Sandvik DU412i is a highly versatile and compact ITH longhole drill fitted with an onboard booster and designed for underground mining in 3.2 x 3.2 m or larger production drifts. It is capable of drilling vertical and inclined fans and single or parallel Ø3½” - 8½” (90 - 216 mm) longholes, using 3” to 8” ITH hammers and Ø3” to Ø5” (76 - 127 mm) drill pipes. The DU412i can be fitted with a V-30 head for Ø30” (762 mm) reaming in service support, or reaming up to Ø17½” (445 mm) holes with 12” hammers in rapid raising.

The DU412i is mounted on a frame-steered and diesel-powered carrier. It is equipped with the CFP70 drilling module, RH6245i rotation head, ZR35 telescopic boom and operator’s (tramming) canopy for maximum productivity, safety and hole accuracy. The 360° drilling module rotation and wide boom swing and tilt angles make the unit suitable for mass mining and various service support applications. The iSOLO drilling control system with the user-friendly operating interface and various automation options allow maximum productivity and good drilling accuracy. The layout of the C400 carrier is designed for good visibility and stability in tramming, and all service points are accessible from ground level.

<table>
<thead>
<tr>
<th>KEY FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top drive</td>
</tr>
<tr>
<td>Drilling module</td>
</tr>
<tr>
<td>Drill pipe length</td>
</tr>
<tr>
<td>Boom</td>
</tr>
<tr>
<td>Minimum drift size (H and W)</td>
</tr>
<tr>
<td>T-section width in turning</td>
</tr>
<tr>
<td>Parallel vertical drilling coverage</td>
</tr>
<tr>
<td>Transport height</td>
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<tr>
<td>Transport width</td>
</tr>
<tr>
<td>Transport length</td>
</tr>
<tr>
<td>Transport weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROCK TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITH hammer</td>
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<tr>
<td>----------------</td>
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<tr>
<td>4&quot;</td>
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<tr>
<td>5&quot;</td>
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<tr>
<td>6&quot;</td>
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<tr>
<td>8&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
</tr>
<tr>
<td>V-30</td>
</tr>
</tbody>
</table>

*) by reaming
**TOP DRIVE**
- **Type of rotation head**: RH6245i with spline piston break-out
- **Working pressure**: Up to 210 bar (rotation)
- **Maximum torque**: 5730 Nm (standard 195 cm³ motor)
- **Rotation speed**: 0 - 60 rpm (standard 195 cm³ motor)
- **Weight**: 336 kg
- **Length with saver sub and spline piston**: 760 mm

**DRILLING MODULE**
- **Drilling module type**: CFP70
- **Pipe handler**: PC19-4
- **Pipe length**: 4’ - 6’ (1220 - 1830 mm)
- **Pipe diameter**: 3” - 4” (76 - 102 mm)
- **Storing capacity**: 19 + 1 pipes
- **Retaining centralizer**: CF10 fixed centralizer
- **Drill table pass through**: 267 mm
- **Feed force**: 70 kN
- **Rear stinger extension (2 units)**: 2183 mm
- **Front stinger extension (2 units)**: 1386 mm
- **Remote thread lubrication**: For drill pipes
- **Cuttings diverter**: DP10

**DRILLING MODULE DIMENSIONS**
- **Type**
  - **CFP704**: 4’ 2980 mm
  - **CFP705**: 5’ 3285 mm
  - **CFP706**: 6’ 3590 mm

**LONGHOLE BOOM**
- **Type of boom**: ZR35
- **Boom swing**: ± 44º
- **Boom tilt (back / forward)**: 30º / 45º
- **Drilling module roll-over**: 360º
- **Boom extension**: 620 mm
- **Drilling module travel**: 1300 mm (for 6’ pipes)
- **Parallel vertical drilling coverage**: 3000 mm
- **Pivot point height**: 2100 mm
- **Drilling module parallelism**: Automatic
- **Laser distance from drill center**: 1200 mm

**HYDRAULIC SYSTEM**
- **Powerpack**: HPP755 (55 kW)
- **Rotation and boom pump**: 110 cm³
- **Feed pump**: 60 cm³
- **Filtration size (pressure / return)**: 20 µ / 10 µ
- **Oil tank volume**: 270 liters
- **Cooler for hydraulic oil**: OA40 oil-to-air (40 kW)

**DRILLING CONTROL SYSTEM**
- **Control system and platform**: ISOLO / SICA
- **Control screen**: 12” full colour touch screen
- **Control panel**: Portable remote control panel
- **Diagnostics system**: Comprehensive and interactive

**DRILLING AUTOMATION PACKAGE (SILVER)**
- **Drilling control selection**: Torque drilling or manual
- **Rod handler controls**: Mechanized, instrumented and automated
- **One-hole automation**: Drilling to predefined depth (and retract)
- **Feed and hole parallelism**: Assisted
- **Measurement of angles**: Boom tilt and drilling module rotation
- **Stinger control**: Full time monitoring and re-pressurizing

