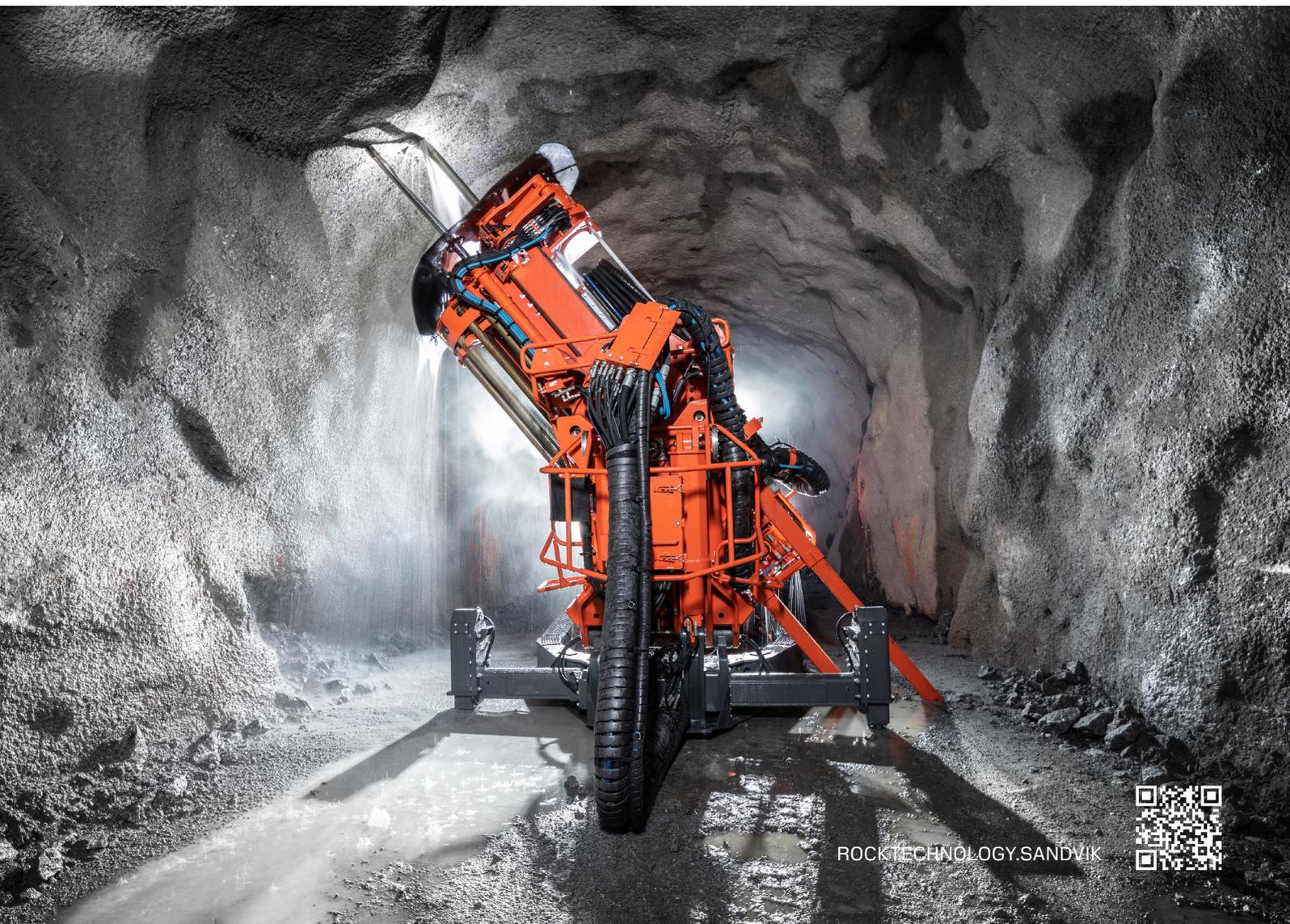


# DL422iE Longhole drill

## Technical Specification





Ergonomic and comfortable cabin

LFP battery tramming

## Sustainability in longhole drilling

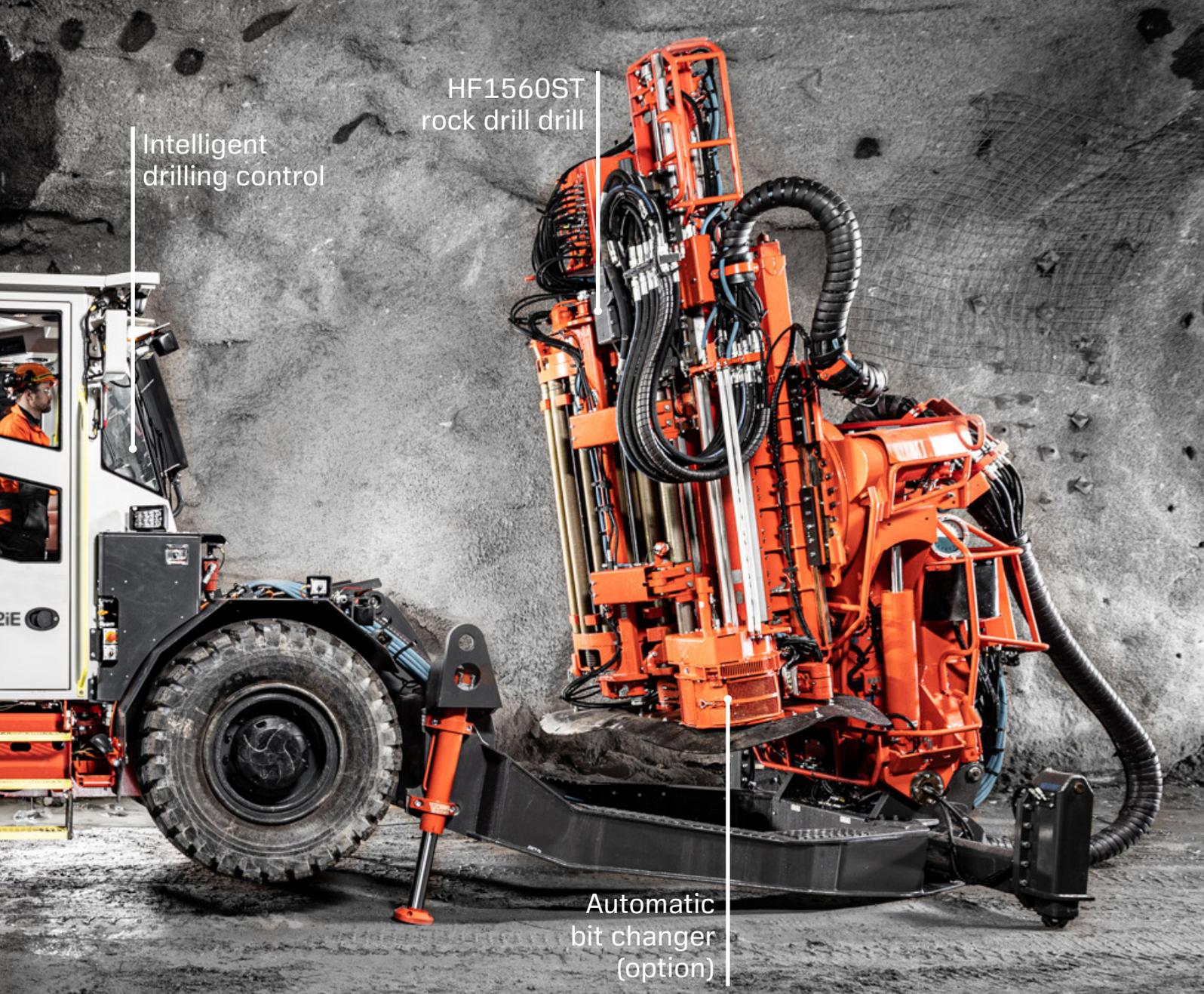
Sandvik DL422iE is a fully automated, battery-powered top hammer longhole drill, designed for underground mass mining in 4.0 x 4.0 m or larger production drifts.

Thanks to its revolutionary electric drive-line system, this highly-automatic mining jumbo consumes no fuel and generates less heat and noise than conventional drivelines. The result is safer, healthier and more productive development drilling in mines.

