

SANDVIK

DD422i DEVELOPMENT DRILL



ROCK TECHNOLOGY SANDVIK

INTELLIGENCE THE WAY TO THE FUTURE

Sandvik DD422i is an advanced multipurpose development drill providing a high level of performance for underground mine development and small scale tunneling, including comprehensive drilling and ground support features.

It is equipped with an intelligent torque optimized drilling control system which helps to minimize hole deviation during drilling, reduce jammings, and maximize the tool life and penetration rate.

Sandvik DD422i is available with scalable automation options, from hydraulic boom parallel hold without instrumentation, up to the tele-remotely controlled equipment fleet with drill bit changers and fully automated drilling.

Comprehensive drill planning, reporting, and analyzing tools help to achieve high quality results in drilling and blasting precision and maximize pull-out per blast.



MAIN BENEFITS

DUAL CONTROLS FOR MULTIPURPOSE USAGE

Sandvik DD422i with Dual Controls option allows true multipurpose usage of the drill.

Booms with hydraulic parallel hold without instrumentation, and electrics combined with two THC561-look drilling control panels, enables fast multipurpose operations for face drilling and ground support using a single drill.

Up to **25%*** reduction in total cost of consumables per drilled meter

REDUCED COSTS

IMPROVED PERFORMANCE

Up to **15%*** increase in gross penetration rate

Up to **50%*** reduction in time scaling the heading before bolting

INCREASED ACCURACY

SCALABLE AUTOMATION

With scalable automation packages, Sandvik DD422i offers a wide range of valuable features for automatic drilling:

- A light and compact teleremote control station enabling the drill to be operated remotely and allowing the operator to drill more holes during shift change, blasting and ventilations times.
- A patented semi-automatic drill bit changer: the bits are changed from a safe location, enhancing productivity and reducing the risk of personnel exposure to hazardous ground conditions.
- Our boom collision avoidance system ensures the reliability of automatic boom movements, by automatically re-routing the boom when a possible collision is detected.

LOW EMISSIONS DIESEL ENGINE

To improve the underground working conditions, DD422i can be equipped with engines certified up to Stage V.





OPTIMIZED WORKING ENVIRONMENT



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



TFX TELESCOPIC FEED (OPTION)



TFX telescopic feeds for multipurpose development drilling with Sandvik DD422i. A versatile feed for face drilling, bolt hole drilling, bolt installation and cross cuttings in a limited space where both long and short rods have to be used.



DUAL CONTROLS (OPTION)



This option allows true multipurpose usage of the drill, improving fleet optimization, versatility and performance. DD422i can be used within multiple and different applications.



SANDVIK 365 PARTS & SERVICES

PROUDLY KEEPING YOU ON TRACK!

Sandvik 365 Parts & Services offer a variety of possibilities to enhance your Sandvik DD422i 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	RD525 (TS2-236)
Percussion power	25 kW
Impact frequency	93 Hz
Stabilizer	Hydraulic
Rotation speed	Max. 280 rpm (with OMS125)
Rotation torque	625 Nm (with OMS125)
Hole size	43 – 64 mm
Hole size (reaming)	76 – 127 mm
Recommended rod	T38-H35-R32 T38-R39-R35
Shank adapter	T38
Weight	225 kg

FIXED DRILLING FEED

Type of feed	TFi500-12'	TFi500-14'	TFi500-16'	TFi500-18'	TFi500-20'
Feed force (max.)	25 kN				
Feed extension	1 650 mm				
Total length	5 355 mm	5 965 mm	6 575 mm	7 185 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	500 kg	530 kg	560 kg	590 kg	620 kg

TELESCOPIC DRILLING FEED (OPTIONS)

Type of feed	TFX6/12	TFX8/14	TFX10/16
Feed force (kN)	25	25	25
Feed extension (mm)	1 650	1 650	1 650
Total length (mm)	3 560 / 5 390	4 170 / 6 000	4 780 / 6 610
Hole length (mm)	1 610 / 3 440	2 220 / 4 050	2 830 / 4 660
Rod length (mm)	1 830 / 3 700	2 440 / 4 305	3 050 / 4 915
Net weight (kg)	640 kg	680 kg	730 kg

