

# Sandvik DS421

## Underground Drill Rig



Sandvik DS421 is a rock reinforcement drill rig specialized into cement grouted cablebolts installation in underground mines and tunnels. The Sandvik DS421 is capable of installing up to 25 meters long cable bolts with several steel strands per hole. The drill rig is provided with an on board cement mixer, a cement bags platform and a steel strand reel. It is therefore autonomous for more than a shift.

The drill rod handling system has a capacity for 19 pieces of 1 1/4 diameter, round MF drill rods. The recommended drill hole size for this application is 51mm.

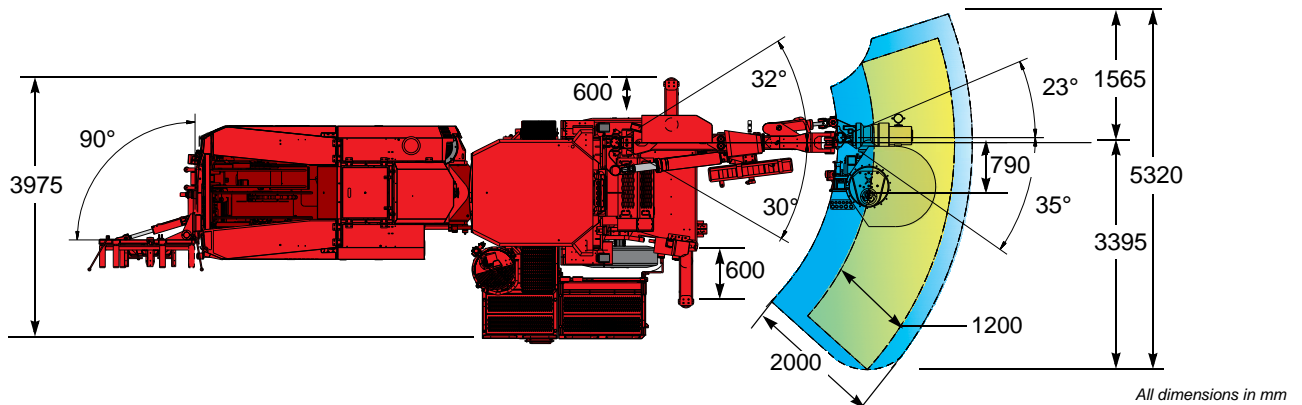
However alternative hole size can be selected with advice from your Sandvik local contact. The steel strand diameter is normally 15.2mm, of either plain steel or bulb anchor strand. The bolting operation is performed by a single operator located away from the drilling, grouting and cable installing module (CBH Cable Bolting Head).

As all the Sandvik drill rigs based on the NC7 carrier family, the Sandvik DS421 is designed for safety.

For example, most of the daily and routine checks are done with both feet on ground.

Cablebolt length	25m
Hole diameter	51-57mm
Rock drill	HL510, R32 Male
Bolting head	CBH
Boom	TBR60
Control system	TPC501 EW
Carrier	NC7S
Cornering	4100 mm
Total weight (depending on options)	Around 25000kg

Coverage



Hydraulic rock drill

Technical Specification 2-1150

Rock Drill	HL510
Percussion power	16 kW
Percussion pressure	120 - 175 bar
Percussion rate	59 Hz
Rotation speed	0...250 rpm
Rotation torque	Max. 630 Nm (OMS125)
Hole size	51 - 57 mm
Shank adapter	R32 or T35 Male
Weight	130 kg
Flushing water pressure	15 bar
Shank lubrication device	Air /oil mist SLU
Shank lubrication compressor	CT10, 1m <sup>3</sup> /min (7 bar)

Boom

Technical Specification 8-5540

Boom type	TBR60
Boom lift	55° Up 25° Down
Boom swing	32° Left 30° Right
Boom head tilt	35° Up 55° Down
Boom head swing	23° Left 73° Right
Boom extension	1200 mm
Bolting head	358°
*Cylinder rods	Harsh water

Cable bolting head

Technical Specification 8-5500

Bolting head type	CBH
Bolting head length	4', 5', 6'
Rod handling system	RC604, 5 or 6 19+1 rods
Centralizer	Pito 11LH
Cuttings collector	1xCC611
Rod length	LF604= 1220mm LF605= 1525mm LF606= 1830mm
Total length	LF604= 2760mm LF605= 3065mm LF606= 3370mm

Grouting and cabling system

Cement mixer	TCM200 with cement dust collector (standard)
Cement pump	TP8
Cement bags platform	Max. weight 500kg
Cement hose reel	35m capacity

\*Drilling options

*HL510-LH45	T35 Male shank
*Cable bolting instrumentation	TMS DDS
*Bolting head oiler	Spec 8-615 S

Steel strand system

Reel	775m
Feeder	Plain or bulbed (bird cage) steel strand
*Steel strand reel	One additional

