Minetruck MT42 SG Trolley

Fully battery-electric trolley underground mine truck with 42-tonne capacity

Epiroc

Electrifying ramp haulage

Enjoy unlimited energy thanks to dynamic charging with the Minetruck MT42 SG Trolley and discover a new way to electrify ramp haulage. Combining the power of a battery-electric mining truck with the trolley system, you will experience new levels of productivity without overlooking the social responsibility costs. No diesel fumes and toxic gases, improved levels of productivity, and unlimited energy – this sums up the new Minetruck MT42 SG Trolley.

The pantograph on the Minetruck MT42 SG Trolley allows for continuous energy supply and dynamic charging.

Thanks to an optimized battery capacity of 280 kWh, the truck can travel solely on battery power for up to 5 kilometers (3.1 miles) on inclines

Minetruck MT42 SG Trolley is equipped with a fast, reliable and efficient driveline with low maintenance requirements.

Main benefits

Sustainability – Reduce emissions, protect operators, and prioritize safety through the perfected design and the secure battery that come with the Minetruck MT42 SG Trolley.

Productivity – Enhanced by the trolley system, which enables 50% higher uphill ramp speeds, compared to the traditional Minetruck MT42 S, and dynamic battery charging, leading to continuous haulage without refueling stops.

Cost/tonne – Minetruck MT42 SG Trolley provides you with one of the lowest costs/tonne on the market. This is primarily attributed to its low energy consumption, facilitated by continuous battery regeneration, along with minimal preventive maintenance requirements and reduced ventilation needs.

Part of the Smart and Green series

Our battery-electric trolley underground truck is part of the Smart and Green series (SG). Equipped with Rig Control System (RCS) and ready for smart functionality such as automation and remote control.

Enjoy unlimited energy for ongoing mining operations

Come one step closer to the fully electric mine of the future and endless operations with the Minetruck MT42 SG Trolley. The electric trolley line gives additional assistance to the battery-electric mine truck on the most demanding stretches up-ramp while fully loaded, enabling further reach and battery regeneration during drift, which increases productivity drastically for a mining operation.

+ Dynamic charging during operation

The trolley system powers the truck in the energy-consuming drive up the ramp, while charging the battery (dynamic charging) at the same time. No need to stop for refueling, battery charge, or battery swap, just continuous haulage. You will be able to run the truck on the trolley system and battery interchangeably.

+ Low operating cost/tonne

The continuous battery regeneration, minimal preventive maintenance requirements and reduced ventilation needs are some of the benefits you will enjoy with the Minetruck MT42 SG Trolley. All of these will support your operation in achieving low operating costs/tonne, while maintaining a high productivity level.

+ Better climate

Minetruck MT42 SG Trolley improves the environment both locally at your operations and globally. Leaving no emissions behind, Minetruck MT42 SG Trolley means zero exposure for operators to diesel particulates and toxic gases such as nitrogen oxides, hydrocarbons, and carbon monoxide (NOx, HC, and CO). Minetruck MT42 SG Trolley makes the difference when it comes to reducing carbon footprint and greenhouse gases.

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 Epiroc service from our certified technicians, we safeguard your productivity – wherever you are.

Technical specifications

Features

The Minetruck MT42 SG Trolley provides high safety standards thanks to the ROPS- and FOPS-certified cabin, four isolation monitoring devices, Epiroc battery safety system, automatic disconnection of the pantograph, keeping operators and operations safe at all times.

At the same time, operators benefit from a comfortable cabin thanks to the air-suspension seat, low noise levels comparable to an office environment, and front axle suspension system.

Moreover, it is not only the high speed up the ramp, but also the smart features and unlimited energy that offer your operation new levels of productivity. Through our fleet monitoring system, machine data can be used to optimize day-to-day work and processes for increased productivity and flow in the mine.

Keeping up a productive operation requires a high utilization rate of the machine. That is why we have made the maintenance 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 emissions underground and contributing to a better working environment.

