We are Epiroc

Your productivity and sustainability partner

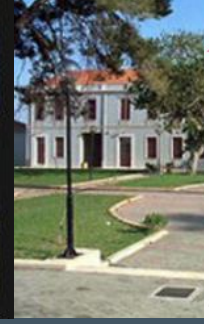
Andreas Papadopoulos

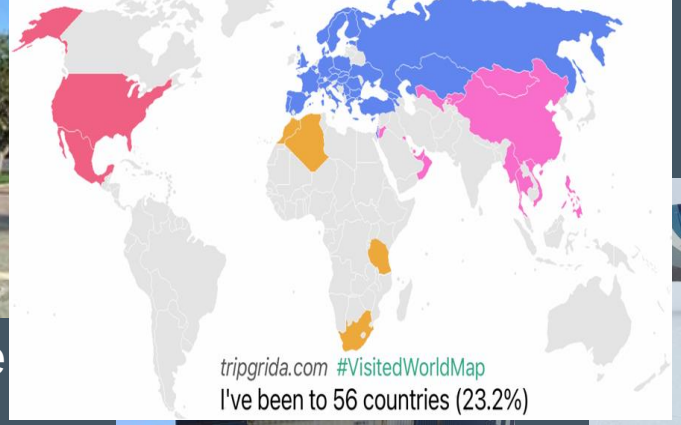
Regional Business Manager

Europe – Africa – M.East

Epiroc

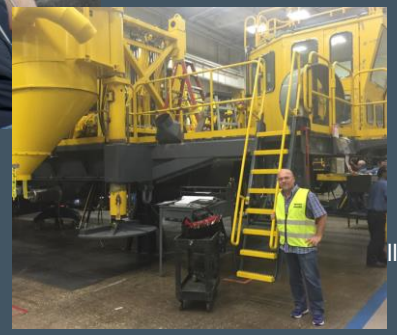
Introduction





Epiroc

- 1990-1996, Mineral Recourses Engineer – Tec. University Crete
- 2000- 2014, Sales Engineer N.Greece / Regional Product Manager Greece / Business Line Manager SEEurope - Atlas Copco Hellas SA
- 2014, Regional Business Manager Parts and Services Europe – Atlas Copco Rock Drills AB
- 2018 - , Regional Business Manager Parts and Services EMEA – Epiroc AB

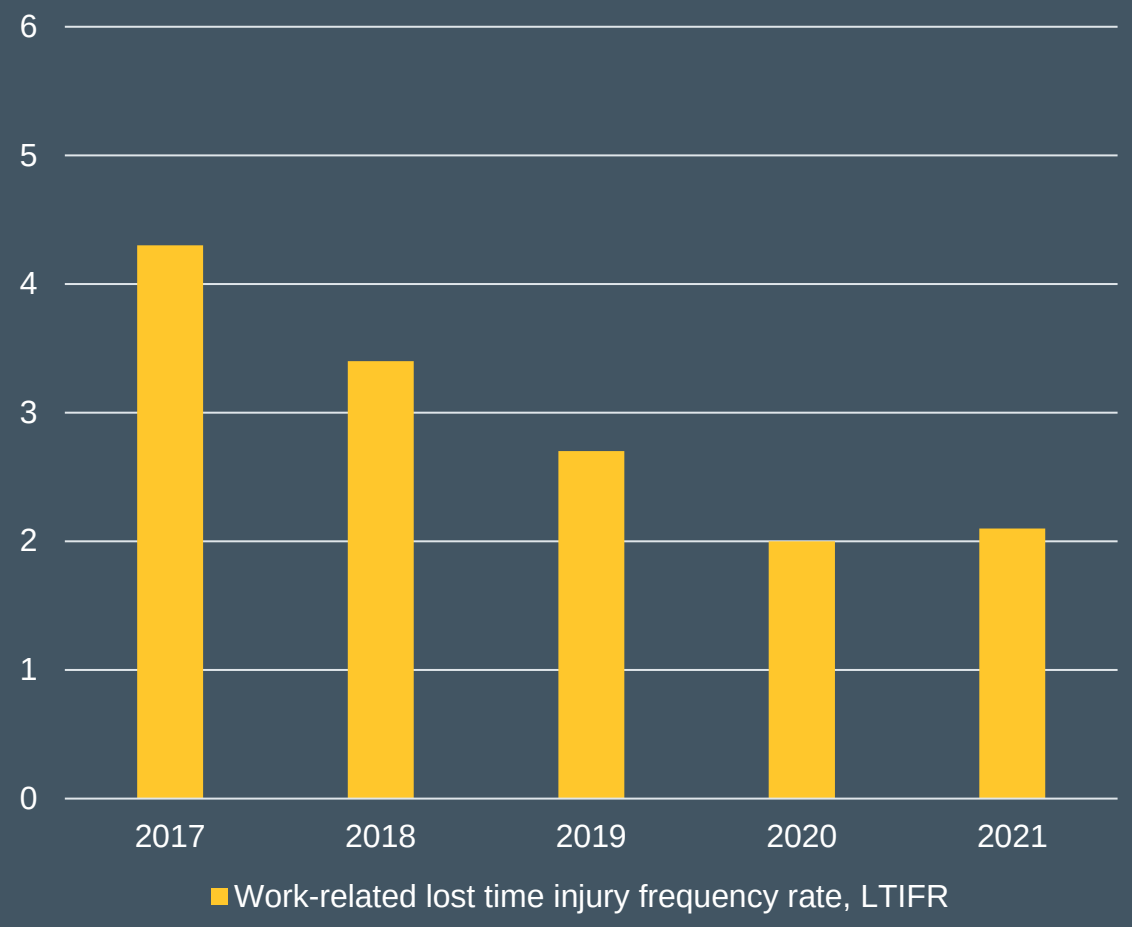


We care

Epiroc takes the well-being of people and planet seriously. We drive many projects to increase safety, diversity and sustainability.

Epiroc

Safety first



Epiroc in brief

What do we stand for?

Epiroc

Epiroc in brief

We are a leading productivity and sustainability partner to our customers

We provide

- innovative and safe equipment, such as drill rigs, rock excavation and construction equipment and tools for surface and underground applications.
- world-class service and other aftermarket support as well as solutions for automation, digitalization and electrification.

Epiroc in numbers

>15 500
Employees*

Global presence
Customers in more than 150 countries

Annual revenues of
BSEK 40*

*2021

A 149-year old start-up

A new company with a proven track record of innovations

Digitalization
Automation
Electrification

1873
Company founded

1905
The pneumatic rock drill

1936
The jackleg and Swedish method

1973
The hydraulic rock drill and mechanized drilling

2018
Split from Atlas Copco and listing of Epiroc as an independent company

epi in Greek:
at, close, upon

epi + roc

rocca in Latin:
rock

Epiroc means “at rock,” reflecting our **focus on mining and rock excavation, proximity to customers** and the **strength of our partnerships**.

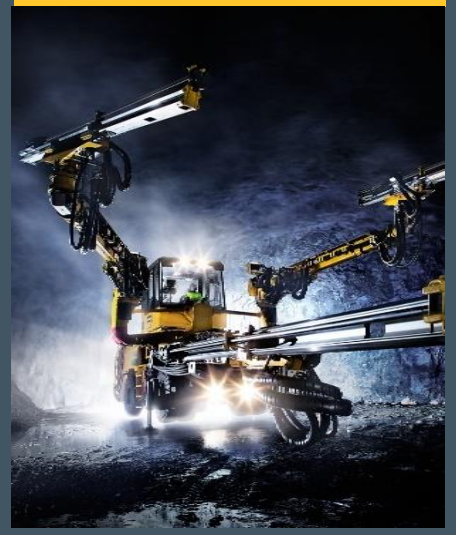
Focused and decentralized businesses

Segments and divisions

Equipment & Service

Surface

Underground



Parts & Services

Technology & Digital

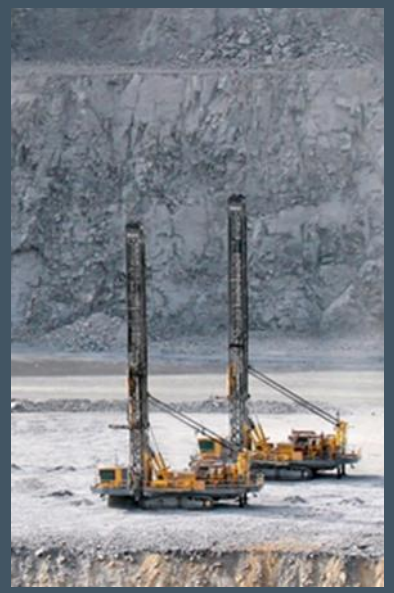
Tools & Attachments

Tools & Attachments

Leadership in selected niches

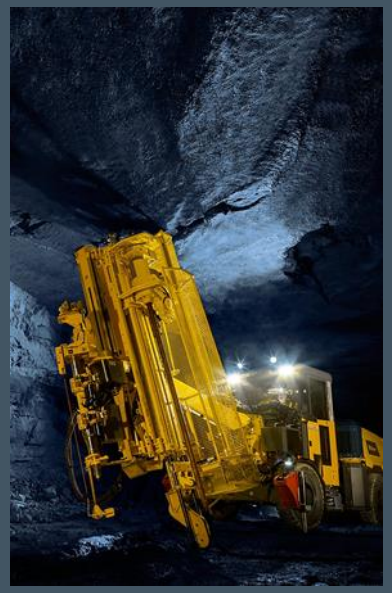
Innovative solutions for hard-rock applications

Mining



Surface mining

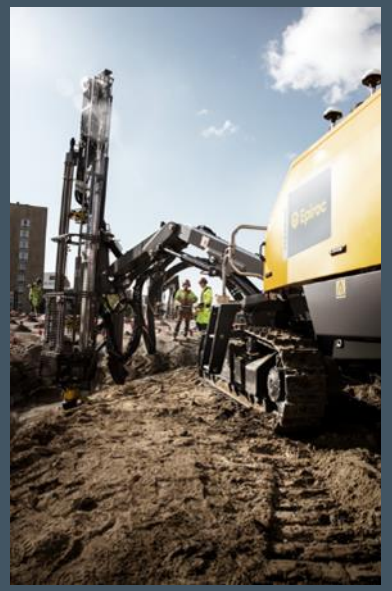
Underground mining



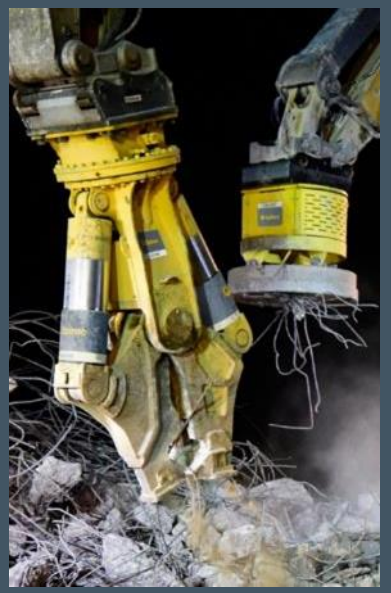
Exploration

Infrastructure

Underground civil engineering



Surface civil engineering



Deconstruction and recycling

Service, spare parts and consumables

Our core values

Innovation

We are creative, bold and open minded, with the imagination to develop new ideas and the initiative to bring them to market.

Commitment

We are committed to meet and exceed expectations by staying connected to our customers, technology and the environment.

Collaboration

We believe in close cooperation with customers, colleagues, partners and other stakeholders.

Epiroc

United in performance. Inspired by innovation.

What it means

With Epiroc as a dedicated **partner**, you as a **customer** get a **passionate** team that supports you in a **sustainable, efficient** and **safe** way.

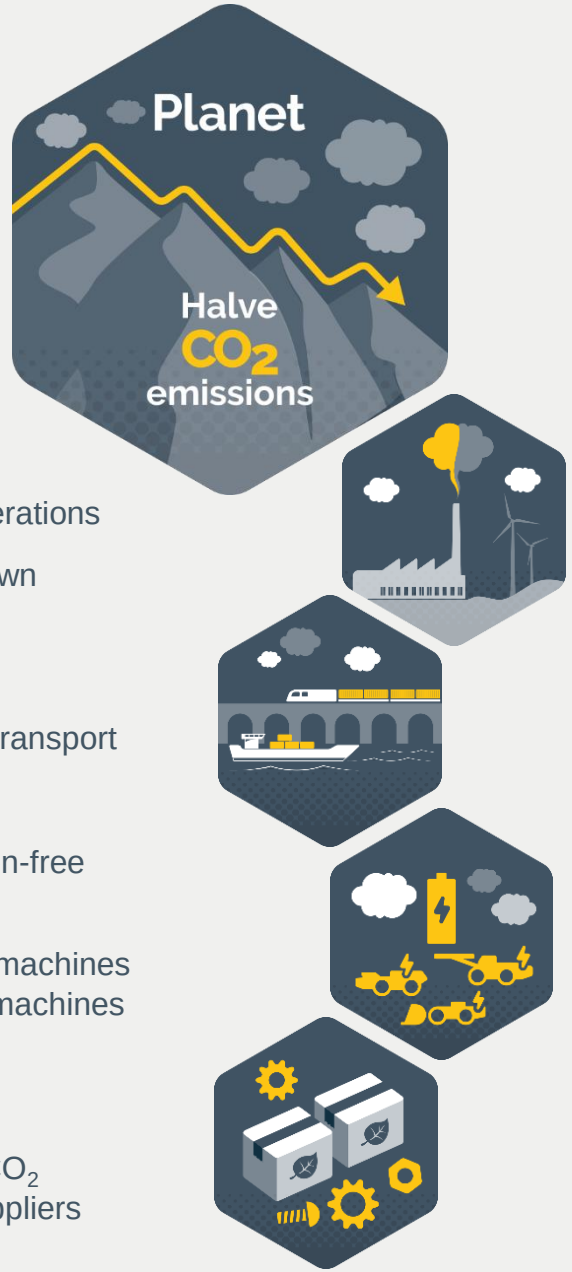
No challenge is too big for our **curiosity** and **persistence** to increase your productivity.

Lift your competitive advantage with our continuous drive to make good things better, from **high-performance equipment** and **service excellence** to building the **mining** and **construction** industries of tomorrow.

Full commitment to sustainability

United and inspired throughout the whole value chain

Epiroc 2030 goals for People and Planet



Safe, healthy, ethical

Safety and Health

- No work-related injuries

Balanced workforce

- Double the number of women in operational roles

Walk the talk

- Have all employees and business partners comply with our Code of Conduct
- Responsible Sales Assessment Process implemented

Halve CO2 emissions

Operations

- Halve CO_2 emissions in operations
- 90% renewable energy in own operations

Transport

- Halve CO_2 emissions from transport

Products

- Offer a full range of emission-free products
- Halve CO_2 emissions from machines sold (in 2030 compared to machines sold in 2019)

Suppliers

- Require 50% reduction of CO_2 emissions from relevant suppliers

Water for All

Epiroc’s global community engagement initiative

- Empowering people through access to clean drinking water, sanitation and hygiene
- Founded in Sweden in 1984 by two employees
- Reached millions of people worldwide
- Financed through employee donations that are tripled by Epiroc

Our offering

Making your operations more profitable, safe and sustainable

Epiroc

Epiroc in brief

Our segments and applications

Equipment & Service

Equipment & Service provides equipment and solutions for rock drilling, mechanical rock excavation, rock reinforcement, loading and haulage, ventilation systems, exploration drilling, drilling equipment for water, energy, oil and gas. It also provides related parts and service and solutions for automation and interoperability.

