

Heating with wood chips & pellets



firematic

20 - 60 kW



firematic

80 - 301 kW



Competence is our success...

HERZ FACTS:

- 35 companies
- Group headquarters in Austria
- Research & development in Austria
- Austrian owned
- 1,500 employees in more than 70 countries
- 9 production sites



HERZ – The company

Founded in 1896, Herz has been continuously active in the market for more than 110 years. With 6 sites within Austria, another 3 in Europe and more than 1,500 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.



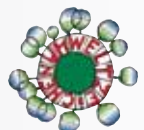
HERZ Energietechnik GmbH

HERZ Energietechnik employs more than 200 staff in production and sales.

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

HERZ for the environment

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



HERZ quality

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



Convenient heating...



Decades of experience

- In-house development and test centre
- Austrian quality with europe-wide sales
- Comprehensive service
- ISO 9001 certification

Economical and convenient heating using wood chips.

The cleanest combustion thanks to Lambda probe control even with variable fuel quality.

The quiet operation of the boiler is thanks to its high-quality system components.

The lowest emission values to protect our environment.

The great advantages of HERZ firematic:

- Energy-saving drive technology
- Simple operation
- Consistently high efficiency factor
- Compact design
- 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 bin

Easy, modern and comfortable...



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

A central controller for:

- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- Domestic hot water preparation
- controlled heating circuits (pump and mixer valve)
- solar circuit
- 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 VNC Viewer

As an additional option, the T-CONTROL offers the possibility for remote visualization and remote maintenance via smartphone, PC or tablet PC.

The handling is the same as in the touch controller directly in the boiler. The processes and parameters can be read and modified any time from anywhere.

Further advantages of the T-CONTROL:

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

Benefits and details...



**The HERZ T-CONTROL
with touch display**

Central control unit as standard for:

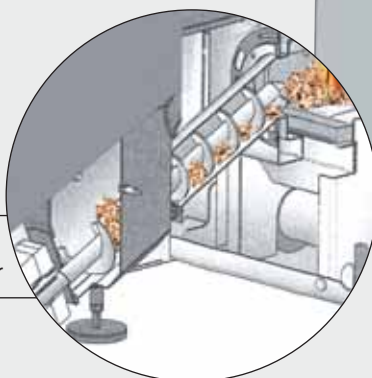
- Buffer management
 - Return flow temperature bypass (pump and mixer valve)
 - domestic hot water preparation
 - controlled heating circuit (pump and mixer valve)
 - frost protection
- Simple screen design and convenient menu guide.
 - Extension modules up to 55 modules possible (heating circuits, solar-use, second buffer etc.)



**Automatic
cleaning of the
combustion grate**

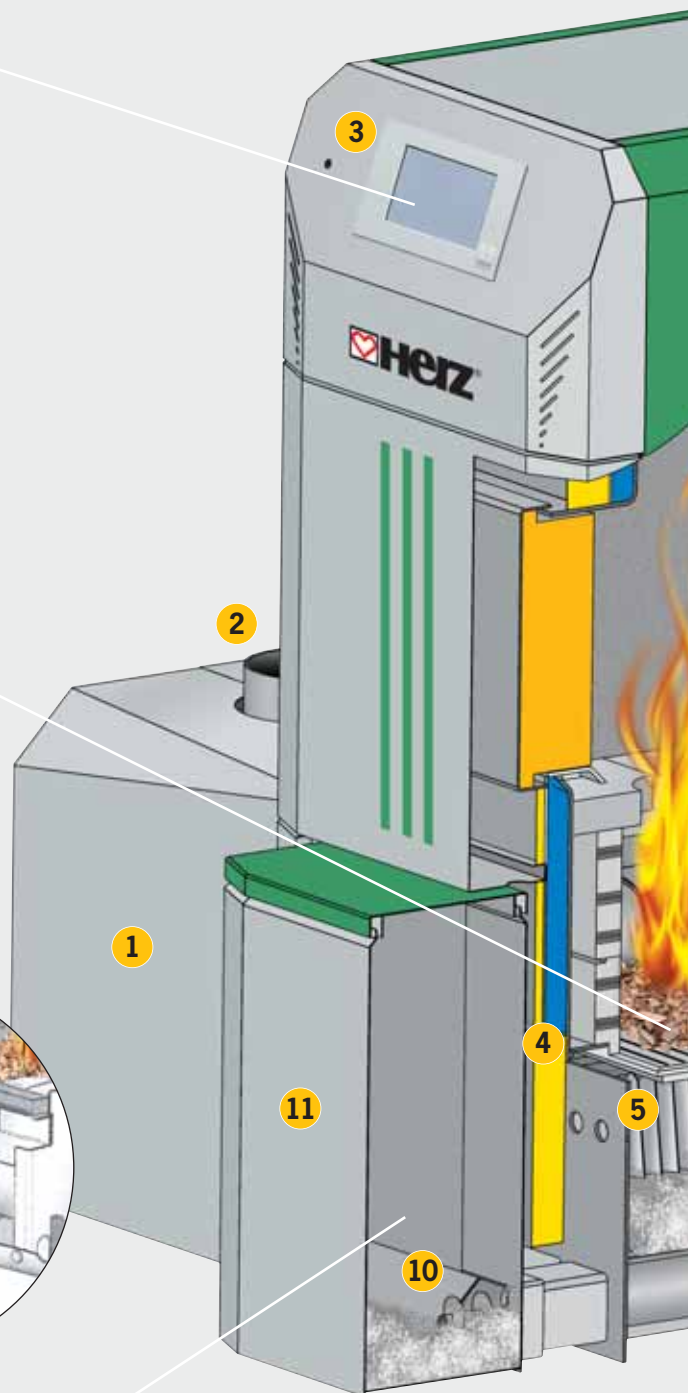
- Complete cleaning of combustion grate which automatically tips ash to extraction point.
- A clean combustion grate guarantees an optimum air supply.
- Minimises the manual cleaning requirement.

