

SANDVIK DD422i UNDERGROUND DRILL

TECHNICAL SPECIFICATION

Scan or click to see the video.



Sandvik DD422i is an advanced control system based electro-hydraulic jumbo to provide top-level performance, accuracy and reliability for underground development drilling and small scale tunneling. The rig has the widest range of automatic drilling functions to give increased productivity with reduced costs, top-level product safety and access to the future of underground mining.

Sandvik DD422i is equipped with Sandvik Intelligent Control System Architecture (SICA) that is a well-proven and commonly used control system technology across a wide range of Sandvik drills. This technology enables a variety of functions to achieve maximized performance and precision in drilling. The rig has features for fully-automated face drilling, optimized drilling and boom control systems and comprehensive tools for drill planning, reporting and analyses.



Sandvik DD422i provides maximized operator ergonomics and comfort in use with a fully ROPS/FOPS-compliant cabin that significantly reduces both noise and dust levels. With the powerful Sandvik RD525 drifter that provides smooth and reliable performance and the widest range of options, the whole concept of underground face drilling is taken to a new level.

KEY FEATURES

Height	3,145 mm
Width	2,310 mm
Weight	26,000 kg
Hole diameter	43–64 mm
Hole length	up to 5,270 mm
Drilling coverage	10,270 x 6,590 mm
Rock drill	RD525
Control system	SICA
Automation levels	Silver / Gold / Platinum

HYDRAULIC ROCK DRILL

Rock Drill	Sandvik RD525
Percussion power	25 kW
Impact frequency	95 Hz
Stabilizer	Hydraulic
Rotation speed	Max. 400 rpm (with OMS80)
Rotation torque	400 Nm (with OMS80)
Hole size	43–64 mm
Hole size (reaming)	76–127 mm
Recommended rod	T38–H35–R32 T38–R39–R35
Shank adapter	T38
Weight	225 kg
Length	1,010 mm
Profile height	90 mm
Shank lubrication device	Air/oil mist, SLU
Shank lubrication compressor	CTN10, 1m ³ /min (7 bar)
Air consumption	250–350 l/min
Oil consumption	180–250 g/h

OPTIONS

Sandvik HLX 5 (20 kW) rock drill, 55 kW electric motors included.

FEED SYSTEM

Type	TFi500-12	TFi500-14	TFi500-16	TFi500-18
Feed force	max. 25 kN	max. 25 kN	max. 25 kN	max. 25 kN
Feed extension	1,650 mm	1,650 mm	1,650 mm	1,650 mm
Total length (mm)	5,355	5,965	6,575	7,185
Hole length (mm)	3,440	4,050	4,660	5,270
Rod length (mm)	3,700	4,305	4,915	5,525
Net weight (kg)	500	530	560	590

OPTIONS

- Telescopic feeds TFX 6/12, 8/14 and 10/16
- Rod Retainer (TRR1 including safety wire)
- Two Rod System (TRS + TRR1 including safety wire)

BOOM

Boom type	SB60/SB60i
Parallel coverage	54 m ²
Parallelism	Hydraulic/electric
Boom extension	1,200 mm
Boom weight, net	2,250 kg
Roll-over angle	358 °
Bolt hole drilling	Yes

CONTROL SYSTEM

- Sandvik Intelligent Control System Architecture (SICA)
- Upgradable to higher levels in automation
- Comprehensive diagnostics system
- Variety of drilling controls
(advanced torque, feed / percussion and manual control)
- Fully proportional boom control
- 15" full color touch screen display

OPTIONS

- AutoMine® Remote Monitoring and AutoMine® Drilling suitability

HYDRAULIC SYSTEM

Percussion and feed pump	110cc (variable piston)
Rotation pump	60cc (variable piston)
HVAC (Heating, Ventilation and Air conditioning) pump	26cc (gear)
Filtration size	20 micron (pressure) 10 micron (return)
Oil tank volume	270 l
Tank filling	Manual
Oil cooler	2 x 30 kW

OPTIONS

- Biodegradable oils

ELECTRICAL SYSTEM

Total input power	170–200 kW
Powerpack	2 x 75 kW IE3
Voltage	380–1,000 V (±10%)
Frequency	50–60 Hz
Automatic cable reel	Dual control from both cabin and external panel
Electric quality monitoring	Voltage, Amperage, Power, Pf, Energy, Phase-sequence
Motor protection	Intelligent control with power maximization
Diagnostics	Fully integrated and easy to use graphical user interface
Extra low voltage supply	Continuous 80 A 27 V dc with battery backup. Intelligent battery management system
Protection	Mains switchgear IP66 Junction boxes ≥IP68

