Minetruck MT42 SG

Underground battery electric mine truck with 42-tonne load capacity

Epiroc

Supreme strength, impressively fast

Minetruck MT42 SG is Epiroc's largest battery-electric mine truck, with a 42-tonne capacity. It delivers impressive speed on inclines, accelerating dump cycles and boosting overall productivity. The result is zero tailpipe emissions and unmatched performance in underground mining and construction operations.

The smart, hydraulically operated tailgate works as a spill guard and supports the filling process with one extra side in the box.

Front axle suspension, a comfortable seat, lower noise, and reduced vibrations make this truck easy to operate for long periods.

The CE-marked high-energy density battery has a built-in multi-layer safety system from cell design to a deformation zone.

Thermal management system for the battery

A comfortable, ROPS- and FOPS-certified operator's cabin with an air-suspended seat and ergonomic controls.

Dump box with wear resistant steel and optimized interior angles for easy release of material

Front axle suspension for superior comfort and increased productivity

Main benefits

Safety - equipped with Epiroc's battery safety systems and features such as Hill Descent Assist and Door Open Brake Apply, this underground truck prioritizes worker well-being and the safety of the entire operation.

Electrification - the electric drivetrain has significantly fewer components, service points, and moving parts. This leads to longer service intervals, reduced parts consumption, increased uptime, and lower running costs.

Productivity - thanks to the highly efficient drivetrain, Minetruck MT42 SG hauls material faster than its diesel-driven counterparts.

Part of the Smart and Green series

Our Minetruck MT42 SG is part of the Smart and Green series (SG). Equipped with Epiroc's Rig Control System, RCS, and ready for smart functionality such as automation and remote control.

Minetruck MT42 SG brings electrification to underground applications

Energy regeneration and the efficient drivetrain configuration ensure low energy consumption and extended driving range. With its electric drive, the Minetruck MT42 SG outperforms diesel equivalents, especially on inclines.

+ Environmental benefits

Minetruck MT42 SG benefits both the global environment and local working conditions by producing less heat and noise. As an electric vehicle, it eliminates operator exposure to diesel particulates and toxic gases such as nitrogen oxides (NOx), hydrocarbons (HC), and carbon monoxide (CO). By choosing an electric underground truck, you can make a difference when it comes to reducing carbon footprint and greenhouse gases.

+ Maximized productivity

Minetruck MT42 SG is designed for maximum productivity. Its drivetrain is optimized to minimize energy losses and reduce the number of components. Each axle is powered by a high-performance electric motor, enabling high speeds on inclines, both uphill and downhill. Hydraulic functions are driven by a separate electric motor, delivering power on demand. Extended battery autonomy is achieved through energy regeneration and a high-energy-density battery design.

+ Optimized performance

Unlock valuable machine working time with a direct impact on production output by combining Epiroc's Deep Automation with the Minetruck MT42 SG. This enables fleets of underground mine trucks to continuously operate on autonomous hauling loops, even when blasting and while venting out blast fumes. Operators control these from a safe control center without being exposed to hazardous environments.

A comprehensive service offering

Even the best equipment needs to be serviced regularly to make sure it sustains peak performance. An Epiroc service solution offers peace of mind, maximizing availability and performance throughout the lifetime of your equipment. We focus on safety, productivity and reliability.

By combining genuine parts and an Epiroc service from our certified technicians we safeguard your productivity - wherever you are.

Technical specifications

Features

Minetruck MT42 SG is an underground mining truck designed with safety as the top priority. It features smart technologies such as an automatic brake test, Door Open Brake Apply (DOBA), and a three-point contact system for entry and exit, ensuring a safer working environment for both the operator and the entire operation.

Operators benefit from a comfortable cabin equipped with an air-suspension seat, low noise levels comparable to an office environment, and a front axle suspension system for a smoother ride.

Beyond its impressive speed on inclines, the truck's advanced smart features and high-energy battery take productivity to new levels. With our fleet monitoring system, real-time machine data can be leveraged to optimize daily operations, improving workflow and efficiency in the mine.

Maximizing machine uptime is essential for a productive operation. That's why we have designed maintenance to be as safe, fast, and accessible as possible.

All this and more come with a machine that is made for a sustainable business, industry and society, leaving no tailpipe emissions underground and contributing to a better working environment.

