

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



BioFire
500 - 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
- 3.000 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 industry and is one of the most important internationally.



HERZ Energietechnik GmbH

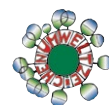
HERZ Energietechnik employs 200 people in production and sales. At the company sites in Pinkafeld/Burgenland and Sebersdorf/Styria, there is state-of-the-art production as well as a research institute for new, innovative products. Proven cooperations with research and educational institutions can be 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

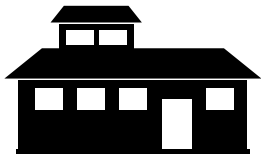
- Due to the possibility of cascading, projects up to 4,500 kW can be realized.
- Step grate with 2 controllable zones
- Suitable for 6 bar operating pressure
- Possibility of central ash discharge into external containers - also retrofittable.



BioFire

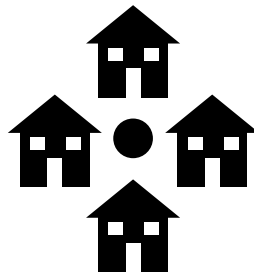
500 - 1500 kW

Individual use ...



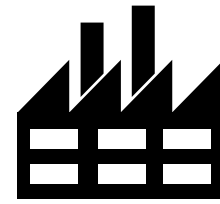
Large buildings

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).



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 ...

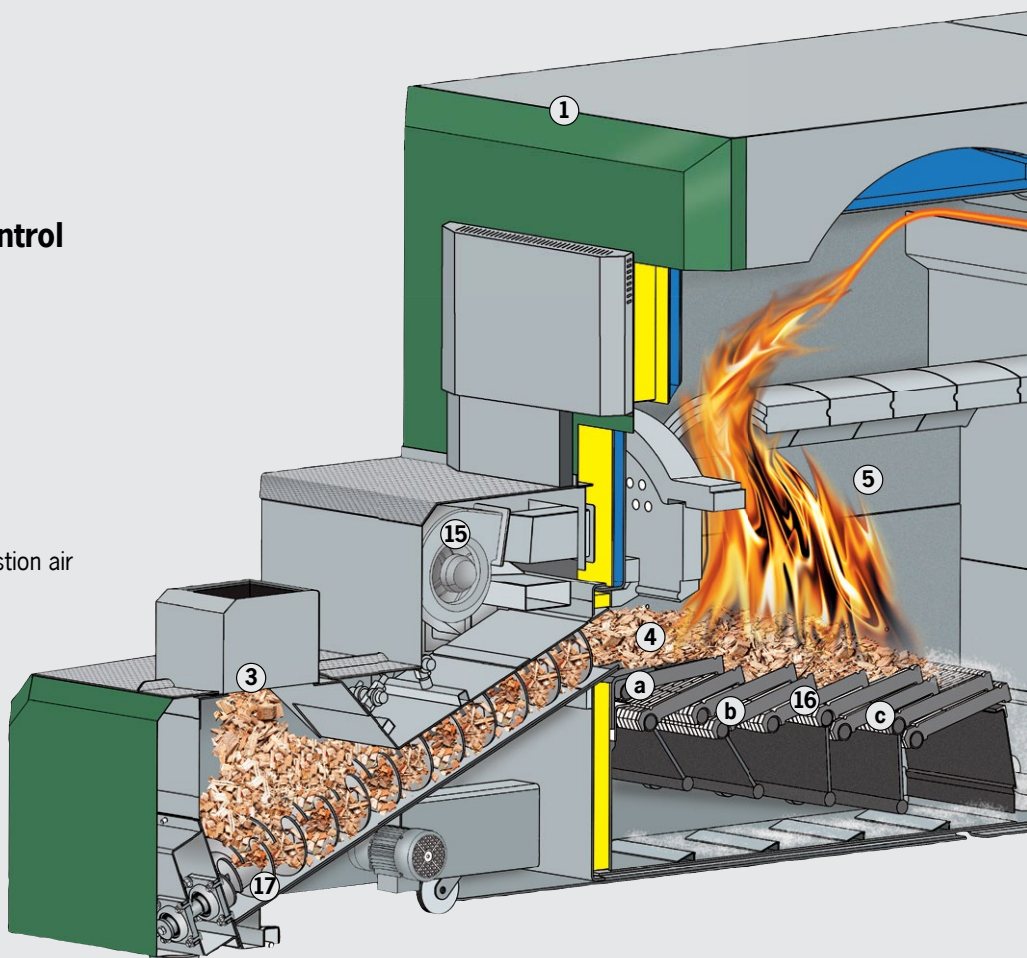


T-CONTROL - the user-friendly control with touch display

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:

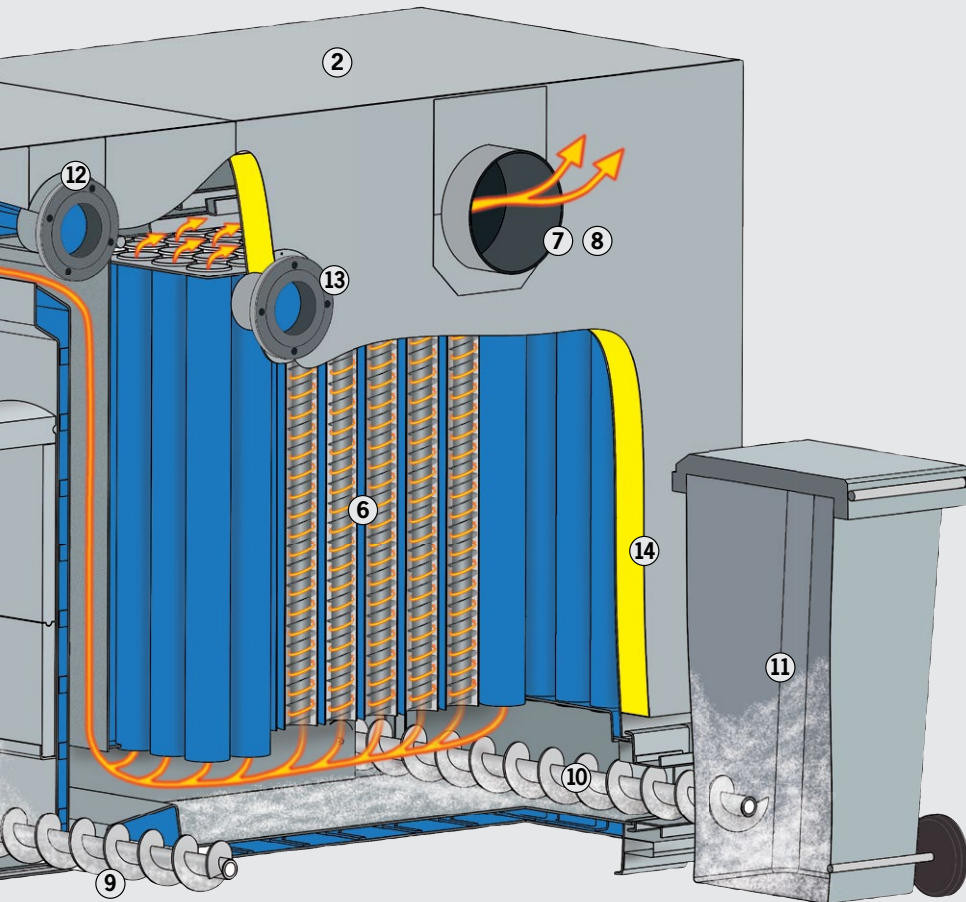
- Back fire protection flap (BFP-flap) currentless closing airtight flap
- Independent extinguishing device sprinkler device with water tank
- Spark-back protection fuel barrier layer
- Pressure monitoring in the combustion chamber
- Temperature monitoring in the combustion chamber
- Temperature monitoring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

- | | | |
|--|---|--|
| <p>1. Combustion chamber module</p> <p>2. Heat exchanger module</p> <p>3. Intermediate hopper
with fall shaft, double stoker screw and fuel barrier layer</p> <p>4. Automatic ignition
with hot air blower</p> | <p>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.</p> | <p>6. Standing pipe heat exchanger
with integrated turbulators and cleaning mechanism</p> <p>7. Automatic flue gas and combustion monitoring
via lambda probe control</p> <p>8. Frequency converter controlled induced draft fan (on the cyclone)
with underpressure control in the burning chamber</p> |
|--|---|--|



