

SANDVIK

DL432i TOP HAMMER LONGHOLE DRILL

TECHNICAL SPECIFICATION

Sandvik DL432i is a fully-mechanized, highly versatile and compact electro-hydraulic top hammer longhole drill designed for underground mass mining in 3.4 x 3.4 m or larger production drifts. It is capable of drilling vertical and inclined fans and single or parallel Ø64...102 mm longholes up to 38 meters in depth, using T38, T45 and T51 MF-rods or Ø65 mm/T45 and Ø76 mm/ST58 tube rods.

The DL432i is mounted on a 4-wheel drive frame-steered and diesel-powered carrier. It is equipped with the RD927L hydraulic rock drill, LFRC906 drilling module, SB160P boom and operator's safety cabin for high drilling capacity and maximum uptime. The 360° drilling module rotation and wide boom swing and tilt angles make the unit suitable for most mining methods and various service support applications. The CANbus based iSOLO drilling control system with the user-friendly operating interface and various instrumentation and automation options allow maximum productivity and good drilling accuracy.

The layout of the C400D carrier is designed for good visibility and stability in tramming and maintenance interface are designed for easy access, safe operation and all service points are accessible from ground level.

KEY FEATURES

Hydraulic rock drill	RD927L (27 kW)
Drilling module	LFRC906 (20 + 1 rods)
Rod length	4' - 6' (1 220 - 1 830 mm)
Telescopic boom	SB160P (1 600 mm extension)
Minimum drift size (H x W)	3.4 - 4.0 m
Minimum drift width in T-section	3 800 mm
Boom coverage (vertical holes)	6 070 mm
Transport height (with cabin)	3 050 mm
Transport width	2 500 mm
Transport length	11 850 mm
Transport weight	26 500 kg

ROCK TOOLS AND HOLE LENGTH

Rod and hole diameter			Rock drill	Max. hole length (m)*		
Thread	Rod Ø (mm)	Hole Ø (mm)		4' rods	5' rods	6' rods
T38	39	64	RD921S	25.3	31.7	38.1
T45	39	76				
T45	65 (tube)	76	RD925M			
T51	52	89	RD921S			
			RD925M			
			RD927L			
ST58	76 (tube)	89 - 102	RD927L RD925M			

*) Feed in contact with rock, front stinger retracted



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HYDRAULIC ROCK DRILL

Type of rock drill	RD927L (TS2-356)
Percussion power	27 kW
Percussion pressure	Up to 210 bar
Percussion rate	60 Hz
Stabilizer	Sleeve type
Rotation speed	0 - 200 rpm
Rotation torque	Max. 1 750 Nm (OMT315)
Weight	340 kg
Length with shank adapter	1 260 mm

DRILLING MODULE

Type of drilling module	LFRC906 (TS2-412)
Rod length	1 220 - 1 830 mm (4' - 6')
Rod changer storing capacity	20 + 1 rods (all threads)
Retaining centralizer	Pito 8
Cuttings diverter	CC908
Set-off from stope face	800 mm (minimum)
Feed force	31 kN
Feed and return speed	Up to 0.3 m/s (fast feed)

DRILLING MODULE DIMENSIONS

Type	LFRC906 (standard)	LFRC905 (option)	LFRC904 (option)
Rod length	6' (1 830 mm)	5' (1 525 mm)	4' (1 220 mm)
Total length*	3 720 mm	3 415 mm	3 110 mm

**) Add 60 mm with bit changer*

LONGHOLE BOOM

Telescopic boom	SB160P (TS2-318)
Boom swing	Left 45° / Right 45°
Drilling module roll-over	360°
Boom extension	1 600 mm
Drilling module travel	1 500 mm (limits with ST58 tubes)
Drilling module length with stingers extended	7 000 mm (6' rods)
Front stinger	Mounted on the feed
Front stinger extension	2 000 mm
Rear stinger	Mounted on feed cradle
Rear stinger extension	1 500 mm
Laser distance to drill center	1 400 mm (feed vertical)

HYDRAULIC SYSTEM

Powerpack	HPP990 (90 kW)
Filtration size (pressure / return)	20 µ / 10 µ
Oil tank volume	270 liters
Oil tank filling pump	Electric
Cooler for hydraulic oil	OW45 oil-to-water (45 kW)
Low oil level indication	Low oil level switch

DRILLING CONTROL SYSTEM

Type of control system	iSOLO / SICA
Control screen	15" full colour touch screen
Control panel	In safety cabin or canopy
Drilling controls	Torque drilling, feed percussion
Flushing control	Water flow and pressure monitoring
Diagnostics system	Comprehensive and interactive

AUTOMATION PACKAGE (SILVER)

