Technical data sheet

TERBERG/ZAGRO

RR222/RR282 6x4 Road/Rail vehicle

OPERATING CONDITIONS
Outside temperature limits …..-25°C to +50°C
Max. GCW RR222: ….. 2000T @ 0% gradient
Max. GCW RR282: ….. 2800T @ 0% gradient
Max. tractive force: 170 kN (0.85 friction value)
Track gauge standard: ….. 1435 mm
Wide track gauge optional: 1524 or 1668 mm
Narrow track gauge optional: 1000 or 1067 mm
Vehicle weight incl. ballast: ….. 29.000 kg

ENGINE
RR222: Mercedes-Benz OM 926 LA (Tier 4i/Stage 3B)*
Six-cylinder four-stroke direct injection diesel engine with turbo charging and intercooler.
Engine equipped with Mercedes (AdBlue) system including SCR-catalyst.
Displacement: ….. 7.2 l
Bore: ….. 106 mm
Stroke: ….. 136 mm
Compression ratio: ….. 17.5:1
Output: ….. 175 kW (238 hp) at 2200 rpm
Torque: ….. 850 Nm at 1200-1600 rpm

RR282: Mercedes-Benz OM 926 LA (Tier 4i/Stage 3B)*
Six-cylinder four-stroke direct injection diesel engine with turbo charging and intercooler.
Engine equipped with Mercedes (AdBlue) system including SCR-catalyst.
Displacement: ….. 7.2 l
Bore: ….. 106 mm
Stroke: ….. 136 mm
Compression ratio: ….. 17.5:1
Output: ….. 210 kW (285 hp) at 2200 rpm
Torque: ….. 1120 Nm at 1200-1600 rpm
* Engine selection depending on operating region and availability. For more info contact our sales team.

GEARBOX
ZF type 6WG211
Automatic Powershift transmission with 6 forward gears and 3 reverse gears, high efficiency torque converter with Lock-Up clutch for low fuel consumption and high operating speeds.

<table>
<thead>
<tr>
<th>Gear ratio</th>
<th>Maximum speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.63F+0.041R</td>
<td>4.0 +4,5 (F1+R1)</td>
</tr>
<tr>
<td>3.702F</td>
<td>6.1 (F2)</td>
</tr>
<tr>
<td>2.304F+2.044R</td>
<td>9.8+11,1 (F3+R2)</td>
</tr>
<tr>
<td>1.501F</td>
<td>15,1 (F4)</td>
</tr>
<tr>
<td>0.963F+0.854R</td>
<td>23.6+26,6 (5F+R3)</td>
</tr>
<tr>
<td>0.627</td>
<td>36,2 (F6)</td>
</tr>
</tbody>
</table>

COOLING SYSTEM
Plate and bar type radiator of heavy-duty construction mounted on rubber silent blocks with separate air to air transmission oil cooler and engine intercooler all mounted side by side.

EXHAUST SYSTEM
SCR-catalyst mounted in well protected vertical position behind cabin.
Mercedes-Benz AdBlue injection system with heated lines and 40 liter ABS-tank.

CHASSIS
Fully welded, solid and very warp resistant ladder frame.
Profile measures 200 x 100 x 10 mm.
Air reservoirs and fuel tank mounted inside chassis.
Access steps with anti-slip surface integrated in the chassis.

FUEL TANK
Steel tank, 400 l capacity. Mounted on top of the chassis counterweight. Very easily accessible from both sides.

FRONT AXLE
Terberg TTA 60 Non-driven steering axle.
Axle load: max. 10.000 kg (at 20 km/h)*
* Actual axle load capacity depending on tyre load rating.

REAR AXLES
2x Kessler D81DPL478 Gear ratio 22.11:1
Axle load max. 15.000 kg/axle (at 20 km/h)*
Axle load in driving condition ±11.500kg/axle
* Actual axle load capacity depending on tyre load rating.

SUSPENSION
Front: Parabolic leaf springs in rubber mountings with 2 telescopic shock absorbers and additional rubber stops.
Additional air bellow for optimum driving height on road and maximum front wheel lift height when operating on rail.

Rear: Solid walking beam mounting with heavy-duty maintenance-free rubber mounting bushes.

RIMS AND TYRES
Front axle: 2x 11R22.5 on steel rims 8.25x22.5
Rear axles: 4x 12.00R20 on steel rims 8.0x20

Specification may change without prior notice
**STEERING SYSTEM**
Fully hydrostatic orbitrol steering system with priority valve and double acting steering cylinder. Emergency steering property.

- Maximum steering pressure: 175 bar
- Steering wheel diameter: 350 mm
- Steering lock angle: 48°
- Turning circle over front plate: 13.82 m

Automatic hydraulic steering wheel locking while rail operation.

**TRACTOR BRAKE SYSTEM**
Dual-circuit compressed-air brake system for front and rear axles.

- Front axle: S-cam brake system.
- Rear axles: high capacity simplex wedge brake system.
- Automatic slack adjusters front and rear.
- Air reservoirs: 2 x 40 l + 2 x 30 l
- 2-cylinder air compressor.
- Air dryer with integrated pressure reducer.
- Front axle: membrane brake cylinder.
- Rear axles: spring-brake membrane brake cylinders on both axles.

* System pressure: 7.8 - 8.5 bar

**ELECTRICAL SYSTEM**
24 Volt system.

- Alternator: 28 V / 80 A
- Batteries: 2 x 12 Volt / 140 Ah
- Output starter: 3.9 kW
- Fuses and relays easy accessible mounted in central electrical box inside the cabin.
- Wiring with easy readable code numbers. All dashboard check/control lights as LED.

**LIGHTING**
Main headlights with dipped and main beam and direction indicators. LED rear lights mounted at rear of chassis, including direction indicators and brake lights. 2 working lights on rear side of driver cabin.

