Twice as efficient – on the road and on the rails.

The new road-rail Unimog BlueTec 6.
High cost-effectiveness.

Those things which impressed our customers in the previous model series were the focal point in the development of the new Unimog: outstanding efficiency and maximum flexibility.

The Unimog concept demonstrates its unique qualities in road-rail operations: start off by shunting heavy loads on rails, then skip off the tracks and drive on the road to where the next rail task awaits you. Only one vehicle can do this – the Unimog from Mercedes-Benz. For years, the versatile road-rail Unimog has proven itself on rail and road, convincing customers of its economy and great flexibility. Depending on the equipment and body selected, the new BlueTec 6 generation of the Unimog with its pioneering and environmentally-friendly innovations is a fully-fledged shunting vehicle or a professional workhorse for numerous applications in the field of railway infrastructure.

Perfectly tuned for towing loads of up to 1,000 t and equipped to provide outstanding working and driving comfort, the new road-rail Unimog is uniquely versatile. And decisively more economical. The road-rail Unimog isn’t just cheaper than a locomotive, it also proves its worth when it comes to running costs too – in particular thanks to much lower fuel and service product consumption. Even in terms of maintenance, service and regular intermediate and main inspections, the Unimog saves you a packet compared to a shunting locomotive. And not least because you can drive the vehicle yourself to a Service Partner near you. The road-rail Unimog is an investment which pays off.

You can find more information on the new generation Unimog at www.newunimog.com
Convincing system benefits.

The new Unimog BlueTec 6 isn’t just the efficiency champion when it comes to road-rail operations, it also sets a new standard in comfort and environmental-friendliness.

The new generation of the Unimog also fulfils all technical requirements applicable to rail transport. The vehicle destined for road-rail applications is better known as the new Unimog U 423. Strengthened axles and a 1 t payload increase ensure optimum traction and power reserves for demanding shunting tasks. And the new engine with its 170 kW (231 hp) output and up to 900 Nm of torque doesn’t just fulfils the latest Euro VI emissions standard, it also makes its own contribution to sustainability, environmental-friendliness, CO2 reductions and fuel savings. The result is a winning overall concept full of innovations and highlights which will bring company owners and users alike to where they want to be.

KIND TO BOTH THE ENVIRONMENT AND YOUR BUDGET

- The latest BlueTec 6 Common Rail Diesel engines fulfil the Euro VI emissions standard
- Drastic reduction of pollutant and particulate emissions by up to 90% compared to the previous Euro V engines
- Low maintenance costs thanks to longer maintenance intervals
- New, easy-to-maintain cooling system

SUITE TO THE JOB AT HAND AND USER-FRIENDLY

- Generous panoramic cab
- Modern and ergonomic interior
- New camera monitor system improves the close-range field of vision
- New, roof-mounted windscreen wiper system
- New, intuitive operating concept
- Optimised heating and cooling system

POWERFUL

- High-performance engine with 170 kW (231 hp) output and up to 900 Nm of torque
- Powerful transmission with 8 forward and 8 reverse gears
- Standardised mechanical, hydraulic and electrical interfaces
- Mechanical implement drives: front PTO as well as further engine and transmission PTOs
- Hydraulic implement drives and controls: fully proportional working hydraulics and VarioPower® power hydraulics
- Driving speed: up to 90 km/h on roads and up to 50 km/h on rails (in both directions)
- Complete traction thanks to high friction values between rubber and steel
- Torque-converter clutch ensures smooth starts, even with heavy loads of up to 1,000 t

INNOVATIVE

- Newly-developed EasyDrive synergetic drive system for stepless working from 0 to 50 km/h and rapid changing between working and driving modes

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Practical experience.

The world’s largest BASF production facility in Ludwigshafen regularly puts their 13 Unimog U 400 road-rail vehicles through their paces and has even recently added a U 423 BlueTec 6 to the fleet.

BASF has been a customer of the road-rail Unimog for shunting operations for many years. How many Unimog do you have in your fleet?

EDINGER: The first Unimog U 400 with Zagro shunting equipment came into operation in 2006. Because of the positive experience we had, we progressively replaced our fleet of shunting vehicles. BASF now has 13 Unimog U 400 vehicles in operation.

What are your logistic requirements and how does the Unimog help you to deal with them?

EDINGER: We need to ensure that all of our wagons are ready at the right place and at the right time in more than 120 production areas within the plant. Each day we shunt around 900 wagons and serve up to 254 loading areas on a rail network which is 230 km in length. SCHULER: The Unimog are an indispensable part of our fleet. We put them under immense strain – with towing loads predominantly in a range between 300 to 600 t and up to 2,500 operating hours each year.

