



## **MAN Traction Days 2015: MAN showcases its traction prowess with 50 vehicles from the construction and heavy-duty sector**

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Between 8 and 10 October 2015, MAN Truck & Bus will be demonstrating its wide range of construction and heavy-duty vehicles, as well as its extensive expertise in these fields, live at the off-road park in Langenthalheim, Germany.

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### **Vehicle highlights at the MAN Traction Days 2015**

MAN will be showcasing some 50 vehicles from its construction and heavy-duty transportation portfolio at this year's Traction Days, with the following amongst the main attractions at the event:

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- MAN TGX vehicles with the D38 engine and MAN TipMatic TX gearbox
- TGS vehicles with HydroDrive and 4x4H, 6x6H and 8x6H axle configurations
- all-wheel drive vehicles in the TGM and TGS model ranges with 4x4, 6x6, 8x6 and 8x8 axle configurations.

MAN has divided the grounds at the Langenthalheim off-road park up into several stations:

- **Station 1:** MAN will be offering guests the chance to go for a ride around the off-road circuit in a range of all-wheel drive vehicles from the TGM and TGS model ranges.
- **Station 2:** At this station the focus is on all things MAN HydroDrive. Guests can take TGS vehicles with HydroDrive and 4x4H, 6x6H and 8x6H axle configurations for a test drive around the off-road circuit.
- **Station 3:** Fans of all-wheel drive vehicles won't be disappointed at this station, where rear tippers, three-way tippers and crane tippers can be put to the test to see how they cope on challenging off-road terrain.

The MAN Group is one of Europe's leading industrial players in transport-related engineering, with revenue of approximately €14.3 billion in 2014. As a supplier of trucks, buses, diesel engines, turbomachinery, and special gear units, MAN employs approximately 55,900 people worldwide. Its business areas hold leading positions in their respective markets.



- **Station 4:** This station is the place to put vehicles with 6x4 and 8x4 axle configurations through their paces on the off-road circuit.
- **Station 5:** Here, eight different MAN TGX models with low loader trailers or tipper semitrailers can be driven on the road whilst loaded up.
- Around 15 further vehicles will also be on display as exhibits, with one particular highlight being the TGX 41.640 8x4/4 BLS heavy-duty semitrailer tractor with 640 hp.

Driving experts will also be explaining features, including

- the turning brake
- the hill-climbing brake
- the paver brake.

The turning brake acts through selective braking of the rear wheels on the inside of the curve to reduce "pushing" over the front wheels (understeering) when cornering on off-road terrain. The radius of the driven bend is made smaller as a result. The hill-climbing brake makes it easier to start off on uphill inclines. The vehicle is stopped from rolling backwards by maintaining the brake pressure. The paver brake automatically maintains a preset brake pressure for the starting off and pushing operations of a road finisher, meaning that the tipper does not roll away on inclines.

### Suppliers and body manufacturers at the event

The following 30 body manufacturers, fitters and suppliers will be on hand at the event and ready to enter into specialist discussions, with a technical expert from each supervising the various stations at the off-road park:

AEBI-Schmidt	Fassi	Johnston Sweeper	Müller-Mitteltal	Stetter
Carnehl	Fliegl Baukom	Kempf	Palfinger	VDL
CIFA	Fliegl Triptis	KH Kipper	Ressenig	VS-Mont
Dautel	HIAB	Langendorf	Schmitz Cargobull	Wielton
Empl	HMF	Liebherr	Schwarzmüller	Zink
ES-GE	Hyva	Meiller	Schwing-Stetter	

### **The MAN D38: superior power generation meets efficiency**

When it was launched, the trade press dubbed the D38 engine an "economical powerhouse", as MAN had successfully combined superior power generation with maximum efficiency. The six-cylinder diesel engine has a capacity of 15.2 l and complies with the Euro 6 emission standard, with 520, 560 and 640 hp performance levels and powerful torques of 2500–3000 Nm.



#### **MAN D38 Euro 6: high levels of efficiency and reliability for demanding applications**

The D38 engines boast the following features:

- full torque from 930 rpm
- bi-turbo charging with two-stage intercooling that includes a low-temperature cooling circuit
- extremely high levels of reliability
- a long service life for components subjected to high thermal stress due to an outstanding cylinder cooling system with innovative, unprecedented top-down cooling
- a long life expectancy for valve seats and valve seat rings thanks to novel domed valves.



