Mine dump truck BELAZ-75570 of payload capacity 90 tonnes (99 short tons)

It's designed for transportation of rock mass in difficult mining and technical conditions of deep mines, at mineral deposit open pits on technological roads under various climatic operating conditions (at ambient temperature from -50 to +50 °C).

### Engine

<table>
<thead>
<tr>
<th>Model</th>
<th>CUMMINS QST30-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-cylinder turbocharged and intercooled direct diesel engine with V-type cylinders arrangement.</td>
<td></td>
</tr>
<tr>
<td>Rated power @ 2100 rpm, kW (hp)</td>
<td>783 (1065)</td>
</tr>
<tr>
<td>Maximum torque @ 1300 rpm, N·m</td>
<td>4630</td>
</tr>
<tr>
<td>Number of cylinders</td>
<td>12</td>
</tr>
<tr>
<td>Cylinders displacement, l</td>
<td>30</td>
</tr>
<tr>
<td>Cylinder diameter, mm</td>
<td>140</td>
</tr>
<tr>
<td>Piston stroke, mm</td>
<td>165.1</td>
</tr>
<tr>
<td>Specific fuel consumption at rated power, g/kW hr</td>
<td>204</td>
</tr>
<tr>
<td>Air cooling is performed by three-stage filter with dry-type elements.</td>
<td></td>
</tr>
<tr>
<td>Engine exhaust expulsion is performed through body. Circulating lubrication system is pressurized and designed with “wet” sump. Single-loop fluid cooling system with forced circulation. Oil cooling is performed by oil-to-water heat exchanger. Fluid preheating system. Pneumatic starter starting system. Electric equipment system voltage, V</td>
<td></td>
</tr>
</tbody>
</table>

### Hydromechanical transmission

"Allison" M8610A planetary gearbox with torque converter, pump drive, automatic control system. The transmission cooling system is operated through heat exchanger. Maximum dump truck travel speed, km/h: 60

<table>
<thead>
<tr>
<th>Gear</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4,24</td>
<td>5,75</td>
</tr>
<tr>
<td>2</td>
<td>2,32</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1,69</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1,31</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1,00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0,73</td>
<td></td>
</tr>
</tbody>
</table>

### Suspension

Suspension is conventional for front and driving axles and equipped with trailing arms, central joints and transverse rods. Cylinders are pneumohydraulic (nitrogen and oil) with inbuilt hydraulic shock absorber. Two cylinders are on the front axle and two cylinders are on the rear axle.

<table>
<thead>
<tr>
<th>Cylinder piston stroke, mm</th>
<th>260</th>
</tr>
</thead>
<tbody>
<tr>
<td>- front</td>
<td>210</td>
</tr>
<tr>
<td>- rear</td>
<td></td>
</tr>
</tbody>
</table>

### Steering

Hydrostatic steering with steerable front wheels. Steering angle, degree: 38

| Turning radius, m | 11 |
| Overall turning diameter, m | 24 |
| The steering meets ISO 5010 requirements. | |

### Brakes

Dump truck brake system meets ISO 3450 international safety requirements and is equipped with service, parking, auxiliary and emergency brake systems.

**Service brake system** consists of front wheels dry-type disk brakes and rear wheels multiple-disk oil-cooled brakes. Actuator is hydraulic and separate for front and rear wheels.

**Parking brake system** is disk brake gear on final drive driving shaft with spring actuator and hydraulic control.

**Auxiliary brake system** uses rear wheels multiple-disk oil-cooled brakes with hydraulic actuator. Braking by service brakes with the view of deceleration is effected by separate foot pedal.

**Emergency brake system** uses parking brake and operable circuit of service brakes.

### Hydraulic drive

Hydraulic system is combined for body dumping gear, steering and brakes actuator. The system is equipped with gear-type oil pumps and three-stage telescopic body lifting cylinders with one stage of double action.

| Body lifting time, s | 20 |
| Body lowering time, s | 19 |
| Maximum pressure in hydraulic system, MPa | 16,5 |
| Maximum pump delivery @ 2100 rpm, dm³/min | 464 |
| Filtration degree, mcm | 10 |
**Body**
Welded bucket-type body with FOPS safety system, protective canopy, engine exhaust heating, device for mechanical fixing in raised position, rock-finders and rock-ejectors.

Body capacity, m³:
- struck: 37.7
- heaped: 53.3 (standard)
- 44.5
- 60.2 (optional)
- 75.0
- 91.3 (optional)

**Frame**
Frame is welded of high-strength low-alloy steel with application of cast elements at the maximum loading points and equipped with box-section variable-height side-members interconnected by cross-members.

**Driving axle**
Mechanical driving axle is equipped with single-stage bevel final drive, bevel differential with four pinions and planetary hub drives with spur pinions.

Ratios:
- final drive: 2.93
- hub drive: 7.44
- driving axle total: 21.8

**Driveline**
Driveline consists of two open-type cardan shafts with joints on needle bearings that join hydromechanical transmission to engine and driving axle. Flexible coupling is mounted between front cardan shaft and engine. Front cardan shaft is equipped with protective guard.

**Cab**
Two-man two-door cab is equipped with air-sprung adjustable driver seat, additional trainee seat and adjustable steering column. The cab meets EN 474-1 and EN 474-6 requirements that specify permissible levels of in-cab noise, vibration, content of hazardous substances and dust. Driver's workplace meets ROPS safety requirements.

In-cab noise level is not more than 80 dB(A).
Local vibration level is not more than 126 dB(A).
Overall vibration level is not more than 115 dB(A).

**Tires**
Radial or diagonal tubeless air tires with quarry tread pattern.
- Tire designation: 27.00R49 or 31/90-49
- Inflation pressure, MPa: 0.6/0.65
- Rim designation: 19.50-49/4.0

**Overall dimensions, mm**

![Diagram](Image)

*Overall dimensions are specified for basic sitting-up of the dump truck
**Excepting dump trucks of tropicalized design

**Weight**
- Maximum payload capacity, kg: 90000
- Unladen weight, kg: 73000
- Gross weight, kg: 163000

**Capacities, l**
- Fuel tank: 1400
- Engine cooling system: 380
- Engine lubrication system: 140
- Hydraulic system: 405
- Hydraulic cooling system of multiple-disk oil-cooled brakes: 360
- Gearbox: 100
- Final drive: 145
- Hub drives: 90 (45x2)
- Suspension cylinders:
  - front: 33 (16.5x2)
  - rear: 86 (43x2)

**Special equipment**
- Combined fire-fighting system with remote actuation (standard)
- Starting preheater (standard) **
- Centralized lubrication system (standard)
- Heating and conditioning unit (standard)
- Fuel and loading control system (standard)
- Video observation system (standard)
- Telemetering tire pressure control system (standard)
- High-voltageline attention device (standard)
- Fettling of body floor (option)

**Propulsion and Retarding**

![Graph](Image)

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