

# BELAZ-7513R robotic mining dump truck with payload capacity of 130-136 tonnes

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



Rated power@ 1900 rpm,kW(hp)	1194 (1600)
Maximum torque@ 1500 rpm,N*m	6292
Number of cylinders	16
Cylinders displacement	50.3
Cylinder diameter,mm	159
Piston stroke,mm	159
Specific fuel consumption at rated power,g/kW*hr	208
Air cleaning is performed by three-stage filter with dry-type elements.	
Exhaust gases evacuation is being made through body structure.	
Lubrication system is of forced circulation type under pressure with "wet" crankcase oil pan design.	
Cooling system is of single-circuit fluid type with forced circulation.	
Oil cooling – through water-to-oil heat exchanger.	
Starting preheating system is of fluid type.	
Starting system features pneumatic starter.	
Electric system voltage,V	24

## Engine

## Operating modes

Traditional — with command control by operator in the cab of the dump truck.  
Remote — with control from remote operator workstation.  
Autonomous (robotic) — with on-board system control under control from remote operator workstation.

## Remote and autonomous control

On-board system — the complex of electronic systems that control dump truck, receive and transmit data and control actions, audio and visual information via the radio channel, high-precision positioning, diagnose emergency conditions, emergency stop active safety systems (cameras, radars, lidars, etc).  
Operator workstation — remote post with dashboard, comfortable seat, steering wheel and controls (accelerator pedals, service and auxiliary brake systems, parking brake lever), large-screen displays to monitor traffic conditions, wireless data and control system, wireless navigation correction data transmission system.

## Transmission

AC/DC electric drive with traction alternator, two traction electric motors, motor-wheel reduction gears, microprocessor control system, adjustment and control devices.  
Motor-wheel reduction gear unit is of two-stage type with spur gears.  
Max speed, km/h 48  
Motor-wheel reduction gear unit ratio 30.36

Traction alternator	GSN-500,GST-1,SGT-1000
Traction electric motor	EDP-600,EK-590, TED-6,ED-136, EK-420A

## Technical specification

Camera	
Videosignal	PAL
Number of active pixels	720x480
Light sensitivity	<0.25lux
Viewing angle	70°, 115°
Protection class	IP69K
High-precision satellite navigation system	
Receiver type	two-channel GPS/GLONASS
Number of antennas	2 pcs
Positioning accuracy	±10 cm
Accuracy of the elevation vector determination	0.1°
Wireless data transmission equipment	
Radio frequency ranges	2400-2480 MHz, 916.5-924.5 MHz
Communication	scalable for operating conditions (other radio frequency ranges are possible)
Collision avoidance system	
Detection range	up to 60 m
Viewing angle	120°

Bucket type body is a welded structure with FOPS, has a protective canopy and is heated by exhaust gases. It is equipped with a device for mechanical locking in raised position and with rock-ejectors.

Body volume, m<sup>3</sup> (struck / heaped 2:1):

40.0/67.0; 45.5/71.2; 50.1/75.5; 55.0/80.0; 59.6/84.0; 103.8/134.8

# BELAZ 7513R\*



## Tires

Pneumatic, tubeless, with quarry tread pattern.

Designation 33.00R51; 33.00-51; 36/90-51  
Internal pressure, MPa—in accordance with tire manufacturer instructions.  
Rim designation 24.50-51/5.0

## 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).

## 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 320  
- rear 190

## Steering

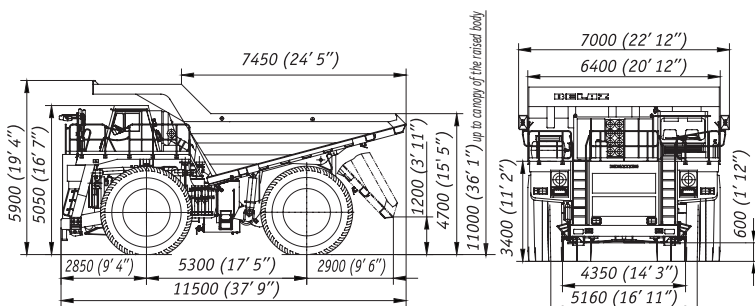
Hydrostatic. Steerable front wheels.  
Steerable wheels rotation angle, degrees 42  
Turning radius, m 13  
Overall turning diameter, m 28  
Complies with ISO 5010 requirements.

## Hydraulic system

Combined hydraulic system for body hoist, steering and brake system. Body hoist cylinders are telescopic with three stages and one stage of double action.

Oil pump is of axial-piston variable-flow type.  
Body raising time, s 20  
Body lowering time, s 18  
Max pressure in hydraulic system, MPa 18  
Max delivery of pumps @ 1900 rpm, dm<sup>3</sup>/min 474  
Filtering degree, μm 10

## Overall dimensions, mm\*\*



\*\*Overall dimensions are stated for the standard set of equipment.

## 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 single-disk brakes with automatic clearance adjustment. The disks are mounted on the shafts of traction electric motors.

*Parking brake:*

Constantly closed brake gears for rear wheels. Spring actuation, hydraulic control.

*Auxiliary brake:*

Electrodynamic braking with traction electric motors in alternator mode with forced air cooling of brake resistors.

*Emergency brake:*

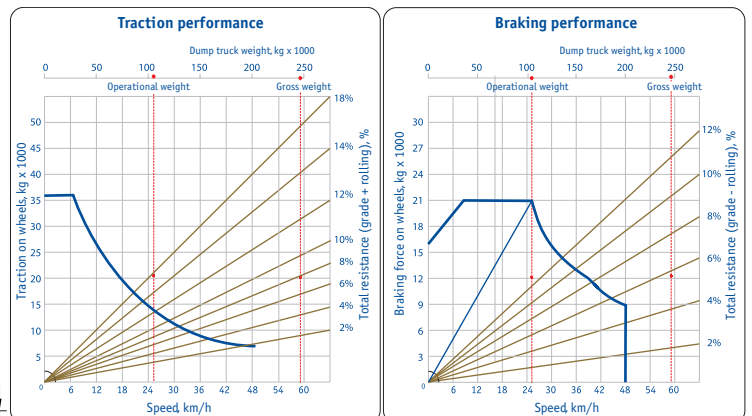
Parking brake and intact circuit of service brake are used.

Brake resistors UVTR 2x600  
Power dissipation, kW 1200

## Special equipment

- Fire-fighting system with remote control (standard)
- Engine liquid preheater (standard, except for tropical modification of dump trucks)
- Video surveillance system (standard)
- Automatic centralized lubrication system (standard)
- Telemetering tire inflation control system (standard)
- Loading and fuel control system (standard)
- High-voltage line proximity alarm (standard)
- Heater and conditioner unit (standard)
- Lining of the bottom body plate (option)
- Enhanced combined fire-fighting system with automatic actuation (option)
- Rock deflectors (option)

## Traction and braking performance



\*Due to the continuous improvement of the product, the specification is subject to change without prior notice.