
Press release

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MAN Energy Solutions SE
Stadtbachstraße 1,
86153 Augsburg, GermanyPostal address:
86224 Augsburg, Germanywww.man-es.com

Group Communications
Nils Soeholt
P +45 33 85 26 69
Nils.Soeholt@man-es.com

MAN Introduces Second-Generation Common-Rail

New modular four-stroke injection system 2.2 builds on experience from previous CR

MAN Energy Solutions has announced a new generation of its Common Rail injection system for its medium-speed, four-stroke portfolio. The CR 2.2 common-rail fuel-injection system will eventually completely replace its CR 1.6 predecessor and builds on its experience, allowing a very precise and flexible control of injection pressure, timing, and duration throughout engines' entire operating ranges. Engine performance, emissions and fuel consumption can be optimised accordingly.

Stefan Eefting, Senior Vice President and Head of MAN PrimeServ Germany, said: "This new common-rail generation integrates the experience and lessons learned from the previous CR generation. A key development is that we have reduced our dependency on subsuppliers and brought production completely in-house, which – in dispensing with external partners – greatly simplifies the technical side of things for us. The result is a proven, modular system that can easily be adapted to different engine sizes and that I'm positive will be well-received by the market."

The new CR 2.2 generation is based on the CR 1.6's extensive field experience running over 17 years on over 500 engines and 5,000 cylinders, representing more than 17,800,000 accumulated operating hours in different applications and fuels. Its core components comprise an optimised and uniform high-pressure pump and a newly developed injector, integrating the CR 1.6 valve group and making the entire system setup more coherent. It is initially being introduced via the MAN 49/60DF engine.

MAN Energy Solutions reports that CR 2.2 can boast of up to 38% increased rail-pressure for all applications, and over 33% increased target time-between-overhaul intervals for most components. The CR 2.2 system features some 35% fewer high-pressure connections, meaning a significantly reduced risk of leakages and greater service-friendliness.

Alexander Knafl, Senior Vice President, Head of Engineering R&D Four-Stroke, MAN Energy Solutions, said: "Common-rail 2.2 brings multiple benefits for engines and engine performance, including reductions in fuel consumption, emissions, vibrations and noise. In general, it offers improved performance and increased robustness compared to its predecessor and has already successfully accumulated over 30,000 engine test hours running on DMA and HFO."

Other features of common-rail 2.2 include:

- an increased system pressure up to 2,200 bar to comply with future emission limits while offering the best possible fuel consumption;

- an electronically-controlled injector including an accumulator enabling the greatest flexibility with multiple injections and maximum stability during an injection event;
- a reduced modular design for simplified service and allowing the maximum free space for engine maintenance;
- a platform for a broad variety of fuels including HVO and FAME;
- its proven technology with all safety functions from CR 1.6 implemented;
- delivers lower fuel-oil consumption, soot emissions, mechanical load to the engine (due to the reduced pressure-rise gradients in the cylinder), vibration and noise.



The complete CR 2.2 System for a 6L 49/60DF engine with high-pressure pumps, injectors, accumulators and valve blocks

MAN Energy Solutions Contacts:

Dr. Johann Wloka, Head of Fuel Systems, Engineering Engines

johann.wloka@man-es.com

Robert Strobel, Senior Project Manager - Fuel Systems, R&D Four-Stroke

robert.strobel@man-es.com

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