Scooptram ST14 SG

Fully battery-electric loader with 14-ton capacity

Epiroc

When electrification meets automation

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

With higher lifting, a proven power train and traction control, the Scooptram ST14 SG is designed to optimize every stage of the loading operation

No exhaust emissions underground, cleaner air, less noise and less heat are obvious benefits of switching to battery power

Optimal performance from separate motors for traction and hydraulics

Scooptram ST14 SG can lower your energy consumption by up to 75% compared to diesel-driven vehicles

Epiroc's self-sustained battery, which has its own dedicated cooling system, allows for both on-board and off-board charging.

Main benefits

Productivity – Scooptram ST14 SG is a highly productive compact loader with a 14 metric ton tramming capacity.

Safety – Scooptram ST14 SG ensures safety for the operators, service routines, and the overall operation through features such as a self-sustained battery management system, a center hinge and boom uplock, and built-in smart safety features.

Electrification – A battery-electric driven fleet minimizes the environmental footprint and creates a healthier work environment.

An automated Scooptram ST14 SG increases productivity and uptime, providing you one extra hour of operation per shift during blasting and while venting blast fumes.

All electrical components are maintenance free and allow for longer service intervals. Scooptram ST14 SG will spend more time moving material and less time in the shop.

The bucket of the Scooptram ST14 SG can be equipped with Wearpact. This high-quality, bolt-on GET delivers exceptional reliability, cost of ownership and productivity results.

Part of the Smart and Green series

Our battery-electric underground loaders are now 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.

An exhaust-free loader for large-scale mining operations

Scooptram ST14 SG is a 100% exhaust-free loader for underground application and is based on the well-proven Scooptram ST14. It is as suitable for development as it is for production loading. Energy regeneration will ensure low energy consumption and extend the driving range. With the electric drive, Scooptram ST14 SG will outperform diesel equivalents, especially on grade.

+ Environmental benefits

Scooptram ST14 SG will improve the environment both locally at your operations and globally. Scooptram ST14 SG means zero exposure for the work force to diesel particulates and toxic gases such as nitrogen oxides, hydrocarbons and carbon monoxide (NOx, HC and CO). Being exhaust-free, this machine makes a difference when it comes to carbon footprint and greenhouse gases.

+ Maximized productivity

Scooptram ST14 SG is optimized for productivity in many ways. Tramming is provided by a high-power traction motor connected to a high-efficiency driveline. Hydraulic functions are powered from a separate auxiliary motor that delivers hydraulic power on-demand. The battery is designed for maximum energy capacity and quick swapping.

+ Automate your Scooptram ST14 SG

Stoping and caving operations can benefit from Epiroc's battery-electric 14-ton loaders combined with Deep Automation solutions. Epiroc's integration capabilities and system interoperability empower you to scale up the use of Scooptram ST14 SG in a mixed fleet of battery-electric loaders, conventional loaders, and utility vehicles.