“The high torque of the new engine can be felt clearly when pulling away with heavy loads.”

Mathias Schuler, Head of Locomotive Maintenance at BASF talks about the new road-rail Unimog BlueTec 6

Which technical features predestine the road-rail Unimog for use at BASF?

EDINGER: Many of our delivery journeys would not be feasible with a locomotive. The ability to switch rapidly from the rails to the road is a massive advantage. And as far as the tractive power is concerned, the Unimog equipped for road-rail operations is a top-performing shunter which perfectly fits our requirements.

SCHULER: Our Unimog are converted to road-rail vehicles by Zagro. Besides the rail gear and the railway wagon brake system, the radio remote control is also of crucial importance as it allows for efficient single-crewed operation.

Apart from the technical specifications, what other criteria are decisive for you?

EDINGER: Costs are naturally a decisive factor for us. The average fuel consumption of 5–6 l of diesel per operating hour helps achieve outstanding overall economy.

SCHULER: In terms of servicing and maintenance, the Unimog also performs impressively, as does the co-operation with our Unimog Service Partner. One of our U 400 vehicles has already clocked up 20,000 operating hours and is still in great condition.

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You were one of the first customers to get the chance to test the new Unimog generation on rails. What do you like most about the new BlueTec 6 model series and, moreover, what do your employees think of it?

SCHULER: The new Euro VI engine left us with a very good impression and is definitely a step ahead of the previous generation. The high torque at low revs can be felt clearly when pulling away with heavy loads and this is a particularly important characteristic for us. Even the new increased permissible gross vehicle weight of 13 t has a very positive effect when shunting and is a welcome power reserve, for example when working in difficult weather conditions. Our drivers, of course, instantly fell in love with the modern equipment and improved comfort in the cab.

The majority of your vehicles are only used within the confines of the plant. Thus in theory you could also procure vehicles which do not meet the currently applicable emissions standard. What is your strategy in this respect?

EDINGER: At BASF we, of course, place great emphasis on protecting the environment. Accordingly, even with our previous road-rail Unimog, we ensured that we always took the latest model which met the emissions standard applicable in Germany at the time of procurement. In the future, we will also stand by the new vehicle generation with Euro VI engines, despite the Euro V models still being available.

SCHULER: We now also have some Unimog vehicles which are registered for use on public roads in order to be able to respond more flexibly to the requirements of other BASF plants, such as Lampertheim, Schwarzheide or Antwerp. Because the Unimog is capable of driving at speeds up to 90 km/h, we can comfortably set it rolling on its axles.
Impressive pulling power.

A reliable chassis concept with all-wheel drive, portal axles and differential locks: the Unimog tackles the tough jobs.

The Unimog offers everything that counts in road-rail operations. Thanks to compact axle dimensions the Unimog uses its own wheels to power itself along the tracks, regardless of whether they are normal-gauge or wide-gauge. To make this possible, the Unimog merely needs a rail gear and can thus do without a separate drive system for rail operations. Optimal performance both on and off the rails is served up by a powerful diesel engine, an impressive transmission with intelligent torque-converter clutch and an all-wheel-drive system with differential locks.

A true powertrain. The vehicle wheels drive the Unimog along the rails. A hydraulically retractable rail gear keeps the Unimog well on track up to a speed of 50 km/h in both the forward and reverse gears. The Unimog is thus able to use the high friction values between the rubber tyres and steel tracks to its full advantage. It thus achieves optimal traction and high towing capacities. A finely-stepped transmission with 8 forward and 8 reverse gears, as well as permanent all-wheel drive and differential locks all also ensure optimal conversion of the engine’s power into maximum pulling power on the tracks. Accordingly, shunting loads of up to 1,000 t is thus possible at speeds up to 25 km/h – and that in both directions.

Smooth starts. Thanks to 2.5 times more torque when pulling away, the Unimog allows for smooth starts even when towing heavy loads. The hydrodynamic torque converter enables you to do this with few shifts and without having to use the clutch. This not only protects your freight but also your vehicle. And it even reduces clutch wear.

Single-crewed operation. The optionally available radio remote control lets the driver carry out coupling and decoupling tasks more efficiently. It even allows the driver to position the wagons without the help of a marshall, and to control the vehicle from the head of the train without the aid of a second driver in the cab when reversing with wagons coupled. The Unimog thus saves you both time and additional personnel costs.

