



# Dual efficiency – on road and rail.

The Unimog road-railer.

Mercedes-Benz  
Trucks you can trust



# A singular idea with decades of experience to its name.

Supremely capable in demanding situations, mastering challenges with aplomb – that's the Mercedes-Benz Unimog. Since the 1950s, the Unimog has been supporting countless companies in specialised areas of work. It was already in service on track infrastructure operations and as an alternative to the use of locomotives back in the 1960s.

In road-rail operations, the Unimog deploys high levels of tractive power in shunting operations, with a towing capacity of up to 1000 t. This is made possible by the torque converter clutch, permanent all-wheel drive, compact axles and propulsion via the vehicle's own wheels. The fully-fledged

track vehicle can switch quickly between road and track use, ensuring flexibility at all times – not least of all because the Unimog also offers a host of other options, beyond shunting: with its attachment and mounting areas and its mechanical, electrical and hydraulic interfaces it is predestined for a diverse range of tasks relating to maintenance of the track infrastructure.

The vehicle concept is unique worldwide and continues to set the benchmark for operational effectiveness and diversity on four wheels to this day.



Already in service as a shunting vehicle back in the 1960s: Unimog U 406 with special tyres



The sophisticated chassis design also masters major challenges in tough operations





Find out more about the Unimog road-railer at  
[www.mercedes-benz.com/unimog-road-rail](http://www.mercedes-benz.com/unimog-road-rail)





# Crucial advantages.

The Unimog meets the railway sector's technical requirements. Reinforced axles, high payload capacity, high traction – its power reserves make it the vehicle of choice for even the most demanding road-rail operations.

## Powerful.

- + Full traction thanks to high friction values between rubber and steel
- + Torque-converter clutch ensures smooth starts, even with loads of up to 1000 t
- + Vehicle speed of up to 90 km/h on roads and up to 50 km/h on railway tracks (in both directions)
- + Front PTO shaft and additional engine and transmission PTOs, plus up to four separate hydraulic circuits
- + Powerful transmission with up to 24 forward and reverse gears

## Practice-oriented and user-friendly.

- + Spacious panoramic cab
- + Modern, ergonomic interior
- + Camera/monitor system for improved close-range vision
- + High-performance heating and cooling system







#### **Innovative.**

- + Hydrostatic drive for infinite adjustment of the working speed between 0 and 50 km/h at a constant engine and PTO speed
- + EasyDrive for smooth changes while on the move between mechanical and hydrostatic drive
- + Ergonomic, intuitive operating concept for driving and implement functions
- + Fire protection expertise confirms suitability for use as a rail vehicle in tunnels

#### **Unique concept.**

- + Up to four attachment and mounting areas for the most diverse implements
- + Standardised electrical, mechanical and hydraulic interfaces
- + High payload capacity combined with low kerb weight
- + Long-established, close cooperation with bodybuilders and implement manufacturers

#### **Environment-friendly and economical.**

- + Cutting-edge, fuel-efficient and low-emission common rail diesel engines (Euro VI)\*
- + Low fuel consumption, even in demanding shunting operations
- + Low maintenance costs as a result of long maintenance intervals

\* Optionally available as Euro V variant



# At home on the tracks. The Unimog road-railer.

**Customised system solutions.** The Unimog offers the ideal basis for customised system solutions. Close and long-standing collaboration with competent partners ensures that the Unimog road-railer is fitted out with the necessary railway equipment, such as wagon braking system, rail gear and the necessary control elements – providing the ideal basis for a perfectly matched combination of vehicle and attachments/implements.

**A fast operator.** The Unimog is unique in its ability to run on its own wheels both on the road and, with the appropriate road-rail equipment, on the railway track. Rail/road change-over takes just a few minutes. All the Unimog requires for this purpose is a level stretch covering a couple of metres on the track bed. When operations on the track are completed, it travels to the next deployment site at a speed of up to 90 km/h.

**Flexibility ex factory.** The Unimog is fitted as standard with special tyres and wheels for operation on standard gauge or various international wide gauges (1435–1676 mm). Hydraulically lowerable rail gear provides for reliable guidance on the track. Standardised interfaces for operating implements are additionally installed at the factory. Mechanical, hydraulic and electrical interfaces provide an ideal basis for bodybuilders' countless solutions.



Flexible and fast: the Unimog speeds along to its next deployment at up to 90 km/h



Fast changeover: a level stretch of track covering just a few metres is sufficient for rail/road changeover



Ample pulling power: the Unimog wheels provide the necessary traction – enabling the Unimog to tow loads of up to 1000 t



**The right conditions for relaxed working – even on long deployments.** The workplace and the cockpit tailored to its users provide for ideal work conditions. In this comfortable and convenient environment, the driver is able to focus fully on the task in hand. With the aid of the control elements which are arranged ideally within reach and the multifunction

steering wheel, for example. Anyone spending longer periods of time in the cab comes to appreciate the efficient air-conditioning and heating system: whatever the weather, it ensures comfortable temperatures in the vehicle. Heated windows and mirrors ensure clear vision right from the outset.

