



DL422iE BEV LONGHOLE DRILL



ROCKTECHNOLOGY SANDVIK



PRODUCTIVITY WITH ZERO EMISSIONS

Sandvik DL422iE is a fully automated, battery-powered top hammer longhole drill, designed for underground mass mining in 4 x 4 m or larger production drifts.

The drill is equipped with an electric driveline system including a battery package and electric motor for zero emissions while tramming helping the mines to reduce their overall emissions, their ventilation and fuel costs and creating a safer and healthier working environment.

Sandvik DL422iE features the latest technology in drilling automation, data management and tele-remote operation. Continuous and unmanned operation during shift changes and breaks combined with comprehensive data collection and transfer through wireless networks ensure improved equipment utilization and productivity.

ERGONOMIC AND
COMFORTABLE CABIN

FOUR BATTERIES
ELECTRIC DRIVEN



MAIN BENEFITS

HIGH LEVEL AUTOMATION

Sandvik DL422iE is delivered with Platinum automation package (option) for continuous and automated production drilling allowing maximized productivity and good accuracy in drilling fans and parallel longholes.

Tele-remote drilling is available (option) allowing units or fleets to be operated remotely for improved equipment utilization and fleet efficiency.

In addition, the DL422iE can also be equipped (optionally) with an automatic bit changer, making autonomous drilling of complete fans possible as well as working through shift changes.