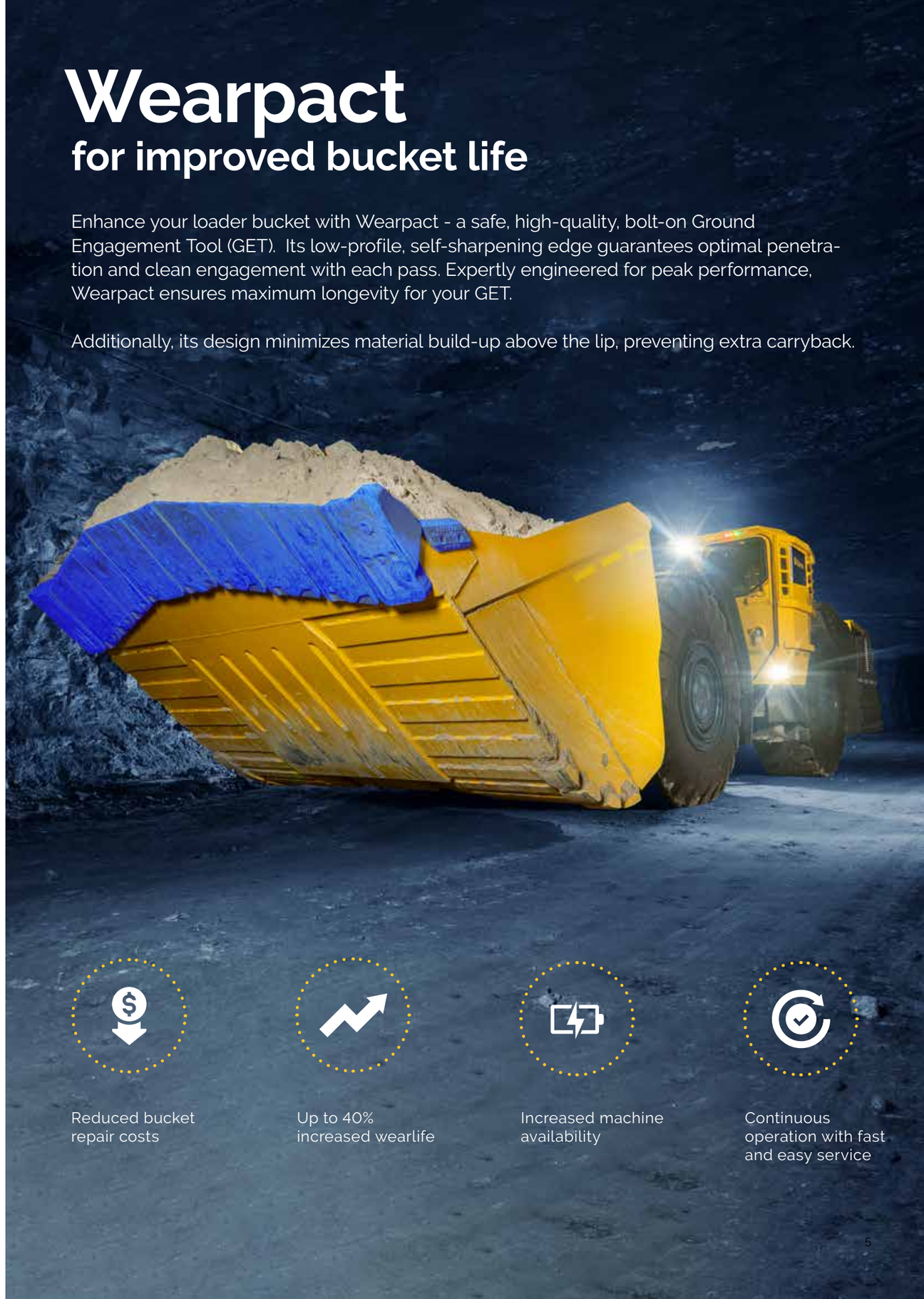
A comprehensive service offering

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.

Wearpact
for improved bucket life

Enhance your loader bucket with Wearpact - a safe, high-quality, bolt-on Ground Engagement Tool (GET). Its low-profile, self-sharpening edge guarantees optimal penetration and clean engagement with each pass. Expertly engineered for peak performance, Wearpact ensures maximum longevity for your GET.

Additionally, its design minimizes material build-up above the lip, preventing extra carryback.



Reduced bucket repair costs

Up to 40% increased wearlife

Increased machine availability

Continuous operation with fast and easy service

Technical specifications

Features

The Scooptram ST14 SG provides high safety standards thanks to the ISO ROPS- and FOPS-certified cabin, speed limiter and best operator visibility in its class, always keeping operators and the operation safe.

At the same time, operators benefit from a comfortable cabin thanks to the spacious legroom in the Epiroc footbox, air-suspended seat and steering soft stop.