OPTIONS

- Multivoltage basic (covers 380–440 V, 690 V 50 Hz)
- Multivoltage extended (covers 380–440 V, 690 V, 1,000 V, 50 Hz)
- Ground fault and overcurrent protection (VYK)
- Earth continuity control (1 wire pilot circuit with remote reset / disconnect)
- Electric current draw reducer unit
- PUR cables

FLUSHING SYSTEM

Water pump	WBP 2 HP
Water pump capacity	185 l/min
Inlet pressure	2–7 bar

OPTIONS

- Air cleaning of hole (CT28 compressor also for shank lubrication)
- Air mist flushing (CT28 compressor, OA40 Oil to Air cooler 40 kW, IP5)
- Water hose reel and hose THR2.5E + 38 mm (1"1/2), 65 m

OPERATOR ENVIRONMENT

- FOPS/ROPS (ISO 3449 and 3471) certified cabin
- Seated tramming, seated and standing drilling
- Fully adjustable seat (tramming and drilling)
- Noise level (EN 791:1995, ISO 4872:1978 and ISO 11201:2010)
- Vibration level (EN 791:1995 and ISO 2631-1:1997)
- Optimized dust level control via air circulation
- Air conditioning (EU6/7 filtering capacity)
- Cabin heating during tramming and drilling
- Safety laminated acoustic windows
- Electricity outlets 1x12VDC, 1x24VDC, 230V/120V 16A
- LED lights for stairs and indoors
- Boot washer
- Toolboxes and first aid kit
- CD/MP3 player with radio

CARRIER

Steering	Electro-hydraulic joystick control
Frame steering angles	+/- 40 °
Rear oscillation angles	+/- 8 °
Ground clearance	330 mm
Diesel engine	Cummins QSB4.5, 119 kW, Tier3
Gradeability/Inclination	Max 15°/5°
Transmission	Hydrostatic
Axles	Dana Spicer
Tramming speed	12 km/h (limited)
Tires	14.00–24 PR28
Brakes	SAHR type, fail-safe wet disc brakes
Fuel tank	100 l
Hydraulic jacks (front)	SJ500
Hydraulic jacks (rear)	SJ600
Wheel chocks and holders	
Front lights	LED 24Vdc 6 x 50 W (>125lx, 20 000 lm 6 000 k)
Rear lights	LED 24Vdc 2 x 50 W and 2 x 17 W (8,000 lm 6,000 k)
Greasing unit with pump, reel and nozzle	Manual
Water outlet	5–15 bar
Compressed air outlet	
Safety lock for movement prevention	2 x switches

OPTIONS

- Access Detection System
- Fire suppression system, automatic (Ansul / FS1000)
- Fire suppression system, manual (Ansul)
- Automatic greasing system for Carrier and booms (Lincoln)
- Cabin front window protection bar
- Dewatering pump outlet (8 kW), controlled in cabin
- Electrical filling pump for hydraulic tank
- Foam-filled tires
- High pressure water cleaning system with reel (180 bar)
- Indicator lights for jacks
- Tier 4F diesel engine (Cummins QSB4.5, 119 kW)
- Tramming cameras
- Remote controlled spotlights for drilling, LED 2x50 W
- Rod rack on carrier
- Separated bypass filtering for hydraulic system
- Vacuum pump for hydraulic system
- Low height cabin (3,050 mm) with tramming cameras
- Amber LED strobe light (24 V)
- Battery jump start
- Fast filling complete
- Hand held fire extinguisher (7,7kg or 9kg, type ABC)

OPTION PACKAGES

Each package contains all listed items below

AUTOMATION SILVER PACKAGE

SB60 boom with hydraulic parallellism
Display of feed angles, drilling depth and penetration rate
Display of actual tunnel advance with given angles
Presetable angle and depth indication (ie. reference hole)
Counters and recommended change levels for bits and tools

