Heating with **wood chips & pellets**

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

firematic 20-60

firematic 80 - 201

Herz®

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.

Herz®

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

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Vorteile und **Details...**

Control using HERZ BioControl 3000

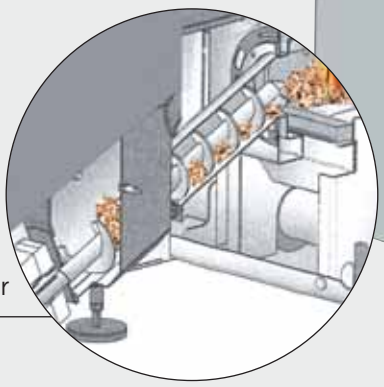
Central control unit as standard for:

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

- Simple screen design and convenient menu guide.
- Option for internal modular extensions for solar circuit control as well as other heating circuits (total maximum 6 heating circuits, for solar-use maximum 5 circuits).

Automatic cleaning of the combustion grate

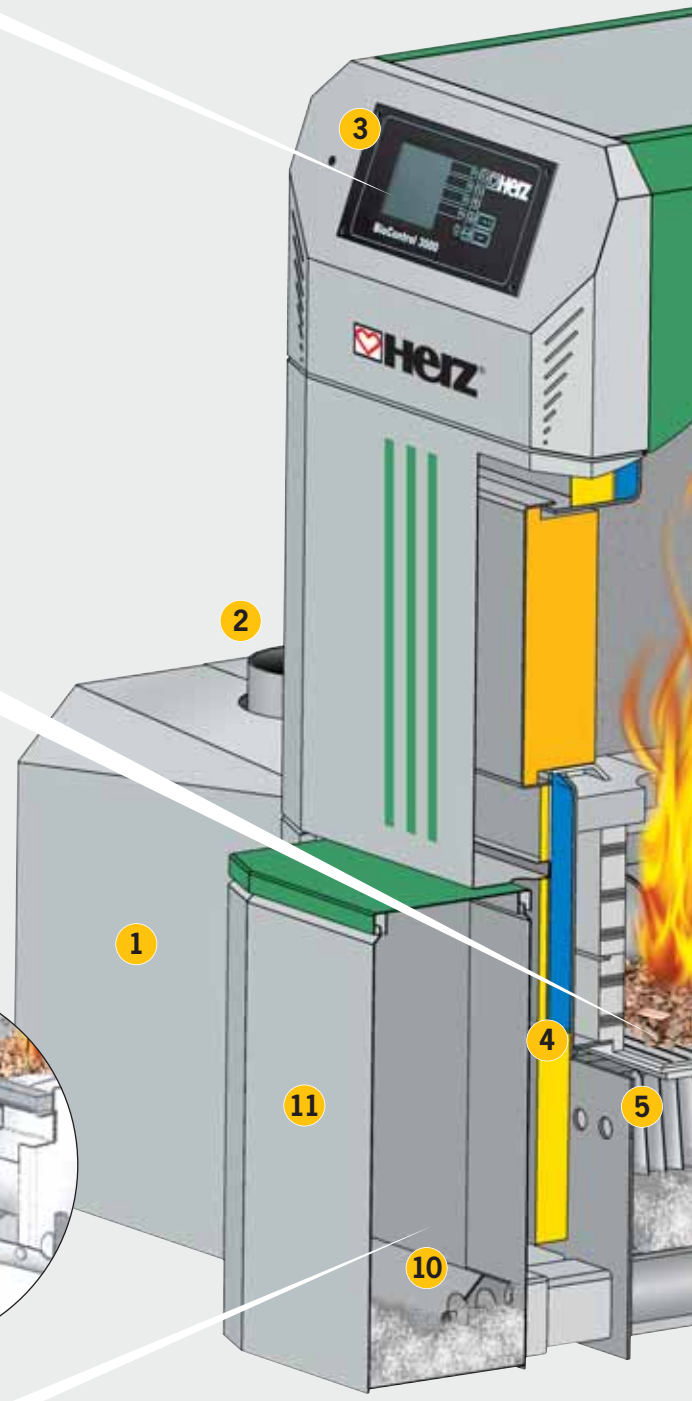
- Complete cleaning of combustion grate which automatically tips ash to extraction point.
- A clean combustion grate guarantees an optimum air supply.
- Minimises the manual cleaning requirement.



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.

