



## **THE NEW MAN TG – EXCELLENT DRIVER FIT.**

**To assist drivers as much as possible, take the pressure off them, and simultaneously offer them the best possible level of comfort, the focus during the development process of the new MAN truck generation was placed especially on designing the cab as a combined work place and living space.**

*“The new MAN truck generation combines excellent ergonomics, unique functionalities and a distinctive design. Excellent Driver Fit is an expression of our appreciation for the most important element of the logistics chain – the driver.”*

Dr Manuel Marx, Head of Total Vehicle Development at MAN Truck & Bus SE and  
Stephan Schütt, Head of Cab/Chassis Development at MAN Truck & Bus SE.

Drivers have a very challenging job: they work with technologically advanced machines, have to comply with more and more statutory specifications, are often under time pressure, and are exposed to a lot of stress in road traffic on a daily basis. Furthermore, they have to be as efficient as possible when on the road.

“The demands made of drivers while driving are high. As a result, our aim was to make working with the truck simpler, safer and even more ergonomic. We have made further improvements to its user friendliness by providing greater clarity and standardisation across the operating elements, as well as introducing intuitive handling – thanks to controls that are easy to grasp. We have also added new assistance systems and safety systems,” explains Dr Manuel Marx, Head of Total Vehicle Development at MAN Truck & Bus SE, when describing the approaches taken for the development. Stephan Schütt, Head of Cab and Chassis Development at MAN Truck & Bus SE, adds: “For many drivers, the cab is the place where they retreat after work. We would like them to feel at home there. More space, more storage, comfortable beds, functional yet pleasant lighting, and well thought-out multimedia interfaces all help to achieve this.”

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.

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## **EXCELLENT DRIVER FIT – WORKSPACE**

### **Cockpit – the perfect place to work**

The cockpit design of the new MAN truck generation is now divided into two levels, which makes reading and operating the controls ideal from an ergonomic point of view. At close hand, all of the operating elements that are required when driving are optimally arranged such that they can be reached comfortably from the driving position. The position of each operating element was adjusted. Overall, the operating elements are now turned significantly more towards the driver than in the previous series, yet without restricting the access to the co-driver's area and bunk area. All of the displays that show visual information are positioned slightly further away from the driver. This design helps the eye to adjust the level of sharpness when switching between the view over the cockpit close up and the view over the road further away, which helps information to be perceived more quickly. This arrangement helps older drivers in particular when objects start to become less and less sharp at close range. Furthermore, the driver is significantly less distracted from what is happening on the road, which is a plus in terms of safety for all road users.

One element that MAN has completely redeveloped and repositioned is the operation of the MAN TipMatic gearbox with a stalk switch on the right side of the steering wheel. Thus, both the gear and the driving program of the gearbox are within easy reach and can be selected reliably – right behind the rim of the steering wheel. The new stalk switch also features the operation of the continuous brake. Furthermore, the switch for operating the new electric parking brake is very close at hand; on the right, next to the main display on the instrument panel. It has been dimensioned in a way that enables it to be operated easily, even with gloves. Operating the parking brake when parking the vehicle, as well as releasing the parking brake when driving off, can be performed automatically under certain conditions.

The optimised driver's workplace underscores the new operation philosophy, the positive impact of which becomes most evident when driving – no matter whether during the day or in the dark. The individual buttons and switches can be felt out, so to speak, and provide unmistakable haptic feedback. Drivers can configure speed buttons with the functions that they consider to be important. The entire handling is also possible when wearing gloves. The switches and buttons are also grouped together in logical groups. Particularly important or frequently used functions are positioned in fixed places. This operation concept is the same across every series and,



as a result, it is very easy to recognise; drivers can quickly and easily find their way around a truck from a different series, as well.

The optional, fully digital instrumentation in the cockpit of the new MAN truck generation is clear and easy to read. It has a high-resolution, glare-free, 12.3-inch colour display and provides a new form of visualisation, with optimum information transfer to the driver. On the left it displays the tachometer and on the right the rev counter with a familiar look. In between there is an additional display area that shows easy-to-read notifications, which are in the direct line of sight of the driver.

The central truck display shows the information relating to the driver assistance systems by means of a three-dimensional image of the vehicle itself – and, as the case may be, of vehicles ahead or currently overtaking. This information is always visible on the screen and shifts only slightly to the right or left, depending on the second information level that is open. These variable notifications, or “curtains”, slide from left to right, if required, into the central display and provide several more detailed pieces of information. The left-hand “curtain” shows the menus for vehicle health check, settings, notifications and driving data, as well as the driving times and the kilometres travelled; the right-hand “curtain” displays a minimised navigation view, the radio, media system and telephone. The variable notifications are called up via the multifunction steering wheel. The driver can also call up important vehicle-related settings via the truck switch, located next to the instrumentation on the right behind the steering wheel. This switch allows the driver to quickly access the headlight beam regulator, display brightness, mileage display and the headlight cleaning system.

