English

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

YOUR RELIABLE PARTNER
Herz since 1896
Present on the market for over 120 years

BioFire

500 - 1500 kW

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

Herz®

Competence is our success ...

HERZ **FACTS:**

- 50 subsidiaries
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 3.000 employees in over 100 countries
- 30 Production sites

HERZ Armaturen GmbH – The company
Founded in 1896, HERZ has been continuously active in the market for more than 120 years. With 6 sites within Austria, another 24 in europe and more than 3.000 employees at home and abroad, HERZ is the only Austrian manufacturer that produces equipment for the entire heating and installation industrie and is one of the most important internationally.

HERZ Energietechnik GmbH
HERZ Energietechnik employs 200 people 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. Proven cooperations with research and educational institutions can be intensified. Over the years, HERZ has established itself as a specialist in renewable energy systems. HERZ places a great importance on modern, cost-effective and environment-friendly heating systems with the highest level of convenience and user-friendliness.

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. Also in already existing boiler rooms with limited space, the system offers an optimal solution due to its low and compact design.

COMFORTABLE

Automatic burner & heat exchanger cleaning and automatic ash removal

The combustion chamber and the heat exchanger are automatically cleaned and thus kept clean, therefore long boiler operation periods can be realized. The highest level of comfort is provided by automatic deashing.

EASY & THOUGHTFUL

Multifunctional control concept

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

FAST

Low storage mass (no fireclay but water cooled combustion chamber) - therefore fast power supply

EASY MAINTENANCE

Pull-out burner

The burner grate can be completely pulled out of the burner module for maintenance.

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.

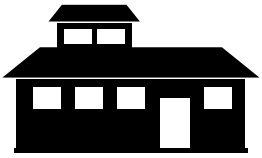
FURTHER FACTS

- Due to the possibility of cascading, projects up to 4,500 kW can be realized.
- Step grate with 2 controllable zones
- Suitable for 6 bar operating pressure
- Possibility of central ash discharge into external containers - also retrofittable.

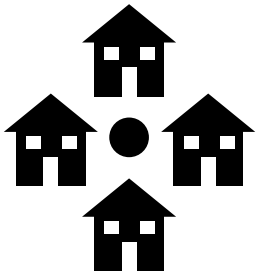
BioFire

500 - 1500 kW

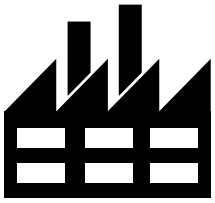
Individual use ...



Large buildings
such as hospitals, schools, public buildings, hotel complexes, heating buildings as well as heating for swimming pools, wellness areas, fitness and spa areas, ...



Housing estate projects
for the heating of districts, residential buildings, local heating networks, ...



Industrial companies, process heat & wood processing companies
like joinery, furniture producers, ...

Justice Center Eisenstadt:
- The BioFire 1000 heats the district court, the public prosecutor's office and the justice institution in Eisenstadt.

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

Local heating in Wöllersdorf
- HERZ BioFire 500 in form of a heating container (turnkey incl. vertical filling system, agitator discharge, hydraulics, control system, chimney & electrical installation).

... and successful in operation

VILA VITA Pannonia (4-star wellness and family paradise with 200 hectare)

- HERZ BioFire 600
- Heating of the main building with wellness park
- Restaurant, hotel & reception as well as seminar rooms
- 60 bungalows
- Indoor tennis center
- 1000 m² event hall
- Employees village

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: 12.000m²

District heating Neckenmarkt

- 2 BioMatic 400 and a HERZ BioFire 800
- Heating of 117 objects in Neckenmarkt

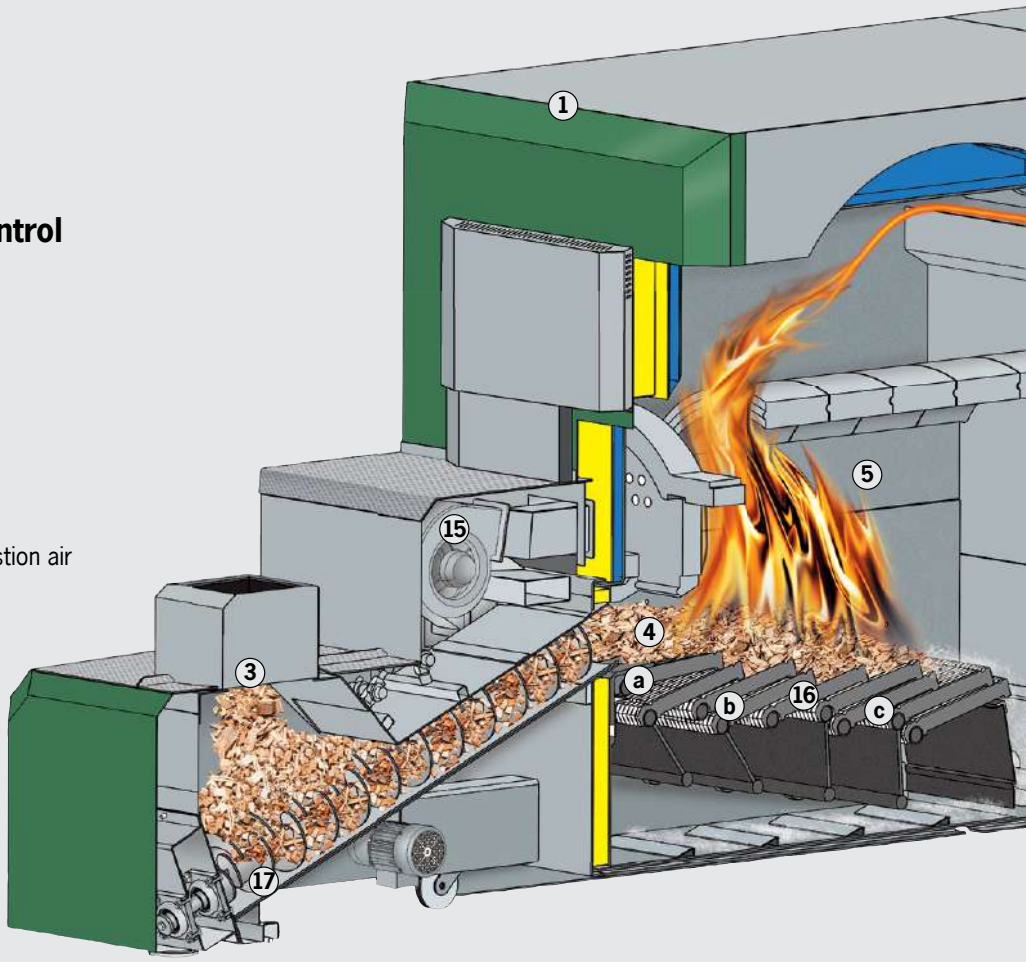
Benefits and **details ...**

T-CONTROL - the user-friendly control with touch display

central control unit -
Standard version consisting of:

- combustion control
- buffer management module
- under pressure control
- (motor mixing valve and pump)
- Motor valve control for fast heating up
- Lambda probe control (controls the combustion air and fuel input)

- Simple screen design and convenient menu guide.
- Extension modules up to 55 modules possible (further heating circuits, solar circuit control, 2. buffers, etc.)



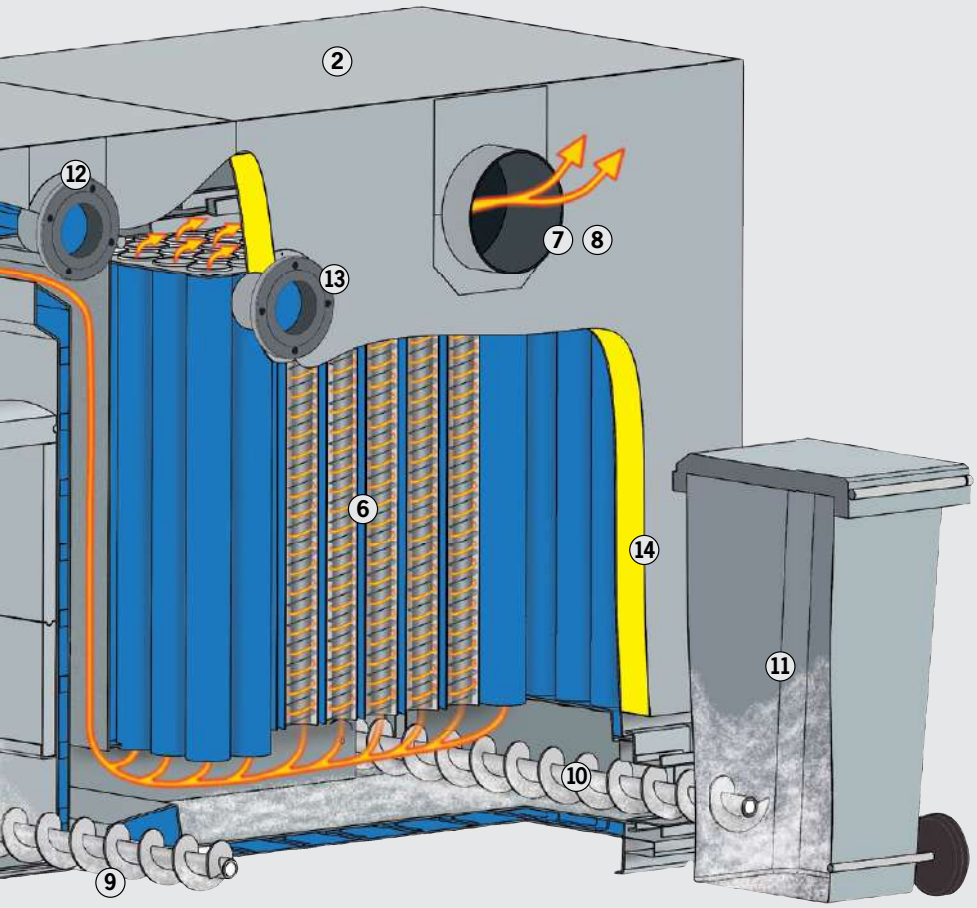
Safety devices:

- Back fire protection flap (BFP-flap) currentless closing airtight flap
- Independent extinguishing device sprinkler device with water tank
- Spark-back protection fuel barrier layer
- Pressure monitoring in the combustion chamber
- Temperature monitoring in the combustion chamber
- Temperature monitoring sensor in the storageroom

Double HARDOX stoker screw

Due to the double screw, the step grate it is already filled with fuel at full width at the beginning of the grate.

1. **Combustion chamber module**
2. **Heat exchanger module**
3. **Intermediate hopper**
   with fall shaft, double stoker screw and fuel barrier layer
4. **Automatic ignition**
   with hot air blower
5. **combustion chamber**
   made of SiC fireproof concrete (temperature resistance up to 1550°C) with step grate (2 zones) made of solid cast chromium steel. The fuel-pusher grate intervals and 2 primary air zones are separately controllable. The grate elements can be changed individually. Furthermore, the combustion chamber has 2 secondary air zones.
6. **Standing pipe heat exchanger**
   with integrated turbulators and cleaning mechanism
7. **Automatic flue gas and combustion monitoring**
   via lambda probe control
8. **Frequency converter controlled induced draft fan (on the cyclone)**
   with underpressure control in the burning chamber



Exhaust gas recirculation available as an option

- For moist fuels as drying
- For dry fuels as combustion chamber temperature reduction

Optimized 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.

Easy revision options through:
- Pull-out burner from the front
- Pull-out burner from the side
- Easy to exchange grate elements
- Access from the side via additional inspection openings

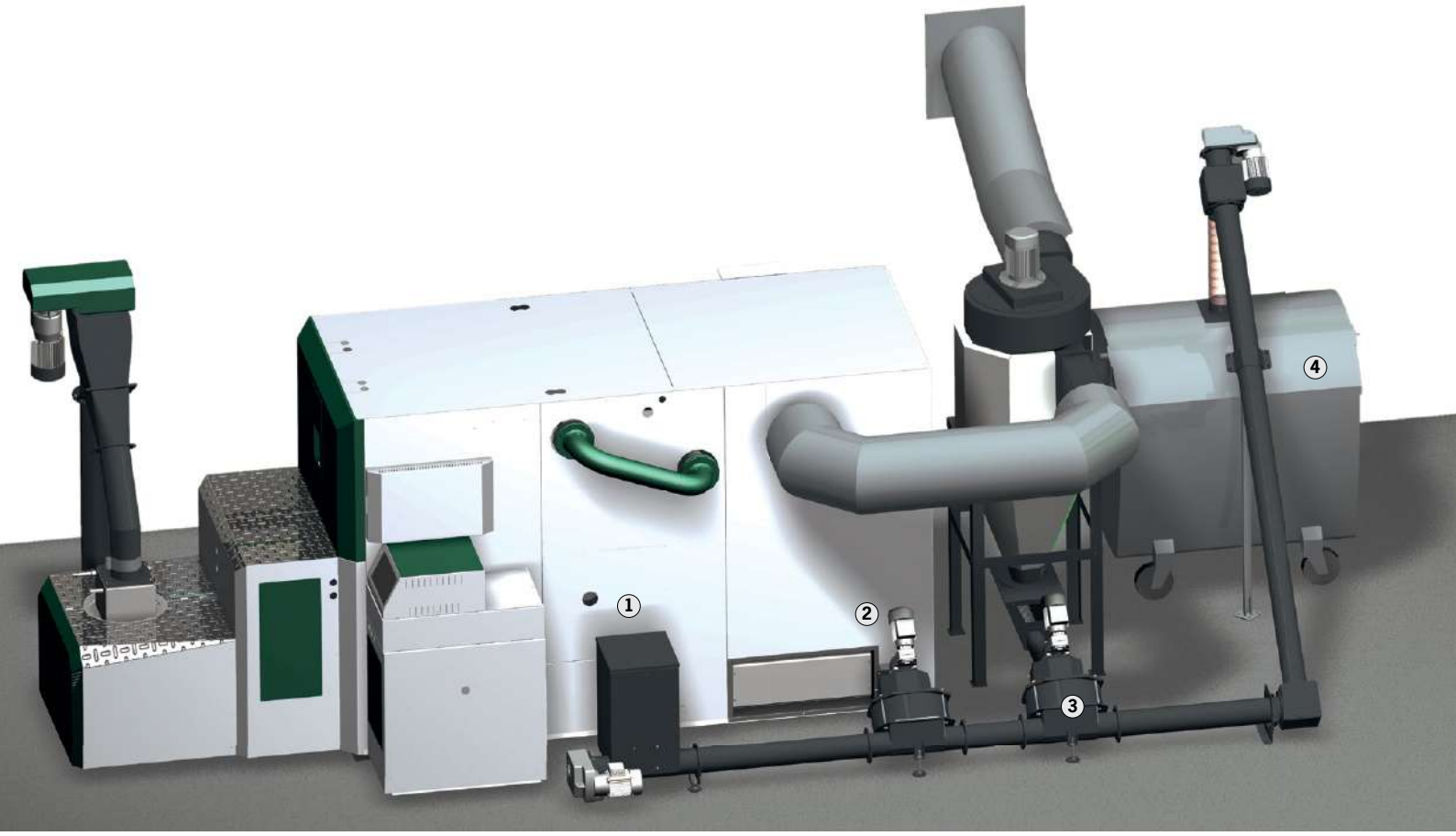
Zones:
1 Drying zone
2 Combustion zone
3 Burn-out zone

Automatic cleaning of the heat exchanger

- The heat exchanger tubes are automatically cleaned by the displacement body with springs that serve as turbulators, even during heating operation and are therefore kept clean without manual effort.
- A consistently high level of efficiency due to cleaned heat exchanger surfaces means lower fuel consumption.
- The fly ash is taken into the front ash container via a discharge screw.
- No compressed air supply necessary.

9. **Ash discharge screw** from the combustion chamber including push rod floor conveyor
10. **Ash discharge screw** from the heat exchanger module
11. **Ash containers with wheels** These allow easy and convenient emptying of the ashes. Optionally a central ash discharge is possible (see page 9)
12. **Flow connection** possible on both sides
13. **Return connection** possible on both sides opposite the advance flow and return flow connection is the hydraulic connection between the combustion chamber and the heat exchanger module
14. **Efficient heat insulation** for lowest radiation losses
15. **Zone-controlled primary air supply**
16. **Combustion zones**
    a drying zone
    b combustion zone
    c burn-out zone
17. **Double HARDOX stoker screw**

Ash discharge systems ...



Central ash discharge system via screw:

The ash from the combustion and fly ash containers (1+2) as well as from the ash box of the cyclone (3) is transported automatically via screw system in an ash container (4) available on site.

The advantages for the operator are the less cleaning intervals and the comfortable removal of ash. The central ash discharge system is individually planned and adapted to the local conditions.

Numerous projects have been implemented, in which the ash is transported over long distances or levels in central ash containers.

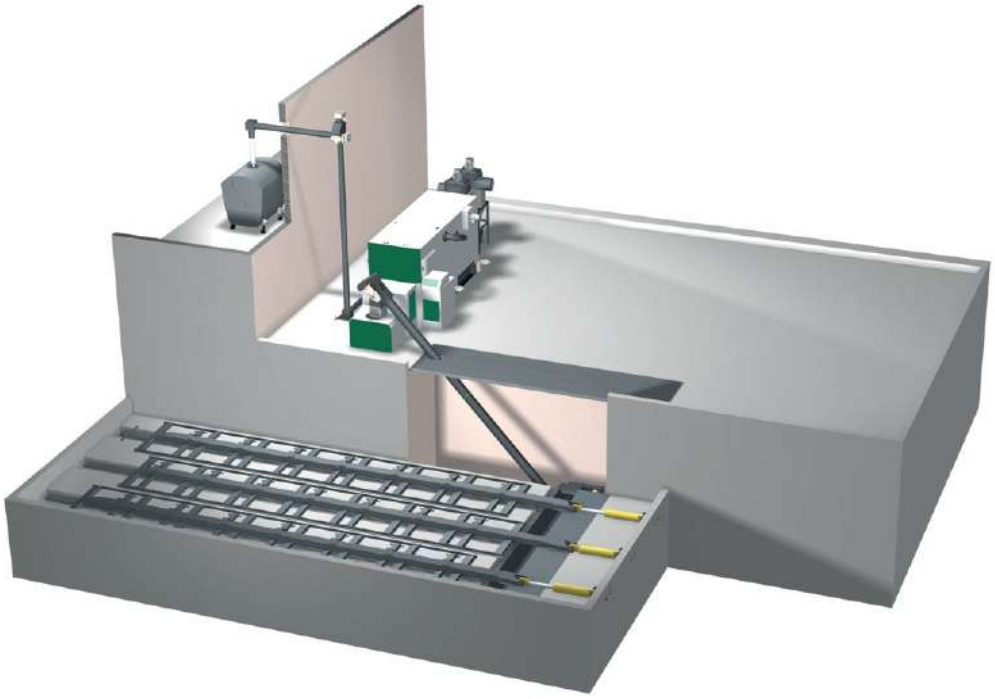
Your advantage:
Lower construction costs because there are no construction measures like ash cellars or floor openings necessary.

This image shows the ash containers of a 2 HERZ boiler cascade solution connected via the screw system.

In this project the climbing screw transports up to a height of approx. 4 m the ashes from 2 HERZ boilers to a 2 m^3 huge ash container, which is positioned outside of the boiler house.

Ash transport in tight spaces:

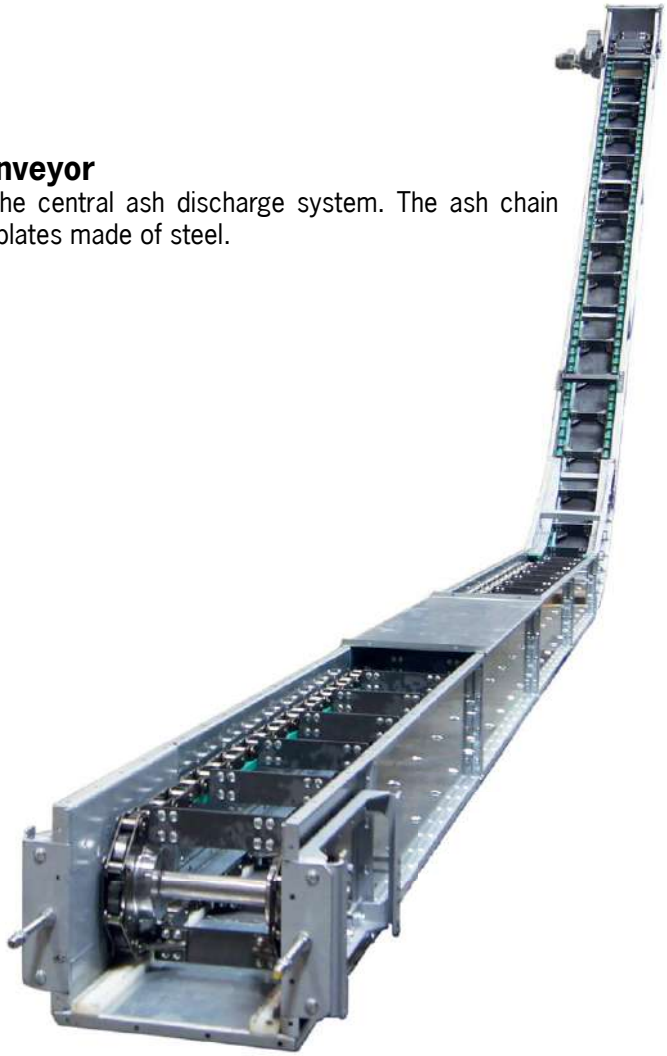
HERZ pays special attention to the best possible customer comfort. Therefore individual solutions are designed and implemented for almost any space situation. By a central ash discharge with vertical transport of the ash a saving of space and optimum comfort is realized.
The ash can be easily transported vertically over several meters (up to 5 meters) to ash containers. A difficult and complicated ash removal from containers in basements or underground floors is a thing of the past.



Ash transport in tight spaces with the chain conveyor

It is possible to introduce the scraper chain conveyor into the central ash discharge system. The ash chain conveyor is equipped with a HARDOX-coated floor and carrier plates made of steel.

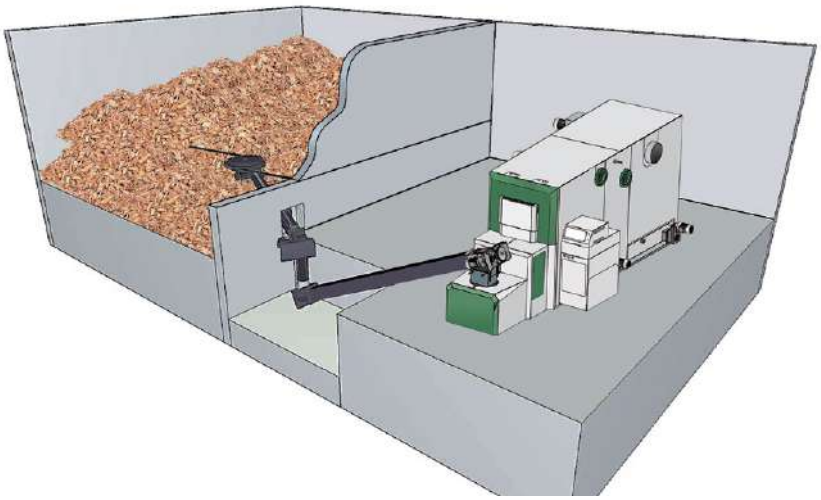
The HERZ Energietechnik GmbH has been awarded 2013 with the Innovation Prize of Burgenland for their "Vertical transport technic in ash transport systems".



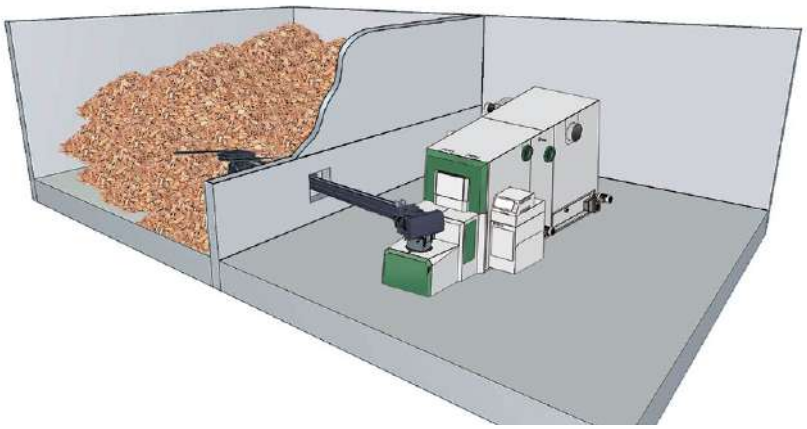
Discharge Systems & Projects ...

HERZ discharge systems enable numerous storage room designs.

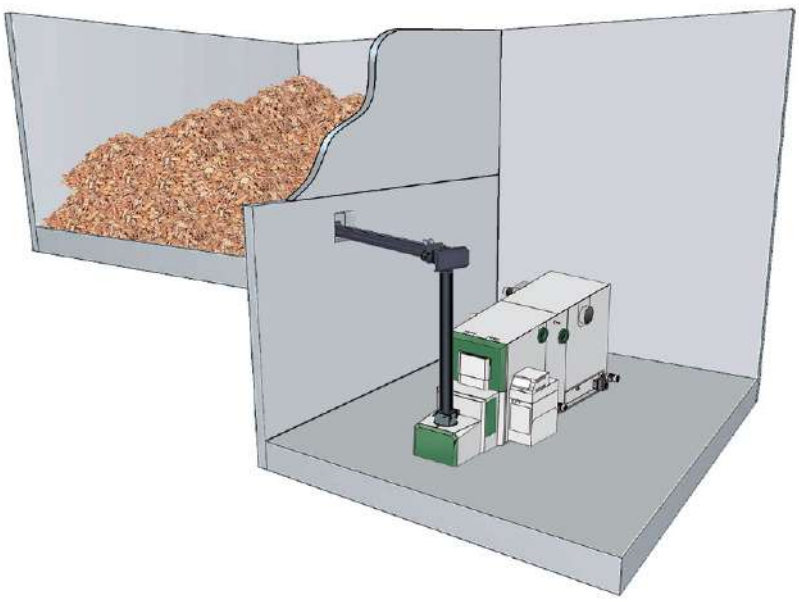
The operation with wood chips is especially suitable for contracting - models, where the wood supplier also acts as energy supplier.