Surface equipment

Underground equipment

Parts and services

Automation and digital solutions

Tools & Attachments

Tools & Attachments provides rock drilling tools and hydraulic attachments that are attached to machines and used mainly for drilling, demolition and recycling as well as rock excavation. It also provides related service and spare parts.

Rock drilling tools

Hydraulic attachment tools

Our customers and applications

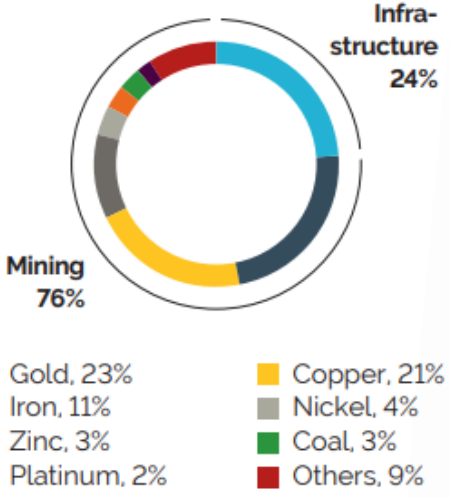
Mining

The mining industry represents approximately 76% of our business. Applications include production and development work for both underground and open-pit mines, and for mineral exploration.

Infrastructure

Infrastructure applications represent approximately 24% of our business. Applications include blasthole drilling for tunneling, for road, railway and dam construction, aggregate production and other construction work, demolition of buildings, bridges and industrial plants as well as other drilling applications.

Exposure to mining (by minerals) and infrastructure



Estimated exposure based on orders received in 2020

Mining equipment and applications

Epiroc

Underground mining

- Mechanical rock excavation
- Face drill rigs/long hole drill rigs
- Underground loading and haulage
- Ground support equipment
- Ventilation systems
- Rock drilling tools
- Hydraulic drum cutters
- Hydraulic breakers

Surface mining

- Blasthole drill rigs
- Rock drilling tools
- Hydraulic breakers
- Hydraulic drum cutters

Exploration

- Surface core drill rigs
- Underground core drill rigs
- Reverse circulation drill rigs
- Rock drilling tools




Infrastructure equipment and applications

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Underground civil engineering

- Face drill rigs/long hole drill rigs
- Underground loading and haulage
- Rock reinforcement equipment
- Ventilation systems
- Rock drilling tools
- Hydraulic drum cutters
- Hydraulic breakers
- Underground core drill rigs

Surface civil engineering and urban development

- Surface drill rigs
- Well drill rigs
- Rock drilling tools
- Hydraulic breakers
- Hydraulic drum cutters

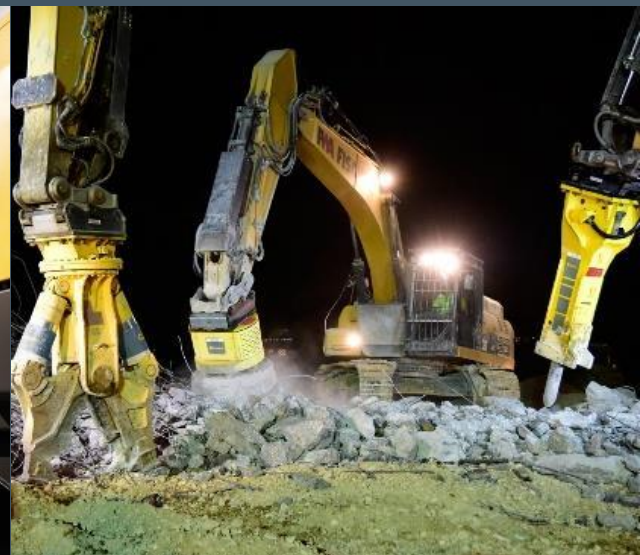
Quarrying

- Surface drill rigs
- Hydraulic dimensional stone drill rigs
- Rotary blasthole rigs
- Rock drilling tools
- Hydraulic breakers
- Hydraulic drum cutters

Deconstruction and recycling

- Hydraulic breakers
- Cutters
- Pulverizers
- Grapples
- Magnets
- Compactors
- Bucket crushers
- Bucket screeners



Underground application offering

Leading solutions for underground mining and civil construction

Epiroc


Today
Tomorrow
Future
Selective mining electrified
Large scale mining electrified
Ventilation on demand
Emission free
Real time mining
Autonomous mining
Energy efficiency
Maintenance and consumables planning
Hard rock continuous operation
Short Interval Control
Fleet management
Connected machines
Opt projects
Traffic Awareness
Traffic Management
Autonomous fleet
High capacity haulage systems
Interoperability
Mobilaris MI – Situational Awareness
Mechanical Rock Excavation
Guidance / Wall Avoidance
Ring to ring tele-remote tramming
Truck Automation
Certiq – Connected Machines
Scooptram Automation
Tele-remote drilling
Automatic face drilling
Automatic fan drilling
Autonomous production
High performance rock reinforcement
Automation
Rock Excavation

Application expert services

Investigational / Auditing Services

- Pilot study support
- Operations audits
- Machine selection studies

Analysis & Simulation Services

- Mine and tunneling development simulations
- Load and haulage simulations
- Production drilling productivity
- Total cost of operation (TCO) Analysis

Integration Services

- Automation-process
- Communication
- Mining-/tunneling- process
- Machine maintenance
- Infrastructure maintenance

Optimization Services

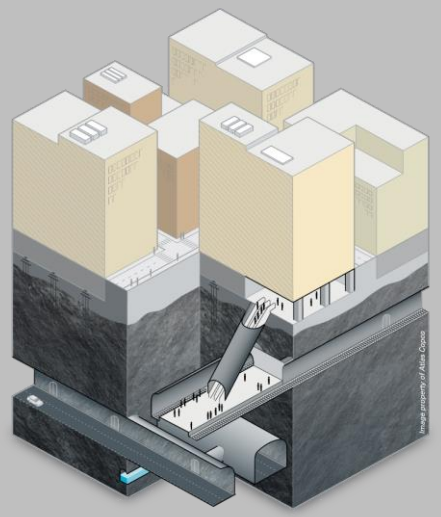
- Automation-process
- Development optimization
- Load and haulage optimization
- Layout optimization
- 6th sense

Arbitrary

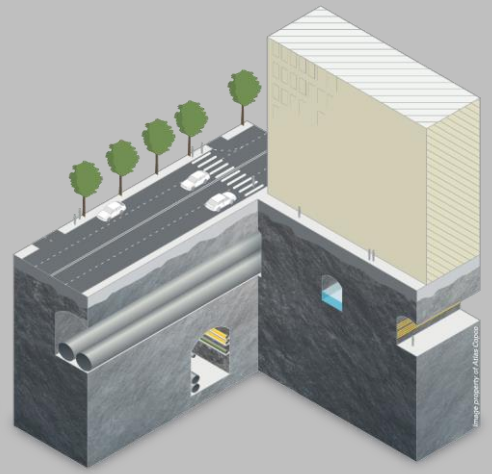
- Machine bench marketing
- Process bench marketing
- Training and education
- Market analysis
  Industry forums

Tunnel and underground space

Examples

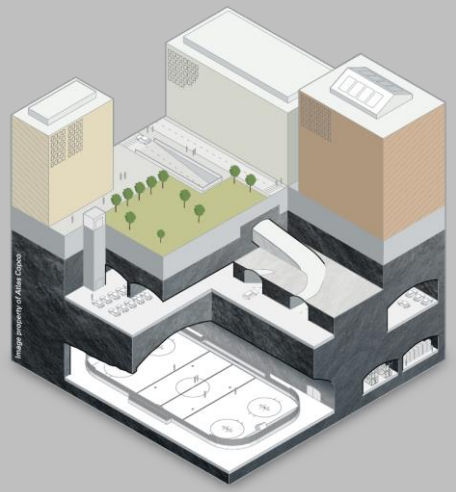


Transport tunnels

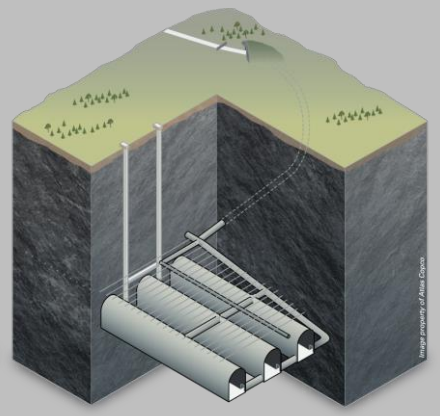


Utility tunnels

Hydroelectric power plants



Underground space

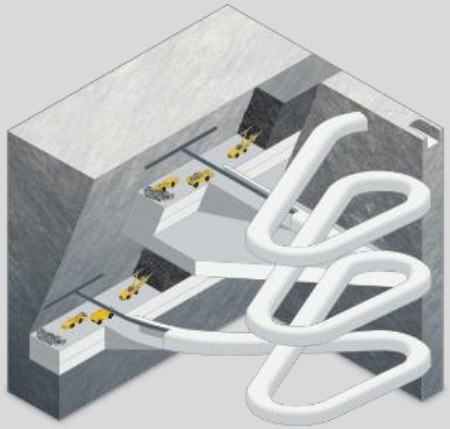


Storage

Underground mining methods

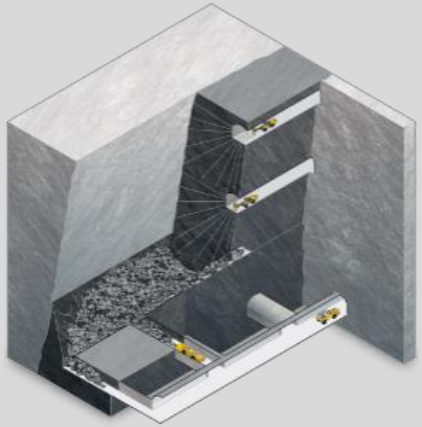
Machine selection

Classifying Machine selection with Mining Method based on where the bulk of the ore comes from



Cut and fill

Development drifting method

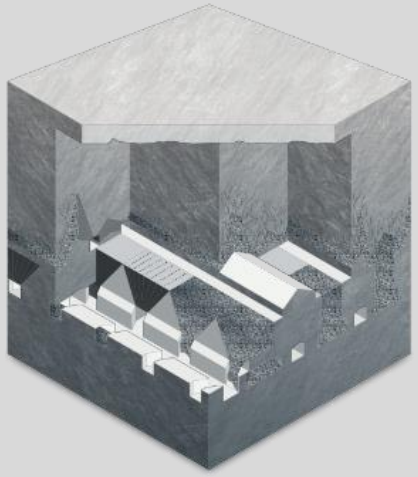


Sublevel stoping

Long hole drilling method

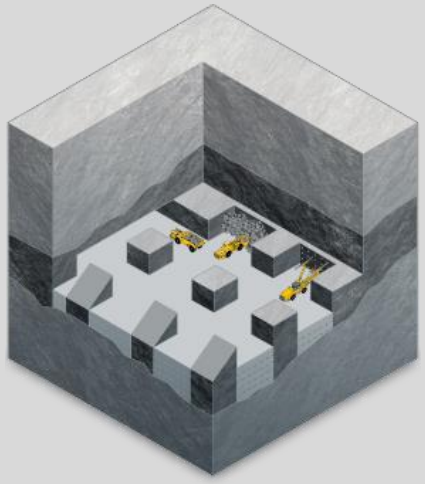
Sublevel caving

Long hole drilling method



Block caving

Long hole drilling method

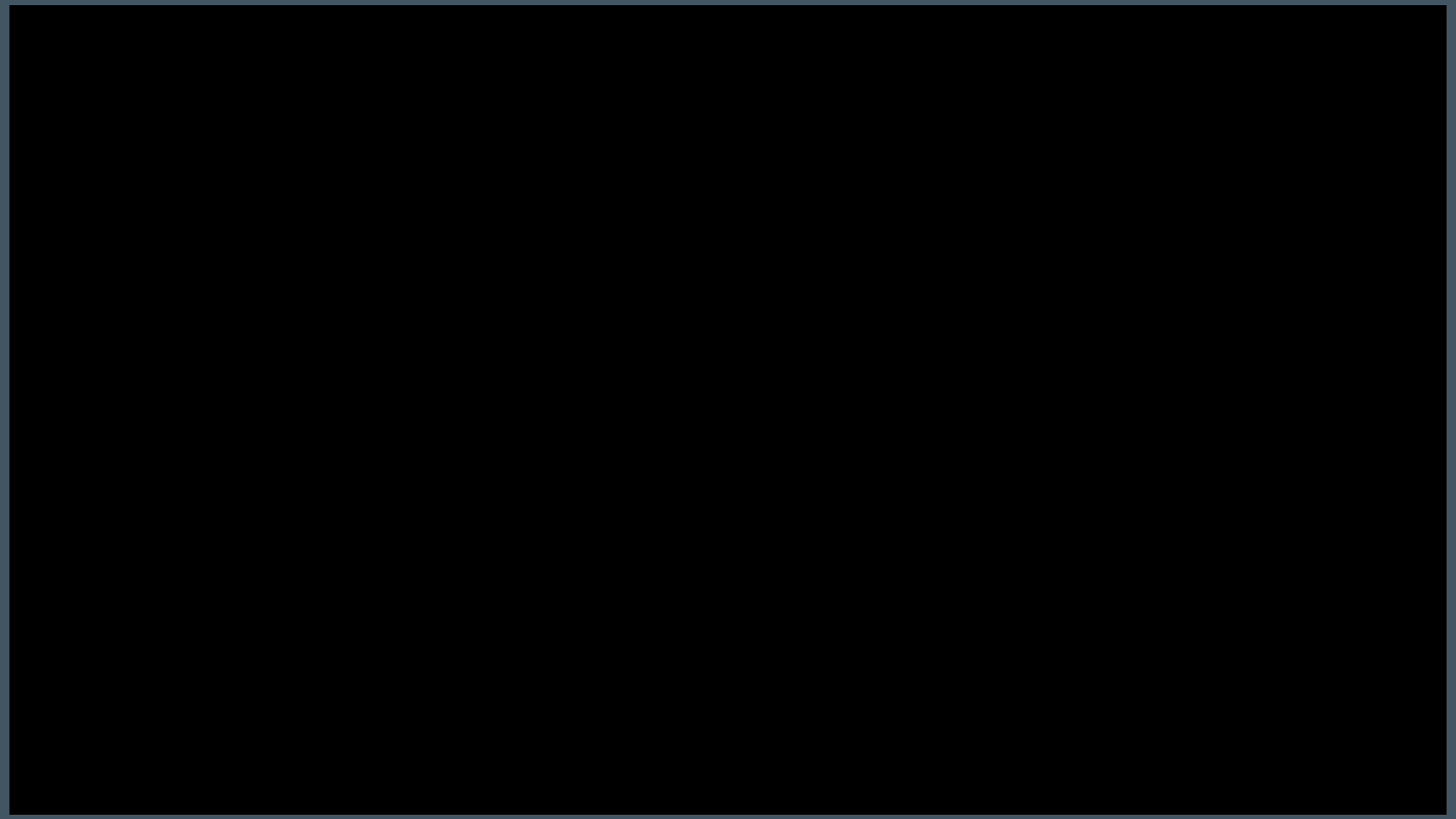


Room and pillar

Development drifting method

Animation Mining Methods

Room and Pillar



Drill and blast cycle

Tunneling and mine development

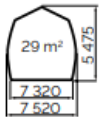
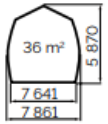
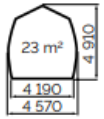
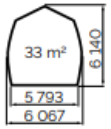
- Cycle time per drift 12-20h
- Vehicle utilization ≈20%
- Time and cost are strongly related
- Utilization of the equipment is a secondary priority

