



News from MAN at bauma 2019

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MAN will be presenting vehicles and driver assistance systems as complete solutions for the construction industry at bauma 2019.

- **New Euro 6 MAN engine family and launch of the new D15 truck engine series**
- **MAN TGE from 3 to 5.5 tonnes for the first time at bauma**
- **New MAN ComfortSteering and MAN Lane Return Assist safety and driver assistance systems together with VAS Video Manoeuvring System**
- **MAN presenting six vehicles from all its model series on stand 325 in hall B4, and a further five vehicles in the outdoor area in front of hall B4**

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MAN will be exhibiting a large number of driveline innovations and sector-specific product upgrades at bauma, the world's leading trade fair for construction, building materials processing and mining machinery, vehicles and equipment, being held in Munich from 8th to 14th April 2019. The 11 MAN vehicles will be presented on stand 325 in hall B4, as well as on an outdoor stand outside the same hall.

11 MAN exhibits at bauma

MAN will exhibit six vehicles in hall B4, stand 325. The product highlights are: MAN TGE, new D15 engine, new engine family, improved efficiency across-the-board based on increased payload and sector-specific configurations.

- **TGE 6.180 4x2 three-way tipper**
The largest tipper in the MAN TGE series, featuring a single cab and twin tyres on the rear axle.
- **TGL 12.250 4x2 BL three-way tipper**
Complete vehicle supplied ex-works for construction, landscaping

MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of some 11 billion euros (2018). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON SE and employs more than 36,000 people worldwide.



and horticulture companies. Tractor vehicle for transporting mini-excavators and equipment.

- TGS 32.400 8x4 BB truck mixer
Very lightweight 8.95 tonne sector-specific chassis providing a high payload thanks to the new lighter D15 engine and hypoid axles.
- TGS 33.470 6x6H BL mobile crane tipper
Medium-height chassis with MAN HydroDrive on the front axle providing traction as required. Launch of the new Euro 6 D26 engine, ComfortSteering and Lane Return Assist. With 59 tonnes gross train weight, the ideal vehicle for transporting construction machinery.
- TGX 18.510 4x2 BLS tipping semi-trailer tractor
High-specification XLION special model with the spacious XLX cab. Launch of the Euro 6 D26 engine updated by 10 hp and 100 Nm of torque.
- TGX 33.640 6x4 BLS heavy-duty tractor
Compact three-axle heavy-duty tractor for transporting heavy construction equipment and machinery. Their permissible gross train weight is 160 tonnes – with an exemption of up to 180 tonnes.

A further five vehicles exhibited on the open area in front of hall B4 will demonstrate the detailed sector-specific preparation of the MAN chassis units for their often specialist construction tasks:

- TGE 3.180 4x2 heavy transport support vehicle BF4
Box van featuring an on-roof dynamic traffic sign unit and a racking system in the interior.
- TGM 18.320 4x4 BB mobile crane tipper
All-wheel drive vehicle fitted with winter clearing equipment ex works, for use all year round on construction sites and for municipal services.
- TGS 35.400 8x4 BB three-way tipper
Maximum payload in the classic four-axle tipper segment. The new D15 engine and the lightweight hypoid tandem axle help to reduce weight.
- TGS 35.500 8x4 BL large mobile crane
Sector-specific chassis to be equipped in future with 10 tonne front axles and a new front plate for front-end crane support. This will increase the load capacity for the crane superstructure and extend the working area of large loading cranes over the cab.



- TGS 50.500 10x4-6 BL concrete pump
Five-axle chassis with steered trailing axle and offset units on the frame for installation of a concrete pump with mast.

Ultra-lightweight truck mixer chassis

MAN is extending its initiative offering concrete deliverers a truck mixer chassis with an extremely high load capacity by optimising the weight of various auxiliary units. MAN launched the lightweight hypoid tandem axle unit at bauma in 2016. They offer a weight saving of 180 kilograms compared to the previously installed 13 tonne axles. The upgrade to the new MAN D15 engine series in 2019 will reduce the chassis weight by a further approximately 230 kilograms. This means around 410 kilograms additional payload - a big gain in terms of efficient transportation.