Room discharge via horizontal spring agitator with following transport screw for optimum storage room utilisation. This variant permits perfect adaptation to the local conditions.



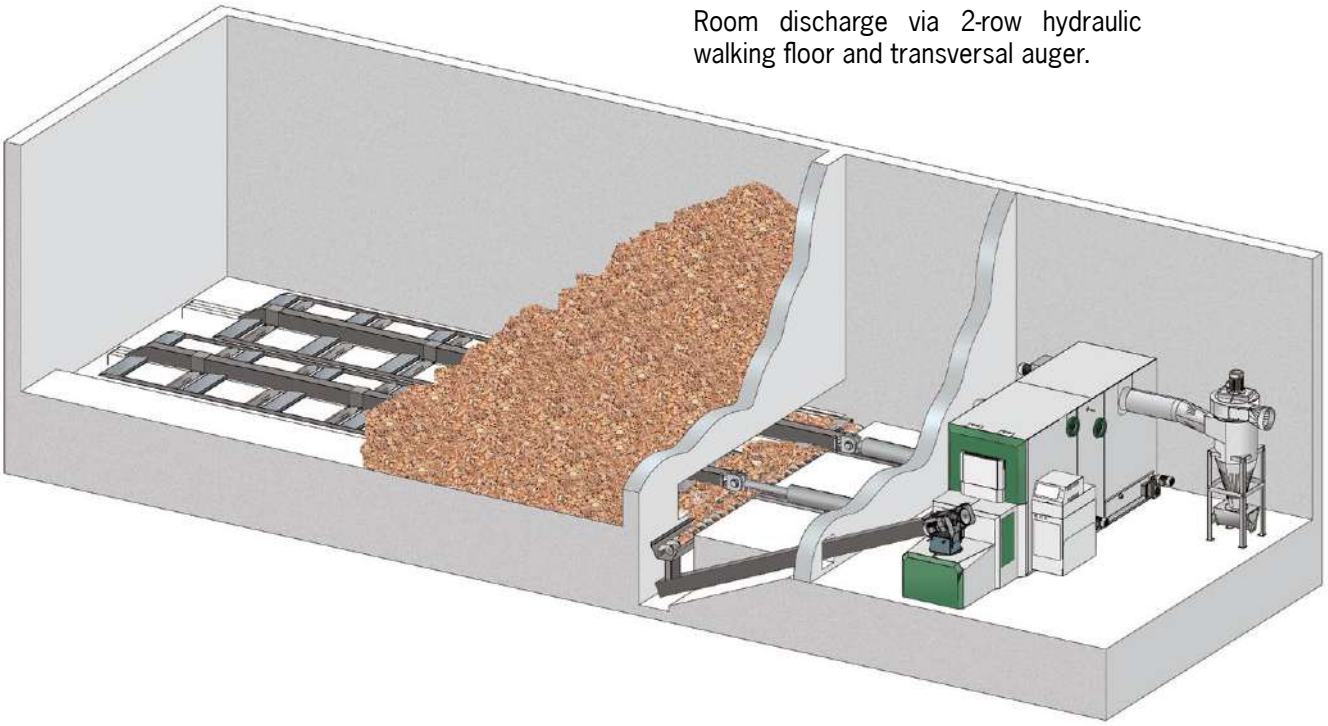
Storage room and heating room on same level. Transverse discharge with spring agitator.

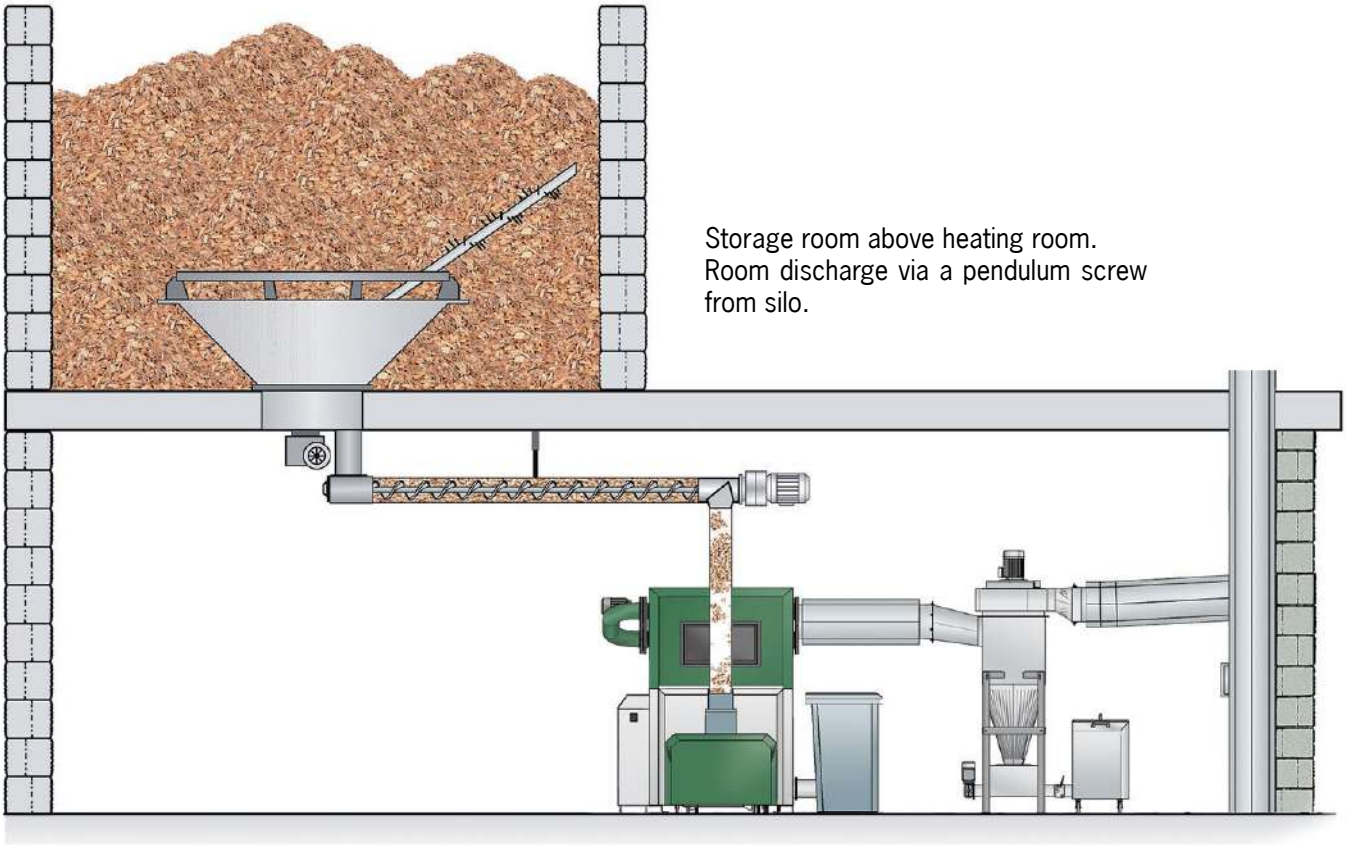


Storage room and boiler room on a different level. Horizontal discharge via spring agitator and chute pipe.

HERZ BioFire: Bio energy for heating of housing complexes, schools, kindergartens and commercial buildings.

Room discharge via 2-row hydraulic walking floor and transversal auger.

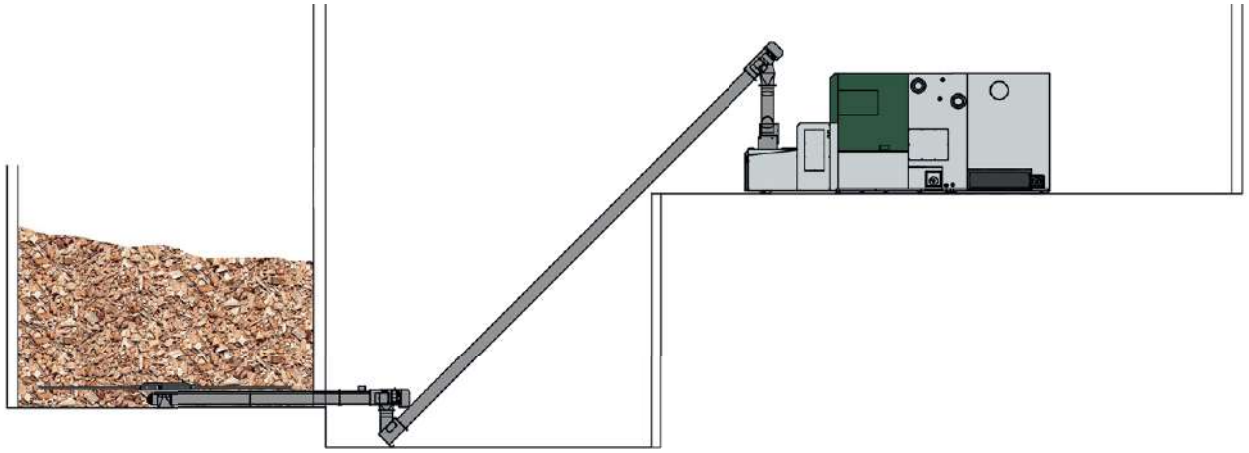




Storage room above heating room.
Room discharge via a pendulum screw from silo.

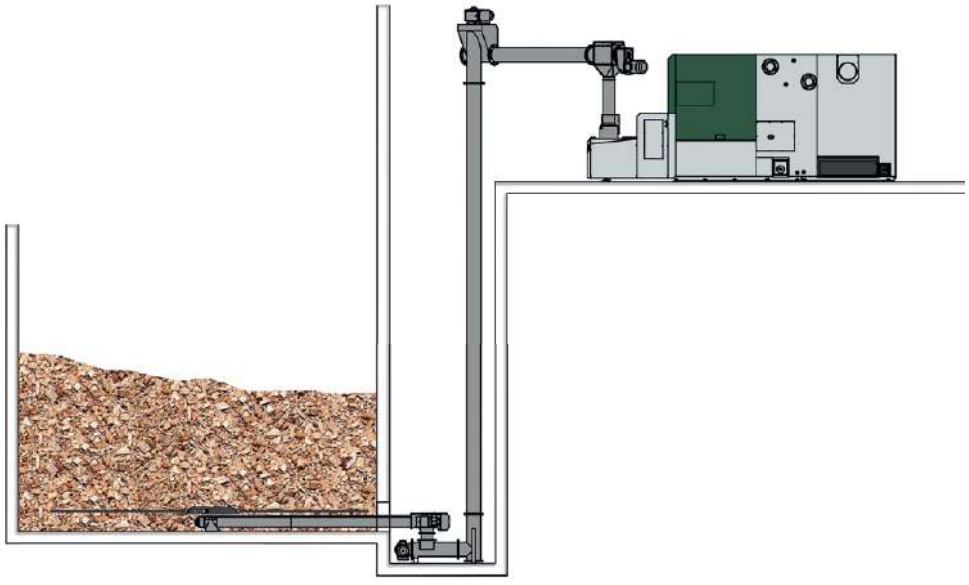
Discharge Systems & Projects ...

Discharge via rigid transport screw



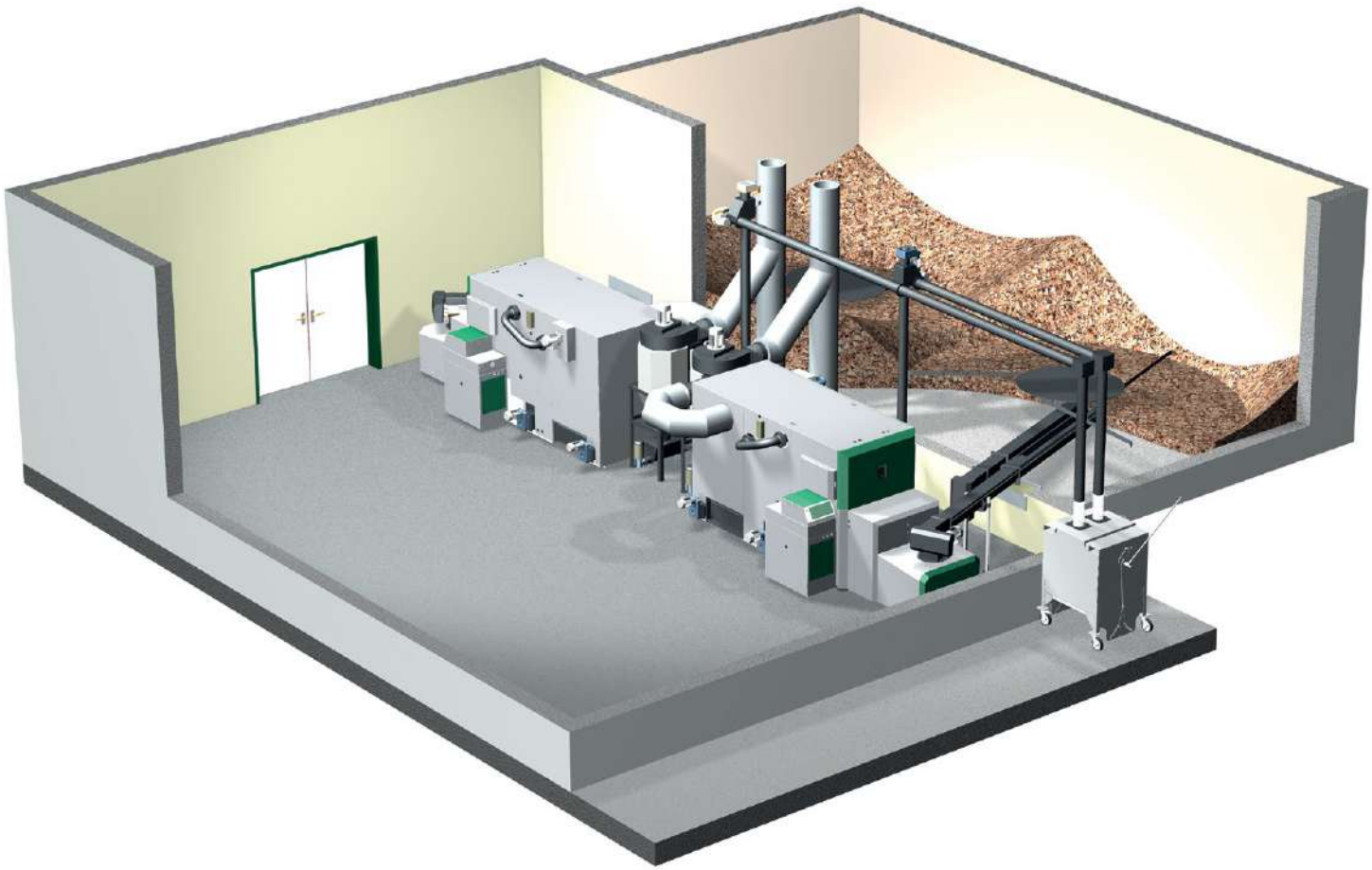
Discharge via vertical filling system

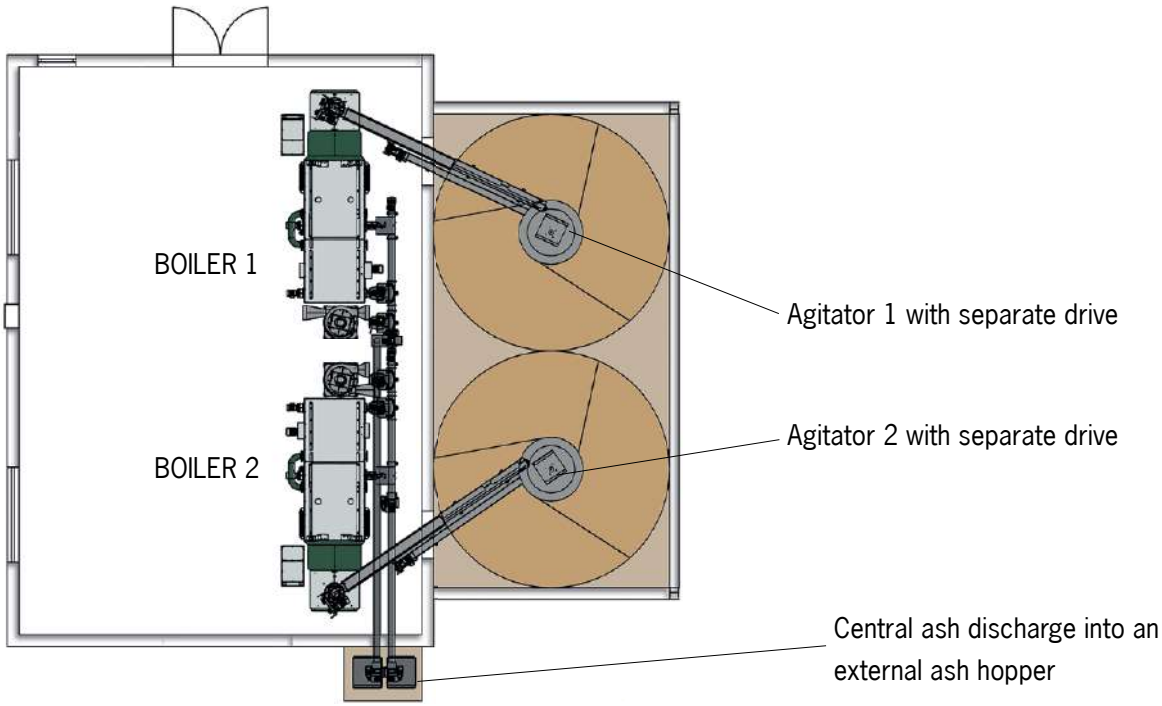
If the storage room is a floor lower, the discharge via the HERZ vertical filling screw is the optimal solution because the space is utilized in the best way.



2 agitator discharge systems with central ash discharge to an external ash container

- 2x HERZ wood chip-/pellet boiler BioFire 500 in cascade
- 2 agitator discharge systems with seperate gear
- Central ash discharge into an external ash hopper

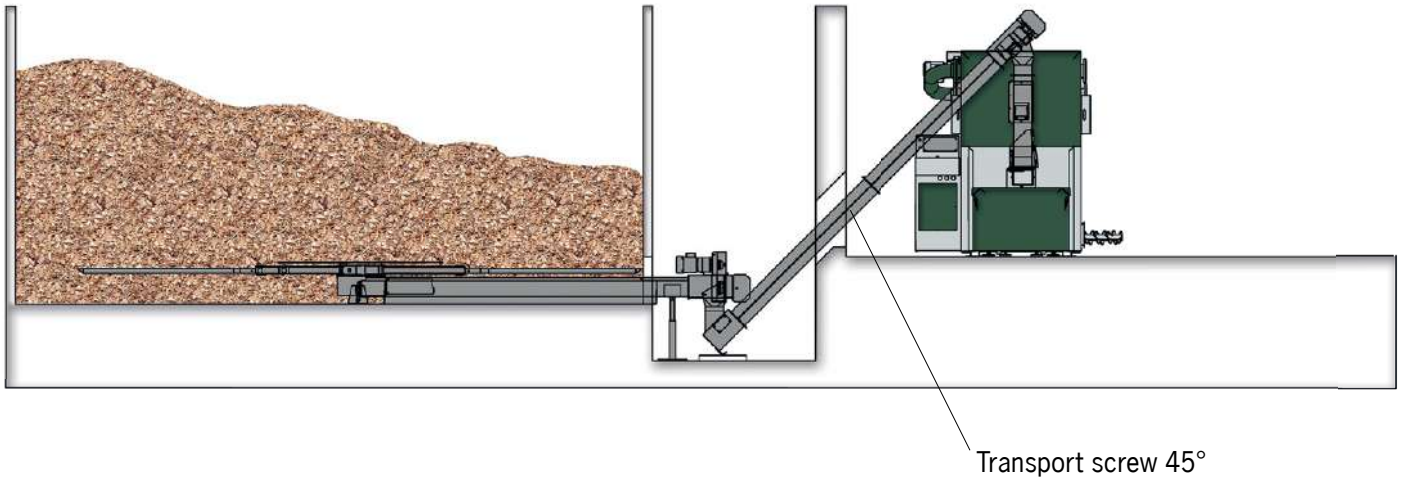


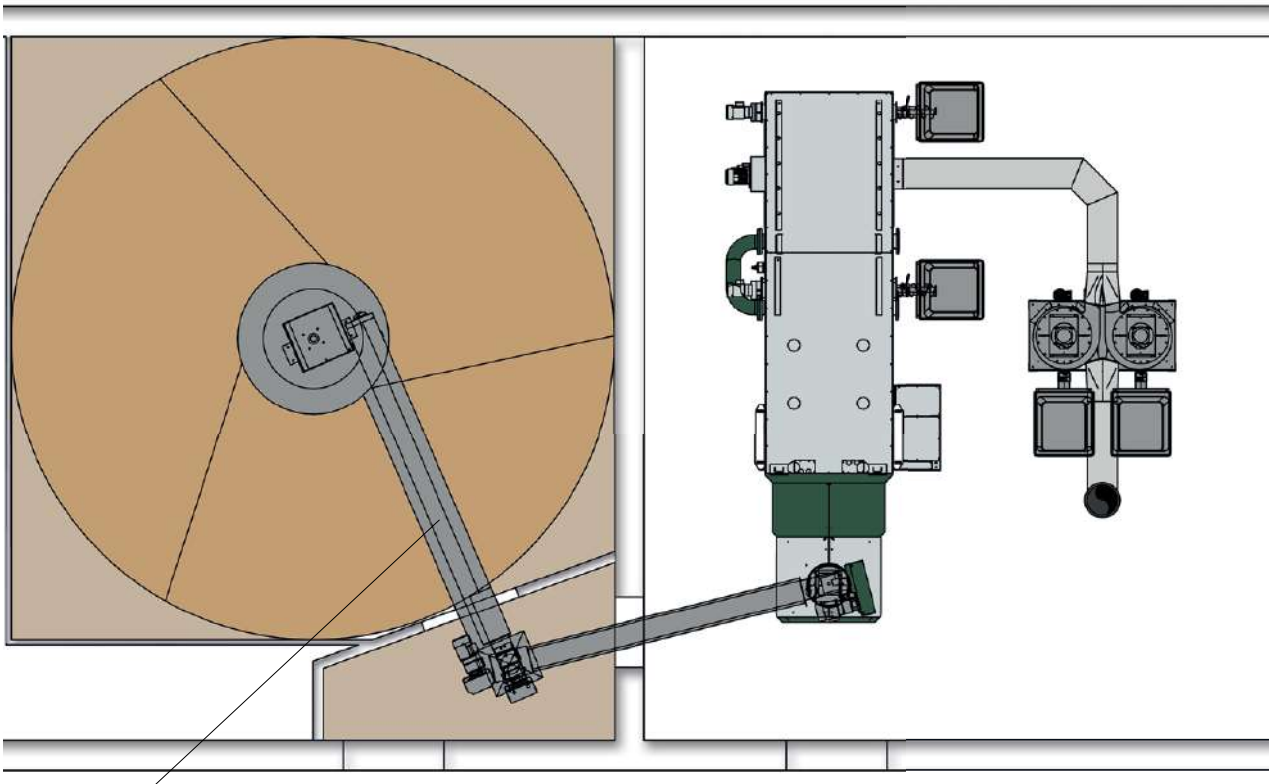


Discharge Systems & Projects ...