Specifications

Capacities	
Hauling capacity*	42 000 kg
Standard box volume (SAE heaped)	19.0 m³
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	70 dB
Weighted whole body vibration level, A(8) w according to ISO 2631-1	0.55 +/- 0.2 m/s²
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	65	65
Nominal power	2 x 260 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

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/s²
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
Pantograph camera
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

Technical specifications

Electrical system

Batteries	2x 12V, 56Ah
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	3
Usable capacity (kWh)	225
Voltage	800 V
Cell cooling	Liquid-cooled
Thermal management system	Integrated
Operating ambient temperature	0° to 40°C
Charging source	Charged from overhead catenary lines. Also possible to connect external charger
Charging contact	CCS 2.0 type 1 or 2

Suspension

The suspension is a gas-hydraulic system for improved operator comfort and vehicle handling while minimizing frame stress

Suspension, maximum travel: 140 mm

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	

Main frame

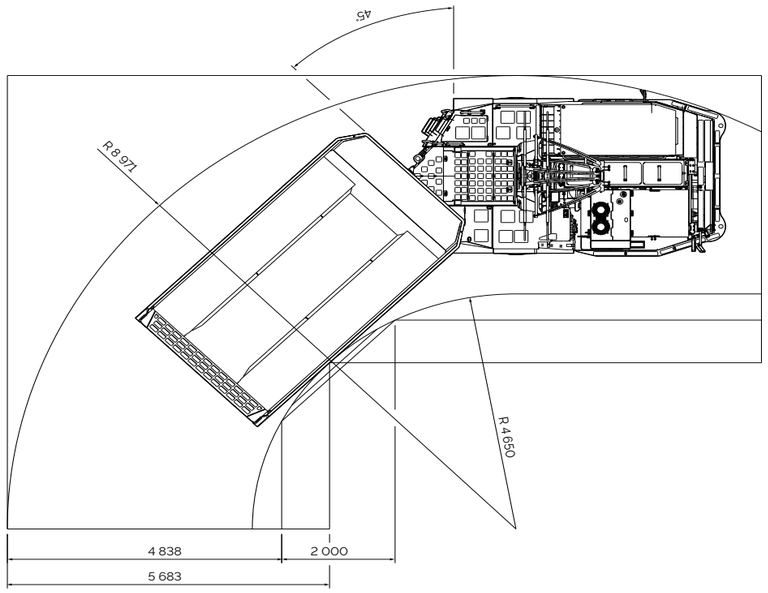
Box up support stand, articulation safety lock and cabin tilt stand

