

# DT821-C

## Tunneling drill

### Key features

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| Coverage area                        | 110 m <sup>2</sup><br>(14 210 x 8 420 mm) |
| Hydraulic rock drill                 | 2 x RD520 (20 kW)                         |
| Drill feed                           | 2 x TF500 - 16'                           |
| Boom                                 | 2 x SB90                                  |
| Control system                       | THC561, hydraulic                         |
| Hole length                          | Up to 5 880 mm                            |
| Turning width<br>(T-section)         | 4 840 mm<br>(with TF500-16')              |
| Transport / drilling width           | 2 500 mm / 3 000 mm                       |
| Transport / drilling height          | 3 600 mm (*3 190 mm)                      |
| Transport length                     | 14 930 mm<br>(with TF500-16')             |
| Total weight<br>depending on options | 27 000 kg<br>without utility boom         |
| Total weight<br>depending on options | 29 400 kg<br>with utility boom            |

\*) Low mounted cabin

Sandvik DT821-C is a two-boom electro-hydraulic jumbo for fast and accurate drilling in tunneling and cavern excavation.

The hydraulic controlled drilling system with added automatic functions and optional instrumentation enable productive and high quality excavation.

Sandvik RD520 rock drills deliver superior performance with high consumable life.

Sandvik SB90 universal booms have a large optimum shaped coverage and full automatic parallelism. In addition to face drilling the unit can also be used for crosscutting and bolt hole drilling. An optional utility boom for bolting and utility works is available.

The powerful 4-wheel-drive center articulated carrier ensures rapid and safe tramming with a good balance. Noise and vibration insulated cabin provides ergonomic and extremely comfortable working place with excellent visibility during tramming and drilling.



Technical Specification

Hydraulic rock drill

|                                                 |                                                                         |
|-------------------------------------------------|-------------------------------------------------------------------------|
| Type of rock drill                              | RD520 (TS2-235)                                                         |
| Percussion power                                | 20 kW                                                                   |
| Percussion pressure                             | Max. 220 bar                                                            |
| Percussion rate                                 | 74 Hz                                                                   |
| Stabilizer                                      | Hydraulic                                                               |
| Rotation speed                                  | Max. 280 rpm (with OMS125)                                              |
| Rotation torque                                 | 625 Nm (with OMS125)                                                    |
| Hole size (drifting)                            | 43 - 64 mm                                                              |
| Hole size (cut hole)                            | 76 - 127 mm                                                             |
| Recommended tools<br>43 - 45 mm:<br>48 - 51 mm: | T38 – H35 – Alpha 340<br>T38 – H35 – Alpha 360<br>T38 – R39 – Alpha 360 |
| Shank adapter                                   | T38 (male)                                                              |
| Weight                                          | 225 kg                                                                  |
| Length                                          | 1 010 mm                                                                |
| Profile height                                  | 90 mm                                                                   |

Feed

|                   |                    |                    |                    |                    |                    |
|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Type of feed      | TF500-12' Optional | TF500-14' Optional | TF500-16' Standard | TF500-18' Optional | TF500-20' Optional |
| Feed force (Max.) | 25 kW              | 25 kW              | 25 kW              | 25 kW              | 25 kW              |
| Total length      | 5 270 mm           | 5 880 mm           | 6 490 mm           | 7 100 mm           | 7 710 mm           |
| Hole length       | 3 440 mm           | 4 050 mm           | 4 660 mm           | 5 270 mm           | 5 880 mm           |
| Rod length        | 3 700 mm           | 4 305 mm           | 4 915 mm           | 5 525 mm           | 6 135 mm           |
| Net weight (kg)   | 500                | 530                | 560                | 590                | 620                |

Boom

|                   |                 |
|-------------------|-----------------|
| Type of boom      | SB90i (TS2-265) |
| Parallel coverage | 90 m²           |
| Parallelism       | Hydraulic       |
| Boom extension    | 1 800 mm        |
| Feed extension    | 1 650 mm        |
| Boom weight, net  | 2650 kg         |
| Roll-over angle   | 358 °           |

Utility boom (optional)

|                                     |                 |
|-------------------------------------|-----------------|
| Type of boom                        | SUB3A (TS2-307) |
| Utility boom pump                   | 60 cc (gear)    |
| Boom extension                      | 2 x 2 000 mm    |
| Boom weight,net                     | 2 350 kg        |
| Max allowed load                    | 510 kg          |
| Max allowed load with safety canopy | 400 kg          |

