

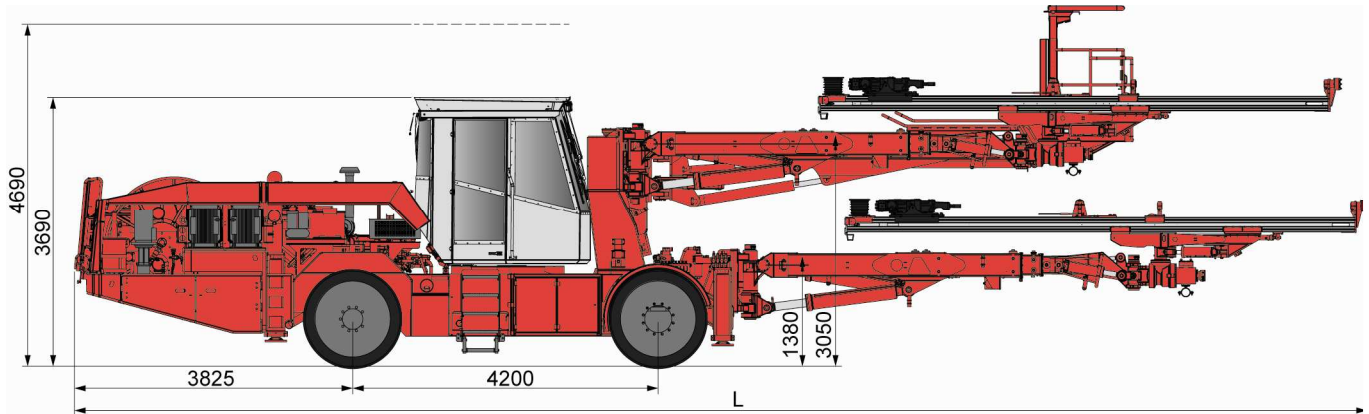
Sandvik DT1130i Underground Drill Rig



The Sandvik DT1130i is a computer controlled three boom electro hydraulic jumbo for fast and accurate drilling in tunneling and cavern excavations. The rig has automatic drilling functions and boom positioning under supervision of rig operator. Automated drilling of pre-planned drilling pattern combined with extensive data collection and reporting system enables continuous control of productivity, quality and economy. In addition to face drilling the unit can also be used for cross-cutting and bolt hole drilling. Noise and vibration insulated cabin provides ergonomic and extremely comfortable working place with excellent visibility during tramming and drilling.

Coverage	20-183 m ²
Hole diameter	43 - 64 mm
Hole length	3 344 - 6 085 mm
Booms	3 x TB150i
Feed	3 x TF5i-18
Rock drill	3 x RD525
Control and operation system	iDATA
Length (with default feed)	17 780 mm
Width (drilling)	2 940 mm
Width (tramming)	2 880 mm
Width (transportation)	2 880 mm
Height (drilling)	4 690 mm
Height (tramming)	3 690 mm
Weight	44 000 kg
Weight with Utility boom	48 000 kg

Machine Dimensions



Hydraulic rock drill

Rock drill type	RD525
Weight	225 kg
Length	1 010 mm
Profile height	90 mm
Power class	25 kW
Frequency	93 Hz
Max working pressure:	
Percussion	235 bar
Rotation	175 bar
Max torque (125 cm ³)	625 Nm
Stabilizer	Hydraulic
Hole size	43 - 64 mm
Hole size (reaming)	76 – 127 mm
Shank lubrication	Air / oil mist
Air consumption	250 - 350 l/min / rock drill
Oil consumption	180 - 250 g/h / rock drill
Shank lubrication	Boom specific

Boom

Boom type	TBI 50i
Parallel coverage	159 m ²
Parallelism	Electrical
Boom extension	3 200 mm
Feed extension, with TF-feed	1 650 mm
Boom weight, net	3 350 kg
Roll-over angle range	358°

Utility boom and *options

Boom type	*SUB5iA/B
Boom extension	2 x 3 000 mm
Boom weight, net	2 635 / 2 895 kg
Basket swing	+/- 45 degrees in B-model
Max allowed load	510 kg
Max allowed load with safety canopy	400 kg
*Safety canopy for utility boom	FOPS approved
*Spot lights for utility boom	2 x 35W HID
*Rod racks for utility boom	For 4 pcs of 10 or 12 ft rods
*RX expansion bolt installation kit for utility boom	Diam. 38 mm (standard) or 41 mm (midi/super)