BOOM

Type of boom	SB60 / SB60i (TS2-264)
Parallel coverage	54 m ²
Parallelism	Hydraulic / electric
Boom extension	1 200 mm
Boom weight, net	2 250 kg
Roll-over angle	358 °
Bolt hole drilling	Yes

HYDRAULIC SYSTEM

Powerpack	HPP575 (2 x 75 kW)
Percussion and feed pump	110 cc
Rotation pump	60 cc
HVAC (Heating, Ventilation and air conditioning) pump	26 cc
Filtration (pressure / return)	20 µ / 10 µ
Oil tank volume	270 liters
Oil tank filling pump	Electric
Cooler for hydraulic oil	OW30 oil-to-water (2 x 30 kW)

DRILLING CONTROL SYSTEM

Control system type	SICA
Drilling control modes	Intelligent Torque control / Feed percussion / manual
Upgradeable automation levels	
Comprehensive diagnostic system	
Electronic joystick controls	
15" full color touch screen	
Cable kit for spare part programming	
Safety lock for movement prevention	2 switches
OptiMine®	With configuration readiness

ELECTRICAL SYSTEM

Standard voltage	380 – 1 000 V (±10%)
Total installed power	170 - 200 kW
Main switch gear	MSE20
IP classification	Specification TS2-132
Starting method	Direct on line 380 V - 1 000 V
Automatic cable reel	TCR4CD with spooling system
Cable reel control	Operator station and remote control at rear machine
Front lights	6 x 50 W LED (24V) >125lx, 20 000 lm; 6 000 k
Rear lights	2 x 50 W LED (24V) and 2 x 17 W LED (24V) 8 000 lm; 6 000 k
Parking rear brake / park lights	2 x Red LED
Stair and service lights	LED (24 V)
Amber flashing light	LED (24 V)
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 VDC) with battery back-up and management

AIR AND WATER SYSTEM

Flushing of holes	By water
Water booster pump	WBP2 HP
Water pump capacity	185 l/min
Inlet pressure	2 - 7 bar
Flushing water pressure	10 - 15 bar
Shank lubrication device	SLU2 (air / oil mist)
Rock drill oil consumption	180 - 250 g/h
Rock drill air consumption	250 - 350 l/min
Air compressor	CTN10, 1.0 m ³ /min (7 bar)
Air and water outlets	Quick coupling

OPERATOR'S SAFETY CABIN

Safety cabin certification	FOPS / ROPS (ISO 3449 / 3471)
Operation	Seated tramping Standing and seated drilling
Sound pressure level According to EN 16228, ISO4872, ISO1120.	Operator station: 69 db(A)
Vibration level	According to EN791, ISO2631-1
Seat	Fully adjustable seat (tramping and drilling)
Optimized dust level control via air circulation	
Air conditioning	EU6/7 filtering capacity
Cabin heating	During tramping and drilling
Electricity outlets	1 x 12 VDC and CD player readiness
Stairs and indoors lights	LED
Audio system	CD / MP3 player with radio
Boot washer	At each cabin entrance
Safety laminated acoustic windows	

CARRIER

Type of carrier	C400D (frame-steered)
Carrier articulation	± 40°
Rear axle oscillation	± 8°
Ground clearance	330 mm
Diesel engine	QSB4.5, 119 kW, Tier 3, Stage IIIA
Transmission	Hydrostatic
Axles	Dana Spicer
Tires	14.00–24 PR28
Brakes	SAHR type, fail-safe wet disc brakes
Tramping speed	12 km/h (limited)
Gradeability / sideways tilt	Max.15° / 5° (according to EN 16228-2)
Fuel tank	150 liters
Hydraulic jacks	2 x SJ500 (front), 2 x SJ600 (rear)
Wheel chocks and holders	2 Sets
Centralized greasing points	Specification (TS2-463)
Manual greasing system	Specification (TS2-463)
Hand held fire extinguisher	1 x 7.7 or 9 kg (type ABC)
Tramping alarm	Standard
Knowledge Box™	Connectivity solution (TS2-535)
Colour scheme	Sandvik
Toolboxes and first aid kit	
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 Toolman USB Key

