

MAN TGS.

Simply reliable – off- and on-road.



A new design, new handling, new mobility. With the MAN TGS range you experience reliability pure and simple. The powerful common-rail engines and perfectly matched gearboxes unfold a superb driving performance with very good consumption values. You'll reach your destination quickly – even if it's off the beaten track - since the performance of the MAN TGS is

unbeatable both on-road and off. With its unrivalled and versatile wheel and drive formulae through to the 8x8 all-wheel-drive truck it offers you the entire range of mobility in the weight class from 18 to 41 tonnes. The MAN TGS: The new standard for your work, built to keep you ahead of the competition.

Reliability at work. The new MAN TGS.

Some of the equipment illustrated in this prospectus is not included in the standard fittings.



Reliability means a higher quality of transport and more success.

MAN

MEAN 440

CARFIER

The precision of a Swiss watch is now available in the form of a truck too. With the new MAN TGS everything runs like clockwork. Above all your transport assignments for local transport and on building sites will run better than ever. After all, it provides everything you need to achieve top performance. With its weight-optimised design it offers the biggest payload in its class and is the market leader with regard to transport capacity. Its safety systems and the running gear technology guarantee that the load always arrives safely. And its favourable running costs ensure that the operator meets his profit target.

Reliability means being fit to achieve top performance.

Among all the goods transported by the MAN TGS the driver is the most important. That's why we have done our utmost to make his working life as easy as possible. The comfortable cabs focus on the requirements of the trucker down to the last detail. The space, seats, fittings and instruments have been designed in accordance with ergonomic findings. Here professional drivers not only feel at home but immediately find their way about. A workplace to improve the motivation and concentration of the driver – for the top performance which leads to success.





The new MAN TGS is not just one truck but many trucks. In heavy local and distribution transport, in service on building sites, for public-utility transport and as the specialist for special assignments: The MAN TGS is the new model of truck perfectly tailored for branch service. With its new powerful drive, winning payload capacity and unique ergonomics it sets new standards for work.

The expectations of a new truck are always high. Of a new MAN they are a lot higher – better driving performance, greater comfort, maximum transport capacity, top quality and a long service life, exemplary safety and environmental compatibility. The MAN TGS fulfils all the expectations. It offers far greater value at far less cost. Or as we also say: reliability with efficiency. Look forward to a truck with a service performance which is just as persuasive as its accounting.

We now have pleasure in inviting you to explore the full details of the MAN TGS. On the following pages you will find out everything that you should know about its design, its engineering and MAN's comprehensive service.

The safest workplaces are also the most comfortable.

The winning argument for professional drivers is a workplace which combines safety with comfort and functionality. Drivers who get into the MAN TGS quickly recognise that it's just the right place for them. The low entry height, large interior with an optimised layout, the ergonomic design of the cockpit and the well-conceived rest area in the long cabs create the right conditions for relaxed working and top performance.







M cab.

Compact and comfortable. Predestined for short hauls in local and distribution transport, in the building sector and for public-utility assignments. Favourable dimensions, maximum payload, generous stowage facilities and compartments. On request folding standby bunk.

1 880 mm long, 2 240 mm wide.

L cab.

A workplace with the comfort of a living room. Ideal above all for tank / bulk vehicles, timber, building material and refrigerated transport. Low overall vehicle height, low weight for high payloads. With a comfortable bunk and versatile stowage facilities.

On request with a multifunctional stowage system. 2 280 mm long, 2 240 mm wide.

LX cab.

For the economical fleet truck in intercity service. Low cab weight for a high payload capacity. Fitted with a comfortable bunk or on request a multifunctional stowage system, generous stowage spaces, standing height in front of the co-driver's seat. 2 280 mm long, 2 240 mm wide.



Low entry, ideal for local and distribution transport.

Take your opportunity. Start with the steering wheel.

A fascinating place: The TGS driver's workplace.

The finest illustration that ergonomics can also be aesthetically pleasing is the MAN TGS cockpit. An interior design which sets the tone with high-grade cladding materials, two-tone dashboard and attractive decorative trims. Let your eyes go on a journey of discovery and you will quickly recognise that here everything is in the right place. The displays are clearly arranged, the controls logically laid out and easy to reach. The height and inclination of the steering wheel can be ajusted. From the multifunctional modules in the driver's door through to the numerous practical stowage spaces and compartments: each detail is a model of ergonomic perfection.

Nothing distracts the driver.

