

# Grant Wood Pellet Boiler and accessory range

High efficiency condensing biomass boilers,  
flues, vacuum systems and pellet stores



Boiler outputs from 6-72kW • Award winning condensing heat exchanger • Automatic pellet feed and ignition • Minimal maintenance  
Integrated pellet store • Rapid ignition system • Modulating burner • 125mm conventional flue • Flue box with integral fan/draught stabiliser  
Automatic wash system for condensing unit • MCS approved • DEFRA approved under the Clean Air Act



EFFICIENT HEATING SOLUTIONS

# Grant Profile

At Grant we have been designing and manufacturing reliable and easy to install heating products for over 35 years. From award winning oil-fired condensing boilers to the latest renewable technologies, our heating systems have a reputation for quality that is second to none.

We combine precision engineering, innovation, performance and value for money to produce sustainable heating solutions that are trusted by both installers and householders.



## Quality Design

There is never a compromise on quality. We design all of our products so that you can be sure that the durability and efficiency are sector leading. We continually develop new technologies and use only the best materials to ensure our products meet performance and environmental standards.

Our belief in simple solutions ensures that, while our technology is sophisticated, our products are low maintenance and easy to install. For a high quality, reliable and sustainable heating system, trust in Grant.



## Heating Responsibly

Grant manufacture heating systems that respond to the challenges of rising fuel costs whilst protecting our environment. Environmental responsibility is central to all we do and we continue to develop and innovate to produce even more efficient products that make best use of our natural resources.

We are passionate about developing sustainable, high-performance and affordable alternatives for heating homes into the future.



## Our Guarantee

The Grant label is a guarantee of reliability, quality and value. We put our customers first and our independence ensures that we can monitor our standards and processes to deliver the very best quality and service.

That's why, when you order your system from a Grant stockist, you can be sure of a tailored service and excellent after sales support.

# Wood Pellet Boiler Technology



## Wood Pellet Boiler Design

Wood pellet boilers are an environmentally friendly, safe and convenient way of heating the home using wood pellets as fuel.

Our 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 the heat demand on the boiler. The fuel is fed to the burner via an auger connected to the adjacent pellet hopper. This can, in turn, be automatically supplied from a bulk pellet store which can vary in size.

Wood pellet boilers produce ash and can normally require frequent cleaning and maintenance by the user. Our pellet boilers operate a self-cleaning function, reducing the need for regular cleaning when using EN Plus A1 grade pellets with low ash content.



## What are wood pellets?

Wood pellets are an environmentally-friendly fuel, produced from either recycled sawdust or virgin timber from managed resources. The raw material is compressed into small, dense cylindrical pellets with very low moisture content which deliver high efficiency combustion when burnt.

Grant Wood Pellet boilers can only be used with 6mm approved EN Plus A1 premium pellets with attributes as follows:

- Moisture content below 10%
- Calorific value of 4.8 - 5.2kWh/kg
- Ash content of <1% (Low)
- Bulk density of around 650kg/m<sup>3</sup>
- Chlorine content of 0.03% or less
- No additives

Using pellets which do not meet the EN Plus A1 specification from an unapproved supplier will invalidate your boiler guarantee. If you are in any doubt, please contact Grant before purchasing your pellets.

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## How are pellets delivered?

Wood pellets can be bought in bags of various sizes or alternatively they can be delivered in bulk by tanker (around one to six tonnes at a time). Buying pellets in bulk is the most cost effective option.

# Grant Spira Condensing Wood Pellet Boiler range

## High efficiency condensing biomass boilers with outputs from 6kW to 72kW.

Featuring Grant's patented stainless steel turbulator baffle system, the Spira Condensing Wood Pellet Boiler delivers award winning efficiency at outputs ranging from 6kW to 72kW. Our wide range of models ensures that the Spira delivers the right renewable heating solution for your home, while using two boilers makes even higher outputs available.

The Spira is available in single outputs of 6-26kW with a seasonal efficiency of 89.5%, and 9-36kW with an efficiency of 88.4% (SAP2009). They come complete with a pellet hopper and feed auger, which automatically supplies the boiler with fuel.

Installations up to 72kW can also be accommodated, utilising two boilers (separately flued) and a central hopper/twin auger arrangement. Models include 12-52kW, 15-62kW and 18-72kW.