Agitator discharge system with separate drive and transport screw

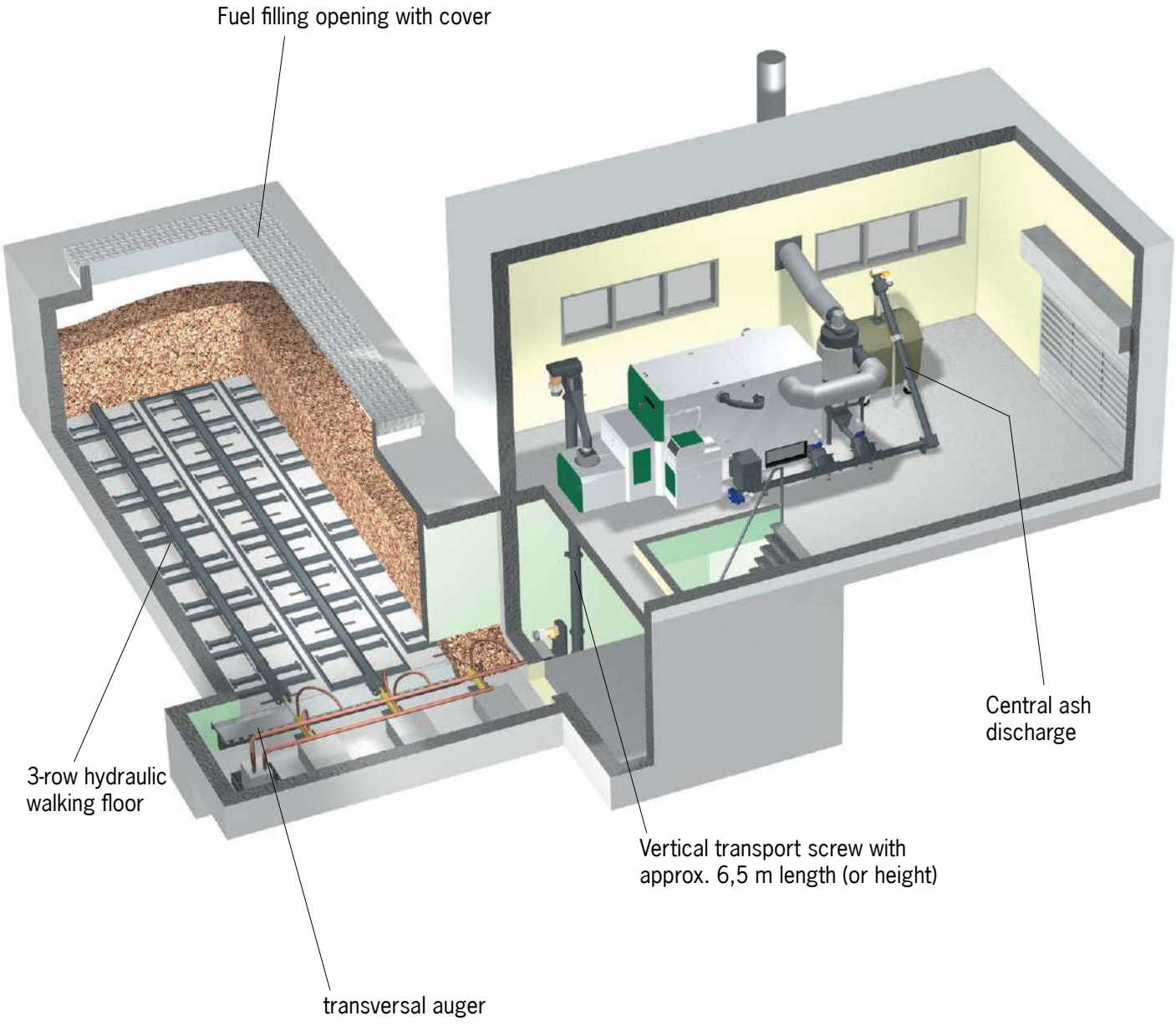
- Wood chip-/pellet boiler BioFire 1000
- Discharge: agitator with separate drive and transport screw with 45° incline





Hydraulic walking floor with transversal auger and vertical transport screw to the boiler

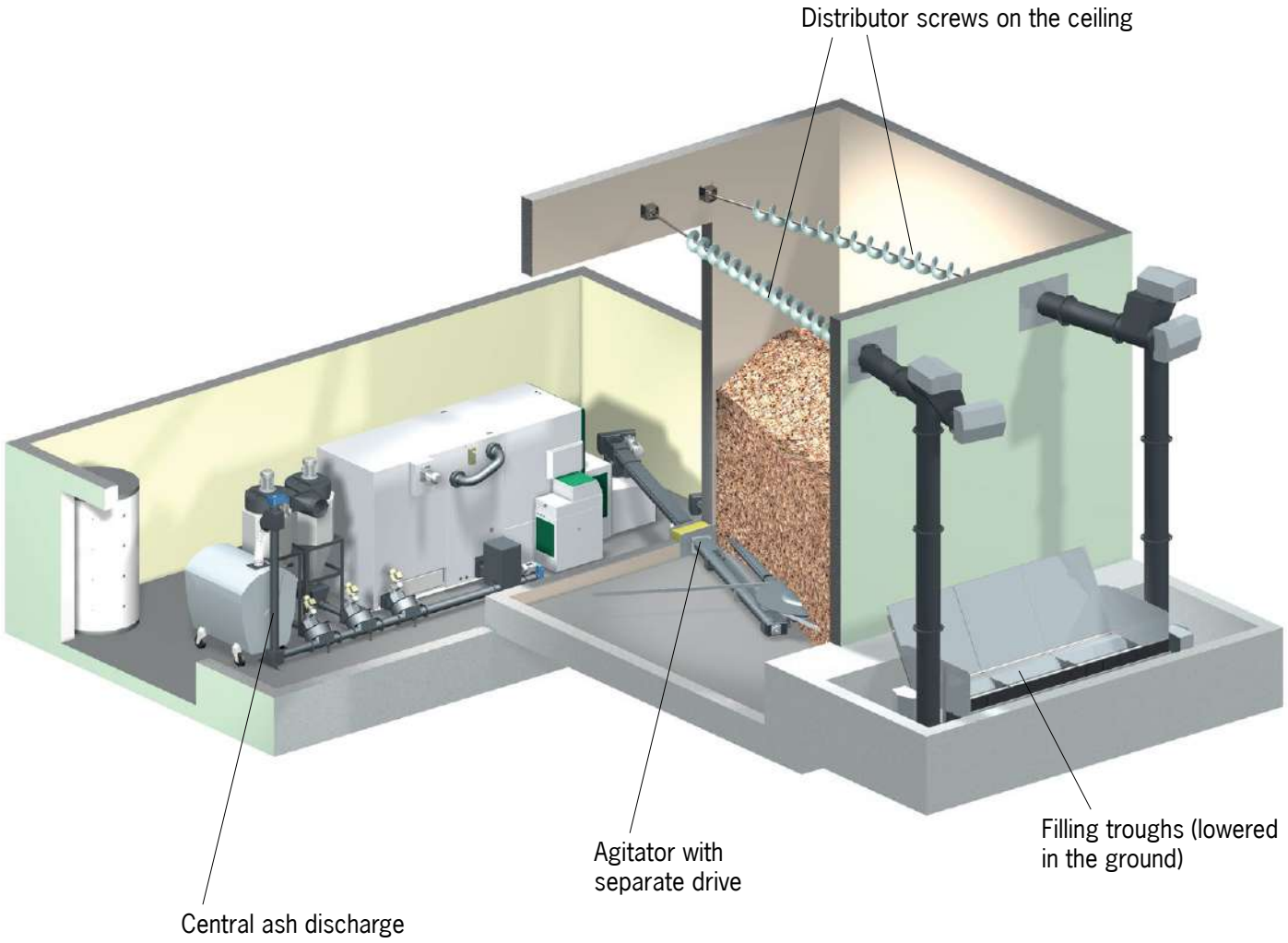
- Wood chip-/pellet boiler BioFire 600
- Discharge: 3-row hydraulic walking floor with transverse screw and vertical screw with approx. 6,5 m length (or height) to the boiler
- Central ash discharge

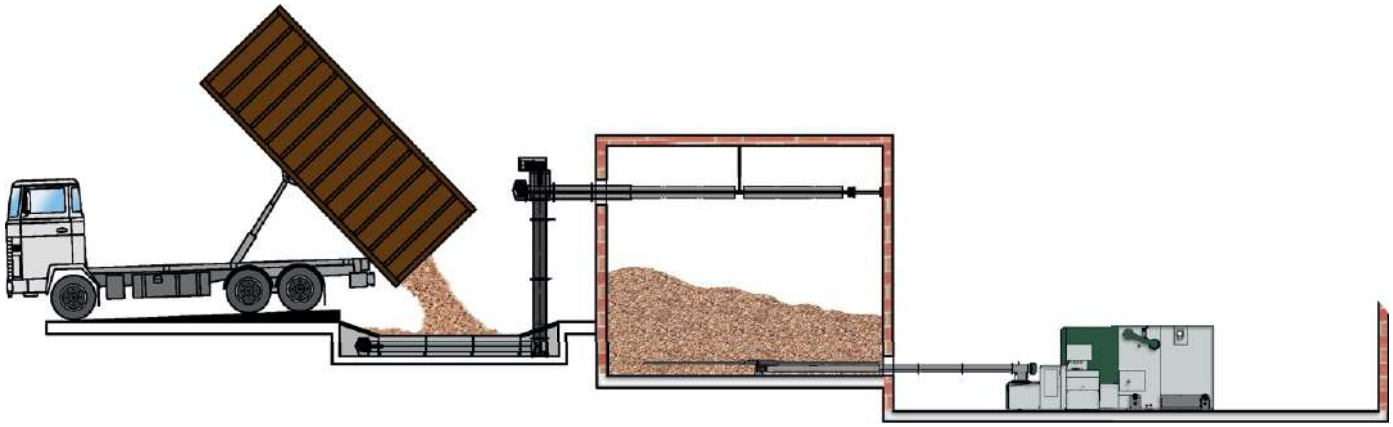


Discharge Systems & Projects ...

Double vertical filling system with agitator discharge

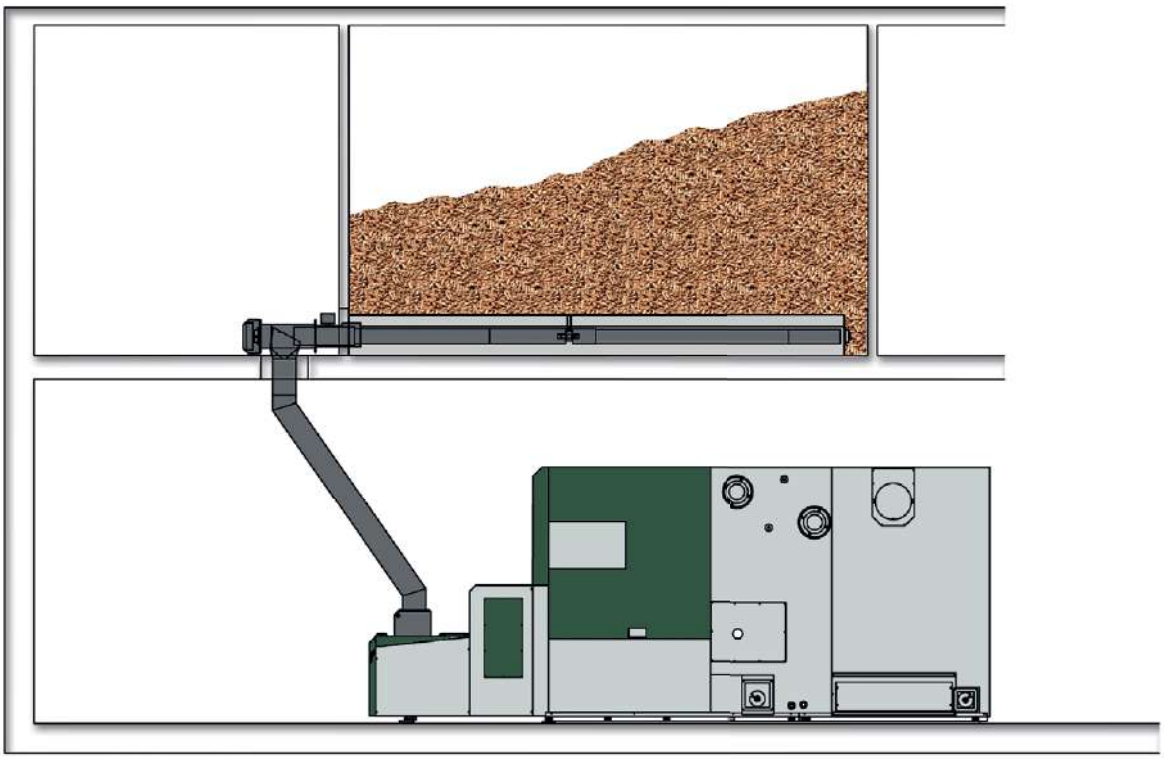
- Wood chip-/pellet boiler BioFire 1000
- Double vertical filling system (the troughs were lowered in the floor) with 2 distributor screws on the ceiling
- Agitator discharge systems with seperate gear
- Central ash discharge





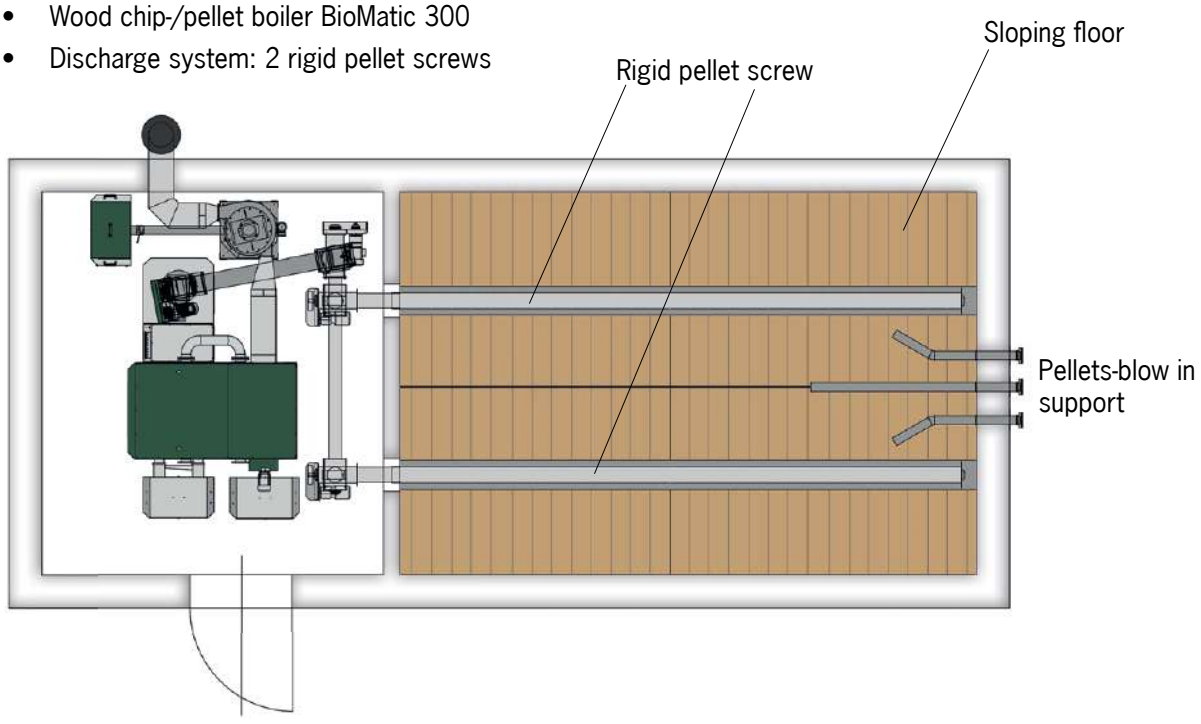
The fuel store is directly above the boiler room.

- Wood chip-/pellet boiler BioFire 1000
- Discharge: pellet screw with chute pipe



Rigid pellet screw

- Wood chip-/pellet boiler BioMatic 300
- Discharge system: 2 rigid pellet screws



Vertical filler ...

The system
After filling the trough with the wood chips or wood pellets it will fed up to 10 m height via a vertical screw into the fuel storage room. By means of the screw in the storage room an optimal distribution of the fuel is provided.

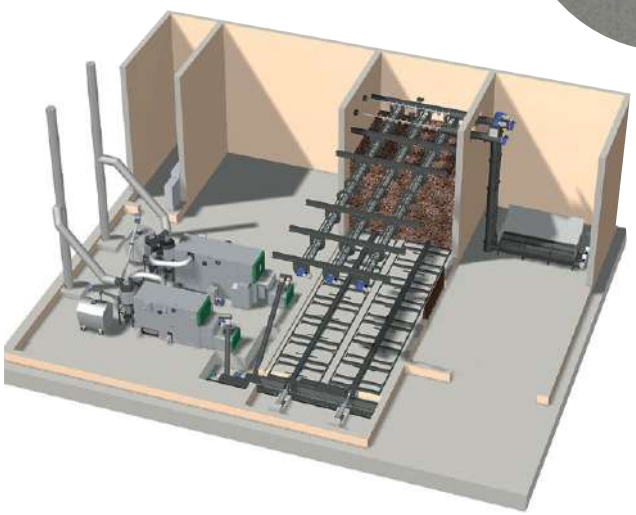
The big advantages
- Individual useable
- Robust
- Relieable
- Possible hights till 10 m
- Corrosion-resistant due to galvanized paneling parts for permanent outdoor installation
- Optimal distribution of the fuel in the storage room by the distribution screw (up to 12 meters possible)

Double vertical filling system
At double installations 2 vertical screws an a double trough are used. In the trough there are 2 parallel arranged transport screws, which lead directly to the vertical screws. This achieves delivery rates up to 120 m³/h. Depending on the space situation HERZ provides customized solutions and flexible installation options.

Filling trough with transport wheels

The trough whether 1-way or 2-way is available as an option with transport wheels. After the filling the trough can be carried away easily and quickly.

The openings to the vertical screw are equipped with closing caps. So the system is prepared for any weather conditions.

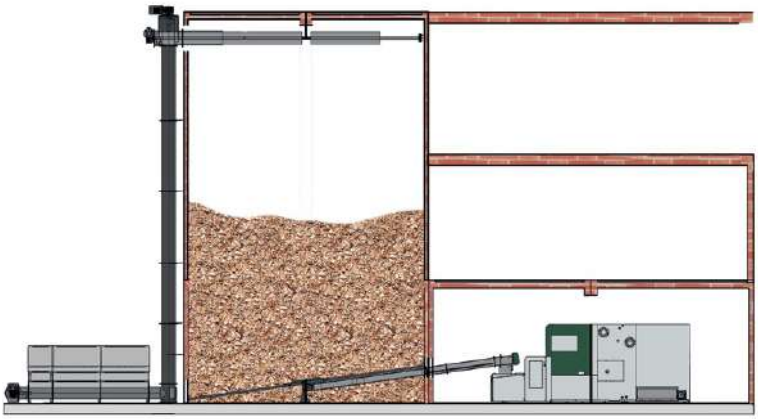


2 wood chip boilers HERZ BioFire
2 wood chip systems HERZ BioFire 1000 kW and HERZ BioFire 500 kW with central ash discharge and double vertical filler in combination with 2 transversal and 3 longitudinally arranged distributor screws on the ceiling with hydraulic walking floor discharge.

The HERZ vertical filler can be used individually for each room and space situation with a variety of options.

The storage room is located above the boiler room

The fuel is distributed optimally by the vertical filler and transported by a chute pipe to the boiler.

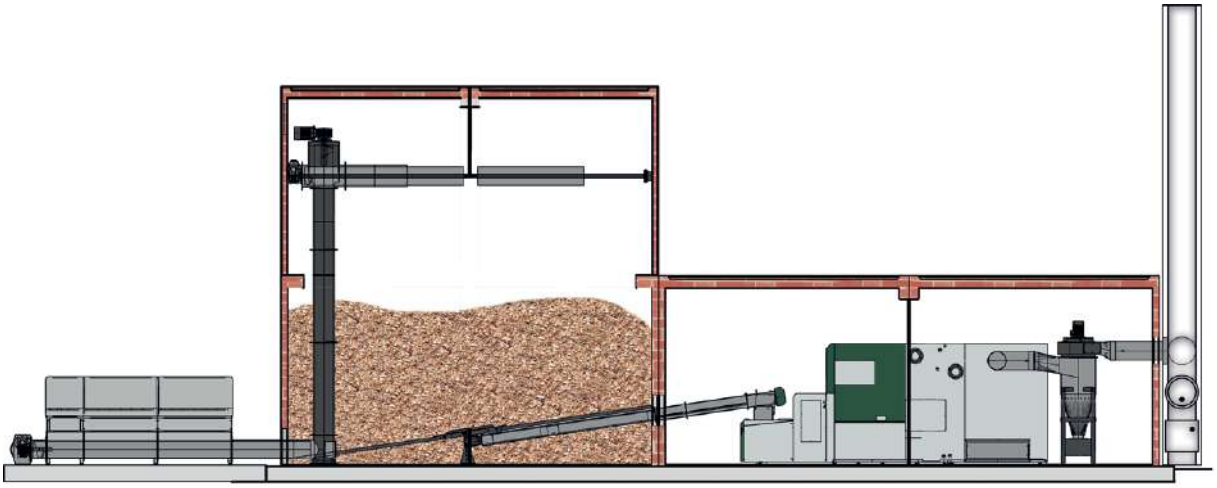


The storage room is located next to the boiler room

The fuel is transported to the desired height into the storage room and applied to the boiler with any discharge system, such by agitator, flexible screw, hydraulic walking floor or suction system (depending on the fuel and boiler type).

Vertical screw in the building

If needed the vertical screw can be installed in the building. Wood chips or wood pellets are filled from the outside into the trough and transported upwards inside the building.



The central control unit T-CONTROL

T-CONTROL

With the user-friendly VGA color touch-screen controller, the burning-process, as well as heating circuits, a hot water tank, buffer tank and a solar system can be controlled.

A central control unit for:

- Buffer management
- Back flow elevation (pump and mixer valve)
- Domestic hot water preparation
- Controlled heating circuits (pump and mixer valve)
- Solar circuit controll
- Frost protection monitoring

The convenient menu and simple screen layout with schematic 3D-representation ensures maximum user-friendliness.

The “modular operation” of the T-CONTROL offers extension possibilities up to 55 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
- 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 (heating circuit pump, hot water tank loading pump, circulation pump, mixing valve, switching valve, actuator motors etc.)

Illustration: Control cabinet BioFire 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 visualization and remote maintenance via smartphone, PC or tablet PC. The handling is the same as in the Touch-Control directly on the boiler. The processes and parameters can be read and modified any time from anywhere.

Remote access via **myherz.at**

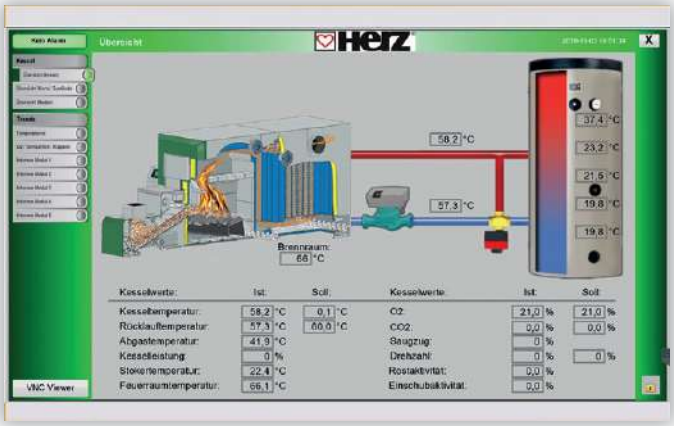
Cascade operation:

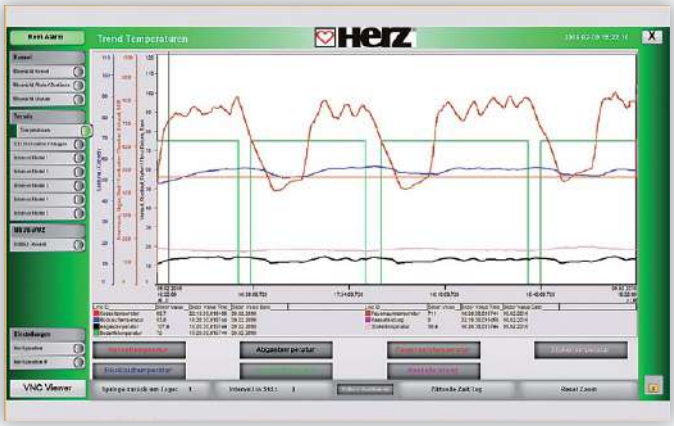
Using the HERZ T-CONTROL, up to 8 HERZ boilers equipped with T-CONTROL can be switched to cascade (CAN BUS). A special advantage of the cascade arrangement is the efficient utilization of the boiler at lower heat consumption (eg in the transitional period).

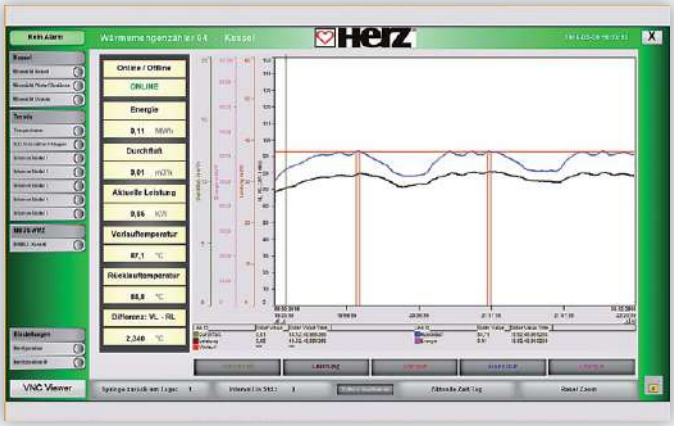
Control & visualization – for biomass plants

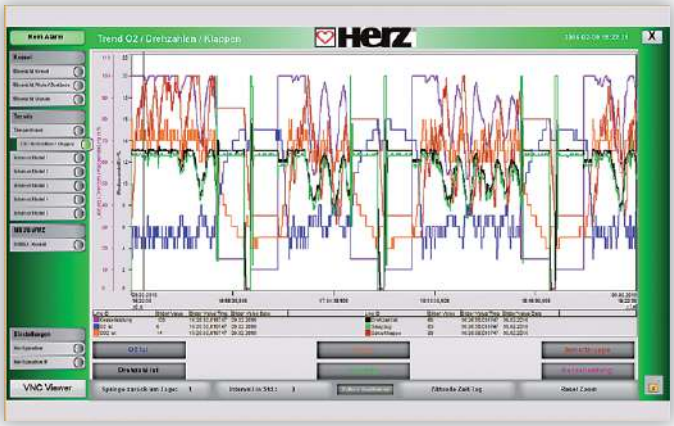
Due to the regulation according to ”qm Holzheizwerke“ a runtime optimization should be achieved in biomass plants. Based on min. 5 sensors (optional 10) in the buffer tank, the state of the buffer charge (0-100%) is determined and depending on the boiler output (100-30%) specified. This control strategy aims to ensure a constant boiler outlet temperature. Another feature of "qm Holzheizwerk" 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 speed controlled by PWM (pulse width modulation) or 0-10 Volt.

The innovative HERZ visualization 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. Electric meters and heat meters as well as trend displays are clearly shown in the qm format. In addition, the complete heating system with all heat generators, buffer tanks, solar and hydralik, and much more can be represented.