One-hole automation	Automatic coupling / uncoupling of rods
Stinger control	Full time monitoring and repressurizing
Drilling control selection	Torque Drilling (default) or manual
Selectable hole length	Torque drilling and feed percussion
Feed and hole parallelism	Assisted

ELECTRIC SYSTEM

Standard voltages	380-690 V (50 or 60 Hz)
Total installed power	110 - 130 kW
Main switch gear	MSE 10
IP-classification	Main switch gear IP66, junction boxes ≥ IP68
Allowed voltage fluctuation	± 10%
Current reducer unit	Standard (power factor > 0.95)
Starting method	Star-Delta (380-690 V), DOL (1000 V)
Automatic cable reel	TCR4CD and spooling system
Cable reel remote control	At operator station and cable reel
Front lights (combined working and driving)	6 x 50 W (24 V) LED >125 lx / 20000 lm / 6000 K
Rear lights (combined working and driving)	2 x 50 W and 2 x 17 W (24 V) LED 8000 lm / 6000 K
Carrier positioning lights	2 x Laser type
Braking lights and blinkers	LED (24V)
Stair and service lights	LED (24V)
Parking lights	LED (24V)
Sealed AGM batteries	2 x 12 V (100 Ah)
Electric quality monitoring	Voltage, Amperage, Power, Pf Phase-sequence
Motor protection	Intelligent control with power maximization
Extra low voltage supply	Continuous 80 A/27 V DC with battery back-up and management

AIR AND WATER SYSTEMS

Flushing of holes	By water
Water booster pump type	WBP3HP (11 kW / 50 Hz)
Water pump capacity	375 l/min at 15 bar (from 5 bar inlet)
Flushing water pressure	10 - 20 bar
Shank lubrication device	SLU1 (air / oil mist)
Air compressor	CTN 10 (1.0 m³/min at 7 bar)
Rock drill oil consumption	300 - 500 g/h
Rock drill air consumption	400 - 500 l/min
Air mine connection	IP5 air cleaner with connection

OPERATOR'S SAFETY CABIN

Cabin certification	FOPS / ROPS (ISO3449 / 3471)
Cabin inside height	2 020 mm
Sound pressure level	Operator station 69 dB(A) EN 16228 / ISO4872 / ISO1120
Vibration level	According to EN 16228/ISO2631-1
Operator's seat	For drilling and tramming
Air conditioning system	EU6/7 filtering capacity
Cabin heating	During drilling and tramming
Cabin safety grill	For front window
Audio system	CD / MP3-player, radio and loudspeakers
Electrical outlets (16 A)	12 / 24 V (DC) and 110 / 230 V (AC)
Cabin boot washer	At cabin entrance

CARRIER

Type of carrier	C400D (frame-steered)
Carrier articulation	± 40°
Rear axle oscillation	± 10°
Ground clearance	330 mm
Diesel engine	Cummins QSB4.5 (119 kW Tier 3)
Exhaust catalyzer	Standard
Transmission	Hydrostatic
Drop box	Dana Spicer 305D
Axles	Dana 113 (front and rear)
Tires	14.00-24 PR28
Brakes	SAHR fail safe wet disc brakes
Tramming speed	Horizontal (0%): 12 km/h 14% = 1:7 = 8°: 5.5 km/h
Gradeability / sideways tilt	Max. 15° (27 %) / 5° (9 %)
Carrier stabilization	2 x SJ500 telescopic jacks (front) 2 x SJ600 jacks (rear)
Fuel tank	150 liters
Hand held fire extinguisher	1 x 7.7 or 9 kg (type ABC)
Centralized greasing points	Specification TS2-463
Tramming alarm	Standard
Tramming cameras	Front, rear and side
Hill holder	Standard
Levelling indicators	Spirit level/monitor indication
Knowledge Box™	Connectivity solution (TS2-535)
Colour scheme	Sandvik standard
Documentation	1 x Operator's manual 1 x Maintenance manual 1 x Technical manual (English only) 1 x Parts manual (English only) 2 x Toolman USB key

OPTIONAL FEATURES AND PACKAGES

Drilling system

*RD921S rock drill	For T38, T45 and T51 rods
*RD925M rock drill	For T51 rods and T45/ST58 tubes
*Power extractor	For RD921S, RD925M and RD927L
Offboard drilling control panel	With wheeled stand and cable
Conversion kit	From one rod/tube size to another
Rear stinger extension kit	Extension 1 000 mm
BC911 bit changer	For LFRC906 drilling module

Hydraulic system

*Cooler for hydraulic oil	OA40 (40 kW) for <25°C ambient temperature
Vacuum pump	For hydraulic oil
Side stream filter	Separated bypass filtering of hydraulic system
By pass oil filter	

