Biomass Boilers & Stoves

Renewable Heating Solutions from a Natural & Sustainable Fuel Source
Renewable energy from a natural & sustainable fuel source.

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Firebird Products Ltd are market-leading manufacturers of heating products with a proven track record built on the global supply of heating systems. Established in Ireland in 1980, the Firebird name has become synonymous with performance, quality and innovative design.

At the forefront of technology, Firebird are committed to providing cost-effective, energy-efficient heating solutions that not only meet, but easily exceed today’s stringent legislative requirements. Historically an oil-fired boiler manufacturer; the addition of renewable heating options, which include air source heat pumps, biomass boilers, stoves and solar thermal systems enable Firebird to offer a total heating solutions package.
Benefits of Biomass as a Heating Option

Firebird’s biomass heating solutions provide an economical and environmentally-friendly alternative to traditional heating and hot water systems.

1. Firebird Tavistock Wood Pellet Boiler
2. Pellet hopper (optional)
3. Radiators
4. Underfloor heating
5. Sanitary system
6. Accumulator
7. Solar thermal panel
8. Solar station
✓ Self-contained and fully automated to provide consistent heat

✓ Long-term, sustainable, renewable energy source

✓ Cost-effective heating option – unaffected by fluctuating fossil fuel prices

✓ Eligible for domestic Renewable Heat Incentive payments (RHI)*

✓ MCS & HETAS Approved**

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* Applicable to biomass boilers or stoves with a back boiler.
** Firebird Tavistock biomass boiler range.
What is a Biomass Heating System?

Biomass heating systems quite simply provide heat by burning wood pellets, chips or logs. There are two ways in which this type of heating system can work; firstly as a biomass boiler which powers a central heating and hot water system and secondly as a stand-alone stove that burns wood pellets or logs to heat a single room.

Does Installing a Biomass Boiler Make Economic Sense?

Although biomass provides an excellent alternative to the more traditional fossil fuel boilers that heat our homes, it has historically been regarded as an expensive capital cost option – both to install and maintain. However, following recent changes to the domestic RHI policy* which has seen tariffs increase by over 50% and the many new developments in biomass technologies themselves, biomass has become a financially attractive renewable heating option for the average homeowner.

*Only applicable to biomass boilers or biomass stoves with a back boiler.
Renewable Heat Incentive
The domestic Renewable Heat Incentive (RHI) scheme was set up by the UK Government in 2014 to help meet planned CO₂ reduction targets by encouraging the uptake of renewable heat technologies. Following changes to this scheme, homeowners installing a biomass boiler or stoves with a back boiler, will be eligible to receive increased tariffs of 6.54p/kWh (formerly 3.85p/kWh), paid quarterly over a seven year period. To further encourage the uptake of renewable technologies a VAT rate of 0% for new build applications and 5% for retrofit also exists.

These incentives make the installation of a biomass boiler or stove a financially attractive option to either update an existing heating system, or to incorporate as part of a new build. For further information on the Renewable Heat Incentive please contact Firebird Products Ltd or visit www.ofgem.gov.uk.

The Environment
Wood is one of the most natural and sustainable fuel sources available to us as it has a carbon neutral cycle. Classed as a renewable energy source in the EU and UN legal frameworks, it releases the same amount of carbon dioxide into the atmosphere through burning, as it absorbs during the growth process.

Wood Pellets – Practical, High-Efficiency Fuel
Firebird’s range of biomass boilers and stoves are highly sophisticated and operate using wood pellets* which ensures combustion efficiency that is comparable with the best fossil fuel boilers. Firebird recommend the use of ENplus A1 quality wood pellets. Using modern technology they can operate in excess of 90% efficiency which is vastly higher than conventional boilers and electric heating systems.

Wood pellets are made from sustainably sourced dry sawdust (a combination of both non-treated virgin wood and recycled wood) which is compressed under high pressure into small cylinders. Available in varying lengths (15 – 20 mm) and 6 mm in diameter, their regular geometry and small size allows automatic feeding to a burner via an auger with very fine calibration.

The high density and low moisture content gives wood pellets a calorific value that is higher than wood in its natural form which allows combustion autonomy to be achieved. Their high density also means that wood pellets require less storage space and their flow characteristics make them easier to deliver as they can be blown through pipes from a long distance. Wood pellets also provide flexibility as they can also be delivered and stored in bags for hand-feeding options.