### **Multifunction steering wheel – sits nicely in your hand**

The multifunction steering wheel continues to be the central element of vehicle operation – as before – and it has been adapted for optimum handling. In order to further improve user convenience, the multifunction buttons have been positioned together and, insofar as possible, not assigned with multiple functions. Moving your hands around to operate them is reduced to the minimum, and everything can be reached without having to fumble around. The driver can easily feel that the buttons for operating the infotainment are positioned in a separate location. Thanks to the ergonomically varying thickness of the steering wheel rim, the steering wheel sits nicely in your hand. A leather version is optionally available with a narrow baseball-style seam.

What is more, the significantly greater adjustment range enables drivers of different heights and statures to customise the driving position to their body



shape. Height-wise, the steering wheel can be adjusted by 110 millimetres, and the driving position can be adjusted between 20 and 55 degrees, bringing it to a similar position as a car. To make getting into the truck easier when parked, it can also be completely folded down into a horizontal position.

#### **MAN media system – information and entertainment in one**

Another highlight of the new MAN truck generation is the MAN media system. In the Professional version, it combines all of the high-end functions of a modern radio and entertainment system. It has a high-quality, low-glare 12.3-inch colour display with splendid HD resolution. In the first instance, the display enables information to be read quickly and reliably when driving. In the second instance, it becomes a full-fledged screen for entertainment during breaks. It can also function as a dual-screen, i.e. it can either show additional information on the right side of the screen or show two camera images. The means to install two rear-view cameras is already provided for.

As well as being able to receive standard and digital radio stations, there are several options for connecting mobile phones and tablets – via USB/AUX or Bluetooth® – to allow drivers to play their own files or to stream music using MirrorLink. Drivers can select from predefined sound profiles, such as rock, pop and classic, or, of course, also tune the sound and sound distribution manually.

Drivers can make calls safely whilst driving thanks to the integration option for Bluetooth®-enabled mobile phones and the integrated hands-free system. The Navigation Professional and Navigation Advanced versions of the system provide the option of using two phones at once. The MAN media system picks up data saved in the mobile phone, such as contacts, call lists or text messages, as well as the corresponding functions.

MAN also offers a suitable application for smartphones – the free MAN Driver App. It helps to make daily work life easier for drivers, and one of its features is a remote control function for the MAN media system. Drivers can use the app to very easily operate the radio from the co-driver's seat or the bunk during their breaks, and access audio files from devices or data carriers that are connected to the MAN media system.

In addition to the diverse range of entertainment functions, the infotainment system helps drivers to navigate traffic efficiently – thanks to its truck-specific navigation functions. These functions include eco routing for efficient route guidance, the choice between 2D or 3D imaging, points of interest, taking current traffic information from the Internet into consideration,



and suggesting alternative routes in the event of traffic jams. An interface to RIO, the cross-manufacturer digital services platform, is also pre-installed, and updates for the map can be accessed either offline during a service appointment in the MAN workshop or “over the air”.

MAN has made the latter possible through the unique electronic architecture of the new series. A hardware and software system open both to the inside and outside, developed and implemented by MAN, ensures a unique level of connectivity. Third-party apps and their functionalities can be integrated into the MAN Media System for example, for bodies or telematics. Another source of added value for drivers offered by the new MAN truck generation is the automatic configuration of the vehicle via driver card. It saves individual configurations, such as favourite stations or navigation destinations, to a driver profile. The saved configurations are activated as soon as the driver slides the driver card into the digital tachograph, and the driver can set off immediately.

**MAN SmartSelect – the most innovative technology in the truck (truck-optimised Infotainment control)**

The new truck generation only uses operating elements that are fit for the particular requirements in trucks and which ensure intuitive, correct operation with little distraction in all driving situations. MAN has therefore deliberately forgone the use of a touch screen in using the media system. Because, when using a touch screen, your gaze automatically follows your finger – and is thus, directed away from the road. Furthermore, the screen has to be placed at a level where it can be reached by hand, which makes it more difficult to adjust one’s gaze between close-range and distance viewing. On the whole, the use of a touch screen means that, to operate it, drivers have to shift their gaze from what is happening on the road for a relatively long time. This means a higher safety risk.

For the new truck, with the MAN SmartSelect, the principle of the turn-and-press control was further developed specifically for the truck sector. This is positioned ergonomically in the instrument panel at operating level next to the driver’s seat, and is supplemented by a touchpad function. This means the driver remains focused on the level of the road and the display elements during operation. The haptic feedback, such as latching and push-in point, was adapted to ensure correct input when the driver’s air-sprung seat is moving up and down when driving on rougher surfaces. A wrist rest stabilises the operating hand and takes the load off the driver’s arm. To free up the access to the co-driver’s seat, the rest can be folded forwards over the MAN SmartSelect. The intelligent concept, which is currently unique in



the commercial vehicle sector, is expanded by a classic operating panel with direct-access buttons.

