



# DS311 ROCK SUPPORT BOLTER

TECHNICAL SPECIFICATION

Sandvik DS311 is the most compact mechanized rock bolter on the market. Its unique rock bolting concept delivers the best ratio of rock bolt length to drift height.

Sandvik DS311 is a one-man-operated electro-hydraulic rock bolter for rock reinforcement in underground mines with small and medium cross sections. The operator works below supported ground while protected under a FOPS / ROPS certified cabin structure. Mechanization of the bolting process ensures efficient, constant and durable rock bolt integrity.

Built from proven and reliable components, Sandvik DS311 uses RD314 rock drill for fast performance, installed on the Sandvik Bolting Head with low operating cost.

Versatility is also one of the rock bolter's key characteristics. Sandvik DS311 can install most common rock bolts ranging in length from 1.5 to 3 meters (5 to 10 feet).

## KEY FEATURES

Coverage area	6 350 x 2 100 mm (roof)
Hydraulic rock drill	1 x RD314, 14 kW
Bolting head	1 x SBH, (5' to 10')
Boom	1 x B26XLB
Turning width (T-section)	4 165 mm (with SBH5 and B26B)
Transport width	2 020 mm
Transport height (canopy)	2 140 mm / 3 100 mm
Transport height (cabin)	2 920 mm or 2 670 mm
Transport length	11 530 mm (with SBH5)
Total weight	15 000 - 18 000 kg depending on options



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## HYDRAULIC ROCK DRILL

Type of rock drill	RD314 (TS2-137)
Percussion power	14 kW
Percussion pressure	Max. 180 bar
Percussion rate	110 Hz
Rotation speed	Max. 530 rpm
Rotation torque	Max. 340 Nm
Hole size diameter	33 - 43 mm (1"5/16 - 1"23/32)
Recommended rod	R32 - HEX25 - R25
Shank adapter	R32 female
Weight	115 kg
Filling device for accumulators	Specification TS2-430

## BOLTING HEAD

SBH (TS2-208)	SBH5	SBH6	SBH7	SBH8	SBH10
Bolt length	mm 1 525	1 830	2 135	2 440	3 050
Drill steel length	mm 1 975	2 175	2 475	2 795	3 405
Hole depth	mm 1 755	1 950	2 250	2 570	3 185
Total length (A) (drilling)	mm 2 520	2 820	3 120	3 440	4 090
Total length (B) with RHR50 (bolting)	mm 2 710	3 010	3 310	3 630	4 280
Total length (B) with RD315 (bolting)	mm 2 770	3 070	3 370	3 690	4 340
Recommended operating height with RD315 (min.)	mm 2 970	3 270	3 570	3 890	4 540
Total weight*	kg 1 040	1 070	1 100	1 150	1 280

Dimensions +/- 5 mm

\*The weights are theoretical and given for information  
Dimensions and weights are for a bolting head equipped

## BOOM

Type of boom	B26XLB (TS2-207)
Boom extension	1 700 mm
Boom weight, net	1 500 kg
Roll-over angle	360°

## HYDRAULIC SYSTEM

Powerpack	HPP355 (1 x 55 kW) IE3 electric motor
Filtration (pressure / return)	20 µ / 10 µ Quick couplers for kidney filtration
Oil tank volume	180 liters
Oil tank filling pump	Electric
Cooler for hydraulic oil	OW30 oil-to-water (30 kW)

## DRILLING CONTROL SYSTEM

Type of control system	THC561 (TS2-362)
Operating principle	Hydraulic control
Manual boom control	Direct control Fully proportional Hydraulic parallelism
Drilling control	Manual collaring Feed / percussion pressure control Feed / percussion pressure monitoring Anti-jamming system Flushing control (On /Off/Auto.)
Drilling safety	Boom movements inhibition switches