*The Firebird Wood Burning Dry Stove operates using wood.
Firebird Biomass Boilers & Stoves

Tavistock Wood Pellet Biomass Boilers

The Benefits

- Fully automated heating system
- Behaves like a traditional gas or oil-fired boiler
- Aesthetically pleasing compact size
- Flexibility – can supply heating via underfloor or radiator circuit
- Available in 4 outputs from 12 – 35kW
- Can supply domestic hot water
- Suitable for new build and renovation projects
- Capable of heating large homes with very low fuel consumption
- Can automatically maintain room temperatures
- Easy-to-use colour, high-resolution touch-display screen with weekly time programming
- Ultra-quiet operation
- Responsive to rapid changes of heating demand
- Pellet combustion electronically managed
- Automated cleaning programme and ash expulsion
- MCS & HETAS Approved
- Integrates with other renewable technologies
- Bivalent options available with existing heating systems
- 5-year warranty
- ErP rating A+
The Biomass Boiler with intelligent thinking...
Tavistock Wood Pellet Biomass Boilers

The Biomass Boiler with intelligent thinking...

The Firebird Tavistock range of Wood Pellet Biomass Boilers are fully automated and entirely self-contained. Providing heating and domestic hot water, their compact size won’t look out of place in a utility room. The aesthetically pleasing lines are completed by a high-resolution, touch-display which enables simple commissioning and control of the boiler.

The Tavistock Wood Pellet Biomass Boiler range is available in 4 outputs from 12 – 35kW and uses wood pellet combustion to produce hot water. This hot water is then supplied to radiators (at high temperature) or underfloor heating (at low temperature) to meet a households’ heating requirements. Tavistock Wood Pellet Biomass Boilers can also be used to provide domestic hot water which is stored in a separate hot water cylinder at the desired temperature.

Fully Automated
Designed to behave like a traditional gas or oil-fired boiler, the Tavistock Wood Pellet Biomass Boiler is fully automated and entirely self-contained, with pellet tank, heat exchanger and control systems in one complete package. At the heart of the boiler is a high-tensile, stainless steel, pot burner that is automatically fed by the internal auger (supported by a high-capacity pellet tank), which ensures the correct ratio of air and fuel mix (wood pellets). Exceptional long-term operating autonomy is also offered (without the need for pellet loading), as in addition to the pellet tank fitted on the boiler itself, additional hoppers and external tanks can also be connected.

The Tavistock Wood Pellet Biomass Boiler can be programmed to automatically switch off once a certain room temperature is achieved and will then switch back on when the temperature drops*. A highly-effective automated cleaning programme and ash compaction systems is also incorporated into the boiler design which reduces the level of manual cleaning and maintenance required.

Leonardo Control System
The autonomy of the Firebird Tavistock Biomass Boiler is monitored electronically using the patented Leonardo Control System. This automatically manages pellet combustion to meet changes in heating demand. Clean and complete combustion relies on the correct mix of fuel and air, so as the heat demand changes it is imperative that the balance of air and fuel mixture changes accordingly. The Leonardo Control System monitors boiler performance every 20 seconds to optimise boiler performance and the amount of fuel used. This method of control also reduces residual waste from the pellet combustion process, resulting in less frequent emptying cycles of the ash bin.

* Only use in self-contained small rooms to avoid continuous activation of the function.
**General Operating Scheme**

1. Pellet hopper with top loading hatch
2. Screw for conveying the pellets from the hopper to the combustion chamber
3. Screw gear motor
4. Pellet combustion hearth
5. Electric heating element for igniting the wood pellets
6. Centrifugal fan for extracting the combustion fumes
7. Fumes outlet port for connection to flue
8. Ash extraction
9. Synoptic panel for controlling/monitoring the device’s operation
10. Heat exchanger tubes for producing hot water
11. Turbolators for cleaning the exchanger tubes
12. Thermal insulation for the combustion chamber door and walls
13. Plumbing kit complete with pump, safety valve and closed expansion vessel
14. Combustion air intake port

**High-Efficiency, Minimum Maintenance & Minimal Emissions**

Tavistock Wood Pellet Biomass Boilers incorporate an innovative Ceramic Combustor with Catalyst unit. This increases the combustion temperature to ensure optimum efficiency, whilst significantly reducing emissions. By allowing complete pellet combustion, the removal of ash is only required approximately every three weeks.