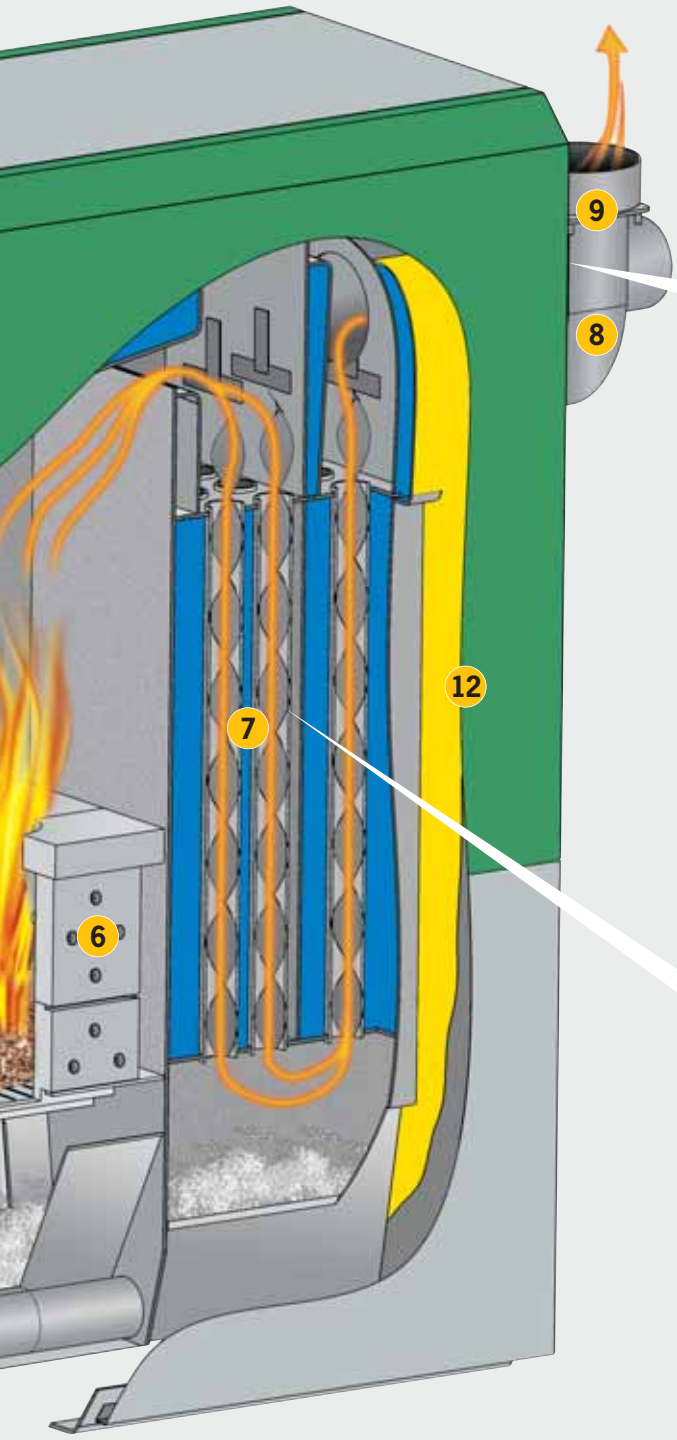


1 **Intermediate container**
with infrared light barrier system (removes the need for mechanical level control)

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

3. **BioControl 3000 control**
central control unit

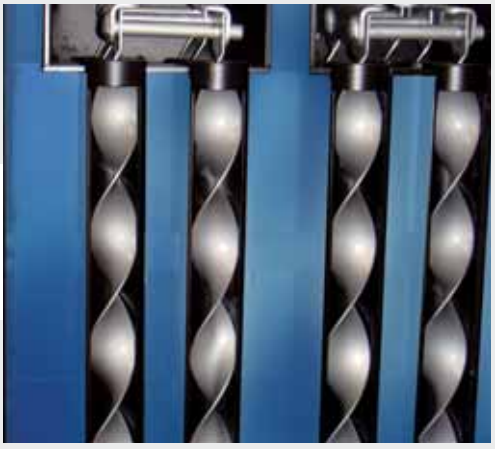
...of HERZ firematic 20-60



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. **Draught 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

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Benefits and **details...**

Control using HERZ BioControl 3000

Central control unit as standard for:

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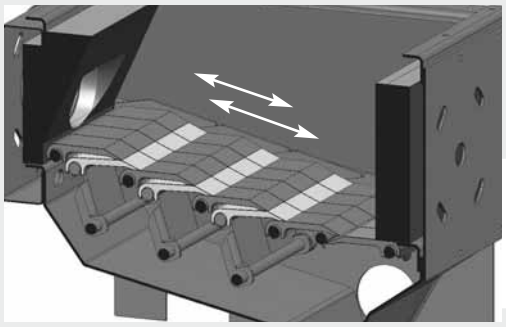
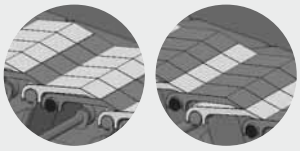
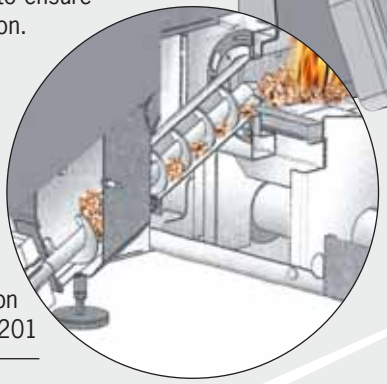