Up to 10%* more drilled meters per shift

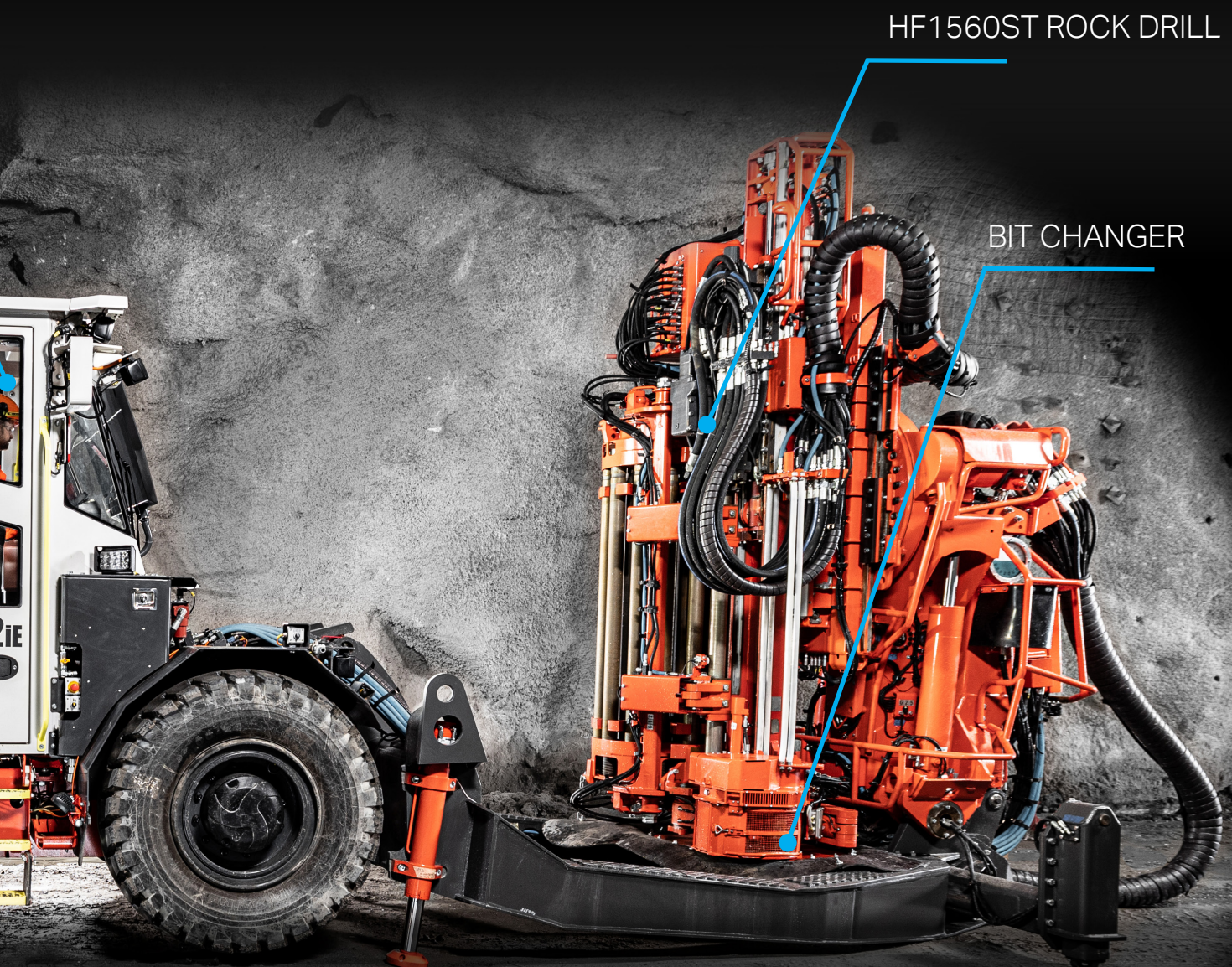
SHORTER DRILLING CYCLE TIME

INCREASED PRODUCTIVITY

Up to 20%* improved equipment utilization

0%* diesel emission while tramming

IMPROVED WORKING ENVIRONMENT





ZERO EMISSIONS WHILE TRAMMING



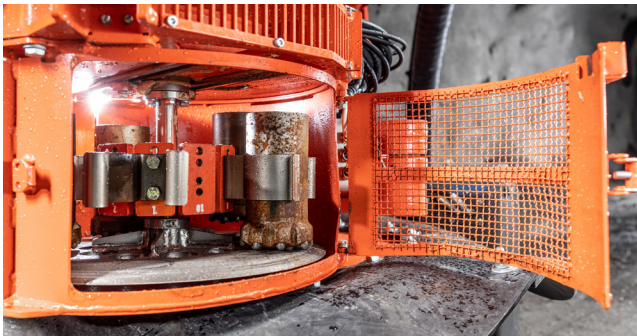
DL422iE is a battery-powered drill, avoiding spreading diesel emissions into the environment, it helps reducing thermal load and requirements for ventilation capacity underground.



i-CLASS CONTROL SYSTEM



It enables advanced mine automation and tele-remote solutions. This is a key productivity asset. It allows compatibility with My Sandvik and AutoMine® systems.



DRILL BIT CHANGER



Integrated in one-hole and fan automation offering, the automatic bit changer allows autonomous drilling of complete fans through shift changes. The capacity of the revolver type carousel is 5 to 10 bits.



SANDVIK 365 PARTS & SERVICES

PROUDLY KEEPING YOU ON TRACK!

Sandvik 365 Parts & Services offer a variety of possibilities to enhance your Sandvik DL422iE drill's performance. As an OEM, we provide the best-suited choices to preserve your machine's high performance throughout its lifetime. These consist of highly skilled service specialists supporting you 365 days a year, all using Sandvik Genuine parts and components complemented by a range of robust tools. In addition, you get to enjoy the benefits of advanced digital services and a global infrastructure dedicated to keeping your Sandvik fleet on track.

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
T45	46 (rods)	76	RD927L	37.5	45.5	54.6
T51	52 (rods)	89	RD921S	37.5	45.5	54.6
ST58	76 (tube)	89 -102	HF1560ST	37.5	45.5	54.6
ST68	87 (tube)	102 -127	HL1560ST			

*) Feed in contact with rock, front stinger retracted

HYDRAULIC ROCK DRILL

Type of rock drill	HF1560ST (TS2-419)
Percussion power	33 kW
Percussion pressure	Up to 200 bar
Percussion rate	40 - 45 Hz
Stabilizer	Sleeve type
Rotation speed	0 - 100 rpm
Rotation torque	2 330 Nm (OMT500)
Weight	490 kg
Length with shank adapter	1 505 mm

DRILLING MODULE

Type of drilling module	LFRC1606 (TS2-342)
Storing capacity	29 + 1 rods (all threads)
Retaining centralizer	Pito 16
Cuttings diverter	CC1016
Set-off from stope face	2 055 mm (minimum)
Feed force	31 kN
Feed and return speed	Up to 0.3 m/s (fast feed)
Front stinger extension	2 180 mm