**Optimised Cleaning for Longer Autonomous Operation**

eBrusher® is a patented system that automatically cleans deposits from the combustion chamber left from burning wood pellets. The system is so effective that it offers months of autonomy without the need to clean the combustion chamber manually.
Tavistock Wood Pellet Biomass Boilers

State-of-the-art-Controls
The Firebird Tavistock Wood Pellet Biomass Boiler is controlled by a high-resolution, colour, touch-display screen which allows total control of all functioning phases; including a weekly and hourly programmer. All phases are controlled by electronic software, which guarantees high-efficiency and low emissions in total safety.

Connection Options
Firebird Tavistock Wood Pellet Biomass Boilers offer the flexibility of being installed on a buffer system to supply underfloor heating, or alternatively via a plate heat exchanger kit directly onto a radiator circuit. Tavistock Wood Pellet Biomass Boilers can also be connected to existing heating systems and work alongside other renewable technologies, such as solar panels, to create advanced heating solutions.

Flue Kits
Firebird Products Ltd offer a comprehensive range of flue options to compliment the Firebird Tavistock Wood Pellet Biomass Boiler. For further information, please contact Firebird Products Ltd on 01752 691177.
A fully automated renewable heating solution

Technical Data

The heat requirement for a property should be designed in accordance with MCS 3005 and include a room by room heat loss calculation. The calculated heat requirement should then be matched to the output of the Tavistock Wood Pellet Biomass Boiler (see below). Please note that the information contained in these tables is for guidance purposes only. For exact quotations please contact the Firebird Technical Hub on 01752 691177 or technicalhub@firebird.uk.com.

<table>
<thead>
<tr>
<th></th>
<th>Tavistock 12kW (min/max)</th>
<th>Tavistock 18kW (min/max)</th>
<th>Tavistock 24kW (min/max)</th>
<th>Tavistock 35kW (min/max)</th>
</tr>
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<tr>
<td>Width (cm)</td>
<td>cm</td>
<td>76</td>
<td>76</td>
<td>91</td>
</tr>
<tr>
<td>Depth (cm)</td>
<td>cm</td>
<td>79</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>cm</td>
<td>128</td>
<td>128</td>
<td>126</td>
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<tr>
<td>Heat Output</td>
<td>kW</td>
<td>12.4</td>
<td>18.1</td>
<td>24.4</td>
</tr>
<tr>
<td>Useful Output to the Water</td>
<td>kW</td>
<td>3.5/11.4</td>
<td>3.5/16.5</td>
<td>6.0/22.2</td>
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<tr>
<td>Efficiency</td>
<td>%</td>
<td>92</td>
<td>91.3</td>
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</tr>
<tr>
<td>Fuel Consumption (Pellets)</td>
<td>Kg/h</td>
<td>0.8/2.7</td>
<td>0.8/3.7</td>
<td>1.4/5.1</td>
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<tr>
<td>Tank Capacity</td>
<td>kg</td>
<td>60</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>Autonomy</td>
<td>h</td>
<td>22/75</td>
<td>16/75</td>
<td>19/71</td>
</tr>
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<td>Water Content</td>
<td>l</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Ø Combustion Product Outlet</td>
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<td>10</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Ø External Air Intake</td>
<td>cm</td>
<td>5</td>
<td>5</td>
<td>6</td>
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<tr>
<td>Weight including packaging</td>
<td>kg</td>
<td>280</td>
<td>280</td>
<td>320</td>
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<tr>
<td>Heatable Volume*</td>
<td>m³</td>
<td>315</td>
<td>470</td>
<td>580</td>
</tr>
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</table>

Technical Characteristics in accordance with EN 303-5 Class 5.

*The heatable volume is calculated based on the assumption of a heating demand of 33Kcal/m³ hour.
Dartmoor Wood Pellet Biomass Stove

The Firebird Dartmoor is an “airtight” Wood Pellet Biomass Stove that is completely self-contained and draws in air directly from outside. These stoves are suitable for use in any type of home, including modern passive homes, as the stove provides space heating without altering the characteristics of the home.