Feed

Feed type	TF5i-18
Feed force	Max. 25 kN

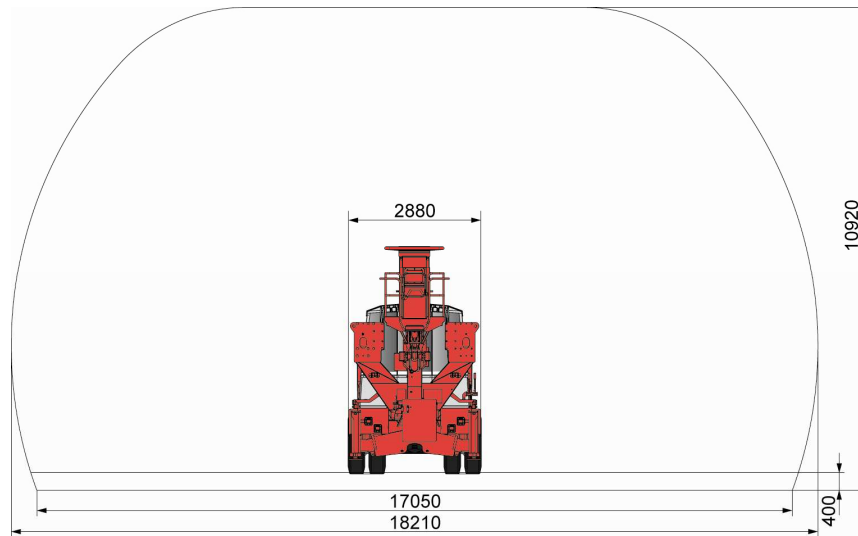
Feed TF5i-	Total length (mm)	Hole length (mm)	Rod length (mm)	Machine length (mm)
12'	5 330	3 440	3 700	15 850
14'	5 940	4 050	4 305	16 740
16'	6 550	4 660	4 915	17 340
18'	7 160	5 270	5 525	17 780
20'	7 770	5 880	6 135	18 540
21'	8 075	6 180	6 440	18 740

*Drilling options

TF Feed lengths	12', 14', 16', 18', 20', 21'
*Rod retainer	SCR
*Power extractor	PE-45
*3 x HFX5T rock drill i/o RD525	Option

Sandvik Mining and Construction reserves the right to change this specification without further notice.

Coverage area



Carrier and *options

Carrier type	TC11
Diesel engine	Mercedes Benz OM904LA, 110 kW (Tier3)
Transmission	SPICER T20000 Hydrodynamic
Axles	SPICER 37R front, 213 rear
Brakes: Service	Hydraulically operated wet disc brakes
Brakes: Parking and emergency	SAHR type, fail safe wet disc brakes
Tyres	14.00-24/28RL
Steering	Axle steering in engine end, Orbitrol
Rear oscillation	±8 °
Ground clearance	400mm
Tramming speed:	15 km/h (Horizontal) 3,5 km/h (14% = 1:7 = 8°)
Gradeability	28 % = 1:3,5 = 15°
Fuel tank	150 l
Hydraulic jacks	2 x TJ60 front
Hydraulic jacks	2 x TJ75 rear
Hand throttle	Yes
*Exhaust catalyzer	Option
*Carrier	*Carrier TC12 (170 kW) with transmission Spicer 32000 and front axle 43R
*Power supply for MiniSSE	Option
*Rod rack under carrier	For 12-21 ft rods
*Reduced tramming speed	3rd gear lockout

Hydraulic system and *options

Powerpack type	HP 575 (75kW)
Percussion and feed pump	1 x 110 cc (variable)
Rotation and boom pump	1 x 85 cc (variable)
* Utility boom pump	1 x 26 cc (gear pump)
Air conditioning pump	1 x 26 cc (gear pump)
Filtration rate	20 micron (Pressure) 10 micron (Return)
Oil tank volume	470 l
Tank filling	Electric pump
*Tank filling	Manual pump
Oil cooler	Cooling capacity 30kW, OW30 water cooler
*Oil cooler	Cooling capacity 30kW, OA30 air cooler
*Biodegradable oils	Shell Naturelle HFE 46/HFE 68
*Under pressure pump for hydraulic oil	Option
*Additional fine filtration for hydraulic oil	Removal of particles Absorption of water Absorption of Oxidation By-products

Fire suppression system and *options

Hand held fire extinguisher	UL or CE approved
* Manual fire suppression system (Ansul)	8 nozzles
* Automatic fire suppression system (Ansul)	8 nozzles

