

HERZ biomass boilers 100 to 20,000 kW



- **Warmwater** boilers
- **Hotwater** boilers
- **Steam** boilers
- **Thermal Oil** boiler
- **Hot-air** systems
- **Eligible** for RHI Guarantee Scheme



Competence is our success ...

HERZ FACTS:

- 22 companies
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 2,400 employees in over 85 countries
- 22 production sites



HERZ Armaturen GmbH - The company

Founded in 1896, HERZ has been continuously active in the market for more than 120 years. With 8 sites within Austria, another 14 in Europe and more than 2.400 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.



MYRIAD

HEAT AND POWER PRODUCTS

Myriad Heat and Power Products Ltd

Installing biomass systems in the UK since 2002.

Myriad Heat and Power Products is at the forefront of boiler and CHP system design. Specialising in commercial and industrial heating, supplying chip and pellet solutions ranging from 10kW up to 10,000kW.

We offer a full turnkey service from survey and design through to installation and ongoing service and maintenance with our National network of trained biomass engineers.

We firmly believe in offering quality systems, and the Herz biomass boiler range is one of the best brands to be brought to the market. Commercial systems up to 1.5MW with low thermal mass design for fast response and close control. Easy to install and a compact system design.




Ofgem RHI approved and Clean Air Act certified highly efficient boilers.







Fuel Range

HERZ offers a wide variety of different combustion systems for different fuels. Below is an overview of the various systems.

We are happy to test your fuel in our test center and will advise you of your optimum combustion system.

Combustion systems→		RRF	SRF-S	TSRF	WID
	Shredded demolition & packaging wood	●	●	●	
	Recycled Wood Waste (A/B)		●	●	
	Grade C Waste Wood				●
	Swarf	●		●	
	Saw dust	●		●	
	Shavings-millings	●	●	●	
	Chipboard, MDF	●	●	●	

Combustion systems→		RRF	SRF-S	TSRF	BLRF
	Bark		●		
	Virgin Wood Chip	●	●	●	
	Wood based energy crops (miscanthus)		●	●	
	Tree surgery cutting		●	●	
	Wood pellets	●		●	
	Industrial pellets	●		●	
	Turf pellets, agro-pellets			●	
	Broiler Chicken Litter				●

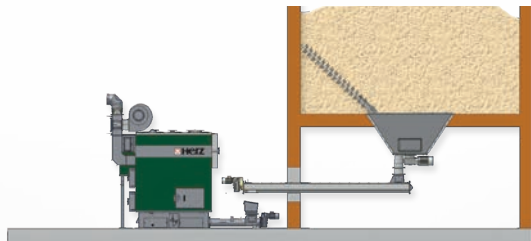
Boiler range

HERZ offers boilers with a nominal capacity from 100 kW to produce warm and hotwater, saturated steam, superheated steam, hot air and hot gas as well as CHP. The biggest advantage of HERZ is total flexibility. True to the motto "Nothing is impossible" our engineers will seek to provide an optimum solution for your requirements.

BOILER		W20	W30	W40	W50
RRK 130-250	TSRF	224	210	200	
	SRF		210	200	185
RRK 200-350	TSRF	333	314	300	
	SRF		314	300	281
RRK 400-600	TSRF	562	526	500	
	SRF		526	500	464
RRK 640-850	TSRF	938	881	840	
	SRF		881	840	785
RRK 1000	TSRF	1337	1257	1200	
	SRF		1257	1200	1122
RRK 1200-1650	TSRF	1833	1725	1650	
	SRF		1725	1650	1547
RRK 1800-2300	TSRF	2332	2194	2100	
	SRF		2194	2100	1971
RRK 2500-3000	TSRF	3319	3129	3000	
	SRF		3129	3000	2821
RRK 5M	TSRF	5518	5203	5000	
	SRF		5203	5000	4715

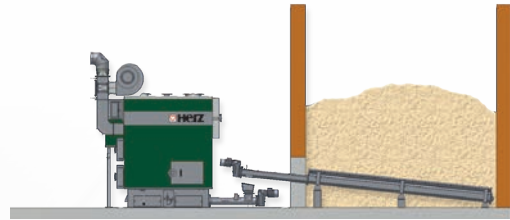
Discharge systems

SS - Tapered Sweep Auger



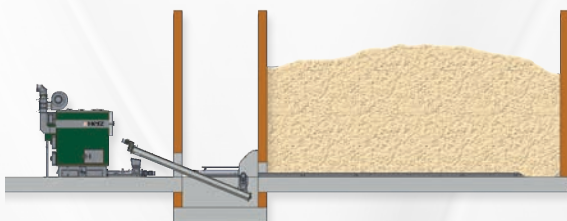
- for granulated fuels up to P63*
- For silos accessible from the bottom up to 7m \varnothing
- Filling height up to 20m*