LONGHOLE BOOM

Telescopic boom	ZR35 (TS2-465)
Boom support type	Frame (horseshoe)
Boom swing	Left 45° / Right 45°
Boom (fan) tilt (std horseshoe) (long horseshoe)	Back 26° / Forward 45° Back 40° / Forward 38°
Drilling module roll-over	360°
Boom extension	620 mm
Drilling module travel	1 400 mm (6'), 1 100 mm (5'), 1 000 mm (4')
Pivot point height (boom vertical)	2 310 - 2 930 mm
Front and rear stingers	Mounted on the feed
Rear stinger extension	2 180 mm

DRILLING MODULE DIMENSIONS

Type	LFRC1606 (Standard)	LFRC1605 (Option)	LFRC1604 (Option)
Rod / tube length	6' (1 830 mm)	5' (1 525 mm)	4' (1 220 mm)
Total feed length*	4 044 mm	3 739 mm	3 434 mm

*) Remove 45 mm without bit changer

DRILLING CONTROL SYSTEM

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

HYDRAULIC SYSTEM

Powerpack	HPP1560 (160 kW)
Filtration size (pressure / return)	20 µ / 10 µ
Oil tank volume	270 liters
Cooler for hydraulic oil	OW45 oil-to-water (45 kW)
Low oil level indication	Low oil level switch

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 (drilling) power	205 (135) kW
Main switch gear	MSE 20
IP-classification	Main switch gear IP66/Nema 4X, junction boxes ≥ IP68
Allowed voltage fluctuation	± 10%
Current reducer unit	Standard (power factor > 0.95)
Starting method	Inverter controlled soft starting Typical inrush current peak less than 1 kA (duration less than 20ms)
Automatic cable reel	TCR4CD and spooling system
Cable reel remote control	At operator station and cable reel
Onboard battery pack	Sodium-Nickel-Chloride technology Energy draw 75 kW/h (maximum)
Intelligent power management	Battery charging during drilling Resettable power compensation during peak loads in drilling
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 100 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 (inlet 5 bar)
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 cleaner for external air supply	IP5 and connection

OPERATOR'S SAFETY CABIN

Cabin certification	FOPS / ROPS (ISO3449)
Cabin inside height	2 020 mm
Sound pressure level	Operator station 69 dB(A) EN791 / ISO4872 / ISO1120
Vibration level	According to EN791/ISO2631-1
Operator's seat	For drilling and tramming
Air conditioning system	EU6/7 filtering capacity
Cabin safety grill	For front screen
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
Tramming cameras	Front, side and rear

CARRIER

Type of carrier	C400E (frame-steered)
Carrier articulation	± 40°
Rear axle oscillation	± 8°
Ground clearance	330 mm
Transmission	Inverter controlled electric motor with mechanical link to axles
Axles	Dana 114 (front) and Dana 113 (rear)
Tires	14.00-24 PR28
Brakes	SAHR fail safe wet disc brakes
Tramming speed	Horizontal (0%): 10 km/h 14% = 1:7 = 8° 3 km/h
Tramming distance	Horizontal (0%): 10 km 8°=1:7=14%: 3 km
Gradeability / sideways tilt	Max. 15° (27 %) / 5° (9 %)
Carrier stabilization	2 x SJ500 telescopic jacks (front) 2 x SJ600 jacks (rear)
Oil tank filling pump	Electric
Hand held fire extinguisher	7.7 or 9 kg (type ABC)
Carrier centralized greasing points	Standard
Tramming alarm	Standard
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

*HL1560ST rock drill	Percussion rate 30 – 40 Hz
*RD921S rock drill	For T38-T51 rods (Ø64–89 mm)
*RD927L rock drill	For T45 and ST58 tube rods (Ø76–89 mm)
*Power extractor	For HL/HF1560ST or RD927L
BC1611 bit changer	For LFRC1600 drilling module
Conversion kit	From one rod/tube size to another
Horizontal zoom	On ZR35 boom head
Long boom (horseshoe) support	With dual feed cradle
Rear stinger extension kit	Extension 1000 mm
Remote drilling control panel	On trolley (including cable)
Tube rod manipulator (cabin units)	Including lifting tool kit