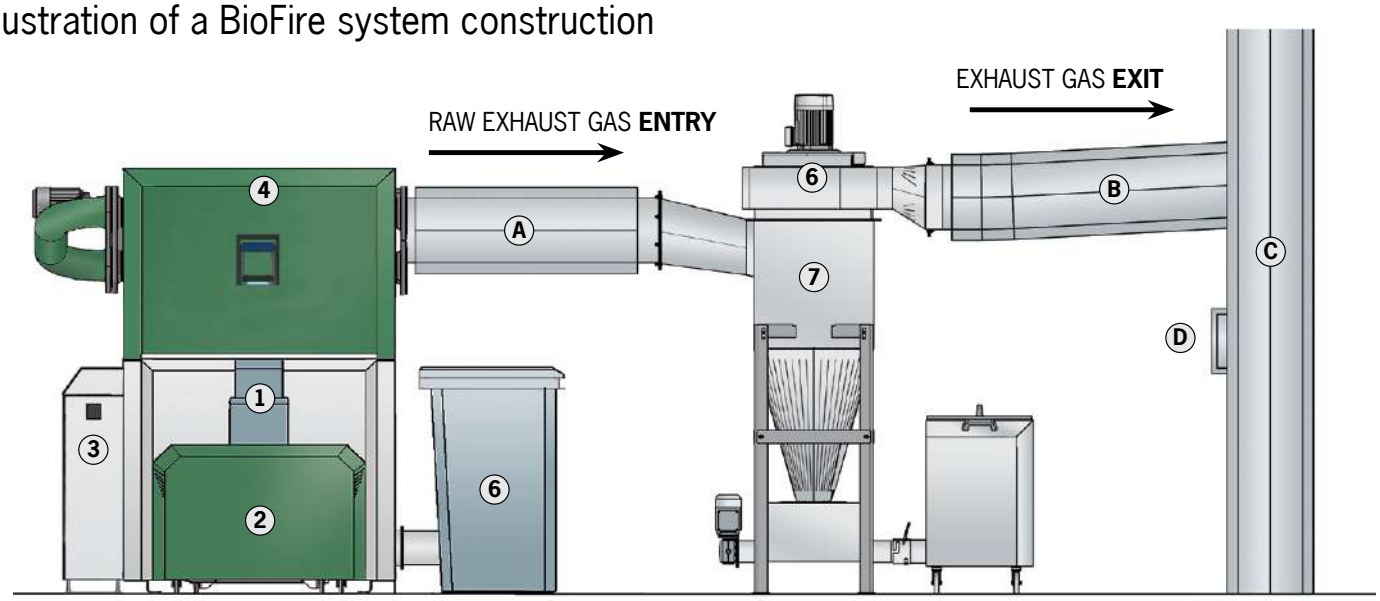






Cyclone and drive technology

Illustration of a BioFire system construction

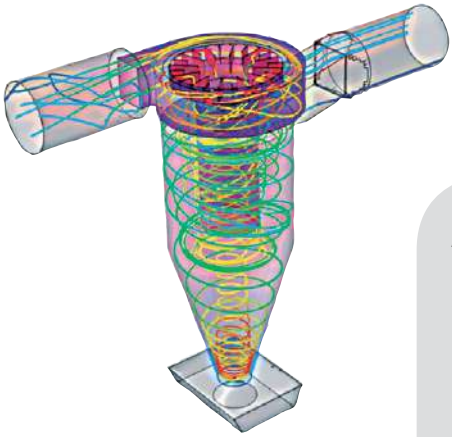


1. Chute pipte with back fire protection flap (BFP)
2. Intermediate hopper with double feed screw incl. independent extinguishing device and spark-back protection
3. T-CONTROL - user-friendly control with touch display
4. Boiler (burning chamber - and heat exchanger module)
5. Frequency converter controlled induced draft fan with underpressure control
6. Ash container
7. Flue gas dust extractor (cyclone)

Flue pipe connections (on site):

A. Flue pipe connection
B. Chimney connection with rising flue pipe
C. Chimney not sensitive to moisture
D. Draft regulator with explosion relief

CYCLONE DUST EXTRACTOR



In the HERZ ZykloVent the flue gas is brought in a twisting motion. Thereby centrifugal forces act on the entrained particles, which leads to dust separation.

The key data of the HERZ ZykloVent:

- Compact Design
- Matched to HERZ biomass plants
- For BioFire 500 single cyclone and 600 - 1,500 kW double cyclone
- Low investment costs
- Low operating costs
- Low pressure loss
- min particle size 5-50µm
- Integration into central ash discharge system possible

Applicable fuels of the different BioFire boiler types:

at BioFire 500-1500 T-Control:

- **Wood pellets according to**
  - EN ISO 17225-2: Property class A1, A2
  - ENplus, ÖNORM M 7135, DINplus or Swisspellet
- **Wood chips M40 (water content max. 40 %) according to**
  - EN ISO 17225-4: Property class A1,A2, B1 and particle size P16S, P31S

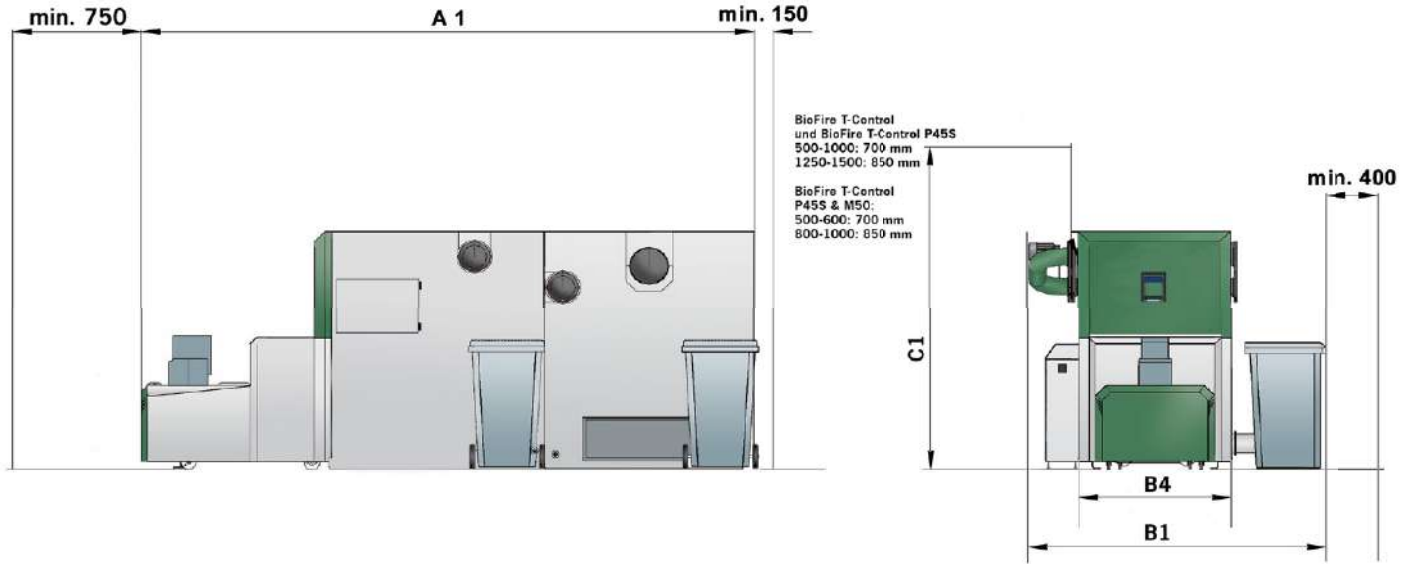
at BioFire 500-1500 T-Control (P45S):

- **Wood chips M40 (water content max. 40 %) according to**
  - EN ISO 17225-4: Property class A1, A2, B1, and particle size P16S, P31S, P45S

at 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 P16S, P31S, P45S

Dimensions & technical data BioFire

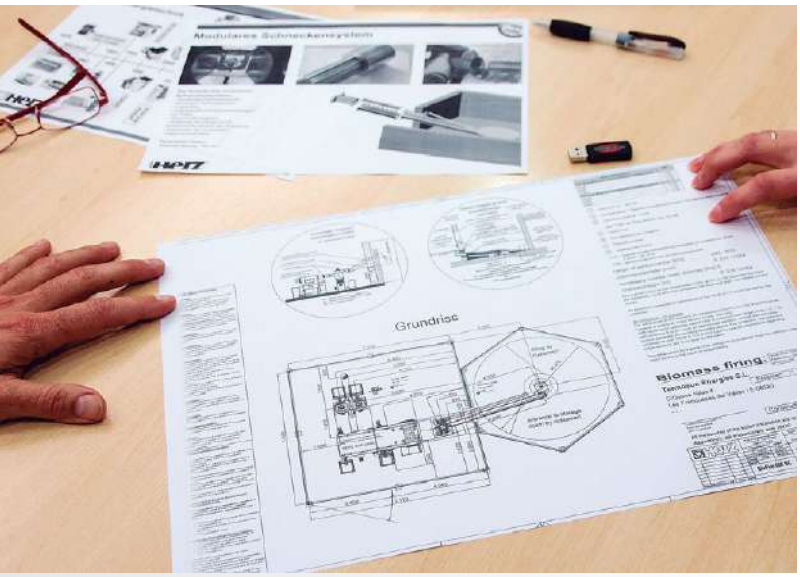


BioFire T-Control		500	600	800	1000	1250	1500
Output range WOOD CHIPS or Pellets (kW) Nominal load at 25 % water content		**150-500**	**180-600**	**240-800**	**300-1000**	**375-1250**	**450-1500**
Dimensions (mm)							
A1	Length - total	4485	4980	4980	5285	5880	5880
C1	Height	1975	1990	1990	2190	2470	2470
B1	Width - total	2425	2425	2425	2425	2795	2795
B4	Width - boiler	1375	1375	1375	1375	1735	1735
Technical data							
Boiler weight	kg	5317	5915	5915	6796	10003	10003

BioFire T-Control P45S		500	600	800	1000	1250	1500
Output range WOOD CHIPS (kW) Nominal load at 25 % water content		**150-500**	**180-600**	**240-800**	**300-1000**	**375-1250**	**450-1500**
Dimensions (mm)							
A1	Length - total	4485	4980	4980	5285	5880	5880
C1	Height	1975	1990	1990	2190	2470	2470
B1	Width - total	2425	2425	2425	2425	2795	2795
B4	Width - boiler	1375	1375	1375	1375	1735	1735
Technical data							
Boiler weight	kg	5317	5915	5915	6796	10003	10003

BioFire T-Control P45S + M50		500	600	800	1000
Output range WOOD CHIPS (kW) Nominal load at 50 % water content		**250-500**	**300-600**	**400-800**	**500-1000**
Dimensions (mm)					
A1	Length - total	4980	5285	5880	5880
C1	Height	1990	2190	2470	2470
B1	Width - total	2425	2425	2795	2795
B4	Width - boiler	1375	1375	1735	1735
Technical data					
Boiler weight	kg	5915	6796	10003	10003

HERZ customer-oriented...



- Advicing 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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HERZ biomass boilers underbid the strictest emission regulations.

d04-2019

English

Forward-looking and energy efficient

Biomass heating

YOUR RELIABLE PARTNER • Herz since 1896 • Present on the market for over 120 years

firematic

349 - 501 kW

- Large buildings
- Hotel complexes
- Housing estate projects

Herz®

Competence is our success ...

HERZ **FACTS:**

- 50 companies
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 2.600 employees in over 100 countries
- 24 production sites

HERZ Armaturen GmbH - The company
Founded in 1896 Herz has been continuously active in the market for more than 120-years. With 8 sites within Austria, another 16 in Europe and more than 2.600 employees at home and abroad, HERZ 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. As a result, proven cooperations with research and educational institutions can be intensified. 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 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.

Austrian **quality products...**

HERZ customer service:
In cooperation with Herz Armaturen GmbH and with branches in all European countries, our partners and factory representatives are in a position to give the optimum competent support to our customers at any time.

- Advice during the planning phase
- Planning of installation & chamber discharge according to customer requirements and local conditions
- Comprehensive services

HERZ training:
- for the machine operator
- for planners
- for technical offices
- for installers & assemblers
- as well as continuous training of the maintenance staff

Customer-oriented!

HERZ firematic can be used individually ...

HERZ firematic can be used individually ...

Large buildings
Hospitals, schools, public buildings, hotel complexes, heating buildings as well as heating for swimming pools, wellness areas, fitness and spa areas, ...

Housing estate projects
District heating, family homes, ...

industrial plants
Joinery, furniture producers, ...

... flexible and adaptable

COMPACT
System in modular design

FLEXIBLE
flexible & easy to place and connecting

The induced draft fan of the boiler can be either mounted at the back or on the side (right or left). In addition, the exhaust pipe is pivotable, therefore a flexible and easy connecting of the system is possible.

COMFORTABLE
Automatic burner & heat exchanger cleaning and automatic ash removal

LOW EMISSIONS
Combustion technology at the highest level

Easy, modern and comfortable ...

With the user-friendly VGA color touch-screen controller, the burning-process, as well as heating circuits, a hot water tank, buffer tank and a solar system can be controlled.

T-CONTROL

A central control unit for:

- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- Domestic hot water preparation
- Controlled heating circuits (pump and mixer valve)
- Solar circuit control
- Frost protection

The convenient menu and simple screen layout with schematic 3D-representation ensures maximum user-friendliness.

The “modular operation” of the T-CONTROL offers extension possibilities up to 55 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.

... with the central control unit T-CONTROL

T-CONTROL

Remote access to the controller using myHERZ

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-Control directly on the boiler. The processes and parameters can be read and modified any time from anywhere.

Even the control of a district heating network up to 50 customers can be realized with the T-CONTROL.

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

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. Cascade switching offers superior load profile matching, higher efficiency, and ensures even distribution of wear by automatically switching the lead role.

Benefits and **details ...**

The HERZ T-CONTROL with touch display

Central control unit as standard for:

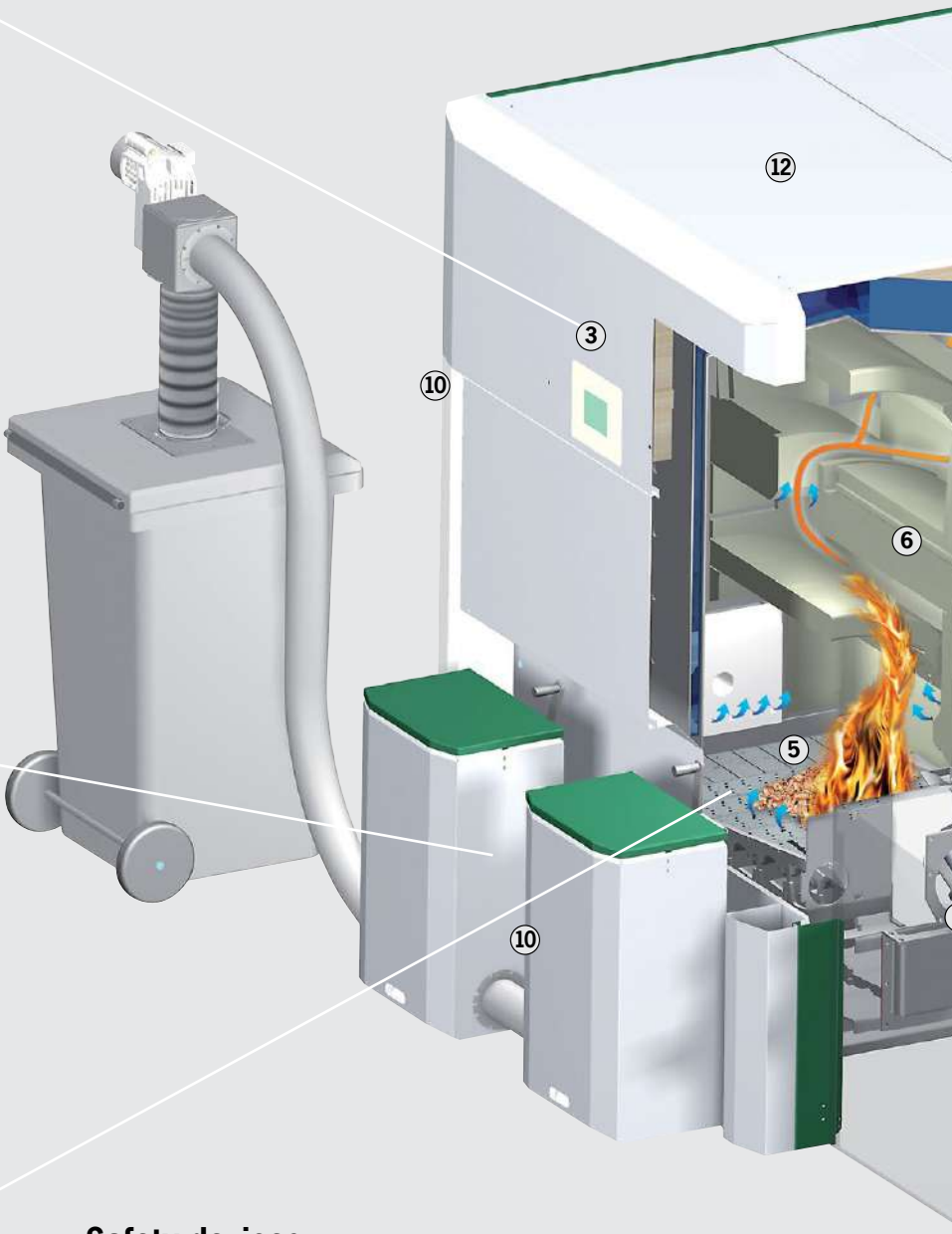
- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- Domestic hot water preparation
- Controlled heating circuit (pump and mixer valve)
- Frost protection

Automatic de-ashing

- Via the two ash discharge screws the combustion and fly ash is automatically augered into the ash bins.
- For even more comfort, there is the possibility of fully automatic ash removal into an external, bigger ash container. Due to the bigger volume of ash container the intervals for empty the containers are not so often. Therefore it saves time and increases the comfort.

Feeding system & step- / moving grate burning chamber

- Wood chips or pellets are transported from the side into the combustion chamber (with double stoker screw).
- The movement of the step grate is also a cleaning mechanism of the burning chamber. These grate elements consist of special, high-quality cast iron. Through the movement of the step- /moving grid the biomass is transported through the combustion area.
- The cleaning of the combustion chamber from burning ash is carried by an automatically tipping grid. The screw below transports the ash directly into the ash bin.
- No manual cleaning requirement.

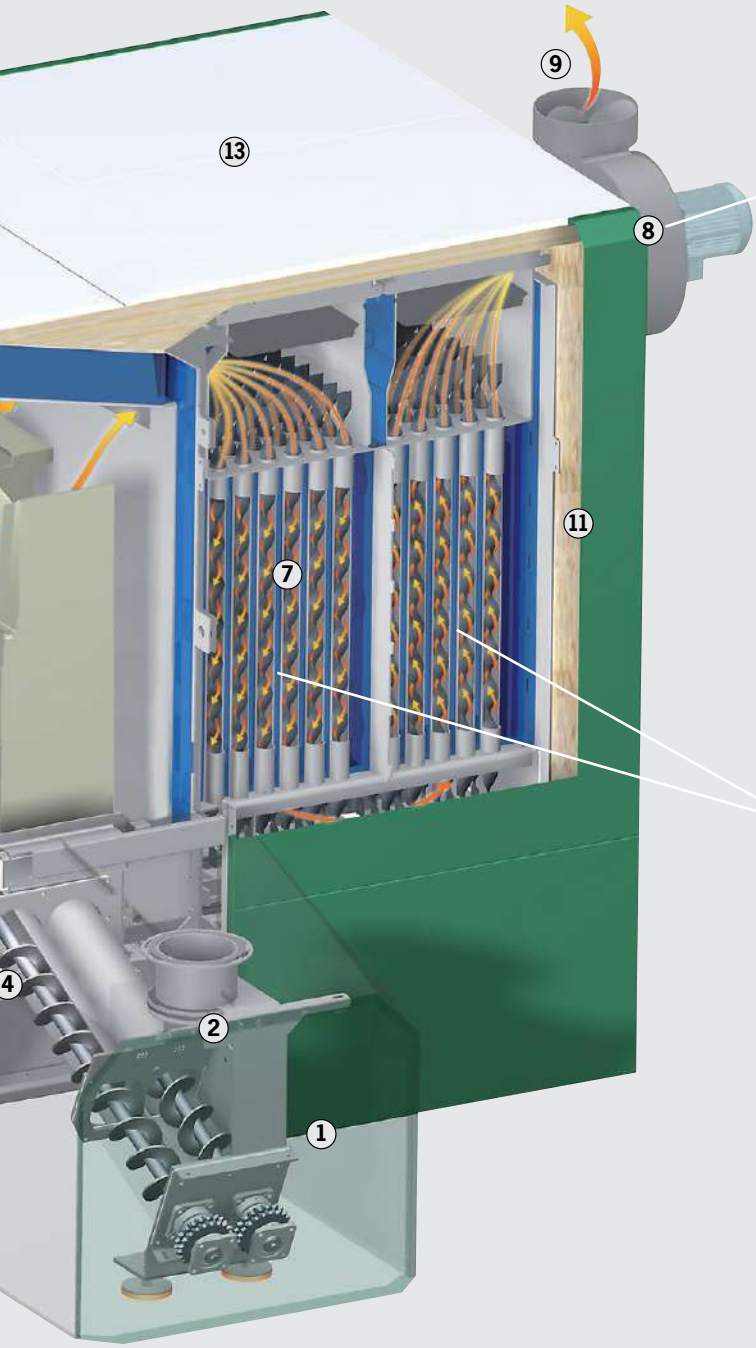


Safety devices:

- Burn-back protection, currentless closing airtight flap
- Independent extinguishing device, sprinkler device with water tank
- Spark-back protection, fuel barrier layer
- Temperature monitoring in the combustion chamber
- Temperature monitoring sensor in the storage room

1. **Intermediate hopper** with infrared light barrier system (no mechanical level control - thereby insensitive) and double stoker screw
2. **BBP** (back burn protection device; flap) **BBI** (back burn inhibit device; sprinkler system)
3. **T-CONTROL** central control unit
4. **Automatic ignition** using hot air fans
5. **Step- / moving grate** with automatic cleaning

...of the HERZ firematic 349-501



Energy saving combustion due to the lambda probe

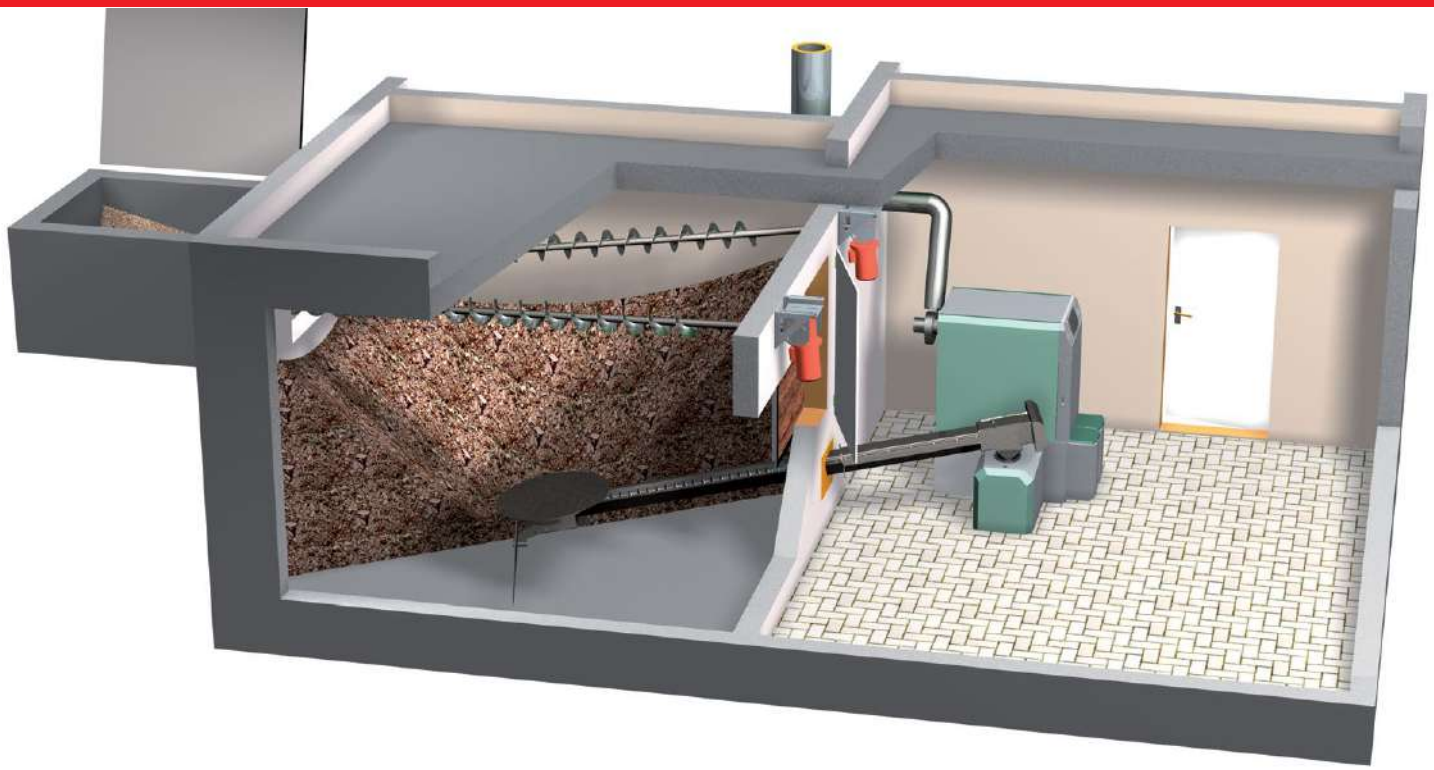
- A built in lambda probe, which monitors continuously the flue gas values, detects fuel quality changes and ensures optimum combustion and low emission values.
- The Lambda probe controls the primary and secondary air supply ensuring complete combustion, even in partial load operation.
- The results are low fuel consumption and the lowest emission values even with different fuel qualities.