Just a quick glance and the driver knows what's going on. That is the principle behind the central instrument panel. The analogue and digital displays give the driver the information that he needs to know. The focus is the LCD display. The user-friendly menu guidance makes it possible to quickly and simply call up the different operating conditions of the vehicle and diverse service information. The axle-load display, for example, permits the driver to make use of the full payload capacity without overloading. Beside this, components such as the phone and radio are integrated in the information management.



Everything under control at the helm.

It's almost as if you had four hands: With the button in the multifunction steering wheel you can access vehicle information, take calls or change the radio settings. By just tapping your thumb you can operate the radio, phone and vehicle menu on the left-hand side. On the right-hand side you control the different cruise-control functions. And all of this without taking your hands off the wheel. The multifunction steering wheel is part of the series equipment in the L and LX cab; for the M cab it is available as an option.



High Line radio with integrated navigation system.



The sound is good.

Whether for entertainment or traffic news, the series Basic Line radio with MP3-compatible CD player ensures that the sound on board is good. The following options can be selected as alternatives: The High Line radio with a navigation system, traffic-message channel (TMC) and the Top Line radio with the same functions, a large colour display and a sound system with an integrated subwoofer. An infrared remote control is available as special equipment for all radios.

Ergonomically designed door control module.



High-grade materials create the car-like ambience.





A trucker needs a strong back.

If he's had a long hard day he shouldn't feel it in his back. That's why the driver is spoilt with a seat with an exceptionally high ergonomic sitting quality. He can adjust the seat to his individual needs with numerous options, for example, pneumatic height adjustment and vertical damper settings. If he wants to be even more comfortable he can relax with the seat heater, a pneumatic lumbar support, side contour and shoulder adjustment, hydraulically damped horizontal suspension and the depth adjustment of the seat cushion. The ultimate luxury is the air-conditioned seat which produces an agreeably tempered flow of air in the seat cushions and the backrest to create a pleasant feeling of warmth. In hot weather it generates an unheated flow of air. The co-driver's seat can be adjusted through to the resting position – ideal for a short break en route.

Washable door cladding if desired. Series for the M cab.

Folding compartment in the door armrest.







Lockable stowage compartment with ashtray.

All of the air-sprung seat variants have a multifunctional backrest with an integrated headrest and three-point belt. It is ingeniously simple to handle the seats by means of clearly arranged controls. You can choose between black velour and anthracite-grey flat woven fabric for the seat covers.

A good working climate, in a literal sense.

Efficient heating systems provide agreeable warmth on board the MAN TGS. If desired the quiet air conditioner with automatic temperature control and an optimised air flow ensures a pleasant atmosphere. Diesel air heaters, auxillary water heater and gas heaters, each with a thermostat function, are available as auxiliary heaters.

Spectacles compartment.



New controls for the air conditioner, heater and ventilation. New switch field with function displays.







Stowage compartments? That's all part of our job.

Making it easy to keep things in order. That's the idea of the stowage space and compartment system on board the MAN TGS. Large cupboards above the windscreen in the LX and a three-section roof stowage unit in the M and L cab provide ample space for luggage and other equipment.

Luggage rack and bunk all in one.

The multifunctional stowage space, available as an alternative to the upper bunks, serves as a resting bunk for the second driver when the vehicle is parked. Half extended it serves as a practical stowage space with approximately 200 litres capacity for bedclothes, clothing and bags. If you completely fold back the multifunctional stowage space you gain maximum space above the bunk.

The central console provides numerous stowage facilities, a compartment for glasses, a pen and beaker holder and a large drawer.

In the L and LX cab the illuminated luggage compartment, accessible from outside and inside, provides an abundance of space for personal gear. An additional stowage box, only accessible from outside, can be used for working clothing or diverse equipment

How about a pull-out insulated or refrigerator box for food and bottles? There you go! In the MAN TGS the box can be quite simply pulled out from under the bunk. It is also fitted with a practical folding table which is ideal as a bedside table.

well. After all, you need to be wide awake for the demanding covers of the replaceable mattresses can be washed and



Large luggage compartment.





Drawer in the central console.

Play safe. Drive the MAN TGS.



Headlights with free-form reflectors, Xenon dipped headlight.

Seeing and being seen.

