

Mining dump truck BELAZ-7530D

BELAZ

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	CUMMINS QSK 60-C
Four-cycle turbocharged and intercooled direct-injection diesel V-engine with electronic control system. The engine meets Tier 1 requirements for toxic substances emissions.	
Gross power @ 1900 rpm, kW (hp)	1715 (2300)
Maximum torque @ 1500 rpm, N.m	9053
Number of cylinders	16
Cylinders displacement, l	60.2
Cylinder diameter, mm	159
Piston stroke, mm	190
Specific fuel consumption, g/kW hr	208
Air cleaning is performed by three-stage filter with dry-type elements.	
Exhaust expulsion is routed through dump truck body.	
Pressurized circulation lubrication system with "wet" sump.	
Double-loop fluid cooling system with forced circulation.	
Oil cooling is through oil-to-water heat exchanger.	
Fluid preheating system. Fuel cooling is through radiator.	
Starting system is actuated by pneumatic starter.	
Cooling system impeller actuation is performed through hydraulic clutch with automatic control.	
Starting system air pressure, MPa	0.6 - 0.8

Transmission

KTEP-1500 AC drive with traction alternator, two traction motors, motor-in-wheel differential-type double-row planetary reduction gears, adjustment and control devices.

Gear ratio 28.38
Maximum travel speed, km/h 60

Traction alternator	GST 1600
Traction motor	DAT-740

Suspension

Conventional suspension for front axle and driving axle 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.

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

Braking system meets ISO 3450 international safety requirements and guidelines and consists of service, parking, auxiliary and emergency brake systems.

Service brake system:

Front wheels - disk brakes with four brake gears per disk.
Rear wheels - disk brakes with two brake gears per disk and automatic gap adjustment. Brake disks are mounted on shafts of traction motors.
Brake actuator is hydraulic and separate for front and rear wheels.

Parking brake system - permanently closed system with two brake gears of rear wheels per disk. Spring actuation and hydraulic control.

Auxiliary brake system - electrodynamic braking by traction motors with forced air cooling of brake resistors.

Emergency brake system - parking brake and operable circuit of service brakes are used.

Brake resistors	Gridbox 2x600 - 2 units
Power, kW	2400

Tires

Diagonal and radial pneumatic tubeless tires with quarry tread pattern.

Designation 46/90-57; 40.00R57
Inflation pressure, MPa upon recommendation of tire producer
Rim designation 29.00-57/6.0

Hydraulic system

Combined system for body dumping gear, steering and brake actuator.

Two-section variable-displacement axial-piston oil pump.

Three-stage telescopic body lift 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, dm³/min 698
Filtration degree, mcm 10

Body

Bucket-type welded body with FOPS safety system, rops and heating by engine exhaust. The body is equipped with device for mechanical fixing in raised position, rock-deflectors and rock-ejectors.

Body capacity, m³:

struck heaped 2:1
89.5 131



Frame

High-strength low-alloyed steel welded frame with cast elements in places of maximum loading. Box-section variable-height side rails are interconnected by cross-members.

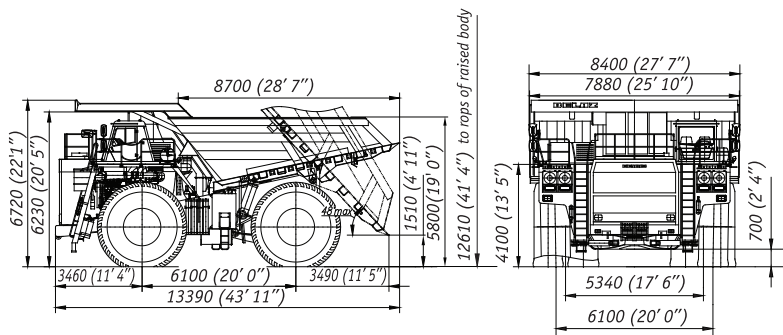
Special equipment

- Combined fire-fighting system with remote actuation and subsystem in back axle (standard)
- Starting preheater (standard)**
- Heating and conditioning unit (standard)
- Centralized lubrication system (standard)
- Fuel and loading control system (standard)
- Tire-pressure monitoring telemetry system (standard)
- Video observation system (standard)
- High-voltage line attention device (standard)
- Fettling of body floor (option)
- Combined fire-fighting system with automatic control and subsystem in back axle (option)