**ELECTRIC SYSTEM**
- **Standard voltages**: 380 - 1000 V (50 or 60 Hz)
- **Total installed power**: 130 - 220 kW (depends on booster capacity)
- **Main switch gear**: MSE 10
- **Allowed voltage fluctuation**: ± 10%
- **Current reducer unit**: Standard

**AIR AND WATER SYSTEM**
- **Onboard booster**: 20 m³/min at 28 bar from 6 bar inlet (60 Hz)
- **Booster electric motor**: 90 kW
- **Booster inlet pressure**: 4 - 7 bar
- **Water booster pump**: WBPU (30 l/min at 45 bar)
- **Hammer lubrication system**: HLU50 with oil / grease level sensor
- **Lubrication metering capacity**: 0...5 liters / h
- **Lubrication tank capacity**: 45 liters
- **Low pressure water outlet**: On carrier front module
- **Compressor air outlet**: Quick coupling for pneumatic tools

**OPERATOR’S SAFETY CANOPY**
- **Canopy certification**: FOPS (ISO3449)
- **Type of canopy**: Standard height
- **Unit height in trarming**: 2950 mm
- **Operator’s seat**: For trarming
- **Electrical outlets (16 A)**: 12 / 24 V DC (outside canopy)
- **Tramming cameras**: Front, side and rear
### CARRIER

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of carrier C400 (frame-steered)</td>
<td></td>
</tr>
<tr>
<td>Carrier articulation ± 40°</td>
<td></td>
</tr>
<tr>
<td>Rear axle oscillation ± 8°</td>
<td></td>
</tr>
<tr>
<td>Ground clearance 330 mm</td>
<td></td>
</tr>
<tr>
<td>Diesel engine Cummins QSB4.5 (119 kW Tier3)</td>
<td></td>
</tr>
<tr>
<td>Exhaust catalyst</td>
<td>Standard</td>
</tr>
<tr>
<td>Transmission</td>
<td>Hydrostatic</td>
</tr>
<tr>
<td>Drop box Dana Spicer 305D</td>
<td></td>
</tr>
<tr>
<td>Axles Dana 113 (front and rear)</td>
<td></td>
</tr>
<tr>
<td>Tires 14.00-24 PR28</td>
<td></td>
</tr>
<tr>
<td>Brakes</td>
<td>SAHR fail safe wet disc brakes</td>
</tr>
<tr>
<td>Tramming speed</td>
<td></td>
</tr>
<tr>
<td>Powerpack tramming</td>
<td>For short distance (1 km/h) only</td>
</tr>
<tr>
<td>Gradeability / sideways tilt</td>
<td></td>
</tr>
<tr>
<td>Carrier stabilization 2 x TJ40 telescopic jacks (front) 2 x SJ600 jacks (rear)</td>
<td></td>
</tr>
<tr>
<td>Fuel tank 100 liters</td>
<td></td>
</tr>
<tr>
<td>Oil tank filling pump Electric</td>
<td></td>
</tr>
<tr>
<td>Hand held fire extinguisher 7.7 or 9 kg (type ABC)</td>
<td></td>
</tr>
<tr>
<td>Carrier centralized greasing points 5-2110</td>
<td></td>
</tr>
<tr>
<td>Tramming alarm</td>
<td>Standard</td>
</tr>
<tr>
<td>Hill holder</td>
<td>Standard</td>
</tr>
<tr>
<td>Levelling indicators Spirit level/monitor indication</td>
<td></td>
</tr>
<tr>
<td>Colour scheme Sandvik standard</td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td>2 x Operator’s manual 2 x Maintenance manual 2 x Technical manual (in English only) 2 x Parts manual (in English only) 1 x Toolman CD</td>
</tr>
</tbody>
</table>

### OPTIONAL FEATURES AND PACKAGES

#### Instrumentation
- Access detector, or protector
- Spirit level angle indicators
- Tele-remote drilling
- OptiMine remote monitoring
- Radio remote control

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

#### Greasing system
- Automatic system
- Manual system
- Pump, reel and nozzle (5-2110)

#### Electric system
- *Voltage option 1000 V (50 or 60 Hz) 380 - 440 / 690 V (50 or 60 Hz) 380 - 440 / 690 / 1000 V (50 or 60 Hz) Dewatering pump outlet Site voltage 380 - 690 V (7.5 kW) Site voltage 1 000 V (8 kW) Transformer supply 400 V (7.5 kW) earth continuity control For power cable (1-wire pilot circuit)
- Ground fault and overcurrent unit
- Indicator light for jacks up and down
- Extra working light
- Amber flashing light
- Power outlet on carrier 110 V or 230 V (16 A)
- Battery jump start CAT

#### Air and water system
- *Booster upgrade 27 m³/min at 28 bar from 6 bar inlet (110 kW / 60 Hz)
- *Booster upgrade 33 m³/min at 28 bar from 6 bar inlet (160 kW / 60 Hz)