Using two Spira boilers to achieve higher outputs is very cost effective. When the units are combined their precise electronic burner controls allow both units to modulate as one, down to just 25% of maximum load when the full output is not required. This, combined with the extremely high condensing efficiencies achieved, makes the Spira a unique option when considering a biomass boiler.



### Key features

- MCS approved
- Highly efficient
- Modulating burner
- Integrated pellet store
- 125mm conventional flue
- Automatic pellet feed and ignition
- Award winning condensing heat exchanger
- Flue box with integral fan/draught stabiliser
- Automatic wash system for condensing unit
- SpiraVAC pellet vacuum system available
- DEFRA approved under the Clean Air Act

### Grant Spira boiler models

Code	Output	Description
WPS626 RH110	6-26kW	26kW biomass boiler c/w 110kg right hand single hopper and feed auger
WPS626 LH110	6-26kW	26kW biomass boiler c/w 110kg left hand single hopper and feed auger
WPS626 RH200	6-26kW	26kW biomass boiler c/w 200kg right hand single hopper and feed auger
WPS626 LH200	6-26kW	26kW biomass boiler c/w 200kg left hand single hopper and feed auger
WPS936 RH110	9-36kW	36kW biomass boiler c/w 110kg right hand single hopper and feed auger
WPS936 LH110	9-36kW	36kW biomass boiler c/w 110kg left hand single hopper and feed auger
WPS936 RH200	9-36kW	36kW biomass boiler c/w 200kg right hand single hopper and feed auger
WPS936 LH200	9-36kW	36kW biomass boiler c/w 200kg left hand single hopper and feed auger
WPS1252	12-52kW	2 x 26kW biomass boilers c/w 140kg dual hopper and feed augers
WPS1562	15-62kW	26kW & 36kW biomass boilers c/w 140kg dual hopper and feed augers
WPS1872	18-72kW	2 x 36kW biomass boilers c/w 140kg dual hopper and feed augers

# Operation, Siting and Maintenance

## How the Grant Spira works

On start up the auger feeds the wood pellets into the burner where they are lit by an ignition element.

The burner output modulates to achieve the set temperature by controlling the feed rate of pellets. The fan in the burner propels hot gas generated from the fuel into the boiler's primary heat exchanger. The heat energy is then transferred to the water circulating around the radiators/underfloor pipework of the heating system.

It is important to note that in most modern pellet boilers, up to 20% of the energy that is produced is lost to the atmosphere through waste gases exhausted by the flue system. Grant Wood Pellet Boilers have a unique secondary condensing heat exchanger which has been designed to capture some of this lost latent heat energy, so it can maintain extremely high efficiencies.

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## Siting of Appliance

Wood pellet boilers must be installed in a damp free environment. The Grant Spira is designed to be sited in a garage, store or outhouse.

To enable the boiler to operate safely and efficiently, a correctly sized and permanently open air vent (open to the outside) should be provided in the boiler room. It is also important to bear in mind that the boilers will carry out an automatic cleaning cycle at preset intervals. This process will result in a temporary increase in noise level, so should also be considered when choosing a suitable location. Storage hoppers will require vehicle access for refilling, making it is important to consider where the boiler and its accompanying hopper will be located before purchasing.



## Boiler Maintenance

A unique feature of the Grant Condensing Wood Pellet range is that our patented technology results in the boiler requiring very little maintenance compared with other wood pellet appliances.

Our boilers have an automatic self-cleaning system for the primary and secondary heat exchangers to ensure they stay free of debris. They also feature a self-cleaning burner. Using a Grant approved EN Plus Grade 1 wood pellet with a low ash content minimises boiler maintenance, as larger amounts of pellets can be burned before the ash pan requires emptying - up to 2 tonnes in some instances.



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## Fuel Storage

It is very important to ensure you have sufficient space to store the wood pellet fuel. A bulk storage system can be employed for greater pellet capacity e.g. four tonne store. This can be fed directly into the integral boiler hopper supplied as standard with the boiler.

When using larger storage, it is also important to consider vehicle access, as bulk delivery lorries need to blow pellets into the hopper

# Grant Wood Pellet Stores

## Bulk Pellet Stores

The latest range of internal and external wood pellet stores come in sizes ranging from 500kg to 6 tonnes and are designed and manufactured by Grant.

Models from 1.5 tonnes and above feature a unique cyclone pellet filling system, which is designed as a safety measure to reduce pressure during filling.