Hydraulic system

|                                     |                               |
|-------------------------------------|-------------------------------|
| Powerpack                           | HPP555 (2 x 55 kW)            |
| Percussion pump                     | 110 cc (variable)             |
| Rotation pump                       | 60 cc (variable)              |
| Filtration size (pressure / return) | 20 µ / 10 µ                   |
| Oil tank volume                     | 290 liters                    |
| Filling pump for hydraulic oil      | Electric                      |
| Cooler for hydraulic oil            | OW30 oil-to-water (2 x 30 kW) |

Control system

|                        |                                                               |
|------------------------|---------------------------------------------------------------|
| Type of control system | THC561, hydraulic (TS2-362)                                   |
| Manual boom control    | Direct control<br>Fully proportional<br>Hydraulic parallelism |
| Drilling control       | Feed / percussion control                                     |
| Automatic cycle        | Stop and return automatics                                    |

Electric system

|                                             |                                |
|---------------------------------------------|--------------------------------|
| Standard voltage                            | 380 - 690 V (± 10%)            |
| Total input power                           | 135 kW                         |
| Main switch                                 | MSE20                          |
| IP classification                           | Specification TS2-132          |
| Starting method                             | Star-delta starter 380 - 690 V |
| Automatic cable reel                        | TCR4E with spooling system     |
| Cable reel control (in / out)               | Operator station               |
| Front lights (combined working and driving) | 8 x 50 W LED (24V)             |
| Rear lights (combined working and driving)  | 4 x 50 W LED (24 V)            |
| Rear parking / brake lights                 | 2 x Red LED (24V)              |
| Stair and service lights                    | LED (24V)                      |

Air and water system

|                           |                             |
|---------------------------|-----------------------------|
| Flushing of holes         | By water                    |
| Water booster pump type   | WBP2 (11 kW)                |
| Water pump capacity       | 200 l/min                   |
| Water pump inlet pressure | 2 - 7 bar                   |
| Flushing water pressure   | 10 - 15 bar                 |
| Shank lubrication device  | SLU-2 (air / oil mist)      |
| Air compressor            | CTN10 (1.0 m³/min at 7 bar) |
| Oil consumption           | 180 - 250 g/h               |
| Air consumption           | 250 - 350 l/min             |

Operator's safety cabin

|                                            |                                       |
|--------------------------------------------|---------------------------------------|
| Cabin certification                        | FOPS (ISO 3449)                       |
| Type of cabin                              | Standard height                       |
| Cabin height                               | 3 600 mm                              |
| Cabin inside height                        | 2 000 mm                              |
| Sound pressure level according to EN 16228 | Cabin < 79 dB(A)<br>Emitted 125 dB(A) |
| Operation                                  | Standing drilling, seated tramming    |
| Floor                                      | Water-washable                        |
| Air conditioning                           | During tramming and drilling          |
| Cabin heating                              | During tramming and drilling          |
| Electricity outlets                        | 1 x 12 V                              |

## Technical Specification

### Carrier

|                              |                                                                                                                                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of carrier              | TC8 (frame-steered)                                                                                                                                    |
| Carrier articulation         | ± 37°                                                                                                                                                  |
| Rear axle oscillation        | ± 8°                                                                                                                                                   |
| Ground clearance             | 400 mm                                                                                                                                                 |
| Diesel engine                | Cummins B4.5, 129 kW, Tier 4F, Stage V                                                                                                                 |
| Transmission                 | Hydrodynamic, Spicer T20 000                                                                                                                           |
| Axles                        | Dana Spicer 113 (front and rear)                                                                                                                       |
| Tires                        | 14.00-24 PR28                                                                                                                                          |
| Service brakes               | Hydraulically applied wet disc brakes                                                                                                                  |
| Parking / emergency brakes   | SAHR type, fail safe wet disc brakes                                                                                                                   |
| Fuel tank                    | 150 liters                                                                                                                                             |
| Tramming speed               | Horizontal (0°): 16 km/h<br>14° = 1:7 = 8°: 5.4 km/h                                                                                                   |
| Gradeability / sideways tilt | Max. 15° / 5°                                                                                                                                          |
| Carrier stabilization        | TJ60 (front), TJ75 (rear)                                                                                                                              |
| Hand throttle                | Standard                                                                                                                                               |
| Hand held fire extinguisher  | 7.7 kg (type ABC)                                                                                                                                      |
| Carrier centralized greasing | Specification TS2-463                                                                                                                                  |
| Tramming alarm               | Standard                                                                                                                                               |
| 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 (in English only)<br>1 x Parts manual (in English only)<br>2 x Toolman USB key |