OPTIONAL FEATURES AND PACKAGES
Hydraulic system

*Cooler for hydraulic oil	OA45 oil-to-air (45 kW) OW55 oil-to-water (55 kW)
Side stream filter	Separated bypass filtering of hydraulic system
Vacuum pump	For hydraulic oil

Instrumentation

Access detector or protector	Mandatory in Europe (TS2-211)
Spirit level angle indicators	2 pcs (on boom and feed)
Tele-remote drilling (WLAN/LAN)	Including data transfer

Automation package (Platinum)

Data transfer	USB/WLAN (excl. 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
DrillConnect mobile application	Connectivity through Knowledge box™ for easy data transfer to and from the rig

Cleaning system

Low pressure system	Up to 15 bar (TS2-343)
High pressure system with reel	Up to 220 bar (TS2-343)

Greasing systems

Automatic system	Carrier, boom and rod handler
Manual system	Pump reel and nozzle (TS2-463)

Electric system

*Supply frequency	60 Hz
*Supply voltage	1 000 V (50/60 Hz) and DOLstarter LED (24 V)
Amber flashing light	CAT
Battery jump start	Site voltage 380 – 690 V (7.5 kW)
Dewatering pump outlet	Site voltage 1 000 V (8 kW)
	Transformer 400 V (7.5 kW)
	For power cable (1-wire pilot circuit) Specification TS2-121
Earth continuity control	VYK (excluding CAN / USA)
Electric cables	For drilling and tramming
Ground fault and overcurrent unit	380 - 440 / 690 V (50/60 Hz)
Indicator light for jacks up/down	380 - 440 / 690 / 1 000 V (50/60 Hz)
Multivoltage Basic	110 V (15 A, single-phase, 1.6 kW)
Multivoltage Pro	230 V (16 A, single-phase, 2 kW)
Outlet on carrier	Remote joystick controlled
Working lights	

Air and water system

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

Operator's safety cabin/canopy

*Stainless steel cabin	FOPS/ROPS (ISO3449)
*Low height cabin and safety grill	FOPS/ROPS (ISO3449), H:2900 mm
Cabin heating system	For drilling and tramming

Fire suppression system

Spare hand held fire extinguisher	7.7 or 9 kg (type ABC)
Automatic system	DAFO / Forrex / Ansul (6 nozzles)
Manual system	Ansul (6 nozzles)

Carrier

*Foam filled tires	Set of four
Carrier speedometer	For C400E-series
Wheel chocks and holders	One set each side

Extra items

Spare rock drill	HF1560ST, HF1560ST or RD927L
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

