

- burning control (lambda probe control)
- Buffer management
- Return flow temperature bypass (pump and mixer valve)

- Control of heating circuits, solar circuit control and domestic hot water preparation can be realised with external control units.

Easy, modern and comfortable – T-CONTROL

Remote access to the controller using VNC Viewer

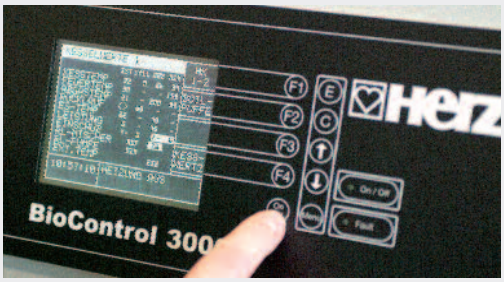
As an additional option, the T-CONTROL offers the possibility for remote visualization and remote maintenance via smartphone, PC or tablet PC. The handling is the same as in the touch controller directly in the boiler. The processes and parameters can be read and modified any time from anywhere.

Further advantages of the T-CONTROL:

- power-saving standby mode
- status and error messages via e-mail
- Data transfer and software updates via USB stick
- Possibility of Modbus-Communication
- easy and clear presentation of the functions from various components (hot water preparation pump, circulation pump, mixing valve, switchin valve, actuator-motors usw.)

Benefits and **details...**

Different control options



Central control unit firestar BioControl 3000 (for firestar 18)

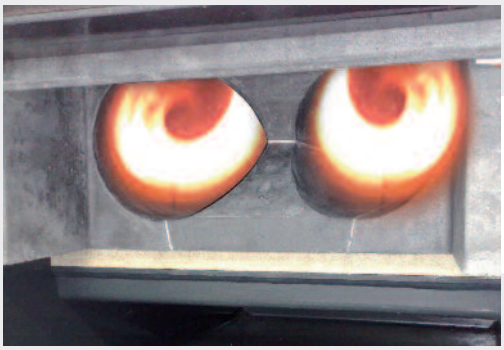
Control unit firestar Lambda (for firestar 20/30/40)

Central T-CONTROL (for firestar 20/30/40)

For a detailed description of the different control options see page 4.

Smoke extraction via open filling shaft door

- To avoid smoke escaping when the filling shaft door is opened the ventilator sucks out the gases via the smoke extraction channel.
- Ensures a smoke free boiler room without interrupting the combustion process