Instrumentation

Access detector or protector	Mandatory in Europe (TS2-211)
Spirit level angle indicators	2 pcs (boom and feed)
Tele-remote drilling (WLAN)	User interface for the remote location

Automation package (Platinum)

Data transfer	USB/WLAN (excluding drill plan software)
Drill plan management	In the user interface (create, copy and edit)
Boom automatic positioning	To the next hole
Fan automation	For up- and downhole
Drill plan management	In the user interface (create, copy and edit)
DrillConnect mobile application	Connectivity through Knowledge box™ for easy data transfer to and from the rig

OPTIONAL FEATURES AND PACKAGES

Cleaning system

Low pressure system with reel	Up to 15 bar (TS2-343)
High pressure system with reel	Up to 180 bar (TS2-343)

Greasing systems

Automatic system	Lincoln (for carrier, boom and rod handler)
Manual system	Specification TS2-463

Electric system

*Multivoltage Pro (50 Hz)	380-575 V (YD) or 660-1000 V (DOL)
*Multivoltage Pro (60 Hz)	440-575 V (YD) or 690-1000 V (DOL)
*Optional voltage	*1000 V electric system and Direct-On-Line (DOL) starter
Dewatering pump outlet	Site voltage 380 - 690 V (7.5 kW) Site voltage 1000 V (8 kW)
Powerpack tramming	For transfers less than 25 m
Electric cables	Specification TS2-121
Earth continuity control	For power cable (1-wire pilot circuit)
Ground fault and overcurrent unit	VYK (excluding CAN/USA)
Indicator light for jacks up / down	For front hydraulic jacks
Indicator light	For boom prevention switch
Power outlet on carrier	110 V (16 A, single phase, 1.6 kW) 230 V (15 A, single phase, 2 kW) LED (24 V)
Amber flashing light	Joystick controlled
Remoted working lights	For tramming, jacks and boom
Radio remote control	CAT
Battery jump start	

Air and water system

*Air compressor	CT28 (2.8 m³/min, 18.5 kW)
Air mist flushing kit	For external air and water supply
Compressed air outlet	Quick coupling for pneumatic tools
1 x 60 liter air receiver	For end-of-hole flushing (requires CT28)
Water hose reel and hose	THR2.5E, Ø38 mm hose, lg: 65 m
Thermostats	For high and low ambient temperature

Operator's safety cabin / canopy

*Stainless steel cabin	FOPS/ROPS (ISO3449)
*Safety canopy and safety grill	FOPS/ROPS (ISO3449 / 3471)
*Low height cabin and safety grill	FOPS/ROPS (ISO 3449/3471) Height 2 900 mm
Cabin safety grill lifting mechanism	400i class

Fire suppression system

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

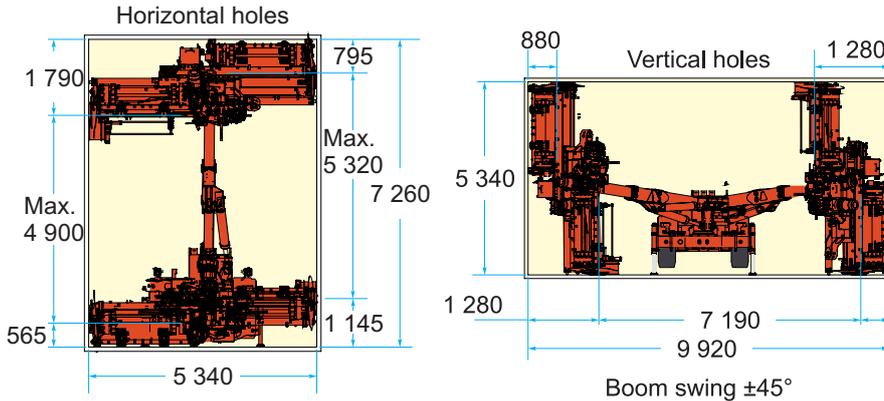
Carrier

*Diesel engine	Cummins QSB4.5, 122 kW, Tier 4F Cummins B4.5, 129 kW, Stage V
*Foam filled tires	4 pcs
Fast filling and evacuation system	Fuel, oil and coolant (Wiggins)
Wheel chocks and holders	2 sets

