This Technical Manual serves as an advisory reference document for Unimog Sales. Besides the basic vehicle version, special equipment is also listed. Regarding the availability of standard and special equipment, please refer to the applicable price lists. Subject to technical modifications without notice. All rights reserved. Reprinting or reproduction in electronic form, including excerpts, is prohibited and requires the approval of Mercedes-Benz Special Trucks.

The latest changes and additions are available through our updates on the Extranet at:

www.specialtrucks-extranet.com

By the copy deadline only a few application pictures of the Unimog Implement Carrier BlueTec 6 were available. Therefore pictures of the BlueTec 5 generation were used. Pictures depicting the BlueTec 5 generation are designated '{BlueTec 5}' in the caption. All other pictures show the new Unimog Implement Carrier BlueTec 6.

Daimler AG
Mercedes-Benz Special Trucks
Sales & Marketing
February 2014 issue
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## Overview of models and components

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<th>Engine</th>
<th>Power (kW/hp)</th>
<th>No. of cylinders</th>
<th>Gross vehicle weight from to (t)</th>
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<tr>
<td>U 216</td>
<td>405.090</td>
<td>2800</td>
<td>OM 934 LA</td>
<td>115/156</td>
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<td>7.5 - 10.0</td>
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<td>U 218</td>
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<td>OM 934 LA</td>
<td>130/177</td>
<td>4</td>
<td></td>
</tr>
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<td>405.104</td>
<td>3000</td>
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<td>170/231</td>
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<td>U 427</td>
<td>405.110</td>
<td>3150</td>
<td>OM 936 LA</td>
<td>200/272</td>
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<td>11.99 - 14.0</td>
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<td>U 430</td>
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</table>
Product concept

Unimog model series in comparison

**Unimog Implement Carrier BlueTec 6**
- Compact all-terrain Unimog implement carrier
- Vehicle type: tractor unit/truck
- Vehicle width: from 2.15 m
- Wheelbases: 2800 mm - 3900 mm
- Straight, dimensionally stable and weight-optimised ladder-type frame
- Cab-behind-engine truck with large windscreen and low dash support
- 4+3 implement mounting areas
- Extensive hydraulics package
- Mechanical engine and transmission PTOs
- Permanent all-wheel drive, on-demand differential locks

**Unimog Extreme Off-Roader BlueTec 6**
- Extreme off-road Unimog chassis
- Vehicle type: truck chassis
- Vehicle width: from 2.3 m
- Wheelbase: 3850 mm
- Dropped, flexible and torsionally flexible frame
- Cab-behind-engine truck with raised windscreen
- Body length increased for added transport capacity
- Integrated hydraulics system available
- Mechanical engine and transmission PTOs
- Rear-wheel drive, all-wheel drive and on-demand differential locks
Compact design

Feature
- Compact vehicle width
- Tailored wheelbases for any application
- Small turning circle
- Short distance between implement and tractor
- High front axle load in relation to gross weight
- Gradation of permissible load levels (supplementary sheet)

Advantage
- Operations in narrow, urban areas
- Little obstruction of traffic when working on roadside
- Short wheelbases, high manoeuvrability
- Long wheelbases, large implement mounting space
- Manoeuvring with implements in extremely tight spaces
- Can reach sites with difficult access
- Low stress on front axle, use of heavy front-mounted implements possible
- Operation of heavy front-mounted implements
- Flexible use through variable payloads for summer and winter service operations

Distances between implement and tractor
Front axle / front mounting plate: approx. 1145 mm
Front axle / steering wheel: approx. 218 mm
Front mounting plate / steering wheel: approx. 1363 mm

Exemption for load levels in Germany
Up to 7.5 t GVW listed on model plate: legal operation with old class 3 / C1 driver’s licence possible.
Up to 11.99 t GVW listed on model plate: toll-free use of federal motorways. Simultaneously higher load levels possible via supplementary sheet (W code).
Off-road capability

**Feature**
- Professional, all-terrain implement carrier
- Portal axles with hub reduction gear
- All-round single tyres
- 100% differential lock, inter-axle differential lock
- Progressive coil springs

**Advantage**
- High traction through permanent all-wheel drive
- Extreme climbing ability
- High ground clearance
- High resistance to tipping even with implement
- High ground clearance
- Slim powertrain
- High payload with high pulling power
- Better snow track overlap
- Better traction off-road, on ice and snow
- Identical snow chains on both axles
- Increased traction on- and off-road
- Large spring travel
- Wheels maintain ground contact even on highly uneven surfaces
- Safe springing, irrespective of load condition

<table>
<thead>
<tr>
<th>U 200</th>
<th>U 300</th>
<th>U 400</th>
<th>U 500</th>
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<tr>
<td>090</td>
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<th>U 400</th>
<th>U 500</th>
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<tr>
<td>a) Ground clearance (mm)</td>
<td>335</td>
<td>325</td>
<td>383</td>
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<td>b) Angle of approach (°)</td>
<td>22</td>
<td>22</td>
<td>25</td>
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<tr>
<td>c) Ramp breakover angle (°)</td>
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<td>30</td>
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<tr>
<td>d) Angle of departure (°)</td>
<td>37</td>
<td>37</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>e) Tipping angle (°)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tyres U 200 / U 300: 365/80 R20
Tyres U 400 / U 500: 365/85 R20
Frame concept

**Feature**
- Straight, continuous ladder-type frame
- Bolted cross-members and bolted-in cross tubes, modular design
- Dimensionally stable, high flexural and torsional rigidity
- Front integral carrier
- Specified mounting points
- Frame with cut-outs

**Advantage**
- Implements mounted directly on the frame side members
- Good supply of replacement parts
- Easy replacement of parts
- Low torsion
- Maximum absorption of shearing and tractive forces from vehicle and implement
- Defined transmission of forces
- Safeguard against overloading
- Good handling with and without implement
- Simplified mounting, see Implement Mounting Areas
- Weight optimisation

---

The absorption of shearing forces from the front axle occurs through the trailing arms, the shearing forces from the front-mounted implements are absorbed via the front mounting plate.
Optional equipment - trailer coupling / end cross-member

**Feature**

**[Q31]** End cross-member for increased towing capacity (13 t / 18 t)
- Reinforced end cross-member

**[Q33]** End cross-member for lowered trailer coupling position
- Reinforced and enlarged end cross-member

**[Q36]** End cross-member for increased towing capacity (13 t)
- Reinforced end cross-member

**Advantage**

- Operation of rigid-drawbar trailers or centre-axle trailers up to 13 / 18 t
- Trailer couplings [Q94], [Q95] in 2 positions each
- 2 trailer couplings simultaneously [Q96]
- Allows lowering of trailer coupling by 265 mm, for low drawbar height
- For vehicle fleets with frequent changes in trailer operation
- Fits Scharmüller height-adjustable trailer coupling
- Operation of rigid-drawbar trailers or centre-axle trailers up to 13 t

The end cross-member [Q33] is also suitable for the height-adjustable trailer coupling from Scharmüller. Rear PTO shaft operation possible.
Feature

[Q94] Trailer coupling, large jaw, annular spring, 38.5 bolt
- Jaw size: 360 x 215 mm
- Flange dimension (hole pattern): 160 x 100 mm
- Drawbar load: 1000 kg
- Bolt ø: 38.5 mm for 40-mm eyelets

[Q95] Trailer coupling, large jaw, annular spring, 48.7 bolt
- Jaw size: 360 x 208 mm
- Flange dimension (hole pattern): 160 x 100 mm
- Drawbar load: 1000 kg
- Bolt ø: 48.7 mm for 50 mm eyelets

[Q96] Two trailer couplings, annular spring, 38.5+48.7 bolts
- Two trailer couplings for attachment to reinforced end cross-member [Q 33]
- Jaw size: upper 360 x 200 mm; lower 200 x 100 mm
- Flange dimension (hole pattern): 160 x 100 mm
- Drawbar load: 1000 kg (upper and lower)
- Bolt ø: upper 48.7 mm for 50-mm eyelets, lower 38.5 mm for 40-mm eyelets

Advantage

- Swivelling coupling pin
- Meets requirements for registration as a tractor unit

- Flexible application
- Low and high trailer coupling
- Standard height for truck trailer
Engine

Engine concept

**Feature**
- Mercedes-Benz 4-cylinder and 6-cylinder diesel engines, model series 930
- Newly developed engines from 115 kW / 156 hp to 220 kW / 299 hp
- Common-rail direct injection with high injection pressures (up to 2400 bar)
- Multiple injection
- Single-stage and two-stage turbocharging
- Euro VI technology
- Mercedes-Benz BlueTec 6 technology: combined SCR technology with particulate filter and cooled exhaust gas recirculation (EGR)

**Advantage**
- Proven engines of the Mercedes-Benz volume series
- High power reserves
- Efficient and clean combustion
- Smooth running
- High torque even at low engine speeds
- Optimised fuel consumption
- Future-proof through compliance with Euro VI
- Reduced NOx emissions
- Reduced particulate emissions
Feature
- Optimised choice of materials and manufacturing process
- Extended maintenance intervals, 1400 operating hours
- High torque
- Optimised in-engine combustion
- Engine start temperature as low as -15 °C

Advantage
- Service life extended by 20%
- Extended operating time, low service requirements, reduced operating costs
- High pulling power and holding ability of torque
- Significantly reduced AdBlue® consumption
- Problem-free engine start at low temperatures

<table>
<thead>
<tr>
<th>Torque (Nm)</th>
<th>n (rpm)</th>
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<tbody>
<tr>
<td>1500</td>
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</tr>
<tr>
<td>1200</td>
<td>2.400</td>
</tr>
<tr>
<td>1100</td>
<td>2.300</td>
</tr>
<tr>
<td>900</td>
<td>2.200</td>
</tr>
<tr>
<td>750</td>
<td>2.100</td>
</tr>
<tr>
<td>650</td>
<td>2.000</td>
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</table>

OM 936, 220 kW, 1200 Nm
OM 936, 200 kW, 1100 Nm
OM 934, 170 kW, 900 Nm
OM 934, 130 kW, 750 Nm
OM 934, 115 kW, 650 Nm

Tool-less access to engine air filter allows easy cleaning.

Engine air filter
Drive clutch

**Feature**
- Single-plate dry clutch
- Organic, asbestos-free clutch linings
- Clutch diameter 395 mm with all engines
- Hydraulic central clutch release bearing
- Pneumatic clutch pressure booster
- Position sensor
- Wear compensation
- Aluminium clutch housing

**Advantage**
- Responsive
- Long service life
- No lubrication of moving parts necessary
- Low pedal force (approx. 150 N)
- Wear detectable without disassembly
- Secure frictional connection
- Weight optimisation
High-performance engine brake

**Feature**
- 2-stage decompression brake
- Power output up to 300 kW with 6-cylinder (up to 180 kW with 4-cylinder)

**Advantage**
- Wear-free permanent brake
- High brake power, very good deceleration
- Reduces heating and wear of the service brake

Engine control

**Feature**
- 2 selectable engine control characteristics
  - Torque control (elastic rpm characteristics)
  - Work speed control (rigid rpm characteristics)

**Advantage**
- Rpm characteristics optimally tailored to the operating mode
  - Operation under normal conditions, road travel, transport
  - Implement use at constant engine speed
  - Driving in difficult terrain at specified engine speed, only minimal rpm deviation
Exhaust gas aftertreatment – BlueTec 6

- Exhaust gas recirculation (EGR)
- Diesel particulate filter (DPF)
- Selective Catalytic Reduction (SCR)

Symbols:
- P Pressure sensor
- NOx NOx sensor
- T Temperature sensor
Feature

- Newly developed Mercedes-Benz engines and exhaust box with BlueTec® diesel technology
- Exhaust gas recirculation
- Diesel particulate filter
- SCR catalytic converter
- Optimised AdBlue® injection
- Passive regeneration of the particulate filter while driving
- Active regeneration of the particulate filter through diesel injection with inhibit switch for suppressing the process
- Exhaust tailpipe upwards

Advantage

- Euro VI compliance
- Proven technology of the Mercedes-Benz large-scale series production, optimised space-saving design for implement carriers
- Low NOx emissions
- Particulate matter in exhaust flow reduced by 90%
- Converts NOx into harmless nitrogen and water vapour by reacting with AdBlue®
- Reduced AdBlue® consumption
- Longer filter replacement intervals and long filter service life
- Regeneration of the particulate filter possible at low exhaust temperatures
- No exhaust fumes in the operator area
- Exhaust gases do not kick up any dust
- No hot exhaust at the floor area

Euromot III B/Tier 4i

For agricultural use in Germany, the Unimog implement carrier, model designation 405.103/123, continues to be available in the following versions:

- LoF. tractor unit/agricultural tractor  405.103/123/201/221
- LoF. tractor unit/implement carrier  405.103/123/201/221
- Self-propelled work machine  405.103/123

The relevant equipment variants must be taken into account for registration. For model designations 405.123 and 405.221 and LoF. tractor units / agricultural tractors the platform must be provided via body manufacturers.
Exhaust emissions

**CO:**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Vehicle category</th>
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<tr>
<td>Euromot IIIB/ Tier 4i</td>
<td>Mobile work machines 130 - 560 kW</td>
<td>01.01.2011</td>
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<td>Euro V</td>
<td>Trucks &gt; 3.5 t</td>
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<tr>
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<td>Mobile work machines 130 - 560 kW</td>
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<tr>
<td>Euro VI</td>
<td>Trucks &gt; 3.5 t</td>
<td>01.01.2014</td>
</tr>
</tbody>
</table>
Regeneration
Soot from diesel combustion continuously accumulates in the closed diesel particulate filter. To guarantee longer filter change intervals and a long filter service life, regular regeneration of the diesel particulate filter is necessary.

High exhaust temperatures effectively reduce the soot, to keep the exhaust back pressure within permissible limits.

As the exhaust temperatures are not always sufficient for continuous soot reduction (passive regeneration), either passive regeneration or active regeneration will occur, depending on the driving situation.

The percentage of passive or active regeneration is dependent on the engine load and the vehicle's usage profile.

Passive regeneration
- Continuous, at exhaust gas temperatures > 250°C
- Without additional diesel injection
- Initiated automatically, no action required on the part of the driver

Active regeneration
- Depending on the given operating conditions, required for complete regeneration
- Additional diesel injection to increase the exhaust temperature
- Initiated automatically, no action required on the part of the driver
- Can be suppressed by means of the Inhibit switch in dangerous situations or special operations

Special operations/emergencies
The regeneration process can be suppressed by means of the Inhibit switch when entering a danger zone. After leaving the danger zone, the Inhibit switch must be deactivated by the driver.

The Inhibit function serves solely to suppress the regeneration process briefly in exceptional situations. Permanent use of the Inhibit function will lead to premature filter loading which cannot be reduced. Unscheduled replacement of the filter will then be necessary.

