Sandvik DS221L is a rock reinforcement drill rig specialized into mechanized and cement grouted cable-bolts installation.

The machine is designed for a nominal gallery height of 2 m (+/- 0.2 m) in underground mines and tunnels. The Sandvik DS221L is able to install cable anchors up to 6 meters length. The drill rig is provided with an onboard cement mixer, cement bags platform and cable magazine of 6 cable bolts. The drill rod handling system has a capacity of 8 rods. Hole drilled can be Ø38 mm or Ø48 mm depending on the cable shell. The machine has an ability to drill one hole fully automated (rod adding and removing).

The bolting operation is performed by a single operator located outside of the dangerous area. Once the area underneath the cable is safe thanks to the cable pre-tensioning, the operator can attach the hose for post-grouting by hand.

As all the Sandvik drill rigs based on the LP carrier family, the Sandvik DS221L is designed for safety. For example, most of the daily and routine checks can be done from the ground.

### KEY FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage area</td>
<td>6,090 x 2,790 (11 m²)</td>
</tr>
<tr>
<td>Hydraulic rock drill</td>
<td>1 x RD314 (14 kW)</td>
</tr>
<tr>
<td>Cable bolting head</td>
<td>1 x SCBH-LP</td>
</tr>
<tr>
<td>Boom</td>
<td>1 x B26LPCB</td>
</tr>
<tr>
<td>Control system</td>
<td>THC561, hydraulic</td>
</tr>
<tr>
<td>Hole length</td>
<td>Up to 6,300 mm</td>
</tr>
<tr>
<td>Hole diameter</td>
<td>Ø38 mm, Ø48 mm</td>
</tr>
<tr>
<td>Total weight</td>
<td>17,000 kg depending on options</td>
</tr>
</tbody>
</table>
### Hydraulic Rock Drill

- **Type of rock drill**: RD314 (TS2-137)
- **Percussion power**: 14 kW
- **Percussion pressure**: Max. 160 bar
- **Rotation pressure**: Max. 175 bar
- **Percussion rate**: 110 Hz
- **Rotation speed**: Max. 530 rpm (with OMS100)
- **Rotation torque**: 505 Nm (with OMS125)
- **Hole size (drifting)**: 38 - 51 mm
- **Recommended rod**: R32
- **Shank adapter**: R23 / R32 (female)
- **Weight**: 115 kg
- **Length**: 559 mm
- **Profile height**: 95 mm
- **Inflating device for accumulator**: Specification 2-9110

### Hydraulic System

- **Powerpack**: HPP555 (55 kW)
- **Filtration (pressure / return)**: 20 µ / 10 µ
- **Oil tank volume**: 160 liters (drilling)
- **Tank filling**: Manual pump
- **Oil cooler (water actuated)**: 1 x OW30 (30 kW)
- **Hydraulic low level indicator**: Stop drilling when the oil level in drilling tank is low
- **Safety shut down**: Low water pressure, low air pressure, low oil level
- **Oil drilling safety temperature**: Above 75°C
- **Tool set for hydraulic adjustment**: Specification 2-9100

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### Wrench RHR540

- **Type of wrench**: RHR54 (TS2-250)
- **Rotation speed**: 0 - 500 rpm (OMS160)
- **Rotation torque**: 450 Nm (OMS160)
- **Weight**: 40 kg

### Cable Bolting Head

- **Type of bolting head**: SCBH-LP (TS2-332)
- **Rod handling system**: 8 + 1 rods
- **Cable operation magazine capacity**: 6 equipped cables (3 m as standard or easily adaptable up to 6 meters length)
- **Stinger (retractable / extended)**: 1 650 / 2 650 mm
- **Total length**: 1 800 mm

### Boom

- **Type of boom**: B26LPCB (TS2-323)
- **Parallel coverage**: 6 090 x 2 790 mm (11 m²)
- **Boom extension**: 1 200 mm
- **Boom weight, net**: 1 900 kg
- **Roll-over angle**: ± 120° (240°)

### Drilling Control System

- **Type of control system**: THC561 (S-1020)
- **Operating principle**: Hydraulic control
- **Radio remote boom control**: Fully proportional
- **Vertical parallelism**
- **Radio remote drilling control**: Proportional feed manual control
- **Feed deviation pressure**
- **Automatic cycle**: One hole automation
- **Adjustable parameters**: Feed force, rotation speed
- **Feed/percussion ratio**
- **Other functions from operator controls**: Rattling, flushing selection, fast feed
- **Drilling supervision**: Anti jamming system
- **Onboard diagnostics**: Warning display / SICA platform

### Instrumentation

- **Hole depth monitoring**: On SICA screen and remote control
- **Automine**: Readiness