#### Operator’s safety cabin / canopy
- Canopy certification FOPS / ROPS (ISO3447 / 3471)

#### Fire suppression system
- Additional fire extinguisher 7.7 kg (Europe) or 9 kg (type ABC)
- Automatic system Sandvik FS1000 (above 0°C)
- Manual or automatic system ANSUL (6 nozzles)

#### Fire and water system
- *Diesel engine Cummins QSB4.5 (122 kW Tier4F)
- *Foam filled tires 4 pcs
- Filling pump for hydraulic oil
- Fast filling and evacuation system
- Wheel chocks and holders 2 pcs

#### Extra items
- Spare wheel assembly
- Tools to specifications
- Documentation Extra manuals
- Packages Temperature and altitude specific
- *) replaces standard feature
- **) features in addition to Silver

#### Drill plan management
- USB / WLAN (excluding drill plan software)
- In the user interface (creating, copying and editing plans)
- To next hole in the plan

#### Boom automatic positioning
- USB / WLAN (excluding drill plan software)
- In the user interface (creating, copying and editing plans)
- To next hole in the plan

#### Drilling automation package (platinum)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling system</td>
<td></td>
</tr>
<tr>
<td>*Heavy hoist drilling module</td>
<td></td>
</tr>
<tr>
<td>*PC22-5 carousel</td>
<td></td>
</tr>
<tr>
<td>*PC33-4 carousel</td>
<td></td>
</tr>
<tr>
<td>*PA10-5 single axis pipe arm pipe must</td>
<td></td>
</tr>
<tr>
<td>*Retaining centralizer CS15</td>
<td></td>
</tr>
<tr>
<td>Conversion kit (with carousel)</td>
<td></td>
</tr>
<tr>
<td>Conversion kit (w/o carousel)</td>
<td></td>
</tr>
<tr>
<td>Cuttings diverter DV30</td>
<td></td>
</tr>
<tr>
<td>Petol chain wrench on feed</td>
<td></td>
</tr>
<tr>
<td>RC slip plate</td>
<td></td>
</tr>
<tr>
<td>Spare control panel and stand V30 blind bore kit</td>
<td></td>
</tr>
<tr>
<td>Vacuum pump</td>
<td>For hydraulic system</td>
</tr>
<tr>
<td>Bypass oil filter</td>
<td>2µ</td>
</tr>
</tbody>
</table>

#### Documentation
- Packages
  - Standard or foam filled tires
  - Site voltage 1 000 V (8 kW)
  - Transformer supply 400 V (7.5 kW)

#### Extra features
- Extra manuals
- Field kit
- Temperature and altitude specific

#### SITE VOLTAGE
- 27 m³/min at 28 bar from 6 bar inlet (110 kW / 60 Hz)
- 33 m³/min at 28 bar from 6 bar inlet (160 kW / 60 Hz)

#### Electric system
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- Wheel chocks and holders 2 pcs

#### Extra items
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### Special features
- *Diesel engine Cummins QSB4.5 (122 kW Tier4F)
- *Foam filled tires 4 pcs
- Filling pump for hydraulic oil
- Fast filling and evacuation system
- Wheel chocks and holders 2 pcs

### Extra items
- Spare wheel assembly
- Tools to specifications
- Documentation Extra manuals
- Packages Temperature and altitude specific
- *) replaces standard feature
- **) features in addition to Silver
### MINIMUM PRODUCTION DRIFT SIZE**

<table>
<thead>
<tr>
<th>Model</th>
<th>H</th>
<th>W</th>
<th>WP</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFP704+PC19-4 (4') mm</td>
<td>3 190</td>
<td>3 190</td>
<td>1 420</td>
</tr>
<tr>
<td>CFP705+PC19-4 (5') mm</td>
<td>3 490</td>
<td>3 490</td>
<td>1 720</td>
</tr>
<tr>
<td>CFP706+PC19-4 (6') mm</td>
<td>3 790</td>
<td>3 790</td>
<td>2 020</td>
</tr>
</tbody>
</table>

** 100 mm clearance

### MAXIMUM PRODUCTION DRIFT SIZE**

<table>
<thead>
<tr>
<th>Model</th>
<th>H</th>
<th>W</th>
<th>WP</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFP704+PC19-4 (4') mm</td>
<td>3 925</td>
<td>4 890</td>
<td>3 000</td>
</tr>
<tr>
<td>CFP705+PC19-4 (5') mm</td>
<td>4 225</td>
<td>5 190</td>
<td>3 000</td>
</tr>
<tr>
<td>CFP706+PC19-4 (6') mm</td>
<td>4 525</td>
<td>5 490</td>
<td>3 000</td>
</tr>
</tbody>
</table>

** Rear stinger extended, front stinger retracted

All dimensions in mm

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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.

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4. SANDVIK DU412I - ITH LONGHOLE DRILL