

Volvo Penta announces a higher power output for its 5-liter Stage V engine

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Extensive testing of an upgraded hardware configuration reveals that Volvo Penta's D5 model in its EU Stage V off-road engine range can now be offered at 175 kW (238 hp).

Following the unveiling of its 5-liter Stage V engine concept in 2017, Volvo Penta has made adjustments to the design in order to leverage more power from the unit. After thorough analysis and investigation to secure a high quality product, the company can now reveal an upgrade in available power from an initial output of 160 kW (218 hp) to a new maximum level of 175 kW (238 hp). The alterations have been made in order to offer customers a superior product with enhanced performance, and the new maximum output has been verified through extensive testing.

"This is an exciting development as we can give a better, more powerful product, which enables OEMs to provide their customers with the next generation of machines equipped with a superior engine, offering enhanced performance and productivity," says Erik Lundberg, product manager for industrial engines at Volvo Penta.

Upgraded engine for enhanced performance

The 5-liter EU Stage V engine – TAD580-582VE – is a four-cylinder unit. Modifications have been made to the base engine, turbo selection, and exhaust aftertreatment system (EATS) in order to produce more power.

"More power from the engine leads to better performance and higher productivity of the machine into which it is installed," says Lundberg. "It means that the engine can be used in a wider range of applications than previously thought, and of course it benefits OEMs and operators in meeting their requirements. In addition, it opens up the possibilities of customers being able to downsize in using our D5 instead of another larger engine, which will be smaller, lighter and use less fuel, and therefore reduce the total cost of ownership."

Optimized performance

With new European Union regulations for off-road machinery emissions to be implemented in 2019, Volvo Penta has re-designed its engine range to offer solutions that are optimized for the future. The D5 model is part of Volvo Penta's EU Stage V range, which also includes D8, D11, D13 and D16 engines. The range as a

whole has a power output of 105 to 575 kW (143-782 hp).

All engine sizes feature common rail fuel injection and is designed to deliver maximum power and torque at low rpm. This results in optimized performance, smooth operation, low noise, and world-class fuel efficiency. They are equipped with all the key elements of Volvo Penta's Stage V concept.

Engineered with a perfectly matched EATS

Volvo Penta's Stage V engines are compact, with hardware layout and electrical interfaces that are compatible with engines of earlier emissions legislation.

The air inlet throttle, together with the uncooled exhaust gas recirculation (EGR), and the electrical exhaust pressure governor (EPG) deliver highly effective heat management of the engine. This enables the system to function without the need to inject fuel into the exhaust stream to raise the temperature. With this approach, the exhaust gas has an optimal temperature when it passes through the EATS. Low heat rejection from the complete system means that less cooling is required.

The EATS includes: Diesel Oxidation Catalyst (DOC); Diesel Particulate Filter (DPF; for D5-D13 models); Selective Catalytic Reduction (SCR); and Ammonia Slip Catalyst (ASC).

A regeneration strategy maximizing uptime

The D5-D13 Stage V engines and EATS are designed to work together to maximize passive regeneration during normal operation. With Volvo Penta's Stage V approach, there is no high-temperature regeneration due to the fact that sulfur regeneration in the SCR catalyst is not required; only soot regeneration is needed to clean the DPF.

"The upgraded power output for the 5-liter Stage V model exemplifies how we keep continually reassess how we can develop our products to provide the best possible solutions for customers," says Johan Carlsson, chief technology officer at Volvo Penta. "Operators want to be able to get the most out of their machinery for optimum productivity, and therefore OEMs keep looking at ways in which they can manufacture and offer high-performance equipment. With more power and more options, we are providing a win-win solution."

Volvo Penta will be at stand 6A 042 at Intermat, Paris, from April 23-28.

Source: Volvo Penta; SE10