Side load of woodchips or pellets
into the combustion chamber

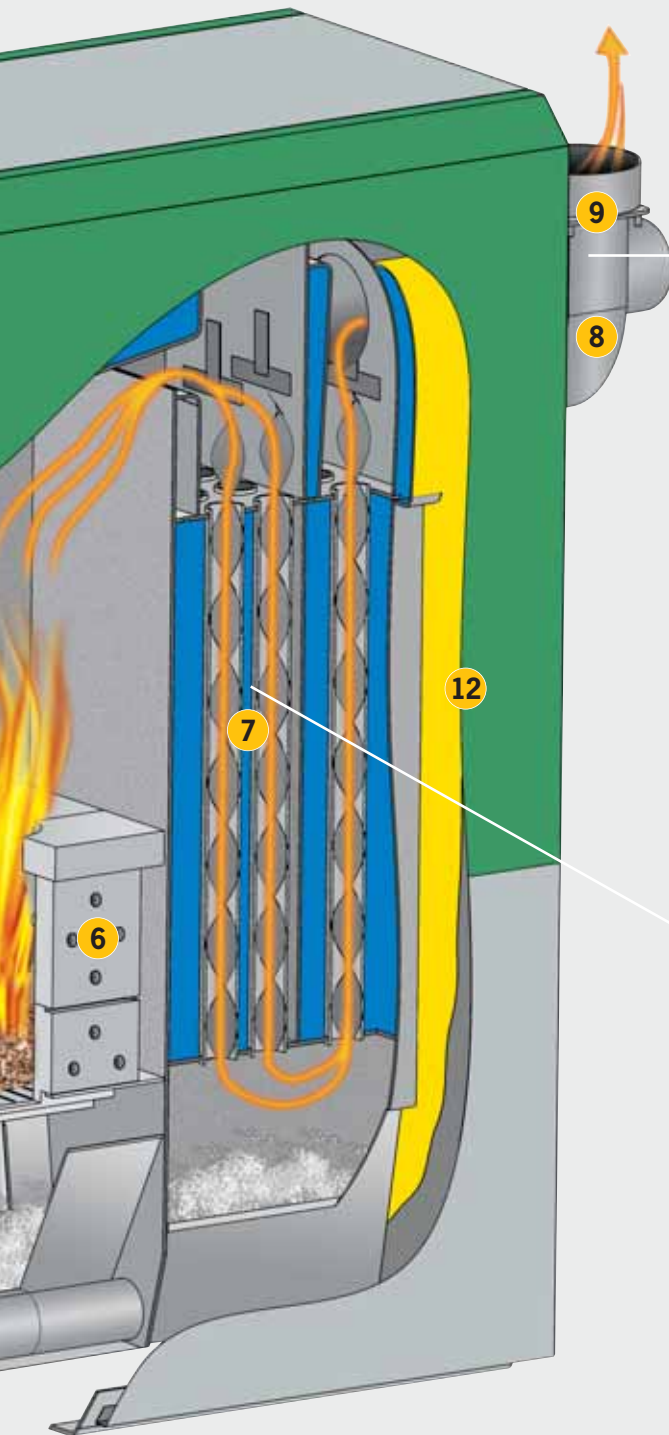


**Automatic
de-ashing**

- Via the two ash discharge screws the combustion and fly ash is automatically augered into the ash bin.
- The removable ash bin 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 protection device; flap)
BBI (back burn inhibit device;
sprinkler system)
- 3. T-CONTROL**
central control unit



Energy saving combustion via the Lambda probe



- Thanks to the in-built Lambda probe, which continuously monitors the flue gas values, the boiler reacts to changes in fuel quality ensuring optimum combustion and extremely 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 surfaces are automatically cleaned via the integrated turbulators, even during heating operation, eliminating manual cleaning.
- 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.

4. Automatic ignition
using hot air fans

5. Tipping grate for complete cleaning

6. Split 2-zone combustion chamber

7. Pipe heat exchanger
with turbulators and
automatic cleaning

8. Lambda probe control
Automatic flue and
combustion monitoring

9. Draft fan
speed controlled and monitored
for the highest operating safety

10. Ash discharge screw
for combustion and fly ash

11. Front ash box

12. Efficient heat insulation
for the lowest radiated
heat loss

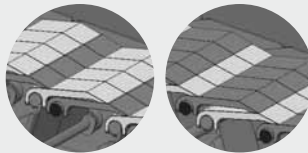
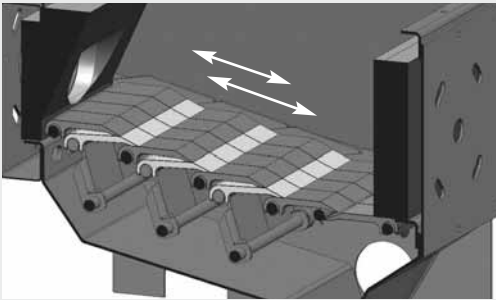
Benefits and details...



**The HERZ T-CONTROL
with touch display**

Central control unit as standard for:

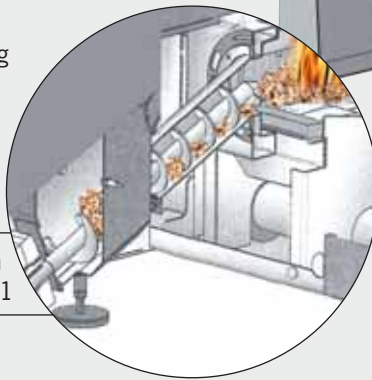
- Buffer management
 - Return flow temperature bypass (pump and mixer valve)
 - domestic hot water preparation
 - controlled heating circuit (pump and mixer valve)
 - frost protection
- Simple screen design and convenient menu guide.
 - Extension modules up to 55 modules possible (heating circuits, solar-use, second buffer etc.)



**Step- / moving
grate burning
chamber**

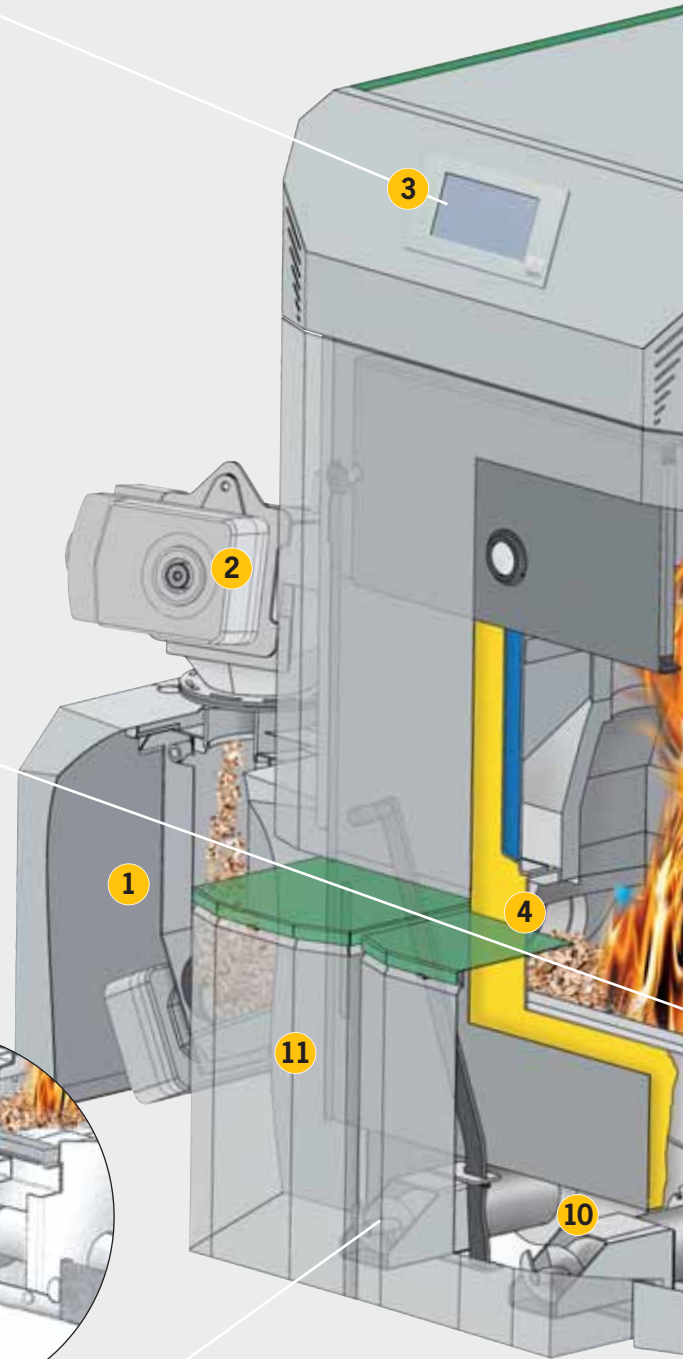
- The movement of the step grate is also a cleaning mechanism of the burning chamber. These grate elements consist of special, high-quality cast iron. Through the movement of the step-/moving grid the biomass is transported through the combustion area. The burning chamber is split into primary and secondary air zones. This is necessary to ensure a system which is adapted to the conditions of combustion.
- The movement guarantees optimal air flow through the cleaned grate.
- 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 effort required.