Step- / moving grate burning chamber

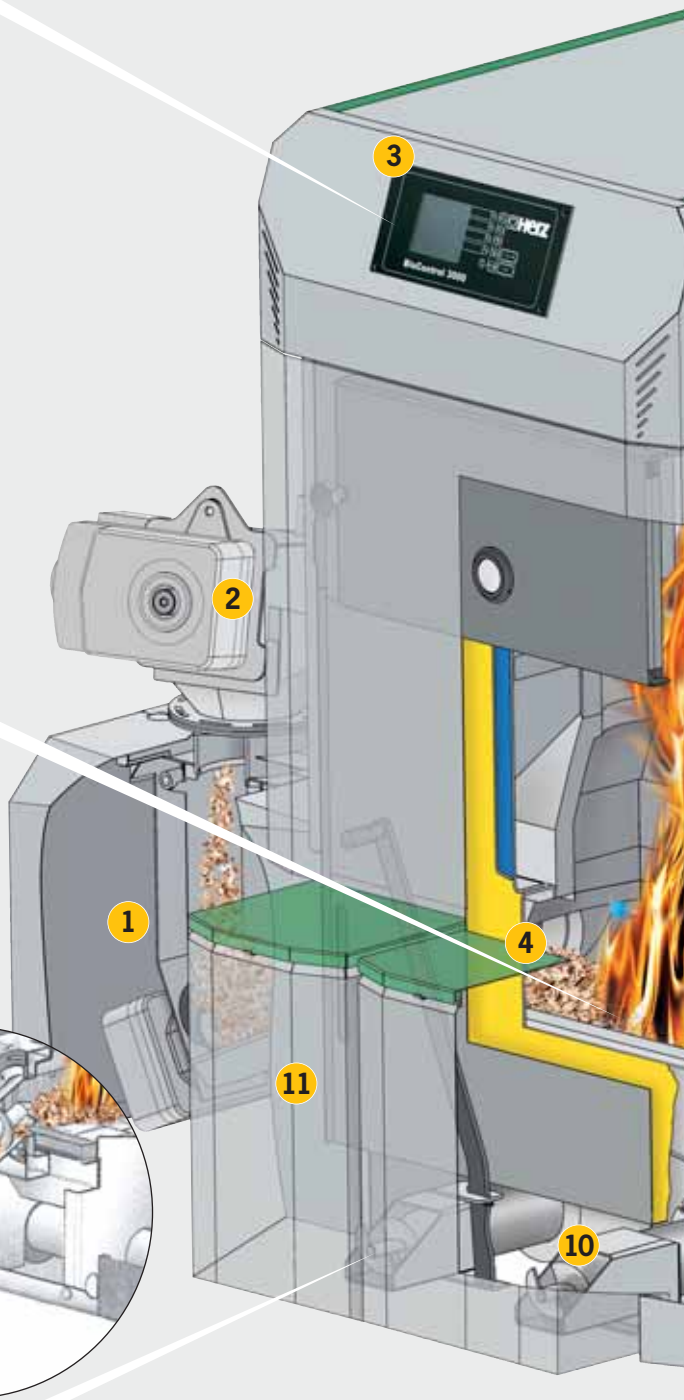
- The movement of the step grate is also a cleaning mechanism of the burning chamber. These grate elements consist of special, high-quality cast iron. Through the movement of the step- /moving grid the biomass is transported through the combustion area. The burning chamber is split into primary and secondary 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 130-201

