

DD311 Development drill

Technical Specification



Same carrier through the range

FOPS / ROPS
Cabin, low cabin
or telescopic canopy



Versatile and productive in medium section

The Sandvik DD311 is a single-boom electro-hydraulic jumbo, designed for fast and accurate drilling within drifting and tunneling of 40 m² cross-sections.

The hydraulic controls enable drilling performance of the highest accuracy, ensuring maximum performance vs. customer requirements.

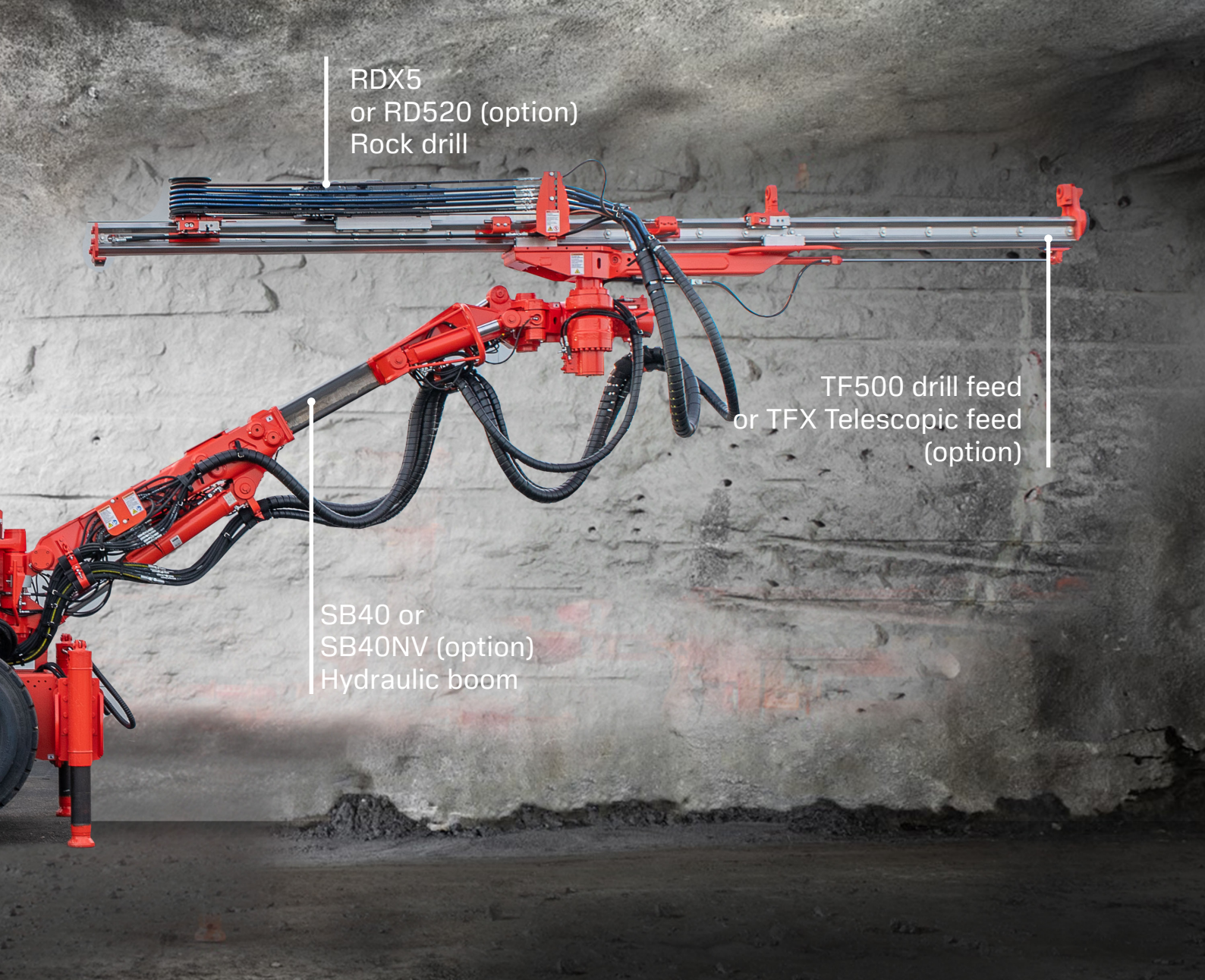
Our new Sandvik RDX5 rock drill now replaces the previous HLX5 model, capitalizing on the existing reliability and efficiency of its predecessor – whilst further improving/lowering operating costs alongside an extended service interval.

