THE FUTURE OF HEATING

Biotech

THE FUTURE OF HEATING
BIOTECH: A SUCCESS STORY

AWARDS

Recommended by EcoTopTen (a project of German ecologic research institute Öko-Institut) for calorific power units up to 16 kW and other 16 kW!

www.ecotop ten.de
Biotech, the specialist in biomass systems, boasts over ten year experience in the development and manufacturing of biomass boilers. Boosted by its idealism and willingness to do, on 1996 Biotech began to adopt a tailor made boiler to an energy source not yet well-known at that time, i.e. the wood pellets.

Such boiler had to meet the following objectives: space-saving design, fitted with user friendly electronic control, optimized to require a minimum amount of time and resources to the plant manager and to guarantee the highest possible yield. The feeding system variants too had to meet so demanding requirements while providing very high availability. Biotech immediately reached such objectives and very quickly developed a worldwide sales network.

The company attaches great importance to the research and development department, where new types of boilers are continuously tested and the existing ones constantly improved. The revolutionary DCC- dual combustion control®, technique, based upon air flow sensors and lambda probe, has been adopted for the first time on a Biotech pellet boiler since 1997 and now it's a fundamental item of every boiler manufactured by the company.

The company’s objective is to offer their customers the best solution using the existing standard systems. To this purpose, the Biotech Energietechnik GmbH product portfolio has been enhanced with accumulators and solar modules. With the Biotech technology you will always be a step ahead.
PELLET BOILER HEATING PRINCIPLE

The suction turbine (4) creates a vacuum to bring the pellets from the main storage area into the daily tank (1). The feed auger (6) transports the pellets into the combustion chamber (8). The automatic ignition (9) device starts the combustion process. Our DCC (Dual Combustion Control) system controls the combustion process by means of the lambda probe (7) and the air flow sensors (10). The lambda probe synchronises the feed auger and the oxygen flow to achieve our high efficiency. This guarantees optimum efficiency at the various power output levels. The heat exchanger (11) transfers the combustion heat to the water within the boiler. The cleaning of the combustion system and the heat exchanger is automatic.
The stoker auger conveys the fuel towards the combustion chamber (the filling level is controlled by the fuel sensor) and the ignition is provided by a hot air fan. The primary air is conveyed through the grate by means of a speed controlled fan. The secondary air is blown through the post-combustion elements by another speed controlled fan. The regulation is carried out depending on the boiler power, the lambda value and the depression rate, inside the combustion chamber. The combusted gases flow through the multi-way tube bundle heat exchanger and transfer heat to the boiler water with the support of special cleaning tabs. The extraction fan generates the required depression, which is controlled and adjusted by the relevant depression metering device. The ash produced by the combustion process is conveyed towards the ash removal auger by means of special cleaning elements.
PELLET BOILERS TOP LIGHT SERIES

MODEL CONSISTING OF

- Automatic pellet ignition unit
- Large ash box, including ash compactor
- Lambda probe with air flow sensors (primary and secondary air)
- Microprocessor based control unit with menu driven graphic display
- Self-cleaning tube bundle heat exchanger
- Intermediate pellet tank with separator (incl. max. level indicator) and suction turbine
- Extraction fan and secondary air fan with speed control

FEATURES

- Program for boiler loading with boiler probe and for buffer accumulator loading included in the standard supply
- Easy installation in the boiler room: boiler, intermediate tank and covers separately packed
- All connection points such as delivery and return lines, chimney outlet and vent located on the upper part: the TopLight series systems can be installed against the left and rear walls!

SERIE TOP LIGHT

<table>
<thead>
<tr>
<th></th>
<th>Top Light</th>
<th>Top Light M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kW)</td>
<td>9,2</td>
<td>14,9</td>
</tr>
<tr>
<td>Part load heat capacity (kW)</td>
<td>2,40</td>
<td>4,50</td>
</tr>
<tr>
<td>Boiler width (mm)</td>
<td>900</td>
<td>1060</td>
</tr>
<tr>
<td>Overall depth (mm)</td>
<td>620 ¹</td>
<td>825 ¹</td>
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<tr>
<td>Boiler height (mm)</td>
<td>1400 ²</td>
<td>1345 ²</td>
</tr>
<tr>
<td>Overall weight (kg)</td>
<td>245</td>
<td>312</td>
</tr>
</tbody>
</table>

¹ excl. adjustable feet ² incl. regulation

User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display.

Operation independent of the chosen fuel. The automatic fuel recognition system is automatically setup according to the fuel quality characteristics.

“Der Blaue Engel” marking and ecological quality Austrian marking.
PELLET BOILERS TLM MBW

FEATURES
- Program for boiler loading with boiler probe and for buffer accumulator loading included in the standard supply
- Easy installation in the boiler room: boiler, intermediate tank and covers separately packed
- All connection points such as delivery and return lines, chimney outlet and vent located on the upper part: the TopLight series systems can be installed against the left and rear walls!