### Key features

- 3 footprints available - 1m x 1m, 1m x 2m and 2m x 2m
- 500kg and 750kg models come pre-assembled and are also available in a powder coated finish
- 1.5 - 6 tonne sizes supplied flat packed for on-site construction
- Low level connections for ease of filling
- Easy access maintenance door for cleaning
- All models supplied with bucket fill connection
- Galvanized steel construction
- Universal auger or vacuum connection
- Suitable for internal or external installation
- Extremely robust construction



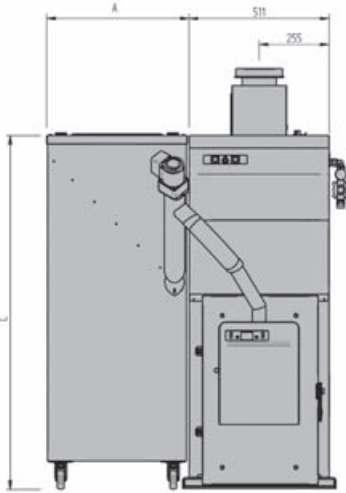
### Grant Pellet Store models

Code	Size	Finish	Footprint	Height	Weight (empty)
WPXG05T	0.5 tonne	Galvanised	1m x 1m	1375mm*	70kg
WPXG05TP	0.5 tonne	Painted	1m x 1m	1375mm*	70kg
WPXG075T	0.75 tonne	Galvanised	1m x 1m	1715mm*	83kg
WPXG075TP	0.75 tonne	Painted	1m x 1m	1715mm*	83kg
WPXG15T	1.5 tonne	Galvanised	2m x 1m	2395mm	310kg
WPXG2T	2 tonne	Galvanised	2m x 1m	2700mm	360kg
WPXG25T	2.5 tonne	Galvanised	2m x 1m	2900mm	375kg
WPXG3T	3 tonne	Galvanised	2m x 2m	2395mm	410kg
WPXG35T	3.5 tonne	Galvanised	2m x 2m	2700mm	472kg
WPXG4T	4 tonne	Galvanised	2m x 2m	2900mm	493kg
WPXG5T	5 tonne	Galvanised	2m x 2m	3200mm	555kg
WPXG6T	6 tonne	Galvanised	2m x 2m	3400mm	577kg

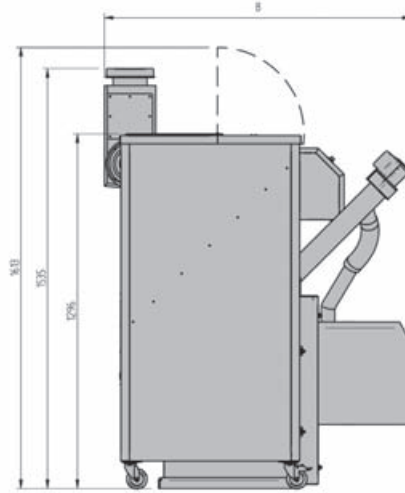
\*Note: Please allow additional clearance of 450mm for store lid.

# Boiler Dimensions and Technical Data

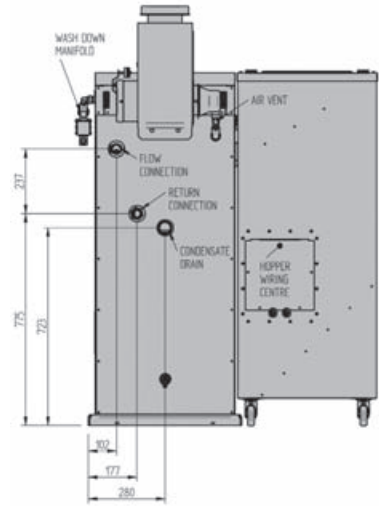
## Grant Spira 6-26kW and 9-36kW Boiler with left/right hand hopper



