GUIDE TO **CONDENSING BOILERS**

Consumer, Specifier, Installer
and Merchant guide to
oil-fired condensing boilers

GRANT UK

The most **commonly asked questions** about **oil-fired condensing boilers**

Q. Why have Grant produced an oil-fired condensing boiler?

A. Global warming and environmental issues are on everyone's mind, so any new appliance that can reduce harmful greenhouse gases, whilst improving heating and hot water running costs makes sense.

Also, major changes to Building Regulations back in 2007 meant that only condensing oil-fired boilers should be installed in England, Wales and Scotland.

The Channel Islands will make a mandatory switch to condensing technology on 1st January 2011.

Q. What is a Condensing Boiler?

A. In modern boilers up to 20% of the energy produced is lost to the atmosphere through the flue system. Condensing boilers are designed to capture part of this lost energy (latent heat) and can therefore, maintain extremely high efficiency levels.

Q. Isn't the Grant Multipass boiler as efficient?

A. The Multipass was ahead of its time and is still one of the most efficient non-condensing boilers available today. However, to achieve very high efficiencies, as in condensing boilers, it is necessary to reduce flue gas temperatures to a point where they condense. As standard oil boilers are constructed of mild steel, so corrosion would occur if they were continually operated at these lower flue gas temperatures.

Q. What is different about a Grant Vortex Condensing boiler?

A. The Grant Vortex Condensing boiler has a high quality stainless steel heat exchanger incorporating Grant's unique turbulator baffle system. This patented design achieves exceptional seasonal efficiency levels of between 92.6-97% Gross (SEDBUK 'A' rated).

Q. Are condensing oil-fired boilers larger in size than equivalent output non-condensing oil-fired boilers?

A. Normally yes, but not in the case of the Grant Vortex, which on models up to 26kW have been designed to kitchen modular dimensions and will fit under a standard height worktop.

Q. Are condensing boilers difficult to install?

A. No! Plumbing and electrical connections are the same as standard boilers except for the addition of a condensate drain. This is generally run in 22mm (3/4") plastic pipe to the household waste system, or run to a soak away. The only requirement is to maintain a fall as you would for a waste pipe from a sink, and to avoid any possibility of the condensate freezing and blocking the pipe.

Q. What is condensate and is it dangerous?

A. Condensate occurs when the flue gas temperature of an appliance drops to below the 'dew point' and the steam present in the flue gases condenses and becomes a liquid. This liquid is slightly acidic but no more so than tomato juice and can be run directly into the household waste system.

Q. What is the difference between ‘Gross’ and ‘Nett’ efficiencies?

A. This is quite difficult to explain, however, in basic terms – ‘gross’ or ‘nett’ efficiencies refer to an efficiency calculated using either the gross or nett calorific values of the fuel.

Gross Calorific Value is the maximum heat in the fuel, including the latent heat, released during the combustion process.

Nett Calorific Value is the gross calorific value, less the latent heat produced.

The latent heat converts the water produced during the combustion process into steam. This heat is normally lost with the combustion gasses through the flue system.

An efficiency calculated ignoring the latent heat, ie. using the nett CV will always be greater than one where the latent heat is included, i.e. using the gross CV, therefore the so called nett efficiency will be higher than the gross efficiency.

All boiler tests in Europe use the ‘nett’ efficiency method for calculating appliance operating efficiency.

Q. I have heard that you need to oversize your radiators and run the boiler at a lower temperature, is this correct?

A. Condensing boilers work at their most efficient when they condense, and this requires the return water temperature to the boiler to be around 50^{O}C or less. However, we do not recommend changing radiators for larger versions to achieve this as it is uneconomical, and for most of the year the radiators will be oversized anyway. The Grant Vortex Condensing boiler will operate efficiently on any system and even when not condensing, the larger heat exchange area will mean you will still be saving money against a standard boiler.

Q. What about servicing?

A. Again, Grant Vortex Condensing boilers are no different from standard boilers, however, you also need to check that the condensate trap and drain are working correctly as this is essential to the operation of the boiler.

Q. Can I connect a Grant Vortex boiler to an older system?

A. Yes. Providing the system is cleansed thoroughly and updated to fully pumped operation (not gravity hot water).

Q. What about flueing?

A. As condensing boilers have 'wet flues', it is important to follow Grant's guidelines for flue installations. Our range of EZ-Fit low level, high level and vertical balanced flues are all suitable for condensing operation. When installing a condensing boiler on a conventional flue, Grant's range of EZ-Fit Flexi-kits and components should be used (Orange System).Further details can be found in the Grant EZ-Fit Flue Guide, or the boiler Instruction Manual.

Q. I've heard that condensing boilers 'plume' - what does this mean?

A. As flue gas temperatures are very low on condensing boilers, a plume of water vapour can often be seen at the terminal (similar to your breath on a cold day). This is the boiler's normal operating mode, but if this is likely to cause a nuisance to yourself or a neighbour's property, we recommend you install a high level or vertical flue system.

Q. Can I connect underfloor heating directly to a Grant Vortex Condensing boiler?

A. Yes, although we recommend the return temperature remains above 40^{o}C. However, it is more usual to connect underfloor heating via a system of mixing valves or even a separate calorifier so that radiators which are normally heated to a higher temperature can be served as well.

Q. Is a condensing boiler more expensive and will it save me money on my fuel bills?

A. The materials used to produce a condensing boiler are more expensive so generally the boiler costs more. However, in the case of the Grant Vortex Condensing boiler this additional cost will be paid back within 2-3 years against an older inefficient boiler.

Q. What is SEDBUK?

A. SEDBUK stands for Seasonal Efficiency of Domestic Boilers in the UK and is a Government sponsored database for domestic gas and oil boilers both old and new. It enables consumers and engineers to choose an appliance based upon its efficiency and is the nearest thing the heating market has to an energy labelling system. Running cost comparisons are available by logging onto the SEDBUK database website at: www.sedbuk.com

Q. What type of heating controls should I install with a Grant Vortex condensing boiler?

A. Any of the regularly used heating controls are suitable for use with these appliances, however, for even better control of the system you could choose to use a control package that incorporates inside and outside temperature sensor stats available from Grant UK.

Q. Why is a condensing boiler better for the environment?

A. As condensing boilers are much more efficient they burn significantly less fuel and consequently produce a smaller amount of harmful CO_2 than the equivalent sized standard boiler.











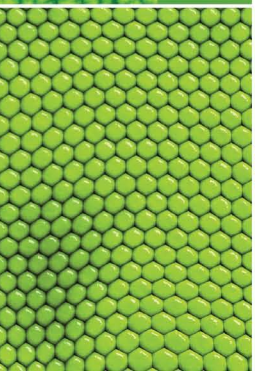

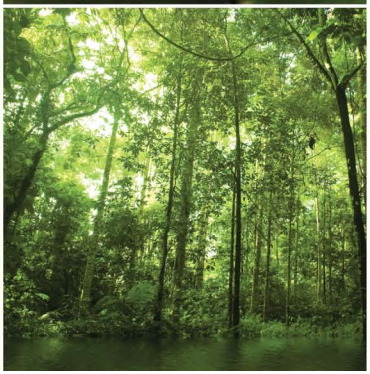

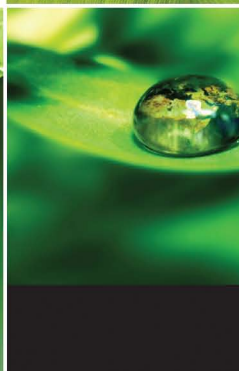

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