Extra items

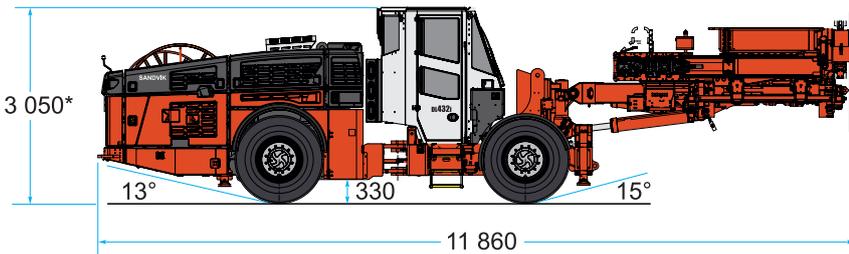
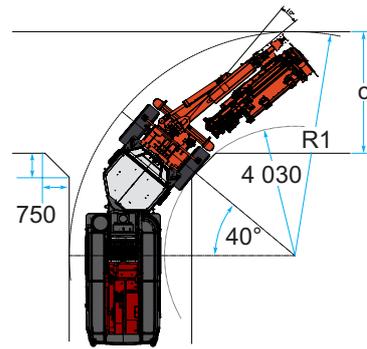
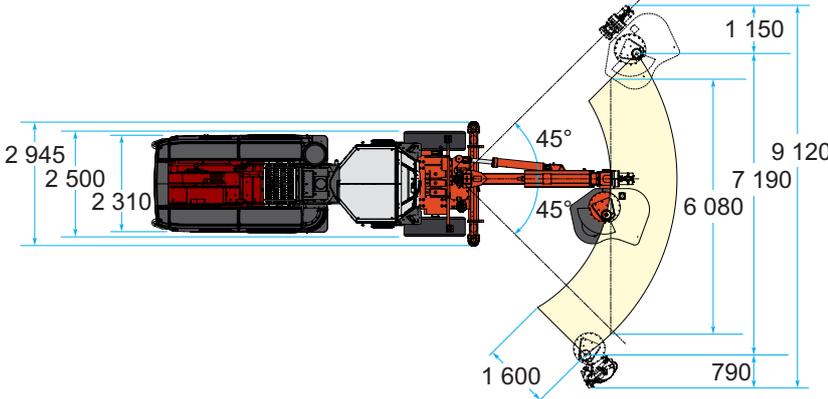
Spare rock drill	RD927L, RD921S, or RD925M
Spare wheel assembly	Standard or foam filled tires
Special tools for rock drill	Field kit or complete set
Documentation	Extra manuals
Packages	Country, environment, water, temperature or altitude specific
Package: Onboard air and water supply	Specification (TS2-328)

**) Replaces standard feature*



TURNING RADIUS

	R1	C
SB120P boom	6 950	3 700
SB160P boom	7 000	3 800

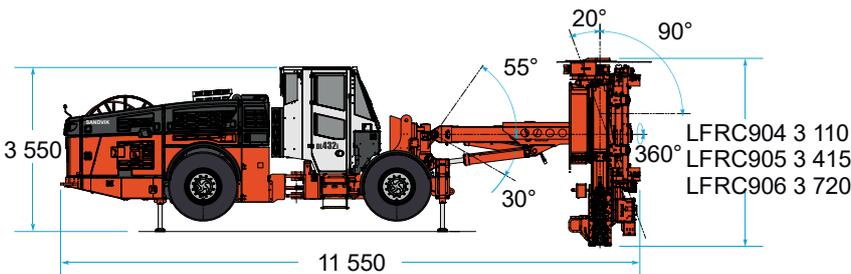


*) 2 900 mm with low height cabin (option)

MINIMUM PRODUCTION DRIFT SIZE*

	H	W	Wp
LFRC904	mm 3 310	3 310	1 040
LFRC905	mm 3 615	3 615	1 340
LFRC906	mm 3 920	3 920	1 640

*) 100 mm clearance at each side

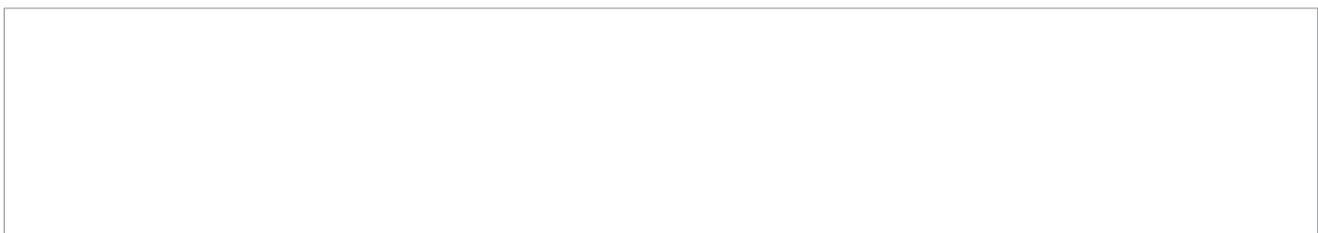


MAXIMUM PRODUCTION DRIFT SIZE**

	H	W	Wp
LFRC904	mm 4 670	4 670	2 500
LFRC905	mm 4 970	4 970	2 800
LFRC906	mm 5 280	5 280	3 100

**) Rear stinger extended, front stinger retracted

All dimensions in mm



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