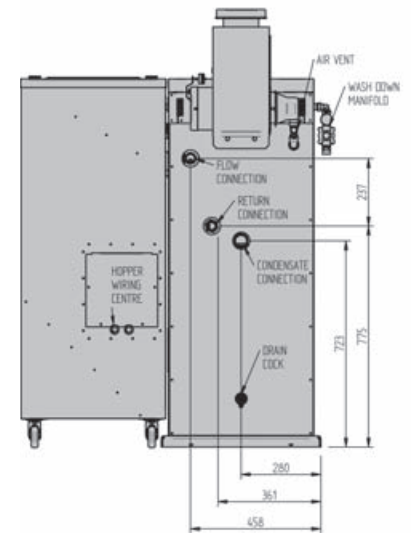
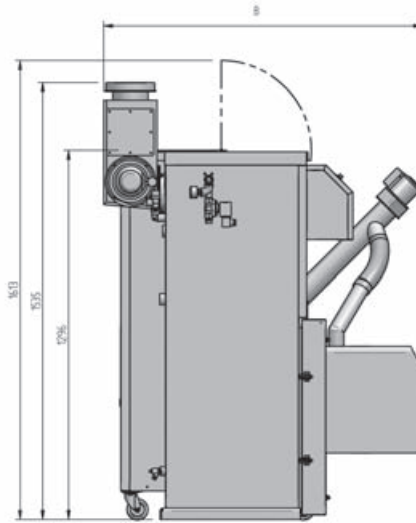
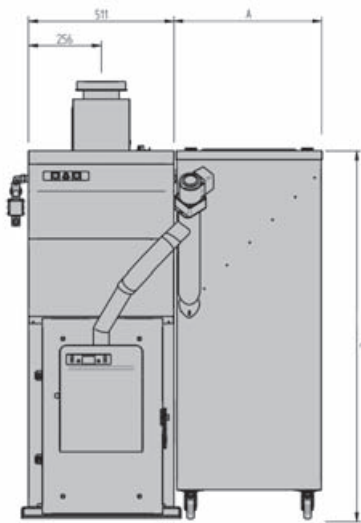
Front view



Side view

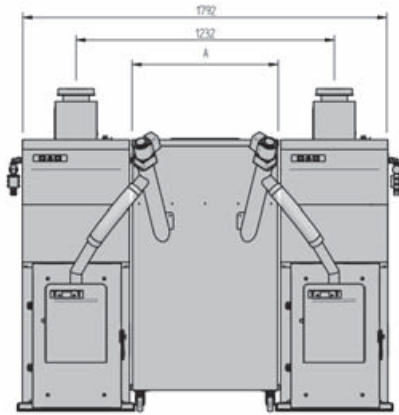


Rear view

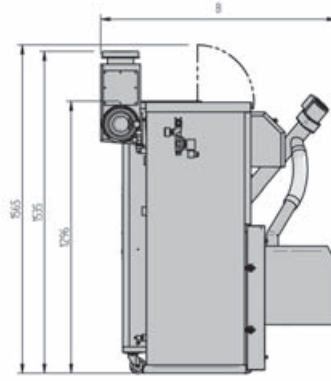


Grant Spira model	Dimensions (mm)		
	A	B	C
6-26kW 110kg left/right hand hopper	518	1120	1296
6-26kW 200kg left/right hand hopper	719	1120	1492
9-36kW 110kg left/right hand hopper	518	1220	1296
9-36kW 200kg left/right hand hopper	719	1220	1492

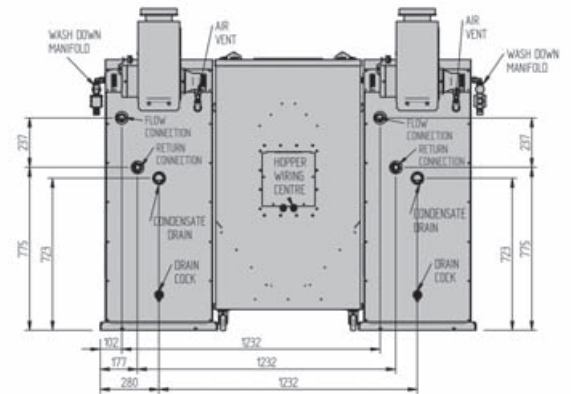
## Grant Spira 12-52kW, 15-62kW and 18-72kW Boiler with double hopper



Front view



Side view



Rear view

Grant Spira model	Dimensions (mm)	
	A	B
12-52kW with double hopper	616	1120
15-62kW with double hopper	616	1220
18-72kW with double hopper	616	1220

### Grant Spira Technical data

Boiler models	WPS6/26	WPS9/36	WPS12/52	WPS15/62	WPS18/72
Boiler type	Single	Single	Twin	Twin	Twin
Boiler weight (without hopper)*	231.5kg	261.5kg	463kg	493kg	523kg
110kg hopper weight c/w auger*	41.35kg	41.35kg	n/a	n/a	n/a
200kg hopper weight c/w auger*	77kg	77kg	n/a	n/a	n/a
140kg twin hopper weight c/w 2 x augers *	n/a	n/a	42kg	42kg	42kg
Flue	125mm (5")	125mm (5")	125mm (5") x2	125mm (5") x2	125mm (5") x2
Wash system (condensing unit)	15mm compression	15mm compression	15mm compression	15mm compression	15mm compression
Flow/return connection	1" female	1 1/4" female	1" female	1" female / 1 1/4" female	1 1/4" female
Condensate drain	1 1/4" female	1 1/4" female	1 1/4" female	1 1/4" female	1 1/4" female
Water content	51.5 litres	60 litres	103 litres	111.5 litres	120 litres

\*Note: These are empty weights.