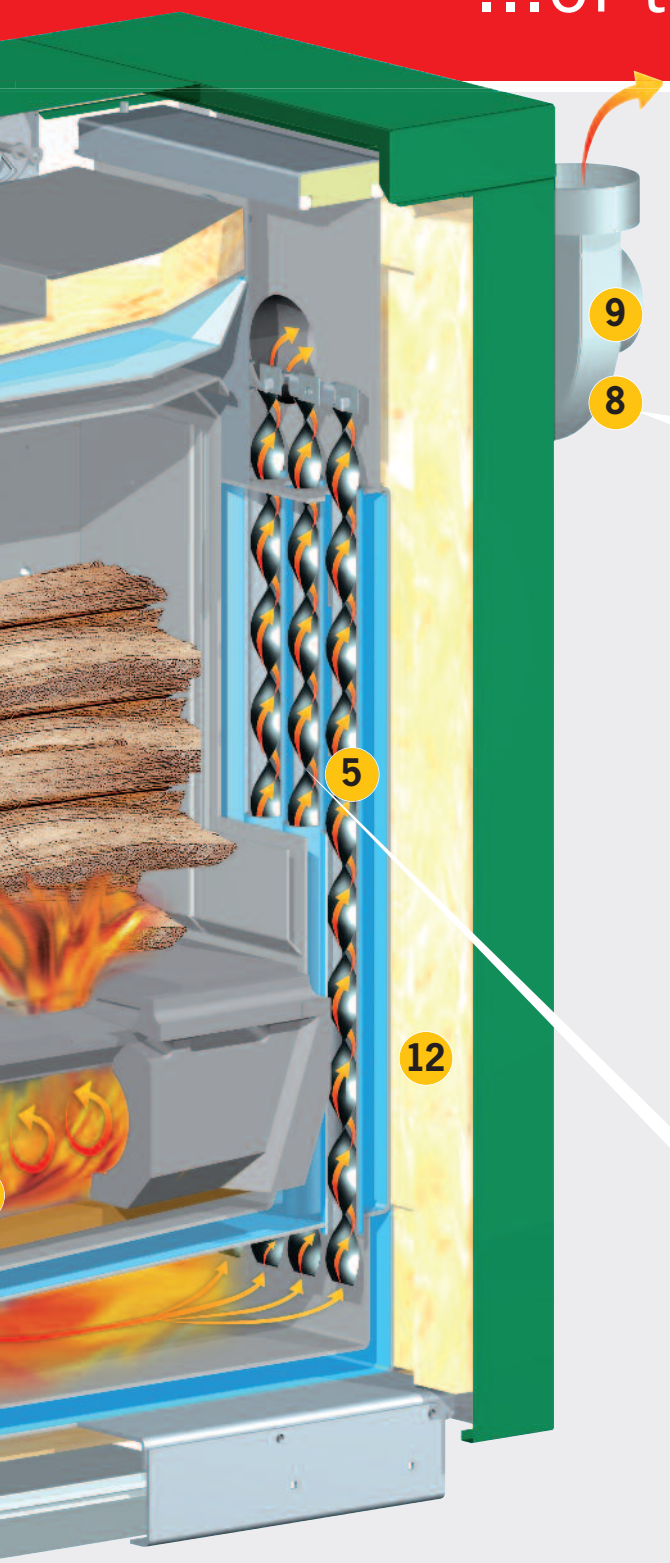


Highly efficient due to the double vortex combustion chamber

- The revolutionary double vortex combustion chamber ensures optimum blending of the combustion gases with oxygen.
- The flame is distributed across 2 chambers and therefore ensures highly efficient combustion.
- The combustion chamber consists of heat-resistant fireproof concrete (SiC) no sheet metal parts ➠ no wear and tear ➠ which means DURABILITY

1. **Filling shaft door**
   Simple firing using large 50 cm logs
2. **Large firing up door**
   Fast and simple firing up without kindling due to innovative technology
3. **Cleaning door**
   Simple removal of combustion and fly ash from the front

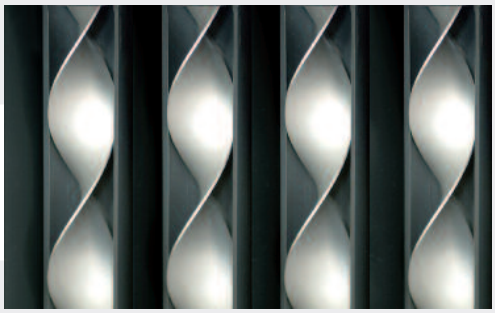
...of the HERZ firestar 18-40



Energy-saving combustion

- With built-in Lambda probe, which constantly monitors the flue gas values, the boiler responds to variations in fuel quality ensuring ideal combustion efficiency and the lowest emissions.
- The Lambda probe controls the primary and secondary air input, always achieving the cleanest combustion, even in partial load operation.
- Sophisticated controls optimise flue gas temperature to maintain boiler performance.
- The results are lower fuel consumption and the lowest emission values even with varying fuel quality.

Automatic heat exchanger cleaning



- The heat exchanger surfaces are automatically cleaned by the integrated turbulators, even during heating operation.
- A high level of efficiency is maintained due to clean heat exchangers, resulting in low fuel consumption.
- The combustion and fly ash can simply be removed via the front using the integrated ash tray.
- No side cleaning apertures – therefore less space is required.

4. **Flue gas duct**
5. **Pipe heat exchangers** with turbulators and automatic cleaning
6. **Double vortex combustion chamber**
7. **BioControl 3000 controls** central control unit
8. **Lambda probe** Automatic flue and combustion monitoring
9. **Suction ventilator** speed-controlled and monitored for the highest operational safety
10. **Integrated ash tray** simple cleaning via pull-out tray
11. **Primary and secondary air flaps** proportionally controlled separate air input
12. **Efficient heat insulation** for the lowest radiated heat loss

firestar with...

In addition to its proven advantages, such as the unique double vortex combustion chamber, automatic heat exchanger cleaning, or smoke extraction via open filling shaft door, the log wood boiler firestar is also available with pellets flange.