Side load of woodchips or pellets into the combustion chamber. Double load auger for firematic 130-301

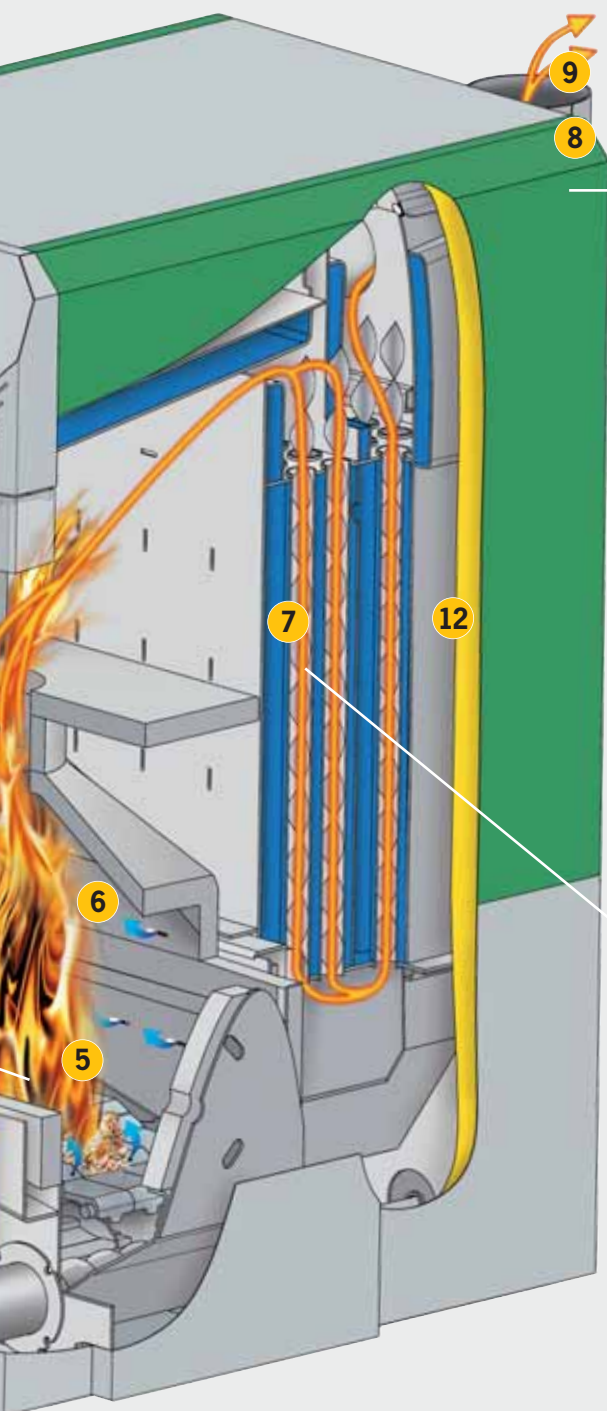


**Automatic
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with infrared light barrier system
(removes the need for mechanical level control)
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BBI (back burn inhibit device;
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central control unit



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using hot air fans

5. Step- / moving grate
with automatic cleaning

6. Split 2-zone combustion
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with turbulators and automatic cleaning

8. Lambda probe control
Automatic flue and
combustion monitoring

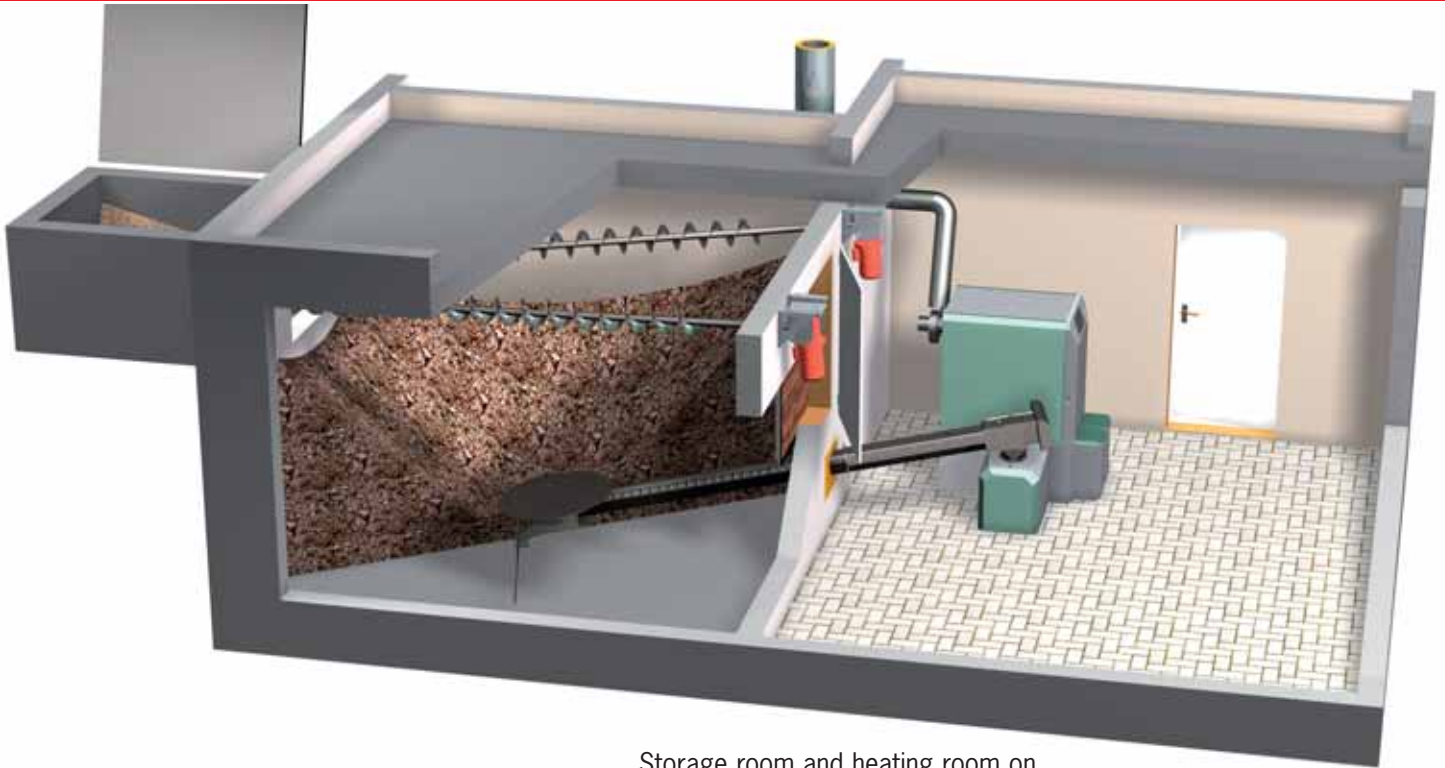
9. Draft fan
speed controlled and monitored
for the highest operating safety

10. Ash discharge screws
for combustion and fly ash

11. 2 front ash boxes

12. Efficient heat insulation
for the lowest radiated heat loss

Discharge and transport systems...

