

... the solution for **large properties**



BioFire

400 - 1500 kW

- Local heat network
- Large buildings
- Hotel complexes
- Housing estate projects
- Process heat



Competence is our success ...

HERZ FACTS:

- 50 subsidiaries
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 3,500 employees in over 100 countries
- 44 production sites



HERZ Armaturen Ges.m.b.H – The company

Founded in 1896, HERZ has a continuous, more than 125-year-old market presence. With 44 locations in 12 European countries and over 3,500 employees in Austria and abroad, HERZ Armaturen Ges.m.b.H is the only Austrian and one of the most important international manufacturers of products for the entire heating and plumbing industry.

HERZ Energietechnik GmbH

HERZ Energietechnik employs about 200 people in production and sales. At the company site in Pinkafeld / Burgenland is a state-of-the-art production as well as a research institute for new, innovative products. Proven cooperations with research and educational institutions can be intensified. Over the years, HERZ has established itself as a specialist in renewable energy systems. The main focus is on modern, cost-effective and environmentally friendly heating systems with maximum comfort and user-friendliness.

BINDER Energietechnik Ges.m.b.H - Bärnbach

For more than 30 years, the factory site in Bärnbach in western Styria large scaled biomass boilers are produced for industry applications. More than 100 boilers up to 10.000 kW are manufactured at the site with a total of 5,070 m² of production and storage area. The service team at the site in Bärnbach / Austria ensures reliable service and maintenance. This is supported by 13 service and sales offices in 11 countries worldwide.

HERZ for the environment

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

HERZ quality

Our HERZ design engineers are in permanent contact with acknowledged research institutions in order to improve the very high standards continuously.



EASY HANDLING

System in modular design

Due to the modular design with combustion chamber and heat exchanger module, installation and assembly can be carried out quickly and easily, even without a crane. Even in already existing boiler rooms with limited space, the system offers an optimal solution due to its low and compact design.

COMFORTABLE

Automatic combustion & heat exchanger cleaning and automatic ash removal

The combustion chamber and the heat exchanger are automatically cleaned and thus kept clean, which guarantees very long maintenance intervals. The highest level of comfort is provided by automatic deashing.

SIMPLE & SOPHISTICATED

Multifunctional control concept

A multifunctional control concept has been developed with the user-friendly color touch display control. With the "core piece" of the boiler, many processes and parameters can be optimally coordinated.

FAST

Low storage mass

No fireclay, but water cooled combustion chamber - therefore fast power supply

EASY MAINTENANCE

Extendable burner

Generously designed maintenance openings, thus easy access to the step grate and combustion chamber. 2 split heat exchanger covers for easier access to the turbulators and the fully automatic heat exchanger cleaning.

LOW EMISSIONS

Combustion technology at the highest level

The in-house developed step grate technology, the compact combustion chamber geometry and the standard built-in lambda probe, which controls the air supply as well as the amount of material, result in flexible application options for fuels and lowest emission values.

FURTHER FACTS

- Due to the possibility of cascade connection, projects up to 12.000 kW can be realised.
- Step grate with 2 controllable zones
- Suitable for 6 bar operating pressure
- Possibility of central ash discharge into external hoppers - also retrofittable.

SAFETY DEVICES

- Back fire protection flap (BFP): currentless closing, airtight flap
- Self-contained extinguishing system (SES) - sprinkler system with water tank
- Spark-back protection (SBP): fuel barrier layer
- Pressure monitoring in the combustion chamber (PMC)
- Temperature monitoring in the combustion chamber (TMC)
- Temperature monitoring in the storage room (TMS)



Easy, modern and comfortable with the ...



With the user-friendly 7" colour touch display control T-Control, heating circuits, boiler, buffer and solar can be controlled in addition to the combustion process.

T-Control - the central control unit for:

- Combustion control
- Lambda probe control (controls the combustion air and fuel input)
- Buffer management
- Control for domestic hot water preparation (via hot water tank or buffer with fresh water module)
- Back flow elevation (actuator drive and pump)
- Controlled heating circuits (actuator drive and pump)
- Solar circuit control
- Frost protection monitoring

T-CONTROL



With its convenient menu navigation and simple screen layout with schematic 3D display, the HERZ piece of the boiler ensures maximum user-friendliness.

The modular mode of operation of the T-Control offers expansion options for 4 internal and up to 30 external modules. This allows the central control unit to process the combustion (with lambda sensor), buffer management, return temperature rise, heating circuits, hot water preparation, solar circuit and more optimal together. Additionally, the control system can be easily expanded or modified with the external modules.

Further advantages of the T-Control:

- Power-saving standby mode
- Transmission of status and error messages via e-mail
- Data transfer and software updates via USB stick
- Integrated Modbus communication interface (TCP)
- Clear presentation of the functions of the different components (heating circuit pump, hot water tank loading pump, circulation pump, mixing valve, switching valve, actuator drive, etc.)

... central control unit T-Control



Remote access to the control via the myHERZ-portal very easy from everywhere

As an additional option, the T-Control offers the possibility for remote visualisation and remote maintenance via smartphone, PC or tablet. The handling is the same as in the Touch-Control directly on the boiler. Processes and parameters can thus be read and changed at any time and location independent.

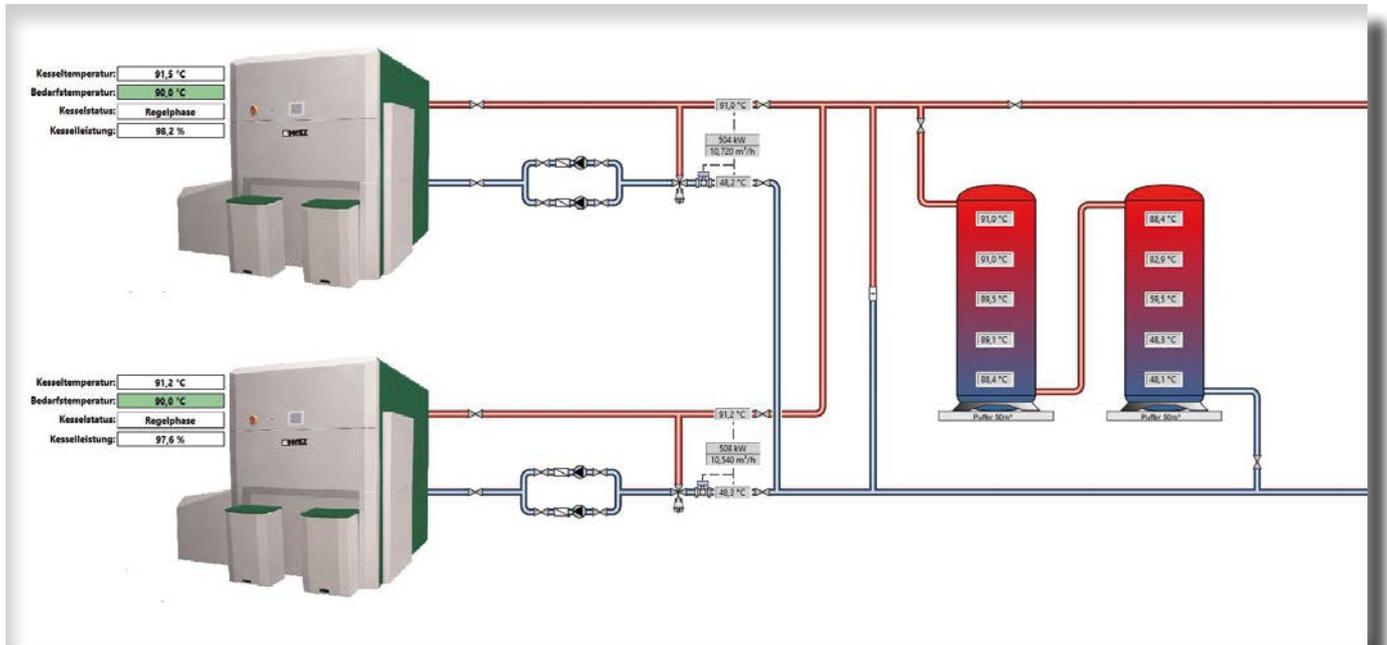
Remote access via www.myherz.at

Cascade operation

With the HERZ T-Control up to 8 boilers can be switched in cascade. That means, several boilers are merged in order to achieve a higher performance. A particular advantage of the cascade connection is the more efficient utilisation of the boilers with lower heat consumption (e.g. in the transitional period).