**HYDRAULIC SYSTEM**
Engine driven hydraulic gear pump for steering system only.

Heavy Duty PTO drive on rear of transmission to drive hydraulic piston/gear pumps which drive the rotating compressor (of the wagon brake system) and the track guiding system.

**CABIN**
Full width, execution for 2 persons.

Forward facing main driver’s position on L.H. side with all necessary controls.

**Dimensions outside:**
- width: 2380 mm
- length: 1593 mm
- height: 1821 mm

Cabin construction of overdimensioned strong steel profiles to resist latest Rops/Fops regulations.

Anti-vibration cabin mounting and additionally air-suspended.

Rear cabin door arranged centrally for safe and comfortable entrance and exit. Spacious safety windows for excellent panorama view (toned).

Each 2 sliding windows on driver’s and co-driver’s side.

Driver cabin can be tilted electro-hydraulically up to 65° for comfortable accessibility of the engine compartment for maintenance works.

- 2 Parallel wipers on front window.
- 1 wiper at each rear window.

2 air-suspended Isri 6860 series comfort seats for driver and co-driver with armrests. Adjustable 2-point safety belts. Mounted on console with extra storage space.

Air blower heating/ventilation three-step with recirculation system.

Air conditioning system.

**Dashboard controls:**
- Throttle pedal
- Foot brake pedal
- Parking brake lever
- Ignition key switch
- Dashboard light
- Hazard lights
- Lighting
- Gear selector
- Indicator lights:
  - Oil pressure
  - Alternator charging
  - Direction indicator
  - Main beam
  - Parking brake activated
  - Air filter clogged
  - Fuel pre-filter clogged
- Engine revolution counter
- Operating hours counter
- Control system with optical and acoustical warning signal for:
  - High temperature gearbox
  - Low oil pressure engine
  - High temperature engine
  - Low air pressure circuit 1
  - Low air pressure circuit 2
  - Low fuel level
  - Low voltage
- Combined switch for:
  - Direction indicators
  - Wipers front window
  - Main/dipped beam
  - Horn

Specification may change without prior notice
### TRACK GUIDING SYSTEM
- For track gauge 1435 mm
- 2 heavy rail guiding axles with each 2 guide wheels Ø 400 mm
- With profile 70° H4020
- Including track sweepers
- Colour monitor with 2 colour cameras as rerailing assistance
- Rear rail guiding axle as swing axle via central bolt
- Warp resistant mounting frame rear at the vehicle frame
- Front rail guiding axle
- Separately controllable hydraulic control for lifting/lowering of the front and rear track guiding with pressure compensation and damping
- Combined ergonomic control unit in the driver cabin
- LCD indication in the driver cabin with optic-acoustic warning in case of hydraulic pressure loss
- Automatic pressure adjustment
- CAN-Bus control
- Automatic fixation of the hydraulic steering at the front axle while rail operation
- Automatic lifting of front axle while rail operation
- Hydraulic safety locking of the rail axles while road operation
- Open-circuit guards directly at the cylinders
- Manual hand pump for lifting of the rail axles in case of vehicle hydraulic failure
- Pneumatically operated footstep with hand grip front right (when shunting configuration)
- For trailing loads up to 2800 tons,
- Compressor unit with rotation compressor 2500 - 3000 l/min electronically controlled, 10 bar reservoir pressure
- Electronic hand-brake valve for sensitive control of the wagon brake system
- Air reservoirs with 600 l air reserve
- Each 2 brake hoses (HL + HBL) with LH3 shut-off cock rear left and right

### STANDARD COUPLING SYSTEM
2 buffer as per UIC 526-1 with UIC-hook and mechanical shackles rear.

### SUPPLEMENTS FOR THE STANDARD COUPLING SYSTEM
- Automatic shunting coupling RK 900
  - Integrated swivelling device.
  - Pneumatic operation of the coupling head from the driver cabin.
  - Additional manual emergency release.
  - Elimination of mechanical shackles.
- Automatically operated throw shackle
  - Pneumatic operation of the throw shackle.
  - Elimination of mechanical shackles.

### OPTIONS BASIC VEHICLE
- Driver cabin as right-hand drive
- Elimination of air conditioning
- Engine pre-heating 220V
- Hot water auxiliary heating for heating of the cooling water circuit
- 2 additional working lights at the top-front of the driver cabin
- Radio with CD-Player
- Co-driver’s seat with rotating console (180°) makes second operator stand for rail operation with bidirectional trailing load (required control elements are arranged twice)
- Draw bar coupling front and/or rear (not in combination with automatic shunting coupling RK 900)
- Track gauges from 1000 to 1668 mm
- Special guide wheel profile according to customer’s specification
- Emergency stop switches at all four corners of the vehicle (function: engine stop, apply parking brake, ventilate wagon brake system)
- Illumination of guide wheels
- Camera for supervision of the rear coupling system
- Signalling and warning devices in special execution
- Radio remote control for rail operation (Loc Control 100 RS Compact, Schweizer Electronic)
- Footstep (pneumatically retractable) with hand grip front left
- Footstep (pneumatically retractable) with hand grip rear right
- Footstep (pneumatically retractable) with hand grip rear left
- Pneumatic sanding equipment
- Standard coupling system front in combination with:
  - Each 2 brake hoses (HL + HBL) with LH3 shut-off cock front left and right
- Coupling systems other than UIC on request

### RAILWAY LIGHTING
Signalling and warning device.

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**Tractive Effort Diagram Mercedes OM926LA-210kW - ZF6WG211**

RR282 with Lock-Up, GCW 2800 Ton (2kg/ton), axleratio 22.11 Tyres 12.00R20XZM
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