



# DD422i DEVELOPMENT DRILL

## TECHNICAL SPECIFICATION

Sandvik DD422i is an advanced control system based on the electro-hydraulic jumbo to provide top-level performance, accuracy and reliability for underground development drilling and small scale tunneling. The drill 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 drill rigs. This technology enables a wide range of functions for achieving maximized performance and precision in drilling. The drill rig has features for automatic drilling and boom movements. Also comprehensive drill planning, reporting and analyzing tools along with the drill rig will help to achieve high quality results in drilling and blasting precision. Intelligent torque optimised drilling control system will help to minimize the hole deviation during drilling, reduce jammings and maximize the tool life consistently.

### KEY FEATURES

Coverage	60 m <sup>2</sup> (10 270 x 6 590 mm)
Hydraulic rock drills	2 x RD525, 25 kW
Drill feeds	2 x TF500, 12 ft
Booms	2 x SB60 / SB60i
Control system	SICA
Hole length	Up to 5 270 mm
Automation levels	Silver / Gold / Platinum
Drift size class (H x W)	4 500 mm x 4 500 mm
Turning width (T-section)	3 870 mm
Transport width	2 310 mm
Transport height	3 150 mm / 3 050 mm
Transport length	13 250 mm
Total weight	26 000 kg depending on options

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 widest range of options, the whole concept of underground face drilling is taken to a new level.



## HYDRAULIC ROCK DRILL

Type of rock drill	RD525 (TS2-236)
Percussion power	25 kW
Impact frequency	93 Hz
Stabilizer	Hydraulic
Rotation speed	Max. 280 rpm (with OMS125)
Rotation torque	625 Nm (with OMS125)
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

## DRILLING FEED

Type of feed	TFi500-12' Standard	TFi500-14' Optional	TFi500-16' Optional	TFi500-18' Optional	TFi500-20' Optional
Feed force (Max.)	25 kN	25 kN	25 kN	25 kN	25 kN
Feed extension	1 650 mm	1 650 mm	1 650 mm	1 650 mm	1 650 mm
Total length	5 355 mm	5 965 mm	6 575 mm	7 185 mm	7 710 mm
Hole length	3 440 mm	4 050 mm	4 660 mm	5 270 mm	5 880 mm
Rod length	3 700 mm	4 305 mm	4 915 mm	5 525 mm	6 135 mm
Net weight	500 kg	530 kg	560 kg	590 kg	620 kg

## BOOM

Type of boom	SB60 / SB60i (TS2-264)
Parallel coverage	54 m <sup>2</sup>
Parallelism	Hydraulic / electric
Boom extension	1 200 mm
Boom weight, net	2 250 kg
Roll-over angle	358 °
Bolt hole drilling	Yes

## HYDRAULIC SYSTEM

Powerpack	HPP575 (2 x 75 kW)
Percussion and feed pump	110 cc
Rotation pump	60 cc
HVAC (Heating, Ventilation and Air conditioning) pump	26 cc
Filtration (pressure / return)	20 µ / 10 µ
Oil tank volume	270 liters
Oil tank filling pump	Electric
Cooler for hydraulic oil	OW30 oil-to-water (2 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
OptiMine / FDM / WLAN	Data transfer readiness

## ELECTRICAL SYSTEM

Standard voltage	380 – 1 000 V (±10%)
Total installed power	170 - 200 kW
Main switch gear	MSE20
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)
Amber flashing light	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	WBP2 HP
Water pump capacity	185 l/min
Inlet pressure	2 - 7 bar
Flushing water pressure	10 - 15 bar
Shank lubrication device	SLU2 (air / oil mist)
Rock drill oil consumption	180 - 250 g/h
Rock drill air consumption	250 - 350 l/min
Air compressor	CTN10, 1.0 m <sup>3</sup> /min (7 bar)
Air and water outlets	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 EN 16228, 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 12 VDC and CD player readiness
Stairs and indoors lights	LED
Audio system	CD / MP3 player with radio
Boot washer	At each cabin entrance
Safety laminated acoustic windows	

## CARRIER

Type of carrier	C400D (frame-steered)
Carrier articulation	± 40°
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° (according to EN 16228-2)
Fuel tank	150 liters
Hydraulic jacks	2 x SJ500 (front), 2 x SJ600 (rear)
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
Colour scheme	Sandvik
Toolboxes and first aid kit	
Documentation	2 x Operator's manual 2 x Maintenance manual 2 x Technical manual (in English only) 2 x Parts manual (in English only) 2 x Toolman USB Key

## OPTIONAL FEATURES AND PACKAGES

### Rock drill

*Type of rock drill	RDX5 or RD520 instead of RD525
Power extractor	for RD525 or RD520
Stabilizer diagnostics indicator	for RD520 or RD525