If the use of wood pellets is likely in the future, the log boiler with pellet flange is the perfect solution. If the buffer or heating circuits require heat after burning of all logs, the operation is automatically continued with pellets.

firestar 20-40 De Luxe with pellet flange

firestar 20-40 Lambda with pellet flange

PLEASE NOTE:
A pellet flange is possible for firestar 20/30/40

firestar with pellet flange combined with a pellet burner

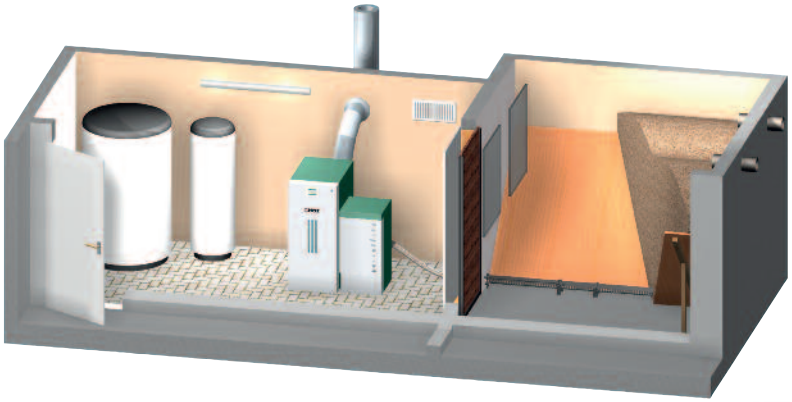
Heating with either logs or pellets

Due to the separate combustion chambers, the operation can be switched easily between logs and pellets.

Continued operation
If the buffer or heating circuits require heat after burning of all logs, the operation is automatically continued with pellets.

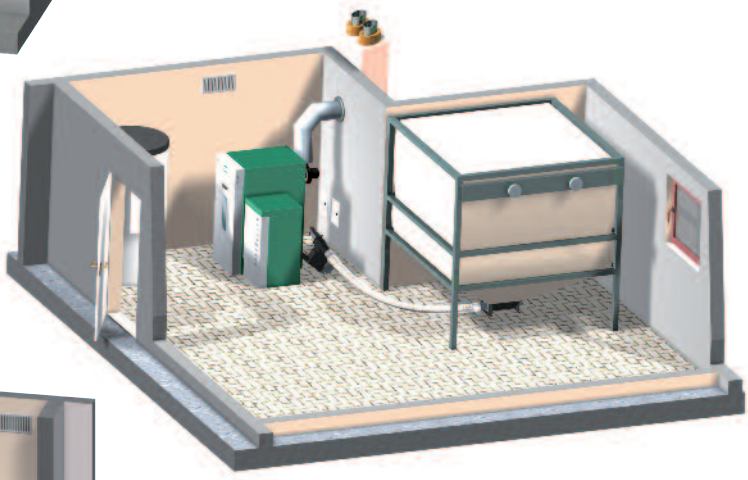
Selection of pellet discharge systems
HERZ offers a variety of pellet discharge systems including flexible screw discharge, suction system or manual hand filling to suit different plant room layouts.

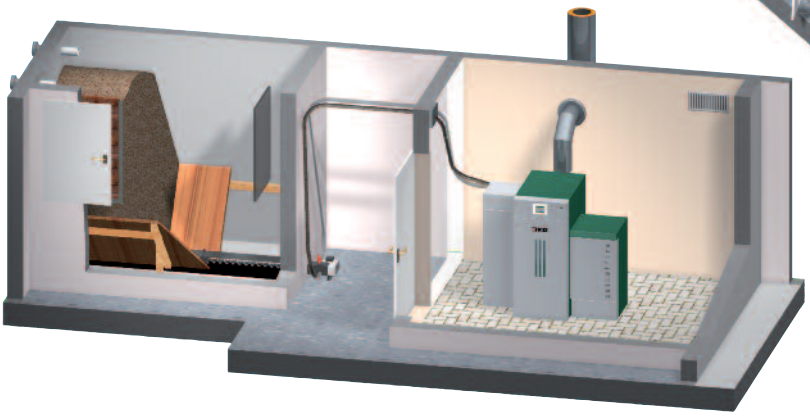
Some examples of various pellet discharge options.



The room discharge with a flexible screw is an easy and energy saving solution to empty the storage room in an efficient way.

Room discharge with flexible screw from a bag silo. The bag silo can normally be placed into the boiler room (please pay attention to your local safety laws!). This solution is used if no separate storage room is available.