Moreover, it is not only the boom suspension and traction control, but also the smart features and long battery autonomy that offer your operation new levels of productivity. Through our Fleet+ on My Epiroc, 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 service of the Scooptram ST14 SG as safe, fast and accessible as possible.

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

Specifications

Capacities	
Tramming capacity*	14 000 kg
Breakout force, hydraulic	22 300 kg
Breakout force, mechanical	18 240 kg
Standard bucket	6.4 m^3
*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

Sound and vibration

Closed cabin	
A-weighted sound pressure level, LpA according to ISO 6396:2008	69 +/-6 dB
Weighted whole body vibration level, A(8) w according to ISO 2631-1	0.8 +/- 0.4 m/s^2
External	
A-weighted sound power level, LwA according to ISO 6395:2008	98 +/-6 dB

Requirements and compliance

Machinery directive - 2006/42/EC

Low voltage directive - 2014/35/EC

Electromagnetic compatibility directive - 2014/30/EC

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

Axles

Brand/model	Kessler/D106
Front and rear differential	Limited slip
Oscillation	16o (8o each side)

Transmission

Brand/model	Dana/ERTE32
Type	Automatic power shift with fully modulated 4-speed shifting

Tires

Front and rear size	26.5 R25 (slicks/treaded)
Because applications and conditions vary, Epiroc recommends that the user consult with tire suppliers to obtain the optimum tire selection.	

Operator's compartment

Cabin
Closed cabin
Door interlock to apply brake and prohibit hydraulics
Insulated sound barriers
Sealed door and windows
Emergency exit in large window, all windows can be opened from inside and outside
Heating Ventilation and Air Conditioning (HVAC)
Ergonomic adjustable joysticks
Safe, three-point access into and out of the cabin
Oil-free environment
5V USB outlet
Diagnostic outlets
Physical dimensions of operators and minimum operator space envelope - ISO 3411:2007
Zones of comfort and reach for controls - ISO 6682:1986
Operator's control - ISO 10968:2020
Falling-object protective structures (FOPS) - ISO 3449:2005
Roll-over protective structures (ROPS) - ISO 3471:2008
Operator's seat
Air suspended
Adjustable height, depth and lumbar support
Soft padding with water-resistant material
Two-point safety belt
Side-seated for bi-directional control
Epiroc footbox

Documentation

Safety-, operator-, service- and spare parts manual in english and other languages

Read more about environmental product information here:

Technical specifications

Control system

Epiroc rig control system (RCS)
Operator display with intuitive interface and integrated BMS information
Logging of production and machine data
Fleet+ telematics hardware for wifi and LTE
Automatic brake test
Traction control
Bucket float
Joystick controls for dump/hoist and steering
Forward-Neutral-Reverse toggle switch
Machine status indicator light mounted on canopy
Hill hold
Wiper and washer control in joystick
Machine warm-up function
Audio-visual reverse alarm

Electrical system

Batteries	2x 12V, 56Ah (2S configuration)
System voltages	24V
Front working lights	1 400 lumen
Rear working lights	1 400 lumen
Emergency stops, 3 positions	
Position and brake lights	

Power electrics: inverters, transformers

Brand	ABB
IP	67
Max voltage	850 VDC
Cooling	Liquid cooled

Battery pack

Chemistry	Li-Ion NMC
Usable capacity (kWh)	300
Cell cooling	Liquid cooled
Thermal management system	Integrated
Operating ambient temperature	0o to 40oC
Charging contact	CCS 2.0 type 1 or 2
Charging source	External charger
On-board battery with off-board charger	Yes
Off-board battery with off-board charger	Yes, battery swap
Minimum charging time 0–90%	1 hour 50 min
Weight	4 200 kg

Hydraulic system

System pressure	27 Mpa
Main valve	Open circuit, LS controlled
Steering pump	Piston type, LS controlled
Boom and bucket pump	Piston type, LS controlled
Hydraulic tank capacity	218 liters
Filtration, return line	12 µm
Lift cylinders	2x 200 mm
Tilt cylinder	1x 230 mm
Steer cylinder	2x 105 mm
Steering cylinder soft stop	
Secondary steering (CE requirement)	
Redundant steering (CE requirement)	
Automatic Brake Activation (ABA)	
Steering requirements - ISO 5010:2019	