**) Replaces standard feature*

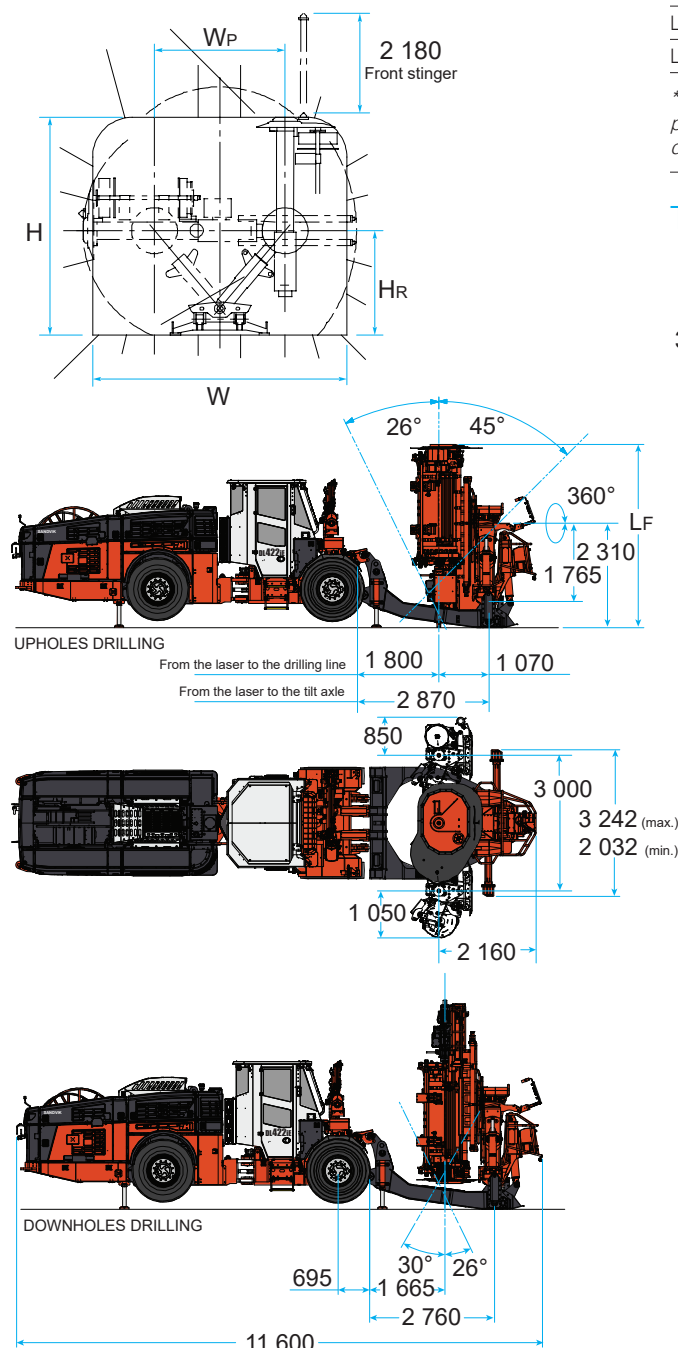
MAIN DIMENSIONS

The dimensions are indicative only - All dimensions in mm

KEY FEATURES

Minimum drift size (H and W)	4.00 - 3.50 m
Minimum drift width in T-section	4 200 mm
Boom coverage (vertical holes)	3 000 mm
Transport height (with cabin)	3 100 mm
Transport width	2 480 mm
Transport length	11 300 mm
Transport weight	31 000 kg

DRILLING POSITION



		LF1604	LF1605	LF1606
Length (L _F)	mm	3 500	3 800	4 100
Height (H _F)	mm	3 300	3 500	3 700
Width (W _F)	mm	3 450	3 750	4 050
External radius (R ₁)	mm	7 350	7 400	7 600
Internal radius (R ₂)	mm	3 950	3 700	3 650
Cornering (C)	mm	4 200	4 450	4 700

MINIMUM PRODUCTION DRIFT SIZE*

		H	W	WP	H _R
LFRC1604	mm	4 000	3 500	1 600	2 310
LFRC1605	mm	4 300	3 800	1 900	2 310
LFRC1606	mm	4 600	4 100	2 200	2 310