### Optional items

#### Rock drill

|                     |                                                       |
|---------------------|-------------------------------------------------------|
| *Type of rock drill | RD525, with 75 kW HPP<br>RDX5 (OMS125), with 55kW HPP |
| Power extractor     | For RD520, RD525 or RDX5                              |

#### Feed

|                  |                                                                                |
|------------------|--------------------------------------------------------------------------------|
| *Feed length     | 12', 14', 18', 20'                                                             |
| *Telescopic feed | TFX6/12, TFX8/14, TFX10/16                                                     |
| Rod retainer     | SCR with TF feed (incl. safety wire)<br>TRR1 with TFX feed (incl. safety wire) |

#### Utility boom

|                                    |                                             |
|------------------------------------|---------------------------------------------|
| Safety canopy                      | FOPS approved<br>Sliding FOPS safety canopy |
| Spot lights                        | 2 x 17 W LED                                |
| Rod racks                          | For 4 pcs of 10 or 12 ft rods               |
| RX expansion bolt installation kit | D30 mm or D41 mm                            |

#### Hydraulic system

|                                 |              |
|---------------------------------|--------------|
| *Filling pump for hydraulic oil | Manual       |
| *Biodegradable oils             | Sandvik oils |

#### Control system

|                         |                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Constant speed drilling | Replaces feed / percussion control                                                                                        |
| Access detector system  | Mandatory in Europe (TS2-211)                                                                                             |
| Instrumentation         | TMS+D2 for TF and TFX feeds<br>TMS+DDSS2 for TF feeds only<br>TCAD+ iSURE® software<br>(incl. basic license for one year) |
| Extra display           | For TCAD+                                                                                                                 |

#### Cleaning system

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

#### Greasing systems

|                  |                                                           |
|------------------|-----------------------------------------------------------|
| Automatic system | Lincoln (for carrier, boom, rod handler and utility boom) |
| Manual system    | Specification TS2-463                                     |

### Optional items

#### Electric system

|                                     |                                                                                                                                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *Voltage option                     | 1 000 V (50 Hz) with DOL starting system<br>Specification TS2-121<br>For voltages 690 - 1 000 V VYK<br>1 x 400 V or 2 x 230 V<br>At rear machine<br>2 pcs remoted with joystick<br>LED (24 V) |
| Electric cables                     |                                                                                                                                                                                               |
| Spooling device for cable reel      |                                                                                                                                                                                               |
| Ground fault and overcurrent unit   |                                                                                                                                                                                               |
| Electricity outlet in front carrier |                                                                                                                                                                                               |
| Remote control for reel(s)          |                                                                                                                                                                                               |
| Spot lights                         |                                                                                                                                                                                               |
| Amber flashing light                |                                                                                                                                                                                               |

#### Air and water system

|                           |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| Flushing flow supervision |                                                                                                        |
| *Air compressor           | CTN16 (1.6 m³/min at 7 bar)                                                                            |
| Air mist flushing         | External air / water supply (incl. IP5 air cleaner)<br>2 x 80 liters receiver (incl. IP5 air cleaner). |
| End of hole flushing      | IP5 air cleaner<br>THR2.5E with water hose<br>38 mm (1 ½"), 65 m                                       |
| External air connection   |                                                                                                        |
| Water hose reel           |                                                                                                        |

#### Operator's safety cabin

|                        |                                         |
|------------------------|-----------------------------------------|
| Reduced tramming speed | 3rd gear lockout                        |
| *Stainless steel cabin | FOPS (ISO 3449)                         |
| *Low mounted cabin     | Height 3 190 mm                         |
| Boot washer            | At cabin entrance                       |
| Audio player           | MP3 player with radio with loudspeakers |

#### Fire suppression system

|                  |                            |
|------------------|----------------------------|
| Manual system    | Ansul, 6 nozzles (TS2-460) |
| Automatic system | Ansul, 6 nozzles (TS2-460) |

#### Carrier

|                          |                      |
|--------------------------|----------------------|
| *Tires                   | Foam filled tires    |
| Fast filling system      | For fuel or complete |
| Rod rack on carrier side | 12 to 20 ft rods     |
| Tramming camera          | Rear and side        |
| Wheel chocks and holders | 2 pieces             |

