Mining dump truck BELAZ-75710 with payload capacity of 450 tonnes

Designed for transportation of rock mass in complex technical conditions of deep mines, at open cast mining sites on technological roads under various climatic operating conditions (at ambient temperature range from -50 to +50 °C).

**Engine**

- **Model**: MTU DD 16V4000
- **Two diesel, four-cycle engine** with V-type cylinders arrangement, direct fuel injection, electric control system, gas turbine charging and intermediate cooling of the charged air. The engine complies with toxic substances emission requirements of Tier1.

**Transmission**

- AC electric drive with two traction alternators, two traction electric motors, motor-wheel reduction gear units, microprocessor control system, adjustment and control devices.
- Double-row planetary motor-wheel reduction gear unit is of differential type.
- **Max speed**: 60 km/h
- **Motor-wheel reduction gear unit ratio**: 29.20

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traction alternator</td>
<td>YJ177A</td>
</tr>
<tr>
<td>Traction electric motor</td>
<td>1TB3026-0GB03</td>
</tr>
</tbody>
</table>

**Suspension**

Conventional suspension for front and rear wheels, cylinders are pneumohydraulic (nitrogen and oil) with in-built hydraulic damper, two cylinders both on the front axle and on the rear axle.

- **Cylinder piston stroke, mm**
  - front: 200
  - rear: 170

**Steering**

- **Hydrostatic**
- **Steerable front wheels**
- **Steerable wheels rotation angle, degrees**: 39
- **Turning radius, m**: 19.8
- **Overall turning diameter, m**: 45
- **Complies with ISO 5010 requirements**

**Hydraulic system**

Combined hydraulic system for body hoist, steering and brake system.

- **Oil pump**: axial-piston two-section variable-flow pump with pressure regulator.
- **Body hoist cylinders**: are telescopic with two stages and one stage of double action.
- **Max pressure in hydraulic system, MPa**: 26
- **Filtering degree, μm**: 10

**Cab**

- **Two-seat, two-door**, with an additional seat for the passenger and pneumatically cushioned adjustable operator's seat. The cab meets the requirements of EN 474-1 and EN 474-6 for permissible limits of internal sound levels, vibration, concentration of poisonous substances and dust.
- **Operator's workplace complies with ROPS safety system requirements**.
- **Noise level inside the cab** is not more than 80 dB(A).
**Weight**

- Maximum payload capacity of the dump truck, kg: 450000
- Empty weight, kg: 360000
- Gross weight, kg: 810000

**Weight distribution on axles, %:**

<table>
<thead>
<tr>
<th></th>
<th>empty</th>
<th>loaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>front axle</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>rear axle</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
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**Refill capacities, l**

- Fuel tank: 2x2800
- Engine cooling system: 2x690
- Engine lubrication system: 2x225
- Hydraulic system: 2800
- Motor-wheel reduction gear units: 600 (150x4)
- Suspension cylinders:
  - front: 127.6 (63.8x2)
  - rear: 127.6 (63.8x2)

**Tires**

- Pneumatic, tubeless, with quarry tread pattern.
- Designation: 59/80R63
- Internal pressure, MPa: 0.7
- Rim designation: 44.00-63/5.0

**Frame**

Frame is a welded structure of high-strength low-alloyed steel. Longitudinal box-section variable height side rails are interconnected by cross-members. Castings are applied in highload zones.

**Braking system**

The braking system meets international safety requirements according to ISO 3450 and comprises service, parking, auxiliary and emergency brakes.

- **Service brake:**
  - Front wheels – dry disk brakes with automatic clearance adjustment.
  - Rear wheels – dry disk brakes with automatic clearance adjustment. The disks are mounted on the shafts of traction electric motors.
- **Parking brake:**
  - Two brake gears on the external brake disk of the traction motor. Spring actuation, hydraulic control.
- **Auxiliary brake:**
  - Electrodynamic braking with traction electric motors in alternator mode with forced air cooling of brake resistors.
- **Emergency brake:**
  - Parking brake, intact circuit of service brake and retarder are used.

**Special equipment**

- Enhanced combined fire-fighting system with automatic actuation (standard)
- Engine liquid preheater (standard except for tropical modification of dump trucks)
- Active video surveillance system (standard)
- Refueling center (standard)
- Heating system for the electric drive control cabinet (standard)
- Telemetering tire inflation control system (standard)
- Loading and fuel control system (standard)
- High-voltage line proximity alarm (option)
- Fettling of the bottom body (standard)
- Heater and conditioner unit (standard)
- Wiggins fast fueling system (standard)
- Diagnostics system (standard)

**Overall dimensions, mm**

- **Body**
  - Volume:
    - struck: 164.9 m³
    - heaped: 268.3 m³

- **Frame**
  - Dimensions:
    - Height: 2860 mm
    - Width: 2000 mm

**Traction and braking performance**

- **Traction performance**
  - Speed, km/h: 0 - 100
  - Traction on wheels, kg: 3000
- **Braking performance**
  - Speed, km/h: 0 - 100
  - Braking force on wheels, kg: 2500