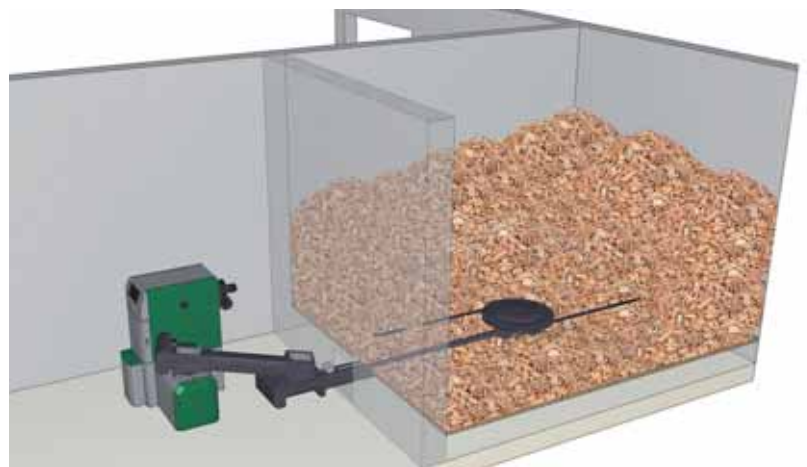


Storage room and heating room on same level. Transverse discharge with spring agitator and 2 filling screws.

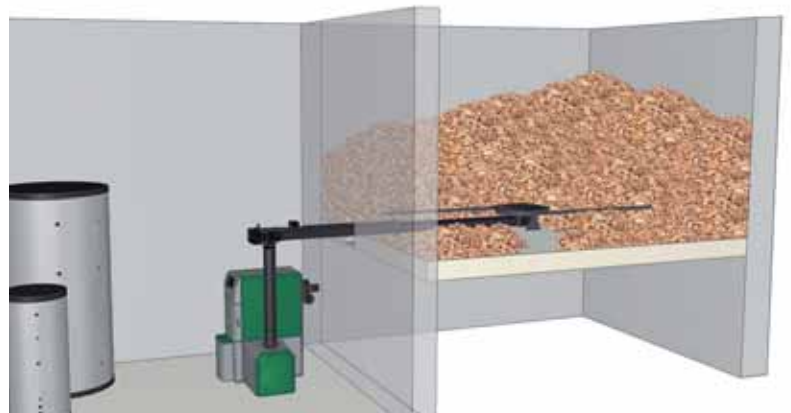
HERZ spring agitator and drive technology:

Robust agitator with heavy gearing and pressure release for reliable operation. Spring agitator discharge up to 6m diameter for 3 x 400 V supply. Up to 5 m diameter for 230V operation for firematic 20-60 possible.

Additional discharge system via a pendulum screw from a silo, or a storage room discharge via hydraulic walking floor and straight auger 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 fed via a vertical screw into the wood chip storeroom and are distributed optimally via a horizontal screw in the storage room.

Basic datas:

- Maximum fill trough length of 6m
- Modular extension of 0,6m and 1,2m possible
- Hinged, galvanized cover of the fill trough
- High corrosion resistant - fully galvanized panel for out door areas
- All engines are suitable for out door areas
- Vertical height up to 10 meters
- Perfectly distribution of the material in the bunker by a horizontal auger inside (up to 12 meters possible)



transport volume: $< 60\text{m}^3/\text{h}$
double systems: $< 100\text{m}^3/\text{h}$



Suitable fuels:

woodpellets according to

- EN 14961-2: property class A1
- Swisspellet, DINplus, ENplus or ÖNORM M7135

woodchips M40 (water content max. 40%) according to

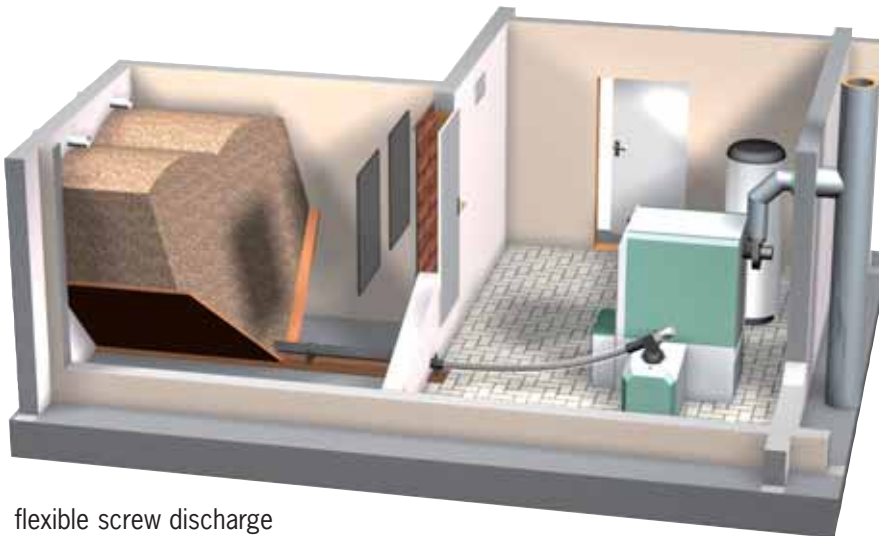
- EN 14961-4: property class A1, A2, B1 and particle size P16B, P31,5 or P45A
- ÖNORM M7133: G30-G50



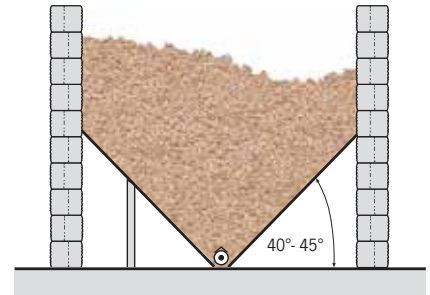
Discharge systems...



Discharge systems for pellets with flexible screw (till 201 kW)