The chassis, weighing about 8.95 tonnes, meets the approval criteria for off-road vehicles of category N3G of standard height and with 315/80 R22.5 tyres, even with these hypoid axles. For the driver and the operating company it is important that MAN has achieved this weight reduction without any sacrifice in terms of equipment specification or cab comfort.

The same payload optimisation measures will benefit companies operating MAN TGS three-axle or four-axle tippers. For those models, too, the new D15 engine and the option of the lightweight hypoid tandem axle will reduce weight by some 410 kilograms.

MAN TGE at bauma for the first time

The MAN TGE series covers the range from 3.0 to 5.5 tonnes gross train weight, adding new models at the bottom end of the MAN truck portfolio, which previously ranged from 7.5 to 44 tonnes. The MAN TGE marked its world premier in autumn 2016 at the IAA commercial vehicles show in Hanover. Since spring 2017, MAN has been introducing the van range into various European markets. The extensive product portfolio, featuring box vans, glazed combi vans and chassis units with single or crew cabs, covers a very wide range of applications in the construction industry as well as for landscaping and horticulture. The choice spans two wheelbases, three overhangs, three roof heights and three drive variants: front-wheel drive, rear-wheel drive and all-wheel drive. The 2-litre unit is available with four power ratings from 102 hp to 177 hp.



New D15 engine for MAN trucks

The new Euro 6 standard 9-litre D15 engine will be replacing the tried and proven D20 engine in the MAN TGS and TGX truck series in 2019,. The straight-six engine achieves higher power, lighter weight and better fuel efficiency, despite a smaller cubic capacity. The engine's light weight is a major benefit for sector-specific applications. The payload is increased by about 230 kilograms. The new engine design is a particular boon to transporters of bulk cargo, such as fuels, mineral oils and concrete.

With three power ratings at 330 hp (243 kW), 360 hp (265 kW) and 400 hp (294 kW), the D15 engine is positioned in the middle range between the top-end 6-cylinder D08 engine series developing 320 hp and the bottom-end D26 developing 430 hp. The cubic capacity of the straight-six engine featuring Common Rail injection is 9037 ccm, with a stroke of 145 mm and a bore of 115 mm. Traditionally MAN derives the designation of the engine from the last of those figures. The maximum torque is 1600 Nm with power output of 330 hp, increasing by 100 Nm at each power rating. A maximum engine braking power of 350 kW is available with the Turbo EVBec. The Common Rail injection system operating at up to 2500 bar injection pressure, in conjunction with demand-based control of auxiliary units helps to reduce fuel consumption.

As AdBlue fluid is readily available these days, MAN is leveraging an evolved version of the SCR technology (Selective Catalytic Reduction) combined with the self-regenerating filter system MAN CRT (Continuously Regenerating Trap) for the exhaust gas aftertreatment.

The factors that contribute to the consumption efficiency are various technical solutions for the thermal management of the engine and the engine auxiliary units. These include the warm-up and constant high exhaust gas temperature, a speed-regulated coolant pump that operates as and when required or the mechanism of the 1-cylinder air compressor.

Technical improvements and optimisations to the D26 and D38 engines

The new engine family also includes the other MAN engine series D08, D26 and D38, which in the course of 2019 will be launched on the market as Euro 6 versions. We have introduced a completely revised version of the D26. As a result, the D26 engines will have 10 hp more power and 100 Nm more torque than the previous version. So the new power ratings will be 430 hp, 470 hp and 510 hp. The optimisations have had a positive impact



on profitability by increasing the payload by around 80 kilograms and reducing fuel consumption by up to four percent.

The technical improvements have now enabled the oil-change intervals in the MAN D38 engine to be increased to 140,000 kilometres – depending on usage strain.

