Press Release
MAN Truck & Bus

New MAN engine portfolio for construction machinery lays the foundation for EU emission stage V.

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MAN Truck & Bus
Dachauer Straße 667
D-80995 Munich

Head of Media Relations
Martin Böckelmann

Phone: +49 89 1580-2001
Martin.Boeckelmann@man.eu
www.man.eu/presse

Compact and cost efficient tier 4 final emission stage implementation

Successful field tests for the D3876

Flexible stage V solution for optimum use of space

MAN will present the twelve-cylinder D2862 LE13x engine and the six-cylinder D3876 LE12x engine at bauma 2016 in Munich - two new engines with significantly improved performance characteristics and based on the latest MAN engine generations. The result is that a product range from 294 to 816 kW and with a displacement of 12.4, 15.2 and 24.2 litres is now available for use in heavy duty construction machinery.

One particular standout feature is the D3876 LE12x Common Rail injection system with a maximum injection pressure of 2500 bar, available independently of load and engine speed and which, in combination with the variable-turbine geometry of the turbo charger, ensures optimum engine dynamics. The high injection pressure produces extremely efficient fuel consumption and lowers emissions without compromising on performance. “We are extremely satisfied with the results under test conditions in terms of fuel consumption and performance characteristics. Our initial global field tests in the off-road area confirm this impression,” commented Jürgen Haberland, Head of Off-Road MAN Engines.

The six-cylinder D3876 LE12x in-line engine guarantees a broad torque and plateau of 1050 to 1450 rpm with maximum torque of 2700 to 3000 Nm. This gives sufficient charging pressure and dynamics for wheel loaders, excavators and mobile cranes even at the low revolution and efficient engine speed range. For the same applications with an even

greater power requirement, wastegate charging will deliver a maximum torque of 5000 Nm at 1300 rpm on the twelve-cylinder D2862 LE13x V engine. Without exhaust gas recirculation, the engine achieves low heat dissipation which means that radiator dimensions are therefore reduced.

All units are designed for the currently valid US Tier 4 final/CARB and EU stage IV emission standards. With the use of modular exhaust gas aftertreatment, the entire engine range is optimally equipped for the future EU stage V without intervention in the basic engine.

Our compliance with the current and future emission standard is due to the many years of experience we have of exhaust gas aftertreatment systems in the groups own commercial vehicles and of the large-scale production of industrial engines. This results in a current engine portfolio for construction machinery which meets the emissions standards and market requirements with a low level of complexity. “An SCR catalytic converter and the optimised combustion and internal engine exhaust gas recirculation of our MAN engines is sufficient for meeting US EPA Tier 4 final and EU stage IV. A bulky diesel particulate filter, the additional costs associated with this, and an oxidation catalyst are not necessary”, explained Haberland.

It is therefore not necessary for machine manufactures to make any changes in terms of heat balance, on the mechanical side or in terms of electronic triggering in order to upgrade to EU stage V effectively. The basic engine stays the same, and apart from the SCR catalytic converter and the diesel particulate filter, MAN simply makes changes to the control unit.

In order to comply with the EU stage V statutory particle count limit from 2019, MAN has also used space efficient modular exhaust gas aftertreatment (AGN). “We have decided to position the particle filter and SCR system separately but together to provide flexibility. This allows customers greater flexibility in complex assembly situations and when using the limited installation space available than would be the case with a bulky integrated individual solution”, says Haberland. Also, the diesel particulate filter can simply be removed for the machine to have an alternative product life cycle in countries where the emission legislation is less strict.

The intermodularity of the AGN allows this adaptability to be transferred to the different D26, D28 and D38 engine series. Solutions for a wide range of series can be configured via simple design measures such as extending the SCR catalytic converter or parallel connection of two systems.

It is not only machine manufacturers who are impressed with the modular AGN kits. Final customers also appreciate the low maintenance requirement of the components. The use of sulphur-insensitive SCR catalytic converters based on vanadium is the solution for users in countries with lower quality diesel fuels.

In terms of diesel particulates, improved particle separation and long service intervals are already provided by optimized internal engine combustion, a smart selection of diesel particulate filter sizes and their specific geometric design. Maintenance work can be carried out in a few simple steps in no time at all without special tools.

MAN Engines, a supplier of engines for construction machinery, is showcasing both engines present at bauma in Munich from 11 to 17 April 2016 in hall A5, on stand 325. MAN Truck & Bus AG commercial vehicles can be seen in hall B4 on stand 225.