Control system and *options

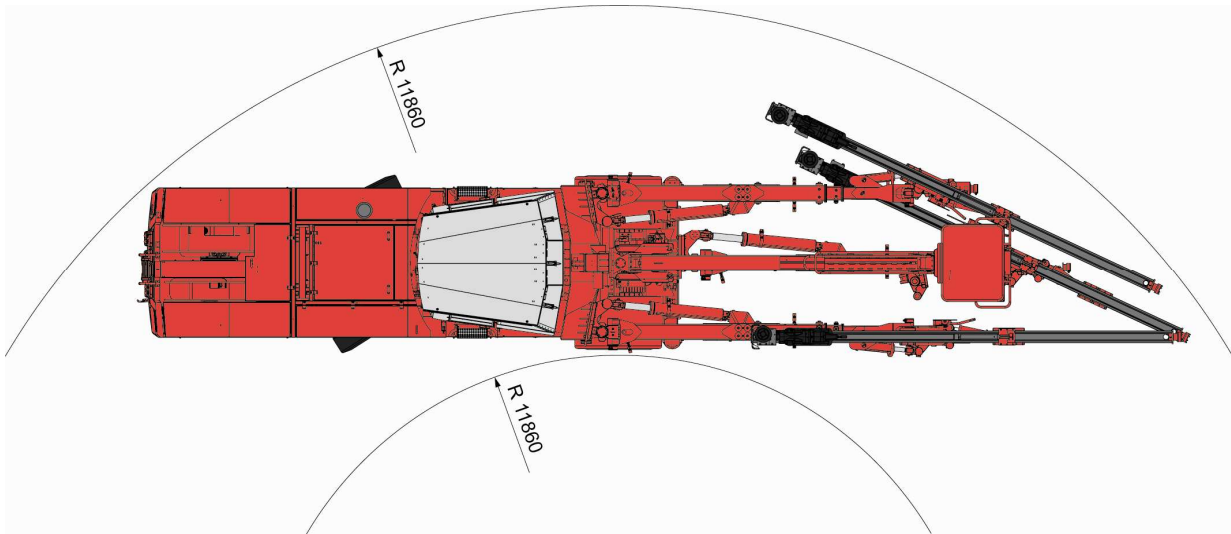
Control system	iDATA Automation system
Manual boom control	Electronic proportionally pilot controlled manual boom control , Electric parallelism and Manipulator mode.
Automatic boom positioning	Full automatic boom positioning according to drill plan; Boom self collision detection; Dynamic correct; Lock to target; Alternative reference line.
Drilling control	Torque control, Feed/percussion control, Feed/percussion manual control
Automatic cycle	One hole drilling automatics, Full round drilling automatics, Automatic hole length control
Adjustable drilling control parameters in operator panel	Torque setting, Feed-Percussion power level, Feed force deviation, Rotation speed
Other functions from operator panel	Rattling, Toggle water flow, Toggle air flow, Quick step functions, Adjustable threading mode
Collaring	Manual and auto collaring, Adjustable collaring parameters per hole type, Stepless feed speed adjustment with reverse, Rock detect
Ramp to full power	Adjustable two stage ramp to full power
Different drilling settings for hole types	10 configurable hole types, defined in drill plan or selectable at rig
Finishing modes	No flush, flush with water, air blow, end-rattling, with or without rotation
Drilling supervision	Anti-jamming; shank lubrication oil flow, air pressure and oil level; Stabilator pressure low; Rock detect; air pressure; water pressure; water flow, air flow
Shank lubrication	Boom specific
User Interface	Easy to learn, efficient point & select interface, Color screen 15", 1024 x 768 pixels, 65 000 colors; Ergonomic armrest controls; mouse controlled
Onboard diagnostics	On screen warnings, Function based diagnostics, Error and service log with transferrable log file
Parameter handling	Operator- and Service access levels. Backup and restore via USB
Data Collection	Efficiency measurement of drilling levels as per: round, service, user, total history; Realized pattern: hole start and end points; 13 MWD-parameters recorded; Display of used time and forecast of remaining drilling time on screen

Calibration	End user calibration, Total station calibration, Quick calibration with onboard laser, Quick calibration of linear sensors. Boom accuracy measurement and report generation possible on site by customer. Boom accuracy report generated by drill rig. Advanced boom depletion compensation, roll-over compensation and boom position compensation ensure the accuracy of the drilling booms.
Navigation methods	Tunnel laser- and total station navigation, curve calculation, restore previous navigation, Re-navigation during round
Assisting navigation features	Tunnel line with rig and plan position on screen, navigation sets, creation and editing of lasers, round length editing on rig. Wireless total station data transfer for Leica 1200 series
iSURE I Tunnel	iSURE is a tunneling excavation process control tool for producing the necessary information for the rig for optimized drilling and blasting. In addition to drill plan and tunnel line design, iSURE is used for data collection analysis and works as a learning tool to improve the work cycle and the process. iSURE excavation process control together with an accurate jumbo offer a concept by which the end user can improve their drill and blast process. Every rig is delivered with three licences to iSURE (iSURE I Tunnel). Additional licences and modules can be purchased as an option.
*Control system option	iPROF
*Systematic bolting	iBOLT
*Online MWD	Option
*Drill steel consumption monitoring	Option
*Drill rig performance analysis	iSURE II: Report
*MWD analysis	iSURE III: Analysis
*Bolt plan design and data collection analysis	iSURE IV: Bolting