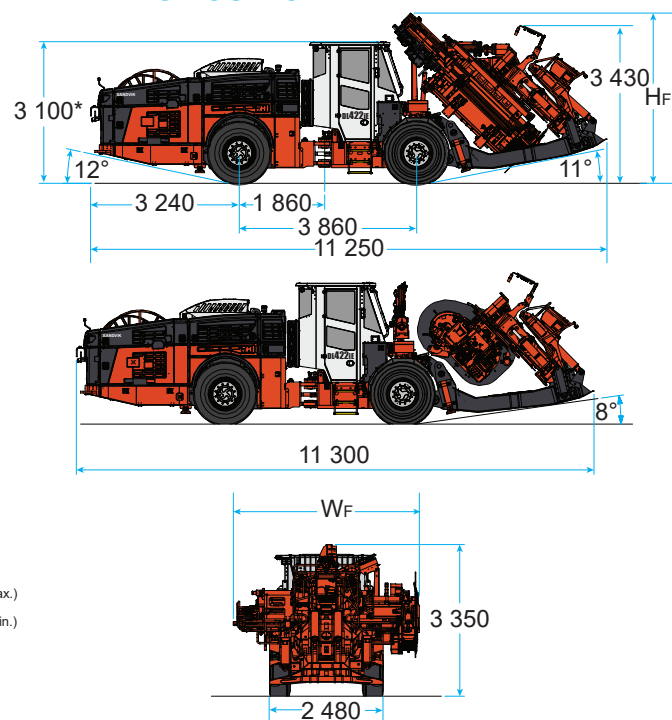
*) 100 mm clearance

MAXIMUM PRODUCTION DRIFT SIZE**

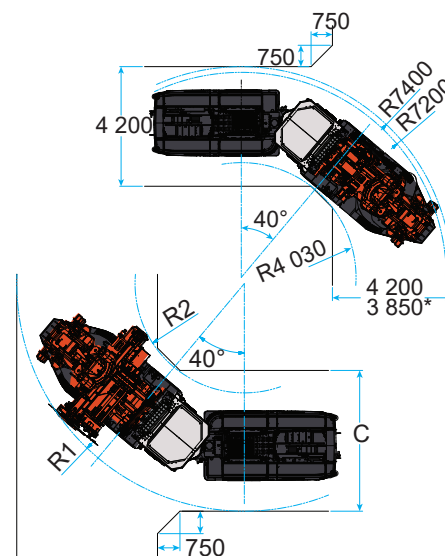
		H	W	WP	H _R
LFRC1604	mm	4 400	5 800	3 000	2 350
LFRC1605	mm	4 700	6 100	3 000	2 350
LFRC1606	mm	5 000	6 400	3 000	2 350

**) Rear stinger extended, front stinger retracted and feed in forward position; the use of front stinger may increase the maximum production drift size

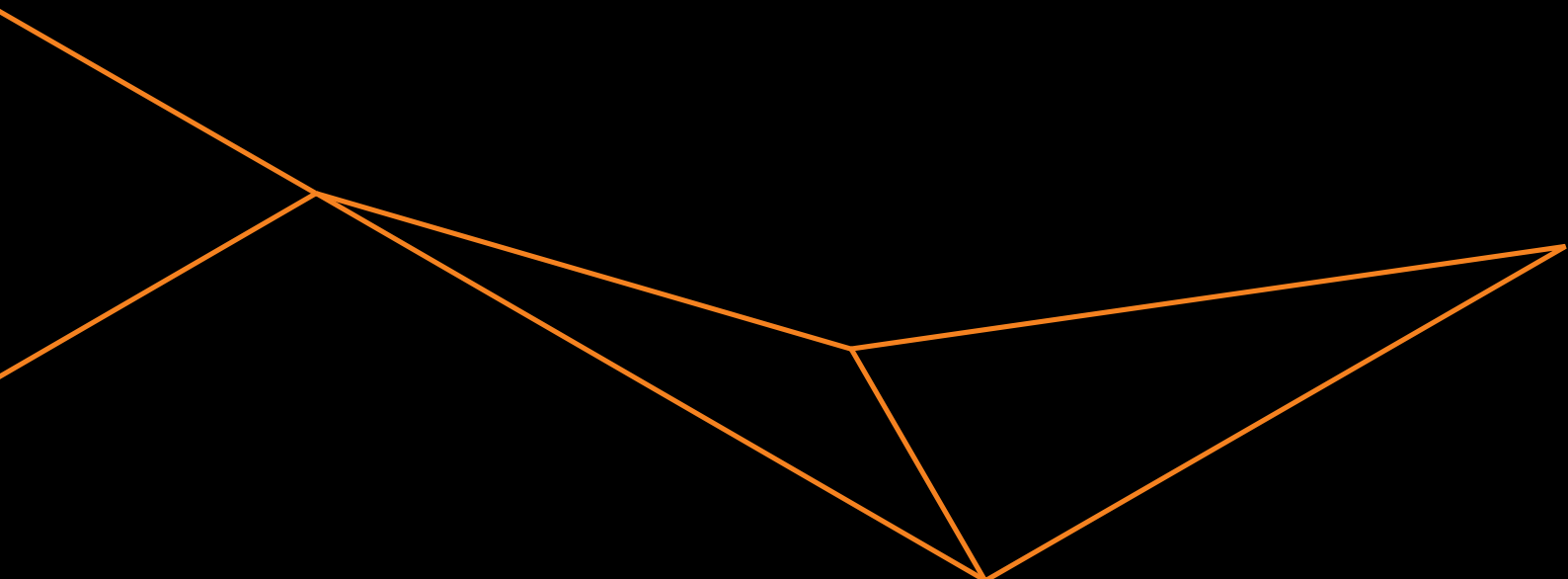
TRAMMING POSITION



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



*Without the front ground support
All dimensions in mm



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