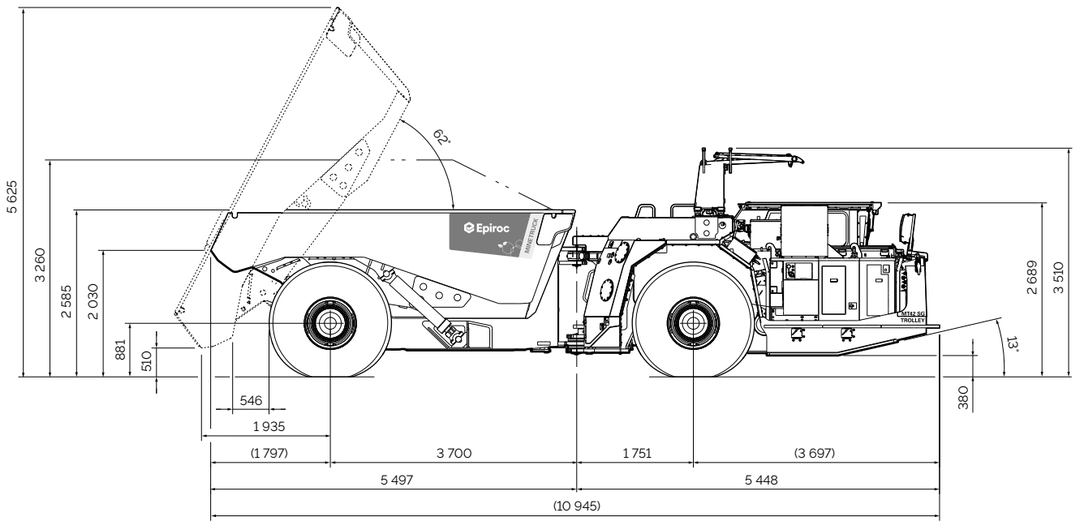
Wheel chocks and brackets

Pantograph

Supplier	Siemens
Voltage	Up to 1 500 V DC
Max current	500 A
Working range	700 mm
Safety	
Automatically retracted in case of:	Truck is driven to the side
	Lost power
	Lost communication
	Collision
	No catenary wires
	No voltage in catenary wires
	Wrong catenary voltage or polarity

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



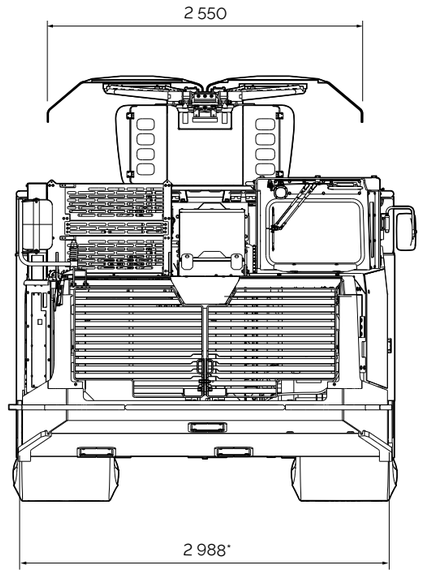


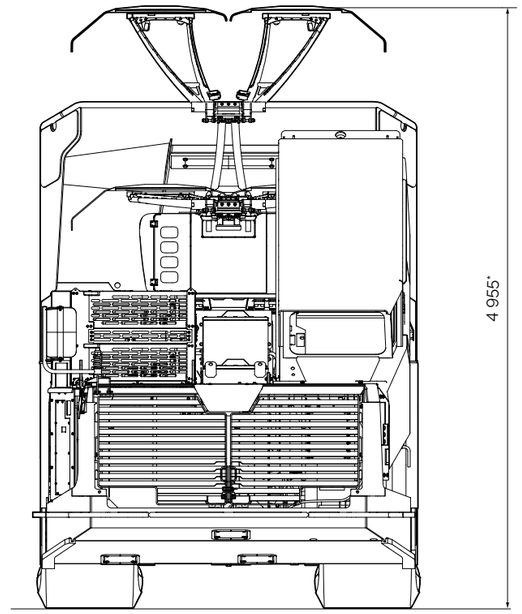
All dimensions are shown in millimeters (mm). Dimensions and calculations shown are based on standard vehicle configuration with 30 mm tire deflection, unloaded.

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	19	19	19	19	19	19	19	19	19	19
Standard configuration, box loaded											
km/h	19	19	19	19	19	17.2	15.2	13	11.7	10.5	9.5

These are theoretical calculations and should be considered 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.





* Dimension is from outside of rim

Dump boxes

						Ejector box style*	
Volume, SAE heaped 2:1 (m³)	23	21	19	17.5	16	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)	5 835	5 730	5 625	5 625	5 625	–	–
Spill guard height (mm)/push plate height	2 885	2 735	2 585	2 585	2 585	3 035	2 815
Load height (mm)	2 885	2 735	2 585	2 460	2 460	2 902	2 685
Height loaded, heaped, (mm)	3 560	3 410	3 260	3 135	3 135	3 523	3 305
Width inside box (mm)	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

Operator's compartment

Media player

Control system

Ansul checkfire automatic fire suppression
Ansul dual bottle fire suppression with engine shutdown
Handheld fire extinguisher, 2x6 kg
Forrex automatic fire suppression
CAS interface
Tire monitoring system
Automation-ready

Electrical system

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

Main frame

Guard rails (CE requirement)
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)

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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