The robust SB40 Boom ensures that optimal coverage is achieved, with drilling performance also being improved via optional instrumentation.

The DD311 is the latest in Sandvik's range of medium size single boom jumbos, comprising none of the previous unit's quality, whilst offering a number of improvements including (but not limited to) easier maintenance etc.

Key features

| | |
|----------------------------|--|
| Coverage | 40 m ² (5.8 x 7.2 m) |
| Hydraulic rock drill | 1 x RDX5, 20 kW |
| Drilling feed | 1 x TF512, 12 - 16 ft |
| Boom | 1 x SB40 |
| Hole length | Up to 4 660 mm |
| Minimum drift size (H x W) | 3 000 x 3 000 mm |
| T-section width in turning | 3 550 mm (TFX6/12) |
| Transport width | 2 020 mm |
| Transport height (canopy) | 2 140 mm / 3 100 mm |
| Transport height (cabin) | 2 920 mm or 2 670 mm |
| Transport length | 12 520 mm |
| Total weight | 15 000 - 18 000 kg depending on options |



RDX5
or RD520 (option)
Rock drill

TF500 drill feed
or TFX Telescopic feed
(option)

SB40 or
SB40NV (option)
Hydraulic boom

Main benefits

Fast and accurate drilling

DD311 uses hydraulic controls that enable high drilling accuracy of its rock drill to optimize performance and lower operating costs.

Very flexible drill, DD311 comes in three versions: DD311 (diesel tramping and electric drilling), DD311D (diesel engine for tramping and drilling for areas without electrical power) and DD311DE (diesel tramping and electric or diesel drilling).

The rig's compact carrier features a FOPS/ROPS-certified cabin and can tram into small tunnels, while its powerful power train provides fast tramping.

DD311 can be used for face drilling, cross cutting or roof drilling for bolting, for development and/or production in room and pillar, cut and fill, stopping or caving mining method



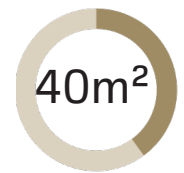
Service interval

Up to 50%* longer service interval vs proven HLX5, for lower OPEX and improved serviceability and reliability



Flexibility

100%* flexibility 3 versions of DD311 to answer customers needs



Large coverage

Up to 40m² without resetting the drill



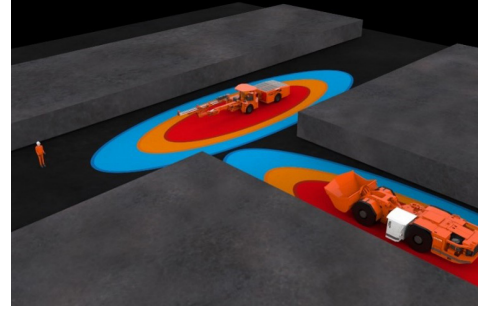
Optimized working environment

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



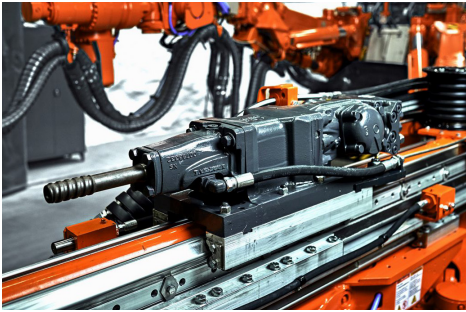
Efficient control system

The THC561 drilling control system with reaming hole selector increases drilling performance and reduces the wear on both rock drill and rock tools for an extended lifetime.



