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Diversified Alfa Laval PureNOx technology will provide greater EGR economy at different fuel sulphur levels

Alfa Laval PureNOx technology has long been the choice for water treatment in Exhaust Gas Recirculation (EGR), one of the main strategies for Tier III NOx compliance. Soon it will be channelled into two differentiated systems, PureNOx LS and PureNOx HS, optimized according to fuel sulphur level and the updated specifications of engine manufacturer MAN Energy Solutions.

Built on Alfa Laval's leading expertise in centrifugal separation, PureNOx technology has proven successful in thousands of hours of EGR operation at sea. In response to new specifications from MAN Energy Solutions, with whom Alfa Laval has cooperated closely in PureNOx development, PureNOx will soon be released in two streamlined versions according to fuel sulphur level: PureNOx LS (Low Sulphur) and PureNOx HS (High Sulphur).

“By taking advantage of the new EGR specifications, we will provide optimized and more compact water treatment systems that lead to more cost-efficient EGR,” says Ayla Körlof, Global Business Manager, Alfa Laval PureNOx. “The centrifugal separator module, which will be identical for PureNOx LS and PureNOx HS, will be 50% smaller than that of today's PureNOx Prime.”

Sales start for both PureNOx systems is expected at the end of 2018.

PureNOx LS – effective bleed-off water cleaning

PureNOx LS, which will be used with EGR engines running on low-sulphur fuel, will clean the EGR bleed-off water before overboard discharge in accordance with the upcoming MEPC resolution on EGR guidelines. Based on experience from years of real-life operation, MAN Energy Solutions has determined that EGR process water cleaning is not necessary when low-sulphur fuel is used. This allows for a PureNOx LS setup that is much like a bilge water

system, where the centrifugal separator is combined with an oil monitor and a three-way valve.

PureNOx HS – process water cleaning and synergy with SOx compliance

EGR process water will be cleaned by PureNOx HS, which will be used with EGR engines running on high-sulphur fuel in combination with a SOx scrubber. In PureNOx HS, the separator will be combined with an initial filter stage to remove the worst process water contaminants. Heavier particles will be separated from the bleed-off water prior to discharge through the SOx scrubber system, again in line with the pending EGR guidelines.

“When PureNOx HS is used with a closed-loop or hybrid scrubber system, the EGR bleed-off water will be processed by the SOx system’s own water cleaning unit,” says Körlof. “This means added peace of mind for customers who choose EGR with PureNOx and exhaust gas cleaning with Alfa Laval PureSOx. Not only is the PureSOx water cleaning unit the most effective on the market, customers will get a complete, tested and approved setup with smoothly cooperating systems from a single supplier.”

Support for Eco EGR fuel savings

A further benefit of both PureNOx LS and PureNOx HS will be the ability to support operation in Eco EGR mode. Eco EGR is an additional engine mode in which EGR is used for Tier II as well as Tier III compliance. When Eco EGR is employed for Tier II, the EGR system will both reduce NOx formation and result in substantial fuel savings.

“For Eco EGR mode to work, the water treatment system must be able to operate continuously,” says Körlof. “PureNOx LS and PureNOx HS have been tested and proven in round-the-clock operating conditions, which means customers will have reliable access to Tier II fuel savings.”

To learn more about PureNOx technology and Alfa Laval’s approach to NOx compliance, visit www.alfalaval.com/purennox

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Editor's notes

About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval's products are also used in power plants, aboard ships, oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval is listed on Nasdaq OMX, and, in 2017, posted annual sales of about SEK 35.3 billion (approx. 3.6 billion Euros). The company has about 16 400 employees.

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