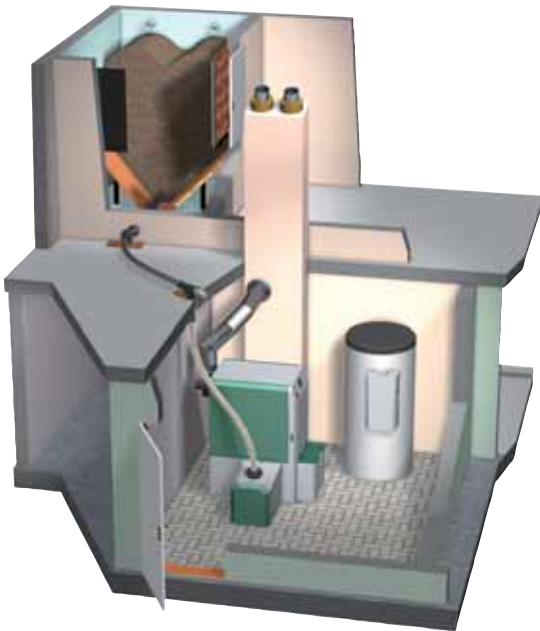


flexible screw discharge

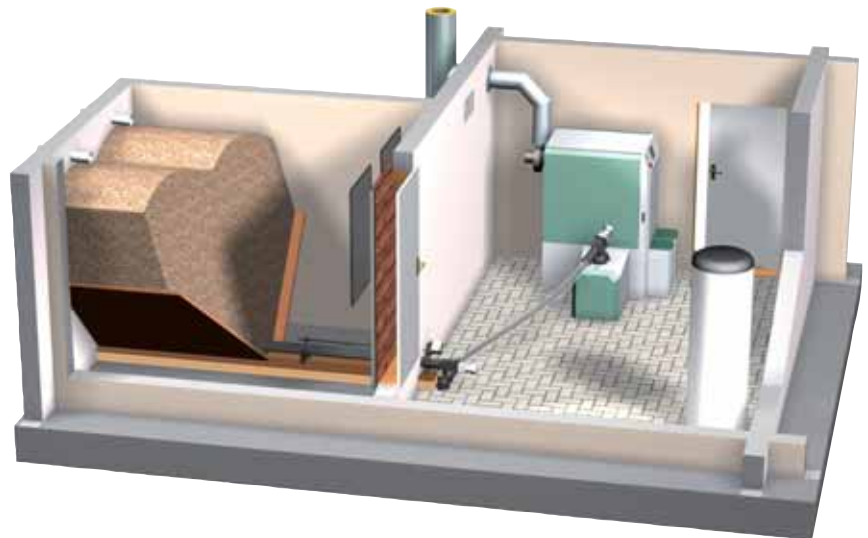


sliding angle of 40° - 45° in the pellet-store with a smooth surface

If the firematic is only used to burn pellets the flexible transport screw is a cheaper solution (in comparison with an agitator). To empty the storage room completely, we recommend making slidings. For this system no transport of woodchip 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 pellets.

If you want to burn wood chips in the system too, the discharge with an agitator has to be used. Nevertheless, if only pellets are used, the agitator system also can be used.

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.





... for pellets



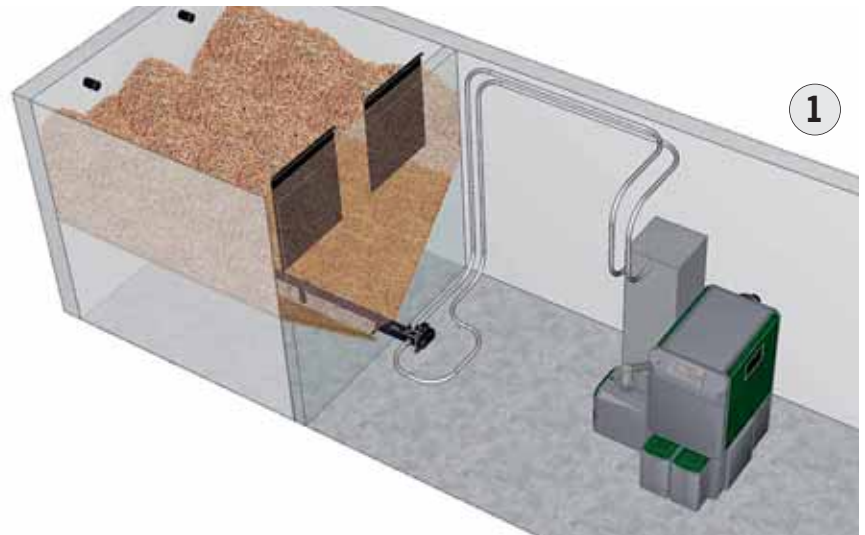
Pellets extraction via suction system (till 201 kW)

If the firematic is only used to burn pellets and the pellets have to be transported via a long distance from the storage room to the boiler room, the suction system is an optimal solution. Pellets can be transported up to a distance of max. 25 meters length and max. 5m height.

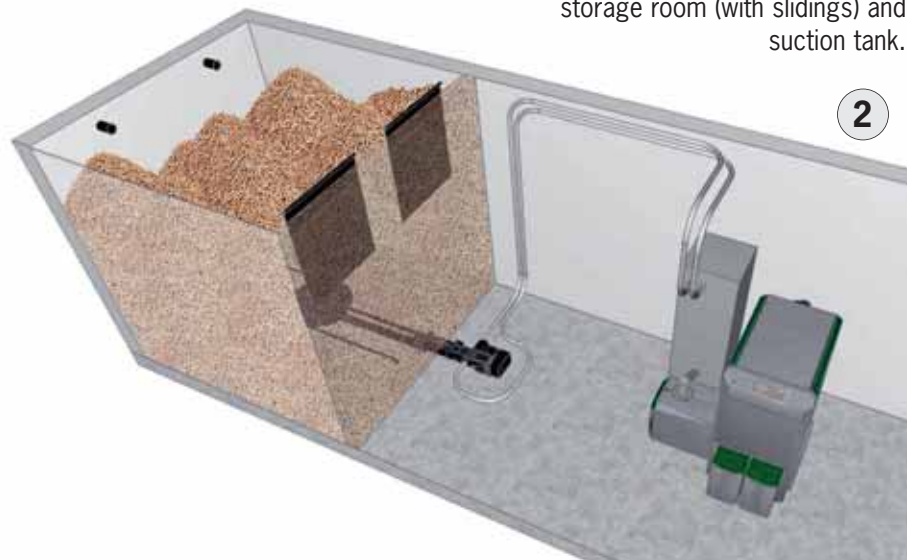
There are 3 possibilities to discharge the pellets out of the storage room:

- 1 an auger 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 positioning of the 4 suction probes can be individually selected.

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)



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



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



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

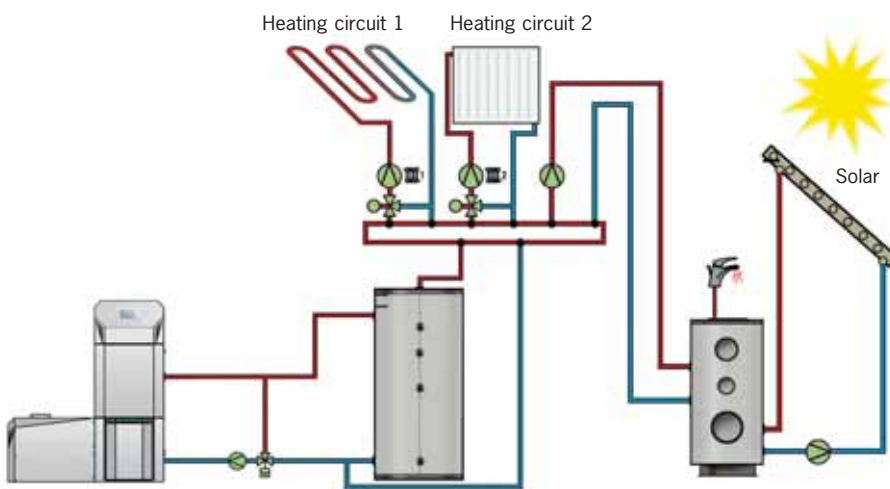
A range for all requirements...

The HERZ T-CONTROL:

The control enables a variety of application options, and two of the most frequent are shown below.