Information fields on the display show when the Inhibit switch is active and indicate when regeneration is overdue.
Radiator system

Feature

- Intercooler in vehicle front mounted at an angle (approx. 45°)
- Radiator below the cab
- Large radiator, designed for high outside temperatures and slow vehicle speeds
- Demand-based radiator control
- All radiators designed for dirt-intensive applications
- Mounted at an angle, can be folded up without tools
- Radiator grille for retention of coarse dirt particles
- Arranged on left in direction of travel
- Hydrostatic fan drive
- Variable displacement pump for fan drive

Advantage

- High cooling output, dirt falls down
- Space for windscreen sloping far down, optimal view of the work area
- High operational safety
- Fuel savings
- Long cleaning intervals
- Excellent accessibility for cleaning
- Increased radiator efficiency, fuel savings
- Low-dirt area
- High cooling output across entire rpm range
- Optimal cooling output in any driving situation, minimum energy requirement, low noise emission

Locations of the radiator components

1. Charge air + fan hydraulic cooler
2. Radiator + air conditioning system
3. Work hydraulics cooler
4. Heavy-duty hydraulic cooler
5. Hydrostatic cooler, alternatively torque converter clutch cooler

Radiator and A/C condenser
Optional equipment - engine

**Feature**

**[M54] Engine preheating via power grid (110V / 220V)**
- Power supply with connecting cable from the local power grid (230V)
- Power output heater element: 1000 W
- Temperature control: shut-off / switch-on 85 °C / 69 °C

**[M55] Fuel preheating, with water separator**
- Container consists of a heated prefilter with water separator
- Heated water storage tank (0.5 l)

**[L60] Entrance lighting at the steps to the cab**
- Steps illuminated when door open
- Code contains compressed air connection with extension hose and compressed air gun

**[Z0A] Cold climate package**
- Lowering of engine start temperature to -26 °C

**Advantage**

- Reliable engine start at extremely low outside temperatures
- Reduction of wear related to cold starts by reaching the operating temperature faster
- Faster cab heating immediately after departure
- Less environmental burden

- Particle-free and anhydrous fuel even with low fuel grades
- Prevention of damage to the injection pumps from increased water content and dirt
- Fuel flowability is maintained even at extremely low temperatures

- Increased safety when entering and exiting
- Efficient cleaning of the radiators at work site

- Problem-free engine start at extremely low outside temperatures
Feature

**[M74] Clean-Fix fan**

- Effective cleaning of the fouled radiator through rotation of the fan blades about their own axis and run-up of the rotational speed
- The process is activated while driving or working with a switch on the centre console

Advantage

- The full cooling output is available in any situation
- Interval setting, automatic start-up (every 10 minutes)
- No work interruption because of manual radiator cleaning
Transmission

Main transmission

**Feature**
- Fully synchronised manual transmission with 8 forward and 6 reverse gears
- Small gear-ratio steps in the lower gears
- Synchronised Electronic Quick Reverse (EQR) for direct shifting between forward and reverse gears
- Discrete design
- Low mounting
- Optionally extendible by 8 or 16 gears
- Double-cone synchronisers

**Advantage**
- Optimal speeds for work applications and transport trips
- Individual adaptation of the speed to work applications
- Fast turning, rocking free
- Minimal transmission of engine vibrations
- Low vehicle centre of gravity
- Ideal gear-step ratio for any application profile
- Long service life
- Short shift times

Discrete design of engine and transmission
Overview
Fully synchronised Daimler 8-speed EPS manual transmission

- Crawler gear range
- Work gear range
- Main transmission
- Synchronised Electronic Quick Reverse gearshift
- Transfer case with permanent all-wheel drive and inter-axle differential lock

Crawler gears: 0.12 km/h - 1.54 km/h
Work gears: 1.2 km/h - 14.9 km/h
Basic range: 6.6 km/h - 90 km/h
Engine management

**Feature**
- Operation via multifunction lever
- Automatic determination of the correct next gear, indication on display
- Depress clutch for gear change, switching occurs automatically
- No mechanical/hydraulic connection between selector lever and transmission
- Minimal physical effort required of driver, shifting work performed by pneumatic cylinder
- Neutral switch with detent position in multifunction lever

**Advantage**
- Convenient arrangement of shift elements and controls
- Optimal gear pre-selection
- Protection of engine, clutch and transmission
- During gear changes the right hand is free (e.g. for operating implements)
- No transmission of vibrations to cab
- Short interruption of pulling power
- Allows drivers to relax and concentrate on driving
- Direct shifting to neutral from any gear
- Automatic gear selection from neutral, at any speed

The multifunction lever serves for pre-selecting the desired gear in powertrain management
Electronic Quick Reverse (EQR)

**Feature**
- Direct shifting between the forward and reverse gears in all work gears and up to 3rd gear of the road range
- Pre-selection of forward/reverse gears on multifunction lever, confirmation via clutch

**Advantage**
- Reliable and fast shifting, strong work performance through rapid changes between gears
- Pre-selection of reverse gears possible in all forward speeds while driving
- Highly reliable shifting
- Relief of the driver, better handling, better response when turning (e.g. clearing junctions)
- Higher snow clearing performance on parking lots/junctions

The EQR allows higher snow-clearing power at junctions and on parking lots.

Useful supplement to the EQR affords:
[DG1] Additional steering-column switch, left
See Optional equipment - cab, interior

Multifunction lever
Unimog in snow clearing with EQR (BlueTec 5)
Optional equipment - transmission

**Torque converter clutch**

The torque converter clutch is a combination of hydrodynamic lock-up torque converter and hydraulic multi-disc shift clutch.

- **Engine flywheel**
- **Torque converter**
  - **Impeller**
  - **Turbine wheel**
  - **Stator**
  - **Stator freewheel**
- **Torque converter lock-up clutch**
- **Turbine shaft**
- **Shift clutch, automatic clutch operation**
- **Output flange to the manual transmission**
- **Oil pump**
[G31] Torque converter clutch

Feature

- Shift clutch with hydrodynamic torque converter
- Boosting of the starting torque to up to twice the engine torque

- From a certain rpm ratio, lock-up clutch cuts direct connection between engine and manual transmission (lock-up)

- Kick-down switch for opening the lock-up clutch
- Automatic clutch operation with engine rpm adaptation

Advantage

- Starting off with heavy loads without clutch wear
- Smooth starting off
- Protection of the drivetrain
- Fewer gearshifts, starting off possible 1-2 gears higher
- No hydraulic losses in the converter
- Fuel savings compared with permanent converter operation
- Engine brake fully effective
- Crane operation possible with [N16]
- Defined, direct cut-in of the converter for fast torque increase
- Reliable shifting at the right moment, no operating errors

Use of torque converter clutch possible with:
front PTO shaft, power take-offs, engine power take-off

The torque converter clutch is designed for a power output of up to 170 kW and 900 Nm of torque.
The converter provides the high starting-off torque and the multi-disc clutch the shifting function. The operation of the lock-up clutch and shift clutch is automatically controlled by the engine management system. For this reason, there is no clutch pedal when the integrated torque converter clutch is installed.
New hydrostatic drive

Overview

The new hydrostatic drive consists of an intermediate transmission flanged onto the main transmission, a hydrostatic variable displacement pump and a hydrostatic adjustment motor. The system allows fully hydrostatic driving up to 50 km/h. The changeover to manual drive is possible at any time.

1. Manual transmission
2. Intermediate transmission
3. Variable displacement pump
4. Adjustment motor
5. Oil filters
[G34] **New hydrostatic drive**

### Feature
- Vehicle speed range: forwards up to approx. 50 km/h, reverse up to approx. 25 km/h
- Selectable in gears 1 - 6
- Braking effect tailored to application
- Hydrostatic variable-displacement pump and adjustment motor
- Low speeds possible
- 2 drive modes ('Work' and 'Drive') available
- Shifting possible while driving

### Advantage
- Continuously variable adaptation of working speed at constant engine and power take-off shaft speeds
- Relieves workload for driver or operator, enabling better concentration on the actual work in hand
- Increased driving safety
- Starting off and turning without clutch wear
- Increased pulling power in low gears
- Can substitute the speeds of the work range [G 20]
- Individualised adaptation to the particular type of application
- In hydrostatic operation the target speeds can be changed while driving

---

**Multifunction lever**

[DG1] Additional steering-column switch, left is standard equipment with [G34] New hydrostatic drive.
New hydrostatic drive

Drive modes

'Work' mode
- Working with implement
- Constant engine rpm, irrespective of the vehicle speed
- Hydrostatic operation in 1st - 6th gear, up to 50 km/h
- Working mode cruise control from 0.1 km/h to 25 km/h
- Manual shifting possible while driving
- Turning without operating pedals

'Drive' mode
- Automotive driving
- Variable engine rpm, dependent on the vehicle speed and accelerator pedal position
- Hydrostatic operation in 1st - 6th gear, up to 50 km/h
- Automatic shifting (A-Drive)
- Manual shifting (M-Drive)

Drive mode change
Drive mode change with A/M mode switch on multifunction lever.
- A-Drive
- M-Drive
- M-Work

The set values of the modes are saved before the change.

Working mode cruise control
Working mode cruise control is available in "Work" mode and is operated with the [DG1] Additional steering-column switch, left. The engine rpm remains constant, slight adjustment of the vehicle speed with the accelerator and brake is possible, the set speed is maintained. The maximum speed is 25 km/h.
[G48]Automatic Shift (EAS*)

**Feature**
- Automatic gearshifts
- Automatic clutch operation
- Manual clutch operation with clutch pedal folded out
- Manual gear-change selectable

**Advantage**
- Relieves driver workload in all shift-intensive applications
- Full concentration on traffic
- 2-pedal system
- Reduced clutch wear
- Sensitive control in difficult driving situations
- Driver selects optimal gear in implement operation or off-road

*EAS: Electronic Automated Gearshift

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**A Automatic gear change**
Automatic shifting depending on the load condition, accelerator pedal position, engine operation, uphill/downhill gradient and engine brake.

**M Manual gear change**
Manual gear selection on the multifunction lever. The driver determines the gear, clutch operation occurs automatically. Selected gear is held when driving uphill or downhill.

---

The clutch pedal can be folded out in difficult driving situations such as manoeuvring, mounting an implement or in terrain, to allow sensitive control. When folded in, driving with automatic clutch operation considerably facilitates work, for example when clearing snow, mowing or sweeping.
Feature

[G03] Reverse gears 7+8 for road range
- In the basic range the 7th and 8th reverse gears are available

[G20] Range group with working range
- Additional range with 8 forward and reverse gears behind the main transmission
- Reduced gear-step ratio, 1.2 to 15 km/h
- Reduction ratio for road range i = 5.76

[G21] Range group with working and crawler range
- Work range corresponding to [G20]
- 8 crawler gears 0.12 to 1.54 km/h for speed reduction
- Overall reduction ratio for road range i = 55.87
- Not suitable for increasing pulling power

Advantage

- High speeds are possible even in reverse (only for road/rail use)
- For low operating speed
- For difficult off-road driving
- The work range can be operated at full load for increased pulling power
- Lowest work speed at full engine power
Feature

**[G28] Pre-installation for retrofitting work/crawl/off-road range**
- Technical modifications in the main transmission to prepare for retrofitting the work gear range [G20] or the work and crawl range [G21]

**[G50] Transmission oil cooling**
- Mandatory:
  - Use with 6-cylinder engines
  - Use of mineral oils
  - Non-civilian use
  - Continuous power take-off output > 50 kW

Advantage

- Allows retrofit at a qualified specialist workshop
- Delivers the necessary cooling capacity even in extreme conditions
Axles

Portal axles

**Feature**
- Axle tube and differential are above the wheel centre
- Differential to left of centre
- Gear ratio step in hub reduction gear
- High front axle load in relation to gross weight
- Front and rear axles located by links
- Trailing arms also act as stabilisers (stabiliser links)

**Advantage**
- High ground clearance with a low centre of gravity
- Safe driving over obstacles
- Slim drivetrain, small axle housing
- High payload, attachment of heavy front-mounted implements
- Maximum utilisation of the vehicle through tailored implement combinations
- Comfortable, directionally stable handling
- Good cornering characteristics even when fully laden
- Low body roll and pitch
- Low self-steering effect
- No track offset during bound and rebound
Suspension

Feature

• Shock absorbers with long spring travel and large degree of axle articulation
• Coil springs with progressive spring rate

Advantage

• Ground contact of all wheels, even on severely uneven ground
• Continuously variable adjustment of suspension to any vehicle load

Track width

Feature

• Longitudinal and transverse control arms
• Identical track width front and rear
• Narrow track

Advantage

• Narrow vehicle with greatest possible track width
• Rear wheels run in the track of the front wheels, need not form their own, power-sapping track
• Good track overlap
• Rear wheels do not run outside the cleared area, uncleared snow is not compacted

Identical track width front and rear through same axle flange dimension and same wheel offset.
Drive system

**Feature**
- Permanent, manual all-wheel drive  torque split 50: 50
- Inter-axle differential lock between front and rear
- Rear differential lock
- 100% locking effect in both axles through positive connection (dog clutch units)
- Differential locks can be engaged and disengaged while driving
- Electro-pneumatic operation with rotary switch on the instrument cluster

**Advantage**
- High handling stability and directional stability, high level of safety
- Increased traction off-road, also advantageous in road travel (e.g. in winter service operations)
- Synchronisation of the rear wheels
- Best traction on poor routes
- Slip-free power transmission to all four wheels
- No need to stop
- No interruption in pulling power
- Use of differential locks throughout the entire speed range
- Convenient engagement

Optimal adaptation off-road through permanent all-wheel drive and locking of the relevant differentials.

- Permanent all-wheel drive
- Inter-axle differential locked
- Inter-axle and rear-axle differential locked
- Inter-axle, rear-axle and front-axle differential locked
Single tyres

**Feature**

- Large range of different tyre sizes and types
- All tyres equally large
- Rear wheels run in the track of the front wheels, need not form their own track
- Large-footprint MPT low-pressure tyres available
- Truck tyres available

**Advantage**

- Selective equipment for different operating conditions
- Low rolling resistance, identical snow chains on all wheels
- High traction through multi-pass effect
- Low standing pressure
- High traction
- Reduced ruts off-road
- Good self-cleaning
- Advantageous for all-road use
Optional equipment - axles

[A30] Tyre pressure control system

Overview

The tyre pressure control system is an electro-pneumatic system installed in the vehicle for tyre inflation and deflation at the front and rear axles while on the move.

- 1. Hose line to the wheel rim
- 2. Wheel rim:
- 3. Wheel hub
- 4. Drive gear
- 5. Axle tube
- 6. Compressed air hose
- 7. Shaft seals
- 8. O-ring
- 9. Sleeve
- 10. Fitting
- 11. Quick-release coupling
- 12. Test and filling valve
- 13. Wheel nut cover
[A30] Tyre pressure control system (RDRA)

Feature
- Adaptation of the tyre pressure during driving
- Tyre pressure at front and rear axles individually adjustable on basis of pre-programmed pressure levels
- Four specified tyre pressures can be set
- Operation by switch in the centre console
- Indication of the tyre pressure on the display

Advantage
- Fast and flexible adaptation to road and ground conditions
- Equalisation of pressure loss, in case of tyre damage vehicle can travel to the nearest workshop
- Increased traction
- Stopping not necessary
- Adjustment of actual rolling circumferences of front and rear wheels
- Consideration of different axle loads
- Intuitive setting of tyre pressures
- Convenient control of tyre pressure in the driver's cab
- Monitoring of the settings and detection of pressure loss
- Prevention of tyre damage

Tyre pressure pre-selection on the display
Central tyre inflation system switch
Left: attachable hose, test and filling valve for rim and tyres
Right: driving condition, valve and line protected under the wheel hub
[A30] Tyre pressure control system (RDRA)

Cutting the tyre pressure off-road by half means doubling the ground contact area and the pulling power.

Traction conditions depending on the tyre pressure

<table>
<thead>
<tr>
<th>Tyre pressure [bar]</th>
<th>Pulling power (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>2.5</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>3.5</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>4.5</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

High tyre pressure on the road
- Small contact area
- Low tyre wear
- Low fuel consumption
- High load capacity at high speed
- Good directional stability and very stable steering

Low tyre pressure off-road
- Large contact area
- Low ground pressure, less crop damage
- Less slip
- High traction
- Good self-cleaning (tread)
- Minimal ground compaction, fewer ruts
- No getting stuck
Feature

[A1W] Differential lock on front axle
- Synchronisation of the front wheels
- Pneumatically engageable/disengageable while driving
- Engagement and disengagement occur via a dog-type lock
- Engageable independently of the rear axle

Advantage
- Maximum traction on any ground
- Traction from just one wheel possible
- Reduces slip
- No need to stop
- No interruption of pulling power during shifting
- Cut-in at any speed
- Better cornering radius with front axle not locked
Brakes

Dual-circuit braking system

**Feature**
- Pneumatic disc brakes at all wheels
- Automatic load-dependent brake (ALB)
- Brake wear indicator
- High-pressure system (18 bar) via gear-driven high-performance compressor
- Air dryer
- Spring-loaded parking brake, acting on the rear wheels

**Advantage**
- Uniform braking effect
- No overheating even under continuous stress
- Maintenance- and repair-friendly
- Brake power regulation depending on the load condition
- Timely indication when maintenance is due
- High reserve air pressure
- Small space requirement for air tank, greater clearances on the vehicles
- No corrosion
- No freezing of the lines
- High braking force, minimal braking effort required of driver

---

1. Diaphragm cylinder
2. Brake calliper
3. Brake carrier
4. Brake disc

_Safe braking with full load (BlueTec 5)_

The ALB allows safe and steady braking under any load conditions.
4-channel ABS

**Feature**
- In case of a locking tendency, the pressure of the wheel cylinder is corrected according to the road surface conditions and load conditions
- 4-channel ABS in all model designations
- ABS can be switched to off-road mode

**Advantage**
- Safe handling characteristics during braking
- Driving stability and steerability are preserved
- Reduced risk of accidents
- High level of safety through separate control of each wheel at the front and rear axle
- Volume production-tested
- Wheels can lock to a certain extent, in order to build up a loose wedge

Switch to change ABS mode (off-road)

Driving stability and steerability are preserved

Evasive manoeuvres with ABS (BlueTec 5)
Optional equipment - brakes

**Feature**

[B76] Air dryer, heated
- Moisture in the compressed air is absorbed by granulate
- Electrical heating rod with thermo switch

[B5B] Trailer brake, 2-line
- Pressurised fill line (red)
- Unpressurised brake line (yellow)
- Braking effect from air admission to the brake line

[B2Z] Parking brake additionally on front axle
- Service and parking brakes are electro-pneumatically coupled as a securing brake
- The parking brake acts on the rear wheels, in addition the service brake acts with reduced pressure on the front wheels
- Only when the engine is running

**Advantage**

- Increased operating and road safety under cold and damp conditions and with long downtimes
- Prevents freezing of moisture in the area of the drain valve

- EU safety standard
- Accommodation of fast-running trailers

- High stability possible in cable winch operations without additional aids such as slope supports
- The full weight pressure of the vehicle is available as retention force dependent on given friction coefficient
Steering

Power steering

**Feature**
- Mechanical recirculating-ball steering
- High mechanical, progressive gear ratio
- Uprated steering, hydraulic assist
- Steering gear turned, omission of intermediate bearing and universal joint
- Large line cross-section

**Advantage**
- Mechanical part of the steering system remains functional should hydraulic power assist fail
- Small steering wheel with all model designations (450 mm)
- Easy steering even with high front axle loads
- Friction-optimised shaft train, less wear
- Low circulation pressure, fuel savings

Turning of the steering gear allows omission of the intermediate bearing and universal joint.