Automatic de-ashing

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



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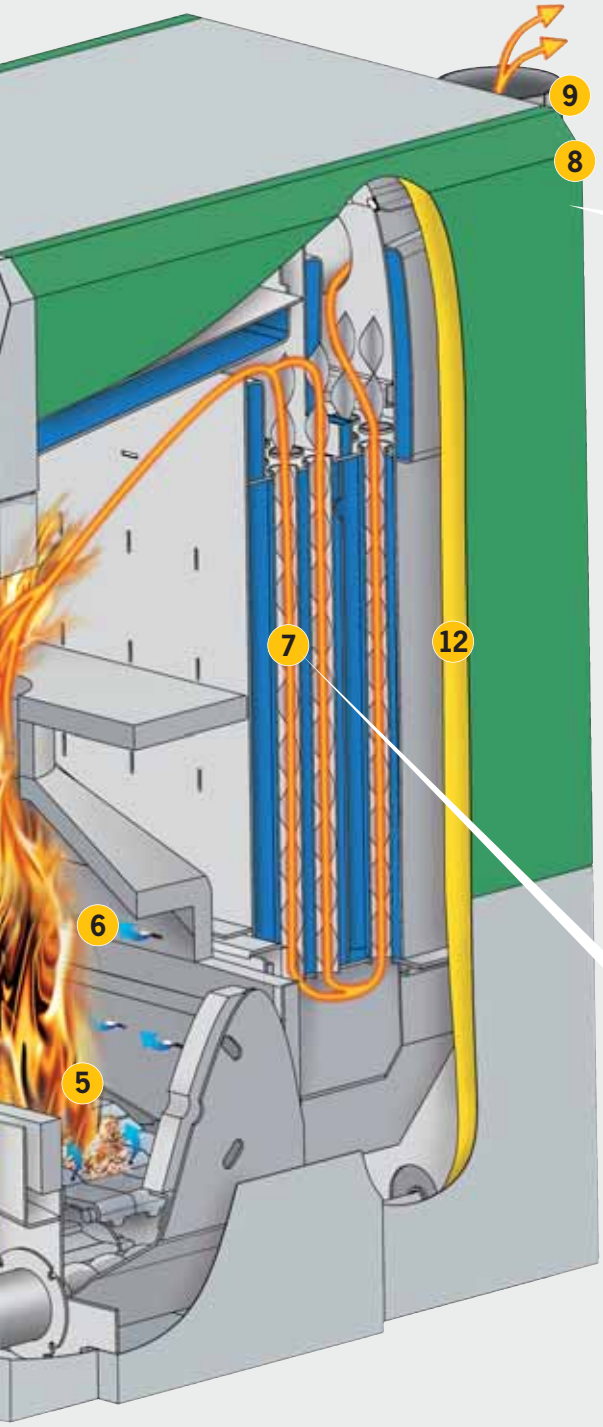
...of HERZ firematic 80-201



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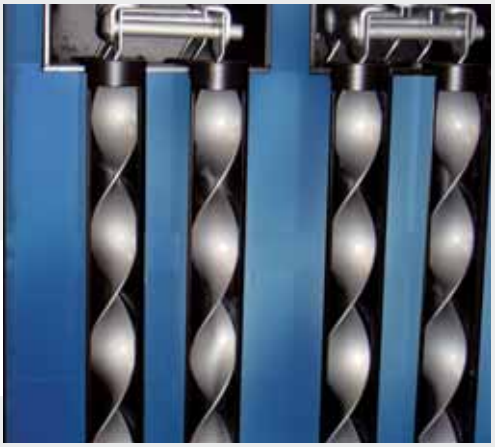
Automatic cleaning of the heat exchanger



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   using hot air fans
5. **Step- / moving grate**
   with automatic cleaning
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   Automatic flue and combustion monitoring
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   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

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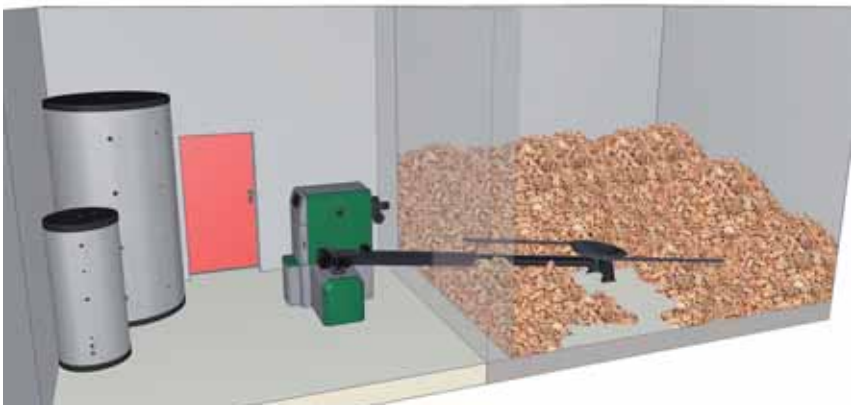
Discharge and transport systems...

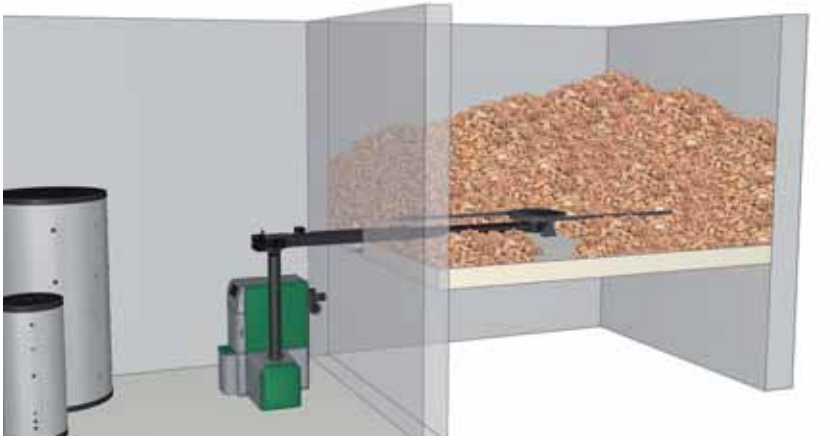
HERZ spring agitator and drive technology:

for wood chips: G30-50/W35 according to ÖNORM M7133 or P16B, P45A according to EN 14961-1
for woodpellets (Ø 6mm):
according to ÖNORM M 7135,
DINplus or Swiss Pellets or quality-level A1
according to EN 14961-1



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

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.