OPTIONAL FEATURES AND PACKAGES

Rock drill		
*Type of rock drill	RDX5 or RD520 instead of RD525	for RD525, RD520, RDX5
Power extractor	Stabilizer diagnostics indicator	for RD520 or RD525
Feed		
Rod retainer	TRR1 incl. safety wire, add 35 mm length of the feed	
Two rods system	TRS included TRR1 with safety wire	
Drill bit changer	12 x std bits (45 / 48 / 51mm bits) + 2 reaming bits incl. SCR rod retainer	
Hydraulic system		
*Powerpack	HPP555 (55 kW) with RDX5, RD520	For hydraulic system
Vacuum pump		
By pass oil filter		
Drilling control system		
Boom collision avoidance system		
*Dual drilling controls	THC561 look control panel for multi task-operations (TS2-497)	
Reversed bolt joint		
Data transfert	WLAN including remote GUI view	
Access detector and protector	Mandatory in Europe (TS2-211)	
Electric system		
*Optional voltage	1 000 V (50/60 Hz) with DOL starter	
*Electric cables	Specification TS2-121	
Ground fault and overcurrent protection	VYK	
Dewatering pump outlet	Site voltage 380 - 690 V	
Multivoltage basic	380 – 440 V, 690 V 50 Hz	
Multivoltage pro	380 – 1 000 V, 50 or 60 Hz	
Electric current draw reducer unit		
Remote controlled spot lights	2 pcs	
Indicator lights	For jacks up / down	
Earth continuity control	1 wire pilot circuit with remote reset / disconnect	
Auxiliary outlet	1 x 110 V or 1 x 230 V, 16 A	
Battery jump start	Optional	
Indicator light for boom movement prevention switch status	2 x on both sides, 1 x inside cabin (green or red depending status)	
Air and water system		
Air mist flushing kit	IP5 air cleaner and flow control	
*End of hole air flushing	Including CT28 air compressor	
Water hose reel with water hose	THR2.5E with 38 mm (1 ½"), 65 m	
Cleaning system		
HP system with reel	Up to 180 bar (TS2-343)	
Greasing systems		
Automatic system	Lincoln (complete)	
Operator's safety cabin		
*Low height cabin	Height 2 900 mm	
*Low height unit	Height 3 050 mm (incl. tram camera) (std cabin w/o 100 mm ex. pieces)	
Safety grill lifting mechanism	400i serie Cabin	
Tramping camera	Rear and side	
Fire suppression system		
Spare hand held fire extinguisher	1 x 7.7 or 9 kg (type ABC)	
Manual or automatic system	Ansul, 6 nozzles (TS2-460)	
Automatic system	Sandvik Eclipse™ (TS2-461)	
Carrier		
*Diesel engine	B4.5, 121 kW, Tier 4F, Stage V	
*Foam filled tires	4 pcs	
Fast filling system	Complete	
Rod rack	On carrier side (Max. 400 kg)	

EXTRA ITEMS

Spare rock drill	RD525, RD520, RDX5
Spare wheel assembly	14.00-24 PR28 or foam filled tire
Warranty extension	One year (excl. Kazakhstan)
Special tools for rock drill	Field tool set, complete tool set
Documentation	Extra, Catbase, Link one manuals
iSURE®	iSURE II Plus annual license (Advanced drill and blast design including round reports)
	iSURE III Premium annual license (MWD including pull out analyses)
	iSURE IV Pro annual license (Tunnel development KPI's)
Package: Dual controls	See below
Packages: Automation	Gold, platinum
Packages: Extreme environment	Specification TS2-166
Package: Teleremote drilling	Specification TS2-422