In this way, the MAN SmartSelect offers an intuitive and fast application with minimal distraction in any driving situation and is ideal for operating the MAN media system.

#### **MAN EasyControl – cleverly placed control unit**

Shutting the sliding roof, switching on the spotlights or starting the engine for the tipping operation: all of this can now also be done when the driver's door is open after the driver has got out. When unloading items during distribution transport operations in cities or in an emergency, the driver can also switch on the hazard warning system from the outside in a flash. The buttons are easy to reach when the driver's door is open and are in a place where they are protected against splashing water and dirt. Each switch has an identification marking, and they are easy to find by feeling for them – in the event that they are not in the driver's direct field of vision. This prevents incorrect operation.

Depending on what the vehicle is used for, the customer can choose to have buttons that can be freely assigned, which a service outlet can program with functions according to the customer's wishes; or the customer can use specifically appropriate preconfigured assignments.

#### **Driver's seat – ideal and ergonomic seating**

The driver's seat is the element that completes the work place of a driver. It is the place where drivers spend many hours every day. At the same time, being in a sitting posture for a long period of time is not ideal for humans. That is why drivers' seats have to be as comfortable and unburdening as possible. The new generation of seats for the new truck series was developed and designed by MAN. It is the result of numerous driver surveys and thousands of test kilometres.

In addition to the completely new outline, the seats are characterised by further new features. For example, in the air-sprung models, the seat belt height-adjustment function is integrated, to ensure that the seat belt sits safely and comfortably, no matter the body size and stature. In addition, an adjusted seat belt position, combined with a seat belt tensioner, reduces the risk of injury in the event of an accident. The configuration range of the seats has been increased by 50 millimetres along the longitudinal axis, giving a total of 230 millimetres. Along the height axis the adjustment range is now 120 millimetres. In that way, drivers can find their ideal seat position, no matter whether they are of particularly large or small stature.



Operation is completely intuitive, as the levers for setting the various seat functions are different in shape and touch, are positioned in logical operating groups, and are easy to reach and practically arranged. What's more, the exclusive MAN design automatically promotes ergonomic and correct sitting. This is enabled through the various levels of hardness of the foam and the MAN-specific foam contour.

The most luxurious model of the new generation of seats is the air-sprung comfort driver's seat with lumbar support, shoulder adjustment and an integrated headrest. The air-suspended seat offers nine-level and weight-dependent height adjustment, including a memory function and quick-lowering function, which makes it easy to get in and out of the truck. The vertical damping can be individually adjusted in seven levels or blocked completely. In cabs with beds, a chafe guard is automatically integrated into the corresponding areas on the rear of the seat.

The optional, active air-conditioning cools, heats and dries the contact surfaces on the seat cushion and backrest. Here the air flows through fine perforations in the surface of the cover. The dry and comfortable feeling of the seat increases the driver's sense of well-being in all temperatures. Especially in the winter, the fast reaction time of the seat heating ensures the provision of pleasant heat in a short space of time.

The covers are available in a partial-leather version, whereby the headrest, side panels and front middle section of the seat cushion are made from classy yet very robust natural leather. The central sections are made from high-quality Alcantara, which is breathable, anti-static and hypoallergenic. Furthermore, it is not just especially snug, but also resilient and non-slip. The textile seat covers in the Comfort version are made from very hard-wearing velour material. Velour stands out due to its velvet-like soft feel which ensures a high level of comfort in the seat. The textile seat covers in the Standard version are made entirely from high-quality flat-woven fabric. The non-pile fabric provides a sports-like grip and ensures the seat is comfortable to sit in.

All of the seats have also been awarded the Aktion Gesunder Rücken e. V. (Campaign for Healthier Backs) quality seal and are recommended as products that are especially suited for backs. Of course, all of the models also meet the required ECE standards and safety regulations.



## **EXCELLENT DRIVER FIT – REST AREA**

### **Beds – a good night's sleep, almost like at home**

To be wide awake at the steering wheel, getting a good night's sleep is especially important. This is something that the beds in the new MAN truck generation – which are equipped above and below with a slatted frame – can certainly provide. Each slatted frame is fixed inside a steel frame that is surrounded by material on all sides. The individual elements of the slatted frame consist of different materials with different characteristics. This means there can be seven zones, which adapt themselves to the various parts of the body. There is a generous amount of space on the surfaces of both top and bottom bunks, and the slatted frame ensures that the mattresses are well aired.