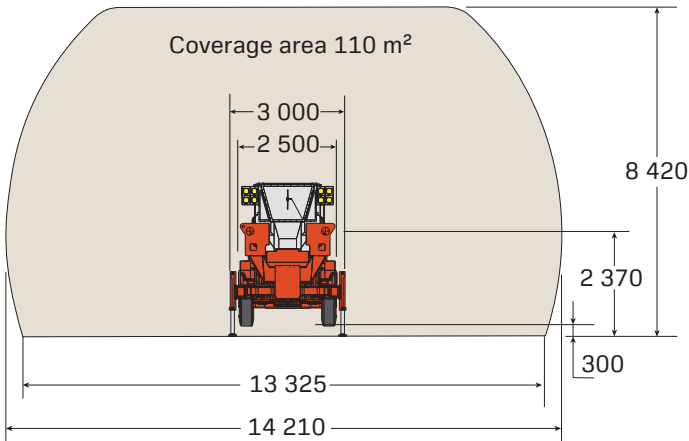
#### Extra items

|                                   |                                                                                                                         |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Spare rock drill                  | RD520, RD525 or RDX5                                                                                                    |
| Spare wheel assembly              | Standard or foam filled tires                                                                                           |
| Special tools for rock drill      | Field tool set<br>Complete tool set                                                                                     |
| Tunnel laser set                  |                                                                                                                         |
| Documentation                     | Extra manuals                                                                                                           |
| Extended warranty                 | 2 years                                                                                                                 |
| iSURE®                            | Complete license (for one year)                                                                                         |
| Package: Country specific options | EUR package                                                                                                             |
| Package: Anti-freezing            | Block heater for engine, heater for hydraulic oil, water circuit flushing with air, antifreeze adding in water circuit. |

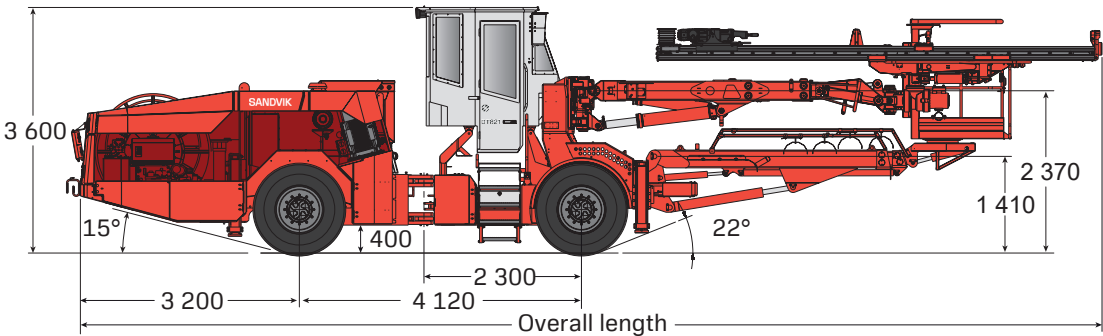
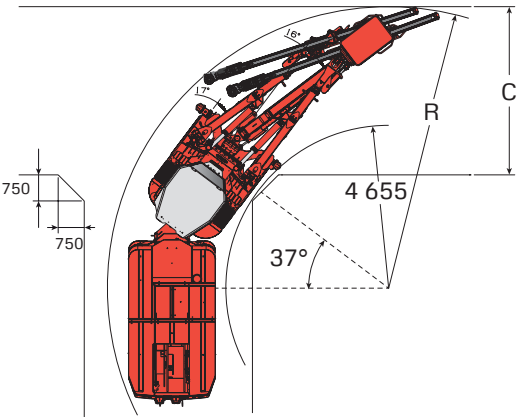
\*J) Replaces standard feature

Technical drawings

All dimensions in mm



|                          | TF500-12' | TF500-14' | TF500-16' | TF500-18' | TF500-20' |
|--------------------------|-----------|-----------|-----------|-----------|-----------|
| Feed length              | 5 330 mm  | 5 940 mm  | 6 550 mm  | 7 160 mm  | 7 770 mm  |
| Overall length           | 14 680 mm | 14 900 mm | 14 900 mm | 15 350 mm | 16 400 mm |
| Overall length with TRR1 | 14 710 mm | 14 930 mm | 14 930 mm | 15 380 mm | 16 430 mm |



|                     | Radius (R) | T-cross (C) |
|---------------------|------------|-------------|
| DT821-C (TF500-12') | 7 940 mm   | 4 730 mm    |
| DT821-C (TF500-14') | 7 940 mm   | 4 730 mm    |
| DT821-C (TF500-16') | 8 050 mm   | 4 840 mm    |
| DT821-C (TF500-18') | 8 190 mm   | 4 980 mm    |
| DT821-C (TF500-20') | 8 300 mm   | 5 090 mm    |