



# DS412i ROCK SUPPORT

## TECHNICAL SPECIFICATION

Sandvik DS412i is a new highly automated and productivity rock bolting rig for underground mining operations and civil construction tunneling.

Upgraded bolting head with different bolt lengths enables wider bolt selection for all customers. Automatic resin shooting and cement mixing system ensure high quality rock reinforcement process.

Like all Sandvik underground drills, Sandvik DS412i benefits from a design philosophy that focuses on the operator. The complete new cabin is state of the art what comes to noise isolation and ergonomic.

### KEY FEATURES

Optimum bolting coverage	4.5 m x 4.5 m - 7.0 m x 7.0 m
Hydraulic rock drill	1 x RD314, 14 kW
Bolting head	1 x BHi
Boom	1 x SBR60i
Bolt length	From 1.5 m to 3.0 m (5' to 10')
Turning width (T-section)	4 140 mm
Transport width	2 500 mm
Transport / drilling height	3 070 mm / 3 320 mm
Transport length	13 020 mm
Total weight	29 000 kg depending on options



1. SANDVIK DS412i - ROCK SUPPORT

## 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. 520 rpm (with OMS100)
Rotation torque	340 Nm (with OMS100)
Hole size (bolting)	33 - 43 mm
Shank adapter	45 mm / R32 female
Weight	122 kg
Length	571 mm

## BOLTING HEAD

Type of bolting head	BH (TS2-277)
Bolting head feed	KS140
Bolt carousel capacity	8 rock bolts with 200 x 200 mm maximum plate size
Bolt head length	Max. 4 142 mm (BH30)
Net weight	Max. 1 720 kg (BH30)

## BOLTING BOOM

Type of boom	SBR60i (TS2-478)
Boom extension	1 200 mm
Boom weight, net	2 200 kg
Roll-over angle	358°

## HYDRAULIC SYSTEM

Powerpack	HPP355 (1 x 55 kW)
Filtration size (pressure / return)	20 µ / 10 µ
Oil tank volume	270 liters
Oil tank filling pump	Electric
Oil cooler (water actuated)	OW30 oil-to-water (1 x 30 kW)

## DRILLING CONTROL SYSTEM

Control system type	SICA
Drilling control modes	Intelligent Torque control / Feed percussion / manual
Upgradeable automation levels	
Comprehensive diagnostic system	
Electronic joystick controls	
15" full color touch screen	
Cable kit for spare part programming	
Safety lock for movement prevention	2 switches

## ELECTRICAL SYSTEM

Standard voltage	380 – 1 000 V (±10%)
Total installed power	70 - 80 kW
Main switch gear	MSE10
IP classification	Specification TS2-132
Starting method	Direct on line 380 V - 1 000 V
Automatic cable reel	TCR4CD with spooling system
Cable reel control	Operator station and remote control at rear machine
Front lights	6 x 50 W LED (24V) >125lx, 20 000 lm; 6 000 k
Rear lights	2 x 50 W LED (24V) and 2 x 17 W LED (24V) 8 000 lm; 6 000 k
Parking rear brake / park lights	2 x Red LED
Stair and service lights	LED (24 V)
Electric quality monitoring	Voltage, Amperage, Power, Pf Energy, Phase-sequence
Motor protection	Intelligent control with power maximization
Extra low voltage supply	Continuous 80 A (27 VDC) with battery back-up and management

## AIR AND WATER SYSTEM

Flushing of holes	By Water
Water booster pump type	WBP2
Water pump capacity	100 l/min
Water pump inlet pressure	2 bar (Min.)
Flushing water pressure	10 - 15 bar
Shank lubrication device	SLU-1 (Air / oil mist)
Air compressor	CTN10 (1.0 m³/min at 7 bar)
Oil consumption	150 - 250 g/h
Air consumption	250 - 350 l/min
Compressed air outlet	Quick coupling

## OPERATOR'S SAFETY CABIN

Safety cabin certification	FOPS / ROPS (ISO 3449 / 3471)
Operation	Seated tramming Standing and seated drilling
Sound pressure level	According to EN791, ISO4872, ISO1120. Operator station: 69 db(A)
Vibration level	According to EN791, ISO2631-1
Seat	Fully adjustable seat (tramming and drilling)
Optimized dust level control	via air circulation
Air conditioning	EU6/7 filtering capacity
Cabin heating	During tramming and drilling
Electricity outlets	1 x 24 V, 1 x 12 V and CD player readiness
Stairs and indoors lights	LED
Audio player	CD / MP3 player with radio
Boot washer	At each cabin entrance
Safety laminated acoustic windows	