Brakes

Type	Fully enclosed, force-cooled, multiple wet discs at each wheel end
Service brake	Regenerative braking (SAHR)
Park brake/emergency brake	SAHR
Performance requirements and test procedures for brake systems - ISO 3450:2011	

Buckets

Type	Volume (m^3)	Material density (t/m^3)		Width (mm)
		Straight blade	Wearpact (GET)*	
Straight blade and Wearpact (GET)*	7.8	1.8	1.7	3 040
	7.0	2.0	1.9	3 040
	6.4	2.2	2.1	3 040
	5.8	2.4	2.3	3 040
	5.4	2.6	2.5	3 040
	5.0	2.8	2.7	3 040
	4.7	3.0	2.9	3 040
EOD straight blade	6.0	2.0	-	2 850

* Wearpact (GET) is optional

Main frame

Center hinge and boom lockup pins
Central manual lubrication system
Manual hydraulic fill pump
Battery jumpstart receptacle
Lockable machine disconnector

Options

Automation

- Radio Remote Control (RRC)
- Video assist
- Tele Remote Control
- Automation solutions

Operator's compartment

- Camera monitoring, front and rear with dedicated displays
- Media player

Control system

- Machine protection
- Speed limiter
- Collision Avoidance System (CAS) interface
- Tire pressure monitoring system (TPMS9
- Load weighing system

Electrical system

- Detachable service light (CE requirement)
- Always on strobe

Hydraulic system

- Automatic boom suspension system, ride control
- Arctic oils

Brake

- Neutral brake apply, NBA (Park brake on neutral)
- Hydraulic brake release tow hook

Main frame

- Ansul Foray (powder) fire suppression manual release
- Ansul Foray (powder) with Checkfire 210 fire suppression automatic release
- Forrex (liquid) fire suppression system with automatic release
- Handheld fire extinguisher
- Central automatic lubrication system
- Electric pump for hydraulic tank fill, 24V
- Wheel chocks and brackets
- Ground engagement tools (GET)
- EOD ejector bucket
- Corrosion resistance radiator
- Knock-down construction
- Guard rails