KA - Sweep Arm Agitator



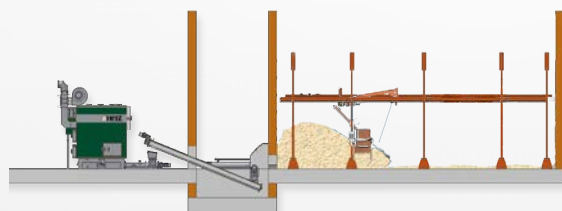
- for granulated fuels up to P63*
- Filling height up to 7m (depending on fuel bulk density)*

SBA - Walking Floor



- for coarse and shredded fuels up to size class P120* (slivers up to 35cm long) with hydraulic ram infeed
- with transport auger up to P63*

TL - Top Loading System



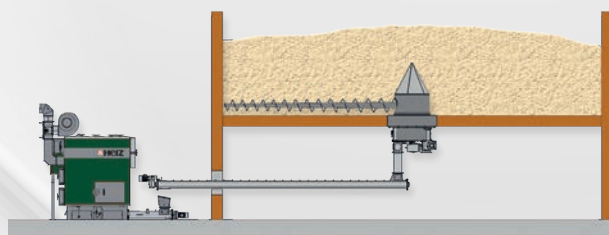
- for granulated fuels up to P63*
- Height: 3m / Width 4-6m
- Filling length up to 20m*

Transport systems

HERZ offers different types of transport systems like Transport auger (TS), direct hydraulic ram (QFE), chain conveyors (KKF) Spring arm agitators and crane systems.

These systems are suitable for the following max. size classes (acc. To OENORM EN 14961):

WS - Horizontal Sweep Auger



- for granulated fuels up to P63*
- For silos accessible from the bottom
- Filling height up to 30m*

*)...Size class specifications and storage heights are for guidance only, as they depend on the actual kind of fuel and design variant. Beware of bridging which might occur on a storage height that exceeds twice the silo width.

Combustion systems

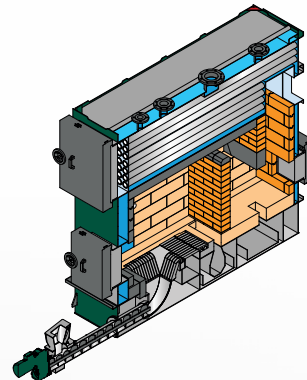
Underfed Hearth Combustion Unit RRF

Combustion with hearth and rear grate section with hinged cast steel elements. Integrated ash trays and optional de-ashing with auger. Completely refractory lined and stoichiometrically designed primary and secondary combustion air zones.

max. fuel water content up to M30

max. fuel ash content $\leq 1,5\%$

Available from 100 kW Nominal capacity



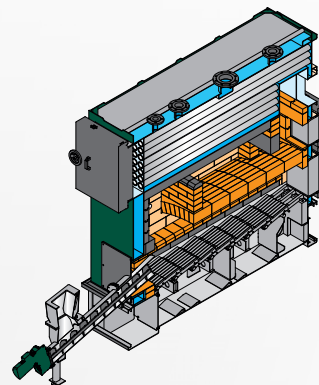
Moving Grate Combustion Unit for Dry Fuels TSRF

Combustion with hydraulically or electro-mechanically operated grate, for combustion of dry fuels with high ash content. Fully automatic de-ashing of the combustion unit with ash scraper below grate and ash auger. Completely refractory lined combustion chamber. Stoichiometrically designed primary and secondary combustion air zones. Alternatively with auger or hydraulic infeed.