Proximity detection system (PDS level 9)

PDS system is generally designed to inform the operator and to slow down the machine and/or stop the equipment in case of a collision risk with a person or object carrying a tag.



Robust and performing rock drill

Sandvik RDX5 is a robust rock drill for heavy duty rock drilling. It is designed for face and long hole drilling, also used in rock bolting. RDX5 is designed to perform even in the harshest conditions.



Drill plan visualization

Sandvik TCAD+ is delivered with your drill rigs significantly improves drilling accuracy. Therefore, it also decreases the amount of over and under excavation.



Sandvik DrillConnect

Readiness for Sandvik 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 DD311 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.

Technical Specification

Hydraulic rock drill

| | |
|---------------------------------|--|
| Type of rock drill | RDX5 (TS2-433) |
| Percussion power | 20 kW |
| Percussion pressure | 210 bar (factory setting) |
| Percussion rate | 67 Hz |
| Rotation speed | Max. 250 rpm (with OMS80) |
| Rotation torque | 400 Nm (with OMS80) |
| Hole size diameter (drifting) | 43 - 64 mm |
| Hole size diameter (cut hole) | 76 - 127 mm |
| Recommended tools | |
| 43 - 45 mm: | T38 - H35 - Alpha® 340 |
| 48 - 51 mm: | T38 - H35 - Alpha® 360 T38 - R39 - Alpha® 360 |
| Shank adapter | T38 (male) |
| Weight | 210 kg |
| Filling device for accumulators | Specification TS2-430 |

Drilling feed

| Type of feed | TF510 Optional | TF512 Standard | TF514 Optional | TF516 Optional | TFX6/12 Optional | TFX8/14 Optional |
|--------------|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|
| Feed force | kN 25 kN | 25 kN | 25 kN | 25 kN | 25 kN | 25 kN |
| Rod length | mm 3 090 | 3 700 | 4 305 | 4 915 | 1 830 / 3 700 | 2 480 / 4 305 |
| Hole depth | mm 2 830 | 3 440 | 4 050 | 4 660 | 1 610 / 3 440 | 2 220 / 4 050 |
| Total length | mm 4 690 | 5 300 | 5 910 | 6 520 | 3 560 / 5 390 | 4 170 / 6 000 |
| Net weight | kg 470 kg | 500 kg | 530 kg | 560 kg | 640 kg | 680 kg |

Boom

| | | |
|-------------------|----------------------------|-------------------------------|
| Type of boom | SB40 (TS2-157) Standard | SB40-NV (TS2-257) Optional |
| Parallel coverage | 44.5 m ² | 42.7 m ² |
| Parallelism | Automatic hydraulic | Automatic hydraulic |
| Boom extension | 1 050 mm | 1 050 mm |
| Feed extension | 1 350 mm | 1 350 mm |
| Feed tilt | 90 ° | ± 90° |
| Roll-over angle | 358° | 358° |
| Boom weight, net | 2 100 kg | 2 050 kg |

Hydraulic system

| | |
|-------------------------------------|---|
| Powerpack | HPP555 (1 x 55 kW) IE3 electric motor |
| Filtration size (pressure / return) | 20 µ / 10 µ Quick couplers for kidney filtration |
| Oil tank volume | 180 liters (drilling) |
| Filling pump for hydraulic oil | Electric |
| Oil cooler (water actuated) | OW30 oil-to-water (1 x 30 kW) |