**Top-down cooling: the injector and valve seats in the D38 are cooled as a matter of priority**



### **A focus on efficient heavy-duty vehicles**

MAN will be topping off its Traction Days with a test fleet consisting of eight heavy-duty semitrailer tractors, putting to use the D38 range of engines, which were designed specifically for this field. With a total weight of 41 tons and a gross train weight of up to 250 tons, the TGX 41.640 8x4/4 BLS with XXL driver's cab is right at the top of the range of MAN's heavy-duty transporters. The new Intarder III is already fitted as standard, and, in combination with the electronically controlled Turbo EVB (exhaust valve brake), it is possible to reach a continuous braking power of up to 900 kW.



**Heavy duty: no task is too great for the MAN TGX 41.640 8x4/4 BLS**

MAN has equipped its TGX 41.640 8x4/4 BLS heavy-duty semitrailer tractors with a converter-clutch unit and MAN TipMatic. The TGX 41.560 8x4/4 is also available with a converter-clutch unit for gross train weights of up to 250 tons. Used for starting off and shunting, the converter-clutch unit is locked up automatically when driving at a constant speed. The system allows for smooth and almost wear-free starting off and highly accurate shunting, even with high train weights. The converter lockup at constant speeds means that operation is economical too. The TipMatic TX gearbox is a new addition to the TGX 26.520 6x2/4 BLS, TGX 33.560 6x4 BLS and TGX 37.560 8x4 BLS models.

In power-intensive traction traffic, the MAN TGX D38 can generally pull up to 70 tons with overdrive (OD) gearboxes. Special heavy-duty software for the TipMatic TX enables gross train weights of up to 120 tons without the need to use a converter-clutch unit.

The heavy-duty version with a converter-clutch unit and OD gearbox can handle gross train weights of up to 250 tons with ease. The MAN TGX D38



has been designed especially to handle transportation tasks in this field, with maximum power levels here of 640 hp. The converter-clutch unit lets the 640 hp engine take to the roads smoothly with unstoppable force at the 3000 Nm torque.

The Idle Speed Driving function of the new MAN TipMatic TX ensures optimum handling of heavy-duty vehicles when shunting and operating at crawl speed, allowing for particularly precise shunting on inclines and with heavy loads. In such situations, the vehicle will continue to move forward with the engine at idling speed and the clutch closed, as long as the driver does not brake.

### **MAN HydroDrive: more traction all round**

Whether you are using a tipper, mixer truck, concrete pump, or roll-off or set-down system, the MAN HydroDrive is the ideal solution for anyone in need of increased traction that is looking to move away from the conventional mechanical all-wheel drives. For over ten years now, MAN has been building up an unprecedented level of expertise surrounding HydroDrive. The engageable hydraulic front-axle drive provides significantly increased levels of traction and safety when driving forwards and backwards on unpaved construction sites, in quarries, uphill, downhill, and on slippery tracks through forests and fields, for instance. MAN has the most extensive range of HydroDrive vehicles on the market, with a total of six wheel configurations (4x4H, 6x4H-2, 6x6H, 6x4H-4, 8x4H-6 and 8x6H) and two heights (standard and medium) from the two-axle vehicle to the four-axle vehicle.

HydroDrive is an efficient solution for vehicles that are mainly used on the road, but also require more traction from time to time. The MAN HydroDrive is easy to engage by turning a rotary switch, both while driving and under load, meaning the driver can master gradients safely without having to stop. HydroDrive is switched off from a speed of 30 km/h, but is automatically re-engaged if the speed drops back below 22 km/h.

The additional traction offered by HydroDrive is also available in reverse and when coasting. When you're driving downhill and HydroDrive is engaged, the continuous brake also acts on the front axle, thus stabilising the vehicle. This system also significantly improves the vehicle's manoeuvrability on slippery surfaces and therefore increases driving safety.



**MAN was the first manufacturer to close a gap in the market with HydroDrive ten years ago.**

**The advantages of HydroDrive:**

- intuitive operation
- weight approximately 400 kg less than vehicles with a conventional all-wheel drive, providing payload advantages
- no changes to overall height of vehicles with HydroDrive
- convenient step unit
- low overall height
- low centre of gravity, ensuring optimum driving stability
- small turning circles and therefore higher manoeuvrability
- maximum torque per wheel 7280 Nm
- no need to adjust a special body support frame
- little maintenance required
- no increase in consumption.

The 11,000 vehicles with MAN HydroDrive that have already been sold are testament to the success of this drive.

A special web page on MAN HydroDrive can now be accessed at [www.man.eu/HydroDrive](http://www.man.eu/HydroDrive).