Specifications

Capacities	
Hauling capacity	42 000 kg
Standard box volume (SAE heaped)	19.0 m^3
Motion times	
Dumping with standard box	16 sec
Weights, including battery (standard empty machine)	
Approximate weight	37 700 kg
Axle load, front	27 500 kg
Axle load, rear	10 200 kg

Sound and vibration

Closed cabin	
A-weighted sound pressure level, LpA according to ISO 6396:2008	60 dB
Weighted whole body vibration level, A(8)w according to ISO 2631-1	0.55 +/- 0.2 m/s^2
External	
A-weighted sound power level, LwA according to ISO 6395:2008	104 dB

Requirements and compliance

2014/35/EC Low Voltage Directive

2014/30/EC Electromagnetic Compatibility Directive

2006/42/EC Machinery Directive

Motor

	Traction	Auxiliary
Brand/model	ABB	ABB
IP	66	66
Nominal power	2 x 200 kW	160 kW
Nominal torque	2 x 1 100 Nm	600 Nm
Nominal voltage	400 VAC	400 VAC
Cooling	Liquid cooled	Liquid cooled

Axles

Brand/model	Kessler/D102
Front and rear differential	Open

Tires

Front and rear size	29.5 R25 (tubeless and treaded)

Documentation

Operator, service, and spare parts manual in English and other languages

Main frame

Box up support stand, articulation safety lock and cabin tilt stand

Operator's compartment

Cabin
Closed cabin
FOPS according to ISO 3449
ROPS according to ISO 3471
Interactive display module
Door open brake apply (at low speeds)
Sliding window on door
Insulated sound barriers
Sealed door and windows
Emergency exit in side window, all windows can be opened from inside and outside
Automatic climate control (air conditioner, heater and pressurizer)
Safe, three-point access into and out of the cabin
Oil-free environment
5V USB outlet
Diagnostic outlets
Whole body vibration value below EN 14253 A(8)w maximum 0.55 m/s^2
Physical dimensions of operators and minimum operator space envelope according to ISO 3411
Zones of comfort and reach for controls according to ISO 6682
Operator's control according to ISO 10968
Operator's seat
Air suspension
Adjustable height, depth and lumbar support
Soft padding with water-resistant material
Three-point safety belt
Trainer seat

Control system

Epiroc rig control system (RCS)
Operator display with intuitive interface and integrated BMS information
Logging of production and machine data
My Epiroc telematics hardware for Wi-Fi and LTE
Automatic brake test
Traction control
Machine status indicator light mounted on cab
Hill hold
Audiovisual reverse alarm
Hill Descent Assist (HDA)
Speed limiter
Load weighing production data, weight per box, number of boxes and accumulated payload

Suspension

The suspension is a gas-hydraulic system for improved operator comfort and vehicle handling while minimizing frame stress
Suspension, maximum travel: 140 mm

Technical specifications

Electrical system

Batteries	2x 12V, 235Ah
System voltages	24V
Driving lights LED	13x40 W
Front and rear turn signals	
Hydraulic warning system, low level	
Rear-view camera	
Machine status indicator lights	
Neutral brake apply	
DC/DC converter	
Isolation switch lockout	
Audiovisual back-up alarm	
3x emergency stop buttons	
Tail and brake lights	
Side lights	
Lockable main switch	

Power electrics: inverters, transformers

Brand	ABB
IP	67
Max voltage	850 VDC
Cooling	Liquid-cooled

Battery pack

Chemistry	Li-Ion NMC
Number of sub-packs	5
Usable capacity (kWh)	465
Voltage	800 V
Cell cooling	Liquid-cooled
Thermal management system	Integrated
Operating ambient temperature	0° to 40°C
Charging source	External contact
Charging contact	CCS 2.0 type 1 or 2

Hydraulic system

System pressure	21.5 Mpa
Main valve	Open circuit, LS-controlled
Steering pump	Piston type
Hydraulic tank capacity	220 liters
Filtration, return line	12 µm
Hoist cylinders	2x 200 mm
Tilt cylinder	1x 230 mm
Steer cylinder	2x 105 mm
Heavy duty gear pumps	
Electric hydraulic oil fill pump	
Secondary steering (CE requirement)	
Automatic lubrication system with timer (Lincoln pump)	
Chrome-plated stems on cylinders	

Brakes

Type	Fully enclosed, force-cooled, multiple wet discs at each wheel end
Service brake	Regenerative braking (SAHR)
Parking brake/emergency brake	SAHR
Electric brake release pump	
Brake apply after 3 sec in neutral	

