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 CF706-F feed, PC194 pipe handler, RH6250 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 a good visibility and stability in tramming, and all service points are accessible from a ground level.

**KEY FEATURES**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top drive</td>
<td>RH6250 with splined piston</td>
</tr>
<tr>
<td>Feed</td>
<td>CF706-F with fixed centralizer</td>
</tr>
<tr>
<td>Pipe carousel</td>
<td>PC194 (19 pipes)</td>
</tr>
<tr>
<td>Pipe diameter</td>
<td>Ø3&quot;-4&quot; (76 - 102 mm)</td>
</tr>
<tr>
<td>Pipe length</td>
<td>4’ - 6’ (1 220 - 1 830 mm)</td>
</tr>
<tr>
<td>Telescopic boom</td>
<td>ZR35 (620 mm extension)</td>
</tr>
<tr>
<td>Drift width in T-section</td>
<td>3 800 mm (minimum)</td>
</tr>
<tr>
<td>Parallel vertical drilling coverage</td>
<td>3 000 mm</td>
</tr>
<tr>
<td>Pivot point height</td>
<td>2 100 mm</td>
</tr>
<tr>
<td>Transport height</td>
<td>2 850 mm</td>
</tr>
<tr>
<td>Transport width</td>
<td>2 345 mm</td>
</tr>
<tr>
<td>Transport length</td>
<td>10 495 mm</td>
</tr>
<tr>
<td>Transport weight</td>
<td>30 000 kg (without drill tools)</td>
</tr>
</tbody>
</table>

**ROCK TOOLS**

<table>
<thead>
<tr>
<th>ITH hammer</th>
<th>Pipe Ø (mm)</th>
<th>Hole Ø (mm)</th>
<th>Hole Ø (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4”</td>
<td>79</td>
<td>115 - 127</td>
<td>4½ - 5</td>
</tr>
<tr>
<td>5”</td>
<td>89</td>
<td>140 - 152</td>
<td>5½ - 6</td>
</tr>
<tr>
<td>6”</td>
<td>102</td>
<td>165 - 178</td>
<td>6½ - 8</td>
</tr>
<tr>
<td>8”</td>
<td>127</td>
<td>203 - 254</td>
<td>8½ - 10</td>
</tr>
<tr>
<td>12”</td>
<td>127</td>
<td>445*</td>
<td>17½</td>
</tr>
<tr>
<td>V-30</td>
<td>127</td>
<td>762*</td>
<td>30</td>
</tr>
</tbody>
</table>

*) by reaming
**LONGHOLE BOOM**
- Telescopic boom: ZR35
- Boom swing: ± 44º
- Boom tilt (back / forward): 30º / 20º
- Feed over-rollover: 360º
- Boom extension: 620 mm
- Feed travel: 1 300 mm (for 6' pipes)
- Parallel vertical drilling coverage: 3 000 mm
- Pivot point height: 2 100 mm
- Laser offset from drill center: 3 150 mm

**FEED AND CAROUSEL**
- Type of feed: CF706-F
- Type of pipe handler: PC194
- Pipe length (standard): 6' (1 830 mm)
- Retaining centralizer: CF10 fixed centralizer
- Drill table pass through: 267 mm
- Feed force: 70 kN
- Feed and return speed: Up to 0.3 m/s
- Rear stinger extension: 2 183 mm
- Front stinger extension: 1 386 mm
- Cuttings diverter: DV10
- Set-off from stope face: 400 mm

**FEED DIMENSIONS**
- Type: CF706 (standard), CF705 (option), CF704 (option)
  - Pipe length: 6' (1 830 mm), 5' (1 525 mm), 4' (1 220 mm)
  - Total length: 3 560 mm, 3 255 mm, 2 950 mm

**CAROUSEL CAPACITIES**
- Type: PC194 (standard), PC225 (option), PC334 (option)
  - Storage capacity: 19 pipes, 22 pipes, 33 pipes
  - Pipe diameter: 3" - 4" (76 - 102 mm), 3" - 5" (76 - 127 mm), 3" - 4" (76 - 102 mm)
  - Max. hole length (6') : 34.3 m, 40.0 m, 60.1 m
  - Max. hole length (5') : 28.7 m, 33.3 m, 50.0 m
  - Max. hole length (4') : 22.9 m, 26.5 m, 40.0 m

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**HYDRAULIC SYSTEM**
- Powerpack: HPP755 (65 kW)
- Filtration size (pressure / return): 20 µ / 10 µ
- Oil tank volume: 270 liters
- Cooler for hydraulic oil: OA40 oil-to-air (40 kW)
- Low oil level indication: Low oil level switch