Regulation according to QM-Holzheizwerke

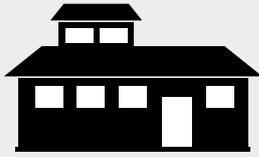


Control & visualisation – for biomass plants

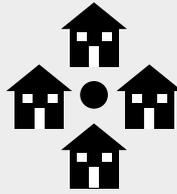
Due to the regulation according to QM-Holzheizwerke a runtime optimisation should be achieved in biomass plants. Based on min. 5 sensors (optional 10) in the buffer tank, the state of the buffer charge (0-100%) is determined and depending on the boiler output (100-30%) specified. This control strategy aims to ensure a constant boiler outlet temperature. Another feature of "QM-Holzheizwerke" regulation is that the buffer tank is loaded to an adjustable value and the boiler is operated at the lowest possible power. Therefore, a constant availability of heat is ensured. HERZ offers four packages according to the schemes WE2/4/6/8 . It is possible to operate the backflow pump with PWM or 0-10 volts speed control.

The innovative HERZ visualisation for biomass heating plants and local heating networks enables a clear presentation of the heating system according to the requirements of "QM-Holzheizwerke". Processes and parameters can be easily optimized and adjusted. Electricity and heat meters as well as trend displays are displayed clearly in the QM format. In addition, the complete heating system with all heat generators, buffer storage, solar and hydraulics, etc can be represented.

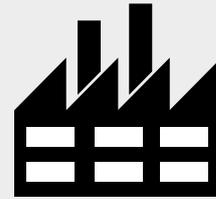
Customer satisfaction is our priority



LARGE BUILDINGS



HOUSING ESTATE PROJECTS



INDUSTRIAL PLANTS, PROCESS HEAT & WOOD PROCESSING COMPANIES



Justice Center Eisenstadt:

- The BioFire 1000 heats the district court, the public prosecutor's office and the justice institution



District heating Neckenmarkt

- 2x HERZ BioFire 800, HERZ BioMatic 400
- Heating of 117 objects in Neckenmarkt



Bio heat Hatzendorf

- HERZ BioFire 800 and HERZ BioMatic 500
- The agricultural school, public buildings, residential buildings as well as private houses are heated



Local heating in Wöllersdorf

- HERZ BioFire 600 in form of a heating container (turnkey incl. vertical filling system, agitator discharge, hydraulics, control system, chimney & electrical installation)



HERZ facility in Pinkafeld

- The BioFire 800 heats the entire factory consisting of technical area (research area), offices and the manufacturing area with state-of-the-art production
- Heated area: 18.400m²



VILA VITA Pannonia (4-star wellness and family paradise on 200 hectares)

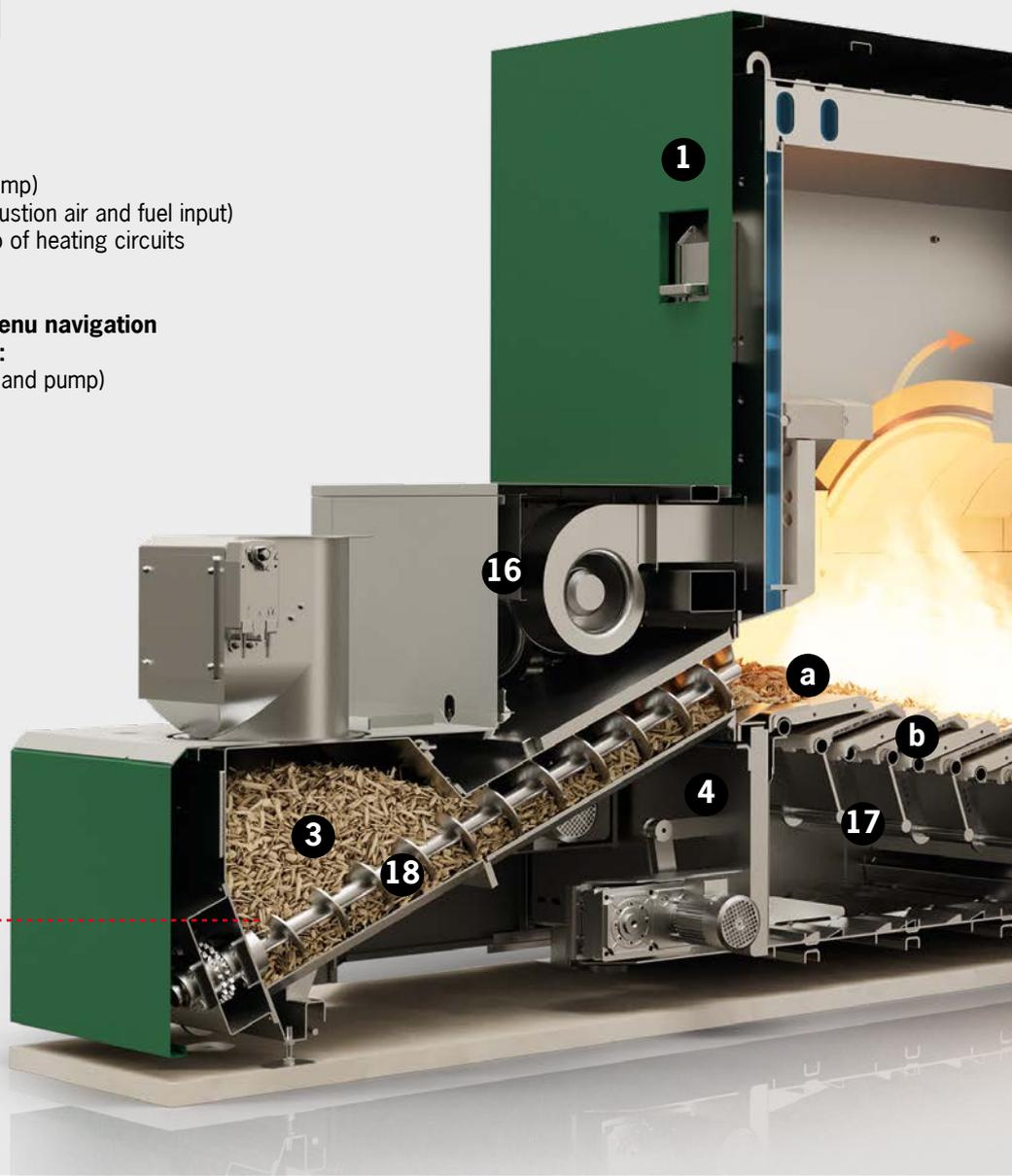
- 2 HERZ BioFire 1000
- Heating of the main building with wellness park
- restaurant, hotel & reception as well as conference rooms, 60 bungalows tennis hall, 1000 m² events hall employee village

Advantages and details



T-Control - the userfriendly control with touch-display

- **Central control unit as standard for:**
 - Combustion control with lambda probe
 - Buffer management
 - Underpressure control
 - Back flow elevation (actuator drive and pump)
 - Lambda probe control (controls the combustion air and fuel input)
 - Control for motor valve for fast heating up of heating circuits for buffer operation
- **Simple screen design and convenient menu navigation**
- **Extension possibilities up to 30 modules:**
 - Controlled heating circuits (actuator drive and pump)
 - Solar circuit control
 - Further buffer management



- | | | |
|--|--|---|
| <p>1. Combustion chamber module</p> <p>2. Heat exchanger module</p> <p>3. Intermediate hopper with backfire protection flap and drop chute</p> <p>4. Automatic ignition via hot air fan</p> <p>5. Combustion chamber made of silicon carbide (temperature resistance up to 1550°C) with step grate (3 zones) made of robust cast chrome steel. The grate feed intervals and 2 primary air zones</p> | <p>6. Vertical pipe heat exchanger with integrated turbulators and cleaning mechanism. Consistently high efficiency through automatic cleaning of the heat exchanger surfaces, even during heating operation, via springs and displacement bodies ensures low fuel consumption. No compressed air supply necessary.</p> | <p>7. Automatic exhaust gas and combustion monitoring through lambda probe control</p> <p>8. Frequency converter-controlled induced draft fan (on the cyclone) with underpressure control in the burning chamber</p> <p>9. Ash discharge screw from the combustion chamber including push rod floor conveyor</p> |
|--|--|---|



Optimised combustion through 3-zone step grate

The proven technology for large plants guarantees a long combustion zone and is fuel-independent - therefore a higher water content in the fuel is possible.

The standard grate temperature monitoring, in combination with the optional recirculation, ensures a longer service life of the grate elements due to reduction of the grate temperature.