On the lower bed, on the right in the direction of travel, a practical control can optionally be integrated into the bunk for adjusting the headpiece. It has a hand strap which makes it easy to move it into one of five different positions. For smaller items, like mobile phones or a pair of glasses, there is a storage shelf with a cup holder at the end of the bed. There is a safety net on the front side, anchored to the roof via two belts, to prevent anyone from falling out of the bed. When not in use, it can be released from the anchoring quickly and easily and stowed away under the mattress. To get to the storage space underneath the bunk, this can be tipped up easily. There are two gas-filled spring devices that help with this operation and hold the bunk in the final position. To provide easy access to the optionally available top bunk, there is an easy-to-reach, anti-slip standing platform and a hand strap for when climbing up. A ladder or other additional aids are not necessary.

To complete the level of comfort in the resting area, there is a large multi-part storage compartment above the lower bunk on the rear cab wall. The closed compartments that are accessible from above provide space for books and magazines. The storage space that is open at the front can be used for storing mobile phones, keys and pairs of glasses, for example. All items are within easy reach of the bed, no matter the position in which a person is reclined, and the extra storage space helps to keep the cab more organised.

In the middle section of the compartment, there is an optional remote control. A 50 cm-long spiral cable connects it to the vehicle and it can be attached to the centre of the compartment. With its large buttons that light up in the dark, it is very easy to use. The colour display is very easy to read and the start screen provides a fast overview of all the functions. The prac-





tical cable not only ensures it doesn't get lost, but provides it with a continuous supply of power, so that it doesn't need to be charged.

Using the remote control, the driver can access an endless array of functions very easily from the bed: e.g. switching the light on and off and dimming the interior light or the ambient lighting. The driver can operate the window-lifting and door-locking mechanisms, activate the auxiliary air-conditioning system and independent heating, and change settings like the temperature and programming. The menu also shows the driver the status of the vehicle batteries, or, if desired, the driving times (DTCO) with driving hours assistant, daily overview and weekly overview. Furthermore, it is also possible to control infotainment functions like media selection, list of radio stations, frequency band, volume and the programming of the sleep timer and the alarm. The structure and operation of the menus are designed in the same way as the media system, thereby facilitating familiarity with the functions.

The options for lying down on the top bunk are flexible, as there is no defined end for the head to rest. Here there is also a net that secures you from falling out – with continuous height adjustment using two straps. The surface of the bunk can be tipped upwards and secured with two belt buckles. When doing so, the crossbeam on the frame can be used to hold onto. It can also be used to hang up clothes. At the end of the bed, there is an optional storage tray with a full-length lid for storing small objects. The top bunk also features a control unit for comfort functions, located on the side wall of the cab. You can choose whether to have this operating unit on the driver's side only, or, for a more flexible sleeping arrangement, on both the driver's and co-driver's sides. It includes switches for controlling the lighting and operating the windows and the electric glass lift-up roof. There is also an additional integrated stowage compartment with a holder for storing a pair of glasses.

The comfort mattress available for both beds can be provided in a thickness of up to 110 millimetres. It is made from cold foam, and – similar to the slatted frame – has seven zones. Thanks to the open-pore structure of the light-weight cold foam, the mattress is breathable, permeable to moisture and heat insulating. It adjusts to the body, provides optimum support to the spine and encourages a straight, ergonomic, healthy sleeping position. Its equally breathable, removable and washable fabric cover is easy to care for and clean, and thus highly suitable for allergy sufferers. There are two hook-and-loop fasteners that secure it from sliding around on the slatted frame. The bottom mattress measures up to 2000 mm x 700 mm/800 mm



(length, width at head and foot ends/width in middle) and the top mattress measures up to 1970 mm x 7150 mm (length/width).

### **Climatronic and auxiliary air-conditioning system – always the ideal temperature**

All functions of the fully automatic air-conditioning can be conveniently controlled via the air-conditioning operating element in the centre console. The selected temperature is achieved through an individual adjustment of the air outlet, depending on whether the cab is to be cooled down or heated up. The temperature is automatically, quietly and inconspicuously maintained or adjusted, in order to ensure as much comfort as possible. The newly-designed air outlets and their optimal positioning within the cab provide ideal air distribution, so that, in the event of misted or iced-up cab windows, a good level of visibility to the exterior can be quickly restored. The air re-circulation also ensures that pollutant-contaminated ambient air does not enter the cab.

The ideal temperature in the “bedroom” is also an important factor for a sense of well-being. In the new MAN truck generation, this is provided by the electric auxiliary air-conditioning system. It cools the interior of the cab for up to twelve hours, even when the engine is off – e.g. during breaks or before setting off. This means that the window and roof hatch can remain closed even during longer breaks, and keep insects, dust and noise outside.