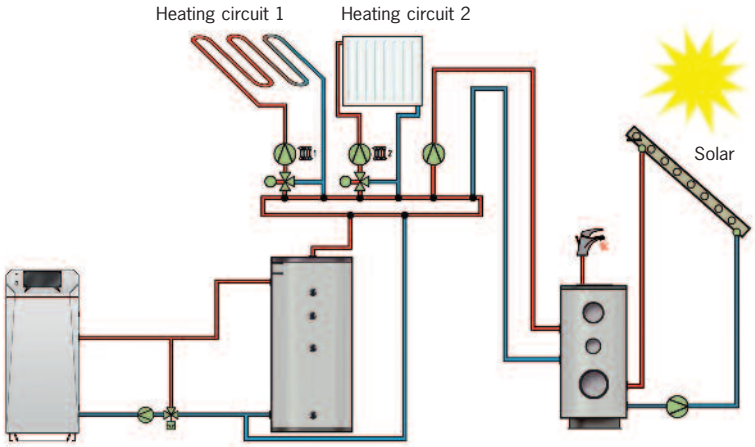


Room discharge with a modular screw (in the storage room) and in combination with suction turbine.

A **range** for all requirements...

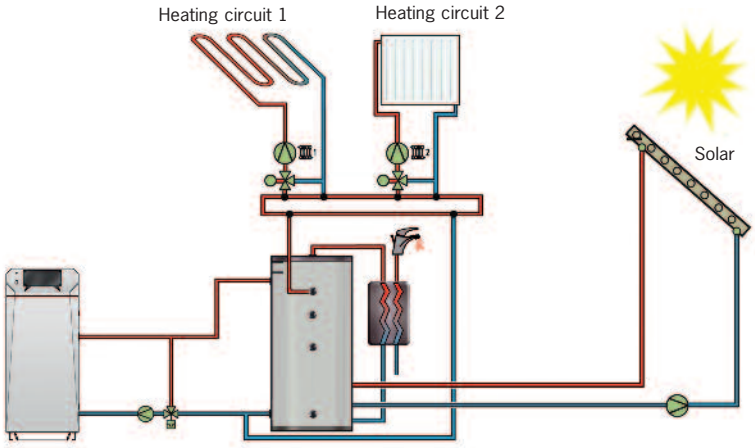
With HERZ T-CONTROL and BioControl 3000 heating circuits, boiler, buffer and solar can be controlled centrally from the boiler.

The control enables a range of application options. The 2 most common cases are shown below.



Hot water storage with solar usage and buffer storage:

With this system configuration solar energy is utilised to provide the domestic hot water. When the solar input is insufficient to meet the hot water demand, additional heat is taken from the buffer tank. Additional heating circuits such as under floor heating and the radiators are supplied with heat from the buffer tank.



Solar heating support and hygienic hot water preparation:

With this system configuration the solar energy heats the water in the buffer tank directly. Domestic hot water is provided using a heat exchanger. Additional heating circuits such as under floor heating and the radiators are supplied with heat from the buffer tank.

HERZ buffer tank

The installation of a buffer tank considerably increases the efficiency of the heating system, especially during periods of partial load. The variable heat loads from the different heating circuits (e.g. radiators and under floor heating) can be met readily from the buffer.
A buffer tank is sized to store the energy of an the boiler's maximum heat output.

HERZ recommends the following buffer tank sizes for the wood burning boiler:

- firestar 18:	minimum 1000 Liter (1500 Liter recommended)
- firestar 20/30:	minimum 2000 Liter
- firestar 40:	minimum 3000 Liter

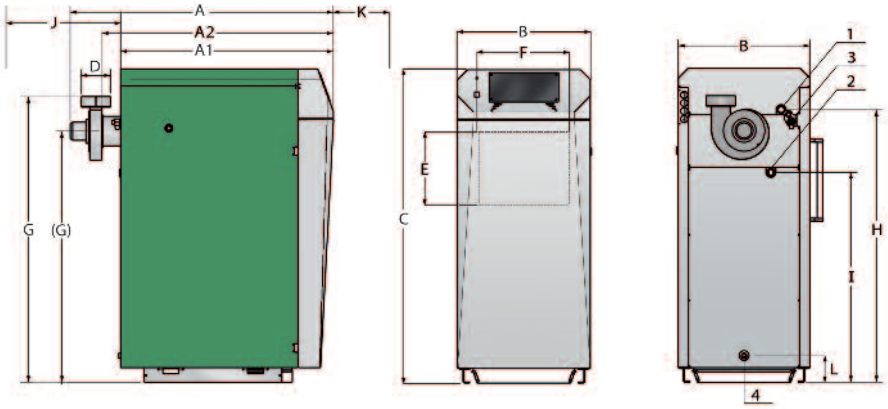
(Please note the relevant state regulations for buffer storage sizes in order to receive financial support!)

