

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.

Gear ratio	Maximum speed (km/h)
5.683F+5.041R	4,0 +4,5 (F1+R1)
3.702F	6,1 (F2)
2.304F+2.044R	9,8+11,1 (F3+R2)
1.501F	15,1 (F4)
0.963F+0.854R	23,6+26,6 (5F+R3)
0.627	36,2 (F6)

Tyres rear axle: 4x 12.00R20 Michelin XZM  
 axle ratio 22.11:1

#### 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  
 Axle load in rail operation ±10.000kg/axle (total 20.000 kg traction mass)  
 \* Actual axle load capacity depending on tyre load rating.

#### SUSPENSION

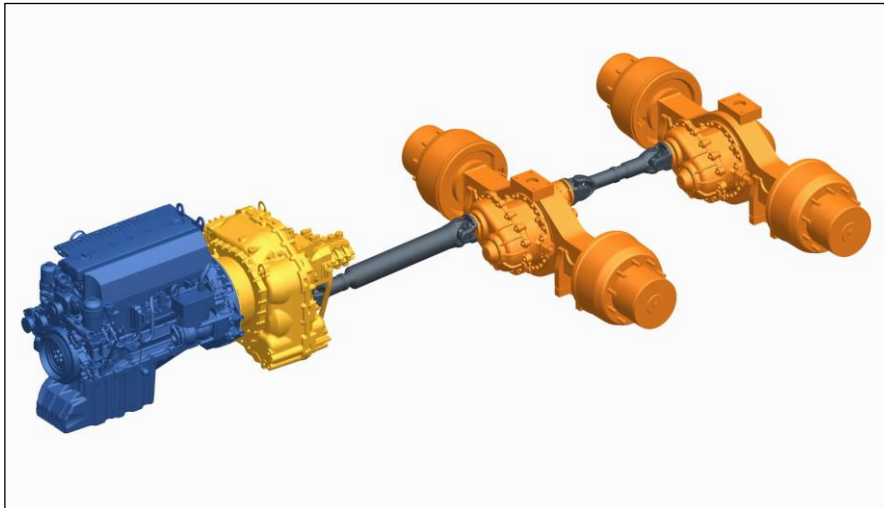
**Front:** Parabolic leaf springs in rubber mountings with 2 telescopic shock absorbers and additional rubber stops.  
 Additional air bellow for optimum driving height on road and maximum front wheel lift height when operating on rail.

**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

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## 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.

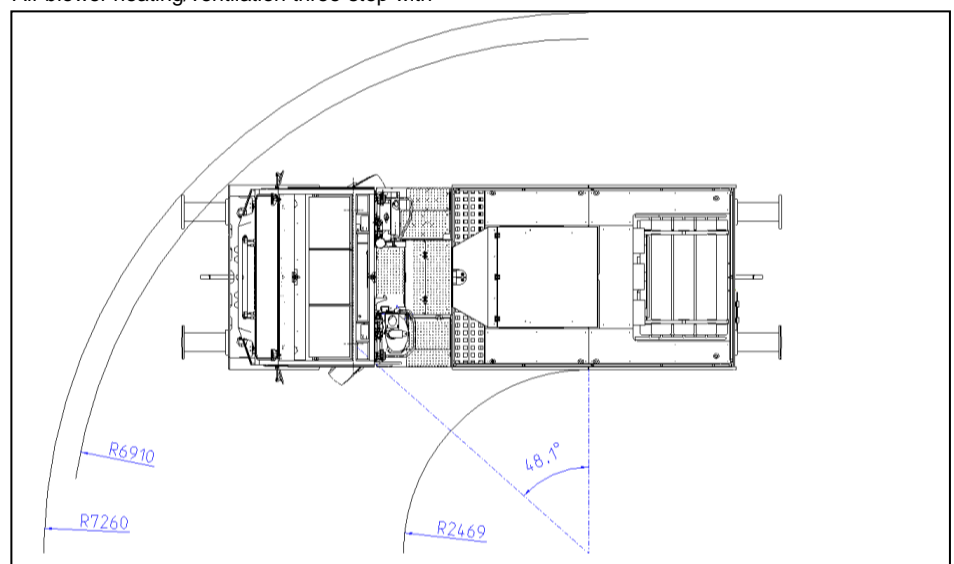
Driver cabin can be tilted electro-hydraulically up to 65° for comfortable accessibility of the engine compartment for maintenance works.