Greasing system and *options

Centralized greasing points for carrier	Manual
Greasing unit with reel, pump and nozzle	Manual
*Automatic greasing system	Carrier and booms

Tramming dimensions



Cabin/Operator platform and *options

Cabin/Operator platform type	CABIN 3i
Cabin/Platform elevation:	Elevation 1000 mm
Safety	FOPS ISO 3449 Approved
Noise level (EN791, free field condition)	LpA = 75 dB (In cabin) LwA = 126 dB (Emitted)
Safety	Safety barrier in doorway
Safety	Illuminated stairs
Driving panel	Brake pressure gauges in control panel
Operation	Seat for 1 operator
*User interface options	User interface for 2nd operator (standing)
Ergonomy	Operator seat with neck support
Ergonomy	Led type interior lights
Ergonomy	Two reading lights
Ergonomy	Two tables in cabin
Ergonomy	Floor water-washable
Ergonomy	Air conditioning (filtering capacity EU 6/7)
Ergonomy	Vibration dampening
Ergonomy	Cabin heating during drilling and tramming
Interfaces	1 x USB 1 x programming socket 1x ethernet 1x serial port
Electricity outlets	2 x outlet for 230V 16A
Electricity outlets	1 x 12 VAC
*Reversing camera	Rear and side
*Boot washer	Outside cabin
*CD player/radio/MP3	Option

Electrical system and *options

Total input power	270kW
Main switch type	MSE3i
Standard voltages	380...690VAC
*Optional voltage	1 000 VAC
Voltage fluctuation	Max ± 10%
Star-Delta starter for 380 - 690V system	Yes
Automatic cable reel	1 x TCR6EHD
Cable reel control (in&out)	Operator station and remote at rear
*Remote control for reel(s)	Option
*Spooling device for cable reel	For voltages 690 - 1 000 VAC
*Ground fault and over current unit	VYK
*Electric cable rubber or PUR	Size and length depending on voltage
*Electricity outlet in front carrier	1 x 400VAC or 1 x Main voltage, Define pump power in order!

Lights and *options

Front Lights (Combined working and Driving lights)	8 x 35 W HID Xenon (front)
Rear Lights (Combined working and Driving lights)	4 x 35 W HID Xenon (front)
Rear Lights (Driving lights)	4 x 35 W HID Xenon (rear)
Rear brake/park lights	LED
*Remote joystick controlled spot lights	2 pcs
*Amber strobe light	1 pcs

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*Cleaning systems

*Pressure cleaning system with reel	5-15 bar
*High pressure cleaning system with reel	Max. 180 bar

Flushing system and *options

Flushing	Water
Water pump type	WBP 3 HP
Water pump capacity	375 l/min (15 bar)
Water pump inlet pressure	2 - 10 bar
Flushing water pressure	10 - 20 bar
Compressor type	CT28
Compressor capacity	2,8 m3/min (7 bar)
*Additional air capacity for hole cleaning with air	2 x 80 l Air receivers (incl. IP5 air cleaner)
*Air mist flushing	External air supply, (incl. air cleaner and flushing flow supervision)
*Air cleaner	IP5
*Water hose reel	THR 5E
*Water hose	1 3/4", 60m
Flushing	Water
Water pump type	WBP 3 HP

*Packages

*Package: Calibration, accuracy measurement and total station navigation set (excl. total station)	(excl. total station)
*Package: Remote monitoring and data transfer with WLAN	- WLAN connectivity with on-board WLAN modem - Remote monitoring - Remote data transfer
*Package: Anti-freezing	-Block heater for engine (including plug and 5 meter of cable) -Electric heater for hydraulic tank -Water circuit flushing with anti-freezer
*Regional package	EU
*TRH Rod handling system	- TRH rod handler for 12 - 16 ft extension rods - SCR centralizing retainer - PE Power extractor for HFX5T
*Package: Start-up drilling tools	For 45 - 51 mm holes
*Package: Measurement adapter kit	- Cables for Spare part programming and maintenance measurements

*Spare items

Spare HFX5T rock drill
Spare HFX5T rock drill with power extractor
Spare RD525 rock drill
Spare RD525 rock drill with power extractor
Spare wheel assembly for TC11 and TC12 carrier (back)
Spare wheel assembly for TC11 and TC12 carrier (front)

*Extra items

Special tools for HLX 5 / HLX 5T / HFX 5T / complete set (550 065 07)
Special tools for HLX 5 / HLX 5T / HFX 5T / field tool set (550 479 73)
Special tools for PE-45 (HLX 5 / HLX 5T / HFX 5T) / complete set (550 687 02)
Tunnel laser set
Documentation: Extra manuals (Paper copy), one set
Documentation: Extra manuals (Toolman), one set

*Optional features/components