



Case Study: Volvo Penta

Eminox partners with Volvo Penta to develop versatile off-road exhaust system range

With over 100 years' manufacturing expertise, Volvo Penta is one of the world's leading suppliers of high-capacity engines and complete power systems for marine and industrial applications. Working with a wide range of global equipment manufacturers and off-road machinery users, the engine expert has experience with machinery from almost every part of the heavy equipment sector, including road building, landscaping, open-cast mining, quarrying, port handling and building construction.

As part of its next-generation engine development upgrades to meet the latest Non-Road Mobile Machinery (NRMM) emissions-reduction regulations, Volvo Penta looked to Eminox to supply a flexible range of Stage IV-compliant Selective Catalytic Reduction (SCR) systems for its "Versatile" range of 11, 13 and 16 litre diesel engines. This posed Eminox a considerable task considering the enormous range of customers and machines on the market.

By working in close partnership with the Volvo Penta team, Eminox was able to utilise proven Euro V exhaust technology and develop it into a Stage IV-compliant suite of SCR products. Initial development was supported by the use of in-house Computer Aided Design (CAD) processes, as well as Computational Fluid Dynamics (CFD) simulations and Finite Element Analysis (FEA) to guarantee accurate concept development and reliable real-world performance. Alongside the need for flexible application and compliance with the latest emissions regulations, the project's key objective was to deliver high performance solutions to fit the tightest of space envelopes.

At every stage of development, from initial concept to final manufacture, Eminox's rapid prototyping capabilities and flexible cellular manufacturing proficiencies meant that production-ready prototypes could be developed with minimal lead times, before being tested on Volvo's in-house engine bed facility.

The complete systems approach, taking into account the requirement for versatility and close interrelationships between all components, led to a high performance Stage IV SCR solution that could be used in an extensive range of NRMM equipment in the global marketplace.

As a result of the successful project, Volvo Penta is now able to supply customers worldwide with a flexible range of emissions-compliant exhaust system solutions, specifically developed for use in heavy duty machinery. Through the clever use of shared components and economies of scale, the engine specialist can now deliver a cost-effective exhaust solution across its entire 11, 13 and 16 litre series.

(Name), (Job title) from Volvo Penta commented: *"Working with Eminox to embrace SCR technology has delivered crucial value to our total product and service offering. As well as delivering exceptional emissions-reductions performance, the flexible suite of exhaust solutions means that we can continue to offer high-technological products to meet the engine requirements of tomorrow."*