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

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## TRACK GUIDING SYSTEM

- For track gauge 1435 mm
- 2 heavy rail guiding axles  
With each 2 guide wheels  $\varnothing$  400 mm
- With profile 70° H4020
- Including track sweepers
- Colour monitor with 2 colour cameras as rereiling 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, max. 84 axles
- Compressor unit with rotation compressor 2500 - 3500 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 shackle 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 shackle.
- **Automatically operated throw shackle**  
Pneumatic operation of the throw shackle.  
Elimination of mechanical shackle.

## OPTIONS BASIC VEHICLE

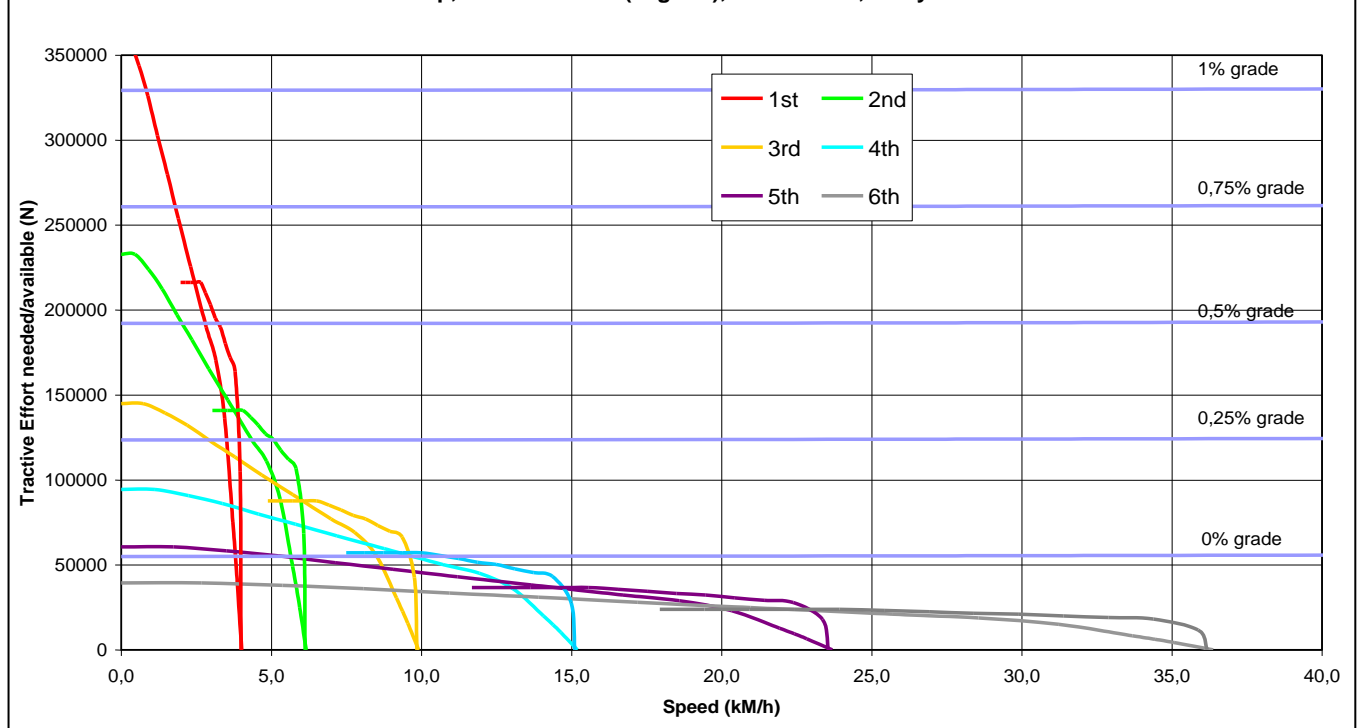
- Driver cabin as right-hand drive
- Elimination of air conditioning
- Engine pre-heating 220V
- Hot water auxiliary heating for heating of the cooling water circuit
- 2 additional working lights at the top-front of the driver cabin
- Radio with CD-Player

- 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.

