Mine dump truck BELAZ-75473 of payload capacity 45 tonnes (50 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).

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**Engine**

Model: **CUMMINS KTA 19-C**

Four-cycle turbocharged direct diesel engine with in-line arrangement of cylinders.

- Rated power @ 2100 rpm, kW (hp): 448(600)
- Maximum torque @ 1500-1600 rpm, N.m: 2237
- Number of cylinders: 6
- Cylinders displacement, l: 18,9
- Cylinder diameter, mm: 159
- Piston stroke, mm: 159
- Specific fuel consumption at rated power, g/kW hr: 219
- Air cleaning is performed by three-stage filter with dry-type elements.
- Engine exhaust expulsion is performed through body.
- Mixed-type lubrication system is designed with ‘wet’ crankcase.
- Fluid cooling system with forced circulation is integrated with cooling system of hydromechanical transmission. Hydromechanical transmission oil cooling is performed by oil-to-water heat exchanger.
- Electric starter starting system.
- Electric equipment system voltage, V: 24

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**Suspension**

Suspension is conventional for front and driving axles and equipped with longitudinal and transverse rods. Cylinders are pneumohydraulic (nitrogen and oil) with inbuilt hydraulic shock absorber.

- Two cylinders are on the front axle and four cylinders are on the rear axle.
- Cylinder piston stroke, mm:
  - front: 265
  - rear: 265

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**Steering**

Hydrostatic steering with steerable front wheels.
- Steering angle, degree: 35
- Turning radius, m: 10,2
- Overall turning diameter, m: 23
- The steering meets ISO 5010 requirements.

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**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 shoe-drum brake gears for front and rear wheels with pneumatic actuator separated for front and rear wheels.
- **Parking brake system** is permanently closed shoe brake gear on final drive driving shaft with spring actuator and pneumatic control.
- **Auxiliary brake system** is hydrodynamic retarder on gearbox driving shaft with electric control.
- **Emergency brake system** uses parking brake and operable circuit of service brakes.

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**Hydromechanical transmission**

Hydromechanical transmission with three-shaft matching reduction gear, complex one-stage four-wheeled torque converter with hydraulic clutch mode and automatic locking, four-shaft gearbox with friction clutches and electrohydraulic actuator of gear change control, hydrodynamic blade-type retarder.

- Maximum dump truck travel speed, km/h: 50
- Ratio of matching reduction gear: 1:0
- Ratios of gearbox:
  - forward: 3,84, 2,27, 1,50, 0,625
  - reverse: 6,07, 1,67, 1,055

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**Hydraulic drive**

Hydraulic system is combined for body dumping gear and steering.

- The system is equipped with gear-type oil pumps, four-stage telescopic body lifting cylinders with one stage of double action.
- Body lifting time, s: 25
- Body lowering time, s: 20
- Maximum pressure in hydraulic system, MPa: 13,5
- Maximum pump delivery @ 2100 rpm, dm³/min: 260
- Filtration degree, mcn: 10
Fire-fighting system with remote actuation (standard)
Starting preheater (standard)**
Centralized lubrication system (standard)
High-voltage line attention device (standard)
Conditioner (option)
Auxiliary heater (option)
Electric-heated mirrors (optional)
Multiple-disc oil-cooled brakes for rear wheels and dry-type disk brakes for front wheels. Actuator is hydraulic and separate for front and rear wheels (optional).

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: 3,417
- hub drive: 6,0
- driving axle total: 20,50

Frame
High-strength low-alloy steel welded frame is equipped with box-section variable-height side-members interconnected by cross-members.

Capacities, l
- Fuel tank: 610
- Engine cooling system: 173
- Engine lubrication system: 47
- Hydromechanical transmission: 70
- Hydraulic system: 160
- Final drive: 24
- Hub drives: 24 (12x2)
- Suspension cylinders: 24 (4x6)

Special equipment
Fire-fighting system with remote actuation (standard)
Starting preheater (standard)**
Centralized lubrication system (standard)
High-voltage line attention device (standard)
Conditioner (option)
Auxiliary heater (option)
Electric-heated mirrors (optional)
Multiple-disc oil-cooled brakes for rear wheels and dry-type disk brakes for front wheels. Actuator is hydraulic and separate for front and rear wheels (optional).

Overall dimensions, mm*

*Overall dimensions are specified for dump truck with standard options
**Excepting dump trucks of tropicalized design

Belaz
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: 21.5
- heaped: 27.6
- 19.8
- 26.2 (optional)
- 23.7
- 29.9 (optional)
- 28.5
- 33.9 (optional)
- 35.9
- 43.3 (optional)

Propulsion and Retarding

75473

Maximum payload capacity, kg
Unladen weight, kg
Gross weight, kg
Dump truck weight distribution on axles, %:

front
rear

45,0
55,0
laden
33,0
67,0

45000
33100
78100

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