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

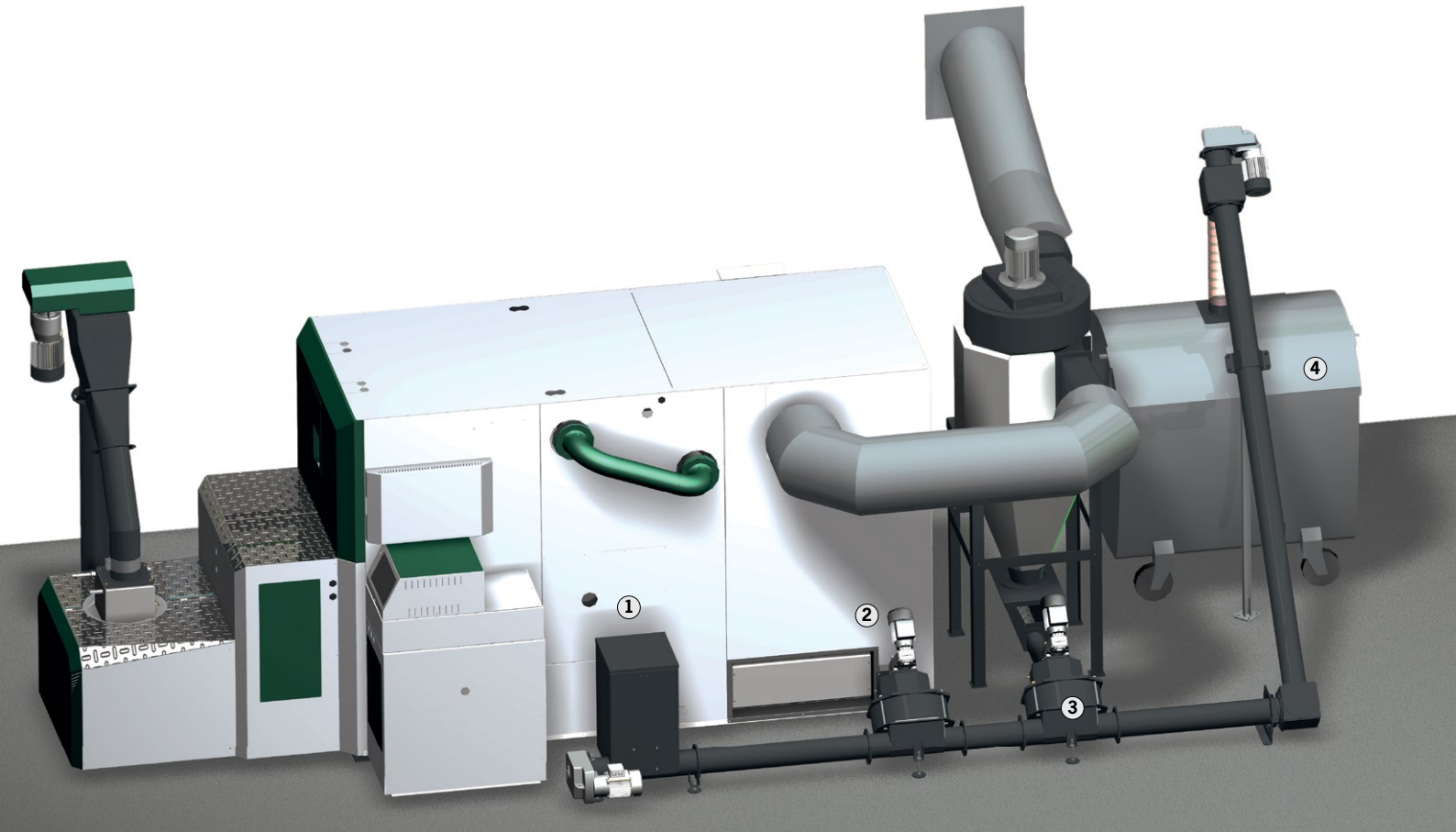
14. Efficient heat insulation for lowest radiation losses

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.



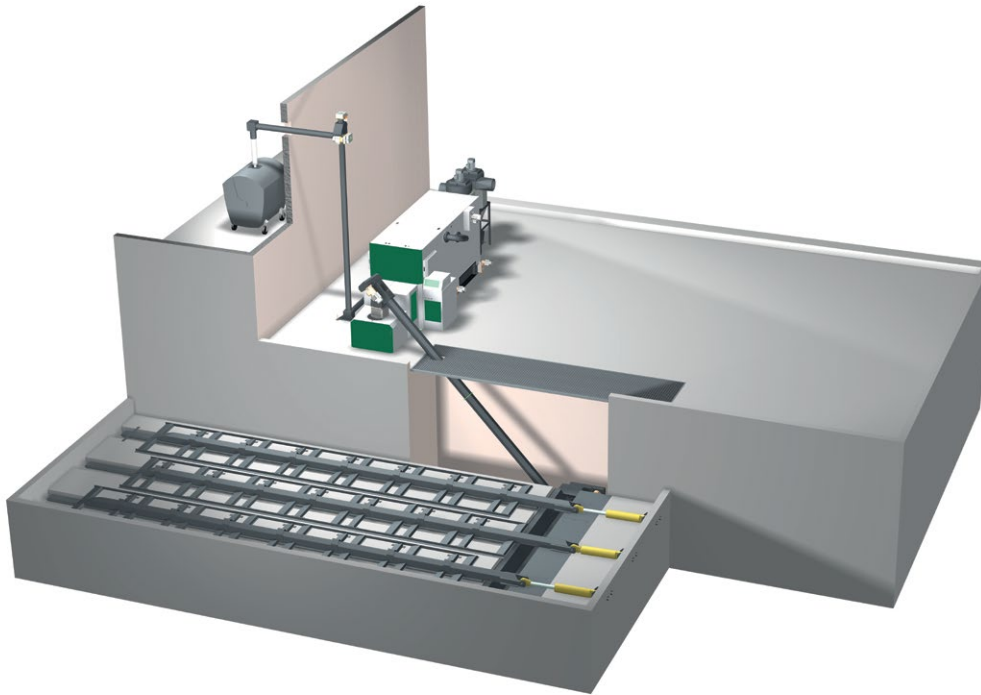
This image shows the ash containers of a 2 HERZ boiler cascade solution connected via the screw system.

In this project the climbing screw transports up to a height of approx. 4 m the ashes from 2 HERZ boilers to a 2 m³ 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.

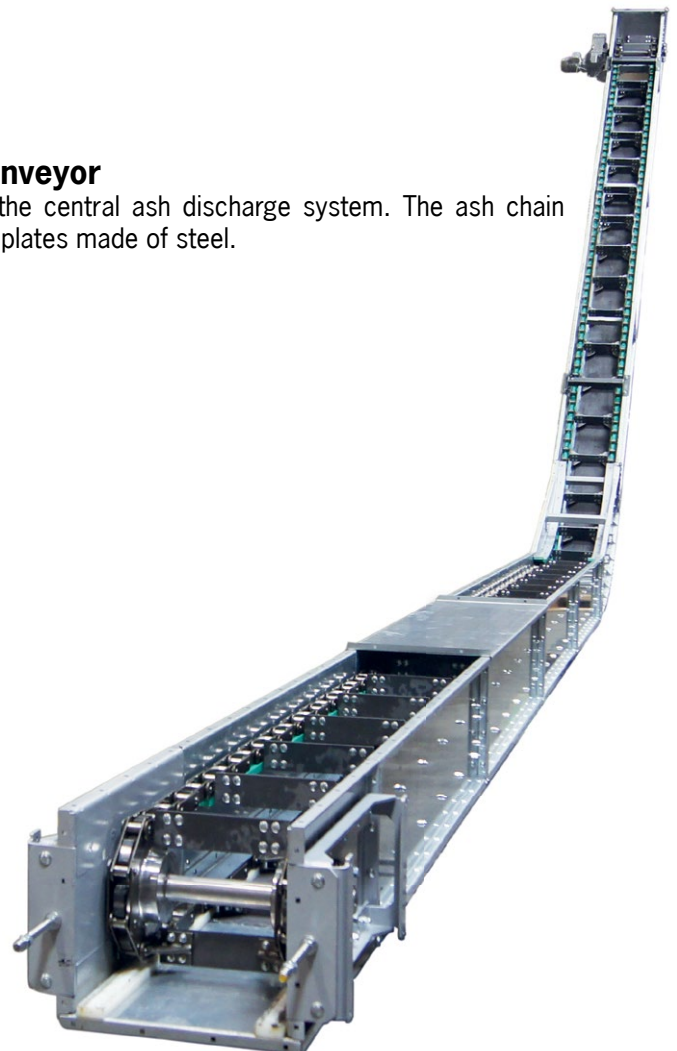


Ash transport in tight spaces with the chain conveyor

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.



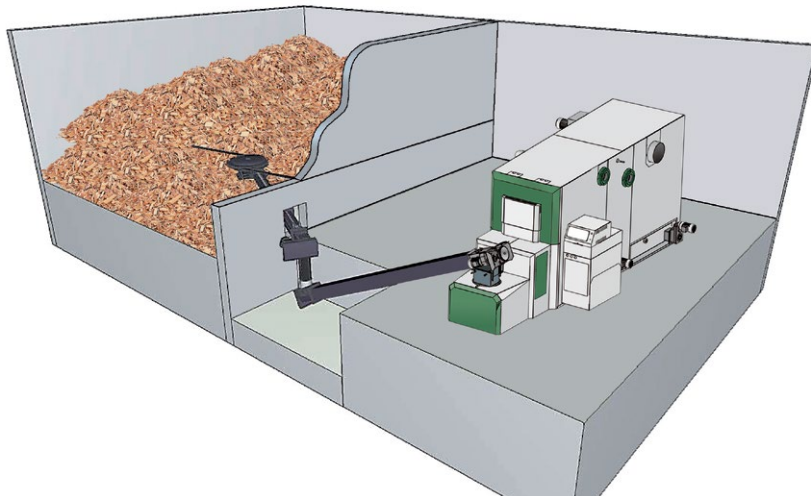
The HERZ Energietechnik GmbH has been awarded 2013 with the Innovation Prize of Burgenland for their "Vertical transport technic in ash transport systems".



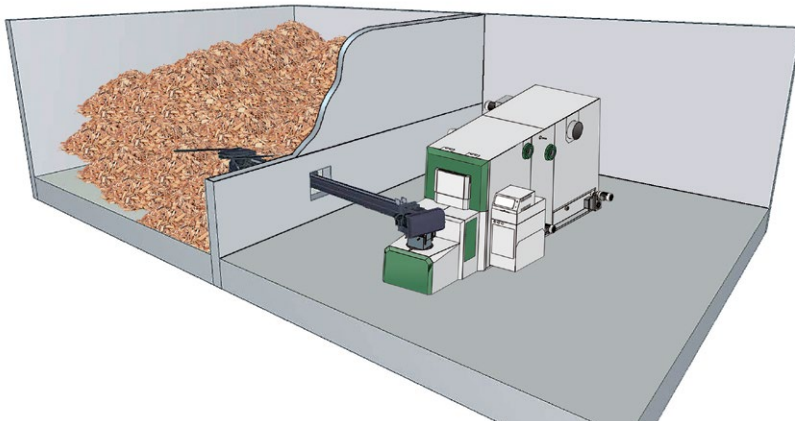
Discharge Systems & Projects ...

