Scooptram ST14 Battery

Fully battery electric loader with 14-tonne capacity

Epiroc

Power unleashed underground

Built for demanding underground applications, the compact and highly productive, zero-emission Scooptram ST14 Battery gives you the ability to work in the toughest conditions without exposure to diesel particulates and toxic gases.

The CE-marked high safety batteries have a built-in, multi-layer safety system, from cell design to a deformation zone.

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

The batteries are designed with productivity and performance in focus. The high-energy density batteries are easily swappable for continuous applications.

Zero emission 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

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

Scooptram ST14 Battery can lower your energy consumption up to 80% compared to diesel-driven machines

Boost your productivity and take a big step toward a more sustainable operation

Main benefits

Zero emission – A battery-driven electric fleet provides a powerful opportunity to minimize the environmental footprint and create a healthier work environment.

Significant cost savings – Battery-powered electric machinery brings savings on operational costs, including expenditures related to ventilation, cooling and operator health.

Power in a compact size – Scooptram ST14 Battery is a highly productive compact loader with a 14 metric tonne hauling capacity.

The future is electric

We are leading the change towards sustainability in mining through battery electric, zero-emission equipment. The result is a safer and healthier underground working environment. This contributes to a sustainable future and a smaller environmental footprint. It is a power change that changes everything.

A zero-emission loader for large scale mining operation

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

+ Environmental benefits

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

+ Maximized productivity

Scooptram ST14 Battery 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.

+ Service and maintenance made easy

The new Scooptram ST14 Battery has a considerably reduced number of service points and moving parts. This results in longer service intervals, lower parts consumption and lower running cost.

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

● = Standard ○ = Option

Features

Safety
- Spring-applied, hydraulic release SAHR) brakes
- Automatic brake-test with diagnostics and logging
- ISO ROPS and FOPS certified cabin, oil-free operator's compartment and door interlock (applies brakes, blocks steering and bucket/boom movement when door opens)
- The best operator visibility in its class
- Speed limiter

Comfort
- Increased leg-room with Epiroc footbox
- Rubber mounted cabin or canopy for reduced vibration level
- Ergonomic multifunction control joysticks
- Simple and clear, multifunction di play with intuitive operator interface, available in 11 languages
- Comfortable air suspended seat
- Steering and boom soft stop reduces vibration for the operator

Productivity
- Load weighing system
- Boom suspension with dual accumulator to provide a smooth ride, allowing to travel at higher speed and reducing spillage
- Automation ready

Serviceability
- Epiroc Rig Control System (RCS) provides service information in clear text on the monitor
- Easy access to service points, filters and valve blocks
- Daily lube points quick and easy to service

Sustainability
- Traction control
- On board BMS - Battery Management System
- On board diagnostics
- Proven powertrain components
- Machine status indication lights

Motor

	Traction	Auxiliary
Brand/model	ABB	ABB
IP	65	65
Nominal power	200 kW	160 kW
Nominal torque	1 100 Nm	600 Nm
Nominal voltage	400 VAC	400 VAC
Cooling	Liquid cooled	Liquid cooled

Battery pack

Chemistry	Li-Ion NMC
Number of sub-packs	4
Useable 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

Power electrics; inverters, transformers

Brand	ABB
IP	67
Max voltage	850 VDC
Cooling	Liquid cooled

Axles

Brand/model: Kessler D106	●
Degree of oscillation (total): 16° (8° on each side)	●
Differentials: front, limited slip	●
Differentials: rear, limited slip	●

Specifications

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

Transmission

Automatic power shift with fully modulated 4 speed shifting	●
Brand/model: Dana ERTE32	●