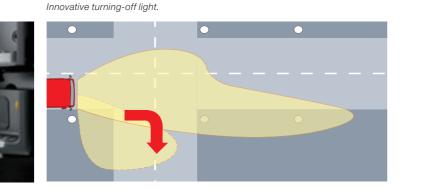
With its headlight system the MAN TGS casts a new light on the road. Free-form reflectors and H7 lamps with a service life four times longer or Xenon light as special equipment illuminate a wide area of the road. A new feature in a truck is the optional static turning off light which automatically switches on when the flasher is activated at a speed of up to 30 km/h. Further highlights are the day-driving light and the manoeuvring light, in the co-driver's step, which are available only at MAN. The parking and marker lights, designed in LED technology and to last as long as the vehicle service life, satisfy the highest demands. The new mirror concept of the MAN TGS has also been designed for better vision and more safety. Beside one adjustable and heatable main and wide-angle each, a front ramp mirror with a particularly large field of vision and a front mirror as an innovation are all available. It is thus now also possible to view the areas right in front of vehicle and the potential danger area when turning off to the nearside. Now there is practically no longer a blind spot. The innovative housing design reduces the contamination of the mirror surfaces and the side windows considerably.

LED parking light.





Manoeuvring light in



Brake management by MAN BrakeMatic.

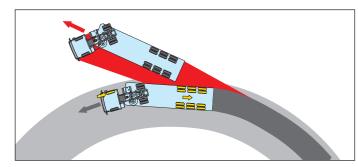
If you drive long journeys you should pay attention to short braking distances. To ensure you that you don't have any unpleasant surprises MAN BrakeMatic with the EBS electronic braking system, including ABS and ASR, provides for shorter braking distances. The coupling force control to guarantee optimal matching of the trailer and semitrailer brakes results in a perfectly harmonious train, shorter braking distances and equalisation of the brake pad wear of the entire train combination with extremely long pad service lives. One highlight of particular significance is the sustained-action brake management with a sustained-action brake and constant braking function which act in advance in the brake-pedal travel.



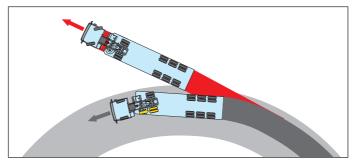


Wear-free sustained-action brakes if desired.

The MAN PriTarder[®] is the world's first ever primary retarder integrated in the water system. It functions with absolutely no maintenance, weighs just 30 kg and develops an awesome braking efficiency of up to 600 kW, which is also available for slower driving as, for example, for building-site service. You benefit from a higher average transport speed and reduced brake-pad wear. At the same time it is easy to operate, either with a steering-column stalk or via the brake pedal. The compact Intarder is the first choice for long-distance assignments. It is integrated in the gearbox housing, has a low weight, is maintenance-free and offers the familiar economic advantages of a retarder. The minimised air flow losses also mean that it saves fuel.



Compensatory braking if the tractor is oversteered.



Compensatory braking if the tractor is understeered.

Standard: Electronic Stability Programme ESP.

The standard ESP* in the TGS semitrailer tractors protects you from any unpleasant surprises. For example, when suddenly avoiding obstacles, when rapidly cornering or if there are changes in the road surfaces. The ESP sensors constantly monitor the situation of the driving dynamics. If there is a risk

of skidding or overturning individual wheels of the semitrailer tractor are efficiently braked and if necessary the engine torque is reduced. In this way the ESP stabilises the train and keeps it safely on track. The electronic stability program is now also available as an option for solo vehicles.

* if fitted with MAN TipMatic® and a MAN PriTarder® or Intarder.

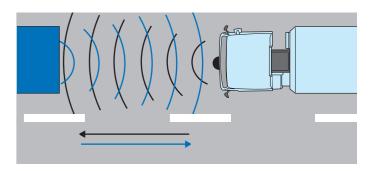


Lane Guard System LGS.

The electronic lane guard system permanently monitors the lane ahead of the vehicle. If the driver strays from the lane without activating his flasher he is warned by an acoustic signal. It emits the sound of nails rattling from the loudspeaker on the relevant side and is intuitively correctly understood by the driver. LGS increases the driver's awareness so that he keeps to his lane and it thus prevents many a dangerous situation.

Active roll stabilisation CDC and high load roll stabilisation.

Active roll stabilisation will certainly make your driving more comfortable. It aligns your vehicle perfectly with the driving situation, load and road. The damper control is carried out automatically by the CDC (Continuous Damping Control). When cornering, quickly changing lane or during sharp brake manoeuvres the harder damper adjustment prevents the mutual generation of rolling or pitching movements and hence leads to greater driving safety. For vehicles with high centres of gravity high-load roll stabilisation with an additional X control arm is ideal. This ensures that the side inclination is effectively reduced.