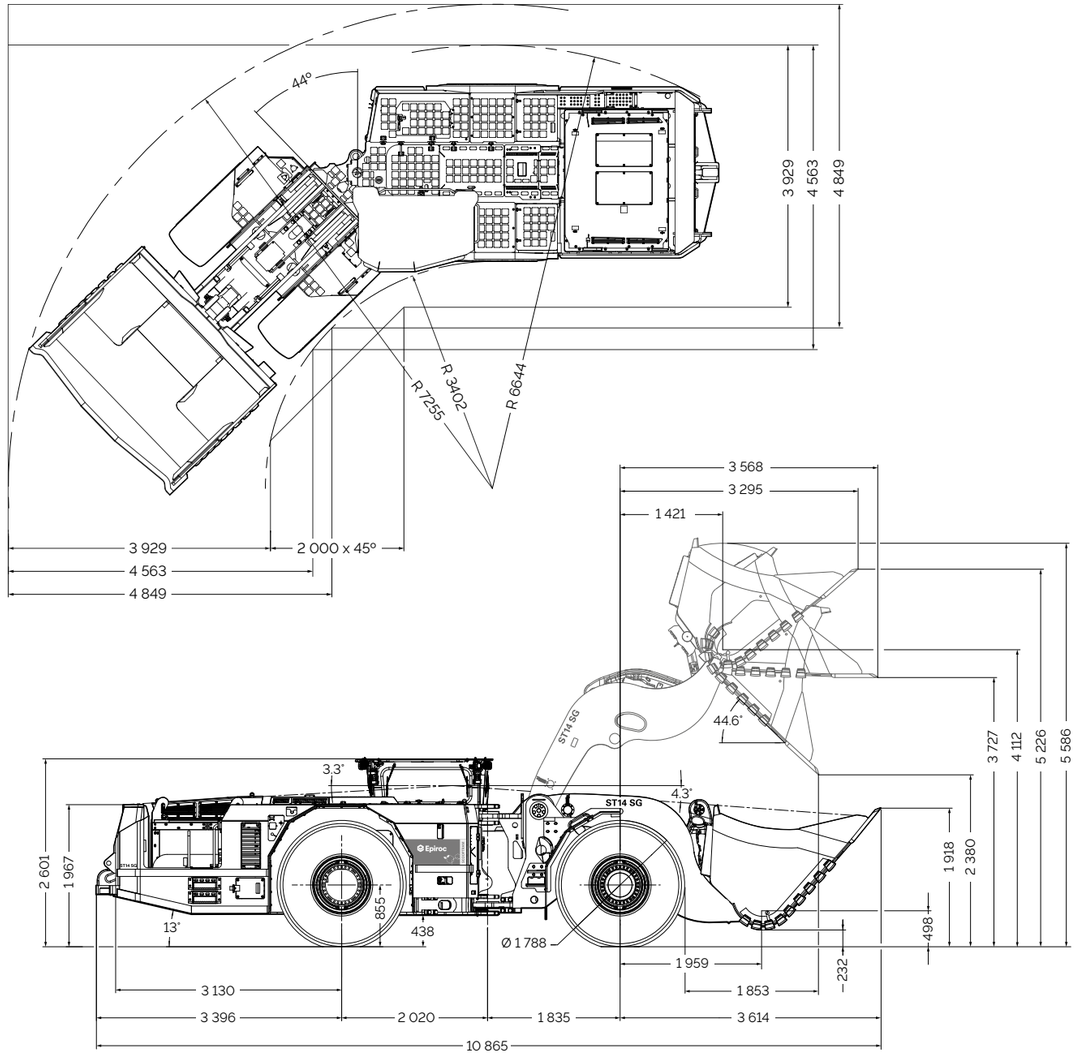
Parts and services

- Preventive maintenance kits
- Repair and rebuild kits
- Upgrade kits
- Face mechanics tool set
- Shop mechanics tool set
- Service toolbox for RCS
- Operator training in simulator

Digital products

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

Turning radius and dimensions (2.2 t/m³ bucket)



All dimensions are shown in millimeters (mm). Dimensions and calculations shown are based on standard vehicle configuration with 27 mm tire deflection, unloaded.

Grade performance

Grade %	0	2	4	6	8	10	12.5	14.3	16	18	20
Grade	-	1:50	1:25	1:16.7	1:12.5	1:10	1:8	1:7	1:6.3	1:5.6	1:5
Standard configuration, empty bucket (km/h)											
1st gear	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
2nd gear	11.1	11.1	11.1	11.1	11.1	11.1	10.8	9.6	8.8	8.0	7.4
3rd gear	18.5	18.5	18.5	18.5	15.2	12.8	10.8	9.6	8.9	8.0	7.4
4th gear	33.2	33.2	23.7	18.5	15.2	12.8	–	–	–	–	–
Standard configuration, loaded bucket (km/h)											
1st gear	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
2nd gear	10.9	10.9	10.9	10.9	10.9	9.6	8.1	7.2	6.6	6.0	5.5
3rd gear	17.8	17.8	17.8	13.9	11.4	9.6	8.1	7.2	–	–	–
4th gear	31.1	24.9	17.8	13.9	–	–	–	–	–	–	–

3% rolling resistance assumed. Actual performance may vary depending on the application, lockup engaged. Continuous operation is recommended on maximum 1:7 grade.

Automate your operation

Your Scooptram loader is ready for automation with well-proven teleremote and automation capabilities, matching the needs of your operation – from small stoping to large block caving.