All four engine series – D08, D15, D26 and D38 – can be operated with paraffin fuels, such as hydrogenated vegetable oils, as per EN 15940, without the need for retrospective conversions.

New driver assistance and safety systems for MAN trucks

For many years MAN has successfully offered adaptive cruise control (ACC); now the company is adding a Stop & Go feature. When first launched back in 2018, it was offered only for two-axle on-road semi-trailer tractors. During the course of 2019 it will be available for a wide range of vehicles fitted with the TipMatic12 transmission, including particularly for the MAN TGS and TGX series used in the construction sector. Within the speed range 0 to 25 km/h, the ACC Stop & Go maintains a fixed distance from the vehicle ahead, brakes to a standstill as required, and after only a brief stoppage of a maximum of two seconds starts off again automatically. If the vehicle is stopped for longer, the driver presses the accelerator or a button on the multi-function steering wheel to move off again.

This year MAN will be introducing ComfortSteering in the TGM, TGS and TGX model series featuring the new engine family. This active steering system assists the driver by adapting the steering forces to the vehicle's speed.

This system also provides the technical basis for the Lane Return Assist (LRA) feature. If the driver unintentionally drifts out of the lane without indicating, the LRA activates and guides the vehicle back into the marked lane.

Video Manoeuvring System for optimum near-side visibility

Some of the truck exhibits on the MAN stand include the VAS Video Manoeuvring System which shows the driver the blind spot on the near-side of the vehicle, so providing early detection of critical situations when turning or manoeuvring. The system assists the driver by providing vision in addition to the rear-view mirror by means of an in-cab monitor attached to the near-side A-pillar or the dash display screen, allowing a view of the



blind spot area alongside the vehicle. A wide-angle camera on the near-side of the cab captures the image. The camera monitor system can be supplemented by ultrasonic sensors on the front of the vehicle and along the near-side. These provide the driver with acoustic and visual (LED display) alerts indicating obstructions.

Refurbished – all MAN trucks now with optimised interior

For the 2018 model year MAN presented a new cab interior for trucks with Euro 6 engines. In the course of 2019, all TGL, TGM, TGS and TGX series models conforming to emissions standards below Euro 6 will also be fitted with the new interior. Design, functionality and ergonomics are the focus areas.

Two modern interior colour schemes are available: “Sand” beige and “Urban Concrete” dark grey. The latter is more resilient to staining by dirty hands or oily workwear.

The main instrument panel features a clearly laid-out 4” high-definition colour screen. The displays on it are in different colours to aid readability and orientation. The central switch and control panel also has restructured functionality. Switches are grouped by function for more intuitive operation, and functions that are used frequently, such as the rotary switch for the MAN TipMatic automated transmission, are now positioned on the main control panel. The instrument panel above and to the right of the central control panel offers more storage space with integral electrical sockets and new flexible cupholders.

The repositioning of the TipMatic rotary switch also creates more space between the seats and in front of the bunk. The coolbox/storage box also contributes to this extra space, because in the long cab variant it is stowed away under the bunk. The coolbox is also larger than previously, and now has a capacity of 35 litres, with a quick cooling function and a quiet rest mode. Alternatively, a large lockable storage compartment can be provided in this location.

In the optimised rest area, the lower and (optional) upper bunks are provided with more convenient electrical controls, with switches for the internal lighting, the window lifters and the sliding roof. Four high-performance sockets (12V, 24V, USB) and a new lighting design enhance user comfort.



MAN Individual replaces Truck Modification

In spring 2019, MAN Truck & Bus is consolidating its modification operations on trucks, buses and vans under the name MAN Individual. MAN Individual's wide-ranging and industry-specific truck modification offering comprises work to both the exterior and interior of the cab, to the chassis and to the driveline. As an optical indication of the services commissioned, the offering also comes with an MAN Individual badge, which is attached to the instrument panel in the cab. However, this is only the case if the services largely involve making visible refinements to the vehicle.