## CARRIER

Type of carrier	C400D (frame-steered)
Carrier articulation	± 35°
Rear axle oscillation	± 8°
Ground clearance	330 mm
Diesel engine	QSB4.5, 119 kW, Tier 3, Stage IIIA
Transmission	Hydrostatic
Axles	Dana Spicer
Tires	14.00–24 PR28
Brakes	SAHR type, fail-safe wet disc brakes
Tramming speed	12 km/h (limited)
Gradeability / sideways tilt	Max.15° / 5°
Fuel tank	100 liters
Hydraulic jacks	2 x SJ500 (front) 2 x SJ600 (rear)
Brake release	Manual hand pump
Wheel chocks and holders	2 Sets
Centralized greasing points	Specification TS2-463
Manual greasing system	Specification TS2-463
Hand held fire extinguisher	1 x 7.7 or 9 kg (type ABC)
Tramming alarm	Standard
Toolboxes and first aid kit	
Knowledge Box™	Connectivity solution (TS2-535)
Colour scheme	Sandvik
Documentation	1 x Operator's manual 1 x Maintenance manual 1 x Technical manual (in English only) 1 x Parts manual (in English only) 2 x Toolman USB key

## OPTIONAL FEATURES AND PACKAGES

### Bolting head

*Bolt carousel capacity	10 rock bolts for square plate 200 mm 12 rock bolts for square plate 150 mm
-------------------------	--

### Bolting option

*Bolting alternatives	GCR, WI, S, BCS, M, K
Automatic resin shooting	ARI system
"In the hole" resin cartridges injection system	See spec TS2-290
Screen handler	SB60RSH dedicated boom
Cement dust collector	Above the mixer
Bolt storage	On right side, or front module
Bolting head oiler	Recommended with BCS-system

### Hydraulic system

Vacuum pump	For hydraulic system
By pass oil filter	

### Drilling control system

Access detector, or protector	Mandatory in Europe (TS2-211)
-------------------------------	-------------------------------

## OPTIONAL FEATURES AND PACKAGES

### Air and water system

*Air compressor	CT28 (2.8 m³/min, at 7 bar)
Compressed air outlet	Quick coupling
Water hose reel and hose	THR2.5E with Ø38 mm (1 ½"), 65 m

### Cleaning system

LP system with reel	Up to 15 bar (TS2-343)
HP system with reel	Up to 180 bar (TS2-343)
Bolting module continuous washing system	Remote controlled

### Greasing systems

Manual system	Specification TS2-463
Automatic system	Lincoln (complete)

### Electric system

*Electric cables	Specification TS2-121
Ground fault and overcurrent protection	VYK
Dewatering pump outlet	8 kW, Site voltage 380 - 690 V
Multivoltage basic	380 - 440 V, 690 V 50 or 60 Hz
Multivoltage pro	380 - 1 000 V, 50 or 60 Hz
Current draw reducer unit	
Remote controlled spot lights	2 pcs
Indicator lights for jacks	Up and down
Earth continuity control	1 wire pilot circuit with remote reset / disconnect
Amber flashing light	LED (24 V)
Battery jump start	Optional

### Operator's safety cabin

*Low height cabin	FOPS/ROPS (ISO 3449/3471) height 2 900 mm
Tiltable cabin	15° to improve operator's comfort
Cabin heating	During tramming and drilling
Tramming camera	Rear and side

### Fire suppression system

Spare hand held fire extinguisher	1 x 7.7 or 9 kg (type ABC)
Manual or automatic system	Ansul, 6 nozzles
Fire suppression system	Sandvik Eclipse™