**Low running costs.** The Unimog road-railer featuring efficient, state-of-the-art drive technology leads the way in economic efficiency, too. The Unimog pays off in terms of operating costs, thanks to its comparatively low fuel consumption and the high capacity utilisation resulting from flexible deployment. The Unimog is also highly maintenance-friendly and backed up by an excellent service infrastructure – crucial assets, courtesy of the Unimog.

**Fire protection expertise for deployment in tunnel areas.** A fire protection expertise drawn up by the TÜV Süd Rail technical inspection agency for the latest generation of the Unimog road-railer confirms the vehicle's suitability for deployment in tunnel areas, even in parallel with passenger transport operations. To meet the fire protection requirements in these areas, a fire detection device and a fire extinguishing system in the engine compartment are optionally available.



# Ample drive power, ingeniously applied to the track.

Traction on the track is provided by all four of the vehicle's wheels, with the rail gear serving solely to ensure safe travelling on rail at speeds of up to 50 km/h.

The advantage of this solution is that the high friction between rubber wheel and steel rail yields the very highest levels of traction. This enables the Unimog to shunt loads of up to 1000 t or 52 wagon axles.

A finely graduated transmission with up to 24 forward and reverse gears and the permanent all-wheel drive with differential locks ensure optimum transfer of the engine power to the track.

If required, the Unimog's engine power take-off can be used to drive a powerful compressor for a wagon braking system.



Pulling power for up to 1000 t: Unimog in shunting operation



Swift help: towing a tram









# Shunting specialist with pulling power.

## The advantages at a glance.

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- + Full traction thanks to high friction between rubber and steel
- + Torque-converter clutch ensures smooth starts, even with heavy loads
- + High towing capacity in rail-bound shunting operations: up to 1000 t
- + Convenient radio remote control for economical one-man operation
- + Speedy on the track – up to 50 km/h as a solo vehicle, in forward and reverse direction
- + Shunting at up to 25 km/h
- + Clean drive concept\*

\* Engines available in Euro VI or Euro V version

**Smooth starting.** The torque converter clutch on the Unimog increases the starting torque by a factor of around 2.5. This ensures that the Unimog moves off smoothly even when towing heavy loads – with a small number of gear changes and without operating the clutch. This not only protects your freight but also your vehicle. And it also reduces clutch wear.

**One-man operation.** Road-rail specialist partners are optionally able to equip the Unimog with radio remote control. This enables the driver to carry out coupling and decoupling operations more efficiently. Or to position the wagons without the help of a guide, for example under a filling installation. Or, when reversing with wagons, to steer the train from the front end, without an additional driver in the cab. In short: one-man operation by radio remote control saves time – and personnel costs.

**Environment-friendly ex factory.** Thanks to the clean, powerful yet economical drive. And also by virtue of the vehicle's low noise emissions – a major benefit when deploying the Unimog in the vicinity of residential areas.

**Major additional utility value.** Numerous implements that can be fitted and removed in next to no time are also available for the Unimog road-railer. Fresh from a stint as a shunting vehicle, the Unimog can swiftly be fitted with a snow plough or front sweeper to clear the factory grounds, for example.

In a nutshell: the road-rail Unimog is an investment that pays off.





Coupling up the easy way



Comfortable workplace: ideal all-round view of the work area, intuitive and ergonomic operation, optional camera/monitor system – the Unimog has everything covered



Coupling up, then shunting: by means of radio remote control the line of wagons can be controlled from the front end of the train at all times in one-man mode





Vast quantities of grain are handled every day at the HaBeMa depot in Heidenau – the Unimog is an invaluable helper



# “The Unimog is unbeatable in terms of running costs.”

## **The AGRO terminal in Heidenau is an important transfer depot for grain and animal feed. What tasks does your Unimog perform?**

Jes-Christian Hansen, authorised signatory at HaBeMa: Every morning, a full train load of soya meal arrives in Heidenau from our plant in Hamburg. It is unloaded in Heidenau and goes into interim storage until it is sold on. We then fill the wagons, which may number up to 36, with grain again. This originates for the most part from Saxony, the Czech Republic and southern Poland, and is transported to Hamburg for use in the production of compound feed and subsequent shipping. We use our Unimog road-railer to haul sections of the train comprising up to 12 wagons over our filling and unloading station.