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

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.

... for woodchips / pellets

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 storeroom.

Suitable for wood chips G30-50/W35 according to ÖNORM M7133 or P16B, P45A according to EN 14961-1
and for woodpellets (Ø 6mm):
according to ÖNORM M 7135, DINplus or Swiss Pellets or quality-level A1 according to EN 14961-1

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 hight up to 10 meters
- Perfectly distribution of the material in the bunker by a horizontal auger inside (up to 12 meters possible)

transport volume: < 60m³/h
double systems: < 100m³/h

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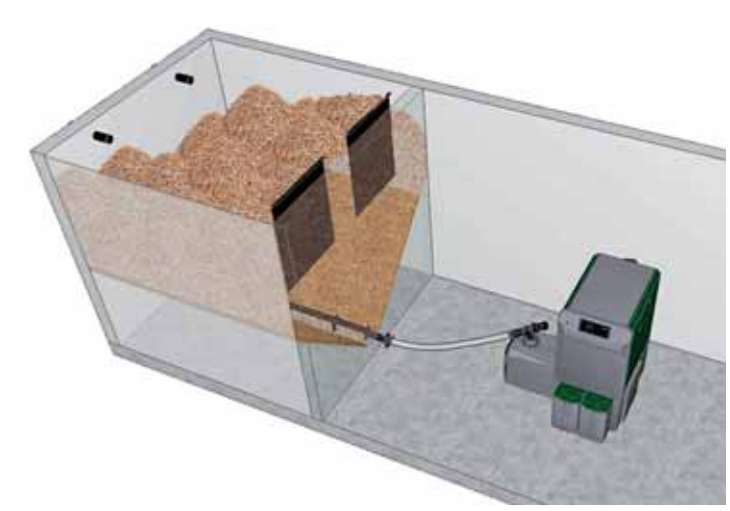
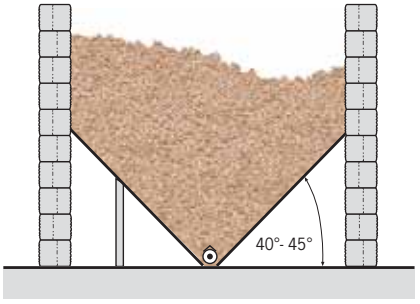
Discharge systems...

Discharge systems for pellets with flexible screw.



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.

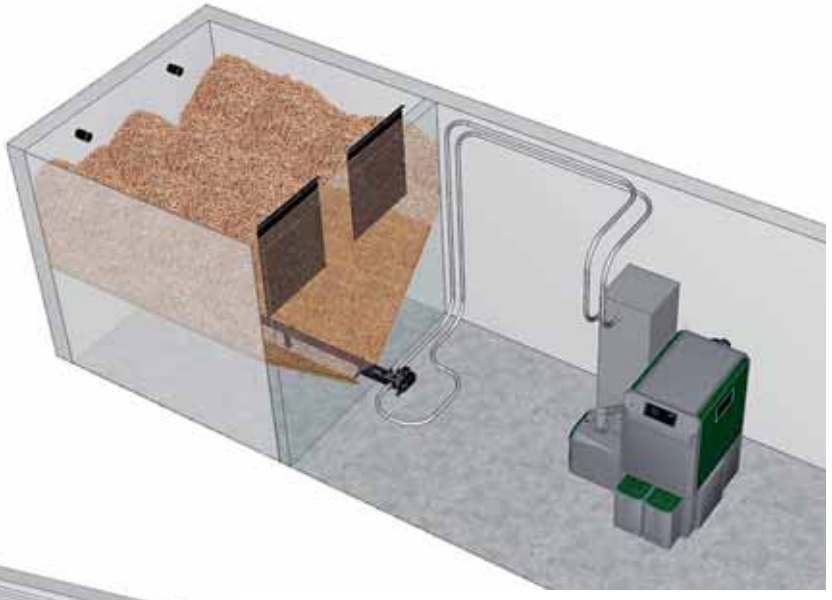
... for pellets

Pellets extraction via suction system

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 2 possibilities to discharge the pellets out of the storage room:

- an auger in the middle of the storage room (to empty the storage room completely, we recommend making slidings) or
- an agitator for efficient storage space usage (for this case the slidings are not needed).



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.

Central control unit – BioControl

With the HERZ BioControl 3000 heating circuits, hot water tank, buffer and solar can be controlled.