Drilling control system

| | |
|------------------------|--|
| Type of control system | THC561 (TS2-361) |
| Operating principle | Hydraulic control |
| Manual boom control | Direct control Fully proportional Hydraulic parallelism |
| Drilling control | Manual collaring Feed / percussion pressure control Feed / percussion pressure monitoring Anti-jamming system Flushing control (On/Off/Auto.) Reaming control |
| Automatic cycle | Stop and return automatics |
| TFX adjustment | Electric |
| Drilling safety | Boom movements inhibition switches |

Electric system

| | |
|--|---|
| Standard voltage | 380 - 690 V (± 10%) |
| Total installed power | 70 kW |
| Main switch gear | MSE 5 |
| IP classification | Specification TS2-132 |
| Starting method | Star Delta 380 V - 575 V DOL 600 - 690 V |
| Automatic cable reel | TCR1 |
| Cable reel control | At operator station and remote control at rear of the machine |
| Sealed AGM batteries | 2 x 12 V, 95 Ah |
| Cable plug holder | On central rear hood |
| Front working lights (combined working and driving) | 4 x 50 W LED (4 200 lm, 6 000 K) |
| Rear working lights (combined working and driving) | 4 x 50 W LED (4 200 lm, 6 000 K) |
| Parking rear brake / park lights | 2 x Red LED |

Air and water flushing

| | |
|----------------------------|--|
| Flushing of holes | By Water |
| Water booster pump type | WBP1 (4 kW) |
| Water pump capacity | 33 l/min at 15 bar (input pressure = 4 bar) |
| Water pump inlet pressure | 2 bar (min.) |
| Flushing water pressure | 10 - 15 bar |
| Shank lubrication device | SLU1 (air / oil mist) |
| Air compressor | 1 m ³ /min at 7 bar |
| Rock drill oil consumption | 180 - 250 g/h |
| Rock drill air consumption | 250 - 350 l/min |

Operator's safety cabin

| | |
|---|---|
| Cabin certification | FOPS / ROPS (ISO 3449 / 3471) Cabin with safety grill, height 2 920 mm |
| Operation | Standing drilling, seated tramming |
| Sound pressure level according to EN 16228 | Operator station: 80 dB(A) |
| Operator's seat | Ergonomic T-back seat |
| Air conditioning | Cooling only |
| Tramming cameras | 1 x rear frame 2 x on each side of cabin or canopy |

Technical Specification

Carrier

| | |
|------------------------------|---|
| Type of carrier | NC5-17 |
| Steering system | Frame steering |
| Carrier articulation | Up to $\pm 38^\circ$ |
| Rear axle oscillation | $\pm 10^\circ$ |
| Ground clearance | 320 mm |
| Diesel engine | Deutz TCD2012, 74 kW, Tier 3, Stage IIIA, Canmet, China 2 |
| Exhaust catalyzer | Standard |
| Transmission | Hydrostatic, automotive |
| Axles | Dana spicer 112 with extended differential breathers |
| Tires | 12.00-20 |
| Service brakes | Hydrostatic and positive braking |
| Parking and emergency brakes | SAHR fail safe type wet disc brakes |
| Tramming speed | 12 km/h (horizontal) 5 km/h (14%=1:7=8°) |
| Gradeability / sideways tilt | Max. 15° / 5° (according to ISO 18758) |
| Fuel recommended | Diesel EN590 / HVO EN15940 |
| Fuel tank | 90 liters |
| Tramming oil tank | 55 liters |
| Carrier stabilization | 2 x Telescopic (front) 2 x Vertical (rear) |
| Tramming alarm | Backward alarm |
| Knowledge Box™ | Connectivity solution (TS2-535) My Sandvik insight readiness (TS2-390) |
| Documentation | 1 x Operator's manual 1 x Maintenance manual 1 x Technical manual (in English only) 1 x Parts manual (in English only) 2 x USB key of manuals (PDF files) 1 x Online Parts manuals (MySandvik) |

Optional features and packages

Rock drill

| | |
|---------------------|--|
| *Type of rock drill | RDX5 (OMS125) RD520 instead of RDX5 |
|---------------------|--|