Adaptive Cruise Control ACC.

Automatic ranging determines the distance from and the differential speed of the vehicle ahead and ensures a safe distance by electronic intervention in the accelerator or brake pedal. ACC can be used from a driving speed of 25 km/h. It eases the burden on the driver and helps him to be more relaxed when driving by integrating the vehicle harmoniously in the traffic.

Brake assistant.

The brake assistant registers the speed and pressure with which the brake pedal is operated and optimises the brake pressure supplied through to full braking force. It recognises an emergency stop when it is initiated and immediately builds up the largest possible brake pressure.

Tyre pressure monitoring system TPM.

The tyre pressure monitoring system (TPM) makes slow pressure losses in the tyres visible before damage can arise. If pressures drop below the minimum permissible level a check lamp warns the driver. This results in increased transport safety and higher payload capacities since the spare tyre is not necessary. At the same time you save the time necessary to check the tyre pressure on all the wheels. Available for 4x2 semitrailer tractors. **The all-roader** among the trucks. **Off-road** as good as on.

MAN

M°AN 440

If you want to reach your destination you shouldn't be held up by restrictions en route. That's why the MAN TGS has been made fit not only for city and main roads but also for terrain off the beaten track. It feels at home on asphalt and on dust and gravel and it is in its element on mud. A truck that will take you everywhere so you can do whatever you have to. Its axle configurations, suspension variants, engine/gearbox combinations are designed for performance in tough continuous service. And for rational transport with high payloads, little downtime, great economy and maximum reliability.





MAN TipMatic[®] rotary switch.

MAN ComfortShift.

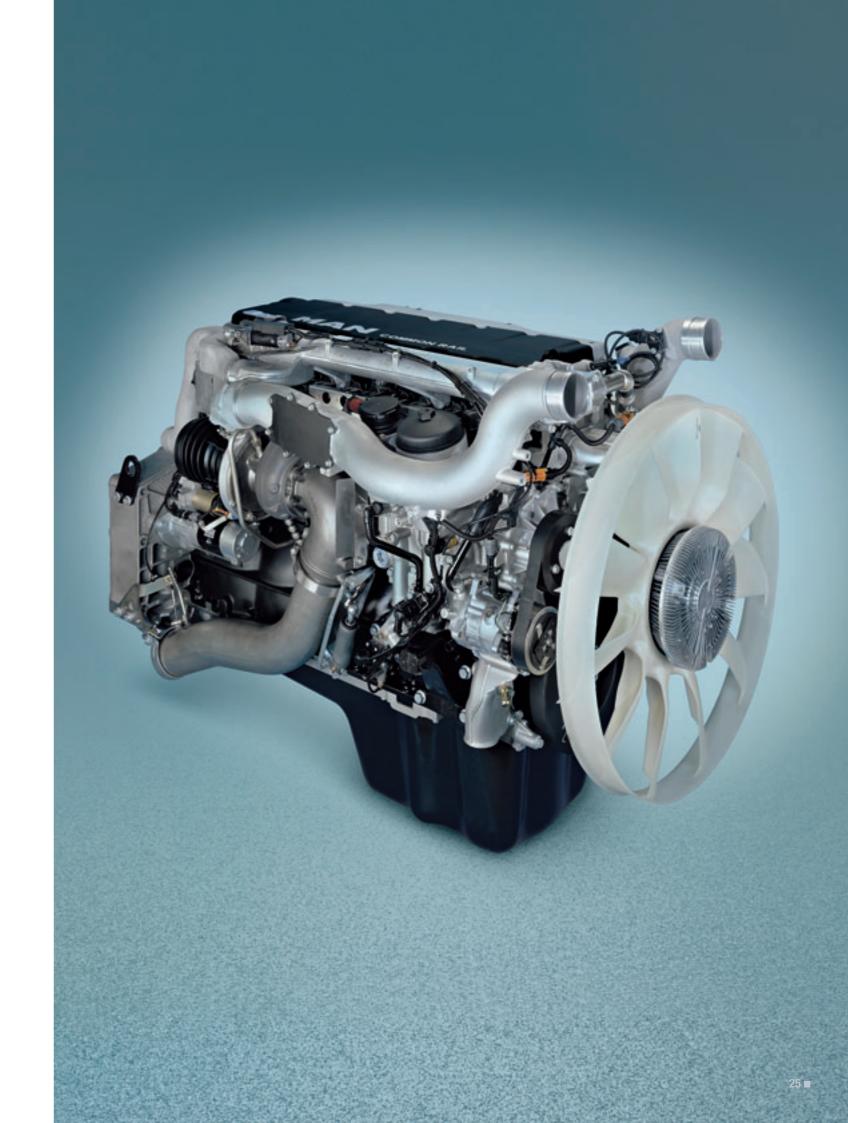
Modern performance society.