AUTOMATION GOLD PACKAGE

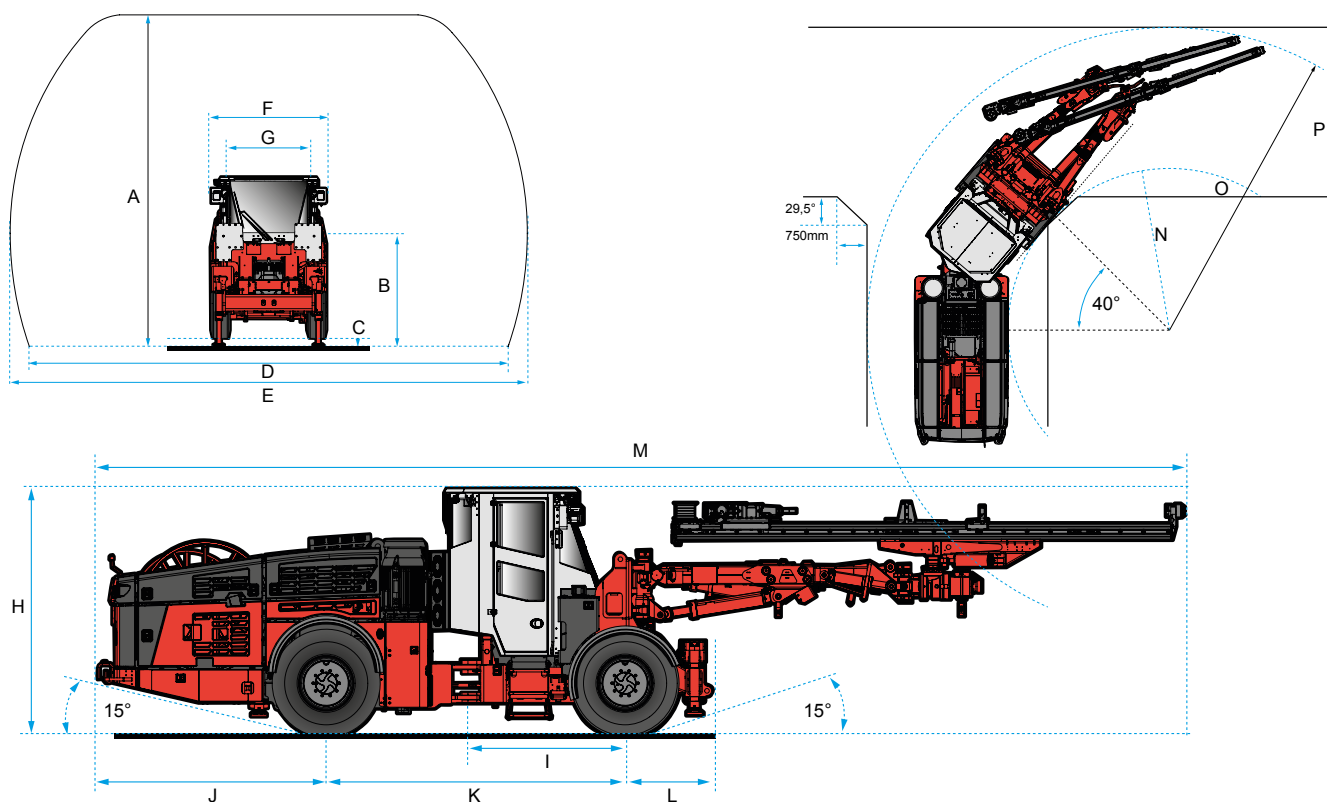
Automation Silver package content
SB60i boom with electric parallellism
Drill plan visualisation onboard
Display of drill bit location vs. given drill plan
iSure office tool for planning of drilling, charging and blasting
Drill rig suitable with various navigation methods
Advanced MWD data collection with analyses tool (iSure)

AUTOMATION PLATINUM PACKAGE

Automation Silver and Gold package content
SB60i boom with electric parallellism
Semi-automatic face drilling
Full-automatic face drilling

EXTREME ENVIRONMENT PACKAGES (See Tech Spec TS2-166-01)

High temperature package
Extreme high temperature package
Anti-freezing package
High altitude package
Harsh water flushing package
Harsh water environment package
Market area specific packages for Australia, Europe, Southern Africa and USC



COVERAGE

A	6,590 mm
B	2,250 mm
C	200 mm
D	9,510 mm
E	10,270 mm
F	2,310 mm
G	1,800 mm

MAIN DIMENSIONS

H	Max. 3,150 / Min. 3,050 mm
I	2,000 mm
J	2,850 mm
K	3,850 mm
L	1,115 mm

SANDVIK DD422i-SB60i

FEED	M	M (WITH TRR1)
TF500-12'	13,250 mm	13,285 mm
TF500-14'	13,450 mm	13,485 mm
TF500-16'	13,900 mm	13,935 mm
TF500-18'	14,650 mm	14,685 mm
TFX-6/12	13,150 mm	13,150 mm
TFX-8/14	13,300 mm	13,300 mm
TFX-10/16	13,500 mm	13,500 mm

SANDVIK DD422i-SB60i

FEED	N	O	P
TF500-12'	4,050 mm	7,000 mm	3,870 mm
TF500-14'	4,050 mm	7,150 mm	4,020 mm
TF500-16'	4,050 mm	7,400 mm	4,200 mm
TF500-18'	4,050 mm	7,550 mm	4,250 mm

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