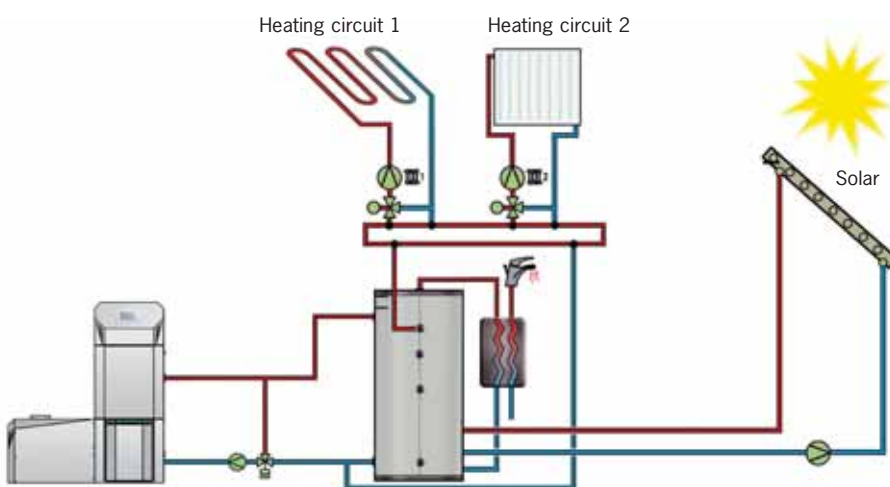
The installation of a buffer tank considerably increases the efficiency of the heating system, especially during periods of partial load. The variable heat loads from the different heating circuits (e.g. radiators and under floor heating) can be met readily from the buffer.

The differential temperature control and weather-driven control optimise energy usage allowing environmentally friendly and energy saving heating.



Hot water storage with solar usage and buffer storage:

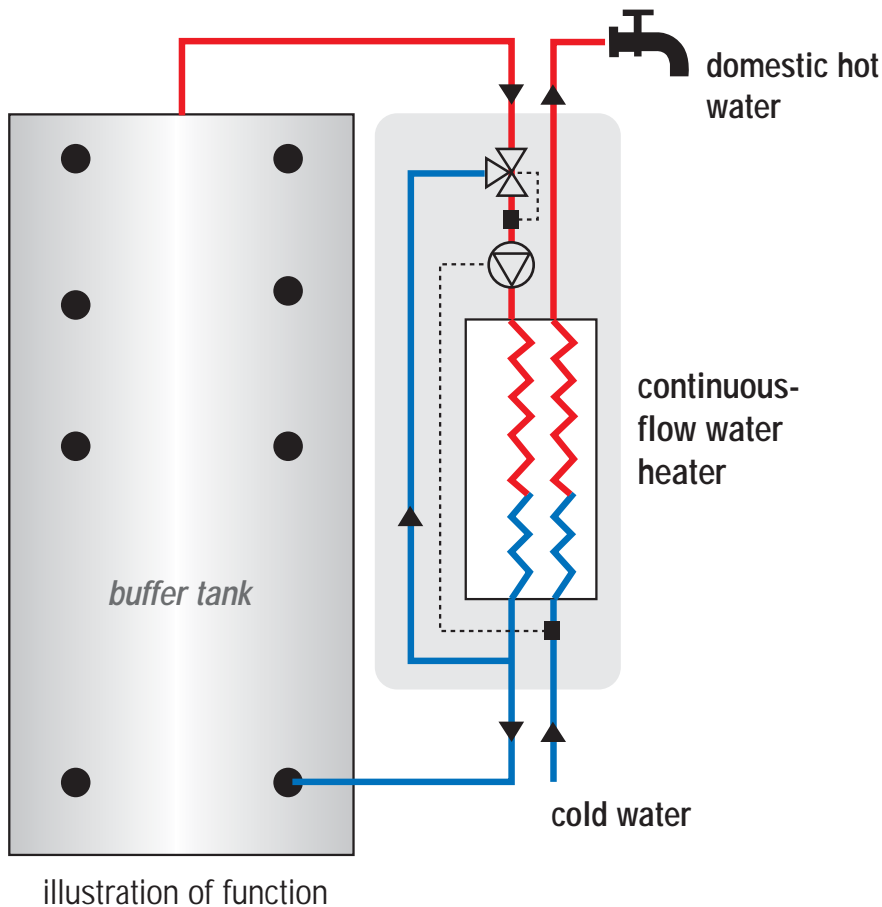
With this system configuration solar energy is utilised to provide the domestic hot water. When the solar input is insufficient to meet the hot water demand, additional heat is taken from the buffer tank. Additional heating circuits such as under floor heating and the radiators are supplied with heat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



Solar heating support and hygienic hot water preparation:

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

HERZ continuous-flow water heater & buffer tanks



The HERZ continuous-flow water heater prepares the domestic hot water in an efficient way. The fresh cold water is heated 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 advantages:

- Domestic hot water – hygienic & fresh
- Easy to install
- very compact (low space required)

Useful supplementation for your heating system: HERZ buffer tanks

Integrating a buffer tank into the system provides an energy store. It reduces the number of boiler start-ups, guarantees a continuous heat leak, and allows the boiler to optimise when it turns on.

Using a buffer store, continuous power generation can be sustained for a longer period. Thus frequent cycling of the boiler can be avoided and the level of efficiency improved.

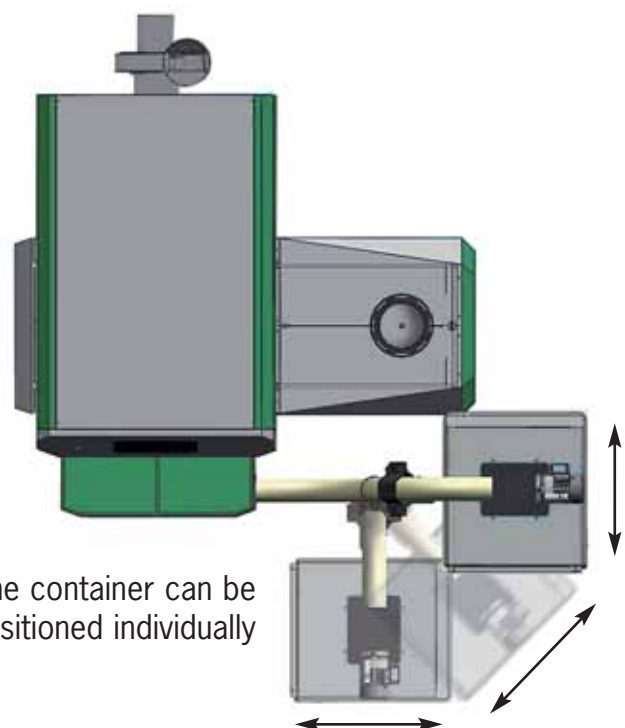
Ash discharge into an external box - 240 litre