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.

### Key features

|                                  |   |
|----------------------------------|---|
| Minimum drift size (H and W)     | 4.00 - 3.50 m                                       |
| Minimum drift width in T-section | 4 200 mm  |
| Hydraulic rock drill             | HL1560ST  |
| Drill feed                       | LFRC1606  |
| Boom                             | ZR35  |
| Automation package               | Silver (std), platinum (opt)                        |
| Onboard battery package          | Lithium iron phosphate battery technology           |
| Max. battery energy              | 121 kWh   |
| Tramming distance                | 22 km (flat ground)<br>4.4 km (1:7 incline upwards) |
| 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                 | 33 000 kg<br>depending on options                   |



Intelligent  
drilling control

HF1560ST  
rock drill drill

Automatic  
bit changer  
(option)

## Main benefits

### High automation level

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.

The option AutoMine® for underground drills enables an operator to remotely control and simultaneously supervise one or multiple drills.

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.

10%

### Shorter drilling cycle time

Up to 10%\* more drilled meters per shift

20%

### Increased productivity

Up to 20%\* improved equipment utilization

50%

### Improved tramming distance

Up to 50%\* more tramming distance with LFP battery.



**Increased performance through safest technology**

LFP batteries are certified for underground mining applications for maximum safety. Extended tramming performance and shorter charging time are achieved.



**Drill bit changer (option)**

Integrated in the 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.



**Automation package: Platinum (option)**

Drilling automation package Platinum for repeating drilling cycles automatically with speed and precision.



**Optimized working environment**

Modern and ergonomic cabin for maximum operator comfort with improved visibility and reduced noise level.



**Tele-remote drilling operation (option)**

Tele-remote drilling and tramming allows a better utilisation of workforce and equipment and improved operator safety and performance.



**Digital solutions**

Readiness for DrillConnect mobile application for improved data management and enhanced maintenance, and My Sandvik digital services.



# Sandvik 365 Parts and Services

**Proudly keeping you on track!**

Sandvik 365 Parts & Services offer a variety of possibilities to enhance your Sandvik DL422iE drill's performance 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.

## Technical Specification

### 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 (rods)  | 64          | RD921S               | 37.5                  | 45.5    | 54.6    |
| T45                   | 46 (rods)  | 76          | RD921S               | 37.5                  | 45.5    | 54.6    |
| T45                   | 65 (tube)  | 76          | RD925M               | 37.5                  | 45.5    | 54.6    |
| T51                   | 52 (rods)  | 89          | RD925M<br>RD927L     | 37.5                  | 45.5    | 54.6    |
| ST58                  | 76 (tube)  | 89 -102     | HF1560ST<br>HL1560ST | 37.5                  | 45.5    | 54.6    |
| ST68                  | 87 (tube)  | 102 -127    | HF1560ST<br>HL1560ST | 37.5                  | 45.5    | 54.6    |

\*) 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           | 35 - 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                  |

### Drilling module dimensions

| Type               | LFRC1606<br>(Standard) | LFRC1605<br>(Option) | LFRC1604<br>(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

### Longhole boom

|   |  |
|---|--|
| Telescopic boom                                     | ZR35 (TS2-465)                                   |
| Boom support type                                   | Frame (horseshoe)                                |
| Boom swing  | Left 45° / Right 45°                             |
| Boom (fan) tilt (std horseshoe)<br>(long horseshoe) | Back 26° / Forward 45°<br>Back 40° / Forward 38° |
| Drilling module roll-over                           | 360°   |
| Boom extension                                      | 620 mm   |
| Drilling module travel                              | 1 400 mm (6'), 1 100 mm (5'),<br>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   |

### 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      |

### Drilling control system

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| Type of control system               | iSOLO / SICA                        |
| Drilling control modes               | 15" full colour touch screen        |
| Upgradeable automation levels        | In safety cabin                     |
| Electronic joystick controls         | Torque drilling and feed percussion |
| 15" full color touch screen          | Water flow and pressure monitoring  |
| Cable kit for spare part programming | Comprehensive and interactive       |