Automatic cleaning of the heat exchanger

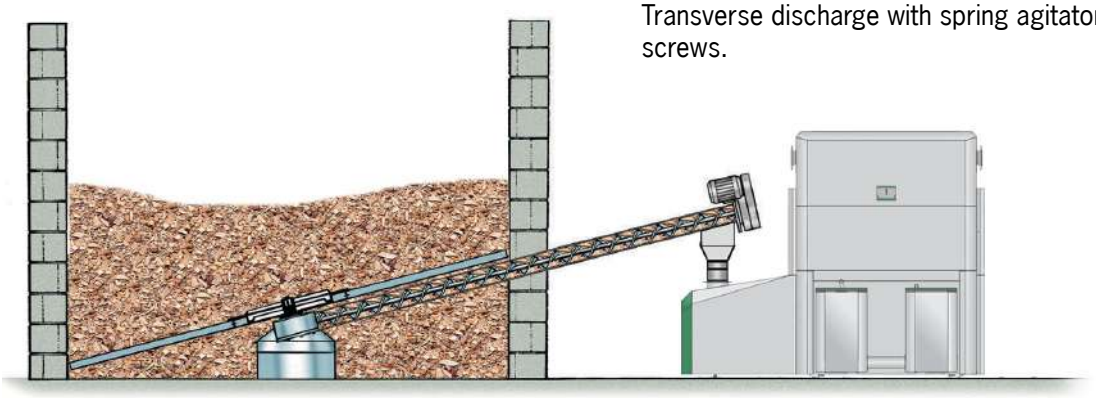
- The heat exchanger surface gets cleaned automatically via the integrated turbulators (by lifting and lowering), even during heating operation and therefore kept clean without manual effort.
- A consistently high level of efficiency thanks to cleaned heat exchanger surfaces enables low fuel consumption.
- Falling ash is taken into the ash bin via an auger.

6. **Split 2-zone combustion chamber**
   made of SiC fireproof concrete (Temperature resistance up to 1550°C) with step grate (2 zones) made of solid cast chromium steel. The grate bars can be changed individually. Furthermore, the combustion chambers have 2 secondary air zones.
7. **Pipe heat exchanger**
   with turbulators and automatic cleaning
8. **Lambda probe control**
   Automatic flue and combustion monitoring
9. **Exhaust fan**
   speed controlled and monitored for the highest operating safety
10. **2 front ash boxes**
    for combustion and fly ash
11. **Efficient heat insulation**
    for the lowest radiated heat loss
12. **Combustion chamber module**
13. **Heat exchanger module**

Discharge systems ...

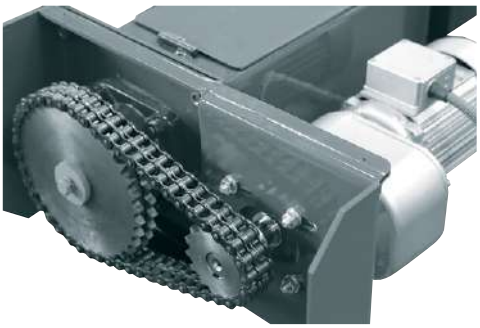


Storage room and heating room on same level.
Transverse discharge with spring agitator and 2 filling screws.



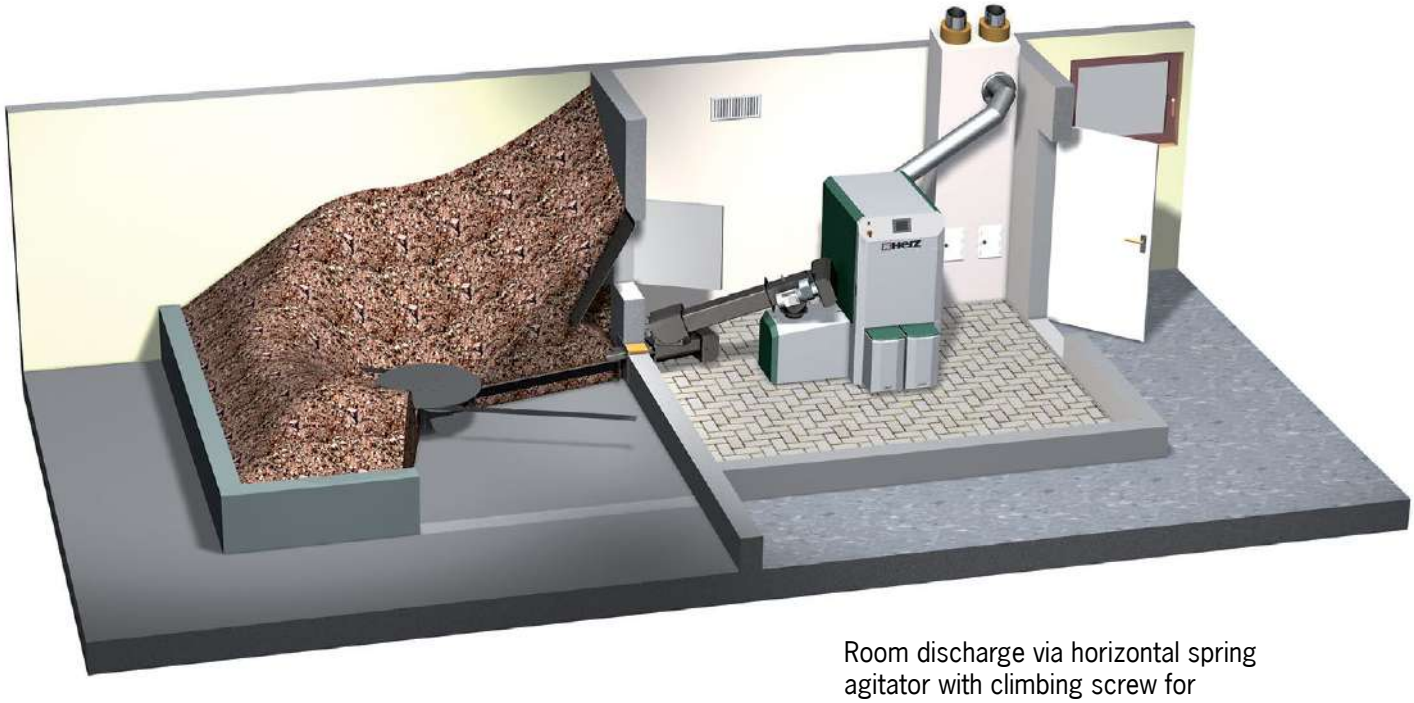
HERZ fuel feeder technology – all parts under the same roof!

Stable screw feeder system for wood chips and pellets. The special “G-trough” shape enables stable transportation of fuel.



High-quality drive motors with chain drive (dual chain). High starting torque and low power consumption.

...for wood chips & wood pellets



Room discharge via horizontal spring agitator with climbing screw for optimum storage room utilisation.

Agitator

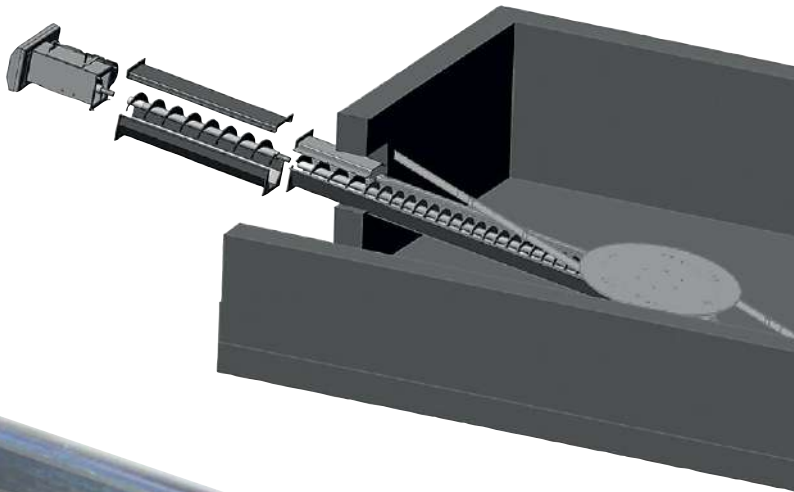
Robust agitator with heavy gearing and pressure discharge for reliable operation.

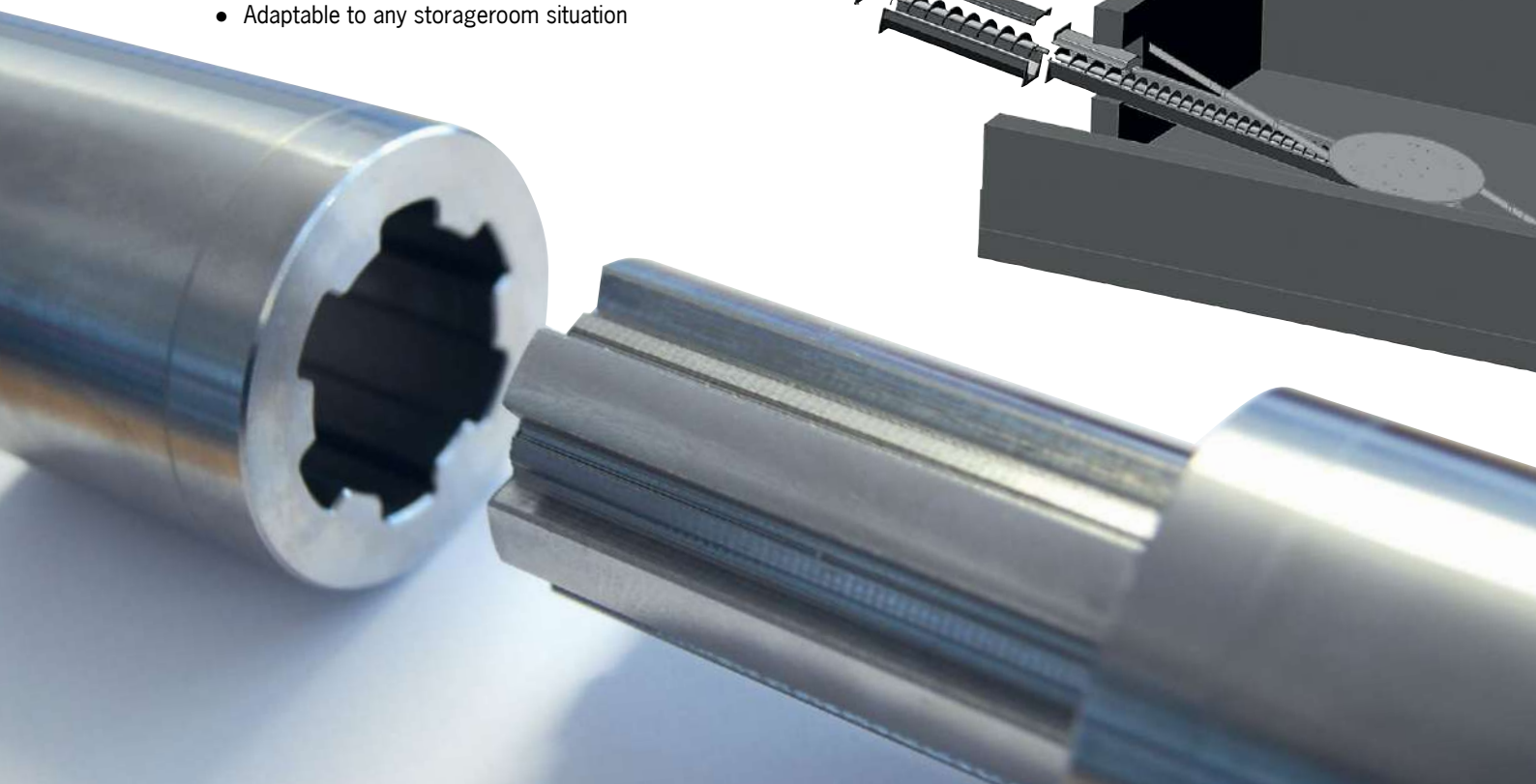
Modular system

The discharge system with agitator is modular, that means the system consists of elements which can be combined according to the room situation or room size.

The advantages

- Proven PTO profile
- Modular screw and trough design
- Screwed flange connections of the trough
- Fast installation time
- Adaptable to any storageroom situation



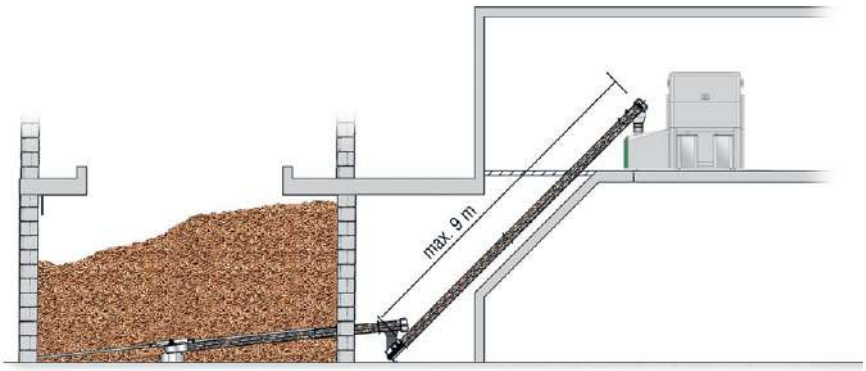


Discharge systems ...

Storage room and boiler room at different levels. Horizontal discharge with spring agitator and chute pipe.

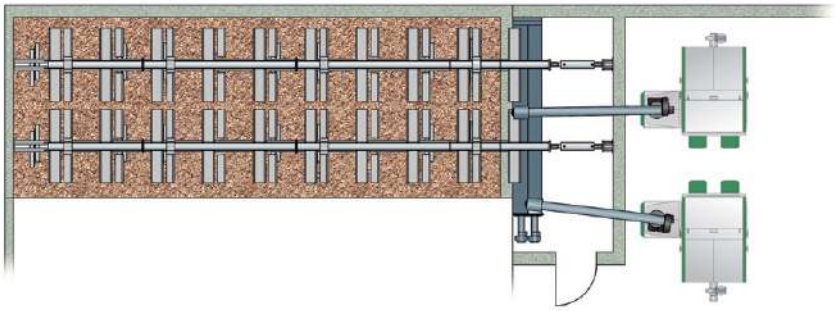
Agitator discharge system with transport screw

The advantage of agitator discharge with transport screw is the efficient use of the storage room. With the transport screw lengths up to 9 meters and angles to 45 °can be realized.



Hydraulic walking floor discharge

Room discharge with hydraulic walking floor and transversal auger



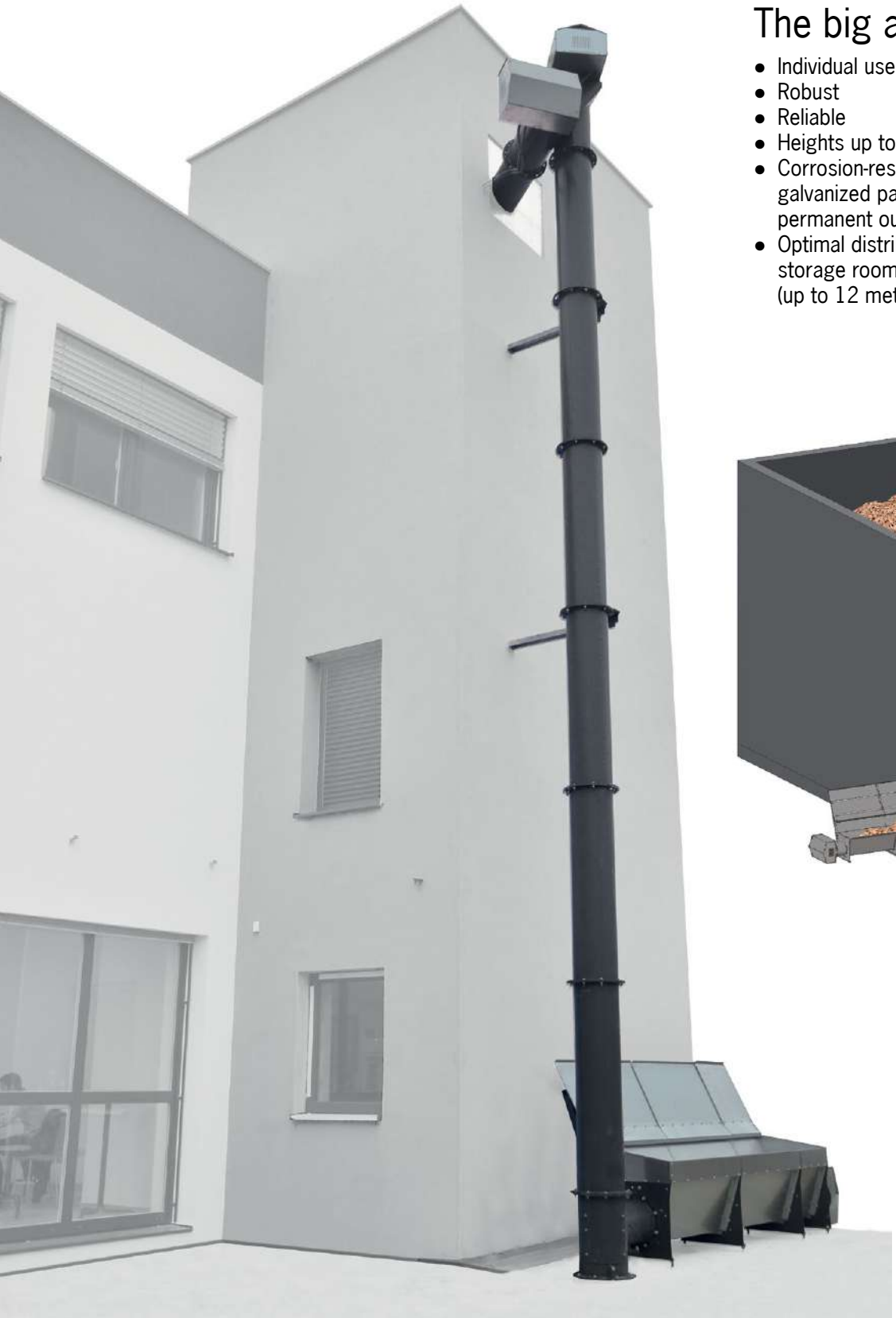
Vertical filling system ...

The system

After filling the trough with the wood chips or wood pellets it will fed up to 10 m height via a vertical screw into the fuel storage room. By means of the screw an optimal distribution of the fuel in the storage room is provided.

The big advantages

- Individual use
- Robust
- Reliable
- Heights up to 10 meters possible
- Corrosion-resistant because of galvanized paneling parts for permanent outdoor installation
- Optimal distribution of the fuel in the storage room by the distribution screw (up to 12 meters possible)



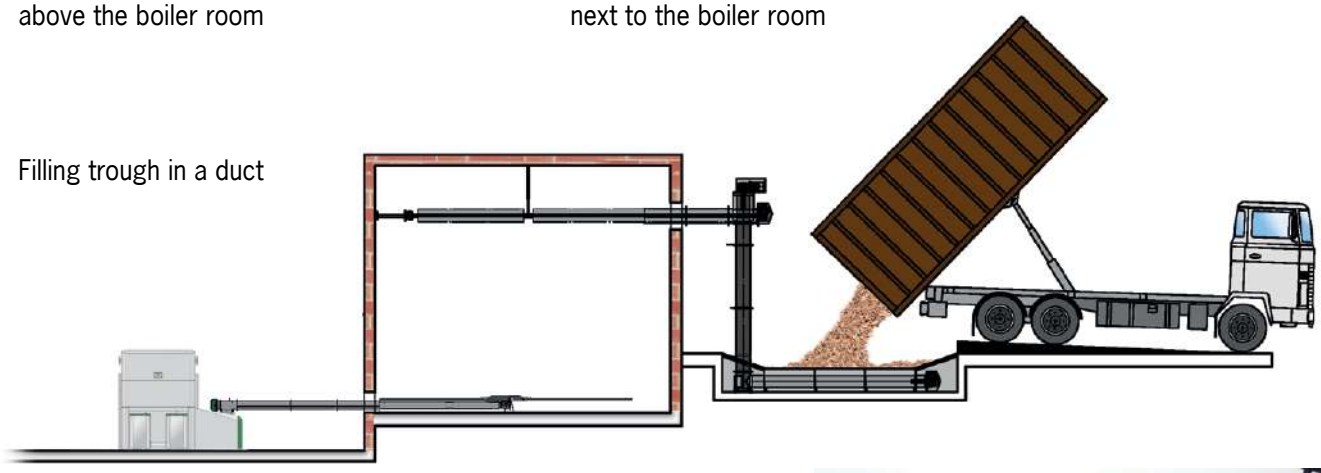
For an optimal storage room filling ...

The HERZ vertical filler can be used individually for each room and space situation with a variety of options. Below some examples:

The storage room is located above the boiler room

The storage room is located next to the boiler room

Filling trough in a duct

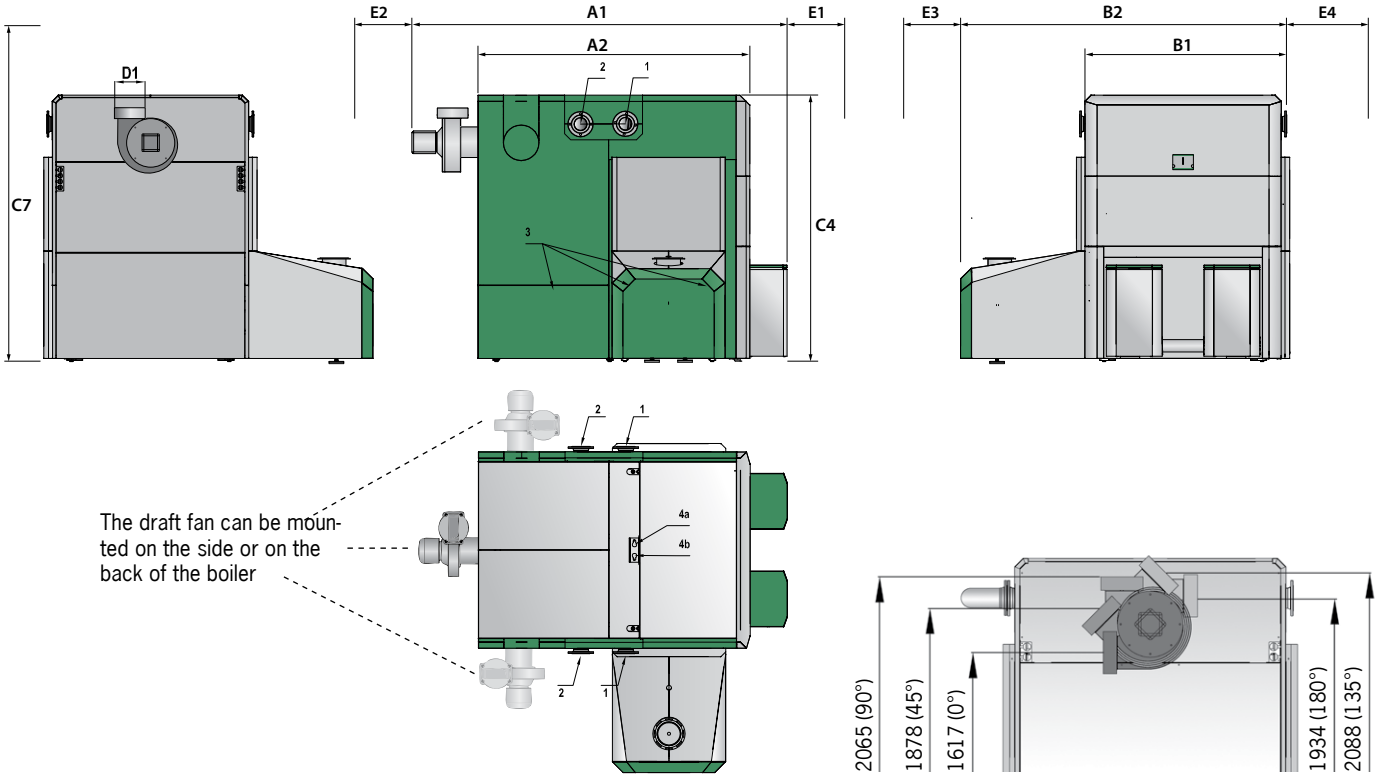


Double vertical filling system

At double installations 2 vertical screws an a double trough are used. In the trough there are 2 parallel arranged transport screws, which lead directly to the vertical screws. This achieves delivery rates up to 120 m^3/h. Depending on the space situation HERZ provides customized solutions and flexible installation options.