The innovative D20 and D26 engines with outputs of 235 kW (320 hp) through to 397 kW (540 hp) move more than just wheels. They are a motor of progress. The modern common-rail diesel engines for Euro 4 and Euro 5 develop more power with lower fuel consumption and longer service life. They convince operators with the lowest power-to-weight ratio in their class. And with a life of at least 1.5 million kilometres and intervals between maintenance of 120 000 kilometres they set standards for reliability and for service costs.

Your personal gearshift selection.

For the MAN TGS you have a choice of gearbox between first-class alternatives. On the one hand you can choose the manual gearbox with 16 gears and a servo shift system for easier shifting and short shifting travel or MAN ComfortShift, both available as overdrive and as direct drive gearboxes. As far as comfort and economy are concerned you can shift up a gear. The automated 12-speed gearbox MAN TipMatic[®] can be operated by the driver fully automatically or manually via a push lever at the steering wheel. The gearbox which is available as a direct-drive and overdrive version, is outstandingly economical since it reduces fuel consumption and eases the burden on the driveline.

The MAN TipMatic[®] DX with an off-road mode, which permits comfortable gearshifts off-road too, is especially tailored for building-site service. The decisive factor is the shifting strategy with more rapid shifting times. The gear which is engaged is retained as long as possible to avoid any unnecessary shifting up and down at a practically constant speed. A higher torque is available when moving off in the "Dx" position. The more rapid releasing and closing of the clutch also makes it possible to rock vehicles free if they get stuck.



We're not offering one exhaust-gas system for everyone. But two to meet your requirements.

The pollutant emissions of commercial vehicles depends on the statutory limits and the innovative technology required to meet them. Today Euro 4 is mandatory, Euro 5 will be valid from 2009. With MAN not only environmental protection has the best prospects but you too benefit from economically acceptable solutions. Decide right in line with your requirements for the unique EGR + MAN PM-KAT® solution or the SCR technology MAN AdBlue®.

Clean without any additive: EGR + MAN PM-KAT[®].

With the innovative system consisting of common-rail injection, cooled exhaust-gas recirculation EGR and PM-KAT® filter MAN has a technically and economically advantageous system to meet the Euro 4 limits. This solution doesn't require any AdBlue®. There are no costs for maintenance or the operating agent. You don't need to waste time with any extra stops to refuel and you save weight too. Last but not least MAN's engineering does not lead to a higher fuel consumption, no additional space on the chassis is necessary and the costs of purchase, operation and maintenance are reasonable. That is why MAN is further developing the EGR + PM-KAT® system for Euro 5 and making it available in good time for the statutory date of introduction.

Euro 5 including: MAN AdBlue®*.

Today the SCR technology MAN AdBlue® already fulfils the Euro 5 limits. In order to reduce the nitrogen oxides downstream of the engine to the stipulated limits this technology requires the reducing agent AdBlue®, a non-toxic and odourless urea solution. Even with the MAN AdBlue® solution the dimensions of the exhaust silencer remain unchanged so that no extra space is necessary. The SCR solution is being subsidised by the state in Germany (motorway toll) and in Switzerland in view of the premature compliance with Euro 5 that it entails fulfilment of Euro 5. It can therefore be worthwhile for customers in long-distance transport who clock up high annual kilometrages on German motorways and on the roads in Switzerland.

Silencer with MAN PM-KAT® for Furo 4



Silencer with SCR catalyst for Euro 5.





Combined tank for diesel and AdBlue®



Separate AdBlue® tank for construction vehicles



* AdBlue® is a registered brand of the German Association of the Automobile Industry VDA.

There's a lot to do. MAN TGS gets down to business.

A good frame, a stable basis.