The system is ready to be used at any given moment, as it operates without a low-temperature accumulator – also meaning that the left outer storage compartment (208 to 234 l) can still be used. The auxiliary air-conditioning system also has the advantage of weighing around 100 kilograms less than the previous model. The electrically powered refrigerant compressor is integrated into the circulation of the air-conditioning system and uses the same air outlets in the cab. The air compressor obtains its energy from the vehicle battery. This, in turn, reduces fuel consumption, minimises noise emissions and protects the environment, as the compressor doesn't rely on the internal combustion engine to power up. The intelligent battery management system switches the auxiliary air-conditioning system off at the right time, to enable the engine to start up.

### **Interior design – well thought-out storage and living space**

If drivers are on the road for several days at once, the available storage is also a decisive factor for the everyday suitability of the cab. In the new MAN truck generation, with up to 1,148 litres, this is more than generous:



thanks to the offer of MAN Individual, the storage space can even be expanded to up to 1,400 litres. In the high-roof cabs, there are three large storage compartments above the windscreen with space for everything that the driver needs for a trip lasting several days. Combined, they provide up to 355 litres of storage space. The flap covers of the left and right compartments have gas-filled spring devices that hold them open. This means both hands are free to put things in or take things out. The rolling shutter of the middle compartment, on the other hand, provides more freedom of movement in the cab, as the head room isn't hampered by an outward-swinging flap cover. The optional LED interior lighting in the middle compartment switches on automatically when the shutter is opened – but is very energy-saving.

The multifunction stowage shelves in the instrument panel are especially practical for storing small items. They also function as holders for drinks containers of differing sizes. The diameter of the cup holder can be adjusted by using removable inserts. There is also a further, pull-out compartment with two cup holders that is closer for the driver to access. Directly below this, in the middle section of the instrument panel, there are – depending on the cab model – up to two large compartments in which the driver can store all of the items that need to be accessed quickly and easily, but which mustn't slide around while the vehicle is moving.

In the cabs with bunks, the two storage boxes behind the seats have even more space for larger items. They are accessible from the inside by tipping up the lower bunk, and also from the outside via a separate hatch next to the door. The optional hook-in tray of the compartments – which can be removed from the inside – can also be used as a portable transportation box. There is space between the two storage boxes for a module building block – which can come as either a further storage compartment, a box, up to two drawers or even a fixed refrigerator or one that pulls out completely.

As well as a pleasant working environment, a good night's sleep and sufficient storage space, the developers of the new MAN truck generation have – of course – also factored in freedom of movement in the cab. As a result, the area in the middle of the cab next to the driver's seat can now be utilised completely freely, as the consoles and operating units for the MAN TipMatic® automated manually operated gearbox and the parking brake are no longer installed here, depending on equipment. The free space between the two seats is a maximum of 0.87 square metres.

The optional Vario co-driver's seat provides for additional space in the cab and makes it easier to climb into the other side of the cab or climb through



to it. This is because its seat cushion can be tipped upwards, thanks to the Cinema function. Furthermore, the Vario seat comes with a swivel seat function in the MAN TGX. However, as the name suggests, the Vario can do much more: if the upper part of the backrest is tipped forwards and opened up, it creates a table area that is approximately DIN A2 in size, with an integrated cup holder, and which can be reached and used from the bunk.

If the co-driver is on board and the Vario needs to be used in its original capacity, it promotes ergonomic and correct sitting thanks to the differing levels of hardness of the foam and the special MAN seat outline. Its diverse range of configuration options enable the seat position to be adjusted entirely to the needs of the co-driver. Different in shape and touch, logical operating groups, easy-to-reach and practically arranged levers and switches for setting the various functions: all of this allows for intuitive operation.

### **Connection options – powered in the best way possible**

Drivers who live and work in the cab use a lot of electrical devices for everyday necessities. As a result, having enough connection options is a must. That is why there are two optional USB connections with a charging function, a 12-volt socket and a 24-volt socket at the top on the remote control retaining device in the storage compartment on the rear wall of the cab. When not in use, and to protect them from dirt, they can be covered with black, spring-loaded caps. There are further optional 12-volt and 24-volt sockets for the driver to use in the roof stowage unit above the windscreen, as well as in the instrument panel, where a USB interface for the MAN infotainment system is also integrated – and which can also be used as a 5-volt charging option.

Furthermore, there is the option to have a 230-volt socket installed in the storage box located on the right in the direction of travel underneath the bunk next to the optional subwoofer. The socket can be used when the vehicle is on the road or when stationary; active ignition is not required. The battery management system warns and reacts in critical situations by switching off the consumers, and additional monitoring against short circuiting is also integrated. Through carrying out the installation at the factory, MAN enables the direct, yet at the same time safe, use of typical household electrical devices, such as a hair dryer, coffee machine, kettle, microwave, TV screen or laptop chargers. Adapters or inverters are no longer necessary.