+ Increase safety

By operating the machine from a control room located in a safe environment, the operator will not be exposed to hazardous areas within the mine.

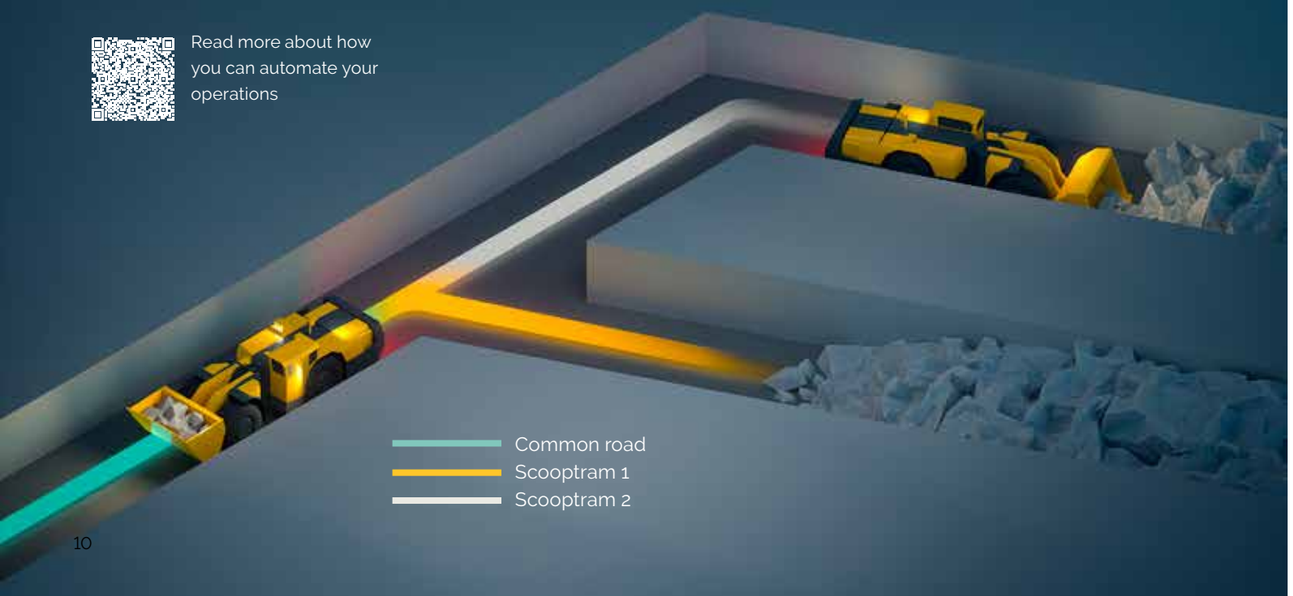
+ Boost productivity

Automation enables you to utilize your loader even when people are not allowed in the mine due to blasting and shift changes, which increases uptime and produced tons. Thanks to hauling on repeatable routes, your machine will have fewer wall hits and spend less time in the repair shop.

+ Optimize your operation

Adding automation to your fleet means reaching the full potential of your operation by controlling production assignments, fleet traffic, and work area access. This eliminates the risk of collisions in common drifts and enables continuous operation.

Read more about how you can automate your operations



Supreme strength, impressively fast

Minetruck MT42 SG is Epiroc's largest battery-electric mine truck. It is impressively fast on inclines, accelerating your dump cycles and increasing your overall productivity. The result is unmatched, zero-emission performance in underground mining and construction operations.

Specifications

Capacities	
Tramming capacity	42 000 kg
Standard box volume (SAE heaped)	19.0 m3
Motion times	
Dumping	13 sec
Operating weight, including battery	
Approximate weight	37 700 kg
Front axle load	27 500 kg
Rear axle load	10 200 kg

Motors

	Traction	Auxiliary
Brand	ABB	ABB
IP	65	65
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

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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