The Benefits

- Fully automated to provide constant heat
- Responsive to rapid changes of heating demand
- Pellet combustion electronically managed
- Cast iron fire box
- Upper hot air ventilation fan (can be deactivated)
- Double closing door
- Remote control with display
- Hourly / daily / weekly programming
- Automatic and manual function
- Pellet reserve system
- Pellet quantity detection system (hours/kg’s)
- Autocheck function
- Automatic combustion control
- Optional Wi-Fi module
- Suitable for modern passive houses
- 5-year warranty
- ErP rating A+
Save on heating costs without compromising on convenience
Exmoor Wood Pellet Biomass Stove

The Firebird Exmoor is a completely self-contained Wood Pellet Biomass Stove with a sliding top for simple pellet feeding. Suitable for use in any type of home, the Firebird Exmoor is fully programmable and features a NIGHT function which allows automatic switch-off to save fuel. Cool air is drawn from the home and delivered to the room as hot air via the forced ventilation system.

The Benefits

✓ Fully automated to provide constant heat
✓ Responsive to rapid changes of heating demand
✓ Pellet combustion electronically managed
✓ Cast iron combustion chamber
✓ NIGHT function for automatic switch-off
✓ RELAX function – deactivates forced ventilation
✓ Remote control with display
✓ Hourly / daily / weekly programming
✓ Automatic and manual function
✓ Pellet reserve system
✓ Pellet quantity detection system (hours/kg’s)
✓ Autocheck function
✓ Automatic combustion control
✓ Optional Wi-Fi module
✓ 5-year warranty
✓ ErP rating A+
Dartmoor Wood Pellet Biomass Stove

Practical & Comfortable Heating Management

The Firebird range of Wood Pellet Biomass Stoves offer the aesthetics of a modern wood burning stove with the convenience of full automation and programmability. The sleek and stylish black steel lines provide a focal design feature to any room, whether modern or traditional.

Available in two models, the Firebird Wood Pellet Biomass Stove range automatically uses wood pellet combustion to produce consistent heat (hot air) without the need to add fuel or adjust the air supply.

Fully Automated
The Firebird Wood Pellet Biomass Stove range is fully automated and entirely self-contained, with pellet hopper, heat exchanger and control systems in one complete package. From the hopper, an electrically operated auger feeds pellets into the combustion chamber. Cool air from the home or outside (depending on model) is drawn into the stove by a convection blower. The heated air is then delivered to the room using a forced ventilation system, via a grill on the front of the stove. Firebird Wood Pellet Biomass Stoves can be programmed to automatically switch off once a certain room temperature is achieved and will then switch back on when the temperature drops*.

Leonardo Control System
The autonomy of the Firebird Wood Pellet Biomass Stove range is monitored electronically using the patented Leonardo Control System. This automatically manages pellet combustion to meet changes in heating demand. Clean and complete combustion relies on the correct mix of fuel and air, so as the heat demand changes it is imperative that the balance of air and fuel mixture changes accordingly. The Leonardo Control System monitors stove performance every 20 seconds to optimise performance and the amount of fuel used. This method of control also reduces residual waste from the pellet combustion process resulting in less frequent emptying cycles of the fire box.

* Only recommended for use in small self-contained rooms to avoid continuous activation of the function.
Remote Control
Firebird Wood Pellet Biomass Stoves are controlled by a remote control. The display allows total control of all functions; including a weekly / hourly and night/relax* programmer. All phases are controlled by electronic software, which guarantees high-efficiency and low emissions in total safety.

* Night/relax function only available on Exmoor Wood Pellet Stove.

Flue Kits
Firebird Products Ltd offer a comprehensive range of flue options to complement the Dartmoor and Exmoor Wood Pellet Biomass Stoves. For further information, please contact Firebird Products Ltd on 01752 691177.

Optional Wi-Fi Module
Firebird Wood Pellet Biomass Stoves are available with an optional Wi-Fi Module. This allows the basic stove functions to be managed from a smartphone or tablet via the WiFire and appFire apps.

Manage your biomass wood pellet stove wherever you are
Dartmoor & Exmoor Wood Pellet Biomass Stoves

Technical Data
The information contained in these tables is for guidance purposes only. For exact quotations please contact the Firebird Technical Hub on 01752 691177 or technicalhub@firebird.uk.com.