# Biomass Flue System

## Biomass Flue System

This 125mm (5") vertical conventional stainless steel, twin wall insulated flue system is specifically designed for use with Grant pellet boilers.

It has been fabricated to cope with continuous operating temperatures of up to 200°C although the typical flue gas temperature produced by Grant biomass boilers is less than 80°C. The system is designed so that the stainless steel outer case is load bearing and stainless steel inner liner is free to expand independently to accommodate temperature change.

Available with a range of extension pieces and bends, the system can easily be assembled to suit a wide variety of installations.

### Key features

- Twist-lock bayonet jointing system including seals, secured by locking bands.
- Advanced corrosion resistant design and construction uses laser welded stainless steel inner liner and case.
- The 25mm high efficiency Superwool blanket maintains flue gas temperature, maximising efficiency, improving flue draught on start up and minimising condensation.
- Low external case temperature.
- Inner liner held by the male locking collar but free to expand and contract with temperature by up to 18mm through the female collar.
- The inner liner has an inward bead at the female end which acts as a capillary break preventing moisture being drawn through the joint.
- CE certified denotes it is fully compliant with the new regulations in force from 1st July 2013.



## Assembly

Biomass flue system components are joined together by placing the female collar of one section over the corresponding male collar of the preceding section then locking by rotating the upper section clockwise. It is vital that all flue components are installed with the male collar pointing upwards. An arrow on the label indicates the flue gas direction.

The inner of each section is enlarged at the male end so that the female end of the other section or fitting enters into it and overlaps. This allows any condensation to run back to the boiler without escaping from joints.

## Flue Runs

The flue should remain as straight as possible through its vertical run to assist flow. Should it be necessary to angle the flue run, an offset no greater than 45° to the vertical flue. A vertical rise of 600mm should be allowed immediately above the appliance before any offsets. Flue systems should be installed to the requirements of Building Regulations Document J (England, Wales, Northern Ireland and the Republic of Ireland).



### Important

Only the Grant Biomass flue system can be used with Grant pellet boilers, as it has been designed to enable efficient operation and reliability. Failure to comply with the above, may result in the guarantee becoming invalid.

A maximum of two 45° bends should be used in the flue run. This can be increased to a maximum of four between the boiler and the terminal if an inspection hatch is fitted between the second and third elbows.

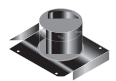
# Flue Components

## Flue Components

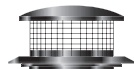
Wall support side plate	
WPB/WS	Models up to 36kW



Intermediate top plate	
WPB/TP	Models up to 36kW



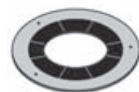
Raincap	
WPB/RC	Models up to 36kW



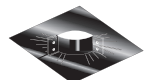
Viton gasket*	
WP/02	Models up to 36kW



Firestop plate	
WPB/FP	Models up to 36kW
WPW/FP	Models up to 36kW



Support plate (2 piece)	
WPB/SP	Models up to 36kW
WPW/SP	Models up to 36kW



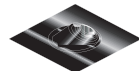
Roof support band	
WP/RS	Models up to 36kW



Guy wire bracket	
WP/GB	Models up to 36kW



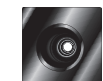
Uni flashing (80mm-200mm)	
WP/UF200	Models up to 36kW



Storm collar	
WPB/SC	Models up to 36kW



Pitched flashing (lead)	
WP/PFL	Models up to 36kW



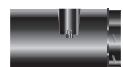
Anchor plate/flue adaptor	
WPB/AP	Models up to 36kW



Extension to flue adaptor	
WPB/CA	Models up to 36kW
WPW/CA	Models up to 36kW



Inspection pipe	
WPB/IP	Models up to 36kW
WPW/IP	Models up to 36kW



Trim collar (for wall sleeve 45°)	
WPB/TC	Models up to 36kW
WPW/TC	Models up to 36kW



Flue cantilever (570mm)	
WPB/CANT	Models up to 36kW



Note: Boilers over 36kW will require two independent flue systems. If this is not possible, please contact Grant UK for guidance.