max. fuel water content M40 (more than M50 with preheater Luvo)

max. fuel ash content $\leq 7\%$

Available from 150 kW nominal capacity



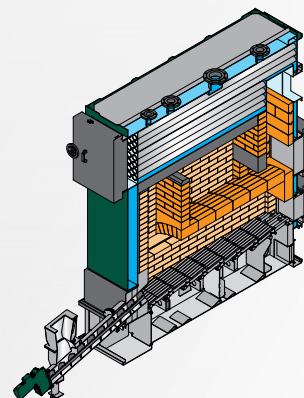
Moving Grate Combustion Unit SRF

Combustion unit with hydraulically or electro-mechanically operated grate, for combustion of wet materials with high ash content. Fully automatic de-ashing of the combustion unit with ash scraper below grate and ash auger. Completely refractory lined and Stoichiometrically designed primary and secondary combustion air zones. Alternatively with auger or hydraulic infeed.

max. fuel water content M50 (more than M60 with preheater Luvo)

max. fuel ash content $\leq 7\%$

Available from 150 kW nominal capacity



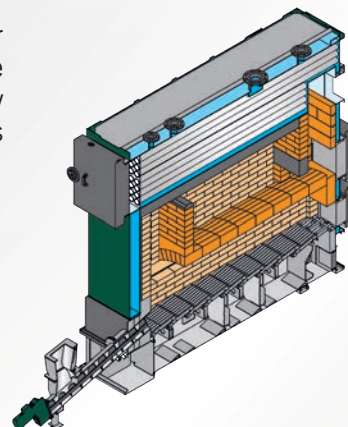
Moving Grate Combustion Unit WID

Combustion unit with hydraulically or electro-mechanically operated grate, for combustion of waste wood with contaminants. Fully automatic de-ashing of the combustion unit with ash scraper below grate and ash auger. Completely refractory lined and Stoichiometrically designed primary and secondary combustion air zones giving a gas residence time of 2 seconds at 850°C as required by WID. Alternatively with auger or hydraulic infeed.

