

Biomass boiler (500 kW)

REH500eco
RENEWABLE ENERGY HEATER

environmentally friendly, decentralized energy supply

Increasing demand and decreasing resources of fossil fuels have brought the use of biomass as an energy carrier in the foreground. Biomass is an important energy source which is often locally and cheaply available. Fuels from biomass sets major challenges for the combustion technology. Operating comfort, product reliability and emissions must have the same standard as conventionally boilers. In order to meet the requirements Werkstätten heating-systems GmbH has developed a new concept for combustion of biomass.

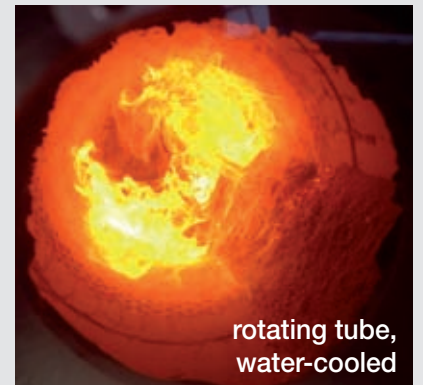
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This combustion technology can use with high efficiency and low emissions following biomass fuel energetic:

- ▲ Wood chips, straw, palm kernel shells, olive stones / -residue, seeds from fruits and berries, oil seed expeller, waste wood
- ▲ Energy plants such as elephant grass and fast-growing trees
- ▲ Fiber residues from biogas plants, mash from breweries and other organic waste, dried, loose or compressed
- ▲ Foliage, horse dung, coffee and cacao deposit
- ▲ Sludge from industrial wastewater treatment plants, dried

The easy to use, self-cleaning and fully automatically combustion technology has an innovative, water-cooled rotary kiln with a number of advantages:

- ▲ Suitable for fuels with low ash melting point and a high ash content (up to 25%)
- ▲ The combustion extends over the length of the rotating tube with a turbulent jet fan
- ▲ All components from the boiler which are exposed to wear out and/or thermal loads, are lined with refractory and wear resistant concrete or ceramic
- ▲ In an isolated afterburning chamber, the flue gases are fully burned out at least 850 °C and residence time of two seconds, before the flue gases enters the heat exchanger
- ▲ The emission values for CO, NO_x and dust are well below the requirements of the 4. BImSchV (TA Luft)
- ▲ The powdery ash is low carbon and free from slag; the containing nutrient salts are available for the plants and could use as dung.



rotating tube,
water-cooled

WERKSTÄTTEN heating - systems GmbH

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... ein Unternehmen der Werkstätten-Gruppe

The boiler technology sets new standards in environmentally friendly energy production.

For example: local heating plant from cities/small towns; for heating of animal housing and commercial properties; process energy for industrial and drying plants or for taking over the basic load supply in existing district heating networks with locally available fuels.

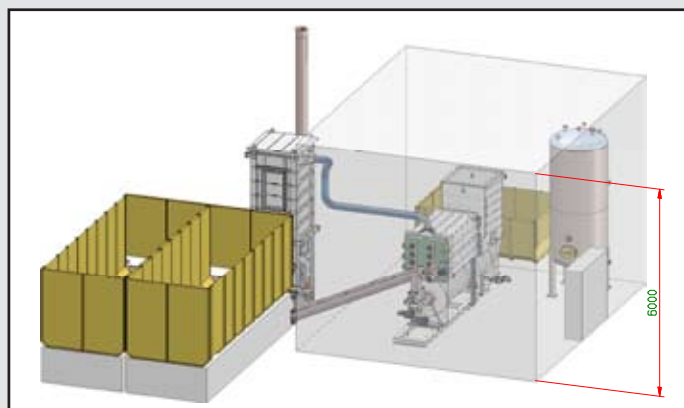
Specifications:

nominal heat output: 300 – 500 kW
part load: 150 kW
permissible flow temperature: 90-110°C
permissible operating pressure: 2,5 bar
rating: CE approved, modular structure; DIN EN 303-5 certified

main dimensions:

total height: approx. 3370 mm
total length: approx. 5890 mm
total width: approx. 1940 mm
height of flue gas connection: 3700 mm
basic weight: 8600 kg
total weight: approx. 11000 kg
water content: approx. 2400 l

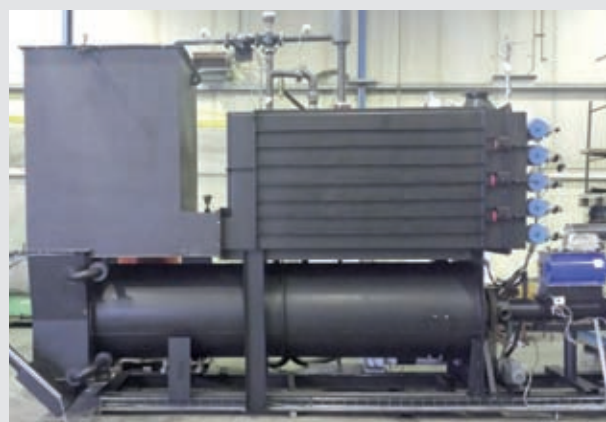
flow connections: Flange DN 80 PN6
return connections: Flange DN 80 PN6
charging rate: <3kW
protection category: Ip54



project example

Special characteristics of the REH500eco:

- ▲ Modular structure and container solutions offers flexible implementation on location
- ▲ Flexible PLC-control for boiler integrating upstream and downstream components
- ▲ Oxygen and load regulation by automatically rate. Burning by dynamic PLC-control
- ▲ PLC-control visualization offering remote monitoring and the support by manufacturer
- ▲ Water-cooled, rotating combustion zone with turbulent jet fan to supply the fuel with combustion air
- ▲ Full automatic energy-efficient usage of various biomass
- ▲ Slag free combustion of difficult biomass with high ash content and low ash melting point
- ▲ Very low carbon monoxide content in flue gas avoiding sticking in the heat exchanger
- ▲ Nearly stoichiometric fuel rate in the innovative rotary kiln
- ▲ Highly efficiency through constant agitation of the material
- ▲ Automatic ignition
- ▲ Automatic ash removal



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