Central control unit for:

- Buffer management
- Return flow temperature bypass (pump and mixer valve)
- Hot water preparation
- Controlled heating circuits (pump and mixer valve) for a maximum of 6 heating circuits (a maximum of 5 heating circuits if a solar circuit is used)
- 1 solar circuit control
- Frost protection and holiday mode
- Simple screen design and convenient menu guide

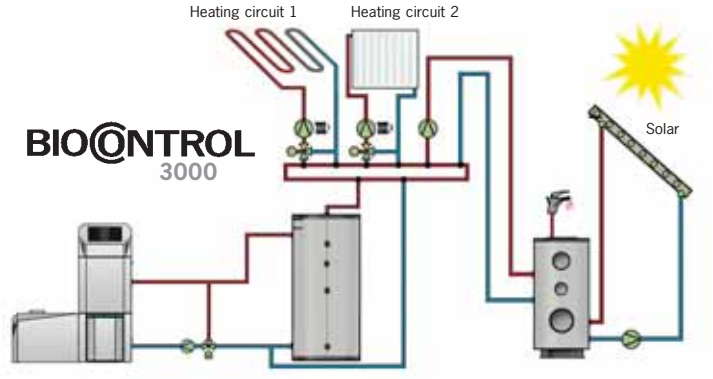
A **range** for all requirements...

The HERZ BioControl 3000:

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

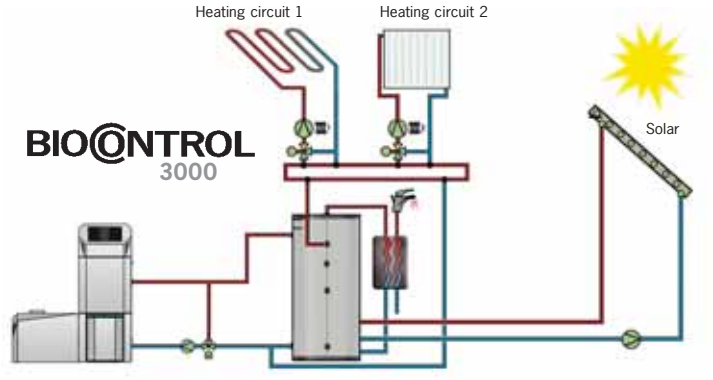
The installation of a buffer tank considerably increases the efficiency of the heating system, especially during periods of partial load. The variable heat loads from the different heating circuits (e.g. radiators and under floor heating) can be met readily from the buffer.

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.



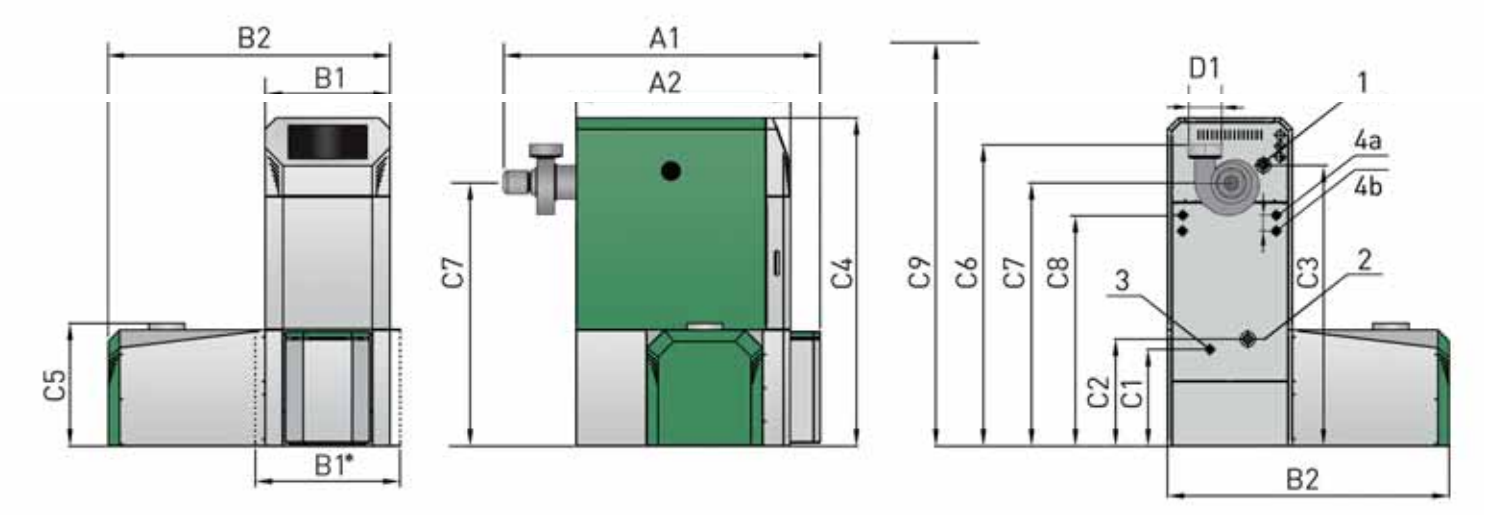
Solar heating support and hygienic hot water preparation:

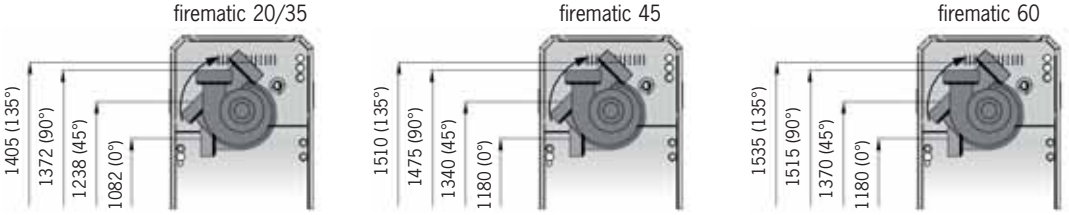
With this system configuration the solar energy heats the water in the buffer tank directly. Domestic hot water is provided using a heat exchanger. Additional heating circuits such as under floor heating and the radiators are supplied with heat from the buffer tank.

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.

Dimensions & technical **data firematic 20-60**





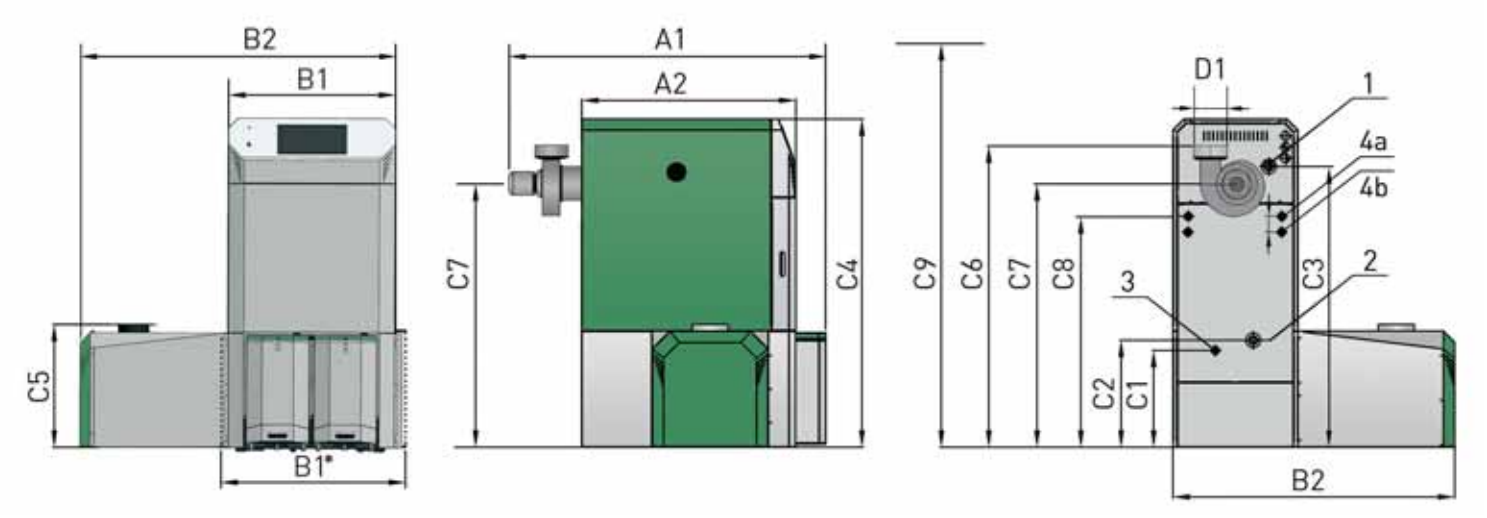
firematic **Output range HACKGUT (kW)** **Output range PELLETS (kW)**		20 **7,3-25** **-**	35 **7,3-35** **10,3-40**	45 **13,1-45** **13,9-48**	60 **13,1-65** **13,9-68**
Dimensions (mm)					
A1 length - total		1389	1389	1495	1495
A2 length – casing		960	960	1070	1070
B1 widht		600	600	710	710
B1* Bring 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
C1 filling/draining connection (1/2") height		395	395	395	395
C2 return flow connection (1") height		440	440	500	500
C3 flow connection (1")		1280	1280	1375	1375
C4 height		1490	1490	1590	1590
C5 delivery – upper edge		646	646	646	646
C6 flue pipe – upper edge		1376	1376	1475	1515
C7 flue pipe – middle		1200	1200	1300	1300
C8 high safety heat exchangers		1040	1040	1125	1125
C9 high safety heat exchangers		2100	2100	2300	2300
D1 flue pipe – diameter		150	150	150	180
Technical data					
Boiler weigth	kg	517	517	620	620
Degree of efficiency η_F	%	>93	>93	>96	>96
Min. / max. permissible feed pressure	mbar	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1
Permissible operating pressure	bar	3,0	3,0	3,0	3,0
Max. permissible operating temperature	°C	95	95	95	95
Water content	l	80	80	116	116
Electrical connection (V, Hz, A)		230,50,16	230,50,16	230,50,16	230,50,16
Emmission values at full load					
Flue gas temperature (adjustable)	°C	~110 (-)	~140 (~155)	~110 (~110)	~140 (~150)
Flue gas mass flow	kg/s	0,0166 (-)	0,0235 (0,0269)	0,0285 (0,02425)	0,0366 (0,0364)
CO2 content	Vol. %	12,6 (-)	12,3 (12,2)	13,8 (15,5)	15,0 (15,6)
Emission values at partial load					
Flue gas temperature (adjustable)	°C	~60 (-)	~60 (~70)	~60 (~60)	~60 (~60)
Flue gas mass flow	kg/s	0,0064 (-)	0,0064 (0,0085)	0,0084 (0,0094)	0,0084 (0,0095)
CO2 content	Vol. %	9,4 (-)	9,4 (9,4)	13,0 (11,7)	13,0 (11,7)