MODEL CONSISTING OF
- Automatic pellet ignition unit
- Large ash box, including ash compactor
- Lambda probe with air flow sensors (primary and secondary air)
- Microprocessor based control unit with menu driven graphic display
- Manual cleaning of heat exchanger (lever)
- Extraction fan and secondary air fan with speed control

SERIE TOP LIGHT

<table>
<thead>
<tr>
<th></th>
<th>TLM MBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kW)</td>
<td>14,9</td>
</tr>
<tr>
<td>Part load heat capacity (kW)</td>
<td>4,50</td>
</tr>
<tr>
<td>Boiler width (mm)</td>
<td>1300</td>
</tr>
<tr>
<td>Overall depth (mm)</td>
<td>680 ¹</td>
</tr>
<tr>
<td>Boiler height (mm)</td>
<td>1345 ¹</td>
</tr>
<tr>
<td>Overall weight (kg)</td>
<td>334</td>
</tr>
</tbody>
</table>

¹) excl. adjustable feet 2) incl. regulation

Intermediate pellet tank with manual filling cover on the top (easy to open)

Manual cleaning of heat exchanger
The cleaning system must be manually operated by means of a lever.

“Der Blaue Engel” marking and ecological quality Austrian marking.
User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display

Operation independent of the chosen fuel. The automatic fuel recognition system is automatically setup according to the fuel quality characteristics

"Der Blaue Engel" marking and ecological quality Austrian marking.*

**MODEL CONSISTING OF**
- Automatic pellet ignition unit
- Large ash box, including ash compactor
- Lambda probe with air flow sensors (primary and secondary air)
- Microprocessor based control unit with menu driven graphic display
- Self-cleaning tube bundle heat exchanger
- Intermediate pellet tank with separator (incl. max. level indicator) and suction turbine
- Extraction fan and secondary air fan with speed control

**FEATURES**
- Program for boiler loading with boiler probe and for buffer accumulator loading included in the standard supply
- Easy installation in the boiler room: boiler, intermediate tank and covers separately packed
- All connection points such as delivery and return lines, chimney outlet and vent located on the rear side
- * PZ25RL: "Der Blaue Engel" marking and ecological quality Austrian marking

**SERIE PZ**

<table>
<thead>
<tr>
<th>Model</th>
<th>PZ8RL</th>
<th>PZ25RL</th>
<th>PZ35RL</th>
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<tbody>
<tr>
<td>Power (kW)</td>
<td>14.5</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Part load heat capacity (kW)</td>
<td>4.10</td>
<td>6.70</td>
<td>8.30</td>
</tr>
<tr>
<td>Boiler width (mm)</td>
<td>1050</td>
<td>1300</td>
<td>1300</td>
</tr>
<tr>
<td>Overall height (mm)</td>
<td>1365</td>
<td>1520</td>
<td>1770</td>
</tr>
<tr>
<td>Overall weight (kg)</td>
<td>269</td>
<td>335</td>
<td>388</td>
</tr>
</tbody>
</table>

1) excl. adjustable feet 2) incl. regulation
User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display.

Operation independent of the chosen fuel. The automatic fuel recognition system is automatically setup according to the fuel quality characteristics.

MODEL CONSISTING OF
- Automatic pellet ignition unit
- Large ash box with automatic ash extraction system
- Lambda probe with air flow sensors (primary and secondary air)
- Microprocessor based control unit with menu driven graphic display
- Self-cleaning tube bundle heat exchanger
- Extraction fan and secondary air fan with speed control
- Removable control unit available as room controller

FEATURES
- Remote service through SMS mobile BCL module
- Parameter query and modification with BHZS visualization software
- Easy installation in the boiler room: boiler, intermediate tank and covers separately packed

Buffer accumulator and Internet connection required at the boiler room for remote boiler service!

SERIE PZ

<table>
<thead>
<tr>
<th></th>
<th>PZ65RL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kW)</td>
<td>64,9</td>
</tr>
<tr>
<td>Part load heat capacity (kW)</td>
<td>18,00</td>
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<tr>
<td>Boiler width (mm)</td>
<td>1891,50</td>
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<tr>
<td>Overall depth (mm)</td>
<td>1375</td>
</tr>
<tr>
<td>Boiler height (mm)</td>
<td>1833,50</td>
</tr>
<tr>
<td>Overall weight (kg)</td>
<td>920</td>
</tr>
</tbody>
</table>

1) incl. adjustable feet
2) incl. heat exchanger cleaning motor (WTR)
PRODUCTION

PELLET BOILERS PZ100RL

User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display.