HERZ discharge systems enable numerous storage room designs.

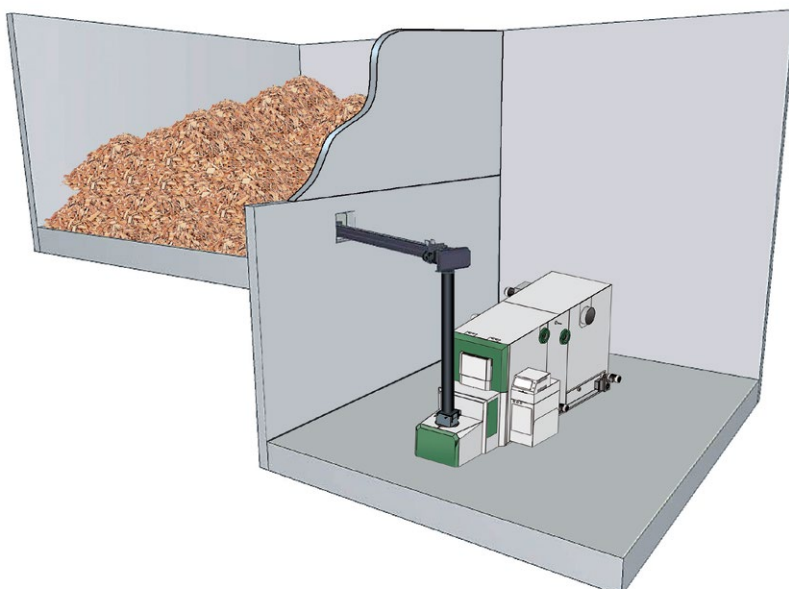
The operation with wood chips is especially suitable for contracting - models, where the wood supplier also acts as energy supplier.



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

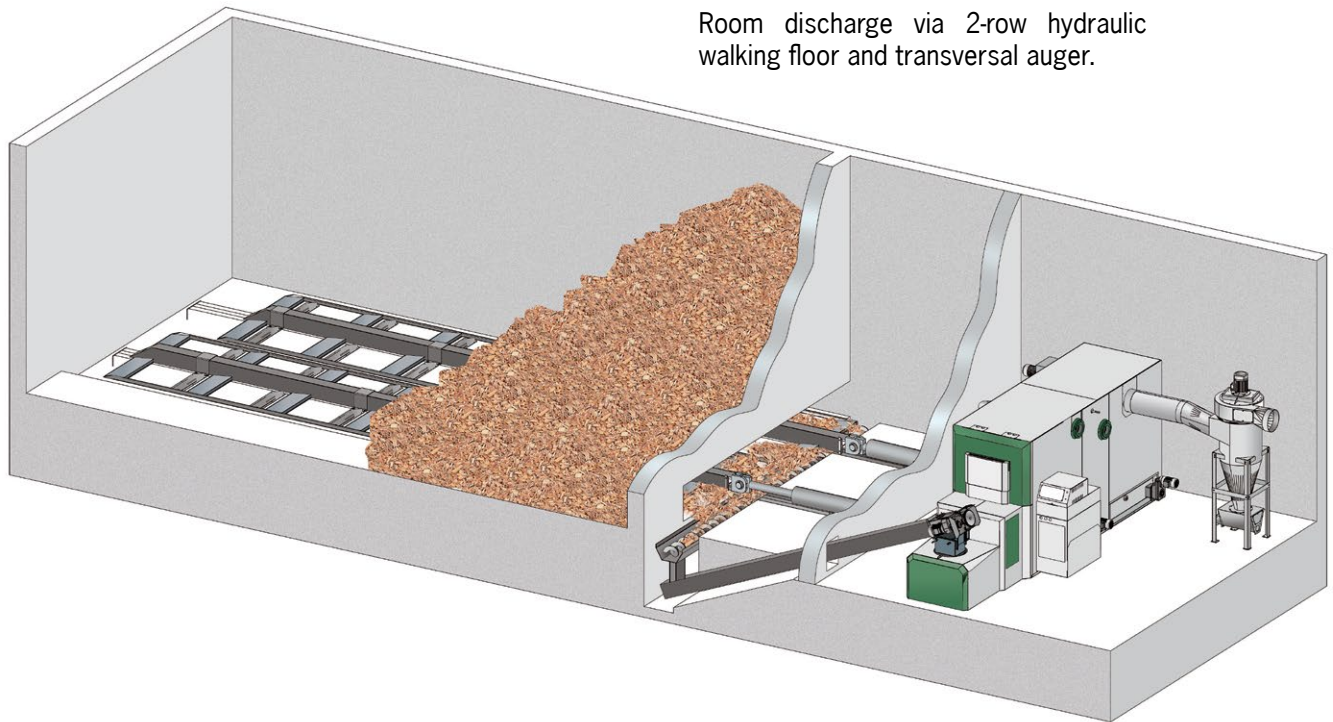


Storage room and heating room on same level. Transverse discharge with spring agitator.

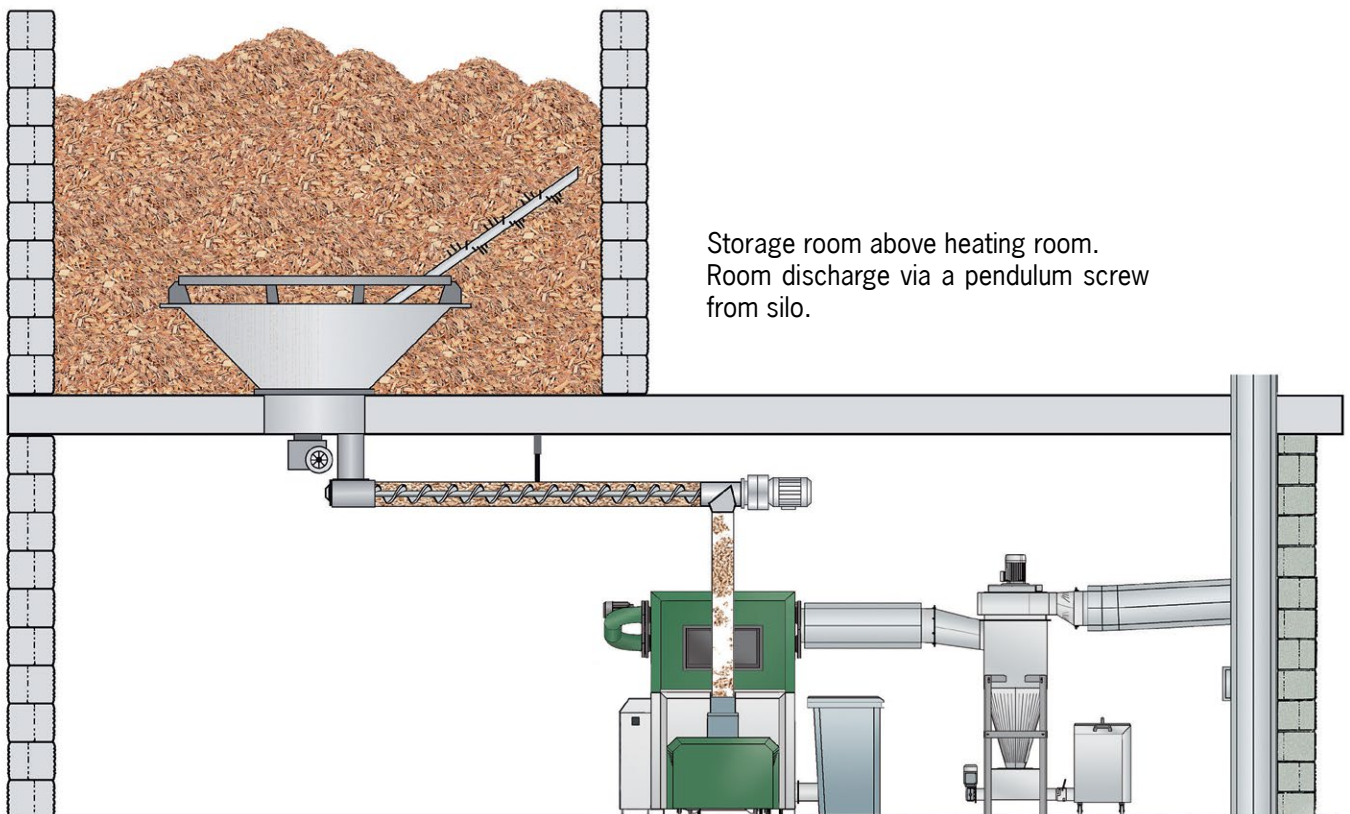


Storage room and boiler room on a different level. Horizontal discharge via spring agitator and chute pipe.

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



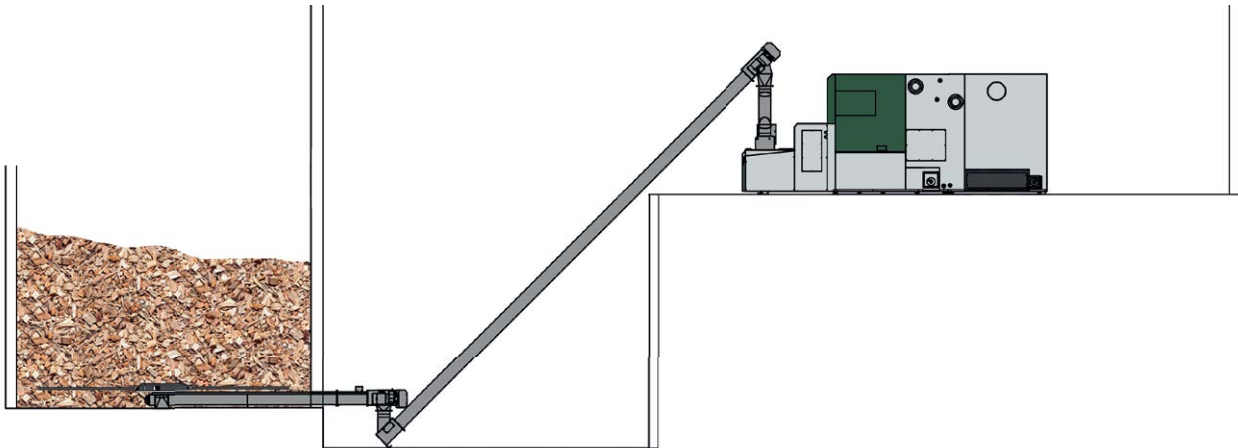
Room discharge via 2-row hydraulic walking floor and transversal auger.



