

Living with...

A wood pellet boiler

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A handy guide providing all the information you need to know about the technology, maintenance and suitability of a biomass boiler.



What you need to know...

What is a wood pellet boiler?

Wood pellet boilers are a safe, convenient and environmentally friendly way of using wood to heat your home. Grant Wood Pellet Boilers are fully automatic and perform more like an oil or gas boiler, using advanced controls which regulate the amount of fuel being delivered to the burner to match a home's heat demand. Wood pellets are fed into the burner via an 'auger' connected to a storage hopper. This storage hopper can be automatically supplied from a bulk pellet store which can vary in size dependent upon requirements.

How do wood pellet boilers work?

The boiler auger feeds wood pellets directly into the burner where they are ignited, and the heat generated is automatically controlled by the feed rate of pellets.

A fan in the boiler propels hot gas into the boiler primary heat exchanger. The heat energy is then transferred to the central heating system before being circulated around the house through either radiators and/or underfloor heating.



How are wood pellets made?

Wood pellets are made from compressed sawdust fused together by the natural lignin present in dry wood. A low moisture content (less than 10%) is important to help increase the combustion efficiency of the fuel - the drier the pellet, the more efficient the boiler.

Because the sawdust used to make wood pellets is either a bi-product of the timber industry (i.e. sawmills) or has been sourced from a managed forest where trees are planted to replace the ones cut down, they are classed as a sustainable or 'carbon neutral' source of fuel.



Are there waste products?

As part of the normal operating process wood pellet boilers produce ash as a waste product. This means that the boiler will require regular cleaning by the user and periodic maintenance by the installer or Grant approved service engineer. The ash that is produced by the boiler can be scattered on the garden once it has cooled to add essential plant nutrients to your soil.

Sustainability

Is my existing heating system compatible with a wood pellet boiler?

Grant Wood Pellet Boilers can be used with any 2-pipe, fully pumped hot water heating system - either open-vented or sealed - using radiators and/or underfloor heating.

When wood pellet boilers are used with a sealed heating system a suitably sized expansion vessel, pressure gauge and approved filling loop must be incorporated.

Wood pellet boilers can be fitted as a replacement boiler on an existing heating system providing that the system has been chemically cleaned and flushed and complies with the current requirements of the Building Regulations – Approved Document L1. The existing control system may also be used providing it also complies with these regulations. If not the system and/or controls will need to be adapted to comply with these requirements.

What space do I require for a pellet store?

Pellets can be fed manually into the boiler hopper, but a more convenient alternative is to install a bulk storage unit (e.g. 3 tonnes) to store and deliver the pellets automatically to the hopper.

While an external bulk storage system allows for increased pellet capacity, it is important to ensure you have sufficient external space for the store. Typical sizes are approximately 2m² in size but you will also need to have clear access for the large lorries to deliver the pellets to the store.

Full details are given in the Installation and servicing instructions supplied with any Grant boiler.



What space do I require for a boiler?

Sufficient space must be allowed around the boiler for servicing and maintenance. The base which the boiler sits on must conform to the requirements of the Building Regulations – Approved Document J. This requires a level, solid, non-combustible base at least 125mm thick extending at least 225mm beyond the boiler at the front and 150mm on either side.



Does the boiler require ventilation?

To enable the boiler to operate safely and efficiently, a correctly sized and permanently open air vent (open to the outside) must be provided in the boiler room.

Where can I install the boiler?

Pellet boilers must be installed in a damp free environment along with the accompanying pellet hopper. Traditionally, due to space and noise considerations wood pellet boilers have needed to be situated in an outbuilding or garage. The new Grant Vecta however, with its quiet operation and compact white design, makes installation within a kitchen or utility environment ideal.

Some newer pellet boilers have been designed to work outside, but you will need to specify the model required before purchasing. The majority of pellet boilers are suitable for indoor installation only and should not be exposed to the elements.



Other considerations

Where can I buy the wood pellets?

Wood pellets can be purchased from a variety of manufacturers and specialist suppliers with some larger plumbing and heating merchants now stocking pellets.

Pellets are available either in bags (usually 10kg bags or 15kg quantities) or in bulk, delivered by lorry direct to your home. The minimum bulk pellet delivery is typically 3 tonnes but this needs to be checked with the supplier concerned, as smaller deliveries may be possible.



How do I fill the boiler?

If you are not planning to purchase a bulk pellet storage unit, the pellet hopper supplied with the boiler will need to be filled manually with pellets supplied in bags.

If you are purchasing a bulk pellet store it will automatically feed the boiler hopper. It is important to regularly check the bulk store to ensure that you have sufficient fuel which will allow you to order a bulk delivery before it is empty.

How do the pellets get from the store to the boiler?

Pellet boilers will either use an auger to draw the fuel from the bulk store, or for installations that require the bulk storage to be sited further away due to space restrictions, a vacuum system can be used, transporting the pellets quickly and quietly to the boiler.

The Grant SpiraVAC system is capable of lifting pellets up to a height of 3 metres with maximum pipe runs of 20 metres, making the most awkward siting a possibility.





When do I need to refill the hopper/store?