Easy revision possibilities through:

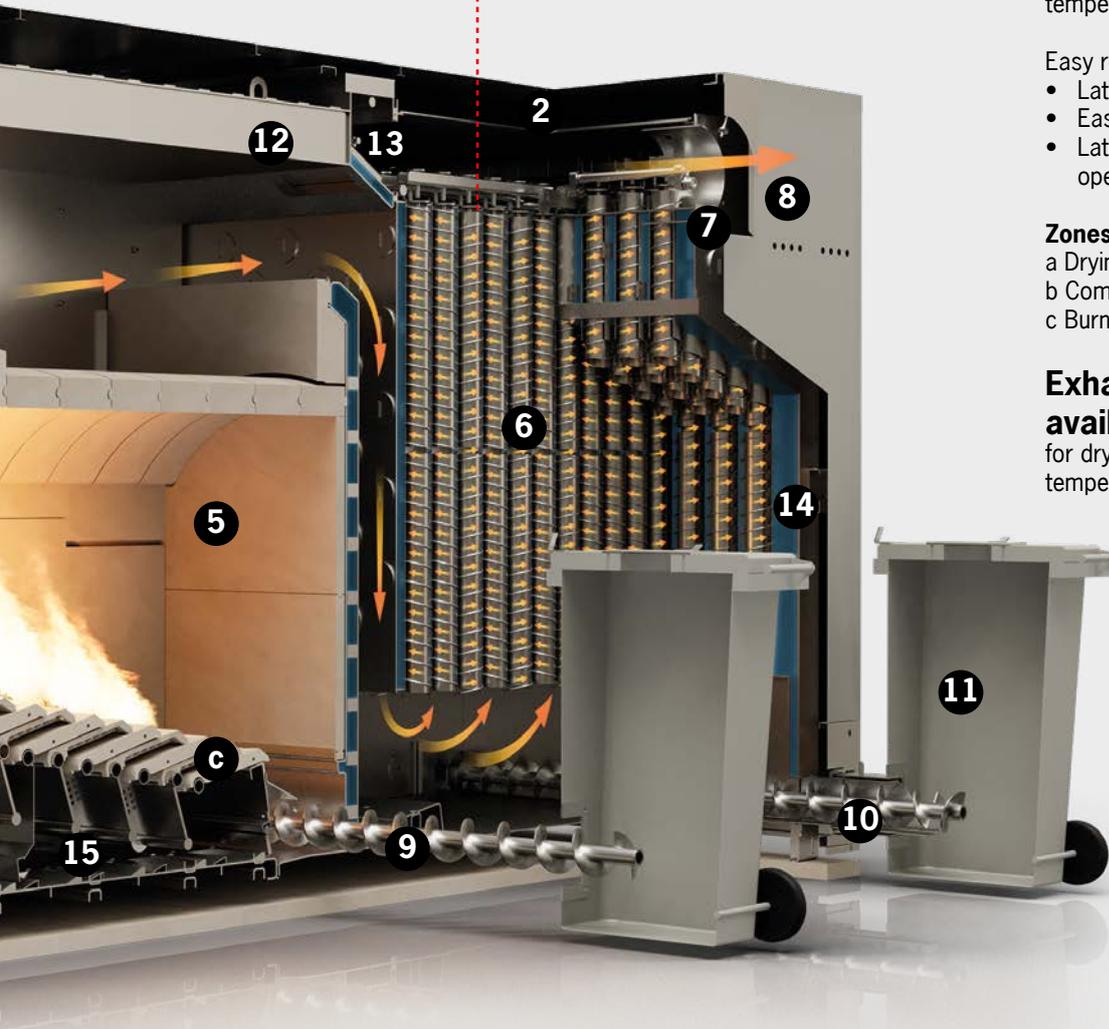
- Laterally extendable burner
- Easy to replace grate elements
- Lateral access via additional inspection openings

Zones:

- a Drying zone
- b Combustion zone
- c Burn-out zone

Exhaust gas recirculation available as an option

for dry fuels as combustion chamber temperature reduction



10. Ash discharge screw from the heat exchanger module - The fly ash is taken to the ash container via screw discharge.

11. Ash containers with wheels These enable easy and convenient emptying of the ash. A central ash discharge is optionally available.

12. Flow connection possible on both sides

13. Back flow connection on both sides possible opposite of the flow and return connection is the hydraulic connection between the combustion chamber and the heat exchanger module

14. Efficient heat insulation for the lowest radiation losses

15. Zone controlled primary air supply

16. Secondary air fan

17. Combustion zone

- a Drying zone
- b Combustion zone
- c Burn-out zone

18. Double hardox insertion screw

Due to the double screw, an even distribution of the fuel can already be ensured at the beginning of the stair grate.

Discharge systems for wood chips & pellets

HERZ discharge systems enable numerous storage room designs.

HERZ offers a variety of solutions to store wood pellets & wood chips and to transport the fuel via various systems to the boiler. Whether a room discharge via hydraulic walking floor, agitator system or rigid pellets screw: Due to the wide range of discharge variants HERZ has the optimal solution for each room and space situation.

Discharge via hydraulic walking floor system with transport screw

The hydraulic walking floor system offers an optimal solution for large storage rooms. Due to the rectangular shape of the grids, the area of the storage room can be optimally used. This system is suitable for boilers with a power range of up to 3.000 kW. Due to the robust design of the grids, they are also insensitive to combustibles and therefore ideally suited for the P45S M50 wood chips. Double boiler system: Optimum design if a large output range is to be covered or useful in summer when less output is required.

Illustration:

- 1 Double boiler system BioFire with flue gas cyclones and electrostatic filter
- 2 Hydraulic walking floor
- 3 Transport screw system to the boiler

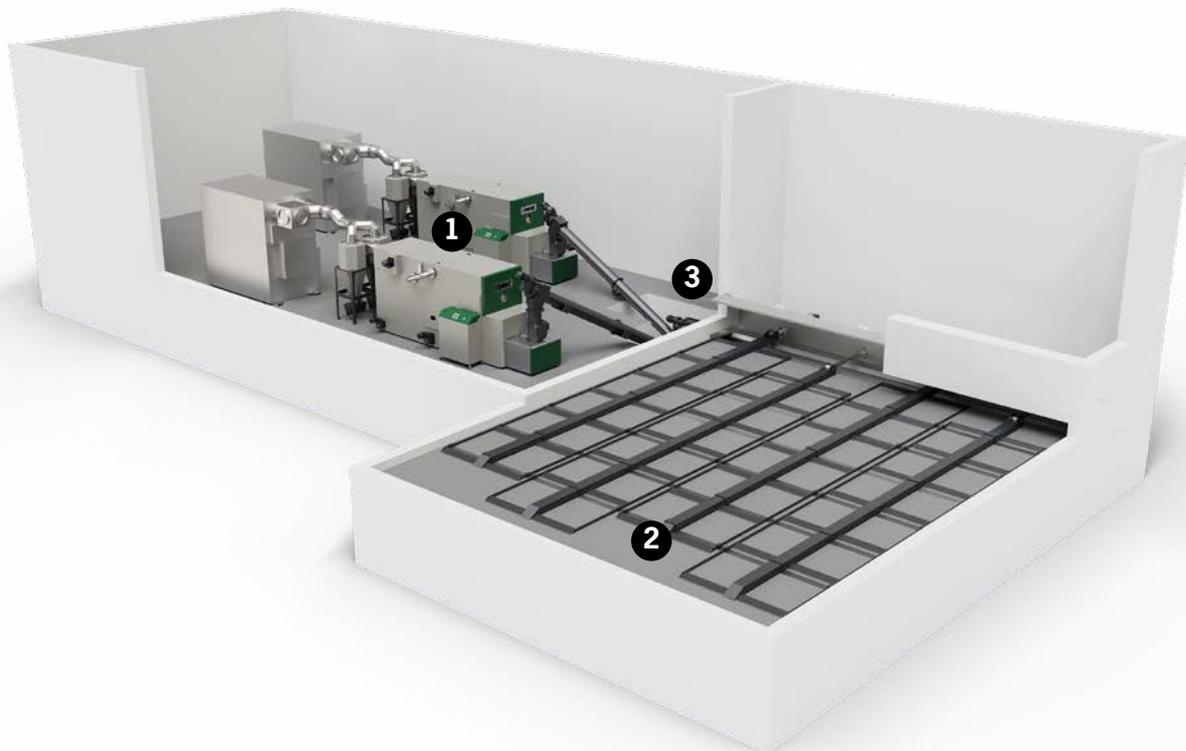
System suitable for:

BioFire 400-1500
BioFire 400-1500 (P45S)
BioFire 500-1000 (P45S + M50)

Usable fuel:

for wood chips according
EN ISO 17225-4: Property class
A1, A2, B1, and particle size P16S,
P31S, P45S

for wood pellets (Ø 6 mm) according
to EN ISO 17225-2: Property
class A1, A2; ENplus, DINplus or
Swisspellet



Discharge systems for wood chips & pellets

Discharge via agitator with separate drive and continuous screw

The advantage of the discharge system agitator with separate drive is the more efficient use of storage space and the possibility of transporting wood chips to the boiler. The continuous screw ensures optimum emptying of the storage room.