### Electric System

- **Standard voltage**: 525 V (+ 10%), 50 Hz
- **Total installed power**: 75.5 kW (70 kW + 5.5 kW for the cement TBC mixer)
- **Main switch gear**: MSE-1JH
- **IP classification**: Specification TS2-132
- **Starting method**: Star delta starter
- **Automatic cable reel**: TCR LP II with spooling system
- **Cable reel control**: Operator station and rear of unit
- **Cable reel end switch**: Automatic brake application before end of cable
- **Cement unit platform control**: Operator station and rear of unit
- **Front working lights (combined working and driving)**: 2 x 35 W HID and 4 x 70 W (24 V)
- **Rear driving lights**: 2 x 70 W (24 V)
- **Rear working light (cement mixer area)**: 2 x 9 W LED + search light
- **Amber flashing light**: LED (24 V)
- **Operator station light**: Standard

### Grouting and Cabling System

- **Cement mixer with pump**: PFT G4 next generation
- **Water/cement ratio automatically controlled**
- **Equipped mechanized cable with nuts**: Installation + pretensioning fully mechanized, Manually post-grouting connection, post-grouting with pump.
- **Cement bags platform**: 5 x 20 kg
### AIR AND WATER SYSTEM
- **Flushing of holes**: By water
- **Water booster pump**: WBP1 (50Hz 4kW, 60Hz 5.5kW)
- **Water pump capacity**: 30 l/min at (11 bar / x bar inlet)
- **Water pump inlet pressure**: 2 – 7 bar (while drilling)
- **Flushing water pressure**: Max. 20 bar
- **Shank lubrication device**: SLU-1 (air / oil mist)
- **Air compressor**: CTN16 (1.6 m³/min at 7 bar)
- **Rock drill oil consumption**: 100 - 200 g/h
- **Rock drill air consumption**: 150 - 250 l/min

### OPERATOR’S SAFETY CANOPY
- **Canopy certification**: FOPS / ROPS (ISO 3449)
- **Unit height in tramming**: High position : 1 950 mm  
  Low position : 1 775 mm
- **Operation**: Seated operations
- **Operator’s seat**: Ergonomic T-back seat
- **Sound pressure level EN 791**: Operator station: 98 dB(A)

### CARRIER
- **Type of carrier**: TCLP II (frame-steered)
- **Carrier articulation**: ± 43°
- **Rear axle oscillation**: ± 15°
- **Ground clearance**: 300 mm
- **Diesel engine**: Deutz BF4M2012 (74 kW, Tier 2)
- **Diesel engine control**: Electronic, EMR
- **Exhaust catalyst**: Standard
- **Transmission**: Hydrostatic, automotive
- **Wheel motor**: 4 x radial piston
- **Tires**: 315/85 x 15
- **Service brakes**: Hydrostatic and positive braking
- **Parking and emergency brake**: SAHR fail safe type wet disc brakes
- **Neutral braking**: Brakes applied when neutral position activated
- **Tramming speed**: 12 km/h (Horizontal)  
  5 km/h (14% = 1:7.5 = 8°)
- **Gradeability / sideways tilt**: Max. 15° / 15°
- **Fuel tank**: 60 liters
- **Tramming oil tank**: 50 liters
- **Carrier stabilization**: Vertical (front and rear)
- **Brake release**: Manual pump
- **Tramming alarm**: Standard
- **Wheel chocks and holder**: 2 pieces
- **My fleet (FDM)**
  - **Basic**
  - **Advanced**: Specification TS2-381
- **Extra items**
  - **Gate end box**
  - **Berg plug / Berg base**
  - **Spare rock drill**
  - **Spare wheel assembly**
  - **Special tools for rock drill**
  - **Documentation**
  - **Package: Country specific options**
  - **Package: Extra safety**
  - **Package: *Harsh water**
- **Colour scheme**: Sandvik standard
- **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 CD of manuals (PDF files)

### OPTIONAL ITEMS
- **Hydraulic system**
  - *Oil tank filling pump*
  - Additional tramming HP filter
- **Electric system**
  - *Starting method*
  - Electric cables
  - *Ground fault and overcurrent protection*
  - Indicator light for jacks up
  - Electric power interlock
- **Air and water system**
  - *Shank lubrication device*
  - Air mine connection
  - Pressurized air outlet
- **Greasing systems**
  - Centralized greasing points
- **Fire suppression system**
  - Spare fire extinguisher
  - Automatic system
- **Carrier**
  - *Foam filled tires*
  - ABA brakes
  - *Lockable filler cap*
  - My fleet (FDM)
  - Proximity interface
  - Extra items
  - Gate end box
  - Berg plug / Berg base
  - Spare rock drill
  - Spare wheel assembly
  - Special tools for rock drill
  - Documentation
  - Package: Country specific options
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  - Package: *Harsh water
- **Documentation**
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  - 2 x Maintenance manual  
  - 2 x Technical manual (in English only)  
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  - 2 x CD of manuals (PDF files)
- **3. SANDVIK DS221L - LP CABLE BOLTER**
First position machine can drill and install the cable in these 4 holes

Machine move to the second and third position, machine can drill and install the cable in these 4 holes

Positions of cement mixer

High position

Low position

All dimensions in mm

Sandvik Mining and Rock Technology 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.