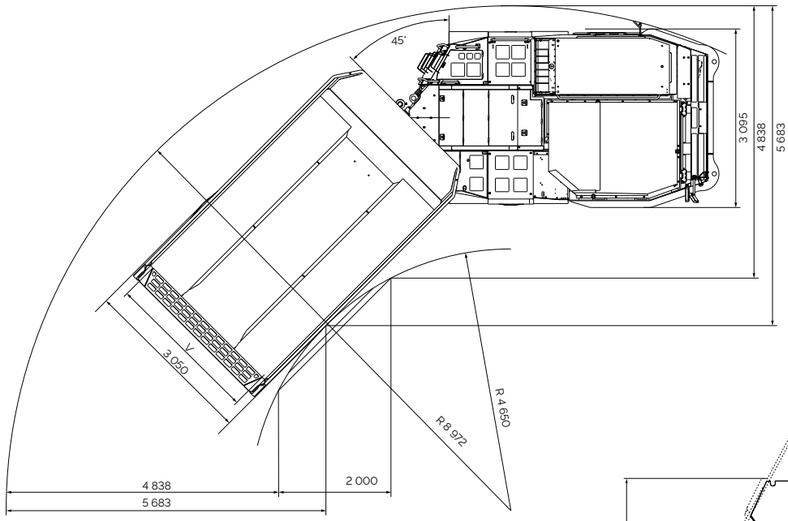
Read more about environmental product information here:

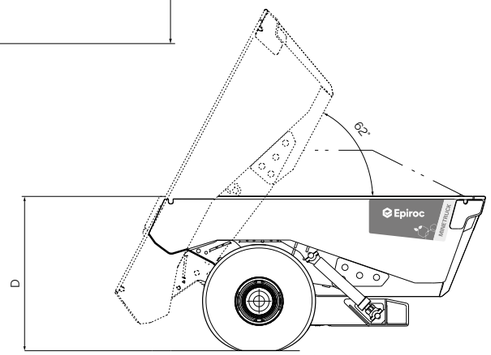
Grade performance

Grade (%)	0.0	2.0	4.0	6.0	8.0	10.0	12.5	14.3	16.0	18.0	20.0
Grade (ratio)	–	1:50	1:25	1:16.7	1:12.5	1:10	1:8	1:7	1:6.3	1:5.6	1:4
Standard configuration, box empty (km/h)											
km/h	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	17.6	16
Standard configuration, box loaded											
km/h	19.4	19.4	19.4	19.4	15.8	13.4	11.3	10.1	9.2	8.3	7.6

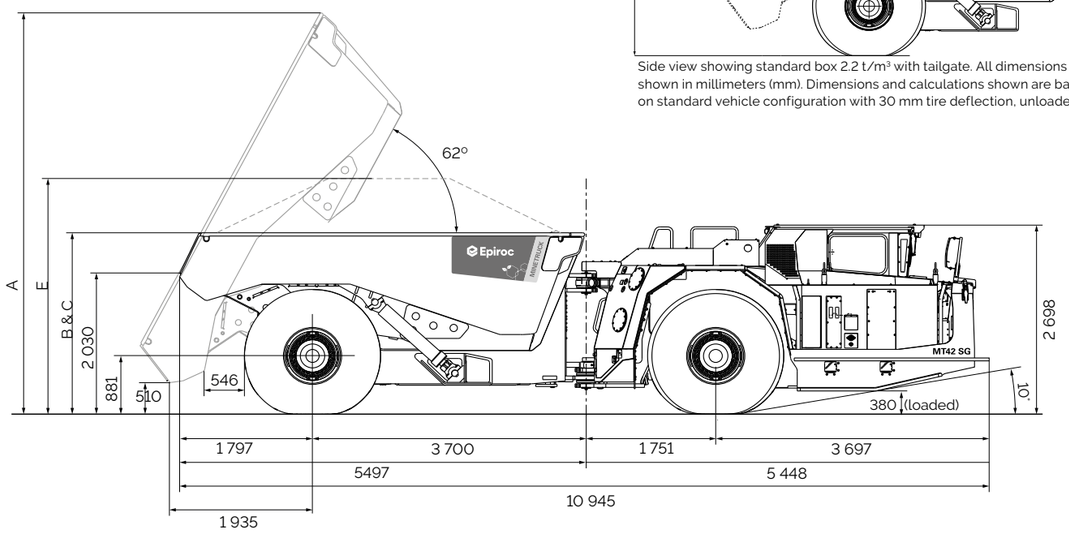
These are theoretical calculations and should be seen as a reference only. 3% rolling resistance assumed. Actual performance may vary depending on the application. Continuous operation is recommended on maximum 1:7 grade.

Turning radius and dimensions (2.2 t/m³ dump box with tail gate)





Side view showing standard box 2.2 t/m³ with tailgate. All dimensions are shown in millimeters (mm). Dimensions and calculations shown are based on standard vehicle configuration with 30 mm tire deflection, unloaded.



All dimensions are shown in millimeters (mm). Dimensions and calculations shown are based on standard vehicle configuration with 30 mm tire deflection, unloaded.