Dimensions & technical **data frematic 349-501**

frematic 349-501



frematic 349-501

Technical data		349	351	399	401	499	501
Output range WOOD CHIPS (kW)		**103,9-349**	**103,9-351**	**103,9-399**	**103,9-401**	**103,9-499**	**103,9-540**
Output range PELLETS (kW)		**104,0-349**	**104,0-351**	**104,0-399**	**104,0-401**	**104,0-499**	**104,0-540**
Dimensions (mm)							
A1	Length - total	3011	3011	3011	3011	3011	3011
A2	Length - casing	2260	2260	2260	2260	2260	2260
B1	Width	1612	1612	1612	1612	1612	1612
B1*	Bring In wide	1200	1200	1200	1200	1200	1200
B2	Width – with push-in	2731	2731	2731	2731	2731	2731
C4	Height	2185	2185	2185	2185	2185	2185
C5	delivery - upper edge	848	848	848	848	848	848
C7	Minimum room height	2600	2600	2600	2600	2600	2600
D1	Flue pipe – diameter	250	250	250	250	250	250
E1	Minimum space front	1000	1000	1000	1000	1000	1000
E2	Minimum space rear	750	750	750	750	750	750
E3	Minimum space left	500	500	500	500	500	500
E4	Minimum space right	900	900	900	900	900	900

Technical data							
Weight combustion chamber module	kg	2010	2010	2010	2010	2010	2010
Weight heat exchanger module	kg	1960	1960	1960	1960	1960	1960
Total weight (including push-in and casing)	kg	4393	4393	4393	4393	4393	4393
Combustion efficiency ηF	%	>94	>94	>94	>94	>94	>94
Permissible operating pressure	bar	5,0	5,0	5,0	5,0	5,0	5,0
Max. permissible operating temperature	°C	95	95	95	95	95	95
Water capacity	ltr.	1130	1130	1130	1130	1130	1130
Flue gas mass flow rate at nominal load: wood chips (wood pellets)	kg/s	0,198 (0,206)	0,199 (0,207)	0,226 (0,225)	0,227 (0,236)	0,285 (0,285)	0,286 (0,309)
Flue gas mass flow rate at part load: wood chips (wood pellets)	kg/s	0,071 (0,070)	0,071 (0,070)	0,071 (0,070)	0,071 (0,070)	0,071 (0,070)	0,071 (0,070)

1...Flow DN100, PN 6 2...Return DN100, PN 6
3...Filling / draining connection 3/4" IG
4a...Safety heat exchanger input
4b...Safety heat exchanger output

IG...Interior thread

SUITABLE FUELS:

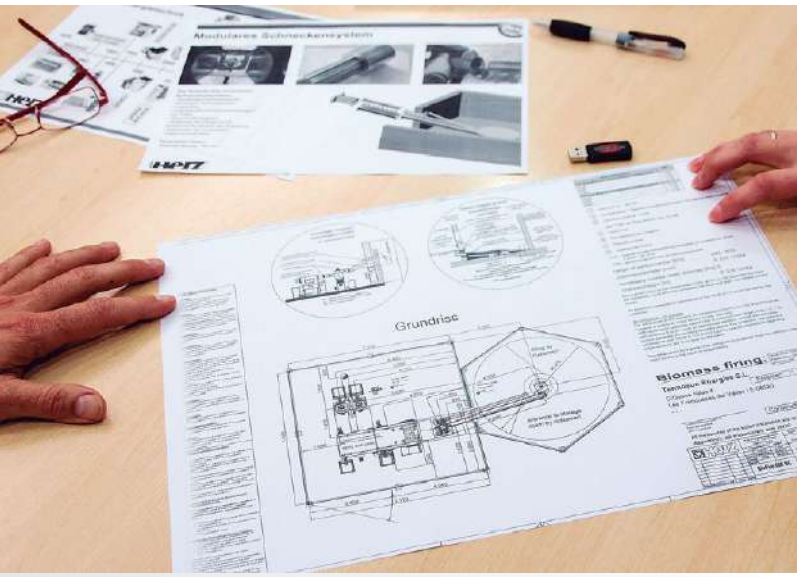
Wood chips M40 (water content max. 40%) according to

- EN ISO 17225-4: property class A1, A2, B1 and particle size P16S, P31S
- EN 14961-1/4: property class A1, A2, B1 and particle size P16B, P31,5 or P45A
- ÖNORM M7133: G30-G50

Wood pellets

- EN ISO 17225-2: Property class A1, A2
- EN 14961-2: property class A1, A2
- ENplus, ÖNORM M7135, DINplus or Swisspellet

HERZ customer-oriented...



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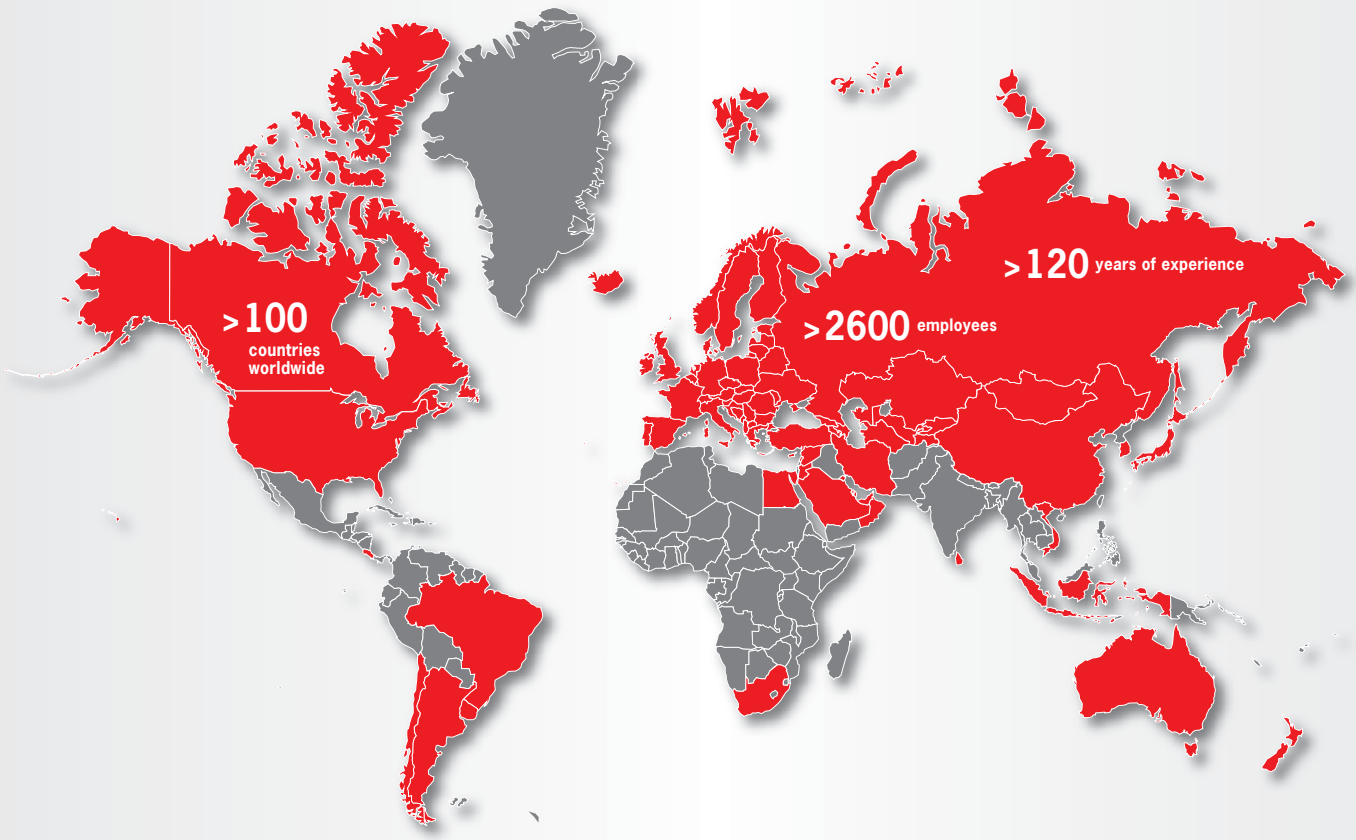

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Internet: www.herz.eu

HERZ biomass systems fall below the strictest emission regulations.

d02-2016

English

Heating with **wood chips & wood pellets**

YOUR RELIABLE PARTNER • Herz since 1896 • Present on the market for over 120 years

firematic
20 - 60 kW

firematic
80 - 301 kW

Herz®

Competence is our success ...

HERZ **FACTS:**

- 50 subsidiaries
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 3.000 employees in over 100 countries
- 30 Production sites

Herz Armaturen GmbH - The company
Founded in 1896, HERZ has been continuously active in the market for more than 120 years. With 6 sites within Austria, another 24 in europe and more than 3,000 employees at home and abroad, HERZ is the only Austrian manufacturer that provuces equipment for the entire heating and installation industrie and is one of the most important internationally.

HERZ Energietechnik GmbH
HERZ Energietechnik employs 200 people 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. Proven cooperations with research and educational institutions can be intensified. Over the years, HERZ has established itself as a specialist in renewable energy systems. HERZ places a great importance on modern, cost-effective and environment-friendly heating systems with the highest level of convenience and user-friendliness.

BINDER Energietechnik GmbH - Bärnbach
At the factory site in Bärnbach in western Styria large scaled biomass boilers are produced for industrie applications. At the factory with a total area of approx. 6 ha and 6,200 m² production area, about 200 boilers up to 20.000 kW are manufactured every year. A reliable maintenance and and repair service provides the service team in Bärnbach / Austria. This is supported by 13 service and sales offices in 11 countries worldwide.

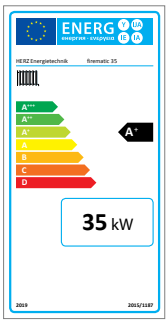
HERZ for the environment
All HERZ biomass systems fall below the strictest emission regulations. Numerous environmental endorsements bear witness to this.

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

Convenient heating...

Decades of experience

- Internal development and test centre
- Austrian quality with a world wide market
- area covered service
- ISO 9001 certification
- FMEA approved boiler production



Energy labelling (firematic 20-60 kW)
Biomass boiler **A+**
Biomass boiller with integrated system controller**A+**

Economical and convenient heating with wood chips and wood pellets.

The cleanest combustion due to the lambda probe control even with different fuel qualities.

The quiet operation of the boiler is based on high-quality system components.

Lowest emissions to protect our environment!

The great advantages of HERZ firematic:

- Energy-saving drive technology
- Simple operation
- Consistently high level of efficiency
- Low space requirement
- Constructed from high quality materials

Automatic cleaning ...
- ... of the combustion grate
- ... of the vertical pipe heat exchanger

Automatic de-ashing of the combustion and fly ash in to an easily accessible ash container on the front side.

Easy, modern and comfortable ...

With the user-friendly VGA color touch-screen controller, the burning-process, as well as heating circuits, a hot water tank, buffer tank and a solar system can be controlled.

T-CONTROL

A central control unit for:

- buffer management
- back flow elevation (pump and mixer valve)
- domestic hot water preparation
- controlled heating circuits (pump and mixer valve)
- Solar circuit controll
- frost protection monitoring

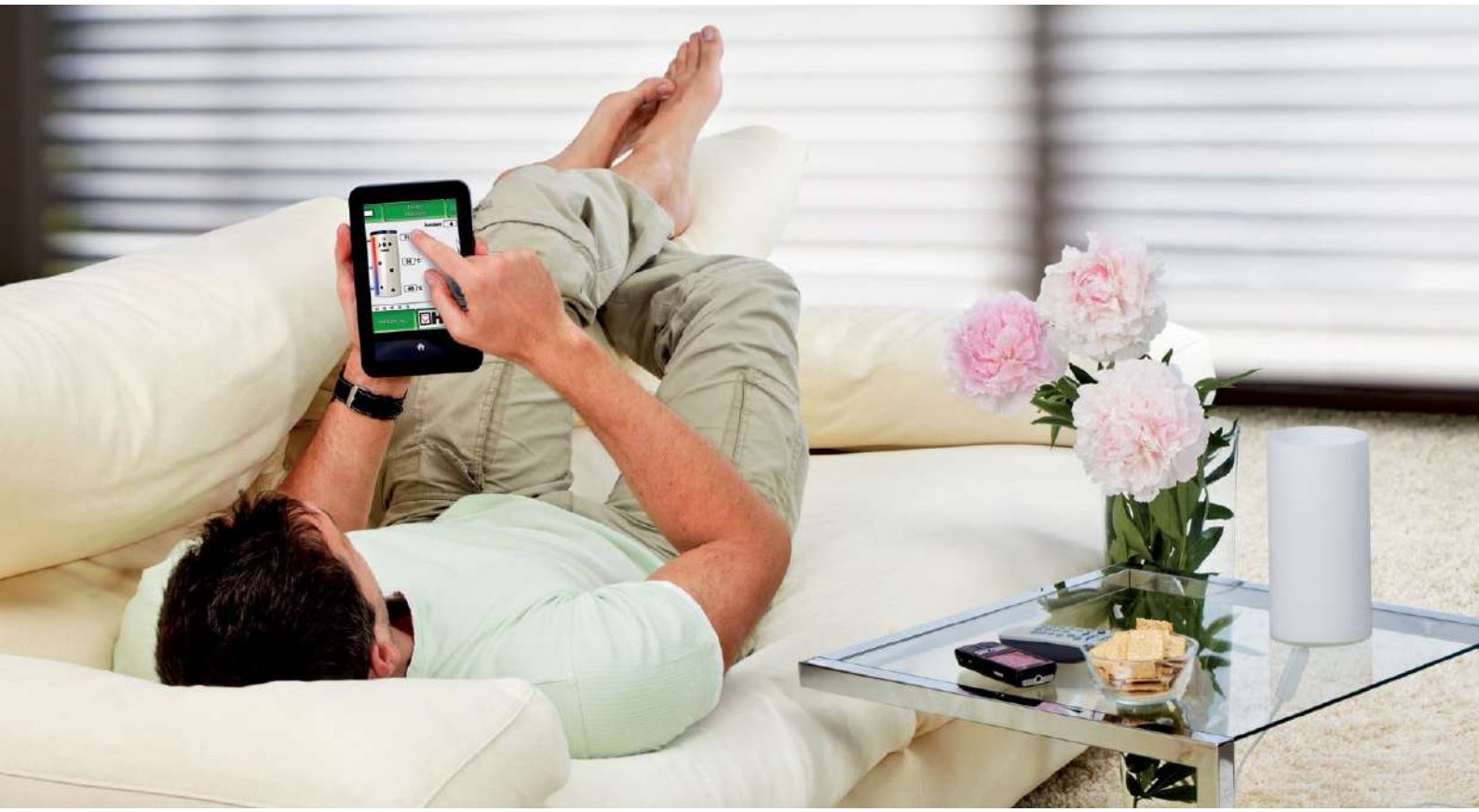
The convenient menu and simple screen layout with schematic 3D-representation ensures maximum user-friendliness.

The “modular operation” of the T-CONTROL offers extension possibilities up to 55 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
- 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 (heating circuit pump, hot water tank loading pump, circulation pump, mixing valve, switching valve, actuator motors etc.)

... central control unit T-CONTROL



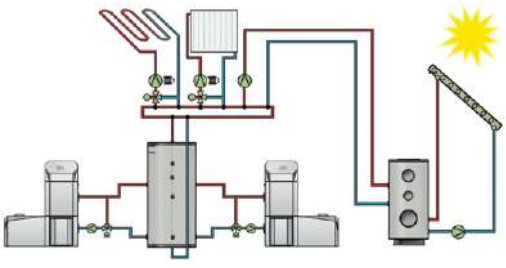
Remote access to the control via the myHERZ-portal very easy from everywhere

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

Remote access via **myherz.at**

Cascade operation

Using the HERZ T-CONTROL, up to 8 HERZ boilers equipped with T-CONTROL can be switched to cascade (CAN BUS). A special advantage of the cascade arrangement is the efficient utilization of the boiler at lower heat consumption (eg in the transitional period).



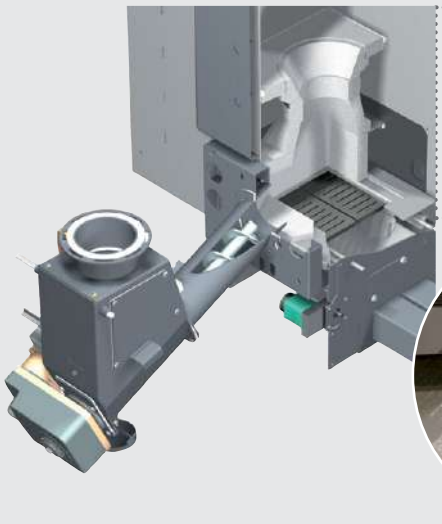
Benefits and **details ...**

T-CONTROL - the user-friendly control with touch display

Central control unit as standard for:

- buffer management
- back flow elevation (pump and mixer valve)
- domestic hot water preparation
- Controlled heating circuits (pump and mixer valve)
- frost protection monitoring

- Simple screen design and convenient menu guide.
- Extension modules up to 55 modules possible (further heating circuits, solar circuit control, 2. buffers, etc.)

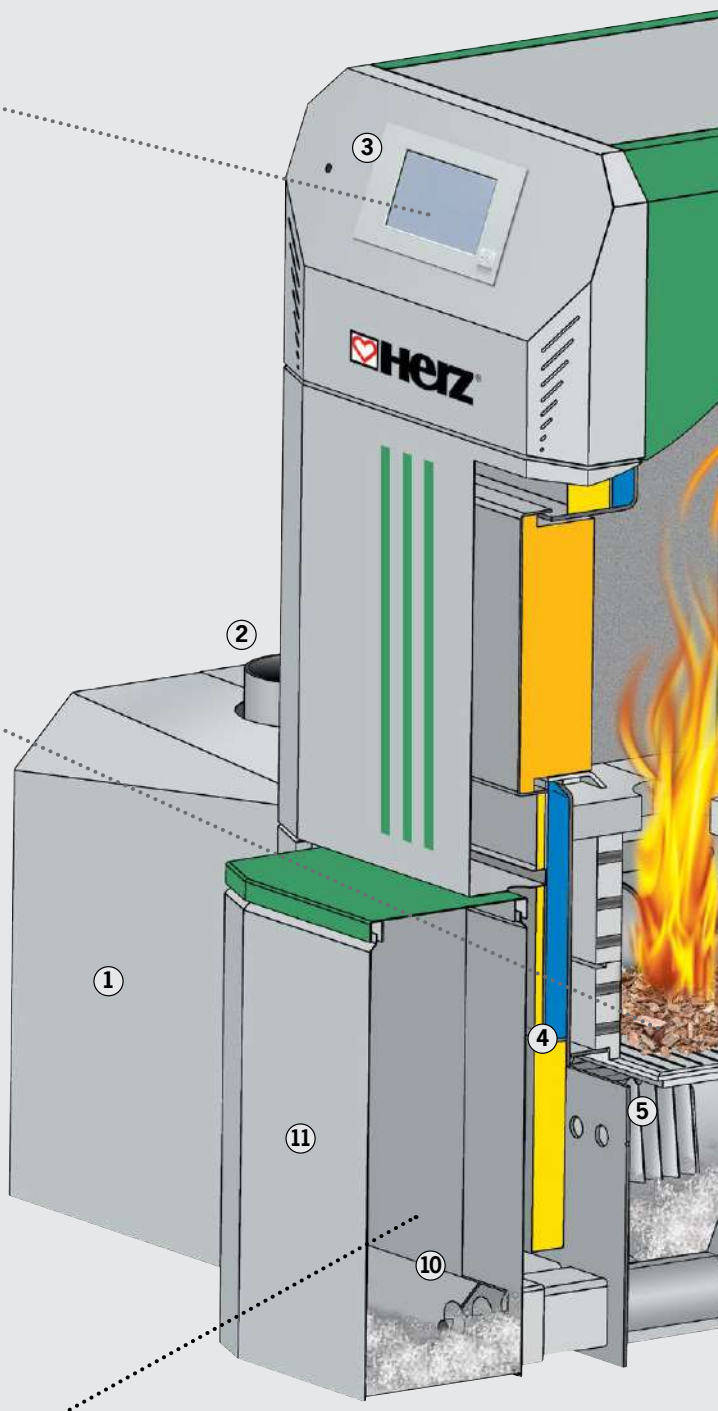


Side load & automatic cleaning of the combustion grate

- Side load of wood chips or wood pellets into the combustion chamber.
- Complete cleaning of the grate due to automatical tipping on a cleaning device.
- Due to the clean combustion grate an optimum air supply is guaranteed
- Minimizes the manual cleaning requirement.

Automatic de-ashing

- Via two ash discharge screws the combustion ash and fly ash is automatically transported into the ash container(s).
- The removable ash container(s) with wheels enables simple and convenient emptying of the ash.

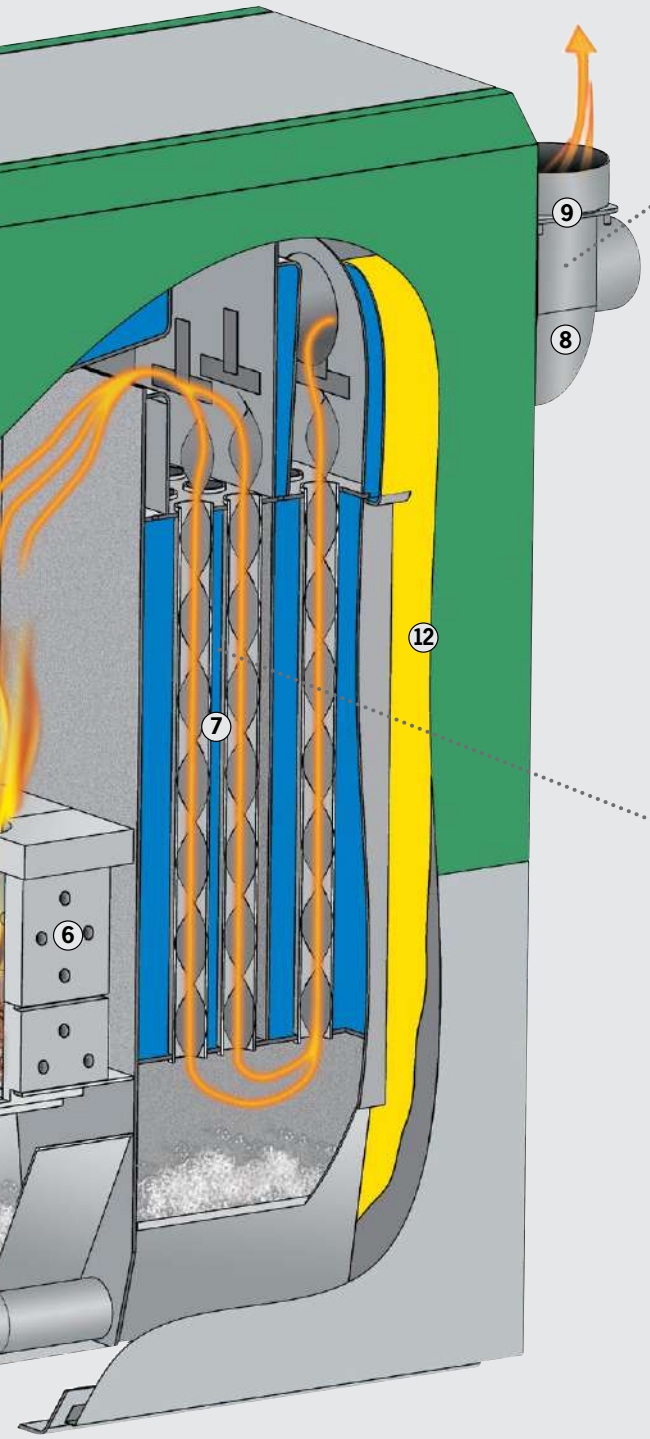


1. **Intermediate container**
   with infrared light barrier system (removes the need for mechanical level control)

2. **BBP**(back burn inhibit device)
   BBI (back burn inhibit device; sprinkler system)

3. **T-CONTROL**
   central control unit

...of the HERZ firematic 20-60



Energy saving combustion via the lambda probe

- A built in lambda probe, which monitors continuously the flue gas content values, detects fuel quality changes and ensures optimum combustion and low emission values.
- The Lambda probe controls the primary and secondary air supply ensuring complete combustion, even in partial load operation.
- The results are low fuel consumption and the lowest emission values even with different fuel qualities.

Automatic cleaning of the heat exchanger

- The heat exchanger surface gets cleaned automatically via the integrated turbulators, even during heating operation, no manual cleaning necessary.
- A consistently high level of efficiency thanks to cleaned heat exchanger surfaces enables low fuel consumption.
- The fly ash is taken into the front ash container via a discharge screw.

4. **automatic ignition** via hot air fan
5. **Automatic tipping grate** for complete cleaning
6. **Split 2-zones combustion chamber**
7. **Pipe heat exchanger** with turbulators and automatic cleaning
8. **Lambda probe control**Automatic flue gas and combustion monitoring
9. **ID fan** speed controlled and monitored for the highest operating safety
10. **Ash discharge screw**for combustion and fly ash
11. **Ash box on the front**
12. **Efficient heat insulation** for the lowest radiation losses

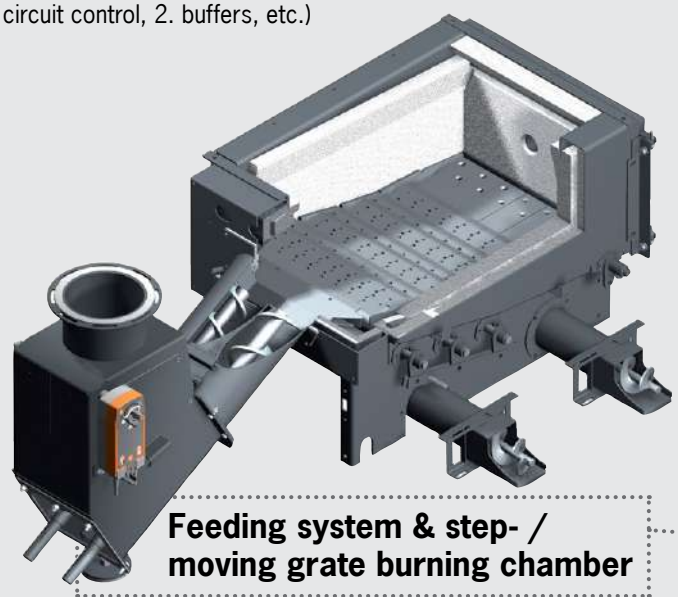
Benefits and **details ...**

T-CONTROL - the user-friendly control with touch display

Central control unit as standard for:

- buffer management
- back flow elevation (pump and mixer valve)
- domestic hot water preparation
- Controlled heating circuits (pump and mixer valve)
- frost protection monitoring

- Simple screen design and convenient menu guide.
- Extension modules up to 55 modules possible (further heating circuits, solar circuit control, 2. buffers, etc.)