The MAN TGS is not just a truck. It is just the truck you need. As a 2-, 3- and 4-axle variant it tackles any job and does it really well. Tailored individually to your tasks and the requirements of building-site transport, drinks logistics, refrigerated transport, the tank and dry-bulk sector, the disposal sector, for timber transport, for fire brigades or for the transport of hazardous goods. With the MAN TGS we've simply thought of everyone and everything. Find out for yourself!

Reliability on axles.

For the drive axles you can make your choice depending on the transport task and the service profile. The hypoid axle wins through owing to its low unladen weight, high load capacity, a wide power range and long intervals between oil changes of 500 000 km. Planetary axles fitted with drum brakes are used for heavy-duty service. These feature a high ground clearance, high tractive power on the wheels, robustness and toughness. Leading and trailing axles in rigid, steered and lifting versions and twin-tyred trailing axles with axle lifts are available to increase the payloads.

Tandem units with planetary axles can be supplied in versions suitable: with parabolic springs for better suspension and driving comfort and with trapezoidal springs for maximum loading capacity.

The hypoid axles are fitted with the hub units for easy and rapid exchange of brake disks. In this way you save downtime and workshop costs.

Weight-optimised X control arm with a stabiliser and steering function for semitrailer tractors and high-load roll stabilisation.





Weight-saving single-leaf suspension.



Wheel-hub motor in MAN HydroDrive®.



Differential lock switch for all-wheel drive.

All-wheel drive for everyone.

The TGS all-wheel-drive versions get into action wherever optimal traction is necessary – on building sites, for municipal road and snow-clearing applications and off-road. As a standard feature the permanent all-wheel drive with a pneumatically engageable longitudinal lock ensures propulsion. The power is distributed by MAN transfer cases with engageable or permanent all-wheel drive. They always have an on-road and off-road ratio. A new feature is the optional electronic transfer case and lock management for distribution of the drive power depending on the situation to the front and rear axle – it marks the ultimate in MAN's modern all-wheel-drive technology for greater mobility and safety. Planetary axles with greater ground clearance, drum brakes and stabilisers are also fitted in the all-wheel-drive vehicles.

A question of the suspension.

The MAN TGS displays a wide range of suspension possibilities from leaf-leaf to leaf-air through to full-air suspension. The robust and low-weight leaf suspension with parabolic springs and specially matched shock absorber and stabiliser gains high marks for roll stability, tracking stability and roll-steer properties. On the front axle the single-leaf suspension has an advantage with regard to the payload capacity. The general rule is that the suspension, kingpin bearings and rubber eye bearing are maintenance-free.

The air suspension with ECAS electronic control ensures that the driving level remains the same, regardless of the load. The main advantages are the rapid mounting of swap platforms. The chassis can be lowered by 90 mm from the driving level and raised by 190 mm.

Here the ECAS control system permits precise adjustment of the frame height. It has a memory function for two heights which can be recalled and it can be quite easily operated with the tap of your finger. With full-air suspension the ingenious front-axle design fulfils the axle location and stabilisation functions without additional stabilisers and control arms. At the same time the air suspension and shock absorbers form one unit – the air suspension – damper system LDS. This results in superb driving stability and safety, even if the centre of gravity of the body is high, and in first-class suspension comfort.

One of MAN's specialities is construction air suspension on the rear planetary axles – available for construction vehicles with medium-high build and all-wheel-drive height. This is ideal for the tough work on building sites and on difficult terrain. It is designed for a load capacity of 13 tonnes per axle, outstanding for an air-sprung axle unit.



MAN HydroDrive® – more traction as required.

There is now an alternative between conventional rear-wheel drive and classic all-wheel drive: MAN HydroDrive®, the engageable hydrostatic front-axle drive for more traction and full drive power for on-road vehicles. It is ideal for assignments with an occasional off-road share and for situations in which additional traction is needed on the front axle. It keeps you safely and reliably mobile. With MAN HydroDrive® the overall vehicle height and the fuel consumption remain unchanged. In this way you increase your safety and mobility without detriment to economy.

Services to let you move more.

All-round transport solutions are the result if the top technology of the Trucknology® Generation is coupled with the tailored MAN mobility services. Clever all-round service in one-stop shopping. With the MAN service packets which are especially orientated to branch requirements, the customer, regardless of whether he is an owner-driver or an international logistics company, obtains a ready-to-use vehicle for which all the services from A, for instance for advice, through to Z, as for zero emissions, are covered - in other words 100 % Trucknology®.

