

Unload, connect - ready!

This semi-mobile heating system is delivered ready for use! Supply line and return line are connected to the large heat exchanger of the TopBio heating system. The separation of the heating systems increases operating safety. Only connections for water and power supply are required.

This biomass heating system is PLC-controlled and works autonomously, from the fuel feed via the combustion automatically adjusted to the required heat until the ash removal. The TopBio heating system can also be controlled via remote monitoring by means of a computer connection.

Your advantages:

- ▶ No building measures required
- ▶ Privileged approvals for systems operated with standard biomass fuels up to 1 WW
- ▶ Additional flue gas cleaning for all biomass types, also possible for fuels in accordance with German Federal Immission Protection Ordinance, articles 4 and 17 (BImSchV 4 and BImSchV 17) (modular design)
- ▶ Engineers and companies specialised in heating systems advise you about legal regulations for the use of special fuels.
- ▶ CE certified system (DEKRA)



Application fields

- ▶ Industrial facilities and food production
- ▶ Public buildings, indoor swimming pools, hotels, old-age homes, housing complexes, schools, hospitals
- ▶ Building areas with district heating system
- ▶ Farms and forest enterprises
- ▶ Biogas plants
- ▶ Combinations with: refrigerator systems, ORC power systems, buffer storage systems



Exclusive distribution:

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www.vebagag.com

TOPBIO
Biomasse-Heizsystem

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▶ compact ▶ flexible ▶ modular ▶ mobile ▶ adjustable

... naturally generated energy!

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Fuels

- ▶ A variety of regional biomasses and biomass mixtures
- ▶ Biomass fuels do not compete with food production
- ▶ Miscanthus, straw pellets, hay pellets
- ▶ Cereal grains, husks
- ▶ Dried pressing residues, pomace, digestates
- ▶ Wood chips, wood pellets
- ▶ Pellets made from horse bedding, dung, colza cake etc.
- ▶ Landscape care material
- ▶ For each suitable fuel, a combustion test with flue gas emission measurement can be carried out.
- ▶ Fuels can be varied

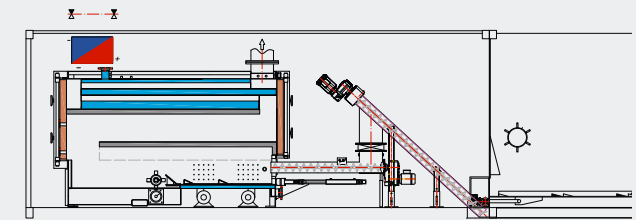
Note:

For the selection of fuels, all legal regulations have to be observed. Special fuel types require additional flue gas cleaning.

Your advantages Experience with the use of ultra-modern and complex technologies

- ▶ Long-term experience with construction of heating systems
- ▶ Energy efficiency up to 85%
- ▶ System can be adjusted to different biomass fuels (potentials for saving)
- ▶ Also suited for special fuels (with appropriate supervision, processing and flue gas cleaning)
- ▶ Automatic fuel feed and ignition
- ▶ Water-cooled combustion cavity made of stainless steel
- ▶ No slag caking in the heating boiler
- ▶ The hydraulically operated ash removal system regulates the slag removal even with different slag melting points
- ▶ Powerful slag breaker and stable screw conveyor for slag removal
- ▶ Double tunnel vault with post-combustion of flue gases to ensure optimal combustion and low emission of pollutants, even for fuels with high water content:
 - optimal combustion behavior
 - low flue gas emissions
- ▶ Fully automated ash removal
- ▶ Flue gas controlled (Lambda regulation) control and regulation technology with integrated performance adjustment
- ▶ Clean combustion even of polluted fuels and fuel mixtures

- ▶ Primary and secondary air supply into the combustion cavity ensures optimal combustion and high efficiency
- ▶ Automated adjustment of combustion performance (continuously variable between 100 % -> 30%) depending on the required heat
- ▶ Large-sized heat exchangers to separate the heating systems
- ▶ DEKRA-certified safety devices:
 - automatic system shutdown, also in case of power failure
 - double burn-back protection
 - highly durable due to compact industrial design
- ▶ The system meets the requirements of different government subsidy schemes for the energy turnaround and for the exploitation of renewable resources.



Wood chips



Pellets



Straw



Husks



Miscanthus

... and many more types of biomass and fuel mixtures!

Complete solutions

- ▶ Semi-mobile design
- ▶ Ready-for-use units in mobile container modules
- ▶ Firing combined with heating boiler
- ▶ Electronic control with remote monitoring, additional remote control is possible via computer or iPad (RMM-Remote Monitoring and Management)
- ▶ Automated fuel feed with coordinated screw conveyor and belt conveyor systems, automated ignition and ash removal
- ▶ Supply depot in combined container
- ▶ Optional: fuel delivery systems with swap container

- ▶ Optional: flue gas cleaning system
- ▶ Optional: buffer storage to ensure heat availability in case of interruption and during consumption peaks
- ▶ Optional: ORC process connection for power generation
- ▶ Optional: connection of absorption refrigeration systems
- ▶ The format of the shipping container is the dimension unit for the modular system: standard dimensions ensure favorable transport routes, good planning reliability, high stability and variable shaping possibilities.