## ELECTRIC SYSTEM

Standard voltage	380 - 690 V (± 10%)
Total installed power	70 kW
Main switch gear	MSE 5
IP classification	Specification TS2-132
Starting method	Star Delta 380 V - 575 V DOL 600 - 690 V
Automatic cable reel	TCR1
Cable reel control	At operator station and remote control at rear of the machine
Sealed AGM batteries	2 x 12 V, 95 Ah
Cable plug holder	On central rear hood
Front lights (combined working and driving)	4 x 50 W LED (4 200 lm, 6 000 K)
Rear lights (combined working and driving)	4 x 50 W LED (4 200 lm, 6 000 K)
Search light	Remoted with cabin: 1 x 40W LED (2 300 lm, 5 700 K) Manual with canopy: 1 x 17W LED (600 lm, 6 000K)
Rear brake / parking lights	2 x Red LED

## AIR AND WATER SYSTEM

Flushing of holes	By water
Water booster pump type	WBP1 (4 kW)
Water pump capacity	33 l/min at 15 bar (input pressure = 4 bar)
Water pump inlet pressure	2 bar (Min.)
Flushing water pressure	10 - 15 bar
Shank lubrication device	SLU1 (air / oil mist)
Air compressor	1 m <sup>3</sup> /min at 7 bar
Oil consumption	100 g/h
Air consumption	250 l/min

## OPERATOR'S SAFETY CABIN

Standard cabin	FOPS / ROPS (ISO 3449 / 3471) Height 2 920 mm
Operation	Standing drilling, seated tramming
Sound pressure level according to EN 16228	Operator station: 80 dB(A)
Operator's seat	Ergonomic T-back seat
Air conditioning	Cooling only

## CARRIER

Type of carrier	NC5-17
Steering system	Frame steering
Carrier articulation	± 38°
Rear axle oscillation	± 10°
Ground clearance	320 mm
Diesel engine	Deutz TCD2012, 74 kW, Tier 3, Stage IIIA, Canmet, China 2
Exhaust catalyzer	Standard
Transmission	Hydrostatic, automotive
Axles	Dana spicer 112 with extended differential breathers
Tires	12.00-20
Service brakes	Hydrostatic and positive braking
Parking and emergency brakes	SAHR fail safe type wet disc brakes
Tramming speed	12 km/h (horizontal) 5 km/h (14%=1:7=8°)
Gradeability / sideways tilt	Max. 15° / 5° (according to ISO 18758)
Fuel tank	90 liters
Tramming oil tank	55 liters
Carrier stabilization	2 x Telescopic (front) 2 x Vertical (rear)
Bolt storage	Left side
Tramming alarm	Standard
Knowledge Box™	Connectivity solution (TS2-535) My Sandvik insight readiness (TS2-390)
Documentation	1 x Operator's manual 1 x Technical manual (in English only) 1 x Parts manual (in English only) 2 x USB key of manuals (PDF files) 1 x Online Parts manuals (My Sandvik)

## OPTIONAL FEATURES AND PACKAGES

### Hydraulic rock drill

*RHR50 rotary drill	Instead of RD314 (drilling line)
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### Boom

*Type of boom	B26B boom instead of B26XLB
Boom suspension system	Specification TS15-232

### Bolting option

*Bolting alternatives	GCR, GCC, WI, S, M
Two bolt lengths carousel on SBH8	For bolting head 7' and 6' bolts
Screen handler	On the bolting head (TS2-355) with hooks for mesh on carrier side
Bolting head oiler	For BC and BCS system (TS2-291)
Rod retainer on SBH	For manual extension drilling with optional rod handler

### Drilling control system

Access detector system	Mandatory in Europe (TS2-211)
Access protector system	Mandatory in Canada (TS2-211)

### Electric system

*Optional voltage	Multivoltage (380 - 1000 V), at 50 or 60Hz
*Electric cables	Specification TS2-121
Ground fault and overcurrent protection	VYK (N/A USC package) with pilot cord (optional)
Auxiliary outlet	1 x 110 V or 1 x 230 V, 16 A
Battery jump start	Optional
Dewatering pump outlet readiness	8 kW (site voltage 380 - 690 V) N/A USC package
Amber flashing light	LED (24 V)