### Automation package, Silver level (Standard)

|                            |   |
|----------------------------|---|
| 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                          | 205 (135) kW   |
| Main switch gear                               | MSE 20   |
| IP-classification                              | Main switch gear IP66/Nema 4X,<br>junction boxes ≥ IP68  |
| Allowed voltage fluctuation                    | ± 10%  |
| Current reducer unit                           | Standard (power factor > 0.95)   |
| Starting method                                | Inverter controlled soft starting<br>Typical inrush current peak less than 1<br>kA (duration less than 20ms) |
| Automatic cable reel                           | TCR4CD and spooling system   |
| Cable reel remote control                      | At operator station and cable reel   |
| Front lights<br>(combined working and driving) | 6 x 50 W (24 V) LED<br>>125 lx / 20000 lm / 6000 K   |
| Rear lights<br>(combined working and driving)  | 2 x 50 W and 2 x 17 W (24 V) LED<br>8000 lm / 6000 K   |
| Carrier positioning lights                     | 2 x Laser type   |
| Braking lights and blinkers                    | LED (24V)  |
| Stair and service lights                       | LED (24 V)   |
| Parking lights                                 | LED (24V)  |
| Sealed AGM batteries                           | 2 x 12 V (100 Ah)  |
| Electric quality monitoring                    | Voltage, Amperage, Power, Pf<br>Phase-sequence   |
| Onboard battery package                        | 2 x Lithium iron phosphate battery<br>121 kWh max. energy  |
| Intelligent power<br>management                | Battery charging during drilling<br>Resettable power compensation during<br>peak loads in drilling           |
| Protection                                     | MSE IP66/Nema4x,<br>junction boxes ≥ IP68  |

### Air and water flushing system

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| 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)      |
| Air cleaner for external air supply | IP5 and connection                |
| Rock drill oil consumption          | 300 - 500 g/h                     |
| Rock drill air consumption          | 400 - 500 l/min                   |

## Technical Specification

### Operator's safety cabin

|                           |  |
|---------------------------|--|
| Cabin certification       | FOPS / ROPS (ISO 3449)                                 |
| Cabin inside height       | 2 020 mm   |
| Sound pressure level      | Operator station 69 dB(A)<br>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), Dana 113 (rear)  |
| Tires                        | 14.00-24 PR28  |
| Brakes                       | SAHR fail safe wet disc brakes   |
| Tramming speed               | 10 km/h (flat ground)<br>5.5 km/h (1:7 incline upwards)  |
| Tramming distance            | 22 km (flat ground)<br>4.4 km (1:7 incline upwards)  |
| Gradeability / sideways tilt | Max. 15° (27 %) / 5° (9 %)   |
| Carrier stabilization        | 2 x SJ500 telescopic jacks (front)<br>2 x SJ600 jacks (rear)   |
| Oil tank filling pump        | Electric   |
| Hand held fire extinguisher  | 7.7 or 9 kg (type ABC)   |
| 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<br>1 x Maintenance manual<br>1 x Technical manual (English only)<br>1 x Parts manual (English only)<br>2 x Toolman USB key |

### Automation package, Platinum level (option)

|                                 |  |
|---------------------------------|--|
| Data transfer                   | USB/WLAN (excl. drill plan software)   |
| Drill plan management           | In the user interface (create, copy, 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 |

### Optional features and packages

#### Drilling system

|                               |  |
|-------------------------------|--|
| *HL1560ST rock drill          | Percussion rate 30 – 40 Hz             |
| *RD925M rock drill            | For T38-T51 rods (Ø64–89 mm)           |
| *RD927L rock drill            | For T45 - ST58 tube rods (Ø76–89 mm)   |
| *RD1735 rock drill            | For T51 - ST58/68 or CT67 (Ø65-127 mm) |
| *Power extractor              | For HL/HF1560ST, RD927L/925M/1735      |
| BC1611 bit changer            | For LFRC1600 drilling module           |
| Conversion kit                | From one rod/tube size to another      |
| Long boom (horseshoe) support | With dual feed cradle (TS2:551)        |
| Rear stinger extension kit    | Extension 1000 mm                      |
| Remote drilling control panel | On trolley (including cable)           |
| Tube rod manipulator          | Including lifting tool kit             |

