Forward-looking and energy efficient **Biomass heating**







- Large buildings
- Hotel complexes
- Housing estate projects



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



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.





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

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



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

(10)

- 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 le

- system (no mechanical level control - thereby insensitive) and double stoker screw
- BBP (back burn protection device; flap)
 BBI (back burn inhibit device; sprinkler system)
- 3. T-CONTROL central control unit

(12)

(6)

(3)

(10)

- 4. Automatic ignition using hot air fans
- 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 ...





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 ...



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



Double vertical filling system At double installations 2 vertical screws

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.



Dimensions & technical data firematic 349-501



firematic 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 k	2010	2010	2010	2010	2010	2010
Weight heat exchanger module k	1960	1960	1960	1960	1960	1960
Total weight (including push-in and casing) k	4393	4393	4393	4393	4393	4393
Combustion efficiency ηF	>94	>94	>94	>94	>94	>94
Permissible operating pressure ba	r 5,0	5,0	5,0	5,0	5,0	5,0
Max. permissible operating temperature °	95	95	95	95	95	95
Water capacity It	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 partic-le size P16B, P31,5 or P45A ÖNORM M7133: G30-G50

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Wood pellets

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

Swisspellet

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• Advice during the planning phase

- Planning of installation & chamber discharge according to customer requirements and local conditions
- Comprehensive services
- HERZ training:
 - for the plant operators
 - for planners and technical offices
 - for installers and assemblers
 - as well as continuous training of the maintenance staff



Your partner:

♥ Herz®

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HERZ biomass systems fall below the strictest emission regulations.

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