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

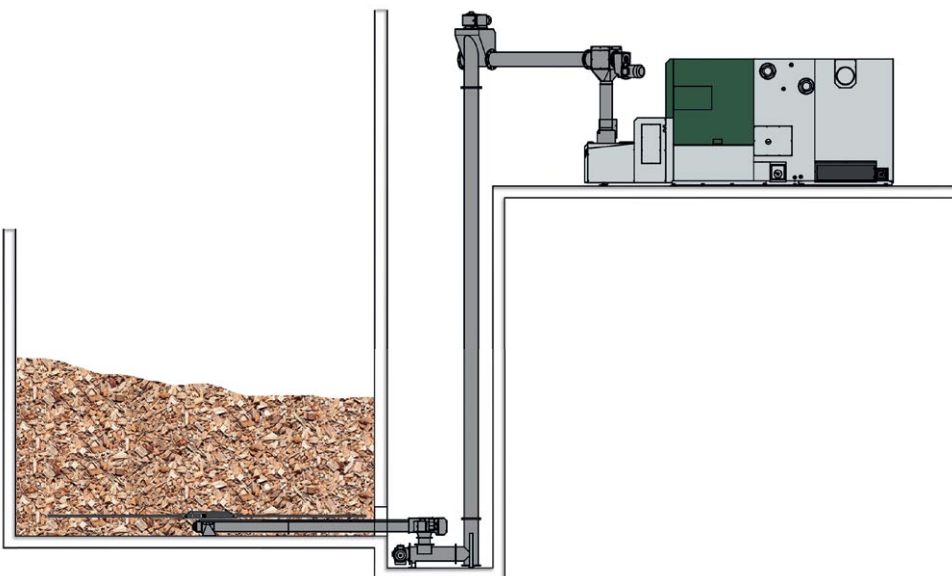
Discharge Systems & Projects ...

Discharge via rigid transport screw



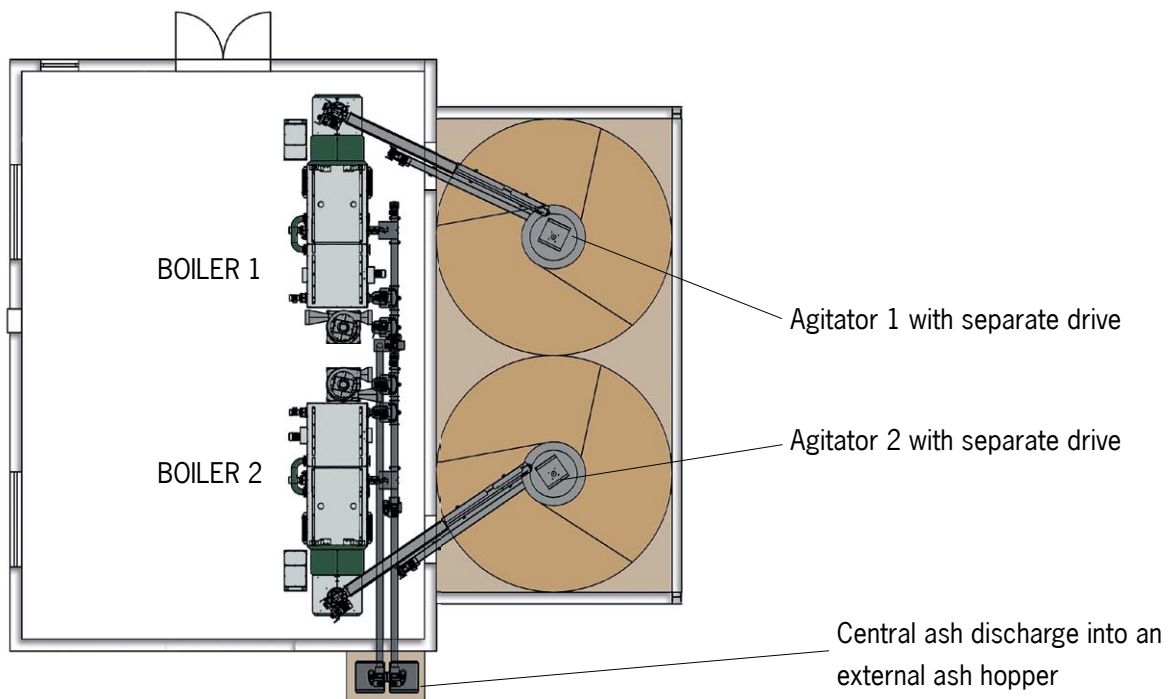
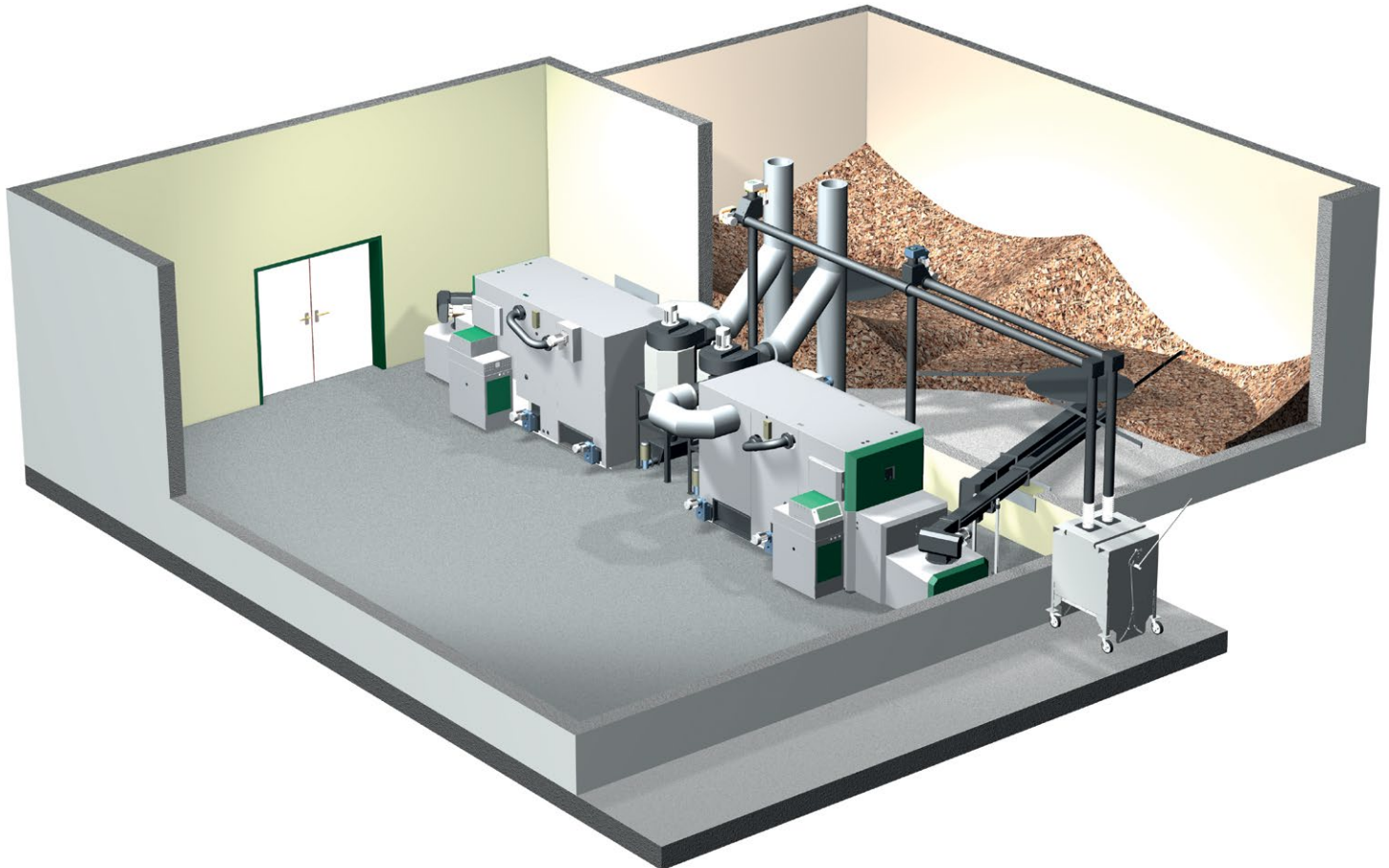
Discharge via vertical filling system