Dump boxes

							Ejector box style*	
Volume, SAE heaped 2:1 (m³)		23.3	21.0	19.1	17.5	16.1	21.5	18.5
Volume, semi-heaped (m³)		21.2	19.0	17	15.3	13.9	19.5	16.5
Volume SAE struck (m³)		19.3	17.1	15	13.1	11.8	17.5	14.5
Material density (t/m³)		**1.8**	**2.0**	**2.2**	**2.4**	**2.6**	**1.8**	**2.0**
Dump height (mm)	A	5 835	5 730	5 625	5 625	5 625	–	–
Spill guard height (mm)/push plate height	B	2 885	2 735	2 585	2 585	2 585	3 035	2 815
Load height (mm)	C	2 885	2 735	2 585	2 460	2 460	2 902	2 685
Tailgate height (mm)	D	2 575	2 575	2 575	2 455	2 455	2 175	2175
Height loaded, heaped, (mm)	E	3 560	3 410	3 260	3 135	3 135	3 523	3 305
Width inside box (mm)	V	2 860	2 860	2 860	2 860	2 860	2 840	2 840

*Ejector box has a different functionality, reduced capacity, different dimensions affecting turning radius, etc. More sizes may be available, please consult Epiroc for more information.

Options

Automation features

- Simulations to virtually evaluate the productivity levels that can be achieved
- Single-level autonomous haulage loops underground
- Multi-level autonomous haulage, including spiral ramp
- Multi-level autonomous and transition to surface haulage
- Two way autonomous traffic, meet and pass at wide meeting points
- Tele-remote operation for recording autonomous routes or other situations
- Driver Assist for tele-remote, to avoid wall collisions

Operator's compartment

- Media player

Control system

- Ansul Foray (powder) dual bottle fire suppression with engine shutdown, manual release
- Checkfire automatic release of Ansul fire suppression
- Forrex fire suppression with automatic release
- Handheld fire extinguisher, 2x6 kg
- Forrex automatic fire suppression
- CAS interface
- Tire monitoring system
- Automation-ready

Electrical system

- Detachable service light (CE requirement)
- Battery jump start receptable
- Amber strobe light
- Loading camera and load lights
- UL/CSA-approved electrical system

Main frame

- Guard rails (CE requirement)
- Wheel chocks and brackets
- Heavy duty dump box linear wear plates
- Ejector dump box*.

* Changes dumping method and vehicle dimensions; consult your local customer center

Parts and service

- Preventive maintenance kits
- Parts & repair kits
- Upgrade kits
- Midlife kits
- Face mechanic's tool set
- Shop mechanic's tool set
- Service tools for Epiroc Rig Control System (RCS)

Digital products

- Fleet monitoring with Fleet• on My Epiroc
- Machine and fleet data via APIs

Matching electrification solutions

Epiroc offers matching batteries and flexible charging solutions for all types of battery electric vehicles. This also includes providing input for design of charging bays as well as offering lifting tools for Epiroc batteries. Our batteries are designed with modularity and safety in mind, ensuring that each individual part of the battery can be monitored and controlled separately. This allows for tailor-made setups and easy maintenance. The rugged and robust design makes it perfectly suited for any operation

Main benefits

Designed for maximized safety, rough conditions and high modularity

Connected and controlled with our established telematics solution

Powerful cabinets to ensure that battery electric machines with any energy density are supported and can be charged within reasonable time.

When electrification meets automation

Built for demanding underground applications, the compact and highly productive automation-ready, battery-electric Scooptram ST14 SG let you work in the toughest conditions without exposure to diesel particulates and toxic gases.

Specifications

Capacities	
Tramming capacity*	14 000 kg
Breakout force, hydraulic	22 300 kg
Breakout force, mechanical	18 240 kg
*Tramming capacity with EOD bucket 12 000 kg	
Motion times	
Boom raising	7.6 sec
Boom lowering	4.0 sec
Dumping	3.0 sec
Weights, including battery (standard empty machine)	
Approximate weight	42 000 kg
Axle load, front	18 400 kg
Axle load, rear	23 600 kg

Motor

	Traction	Auxiliary
Brand/model	ABB	ABB
IP	65	65
Nominal power	200 kW	150 kW
Nominal torque	1 100 Nm	600 Nm
Nominal voltage	400 VAC	400 VAC
Cooling	Liquid cooled	Liquid cooled

United in performance. Inspired by innovation.

Performance unites us, innovation inspires us, and commitment drives us to keep moving forward. Count on Epiroc to deliver the solutions you need to succeed today and the technology to lead tomorrow.

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