### Feed

*Feed length	14', 16', 18', 20'
*Telescopic feed	TFX6/12, TFX8/14, TFX10/16
Rod retainer	TRR1 incl. safety wire, add 35 mm length of the feed
Two rods system	TRS included TRR1 with safety wire
Drill bit changer	12 x std bits (45/48/51mm bits) + 2 reaming bits incl. SCR rod retainer

### Hydraulic system

*Powerpack	HPP555 (55 kW) with RDX5, RD520
Vacuum pump	For hydraulic system
By pass oil filter	

### Drilling control system

Access detector and protector	Mandatory in Europe (TS2-211)
-------------------------------	-------------------------------

### Electric system

*Optional voltage	1 000 V (50 / 60 Hz) with DOL starter
*Electric cables	Specification TS2-121
Ground fault and overcurrent protection	VYK
Dewatering pump outlet	Site voltage 380 - 690 V
Multivoltage basic	380 – 440 V, 690 V 50 Hz
Multivoltage pro	380 – 1 000 V, 50 or 60 Hz
Electric current draw reducer unit	
Remote controlled spot lights	2 pcs
Indicator lights	For jacks up / down
Earth continuity control	1 wire pilot circuit with remote reset / disconnect
Auxiliary outlet	1 x 110 V or 1 x 230 V, 16 A
Battery jump start	Optional
Light indicator for boom movement prevention switch status	2 x on both sides, 1 x inside cabin (green or red depending status)

### Air and water system

Air mist flushing kit	IP5 air cleaner and flow control
*End of hole air flushing	Including CT28 air compressor
Water hose reel with water hose	THR2.5E with 38 mm (1 ½"), 65 m

## OPTIONAL FEATURES AND PACKAGES

### Cleaning system

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

### Greasing systems

Automatic system	Lincoln (complete)
------------------	--------------------

### Operator's safety cabin

*Low height cabin	Height 2 900 mm
*Low height unit	Height 3 050 mm (incl. tram camera) (std cabin w/o 100 mm ex. pieces)
*Dual drilling controls	THC561 look control panel for multi task-operations (TS2-497)
Tramming camera	Rear and side

### Fire suppression system

Additional fire extinguisher	1 x 7.7 or 9 kg (type ABC)
Manual or automatic system	Ansul, 6 nozzles (TS2-460)
Automatic system	Sandvik Eclipse™ (TS2-461)

### Carrier

*Diesel engine	QSB4.5, 122 kW, Tier4F, Stage IV Cummins B4.5, 129 kW, Stage V
*Foam filled tires	4 pcs
Fast filling system	Complete
Rod rack	On carrier side (Max. 400 kg)

### Extra items

Spare rock drill	RD525, RD520, RDX5
Spare wheel assembly	14.00–24 PR28 or foam filled tire
Warranty extension	One year (excl. Kazakhstan)
Special tools for rock drill	Field tool set, complete tool set
Documentation	Extra, Catbase, Link one manuals
iSURE®	iSURE II Plus annual license (Advanced drill and blast design including round reports) iSURE III Premium annual license (MWD including pull out analyses iSURE IV Pro annual license (Tunnel development KPI's)
Packages: Automation	Silver, gold, platinum
Packages: Extreme environment	Specification TS2-166
Teleremote drilling	Specification TS2-422

*\*) Replaces standard feature*

## AUTOMATION SILVER PACKAGE

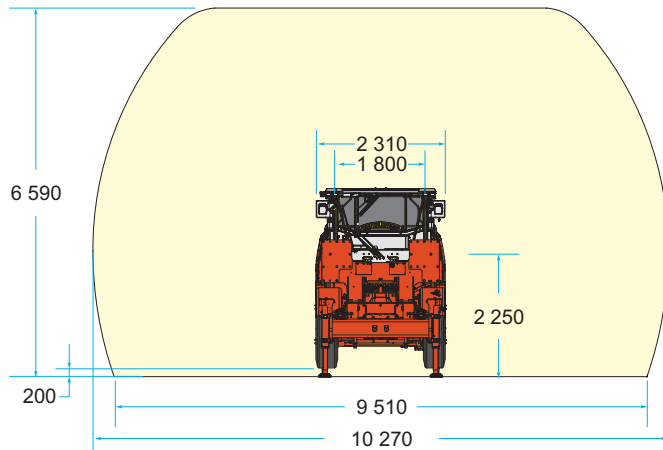
SB60 boom with hydraulic parallel holding
Display of feed angles, drilling depth and penetration rate
Presetable angle and depth indication for reference hole
Counter and recommended change intervals for bits and tools