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

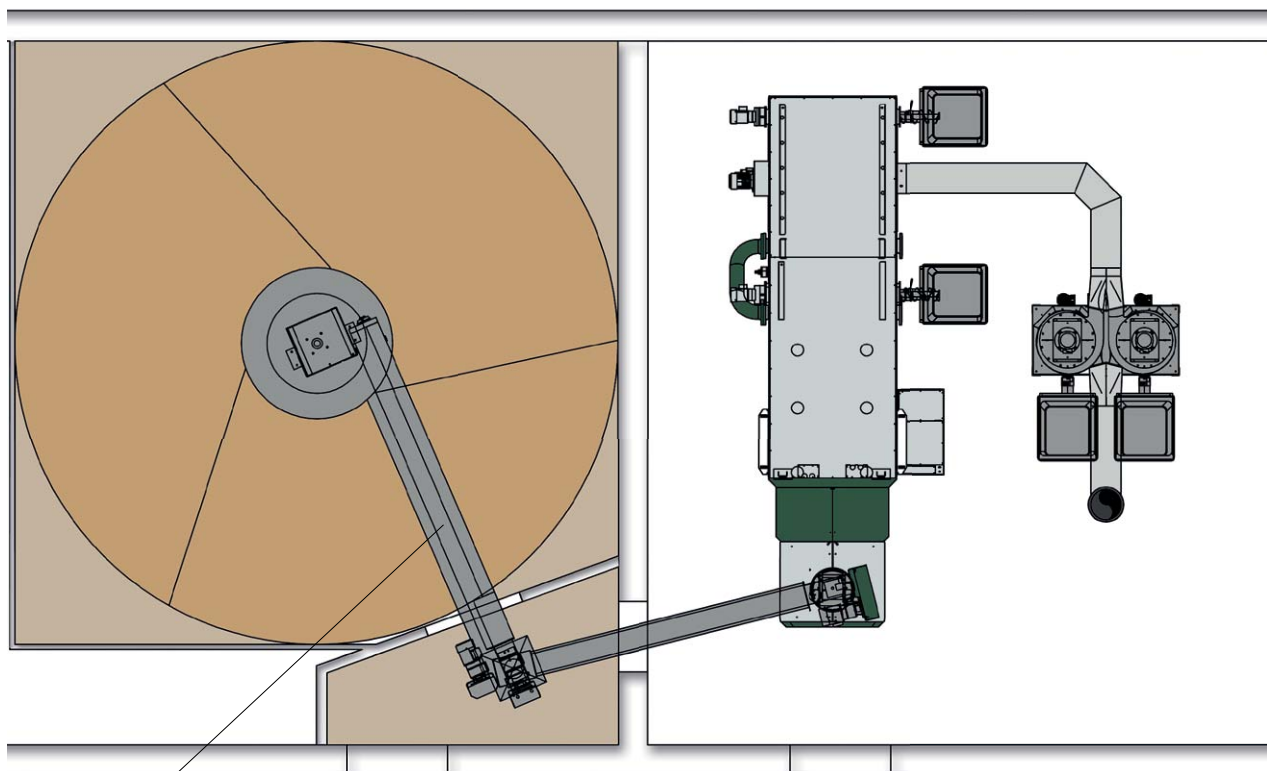
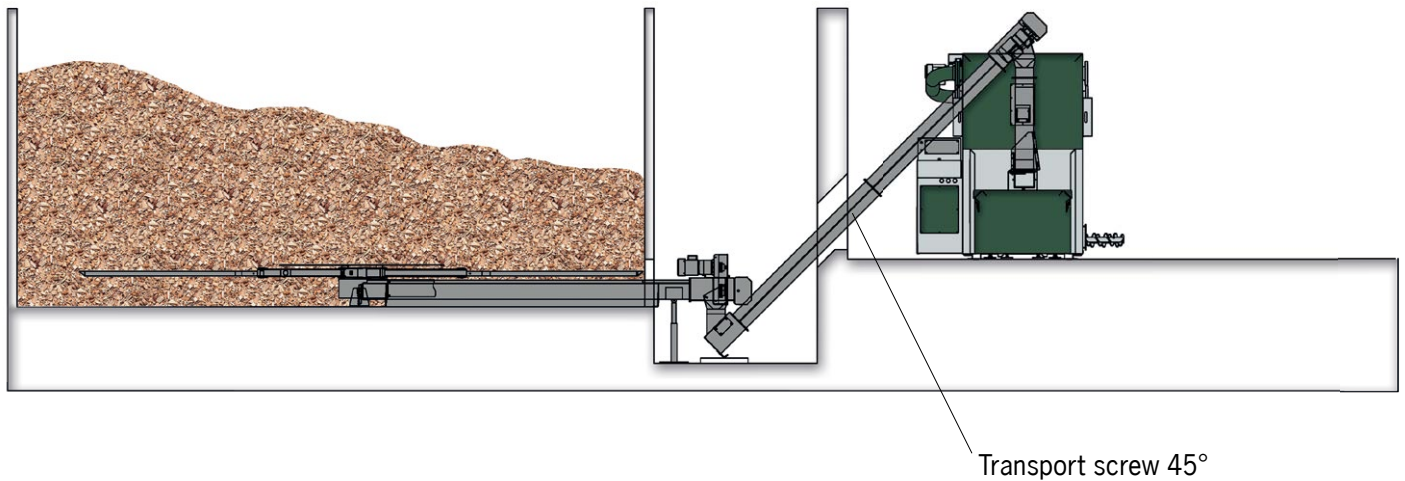
- 2x HERZ wood chip-/pellet boiler BioFire 500 in cascade
- 2 agitator discharge systems with separate gear
- Central ash discharge into an external ash hopper



Discharge Systems & Projects ...

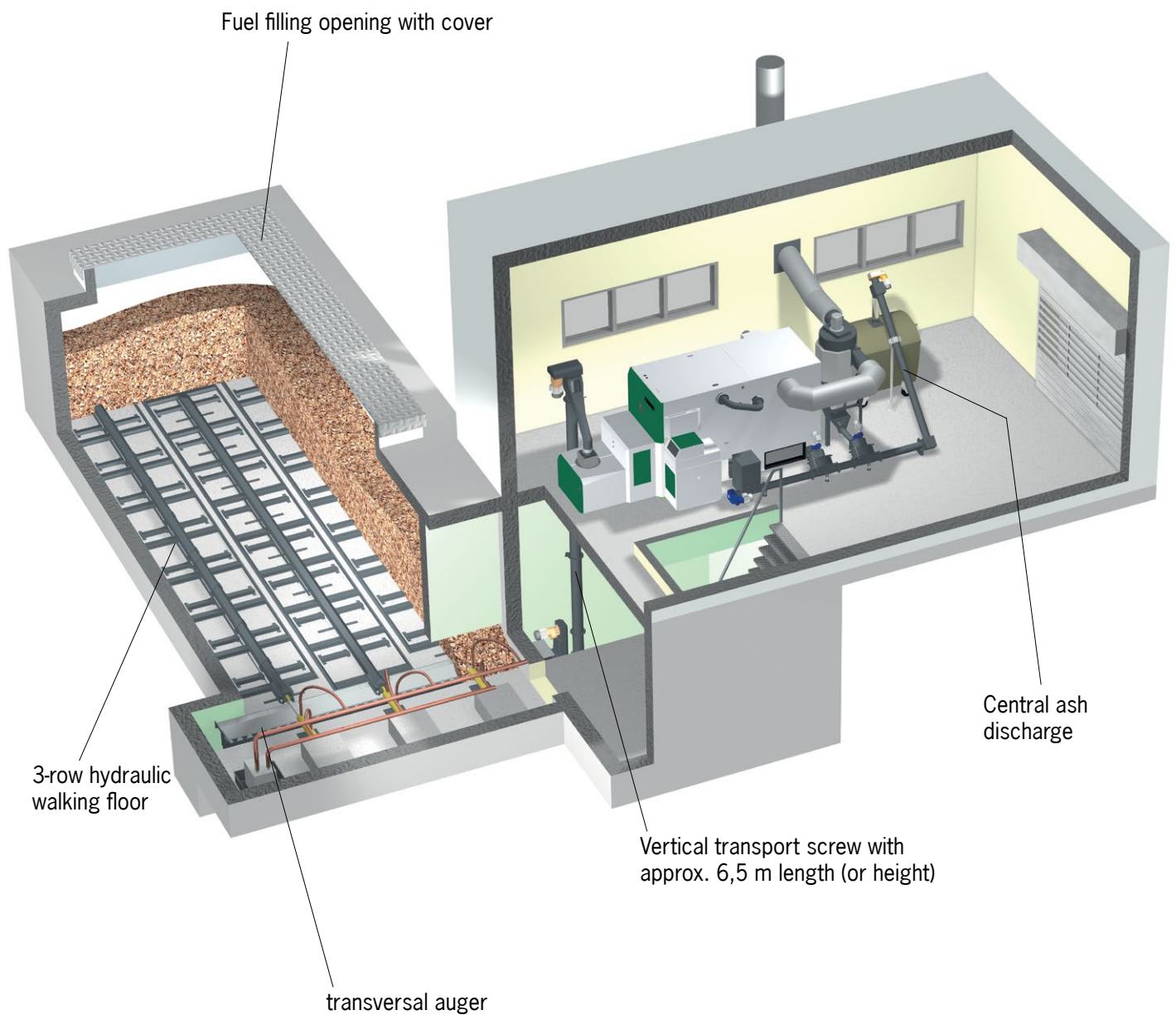
Agitator discharge system with separate drive and transport screw