<table>
<thead>
<tr>
<th></th>
<th>Dartmoor 8kW (min/max)</th>
<th>Exmoor 5kW (min/max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>cm</td>
<td>cm</td>
</tr>
<tr>
<td>Depth</td>
<td>cm</td>
<td>cm</td>
</tr>
<tr>
<td>Height</td>
<td>cm</td>
<td>cm</td>
</tr>
<tr>
<td>Useful Output</td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>Efficiency</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Fuel Consumption</td>
<td>Kg/h</td>
<td>Kg/h</td>
</tr>
<tr>
<td>Tank Capacity</td>
<td>kg</td>
<td>kg</td>
</tr>
<tr>
<td>Autonomy</td>
<td>h</td>
<td>h</td>
</tr>
<tr>
<td>Combustion Product</td>
<td>cm</td>
<td>cm</td>
</tr>
<tr>
<td>External Air Intake</td>
<td>cm</td>
<td>cm</td>
</tr>
<tr>
<td>Total Weight</td>
<td>kg</td>
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<tr>
<td>Volume That Can be</td>
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<tr>
<td>Heated*</td>
<td></td>
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</tr>
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</table>

Technical Characteristics in accordance with EN 303-5 Class 5.
Firebird Wood Burning Dry Stove

For homeowners with a ready supply of firewood, Firebird also offer a traditional free-standing wood burning dry stove. With an output of 5kW, this stove serves as an additional heat source for any type of home, whilst providing the aesthetic appeal associated with a traditional wood burner. The Firebird Wood Burning Dry Stove incorporates an ‘airwash’ design which blows air over the inside surface of the glass to prevent the creation of soot.

The Benefits
✓ Up to 83.5% efficiency
✓ 5kW dry stove
✓ Easy to install
✓ Top and rear outlet options
✓ Direct external air compatible from rear and base
✓ Glass ‘airwash’ design
✓ 5 year warranty
✓ ERP Rating A+

Technical Data

<table>
<thead>
<tr>
<th>Width</th>
<th>cm</th>
<th>5kW Wood Burning Dry Stove</th>
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</thead>
<tbody>
<tr>
<td>Depth</td>
<td>cm</td>
<td>45</td>
</tr>
<tr>
<td>Height</td>
<td>cm</td>
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</tr>
<tr>
<td>Output to Space</td>
<td>kW</td>
<td>5.0</td>
</tr>
<tr>
<td>Efficiency</td>
<td>%</td>
<td>83.5% (net)</td>
</tr>
<tr>
<td>CO₂</td>
<td>g/s</td>
<td>0.64</td>
</tr>
<tr>
<td>Mean Flue Gas Temp</td>
<td>°C</td>
<td>20</td>
</tr>
<tr>
<td>Flue Gas Mass Flow</td>
<td>g/s</td>
<td>3.2</td>
</tr>
<tr>
<td>Total Weight</td>
<td>kg</td>
<td>130</td>
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Technical Characteristics in accordance with BS EN 13240: 2001 + Amendment A2: 2004

Flue Kits
Firebird Products Ltd offer a range of flue options to compliment the 5kW Wood Burning Dry Stove. For further information, please contact Firebird Products Ltd on 01752 691177.
Customer Service
Firebird pride themselves on offering the highest levels of customer service possible. The level of service provided is monitored on a regular basis to ensure customers’ requirements are always met.

Technical Support
Based at Firebird’s UK headquarters, the Technical Hub provides customers with a comprehensive technical support package which is designed to make the specification and installation process as simple as possible. For technical support please contact the Firebird Technical Hub on 01752 691177 or technicalhub@firebird.uk.com.

Quality
All Firebird products are produced to the highest quality standards and are put through rigorous testing procedures by external standards agencies. Every product is designed to meet a specific requirement and has been manufactured using premium quality materials to precise standards and tolerances.

Warranty
Firebird biomass boilers and stoves are covered by a 5-year manufacturer’s warranty as standard. For further information, please contact Firebird Products Ltd.
Firebird Product Range

- Oil-Fired Boilers
- Air Source Heat Pumps
- Biomass Boilers & Stoves
- Solar Thermal
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