**Tractive Effort Diagram Mercedes OM926LA-210kW - ZF6WG211**  
RR282 with Lock-Up, GCW 2800Ton (2kg/ton), axleratio 22,11 Tyres 12.00R20XZM



## WAGON BRAKE SYSTEM

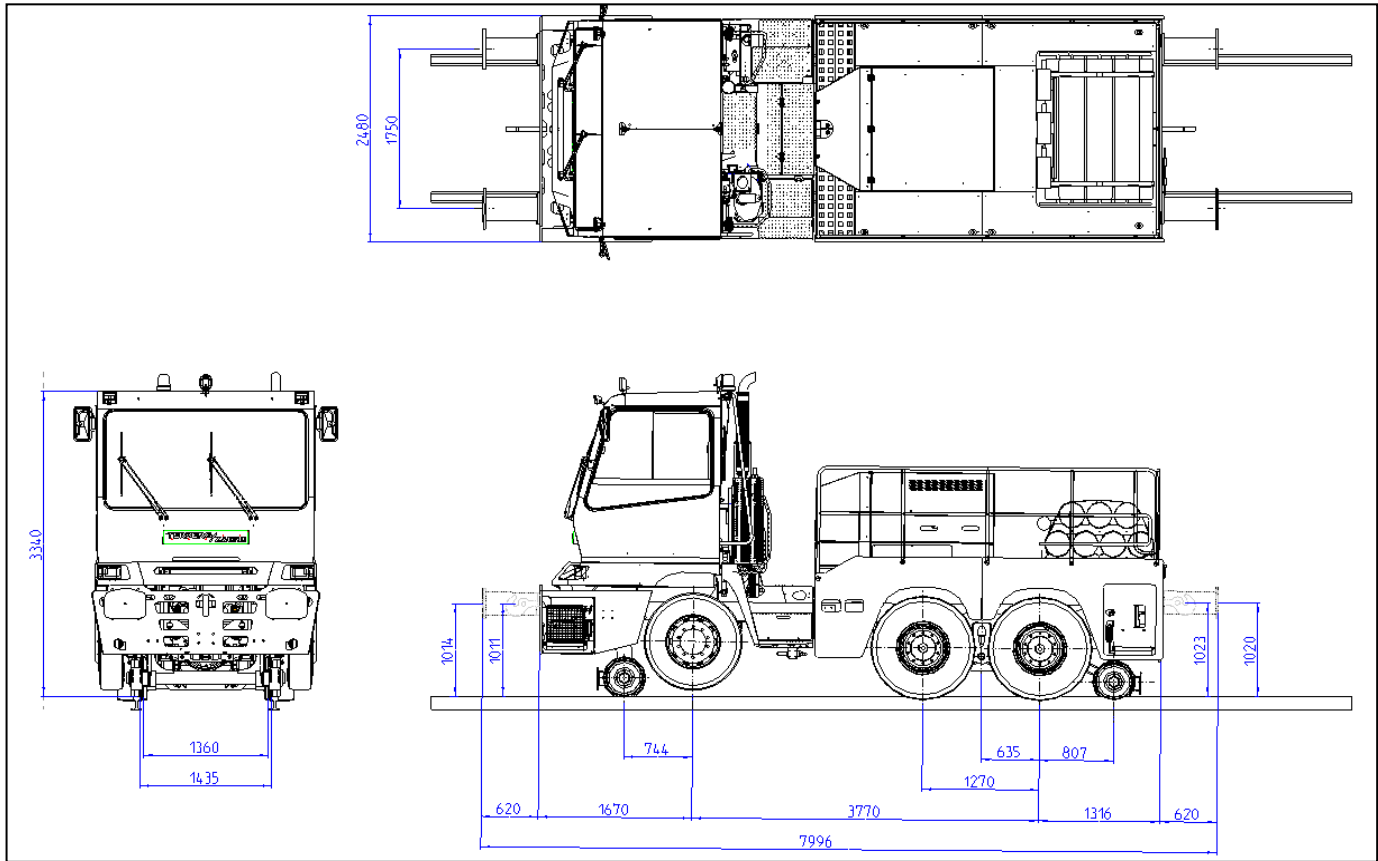
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## OPTIONS FOR RAIL OPERATION

15-12-2015

Specification may change without prior notice

# TERBERG/ZAGRO RR222/RR282 6x4 Road/Rail vehicle



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