MAN mobility services add extra value for economical vehicle deployment, by no means least by their flexibility, cost transparency and planning reliability. Figures, data and facts: You can succeed on the tough market only if you know the figures in your cost management - the Total Costs of Ownership.

The choice is yours. You can put together your own "all-round carefree packet" since the services of MAN Finance, MAN Service and MAN Support are available internationally and can be combined to suit individual requirements in a modular system.

MAN Finance	Credit	Financing mo
	Lease	Leasing mode
	Rental*	Vehicle rental
	CombiContract	Combined co
MAN Service	Comfort	Maintenance
	ComfortPlus	Maintenance
	ComfortSuper	Maintenance
	ComfortEuro	Europe-wide
	RepairCard/ ServiceCard	Europe-wide
	Mobile 24	Europe-wide
MAN Support	TeleMatics*	Mobile trackir
	Communication	Mobile comm
	ProfiDrive	Driver training
	FleetManagement*	Vehicle / fleet
	* NIGER OF A STREET OF A	
	* Not fully available in all Eur	opean countries

You can count on it: Mobility made by MAN:

	Local
	Dense service network with over 1 200 outlets
	throughout Europe
н,	Rapid
	A 24-hour service in 6 languages, on a uniform
	phone number
۰.	Reliable
	Genuine MAN spare parts
н,	Individual
	Effective maintenance and repair contracts through
	to complete service and individual financing models
۰.	Independent
	Non-cash payments in Europe
۰.	Economical
	Training on the job: MAN safety and economy
	training for drivers
۰.	Efficient
	Optimise your processes and reduce your
	fuel consumption, tyre and brake wear with

MAN TeleMatics.*

1	0	d	e	S

ontract with modules from MAN Service and/or MAN Support

contract (regular maintenance in accordance with the manufacturer) contract with the mandatory inspections

and repair contract

maintenance and repair contract

non-cash payments

24-hour service

ng and vehicle management nunication t management

Small overview of big possibilities.

L cab

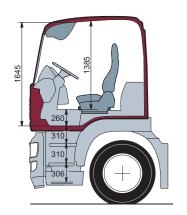


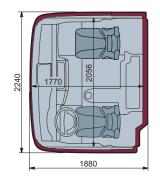
M cab

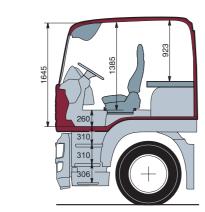


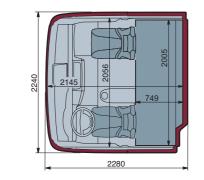


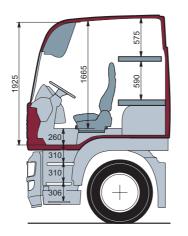
LX cab

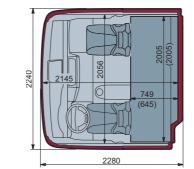








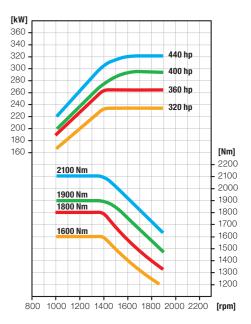


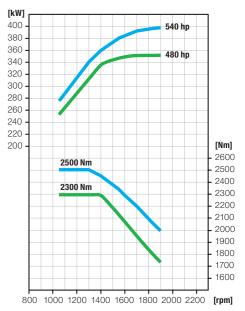


Engine model		
	D2066	D2676
Design	R6	R6
Capacity	10,5 l	12,4 l

D2066	
235 kW (320 hp) at 1500 – 1900 rpm	1600 Nm at 1000 –
265 kW (360 hp) at 1500 – 1900 rpm	1800 Nm at 1000 –
294 kW (400 hp) at 1500 – 1900 rpm	1900 Nm at 1000 –
324 kW (440 hp) at 1500 – 1900 rpm	2100 Nm at 1000 –
D2676	
353 kW (480 hp) at 1900 rpm	2300 Nm at 1050 –
Euro 5	
D2676	
397 kW (540 hp) at 1900 rpm	2500 Nm at 1050 –









1400 rpm 1400 rpm 1400 rpm 1400 rpm

1400 rpm

1350 rpm

35 ∎

MAN Nutzfahrzeuge Group Postfach 50 06 20 D-80976 München

www.man-mn.com

A member of the MAN Group



D111.3387/E · mu 08078 · Printed in Germany Text and illustrations not binding. Subject to changes in the course of technical progress.