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

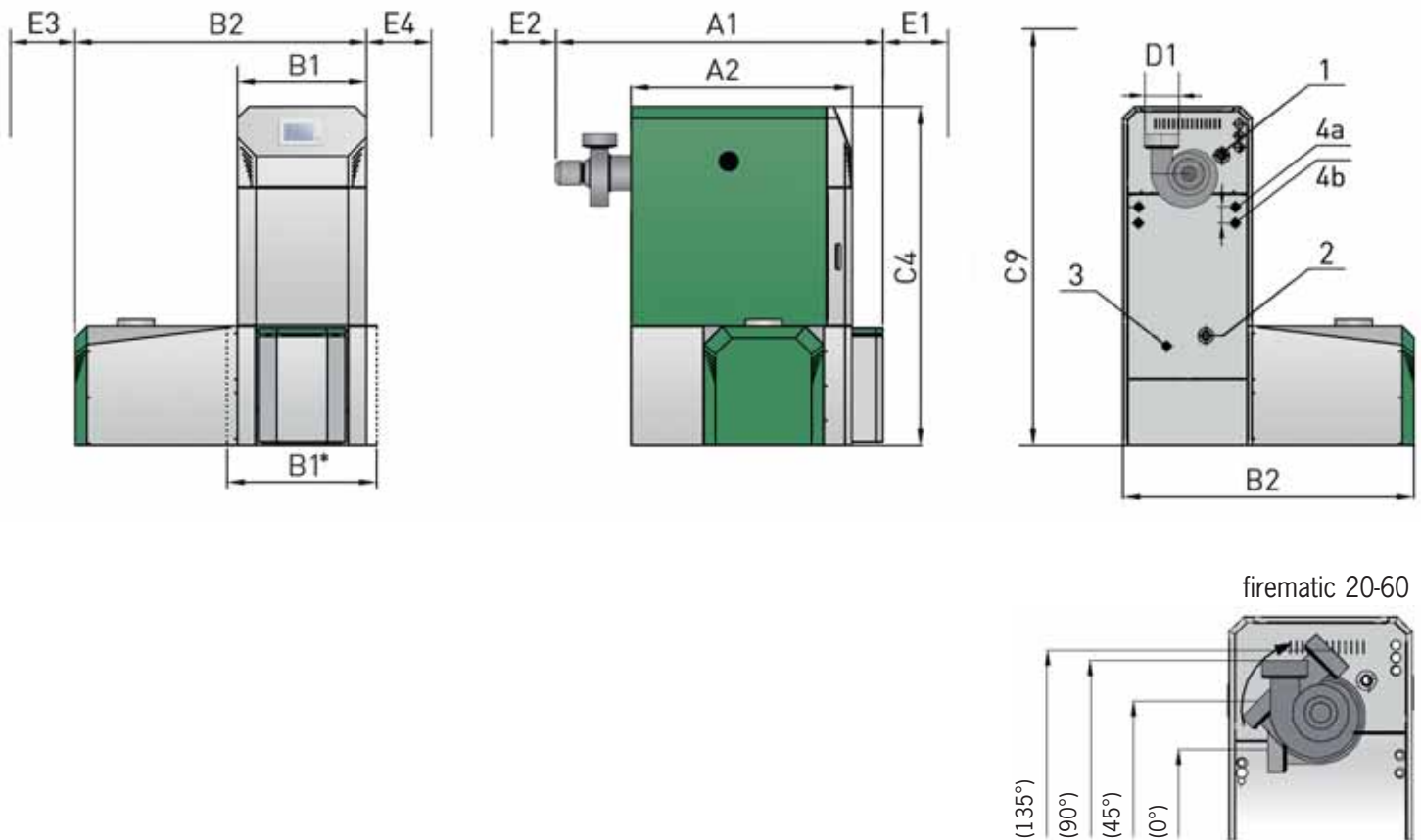
With a flexible screw the combustion and fly ash is transported automatically into an ash container with a capacity of 240 liters.

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.



The container can be positioned individually

Dimensions & technical data firematic 20-60



firematic 20-60

Technical data		20	35	45	60
Output range WOODCHIPS (kW)		7,3-25	7,3-35	13,1-45	13,1-65
Output range PELLETS (kW)		-	10,3-40	13,9-48	13,9-68
Dimensions (mm)					
A1	length - total	1389	1389	1495	1495
A2	length – casing	960	960	1070	1070
B1	width	600	600	710	710
B1*	Bring In wide with removal of components	-	-	-	-
B1*	Bring In wide with the casing (without casing removal)	621	621	731	731
B2	width – with push-in	1300	1300	1410	1410
C4	height	1490	1490	1590	1590
C9	Minimum room height	2100	2100	2300	2300
D1	flue pipe – diameter	150	150	150	150
E1	Minimum space at the front	600	600	700	700
E2	Minimum space at the back	500	500	530	530
E3	Minimum space left	300	300	300	300
E4	Minimum space right	300	300	300	300
Technical data					
Boiler weighth	kg	517	517	620	620
Degree of efficiency η_f	%	>93	>93	>96	>96
Permissible operating pressure	bar	3,0	3,0	3,0	3,0
Max. permissible operating temperaturer	°C	95	95	95	95

firematic 20-35:

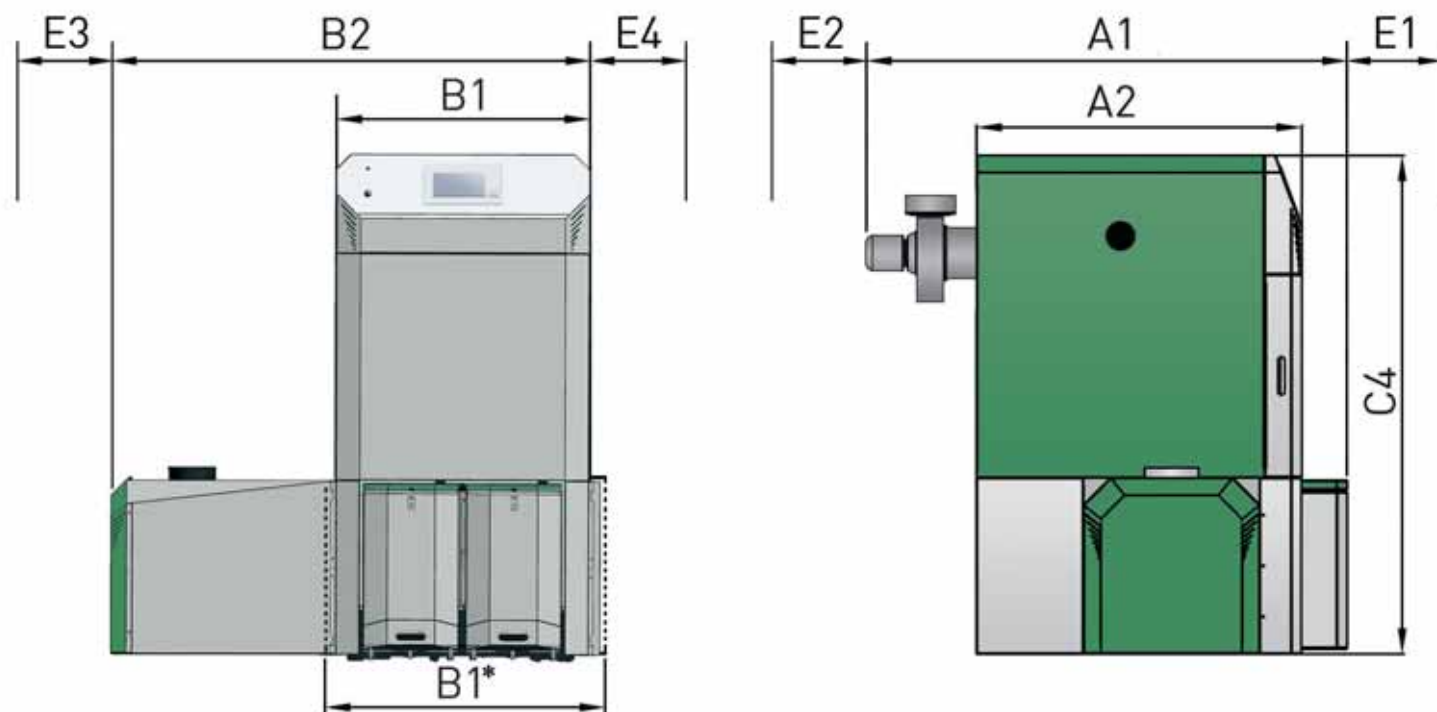
- 1... Flow, 1" IG 2... Return, 1" IG
- 3... Filling / draining connection, 1/2" IG
- 4a... Safety heat exchanger input, 1/2" IG
- 4b... Safety heat exchanger output, 1/2" IG