Steering gear

1. Steering shaft
2. Drag link
3. Steering gear
Optional equipment - steering

Feature

**VarioPilot (RHD/LHD transferable steering)**
- Steering column, instrument panel and pedal assembly can be moved to RHD or LHD position in less than 30 s
- Engine starting lock when steering not locked in place
- Control console located in the middle
- Omission of height and tilt adjustment
- Stowage compartment in dash support despite movable steering column

Advantage

- Optimal seating position for any purpose
- Supports one-man operation and improves efficiency, especially in operations like mowing and sweeping
- On multi-lane roads (centre median) operations can always be performed in the direction of traffic
- Significantly better view of the right-hand working area
- Exit on side away from traffic, safety for driver
- Protection from improper movement
- Equally well accessible from left and right
- Sufficient stowage space

Vehicles with VarioPilot (RHD/LHD transferable steering) have kerb mirrors on both right and left.
**Feature**

**[Z01] Vehicle with left-hand drive**
- Steering wheel on left
- Centre console on left
- Height-adjustable steering wheel

**[Z03] Vehicle with right-hand drive**
- Steering wheel on the right
- Centre console on right
- No steering wheel height adjustment

**[Z5Y] Vehicle for right-hand traffic**
- Headlamps for right-hand traffic
- Tail lights and rear fog lamps for right-hand traffic
- Mirror for right-hand traffic

**[Z5Z] Vehicle for left-hand traffic**
- Left-hand traffic headlamps with modified light pattern
- Tail lights with modified positions of the rear fog lamps
- Mirror holders for right and left side of vehicles as precondition for modified mirror position

**Advantage**

- Control of the vehicle on the left side
- Individual adaptation to the driver

- Control of the vehicle on the right side for operations on the right side of the road (sweeper)

- Operations in countries with right-hand traffic (e.g. Germany)

- Operations in countries with left-hand traffic (e.g. Great Britain)
Cab exterior

Cab concept

Feature
- Heat-insulating windows all round
- Laminated windscreen
- Sprung and dampened cab mounts
- Seat position behind the front axle, seat in low-vibration area
- Entry behind the front axle, door-opening angle approximately 90°
- Underfloor heat- and noise-insulated

Advantage
- Reduction of the interior heating
- Protection against injuries in accidents
- Reduced exposure to jolts from the road
- Spine-friendly on and off the road
- Generous space
- Safe and convenient entry and exit with three steps
- Increased ride comfort

The cab can be exited without changing grip. Grab handles and steps ensure safe entry and exit, and reduce the risk of work accidents.
Material

Feature
- Cab made of contemporary fibre composite
- Integrated insulation layers
- Material made of several high-strength fibre layers
- Use of water-soluble paint
- All plastic parts > 100 g are labelled according to ISO/VDA regulations.

Advantage
- Corrosion-free
- Weight saving
- Good noise and thermal insulation
- Long-term quality
- High strength and visual stability
- Long life, 100% resistant to salt
- Environmentally friendly
- Environmentally compatible through low waste (< 5 %)
- Environmentally safe disposal

The corrosion-free cab does not require cavity sealing or underfloor protection.

The material of the cab consists of several layers of glass fibres and/or carbon fibres.
Visibility

Feature

- Panoramic cab
- Windscreen sloping far down, low side windows
- Large rear wall windows
- The field of vision can be expanded with the camera system with monitor, front camera, reversing camera and implement camera.

Advantage

- Very good 360 degree visibility, small blind spot areas
- Very good view of the working area
- Direct view to rear working area

The diagram on the left illustrates the very good 360 degree view from the panoramic cab. Next to it is a diagram showing the small blind spot area of the Unimog compared with a conventional truck.

The diagram on the right shows the Unimog’s large forward field of vision compared with a conventional truck.
Roof wiper system

**Feature**
- Windscreen wipers mounted on the cab roof
- Wiping motion from above

- Large wiper blades, 900 mm / 1000 mm
- 2 park positions possible (top and side)

**Advantage**
- Especially robust design
- Snow flows off to the side
- No snow wedge under the wiper blades
- Low forces, low motor wear, no flexing of wiper blades
- Good visibility in snowfall
- Large swept area
- Wiper blades not in field of vision, better forward visibility

At the upper end position the roof-mounted windscreen wiper moves onto a small wedge and is slightly raised. Water accumulating on the roof-mounted windscreen wiper can run down and is carried away by the succeeding wiper blade sweep.
Safety

Feature
• All cabs tested as per ECE-R 29/02 regulation on crash safety
• Turnover test in accordance with OECD Code 6 (VH3/VH4)
• Fire-resistance-tested as per FMVSS 571.302

• Rounded, soft cab contours

Advantage
• High safety standard
• High chance of survival in accidents
• Suitable for use in agriculture and forestry
• Tested low flammability of materials, even regarding interior equipment
• Barely flammable
• Passive pedestrian protection

ECE-R: Regulations of the United Nations Economic Commission for Europe
ECE-R-29: Protection of cab occupants
OECD: Organisation for Economic Cooperation and Development
FMVSS: Danger Protection Regulation

ECE-R 29/02 is a internationally recognised standard for confirming the stability of the survival space for all occupants in the cabs of commercial vehicles.

Survival space for occupants
## Optional equipment - cab exterior

<table>
<thead>
<tr>
<th>Feature</th>
<th>Advantage</th>
</tr>
</thead>
</table>
| **[EM5]** Monitor for camera system | • In easy view  
• Connecting several cameras possible (e. g. front and reversing camera) |
| • Monitor in area of the rear-view mirror  
• Monitor with four inputs  
• No centre sun visor | |
| **[EF2]** Front camera | • Optimal view of front-mounted implements  
• Full view of the front area, enhanced safety |
| • Mounted on vehicle front | |
| **[EF3]** Reversing camera | • Full view of the rear area, enhanced safety |
| • Mounted on vehicle rear | |
| **[EF4]** Auxiliary camera, not attached, for implements | • Full view of the working area by the implement, enhanced safety |
| • Can be freely positioned by implement manufacturer | |

*The green guide lines on the monitor provide an orientation aid when mounting implements.*
Feature

[F12] Mowing door, right + cab preparation for mower seat
- Enlarged, side wraparound windscreen made of laminated safety glass
- Main field of vision 90° transverse to direction of travel, further fields of vision upwards, to front and rear
- Large footwell for operator sitting transverse to the direction of travel
- Parallel windscreen wipers with windscreen washer system, electric window heater
- Mowing door window wiper switch in centre console

[F16] Preparation of cabin for mowing door/seat, right
- Preparation for retrofitting [DB6]/[F12]

Advantage
- Specially developed for mowing applications and clearance cutting work
- Extended view of the working areas to the sides, upwards, to front and rear
- Plenty of space, high comfort for implement operator
- Visibility even in rain and with high air humidity
- Can also be operated by the driver
- Allows retrofit at a qualified specialist workshop

2-man mowing operations
The implement operator sits in the "[DB6] Revolving seat, right (mower seat)" transverse to the direction of travel and has a full view of the working area through the "[F12] Mowing door, right".

A necessary supplement to optional extra [F12] is:

- [DB6] Revolving seat, right (mower seat)
  See Optional equipment - cab, interior

- [FS7] Additional mirror, front right (with mowing door)
  See Optional equipment - cab exterior
Feature

[F6B] Windscreen, non-tinted, heated
- Heat-insulating windscreen with electric heating for defrosting
- Can be switched on separately for driver's and co-driver's sides
- Operation with rocker switch

[F5L] Sun visor, exterior, transparent
- Glare protection from bright sunlight
- Transparency as per DIN 5036 (90%)
- PMMA plastic, grey-transparent

[F3W] Cab tilting mechanism, mechanical / hydraulic
- Dual action hand pump with lift cylinder
- Automatic, hydraulic-mechanical lock
- Operation underneath the cab on right, with lever and socket wrench
- Safety boom

[FS7] Additional mirror right front (with mowing door)
- Additional mirror on the right side of vehicle
- Fastened by 3 brackets on bumper and A-pillar

[L47] Additional headlamps for front-mounted implements
- Repetition of the main headlights, higher position

Advantage

- Quick de-icing of the windscreen
- No icing-up of the windscreen while driving
- Windscreen is kept free of fogging
- Increased road safety
- Ensures view of working areas in glaring sunlight
- Reduced heating-up of the cab
- Facilitates access to engine compartment for repair work, also outside of workshops
- Safe tilting of the cab
- Driver can view the right-hand working area even with co-driver sitting transverse to the direction of travel
- Compliance with legal provisions for front-mounted implements
- Full illumination when operating front-mounted implements
Cab interior

Interior

Feature
- Generous space
- High cab roof
- 2-seat or 3-seat version available
- Multifunction steering wheel, with height and tilt adjustment
- Centre console with switches arranged in blocks
- Instrument cluster
- Stowage box behind the seats
- Several stowage compartments, bottle and cup holders
- Diagnostic socket
- Cable grommets sealed by flaps
- 24V power socket

Advantage
- Great freedom of movement
- Large freedom of movement and headroom
- Variable seat arrangement, depending on type of application
- Many functions can be conveniently controlled on the steering wheel
- Easy operation through logical switch arrangement
- Clearly arranged display of all important data
- Generous stowage possibilities for individual parts
- Electrical connection with C3 signals for implement operation
- Simplifies the connection of implements, no installation effort

The stowage box offers sufficient space for personal objects and valuables.
Air conditioning

Feature

- Combined A/C, heating and ventilation system
- 4-stage blower
- Hot water heater with residual heat utilisation
- Integrated air conditioning
- Pollen filter with coarse dirt grill
- Operating panel in centre console

Advantage

- Individual control of the interior climate
- Fast de-icing of windows
- Fuel savings and environmental protection
- Maintains a pleasant temperature in the cab, better concentration by driver and co-driver
- Suitable for dust- and dirt-intensive applications
- Clean and pure air in the passenger compartment, health protection for driver and co-driver
- Readily accessible, simple cleaning
- Within driver's reach

[D6F] Air conditioning is standard equipment on U 300, U 400 and U 500.
[D6F] Air conditioning is not standard equipment on U 200.
Standard controls

**Instrument cluster**
Displays information on
- Overall vehicle
- Engine status
- Hydraulic power

**Multifunction steering wheel**
Adjustable for height and tilt on LHD

Operation of
- Radio
- Telephone
- Instrument cluster
- Cruise control

**Multifunction lever**
Operation of
- Gear selection
- Gear selection
- Mode selection
- Engine brake

**Centre console**
Accommodates
- Joystick
- Operating panel for hydraulics
- Operating panel for heating / air conditioning system
- Parking brake
- 12/24V socket
- On/off switches for many functions
Optional equipment - cab interior

Feature
[DB6] Revolving seat, right (mowing seat)
- Can be turned up to 90°, with intermediate positions (every 10°)
- Air-sprung
- Longitudinal tilt adjustable
- Fully approved as a driver's seat
- 3-point seat belt, lap belt in mowing position
- Side-impact protection
- Laterally adjustable

Advantage
- Convenient, ergonomic implement operation with maximum productivity and best visibility of the right-hand working area
- High level of safety in drive mode
- High level of safety in work mode

2-man mowing operations
The implement operator sits in the "[DB6] Revolving seat, right (mower seat)" transverse to the direction of travel and has a full view of the working area through the "[F12] Mowing door, right and cab preparation for mower seat". The driver has a view of the rear area with "[FS7] Additional mirror front right (with mowing door)".

Required supplement to optional extra [DB6] is:
- [F12] Mowing door, right + cab preparation for mower seat
- [FS7] Additional mirror right front (with mowing door)

See Optional equipment - cab exterior
Feature
[DG1] Additional steering-column switch, left
- Additional control
- Positioned at steering wheel on left

Advantage
- Additional operation of EQR, cruise control and gear shift
- Easier operation
- Ergonomic arrangement
- Right hand free for hydraulics operation

Operation of the EQR
The forward or reverse direction of travel is preselected

Operation of the cruise control
Switching on & off of the cruise control. Increase and reduction in speed.

Pre-selection of the gears
In drive mode the next gear is preselected by the driver.
Feature

[DF1] Suspension seat, air-sprung, driver
- Fitted backrest and integrated head restraint
- Seat-integrated 3-point inertia-reel seat belt
- Air-sprung suspension system, adjustable dampers
- Automatic weight adjustment from 50 to 150 kg, cycle stroke +/- 40 mm, bellows
- 230 mm fore/aft adjustment, in increments of 10 mm
- 100 mm height adjustment, pneumatic assist
- Inclination adjustment 16°, (from -5° to +11°)
- Backrest adjustment in steps of 2° (from -12° to +40°)
- Backrest folds down onto seat cushion
- Express lowering

[DF3] Suspension seat, air-sprung, with seat heating, driver
- Corresponding to [DF1]; plus:
  - 24V seat heater
  - 2-chamber lumbar support
  - Horizontal springing +/- 15 mm
  - Armrest tilt-adjustable

[DB1] Suspension seat, air-sprung, co-driver
- Corresponding to [DF1]

[DB3] Suspension seat, air-sprung, with seat heating, co-driver
- Corresponding to [DF3]

Advantage

- Good adaptation to the contour of the back
- Easily and quickly adjustable to individual heights and weights
- Good damping even on rough roads
- Improved seat climate resulting from fluted upholstery
- Fatigue-free driving

- Good access to stowage space
- Facilitates getting in and out

- Pleasant warmth in cold weather
- Preservation of healthy spinal column, back and kidney area
- Dampening of horizontal impacts
Feature

**[DB5]** Co-driver's seat, double seat
- Double bench seat on the co-driver's side
- Separate head restraints
- 200 mm fore/aft adjustment, in increments of 10 mm
- Two seat-integrated 3-point automatic seat belts

**[D6N]** Auxiliary heater with engine pre-heating
- Auxiliary heater for heating the engine coolant and the cab, from WEBASTO
- The time for starting heating can be pre-set up to 7 days ahead
- Three switch-on times can be programmed
- Pre-selection of the temperature
- Operating cycle 10 to 120 min
- Remaining time 1 to 120 min
- Can be switched on while driving
- The heat output is 1.8 to 7.6 kW
- Fuel consumption between 0.2 and 0.9 l/h
- Automatic altitude compensation

Advantage

- 2 fully-fledged seats, high level of safety
- Room for two accompanying persons
- Preheated cab and clear view at departure
- Preheated engine, problem-free and gentle start-up of the engine, even at extremely low outside temperatures
- Increased heat output in the cab
- Warm engine directly from engine start, fuel savings
- Easy engine start, reduced battery wear
Feature

[J2A] CD radio
- DIN installation
- CD drive (MP3)
- Mini-USB jack
- 2 x 20 W power output
- 6 station buttons, 6 x 6 station presets
- AUX jack
- FM-RDS tuner (FM), AM tuner (AM/LW/SW), RDS-EON
- External muting
- Diverse control options (e.g. multifunction steering wheel)
- Large, clearly defined buttons
- Factory installed

[J2B] CD radio with Bluetooth® corresponding to [J2A], plus:
- Bluetooth® hands-free unit
- Integrated microphone on the front (MIC)

[J1C] Instrument cluster 12.7 cm, with video function
- Colour display with 12.7-cm screen diagonal
- Video input

Advantage

- Highly user-friendly
- High functionality, reception and sound quality
- No malfunctions due to incorrect wiring
- Antenna and speakers included in the scope of delivery

- Fine finish, ergonomic and tailored to interior appointments
- Time-saving and cost-reducing installation at the factory

- Mobile phone can be used while on the move via Bluetooth® (approved hands-free system)
- Radio loudspeakers ensure excellent understanding (volume control)

- Good, glare-free legibility with additional information avoids misinterpretations
- Increased working safety and enhanced comfort thanks to possible connection of a reversing camera
PTOs

Location

① [N08] Engine PTO outlet incl. front PTO shaft

② [N05] Engine PTO to rear (with flange)

③ [N13] Transmission PTO, high-speed, with 6-hole flange
   [N16] Transmission PTO, high-speed, with 4-hole connection
   [N19] Transmission PTO, very high-speed, with flange
Optional extra PTOs

Feature

[N05] Engine PTO to rear (with flange)
- Drives the power hydraulics
- Option for driving equipment with high power requirement, $i = 0.933$
- Independent of the manual transmission
- Dog clutch units electro-pneumatically operated by pull switch in the centre console
- Activation when engine is shut off, deactivation possible at any time