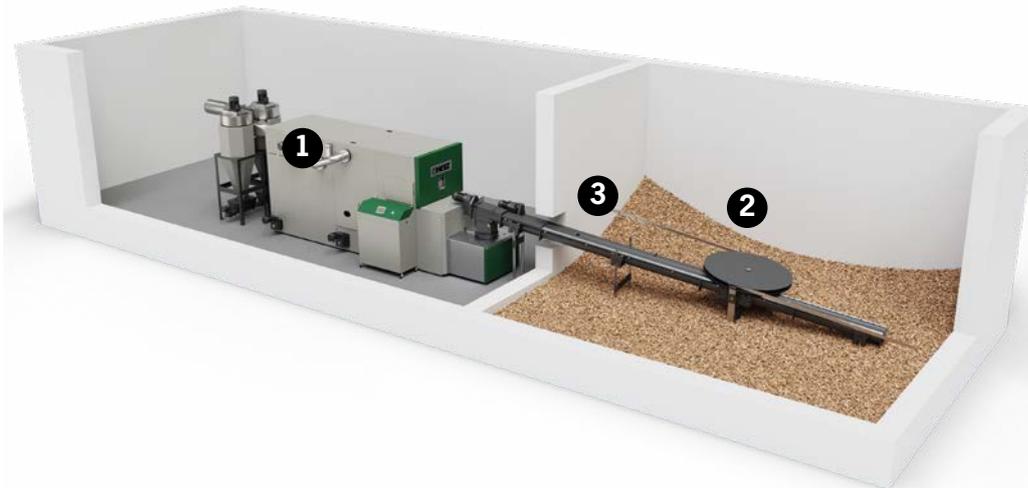


Illustration:

- 1 Boiler system BioFire with flue gas cyclones
- 2 Agitator plate with springs
- 3 Trough with continuous screw

System suitable for:

BioFire 400-1500
BioFire 400-1500 (P45S)*
BioFire 500-1000 (P45S + M50)*

Usable fuel:

for wood chips according to EN ISO 17225-4: Property class A1, A2, B1 and particle size P16S, P31S, P45S*

for wood pellets (Ø 6 mm) according to EN ISO 17225-2: property class A1, A2, ENplus, DINplus or Swissspellet

*when using articulated arm version

Discharge via hydraulic walking floor with fuel chain conveyor and distribution tank

The ideal solution for fuel transport over longer distances is the hydraulic walking floor discharge system in combination with a fuel chain conveyor. In addition, larger level differences between the boiler room and the storage room can be compensated. The distribution tank supplies the systems with fuel and is therefore the more space-saving option if there is not enough space for two discharge systems. Double boiler system: Optimum design if a large output range is to be covered or useful in summer when less output is required.

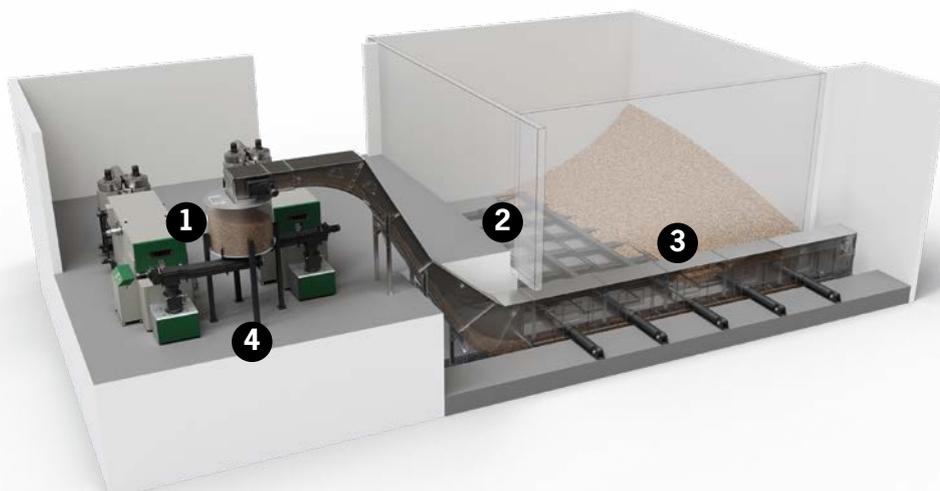


Illustration:

- 1 BioFire double boiler system with flue gas cyclone and distribution tank
- 2 Hydraulic walking floor
- 3 Fuel chain conveyor
- 4 Distribution tank

System suitable for:

BioFire 400-1500
BioFire 400-1500 (P45S)
BioFire 500-1000 (P45S + M50)

Usable fuel:

for wood chips according to EN ISO 17225-4: Property class A1, A2, B1, and particle size P16S, P31S, P45S

for wood pellets (Ø 6 mm) according to EN ISO 17225-2: Property class A1, A2; ENplus, DINplus or Swissspellet

Discharge systems for wood chips & pellets

Discharge via hydraulic walking floor with vertical transport system and vertical filling system with basket screw

The vertical filling system is a modular system for optimised storage room filling from the outside. The fuel is transported into the storage room via vertical screw and optimally distributed in the storage room via horizontal basket screws. The basket screws enable high filling capacities and, in combination with a vertical filling system, the fuel can also be transported over longer distances. The material can be conveniently and cleanly fed into the filling system thanks to the generously dimensioned receiving hopper.

The use of a hydraulic walking floor system in combination with a vertical transport system is particularly suitable when different levels have to be compensated, e.g.: recessed trough or different room heights. The fuel is transported through the hydraulic walking floor into the trough to the vertical transport system and then to the boiler.

Illustration:

- 1 BioFire boiler system with flue gas cyclone
- 2 Hydraulic walking floor
- 3 Vertical transport system
- 4 Vertical filling system
- 5 Basket screw

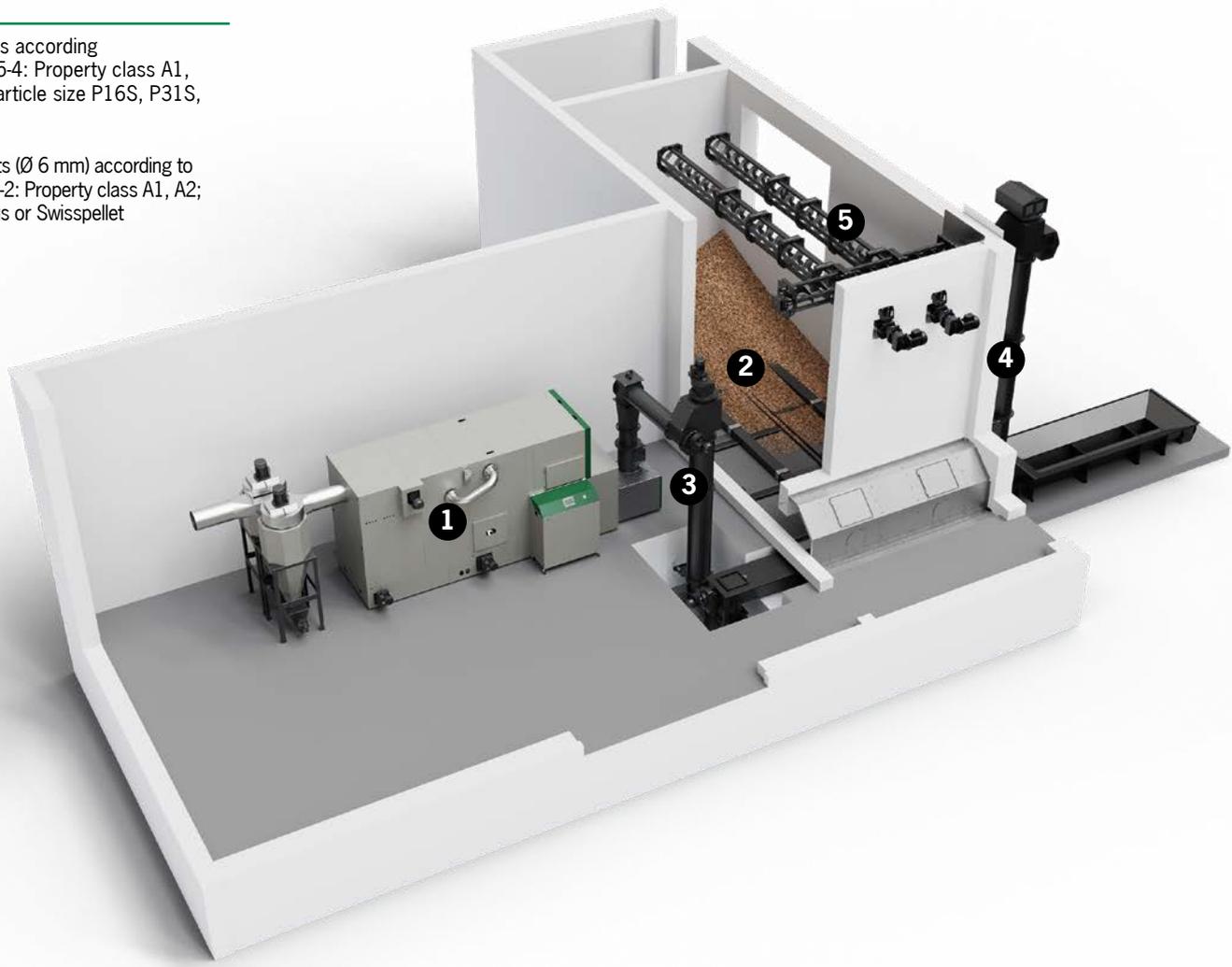
System suitable for:

BioFire 400-1500
BioFire 400-1500 (P45S)
BioFire 500-1000 (P45S + M50)

Usable fuel:

for wood chips according
EN ISO 17225-4: Property class A1,
A2, B1 and particle size P16S, P31S,
P45S

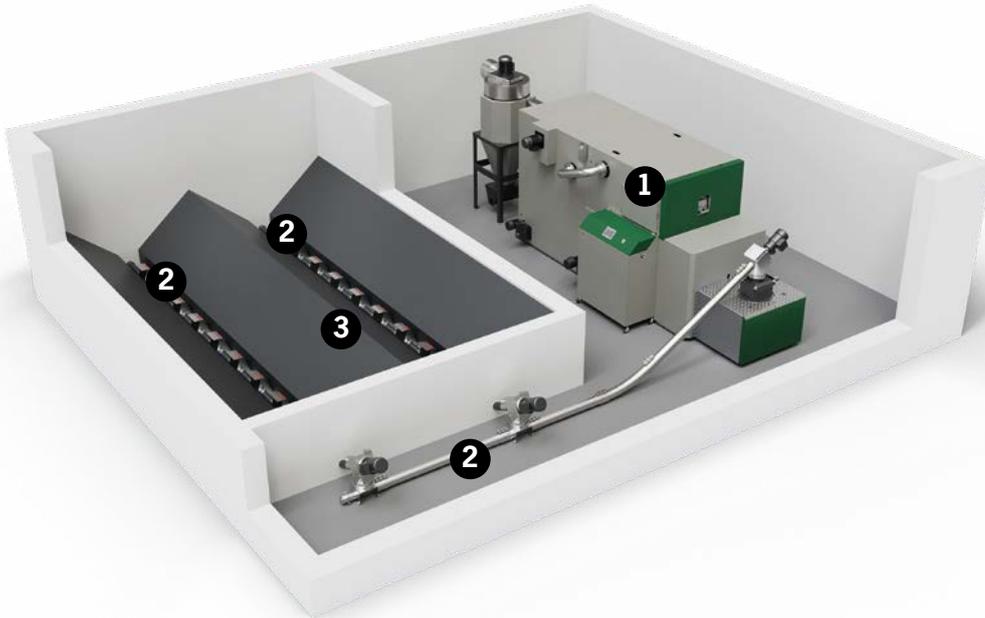
for wood pellets (Ø 6 mm) according to
EN ISO 17225-2: Property class A1, A2;
ENplus, DINplus or Swisspellet



Pellet discharge systems

Discharge from the storage room with SF30iKR transport system equipped with S4 pellet hopper

With the flexible transport system, pellets can be transported vertically and in curves. It not only offers the option of adapting the transport path individually, but also ensures low-noise and gentle pellet transport. The sloping floors ensure that the store is emptied to an optimum degree. In addition, the plug-in system in the storage room enables quick and uncomplicated installation.



In cooperation with

STEINER®
Spiralförderanlagen

www.steiner-spiralen.de

Illustration:

- 1 BioFire boiler system with flue gas cyclone
- 2 Feed screw SF30iKR - S4 pellet hopper
- 3 Sloping floor

System suitable for:

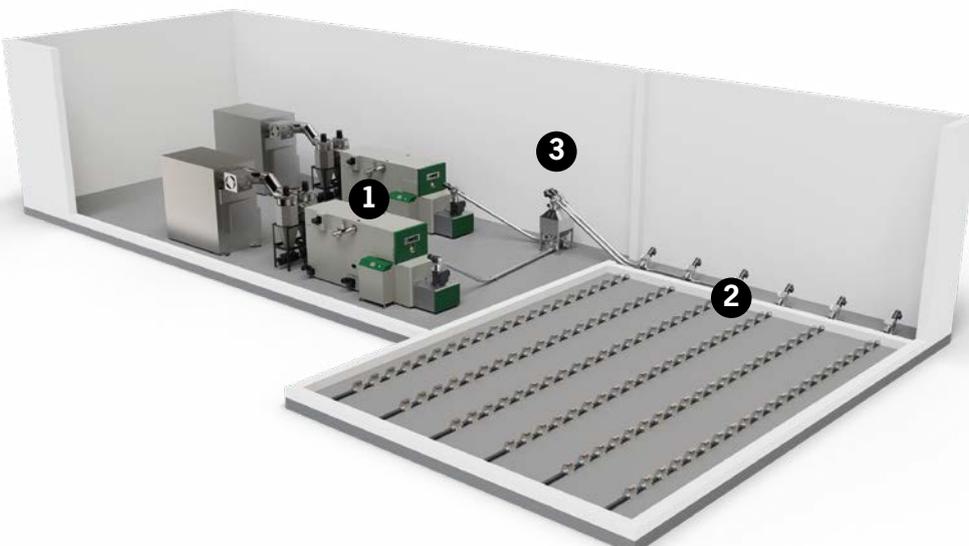
BioFire 400-1500

Usable fuel:

for wood pellets (Ø 6 mm) according to EN ISO 17225-2: Property class A1, A2; ENplus, DINplus or Swissspellet

Discharge via transport screws and intermediate hopper

The intermediate hopper enables optimal feeding of the boilers with maximum redundancy. Each boiler has access to the entire storage volume of pellets. Depending on requirements, the dosing spirals are controlled from the storage tank by the respective boiler. Double boiler system: Optimum design if a large output range is to be covered or useful in summer when less output is required.



In cooperation with

STEINER®
Spiralförderanlagen

www.steiner-spiralen.de

Illustration:

- 1 BioFire boiler system with flue gas cyclone and electrostatic filter
- 2 Feed screw SF30iKR - S4 pellet hopper
- 3 Intermediate hopper

System suitable for:

BioFire 400-1500

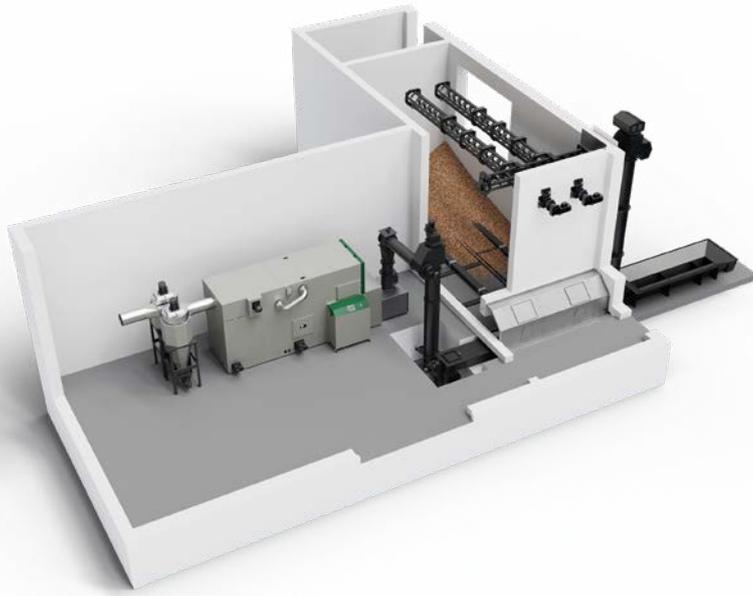
Usable fuel:

for wood pellets (Ø 6 mm) according to EN ISO 17225-2: Property class A1, A2; ENplus, DINplus or Swissspellet

Vertical filling system

The system

The HERZ vertical filling system can be used individually for any room and space situation with a wide range of options. After filling the trough, wood chips or pellets are transported via a vertical screw into the fuel storage room at a height of up to 10 metres. Via screw in the storage room, an optimal distribution of the fuel is ensured.