- 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

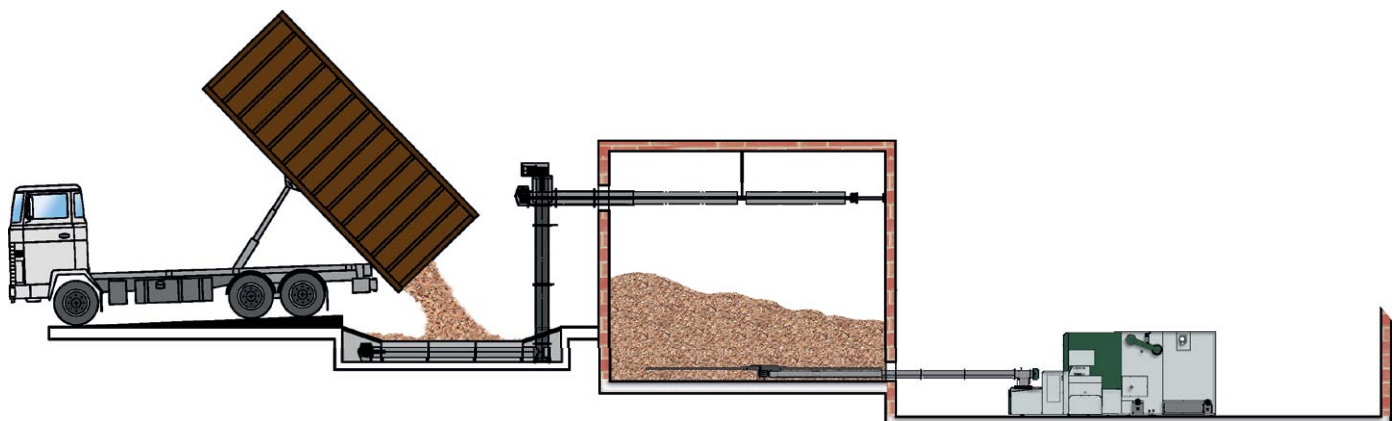
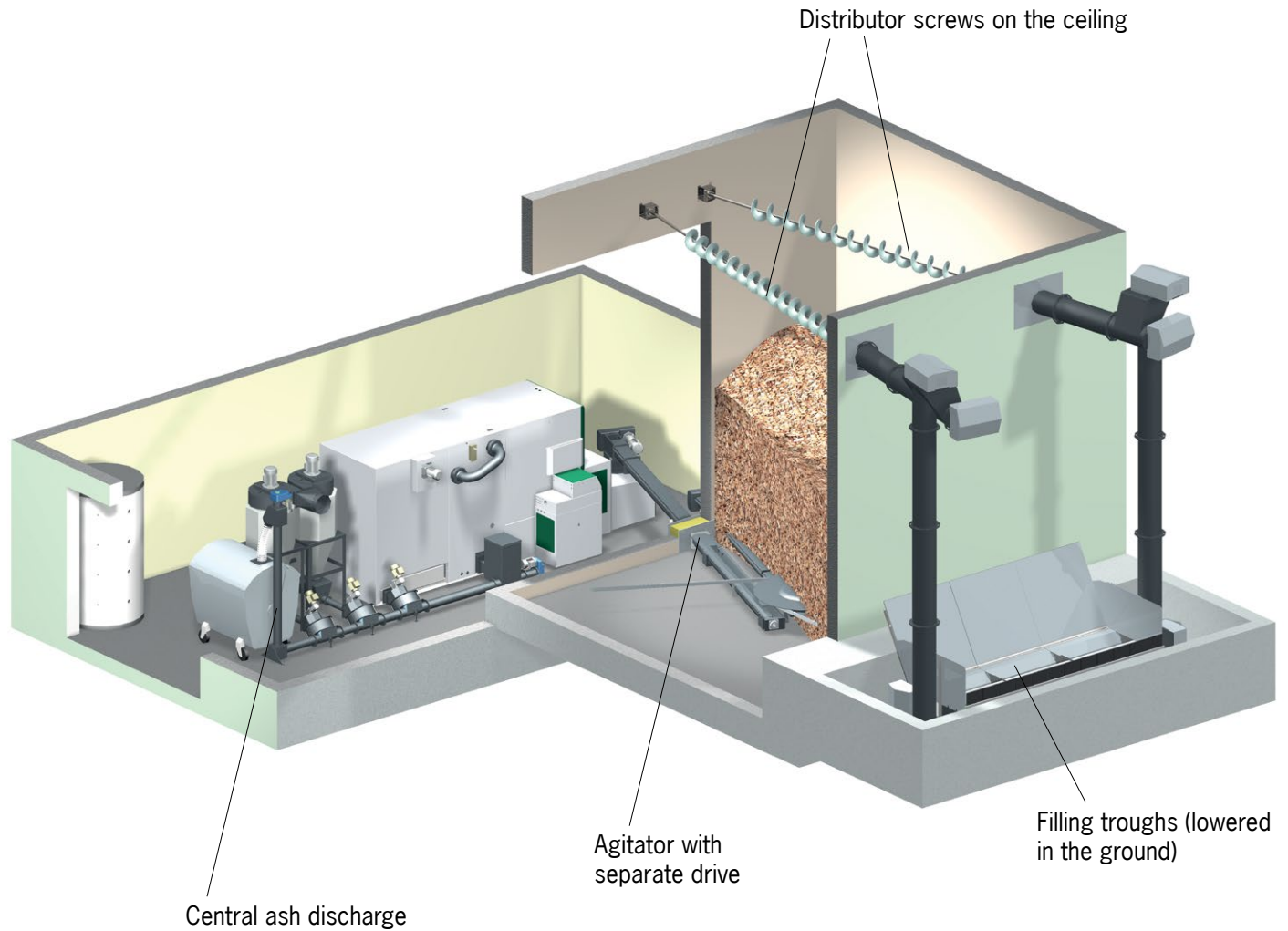
- Wood chip-/pellet boiler BioFire 600
- Discharge: 3-row hydraulic walking floor with transverse screw and vertical screw with approx. 6,5 m length (or height) to the boiler
- Central ash discharge



Discharge Systems & Projects ...

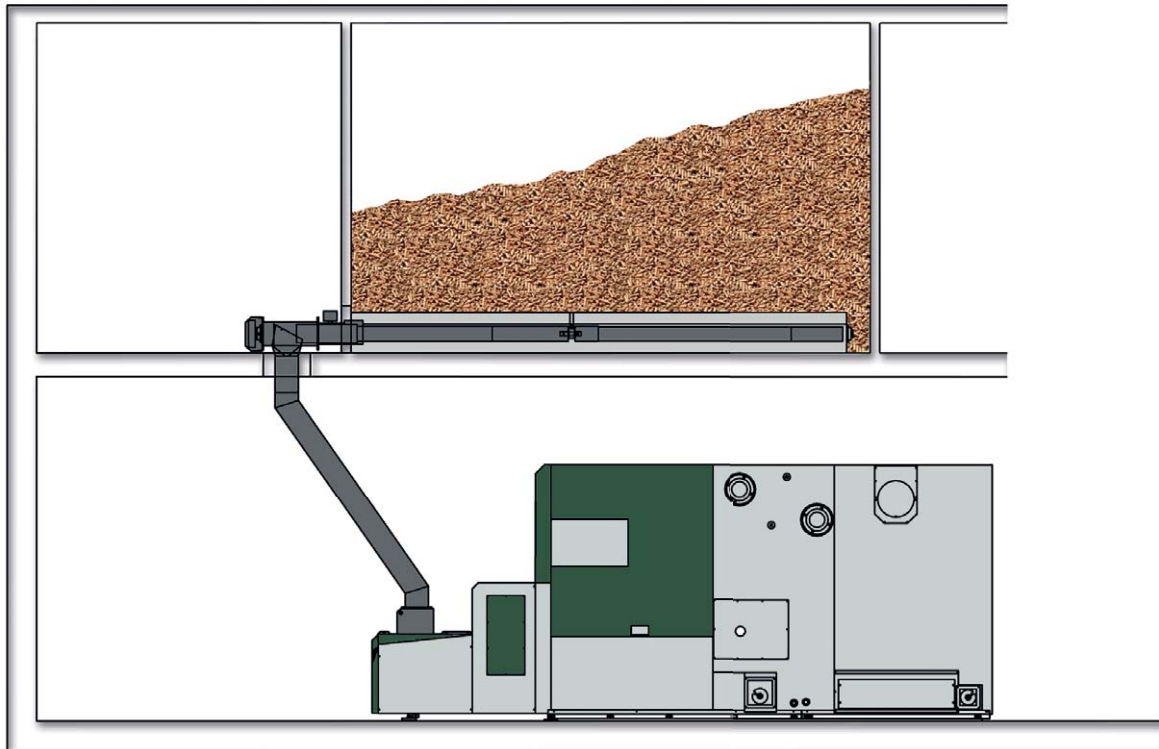
Double vertical filling system with agitator discharge

- 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 separate gear
- Central ash discharge



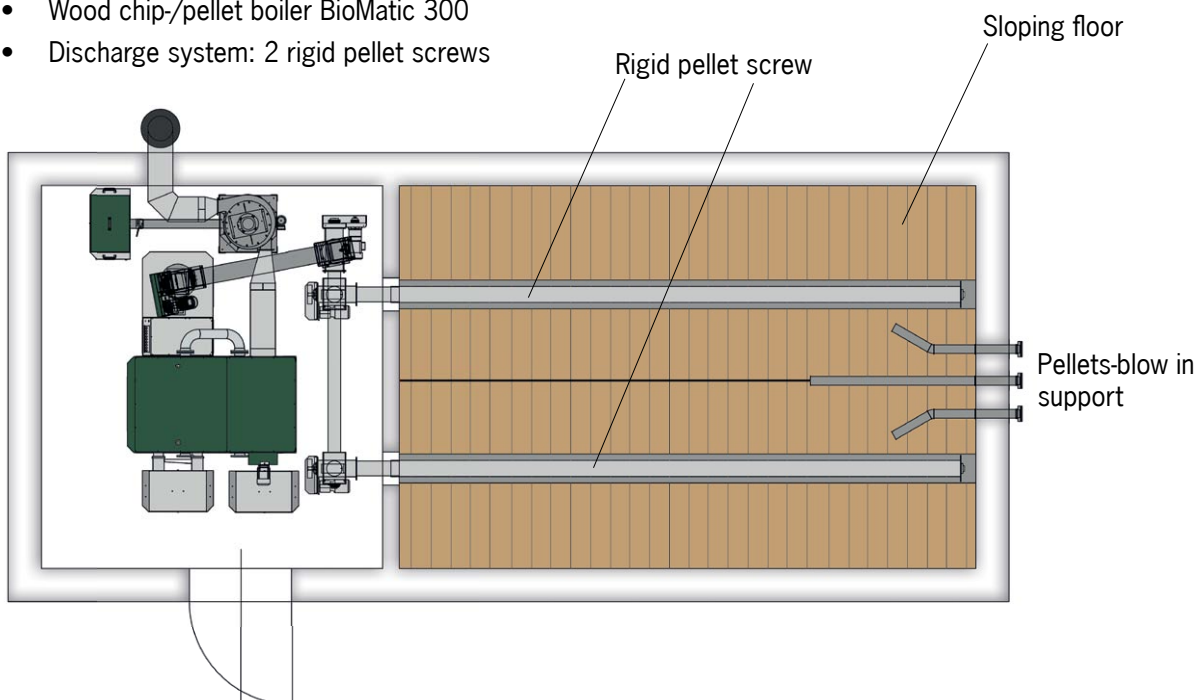
The fuel store is directly above the boiler room.