Advantage
- Connection of prop shafts or commercially available components such as hydraulic pumps
- Simple connection for swap bodies
- No power interruption across the full speed range
- Convenient switching on and off
- Can be used independently of the engaged gear or the drive clutch

The engine power take-off can be switched on only with the engine OFF, to prevent incorrect operation.
Feature

Engine PTO outlet incl. front PTO shaft

- Direct, mechanical drive from the crankshaft
- Up to 160 kW can be transmitted
- Single-stage mechanical gear, $i = 2.139$
- Power take-off stub shaft with 44.4 mm (1³/₄ inch) diameter spline shaft
- Electrically operated, hydraulic multi-disc clutch
- Starter lockout of the engine when power take-off shaft engaged
- Available power take-off shaft speeds up to 1000 rpm
- Adjustment of the power take-off shaft speed on the multifunction steering wheel or via accelerator
- Digital display of the actual power take-off shaft speed

Advantage

- Engine PTO shaft power flow not interrupted during gear changes
- Suitable for implements with high power requirement, (snow blower)
- High efficiency, smooth running and long service life
- Suitable for high torque transmission
- Can be switched under load, independently of drive clutch
- Safety from inadvertent start-up of the implement
- Drives most PTO shaft-driven front-mounted implements
- Any arbitrary power take-off shaft speed can be set easily and precisely
- Reliable detection and if necessary changing of the current operating condition

Always switch on power take-off shaft at idle speed, even with heavy implements. Clutch wear and stress on the implements are reduced.
### Feature

**[N16] Transmission PTO, high-speed, with 4-hole connection**

- Standardised flange on manual transmission (DIN 5480, 4-hole flange, number of teeth 14, \( i = 1 \))
- Rotational direction anticlockwise as seen in direction of travel
- Electro-pneumatically actuated dog clutch units
- Remote control of the clutch with Automatic Shift [G48], signal picked up via implement socket [E87]
- Operation by pull switch 1 in the centre console
- Programming of the maximum rotational speed

### Advantage

- Use of commercially available hydraulic pumps
- Output speed and rotational direction identical to engine rpm and rotational direction
- Can be switched on/off with vehicle stationary and clutch fully depressed, preventing incorrect operation
- For implement operation from outside the vehicle
- Convenient, defined switching on and off
- No exceeding of the permissible maximum speed

**[N13] Transmission PTO, high-speed, with 6-hole flange**

- Corresponding to [N16] with 6-hole flange
Feature

[N19] Transmission PTO, very high-speed, with flange

- Standardised flange at the manual transmission in accordance with ISO 7646
- Rotational direction clockwise in direction of travel
- Gear ratio $i = 0.61$
- Electro-pneumatically actuated dog clutch unit
- Remote control of the clutch with Automatic Shift [G48], signal picked up via implement socket [E87]
- Operation by pull switch 1 in the centre console with indicator lamp when drive clutch operated
- Programming of the maximum rotational speed

Advantage

- Use of commercially available drive assemblies (e.g. fire brigade pumps)
- Output speed 3607 rpm at rated engine speed
- Can be switched on/off with vehicle stationary and clutch fully depressed, preventing incorrect operation
- For implement operation from outside the vehicle
- Convenient, defined switching on and off
- No exceeding of the permissible maximum speed
Feature

[N00] **Pre-installation for front PTO shaft**
- Preparation for electrical equipment, protective tube, bearing mount and bracket for engine power take-off with power take-off shaft in front

[N09] **Speed limiter for PTO shaft**
- Limit switch of the power take-off shaft speed at 540 rpm

[N1] **Pre-installation for transmission PTO**
- Preparation for retrofit of [N13]/[N16]/[N19]

Advantage

- Allows retrofit at a qualified specialist workshop
- Safe operation of implements designed for 540 rpm
- Allows retrofit at a qualified specialist workshop
## Hydraulics

### Hydraulics for tilt mechanism

**Feature**
- Hydraulics for tilt mechanism based on fan hydraulics

**Advantage**
- Inexpensive alternative to work hydraulics with exclusive use of the tilt mechanism

### Work hydraulics

**Feature**
- Selectable from five hydraulic packages with up to 2 hydraulic circuits and four cells
- Allows positioning movements of implements and driving of permanent consumers

**Advantage**
- Optimal adaptation to the given application
- High capacity utilisation for multi-implement operation

### Power hydraulics

**Feature**
- 2 additional hydraulics circuits for driving permanent consumers

**Advantage**
- Coverage of consumers with high power requirements
- Individual adjustment to the given application

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Flow Rate</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit I</td>
<td>55 l/min, 210 bar</td>
<td>Work hydraulics</td>
</tr>
<tr>
<td>Circuit I</td>
<td>32 l/min, 210 bar</td>
<td>Work hydraulics</td>
</tr>
<tr>
<td>Circuit II</td>
<td>55 l/min, 240 bar</td>
<td>Work hydraulics</td>
</tr>
<tr>
<td>Circuit III</td>
<td>125 l/min, 280 bar</td>
<td>Power hydraulics</td>
</tr>
<tr>
<td>Circuit IV</td>
<td>125 l/min, 280 bar</td>
<td>Power hydraulics</td>
</tr>
</tbody>
</table>

**Power hydraulics output**
Short-term output of the power hydraulics up to 125 l/min, continuously up to 90 l/min, with additional oil cooler continuously up to 125 l/min.
Overview

Work hydraulics

Circuit I
1. Cell 1 (connection 1+2)
2. Cell 2 (connection 3+4)
3. Cell 3 (connection 5+6)
4. Cell 4 (connection 7+8)

Circuit II
5. Pressure fitting + return line

Power hydraulics

Circuit III
1. Pressure fitting
2. Return line

Circuit IV
2. Pressure fitting
4. Return line
Snow plough relief

**Feature**
- Only with [HN6]/[HN8], see optional extra hydraulics
- Continuous adjustment of the pressure level in the lift cylinder of the snow plough
- Also available for other implements

**Advantage**
- Easy and fast transfer of some of the snow plough weight to the front axle
- Reduced wear of the scraper bars
- Protection of the road surface
- Less noise development
- High driving safety through improved steering and lateral support characteristics
- Increased traction on the front axle
- Reduced fuel consumption
- Versatile use (e.g. front-mounted broom)

**Snow plough relief in %**

- 100% Implement fully raised, no weight on the road
- 20% Implement partly raised
- 0% Implement not raised, full weight on the road

5 – 20% recommended, depending on implement weight. The percentage of the snow plough relief is shown in the display.

**Memory function**
When the snow plough relief function is started up again, the last set value is automatically used.
## Joystick

1. **Rocker switch**
   - Execute EQR function

2. **Rocker switch**
   - Regulate working speed

3. **Button**
   - Control text menu

4. **Button**
   - Set (save) values

5. **Button**
   - Activate float position
   - Control snow plough relief

6. **Button**
   - Free for assignment by body manufacturer, allows controlling a 3rd level

7. **Button**
   - Control level 2 (cell 3+4)

---

### Operation of the joystick as per EN15431.

- Vertically: raise/lower.
- Horizontally: swivel to left/right.

---

The joystick is part of the work/power hydraulics. The joystick is not a component of the hydraulics for the tilt mechanism.

On vehicle with tilt and work hydraulics the joystick is used for tilting, making proportional tilting possible.
Plug connections

Feature

- Plug connections are marked by colour and number
- Flat-sealing hydraulic couplings as per ISO 16028
- Emergency off switch; all valves go to locked position
- Connectors for pressure lines, collars for return lines

Advantage

- Unique assignment of the vehicle/implement connections, safety when connecting implement
- Prevents escape of oil
- Prevents ingress of dirt into the hydraulics system
- Convenient plug insertion and removal
- Easy cleaning
- Increased operational safety through quick-stop of all positioning movements and hydraulic motors
- Readily identifiable
Optional equipment - hydraulics

**Feature**

[HN2] Single-circuit hydraulics system, 2-cell, fully proportional

- Open hydraulics circuit with pump drive via flat V-belt for positioning movements of implements
- Gear pump with 55 l/min at 210 bar system pressure and rated engine speed of 2200 rpm
- Temperature-controlled oil cooler with driven fan
- 4 connections for 2 dual-acting cylinders
- Permanent current to connection 1 or 3
- Float position for each valve individually switchable
- 2 positioning movements can be simultaneously controlled
- Valves in dirt-protected area

**Advantage**

- Factory-integrated and coordinated components
- Operational reliability and guaranteed availability of replacement parts
- Pressure level of common implements
- Open hydraulics systems are especially suitable for controlling single or dual-acting cylinders
- Low oil heating
- Protection of pumps and motors
- Up to 4 implement positioning movements for uses such as raising and lowering implements, driving oil motor or external operation
- Powering of hydraulics consumers in the output range up to approx. 19 kW
- Unpressurised return flow from permanent consumers (e.g. front-mount broom)
- Individual cut-in of the float position for ground-guided implements or implement relief for mounting and removal
- Simultaneous raising and swivelling of implement (e.g. snow plough)
- Less wear, longer service life
**Feature**

**[HN4]** Dual-circuit hydraulics system, 3-cell, fully proportional
- Dual-circuit hydraulics system with tandem pump drive via flat V-belt, with fully proportional control
- 3 dual-acting control units (circuit I)
- Fully proportional control
- Circuit II for operating a permanent consumer
- Tandem fixed displacement pump delivering 32 and 55 l/min at 210/240 bar system pressure and rated engine speed of 2200 rpm
- Pressure and return line for circuit II behind cab on right
- Additional pressure and return lines for circuit II in front
- Switchover valve (X) for changing the delivery from circuit I to circuit II
- Valve (Y) for the flow summation of the delivery from circuits I and II (87 l/min) to circuit I or circuit II outputs
- 6 connections in front for 3 dual-acting cylinders

- 2 positioning movements can be simultaneously controlled
- Valves in dirt-protected area

**Advantage**

- 2 mutually independent hydraulic circuits
- Integrated at the factory, for operational reliability and guaranteed availability of spare parts

- Sensitive control of all positioning movements in circuit I
- For simultaneous powering of hydraulic motors (snow plough + spreader)

- Optional connection of hydraulic motors in front and centre or additional, external control units

- Flexible use, e.g. in quick excavation by snow plough for clearing junctions and parking lots
- Driving of hydraulic consumers in the output range up to approx. 35 kW, e.g. for pump tank trucks
- Up to 6 implement positioning movements for uses such as raising and lowering implements, driving oil motor or external controlling
- Simultaneous raising and swivelling of implement (e.g. snow plough)
- Less wear, longer service life

**[HN6]** Dual-circuit hydraulics system, 3-cell, fully proportional, snow-plough relief
- Corresponding to [HN4] + snow plough relief
Feature

[HN7] Dual-circuit hydraulics system, 4-cell, fully proportional

- Dual-circuit hydraulics system with tandem pump drive via flat V-belt, with fully proportional actuation
- 4 dual-acting control units (circuit I)
- Fully proportional control
- Circuit II for operating a permanent consumer
- Tandem fixed displacement pump delivering 32 and 55 l/min at 210/240 bar system pressure and rated engine speed of 2200 rpm
- Pressure and return line for circuit II behind cab on right
- Additional pressure and return lines for circuit II in front
- Switchover valve (X) for changing the delivery from circuit I to circuit II
- Valve (Y) for the flow summation of the delivery from circuits I and II (87 l/min) to circuit I or circuit II outputs
- 8 connections in front for 4 dual-acting cylinders
- 2 positioning movements can be simultaneously controlled
- Valves in dirt-protected area

Advantage

- 2 mutually independent hydraulic circuits
- Integrated at the factory, for operational reliability and guaranteed availability of spare parts
- Sensitive control of all positioning movements in circuit I
- For simultaneous powering of hydraulic motors (snow plough + spreader)
- Optional connection of hydraulic motors in front and centre or additional, external control units
- Flexible use, e.g. in quick excavation by snow plough for clearing junctions and parking lots
- Driving of hydraulic consumers in the output range up to approx. 35 kW (e.g. for pump tank trucks)
- Up to 8 implement positioning movements for uses like raising and lowering implements, driving oil motor or external controlling
- Simultaneous raising and swivelling of implement (e.g. snow plough)
- Less wear, longer service life

[HN8] Dual-circuit hydraulics system, 4-cell, fully proportional, snow plough relief

- Corresponding to [HN7] + snow plough relief
**Feature**

[H55] Hydraulics plug connection, rear, set of 4, cell 1+2
- 4 connections in rear to cells 1 and 2 with hydraulics package
- Dual action for positioning movements or continual oil flow
- Flat-sealing plug connections as per ISO 16028

[H58] Pressure line, rear, 2nd hydraulics circuit
- Pressure line for circuit II, rear
- Flat-sealing quick-connect coupling, size 19

[H59] Separate return line, rear
- Separate return line in rear for circuits 1 + 2

**Advantage**

- Rear-mounted implement operation and/or tilt function with vehicle and trailer tipper platform

- Hydraulic drive of rear-mounted implements (oil motor)
- No lengthy hose routing from the centre, protection from damage
- Recirculation of the hydraulic fluid in operation of oil motors
**Feature**

**[HL4]** VarioPower power hydr., open circ. (III), 63 cc, 125 l
- Open circuit III
- Direct oil intake from the oil reservoir for driving an oil motor
- Return flow to the oil reservoir
- Leak oil is also recirculated
- Flow-controlled axial piston variable displacement pump, max. 63 cc/rev.
- Output 0-125 l/min* at 280 bar with min. engine speed 1400 rpm
- Oil cooler with temperature-controlled, electric fan drive, cooling output 15 kW
- Pressure line, return line and leak oil line in rear
- Pressure fitting as screw coupling HS 20, connector
- Return line connection as screw coupling HS 20, collar
- Leak oil connection as screw coupling HS 10, collar
- Electronic fill level sensor in the oil reservoir
- Removable, auxiliary frame and tipping cylinder for platform remain on the vehicle

**Advantage**
- Suitable for quick removal of larger oil quantities under high pressure
- Driving of permanent consumers with hydraulic power requirement up to 42 kW, no need for hydraulic pumps at implement end or auxiliary engines
- Connection of implements in rear
- Safeguard against confusion with work hydraulics
- Standardised couplings for implement connection
- Constant safety through current oil level indicator in the cab
- Acoustic and visual warnings if oil level too low
- Weight savings
- No corrosion in winter service operations

**[HL5]** VarioPower power hydr, 2 open circ (III+IV), 63 cc, 125 l
- Corresponding to [HL4] + additional circuit

*Output temporarily up to 125 l/min continuously up to 90 l/min with additional oil cooler, continuously up to 125 l/min
**Feature**

[H93] Pressure and return line front for 3rd hydraulics circuit
- Pressure, return lines and leak oil connection to front for circuit III
- Pressure fitting as screw coupling HS 20, connector
- Return line connection as screw coupling HS 20, collar
- Leak oil connection as screw coupling HS 10, collar
- Marked by red cap

[H96] Pressure and return line front for 3rd and 4th hydraulics circuit
- Like [H93] + connections for circuit IV

**Advantage**
- Front-end implement operation
- Easy coupling/uncoupling
- Non-interchangeable connector and collar connections
Feature

[HE1] Hydraulics for tipping system
- Expanded fan hydraulics
- Activation switch and button for tipping
- Available without work hydraulics

[HE2] Pre-installation, connection of additional hydr. consumers
- Corresponding to [HE1]; plus:
  - pre-installation of an additional cell for connecting hydraulic consumers

[HE3] Tipper connection for trailer, single-action, rear
- Corresponding to [HE1]; plus:
  - Cell for trailer (tipper)
  - Connection for trailer in rear (single-acting)
  - Switch in cab for changing between vehicle and trailer

Advantage

- No work hydraulics required for tipping the load platform
- Easy operation
- Low-cost solution for strictly tipping function

- Body manufacturer can use the pre-installation for mounting (e.g. rail gear)
- No additional work hydraulics required

- No work hydraulics required for tipping trailer
- Low-cost alternative for strictly tipping function
- Easy operation
Electrics

Electronic networking

**Feature**
- Electronically instead of mechanically controlled systems
- CAN bus: networking of electronic systems in the vehicle
- ODB diagnostic socket
- The assistance and safety systems communicate in the vehicle via CAN bus
- Central plug connection between cab and frame

**Advantage**
- Faster and more precise
- Functions no longer realisable by mechanical means (e.g. economical engine through use of electronics)
- Very fast, bidirectional data exchange between different control devices in the vehicle
- Input and output of relevant diagnostic data (Star Diagnosis)
- The driver's workload is reduced in critical driving situations
- The vehicle is better safeguarded from driving faults
- Driving state signals are immediately displayed
- Simple disconnection of the electrical equipment from the cab (e.g. for diagnosis or repairs)

All driving states are electronically compiled, analysed and relayed accordingly to the engine control system. In this way, the economically optimal gear is identified and engaged, for example.