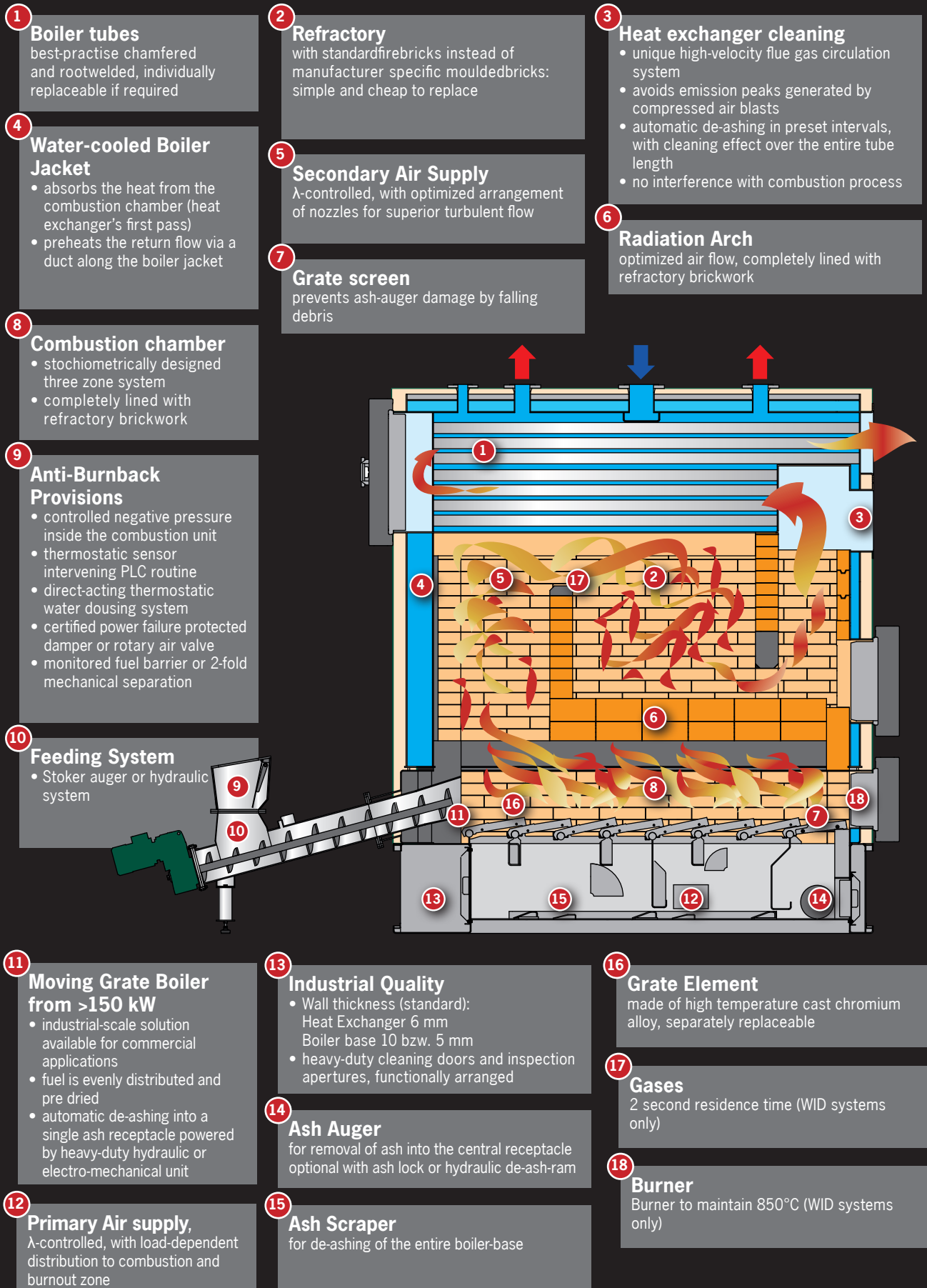
max. fuel water content M50

max. fuel ash content $\leq 7\%$

Available from 995 kW nominal capacity



Warm and Hotwater Systems



CHP Options

Financial Incentives for CHP from Solid Fuels

Mechanism

Thermal combustion of solid biomass to either heat a medium (water, steam, thermal oil) or using hot flue gasses directly in a turbine or screw expander generation plant.

RHI Thermal subsidy

(current support levels, subject to digression)

4.1 p/kWh, no cap on usage

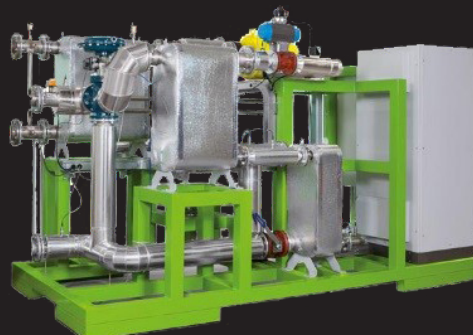
Large commercial combustion unit delivering flue gas to an ORC generator

Fuel Type	Wood Chips
Fuel specification	G30, 50 or 100 / W10, 30, 40 or 50
Electrical output	175 kW
Thermal output	650 kW
Fuel consumption	550kg/hr / 4,000T/yr
Overall efficiency	80-85%
Electrical efficiency	16% (gross)



Large commercial combustion unit delivering hot water to an ORC generator

Fuel Type	Wood Chips
Fuel specification	G30, 50 or 100 / W10, 30, 40 or 50
Electrical output	105 kW
Thermal output	1,150 kW
Fuel consumption	550kg/hr / 4,000T/yr
Overall efficiency	80-85%
Electrical efficiency	14% (gross)



Notes and glossary:

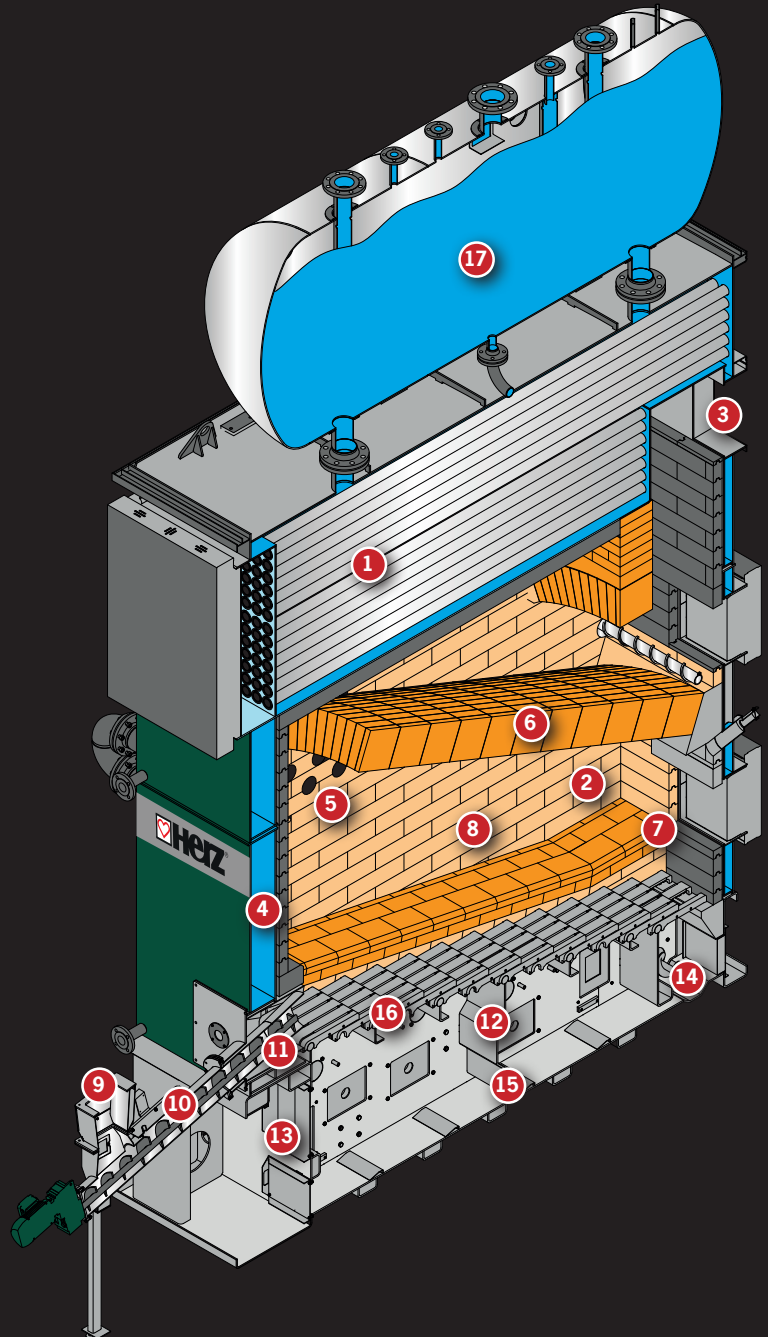
- ROC: Renewable Obligation Certificate
- RHI: Renewable Heat Incentive
- Electrical efficiency: Electrical output divided by total energy input
- Gross electrical efficiency: excludes parasitic loads. Net electrical efficiency is lower as parasitic loads are deducted
- All fuel consumption is based on 7500 full load hours per year

Steam Boiler

Saturated steam boiler

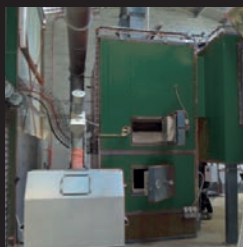
Available from nominal capacity of 200 kW upwards, combinable with all HERZ combustion systems, for the production of saturated steam. Working pressure up to 22 barG available, higher pressure on demand.

- ① Boiler tubes
- ② Refractory
- ③ Heat exchanger cleaning
- ④ Water-cooled boiler jacket
- ⑤ Secondary Air Supply
- ⑥ Radiation Arch
- ⑦ Grate screen
- ⑧ Combustion chamber
- ⑨ Anti-Burnback Provisions
- ⑩ Infeed
- ⑪ Moving grate boiler >150 kW
- ⑫ Primary Air supply
- ⑬ Industrial quality
- ⑭ Ash auger
- ⑮ Ash scraper
- ⑯ Grate element
- ⑰ Steam dome (external or integrated)



Hot Gas Generator

Available from nominal capacity of 200 kW upwards, combinable with all HERZ combustion systems. For the production of hot flue gases, optional with flow optimized mixing chamber.



HERZ customer-oriented...