Brakes

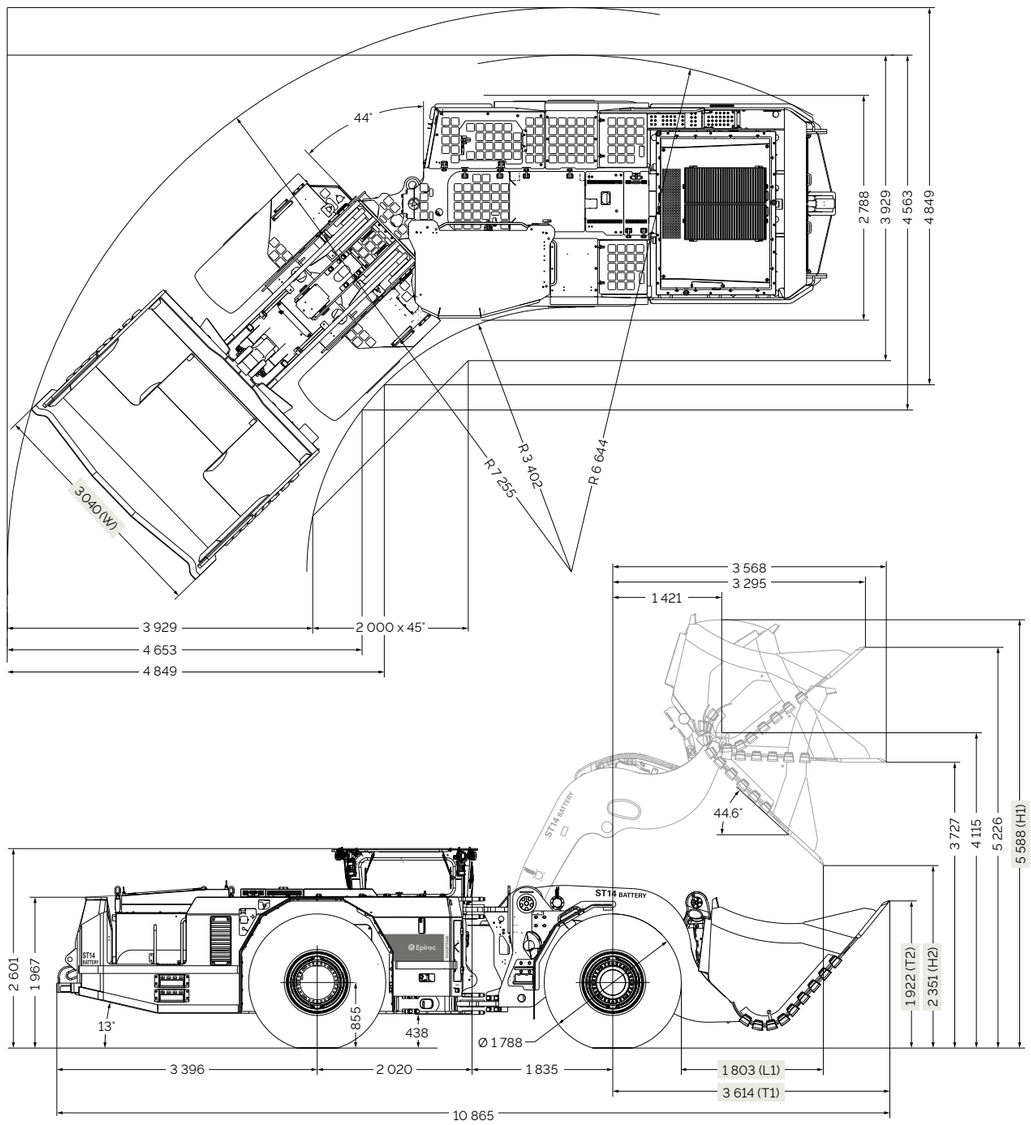
Fully enclosed, force-cooled, multiple wet discs at each wheel end	●
Service/parking/emergency brakes: SAHR	●
Brake apply after 3 sec in neutral	○
Brake release retriever tow hook	○

Tires

Tubeless tire design for underground mine service*	●
Tire size front and rear: 26.5R25 (slicks)	○
Tire size front and rear: 26.5R25 (treaded)	○

*As applications and conditions vary, Epiroc recommends that the user consults with tire suppliers to obtain the optimum tire selection.

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.