The Unimog model series are factory-delivered fulfilling regulation 72/245/EEC 'Electromagnetic Compatibility' in the version 2009/19/EC.
Lights

Feature

• Lighting, front:
  – Bi-halogen headlamps
  – Dipped beam and high beam in a single module
  – Housed in the bumper
  – Headlamp carrier and tubular bracket decoupled
  – Daytime running lamps with LED position lighting

• Lighting, rear:
  – 6-chamber tail lamp
  – Reversing Warner with night deactivation
  – Daytime running lamps

Advantage

• Good illumination
• Compact size due to integration of two modules (high beam and dipped beam)
• Well protected by wrap-around tubular bracket
• Headlamp does not become misaligned as a result of contact with tubular bracket
• Powerful daytime running lamps
• Compact size
• Proven parts from large-series production
• Safety when reversing
• No disturbance in residential areas
• Clearly recognisable in daylight
Optional equipment - electrical system

**Feature**

**[E37]** 12V/15A continuous current socket, with C3 signal
- Electrical power for implements with C3 signal for speed-dependent control
- Behind the driver's seat
- 3-pin
- Via 24V/12V voltage converter (on-board electrical system 24V) in the E box
- Additional 12V socket in the centre console, max. 180 W
- Meets DIN EN 15431

**[E45]** Front socket, 24V, 7-pin
- 7-pin
- 24V
- Supplies power to turn indicators, position and licence plate lamps at the front implement mounting area

**Advantage**

- For consumers such as 12V spreader, agricultural implements
- The implement socket is located in the immediate vicinity of the cable grommet on the cab rear wall
- Easily accessible, no hindrance of the driver/co-driver by surrounding cables
- Additional 12V socket in the centre console, e.g. for mobile phone charger
- C3 vehicle speed signal

- Power supply for the lighting equipment of front-mounted implements
- Easily accessible connection
Feature

[ED6] Socket 24V/25A in cab, with C3 signal
- Electrical power for implements with C3 signal for speed-dependent control
- 3-pin
- Behind the driver's seat
- Openings for cable grommets with plugs in the cab
- Meets DIN EN 15431

[L47] Additional headlamps for front-mounted implements
- High-mounted auxiliary headlamps
- No blocking by implements

(LL6] Auxiliary headlamp, height-adjustable
- Corresponding to [L47]; plus:
  - Height-adjustable

[EL4] Alternator 28V/150A
- Boosted output (1400 W increase)

Advantage

- For consumers such as 24V spreader
- Power outlet located in immediate vicinity of the cable grommet at the cab rear panel
- Easily accessible, no hindrance of the driver/co-driver by surrounding cables
- C3 vehicle speed signal

- Auxiliary headlamp for implement
- Adjusted ex-factory to height of implement
- No proprietary solution by body manufacturer required

- Individually adjustable to height of work implement

- Reliable, higher-power alternator for supplying power to the entire vehicle electrical system, all electrical loads and the batteries and providing power reserves for additional loads
- Offers power reserves for additional electrical loads
Feature

**[E87] Implement socket, 32-pin**
- Electrical interfaces between vehicle and implement
- Power supply for implements up to max. 40A
- Speed and position signals C3/C4
- Switching on/off of the power take-offs (in combination with code [G48])
- Interface for connecting an external (at implement end) engine remote control for start/stop, engine speed change
- Control of transmission for crane body or refuse disposal vehicles (e.g. speed limiter, immobiliser)
- 8 spare lines routed into the cab for optional use by the body manufacturer
- Signals for activated rotating beacon and back-up lamp
- Actuation of 3 spare indicator lamps

Advantage

- Installation of lines via wire harness with defined and unambiguous allocation
- High operational safety between vehicle and implement and in operation of the overall system

---

Connector for [E87] implement socket available via Mercedes-Benz Parts.
Attachment and mounting areas

1. Front mounting area:
   - Snow plough
   - Verge mower

2. Mounting area between the axles:
   - Asphalt mill
   - Broom

3. Rear mounting area:
   - Excavator
   - Loading crane

4. Top mounting area:
   a) on platform
      - Spreader
      - Water tank
   b) on platform intermediate frame
      - Spreader
      - Sweeper
      - Mower
   c) on frame side member
      - Implement frame with crane
      - Elevating work platform
      - Box body
4+3 mounting areas

**Feature**
- Factory-designed mounting points and mounting spaces coordinated with implement manufacturers
- Top mounting space with use on the platform [P code]
- Top mounting space with use on the ball points of the platform intermediate frame [P]
- Top mounting space with use directly on the straight frame side members
- Top mounting space with use between cab and platform

**Advantage**
- Simultaneous mounting of several implements
- High cost effectiveness
- Simple and standardised mounting devices for quick changes
- Payload gain from omission of body-mounting connections
- Fast and easy changes (anchoring lugs)
- Payload gain through omission of platform
- Payload gain through omission of platform and platform intermediate frame
- Payload gain through omission of quick-change power hydraulics [H01]
- Low overall centre of gravity, better driving stability
- Compact attachment of body implements (e.g. crane)
Mounting points

**Feature**
- Specified hole patterns
- Integrated fastening points with detachable parts for accommodating add-on parts and bodies

**Advantage**
- No aftermarket drilling, easy mounting
- Defined and easy installation
- Defined introduction of forces
- Safeguard against overstressing
- Basis for threaded connection
- Safety from lateral motions

The mounting points as an optional extra allow body manufacturers mounting as per Daimler standard.
## Optional equipment - mounting points

### Feature

<table>
<thead>
<tr>
<th>Feature</th>
<th>Advantage</th>
</tr>
</thead>
</table>
| **[CA3]** Attachment brackets, centre | • For implement mounting in the area of the vehicle centre  
• Introduction of static and dynamic forces at defined points  
• High stability with favourable weight |
| • In the middle of the frame  
• On the left and right frame side members  
• 25H11 fit |

| **[CA4]** Attachment brackets, rear | • Usable for add-on and mounted implements at the rear frame end  
• Quick changing possible with bolt connection |
| • At the vehicle rear  
• Integrated in the left and right frame side members  
• Hole spacing 150 mm |

| **[CD2]** Mounting parts for spreader on platform, left | • Safe and non-slip transport of the mounted implement |
| • Mounting of heavy implements on the platform  
(e.g. automatic spreaders)  
• Strong mounting parts  
• Four tie-down eyelets, rotating and swivelling  
• Permissible tie-down force U 200/U 300/U 400 2500 daN, U 500 4000 daN |

| **[CD6]** Mounting parts, between axles | • For frame trusses and rear supports  
• Mounting of various implements through simple modification  
• Specific diversion of the tractive and shearing forces into the frame |
| • Inter-axle mounting points for implements  
• Mounted to the rear axle bearing bracket |
Feature

**[CP3]** **Front mounting plate DIN76060, model B, size 3**
- Catch plates for accommodating front-mounted implements, size 3
- As per DIN 76060, model B
- Vertically adjustable by +/- 60 mm
- With integrated towing bracket (maximum tractive force 7.5 kN)
- Implement attachment with swivelling bolts and collar bolts

**[CP5]** **Front mounting plate EN15432-1, model F1/C**
- Catch plates for accommodating front-mounted implements
- As per EN 15432-1:2011, appendix B F1/C* (c = compact)
- Vertically adjustable by +/- 60 mm
- With integrated towing bracket (maximum tractive force 7.5 kN)
- Implement attachment possible with swivelling and collar bolts
- Formerly DIN 76060 type A (size 5)

**[CA9]** **Mounting brackets for heavy equipment/crane bodies**
- Mounting points for an external implement support frame for heavy implements

Advantage

- Old standard, compatible with existing implements
- Adaption to tyre sizes, implements

- New standard, European-wide standardised version
- Adaption to tyre sizes, implements

- Implement supporting frame is joined to the vehicle frame
- Quickly changeable, reduces installation times
- High strength for heavy bodies
Platforms

**Feature**
- 3-sided tipper platforms
- Aluminium side boards
- Side board latches
- Stakes bolted
- Removable side boards
- Swing side board in rear
- Anchoring lugs in the platform floor
- Lightweight construction through use of higher-strength steel

**Advantage**
- Can be tilted by moving non-interchangeable pins
- Low weight with high stability, gain in payload
- Improved kinematics in the lever arm, reduced force when opening and closing
- Easy and simple removal and exchange (e.g. for spreader mounting)
- Precise adjustment to side board
- Easy mounting of implements
- Easier distribution of bulk materials (e.g. sand)
- Easier load securing
- Weight savings (approx. 80 kg)

The platform is tipped to the desired side by changing the pins. [P01] Platform quick-release system detaches the platform from the tipping cylinder. After removal of the pins, the platform can be removed from the vehicle.

Tipping mechanism switch
Optional equipment - platforms

**Feature**

[P01] Quick-release system for platform
- Quick fastener for tipping cylinder of platform

[P60] Platform intermediate frame
- Suitable for mounting platforms and implements
- Mounting of the intermediate frame on the frame side members by means of disc springs and mounting plates
- Ball stud diameter 73 mm

[P72] Platform front wall, taller
- Side board extension made of steel
- Areas between the tube sections latticed with robust steel mesh
- Thickness 74 mm
- Collides with [L3C] working light, cab rear wall, top

**Advantage**

- Platform can be detached from the tipping cylinder by means of a handle
- Changeable platform
- Bodies can be mounted on the ball points with little effort
- Reduces installation times
- Quickly changeable
- Additional protection for vehicle occupants and cab
- Simplified and safe transport of longer objects
**Feature**

**[PB5]** Platform, inside dimensions 2200x2050x400
- Inside dimensions 2200 x 2050 x 400 mm
- Steel floor and aluminium side boards
- Corrosion-protected platform floor
- Removable (bolted) stakes
- 6 lashing points as per DIN EN 12640 in the floor, 1000 daN
- Floor plate 2.5 mm
- Rear side board with contour marking (yellow)

**[PB6]** Platform, inside dimensions 2385x2075x400
- Corresponding to [PB5]
- Inside dimensions 2385 x 2075 x 400 mm
- 6 lashing points as per DIN EN 12640 in the floor, 2000 daN

**[PB7]** Platform, inside dimensions 2650x2225x400
- Corresponding to [PB6]
- Inside dimensions 2650 x 2225 x 400 mm

**Advantage**

- Low weight with high stability, gain in payload
- Easily removable (exchangeable)
- Quickly removable in combination with [P01]
- Stakes removable with vehicle tool kit
- Standard platform for U 200

- Standard platform for U 300/U 400 short
- Standard platform for U 500 short
Feature

[PB8] Platform, inside dimensions 2900x2075x400
  • Like [PB6]
  • Inside dimensions 2900 x 2075 x 400 mm

[PB9] Platform, inside dimensions 3430x2200x400
  • Corresponding to [PB6]
  • Inside dimensions 3430 x 2200 x 400 mm

Advantage

• Standard platform for U 400, long

• Standard platform for U 500, long
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## Engine

### OM 934 engine data

<table>
<thead>
<tr>
<th>Model</th>
<th>OM 934</th>
<th>OM 934</th>
<th>OM 934</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model designation</td>
<td>934.971</td>
<td>934.971</td>
<td>934.972</td>
</tr>
<tr>
<td>No. of cylinders/arrangement</td>
<td>4, vertical, in-line</td>
<td>4, vertical, in-line</td>
<td>4, vertical, in-line</td>
</tr>
<tr>
<td>Operating principle</td>
<td>4-stroke diesel direct injection</td>
<td>4-stroke diesel direct injection</td>
<td>4-stroke diesel direct injection</td>
</tr>
<tr>
<td>Rated power as per DIN (kW/hp)</td>
<td>115/156</td>
<td>130/177</td>
<td>170/231</td>
</tr>
<tr>
<td>Max. torque (Nm)</td>
<td>650</td>
<td>750</td>
<td>900</td>
</tr>
<tr>
<td>Rated engine speed (rpm)</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
</tr>
<tr>
<td>Idle speed (rpm)</td>
<td>720</td>
<td>720</td>
<td>720</td>
</tr>
<tr>
<td>Torque increase (%)</td>
<td>30</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td>Bore/stroke (mm)</td>
<td>110/135</td>
<td>110/135</td>
<td>110/135</td>
</tr>
<tr>
<td>Total displacement (cc)</td>
<td>5132</td>
<td>5132</td>
<td>5132</td>
</tr>
<tr>
<td>Weight, dry (kg)</td>
<td>495</td>
<td>495</td>
<td>510</td>
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<tr>
<td>Injection pressure (bar)</td>
<td>up to 2400</td>
<td>up to 2400</td>
<td>up to 2400</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>17.6 : 1</td>
<td>17.6 : 1</td>
<td>17.6 : 1</td>
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<tr>
<td>Injection nozzles</td>
<td>10-hole injection nozzles</td>
<td>10-hole injection nozzles</td>
<td>10-hole injection nozzles</td>
</tr>
<tr>
<td>Valve arrangement</td>
<td>2 intake/2 exhaust valves</td>
<td>2 intake/2 exhaust valves</td>
<td>2 intake/2 exhaust valves</td>
</tr>
<tr>
<td>Number of crankshaft bearings</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Fan drive</td>
<td>Hydrostatic</td>
<td>Hydrostatic</td>
<td>Hydrostatic</td>
</tr>
<tr>
<td>Cold start capability/(Z43) (°C)</td>
<td>-15 / -26</td>
<td>-15 / -26</td>
<td>-15 / -26</td>
</tr>
<tr>
<td>Engine oil + filter (l)</td>
<td>17.5 max.</td>
<td>17.5 max.</td>
<td>17.5 max.</td>
</tr>
<tr>
<td>Cooling system with heater (l)</td>
<td>32</td>
<td>32</td>
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</tr>
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</table>
## OM 936 engine data

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<td>OM 936</td>
<td>OM 936</td>
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<tr>
<td><strong>Model designation</strong></td>
<td>936.971</td>
<td>936.971</td>
</tr>
<tr>
<td><strong>No. of cylinders/arrangement</strong></td>
<td>6, vertical, in-line</td>
<td>6, vertical, in-line</td>
</tr>
<tr>
<td><strong>Operating principle</strong></td>
<td>4-stroke diesel direct injection</td>
<td>4-stroke diesel direct injection</td>
</tr>
<tr>
<td><strong>Rated power as per DIN (kW/hp)</strong></td>
<td>200/272</td>
<td>220/299</td>
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<tr>
<td><strong>Max. torque (Nm)</strong></td>
<td>1100</td>
<td>1200</td>
</tr>
<tr>
<td><strong>Rated engine speed (rpm)</strong></td>
<td>2200</td>
<td>2200</td>
</tr>
<tr>
<td><strong>Idle speed (rpm)</strong></td>
<td>720</td>
<td>720</td>
</tr>
<tr>
<td><strong>Torque increase (%)</strong></td>
<td>27</td>
<td>26</td>
</tr>
<tr>
<td><strong>Bore/stroke (mm)</strong></td>
<td>110/135</td>
<td>110/135</td>
</tr>
<tr>
<td><strong>Total displacement (cc)</strong></td>
<td>7698</td>
<td>7698</td>
</tr>
<tr>
<td><strong>Weight, dry (kg)</strong></td>
<td>652</td>
<td>652</td>
</tr>
<tr>
<td><strong>Injection pressure (bar)</strong></td>
<td>up to 2400</td>
<td>up to 2400</td>
</tr>
<tr>
<td><strong>Compression ratio</strong></td>
<td>17.6 : 1</td>
<td>17.6 : 1</td>
</tr>
<tr>
<td><strong>Injection nozzles</strong></td>
<td>10-hole injection nozzles</td>
<td>10-hole injection nozzles</td>
</tr>
<tr>
<td><strong>Valve arrangement</strong></td>
<td>2 intake/2 exhaust valves</td>
<td>2 intake/2 exhaust valves</td>
</tr>
<tr>
<td><strong>Number of crankshaft bearings</strong></td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>Fan drive</strong></td>
<td>Hydrostatic</td>
<td>Hydrostatic</td>
</tr>
<tr>
<td><strong>Cold start ability/[Z 43] (°C)</strong></td>
<td>-15 / -26</td>
<td>-15 / -26</td>
</tr>
<tr>
<td><strong>Engine oil + filter (l)</strong></td>
<td>27 max.</td>
<td>27 max.</td>
</tr>
<tr>
<td><strong>Cooling system with heater (l)</strong></td>
<td>35</td>
<td>35</td>
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</table>
OM 934 engine diagram

OM 936 engine diagram
### Filling capacities

<table>
<thead>
<tr>
<th></th>
<th>Vehicle</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U 200</td>
<td>U 300</td>
<td>U 400</td>
<td>U 500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank</td>
<td>405.090</td>
<td>405.104</td>
<td>405.105</td>
<td>405.110</td>
<td>405.125</td>
<td>405.202</td>
<td>405.222</td>
<td></td>
</tr>
<tr>
<td>AdBlue® (l)</td>
<td>18</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
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### Engine brake

<table>
<thead>
<tr>
<th></th>
<th>2-stage decompression brake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. output</td>
<td>178 kW with OM 934</td>
</tr>
<tr>
<td></td>
<td>300 kW with OM 936</td>
</tr>
<tr>
<td>Operation</td>
<td>Multifunction lever</td>
</tr>
</tbody>
</table>
## Compressed air generation