## AUTOMATION GOLD PACKAGE

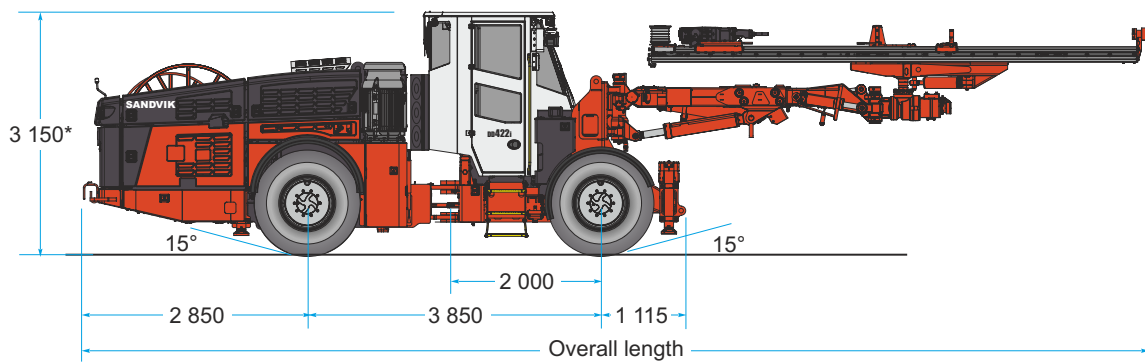
Automation Silver package content
SB60i boom with electronic parallel holding
Drill plan visualization onboard
Display of drill bit location vs. given drill plan
iSURE I Basic (Drill plan design)
Drill rig suitable with various navigation methods
Advanced MWD data collection with analyses tool (iSure)

## AUTOMATION PLATINUM PACKAGE

Automation Silver and Gold package content
SB60i boom with electronic parallel holding
Hole end correction from different start point
Semi-automatic boom movements
Automatic boom movements
Boom collision avoidance system (separate option)

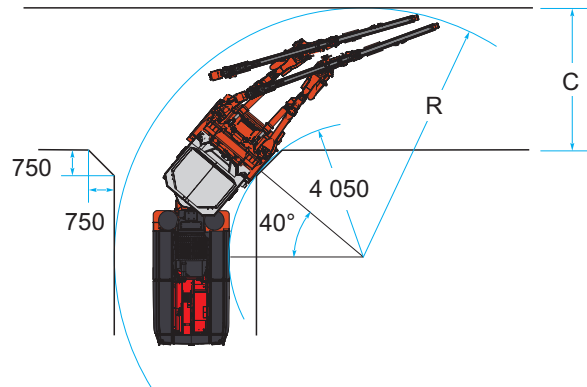


Type of feed	Overall length	Overall length (with TRR1)
TFi500-10'	12 700 mm	12 735 mm
TFi500-12'	13 250 mm	13 285 mm
TFi500-14'	13 450 mm	13 485 mm
TFi500-16'	13 900 mm	13 935 mm
TFi500-18'	14 650 mm	14 685 mm
TFi500-20'	15 300 mm	15 335 mm
TFX6/12	13 150 mm	13 150 mm
TFX8/14	13 300 mm	13 300 mm
TFX10/16	13 500 mm	13 500 mm

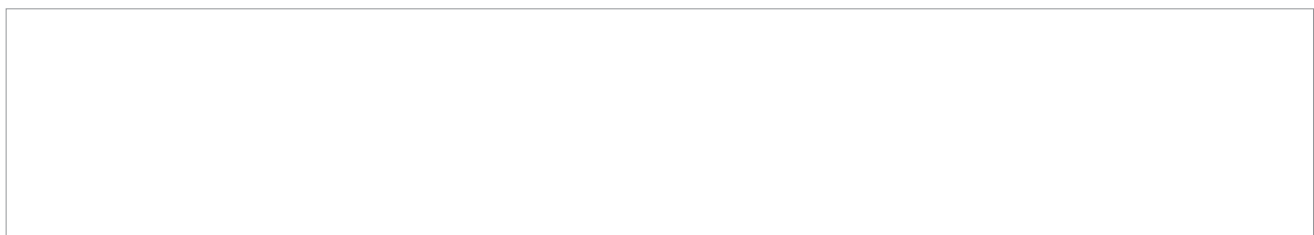


\*) 3 050 mm without extension pieces - 2 900 mm with low height cabin (option)

Type of type	Radius (R)	T-cross (C)
TFi500-10'	6 850 mm	3 720 mm
TFi500-12'	7 000 mm	3 870 mm
TFi500-14'	7 150 mm	4 020 mm
TFi500-16'	7 400 mm	4 200 mm
TFi500-18'	7 550 mm	4 250 mm
TFi500-20'	8 300 mm	5 050 mm
TFX6/12	6 850 mm	3 640 mm
TFX8/14	6 900 mm	3 690 mm
TFX10/16	7 000 mm	3 790 mm



All dimensions in mm



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 DD422i - DEVELOPMENT DRILL