

BELAZ-75454 mining dump truck with 45 tonnes (50 short tons) payload capacity

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



Engine

Model	Scania DC 16 084A (EU Stage IV)
Four-cycle turbocharged and intercooled direct-injection diesel engine with in-line cylinders arrangement.	
Rated power @ 2100 rpm, kW(hp)	478 (640)
Maximum torque @ 1500 rpm, N·m	3043
Number of cylinders	8
Cylinder displacement, l	16.4
Cylinder diameter, mm	130
Piston stroke, mm	154
Specific fuel consumption @ rated power, g/kW-hr	221
Air cleaning is performed by three-stage filter with dry-type elements. Engine exhaust is routed through dump truck body. Mixed lubrication system with "wet" crankcase. Forced circulation fluid cooling system integrated with hydromechanical transmission cooling system and oil-cooled multiple-disk brakes. Oil cooling is performed by oil-to-water heat exchangers. Electric starting system. Electric equipment voltage, V	
	24

Suspension

Conventional suspension for front axle and driving axle, with trailing arms, central joints and transverse rods. Hydropneumatic (nitrogen and oil) cylinders: two cylinders are on front axle and two cylinders are on rear axle.

Cylinder piston stroke, mm:	
- front	300
- rear	270

Transmission

Hydromechanical transmission with complex single-stage four-wheeled torque converter with automatic locking, four-shaft gearbox with multiplate friction clutches and electrohydraulic gear change control drive. Automatic/command gear change.

Maximum travel speed, kmh	55	
Gearbox ratio:		
gears	forward	reverse
1	3.84	6.07
2	2.27	1.67
3	1.50	
4	1.055	
5	0.625	

Driving axle

Mechanical driving axle with single bevel final gear drive, bevel-gear differential, planetary hub drives with spur pinions.

Ratio:	
final drive	3.417
hub drive	6.0
overall ratio	20.50
Brackets for mounting of suspension cylinders, transverse rod bracket and trailing arms for articulated joint of axle and frame are welded to the axle housing.	

Driveline

Two exposed propeller shafts with joints on needle bearings join hydromechanical transmission to engine and driving axle. Flexible coupling is mounted between front propeller shaft and engine.

Steering

Hydrostatic steering with steerable front wheels.

Steering angle, degree	41
Turning radius, m	9
Overall turning diameter, m	20
The steering meets ISO 5010 requirements.	

Cab

Two-man two-door cab equipped with air-sprung adjustable seat for driver, auxiliary seat for passenger, adjustable steering column. The cab meets ROPS requirements and requirements of standards for permissible level of in-cab noise, vibration, content of harmful substances and dust. In-cab noise level doesn't exceed 80 dB(A).

Body

Bucket-type welded body with rops, engine exhaust heating, device for mechanical fixing in raised position and rock-ejectors.

Body capacity, m³:
struck 21.5 heaped 2:1 27.7

Frame

High-strength low-alloy steel welded frame. Box-section frame girders are of variable height and interconnected by cross-members.



Tires

Pneumatic tubeless tires with quarry tread pattern.

Designation 21.00-35/21.00R35
Tire pressure, MPa 0.575/0.7
Rim designation 15.00-35/3.0

Brakes

Brake system meets international standards and STB ISO 3450 safety requirements and includes service, parking, auxiliary and emergency brakes.

Service brakes:

Rear wheels – oil-cooled multiple-disk brakes.

Front wheels – dry single-disk brakes.

Brake actuator is hydraulic and separate for front and rear wheels.

Parking brake – disk brake on shaft of final drive. Spring actuator and hydraulic control.

Auxiliary brake – oil-cooled multiple-disk brakes of rear wheels are used. Braking is performed by separate foot pedal. Hydraulic actuator.

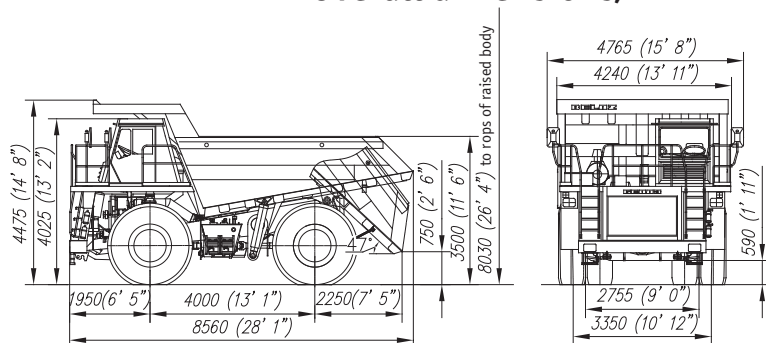
Emergency brake – operable circuit of service brakes and parking brake are used.

Hydraulic system

Hydraulic system is combined for body dumping gear, steering and brake actuator. The system is equipped with gear-type oil pumps and body lift telescoping double-stage cylinders with one stage of double action.

Body lifting time, s 15
Body lowering time, s 14
Max pressure in hydraulic system, MPa 17
Max pump delivery @ 2100 rpm, dm³/min 342
Degree of filtration, micrometers 10

Overall dimensions, mm**



*Excepting dump trucks with tropicalized design

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

Weight

Maximum payload, kg 45000
Unladen weight, kg 35000
Gross weight, kg 80000

Dump truck weight distribution on axles, %:
unloaded loaded
front axle 54.0 34.0
rear axle 46.0 66.0

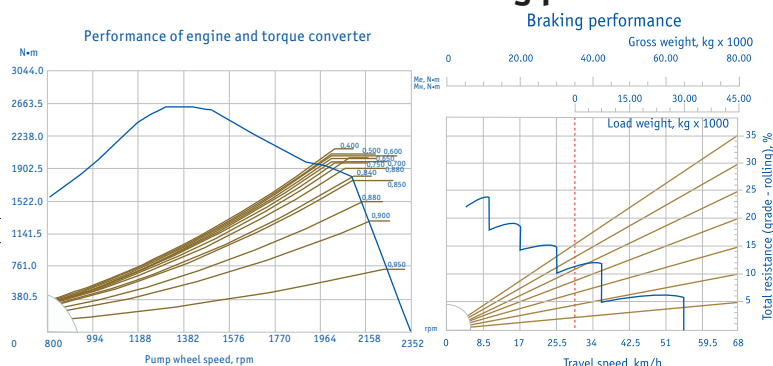
Refill capacities, l

Fuel tank 740
Engine cooling system 152
Engine lubrication system 55
Hydromechanical transmission 145
Hydraulic system 300
Final drive 32
Hub drives 32 (16x2)
Suspension cylinders:
front 13.6 (6.8x2)
rear 29.4 (14.7x2)

Special equipment

Fire-fighting system with remote actuation (standard)
Starting preheater * (standard)
Central lubrication system (standard)
Heating and conditioning unit (standard)
Loading and fuel control system (standard)
Telemetry tire-pressure monitoring system (standard)
Video observation system (standard)
High-voltage line approach attention device (standard)

Traction and braking performance



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