*) Replaces standard feature

AUTOMATION PACKAGE : GOLD

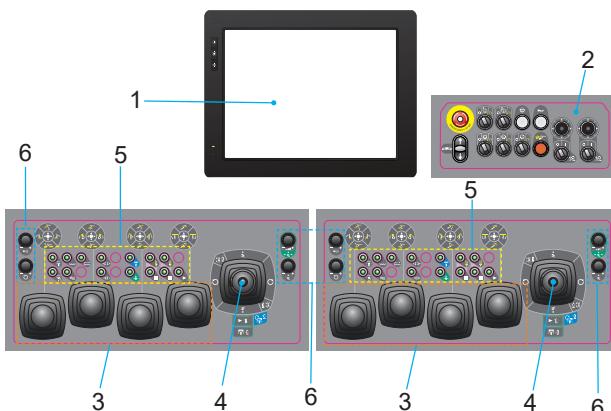
SB60i boom with electronic parallel holding
Drill plan visualization onboard
Display of drill bit location vs. given drill plan
iSURE I Basic (Drill plan design)
Drill rig suitable with various navigation methods
Advanced MWD data collection with analyses tool (iSure)
DrillConnect mobile application : Connectivity through Knowledge box™ for easy data transfer to and from the rig

AUTOMATION PACKAGE : PLATINUM

Automation Gold package content
Hole end correction from different start point
Semi-automatic boom movements
Automatic boom movements (full face automation)
Boom collision avoidance system (separate option)

DUAL CONTROLS PACKAGE**CONTENTS**

SB60 boom with hydraulic parallel holding
THC561 look control panel for multitask-operations

**EXTREME ENVIRONMENT PACKAGES (TS2-166)**

High temperature package
Extreme high temperature package
Anti-freezing package
High-altitude package
Harsh water flushing package
Harsh water environment package

TELEREMOTE DRILLING PACKAGE (TS2-422)

GUI touch screen
Start / Stop of automation
Manual drilling and boom controls
Control of PTZ cameras
Control of spot lights (separate option)
Sending drilling related data
Unit condition monitoring via GUI screen
Audio and video stream from the unit

MAIN FUNCTIONS

1. 12" Touch screen display for diagnostics and drilling information
2. Auxillary control panel
3. Joysticks for boom movements
4. Joysticks for drilling controls
5. Other functions:
 - Mode selection: Drilling / Bolting
 - Boom selection: 1 / 2
 - Water and Air ON/OFF
 - Start / Stop of one hole automation
 - Controls for retainer (Option)
 - Telescopic feed extension control
 - Rattling
6. Fine adjustments (feed, percussion, rotation and flushing flow)

