



## **MAN presents TGS and TGX trucks at the IAA with new technologies that reduce fuel consumption**

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- **MAN EfficientCruise: fuel savings of up to six per cent**
- **TopTorque: torque increase of 200 Nm in all D26 engines**
- **MAN TipMatic 2: new gearbox functions**
- **MAN TGX EfficientLine 2: concentrated efficiency**

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By upgrading its TGS and TGX heavy truck series with a range of new technologies that reduce fuel consumption, MAN is making a significant contribution to reducing the total cost of ownership (TCO) and the CO<sub>2</sub> emissions produced by commercial vehicles. MAN has combined these measures for reducing fuel consumption in the new TGX EfficientLine 2 to create a unique efficiency model for long-haul transport.

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### **Foresighted Efficient Cruise GPS cruise control**

Huge fuel savings can be made by anticipating and making use of momentum and rolling phases – a challenge that is mastered perfectly by trained and experienced professionals at the wheel. To make this easier for drivers on long and unfamiliar routes, and to help drivers who have had less training to drive more efficiently, MAN has developed a cruise control system controlled by satellites.

MAN is presenting this system, called 'EfficientCruise', at the IAA for all heavy trucks and coaches. The assistant calculates inclines and slopes lying ahead using 3D map data stored on board and the vehicle's GPS position. It automatically anticipates and controls the speed when driving on inclines and slopes in such a way that the momentum of the vehicle is used to save fuel. This system enables fuel savings of up to six per cent to be made when used in a fully loaded 40 ton truck, without losing any time on the route.

The assistant controls the speed in exactly the same way as an extremely well-trained driver, the only difference being that it does so automatically. It builds up momentum in a targeted manner before reaching inclines and carries this momentum into the next incline. The vehicle saves fuel on inclines as its speed is reduced slightly and it is able to reach the top of the

The MAN Group is one of Europe's leading industrial players in transport-related engineering, with revenue of approximately €15.7 billion in 2013. As a supplier of trucks, buses, diesel engines, turbomachinery, and special gear units, MAN employs approximately 53,500 people worldwide. Its business areas hold leading positions in their respective markets.



incline at the minimum speed limit which has been set. On inclines, EfficientCruise prevents the MAN TipMatic 2 from shifting down if it is clear that the vehicle can reach the top in the current gear. This allows for further fuel savings.

EfficientCruise can even react further in advance than a trained driver, as the assistant can calculate the route and fuel injection several kilometres in advance during the day and at night.

With a desired speed and one of four possible speed tolerances both selected by the driver, EfficientCruise calculates the appropriate speed for the most fuel-efficient uphill and downhill driving. The driver can adjust the tolerance level for deviations from the set speed at any time to suit the driving scenario. Four tried-and-tested levels make it much easier for the driver to choose the right setting. This is line with MAN's approach to provide the driver with useful default settings, enabling them to achieve optimum levels of consumption whilst avoiding driving errors. Level 3 is preselected when the driver sets off, corresponding to +/- 7 km/h. Level 4 provides flexibility of 9 km/h, both up and down, when there is less traffic around and levels 2 and 1 are options best suited to heavier traffic.

### **TopTorque for all MAN TGS and TGX trucks with D26 engines**

MAN has updated its entire engine portfolio for heavy trucks by introducing a new technology that reduces fuel consumption – the TopTorque torque increase system for all D26 engines.

TopTorque is an electronic torque increase system – the engine's Power Train Manager increases the torque by 200 Nm in both the upper 11th and 12th gears. Thanks to the greater pulling power, the driver can remain in a higher gear for longer and the number of downshifts, for example on slight motorway inclines, are reduced. This reduces fuel consumption, increases the average speed and improves driving comfort. All vehicles with a D26 engine and MAN TipMatic 2 come with TopTorque as standard.

In the new engine portfolio, the 400 hp power level is already covered by the D26 engine. Thanks to TopTorque, this engine's maximum torque is increased to 2100 Nm. With TopTorque, the 440 hp power level can reach 2300 Nm, whilst MAN has increased the 480 hp power level to 2500 Nm in the highest gears.



### **MAN TipMatic 2 with new gearbox functions**

The new MAN TipMatic 2 automated gearshift system, which is available for all vehicles with D20, D26 and D38 engines, is a replacement for MAN TipMatic in the corresponding start-up groups. All vehicles with the new gearbox come with the Idle Speed Driving and Speed Shifting functions.