The great advantages

- Individual application possibilities
- Heights up to 10 metres possible
- Corrosion-resistant due to galvanized paneling parts for permanent outdoor installation
- Optimum distribution of the fuel in the storage room through the distribution screw (up to 12 metres possible)



Double vertical filling system

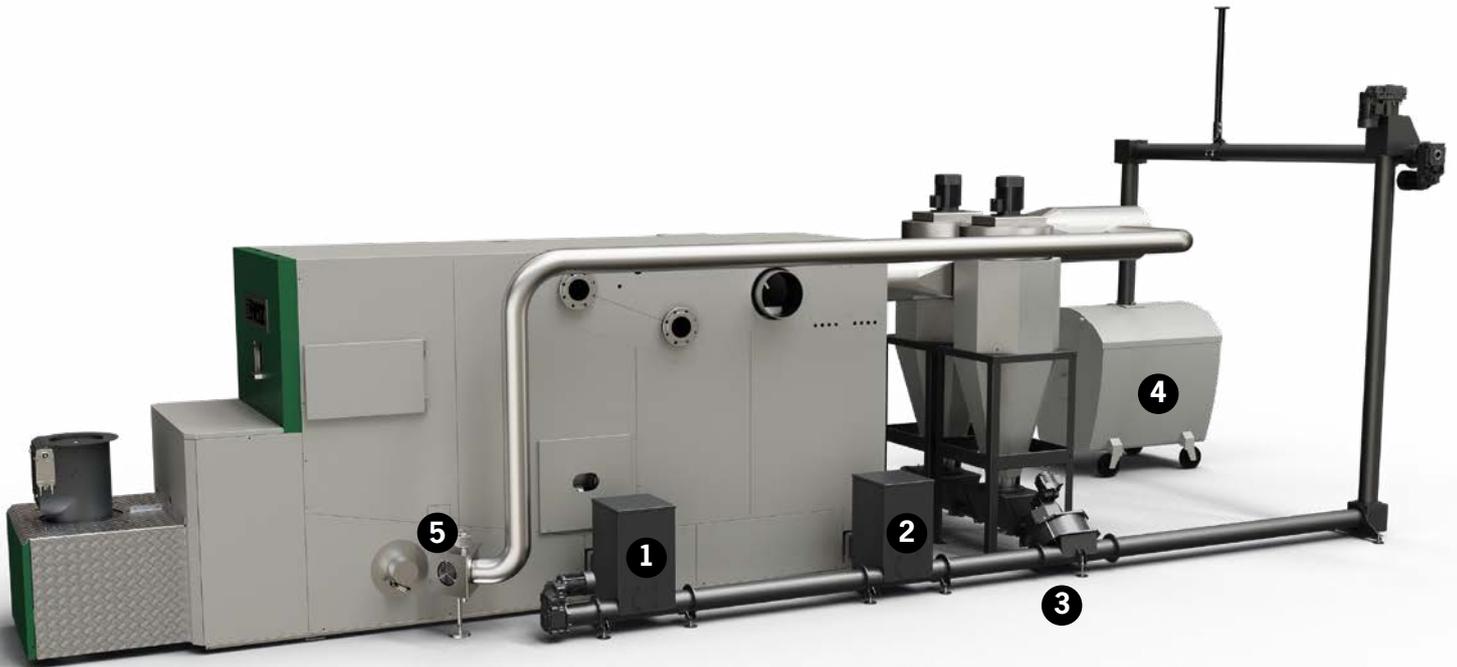
In double systems, 2 vertical screws and a double trough are used. In the trough there are 2 parallel arranged transport screws, which lead directly to the vertical screws. This enables delivery rates of up to 120 m³/h to be achieved. Depending on the space situation, HERZ offers individual solutions and flexible installation options.



Filling trough with transport wheels

The 1-fold filling trough is optionally available with transport wheels. After filling, the trough can be easily and quickly transported away.

The opening to the vertical transport screw is equipped with a closing cap, making the system ready for any weather conditions.



Central ash discharge system via screw

The ash from the combustion ash and fly ash containers (1+2) as well as from the ash lock of the cyclone (3) is transported by a screw system into an external ash container (4) automatically.

The advantages are shorter cleaning intervals and the convenient removal of ash. The central ash removal system is individually adapted and planned to suit local conditions.

Numerous projects have already been realised in which the ashes are transported over longer distances or levels to the large collection container.

In addition, you benefit from lower construction costs, as no structural measures such as ash cellars or floor recesses are necessary.

Ash transport in confined spaces

HERZ pays special attention to the best possible customer comfort. Thus individual solutions are designed and implemented for almost any space situation. A central ash discharge system with vertical transport of the ash saves a lot of space and ensures optimal comfort.

The ash can be easily transported vertically over several metres to ash containers. A difficult and complicated ash removal from containers in the cellar or basement is now a thing of the past.

Flue gas recirculation

When using dry fuels with less than 20 % water content (e.g. pellets), we recommend the usage of primary air flue gas recirculation, which can be installed in all BioFire models, directly in the scope of delivery and also as an option for retrofitting.

By using primary air recirculation, components in the combustion chamber, such as grate elements and combustion chamber stones, can be better protected as a result of a reduction in the grate temperature and a consistently high level of efficiency can also be ensured and slag formation avoided.

Functional principle:

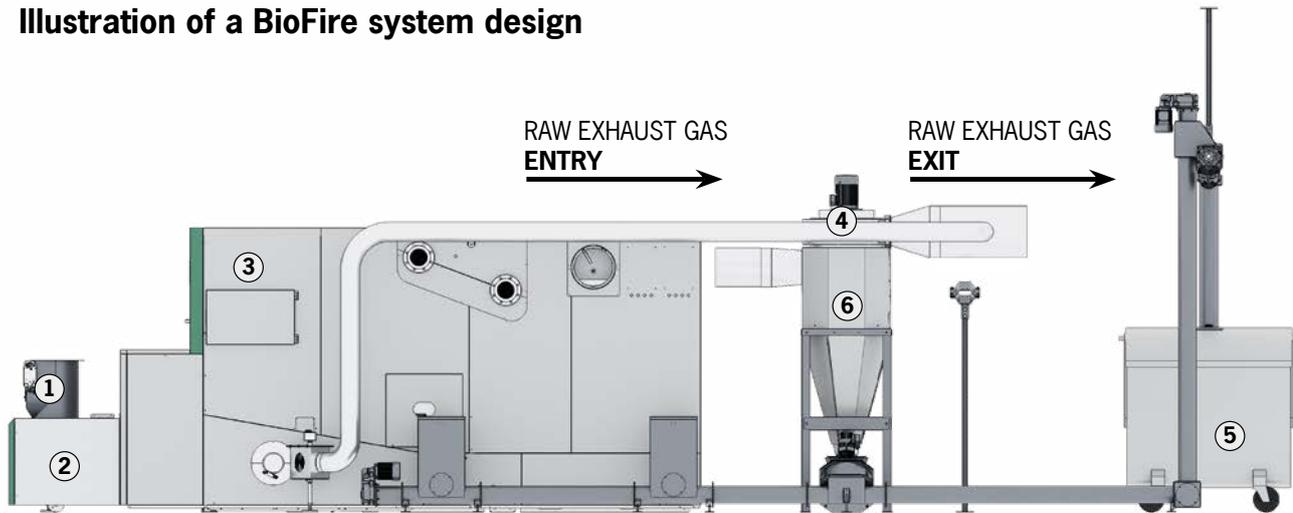
The addition of flue gas (with a low O₂ content) to the primary air supply is regulated by permanently measuring the combustion chamber temperature. Due to the larger volume of flue gas, based on the same O₂ content, more heat is dissipated from the combustion chamber to the heat exchanger. This lowers the combustion temperature and at the same time reduces the formation of thermal NO_x compounds.

The system is consisting of:

- Regulating flap with actuator (5)
- Temperature sensor
- Fully automatic control of the combustion air volume

Flue gas dedusting

Illustration of a BioFire system design



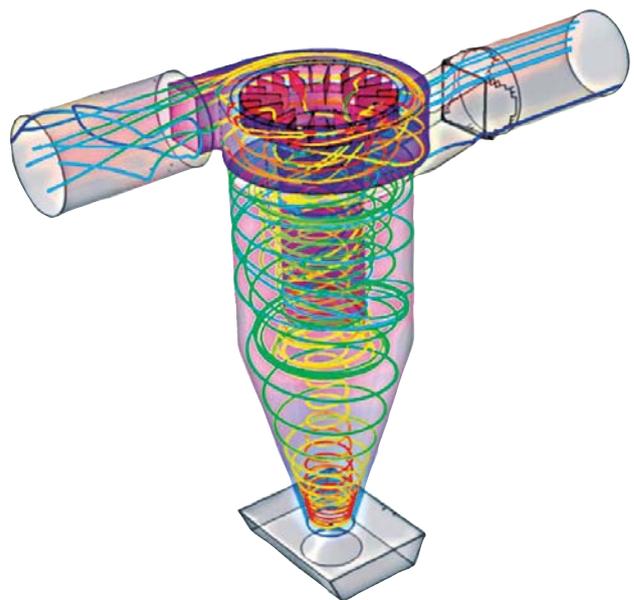
1. Chute pipe with back fire protection flap (BFP)
2. Intermediate hopper with double feed screw incl. independent extinguishing device and spark-back protection
3. Boiler (combustion chamber and heat exchanger module)
4. Frequency converter-controlled induced draft fan (flue gas fan) with underpressure control
5. Central ash container
6. Flue gas dust extraction (cyclone with flue gas fan)
7. Optionally available flue gas recirculation