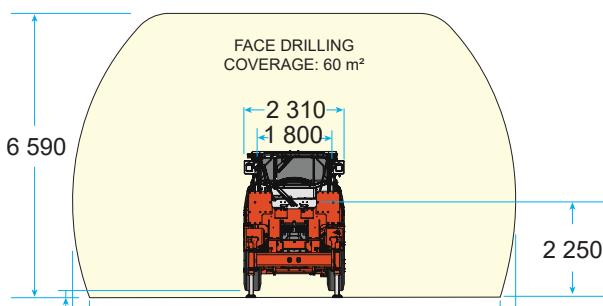
COVERAGE DRAWINGS

The dimensions are indicative only - All dimensions in mm

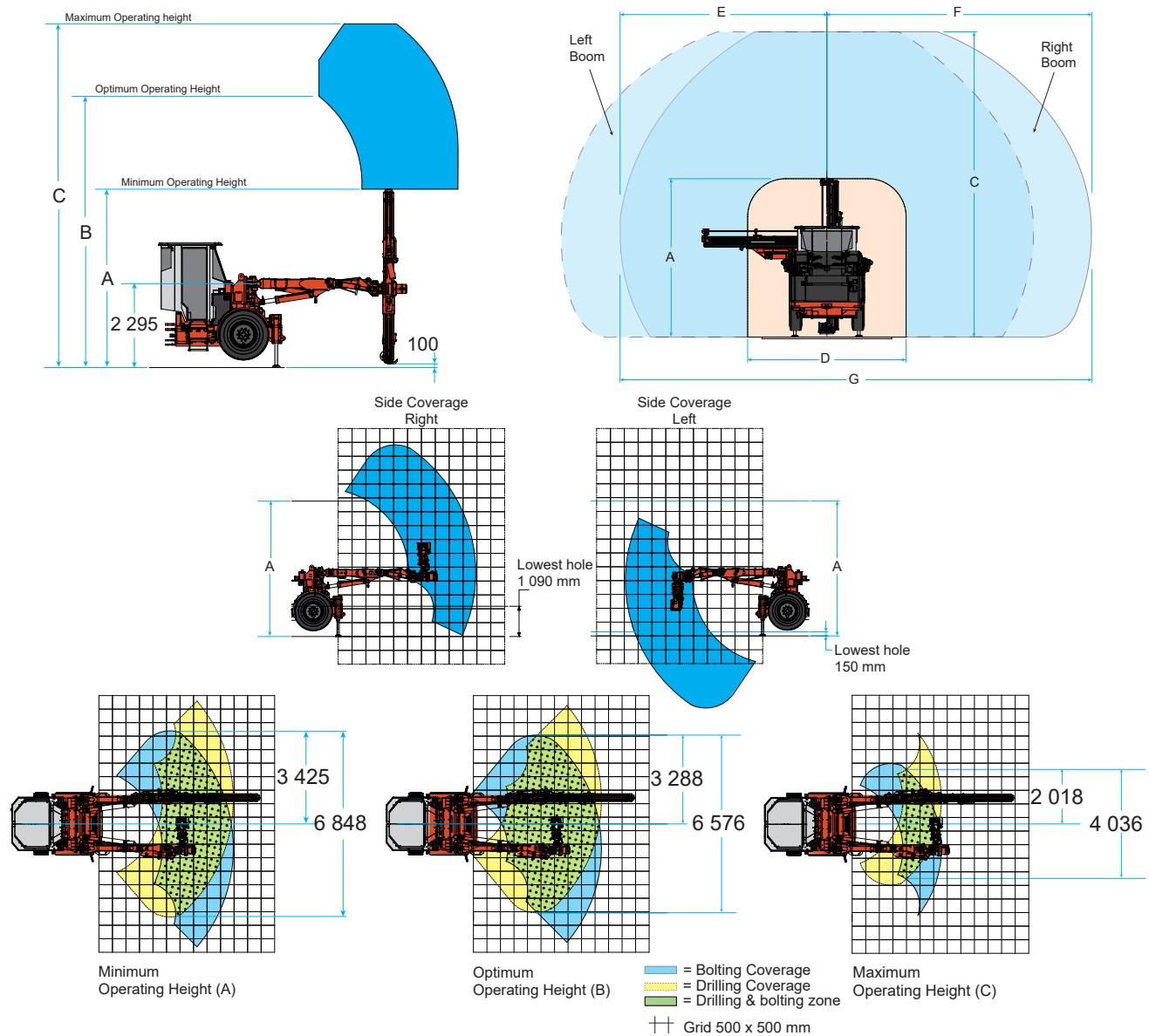
KEY FEATURES

Coverage	60 m ² (10 270 x 6 590 mm)
Drift size class (H x W)	4 500 mm x 4 500 mm
Turning width (T-section)	3 870 mm
Transport width	2 310 mm
Transport height	3 150 mm / 3 050 mm
Transport length	13 250 mm
Total weight	26 000 kg depending on options