## OPTIONAL FEATURES AND PACKAGES

### Air and water system

Air mist flushing kit	Specification TS2-285
*Air compressor	2.8 m³/min at 7 bar
Water hose reel with water hose	THR with 32 mm (1 ¼"), 80 meters
Water hose with hooks	32 mm (1 ¼"), 80 meters
Dry drilling	Ilmeg 125 dust collector with 2.8 m³/min air compressor

### Cleaning system

HP system with reel	Up to 180 bar (TS2-343)
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### Greasing systems

Centralized greasing points	Specification TS2-463
Manual system	Greasing gun and cartridge with hose reel (TS2-463)
Automatic system	Carrier (TS2-463)

### Operator's safety cabin / canopy

*Safety canopy	FOPS (ISO 3449)
*Low cabin	FOPS / ROPS certification Height 2 670 mm, During drilling and tramming
Cabin heating	Radio / MP3 / Bluetooth and loudspeakers
Cabin audio system	For canopy or cabin
Safety grill	For canopy or cabin
Tramming cameras	For canopy or cabin

### Fire suppression system

Hand held fire extinguisher	1 x 6 kg Type ABC
Manual or automatic system	Ansul, 6 nozzles (TS2-460)
Auto. fire suppression system	Sandvik Eclipse™ (TS2-461)

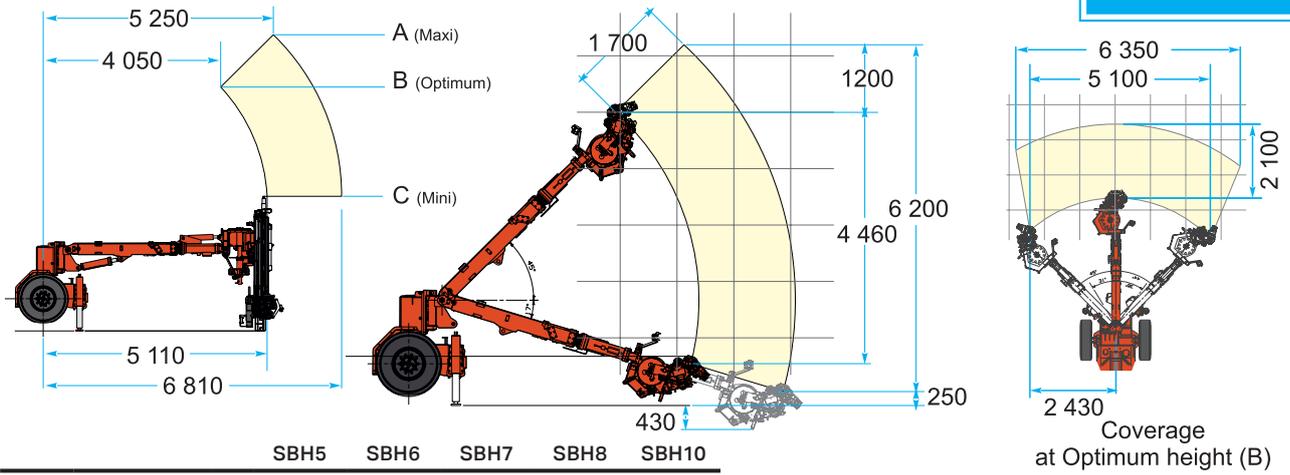
### Carrier

*Diesel engine	Deutz TCD3.6, 74 kW, Tier4F, Stage V, Canmet Deutz TCD3.6 DWG, 75 kW, China 4 with DPF (particles filter)
*Foam filled tires	4 pcs
Fast filling and evacuation system	Wiggins (complete)
Brake release	Manual hand pump
*Knowledge Box™	My Sandvik productivity readiness (TS2-390)
Wheel chocks and holders	2 Sets
*Directional tramming alarm	Cri du Lynx®