With most indoor systems the boiler will automatically stop when the pellet level in the hopper reaches minimum. To avoid this happening, the pellet level in the hopper should be regularly checked and topped up as required –usually once to twice a week. With the Grant Spira, topping up the hopper with pellets will automatically re-start the boiler.

If a bulk pellet store is used, this will automatically top up the indoor pellet hopper to ensure that the level never reaches minimum. However, the pellet

level in the bulk pellet store must be regularly checked and a delivery of pellets ordered in plenty of time before it becomes empty. The time between deliveries will depend on the size of the bulk store, the size of the boiler and how it is used.

How much fuel will the boiler use?

With regular use a high efficiency condensing appliance like a Grant Wood Pellet Boiler would typically use between 3 and 6 tonnes annually depending upon boiler size.

A young girl with brown hair and blue bows is peeking from behind a tree trunk in a forest. She is looking towards the camera with a slight smile and her finger to her lips. The background is a lush green forest with sunlight filtering through the trees.

Is a wood pellet boiler noisy?

Any noise from a wood pellet boiler comes from the flue fan, the burner fan, the pellets themselves dropping into the burner and (in the case of a Grant pellet boiler) the self-cleaning process.

Whilst the combination of these sources is not excessively noisy, some pellet boilers may not be suitable for installation within the 'habitable' rooms of a house, which are often used for locating conventional oil and gas boilers.

The Grant Vecta, however, has been developed with a compact insulated casing and is designed to fit and work where an existing floor standing oil-fired boiler may originally have been situated.



Does a wood pellet boiler require cleaning and maintenance?

Every pellet boiler requires a degree of regular cleaning and maintenance to ensure they continue to run efficiently, which can be messy and time consuming.

The efficient combustion of a Grant Wood Pellet Boiler, coupled with the high quality wood pellets approved for use with Grant appliances, results in a relatively small amount of fine ash being produced. Grant Wood Pellet Boilers also incorporate automatic cleaning at pre-set intervals to remove ash deposits in the primary and condensing heat exchangers as well as the burner brazier. The amount of ash

produced can vary depending on the make of pellets and how often the boiler is used. The ash pan on the Spira, for example, should not require emptying any more than once a month.

In order to ensure efficient and safe operation, all wood pellet boilers must be serviced annually. In a Grant boiler, the primary and condensing heat exchangers, combustion chamber, flue fan box and burner must be cleaned and the burner re-set either once a year, or when the 'SERVICE' message on the burner control panel is displayed. This service interval is based on the actual running time of the burner and may vary in length depending on the degree of use of the boiler.

Financial information



Are wood pellet boilers costly to install?

The typical cost of fitting a pellet boiler is likely to be more than a standard oil or gas appliance, but there are financial incentives that make them a very attractive investment.

Recent history has shown that there is a potential for fuel savings of up to 30% per year when using wood pellets compared to traditional fuels like oil, electric or LPG, even when utilising a high efficiency boiler, and because the fuel comes from a sustainable source, you reduce the amount of harmful carbon dioxide being released into the atmosphere.



What is the Domestic Renewable Heat Incentive?

Launched in April 2014 the Domestic Renewable Heat Incentive (RHI) is a Government financial incentive to promote the use of renewable heat. Switching to heating systems that use naturally replenished fuel like a Grant Wood Pellet (Biomass) boiler can help the UK reduce its carbon emissions. Homeowners who join the RHI scheme receive quarterly payments over a fixed number of years, for the amount of clean, green renewable heat their system produces.

Who's it for?

The Scheme is open to anyone who can meet the joining requirements. Your heating system must only heat a single property which has a domestic Energy Performance Certificate (EPC). An EPC gives information about a property's energy use, plus recommendations on how to reduce energy and save money. An EPC is proof that your property is assessed as a domestic 'dwelling'. Without an EPC you will not be eligible to join the RHI Scheme. The RHI is open to households both off and on the gas grid, however, people off mains gas have a greater potential to save on fuel bills and reduce carbon emissions.



What is the Microgeneration Certification Scheme (MCS)?

To qualify for RHI payments all wood pellet boilers must be MCS approved. MCS is an independent scheme for the certification of microgeneration products and installers. It is designed to assess products and installers against robust criteria, which provides greater protection for consumers when fitting renewable technologies to their property. All Grant Wood Pellet Boilers are MCS approved and are eligible for the RHI scheme (subject to terms & conditions).





How does the biomass tariff work?

The Biomass tariff under the Domestic RHI financially rewards householders for generating and using renewable energy to heat their homes. On a quarterly basis, the householder will receive money for every kWh of renewable heat produced by the biomass boiler. The biomass tariff is annually adjusted to account for inflation. Payments will be calculated over a 20 year term from date of installation but paid over a 7 year period to the end user. (Eligible for technologies installed since 15th July 2009).

This leaflet is accurate at the time of printing but as Grant UK has a policy of continual improvement it may be superseded. We reserve the right to amend specifications without prior notice. The statutory rights of the consumer are not affected.

All products manufactured under I.S. EN ISO 9001. Grant UK additionally holds ISO 14001 accreditation.

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