

Mine dump truck BELAZ-75603 of payload capacity 360 tonnes (400 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 -45 to +50 °C).



| Engine | |
|---|-----------------|
| Model | Cummins QSK78-C |
| Four-cycle turbocharged and intercooled direct diesel engine with V-type cylinders arrangement and electronic control system. | |
| Rated power @ 1900 rpm, kW | 2610 |
| Maximum torque @ 1500 rpm, N.m | 13771 |
| Number of cylinders | 18 |
| Cylinders displacement, l | 77,6 |
| Cylinder diameter, mm | 170 |
| Piston stroke, mm | 190 |
| Specific fuel consumption, g/kW hr | 201 |
| Air cleaning is performed by three-stage filters with dry-type elements. | |
| Engine exhaust expulsion is performed through body and mufflers. | |
| Circulating lubrication system is pressurized and designed with "wet" crankcase. Fluid cooling system is double-loop with forced circulation. | |
| Oil cooling is performed by oil-to-water heat exchanger. | |
| Fluid preheating system. Fuel cooling is performed by radiator. | |
| Cooling system impeller is actuated by electrohydraulic friction coupling. | |
| Automatic control. | |
| Electric starter starting system. | |
| Electric equipment system voltage, V | 24 |

| Transmission | |
|--|-------|
| Electromechanical transmission with Siemens MMT400 AC drive with traction alternator, two traction motors, motorized wheels planetary double-row reduction units, adjustment units, control devices. | |
| Transmission ratio | 38,05 |
| Maximum dump truck travel speed, km/h | 64 |

| | |
|-----------------------|----------------------|
| Traction alternator | YJ177B |
| Traction motor | 1TB3030-2GA03 |
| Power control cabinet | MMT 400 Drive System |

| Suspension | |
|---|-----|
| Suspension is conventional for front and rear wheels. Cylinders are pneumohydraulic (nitrogen and oil), two cylinders are on the front axle and two cylinders are on the rear axle. | |
| Cylinder piston stroke, mm | |
| - front | 300 |
| - rear | 170 |

| Steering | |
|--|------|
| Hydrostatic steering with flow amplifier and variable-displacement pump drive. Emergency drive is combined, from hydropneumatic accumulators and from electrical pump. | |
| Incline of front wheels, degree | 1 |
| Turning radius, m | 17,2 |
| Overall turning diameter, m | 38 |
| Steering system pressure | 16,5 |

| Brakes | |
|--|----------------|
| Brake system meets ISO 3450 international safety requirements and consists of service, parking, retarding and emergency brake systems. | |
| Service brake system includes front wheels disk brakes with four brake gears per disk and rear wheels twin-disk brakes with one brake gear per disk and automatic gap adjustment. The disks are mounted on traction motor shafts. Hydraulic actuator is separate for front and rear wheels. | |
| Parking brake system is rear wheels permanently closed brake gears on the outside brake disk of traction motor. Spring actuator and hydraulic control. | |
| Retarding brake system is electrodynamic braking by traction motors in alternator mode with forced air cooling of brake resistors. | |
| Emergency brake system uses parking brake, operable circuit of service brake system and retarder. | |
| Brake resistors | MMT400 Gridbox |
| Power, kW | 4700 |

Body

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

Body capacity, m³:

| | |
|--------|------------|
| struck | heaped 2:1 |
| 162,8 | 218,1 |
| 139 | 199 |



Frame

Frame is welded of high-strength low-alloy steel with application of cast elements at the maximum loading points. Box-section variable-height side-members are interconnected by cross-members.

Hydraulic system

Hydraulic system is combined for body dumping gear, steering and brake system. Actuator is mechanical, through propeller shaft from traction alternator outlet flange.

Oil pumps are two-section variable-displacement axial-piston pumps with „Bosch-Rexrot“ pressure governor. Body lifting cylinders are two-stage telescopic cylinders with one stage of double action.

| | |
|-----------------------------------|----|
| Loaded body lifting time, s | 31 |
| Body lowering time, s | 20 |
| Pressure in hydraulic system, MPa | 21 |

Cab

Two-man cab with adjustable driver seat, ROPS safety system.

The cab meets requirements of standards that specify levels of in-cab noise, vibration, content of hazardous substances and dust.