Refill capacities, l

Fuel tank	2800
Engine cooling system	650
Engine lubrication system	240
Hydraulic system	790
Motor-in-wheel reduction gears	210(105x2)
Suspension cylinders:	
- front	97.4 (48.7x2)
- rear	103.0 (51.5x2)

Overall dimensions, mm*



*Overall dimensions are specified for standard equipping of the dump truck

**Excepting dump trucks of tropicalized design

Weight

Maximum payload capacity, kg	220000
Unladen weight, kg	156100
Gross weight, kg	376100
Dump truck weight distribution on axles, %:	
front	unloaded 45 loaded 33
rear	55 67

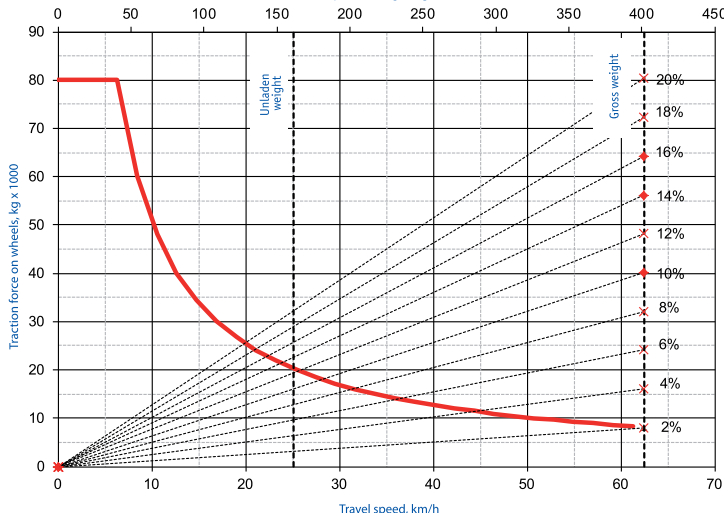
Cab

Two-man two-door cab with air-sprung adjustable seat for driver, auxiliary seat for trainee and adjustable steering column. The cab meets requirements of EN 474-1 and EN 474-6 standards for in-cab noise, vibration, content of harmful substances and dust. Driver's workplace meets ROPS safety requirements. In-cab noise level is not more than 80 dB(A).

Traction and braking performance

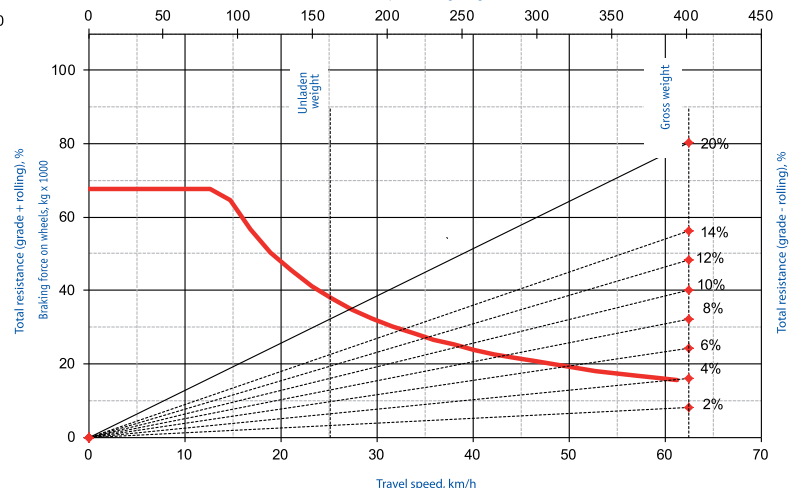
Traction performance

Dump truck weight, kg x 1000



Braking performance

Dump truck weight, kg x 1000



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