Efficient road/rail changeovers. Carry out tasks on the tracks as efficiently as possible. Minimise arrival and departure times at the work site. That’s exactly why the road-rail Unimog exists. All you need to get the Unimog ready for operation on the tracks is a level section of track measuring around 5 m in length and less than three minutes. If the ground conditions are appropriate, the road-rail Unimog’s hydraulic lifting and turning mechanism even allows you to join the rails on a stretch of track between two stations.

Quickly on the scene. Top speeds of up to 90 km/h on-the-road mean that the road-rail Unimog can always take the fastest route between two sites. What’s more, the simple operation of the rail gear saves not only time but also track usage fees.
Tailor-made system competence.

The Unimog is the specialist for universal operations and, in the case of specific customer requirements, offers the ideal basis for personalised, tailor-made system solutions.

For generations, the Unimog has been the benchmark when it comes to versatility in year-round operation. Specially developed for implement operation, the Unimog offers a unique, variable platform for countless possible operations at any time of the year. To ensure this is always possible, among other things, the Unimog is equipped with 4 attachment and mounting areas, standardised interfaces as well as hydraulic and mechanical drives for implements and attachments. Furthermore, Mercedes-Benz has been working closely for several decades with leading international implement manufacturers and bodybuilders – from the development of the vehicle right up to its sale. Accordingly, the best possible conditions are met to ensure optimally co-ordinated vehicle and attachment combinations. Your Unimog Partner can thus provide you with a tailor-made solution from a single source, as well as providing you with competent, personalised advice concerning your particular field of operation.

Efficient vegetation control, such as mowing or cutting overhead clearance areas

Professional implement carrier. The road-rail Unimog is suited to the most varied of tasks – from work involving the rail infrastructure to jobs around plant sites. From maintenance of overhead lines using elevated work platforms to clearing snow with a snow plough or rotating implements. From cutting overhead clearance areas to operation as a recovery vehicle or even assisting in plant construction. Vehicles with fire-fighting bodies are also available.

Endless possibilities. Whether purely an implement carrier or a shunting vehicle with additional implements and mounted bodies such as a crane, snow plough or front boom, a road-rail Unimog offers almost endless possibilities. And to keep it that way, the implement carrier concept comes complete with various attachment and mounting areas, as well as integrated standardised interfaces for implement drives and controls. Maximum power transfer is guaranteed by the mechanical front PTO with an output of 160 kW. Further PTOs are also available in the form of both engine and transmission-driven PTOs, as well as up to four separate hydraulics circuits. If required, all implements can be changed in the shortest of times thanks to the Unimog rapid-change system. The Unimog can therefore be used to full capacity 365 days of the year and thus ensures the greatest possible cost-effectiveness.

Work in comfort. Excellent visibility of all attachments, ergonomic layout of all control elements, fully climatised cab: driving comfort and convenient operation are just as important to the Unimog as safety during implement operation. The new Unimog BlueTec 6 features EasyDrive, a synergetic traction drive which has been fine-tuned to meet the vehicle’s operating requirements. The system unites the advantages of a fuel-efficient manual gearbox with those of a stepless hydrostatic traction drive and thereby allows for swift changes while the vehicle is in motion. Road-sweeping, tree cutting or snow cutting operations are noticeably more comfortable as the hydrostatic traction drive allows precise and smooth working at speeds between 0 and 50 km/h.

Customer-specific solutions. Traction clutch for shunting higher loads in industrial operations? Towing a metro train up an extreme 12 percent gradient? Smooth remote operation of the road-rail Unimog from an elevated work platform or cherry picker basket as part of inspections on the rail network? Re-railing derailed wagons using the vehicle’s PTOs? The road-rail Unimog is ready to take on any challenge you throw at it.

Safe inspection of the overhead lines from an elevated work platform.

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“OUR CLOSE COLLABORATION WITH COMPETENT BODYBUILDERS FROM THE INITIAL DEVELOPMENT STAGE ONWARDS IS A VITAL ELEMENT FOR OUR SUCCESS AND FOR THE SATISFACTION OF OUR CUSTOMERS.”

Holger Doth, Daimler AG, Segment Manager for road-rail vehicles
The Unimog concept impresses customers the world over. Its excellent reputation and the high customer satisfaction are, in the first instance, due to its legendary reliability and robust build quality. The ability to adapt to the most varied of markets and fields of operation is another decisive argument. An important reason for this is the intense collaboration between Mercedes-Benz and internationally renowned bodybuilders and implement manufacturers, as well as the comprehensive worldwide service which Mercedes-Benz can offer its customers.