Mining

- Cycle time per drift ≈50-100h
- Vehicle utilization ≈60%
- Dependent on mining sequence
- Ensure a high utilization of the equipment

Underground drilling – face drilling

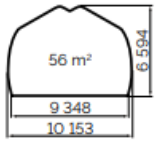
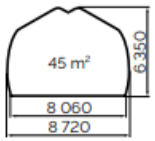
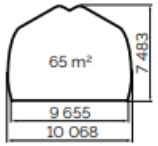
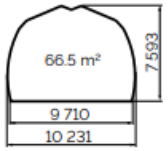
Boomer Mining

	Boomer S1 L	Boomer M1L	Boomer T1	Boomer S1
Coverage area				
Rock drill alternatives	COP 1800-series	COP 1800-series	COP MD20 COP 1800-series	COP 1800-series
Boom type	BUT 28 SL	BUT 29R	BUT 4	BUT 29
Feed alternatives	BMH(T) 2000-series	BMH(T) 2000-series	BMH(T) 2000-series	BMH(T) 2000-series
Engine alternatives	55 kW	80 kW	55 kW	55 kW 72 kW 128 kW
Dimensions and weight*				
Length	13 065 mm (BMH 2837)	13 570 mm (BMH 2837)	9 651 mm (tramming, BMH 2837)	11 040 mm (tramming, BMH 2843)
Width	2 400 mm	2 400 mm	1 300 mm	1 750 mm
Height cabin	1 700 mm	1 800 mm	2 716 mm (option)	2 800 mm (option)
Height roof up/down	1 700/1 300 mm	–	2 726/2 024 mm	2 828/2 128 mm
Turning radius inner/outer	2 900/5 600 mm	6 550/3 800 mm	2 750/4 400 mm	2 985/4 950 mm (BMH 2843)
Total weight	12 500 kg	16 500 kg	11 000 kg	12 800 kg
Alternative configuration	Cabin/canopy	Cabin	Cabin/canopy	Cabin/canopy Diesel hydraulic

* Depending on options and configuration

Underground drilling – face drilling

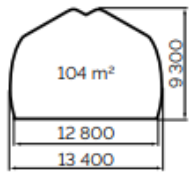
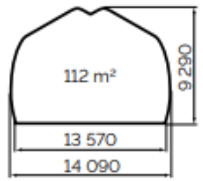
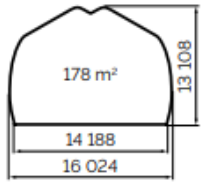
Boomer Mining / Construction

	Boomer S2	Boomer 282	Boomer M	Boomer M20
Coverage area				
Rock drill alternatives	COP MD20 COP 1800-series	COP 1800-series	COP 1800-series COP MD20	COP 1838 COP 2238 COP MD20
Boom type	BUT 29 HD	BUT 28	BUT 36	BUT M
Feed alternatives	BMH(T) 2000-series	BMH(T) 2000-series	BMH(T) 6000-series	BMH 6000-Series
Engine alternatives	90 kW	55 kW 72 kW	115 kW 120 kW 150 kW	115 kW 120 kW 150 kW
Dimensions and weight*				
Length	12 216 mm (BMH 2814)	11 830 mm (BMH 2343)	14 297 mm (BMH 6814)	13 985-14 449 mm
Width	2 000 mm	1 990 mm	2 550 mm	2 550 mm
Height cabin	2 799 mm	3 050 mm	3 179 mm	3 000 mm
Height roof up/down	2 850/2 155 mm	3 000/2 300 mm	3 019/2 324 mm	–
Turning radius inner/outer	3 100/5 975 mm (BMH 2749)	2 800/5 700 mm	4 400/7 500 mm	4 400/7 500 mm
Total weight	18 000-21 000 kg*	18 300 kg	18 000-29 000 kg	23 500-29 000 kg
Alternative configuration	Cabin/canopy	Canopy	Cabin/canopy	Cabin

* Depending on options and configuration
■ - Optional battery electric driveline available

Underground drilling – face drilling

Boomer Tunnelling

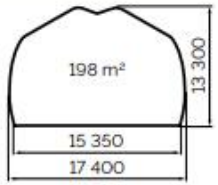
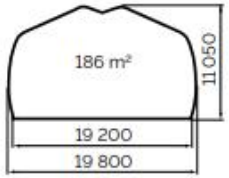
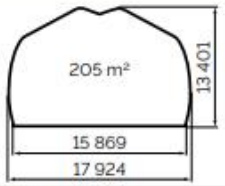
	Boomer L2	Boomer E1/E2 series	Boomer XL3D
Coverage area			
Rock drill alternatives	COP 1800-series	COP 1800-series COP 3038 COP 4038 COP MD20	COP 1800-series
Boom type	BUT 35 M	BUT 45 M	BUT 35 M
Feed alternatives	BMH(T) 6000-series	BMH(T) 6000-series	BMH(T) 6000-series
Engine alternatives	115 kW 120 kW	120 kW 180 kW	173 kW
Dimensions and weight*			
Length	14 169 mm (BMH 6814)	13 969-16 919 mm	16 565 mm (BUT 35 M/BMH 6818)
Width	2 550 mm	2 550 mm	2 926 mm
Height cabin	3 126 mm	3 179 mm	3681 mm
Height roof up/down	3 091/2 375 mm	3 144/2 518 mm	3 789/3 089 mm
Turning radius inner/outer	4 800/8 200 mm	4 800/8 600mm	7 350/12 530 mm
Total weight	27 000-33 000 kg	22 000 - 41 000 kg*	42 000 - 44 00 kg
Alternative configuration	Cabin/canopy	Cabin/canopy Diesel hydraulic (E1 only)	Cabin/canopy

* Depending on options and configuration
■ - Optional battery electric driveline available

Underground drilling – face drilling

Boomer Construction / Infrastructure



	Boomer XE3	Boomer WE3	Boomer XE4
Coverage area			
Rock drill alternatives	COP 1800-series COP 3038 COP 4038 COP MD20	COP 1800-series COP 3038 COP 4038	COP 1800-series COP 3038 COP 4038
Boom type	BUT 45 L	BUT 45 L	BUT 45 L
Feed alternatives	BMH(T) 6000-series	BMH(T) 6000-series	BMH(T) 6000-series
Engine alternatives	180 kW 155 kW	155 kW 180 kW	175 kW
Dimensions and weight*			
Length	17 544 mm (BMH 6820)	17 494 mm (BMH 6920)	17 976 mm (BMH 6920)
Width	2 926 mm	2 926 mm	3 136 mm
Height cabin	3 656 mm	3 664 mm	3 729 mm
Height roof up/down	4 756 mm (cabin up)	4 756 mm (cabin up)	4 760 mm (cabin up)
Turning radius inner/outer	6 300/11 900 mm	6 300/11 900 mm	6 000/12 500 mm
Total weight	46 000 - 54 500 kg	46 500 - 55 000 kg	57 000 - 65 000 kg
Alternative configuration	Cabin	Cabin	Cabin

* Depending on options and configuration

High precision mining and tunneling

- Award winning control system
- Automation
- High precision tunneling
- Extension drilling

Epiroc

Underground drilling – Production drilling

Simba family – Diameter: 51mm-165mm

	Simba 1254	Simba 1354	Simba S7	Simba M4
Coverage, max. width	7 440 mm	>7 440 mm	>7 500 mm	7 440 mm
Coverage, max. height	5 220 mm	5 220 mm	7 700 mm	4 915 mm
Rock drill	COP 1800-series	COP 1800-series COP 2550UX	COP 1800-series	COP 1800-series COP 2550UX COP 3060MUX
Min. drift size op. (w x h)*	3.5 x 3.5 m	3.5 x 3.5 m	3.5 x 3.5 m	3.5 x 3.5 m
Boom type	-	-	BUT 32PD	-
Boom feed type	BMH 2000	BMH 2000	BMH 6000	BMH 2000
Hole diameter	51 - 89 mm	76 - 102 mm	51 - 89 mm	51 - 102 mm
Rod handling system (RHS)	17	17	10	17
Hole length	31 m	31 / 51 m	20 m	31 / 51 m
Diesel engine	70 kW	70 kW	55 kW	120 kW
Optional battery driveline	-	-	-	150 kW
Dimensions and weight				
Length, tramming	6 580/6 880/7 180 mm	8 209/8 486/8 763 mm	8 805 - 9 417 mm	10 400 mm
Width, tramming	2 380 mm	2 380 mm	2 000 mm	2 350 mm
Height, min. protective roof	2 200 mm	2 260 mm	2 100 mm	2 350 mm
Height, min. cabin	-	-	2 800 mm	3 050 mm
Height, tramming	2 660/2 770/2 810 mm	3 180 mm	2 800	3 050 mm
Turning radius inner/outer	2 700/5 100 mm	2 890/5 440 mm	2 850/5 000 mm	3 800/6 900 mm
Operating weight	12 500 kg	15 000 kg	13 500 kg	22 000 kg

* 300 mm total clearance when positioning from tramming to drilling position

■ - Optional battery electric driveline available

	Simba M6	Simba ME7	Simba E7	Simba E6-W(WL)
Coverage, max. width	8 520 mm	>10 000 mm	>8 000 mm	>8 520 mm
Coverage, max. height	5 650 mm	9 000 mm	8 700 mm	5 650 mm
Rock drill	COP 1800-series COP 2550UX COP 3060MUX COP 4050MUX	COP 1800-series COP 2550UX	COP 3060MUX	W100
Min. drift size op. (w x h)*	3.5 x 4.5 m	3.5 x 3.5 m	3.5 x 3.5 m	5.2 x 5.2 m
Boom type	-	BUT 45PDL	BUT 45PDS	-
Boom feed type	BMH 2000	BMH 2000	BMH 2000	BMH 2000
Hole diameter	51 - 127 mm	51 - 102 mm	89 - 127 mm	102 - 165 mm
Rod handling system (RHS)	27	27	27	35
Hole length	51 m	51 m	51 m	63 m
Diesel engine	115 kW	120 kW	120 kW	170 kW
Optional battery driveline	150 kW	150 kW	150 kW	150 kW
Dimensions and weight				
Length, tramming	10 500 mm	12 270 mm	12 748 mm	11 750 mm
Width, tramming	2 210 mm	2 250 mm	2 550 mm	2 600 mm
Height, min. protective roof	2 350 mm	2 350 mm	2 450 mm	2 450 mm
Height, min. cabin	3 050 mm	3 050 mm	3 150 mm	3 150 mm
Height, tramming	3 350 mm	3 050 mm	3 150 mm	3 450 mm
Turning radius inner/outer	3 800/6 950 mm	3 800/6 500 mm	4 400/7 300 mm	4 450/8 050 mm
Operating weight	25 500 kg	26 000 kg	27 500 kg	33 000 kg

* 300 mm total clearance when positioning from tramming to drilling position

■ - Optional battery electric driveline available

Intelligent options for Simba

Automation

- ABC Total – automatic fan drilling
  - One hole automation
    - Manual position and one hole automation drilling
  - Or multi hole automation
    - Automatic positioning and multi hole automation drilling
- Drilling pattern created in the office PC and transferred to the rig on a USB card or using RRA
- Automatic positioning to a new hole in the drill plan, collaring and drill the hole to desired depth
- Logging of drill hole data

Underground drilling – Rock Reinforcement

Boltec/Cabletec : Self drlling, Swellex, Resign. Cable bolts

	Boltec SL	Boltec 235	Boltec S	Boltec M10	Boltec E10
Coverage, max width	7.2 m	9.5 m	9.5 m	12.8 m	15.6 m
Coverage, max height	2 m	7.5 m	7.5 m	9.7 m	11.4 m
Min drift size, tramming (w x h)	3.0 x 1.6 m	2.9 x 3.0 m	2.9 x 2.9 m	3.1 x 3.2 m	3.2 x 3.3 m
Bolt length	1.6-1.8 m	1.5-2.4 m	1.5-2.4 m	2.1-3.5 m	2.1-6.0 m
Drill steel length	-	-	-	-	-
Dead length	0 m	1.4 m	1.3 m	1.3 m	1.3 m
Max mechanised cable length	-	-	-	-	-
Max mechanised drill hole depth	-	-	-	-	-
Boom type	BUT 32SL	BUT 35	BUT 32	BUT 45S	BUT 45S
Feed type	SBU-SL, MBU-SL	MBU	SBU	SBU	SBU
Rock drill	COP 628 COP RR11	COP RR11	COP RR11 COP RR14	COP RR11 COP RR14	COP RR11 COP RR14
Diesel engine	55 kW	55 kW	55 kW	120 kW	155 kW
Optional battery driveline	–	–	–	150 kW electric motor	150 kW electric motor
Dimensions and weight*					
Length tramming	10 275 mm	11 216 mm	10 020 mm	14 125 mm (SBU2400)	15 683 mm (SBU2400)
Width tramming	2 400 mm	1 930 mm	2 115 mm	2 480 mm (without bolt rack)	2 501 mm (without bolt rack)
Height min protective roof	1 300 mm	2 300 mm	2 300 mm	-	-
Height max protective roof	1 700 mm	3 000 mm	2 841 mm	-	-
Height min cabin	–	–	2 841 mm	3 021 mm	3 133 mm
Turning radius inner/outer	2 900/5 600 mm	3 000/5 800 mm	2 750/5 200 mm	4 550 mm/7 100 mm	4 750 mm/7 500 mm
Operating weight	13 000 kg	16 600 kg	12 800 kg	28 000 kg	31 000 kg

* All dimensions shown are based on standard vehicle
■ - Optional battery electric driveline available

	Cabletec M	Cabletec E
Coverage, max width	11.1 m	11.4 m
Coverage, max height	7.1 m	8.5 m
Min drift size, tramming (w x h)	3.5 x 3.6 m	3.7 x 3.7 m
Bolt length	-	-
Drill steel length	1.2, 1.5 or 1.8m	1.5-3.5 m
Dead length	-	-
Max mechanised cable length	20 m	25 m
Max mechanised drill hole depth	20 m	32 m
Boom type	BUT 32PD	BUT 45M
Feed type	BMHP 6000	BMH 2X6
Rock drill	COP 1800-series	COP 1800-series
Diesel engine	120 kW	180 kW
Optional battery driveline	150 kW electric motor	-
Dimensions and weight*		
Length tramming	13 123 mm	14 904 mm
Width tramming	2 605 mm	2 780 mm
Height min protective roof	2 335 mm	2 500 mm
Height max protective roof	3 035 mm	3 200 mm
Height min cabin	3 095 mm	3 160 mm
Turning radius inner/outer	4 000/6 900 mm	6 300/9 400 mm
Operating weight	26 900 kg	36 100 kg

* All dimensions shown are based on standard vehicle
■ - Optional battery electric driveline available