FACE DRILLING



CROSS CUT AND ROOF DRILLING



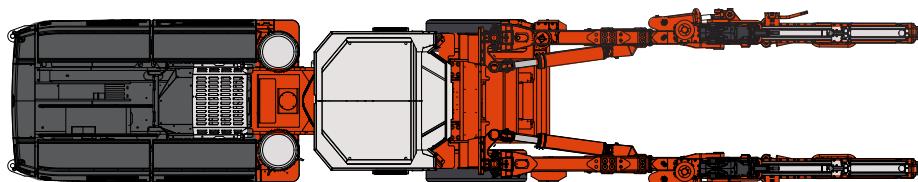
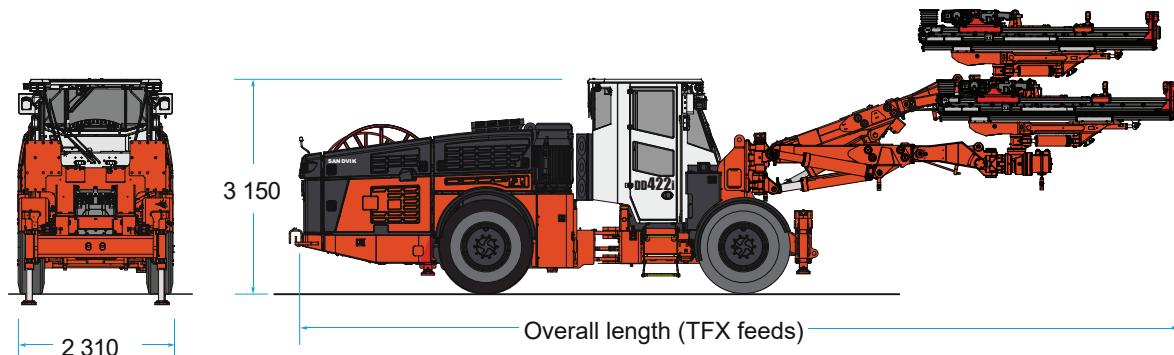
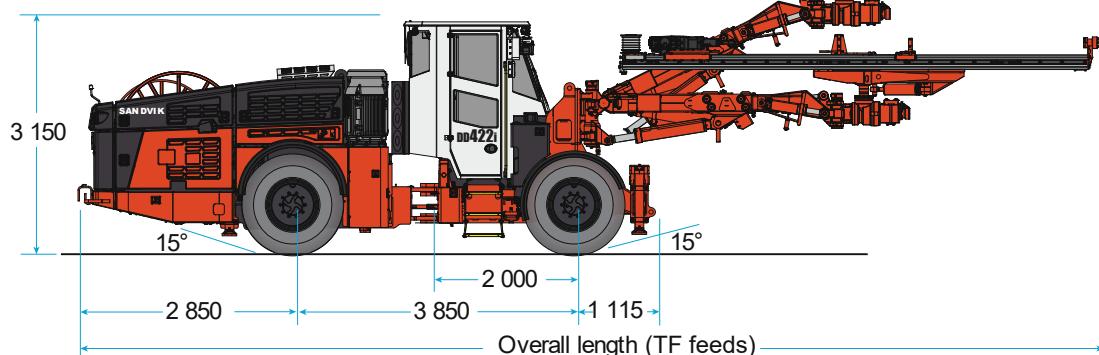
COVERAGE DIMENSIONS

Drilling module	Minimum operating height (A)	Optimum operating height (B)	Maximum operating height (C)	Minimum operating width (D)	Left maximum operating width (E)	Right maximum operating width (F)	Maximum width (G)
TF500-12'	5 435 mm	7 205 mm	9 835 mm	5 435 mm	6 010 mm	7 810 mm	13 820 mm
TF500-14'	6 045 mm	7 425 mm	10 055 mm	6 045 mm	6 230 mm	8 030 mm	14 260 mm
TF500-16'	6 655 mm	7 865 mm	10 495 mm	6 655 mm	6 670 mm	8 475 mm	15 145 mm
TF500-18'	7 265 mm	8 610 mm	11 240 mm	7 265 mm	7 415 mm	9 215 mm	16 630 mm
TFX6/12'	4 200 mm	6 955 mm	8 435 mm	4 200 mm	5 760 mm	7 560 mm	13 320 mm
TFX8/14'	4 275 mm	7 030 mm	9 010 mm	4 275 mm	5 835 mm	7 635 mm	13 470 mm
TFX10/16'	4 885 mm	7 640 mm	9 620 mm	4 885 mm	6 445 mm	8 245 mm	14 690 mm