Worldwide operation.
The Unimog is and will remain a sound investment with a future. The world over. For the most varied of operations. Innovative and proven.

1. **24-HOUR SAFETY CAR**
   In Le Mans, France, the U 400 is the recovery vehicle of choice for the local tram network, as well as a maintenance and repair vehicle for the overhead lines.

2. **OUT-AND-ABOUT IN THE MEGA-CITY**
   The Unimog also makes a noteworthy contribution to the effective operation of the Miskolc City Metro's infrastructure. It is used for drain cleaning predomiately in forma.

3. **TWICE AS TOUGH**
   Two Mercedes-Benz Unimog U 400 vehicles in double traction recover a Mietro Lausanne-Ouchy train in Switzerland.

4. **SAFETY ON THE TRAM NETWORK**
   A dual-rail Unimog with multifunctional interchangeable frame and groove cleaner keeps the rails of the Malaysian tram network in Hungary clean and safe.

5. **CLEAN ENERGY**
   Shunting operations using the radio remote control mean the Unimog U 400 is an essential element of the economic and environmental logistics chain at Enercon in Germany. What’s more, the vehicle is used for vegetation control and cleaning tasks.

6. **QUICKLY ON THE SCENE**
   Twelve Unimog U 400 vehicles help the Turkish state railway (TCDD) to quickly and flexibly clear the tracks in the event of a problem.

7. **UP THERE**
   Unimog shunting wagons with building materials during construction of the Shinkansen high-speed train lines in Japan in collaboration with JRT.

8. **THERE’S NO SUCH THING AS A UNIMOG-FREE COUNTDOWN**
   At the European Space Agency (ESA) in Guyana, a Unimog U 400 shuts the booster rockets to the launchedpad.

9. **A HIGHLIGHT DOWN UNDER**
   A Unimog U 400 with elevated work platform carries out maintenance and repair work on overhead lines and further components of the railway infrastructure in Gold Coast, Australia.
An investment for the future.

For more than ten years a U 400 has been used by Sasol Germany GmbH as a shunting vehicle. Now it is expanding its rail logistics to include a new Unimog 423.

SASOL GERMANY GMBH IN BRUNSBÜTTEL: THE VERY FIRST CUSTOMER FOR THE NEW ROAD-RAIL UNIMOG.

The first road-rail Unimog from the BlueTec 6 generation with shunting equipment and remote control gets down to work. With over 600 employees, Sasol Germany specialises amongst other things in the production of fatty alcohols and their derivatives, as well as highly pure aluminium oxides. The company deals with a large part of its logistics by rail. For over 10 years Sasol has been using a road-rail Unimog U 400 for shunting its tank wagons round the plant.

And in Brunsbüttel this appears to have been a positive experience as now the U 400 is to be given the support of a new road-rail U 423. There are many reasons for making this investment. On the one hand, one important factor for the company was the environmentally-friendly Euro VI technology with its reduced emissions; on the other hand, other important criteria were the improved traction of the U 423 which allows it to carry greater payloads as well as other innovations.

The Unimog is the right shunting vehicle for Sasol’s requirements as the Unimog ensures an especially quick turnover at a loading point. This professional road-rail vehicle can transfer quickly and easily between rails and roads in the plant which makes it much more efficient than a rail-bound vehicle. The low fuel consumption of the Unimog also contributes to its overall economic efficiency.

The new professional shunting vehicle at Sasol Germany GmbH: a Unimog U 423 with BlueTec 6 technology

The Unimog implement carrier also proves its impressive competence in other branches and segments. If needed for off-road operations, the outstandingly agile off-road Unimog, can show you just what it can do. You will find more information at www.newunimog.com

MERCEDES-BENZ SERVICE. WHEREVER YOU USE YOUR UNIMOG – MERCEDES-BENZ IS CLOSE AT HAND.

With over 650 Unimog Service Outlets in more than 130 countries around the world, if you need us, we will immediately take care of your Unimog. With the same care and attention to detail, the same expertise and the same technical resources that we put into its original assembly. This is ensured by our comprehensive service network’s knowledgeable Unimog Service Partners.

+ Top service quality at over 650 outlets in over 130 countries worldwide
+ Maintenance, diagnosis and repairs
+ Technical support
+ Advice and training tailored to requirements
+ Safety and technical training
+ Working relationship based on partnership and fairness

Learn more about the other possible uses of the Unimog.

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More information on the road-rail Unimog, including further references and vehicle examples from around the world can be found in our web special – take a look:

www.mercedes-benz.com/unimog-road-rail
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