Boom

| | |
|------------------------|----------------------------------|
| *Type of boom | SB40NV instead of SB40 (TS2-257) |
| Boom suspension system | Specification TS15-232 |

Drill feed

| | |
|------------------|---|
| *Feed lengths | 10', 14', 16' |
| *Telescopic feed | TFX6/12, TFX8/14 |
| Rod retainer | TRR1 incl. safety wire, adds 35 mm length of the feed |

Hydraulic system

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|---------------------|--|
| *Biodegradable oils | PLANTOHYD SE 68 or PLANTOHYD SE 46 (arctic) |
|---------------------|--|

Drilling control system

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|-------------------------|---|
| Instrumentation | TCAD+ with iSURE I (Option iSure II, III, IV) For TCAD+ with iSURE® |
| Data transfer (WLAN) | For boom movement prevention switch |
| Indicator lights | Mandatory in Europe (TS2-211) |
| Access detector system | Mandatory in Canada (TS2-211) |
| Access protector system | |

Optional features and packages

Electric system

| | |
|---|---|
| *Multivoltage pro | 380 - 1000 V, at 50 or 60Hz |
| *Starting method | Star Delta 600 - 690 V |
| *Electric cables | Specification TS2-121 |
| Ground fault and overcurrent protection | VYK (N/A USC package) with pilot cord (optional) |
| Auxiliary outlet | 1 x 110 V or 1 x 230 V, 16 A |
| Battery jump start | Optional |
| Dewatering pump outlet readiness | 8 kW (site voltage 380 - 690 V) N/A USC package |
| Amber flashing light | LED (24 V) |

Air and water system

| | |
|---------------------------------|---|
| Air mist flushing | Specification TS2-285 |
| *End of hole air flushing | 1 x 60 liters air receivers |
| *Air compressor | 2.8 m³/min at 7 bar |
| Water hose reel with water hose | THR with 32 mm (1 ¼"), 80 meters |
| Water hose with hooks | 32 mm (1 ¼"), 80 meters |
| Dry drilling | Dust collector with 2.8 m³/min air compressor |

Cleaning system

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

Greasing systems

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|-----------------------------|---|
| Centralized greasing points | Specification TS2-463 |
| Manual system | Greasing gun and cartridge with hose reel (TS2-463) |
| Automatic system | Carrier and boom (TS2-463) |

Operator's safety cabin / canopy

| | |
|------------------------------|---|
| *Safety canopy | FOPS (ISO 3449) |
| *Low cabin | FOPS / ROPS certification Height 2 670 mm, During drilling and tramming |
| Cabin heating | Radio / USB MP3 / Bluetooth® and loudspeakers |
| Cabin audio system | Brake applied or buzzer For canopy |
| Seat belt and door interlock | |
| Safety grill | |

Fire suppression system

| | |
|-------------------------------|------------------------------------|
| Hand held fire extinguisher | 1 or 2 x 6 kg or 7.7 kg (Type ABC) |
| Manual or automatic system | Ansul, 6 nozzles (TS2-460) |
| Auto. fire suppression system | Sandvik Eclipse™ (TS2-461) |

Carrier

| | |
|------------------------------------|--|
| *Diesel engine | TCD3.6, 74 kW, Tier4F, Stage IV, Canmet TCD3.6, 74 kW, Stage V TCD3.6 DWG, 75 kW, China 4 with DPF |
| *Foam filled tires | 4 pcs |
| Fast filling and evacuation system | Wiggins (complete) |
| Brake release | Manual hand pump |
| *Knowledge Box™ | My Sandvik productivity readiness (TS2-390) |
| Wheel chocks and holders | 2 Sets |
| *Directional tramming alarm | Cri du Lynx® |
| Proximity detection system | CANbus Level 9 |