Bucket data

									EOD
Volume, nominal heaped		7.8 m³	7.0 m³	6.4 m³	5.8 m³	5.4 m³	5.0 m³	4.7 m³	6.0 m³
Maximum material density		1.8 t/m³	2.0 t/m³	2.2 t/m³	2.4 t/m³	2.6 t/m³	2.8 t/m³	3.0 t/m³	2.0 t/m³
Bucket overall width (mm)	W	3 040	3 040	3 040	3 040	3 040	3 040	3 040	2 850
Tramming position: axle centreline to bucket lip (mm)	T1	3 768	3 690	3 614	3 536	3 486	3 447	3 406	3 724
Tramming position: ground to bucket tip (mm)	T2	2 092	2 005	1 922	1 839	1 783	1 738	1 699	2 027
Truck loading reach (mm)	L1	1 952	1 880	1 803	1 727	1 675	1 633	1 598	1 898
Raised position: back height max (mm)	H1	5 777	5 684	5 588	5 695	5 647	5 591	5 530	5 796
Raised position: bucket tip, height (mm)	H2	2 183	2 268	2 351	2 435	2 489	2 532	2 576	2 233

● = Standard ○ = Option

Cabin

Closed cabin with ISO ROPS and FOPS	●
Heating, Ventilation and Air Conditioning (HVAC) wilth filtered air	●
Door interlock (applies brakes, blocks steering and bucket/ boom movement when door opens)	●
Open door retainer	●
Operator seat with air suspension and 2-point retractable seat belt	●
Side seated operator for bi-directional operation	●
Audio system	○
Whole body vibration value according to below EN 14253 A(8)w max. 0.8+/-0.4 m/s²	
External sound level according to ISO 6393 LwA 102 dB(A)	
Sound level in cabin according to ISO 6394 LpA 76 dB(A)	

Hydraulic system

Heavy duty load sensing piston pumps	●
System pressure 29.6 MPa	●
Hydraulic tank capacity 218 litres	●
Filtration, return line: 12 µm	●
Electric pump for hydraulic tank fill, 24 V	○
Arctic oil	○
Steer cylinders: chrome plated stems, 2x105 mm diameter	
Hoist cylinders: chrome plated stems, 2x200 mm diameter	
Tilt cylinder: chrome plated stem, 1x230 mm diameter	

Control system

Operator display with intuitive interface and integrated BMS information	●
Logging of production data, number of buckets, fuel consumption etc.	●
Brake test function with logging	●
Transmission and hydraulic system diagnostics and logging	●
Save machine logged data on USB memory stick	●
Front and rear cameras	○
Audio-visual reverse alarm	●
Joystick controls for dump and hoist and steering	●
Forward/neutral/reverse toggle switch integrated in steering joystick	●
Machine status indicator light mounted on canopy	●
Steering and boom soft stop reduces vibrations	●
Bucket float	●
Automatic ride control (boom suspension)	○
Traction control	●
Speed limiter	○
Machine protection	○
Emergency steering (required for CE approved vehicles)	●
Redundant steering (required for CE approved vehicles)	●

Electrical system

System voltage: start and accessories: 24V, with 24/12 V converter	●
DC/DC converter	●
Isolation switch lockout	●
Driving lights LED: 17x1 400 lumen	●
Detachable service light (required for CE approved vehicles)	○
24V battery charging receptacle	●

Main frame

Center hinge and boom lock up pins	●
EOD ejector bucket	○
Wheel chocks and brackets	○
Ground Engagement Tool (GET)	○
Knockdown construction	○
Central manual lubrication system	●
Central automatic lubrication system	○
Wiggins fast fill for transmission and hydraulic oil	○
Hand held fire extinguisher	○
Ansul manually activated fire suppression	○
Ansul checkfire automatically activated fire suppression system	○
3x emergency stop buttons	●

Automation

Scooptram Radio Remote Control (RRC)	○
Video assist	○
Scooptram Automation	○
Scooptram Tele Remote Control	○
Collison Avoidance System Interface (CAS)	○
Certiq telematics hardware for Wifi or LTE*	●
Certiq telematics solution professional*	○

*Certain country restrictions may exist

Parts and services

Preventive maintenance kits	○
Repair and rebuild kits	○
Upgrade kits	○
Face mechanics tool set	○
Shop mechanics tool set	○
Service tool box for RCS	○
Operators training in simulator	○

Documentation

Operator, service and spare parts manual on CD and hard copy	●

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, lock up engaged. Continuous operation is recommended on maximum 1:7 grade.

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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