Underground Material Handling

2-18Tn capacity, Drifts 2,8x 2,8m to 5x5m

	Scooptram ST2D	Scooptram EST2D	Scooptram ST2G	Scooptram ST3.5
Drift size (w x h)	2.8 m x 2.8 m	2.8 m x 2.8 m	2.8 m x 2.8 m	3.2 m x 2.8 m
Tramming capacity	3 600 kg	3 629 kg	4 000 kg	6 000 kg
Bucket volume	1.3 - 2.5 m3	1.3 - 2.5 m3	1.5 - 2.5 m3	1.9 - 3.4 m3
Engine alternatives	Deutz TCD3.6L4I Tier 3	ABB Electric Motor	Cummins QSB 4.5 Tier 3	Deutz TCD2013L06 2V Tier 3
Speed loaded	15.0 km/h	8.9 km/h	16.2 km/h	17.5 km/h
Matching truck	N/A	N/A	N/A	Minetruck MT2200 (EOD bucket)
Dimensions and weight*				
Length	7 003 ± 70 mm	6 980 mm	7 124 mm	8 739 mm
Width, maximum	1 740 ± 70 mm	1 515 mm	1 792 mm	2 241 mm
Width over bucket	1 663 mm	1 663 mm	1 663 mm	1 976 mm
Height, cabin	2 112 ± 70 mm	2 086 mm	2 212 mm	2 126 mm
Lift height, horisontal	3 724 mm (H1)	3 725 mm (H1)	3 723 (H1)	3 878 mm (H1)
Turning radius inner/outer	2 870/5 200 mm	2 635/4 797 mm	2 870/5 200 mm	2 598/5 566 mm
Weight, empty	12 840 kg	13 000 kg	13 650 kg	18 050 kg

	Scooptram EST3.5	Scooptram ST4 Battery	Scooptram ST7	Scooptram ST7LP
Drift size (w x h)	3.2 m x 2.8 m	2.5 x 3 m	3 x 3 m	3.5 x 3 m
Tramming capacity	6 000 kg	4 000 kg	6 800 kg	6 800 kg
Bucket volume	2.3 - 3.1 m3	1.8 m^3	2.3 - 3.8 m3	3.1 m3
Engine alternatives	ABB Electric Motor	BYD Battery Pack	Cummins QSB6.7 Tier 3	Cummins QSB6.7 Tier 3
Speed loaded	8.8 km/h	21.5 km/h	22.2 Km/h	22.2 Km/h
Matching truck	Minetruck MT2200 (EOD bucket)	Minetruck MT2010 Battery	Minetruck MT2200	N/A
Dimensions and weight*				
Length	8 849 mm	8 171 mm	8 705 mm	8 567 mm
Width, maximum	1 905 mm	1 791 mm	2 309 mm	2 852 mm
Width over bucket	1 976 mm	1 720 mm	2 280 mm	2 276 mm
Height, cabin	2 118 mm	2 168 mm	2 159 mm	1 386 mm
Lift height, horisontal	3 996 mm (H1)	3 850 mm (H1)	2 824 mm	2 382 mm
Turning radius inner/outer	2 620/5 480 mm	3 253/5 804 mm	3 141/6 010 mm	2 324/5 818 mm
Weight, empty	17 900 kg	17 000 kg	19 300 kg	19 100 kg
Alternative configuration	Engine standard + alternative	Cabin (this option plan to release in 2020, now still in Project phase)	Ground Engagement Tool, GET. Eject dump, EOD	Ground Engagement Tool, GET. Eject dump, EOD
Control system	Direct Control System	Epiroc Rig Control System with intuitive color display Load sensing hydraulics Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Scooptram Automation Total Line if sight- and video remote control Load sensing hydraulics Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Scooptram Automation Total Line if sight- and video remote control Load sensing hydraulics Certiq telematics to extract data for planning and visualization
Operator compartment	ISO FOPS/ROPS approved canopy	ISO FOPS/ROPS approved canopy	ISO FOPS/ROPS approved closed and open cabin	ISO FOPS/ROPS approved closed and open cabin

* All dimensions shown are based on standard vehicle
■ - Battery electric driveline

Underground Material Handling

2-18Tn capacity, Drifts 2,8x 2,8m to 5x5m



	Scooptram ST1030	Scooptram ST1030LP	Scooptram EST1030
Drift size (w x h)	3.5 x 3.5 m	4 x 3 m	3.5 x 3.5 m
Tramming capacity	10 000 kg	10 000 kg	10 000 kg
Bucket volume	3.3 - 5.6 m³	3.3 - 5.6 m³	3.3 - 5.6 m³
Engine alternatives	Cummins QSL9 Tier 3	Cummins QSL9 Tier 3	ABB Electric Motor, 1000 V, 50 Hz ABB Electric Motor, 660 V, 50 Hz
Speed loaded	24.9 km/h	24.9 Km/h	15.1 Km/h
Matching truck	Minetruck MT431 / MT436	Minetruck MT431 / MT436	Minetruck MT431 / MT436
Dimensions and weight*			
Length	9 700 mm	9 700 mm	10 509 mm
Width, maximum	2 440 mm	3 052 mm	2 440 mm
Width over bucket	2 488 mm	2 488 mm	2 488 mm
Height, cabin	2 352 mm	1 972 mm	2 352 mm
Lift height, horisontal	2 967 mm	2 967 mm	2 967 mm (H1)
Turning radius inner/outer	3 429/6 712 mm	3 017/6 712 mm	3 425/6 712 mm
Weight, empty	27 200 kg	27 200 kg	29 000 kg



	Scooptram ST14	Scooptram ST14 Battery	Scooptram ST18
Drift size (w x h)	4.5 x 4.5 m	4.5 x 4.5 m	5 x 5 m
Tramming capacity	14 000 kg	14 000 kg	17 500 kg
Bucket volume	4.7 - 7.8 m³	4.7 - 7.8 m³	6.3 - 9.7 m³
Engine alternatives	Cummins QSM11 Tier 3	ABB traction motor, 200 kW ABB auxiliary motor, 160 kW	Cummins QSX15 Tier 3 Cummins QSX15 Tier 4 Final / Stage V
Speed loaded	29.5 Km/h	35.0 Km/h	27.0 Km/h
Matching truck	Minetruck MT42	Minetruck MT42 / MT42 Battery	Minetruck MT54 / MT65
Dimensions and weight*			
Length	10 853 mm	10 853 mm	11 227 mm
Width, maximum	2 794 mm	2 788 mm	3 067 mm
Width over bucket	3 040 mm	3 040 mm	3 330 mm
Height, cabin	2 605 mm	2 605 mm	2 854 mm
Lift height, horisontal	3 730 mm	3 730 mm	4 074 mm
Turning radius inner/outer	3 398/7 255 mm	3 402/7 255 mm	3 474/7 558 mm
Weight, empty	39 100 kg	42 000 kg	51 500 kg
Alternative configuration	Ground Engagement Tool, GET Eject dump, EOD	Ground Engagement Tool, GET Eject dump, EOD	Ground Engagement Tool, GET Eject dump, EOD
Control system	Epiroc Rig Control System with intuitive color display Scooptram Automation Total Line if sight- and video remote control Load sensing hydraulics Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Scooptram Automation Total Line if sight- and video remote control Load sensing hydraulics Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Scooptram Automation Total Line if sight- and video remote control Load sensing hydraulics Certiq telematics to extract data for planning and visualization
Operator compartment	ISO ROPS and FOPS certified closed and open cabin	ISO ROPS and FOPS certified closed and open cabin	ISO ROPS and FOPS certified closed cabin

* All dimensions shown are based on standard vehicle
■ - Battery electric driveline

Underground material handling

Häggloader – Continouus Loading

	Häggloader 7HR	Häggloader 7HR-B	Häggloader 10HR	Häggloader 10HR-B
Drift size (w x h)	3.7 x 3.3 m	3.7 x 3.3 m	4.4 x 4 m	4.4 x 4 m
Loading capacity	Approx. 3.5 m^3/min	Approx. 3 m^3/min	Approx. 5 m^3/min	Approx. 4 m^3/min
Engine alternatives	Deutz TD 2011 Tier 3	Deutz TD 2011 Tier 3	Deutz TCD 2012, Tier 3 Deutz TCD 2012, Tier 4F/Stage V	Deutz TCD 2012, Tier 3 Deutz TCD 2012, Tier 4F/Stage V
Tramming speed	10 km/h	10 km/h	12 km/h	12 km/h
Matching truck	Minetruck MT2200	Minetruck MT2200	Minetruck MT431 / MT436 / MT42	Minetruck MT431 / MT436 / MT42
Dimensions and weight*				
Length	8 629 mm	8 629 mm	10 723 mm	11 209 mm
Width	2 195 mm	2 195 mm	2 874 mm	2 874 mm
Height	2 268 mm (canopy)	2 268 mm (canopy)	2 977 mm (cabin)	2 977 mm (cabin)
Conveyor position raised	2 546 - 3 245 mm max	2 541 - 3 288 mm max	3 308 - 4 015 mm max	3 308 - 4 015 mm max
Turning radius inner/outer	1 800/5 736 mm	1 800/5 762 mm	2 000/6 978 mm	2 000/6 979 mm
Empty weight	14 500 kg	14 500 kg	21 900 kg	21 900 kg
Alternative configuration	Conveyor length option	Hydraulic breaker, conveyor length option, scaling hook	Conveyor length option	Hydraulic breaker, conveyor length option, scaling hook
Control system	Load sensing hydraulics Pilot controlled hydraulics	Load sensing hydraulics Pilot controlled hydraulics	PLC based control system with intuitive touch display Load sensing hydraulics Pilot controlled hydraulics	PLC based control system with intuitive touch display Load sensing hydraulics Pilot controlled hydraulics
Operator compartment	Canopy	Canopy	Cabin	Cabin

* All dimensions shown are based on standard vehicle

Underground Material Handling

Tram capacity 22-65Tn , Drifts 4x3,4 to 5x5




	Minetruck MT2200	Minetruck MT431B	Minetruck 436B	Minetruck MT436LP
Drift size (w x h)	4 x 3.4 m	4.3 x 3.7 m	4.5 x 3.5 m	4.5 x 3.3 m
Tramming capacity	22 000 kg	28 125 kg	32 650 kg	32 650 kg
Dumpbox volume	8.5-12.2 m³	11.5-16 m³	12.5-21 m³	12.5-18.5 m³
Engine alternatives	Cummins QSL9 Tier 3	Detroit DDS60, Tier 2 Cummins QSM11 Tier 3	Detroit DDS60, Tier 2 Cummins QSM11 Tier 3	Detroit Diesel DDS60, Tier 2
Speed loaded	28.2 km/h	32.7 km/h	30.0 km/h	30.0 km/h
Matching loader	Scooptram ST7, Häggloader 7HR	Scooptram ST1030 Häggloader 10HR	Scooptram ST1030 Häggloader 10HR	Scooptram ST1030
Dimensions and weight*				
Length	9 243 mm	10 110 mm	10 180 mm	10 182 mm
Width	2 435 mm	2 795 mm	3 065 mm	3 090 mm
Height	2 523 mm (canopy)	2 690 mm (cabin)	2 530 mm (cabin)	2 250 mm (canopy)
Dump position box height	4 145 - 4 530 mm max (H1)	2 775 - 5 375 mm max (H1)	2 615 - 5 445 mm max (H1)	5 045 - 5 300 mm max (H1)
Turning radius inner/outer	4 571/7 567 mm	4 640/8 570 mm	4 515/8 570 mm	4 372/8 570 mm
Empty weight	20 500 kg	28 000 kg	30 600 kg	30 600 kg




	Minetruck MT42	Minetruck MT42 Battery	Minetruck MT54	Minetruck MT65
Drift size (w x h)	4.6 x 3.7 m	4.7 x 3.7 m	4.7 x 5 m	5 x 5 m
Tramming capacity	42 000 kg	42 000 kg	54 000 kg	65 000 kg
Dumpbox volume	16-23 m³	16-23 m³	24.6-33.8 m³	27-40.4 m³
Engine alternatives	Cummins QSX15 Tier 3 Cummins QSX15 Tier 4 F / Stage V	ABB Nominal power: 2 x 200 kW ABB Nominal power: 160 kW	Cummins QSK19 Tier 2 Cummins QSK19 Tier 4 F/Stage V	Cummins QSK19 Tier 2 Cummins QSK19 Tier 4 F/Stage V
Speed loaded	41.3 km/h	20 km/h	30.6 km/h	35.4 km/h
Matching loader	Scooptram ST14 Häggloader 10HR	Scooptram ST14 Häggloader 10HR	Scooptram ST18	Scooptram ST18
Dimensions and weight*				
Length	10 945 mm	10 945 mm	11 525 mm	11 526 mm
Width	3 095 mm	3 175 mm	3 200 mm	3 500 mm
Height	2 689 mm (cabin)	2 670 mm (cabin)	2 786 mm (dump box)	3 094 mm (dump box)
Dump position box height	5 625 - 5 835 mm max (A)	5 625 - 5 835 mm max (A)	6 472 - 7 050 mm max (H1)	6 467 - 7 125 mm max (H1)
Turning radius inner/outer	4 650/8 972 mm	4 650/8 972 mm	5 171/9 801 mm	5 080/9 635 mm
Empty weight	34 500 kg	37 700 kg (inkl. battery)	46 300 kg	46 300 kg
Alternative configuration	Ejector dump box	Ejector dump box	Ejector dump box	Ejector dump box
Control system	Epiroc Rig Control System with intuitive color display Load sensing hydraulics Load weighing system Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Load sensing hydraulics Load weighing system Certiq telematics to extract data for planning and visualization	Epiroc Rig Control System with intuitive color display Load sensing hydraulics Load weighing system Certiq telematics to extract data for planning and visualization Tire pressure monitoring	Epiroc Rig Control System with intuitive color display Load sensing hydraulics Load weighing system Certiq telematics to extract data for planning and visualization Tire pressure monitoring
Operator compartment	ISO ROPS and FOPS certified closed cabin	ISO ROPS and FOPS certified closed cabin	ISO ROPS and FOPS certified closed cabin	ISO ROPS and FOPS certified closed cabin

* All dimensions shown are based on standard vehicle
■ - Battery electric driveline

Underground Drilling - Raiseboring

Raises 0,6-6m, Depths 120-1100m

	Easer L	Robbins 34RH QRS	Robbins 34RH	Robbins 44RH
Raise diameter, nominal	0.75 m	1.2 m	1.2 m	1.5 m
Raise diameter, range	1.2 m	0.6 - 1.5 m	0.6 - 1.5 m	1-1.8
Raise length, nominal	60 m	340 m	340 m	340
Raise length, maximum	120 m	610 m	610 m	610
Dimensions and weight*				
Drill pipe diameter	203 mm	203 mm	254 mm	203 mm
Pilot hole diameter	229 mm	229 mm	279 mm	229 mm
Depth	–	–	2 375 mm	1 755 mm
Width	2 800 mm	2 570 mm	2 390 mm	3 120 mm
Height extended	6 000 mm	4 450 mm	3 800 mm	3 540 mm
Height retracted	4 759 mm	–	–	3 540 mm
Operating weight	35 000 kg	27 400 kg	13 800 kg	10 400 kg

* Depending on configuration

	Robbins 53RH	73RH HT	73RVF	Robbins 92R
Raise diameter, nominal	1.8 m	2.4 m	2.4 m	4.5 m
Raise diameter, range	1.0 - 2.1 m	1.5 - 3.1 m	1.5 - 3.1 m	2.4 - 6 m
Raise length, nominal	490 m	550 m	550 m	600 m
Raise length, maximum	650 m	700 m	700 m	1 100 m
Dimensions and weight*				
Drill pipe diameter	286 mm	286 mm	286 mm	327/333 mm
Pilot hole diameter	311 mm	311 mm	311 mm	349/381 mm
Depth	1 820 mm	1 900 mm	1 900 mm	2 700 mm
Width	2 200 mm	3 010 mm	3 010 mm	3 800 mm
Height extended	2 900 mm	5 190 mm	6 000 mm	5 100/5 700 mm
Height retracted	2 900 mm	3 800 mm	3 900 mm	4 100 mm
Operating weight	15 000 kg	13 150 kg	14 960 kg	32 000 - 35 300 kg*