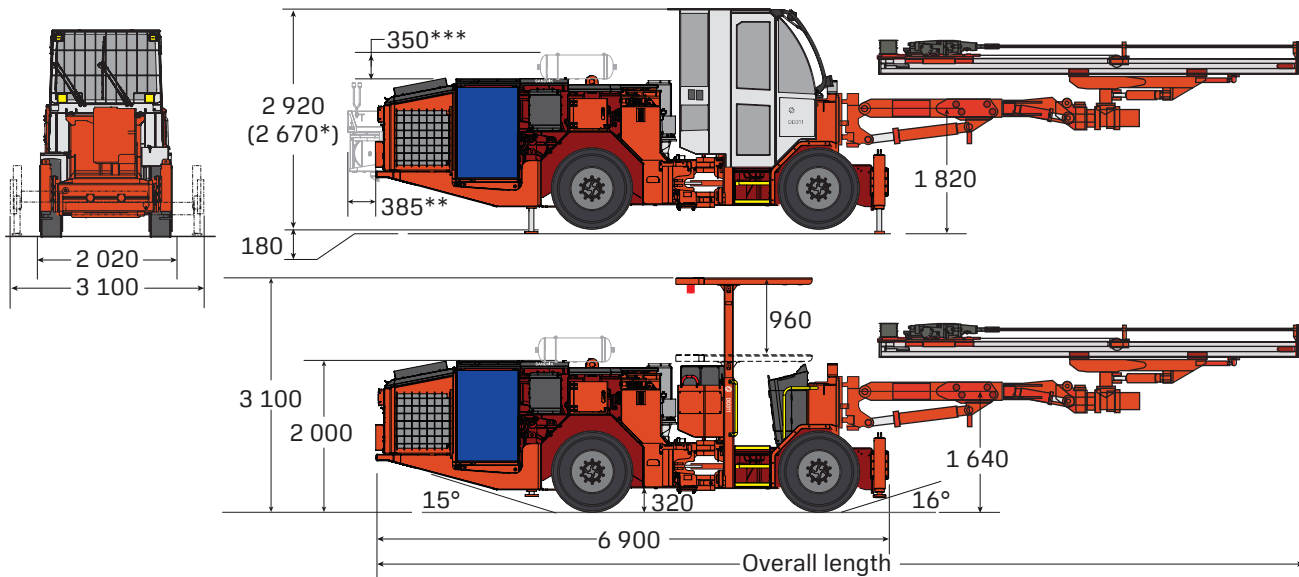
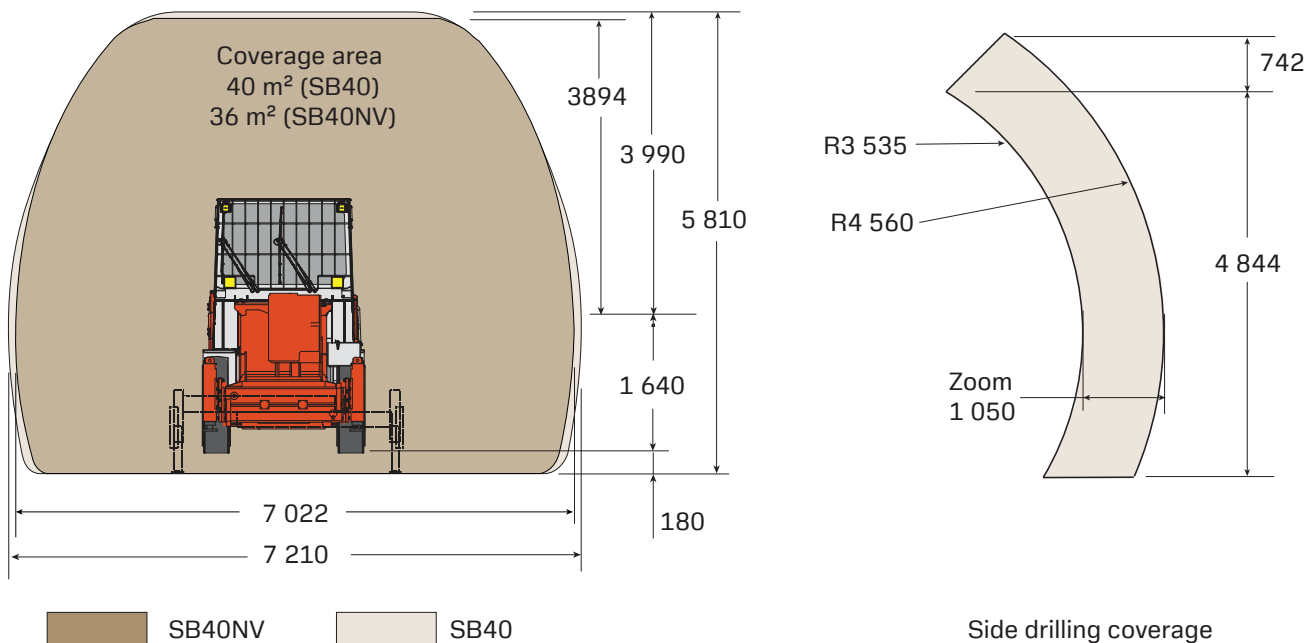
Extra items