Cyclone with flue gas fan for flue gas dedusting

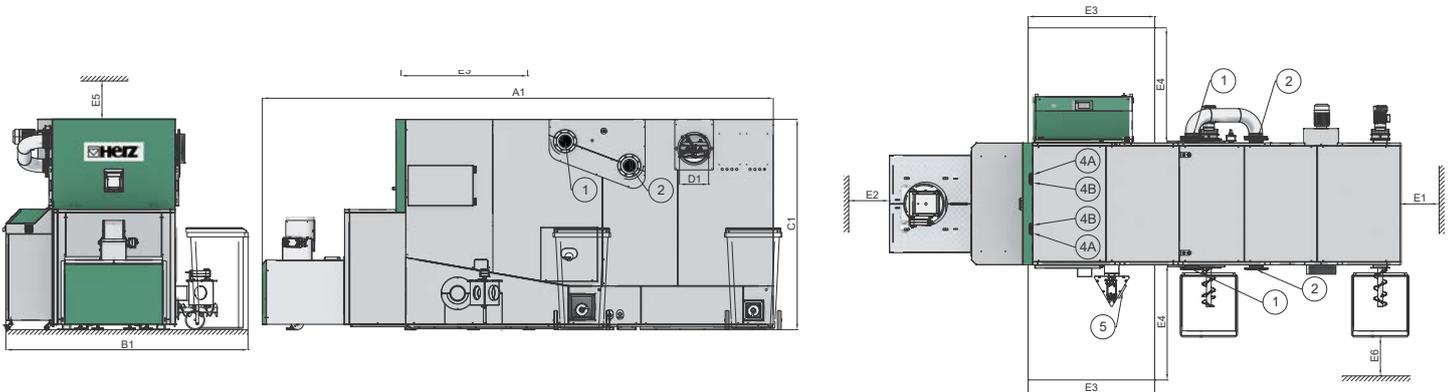
In the cyclone, the exhaust gas is provided with a swirl. This causes centrifugal forces to act on the dust particles in the exhaust gas. The dust particles are pressed against the wall and sink downwards. The dust particles are automatically collected in an ash box or in a central ash removal system.

The key data

- Compact design
- Low investment and operating costs
- Low pressure loss
- Separation of particles with a size of 10-50 μ m
- Integration into central ash discharge system possible



Dimensions & technical data BioFire



Technical data		400	450	500	600	800	1000	1250	1500
Output range according to type plate wood chips	kW	117 - 400	117 - 450	150 - 500	180 - 600	240 - 800	300 - 1000	375 - 1250	450 - 1500
Output range according to type plate wood pellets	kW	117 - 400	117 - 450	150 - 500	180 - 600	240 - 800	300 - 1000	375 - 1250	450 - 1500
Efficiency rate nominal load wood chips*	%	93,1	93,1	95,3	95,0	94,3	93,7	93,3	92,9
Efficiency rate nominal load wood pellets*	%	95,2	95,2	95,8	95,4	94,8	93,8	93,3	92,8
Boiler weight	kg	5317	5317	5317	5915	5915	6796	10003	10003
Max. permissible operating temperature	°C	102	102	102	102	102	102	102	102
Operating overpressure [min-max]	bar	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6
Water capacity	ltrs.	1146	1146	1146	1660	1660	1950	3275	3275

Boiler data for calculation of the flue gas system

Flue gas temperature woodchip nominal load / part load	°C	~ 110/~ 80	~ 110/~ 80	~ 150/~ 90	~ 120/~ 90	~ 140/~ 90	~ 160/~ 90	~ 130/~ 90	~ 150/~ 90
Flue gas mass flow rate wood chips nominal load / part load	kg/h	957,6/352,8	1076,40/352,8	1314/439,2	1620/529,2	1915,2/637,2	2440,8/795,6	3207,6/1112,4	3830,4/1332
CO ₂ content wood chips nominal load / part load	Vol. %	12,06/9,75	12,06/9,75	12,33/11,23	12/11	12,55/11,02	12,27/11,02	12,43/10,82	12,65/10,82
Flue gas temperature pellets nominal load / part load	°C	~ 110/~ 80	~ 110/~ 80	~ 150/~ 90	~ 120/~ 90	~ 140/~ 90	~ 160/~ 90	~ 130/~ 90	~ 150/~ 90
Flue gas mass flow rate pellets nominal load / part load	kg/h	954/374,4	1072,8/374,4	1288,8/424,8	1587,6/432	1850,4/619,2	2268/774	2934/972	3481,2/1166,4
CO ₂ content pellets nominal load / part load	Vol. %	12,28/94,5	12,28/94,5	12/11	12/11	12,54/10,73	12,71/10,73	12,34/11,11	12,56/11,11

Dimensions		400-500	600-800	1000	1250-1500	
A1	Length	mm	4490	4980	5285	5890
B1	Length	mm	2505	2505	2505	2865
C1	Length	mm	1990	1990	2190	2475
D1	Length	mm	Øa 300	Øa 300	Øa 300	Øa 300

Minimal free areas

E1	Free areas [min]	mm	150	150	150	150
E2	Free areas [min]	mm	750	750	750	750
E3	Free areas [min]	mm	1100	1310	1310	1450
E4	Free areas [min]	mm	1200	1200	1200	1200
E7	Minimal gap	mm	700	700	700	850
E6	Minimal gap	mm	400	400	400	400

Insertion dimensions

Depth heat exchanger module	mm	1400	1600	1600	1600
Width of the heat exchanger module	mm	1400	1400	1400	1980
Height of heat exchanger module	mm	1977	1977	2177	2480
Depth of combustion chamber module	mm	2200	2400	2400	2800
Width of the combustion chamber module	mm	1400	1400	1400	1980
Height of combustion chamber module	mm	1977	1977	2177	2480

Usable fuels for BioFire 400-1500 T-Control:

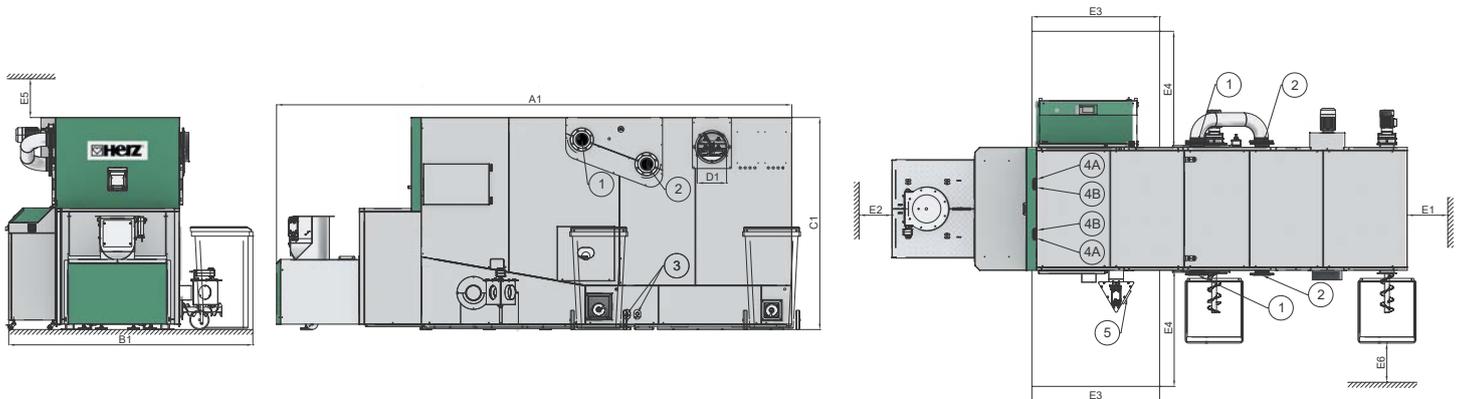
- **Wood pellets according to**
 - EN ISO 17225-2: Property class A1, A2
 - ENplus, DINplus or Swissspellet

Connections		400 - 500	600 - 1500
1	Flow	DN100 / PN6	DN125 / PN6
2	Back flow	DN100 / PN6	DN125 / PN6
3	Filling/emptying	3/4" IT	3/4" IT
4a	Safety heat exchanger input	1" IT	1" IT
4b	Safety heat exchanger output	1" IT	1" IT
5	Connection for flue gas recirculation - optional	150 mm	150 mm

Subject to change in the interest of technical progress!
The specified free areas must be observed for carrying out maintenance and service work.

