



Engines: more torque, less wear

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MAN Truck & Bus optimises its drivetrain for even greater efficiency.

- **With its new engines and an optimised drive train, MAN already meets the Euro 6c emissions standard**
- **The D26 replaces the D20 in MAN and NEOPLAN coaches**
- **Countless optimisation measures ensure clearly improved fuel consumption**

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MAN Truck & Bus viewed the changing emissions regulations as an opportunity to overhaul its engine portfolio. With an optimised drivetrain, the improved engines offer more torque and greater performance with less wear. For the first time, the D26 can now also be operated with hydrotreated vegetable oils (HVO).

D26: higher exhaust gas temperature for optimum treatment

In the future, the 420 h.p. D2676 LOH Euro 6c will replace the 400 h.p. D2066 LOH in MAN and NEOPLAN coaches as well as in the chassis. New to the coach is an improved thermal management system to ensure that the exhaust temperature remains at a high level even in partial-load operation – for example, in normal terrain and/or during minimal vehicle utilisation – allowing emissions treatment systems to perform optimally. This also reduces the engine's warm-up period. This not only diminishes wear, but also protects the environment.

Still another innovation of the D2676 LOH is a regulated coolant pump. Unlike the previous inflexible, unregulated and constantly rotating coolant pumps, MAN's fully engine speed-regulated water pumps provide requirement-based coolant pump performance. The performance is regulated continuously between 20 and 95 percent. Where demand for coolant is low (e.g. in long-haul transport), 80% of the mechanical power

MAN Truck & Bus is one of Europe's leading manufacturers of commercial vehicles and supplier of transport solutions, with revenues of approximately €9 billion a year (2015). The product portfolio includes trucks, buses and diesel engines, as well as services related to passenger and cargo transport. A subsidiary of Volkswagen Truck & Bus GmbH, MAN Truck & Bus employs more than 35,500 people worldwide.



required from the coolant pump can be reduced, resulting in a clear fuel savings potential.

The engine's innovations include improved exhaust gas recirculation, new steel pistons and an oil level sensor. This ensures that an engine's low oil level will not pass unnoticed even if manual examination of the oil level is not possible – for example, if a ski carrier at the rear is blocking access to the engine compartment.

Drivetrain focused on efficiency and comfort

With regard to the MAN BrakeMatic electronic braking system, MAN and NEOPLAN coaches and intercity buses will soon feature the more powerful EVBec engine brake. Electronic regulation of the exhaust back pressure enables increased effectiveness of braking over the entire operating speed range, thus achieving a high degree of braking performance even at low speeds.

A new secondary retarder provides optimum braking in conjunction with a high axle ratio of $i = 2.73$. It achieves higher maximum torque of 4,000 Nm instead of 3,200 as well as a power level of 500 kW, an increase of 80 kW. This provides greater reserves even during heavy braking, thus increasing safety.

The standard MAN TipMatic gearbox employs a new moving-off and gear-shift strategy, optimally matched to the D26 engines. In addition, several new features are included: The new SmartShifting gearbox function plays a key role when it comes to finding the optimum balance between efficiency and comfort when shifting gears. It combines a new, fast shifting procedure in all gears with upshift assistance and shifting adapted to the actual driving situation. For demanding performance in challenging terrain or with heavy loads, the new D26 provides optimised moving-off capabilities. The torque, improved by 200 Nm, also contributes to excellent moving-off behaviour. Overall, the engine's 20 h.p. of increased power provides superior driving performance across a wide engine speed range.

Idle Speed Driving enables comfortable driving at idling speed without touching the accelerator. With this new feature, the bus/coach "glides" effortlessly through slow-moving traffic with the clutch engaged. While manual upshifting is possible from the first through to the sixth gear, downshifting is performed automatically when the idling torque is insufficient for a higher gear or when the driver brakes.



Pro-actively economical

With the optimisation of the drivetrain, a new generation of the proactive MAN EfficientCruise cruise control is introduced into MAN and NEOPLAN coaches. For the first time, this includes the EfficientRoll free-wheel feature that provides a gain in efficiency even on slight inclines by automatically moving the gear to the neutral "N" position and allowing the bus to move with as little friction loss as possible in the drivetrain. The most recent EfficientCruise generation produced a fuel saving of up to 6 percent and the new features are linked to a further increase in fuel efficiency.