Idle Speed Driving enables comfortable driving at the idling speed. This function enables the driver to manoeuvre the truck particularly precisely and sensitively or to 'amble along' comfortably in slow-moving traffic on the motorway. After setting off, the vehicle continues to drive at a low idling speed of some 600 rpm, eliminating the need for the driver to press the accelerator. If the engine torque is not sufficient at idling speed, the TipMatic 2 shifts down a gear. As soon as the driver presses the brake pedal, the clutch opens.

With Speed Shifting, the MAN TipMatic 2 shifts between the three highest gears – 10, 11 and 12 – at a faster rate. The result of this is that the gearbox can shift down quicker when going uphill and the torque for tractive force interruption is shortened. This means that greater momentum is maintained, saving fuel.

### **EfficientRoll: reducing fuel consumption when idling**

The MAN TGS and TGX trucks with TipMatic 2 also come with the EfficientRoll gearbox function. This saves fuel by making use of gentle slopes on rolling stages, meaning it is designed especially for motorway and highway stretches that run gently downhill.

The gearbox shifts into neutral automatically and allows the vehicle to roll, without the engine brake causing the vehicle to lose speed. This enables the vehicle to carry the momentum from gentle downhill sections into a following flat stretch or slight incline. If the truck accelerates over the specified or permitted speed when rolling, the MAN TipMatic 2 automatically shifts into gear again.

### **The new MAN TGX EfficientLine 2 actively saves fuel**

In the new TGX EfficientLine 2, MAN has meticulously combined measures and technologies for reducing fuel consumption to create a stand-alone model.



The TGX EfficientLine has proven to be an attractive tool for overcoming the major challenges arising from increasing competitive pressures, rising diesel prices and stricter environmental regulations. Since its market launch in 2010, more than 27,000 customers have chosen the EfficientLine models and packages. Since then, no other vehicle manufacturer has implemented the known physical aspects in a vehicle as consistently as in the TGX EfficientLine from MAN. The newly available technologies presented above have enabled MAN to consolidate the positioning of the TGX EfficientLine as an extremely efficient towing vehicle.

All of the new electronic systems for reducing fuel consumption are built into the TGX EfficientLine 2 as standard. The foresighted EfficientCruise cruise control enables fuel savings of up to six per cent by making optimum use of momentum energy when driving on slopes and inclines.

The driveline for the TGX trucks with D26 TopTorque engines is ideal for fuel-efficient driving at particularly low speeds. Engines with a torque increase of 200 Nm are best paired with really high drive ratios. This increase in torque results in more control, fewer downshifts and a sustainable reduction in fuel consumption, especially on inclines. The new Speed Shifting function shifts between gears 10, 11 and 12 at a faster rate and reduces interruptions in tractive power on inclines.

Consistent reduction in the air and rolling resistance and the supplementary work of the engine are inherent in the TGX EfficientLine 2. For this reason, sunblinds and compressed-air horns are not necessary, and the aerodynamic chassis cladding also helps in saving fuel. Setting the speed limiter to 85 km/h instead of 89 km/h reduces the rolling resistance by approx. ten per cent. Furthermore, low rolling resistance tyres are used. In the EfficientLine models, the compressor for the compressed-air supply is controlled as required (Air Pressure Management) – the compressor is only activated when compressed air is used. This reduces operating time by around 90 percent in comparison with a permanently running air compressor for long-haul driving.

The TGX EfficientLine 2 also comes with the MAN TeleMatics on-board module as standard. In addition, new customers have the opportunity to test the service packages for six months at no cost. TeleMatics can be used to transfer the truck's consumption and maintenance data to its fleet manager who is then able to monitor the fuel consumption of the vehicle and driver, and even the tyre pressures and the condition of the brakes for an entire fleet, on their data portal. This makes it possible to ensure that no

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unnecessary fuel is used. As part of the free MAN ServiceCare service, the MAN service workshop schedules maintenance appointments for its customers on request.

MAN customers can also order EfficientLine packages for other models, such as two- and three-axle TGX solo vehicles and the TGS trucks, and will therefore receive the core technologies for reducing fuel consumption at an attractive package price. EfficientLine packages are also available for the D38 top of the range model.

The following features are combined in the EfficientLine 2 package: EfficientCruise, MAN TipMatic 2, Speed Shifting, Idle Speed Driving, Air Pressure Management, aeropackage, limit of 85 km/h, daytime driving lights, aluminium tanks for fuel and compressed air, and no spare wheel, sunblinds or compressed-air horns as they are no longer necessary.

Since GPS map data is not available for some countries outside of Europe, customers always have the choice between EfficientCruise and EfficientRoll for EfficientLine models and packages.

**#MANiaa – The MAN social stream for the IAA**