### Carrier

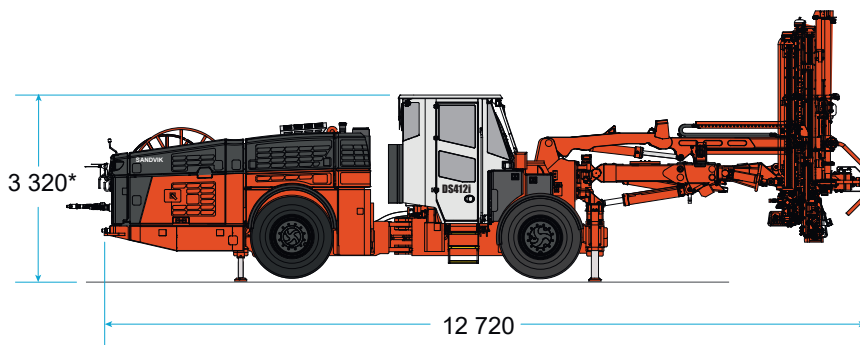
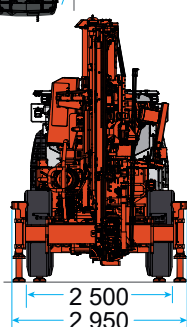
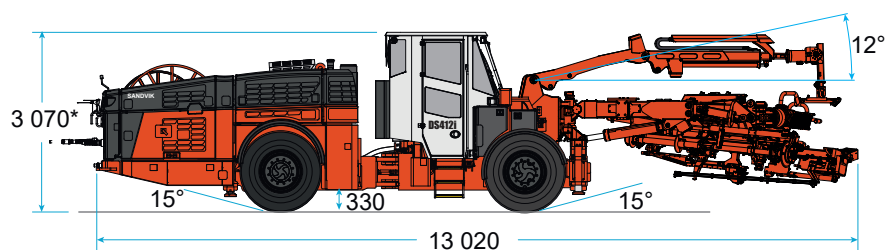
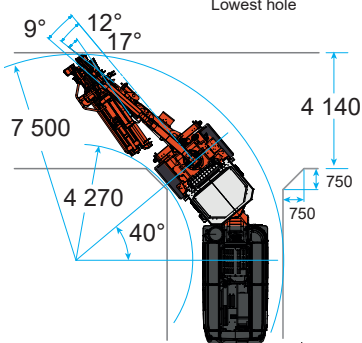
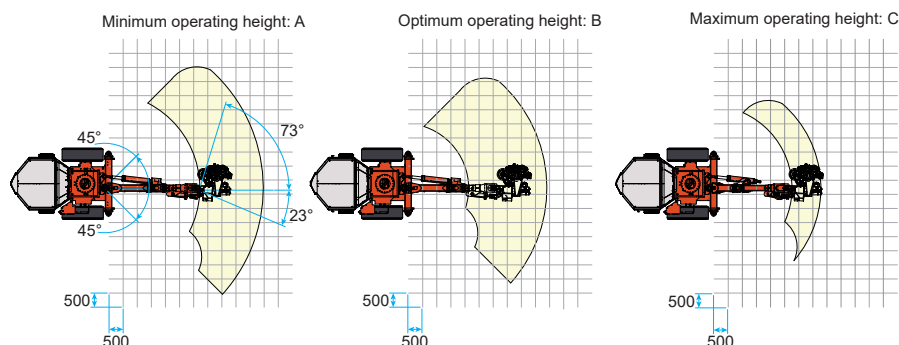
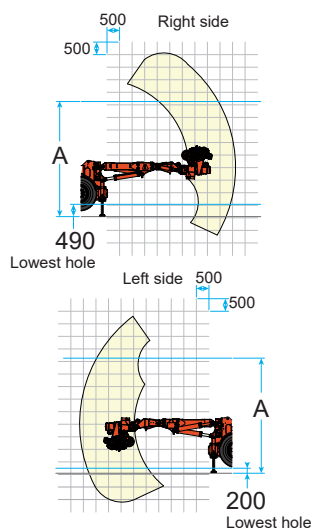
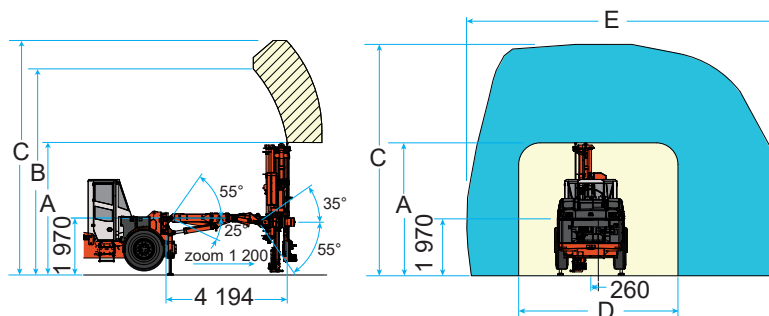
Reduced tramming speed	3 rd gear lockout
*Diesel engine	QSB4.5, 121 kW, Stage V
*Foam filled tires	4 pcs
Fast filling system	Complete
Rod rack	On carrier side (4 rods)
Wheel chocks and holders	2 pcs

### Extra items

Spare rock drill	RD314
Spare wheel assembly	Standard or foam filled tire
Special tools for rock drill	Field tool set (TS2-119) Complete tools set (TS2-118)
Documentation	Extra, Catbase, Link one manuals
Warranty extension	One year (excl. Kazakhstan)

*\*)Replaces standard feature*

Bolting head	Minimum operating height and width (A;D)	Optimum operating height (B)	Maximum operating height (C)	Maximum width (E)
BHi18	3 150	6 600	7 585	9 970
BHi22	3 650	6 600	7 585	9 970
BHi24	3 900	7 060	8 045	10 890
BHi27	4 110	7 060	8 045	10 890
BHi30	4 450	7 060	8 045	10 890



All dimensions in mm - \* Add 100 mm height with tilting option

Sandvik Mining and Rock Solutions reserves the right to make changes to the information on this data sheet without prior notification to users. Please contact a Sandvik representative for clarification on specifications and options.

ROCKTECHNOLOGY.SANDVIK

#### 4. SANDVIK DS412i - ROCK SUPPORT