- 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 be 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
- Reliable
- Possible heights 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

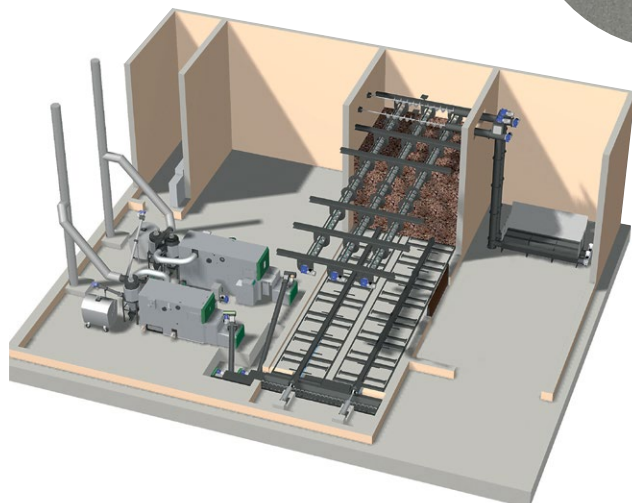
At double installations 2 vertical screws and a double trough are used. In the trough there are 2 parallel arranged transport screws, which lead directly to the vertical screws. This achieves delivery rates up to 120 m³/h. Depending on the space situation HERZ provides customized solutions and flexible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

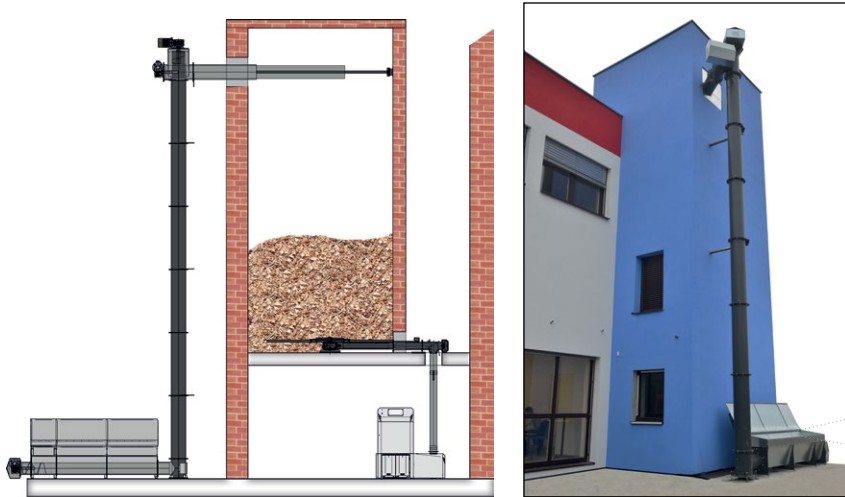


2 wood chip boilers HERZ BioFire

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.

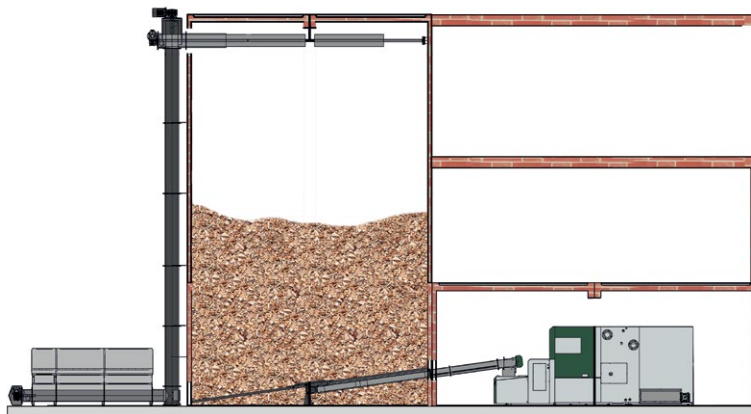
...of the HERZ BioFire

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.

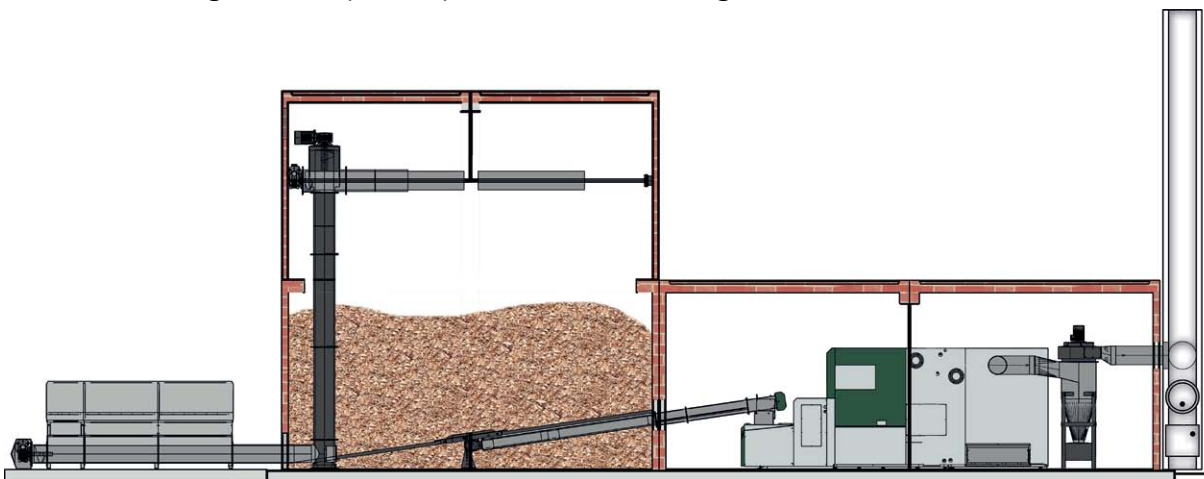


The storage room is located next to the boiler room

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 control
- 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

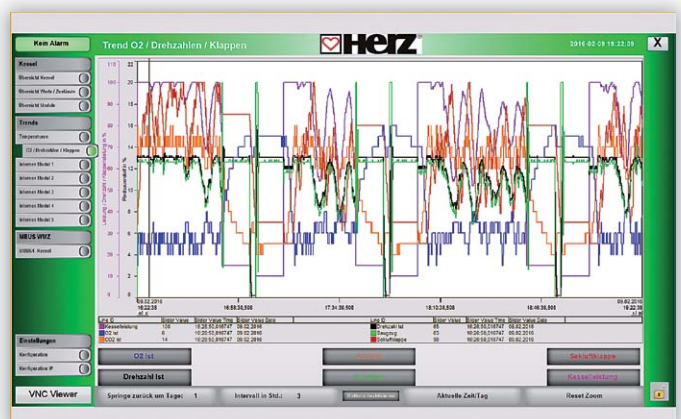
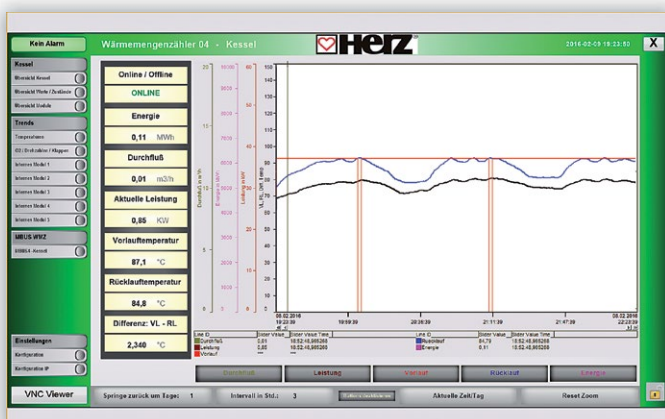
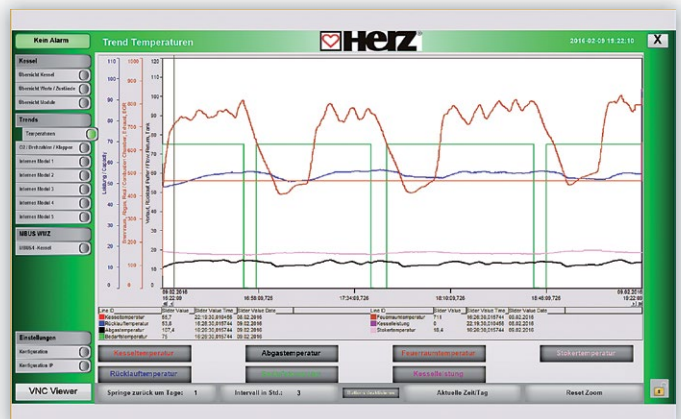
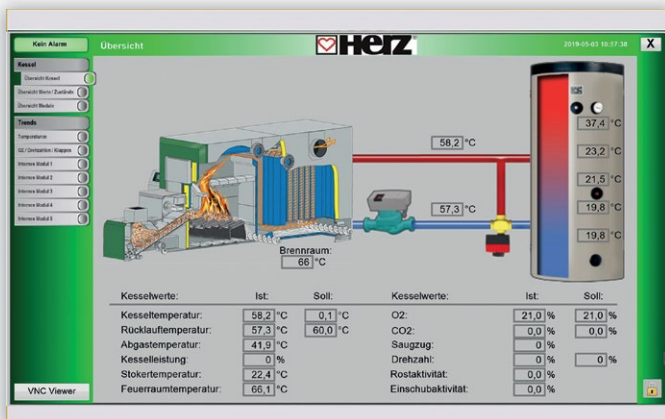
Cascade operation:

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

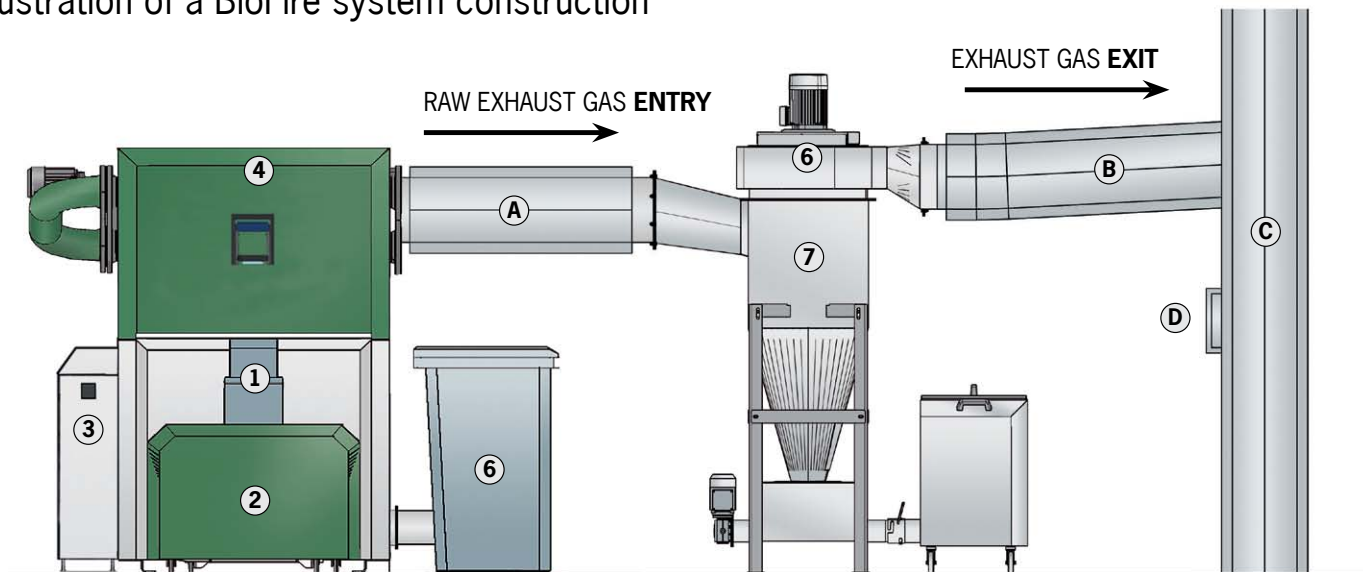
Due to the regulation according to "qm Holzheizwerke" a runtime optimization should be achieved in biomass plants. Based on min. 5 sensors (optional 10) in the buffer tank, the state of the buffer charge (0-100%) is determined and depending on the boiler output (100-30%) specified. This control strategy 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 hydraulik, and much more can be represented.



Cyclone and drive technology

Illustration of a BioFire system construction



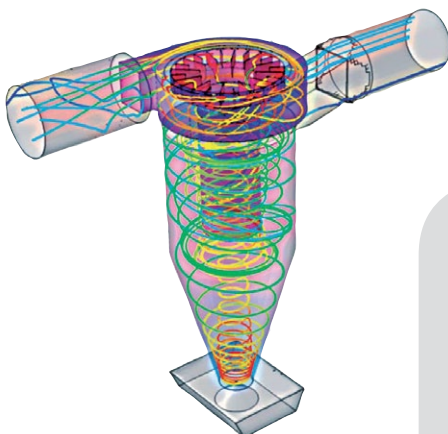
1. Chute pipe with back fire protection flap (BFP)
2. Intermediate hopper with double feed screw incl. independent extinguishing device and spark-back protection
3. T-CONTROL - user-friendly control with touch display
4. Boiler (burning chamber - and heat exchanger module)
5. Frequency converter controlled 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 ZyκλοVent 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 ZyκλοVent:

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

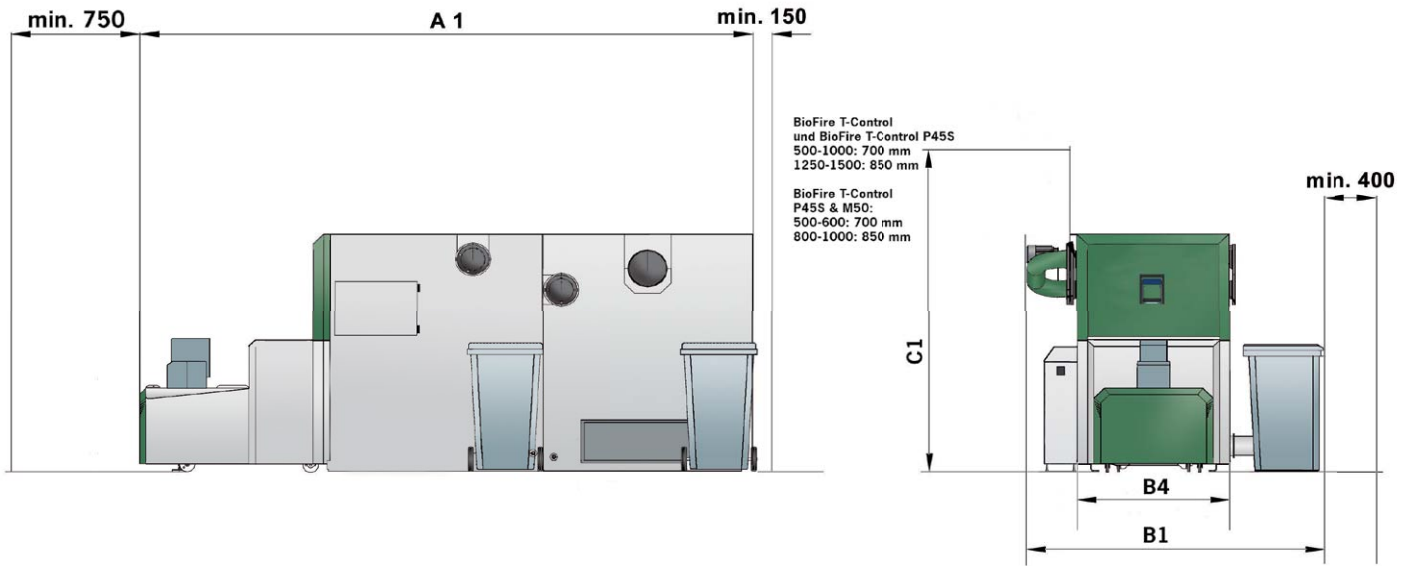
at BioFire 500-1500 T-Control (P45S):

- **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

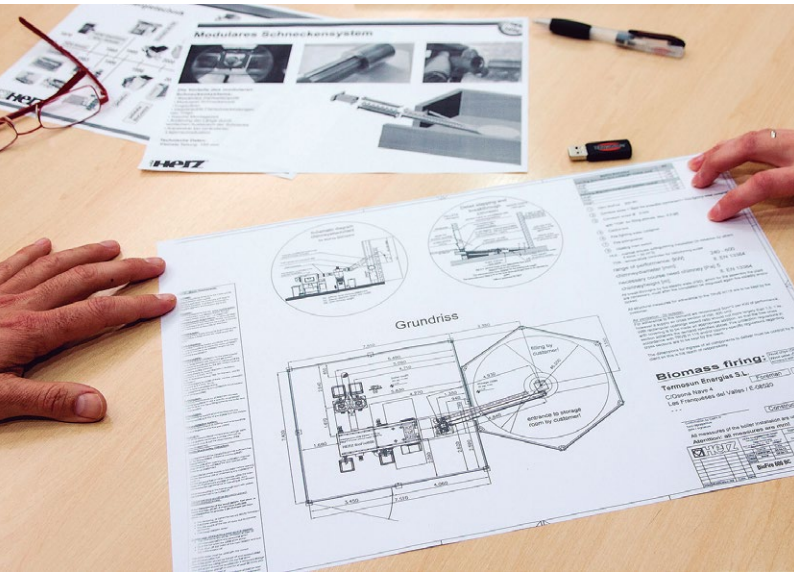
BioFire T-Control P45S		500	600	800	1000	1250	1500
Output range WOOD CHIPS (kW) Nominal load at 25 % water content		150-500	180-600	240-800	300-1000	375-1250	450-1500
Dimensions (mm)							
A1	Length - total	4485	4980	4980	5285	5880	5880
C1	Height	1975	1990	1990	2190	2470	2470
B1	Width - total	2425	2425	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...



- 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



We reserve the right of errors, misprint, typographical failures and technical modifications! Data about our products are not guaranteed characteristics. Mentioned and illustrated discharge systems are system-dependent and only available as an option. In case of discrepancies between documents with regard to the scope of supply the information in the current offer is valid. All images are representations as a symbol and serve only to illustrate our products.

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HERZ biomass boilers
underbid the strictest
emission regulations.