| | |
|-----------------------------------|---|
| Berg plug and socket | 250 A |
| Spare rock drill | RDX5, RD520 |
| Tools and pressure test box | Specification TS2-429 |
| Spare wheel assembly | Air or foam filled tire |
| Special tools for rock drill | Field tool set (TS2-434) Complete tool set (TS2-435) |
| Warranty extension | One year (excl. Kazakhstan) |
| Documentation | Extra paper, PDF manuals |
| Total station navigation set | For TCAD (excl. total station) |
| Video recorder and speedometer | For CIS |
| Package: Configuration level | Streamline |
| Package: Country specific options | LAM, USC, AUS, CE package |
| *Package: Arctic | N/A 1 000 V and USC package Specification TS2-209 |
| *Package: Harsh water | Basic or advanced (TS2-049) |
| *Package: Rotary drilling | Specification TS2-195 |

*) Replaces standard feature

Technical drawings

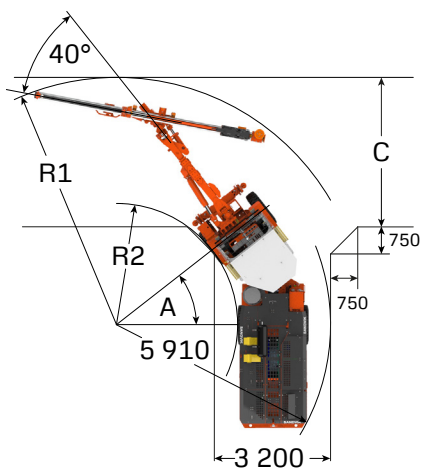
All dimensions in mm



Overall length

| | TF512 | TF514 | TF516 | TFX6/12 | TFX8/14 |
|-------|-----------|-----------|-----------|-----------|-----------|
| DD311 | 12 520 mm | 12 720 mm | 13 170 mm | 12 055 mm | 12 055 mm |

* With low cabin option ** With Sandvik eclipse option *** With Air receiver option



Cornering

| | Angle (A) | Internal Radius R1 | External Radius R2 | T-cross (C) |
|-----------------|-----------|--------------------|--------------------|-------------|
| DD311 (TF512) | 38° | 3 345 | 6 420 | 3 720 |
| DD311 (TF514) | 38° | 3 345 | 6 535 | 3 820 |
| DD311 (TF516) | 35° | 3 731 | 6 940 | 3 950 |
| DD311 (TFX6/12) | 38° | 3 345 | 6 250 | 3 550 |
| DD311 (TFX8/14) | 38° | 3 345 | 6 302 | 3 590 |

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