## **At HaBeMa you already have experience with the Unimog road-railer as a shunting vehicle, e.g. with a U400 at your plant in Hamburg. What considerations were particularly important to you in your decision to purchase the new Unimog U423?**

For the purposes of our efficient procedures at the filling and unloading station, the Unimog is continually required to move loads of up to 1000 t. We also have an S-bend which imposes high requirements on the Unimog's pulling power on account of the curve resistance. We thus specifically opted

for a Unimog of the new generation, which enables a higher gross weight at 13 t and which impressed us with additional improvements in the drivetrain.

## **What items of railway equipment are particularly important for your operations?**

The radio remote control is indispensable for our shunting work, as it enables one employee to position the train precisely over the deep bunker for unloading or under the filling station from outside the vehicle. Another important feature for us was the high-performance helical compressor, which is driven via the Unimog's engine power take-off. With this, we are quickly able to produce enough air to release the wagon brakes – this avoids long waiting times. Another feature which has proven its worth is the acceleration skid control system, which synchronises the speed of the track wheel and the Unimog wheel, thus preventing the wheels from spinning in critical situations.

## **What advantages does the Unimog offer you over a shunting locomotive?**

With a diesel locomotive, we would never have been able to meet the noise control regulations which apply here at our base in Heidenau on the basis of the Federal Emission Control Act. This applies in particular to work between 10 in

the evening and 6 in the morning. A Unimog is also miles ahead of a shunting locomotive in terms of running costs. This concerns its low fuel consumption, as well as markedly lower repair and maintenance costs and the availability of spare parts.

**“A UNIMOG IS MILES AHEAD OF A SHUNTING LOCOMOTIVE IN TERMS OF RUNNING COSTS, PARTICULARLY WITH REGARD TO FUEL CONSUMPTION.”**

Jes-Christian Hansen, authorised signatory at HaBeMa GmbH & Co. KG







# Economic efficiency through flexibility.

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 applications at any time of the year. This is ensured by a range of facilities, including four attachment and mounting areas, standardised interfaces as well as hydraulic and mechanical drives for implements and attachments. In addition, Mercedes-Benz has

been working closely for several decades with leading international implement manufacturers and bodybuilders – from vehicle development through to sales and marketing. This provides an ideal basis for perfectly matched vehicles and attachments. Your Unimog dealer can thus provide you with a tailor-made solution from a single source, as well as competent, personalised advice concerning your particular field of operation.



Flexible track construction vehicle for infrastructure work and pulling wagons



Countless options: up to four attachment and mounting areas



# Whatever your plans, the Unimog has what it takes.

## **Professional deployment of implements and equipment.**

From maintenance of overhead lines using elevating work platforms to winter services with a snow plough or rotating implements. From clear cutting work to use as a rescue vehicle or with a workshop body – the Unimog reliably performs the most diverse spectrum of work in the area of track infrastructure and on factory grounds. A practical feature is the innovative Unimog quick-change system, which enables interchangeable attachments and implements to be replaced in the shortest of time.



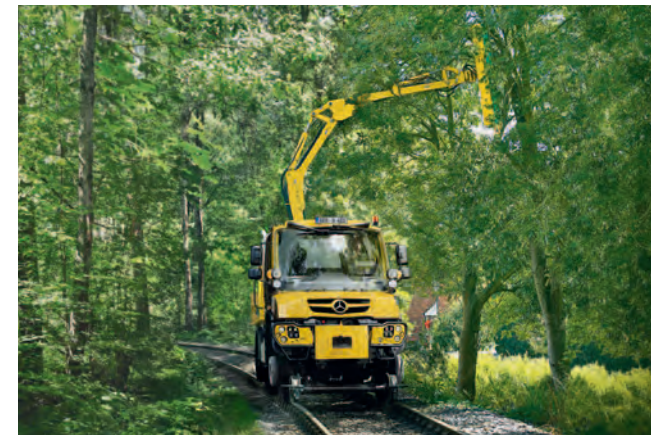
On road or rails: a snow plough is fitted for winter service operations in a matter of minutes

**Impressive versatility.** As a basic implement carrier or a shunting vehicle with additional attachments and implements such as a crane, elevating work platform or mower – with a Unimog road-railer the possibilities are virtually boundless, thanks to its implement carrier concept with standardised interfaces and up to four attachment and mounting areas. Up to four separate hydraulic circuits plus mechanical engine and transmission power take-offs enable diverse implements to be operated – ensuring optimum vehicle capacity utilisation throughout the year.



Rerailing derailed wagons with the aid of a Unimog rescue vehicle

**Convenience and comfort at work.** Excellent visibility of the work area, ergonomically arranged control elements, fully air conditioned cab: driving comfort and convenient operation are just as important to the Unimog as safety when operating implements. The hydrostatic drive is a boon when operating the vehicle with a sweeper, lopper or snow cutter, enabling infinite adjustment of the working speed while maintaining a constant engine and PTO speed. The driver is able to accelerate or slow down the Unimog particularly sensitively and smoothly, without operating the clutch.