## **EXCELLENT DRIVER FIT – DESIGN**

### **Interior – appropriate colour concept**

The colours and surfaces contribute to even greater functionality and, in particular, to a subjective sense of well-being in the cab. For the interior of the new MAN truck generation, there are two ambience variations to choose from: Desert Beige and Moon Grey.

The Desert Beige colour scheme uses bright, warm sand tones, which create a friendly ambience and make the interior look even bigger. The balanced combination with graphite-coloured elements results in an attractive colour and design concept with contrasting accents. All of the surfaces are easy to care for and clean.

The Moon Grey variant uses predominantly cool grey tones. They give the interior a timeless modern look, which is enhanced by graphic and reduced design elements. The colour scheme emits a certain urban robustness, which makes the interior usable for essentially all types of applications. Moon Grey is especially suitable if the vehicle comes into contact with a lot of dirt, as the surfaces are particularly robust.

Anyone wanting something innately more stylish can further enhance the interior with the chrome interior styling option. It has details that stand out optically, such as the MAN lettering below the air outlet next to the infotainment display or elegant door operating elements.

### **Interior lighting – functional and pleasant lighting concept**

In addition to the colour scheme, the light in the interior has a significant impact on the homely feeling of the cab. However, given that a good lighting system is important for the cab work place at the same time, the lighting system in the new MAN truck generation is based on a modular design that consists of two elements.

The functional lighting of the entire interior and individual areas is white, bright, but with less glare, and allows a view of everything. In the Plus packages, it covers the central interior lighting, reading light for the driver and co-driver, bunk lighting, door step unit light, roof stowage unit lighting, as well as the storage compartment lighting under the bunk. The monotone red orientation lighting is specifically designed to help the driver with orientation when driving at night, and throws soft yet accentuating light tones across the interior, floor, dashboard, door handle, door opener and door compartments.



All of the lights are also available as LED lights, which can be dimmed, use less energy and last significantly longer. Most of the lights can be conveniently switched on from the resting area using the remote control.

#### **Exterior – new design, trusted values**

The extent to which new functional and technical developments have influenced the design of the new MAN truck generation is not only obvious from the inside of the cab. The exterior has also been fundamentally transformed in appearance. Nevertheless, there was always no doubt about one particular design aspect: an MAN vehicle should always be recognisable as an MAN vehicle at first glance. This is something that is also valued by customers, as was shown in the development workshops and driver surveys. For, the unmistakable product design from MAN stands for one thing in particular: durability. That is why the MAN designers have worked on the further development of the former exterior for the new MAN truck generation with great caution and carved out the characterising elements across all series in even greater detail. The result is an aesthetic, modern and simultaneously highly functional commercial vehicle.

As before, a feature of the new MAN truck generation that immediately catches the eye is the distinctive radiator grille with the classy looking lion symbol. It has been made longer and extended into the bumper area. The front now makes a more dynamic impression, and although it appears more closed, with its optimally designed wind blades, it conducts the flow of air through the cooler area in a more targeted way. This increases the cooling output, simultaneously improves the aerodynamics and, in this way, influences the durability of the components and also the fuel consumption in a positive way.

Together with the drawn-down bumper, the flat main headlight unit with integrated daytime driving lights and turn indicator highlights the optical cohesion. Air ducts on the corners of the bumper, the “air-curtains”, also contribute to the aerodynamics, as they harmonise the flow dynamics towards the entrance area on the cab side.

Here the design continues in both an optical and functional way: the v-shaped door handle and the familiar yet softened nick in the line of the side window characterise a contour rising to the back, which flows into the “aerodomes”. Until now, MAN trucks have typically had five wave contour lines in the upper area of the rear cab-side wall. But these have now been reduced to three striking edge structures. This form makes a more dynamic impact and resembles the sharp claws of a lion. This is not all down to aesthetics, however, but is also the result of a technological requirement. The



aerodomes absorb vibrations and have a stabilising effect on the side walls of the body.

In the lower door area, an additional deflector plate picks up the line of the wind deflector at the front panel and thus guides the air to the side in an ideal manner. This becomes especially visible in bad weather, as this is when the guiding effect also ensures that dirt and spray from the road don't accumulate directly in the area of the door handle.

Changes to the exterior mirrors are also noticeable. Their housing is now leaner and mounted slightly further back. This not only looks more elegant, but is necessary for a lower wind resistance and increases the driver's direct field of vision in the area of the A-pillar.