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure</td>
<td>18 bar</td>
</tr>
<tr>
<td>Operating pressure for auxiliary consumers</td>
<td>8.3 bar</td>
</tr>
<tr>
<td>Air compressor</td>
<td>OM 934: single-stage compression (393 cm³)</td>
</tr>
<tr>
<td></td>
<td>OM 936: 2-stage compression (400 cm³)</td>
</tr>
<tr>
<td>Air treatment</td>
<td>Air drier with integrated pressure regulator</td>
</tr>
<tr>
<td>Delivery rate</td>
<td>OM 934: 380 l/min at rated engine speed 2200 rpm</td>
</tr>
<tr>
<td></td>
<td>OM 936: 600 l/min at rated engine speed 2200 rpm</td>
</tr>
<tr>
<td>Pressure tank</td>
<td>2 x 13.8 l</td>
</tr>
<tr>
<td>Compressed-air connection</td>
<td>Tyre inflating valve at test connection of the reservoir</td>
</tr>
</tbody>
</table>
## Transmission

### Main transmission

| Model          | UG 100-8/9.57-0.74 GPA  
|                | Model designation: G 718.840 |
| Design         | Fully synchronised 8-speed manual transmission |
| Torque split   | 50 : 50 |

### Clutch

| Design         | Single-plate dry clutch |
| Diameter       | 395 mm |
| Lining         | Organic, asbestos-free |
### U 200 / U 300 vehicle speeds

<table>
<thead>
<tr>
<th>Gear</th>
<th>Transmission ratio</th>
<th>Vehicle speed (km/h)</th>
<th>Basic range</th>
<th>Work range (x 5.757)</th>
<th>Crawler range (x 55.874)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forward/reverse</td>
<td></td>
<td>Forward/reverse</td>
<td>Forward/reverse</td>
<td>Forward/reverse</td>
</tr>
<tr>
<td>1</td>
<td>9.570 / 14.569</td>
<td>5.9 / 3.9</td>
<td>1.03 / 0.68</td>
<td>0.11 / 0.07</td>
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<tr>
<td>2</td>
<td>6.635 / 10.101</td>
<td>8.6 / 5.6</td>
<td>1.49 / 0.98</td>
<td>0.15 / 0.10</td>
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<tr>
<td>3</td>
<td>4.375 / 6.660</td>
<td>13.0 / 8.5</td>
<td>2.26 / 1.48</td>
<td>0.23 / 0.15</td>
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<tr>
<td>4</td>
<td>3.219 / 4.900</td>
<td>17.7 / 11.6</td>
<td>3.07 / 2.02</td>
<td>0.32 / 0.21</td>
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</tr>
<tr>
<td>5</td>
<td>2.188 / 3.330</td>
<td>26.0 / 17.1</td>
<td>4.51 / 2.97</td>
<td>0.47 / 0.31</td>
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</tr>
<tr>
<td>6</td>
<td>1.517 / 2.309</td>
<td>37.5 / 24.6</td>
<td>6.51 / 4.28</td>
<td>0.67 / 0.44</td>
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</tr>
<tr>
<td>7</td>
<td>1.000 / 1.522</td>
<td>56.8 / -</td>
<td>9.87 / 6.49</td>
<td>1.02 / 0.67</td>
<td></td>
</tr>
</tbody>
</table>
| 8    | 0.736 / 1.120      | 77.3 / -              | 13.42 / 8.82 | 1.38 / 0.91          |**|<br>** Speed limiter at 90 km/h

<table>
<thead>
<tr>
<th>Gear</th>
<th>Transmission ratio</th>
<th>Vehicle speed (km/h)</th>
<th>Basic range</th>
<th>Work range (x 5.757)</th>
<th>Crawler range (x 55.874)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Forward/reverse</td>
<td>Forward/reverse</td>
<td>Forward/reverse</td>
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<tr>
<td>1</td>
<td>9.570 / 14.569</td>
<td>7.1 / 4.7</td>
<td>1.23 / 0.81</td>
<td>0.13 / 0.08</td>
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<tr>
<td>2</td>
<td>6.635 / 10.101</td>
<td>10.2 / 6.7</td>
<td>1.77 / 1.17</td>
<td>0.18 / 0.12</td>
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</tr>
<tr>
<td>3</td>
<td>4.375 / 6.660</td>
<td>15.5 / 10.2</td>
<td>2.69 / 1.77</td>
<td>0.28 / 0.18</td>
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<tr>
<td>4</td>
<td>3.219 / 4.900</td>
<td>21.1 / 13.8</td>
<td>3.66 / 2.40</td>
<td>0.38 / 0.25</td>
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</tr>
<tr>
<td>5</td>
<td>2.188 / 3.330</td>
<td>31.0 / 20.4</td>
<td>5.38 / 3.54</td>
<td>0.55 / 0.36</td>
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<tr>
<td>6</td>
<td>1.517 / 2.309</td>
<td>44.7 / 29.4</td>
<td>7.76 / 5.10</td>
<td>0.80 / 0.53</td>
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</tr>
<tr>
<td>7</td>
<td>1.000 / 1.522</td>
<td>67.8 / -</td>
<td>11.77 / 7.73</td>
<td>1.21 / 0.80</td>
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<tr>
<td>8</td>
<td>0.736 / 1.120</td>
<td>92.1** / -</td>
<td>16.00 / 10.51</td>
<td>1.65 / 1.08</td>
<td></td>
</tr>
</tbody>
</table>

**Rated engine speed:** 2200 rpm

**Final drive ratio:** 6.53

**U 200 tyres:** 295/60 R 22.5

**U 300 tyres:** 315/80 R 22.5

**Conversion factors for vehicle speeds with deviating tyres:** see vehicle speed conversion factor chart
## Transmission

### U 400 / U 500 vehicle speeds

<table>
<thead>
<tr>
<th>Gear</th>
<th>Transmission ratio</th>
<th>Vehicle speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forward/reverse</td>
<td>Basic range</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>9.570 / 14.569</td>
<td>7.2 / 4.8</td>
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<tr>
<td>2</td>
<td>6.635 / 10.101</td>
<td>10.5 / 6.9</td>
</tr>
<tr>
<td>3</td>
<td>4.375 / 6.660</td>
<td>15.9 / 10.4</td>
</tr>
<tr>
<td>4</td>
<td>3.219 / 4.900</td>
<td>21.6 / 14.2</td>
</tr>
<tr>
<td>5</td>
<td>2.188 / 3.330</td>
<td>31.7 / 20.8</td>
</tr>
<tr>
<td>6</td>
<td>1.517 / 2.309</td>
<td>45.7 / 30.0</td>
</tr>
<tr>
<td>7</td>
<td>1.000 / 1.522</td>
<td>69.4 / 45.6*</td>
</tr>
<tr>
<td>8</td>
<td>0.736 / 1.120</td>
<td>94.3** / 61.9*</td>
</tr>
</tbody>
</table>

### U 400

<table>
<thead>
<tr>
<th>Gear</th>
<th>Transmission ratio</th>
<th>Vehicle speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Basic range</td>
</tr>
<tr>
<td>1</td>
<td>9.570 / 14.569</td>
<td>7.1 / 4.6</td>
</tr>
<tr>
<td>2</td>
<td>6.635 / 10.101</td>
<td>10.2 / 6.7</td>
</tr>
<tr>
<td>3</td>
<td>4.375 / 6.660</td>
<td>15.4 / 10.1</td>
</tr>
<tr>
<td>4</td>
<td>3.219 / 4.900</td>
<td>21.0 / 13.8</td>
</tr>
<tr>
<td>5</td>
<td>2.188 / 3.330</td>
<td>30.9 / 20.3</td>
</tr>
<tr>
<td>6</td>
<td>1.517 / 2.309</td>
<td>44.6 / 29.3</td>
</tr>
<tr>
<td>7</td>
<td>1.000 / 1.522</td>
<td>67.6 / -</td>
</tr>
<tr>
<td>8</td>
<td>0.736 / 1.120</td>
<td>91.9** / -</td>
</tr>
</tbody>
</table>

### U 500

<table>
<thead>
<tr>
<th>Gear</th>
<th>Transmission ratio</th>
<th>Vehicle speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Basic range</td>
</tr>
<tr>
<td>1</td>
<td>9.570 / 14.569</td>
<td>7.2 / 4.8</td>
</tr>
<tr>
<td>2</td>
<td>6.635 / 10.101</td>
<td>10.5 / 6.9</td>
</tr>
<tr>
<td>3</td>
<td>4.375 / 6.660</td>
<td>15.9 / 10.4</td>
</tr>
<tr>
<td>4</td>
<td>3.219 / 4.900</td>
<td>21.6 / 14.2</td>
</tr>
<tr>
<td>5</td>
<td>2.188 / 3.330</td>
<td>31.7 / 20.8</td>
</tr>
<tr>
<td>6</td>
<td>1.517 / 2.309</td>
<td>45.7 / 30.0</td>
</tr>
<tr>
<td>7</td>
<td>1.000 / 1.522</td>
<td>69.4 / 45.6*</td>
</tr>
<tr>
<td>8</td>
<td>0.736 / 1.120</td>
<td>94.3** / 61.9*</td>
</tr>
</tbody>
</table>

**Rated engine speed:** 2200 rpm  
* Only with road/rail operation  
** Final drive ratio:** 6.38  
** Speed limiter at 90 km/h  
U 400 tyres: 315/80 R 22.5  
U 500 tyres: 385/65 R 22.5  
Conversion factors for vehicle speeds with deviating tyres: see vehicle speed conversion factor chart
## Vehicle speed conversion factor

<table>
<thead>
<tr>
<th>Tyre size</th>
<th>Designation</th>
<th>U 200</th>
<th>U 300</th>
<th>U 400</th>
<th>U 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>275/90 R22.5</td>
<td>Mitas SRT</td>
<td></td>
<td></td>
<td>0.973</td>
<td></td>
</tr>
<tr>
<td>295/60 R22.5</td>
<td>Goodyear Ultra Grip WTS</td>
<td>S</td>
<td></td>
<td>0.839</td>
<td></td>
</tr>
<tr>
<td>315/80 R22.5</td>
<td>Dunlop SP444</td>
<td>1.187</td>
<td>0.996</td>
<td>0.996</td>
<td></td>
</tr>
<tr>
<td>315/80 R22.5</td>
<td>Conti HDW2</td>
<td>1.192</td>
<td>S</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>315/80 R22.5</td>
<td>Michelin X Multiway 3D XDE</td>
<td>1.175</td>
<td>0.985</td>
<td>0.985</td>
<td></td>
</tr>
<tr>
<td>335/80 R20</td>
<td>Conti MPT81</td>
<td>1.110</td>
<td></td>
<td>0.931</td>
<td></td>
</tr>
<tr>
<td>335/80 R20</td>
<td>Dunlop SPT9</td>
<td>1.110</td>
<td></td>
<td>0.931</td>
<td></td>
</tr>
<tr>
<td>365/80 R20</td>
<td>Conti MPT81</td>
<td>1.165</td>
<td>0.977</td>
<td>0.977</td>
<td></td>
</tr>
<tr>
<td>365/80 R20</td>
<td>Michelin XZL</td>
<td>1.184</td>
<td>0.993</td>
<td>0.993</td>
<td></td>
</tr>
<tr>
<td>365/85 R20</td>
<td>Michelin XZL</td>
<td>1.032</td>
<td>1.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>385/65 R22.5</td>
<td>Conti HTC1</td>
<td>0.969</td>
<td></td>
<td>0.994</td>
<td></td>
</tr>
<tr>
<td>385/65 R22.5</td>
<td>Conti HSW2</td>
<td></td>
<td>0.974</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>395/85 R20</td>
<td>Michelin XML</td>
<td></td>
<td></td>
<td>1.099</td>
<td></td>
</tr>
<tr>
<td>395/85 R20</td>
<td>Michelin XZL</td>
<td></td>
<td></td>
<td>1.103</td>
<td></td>
</tr>
<tr>
<td>405/70 R20</td>
<td>Michelin XM47</td>
<td>1.149</td>
<td>0.963</td>
<td></td>
<td></td>
</tr>
<tr>
<td>405/70 R20</td>
<td>Dunlop SPT9</td>
<td>1.149</td>
<td>0.963</td>
<td>0.963</td>
<td></td>
</tr>
<tr>
<td>405/70 R24</td>
<td>Dunlop SPT9</td>
<td>1.257</td>
<td>1.054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>405/70 R24</td>
<td>CGS AC70G</td>
<td>1.255</td>
<td>1.053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>425/75 R20</td>
<td>Michelin XM47</td>
<td>1.220</td>
<td>1.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>445/65 R22.5</td>
<td>CGS AC70+</td>
<td></td>
<td></td>
<td>1.047</td>
<td>1.074</td>
</tr>
<tr>
<td>445/65 R22.5</td>
<td>Michelin XZL</td>
<td></td>
<td></td>
<td>1.059</td>
<td>1.087</td>
</tr>
<tr>
<td>445/70 R24</td>
<td>Michelin XM47</td>
<td></td>
<td></td>
<td>1.102</td>
<td>1.131</td>
</tr>
<tr>
<td>455/70 R24</td>
<td>Dunlop SPT9</td>
<td></td>
<td></td>
<td>1.146</td>
<td></td>
</tr>
<tr>
<td>495/70 R24</td>
<td>Michelin XM47</td>
<td></td>
<td></td>
<td>1.199</td>
<td></td>
</tr>
</tbody>
</table>

The vehicle speed conversion factor allows determination of the vehicle speed with use of the given tyres, in reference to the standard tyres.
Axles

Suspension

<table>
<thead>
<tr>
<th>Design</th>
<th>Portal axles at longitudinal and transverse control arms, hub reduction gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differential lock</td>
<td>Inter-axle differential lock, Rear differential lock, Front differential lock [A1W]</td>
</tr>
<tr>
<td>Suspension</td>
<td>Progressively acting coil springs</td>
</tr>
<tr>
<td>Stabiliser bars</td>
<td>Integrated in trailing arm</td>
</tr>
</tbody>
</table>

Technical data on axles

<table>
<thead>
<tr>
<th>Axle model designation Front axle</th>
<th>Axle model designation Rear axle</th>
<th>Axle flange dimension (mm)</th>
<th>Wheel stud hole circle (mm)</th>
<th>Number of wheel studs</th>
<th>Final drive ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>U 200/U 300</td>
<td></td>
<td>2024</td>
<td>275</td>
<td>8</td>
<td>6.53</td>
</tr>
<tr>
<td>U 400</td>
<td></td>
<td>2056</td>
<td>335</td>
<td>10</td>
<td>6.38</td>
</tr>
<tr>
<td>U 500</td>
<td></td>
<td>2150</td>
<td>335</td>
<td>10</td>
<td>6.38</td>
</tr>
</tbody>
</table>
## Technical data on U 200 / U 300 rims

<table>
<thead>
<tr>
<th>Wheel rim:</th>
<th>Code</th>
<th>Track width (mm)</th>
<th>Tyre size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop centre rims 11 x 20</td>
<td>[RT2]</td>
<td>1794</td>
<td>335/80 R 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>365/80 R 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>405/70 R 20</td>
</tr>
<tr>
<td>Steep-shoulder rim 22.5 x 9.00</td>
<td>[RR6]</td>
<td>1784</td>
<td>295/60 R 22.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>315/80 R 22.5</td>
</tr>
<tr>
<td>Semi-drop centre rim 11.00 - 20 SDC</td>
<td>[RH2]</td>
<td>1824</td>
<td>425/75 R 20</td>
</tr>
<tr>
<td>Drop centre rims 13 x 24</td>
<td>[RN3]</td>
<td>1824</td>
<td>405/70 R 24</td>
</tr>
</tbody>
</table>
## Technical data on U 400 rims

<table>
<thead>
<tr>
<th>Wheel rim:</th>
<th>Code</th>
<th>Track width (mm)</th>
<th>Tyre size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steep-shoulder rims 22.5 x 8.25</td>
<td>[R18]</td>
<td>1574</td>
<td>275/90 R 22.5</td>
</tr>
<tr>
<td>Steep-shoulder rims 22.5 x 9.00</td>
<td>[R40]</td>
<td>1734</td>
<td>315/80 R 22.5</td>
</tr>
<tr>
<td>Semi-drop centre rim 11.00 - 20 SDC</td>
<td>[R30]</td>
<td>1726</td>
<td>365/80 R 20 405/70 R 20</td>
</tr>
<tr>
<td>Flat base rims 10.00V - 20</td>
<td>[R32]</td>
<td>1734</td>
<td>365/85 R20</td>
</tr>
<tr>
<td>Steep-shoulder rims 22.5 x 11.75</td>
<td>[R41]</td>
<td>1816</td>
<td>385/65 R22.5 375/75 R22.5</td>
</tr>
<tr>
<td>Aluminium rims 22.5 x 11.75**</td>
<td>[R2T]</td>
<td>1816</td>
<td>385/65 R22.5 375/75 R22.5</td>
</tr>
<tr>
<td>Steep-shoulder rims 22.5 x 14.00</td>
<td>[R42]</td>
<td>1788</td>
<td>445/65 R22.5</td>
</tr>
<tr>
<td>Drop centre rims 13 x 24</td>
<td>[RN4]</td>
<td>1800</td>
<td>445/70 R24</td>
</tr>
</tbody>
</table>