**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: HLUS0 with oil level sensor
- Lubrication metering capacity: 0...5 liters / h
- Lubrication tank capacity: 45 liters
- Water outlet (low pressure): Front of the carrier
- Compressor air outlet: Quick coupling for hand tools

**DRILLING CONTROL SYSTEM**
- Control system and platform: iSOLO / SICA
- Control screen: 12” full colour touch screen
- Control panel: Portable offboard control panel and stand
- Diagnostics system: Comprehensive and interactive
- Integrated interface: For pipe handler controls

**DRILLING AUTOMATION PACKAGE (SILVER)**
- Drilling control selection: Torque drilling or manual
- One-hole automation: Drill to predefined depth (and uncoupling of pipes)
- 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 - 690 V (50 or 60 Hz)
- Total installed power: 130 - 220 kW (depends on booster size)
- Main switch gear: MSE 10
- Allowed voltage fluctuation: ± 10%
- Current reducer unit: Standard
- Starting method: Star-Delta for booster and DOL for powerpack
- Automatic cable reel: TCR4CD with spooling system
- Cable reel remote control: At operator station and cable reel
- Front and rear lights: 10 x 50 W (24 V) LED
- Carrier positioning lights: 2 x Laser type
- Braking lights and blinkers: LED (24V)
- Parking lights: LED (24V)
- Sealed AGM batteries: 2 x 12 V (100 Ah)
- Current reducer unit: Power factor > 0.95
- Electric quality monitoring: Voltage, Amperage, Power, Pf Energy, Phase-sequence
- Motor protection: Intelligent control with power maximization
- Extra low voltage supply: Continuous 80 A 27 V DC with battery back-up and management
- IP-classification: Mains switchgear IP66 / Nema4X, junction boxes ≥ IP68

**TOP DRIVE**
- Type of rotation head: RH6250 with splined piston
- Working pressure: Up to 210 bar (rotation)
- Maximum torque: 5730 Nm
- Rotation speed: 0 - 60 rpm
- Weight: 336 kg
- Length with saver sub: 760 mm

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**Drilling automation package**

**Platinum**

- Data transfer (USB/WLAN)
- Drill plan management
- Boom automatic positioning
- Excluding drill plan software
- In the user interface
- To next hole in the plan

**Instrumentation**

- Access detector, or protector
- Spirit level angle indicators
- Tele-remote drilling
- Radio remote control
- For tramming, boom and carrier jacks
- On tripod with working lights, video display in the cabin

**Cleaning system**

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

**Guuring**

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

**Optional features and packages**

- **OPTIONAL FEATURES AND PACKAGES**

**Drilling system**

- *CF1306-5 heavy hoist feed
- *PC225 carousel
- *PC334 carousel
- *PA15 single axis pipe arm
- CS15 retaining centralizer
- Conversion kit (with carousel)
- Conversion kit (without carousel)
- DV20 cuttings diverter
- DV30 cuttings diverter
- Removal of carousel
- Petrol chain wrench on feed
- RC slip plate
- Thread lubrication system
- Drilling package V-30

**Hydraulic system**

- Vacuum pump
- Bypass oil filter

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**Hydraulic system**

- Vacuum pump
- Bypass oil filter
MINIMUM PRODUCTION DRIFT SIZE*

<table>
<thead>
<tr>
<th>CF706-F (standard)</th>
<th>H</th>
<th>W</th>
<th>Wp</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>3 760</td>
<td>3 760</td>
<td>2 020</td>
</tr>
<tr>
<td>CF705-F (option)</td>
<td>mm</td>
<td>3 455</td>
<td>3 455</td>
</tr>
<tr>
<td>CF704-F (option)</td>
<td>mm</td>
<td>3 150</td>
<td>3 150</td>
</tr>
</tbody>
</table>

* 100 mm clearance

MAXIMUM PRODUCTION DRIFT SIZE**

<table>
<thead>
<tr>
<th>CF706-F (standard)</th>
<th>H</th>
<th>W</th>
<th>Wp</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>4 525</td>
<td>5 490</td>
<td>3 000</td>
</tr>
<tr>
<td>CF705-F (option)</td>
<td>mm</td>
<td>4 225</td>
<td>5 190</td>
</tr>
<tr>
<td>CF704-F (option)</td>
<td>mm</td>
<td>3 925</td>
<td>4 890</td>
</tr>
</tbody>
</table>

** Rear stinger extended, front stinger retracted

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