#### **Entrance area – comfortable and safe entry to the cab**

Climbing steps can be quite hard on the knees. This hits drivers in distribution transport especially hard, as they have to get in and out quite often. But the comfort and safety of the steps are also particularly important when it comes to the height that you have to get over each time you get into a long-distance cab. Furthermore, on construction sites, the entrance to the cab has to be safely accessible even with muddy soles. That is why one of the most important comfort-based improvements that the new MAN truck generation has to offer is the complete redesign of the entrance area. With the largest door opening angle of 89 degrees, the widest opening dimensions between the access handles of 76 centimetres and the most perpendicular entry geometry, MAN stands out significantly from the competition especially in long-haul transport and construction site deployment.

Compared to the previous series, up to two entrance steps are now firmly mounted on the chassis. This results in wider steps which are located significantly closer to the wheel cutout. The steps are now arranged like a staircase with harmonised spacing, so that the driver can already see part of the lower step from above in the cab. Optional entry lighting provides sufficient light and the highest level of occupational safety when getting in and out of the truck.

The steps are also made from especially weather-resistant black plastic, are anti-slip and have a pierced lattice structure and a practical wiping-off edge for dirty shoe soles.

The bottom step, which is especially prone to damage when driving off-road, comes with a pendulum function. To allow the fastening tabs to warp when they come into contact with the ground, they are made from particu-



larly elastic plastic, which springs back into its original shape after an application of force.

### **Headlights – light signature that is easy to recognise**

The design of the front headlights for the new MAN truck generation is particularly memorable. They are also used in the new MAN buses and subtly underline the affiliation with the brand.

The headlights are created as a modular design and enable all of the vehicle variants of the new MAN truck generation to be fitted with future-oriented LED technology. Thus, the front headlights can have low-beam headlights, high-beam headlights, daytime driving lights, clearance lamps and turn indicators with the latest lighting technology, if desired. The additional light array is, as before, arranged slightly below and contains the fog lights and the cornering lights for all series, optionally also with LED bulbs. This doesn't just represent contemporary vehicle design, but also has clear advantages in terms of safety.

Both the low-beam and high-beam headlights are approximately 50 percent brighter than halogen front headlights and the light reaches a much wider range. That is why the light cone of the low-beam and high-beam headlights illuminates the road even better in the side areas in particular. At the same time, the LED light reaches a further distance than halogen models – by a good 25 percent. Furthermore, the light temperature of around 6,500 Kelvin corresponds to normal daylight, so it is particularly pleasant to the human eye.

A detail such as the optional side indicator light on the mudguard of the new MAN truck proves that functionality and an attractive, high-quality design do not have to be mutually exclusive in commercial vehicles. It is the final element in the LED equipment of the exterior lighting and, with its clear glass and chrome MAN logo on the inside, accentuates the brand in a small yet even more delicate way.

### **Functional design – new optics work in all areas**

Of course, the new design features are not just to be found on the long-haul variants, but also in the traction segment for example. The distinctively designed three-part steel bumper for traction applications stands out with character. It gives the front of the vehicle a striking appearance and, at the same time, is very robust. As a result, it has an extremely long service life. Here too, good design and functionality are not at odds with each other. If a side part is damaged, it can be individually replaced in an economical manner. The headlights are also protected by a two-part mesh, which gives the





vehicle even more visual character. The individual cooler fins and cool air guide elements on the front of the vehicle are adapted to the cooling requirements of the engine accordingly.

## **EXCELLENT DRIVER FIT – DRIVER ASSISTANCE**

### **Safety assistance systems – new functions help the driver**

A well thought-out, functional yet comfortable design is what visibly characterises the new MAN truck generation. The fundamental idea of creating the best possible work place for the driver is also reflected in the assistance systems that help the driver perform the driving task. With both tried-and-tested and new assistance systems, the new MAN truck generation offers even greater safety and comfort.

#### **Turn assist – dangerous situations mitigated**

Using radar sensors, the turn assist monitors the hard-to-see side area next to the vehicle on the co-driver's side at driving speeds of up to 30 kilometres an hour. A three-part LED strip in the A-pillar warns the driver in critical situations using levels. The warning level depends on how far the other detected road user is from the vehicle and whether there is a risk of an accident from the pre-calculation of the paths. If the system detects a critical situation arising, all three LED modules will flash and a warning signal will also sound. This enables the driver to intervene in good time to mitigate the situation.

#### **Lane Change Support (LCS) – safe driving even in heavy traffic**

Another assistance system in the new MAN truck generation that is easy to use is the Lane Change Support (LCS). The LCS also uses radar sensors and, when driving at speeds of 50 km/h or more, monitors the side areas to the left and right of the lane of the truck – something which is so far unique in the commercial vehicle sector. If, when changing lanes, the sensors detect a hazardous situation due to a vehicle approaching from behind, it warns the driver early on – also via the LEDs in the A-pillars. The system takes a lot of strain off the driver in dense traffic in particular and increases safety for other road users.