## **MAN leads the way in conventional all-wheel drives too**

With a market share of more than 50%, MAN is Europe's specialist in all-wheel drives. In addition to the MAN HydroDrive hydrostatic front-axle drive, the company also offers conventional mechanical all-wheel drives within the TGS and TGM model ranges. MAN vehicles with permanent or engageable all-wheel drives step into action wherever maximum traction is needed.

All-wheel drive vehicles are available with 4x4, 6x6, 8x6 and 8x8 axle configurations and are equipped with planetary axles with plenty of ground clearance, differential locks and stabilisers.



**The MAN TGS 18.440 4x4 is designed specifically to be driven on challenging off-road terrain**

The air suspension on the rear axle for the MAN TGM 4x4 and MAN TGS 4x4 and 6x6 all-wheel drive models is ideal for the tough conditions on construction sites and for operation on challenging off-road terrain.

### **Typical fields of application for all-wheel drive vehicles:**

- construction sites
- municipal vehicles (e.g. winter services)
- industry uses on unpaved roads and off-road terrain



- emergency service vehicles (e.g. within fire departments and technical relief organisations)
- climatically/topographically challenging environments.

MAN offers two versions of the all-wheel drive – engageable and permanent. Power is distributed by two-speed transfer cases with on-road and off-road ratios. The inter-axle differential gears enable different speeds on the front and rear axles, with the engageable all-wheel drive of the front axle corresponding to the permanent drive with an engaged inter-axle differential lock.

#### **Advantages of the engageable all-wheel drive:**

- all-wheel drive fully operational without time limitations
- no additional steering forces without front-axle drive
- doubling of the number of gear speeds for all-wheel drive thanks to the transfer case, which is very advantageous for off-road driving (protects the driveline and makes it possible to drive at slower speeds)
- possibility of step-by-step engaging of transverse differential locks on the rear axle and then on the front axle (optional).

#### **Advantages of permanent all-wheel drive:**

- optimum traction and tracking as well as low-wear driving in quick-changing road-grip conditions on unpaved roads
- high driving stability and safety on both smooth roads and challenging off-road terrain
- double the number of gear speeds for off-road operation thanks to transfer case
- 6x6 and 8x8: when driving on challenging off-road terrain, always offers very high traction, from the moment the first lock is engaged.

The engageable all-wheel drive is optimally suited for use in vehicles that are occasionally required to drive on challenging off-road terrain with a need for high levels of traction (e.g. emergency services vehicles used by technical relief organisations), whilst the permanent all-wheel drive is ideal for vehicles that frequently require increased traction (e.g. winter service vehicles).



### **True all-rounders**

Construction without a tipper? Impossible. Whether bulk material, excavated material or asphalt needs loading or various pieces of equipment need moving, literally nothing can be shifted in construction without versatile load carriers. The MAN TGS in particular offers a solution for all applications – as a solo vehicle, a tractor for trailer operation or a semitrailer tractor. The TGX also makes a good impression on construction sites, with optimal ergonomics, high productivity and low transport costs being the hallmarks of this series of tippers. The TGX is also setting new standards when it comes to working in comfort thanks to its wide cab. MAN tippers have been perfected down to the finest detail, with handy equipment such as a range of suspensions, planetary axles and hypoid axles, hoisted exhaust systems and the MAN TipMatic Offroad.



**The TGX does not fail to look good on a construction site – even with a tandem-axle tipper trailer in tow**

When all-round transport solutions with the highest degree of flexibility are required, interchangeable systems are exactly what you need. They carry building rubble, excavated material, scrap and rubbish, and transport construction machinery and other equipment. Roll-off and set-down skip loaders provide high transportation capacities as a result of minimised vehicle downtimes, and they are easy to load and unload, allow the reloading step to be cut out, and provide the option of being used as a temporary storage facility. These are all positive points that enable set-

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down and roll-off skip loaders to render services that are quickly recognised as outstanding.

Users of mixer trucks need to be able to transport mixers to construction sites quickly and reliably – play it safe and go with MAN! Mixer truck chassis from MAN impress with their combination of innovative technology and excellent cost-effectiveness. With its chassis designed specifically for mixer truck applications, the 8x4 in the TGS model range is without a doubt a classic cement mixer. However, another popular concept is the combination of the mixer trailer and the TGS 4x4H as a semitrailer tractor. Hoisted exhaust systems and other preparations made on site mean it is straightforward and cost-effective to install the drum.



**A construction site classic: the MAN TGS 32.400 8x4 BB in use as a cement mixer**