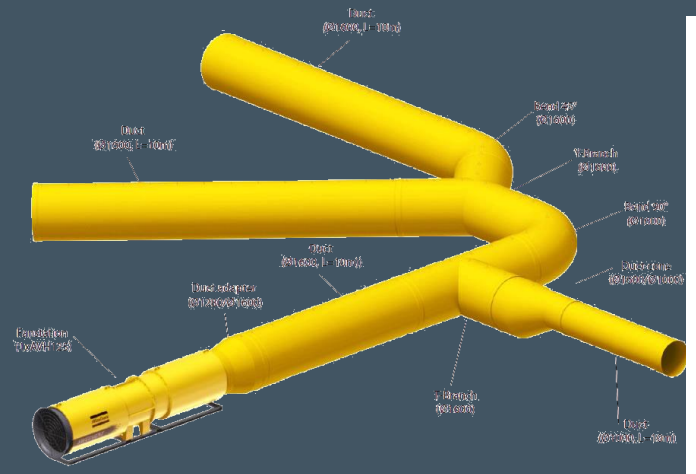
* Depending on configuration

Underground infrastructure – Ventilation

Serpent fans, ducting, sensors

	AVM 90**	AVM 112**	AVH63	AVH71	AVH80**	AVH90	AVH100	AVH125	AVH140	AVH160	AVH180	AVH224
Approximate flow rate (m^3/s)	8-22	13-32	3-9	4-13	6-20	8-22	10-24	14-42	20-48	22-70	40-120	<200
1-stage (kPa/Inch H2O)*	.43-4.1	.2-1.01	1.3-2.2/ 5.2-8.8	1.3-2.3/ 5.2-9.2	1.3-2.0	3.5-4.3/ 14.0-17.3	3.8-4.4/ 15.3-17.7	1.5-2.6/ 6.0-10.4	1.2-2.2/ 4.8-8.8	1.3-2.2/ 5.2-8.8	1.5-3.5/ 6.0-14.1	1.0-2.0/ 4.0-8.0
2-stage (kPa/Inch H2O)*	-	-	2.5-4.5/ 10.0-18.1	2.6-4.6/ 10.4-18.5	-	7.0-8.6/ 28.1-34.5	7.3-8.7/ 29.3-34.9	2.9-5.1/ 11.6-20.5	2.3-4.3/ 9.2-17.3	2.5-4.3/ 10.0-17.3	3.0-7.0/ 12.0-28.1	1.5-4.0/ 6.0-16.1
3-stage (kPa/Inch H2O)*	-	-	4.0-6.5/ 16.1-26.1	4.1-6.6/ 16.5-26.5	-	10.1-12.5/ 40.5-50.2	10.3-12.6/ 41.4-50.6	4.5-7.7/ 18.1-30.9	3.5-6.4/ 14.1-25.7	3.8-6.4/ 15.3-25.7	5.0-10.3/ 20.1-41.4	2.0-5.7/ 8.0-22.9
4-stage (kPa/Inch H2O)*	-	-	5.0-7.5/ 20.1-30.1	5.2-8.5/ 20.9-34.1	-	12.8-16.0/ 51.4-64.2	12.9-16.2/ 51.8-65.0	6.0-9.5/ 24.1-38.1w	4.6-9.5/ 18.5-38.1	5.1-8.5/ 20.5-34.1	-	-
Nominal power (50HZ) (kW)	30-37	5.5-30	5.5-30	7.5-37	30-55	37-110	37-110	37-110	37-132	37-200	132-500	110-400
Impeller blades (pcs)	8	8	8	8	8	8	8	8	8	10	10	10/12

* The numbers for the fans are specified for 50 Hz but the fans are also available up to 60 Hz
** Theoretical data



	Titan S (Steel ring)	Titan S (Zipper function)	Airolite S (Steel ring)	Airolite S (Zipper function)
Diameter mm	300-1 800	500-3 000	300-1 800	500-3 000
Section	10-200	10-200	10-200	10-200
Weight	600	600	500	500
Accessories				
Bend	30°/45°/60°/90°	30°/45°/60°/90°	-	-
Branch	30°/45°/60°	30°/45°/60°	-	-
T-Branch	Yes	Yes	-	-
Y-Branch	90°	90°	-	-
Duct cone, duct diameter range (mm)	400-1 800	600-3 000	-	-
Duct adapter, duct diameter range	500-1 800	500-3 000	-	-
Repar sleeve, lenght	-	1.0/3.0/5.0	-	-

Underground infrastructure – Grouting

Unigrout




	Unigrout Flex S	Unigrout Flex M	Unigrout Flex M2	Unigrout Smart M2
Cemix	103H	203H	203H	203H
Cemag	203H	403H	403H	403H
Silo	-	-	-	Standard
LOGAC	Option	Option	Option	Standard
Dosac	-	-	-	Standard
Dimensions and weight				
Length	1 600 mm	2 030 mm	2 347 mm	3 500 mm
Width	1 400 mm	1 600 mm	2 000 mm	2 500 mm
Height	1 350 mm	1 835 mm	2 172 mm	2 970 mm
Weight	930 kg	1 135 kg	1 695 kg	4 600 kg

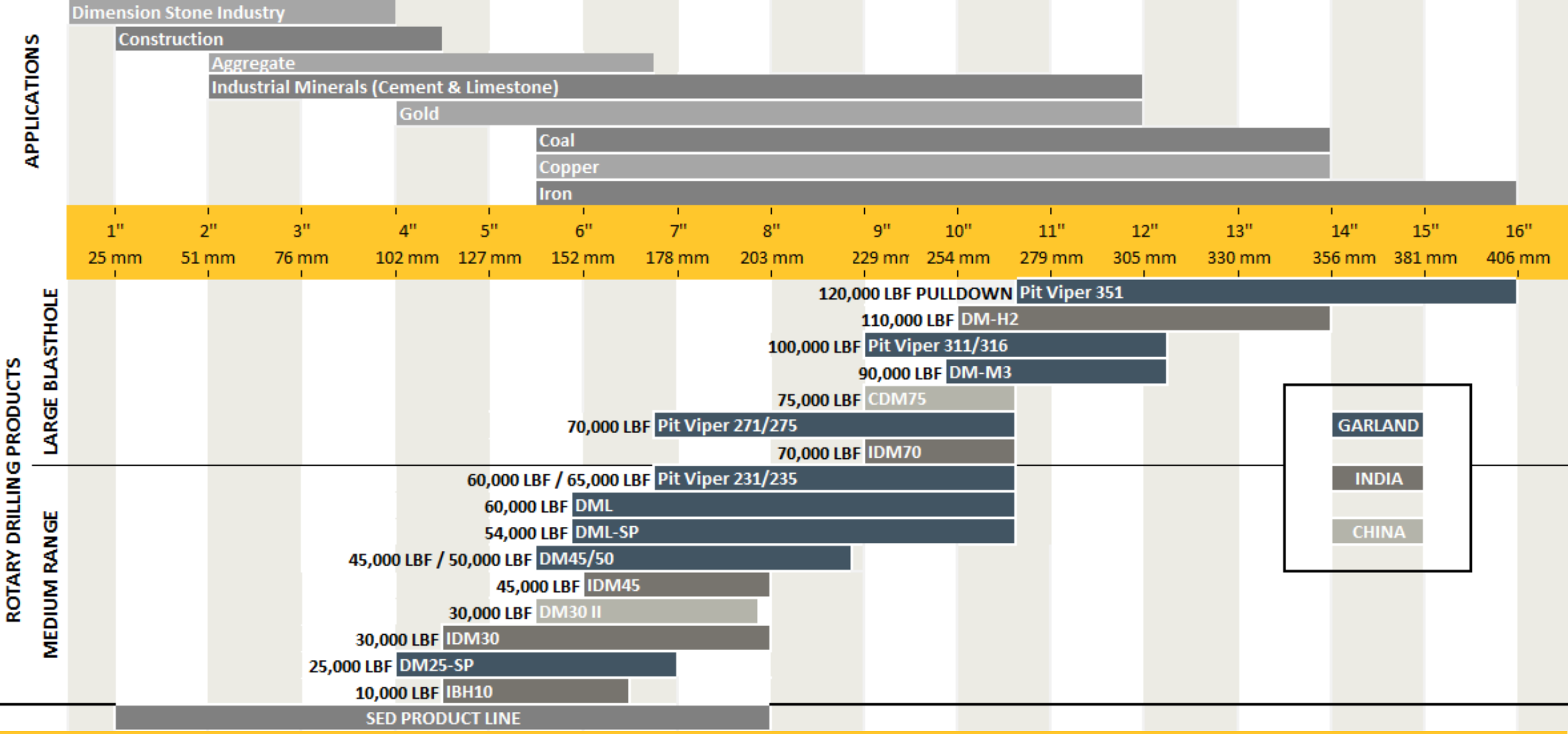
Model			Pressure max, bar	Flow max L/min	Cylinder Ø mm	Cylinder rebuild kits	Complete overhaul kits	Minor overhaul kits
	HP High pressure	HP1	200	50	80	371 6679 081 (80->110)	371 6679 080	3 716 679 090
		HP2	100	100	110	371 6679 080 (110->80)	371 6679 081	3 716 679 092
	LP Low pressure	LP1	100	100	110	371 6142 783 (110->150)	317 6144 783	3 716 621 190
		LP2	50	200	150	317 6144 783 (150->110)	371 6142 783	3 716 621 191
	Progressive cavity pump Flex S e11 (only)		10	60	–	–	–	–

Mechanical Rock Excavation

Mobile Miner

Surface application offering

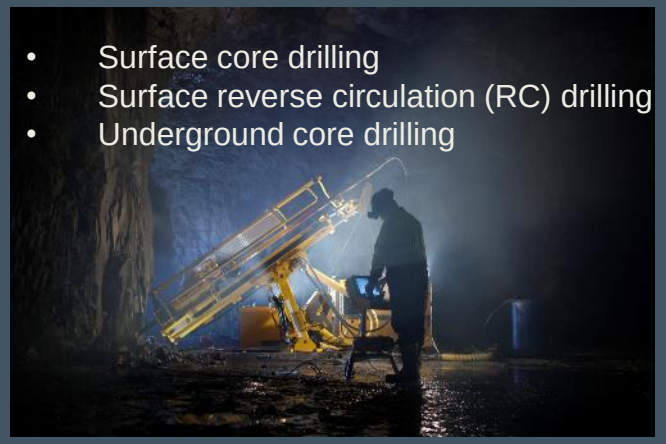
Epiroc


APPLICATIONS
Dimension Stone Industry
Construction
Aggregate
Industrial Minerals (Cement & Limestone)
Gold
Coal
Copper
Iron
1" 25 mm
2" 51 mm
3" 76 mm
4" 102 mm
5" 127 mm
6" 152 mm
7" 178 mm
8" 203 mm
9" 229 mm
10" 254 mm
11" 279 mm
12" 305 mm
13" 330 mm
14" 356 mm
15" 381 mm
16" 406 mm
ROTARY DRILLING PRODUCTS
LARGE BLASTHOLE
120,000 LBF PULLDOWN Pit Viper 351
110,000 LBF DM-H2
100,000 LBF Pit Viper 311/316
90,000 LBF DM-M3
75,000 LBF CDM75
70,000 LBF Pit Viper 271/275
70,000 LBF IDM70
MEDIUM RANGE
60,000 LBF / 65,000 LBF Pit Viper 231/235
60,000 LBF DML
54,000 LBF DML-SP
45,000 LBF / 50,000 LBF DM45/50
45,000 LBF IDM45
30,000 LBF DM30 II
30,000 LBF IDM30
25,000 LBF DM25-SP
10,000 LBF IBH10
SED PRODUCT LINE
GARLAND
INDIA
CHINA

Epiroc

Open pit mining

Quarrying



Exploration

Geothermal drilling

Construction

Dimension Stone Industry

Surface drilling products

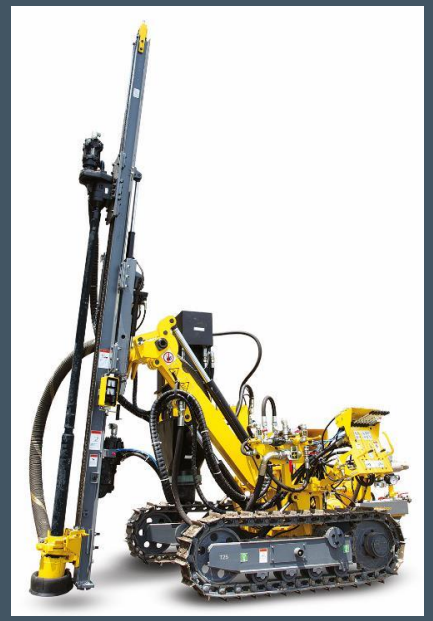
Four sophistication levels for drill and blast (25mm-216mm)

Basic technology families

- **AirROC range** – The easy choice

Hole range 51-165mm (2–6.5”)

- **Simplicity**
  Uncomplicated operation
- **Longevity**
  Low maintenance
- **Capability**
  High drilling capacity



PowerROC range – The power of performance

Hole range 51–165 mm (2–6.5”)

Straightforward

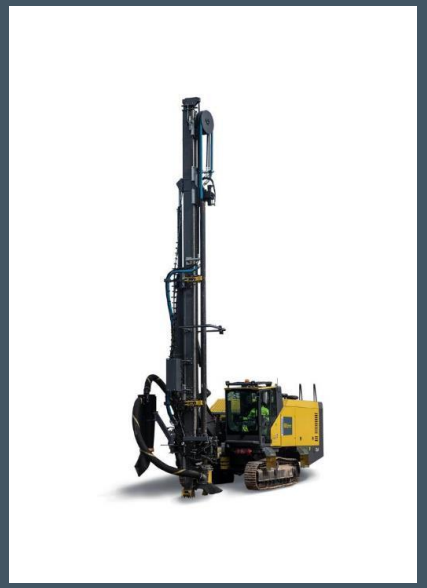
High power operation in tough conditions

Reliability

Easy operation and maintenance

Performance

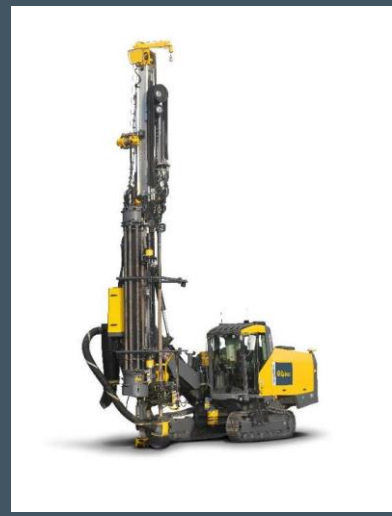
Especially in hard rock applications



Advanced technology families

- **FlexiROC range** – Why compromise?
  Hole range 25–180 mm (1–7”)
- **Versatility**
  Excellent tramming stability
- **Productivity**
  Offers both long and short feed options
- **Efficiency**
  Two rock drills in one, enables optimized drilling

- **SmartROC range** – Improve your business
  Hole range 64–216 mm (2.5–8½”)



- **Intelligence**
  Latest smart technology available
- **Improvement**
  Revolutionary fuel saving system
- **Connected**
  Speeding up identification of an occasional breakdown

Product innovation

BenchREMOTE – Multi machine teleremote

- **Safety** – operator at a safe distance from unstable and hazardous benches
- **Productivity** thanks to increased operator efficiency with multi-machine control and full drill cycle automation
- **Agility** with mobile platform and stand alone network.
- Australian **Devot** case study
  - Ability to operate in hazardous areas
  - Offered 56 hours extra drilling per week

Bench Remote

Exploration and Geothermal drilling products

Surface and Underground core drilling rigs

Hole depth up to 2 450m

Christensen and **Boyles** family
Hole depth up to 2 450m

- Working in variety of terrains, locations and conditions
- Cost effective range
- Drills deep and with high productivity
- High rpm, high torque - ideal for core drilling
- Long mast – to pull 6 or 9 meter rods
- Rod Handling System for increased safety and ergonomics

Diamec family

- Powerful in a compact modular design
- Intelligent versions for control and optimization
- Flexible and easy to set up and position
- State of the art control system for increased productivity
- Unparalleled safety and ergonomics

Explorac – reverse circulation drilling rigs

Leading the way in RC drilling

- Designed specifically for reverse circulation
- Automatic rod handling and break out table for increased productivity and operator safety
- Reliable rigs with easy maintenance designed for drilling in remote locations
- Fast setup for increased efficiency
- Noise reducing canopies for improved operator environment

Welldrill – geothermal drill rig

Compact and powerful

- Designed for all Down-the-hole drilling applications
- Versatile crawled platform with high clearance and 360 degree rotation
- Designed for working in restricted spaces
- Remote controls for increased productivity and safety
- Extensive range of options and accessories

DSI products

Speedcut – The fastest cutting machine

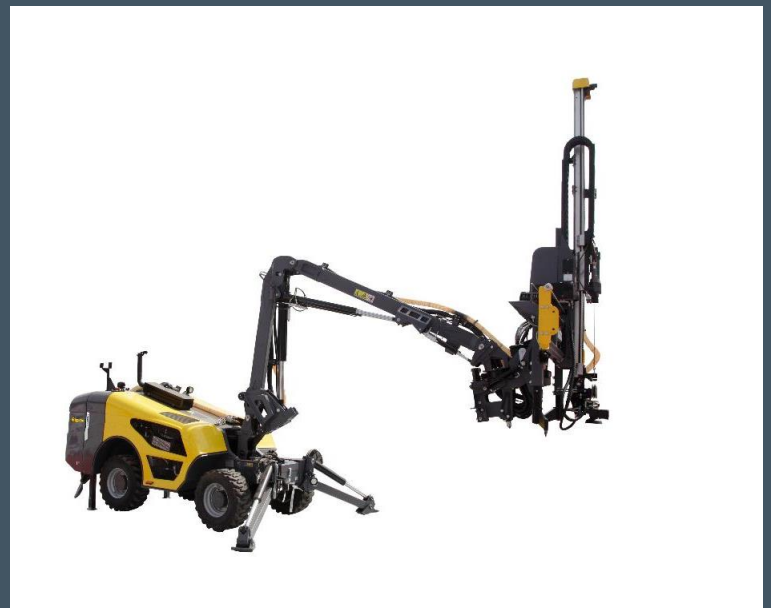
Wire speed from 0 – 45 m/s (0 – 148 ft/s)

- High cutting speed
- Low wire consumption
- Full control of the cutting process
- Biggest cutting capacity on the market

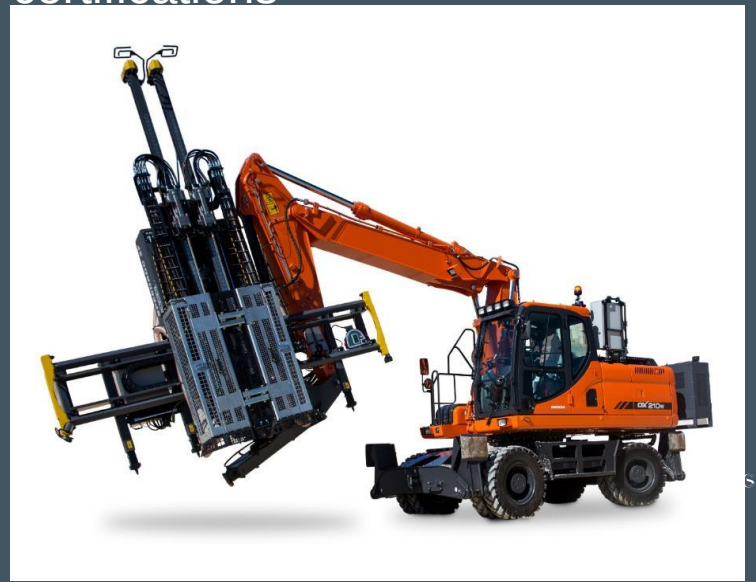
SpeedROC family

Drilling Capacity 50-125 linear m/hrs

- Speedroc 1F **up to 50 linear meter/hour (164 ft/h)**
- Tailor-made for the dimension stone industry
- Drills parallel and straight holes
- High drilling speed capacity
- Low fuel consumption



- Speedroc 2F **up to 125 linear meter/hour (410 ft/hour)**
- Great reach and coverage area thanks to the articulated boom
- Low fuel consumption means improved total cost of ownership
- Complete package with latest European certifications



Product Range & Applications

BLASTHOLE

WATER WELL

OIL & GAS

Epiroc

Drilling Solutions Blasthole Drilling

Epiroc

- **Drilling methods**
  - Rotary drilling
  - Down The Hole (DTH)
- **DM (114-270 mm) and PV (171 - 406mm) product families**
- **Hole diameter range**
  4 $^{1}/_{2}$ in – 16 in
  (114 mm – 406 mm)
- **Pulldown**
  10,000 – 120,000 lbf
  (44 kN – 534 kN)
- **Rig size** (weight)
  58,000 – 415,000 lb
  (26 – 188 tonnes)

Blasthole Drilling TECHNOLOGY

Epiroc

The RCS technology platform for Pit Vipers

- Drilling Data Screen
- Safety Interlocks
- Autolevel/Autodelevel
- Autodrilling
- GPS hole navigation
- Rig remote access & communications
- Measure while drilling
- Teleremote operations
- Autotramming
- *Autonomous Pit Viper operations*

The world of Epiroc - Automation

Autonomous operations in Surface Mining

After Market offering

Parts & Services and Tools & Attachments

Epiroc

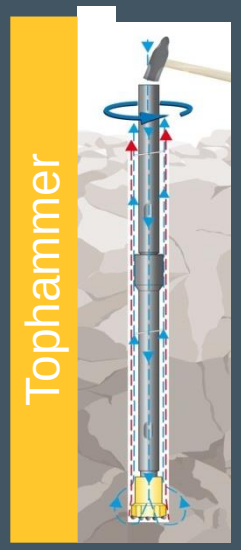
Broad service offering

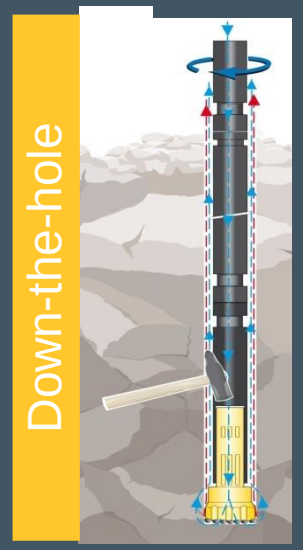
Epiroc

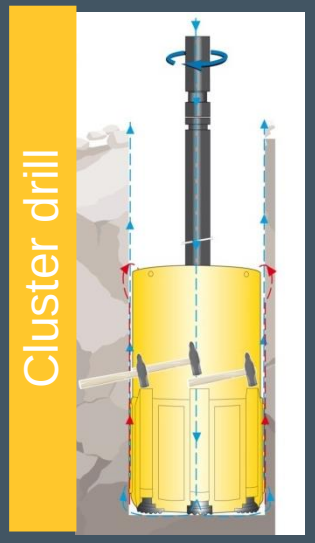
- Replacement parts and kits
- Service agreements and audits
- Reman solutions
- Midlife services
- Custom-engineered solutions
- Training products
- Telematics (connectivity)

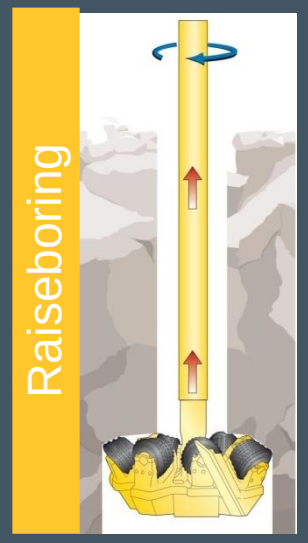
Rock Drilling Tools Ten different drilling methods

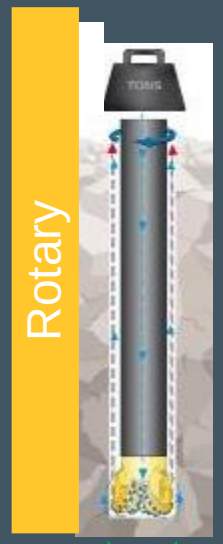
Epiroc

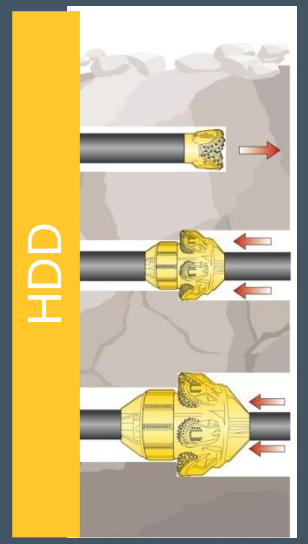


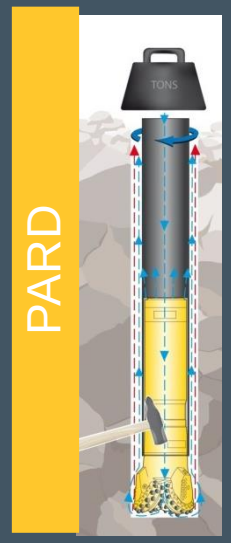


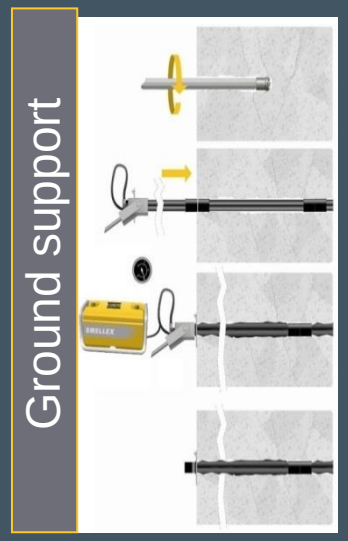












Rotary Cutting: Cuts the rock by a shearing force

Rotary Crushing: Crush the rock with a high point load on the buttons given by a weight or force on the drill bit

Rotary Percussion: Crushes the rock by a hammering impact given by a percussive-unit like a Rockdrill or DTH hammer

Product portfolio Drilling Tools

Epiroc

Tophammer

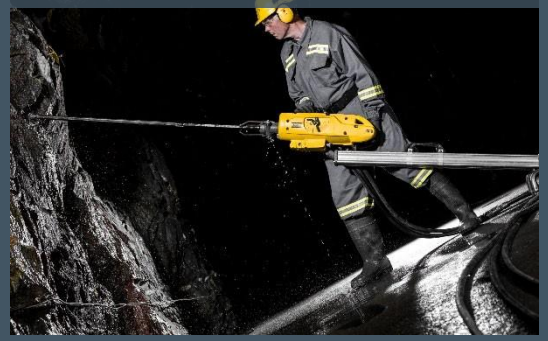
Down-the-hole

FORDIA
Powered by Epiroc

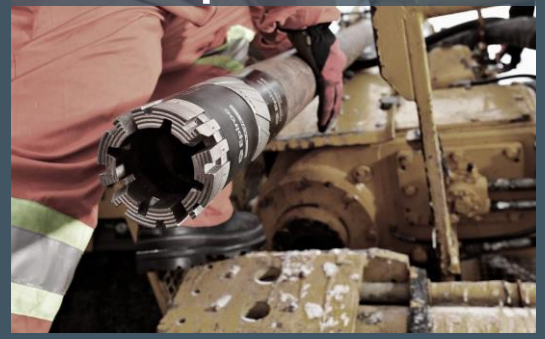
New Concept Mining
Powered by Epiroc

Rotary, Raiseboring

Handheld



Exploration



Ground support

We supply the complete drill string - from the rotation unit spindle to the drill bit

Rock Drilling Tools Applications

We can equip any drill with tools

Wells and energy holes

- Water wells
- Geothermal

Underground

- Mines
- Service shafts
- Ventilation

Surface

- Mines (Open pit)
- Quarry
- Dimensional stone industry (sheets of marble, grave stones)

Exploration

- Exploration drilling

Construction

- Roads/Railroads
- Tunneling
- Foundation (housing, bridges)
- Ground engineering

The Epiroc drilling tools business concept

Epiroc

A complete drill string for any application

Focus on customers' productivity

Service anytime anywhere

Innovative products – based on customer needs

Product overview - Attachments

Epiroc

Hydraulic Breakers

Combi Cutters

Concrete Busters

Drum Cutters

Pulverizers

Grapples

Steel Cutters

Magnets

Compactors

Bucket Crushers

Bucket Screeners

Drum Cutters

erkat®

Powered by Epiroc

Product overview – Attachments

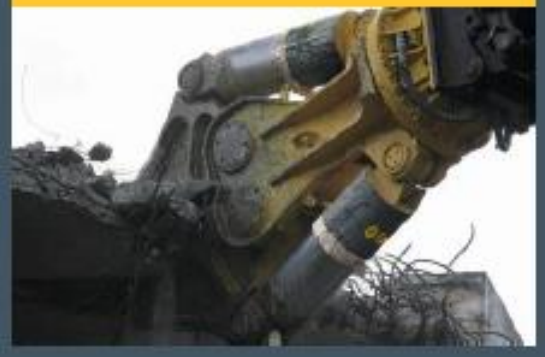
Aftermarket

Working tools

Picks

Lubricants

Maintenance kits



Connection hoses

HATCON

Automation Digitalization Electrification

from Epiroc perspective

Epiroc

Our ambition

Being the leading **productivity and sustainability partner**

We will do this by our:

- **Speed of innovation** – fast to develop groundbreaking new ideas that are on the cutting-edge of the industry
- **Passionate people** – dedicated and collaborative team
- **Leadership in automation, digitalization and electrification** – boldly driving a vision for a future of innovation and automation

Epiroc

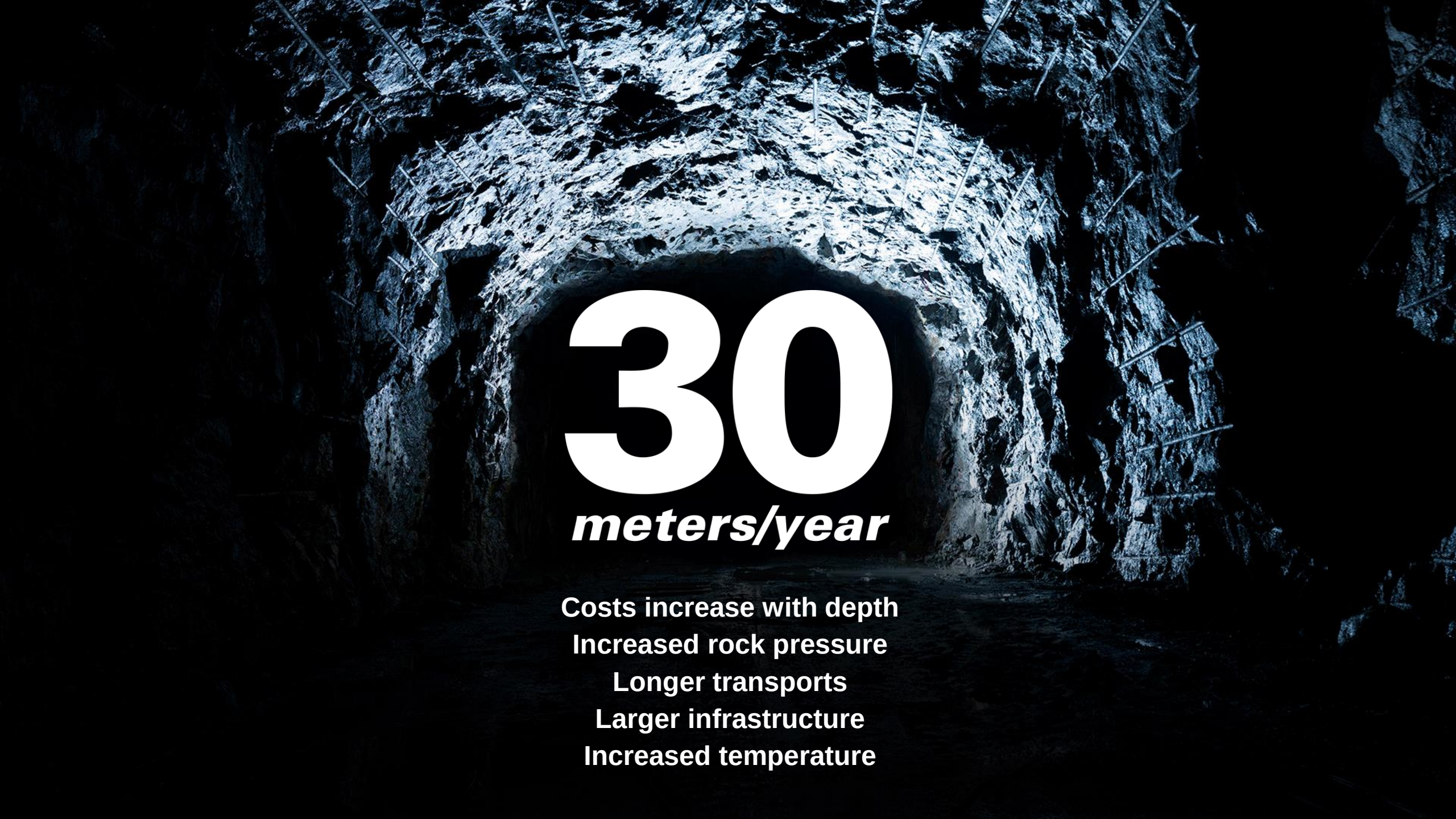
Lifting electrification to a new level

Unrivalled expertise from previous generations of battery equipment

- Modular, scalable and connected technology platform
- State of the art safety
- Battery as a Service model (BaaS)
- Lifecycle approach - circularity

Why electrification

Epiroc



30

meters/year

Costs increase with depth
Increased rock pressure
Longer transports
Larger infrastructure
Increased temperature

Epiroc

Our vision

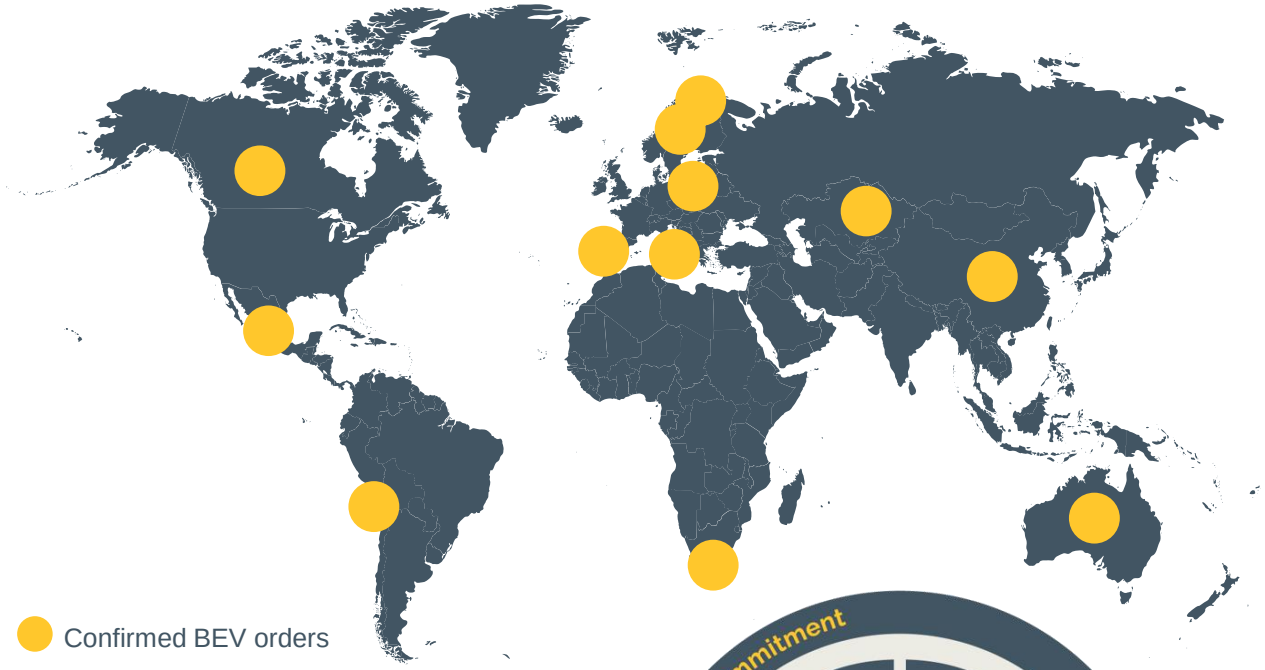
Dare to think new

Our mission

Drive the productivity and sustainability transformation in our industry

Boosting the Innovation

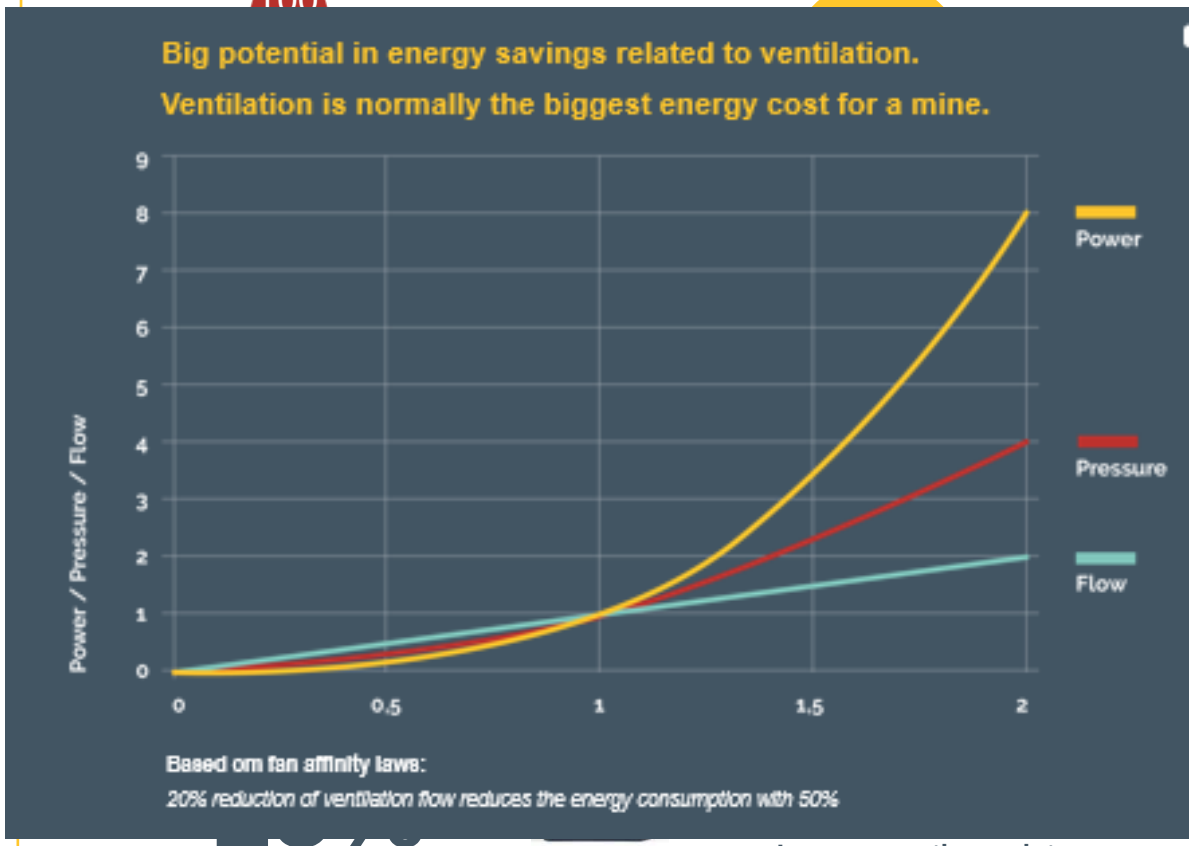
Electrification highlights



- ✓ 10+ years experience
- ✓ Loaders 4-18 tons, Trucks 20-42 tons
- ✓ Drilling fleet
- ✓ Conversions
- ✓ Other OEM solutions
- ✓ Batteries as a Service
- ✓ Chargers
- ✓ Infrastructure (Meglab)

Noise

Heat emission



Less preventive maintenance cost on Loaders

Less preventive maintenance cost on Trucks

Boosting the innovation

- Partnership is the new leadership

Sustainable Underground Mining (SUM)

LKAB, Epiroc, Volvo, ABB, Combitech

Sustainable Intelligent Mining Systems (SIMS)

Epiroc, Agnico Eagle, Boliden, ABB, Ericsson, Luleå University of Technology, KGHM Cuprum, IGW, KS, LKAB, Mobilaris, Wolfit, RWTHAachen University

NEXGEN

Epiroc leading the NEXGEN SIMS project to develop more sustainable and efficient production of raw minerals, kicked off in May 2021 together with 15 partners

- **Leveraging innovation globally by partnerships with customers, suppliers and others**

- **Successful completion of EU-funded Sustainable Intelligent Mining Systems (SIMS) project in 2020**
- **Collaboration enables leverage on R&D**

- **Regional Application Centers (RAC) lowers hurdle for customers to entry automation**
- **Majority of R&D spending goes into equipment and technology**

Press cuts

Bloomberg

Hyperdrive

Electric Vehicle Revolution Goes Underground With Mine Truck

By Niclas Rolander
den 14 november 2018 07:00 *Updated on den 14 novemb*

- Sweden's Epiroc unveils biggest-capacity, battery-run vehicle
- Electrification is aimed at lowering energy costs for miners

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In this article

Electric vehicles are reaching global markets fa
Swedish mining equipment maker Epiroc AB n
underground machines within five years.

The manufacturer on Wednesday launched a r
says is the largest battery-powered vehicle for
surface: a 42 ton-capacity truck that can haul b
tunnels. It's part of the company's latest series
including drill rigs and loaders, designed to cut
costs for miners.

MINING.com NEWS MARKETS PEOPLE GROUPS JOBS COURSES MORE

Epiroc launches new generation of

The Scooptram ST14, Boomer E2 and Minetruck options.

OmEV

finansierad av Energimyndigheten och värd är Swedish Electromobility Centre
15 november 2018

Epiroc lanserat sin andra generation av batteridrivna gruvfordon ihop med ny affärsmodell

skrivet av Magnus Karlström

Svenska Epiroc går före och lanserade igår en ny generation av gruvfordon som enbart går på batteri [1].

Fordonen är en 14 tons och en 18 tons underjordslastare, en 42 tons (nyttolast) lastbil samt flera medelstora borriggar.

De fordonen är bara början för Epiroc planerar att elektrifiera hela sitt modellprogram inom fem år [2].

Northvolt är leverantör av battericeller och ABB av elmaskinerna. Epiroc har valt leverantörer som har en helhetslösning så att batterierna och elmaskiner ska vara så ekologiskt och socialt hållbara som möjligt.

Epiroc har också redan presenterat några kunder som t ex LKAB [4].

En utmärkande del av lansering var att Epiroc också lägger till en affärsmodell. De

HEAVY EQUIPMENT GUIDE NEWS PRODUCTS COMPANIES DIGIT

INDUSTRY NEWS MINING

Second generation of the Epiroc zero-emission fleet presented at Power Change Days

November 14, 2018

Battery-electric equipment allows a mine to unlock a number of benefits: improved health and safety, reduced greenhouse gas emissions and decreased operating costs. "We are leading the charge towards sustainability in mining through battery electric, zero-emission equipment," says Stevan

MINING GLOBAL TOPICS COMPANIES TOP 10

SUSTAINABILITY TECHNOLOGY

Swedish Epiroc unveils new

Mining Magazine

Webinars Events Online Exclusive NEWSLETTERS TRIAL SUBSCRIBE LOGIN

SURFACE MINING | UNDERGROUND MINING | PROCESSING | ASSET MANAGEMENT | INFRASTRUCTURE | FUTURE OF MINING | ALL SECTIONS

Editor's Award WINNER: Epiroc

Epiroc is expanding its battery offering and zero-emission fleet with the second generation of underground loaders, trucks and drill rigs and a new battery service offering. Battery-electric equipment allows a mine to unlock a number of benefits: improved health and safety, reduced greenhouse gas emissions and decreased operating costs.

To realise the technology shift, Epiroc has joined forces with partners like Northvolt and ABB to develop the second-generation electric technology platform, specifically designed for the high requirements of the mining industry regarding safety, performance and reliability.

Someone during the day said Epiroc is a start-up company with more than 100 years of experience.
It should be an advantage to cope with a technology shift as battery operation for underground mining vehicles.

Their new organization and business model is tailor-made to enable them to sell battery power to the mining industry.

Epiroc's offering for battery operation is a holistic solution for reducing the customer's doubts and the speed of changeover.
- They remove the cost of capital and many of the risks associated with batteries.
- They choose components that are relatively environmentally better.
- They offer the possibility to rebuild existing vehicle fleet.
- They adapt the charging solution to the customer's needs.

Epiroc is a model that companies from other industries should study and transform into their situation.

Nowadays, I think e-mobility will happen more or less in all automotive industries. The three remaining questions are:
• How fast can it go?
• Can Sweden participate and sell?
• Is it possible to influence the development so that it becomes as environmentally friendly as possible?

Epiroc's model tries to influence all three issues

THE DIESEL FREE MINE

ZERO EMISSIONS

Zero diesel particulate matter

Zero toxic gases

Reduced heat and noise

The future is electric

Our ambition is to produce the world's greenest machines, using the world's greenest cells, producing the world's greenest metals, doing our best for our planet

Epiroc

Second generation battery electric vehicles

Technology Development started already in Q1-2017

Scooptram
ST4 Battery
ST14 Battery
ST18 Battery

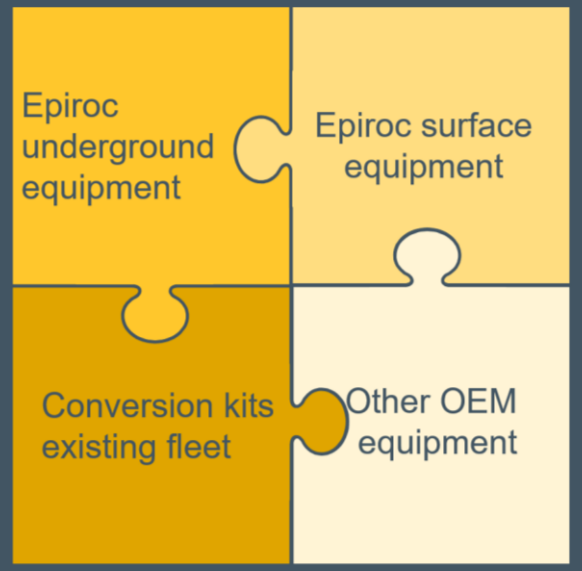
Drill rigs
Mid-sized rigs incl. face drilling, production drilling and rock reinforcement rigs

Minetruck
MT42 Battery

Batteries as a Service | Epiroc

Electrification roadmap

Powered by Epiroc battery system



Today

2021

Tomorrow

2025

Complete range of underground equipment in battery-electric version

Future

2030

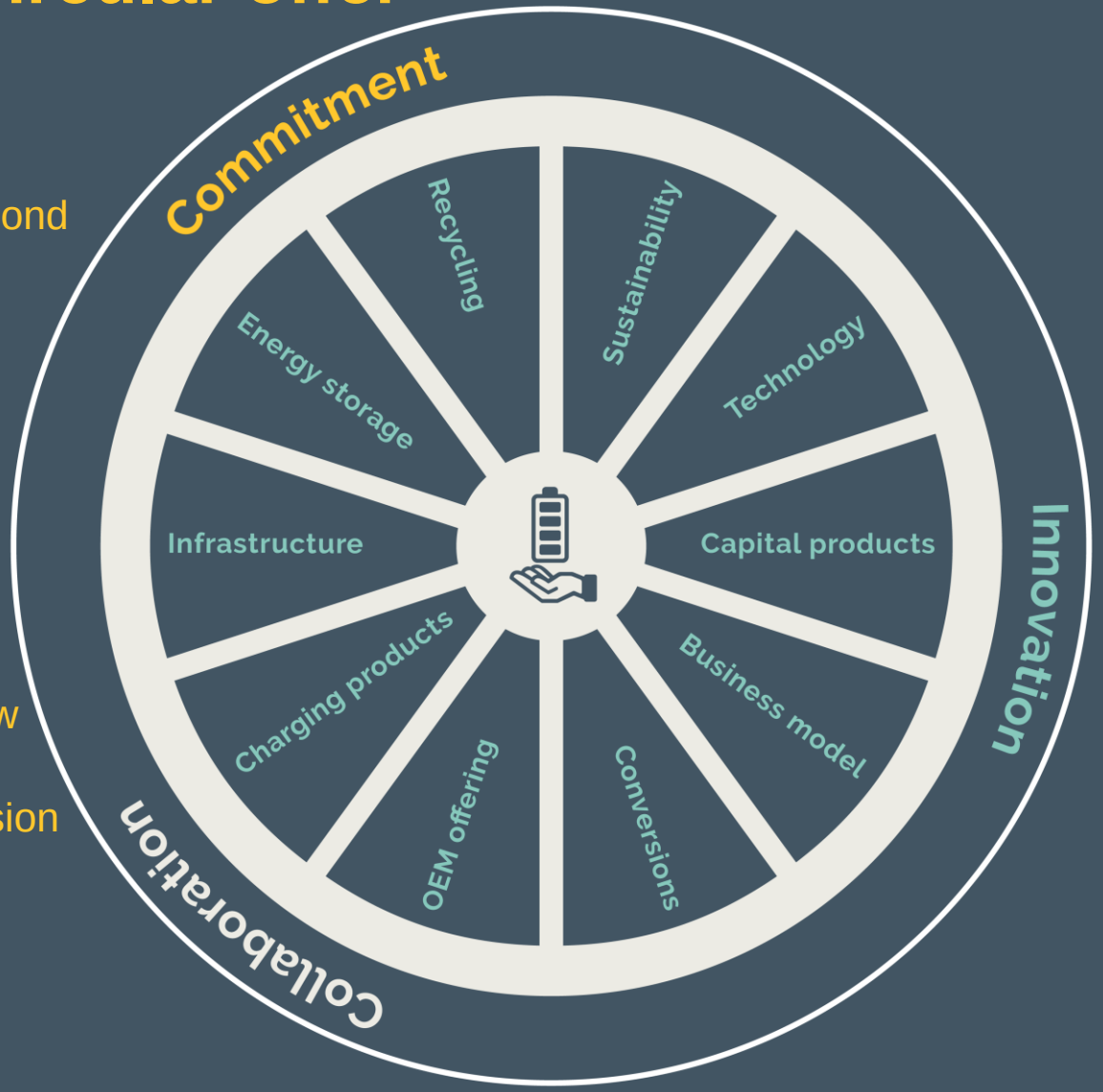
All mining equipment in battery-electric version

Electrification

Complete and circular offer

- Energy Storage systems
- Circularity: Leveraging second life

- Charging products and new businesses
- OEMs conversions expansion



- ESG alignment
- Own technology batteries

- BEV machines
- BaaS, business model

- Conversion diesel to battery for existing fleet

6th Sense

Smart. Safe. Seamless.

6th Sense is our way to optimize our customers' operations with automation and information management solutions.

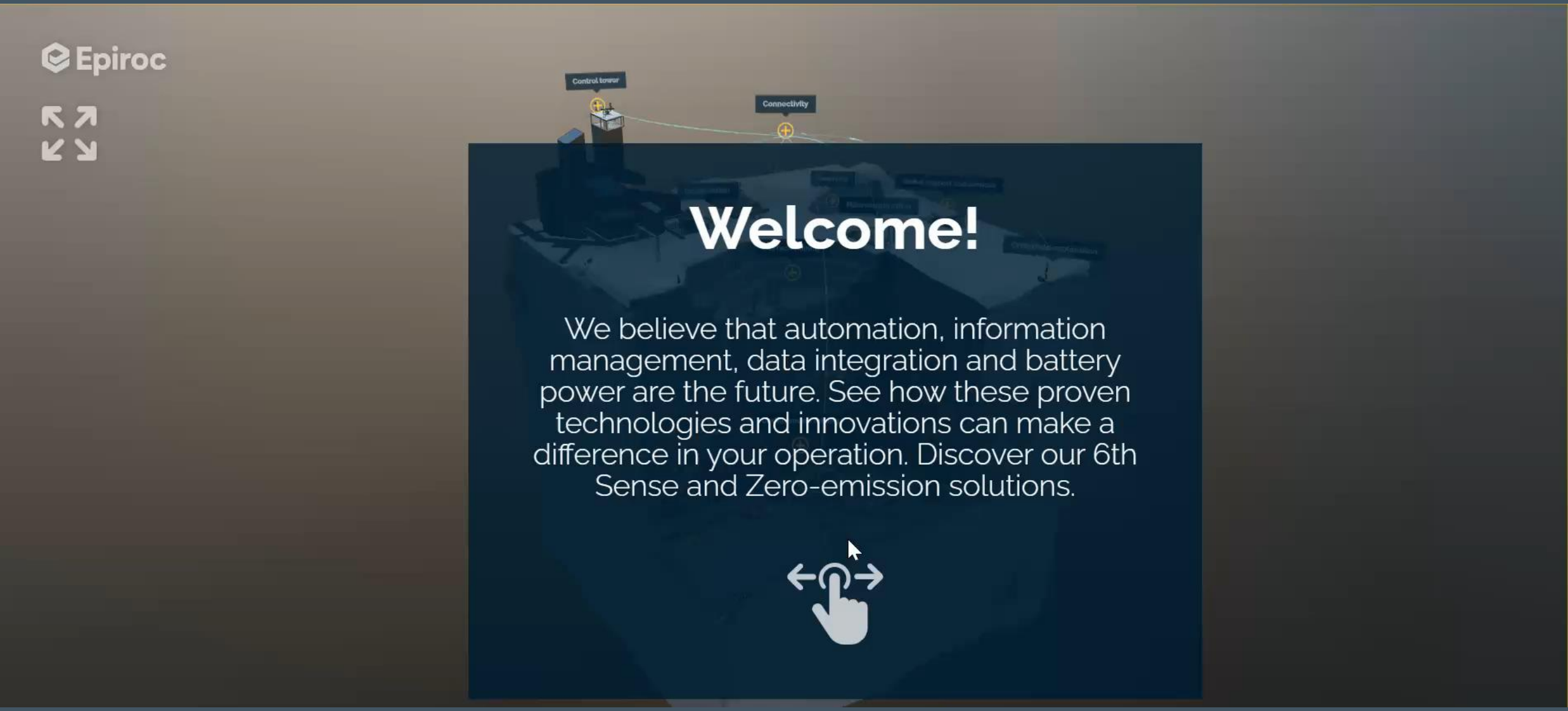
Epiroc

Open systems & standards

Close customer and partner collaboration

Product innovation & customization

The world of Epiroc



The world of Epiroc – Assets Management

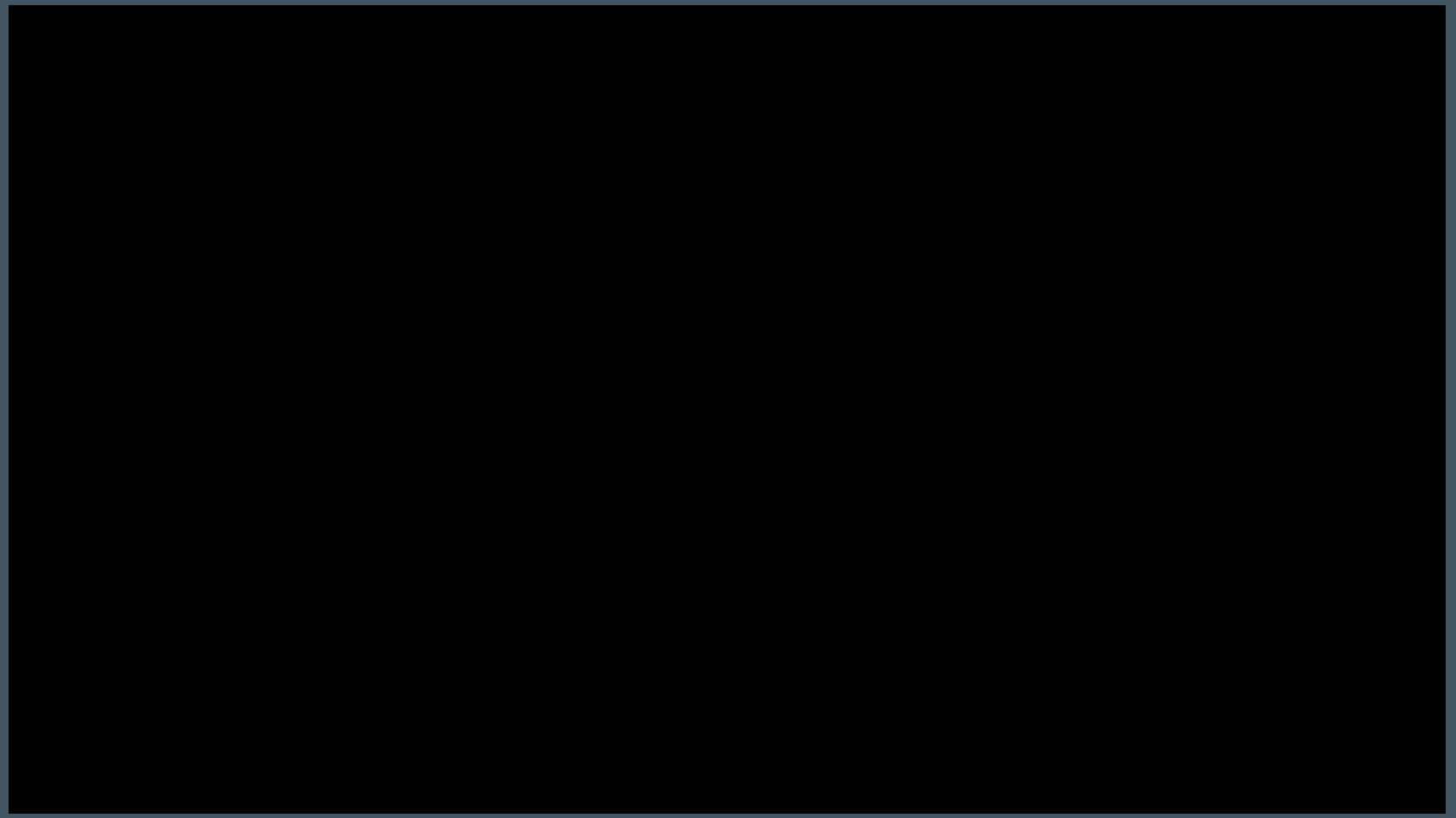
Mobilaris

MOBILARIS
Mining & Civil Engineering

Epiroc

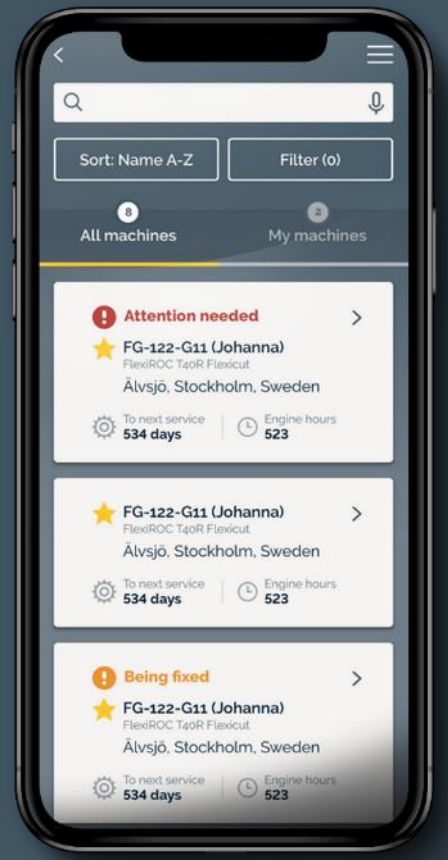
The world of Epiroc - Automation

Automation and Information management Underground – Phosagro RUSSIA



My Epiroc

Customer experience and collaboration platform maximizing your digital efforts



Stay on top of your fleet

As a fleet manager you can keep track of your fleet health and performance. Know of any risks or faults and stay on track with live fleet notifications & statistics.

Manage tasks & actions

Efficiently deal with tasks and actions related to your fleet and get the support needed in order to prepare your reporting.

Empower your operators

Empower your operators with necessary tools to manage their daily flows related to logging events, reporting faults, managing service scheduling, parts ordering and more...

Reduce downtime

Avoid unwanted downtime by being proactive with service notifications, easy managing of orders and get help to pin point faults and find solutions to get them sorted.

Keep your data secure

Your data is always safe in our encrypted environment, to which you are free to upload the content related to your fleet for creating your safe digital fleet library over time.

Get support when needed

When you need support from Epiroc you are just a click away to initiate remote guided support, or a swipe away from getting to your selected Epiroc contacts or to an transparent overview of all your reported inquries.

Careers / Epiroc

- Careers | Epiroc (epirocgroup.com)

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THANK YOU

Questions?