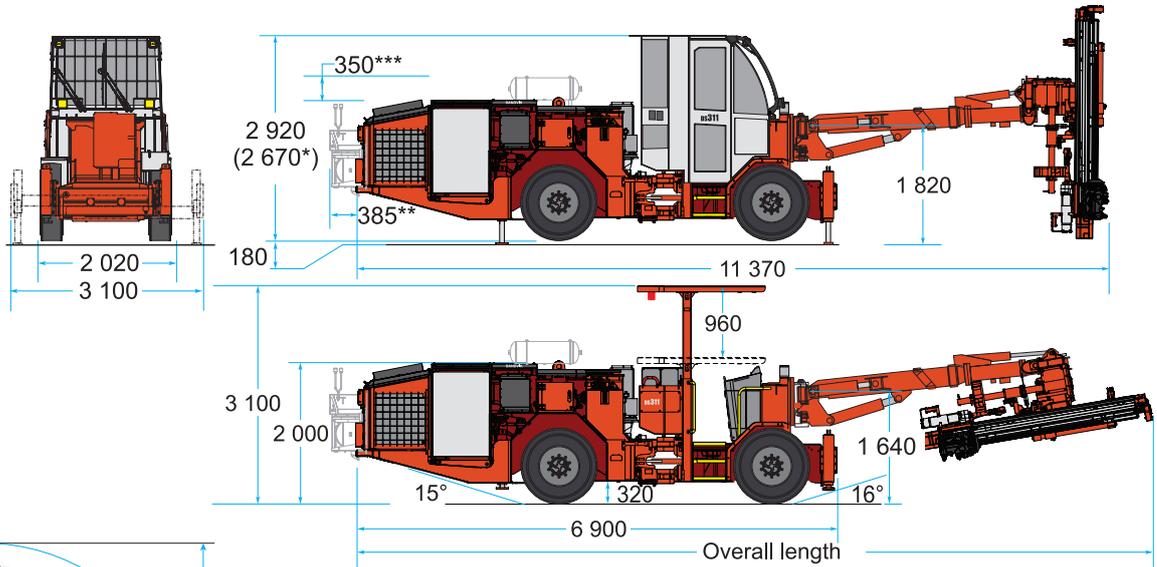
### Extra Items

Berg plug and socket	250 A
Spare rock drill	RD314, RD315
Tools and pressure test box	Specification TS2-429
Spare wheel assembly	Air or foam filled tire
Special tools for rock drill	Field tool set (TS2-119) Complete tool set (TS2-118)
Warranty extension	One year (excl. Kazakhstan)
Documentation	Extra paper or PDF manuals
Video recorder and speedometer	For CIS
Package: Configuration level	Streamline
Package: Country specific options	LAM, USC, AUS, CE package
*Package: Extremely low ambient temperature	N/A 1 000 VAC and USC package Specification TS2-195
*Package: Harsh water	Basic or advanced (TS2-049)

\*) Replaces standard feature



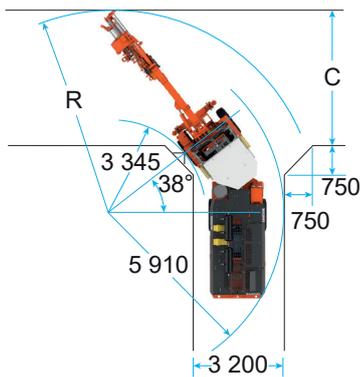
		SBH5	SBH6	SBH7	SBH8	SBH10	
DS311 B26XLB	A (Maxi)	mm	6 810	7 030	7 090	7 340	7 650
	B (Optimum)	mm	5 610	5 830	5 890	6 140	6 460
	C (Mini)	mm	2 970	3 270	3 570	3 890	4 540
	Overall length	mm	11 530	11 660	11 820	12 020	12 325



\* With low cabin option \*\* With Sandvik eclipse option \*\*\* With Air receiver option

		B26BXL boom		B26B boom ****	
		Radius (R)	T-cross (C)	Radius (R)	T-cross (C)
DS311 (SBH5)	mm	7 195	4 485	6 800	4 165
DS311 (SBH6)	mm	7 360	4 650	6 970	4 330
DS311 (SBH7)	mm	7 410	4 700	7 020	4 380
DS311 (SBH8)	mm	7 600	4 890	7 210	4 570
DS311 (SBH10)	mm	7 860	5 150	7 465	4 830

\*\*\*\* Optional boom  
All dimensions in mm



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#### 4. SANDVIK DS311 - ROCK SUPPORT BOLTER