Operation independent of the chosen fuel. The automatic fuel recognition system is automatically setup according to the fuel quality characteristics.

BHVS visualization software

MODEL CONSISTING OF

- Automatic pellet ignition unit
- Large ash box with automatic ash extraction system
- Lambda probe with air flow sensors (primary and secondary air)
- Microprocessor based control unit with menu driven graphic display
- Self-cleaning tube bundle heat exchanger
- 2 feeding systems for double safety operation
- Extraction fan and secondary air fan with speed control
- Removable control unit available as room controller

FEATURES

- Remote service through SMS mobile BCL module
- Parameter query and modification with BHVS visualization software
- Easy installation in the boiler room: boiler, intermediate tank and covers separately packed
- Chimney outlet available on either upper or front side

SERIE PZ

<table>
<thead>
<tr>
<th>PZ100RL</th>
<th>Power (kW)</th>
<th>Part load heat capacity (kW)</th>
<th>Boiler width (mm)</th>
<th>Overall depth (mm)</th>
<th>Boiler height (mm)</th>
<th>Overall weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99,9</td>
<td>24,30</td>
<td>1891,50</td>
<td>1375</td>
<td>2020</td>
<td>1153</td>
</tr>
</tbody>
</table>

1) incl. ash box
2) incl. heat exchanger cleaning motor (WTR)
**DCC®** is a registered trademark of Biotech company and stands for **“DUAL COMBUSTION CONTROL®”**. This unique combustion technology is used in the most recent pellet boilers from Biotech and from several other leading boiler manufacturers, thanks to a special lambda probe and air flow sensors. The lambda probe is directly installed inside the flue and provides continuous data about the oxygen residues in combusted gases.

In combination with the air flow sensors, it allows the system to automatically recognize the pellet type used and to adjust the combustion parameters accordingly. The **DCC®** system allows obtaining a high efficiency degree and a reliable operation safety, as well as low emission values with every boiler power.
**PELLET STORAGE SYSTEM - PLS**

The Biotech PLS 2.2 system has been designed for efficient pellet storage. Its structure and execution is characterized by a high storage volume with a minimum space occupation. The single point suction system is implemented without using movable mechanical parts, thus resulting extremely cost effective. The anti-wear protection allows an easy filling-up while ensuring a long operation life. Save space with PLS 2.2 / N!

### FEATURES
- Storage value: about 5 tons with a density of 650 kg/m³
- Space used 2x2x1.9 / 2.205 m (depending on the type)
- Easy to install
- Motor not required
- Maintenance free
- Complete with intake system

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**PELLET STORAGE SYSTEM**

<table>
<thead>
<tr>
<th>Feature</th>
<th>PLS 2.2</th>
<th>PLS 2.2 N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>2205</td>
<td>1900</td>
</tr>
<tr>
<td>Depth</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Width</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Filling volume</td>
<td>ca. 5 To</td>
<td>ca. 4 To</td>
</tr>
</tbody>
</table>

1) incl. frame
The pellets are transported from the main depot to the boiler accessory tank using a suction turbine. The high flexibility of suction piping installation allows you to overcome any architectural obstacles. The Biotech feeding systems offer the perfect solution to every space problem. The best heating system location can be chosen freely in combination with the Biotech vacuum system.

Pellet suction probe. High flexibility at a reasonable price. Possibility of choosing the desired number of suction points.

Suction point. Two versions of suction points are available: for flat floor and slanted floor.

Pipe deviator. The manual pipe deviator can be used to drive up to 3 extraction systems (e.g. renewal air probe, suction points, bag type silo).

Auger based system. Ideal for rectangular depots with frontal pick-up. The depot can be almost completely emptied (wooden or metal bed inclined by 45°).

Underground tank. Suitable for space saving in new buildings. In this way the depot does not subtract space to the living area.

The available dimensions of the individual systems are indicated both on our design guides and on our price lists.
User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display.

“Der Blaue Engel” marking and ecological quality Austrian marking.

<table>
<thead>
<tr>
<th>MODEL CONSISTING OF</th>
<th>FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic wood chips ignition unit</td>
<td>Program for buffer accumulator loading included in the standard supply</td>
</tr>
<tr>
<td>Large ash box</td>
<td>Model HZ35 with inspection hole in the combustion chamber</td>
</tr>
<tr>
<td>Lambda probe, thermal probe and fuel sensor to ensure the best combustion</td>
<td>Stoker connection on the front side for model HZ35, and on left / right side for model HZ50</td>
</tr>
<tr>
<td>Brazier with tipping grate</td>
<td>Large access door to the combustion chamber for model HZ50</td>
</tr>
<tr>
<td>Falling trap with door to avoid backfire phenomena</td>
<td>Fully automatic cleaning of heating surfaces and brazier grate</td>
</tr>
<tr>
<td>Contact for external request</td>
<td>Standard wood chips up to G50 and W35</td>
</tr>
<tr>
<td>Multi-way tube bundle exchanger made of special steel plate</td>
<td>Thermal protection not required</td>
</tr>
</tbody>
</table>