Consulting



Planning



Manufacturing



Project Management



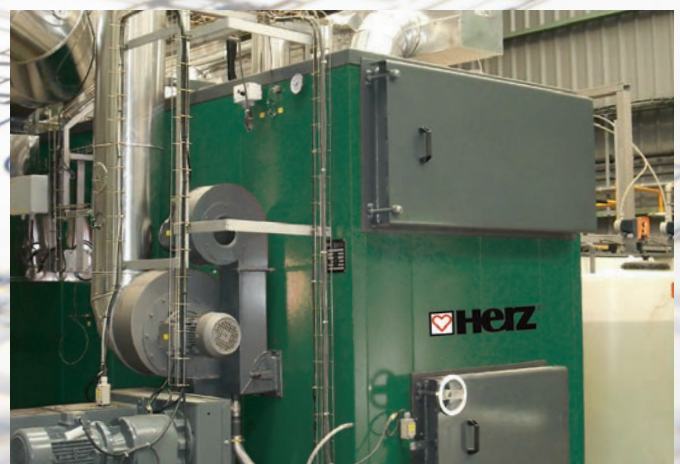
Assembling



Commissioning



Support



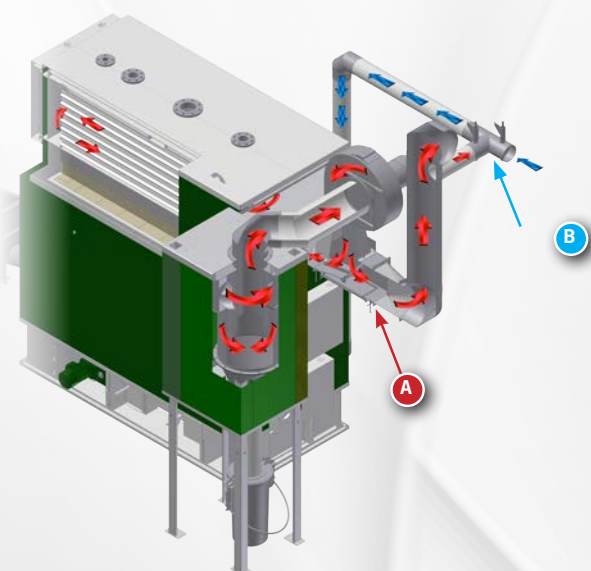
A

Automatic High Velocity Cleaning System HV

With the HV system the cleaned flue gases (after passing the cyclone separator) are blown back into the heat exchanger through a non-return flap at high speeds to clean the heat exchanger tubes.

High velocity cleaning at preset intervals without interfering with normal operation.

- Prevents dust deposition over the whole length of the heat exchanger pipes, maintaining a constant high efficiency
- Reduces maintenance to 1-2 basic procedures per year
- Protects against boiler corrosion

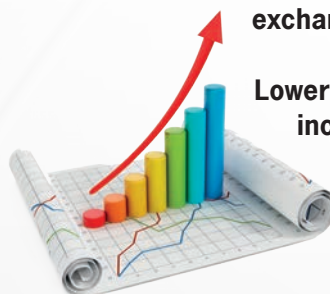


B

Flue Gas Recirculation

Depending on the temperature in the combustion chamber the recirculation system adds a regulated amount of flue gas to the combustion air.

Because of the greater volume of flue gas in the combustion chamber, more heat is dissipated from here towards the heat exchanger.



Lower temperatures also increase the lifespan of the refractory and the grate.

The flue gas recirculation system is particularly recommended for fuels with either a high calorific value, low ash fusion point, or a high nitrogen content.

3D Visualization

The innovative **HERZ 3D Visualization** is created from your individual layout plan.

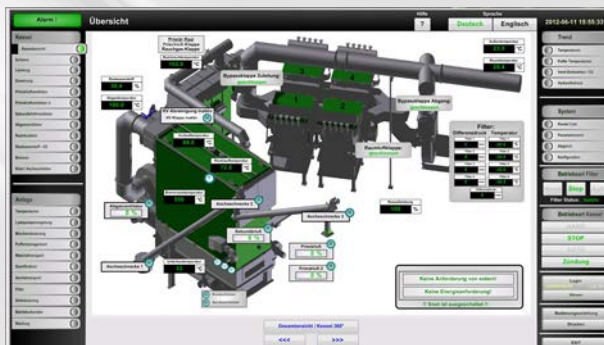
Individually designed setting windows and the included data logging, and also the possibility to integrate the HERZ combustion chamber camera completed the package.

If an Internet connection is available it is possible to log in to the boiler control unit and make adjustments at any time you want.

Capacity and Combustion Control CVP

Features a fully modulating computer control that permanently assesses the actual load, adjusts the fuel feed accordingly and matches it with the continuously variable air supply.

- Reacts dynamically to changes in the combustion process through the Lambda O₂ control
- Variable air volumes are automatically compensated by the integrated negative pressure control
- Speed-controlled fans minimise electric power consumption
- Provides an optimal efficiency over the entire output range of the boiler.