### Optional features and packages

#### Hydraulic system

|                           |  |
|---------------------------|--|
| *Cooler for hydraulic oil | OA45 oil-to-air (45 kW)<br>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 operations (WLAN/LAN) | Including data transfer       |

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

#### 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 Quick coupling for pneumatic tools |
| Compressed air outlet     | High and low ambient temperature                                     |
| Thermostats               | THR2.5E + Ø38 mm hose (65 m)   |
| Water hose reel and hose  |  |

#### Operator's safety cabin

|                                    |                                |
|------------------------------------|--------------------------------|
| *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) |
| Manual or automatic system        | Ansul (6 nozzles)      |

#### Carrier

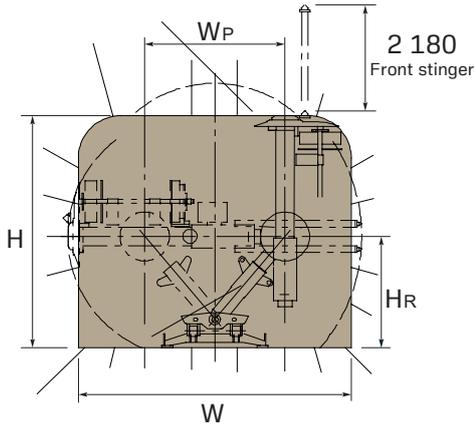
|                          |                   |
|--------------------------|-------------------|
| *Foam filled tires       | Set of four       |
| Carrier speedometer      | For C400E-series  |
| Wheel chocks and holders | One set each side |

#### Extra items

|                                 |                                       |
|---------------------------------|---------------------------------------|
| Spare rock drill                | HF/HF1560ST, RD921S/925M/927L         |
| Spare wheel assembly            | Standard or foam filled tires         |
| Special tools for rock drill    | Field kit or complete set             |
| Spare batteries                 | 2 x LFP battery (purchased or rental) |
| Documentation                   | Extra manuals                         |
| Packages: Country               | AUS, USA, CAN, SWE, EU                |
| Package: Environmental          | Specification TS2-415                 |
| Package: Automation             | Platinum                              |
| Packages: Air and water onboard | Specification TS2-558                 |
| Packages: Dry drilling          | Specification TS2-559                 |
| Package: Tele-remote            | Drilling and tramming                 |