\*Cleaning system

*Pressure cleaning system with reel	Max. 15 bar (11 bar additional to mine water network)
*High pressure cleaning system with reel	Max. 180 bar

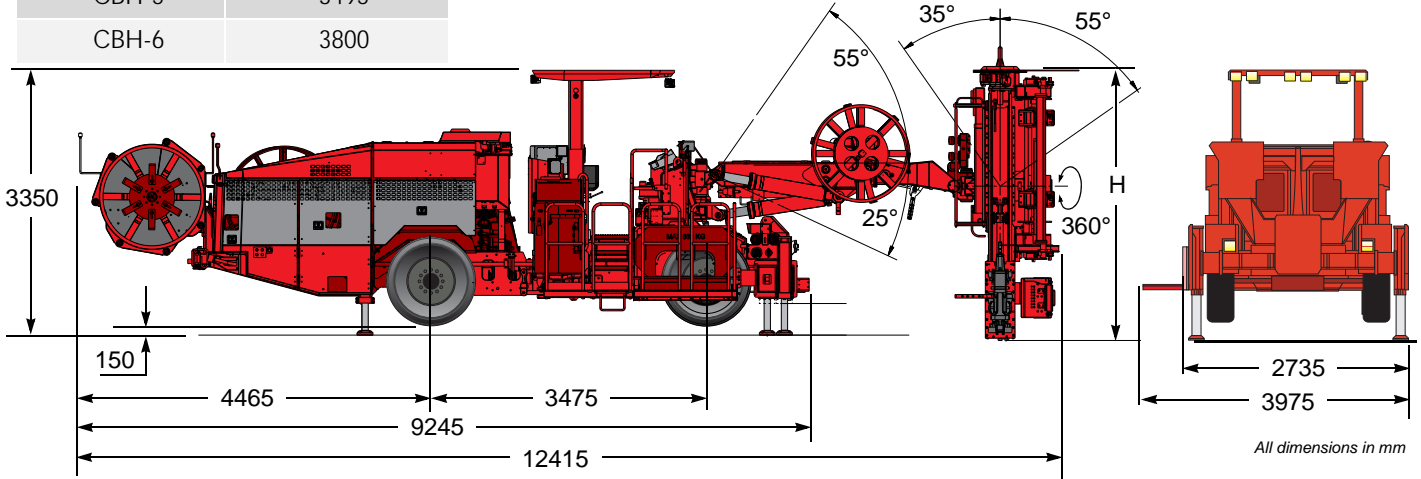
\*Greasing systems and options

*Greasing unit with pump, reel and nozzle	Manual
*Automatic greasing system	Carrier and boom

\*Optional features/components

Machine dimensions

Bolting Head	H
CBH-4	3190
CBH-5	3495
CBH-6	3800



All dimensions in mm

Hydraulic system

Filtration size	20 micron (pressure) 10 micron (return)
Oil cooler	Cooling capacity 30 kW OW30 water cooler
Drilling hydraulic oil tank	270 liters
Tank filling	Electric pump
Powerpack	HPP 555 (55kW)
Percussion pump	100cc (variable)
Rotation pump	33 cc (variable)
*Biodegradable oils	Shell Naturelle HFE

Control system

Type	TPC501 EW
Power control	Adjustable full power Adjustable collaring power
Anti-jamming control	Adjustable anti-jamming pressure
Rotation control	Adjustable rotation speed Reversible rotation
Flushing control	Water flushing flow and pressure control Air-mist flushing, option

\*Fire suppression system and options

*Manual fire suppression system (Ansul)	6 nozzles
*Automatic fire suppression system (Ansul)	6 nozzles
*Hand held fire extinguisher	7.7 kg at the operator station