In-cab noise level is not more than 80 dB(A).

Local vibration level is not more than 126 dB(A).

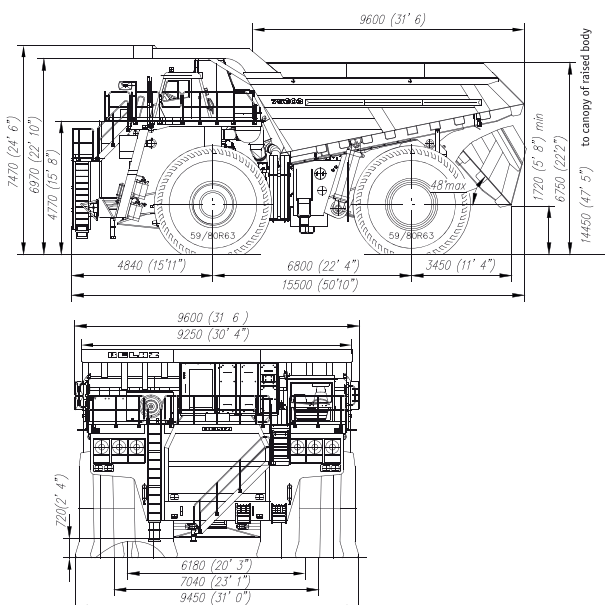
Overall vibration level is not more than 115 dB(A).

Tires

Radial tubeless air tires with quarry tread pattern.

| | |
|-------------------------|--------------|
| Tire designation | 59/80R63 |
| Inflation pressure, MPa | 0,6 |
| Rim designation | 44.00-63/5.0 |

Overall dimensions, mm*



*Overall dimensions are specified for basic kitting-up of the dump truck

Refill capacities, l

| | |
|-------------------------------------|---------------|
| Fuel tank | 4375 |
| Engine cooling system | 890 |
| Engine lubrication system | 300 |
| Hydraulic system | 1410 |
| Reduction units of motorized wheels | 300(150x2) |
| Suspension cylinders: | |
| - front | 129,0(64,5x2) |
| - rear | 125,8(62,9x2) |

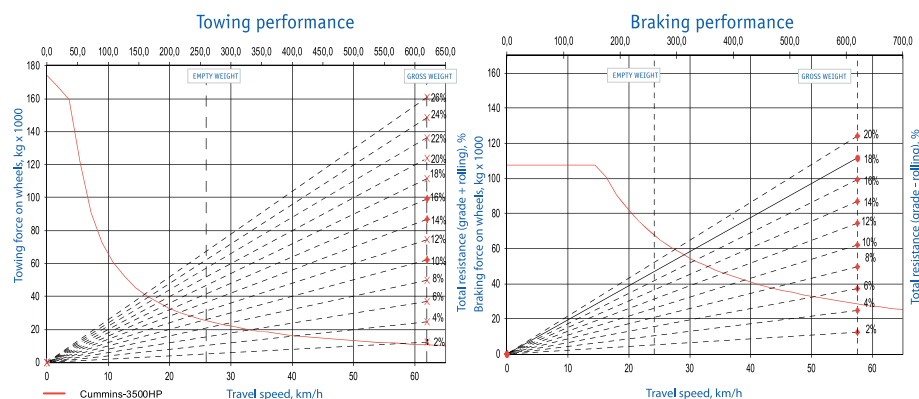
Weight

| | | |
|---|-------------|-----------|
| Payload capacity, kg | 360000 | |
| Operating weight, kg | 261000 | |
| Gross weight, kg | 621000 | |
| Dump truck weight distribution on axles, %: | | |
| - front | unloaded 49 | loaded 33 |
| - rear | 51 | 67 |

Special equipment

- Automatic fire-fighting system (standard)
- Heating and conditioning unit with climate control (standard)
- Automatic lubrication system (standard)
- Telemetering tire-pressure monitoring system (standard)
- Active video observation system (standard)
- Body floor lining (standard)
- Attention device of approach to high-voltage line (standard)
- Multifunctional diagnostic system (standard) with functions: diagnostics, loading control, lighting equipment control, human-machine interface, blackbox

Towing and braking performance



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