\* ) Replaces standard feature

Technical drawings



Minimum production drift size\*

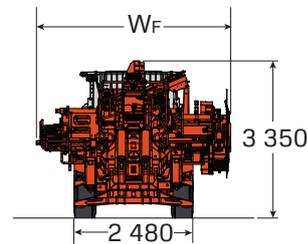
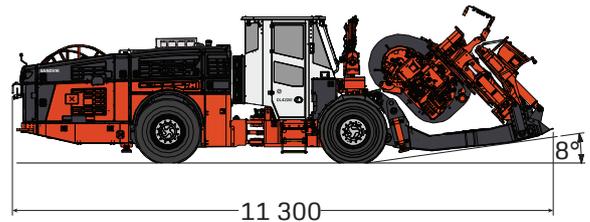
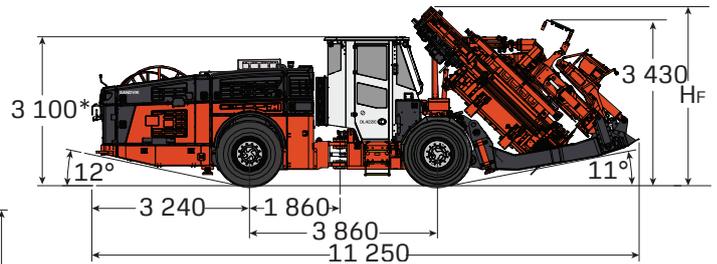
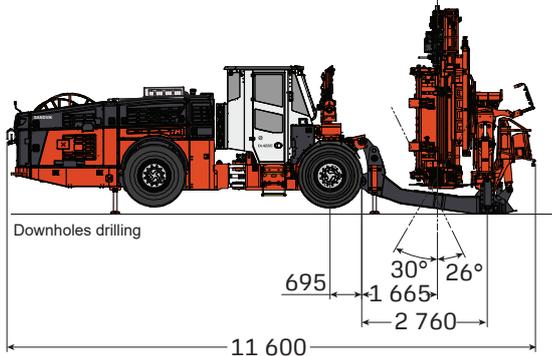
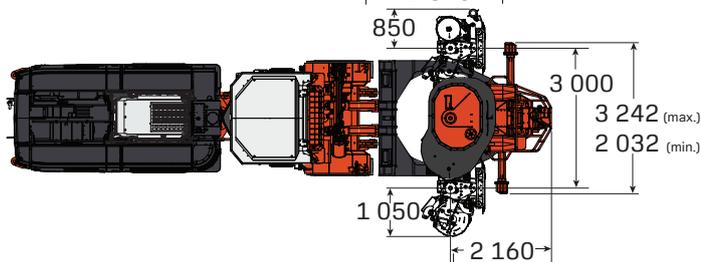
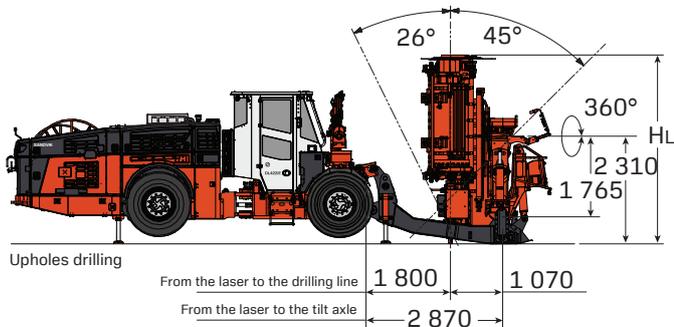
|          | H        | W     | WP    | HR    |
|----------|----------|-------|-------|-------|
| LFRC1604 | mm 4 000 | 3 500 | 1 600 | 2 310 |
| LFRC1605 | mm 4 300 | 3 800 | 1 900 | 2 310 |
| LFRC1606 | mm 4 600 | 4 100 | 2 200 | 2 310 |

\*) 100 mm clearance

Maximum production drift size\*\*

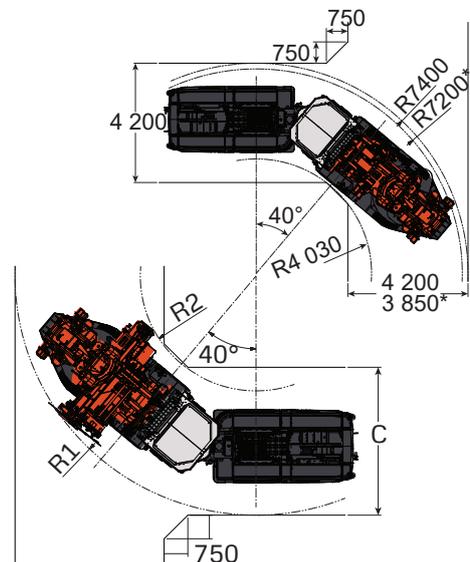
|          | H        | W     | WP    | HR    |
|----------|----------|-------|-------|-------|
| LFRC1604 | mm 4 400 | 5 800 | 3 000 | 2 350 |
| LFRC1605 | mm 4 700 | 6 100 | 3 000 | 2 350 |
| LFRC1606 | mm 5 000 | 6 400 | 3 000 | 2 350 |

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



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

|                      | LF1604   | LF1605 | LF1606 |
|----------------------|----------|--------|--------|
| Height (HL)          | mm 3 500 | 3 800  | 4 100  |
| Height (Hf)          | mm 3 300 | 3 500  | 3 700  |
| Width (Wf)           | mm 3 450 | 3 750  | 4 050  |
| External radius (R1) | mm 7 350 | 7 400  | 7 600  |
| Internal radius (R2) | mm 3 950 | 3 700  | 3 650  |
| Cornering (C)        | mm 4 200 | 4 450  | 4 700  |



All dimensions in mm

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