*measured data from test report
IG internal thread

Dimensions & technical data BioFire P45S



Technical data

		400	450	500	600	800	1000	1250	1500
Output range according to type plate wood chips	kW	120 - 400	120 - 450	150 - 500	180 - 600	240 - 800	300 - 1000	375 - 1250	450 - 1500
Efficiency rate nominal load wood chips*	%	93,1	93,1	92,4	92,5	93,2	91,1	93,4	92,6
Boiler weight	kg	5317	5317	5317	5915	5915	6796	10003	10003
Max. permissible operating temperature	°C	102	102	102	102	102	102	102	102
Operating overpressure [min-max]	bar	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6
Water capacity	ltrs.	1146	1146	1146	1660	1660	1950	3275	3275

Boiler data for calculation of the flue gas system

Flue gas temperature woodchip nominal load / part load	°C	~ 110/~ 80	~ 110/~ 80	~ 150/~ 90	~ 120/~ 90	~ 140/~ 90	~ 160/~ 90	~ 130/~ 90	~ 150/~ 90
Flue gas mass flow rate wood chips nominal load / part load	kg/h	957,6/352,8	1076,40/352,8	1314/439,2	1620/529,2	1915,2/637,2	2440,8/795,6	3207,6/1112,4	3830,4/1332
CO ₂ content wood chips nominal load / part load	Vol. %	12,06/9,75	12,06/9,75	12,33/11,23	12/11	12,55/11,02	12,27/11,02	12,43/10,82	12,65/10,82

Dimensions

		400-500	600-800	1000	1250-1500
A1	Length	mm 4490	4980	5285	5890
B1	Length	mm 2505	2505	2505	2865
C1	Length	mm 1990	1990	2190	2475
D1	Length	mm Øa 300	Øa 300	Øa 300	Øa 300

Minimal free areas

E1	Free areas [min]	mm 150	150	150	150
E2	Free areas [min]	mm 750	750	750	750
E3	Free areas [min]	mm 1100	1310	1310	1450
E4	Free areas [min]	mm 1200	1200	1200	1200
E7	Minimal gap	mm 700	700	700	850
E6	Minimal gap	mm 400	400	400	400

Insertion dimensions

Depth heat exchanger module	mm	1400	1600	1600	1600
Width of the heat exchanger module	mm	1400	1400	1400	1980
Height of heat exchanger module	mm	1977	1977	2177	2480
Depth of combustion chamber module	mm	2200	2400	2400	2800
Width of the combustion chamber module	mm	1400	1400	1400	1980
Height of combustion chamber module	mm	1977	1977	2177	2480

Connections

		400-500	600-1500
1	Flow	DN100 / PN6	DN125 / PN6
2	Back flow	DN100 / PN6	DN125 / PN6
3	Filling/emptying	3/4" IT	3/4" IT
4a	Safety heat exchanger input	1" IT	1" IT
4b	Safety heat exchanger output	1" IT	1" IT
5	Connection for flue gas recirculation - optional	150 mm	150 mm

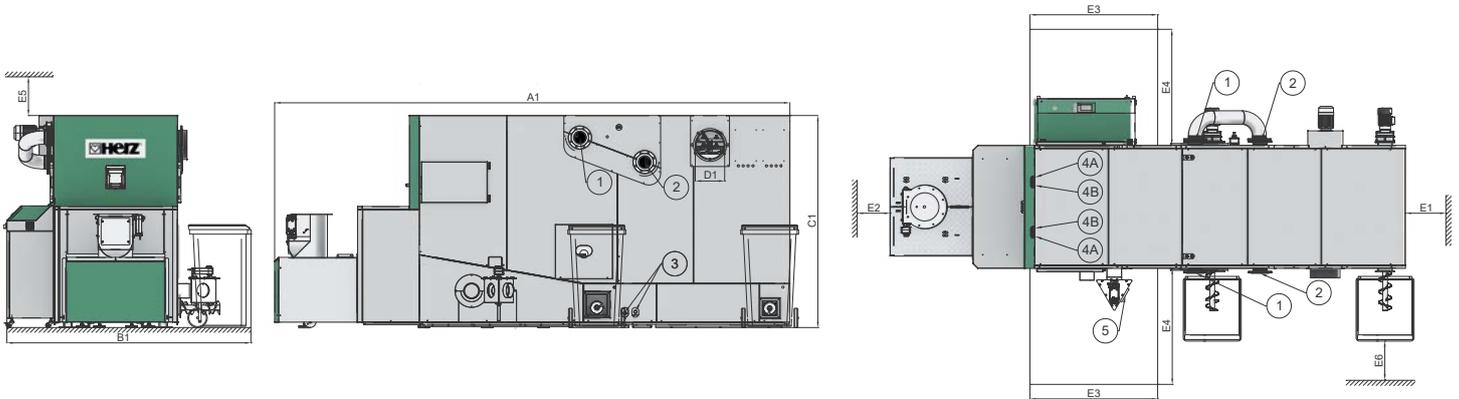
Subject to change in the interest of technical progress!
The specified free areas must be observed for carrying out maintenance and service work.

*measured data from test report
IG internal thread

Usable fuels for BioFire 400-1500 T-Control (P45S):

- **Wood chips M40 (water content max. 40 %) according to**
 - EN ISO 17225-4: Property class A1, A2, B1 and particle size P31S, P45S

Dimensions & technical data BioFire P45S + M50



Technical data

		500	600	800	1000
Output range according to type plate wood chips	kW	250 - 500	300 - 600	400 - 800	500 - 1000
Efficiency rate nominal load wood chips*	%	> 90	> 90	> 90	> 90
Boiler weight	kg	5915	6796	10003	10003
Max. permissible operating temperature	°C	102	102	102	102
Operating overpressure [min-max]	bar	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6
Water capacity	ltrs.	1660	1950	3275	3275

Boiler data for calculation of the flue gas system

		500	600	800	1000
Flue gas temperature woodchip nominal load / part load	°C	~ 160/~ 105	~ 160/~ 105	~ 160/~ 105	~ 160/~ 105
Flue gas mass flow rate wood chips nominal load / part load	kg/h	1980 / 1188	2376 / 1404	3168 / 1908	3960 / 2376
CO ₂ content wood chips nominal load / part load	Vol. %	-	-	-	-

Dimensions

		500	600	800-1000
A1	Length	mm 4980	5285	5890
B1	Length	mm 2505	2505	2865
C1	Length	mm 1990	2190	2475
D1	Length	mm Øa 300	Øa 300	Øa 300

Minimal free areas

		500	600	1000
E1	Free areas [min]	mm 150	150	150
E2	Free areas [min]	mm 750	750	750
E3	Free areas [min]	mm 1310	1310	1450
E4	Free areas [min]	mm 1200	1200	1200
E7	Minimal gap	mm 700	700	850
E6	Minimal gap	mm 400	400	400

Insertion dimensions

		500	600	1000
Depth heat exchanger module	mm	1600	1600	1600
Width of the heat exchanger module	mm	1400	1980	1980
Height of heat exchanger module	mm	1977	2177	2480
Depth of combustion chamber module	mm	2400	2400	2800
Width of the combustion chamber module	mm	1400	1400	1980
Height of combustion chamber module	mm	1977	2177	2480

Usable fuels **for BioFire 500-1000 T-Control (P45S + M50):**

- **Wood chips M50 (water content max. 50 %) according to**
 - EN ISO 17225-4:
 - Property class A1, A2, B1 and
 - particle size P31S, P45S

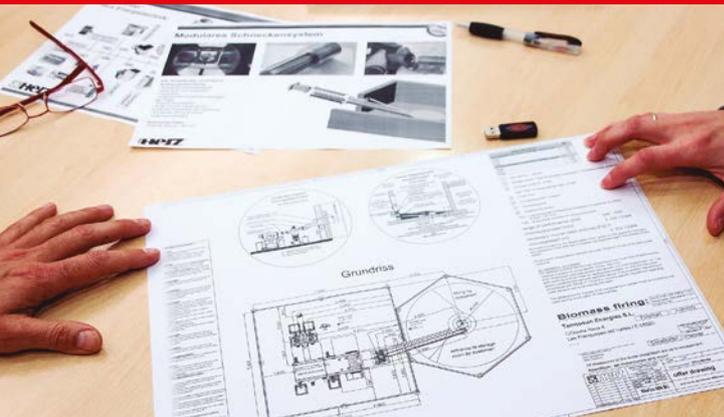
Connections

	500 - 1000
1	Flow DN125 / PN6
2	Back flow DN125 / PN6
3	Filling/emptying 3/4" IT
4a	Safety heat exchanger input 1" IT
4b	Safety heat exchanger output 1" IT
5	Connection for flue gas recirculation - optional 150 mm

Subject to change in the interest of technical progress!
The specified free areas must be observed for carrying out maintenance and service work.

*measured data from test report
IG internal thread

HERZ customer-oriented...



- **Advising in planning phase**
- **Planning of discharge system according to customer requirements and local conditions**
- **Area covered service**

- **HERZ training:**
 - for operators
 - for planners, technical departments
 - for plumbers
 - as well as continuous training of the maintenance staff



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Your partner:

