

Boltec Auto Bolt Reload

Rock bolting rig with fully mechanized bolt reloading functionality



Redefining rock reinforcement underground

The Boltec ABR (Auto Bolt Reload) is designed to increase productivity and bolt installation quality while significantly improving operator safety. With the ABR function there is no need for the operator to exit the cabin and manually reload the feed carousel. The feed carousel is automatically reloaded from the bolt magazine located on the side of the machine, all while the operator stays safe inside the ROPS and FOPS certified cabin.

The Boltec ABR is available on either the Boltec M10 or E10 sized carrier, with battery-electric or diesel driveline.

+ Main benefits

Focus on live work elimination for improved operator safety by mechanizing the feed bolt magazine reloading process, keeping the operator away from unsupported ground

Increased productivity and bolt installation quality thanks to intelligent options as well as SDA (Self Drilling Anchors) and pumpable resin

Flexibility thanks to the boom mounted positioning system giving excellent coverage area and the ability to install bolts and mesh in all ground conditions

Smart and Green series

S – Smart

Machines within the Smart series are equipped with Epiroc's Rig Control System, RCS, which makes them ready for automation and remote control. RCS also provides a foundation for additional functionality from our 6th Sense offering.

G – Green

The Green series includes machines that create more sustainable operations thanks to a battery-electric driveline.

SG – Smart and Green

Smart and Green means that machines feature both Epiroc's Rig Control System and zero-emission technologies.

+ Auto Bolt Reload highlights



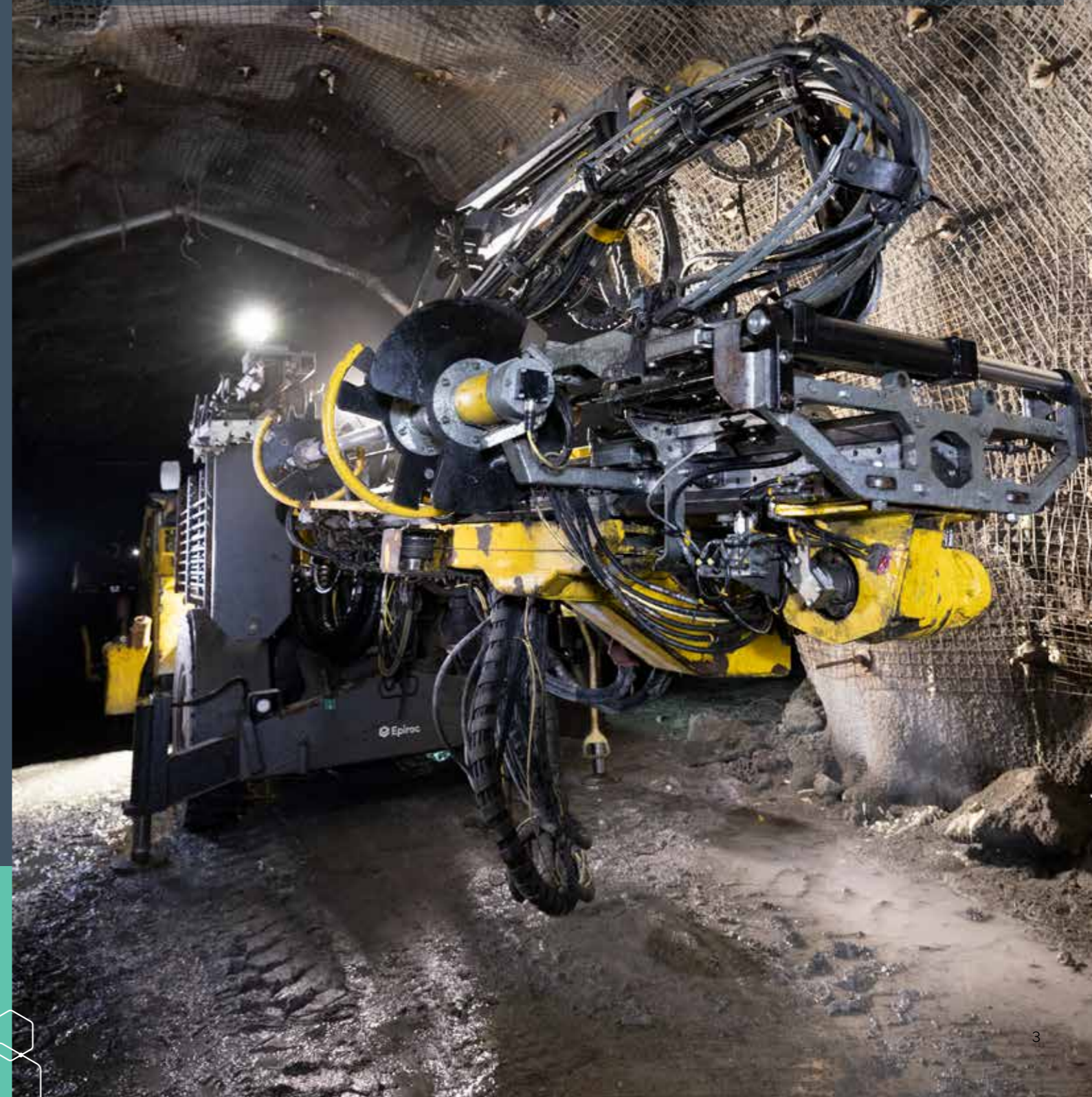
BUT 45 boom used for installing SDA and mesh.



Bolt magazine with the capacity of carrying up to 44 SDA bolts.



Reloading of feed magazine from the big bolt magazine.



Key features of Boltec ABR

The Boltec Auto Bolt Reload system is the culmination of several years of product development that had the aim to alleviate the bottle neck that rock reinforcement had become. The marriage of bolt type, injection resin, mechanized bolt reloading and smart software control has resulted in a solution that promises to become a game changer in the mining industry.



+ SDA and pumpable resin

Self Drilling Anchors and pumpable resin is the key combination for rock reinforcement considering installation speed and installation quality regardless of the ground conditions. Other traditional bolt types are often sensitive to such things as broken ground, changing hole diameter, operator input error, misalignment and other things that may slow down or compromise the bolt installation process. SDA and pumpable resin is the door opener for future automation.



+ The reloading process

When an operator has emptied the eight bolt capacity feed magazine of bolts, the bolting feed is rotated and positioned into the reloading location. A separate transfer boom automatically moves four bolts at a time from the carrier magazine to the feed magazine, thereby completing the auto bolt reload sequence. When the 44 bolt capacity carrier magazine is emptied, it is folded down to ground level for reloading by the operator. The reloading position remains behind the front wheels, always keeping the operator working under already supported ground.



+ Autonomous functionality

Boltec ABR with SDA and pumpable resin allows several autonomous functionalities that previously were not possible for conventional rock bolting rigs. Single bolt auto, multi bolt auto and teleremote control are features that can help to increase productivity, and reduce the requirement for an operator to be physically in the machine.



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
A - Boltec M10 S ABR **B** - Boltec M10 SG ABR **C** - Boltec E10 S ABR **D** - Boltec E10 SG ABR

Rock drill	A	B	C	D
COP RR11	●		●	
COP RR14	○	●	○	●
Rock drill lubrication, air dryer system	○	●	○	●
Air-water mist flushing, external water, internal air, hydraulic oil cooled by air fan	○		○	
Air-water mist flushing, external water, internal air, hydraulic oil cooled by water	○		○	
Air-water mist flushing, internal water, internal air, hydraulic oil cooled by air fan	○		○	
Rock drill lubrication warning kit	●	●	●	●
Hole blowing kit	●	●	●	●

Bolting unit	A	B	C	D
Magazine capacity: 8 in feed magazine + 44 in carrier magazine				
Size of face plates, rectangular, diameter, max 150 x 150 mm				
Size of face plates, round, diameter, max Ø 200 mm				
Bolt length Boltec M10 ABR: 2.4 m				
Bolt length Boltec E10 ABR: 2.4 or 3.0 m				
Self Drilling Anchor (SDA) bolts, R28, R32 (pumpable resin system required)	●	●	●	●
Welded screen mesh handling arm	○	○	○	○
MESHA rolled mesh handling arm (prepared for MESHA)	○	○	○	○
Bolting camera	○	○	○	○
Pumpable resin system	●	●	●	●

Control system	A	B	C	D
Rig Control System (RCS)	●	●	●	●
Bolt angle indication	○	○	○	○
Bolt Quality Log (BQL)	○	○	○	○
Bolt plan navigation	○	○	○	○
Rig Remote Access (RRA)	○	○	○	○
Single bolt auto (SDA and pumpable resin required)	○	○	○	○
Teleremote operation	○	○	○	○

Boom	A	B	C	D
BUT 45 M			○	
BUT 45 S	●	●	●	●
Automatic boom lubrication system, rear part	○	○	○	○
Central boom lubrication kit	○	○	○	○

Air/water system	A	B	C	D
Hydraulically driven screw compressor Atlas Copco GAR5				
Hydraulic water booster pump capacity at 7 bar, 80 L/min				
Minimum water inlet pressure 2 bar				
Water flow and pressure guard for flushing water				
Electric driven water booster pump, max capacity at 15 bar boost 300 L/min. Minimum water inlet, 2 bar at 200 L/min*	●	●	●	●
Water hose reel, including water hose	○	○	○	○
High pressure washing kit	○	○	○	○
Remote controlled water cannon	○	○	○	○

Hydraulic system	A	B	C	D
Low oil level indicator	●	●	●	●
Oil temperature meter	●	●	●	●
Filtration 16 µm	●	●	●	●
Oil filter indicator	●	●	●	●
Mineral hydraulic oil	●	●	●	●
Electric oil filling pump	●	●	●	●
Water/oil cooler in stainless steel	●	●	●	●
Hydraulic oil thermostat	●	●	●	●
Hydraulic oil leakage detection and shut-down system	○	○	○	○
Hydraulic oil fine particulate and water filtration system (not in conjunction with bulk cement system)	○		○	

Electrical system	A	B	C	D
Total installed drilling power 63 kW (Auto cement, 83 kW)	●		●	
Main motors 55 kW (Auto cement, 75 kW)	●		●	
Voltage 380-1 000 V	●	●	●	●
Frequency 50 Hz	○	○	○	○
Frequency 60 Hz	○	○	○	○
Soft start (380-690 V)	○	○	○	○
Transformer 8 kVA	●	●	●	●
Transformer for charging 100 kW		●		●
Electronic overload protection for electric motors	●	●	●	●
Digital volt/ampere meter in electrical cabinet	●	●	●	●
Phase sequence and earth fault indicator	●	●	●	●
Battery charger	●	●	●	●
700 V Battery 280 Ah		●		●
Cable reel with limiting switch	●	●	●	●
Electrical outlet, main supply voltage 16 Amp 3-phase (16 A or 32 A socket size) - not for 1 000 V	○	○	○	○
Extra transformer 3-phase 15 kVA capacity with 230 V and 400 V outlet (16 A or 32 A socket size)	○	○	○	○
PC4 or PC5 plug/socket	○	○	○	○
Spotlight, 1 x 70 W, 24 V	●	●	●	●
Soft start of main electrical motor (not for 1 000 V or CSA)	○	○	○	○

Technical specifications

● - Standard ○ - Option
A - Boltec M10 S ABR **B** - Boltec M10 SG ABR **C** - Boltec E10 S ABR **D** - Boltec E10 SG ABR

Cabin	A	B	C	D
ROPS and FOPS certified cabin, noise level <65 dB(A)	●	●	●	●
Mediaplayer	●	●	●	●
12 V outlet for communication radio	●	○	●	○
Electrical heater, 1.2 kW, 230 V (CE)	○	○	○	○
Electrical heater, 10 kW, 700 V DC (CE)	○	○	○	○
Reversing camera with monitor	●	●	●	●
Air conditioning unit	●	●	●	●
Heating function for air conditioning (water transferred)	○	○	○	○
Swingable seat for drilling and tramming	●	●	●	●
Cabin body made of stainless steel	○	○	○	○
Joystick-controlled spotlights left and/or right, 70 W	○	○	○	○

Dimensions	A	B	C	D
Width, without bolt rack	2 480 mm		2 501 mm	
Height, cabin fixed ROPS and FOPS standard	3 011 mm		3 133 mm	
Height, cabin lift/tilt function, FOPS	-		3 138 mm	
Length tramming SBU2400	14 026 mm		15 120 mm	
Ground clearance	275 mm		275 mm	
Turning radius outer/inner	7 100/4 500 mm		7 500/4 750 mm	

Weight	A	B	C	D
Total	28 000 kg		31 000 kg	
Boom side	16 000 kg		21 000 kg	
Engine side	12 000 kg		10 000 kg	

Weight varies depending on options.

Carrier	A	B	C	D
Deutz TCD 2013 L04, Stage IIIA/Tier 3, 120 kW	●			
Deutz TCD 2012 L06, Stage IIIA/Tier 3, 155 kW			●	
Deutz TCD 4.1, Stage V/Tier 4 final, 115 kW	○			
Deutz TCD 6.1, Stage V/Tier 4 final, 180 kW			○	
Deutz TCD6.1 L06, CN4, 129 kW	○		○	
Traction motor, 150 kW		●		●
Articulated ±38° steering angle	●	●	●	●
Four wheel drive	●	●	●	●
Electrical system 24 V	●	●	●	●
Batteries 2x125 Ah	●	●	●	●
Automatic differential lock on front axle, limited slip	●	●	●	●
Tyres, 12.00 R24 Michelin	●	●		
Tyres, 14.00 R24 Michelin			●	
Front and rear hydraulic jacks	●	●	●	●
Fuel tank volume 4 cylinder engine 110 L	●			
Fuel tank volume 6 cylinder engine 175 L			●	
Central lubrication system	●	●	●	●
Tramming lights, rear 4x40 W LED	●	●	●	●
Tramming lights, rear 2x40 W LED + 2x70 W Halogen	●	●	●	●
Working lights 2x320 W LED 24V DC	●	●	●	●
Illuminated stairs for platform	●	●	●	●
Central grease point	●	●	●	●
Fire extinguisher	●	●	●	●
Fire suppression system ANSUL – manual release	○	○	○	○
Fire suppression system ANSUL – automatic release (check-fire)	○	○	○	○
Fire suppression system ANSUL – automatic release with CO ₂ in electrical cabinet	○	○	○	○
E-Tramming (4-cylinder engine)	○			
E-Tramming (6-Cylinder engine)			○	
Electric hydraulic/diesel hydraulic drilling capability	○		○	

Recommended cable sizes and lengths

Voltage	Dimension, mm ²	Diameter, mm	Length, m
400 V	3x185+3G35+2x1.5	53.5-56	90
440 V	3x150+3G25+2x1.5	48.5-52	100
460-500 V	3x120+3G25+2x1.5	42-46.5	120
500-550 V	3x95+3G16+2x1.5	39-42	150
660-690 V	3x70+3G16+2x1.5	34-37	180
1 000 V	3x50+3G10+2x1.5	29-32	200

Recommendations are given for surrounding temperature of 40°C and up to a height of 2 000 m. Cable dimension for battery version depends on charging cycle.

Tramming speed

On flat ground (rolling resistance 0.05)*	>15
On incline 1:8	>5

* Electric driveline >12 km/h

Technical specifications

Measurements in millimeters

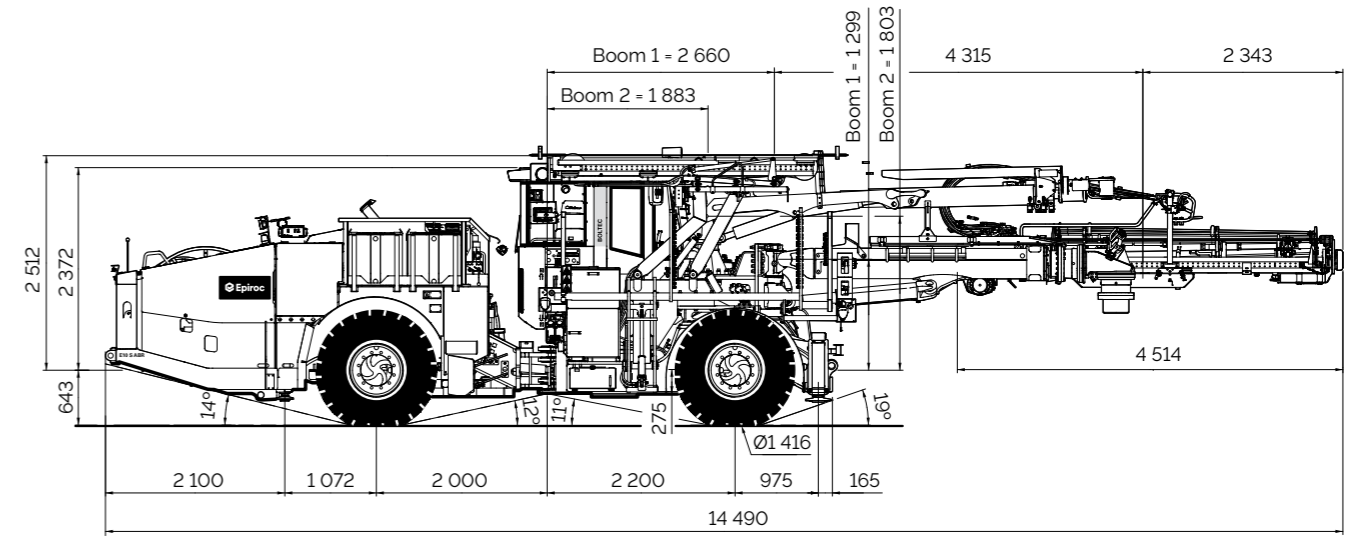
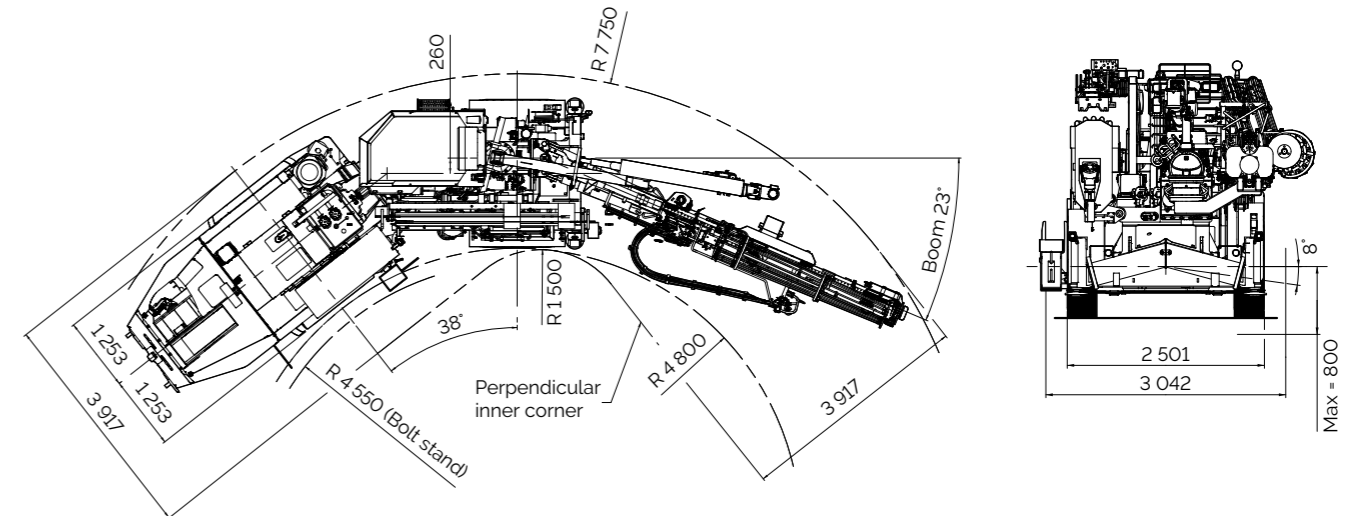


Illustration shows Boltec E10 S ABR with pumpable resin option, mesh handling boom, 6-cylinder diesel engine, BUT 45 S boom and bolting unit for 3 m bolts.





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