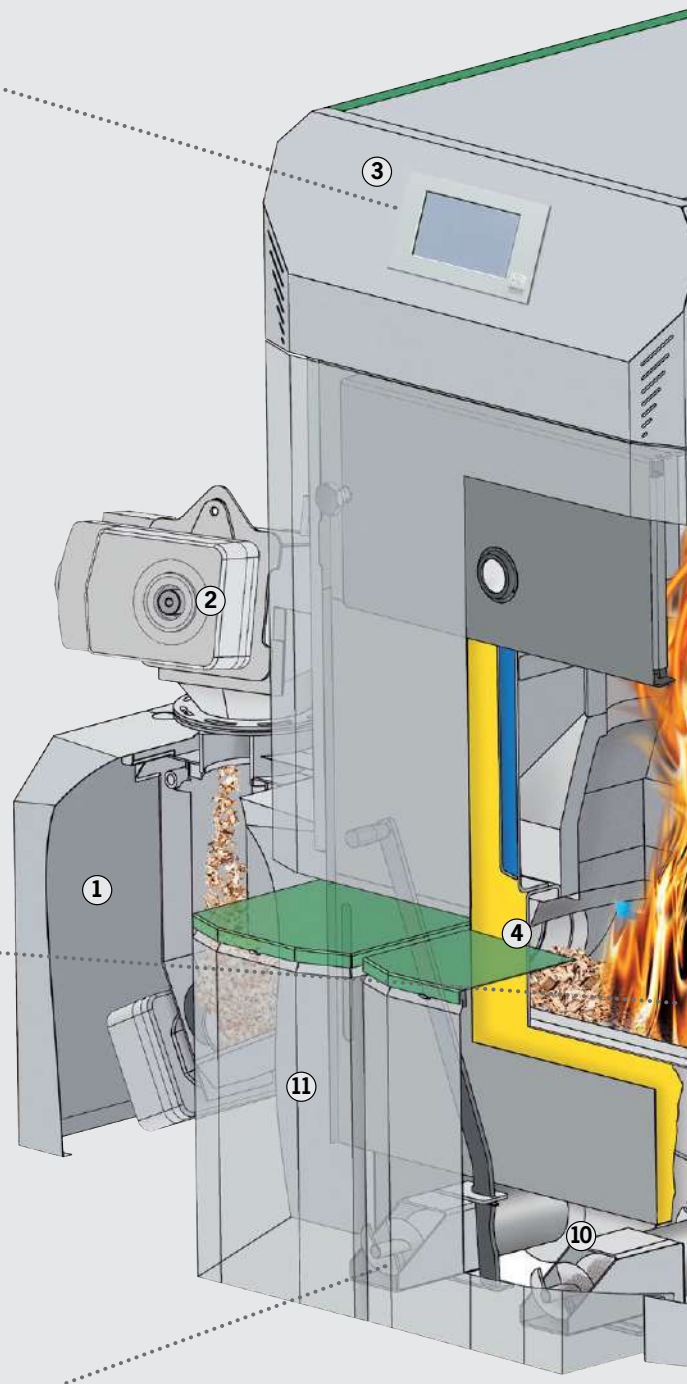


Feeding system & step- / moving grate burning chamber

- Wood chips or wood pellets are transported from the side into the combustion chamber (with single stoker screw for firematic 20-101 and double stoker screw for firematic 130-301).
- The movement of the step grate is also a cleaning mechanism of the burning chamber. These grate elements consist of special, high-quality cast iron. Through the movement of the step- /moving grid the biomass is transported through the combustion area.
- The cleaning of the combustion chamber from burning ash is carried by an automatically tipping grid. A subjacent mounted ash screw transports the ash directly into the ash container.
- Minimizes the manual cleaning requirement.

Automatic de-ashing

- Via the two ash discharge screws the combustion and fly ash is automatically augered into the ash bins.
- The removable ash containers with wheels enables simple and convenient emptying of the ash.



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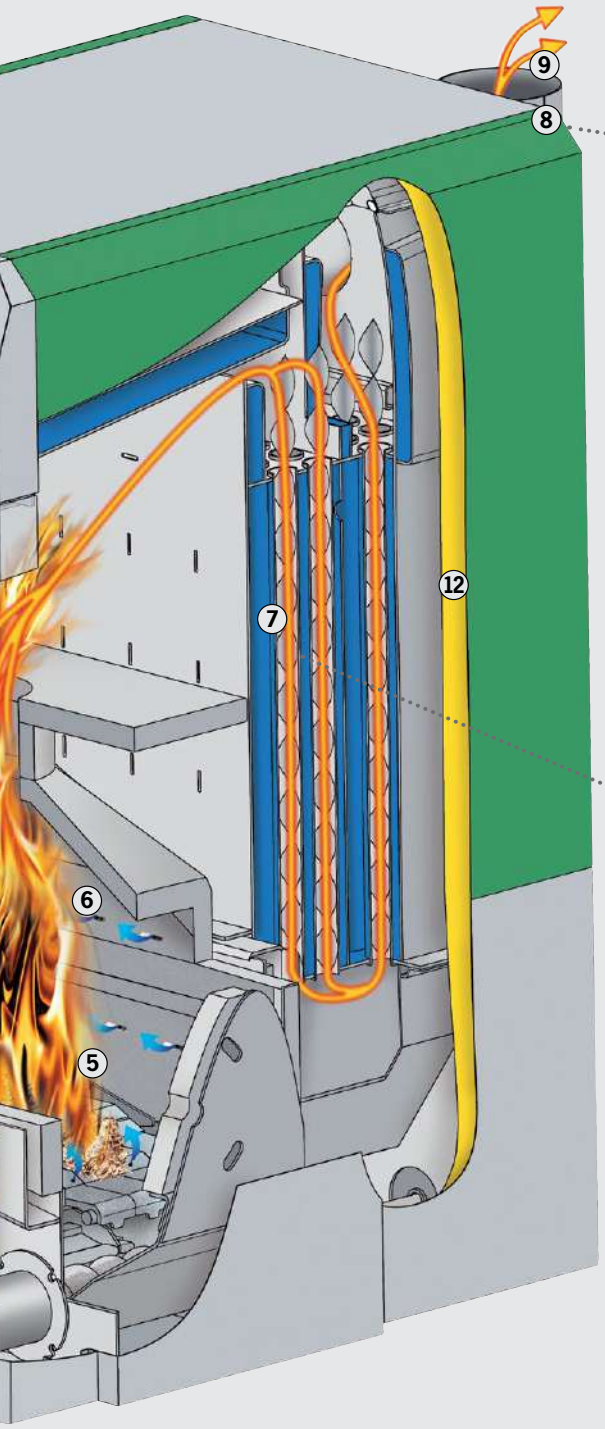
2. **BBP**(back burn inhibit device) **BBI** (back burn inhibit device; sprinkler system)

3. **T-CONTROL**
   central control unit

...of the HERZ firematic 80-301



Energy saving combustion via the lambda probe

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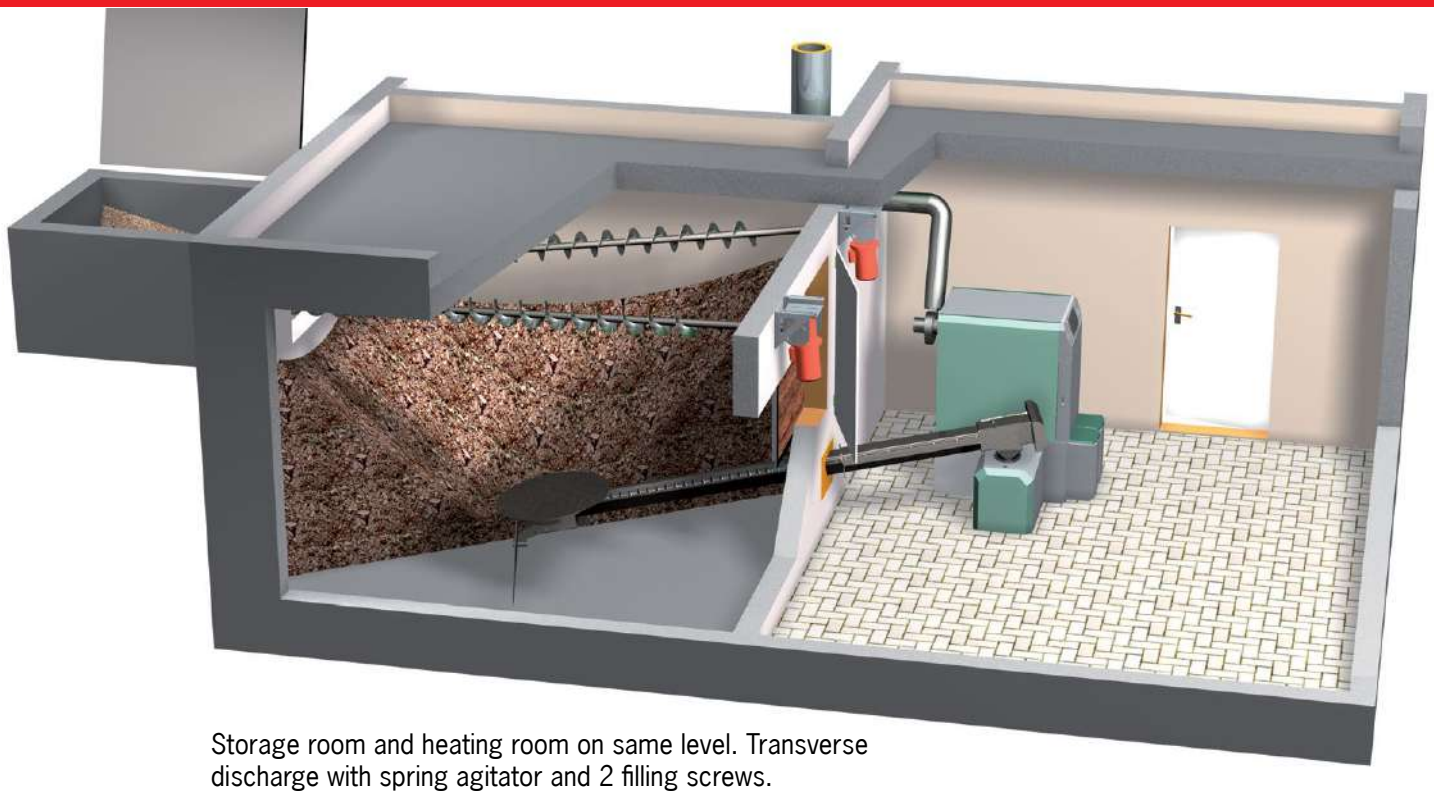
4. **automatic ignition** via hot air fan
5. **Step- /moving grate** with automatic cleaning
6. **Split 2-zones combustion chamber**
7. **Pipe heat exchanger** with turbulators and automatic cleaning
8. **Lambda probe control** Automatic flue gas and combustion monitoring
9. **ID fan** speed controlled and monitored for the highest operating safety
10. **Ash discharge screw**for combustion and fly ash
11. **2 front ash containers**
12. **Efficient heat insulation** for the lowest radiation losses

Discharge systems ...

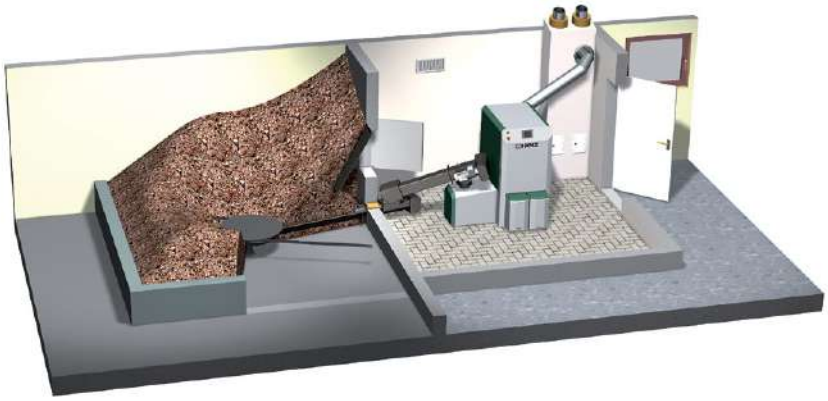


Storage room and heating room on same level. Transverse discharge with spring agitator and 2 filling screws.

HERZ spring agitator and drive technology:

Robust agitator with heavy duty gearing and pressure relief for reliable operation. Agitator discharge up to 6 m in diameter available, up to 5 m in diameter (at firematic 20-60) with 230 V operation possible.

Additional discharge system via a pendulum screw from a silo, or a storage room discharge via hydraulic walking floor and straight discharge screw available.



Room discharge via horizontal spring agitator with climbing screw for optimum storage room utilisation.

Storage room and boiler room at different levels. Horizontal discharge with spring agitator and chute pipe.

The vertical filling system of HERZ offers the opportunity to fill the storage room optimally.

Wood chips are transported via a vertical screw into the wood chip storage room and are distributed optimally via a horizontal screw in the storage room.

- Filling trough lenghts up to 6 meters
- Modular extensions of 0,6 m and 1,2 m possible
- Hinged, galvanized cover of the filling trough
- High corrosion resistance - fully galvanized panel for outdoor areas
- All engines are suitable for outdoor areas
- Vertical height up to 10 meters
- Perfectly wood chip distribution in the storage room by a storage room filling screw (up to 12 meters possible)

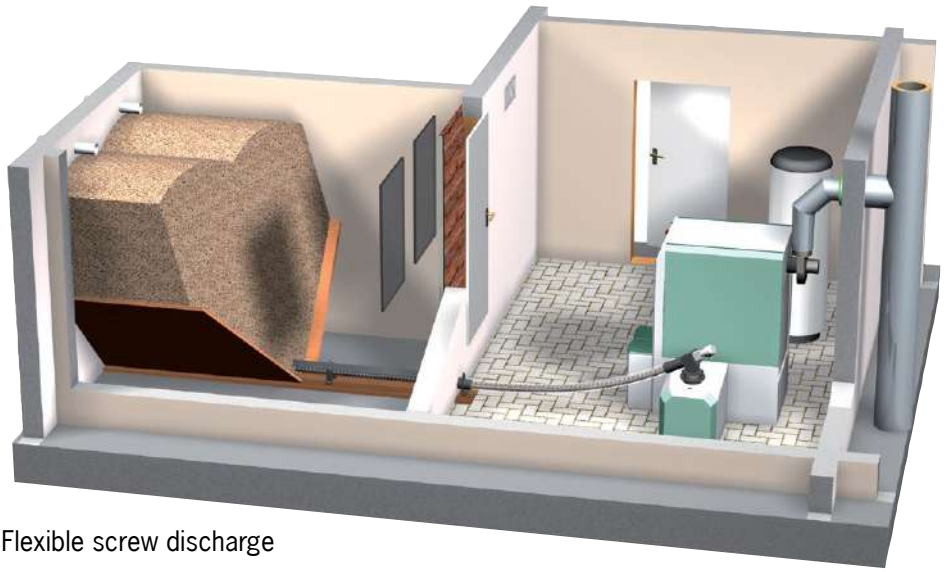
Filling capacity: < 60 m³/h
For double systems < 120 m³/h

SUITABLE FOR:
Wood pellets according to
- EN ISO 17225-2: Property class A1, A2
- ENplus, ÖNORM M 7135, DINplus or Swisspellet

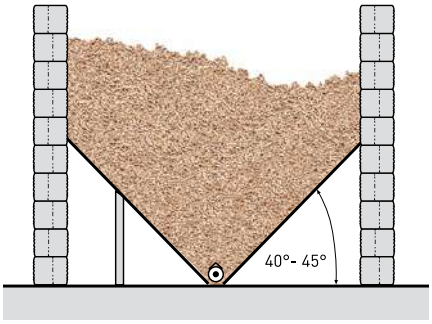
Wood chips M40 (water content max. 40%) according to
- EN ISO 17225-4: Property class A1,A2, B1 and particle size P16S, P31S
- ÖNORM M7133: G30-G50

Discharge systems ...

Discharge systems for wood pellets with flexible screw (up to 201 kW)

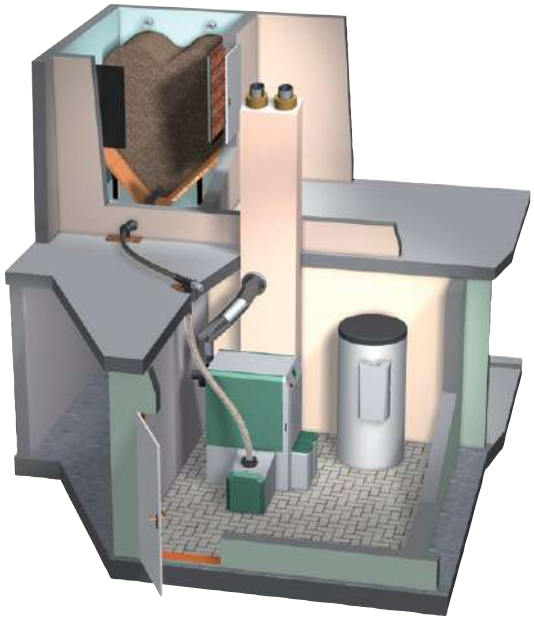


Flexible screw discharge

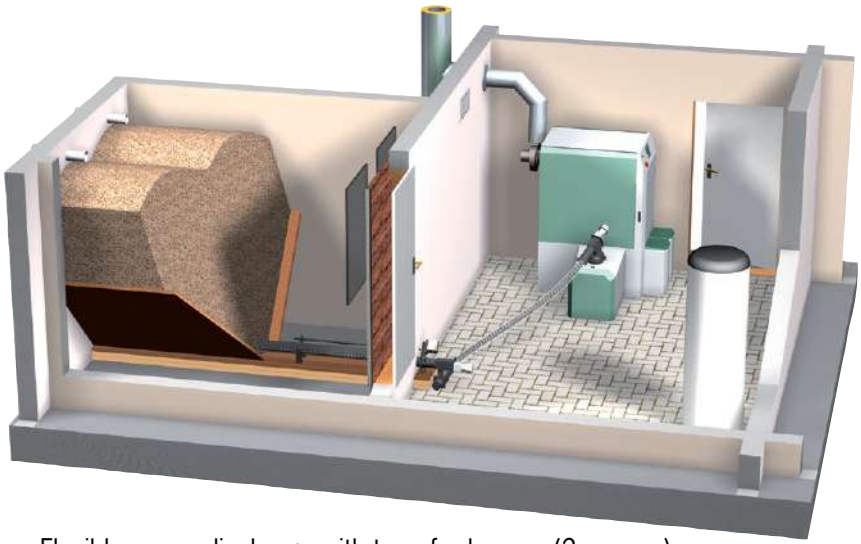


Sliding angle of 40° - 45° in the pellet-store with a smooth surface

For pure pellet operation, the flexible screw is a cost-saving solution. In order to empty the storage room completely a sloping floor is recommended. For this system no transport of wood chip is possible.



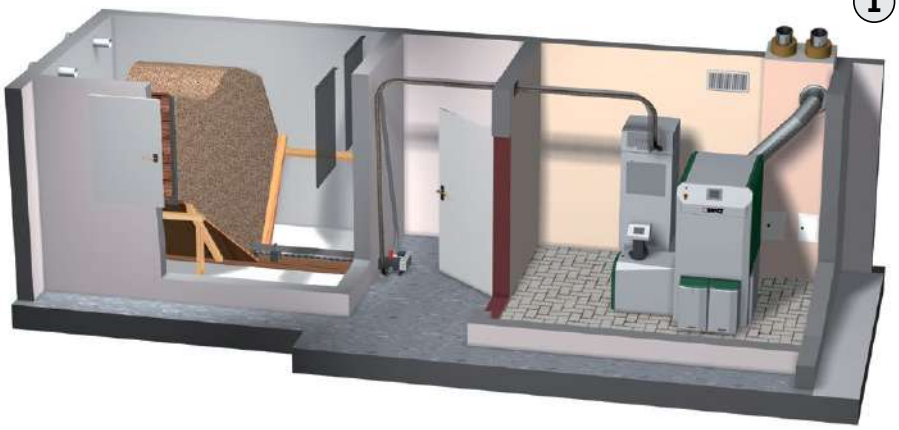
Flexible screw discharge with chute pipe system



Flexible screw discharge with transfer hopper (2 screws)

Agitator discharge - the useful system for wood chips and wood pellets.

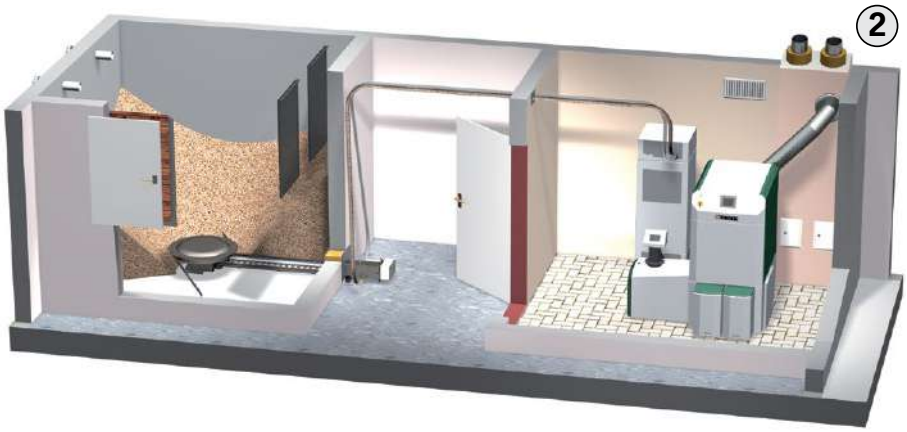
If you want to burn wood chips in the system too, the discharge with an agitator has to be used. Nevertheless, the agitator system is also possible with exclusive pellet operation. The advantage with an agitator is the efficient utilization of storage space and the possibility that the boiler can be filled with wood chips too.



Modular pellet screw in the storage room (with slidings) and suction tank.

Pellets extraction via suction system (up to 201 kW)

For pure pellets operation of the firematic and long distances from the storage room to the boiler room the use of a suction hopper provides an optimum solution. Wood pellets can be sucked up to a distance of 25 m and a maximum height difference of 5 m.



Pellet agitator in the storage room with suction discharge and suction hopper. Efficient use of storage space by eliminating the sliding angles.

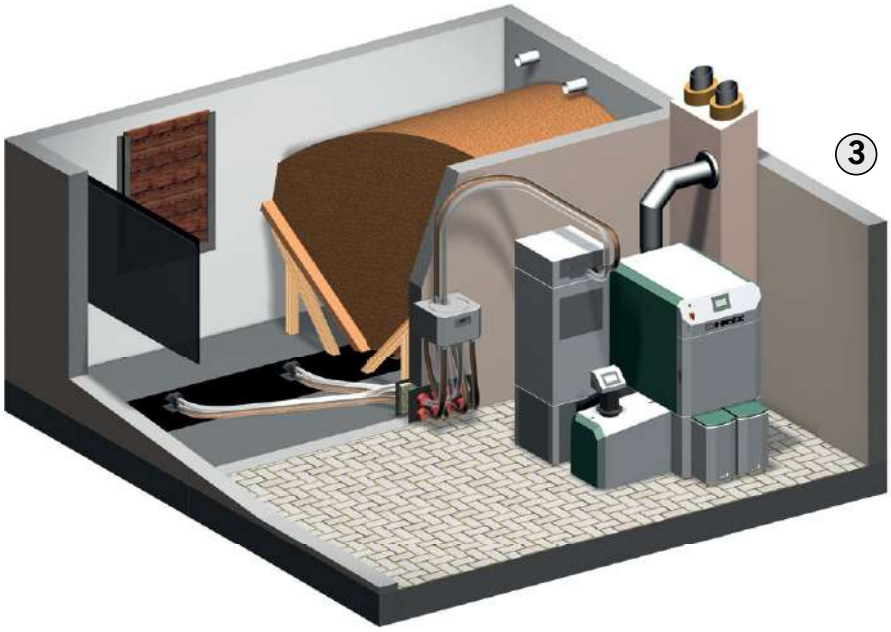
There are 3 possibilities to discharge the wood pellets out of the storage room:

1 A screw discharge in the middle of the storage room (to empty the storage room completely, we recommend making slidings) or

2 an agitator for efficient storage space usage (for this case the slidings are not needed).

3 4-point suction system
The position of the 4 suction points is individually selectable.

NOTE: For double-suction hoppers (necessary for firematic 130-201 kW) 2 discharge systems are necessary (for example 2 agitators, 2 screws, 2 4-point suction systems)



4-point suction system - The system can be easily installed and is adaptable to different storage room situations and is an universal solution.

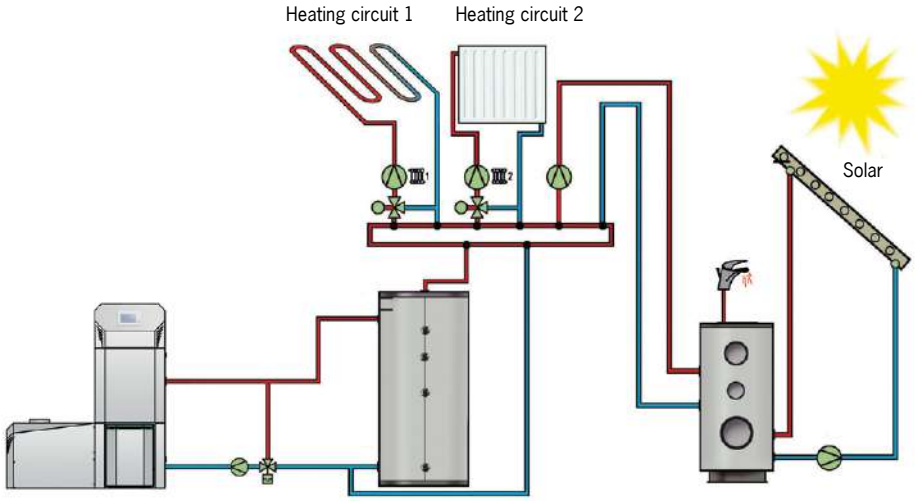
A **range** for all requirements

The HERZ T-CONTROL:

The control enables a multiplicity of application options, 2 of the most common cases are shown below.

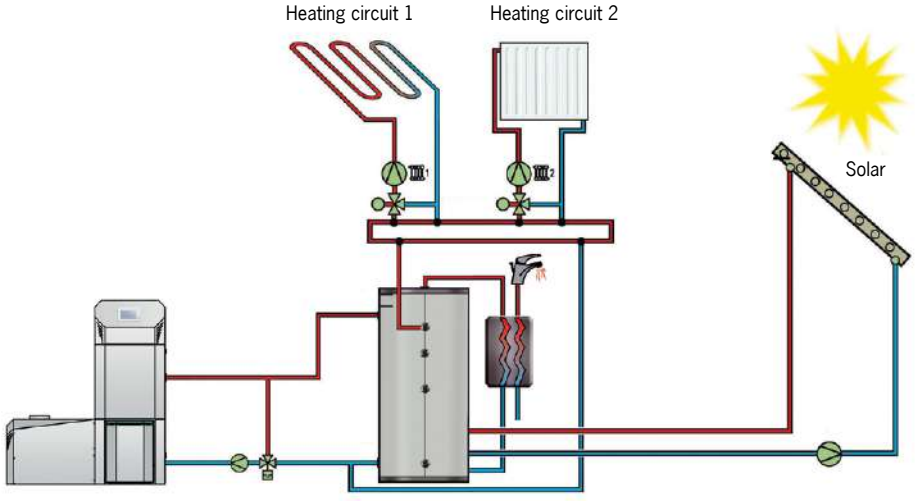
The installation of a buffer tank considerably increases the efficiency of the heating system, especially during periods of part load. A buffer is not absolutely necessary, but recommended for each biomass heating system!