Electric system and \*options

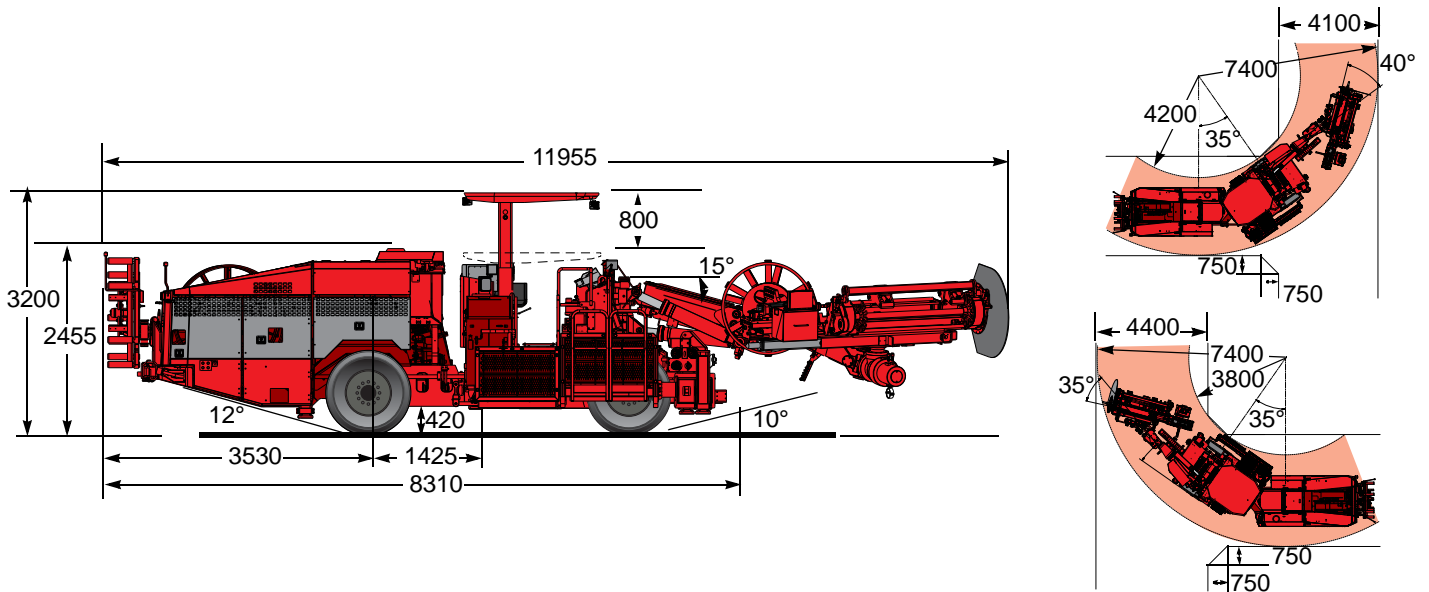
Total input power	75 kW
Main switch	MSE 10
Standard voltages	380-690 VAC
Voltage fluctuation	+/- 10%
Automatic cable reel	TRC3EL
Cable reel control (in & out)	1xTCR3E control at operator station
Starting method	Star delta
*Ground fault and overcurrent protection	VYK
*Electric cable rubber or PUR	100 or 150 meters See spec 5-4100
*Optional voltage	1000 VAC
*Optional outlet	230V outlet 4500VA 3-phase outlet, network voltage 3-phase outlet max 15kVA, with transformer
*Remote control reel(s)	At rear end

Flushing system and \*options

Flushing	Water
Water pump	WBP 2 (4 kW)
Water pump capacity	100 l/min (Max. 10bar)
Inlet pressure	2-7 bar (while drilling)
Mine air network connection	IP5 air cleaner
*Air mist flushing packages	For external supply of air and water
*Water hose reel	THR 2.5E
*Water hose 32mm (1"1/4)	100 meters
38mm (1"1/2)	65 meters

\*Optional features/components

Tramming dimensions



Tramming

Tramming speed	16 km/h on horizontal 14% = 1:7 = 8° 5km/h
Gradeability / Inclination	Max. 15° / 5°

Operator's station

Safety cabin	FOPS (ISO 3449)
Controls	Drilling and tramming
Sound pressure level according to EN791	Operator station: 100 dB(A)
Seat	Ergonomic, adjustable with seat belt
*Reversing camera	On machine rear and side

Lights

Front working lights	4 x 35 W HID (24V)
Front driving lights	2 x 35 W HID (24V)
Rear working lights	2 x 35 W HID (24V)
Rear driving lights	2 x 35 W HID (24V)
Manual search light	1 x 35 W HID (24V)
Parking rear brake lights	2 x Red LED
*Extra working lights	2 x 35 W HID (24V)
*Amber strobe light	

\*Packages

*Harsh water options (level 1)	Oil cooler + boom cylinders
*Harsh water options (level 2)	Level 1 + steering and jacks cylinders
*Regional	AUS, USC, EUR
*Antifreezing	Block heater for engine Hydraulic oil tank heater Water circuit flushing

Carrier

Carrier type	Wheel mounted, frame steering
Carrier name	NC7S
Transmission	Hydrodynamic Spicer T20 000
Axles	Spicer
Tyres	12.00-20
Diesel engine	MB904LA, Tier III, 110kW
Exhaust catalyser+muffler	Standard
Brakes	Service, hydraulic wet disc brakes Parking and emergency SAHR type, fail safewet disc brakes
Ground clearance	420 mm
Rear oscillation	+/- 10°
Frame steering	+/- 35°
Steering	Frame steering
Fuel tank	150 liters
Hydraulic jacks	TJ40 (front telescopic) TJ60 (rear)
Hand throttle	Standard
*Wheel clocks	2 pieces
*Fast filling systems	For fuel/complete
*Battery jump start	
*Sealed gel batteries	
*Foam filled tyres	
<b>Extra items</b>	
Spare rock drill	HL510
Spare wheel assembly	Standard or foam filled
Special tools for rock drill	

\*Optional features/components

Sandvik Mining and Construction reserves the right to change this specification without further notice.