## Extensions and Bends

Extension 1000mm	
WPB/EXT1000	Models up to 36kW
WPW/EXT1000	Models up to 36kW



Extension 500mm	
WPB/EXT500	Models up to 36kW
WPW/EXT500	Models up to 36kW



Extension 333mm	
WPB/EXT333	Models up to 36kW
WPW/EXT333	Models up to 36kW



Extension 160mm	
WPB/EXT160	Models up to 36kW
WPW/EXT160	Models up to 36kW



Adjustable extension 75mm-250mm	
WPB/ADJ250	Models up to 36kW
WPW/ADJ250	Models up to 36kW



Note: An additional extension is required when purchasing an adjustable section.

30° bend	
WPB/30	Models up to 36kW
WPW/30	Models up to 36kW



45° bend	
WPB/45	Models up to 36kW
WPW/45	Models up to 36kW



Locking band	
WPB/01	Models up to 36kW



## Flue Accessories

Extended structural locking band	
WPB/LBEXT	Models up to 36kW



Wall bracket 60mm	
WPB/WB60	Models up to 36kW
WPW/WB60	Models up to 36kW



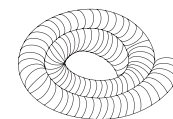
Adjustable Wall brackets 50-300mm	
WPB/WB300	Models up to 36kW
WPW/WB300	Models up to 36kW



Wall sleeve 45°	
WP/SLE	Models up to 36kW

## Flexi Flue Liner Kits

125mm stainless steel liners (includes box kit with WPB/AP, WPB/CA and WPB/RC)		
WPKIT6/125	6m	Models up to 36kW
WPKIT8/125	8m	Models up to 36kW
WPKIT10/125	10m	Models up to 36kW



Key	
WPB	Black painted products
WPW	White painted products

## Grant Biomass Forum

Take a look at the Grant Biomass Forum. It is designed to help installers find answers to technical queries and allow discussions with other heating installers about wood pellet boilers and related topics: [www.grantbiomassforum.com](http://www.grantbiomassforum.com)

## Guarantees

Grant wood pellet boilers are guaranteed for one year from date of purchase, two years if the product is registered within 30 days (excluding consumable items), subject to being serviced annually and installed in accordance with the manufacturer's instructions. The heat exchanger (jacket) within the Grant Spira is covered by a five year guarantee.

On completion of the installation all Grant Engineering wood pellet boilers must be commissioned and the Boiler Passport returned to Grant Engineering.

This leaflet is accurate at the time of printing but as Grant Engineering 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.

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# COMING IN 2015...

## Grant Vecta Condensing Biomass Boiler Range

Compact high efficiency wood pellet models for utility applications.

### Key Features

- Modulating output from 4kW to 16kW.
- Fully condensing operation with proven Grant Vortex technology.
- Operating efficiency in region of 95%.
- 70kg capacity top fill internal hopper.
- Electronic monitoring of all functions.
- Simple to install and maintain.
- New patented burner & boiler design.
- Burner accessible for rapid cleaning.
- Compact white casing design incorporating smart safety features.
- User friendly controls.
- Future option for vacuum system pellet feed.
- Exempt product under Clean Air Act from date of release.
- MCS approved from date of release
- 'Burner on', 'Low pellet' and 'Ash removal' indication lights.



## Also coming...

## Grant 18kW Spira Wood Pellet Boiler



**Grant 18kW, 26kW & 36kW Outdoor Spira Wood Pellet Boilers**

## Other products available from Grant Engineering



Condensing Oil Boilers



Cylinders



Solar Thermal Water Systems



EZ-Fit Flue Systems



Back Boilers



GRANT ENGINEERING IRELAND  
Crinkle, Birr, Co. Offaly, Ireland  
T: (057) 9120089 F: (057) 9121060  
E: [info@grant.eu](mailto:info@grant.eu)  
[www.grantengineering.ie](http://www.grantengineering.ie)

NORTHERN IRELAND  
Unit 117, 21 Botanic Avenue  
Belfast BT7 1JJ, Northern Ireland  
FREEPHONE : 0800 2794796  
E: [info@grantni.com](mailto:info@grantni.com)