IG...Interior thread

firematic 45-60:

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

Dimensions & technical data firematic 80-301



firematic 80-130

Technical data		80	100	101	130
Output range WOODCHIPS (kW)		22,0-80	22,0-99	22,0-101	37,8-130
Output range PELLETS (kW)		22,2-80	22,2-99	22,2-101	42,7-143
Dimensions (mm)					
A1	length - total	1709	1709	1709	2071
A2	length – casing	1178	1178	1178	1494
B1	width	846	846	846	980
B1 *	Bring In wide with removal of components	800	800	800	950
B1 *	Bring In wide with the casing (without casing removal)	907	907	907	1024
B2	width – with push-in	1636	1636	1636	1888
C4	height	1690	1690	1690	1818
C9	Minimum room height	2300	2300	2300	2400
D1	flue pipe – diameter	180	180	180	200
E1	Minimum space at the front	800	800	800	1000
E2	Minimum space at the back	450	450	450	600
E3	Minimum space left	300	300	300	300
E4	Minimum space right	700	700	700	700
Technical data					
Boiler weight	kg	1032	1032	1032	1370
Degree of efficiency η_f	%	>94	>94	>94	>96
Permissible operating pressure	bar	3,0	3,0	3,0	3,0
Max. permissible operating temperaturer	°C	95	95	95	95

firematic 80-100:

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

firematic 130-201:

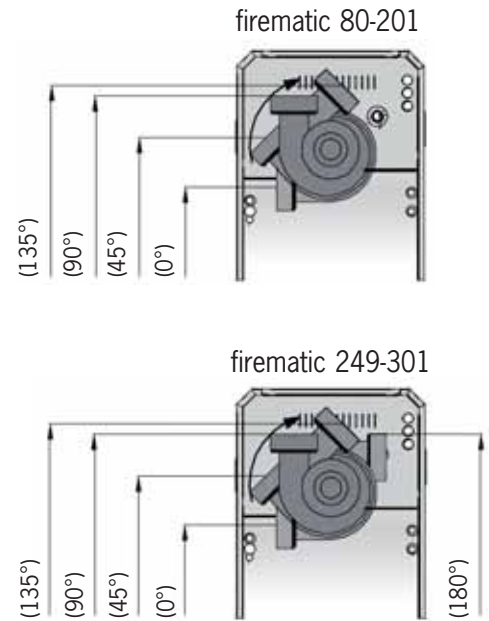
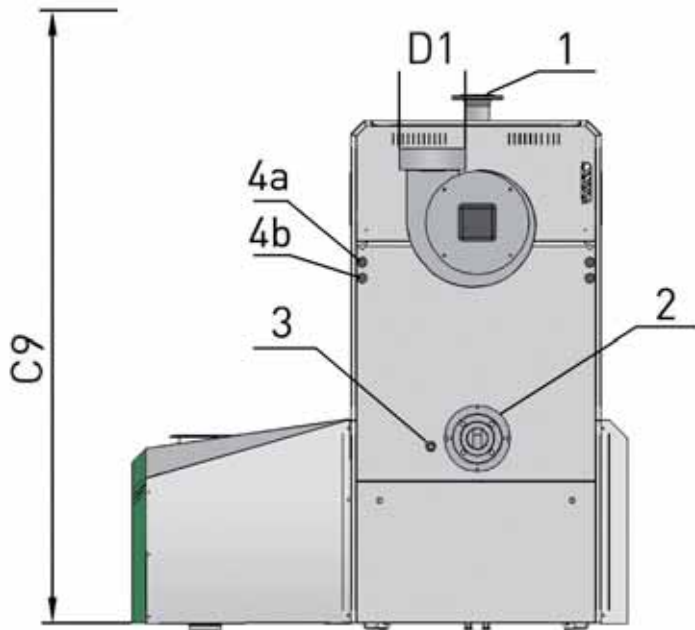
- 1... Flow, 2" IG
- 2... Return, 2" IG
- 3... Filling / draining connection, 1/2" IG
- 4a... Safety heat exchanger input, 1/2" IG
- 4b... Safety heat exchanger output, 1/2" IG

firematic 249-301:

- 1... Flow, DN80, PN 6
- 2... Return, DN80, PN 6
- 3... Filling / draining connection, 1/2" IG
- 4a... Safety heat exchanger input, 1/2" IG
- 4b... Safety heat exchanger output, 1/2" IG

IG...Interior thread

Dimensions & technical data firematic 80-301



firematic 149-301

149	151	180	199	201	249	251	299	301
37,8-149 42,7-147	37,8-155 42,7-155	42,2-180 54,8-183	42,2-199 54,8-199	42,2-201 54,8-201	67,9-249 76,8-256	67,9-251 76,8-256	67,9-299 76,8-299	67,9-301 76,8-301
Dimensions (mm)								
2071	2071	2071	2071	2071	2672	2672	2672	2672
1494	1494	1494	1494	1494	1906	1906	1906	1906
980	980	980	980	980	1116	1116	1116	1116
950	950	950	950	950	1065	1065	1065	1065
1024	1024	1024	1024	1024	1230	1230	1230	1230
1888	1888	1888	1888	1888	2096	2096	2096	2096
1818	1818	1818	1818	1818	1911	1911	1911	1911
2400	2400	2400	2400	2400	2600	2600	2600	2600
200	200	200	200	200	250	250	250	250
1000	1000	1000	1000	1000	1000	1000	1000	1000
600	600	600	600	600	800	800	800	800
300	300	300	300	300	300	300	300	300
700	700	700	700	700	700	700	700	700
Technical data								
1370	1370	1370	1370	1370	2264	2264	2264	2264
>93	>93	>93	>93	>93	>93	>93	>93	>93
3,0	3,0	3,0	3,0	3,0	3,0	3,0	3,0	3,0
95	95	95	95	95	95	95	95	95



Suitable fuels for all firematic types:

woodpellets according to

- EN 14961-2: property class A1
- Swissspellet, DINplus, ENplus or ÖNORM M7135

woodchips M40 (water content max. 40%) according to

- EN 14961-4: property class A1, A2, B1 and particle size P16B, P31,5 or P45A
- ÖNORM M7133: G30-G50

HERZ Customer-orientated...



- Advice during planning
- Planning of energy centre and fuel storage room
- Planning of chamber discharge according to customer requirements and local conditions
- Planning of installation according to customer requirements
- Comprehensive services
- HERZ training:
 - for the machine operator
 - for designers and technical offices
 - for pipe fitters and installers
 - as well as continuous training of the maintenance staff

Business partners in:

AUSTRIA
 BELGIUM
 BULGARIA
 CANADA
 CROATIA
 CZECH REPUBLIC
 DENMARK
 ESTONIA
 FINLAND
 FRANCE
 GERMANY
 GREAT BRITAIN
 GREECE
 HUNGARY
 IRELAND
 ITALY
 LATVIA
 LITHUANIA
 LUXEMBOURG
 NETHERLANDS
 POLAND
 PORTUGAL
 ROMANIA
 RUSSIA
 SERBIA
 SLOVAKIA
 SLOVENIA
 SOUTH TYROL
 SPAIN
 SWEDEN
 SWITZERLAND
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