#### **Lane Return Assist (LRA) – reliably keeps the vehicle in its lane at all times**

If the vehicle is at risk of straying from its lane without activating the turn indicator, Lane Return Assist (LRA) intervenes. LRA comprises the functionality of the LDW Lane Departure Warning, the Comfort Steering active



power-assisted steering and the radar sensors in the front of the vehicle. While the LDW emits an acoustic warning if the vehicle strays from its lane, LRA automatically intervenes and guides the vehicle back to the area within its lane markings. The driver is still able to override the system at any time. A requirement for the system to work is that the driver must keep their hands on the steering wheel, as they are always responsible for guiding the vehicle.

### **ACC Stop&Go – reliably maintains the correct safe distance**

When it comes to maintaining the correct safe distance, the driver can rely on the new MAN truck generation for support in the form of Adaptive Cruise Control with Stop&Go function. ACC Stop&Go automatically controls the distance from the vehicle in front, even at low speeds from 0 to 15 km/h. The more convenient approach behaviour of the ACC in the newest generation independently brakes the truck behind the truck in front of it – if necessary until it is stationary. If the stop lasts less than two seconds, the truck will automatically move off again. If the stop lasts longer than two seconds, the driver moves off again by pressing the accelerator. The system eases the strain on the driver in heavy traffic, meaning they can navigate traffic jams with less effort, thereby mitigating typical situations which have the potential to lead to vehicle body damage. Additionally, the system prevents unnecessary braking and accelerating, thereby reducing wear on the brakes and fuel consumption whilst driving.

### **Congestion assistant – for relaxed driving in traffic jams**

The congestion assistant is an expansion of the ACC Stop&Go, designed to increase driver comfort; it can be activated at low speeds of up to 40 km/h. In applicable situations on the motorway, it controls the driveline, brakes and steering independently, decelerates the vehicle behind a braking vehicle – to a standstill if necessary – and then sets the vehicle in motion again of its own accord. The navigation system maps ensure that the system is only available on motorways. It remains active up to a speed of 60 km/h; from then on the individual functions of ACC Stop&Go and LRA take over. As is the case with Lane Return Assist, the congestion assistant also always requires the driver to keep their hands on the steering wheel.

### **Emergency Brake Assist (EBA) – intervenes when there is a risk of a rear-end collision**

The EBA Emergency Brake Assist system, which is installed as standard in the new MAN truck generation, clearly exceeds the stricter legal requirements for emergency braking systems, which have been in force



since November 2018 in the EU. It initially warns the driver during critical situations and initiates emergency braking if there is a risk of a rear-end collision with a moving or stationary vehicle in front. The aim is to avoid a collision entirely, or at least significantly reduce the effects. The sophisticated combination of data from radar and camera sensors allows the system to interpret even challenging traffic scenarios more reliably, identify preceding vehicles and stationary obstacles with more certainty, and thus only activate emergency braking if required. Emergency Brake Assist EBA 2 was designed on the rule of "the driver should always be the one responding". This warning philosophy specific to MAN ensures a high level of driver acceptance. The interaction of two technologies reduces the risk of unjustified warnings to a great extent. This means MAN achieves the aim of confusing drivers as little as possible through the warning signals. Based on the positive experiences with this design philosophy, MAN has, as before, omitted a switch-off button in the instrument panel of the new truck generation, in order to further increase the safety offered by the system. Nevertheless, the driver still has total control over the system at all times.

#### **MAN AttentionGuard – for staying alert at all times**

The data from the lane monitoring is also used by the MAN AttentionGuard. This alertness assistant continuously evaluates the number of times the vehicle strays from the lane as well as the steering interventions, and assumes that as the driver's alertness decreases, their ability to keep the vehicle neatly within its lane also decreases. An optical warning in the display helps the driver to direct their concentration back onto what is happening on the road.

#### **High beam assist – good visibility without dazzling anyone**

To ensure optimum lighting, the new MAN truck generation provides high beam assist, which automatically controls the use of the high-beam headlights depending on the driving conditions. The system prevents the drivers of oncoming vehicles or vehicles driving ahead from being dazzled by dimming the high-beam headlights in good time.

#### **Airbag – reduced risk of injury**

To protect the driver in the best possible way in the event of an accident, and to reduce the risk of injury or the severity of any injuries, MAN is expanding the restraint systems in the cockpit by optionally integrating an airbag into the multifunction steering wheel. It supplements the seat belt and belt tensioner and protects the driver from impact with the steering



wheel. In this way, the airbag reduces the risk of injury to the head, face and upper body. However, as ever, the following applies: the airbag and belt tensioner will only deploy to the maximum protective effect if the seat belt is strapped in properly.