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Fulton's PURE Technology approach achieves world-first vertical steam boiler design with highest efficiencies and ultra-low NOx emissions

The all-new gas-fired, vertical spiral-rib tubeless steam boiler from Fulton, the VSRT, is the first range to emerge from the company's new 'PURE Technology' approach, an initiative that has resulted in a world-first design that is durable, long-lasting and boasts the highest efficiencies and

ultra-low NOx emissions as standard.

By adopting a systems-engineering approach to design and implementing PURE Technology – the result of a clean-slate design approach that combines new people with new skills bringing a new approach to the design and optimisation of heat transfer solutions – Fulton's VSRT radically challenges the heat transfer and mechanical design principles of traditional steam boilers. It is also claimed by the company to be the most radical change to vertical steam boiler design since Fulton pioneered the vertical tubeless boiler in 1949 and, for the right application, a worthy successor to the company's renowned J Series.



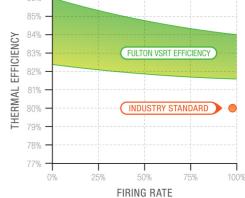
Commenting for Fulton, sales and marketing manager Leigh Bryan says: "To meet ever-more stringent industry and environmental standards, our PURE Technology approach looks to enhance heat transfer, provide class-leading efficiencies, improve steam quality and reduce NOx emissions. So rather than improve existing products to achieve these goals, PURE Technology radically challenges conventional boiler design by engineering solutions that are fit-for-purpose and applications."



With over 15 patents pending in three continents, the VSRT's spiralrib heat exchanger is a world first. It attains industry-leading heat transfer rates thanks to its unique spiral design, which achieves low stack temperatures by passing the flue gases through a spiral-wound heat exchanger that is fully immersed in water. "This all-new spiral-rib design benefits from an extended heat transfer path and dual-direction heat flow, with the spiral annulus designed and optimised to create high heat transfer rates." says Leigh. "This optimises heat transfer to create a longer-lasting boiler that we believe will beat the

competition in every category of durability!"

The ground-breaking spiral rib heat exchanger design not only allows Fulton to improve boiler efficiency but, with virtually zero thermal stress, a thick walled construction and featuring vertical tubeless design architecture, the VSRT is one of the most durable steam boilers available.



It features a fully water-backed pressure vessel, which is wrapped in high-density insulation to achieve minimal thermal losses and low outer surface temperatures. The tubeless design has also enabled Fulton to create a compact boiler with minimal footprint. No refractory also means significantly lower weight (compared to traditional vertical steam boilers) for ease of installation.

Ultra-low NOx emissions of less than 20ppm are achieved thanks to the VSRT's combustion technology, which features a modulating burner and furnace that have been purposely-designed as a single component and fully-matched with the VSRT in mind. This has helped Fulton to achieve up to 10:1 turndown capabilities and industry-leading performance of >82.5% gross thermal efficiency and 99.75% steam quality at 8 bar. When correctly sized for applications, the exceptionally high turndown will result in savings above and beyond those gained from the stated

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efficiencies.

With features including a tubeless design, no internal refractory and revolutionary cyclonic air filtration, the VSRT is extremely easy to maintain and operate. For applications where contaminated air can reduce boiler uptime – such as laundry and dry cleaning – the VSRT's cyclonic air filter effectively separates debris and damaging particles from the combustion air and, because it won't clog over time, eliminates the need for replacement filters. Maintenance is further improved compared to other vertical boilers thanks to the VSRT's industrial control platform and easy access to the pressure vessel.

The VSRT is currently available with outputs from 160 to 960 kg/h, complies with the City of London Air Quality Strategy and anticipated MCPD regulations, is constructed to BS EN 12953 and CE marked to PED. Its pressure vessel and burner are backed by a five year guarantee as standard.

For further information on the VSRT Series, call Fulton on 0117 972 3322, email sales@fulton.co.uk or visit www.fulton.co.uk.

Notes

With manufacturing facilities in the United States, Great Britain and China, Fulton is a global manufacturer of steam, hydronic and thermal fluid heat transfer systems. Backed by over 60 years of research, innovation and experience, Fulton is building on a tradition of success and is focused on improving life through heat transfer solutions. The company also provides sales and application advice, with full commissioning and after sales service, to a growing customer base in numerous sectors including pharmaceutical, process, petrochemical, healthcare, food & beverage, processing, etc. For additional information about Fulton, please visit www.fulton.co.uk.

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