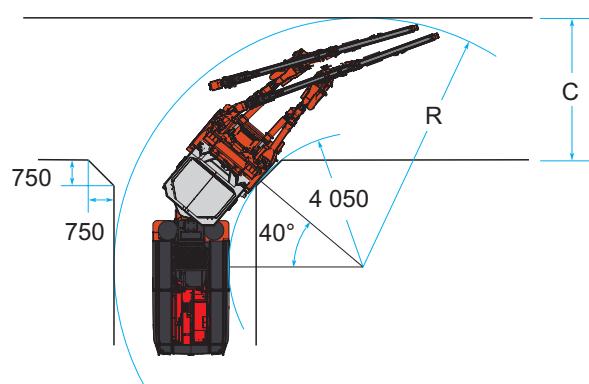
MAIN DIMENSIONS DRAWINGS

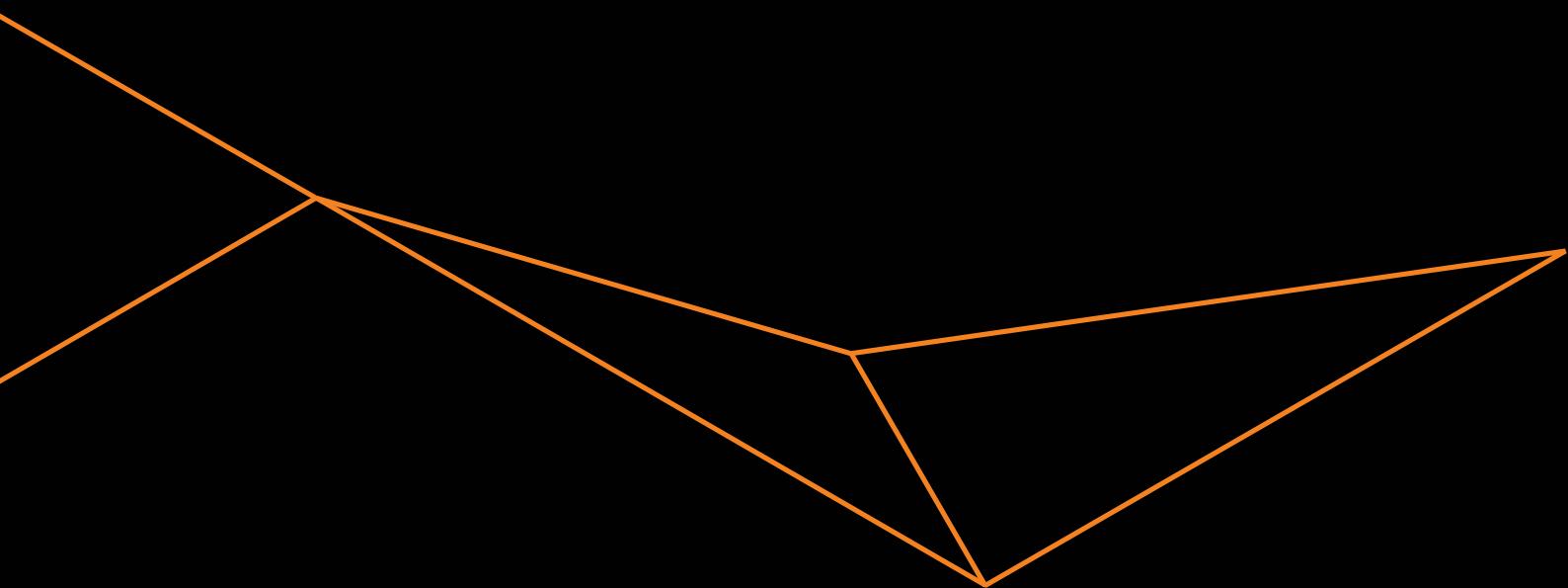
The dimensions are indicative only - All dimensions in mm

Type of feed	Overall length	Overall length (with TRR1)
TFi500-10'	12 700 mm	12 735 mm
TFi500-12'	13 250 mm	13 285 mm
TFi500-14'	13 450 mm	13 485 mm
TFi500-16'	13 900 mm	13 935 mm
TFi500-18'	14 650 mm	14 685 mm
TFi500-20'	15 300 mm	15 335 mm
TFX6/12	13 150 mm	13 150 mm
TFX8/14	13 300 mm	13 300 mm
TFX10/16	13 500 mm	13 500 mm



Type of type	Radius (R)	T-cross (C)
TFi500-10'	6 850 mm	3 720 mm
TFi500-12'	7 000 mm	3 870 mm
TFi500-14'	7 150 mm	4 020 mm
TFi500-16'	7 400 mm	4 200 mm
TFi500-18'	7 550 mm	4 250 mm
TFi500-20'	8 300 mm	5 050 mm
TFX6/12	6 850 mm	3 640 mm
TFX8/14	6 900 mm	3 690 mm
TFX10/16	7 000 mm	3 790 mm





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