

Mine dump truck BELAZ-75302 of payload capacity 220 tonnes (243 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

Model	MTU DD 16V4000
Four-cycle turbocharged and intercooled direct diesel engine with V-type cylinders arrangement and electronic control system. The engine meets Tier1 emission requirements.	
Gross power @ 1900 rpm, kW (hp)	1715 (2300)
Maximum torque @ 1500 rpm, N·m	9313
Number of cylinders	16
Cylinders displacement, l	65
Cylinder diameter, mm	165
Piston stroke, mm	190
Specific fuel consumption at rated power, g/kW hr	198
Air cleaning is performed by three-stage filter with dry-type elements. Engine exhaust routed through body. Circulating lubrication system is pressurized and designed with wet crankcase. Double-loop fluid cooling system with forced circulation. Oil cooling is performed by oil-to-water heat exchanger. Cooling system impeller is actuated by fluid coupling with automatic control. Cooling system activation and deactivation is performed by means of thermostat.	
Pneumatic starter.	
Air pressure in starting system, MPa	0.6-0.8
Electric equipment system voltage, V	24

Electric drive

Equipped with AC/DC drive with traction alternator, two traction motors, planetary double-row reduction units, microprocessor-based control system and control devices.

Transmission ratio	27.5
Maximum dump truck travel speed, km/h	43

Traction alternator	SGT 1400-8
Traction motor	DK-724
Transmission	AC/DC

Suspension

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

Cylinder piston stroke, mm	
- front	320
- rear	290

Steering

Hydrostatic steering with steerable front wheels.

Steering angle, degree	39
Turning radius, m	15
Overall turning diameter, m	34
The steering meets ISO 5010 requirements.	

Brakes

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

Service brake system

Front wheel brakes — disc type with four brake calipers per one disc. Rear wheel brakes — disc type with two brake calipers per each disc and automatic slack adjustment. Discs are installed on the traction electric motor shafts.

Brake drive — hydraulic, separate for front and rear wheels.

Parking brake system — with two brake units per side, normally closed.

Brake actuation — by spring.

Brake control — hydraulic.

Retarder system — retarding by traction electric motors in generator mode with forced air cooled resistors.

Emergency brake system — parking brake system combined with operating service brake system circuit.

Grid resistors	UVTR 2x600 — 2 units
Power, kW	2400

Body

Welded bucket-type body with FOPS safety system, protective canopy, engine exhaust heating, device for mechanical fixing in raised position, rock-fenders and rock-ejectors.

Body capacity, m³:

	struck	heaped 2:1	struck	heaped 2:1
80	112	103	141	
92	130	117	147.4	
100	138			

Frame

Frame is welded of high-strength low-alloy steel with castings at maximum loading points with box-section variable-height side-members interconnected by cross-members.



Hydraulic drive

Hydraulic system is combined for body dumping gear, steering and brakes actuator. The system is equipped with two-section variable-displacement axial-piston oil pump and three-stage telescopic body lifting cylinders with one stage of double action.

Body lifting time, s	22
Body lowering time, s	33
Maximum pressure in hydraulic system, MPa	18
Maximum pump delivery @ 1900 rpm, dm ³ /min	698
Filtration degree, μm	10

Cab

Two-man two-door cab is equipped with air-suspension adjustable driver seat, additional passenger seat and adjustable steering column.

The cab meets EN 474-1 and EN 474-6 requirements for levels of in-cab noise, vibration, and dust.

The cab 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).

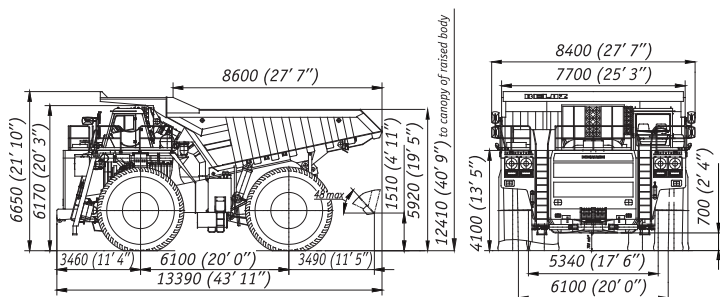
Overall vibration level is not more than 115 dB(A).

Tires

Radial or diagonal tubeless air tires with quarry tread pattern.

Tire designation	40.00R57; 46/90-57
Inflation pressure, MPa	0.7; 0.605
Rim designation	29.00-57/6.0

Overall dimensions, mm*



*Overall dimensions are specified for dump truck with standard options

Capacities, l

Fuel tank	2900
Engine cooling system	600
Engine lubrication system	265
Hydraulic system	790
Reduction gear	210 (105x2)
Suspension cylinders:	
- front	97.4 (48.7x2)
- rear	103.0 (51.5x2)

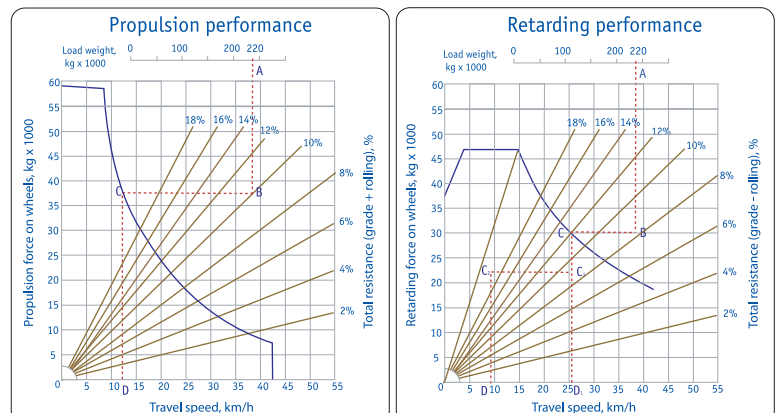
Weight

Maximum payload capacity, kg	220 000	
Unladen weight, kg	156 100	
Gross weight, kg	376 100	
Dump truck weight distribution on axles, %:		
unladen		laden
front	45	33
rear	55	67

Special equipment

- Fire-fighting system (standard)
- Starting preheater (standard)
- Heating and ventilation system (standard)
- Diagonal stairs (optional)
- Automatic lubrication system (optional)
- Loading and fuel control system (optional)
- Telemetering tire-pressure monitoring system (optional)
- Body floor lining (optional)
- Warning device for high-voltage line (optional)
- Exhaust routed undertruck (optional)
- Engine exhaust through mufflers (optional)

Propulsion and Retarding



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