**Aluminium rims offer a considerable weight saving compared with steel rims**
## Technical data on U 500 rims

<table>
<thead>
<tr>
<th>Wheel rim:</th>
<th>Code</th>
<th>Track width (mm)</th>
<th>Tyre size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steep-shoulder rims 22.5 x 11.75</td>
<td>[R41]</td>
<td>1910</td>
<td>385/65 R22.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>375/75 R22.5</td>
</tr>
<tr>
<td>Steep-shoulder rims 22.5 x 11.75</td>
<td>[RN6]</td>
<td>1880</td>
<td>385/65 R22.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>375/75 R22.5</td>
</tr>
<tr>
<td>Aluminium rims 22.5 x 11.75**</td>
<td>[R2T]</td>
<td>1910</td>
<td>385/65 R22.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>375/75 R22.5</td>
</tr>
<tr>
<td>Flat base rims 10.00V - 20</td>
<td>[R32]</td>
<td>1828</td>
<td>365/85 R20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>395/85 R20</td>
</tr>
<tr>
<td>Steep-shoulder rims 22.5 x 14.00</td>
<td>[R43]</td>
<td>1842</td>
<td>445/65 R22.5</td>
</tr>
<tr>
<td>Drop centre rims 13 x 24</td>
<td>[RN5]</td>
<td>1842</td>
<td>445/70 R24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>455/70 R24</td>
</tr>
<tr>
<td>Wide-base rims DW16L x 24</td>
<td>[R46]</td>
<td>1930</td>
<td>495/70 R24</td>
</tr>
</tbody>
</table>

**Aluminium rims offer a considerable weight saving compared with steel rims**
## Brakes

### Braking system

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>Dual-circuit disc braking system, Air dryer</td>
</tr>
<tr>
<td>Safety</td>
<td>4-channel ABS, automatic load-dependent brake</td>
</tr>
<tr>
<td>Parking brake</td>
<td>Spring braking system</td>
</tr>
</tbody>
</table>
## Cab exterior

### Exterior

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Steel tube supporting frame, 4-point vibration-damped, corrosion-free fibre composite, tilting</td>
</tr>
<tr>
<td>Glazing</td>
<td>Heat-insulating glass, laminated glass low-edged panoramic windscreen, low-view windows in the doors, large rear panel window</td>
</tr>
<tr>
<td>Mirrors</td>
<td>Heated exterior mirror on both sides, electrically adjustable, wide-angle rear-view mirror heated on both sides, kerb mirror</td>
</tr>
<tr>
<td>Doors</td>
<td>Corrosion-free fibre composite, power windows on both sides</td>
</tr>
</tbody>
</table>

### Safety

- Tested as per ECE-R-29/2 *

* ECE R: Regulations of the United Nations Economic Commission for Europe
## Cab interior

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior equipment</td>
<td>Interior lighting, reading lamps on both sides, 3 sun visors</td>
</tr>
<tr>
<td>Seats</td>
<td>Fitted backrest and integrated head restraints on both sides, integrated 3-point inertia-reel seat belts on both sides, height, fore/aft and angle adjustment on both sides</td>
</tr>
<tr>
<td>Centre console</td>
<td>Next to driver's seat, central controls, Two separately usable DIN installation slots</td>
</tr>
<tr>
<td>Stowage compartments</td>
<td>Stowage box at the cab rear panel, Compartments with bottle and can holders in the doors, 2 cup holders in the dash support, Large stowage compartment under the dash support, Stowage space behind driver's seat</td>
</tr>
<tr>
<td>Air conditioning system</td>
<td>Heating/ventilation system with integrated air conditioning, 4-speed rotary switch for blower, air recirculation switch, additional mixed-air switch, defroster vents for windscreen and side windows, footwell vents on both sides</td>
</tr>
<tr>
<td>Displays</td>
<td>Instrument cluster with display</td>
</tr>
<tr>
<td>Safety</td>
<td>Safety locks in the doors, combined steering and starter lock at the steering column</td>
</tr>
</tbody>
</table>
## PTOs

**[N05] Engine PTO to rear, with flange**

<table>
<thead>
<tr>
<th>Version</th>
<th>Engine-dependently driven via spur gear in the engine, rear flange output at engine via switchable dog clutch, can be switched on when engine OFF for driving the variable displacement pumps for power hydraulics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear ratio</td>
<td>i=0.933</td>
</tr>
<tr>
<td>RPM at rated engine speed 2200 rpm</td>
<td>2358 rpm</td>
</tr>
<tr>
<td>Rotational direction</td>
<td>Clockwise (in direction of travel)</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>600 Nm (continuous)</td>
</tr>
<tr>
<td></td>
<td>720 Nm (temporary)</td>
</tr>
<tr>
<td>Maximum continuous output</td>
<td>148 kW</td>
</tr>
<tr>
<td><strong>[N08] Engine PTO incl. front PTO</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Version</strong></td>
<td>Hydraulic multi-disc clutch with integrated stub brake, electrically operated, shiftable under load, driven by the front crankshaft end of the engine, independent oil supply with oil filter</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>as per DIN EN 15432-1</td>
</tr>
<tr>
<td><strong>Gear ratio</strong></td>
<td>i=2.139</td>
</tr>
<tr>
<td><strong>Standard rpm</strong></td>
<td>1000 rpm, other rotational speeds continuously variable via electronic hand-operated throttle</td>
</tr>
</tbody>
</table>
| **Power take-off shaft speed at engine rpm** | Power take-off shaft: 540 rpm at engine speed: 1160 rpm  
Power take-off shaft: 1000 rpm at engine speed: 2140 rpm  
Power take-off shaft: 1029 rpm at rated engine speed |
| **Rotational direction**            | Clockwise (in direction of travel) |
| **Continuous output**               | 160 kW |
| **Power take-off shaft profile**    | 6-spline shaft as per SAE J499a 1¾ inch  
Stub when stationary manually rotatable by approx. 50° |
| **Power take-off transmission oil capacity** | 4 l |
| **Oil cooling system**              | via heat exchanger and engine cooling |
### [N13]/[N16]/[N19] Transmission PTO

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear ratio</td>
<td>1.0</td>
<td>1.0</td>
<td>0.61</td>
</tr>
<tr>
<td>Rotational direction (in direction of travel)</td>
<td>left</td>
<td>left</td>
<td>right</td>
</tr>
<tr>
<td>Maximum torque (Nm)</td>
<td>650</td>
<td>650</td>
<td>320</td>
</tr>
<tr>
<td>Maximum output (kW)</td>
<td>150</td>
<td>150</td>
<td>120</td>
</tr>
<tr>
<td>Rotational speed at engine speed 2200 rpm (rpm)</td>
<td>2200</td>
<td>2200</td>
<td>3606</td>
</tr>
<tr>
<td>Connection</td>
<td>6-hole flange</td>
<td>4-hole connection</td>
<td>6-hole flange</td>
</tr>
</tbody>
</table>
Hydraulics

Technical data on work hydraulics

<table>
<thead>
<tr>
<th></th>
<th>[HN2]</th>
<th>[HN4]</th>
<th>[HN6]</th>
<th>[HN7]</th>
<th>[HN8]</th>
</tr>
</thead>
<tbody>
<tr>
<td>System pressure (bar)</td>
<td>210</td>
<td>210/240</td>
<td>210/240</td>
<td>210/240</td>
<td>210/240</td>
</tr>
<tr>
<td>Delivery volume of circuit I/II (l/min)</td>
<td>55/-</td>
<td>32/55</td>
<td>32/55</td>
<td>32/55</td>
<td>32/55</td>
</tr>
<tr>
<td>Displacement volume pump (cc)</td>
<td>19</td>
<td>11/19</td>
<td>11/19</td>
<td>11/19</td>
<td>11/19</td>
</tr>
<tr>
<td>Basic power output (kW)</td>
<td>19</td>
<td>11.2/22</td>
<td>11.2/22</td>
<td>11.2/22</td>
<td>11.2/22</td>
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<tr>
<td>Dual-acting control valves</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Connections</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Oil reservoir</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Volume (l)</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>Capacity (l)</td>
<td>approx 45</td>
<td>approx 45</td>
<td>approx 45</td>
<td>approx 45</td>
<td>approx 45</td>
</tr>
<tr>
<td>max. possible consumption quantity (l)</td>
<td>25-30</td>
<td>25-30</td>
<td>25-30</td>
<td>25-30</td>
<td>25-30</td>
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<tr>
<td>Snow plough relief</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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</table>
### Technical data on power hydraulics

<table>
<thead>
<tr>
<th></th>
<th>[HL4]</th>
<th>[HL5]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System pressure</strong></td>
<td>280</td>
<td>280</td>
</tr>
<tr>
<td>(bar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delivery volume of circuit III/IV</strong></td>
<td>125/-</td>
<td>125/125</td>
</tr>
<tr>
<td>(l/min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Displacement volume pump (cc)</strong></td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td><strong>Basic power output (kW)</strong></td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td><strong>Oil reservoir</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume (l)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>Capacity (l)</strong></td>
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<td>approx 45</td>
</tr>
<tr>
<td>max. possible consumption quantity (l)</td>
<td>5</td>
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<tr>
<td><strong>Hydraulic system</strong></td>
<td>open</td>
<td>open/open</td>
</tr>
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</table>

*Temporary output up to 125 l/min per circuit, continuous up to 90 l/min, with additional oil cooler continuous up to 125 l/min.*
## Electrical system

### On-board electrical system

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-board electrical system</td>
<td>24V</td>
</tr>
<tr>
<td>Starter motor output</td>
<td>4 kW</td>
</tr>
<tr>
<td>Alternator output</td>
<td>2800 W (28V - 100A), 4200 W (28V - 150A) [EL4]</td>
</tr>
<tr>
<td>Battery</td>
<td>2 x 12V/140 Ah</td>
</tr>
<tr>
<td>Trailer socket</td>
<td>24V, 15-pin, with electronic trailer recognition, LED-capable 12V, 13-pin, with voltage converter for 2 trailers [E42]</td>
</tr>
<tr>
<td>On-board power outlet</td>
<td>24V (cigarette lighter)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Electronic vehicle management system with diagnostic interface and on-board diagnosis</td>
</tr>
</tbody>
</table>

### Lights

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headlamps</td>
<td>Bi-halogen headlamps, dipped beam, high beam, parking lamps, daytime running lamps, headlight range adjustment</td>
</tr>
<tr>
<td>Tail lamps</td>
<td>6-chamber tail lamps, Position, turn indicator, brake, tail and rear fog lamps on both sides, reflectors, reversing lamps on both sides</td>
</tr>
<tr>
<td>Turn indicators</td>
<td>on both sides, front and rear, turn indicator repeaters on both sides</td>
</tr>
<tr>
<td>Lights</td>
<td>position lamps, licence plate illumination, hazard warning lamps</td>
</tr>
</tbody>
</table>
## Weights

### Permissible load values

<table>
<thead>
<tr>
<th>GVW (t)</th>
<th>Permissible front axle load (t)</th>
<th>Permissible rear axle load (t)</th>
<th>Prerequisite: only in conjunction with</th>
<th>Identification plate code</th>
<th>Supplementary sheet code**</th>
<th>U 200 3000</th>
<th>U 300 3150/3600</th>
<th>U 400 3350/3900</th>
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</thead>
<tbody>
<tr>
<td>7.5</td>
<td>4.4</td>
<td>4.4</td>
<td>Li &gt;= 136 (979G67-/80)</td>
<td>[TB4]</td>
<td></td>
<td>X</td>
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<td>4.4</td>
<td>4.8</td>
<td>Li &gt;=139</td>
<td>[TB8]</td>
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<td>4.4</td>
<td>Li &gt;= 136 (979G67-/80)</td>
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<td>[WD3]</td>
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<td>Li &gt;=139</td>
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<td>[WD6]</td>
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<tr>
<td>10.0</td>
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<td>Li &gt;=144</td>
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<td>[WG3]</td>
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<td>[WJ1]</td>
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<td>6.9</td>
<td>Li &gt;= 151 (972G67-/80)</td>
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<td></td>
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<td>5.6</td>
<td>6.5</td>
<td>Li &gt;= 155 (973G67-/80)</td>
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<td>X</td>
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<td></td>
</tr>
<tr>
<td>11.99</td>
<td>6.8</td>
<td>7.0</td>
<td>Li &gt;=152</td>
<td>[TL8]</td>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.7</td>
<td>5.8</td>
<td>6.9</td>
<td>Li &gt;=151</td>
<td>[TN8]</td>
<td>[WN8]</td>
<td>X</td>
<td></td>
<td></td>
</tr>
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<td>13.0</td>
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<td>7.5</td>
<td>Li &gt;= 154 (974G56-/20)</td>
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<td>[WP1]</td>
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<td></td>
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<tr>
<td>13.0</td>
<td>6.9</td>
<td>6.9</td>
<td>Road-rail</td>
<td>[TP2]</td>
<td></td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>13.0</td>
<td>6.8</td>
<td>7.5</td>
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<td>[WP4]</td>
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<td>5.6</td>
<td>7.7</td>
<td>Li &gt;= 155 (973G67-/80)</td>
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<td>[WP5]</td>
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</tr>
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<td>6.9</td>
<td>7.8</td>
<td>Li &gt;=154</td>
<td>[TQ7]</td>
<td>[WQ7]***</td>
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<td></td>
<td></td>
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<tr>
<td>13.8</td>
<td>6.9</td>
<td>6.9</td>
<td>Road-rail</td>
<td>[TQ8]</td>
<td></td>
<td>X</td>
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<td></td>
</tr>
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<td>14.0</td>
<td>7.0</td>
<td>8.0</td>
<td>Li &gt;= 156</td>
<td>[TS2]*</td>
<td>[WS2]***</td>
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<tr>
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<td>6.5</td>
<td>9.0</td>
<td>Li &gt;= 160</td>
<td>[TV1]</td>
<td>[WV1]</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>7.2</td>
<td>9.0</td>
<td>Li &gt;=160</td>
<td>[TV3]</td>
<td>[WV3]</td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td>7.5</td>
<td>9.0</td>
<td>Li &gt;= 160</td>
<td>[TX0]</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td>7.5</td>
<td>9.5</td>
<td>Li &gt;=162</td>
<td>[TX3]</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*Only available following release. Individual inquiry required.
** in Germany only
***No trailer operation
## Trailer operation

### Trailer couplings

<table>
<thead>
<tr>
<th>Trailer coupling</th>
<th>Make</th>
<th>Test symbol</th>
<th>Jaw size (mm)</th>
<th>Bolt diameter (mm)</th>
<th>Perm. drawbar load (kg)</th>
<th>Drawbar ratio (kN)</th>
<th>DC value (kN)</th>
<th>V value (kN)</th>
<th>Hole pattern (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Q94]</td>
<td>Ringfeder</td>
<td>e11-00-6292</td>
<td>360 x 200</td>
<td>38</td>
<td>1000</td>
<td>137</td>
<td>92</td>
<td>40</td>
<td>160 x 100</td>
</tr>
<tr>
<td>[Q95]</td>
<td>Ringfeder</td>
<td>e11-00-6289</td>
<td>360 x 200</td>
<td>48.7</td>
<td>1000</td>
<td>200</td>
<td>135</td>
<td>75</td>
<td>160 x 100</td>
</tr>
<tr>
<td>[Q96] top</td>
<td>Ringfeder</td>
<td>e11-00-5997</td>
<td>360 x 200</td>
<td>48.7</td>
<td>1000</td>
<td>200</td>
<td>135</td>
<td>75</td>
<td>160 x 100</td>
</tr>
<tr>
<td>[Q96] bottom</td>
<td>Ringfeder</td>
<td>e11-00-5997</td>
<td>200 x 100</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>160 x 100</td>
</tr>
</tbody>
</table>
### Towing capacity U 200, model designation 405.090

<table>
<thead>
<tr>
<th>Gross vehicle weight (kg)</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>Gross combination weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without brake</td>
<td>With inertia-activated brake</td>
</tr>
<tr>
<td></td>
<td>CAT</td>
<td>DBT</td>
</tr>
<tr>
<td></td>
<td>SQT [standard]</td>
<td>[Q36]</td>
</tr>
<tr>
<td></td>
<td>[Q94] or [Q95]</td>
<td>[Q 94] or [Q95]</td>
</tr>
<tr>
<td>Truck</td>
<td>7500</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>8500</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>10,000</td>
<td>750</td>
</tr>
<tr>
<td>Tractor unit</td>
<td>7500</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>8500</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>10,000</td>
<td>750</td>
</tr>
</tbody>
</table>

Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer
DBT: draw-bar trailer
¹: Gross combination weight with 115 kW engine power output;
²: Permissible in case of ≤ 7% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight
## Towing capacity U 300, model designation 405.104

<table>
<thead>
<tr>
<th>Gross vehicle weight (kg)</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>Gross combination weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without brake</td>
<td>With inertia-activated brake</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7500</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>8500</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>11,000</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>Tractor unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7500</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>8500</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>11,000</td>
<td>750</td>
<td>3500</td>
</tr>
</tbody>
</table>

Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer
DBT: draw-bar trailer

1: Permissible in case of ≤ 7% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight.
# Towing capacity for U 400, model designation 405.105, 405.110 and 405.125

<table>
<thead>
<tr>
<th>GVW (kg)</th>
<th>Without brake</th>
<th>With inertia-activated brake</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>Gross combination weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without brake</td>
<td>With inertia-activated brake</td>
<td>With continuous braking system</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CAT</td>
<td>DBT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SQT [standard]</td>
<td>[Q31]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Q94] or [Q95]</td>
<td>[Q94] or [Q94] or [Q95]</td>
</tr>
<tr>
<td>11,990</td>
<td>750</td>
<td>3500</td>
<td>9000</td>
<td>13,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td>17,900</td>
</tr>
<tr>
<td>12,700</td>
<td>750</td>
<td>3500</td>
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<td>-</td>
<td>3500</td>
<td>8700</td>
<td>12,400</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>8400</td>
<td>11,800</td>
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<tr>
<td>13,800</td>
<td>-</td>
<td>3500</td>
<td>8300</td>
<td>11,600</td>
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<td></td>
<td></td>
<td></td>
<td>8400</td>
<td>11,800</td>
</tr>
<tr>
<td>14,000(^2)</td>
<td>-</td>
<td>3500</td>
<td>8300</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8300</td>
<td>11,800</td>
</tr>
</tbody>
</table>

Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer DBT: draw-bar trailer
\(^1\): Permissible in case of ≤ 10% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight 2: not for model designation 405.105;
### Towing capacity U 400 model designation 405.105, 405.110 and 405.125 (i.c.w. [Q33])

<table>
<thead>
<tr>
<th>GVW (kg)</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>Gross combination weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without brake</td>
<td>With inertia-activated brake</td>
</tr>
<tr>
<td></td>
<td>Top</td>
<td>Bottom</td>
</tr>
<tr>
<td>11,990</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>12,700</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>13,000</td>
<td>-</td>
<td>3500</td>
</tr>
<tr>
<td>13,800</td>
<td>-</td>
<td>3500</td>
</tr>
<tr>
<td>14,000(^2)</td>
<td>-</td>
<td>3500</td>
</tr>
<tr>
<td>11,990</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>12,700</td>
<td>750</td>
<td>3500</td>
</tr>
<tr>
<td>13,000</td>
<td>-</td>
<td>3500</td>
</tr>
<tr>
<td>13,800</td>
<td>-</td>
<td>3500</td>
</tr>
<tr>
<td>14,000(^2)</td>
<td>-</td>
<td>3500</td>
</tr>
</tbody>
</table>

Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer DBT: draw-bar trailer

\(^1\): Permissible in case of ≤ 10% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight 2: not for model designation 405.105; \(^2\): for tractor unit 2000 kg drawbar load via technical approval from TP/EVA, Vmax 62 km/h, required trailer hitch only via body manufacturer (e.g. Scharrmüller)
## Towing capacity for U 500, model designation 405.202 and 405.222

<table>
<thead>
<tr>
<th>GVW (kg)</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>Gross combination weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without brake</td>
<td>With inertia-activated brake</td>
</tr>
<tr>
<td></td>
<td>SQT [standard]</td>
<td>[Q36]</td>
</tr>
<tr>
<td></td>
<td>[Q94] or [Q95]</td>
<td>[Q94] or [Q95]</td>
</tr>
<tr>
<td>Truck:</td>
<td>11,990</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>12,700</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>13,000</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>15,500</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>16,500</td>
<td>-</td>
</tr>
<tr>
<td>Tractor unit:</td>
<td>11,990</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>12,700</td>
<td>750</td>
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<tr>
<td>16,500</td>
<td>Strength of end cross-member in conj. with GVW of 16,500 kg not adequate for minimum towing capacity tractor unit</td>
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</table>

Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer DBT: draw-bar trailer
1: with [Q31] 38,700 kg; 2: with [Q31] 39,400 kg;
3: Permissible in case of ≤ 11% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight.
### Towing capacity U 500 model designation 405.202 and 405.222 (i.c.w. [Q33])

<table>
<thead>
<tr>
<th>GVW (kg)</th>
<th>Without brake</th>
<th>With inertia-activated brake</th>
<th>Permissible towing capacity with trailer [kg]</th>
<th>With continuous braking system</th>
<th>Gross combination weight (kg)</th>
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<tbody>
<tr>
<td></td>
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<td>CAT Top</td>
<td>Bottom</td>
<td>Drawbar load (kg)</td>
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<tr>
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Truck: minimum engine power 5 kW/t; trailer load max. 1.5 x tractor vehicle
Tractor unit: minimum engine power 2.2 kW/t
CAT: centre axle trailer DBT: draw-bar trailer; ¹: Permissible in case of ≤ 11% uphill/downhill slopes, if tractor unit is loaded to permissible rear axle load in compliance with the gross vehicle weight ; ²: for tractor unit 2000 kg drawbar load via technical approval from TP/EVA, Vmax 62 km/h, required trailer hitch only via body manufacturer (e.g. Scharrmüller)
## Wheels/tyres

### Tyres

<table>
<thead>
<tr>
<th>Tyre size</th>
<th>Designation</th>
<th>Tyre code</th>
<th>Tyre tread</th>
<th>Li</th>
<th>V (km/h)</th>
<th>Rolling circumference (mm)</th>
<th>Stat. radius (mm)</th>
<th>Width (mm)</th>
<th>Outside diameter (mm)</th>
<th>Tyre label</th>
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<tbody>
<tr>
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<td>Tyre code</td>
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<td>Stat. radius (mm)</td>
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**Tyre label**

As of 1 November 2012 manufacturers of tyres for passenger cars as well as for light- and heavy-duty commercial vehicles are required to produce tyre labels for their products. The tyre labels provide information on fuel consumption, wet adhesion and noise emission of the corresponding tyres and are provided in the form of labels or stickers.
### Tyre availability

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<tr>
<th>Tyre size</th>
<th>Designation</th>
<th>Tyre code</th>
<th>U 200</th>
<th>U 300</th>
<th>U 400</th>
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## MPT (multi-purpose tyres)

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<th>Municipal, transport, building construction, energy sector, industry, haulage, emergency services</th>
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<tbody>
<tr>
<td>Area of use</td>
<td>On-road/off-road</td>
</tr>
<tr>
<td>Good suitability</td>
<td>Paved and unpaved roads, trails and areas; tractive operations</td>
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<tr>
<td>Less suitable</td>
<td>Soft ground with low load capacity</td>
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<th>Directional</th>
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<tr>
<td>Good winter service properties</td>
<td>Good off-road properties</td>
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### Wheels/tyres

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<tr>
<td>Area of use</td>
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Non-directional | Non-directional
### AS tyres

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<th>Agriculture, energy sector, building construction, open-pit mining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of use</td>
<td>Fields, grassland, ground with low load capacity</td>
</tr>
<tr>
<td>Good suitability</td>
<td>Unpaved roads, trails and areas/high tractive operations</td>
</tr>
<tr>
<td>Less suitable</td>
<td>Winter service operations, paved roads/permanent high utilisation rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Michelin XM 47</th>
<th>CGS AC70G</th>
<th>CGS AC70+</th>
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<tbody>
<tr>
<td>405/70 R20</td>
<td>405/70 R24</td>
<td>445/65 R22.5</td>
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<tr>
<td>425/75 R20</td>
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</tr>
<tr>
<td>445/70 R24</td>
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<td></td>
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<tr>
<td>495/70 R24</td>
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</tr>
<tr>
<td>Directional</td>
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## Truck tyres

<table>
<thead>
<tr>
<th>Sector</th>
<th>Municipal, building construction</th>
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</thead>
<tbody>
<tr>
<td>Area of use</td>
<td>Roads, winter service operations</td>
</tr>
<tr>
<td>Good suitability</td>
<td>Paved roads, trails and areas</td>
</tr>
<tr>
<td>Less suitable</td>
<td>Soft ground with low load capacity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goodyear Ultra Grip WTS</th>
<th>Dunlop SP444</th>
<th>Michelin Multiway 3D XDE</th>
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</thead>
<tbody>
<tr>
<td>295/60 R22.5</td>
<td>315/80 R22.5</td>
<td>315/80 R22.5</td>
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- Directional -
## Truck tyres

<table>
<thead>
<tr>
<th>Sector</th>
<th>Municipal, building construction</th>
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</thead>
<tbody>
<tr>
<td>Area of use</td>
<td>Roads, winter service operations</td>
</tr>
<tr>
<td>Good suitability</td>
<td>Paved roads, trails and areas</td>
</tr>
<tr>
<td>Less suitable</td>
<td>Soft ground with low load capacity</td>
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</table>

<table>
<thead>
<tr>
<th>Conti HDW2</th>
<th>Conti HSW2</th>
<th>Conti HTC1</th>
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<tbody>
<tr>
<td>315/80 R22.5</td>
<td>385/65 R22.5</td>
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<table>
<thead>
<tr>
<th>Directional</th>
<th>Non-directional</th>
<th>Non-directional</th>
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### Road-rail tyres

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<td>Road/rail (dual operation)</td>
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<td>Rubber/steel</td>
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<tr>
<td>Less suitable</td>
<td>Soft ground with low load capacity</td>
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**Mitas SRT**  
275/90 R22.5

**Non-directional**
## Tyre load capacity

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<th>Li</th>
<th>kg</th>
<th>Li</th>
<th>kg</th>
<th>Li</th>
<th>kg</th>
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<td>2360</td>
<td>143</td>
<td>4000</td>
<td>142</td>
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</table>

Li: Load index per tyre
## Speed allocations

<table>
<thead>
<tr>
<th>Maximum vehicle speed ** (km/h)</th>
<th>Permissible tyre load capacity* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
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<td>125</td>
<td>88</td>
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<tr>
<td>130</td>
<td>88</td>
</tr>
</tbody>
</table>

* At speeds above the reference speed only lower tyre load capacities may be utilised. In addition, the air pressure applicable for the 'tyre load capacity' chart may not be reduced.

** Interpolation permissible
## Speed allocations

<table>
<thead>
<tr>
<th>Application-dependent vehicle speed ** (km/h)</th>
<th>Permissible tyre load capacity* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standsstill</td>
<td>F</td>
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<tr>
<td>up to 5</td>
<td>250</td>
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<tr>
<td>up to 10</td>
<td>210</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

* At speeds above the reference speed only lower tyre load capacities may be utilised. In addition, the air pressure applicable for the 'tyre load capacity' chart may not be reduced.

** Interpolation permissible
Dimensions

Technical drawing for U 200 BlueTec 6, model designation 405.090

Dimensions

Shown with suspension compressed:

Front axle: 3500 kg
Rear axle: 5500 kg
GVW: 9000 kg

Turning circle \( \varnothing \) 12.6 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver’s seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PB5] Platform
[Q95] Trailer coupling, \( B = 48.7 \)
Technical drawing for U 300 BlueTec 6, model designation 405.104

Shown with suspension compressed:

Front axle: 3790 kg
Rear axle: 6000 kg
GVW: 9790 kg

Turning circle Ø 13.7 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver's seat, double seat
[E87] Implement socket, 32-pin
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[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PBS] Platform
[Q95] Trailer coupling, B = 48.7
Technical drawing for U 400 BlueTec 6, model designation 405.105

Shown with suspension compressed:

Front axle: 4170 kg
Rear axle: 7800 kg
GVW: 11,970 kg

Turning circle $\varnothing$ 13.7 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver’s seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PB5] Platform
[Q95] Trailer coupling, $B = 48.7$
Technical drawing for U 400 BlueTec 6, model designation 405.110

Shown with suspension compressed:

Front axle: 4170 kg
Rear axle: 7800 kg
GVW: 11,970 kg
Turning circle $\varnothing$ 14.3 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver's seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PBS] Platform
[Q95] Trailer coupling, B = 48.7
Technical drawing for U 400 BlueTec 6, model designation 405.125

Shown with suspension compressed:

Front axle: 4170 kg
Rear axle: 7800 kg
GVW: 11,970 kg
Turning circle $\varnothing$ 16.5 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver’s seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PB5] Platform
[Q95] Trailer coupling, B = 48.7
Technical drawing for U 500 BlueTec 6, model designation 405.202

Shown with suspension compressed:

Front axle: 5660 kg
Rear axle: 9500 kg
GVW: 15,160 kg

Turning circle \( \phi \) 15.1 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver's seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PBS] Platform
[Q95] Trailer coupling, \( B = 48.7 \)
Technical drawing for U 500 BlueTec 6, model designation 405.222

Shown with suspension compressed:

Front axle: 5660 kg
Rear axle: 9500 kg
GVW: 15,160 kg

Turning circle \( \varnothing \) 16.9 m

Special versions
[B5B] Trailer braking system
[C7H] Side underride guard
[CD6] Mounting parts, between axles
[CP5] Front mounting plate
[DB5] Co-driver's seat, double seat
[E87] Implement socket, 32-pin
[HE1] Tipper hydraulics
[HN8] Hydraulics, circuit 2, 4-cell
[H55] Hydraulic line, rear, cell 1+2
[H58] Pressure line, circuit 2, rear
[H59] Separate return line, rear
[L47] Auxiliary headlamps
[L51] Rotating beacon, left+right
[N 08] Front PTO shaft
[P60] + [PB5] Platform
[Q95] Trailer coupling, \( B = 48.7 \)
General information

Gradient values
With the aid of diagrams of vehicle climbing resistance, trailer climbing resistance and the pulling power diagram, we can compute the slope climbing ability, the required gear and the attainable speed in the given driving situation.

Calculation example
A U 400 with a gross vehicle weight of 10 t and a 30 t trailer is to drive up a 20% gradient.

On the basis of this information, determine the vehicle climbing resistance and the trailer climbing resistance from the corresponding diagrams:

Vehicle climbing resistance: 19.5 kN
Trailer climbing resistance: 62.0 kN

Vehicle climbing resistance + trailer climbing resistance = total resistance
19.5 kN + 62.0 kN = 81.5 kN

Given the total resistance, determine the required gear and the maximum possible speed from the pulling power diagram:
Required gear: 1st gear
Maximum speed: 5 km/h

Slip limit
Calculate the pulling power given the friction coefficient:
Friction coefficients for concrete and asphalt:
Dry: 0.85 - 1.0
Damp: 0.50 - 0.65
Wet: 0.40 - 0.55

Pulling power (kN) = vehicle weight (t) x friction value x 9.81
### Vehicle climbing resistance

- **Pulling power (kN)**
  - **Vehicle weight [t]**

### Trailer climbing resistance

- **Pulling power (kN)**
  - **Trailer weight [t]**

- **without rolling resistance (taken into account in pulling power diagram)**
- **with rolling resistance 150 N/t**
Pulling power diagram U 200

Vehicle model: U 200
Gross vehicle weight: 8.5 t
Engine output: 115 kW at 2200 rpm
Transmission: UG100-8 / 9.57-0.74
Final drive ratio: 6.53
Tyres: 295/60 R 22.5
Road surface: concrete
Slip limit (μ=0.85): 71

Pulling power diagram U 300

Vehicle model: U 300
Gross vehicle weight: 11 t
Engine output: 130 kW at 2200 rpm
Transmission: UG100-8 / 9.57-0.74
Final drive ratio: 6.53
Tyres: 315/80 R 22.5
Road surface: concrete
Slip limit (μ=0.85): 92
Vehicle model: U 400 170 kW
Gross vehicle weight: 11.99 t
Engine output: 170 kW at 2200 rpm
Transmission: UG100-8 / 9.57-0.74
Final drive ratio: 6.38
Tyres: 315/80 R 22.5
Road surface: concrete
Slip limit (μ=0.85): 100

Vehicle model: U 400 200 kW
Gross vehicle weight: 13 t
Engine output: 200 kW at 2200 rpm
Transmission: UG100-8 / 9.57-0.74
Final drive ratio: 6.38
Tyres: 315/80 R 22.5
Road surface: concrete
Slip limit (μ=0.85): 108
Pulling power diagram U 500

Vehicle model: U 500
Gross vehicle weight: 16.5 t
Engine output: 220 kW at 2200 rpm
Transmission: UG100-8 / 9.57-0.74
Final drive ratio: 6.38
Tyres: 385/65 R 22.5
Road surface: concrete
Slip limit (μ=0.85): 138

The speeds of the work range are given along the upper X axis.

Trailer rolling resistance

200 N/t +2.5 kN
150 N/t 0 kN
100 N/t -2.5 kN