Know-How & Reliability

High Overall Efficiency Across the Output Range

HERZ boilers achieve efficiency ratings of over 92 percent¹.

- The CVP control package gives fully modulating capacity control from 20-100%
- Speed-control on all fans minimises the electric power consumption
- The Lambda O2 regulation improves efficiency and brings out the most of your fuel
- High quality engineering with a minimum of maintenance required provides for high availability

1)...audit report A-1211-1/18d-06, NUA Umweltanalytik GmbH



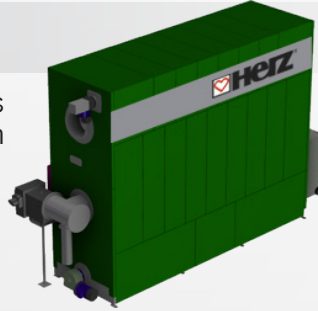
Lambda O2 Regulation

Uses the exhaust O₂ level as an efficient indicator for complete combustion:

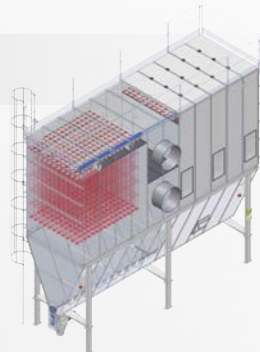
- Reacts to fuel variations by automatically adjusting the air intake and/or fuel supply
- Provides a stable combustion without emissions peaks even where fuel quality varies.

Flue Gas Cleaning

To comply with the legal emission limits, special filters have to be used. HERZ offers optimized filtration systems for your needs.



Electrostatic precipitators



Metal Sleeve filters

References



Boiler type: RRK 1000 | Cap. 2 x 1000kW / Steam. 1.7to/h (each)



Boiler type: DK 640-850 SRF | Capacity: 840kW / Steam. 1,3to/h



Boiler type: RRK 400-600 RRF | Capacity: 500kW



Waste Wood
Boiler type: RRK 200-350 u. RRK 1000 | Capacity: 300kW u. 1200 kW



Boiler type: RRK 400-600 SRF | Capacity: 500kW



Boiler type: RRK 200-350 TSRF | Capacity: 300kW



Boiler type: 4x RRK 200-350 and 2x RRK 200-600 SRF



Boiler type: 1200-1650 SRF | Capacity: 1600kW

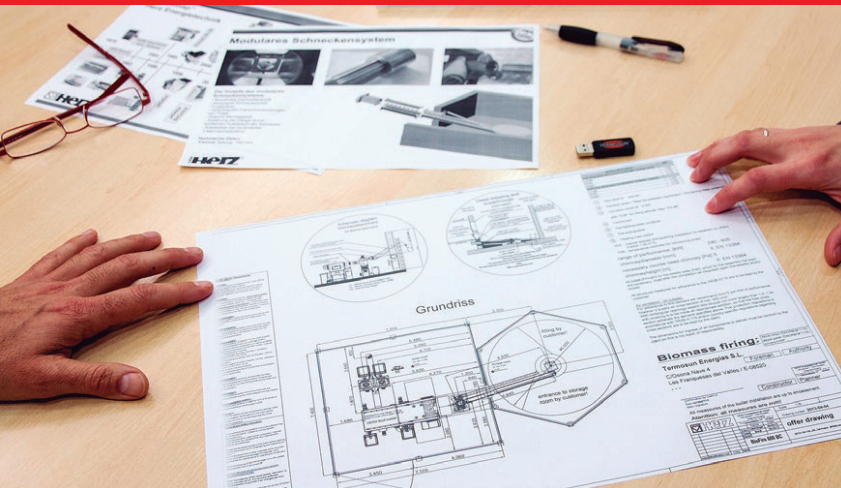


Boiler type: 2500-3000 SRF | Capacity: 3000kW



Boiler type: 6-7M TSRF | Capacity: 7000kW

HERZ customer-oriented...



- Advice during the planning phase
- Planning of the plant and discharge system according to customer requirements and local conditions
- Comprehensive services
- HERZ trainings:
 - for the plant operators
 - for planners and technical offices
 - for installers and assemblers
 - as well as continuous training of the maintenance staff



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HERZ biomass systems fall below the strictest emission regulations.