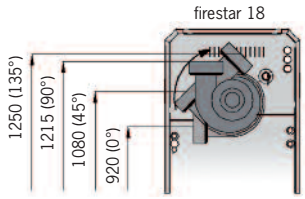
HERZ service water storage

HERZ offers the optimum solution for service water storage with or without solar register - according to the requirements of the customer.

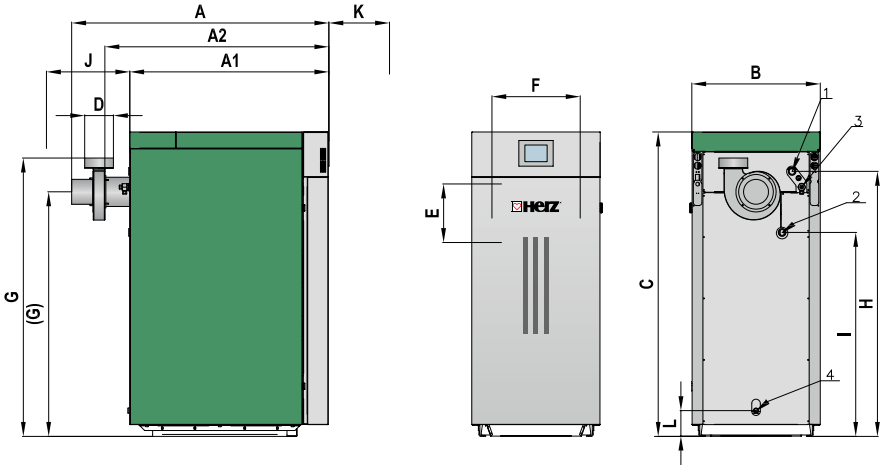
Measurements & technical **data...**

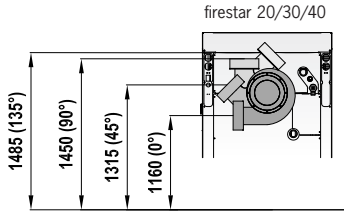
firestar De Luxe **BioControl 18**





firestar Lambda / De Luxe **T-CONTROL**





firestar		18	20	30	40
Output range (kW)		**7,6 - 18,0**	**9,9 - 22,0**	**9,9 - 30,0**	**9,9 - 40,0**
Filling shaft contents (litres)		**90**	**170**	**170**	**170**
Dimensions (mm)					
A length - total		1385	1340	1340	1340
A1 length - casing		1080	1035	1035	1035
A2 length up to the end of the flue pipe		1210	1170	1170	1170
B width		620	670	670	670
C height		1365	1585	1585	1585
D flue pipe – diameter		150	150	150	150
E filling shaft doors – height		260	305	305	305
F filling shaft doors – width		400	460	460	460
G flue pipe – upper edge		1215	1450	1450	1450
(G) flue pipe - centre		1040	1275	1275	1275
H flow connection height		1145	1380	1380	1380
I return connection height		840	1065	1065	1065
J minimum clearance rear		600	600	600	600
K minimum clearance front		520	600	600	600
L filling / emptying connection height		135	135	135	135
Technical data					
Boiler weight	kg	519	622	622	622
Level of efficiency η_F	%	>93	>93	>93	>93
flue draft requirements (min./max.)	mbar	0,05/0,20	0,05/0,20	0,05/0,20	0,05/0,20
maximum water pressure	bar	3,0	3,0	3,0	3,0
maximum water temperature	°C	90	90	90	90
water capacity	l	77	108	108	108
Electrical connection (V,Hz,A) / connection output (kW)		230,50,10/0,1	230,50,10/0,1	230,50,10/0,1	230,50,10/0,1
Emission values at full load					
Flue gas temperature	°C	~160	~140	~160	~170
Flue gas mass flow rate	kg/s	0,011	0,013	0,019	0,025
CO_2 content	Vol. %	15,54	15,4	15,4	15,6
Emission values at partial load					
Flue gas temperature	°C	~100	~100	~100	~100
Flue gas mass flow rate	kg/s	0,005	0,0068	0,0068	0,0068
CO_2 content	Vol. %	13,9	13,9	13,9	13,9

We reserve the right to make technical changes.

Door hinge can be moved from RIGHT to LEFT as standard
1...Flow 1" internal thread
2...Return 1" internal thread
3...Safety heat exchanger 1/2" external thread
4...Filling / emptying connection 1/2" internal thread

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HERZ biomass boilers exceed the strictest emission regulations.

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