**WOOD CHIP BOILERS HZ35 / HZ50**

**SERIE HZ**

<table>
<thead>
<tr>
<th>HZ35</th>
<th>HZ50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kW)</td>
<td>35</td>
</tr>
<tr>
<td>Part load heat capacity (kW)</td>
<td>11,00</td>
</tr>
<tr>
<td>Boiler width (mm)</td>
<td>700</td>
</tr>
<tr>
<td>Overall depth (mm)</td>
<td>1100</td>
</tr>
<tr>
<td>Boiler height (mm)</td>
<td>1310</td>
</tr>
<tr>
<td>Overall weight (kg)</td>
<td>450</td>
</tr>
</tbody>
</table>

1) excl. smoke extraction box
WOOD CHIP BOILERS HZ100 / HZ150

MODEL CONSISTING OF
- Automatic wood chips ignition unit
- Large ash box with automatic ash extraction
- Lambda probe, thermal probe and fuel sensor to ensure the best combustion
- Brazier with stepped grate
- Falling trap with door to avoid backfire phenomena
- Contact for external request
- Multi-way tube bundle exchanger made of special steel plate

FEATURES
- Program for buffer accumulator loading included in the standard supply
- Inspection hole in the combustion chamber
- Front stoker connection
- Automatic ash extraction
- Thermal protection not required
- Fully automatic cleaning of heating surfaces and brazier grate
- Standard wood chips up to G50 and W35

SERIE HZ

<table>
<thead>
<tr>
<th>HZ150 / HZ100</th>
<th>Power (kW)</th>
<th>Part load heat capacity (kW)</th>
<th>Boiler width (mm)</th>
<th>Overall depth (mm)</th>
<th>Boiler height (mm)</th>
<th>Overall weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>164 / 99,00</td>
<td>49,70</td>
<td>990</td>
<td>2210</td>
<td>1970 1</td>
<td>1350</td>
</tr>
</tbody>
</table>

1) excl. smoke extraction box

User friendly control system. Thanks to a modern microprocessor based control system fitted with LCD display

Inspection hole in the combustion chamber
The use of wood chips is particularly suitable for multi-family houses, farms and district heating applications. The feeding auger with wood chip extraction from depot is driven by a motor located on the boiler room. The feeding auger drives the mixer with leaf springs through an angular counter-gear. The wood chips fall onto the stoker auger, through a falling step.

**EXECUTION**

- Stoker channel connection available either on right or left side
- Max feeding auger length: 12 m
- Max diameter of leaf springs: 5 m

The above examples are merely indicative and cannot be applied 1:1 to your individual location! We will be glad to assist you in designing your boiler room!

**FEATURES**
GSM PELLET CONTROL
GSM WOOD CHIP CONTROL

GSM module
GSM modem connected to the boiler control unit

Display / GSM configuration

GSM MODULE CONSISTING IN
- Integrated RS 232 interface
- RS232 connection cable
- Magnetic antenna support foot
- 2 m antenna connection cable

ADDITIONALLY FOR WOOD CHIP BOILERS
+ interface expansion for remote service via GSM modem
BIOTECH COMFORT AND SAFETY PARAMETERS

WOOD CHIPS BOILERS

Operation safety: the step or tipping grate ensures a high operation safety regardless of the fuel quality.

Fuel: the heating systems are suitable for standard wood chips with maximum size G50 and water content up to W35 (AUSTRIAN NORM M 7133).

Depression control system (DCS) inside the combustion chamber: it prevents the stagnation of combusted gases, while enabling the best adaptation to the actual chimney extraction efficiency and optimum combustion ratio inside the combustion chamber.

Lambda probe: it detects the oxygen residue within the combusted gas, thus ensuring optimum combustion values throughout the entire power range.
**PELLET BOILERS**

**Reliable:** fully automated process, from the initial preparation to the brazier grate cleaning. Fewer movable mechanical parts thanks to the DCC® (Dual Combustion Control) system. Higher yield due to the cyclic cleaning of heat exchanger.

**Easy to install:** free installation in the boiler room thanks to a flexible connection to the pellet storage system.

**Comfortable:** reduced maintenance and cleaning expenses thanks to the use of high quality material inside the combustion chamber.
THE FUTURE OF HEATING

LOCAL DEALERS AND SERVICE CENTERS

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+43 662 454072 50

BIOTECH 2010 SALES CATALOGUE 940000192100
SUBJECT TO CHANGES DUE TO TECHNICAL MODIFICATIONS AND PRINTOUT ERRORS.