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

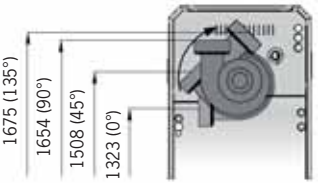
firematic 45-60:
1... Flow, 6/4" IG 2... Return, 6/4" IG
3... Filling / draining connection, 1/2" IG
4a... Safety heat exchanger input, 1/2" IG
4b... Safety heat exchanger output, 1/2" IG

IG...Interior thread

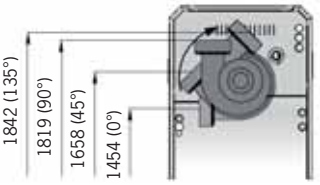
Dimensions & technical **data firematic 80-201**



firematic 80-101



firematic 130-201



80 **22,0-80** **22,2-80**	100 **22,0-99** **22,2-99**	101 **22,0-101** **22,2-101**	130 **37,8-130** **42,7-143**	149 **37,8-149** **42,7-147**	151 **37,8-155** **42,7-155**	180 **42,2-180** **54,8-183**	199 **42,2-199** **54,8-199**	201 **42,2-201** **54,8-201**
1709	1709	1709	2071	2071	2071	2071	2071	2071
1178	1178	1178	1494	1494	1494	1494	1494	1494
846	846	846	980	980	980	980	980	980
800	800	800	950	950	950	950	950	950
907	907	907	1024	1024	1024	1024	1024	1024
1636	1636	1636	1888	1888	1888	1888	1888	1888
519	519	519	648	648	648	648	648	648
690	690	690	678	678	678	678	678	678
1520	1520	1520	1679	1679	1679	1679	1679	1679
1690	1690	1690	1818	1818	1818	1818	1818	1818
646	646	646	725	725	725	725	725	725
1654	1654	1654	1813	1813	1813	1813	1813	1813
1441	1441	1441	1578	1578	1578	1578	1578	1578
1263	1263	1263	1400	1400	1400	1400	1400	1400
2300	2300	2300	2400	2400	2400	2400	2400	2400
180	180	180	200	200	200	200	200	200
1032	1032	1032	1350	1350	1350	1350	1350	1350
>94	>94	>94	>93	>93	>93	>93	>93	>93
0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1	0,05/0,1
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
179	179	179	254	254	254	254	254	254
230,50,16	230,50,16	230,50,16	230,50,16	230,50,16	230,50,16	230,50,16	230,50,16	230,50,16
~115 (~110)	~125 (~130)	~125 (~130)	~140 (~130)	~140 (~140)	~160 (~140)	~160 (~130)	~160 (~170)	~160 (~170)
0,0516 (0,04511)	0,0604 (0,0557)	0,0604 (0,0557)	0,0816 (0,0789)	0,0816 (0,0861)	0,0924 (0,0861)	0,0919 (0,1029)	0,1095 (0,1183)	0,1095 (0,1183)
12,8 (13,2)	14,2 (13,3)	14,2 (13,3)	13,7 (13,5)	13,7 (14,3)	14,3 (14,3)	13,9 (13,0)	13,5 (13,6)	13,5 (13,6)
~60 (~60)	~60 (~65)	~60 (~65)	~70 (~70)	~70 (~70)	~70 (~70)	~60 (~70)	~70 (~70)	~70 (~70)
0,0171 (0,0184)	0,0171 (0,0184)	0,0171 (0,0184)	0,028 (0,036)	0,028 (0,036)	0,028 (0,036)	0,0256 (0,0334)	0,0256 (0,0334)	0,0256 (0,0334)
10,2 (8,8)	10,2 (8,8)	10,2 (8,8)	10,3 (8,9)	10,3 (8,9)	10,3 (8,9)	12,1 (12,0)	12,1 (12,0)	12,1 (12,0)

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

IG...Interior thread

TThe right to make technical amendments is reserved.

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

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Your partner:

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HERZ - biomass boilers exceed the strict emission regulations.

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