The Unimog is also a boon in clear cutting work



When fitted with corresponding equipment, with the aid of the hydrostatic drive the Unimog can also be controlled precisely from the work platform – on inspection runs or when carrying out maintenance work on overhead lines, for example.

#### The advantages at a glance.

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- + Customer-specific solutions
- + Close cooperation with implement and attachment specialists
- + Special railway equipment in accordance with infrastructure operators' requirements
- + Rail gear for tight curve radii from approx. 17 m
- + Diverse scope of applications provides for high capacity utilisation





# The whole world of the Unimog.

Professional services for your mobility and flexibility – wherever your Unimog takes you.

## Worldwide service network.

A Unimog will take you anywhere you need to go – and we are at your service, wherever your Unimog takes you. At over 650 Unimog Service Support Points around the world we will attend to your Unimog straight away if you need us to, always with the same degree of care, the same experience and technical capabilities that were applied when we built it. Using only replacement parts which have met our stringent quality and availability standards.

- + Maintenance, diagnosis and repairs
- + Advice and training tailored to requirements
- + Individual financing and fleet concepts
- + Mobility services, from quick starting assistance to a loan vehicle
- + Mercedes-Benz GenuineParts/reconditioned parts
- + Warranty and follow-on warranty for parts and assemblies

## Financial services.

A professional concept for your fleet and financial matters provides the foundation for your success. You want your vehicles to be available to you at all times, and the same applies to your capital. The Unimog system with its financial services can play a significant role here. We provide economically efficient financing and leasing plans which offer very favourable terms and are specially tailored to your needs.

- + Favourable conditions
- + Flexible terms
- + Guaranteed fixed interest rates
- + Individual advice

## Your one-stop solution.

Competent, individual advice. As your one-stop supplier, your Unimog dealer will provide you with the customised solution you require – and you can rest assured that your overall system comprising vehicle and attachments is perfectly matched and has been tested according to the strictest criteria. Your unique benefit is our long-standing, close cooperation with the best road-rail specialists – ensuring your high requirements are met on all fronts, and that your investment pays off in full.

**Unimog E-News.** Stay up to date – one-off registration: Unimog E-News provides valuable background information, testimonials and news about the Unimog.

**Contact.** Want to know more? We will happily put you in contact with one of our specialist Unimog dealers.

Contact and more – it's all online:  
[mbs.mercedes-benz.com/unimog-road-rail](https://mbs.mercedes-benz.com/unimog-road-rail)



# Model overview and technical data.

Model	U 423 (Euro VI)		U 427 (Euro VI)		U 430 (Euro VI)		U 423 (Euro V)		U 429 (Euro V)	
Engine output	170 kW		200 kW		220 kW		170 kW		210 kW	
Torque	900 Nm		1100 Nm		1200 Nm		900 Nm		1150 Nm	
Wheelbase (mm)	3000	3600	3150	3600	3150	3600	3000	3600	3150	3600
Dimensions – length (mm)	5150	5755	5300	5755	5300	5755	5150	5755	5300	5755
Dimensions – height (mm)	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900
Dimensions – width (mm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Turning circle (m)	13.7	16.5	14.3	16.5	14.3	16.5	13.7	16.5	14.3	16.5
Perm. gross vehicle weight (shunting vehicle)	13000 kg		–		–		13000 kg		–	
Perm. gross vehicle weight (maintenance vehicle)	13800 kg		13800 kg		13800 kg		13800 kg		13800 kg	
Perm. axle load (front)	6900 kg		6900 kg		6900 kg		6900 kg		6900 kg	
Perm. axle load (rear)	6900 kg		6900 kg		6900 kg		6900 kg		6900 kg	
Tyre size	275/90 R 22.5		275/90 R 22.5		275/90 R 22.5		275/90 R 22.5		275/90 R 22.5	
Travelling speed	90 km/h		90 km/h		90 km/h		90 km/h		90 km/h	
Permanent all-wheel drive	•	•	•	•	•	•	•	•	•	•
Option – torque converter clutch	•	•	–	–	–	–	•	•	–	–
Option – hydr. drive (Easy Drive)	•	•	•	•	•	•	•	•	•	•
Fire protection expertise for tunnel deployment	•	•	•	•	•	•	•	•	•	•
Vehicle track width for rail gauge	1435/1520/1668 mm		1435/1520/1668 mm		1435/1520/1668 mm		1435/1520/1668 mm		1435/1520/1668 mm	

You will find more information on the Unimog road-railer in a web special, including many references, films featuring the Unimog road-railer in operation with our customers and examples of vehicles from all over the world. Take a look now at:

[www.mercedes-benz.com/unimog-road-rail](http://www.mercedes-benz.com/unimog-road-rail)



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[www.mercedes-benz.com/specialtrucks](http://www.mercedes-benz.com/specialtrucks)