The differential temperature control and weather-driven control optimise energy usage and allow an environmentally friendly and energy saving heating. The usage of energy is thereby significantly optimized.



Hot water tank with solar usage and buffer tank:

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 domestic hot water preparation:

With this system configuration the solar energy heats the water in the buffer tank directly. Thus, free solar energy is also used for heating purposes. The domestic hot water module for hot water preparation heats the water in continuous flow mode with energy from the buffer tank. Additional heating circuits such as under floor heating and the radiators are supplied with heat from the buffer tank.

HERZ fresh water heater & buffer tanks

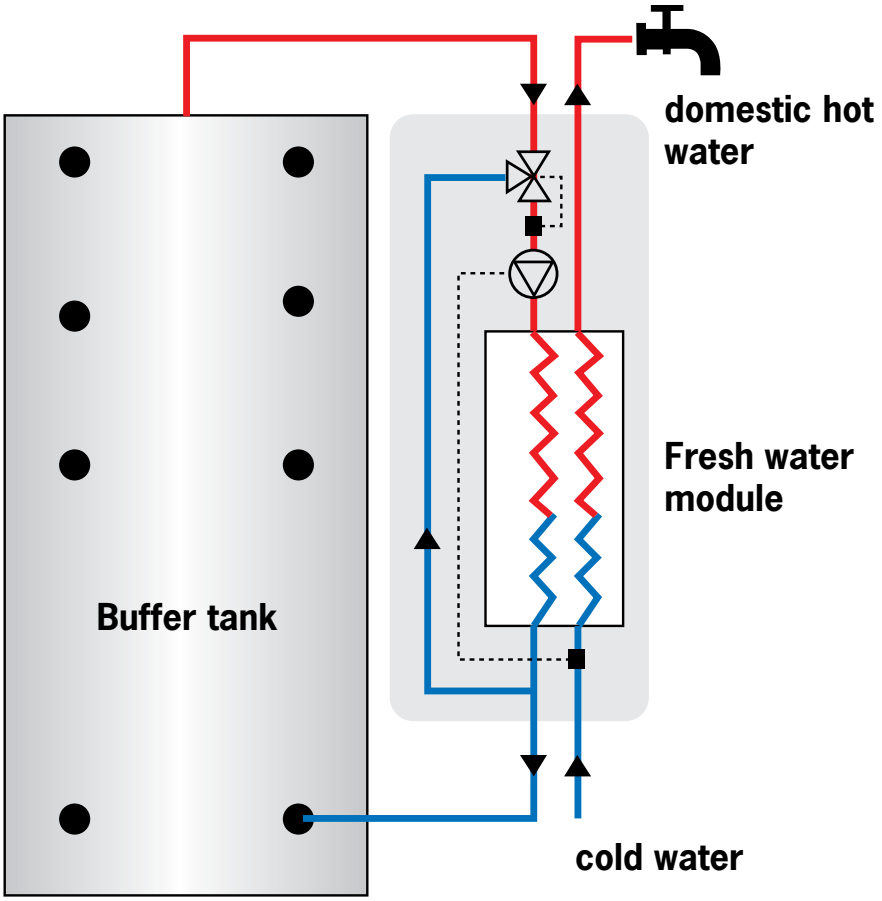


ILLUSTRATION OF FUNCTION

Fresh water module

prepares the domestic hot water in an efficient way. The fresh cold water is heaten up via a plate heat exchanger with water from the buffer tank.

The fresh water module is characterized by its compact design, low pressure drop, low water content and is easy to install

The benefits:

- Domestic hot water – hygienic & fresh
- Simple installation
- Very compact (low space required)

Useful supplementation for your heating system: HERZ buffer tanks

When using a buffer tank the generation of energy takes place over a longer period. As a result the number of boiler starts is reduced and the efficiency of the entire system increases.

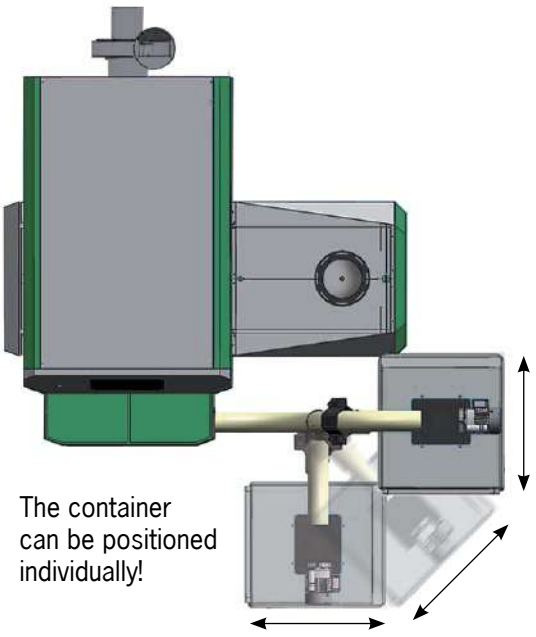
A buffer tank ensures a constant heat supply for different heating circuits (eg underfloor heating and radiators) and ensures optimum operating conditions.

Ash discharge into an external container - 240 liters

For even more comfort, there is the possibility of fully automatic ash removal into an external, bigger ash container with a volume of 240 liter

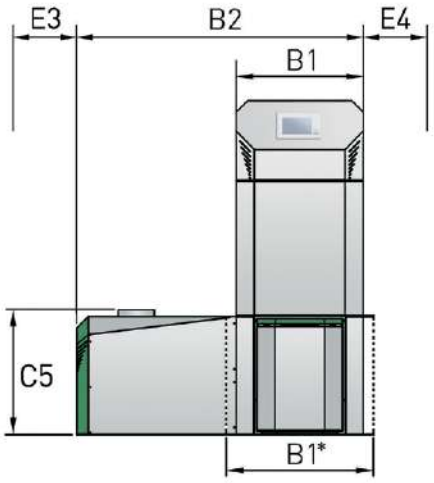
With a flexible screw the combustion and fly ash are transport automatically in an ash container with a capacity of 240 liters.

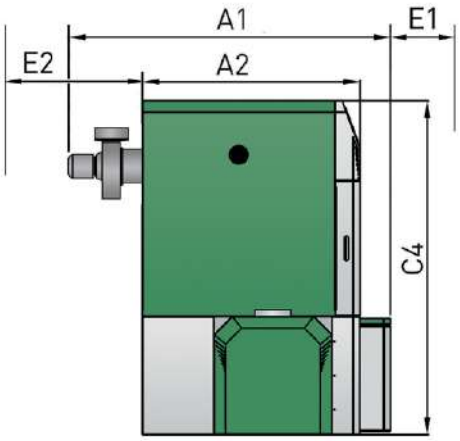
The larger capacity of the ash container reduces the emptying intervals, that saves time and increases comfort.

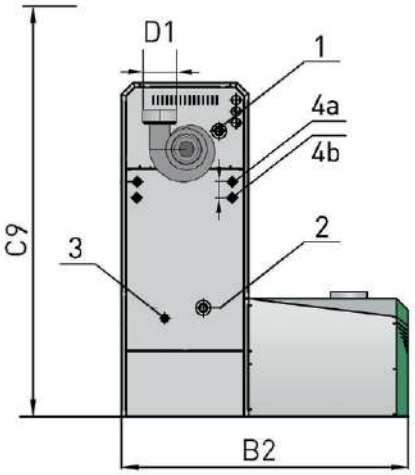


The container can be positioned individually!

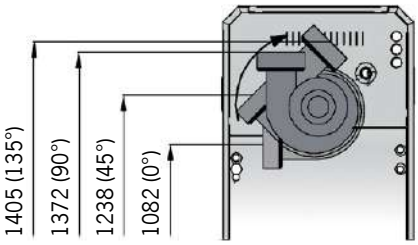
Dimensions & technical **datas frematic 20-60**



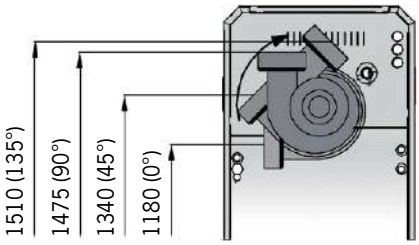




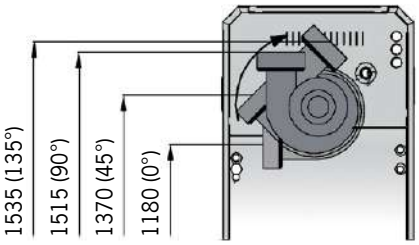
frematic 20/35



frematic 45



frematic 60



frematic 20-60

Technical datas		20	35	45	60
Output range WOOD CHIPS (kW)		**6,0-20**	**6,0-35**	**12,1-45**	**12,1 - 60**
Output range PELLETS (kW)		**5,9-20**	**5,9-35**	**12,6-45**	**12,6-60**
Dimensions (mm)					
A1	Length - total	1389	1389	1496	1496
A2	Length - casing	960	960	1070	1070
B1	Width	600	600	710	710
B1*	Bring In wide with removal of components	574	574	684	684
B1*	Bring In wide with the casing (without casing removal)	620	650	730	730
B2	Width – with push-in	1300	1300	1410	1410
C4	Height	1490	1490	1590	1590
C5	Delivery – upper edge	645	645	645	645
C9	Minimum room height	2100	2100	2300	2300
D1	Flue pipe – diameter	150	150	150	180
E1	Minimum space front	600	600	700	700
E2	Minimum space rear	500	500	530	530
E3	Minimum space left	300	300	300	300
E4	Minimum space right	300	300	300	300

Technical datas					
Boiler weight	kg	517	517	620	620
Combustion efficiency η_F	%	>94	>93	>94	>94
Permissible operating pressure	bar	3,0	3,0	3,0	3,0
Max. permissible operating temperature	°C	95	95	95	95
Water capacity	ltr.	80	80	116	116
Flue gas mass flow rate at nominal load: wood chips (wood pellets)	kg/s	0,014 (0,012)	0,024 (0,022)	0,028 (0,027)	0,038 (0,035)
Flue gas mass flow rate at part load: wood chips (wood pellets)	kg/s	0,005 (0,005)	0,005 (0,005)	0,009 (0,009)	0,009 (0,009)

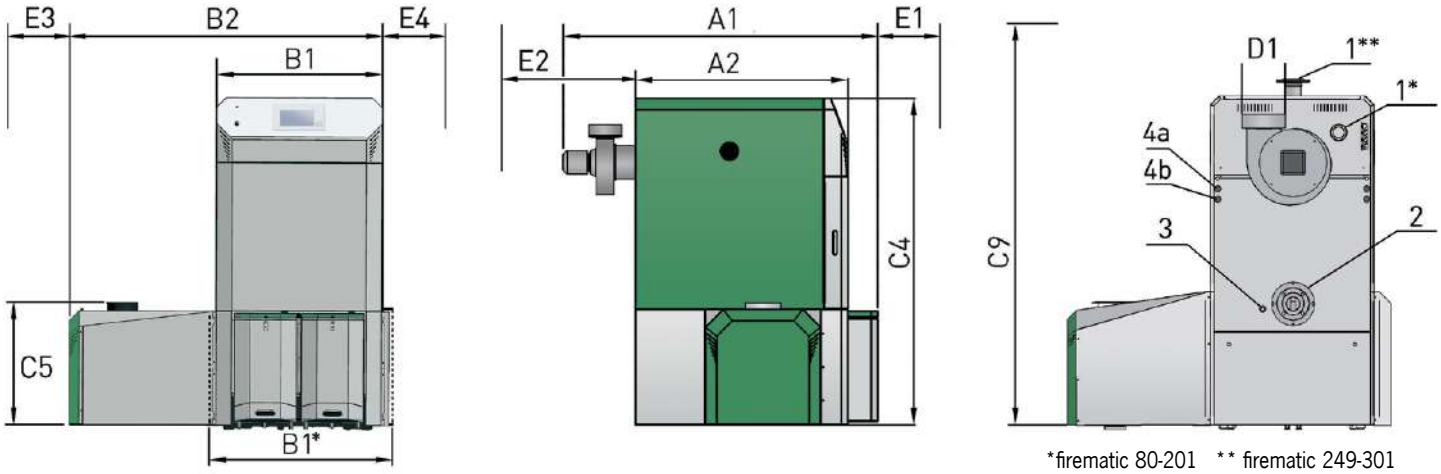
Energy labelling					
Biomass boiler		A+	A+	A+	A+
Biomass boiller with integrated system controller		A+	A+	A+	A+

frematic 20-35:
1... Flow, 1" IT 2... Back flow, 2" IT
3... Filling / draining connection, 1/2" IT
4a... Safety heat exchanger input, 1/2" IT
4b... Safety heat exchanger output, 1/2" IT

frematic 45-60:
1... Flow, 6/4" IT 2... Back flow 6/4" IT
3... Filling / draining connection, 1/2" IT
4a... Safety heat exchanger input, 1/2" IT
4b... Safety heat exchanger output, 1/2" IT

IT... internal thread

Dimensions & technical **datas firematic 80-301**



*firematic 80-201 ** firematic 249-301

firematic 80-151

Technical datas		80	100	101	120	130	149	151
Output range WOOD CHIPS (kW)		**23,2-80**	**23,2-99**	**23,2-101**	**35,1-120**	**35,1-130**	**35,1-149**	**35,1-151**
Output range WOOD PELLETS (kW)		**23,2-80**	**23,2-99**	**23,2-101**	**34,8-120**	**34,8-130**	**34,8-149**	**34,8-151**
Dimensions (mm)								
A1	Length - total	1709	1709	1709	2083	2083	2083	2083
A2	Length - casing	1178	1178	1178	1504	1504	1504	1504
B1	Width	846	846	846	982	982	982	982
B1*	Bring In wide with removal of components	800	800	800	950	950	950	950
B1*	Bring In wide with the casing (without casing removal)	907	907	907	1024	1024	1024	1024
B2	Width – with push-in	1636	1636	1636	1908	1908	1908	1908
C4	Height	1690	1690	1690	1825	1825	1825	1825
C5	Delivery – upper edge	645	645	645	771	771	771	771
C9	Minimum room height	2115	2115	2115	2420	2420	2420	2420
D1	Flue pipe – diameter	180	180	180	200	200	200	200
E1	Minimum space front	800	800	800	750	750	750	750
E2	Minimum space rear	750	750	750	750	750	750	750
E3	Minimum space left	300	300	300	300	300	300	300
E4	Minimum space right	700	700	700	700	700	700	700

Technical datas								
Boiler weight	kg	1140	1140	1140	1445	1445	1445	1445
Combustion efficiency η_F	%	>93	>93	>93	>95	>93	>94	>94
Permissible operating pressure	bar	3,0	3,0	3,0	5,0	5,0	5,0	5,0
Max. permissible operating temperature	°C	95	95	95	95	95	95	95
Water capacity	ltr.	179	179	179	295	295	295	295
Flue gas mass flow rate at nominal load:	kg/s	0,048	0,059	0,060	0,071	0,083	0,092	0,092
Wood chips (wood pellets)		(0,046)	(0,059)	(0,059)	(0,069)	(0,077)	(0,087)	(0,088)
Flue gas mass flow rate at part load:	kg/s	0,016	0,016	0,016	0,024	0,037	0,024	0,024
Wood chips (wood pellets)		(0,016)	(0,016)	(0,016)	(0,026)	(0,022)	(0,023)	(0,023)

SUITABLE FUELS:

Wood chips M40 (water content max. 40%) according to

firematic 20-60:
- EN ISO 17225-4: Property class A1, A2, B1 and particle size P16S
- ÖNORM M7133: G30-G50

firematic 249-301:
- EN ISO 17225-4: Property class A1,A2, B1 and particle size P16S, P31S
- ÖNORM M7133: G30-G50

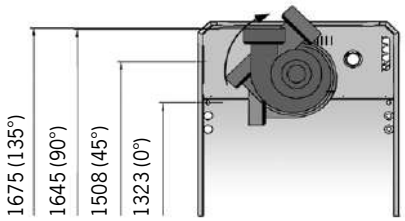
Wood pellets

firematic 20-60:
- EN ISO 17225-2: Property class A1
- ENplus, ÖNORM M 7135, DINplus or Swiss-pellet

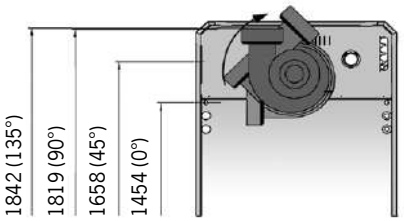
firematic 249-301:
- EN ISO 17225-2: Property class A1, A2
- ENplus, ÖNORM M 7135, DINplus or Swisspellet

Dimensions & technical **datas firematic 80-301**

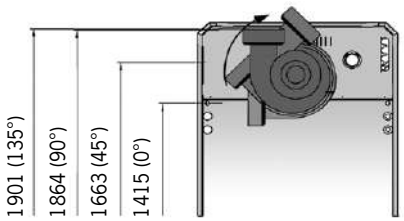
firematic 80-101

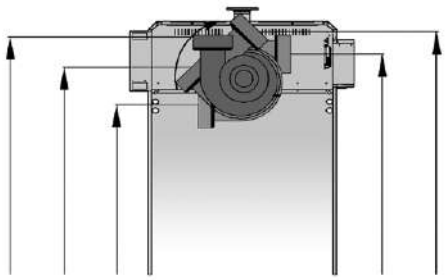


firematic 120-151



firematic 180-201





firematic 180-301

Technical data		180	199	201	249	251	299	301
Output range WOOD CHIPS (kW)		**35,1-180**	**35,1-199**	**35,1-201**	**69,6-249**	**69,6-251**	**69,6-299**	**69,6-301**
Output range PELLETS (kW)		**34,8-180**	**34,8-199**	**34,8-201**	**74,4-249**	**74,4-251**	**74,4-299**	**74,4-301**
Dimensions (mm)								
A1	Length - total	2242	2242	2242	2681	2681	2681	2681
A2	Length - casing	1504	1504	1504	1909	1909	1909	1909
B1	Width	982	982	982	118	118	118	118
B1*	Bring In wide with removal of components	950	950	950	1065	1065	1065	1065
B1*	Bring In wide with the casing (without casing removal)	1024	1024	1024	1230	1230	1230	1230
B2	Width – with push-in	1908	1908	1908	2078	2078	2078	2078
C4	Height	1825	1825	1825	1915	1915	1915	1915
C5	Delivery – upper edge	771	771	771	772	772	772	772
C9	Minimum room height	2420	2420	2420	2600	2600	2600	2600
D1	Flue pipe – diameter	200	200	200	250	250	250	250
E1	Minimum space front	750	750	750	750	750	750	750
E2	Minimum space rear	750	750	750	750	750	750	750
E3	Minimum space left	300	300	300	300	300	300	300
E4	Minimum space right	700	700	700	700	700	700	700

Technical datas								
Boiler weight	kg	1445	1445	1445	2264	2264	2264	2264
Combustion efficiency η_F	%	>93	>93	>93	>94	>94	>93	>93
Permissible operating pressure	bar	5,0	5,0	5,0	5,0	5,0	5,0	5,0
Max. permissible operating temperature	°C	95	95	95	95	95	95	95
Water capacity	ltr.	295	295	295	436	436	436	436
Flue gas mass flow rate at nominal load:	kg/s	0,114	0,125	0,127	0,151	0,151	0,182	0,183
Wood chips (wood pellets)		(0,108)	(0,117)	(0,118)	(0,154)	(0,154)	(0,180)	(0,181)
Flue gas mass flow rate at part load:	kg/s	0,024	0,024	0,024	0,048	0,048	0,048	0,048
Wood chips (wood pellets)		(0,023)	(0,023)	(0,023)	(0,053)	(0,053)	(0,053)	(0,053)

firematic 80-101:
1... Flow, 2" IT 2... Back flow 2" IT
3... Filling / draining connection, 3/4" IT
4a... Safety heat exchanger input, 1/2" IT
4b... Safety heat exchanger output, 1/2" IT

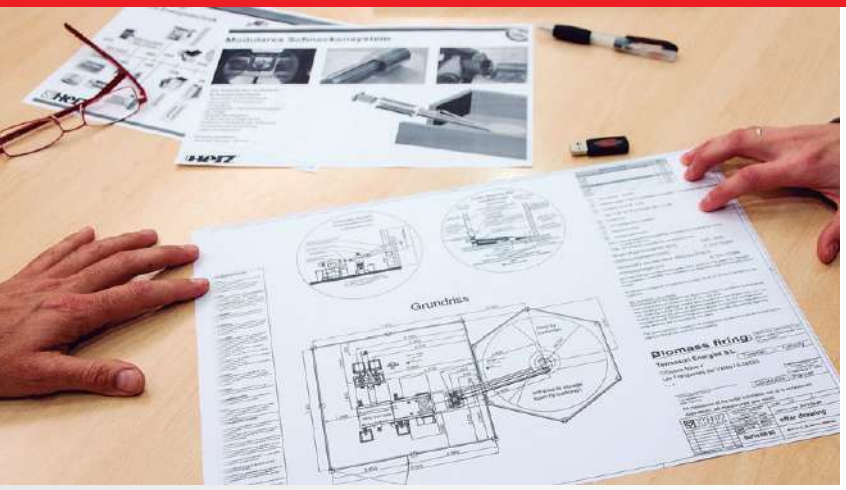
IT... internal thread

firematic 130-201:
1... Flow, 2" IT 2... Back flow 2" IT
3... Filling / draining connection, 3/4" IT
4a... Safety heat exchanger input, 1/2" IT
4b... Safety heat exchanger output, 1/2" IT

firematic 249-301:
1... Flow, DN80, PN 6 2... Back flow, DN80, PN 6
3... Filling / draining connection, 3/4" IT
4a... Safety heat exchanger input, 1/2" IT
4b... Safety heat exchanger output, 1/2" IT

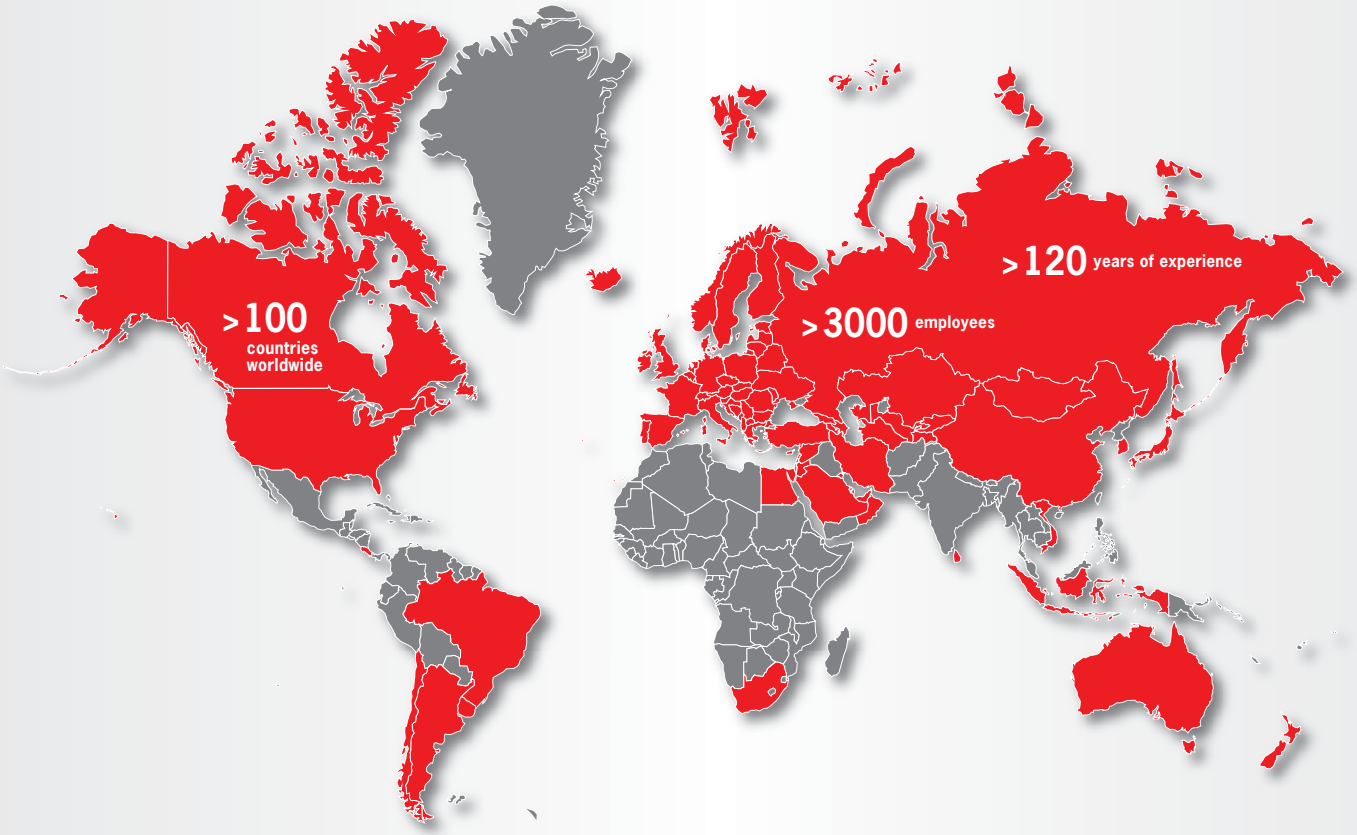
IT... internal thread

HERZ customer-oriented...



- Advicing 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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HERZ biomass boilers underbid the strictest emission regulations.

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