

DT1131-JP UNDERGROUND DRILL RIG

TECHNICAL SPECIFICATION

DT1131-JP is a 3-boom electro-hydraulic jumbo for fast and accurate drilling in tunneling, cavern excavation and large scale underground excavation works. It is equipped with two basket booms and a unique boom selection which is specially designed for minibench applications.

The hydraulic controlled drilling system together with the HLX5 rock drills enables productive and high quality excavation together with high consumable lifetime. SB150 universal side booms have a large optimum shaped coverage and full automatic parallelism.

The middle boom SB90 is selected specially to fit minibench method. The unit can also be used for cross-cutting, bolt hole drilling and extension drilling applications. The powerful 4-wheel-drive axle steered carrier ensures rapid and safe tramming with good balance. All service points are well protected but easy to access.

KEY FEATURES

Coverage area	178 m ² (18 680 x 10 385 mm)
Hydraulic rock drills	3 x HLX5, 20 kW
Drill feeds	3 x TF500-12' (12' to 20')
Booms	2 x SB150 1 x SB90
Utility booms	2 x SUB5S-JP
Utility booms support	Standard
Control system	THC561, hydraulic
Hole length	3 440 - 6 180 mm
Hole diameter	43 - 64 mm
Turning radius	11 700 mm
Tramming /drilling width	3 010 mm / 3860 mm
Transportation width	3 010 mm
Tramming /drilling height	3 950 mm / 4 950 mm
Tramming length	16 070 mm (default feed)
Total weight	50 000 kg, depending on options



HYDRAULIC ROCK DRILL

Type of rock drill	3 x HLX5(TS2-232)
Percussion power	20 kW
Percussion pressure	Max. 225 bar
Percussion rate	67 Hz
Rotation speed	Max. 250 rpm (with OMS125)
Rotation torque	625 Nm (with OMS125)
Hole size (drifting)	43 - 64 mm
Hole size (cuthole)	76 - 127 mm
Recommended rod	T38 - H35 - R32 T38 - R39 - R35
Shank adapter	T38 (male)
Weight	210 kg
Length	955 mm
Profile height	87 mm

SIDE BOOM

Type of boom	2 x SB150(TS2-267)
Parallel coverage	159 m ²
Parallelism	Hydraulic
Boom extension	3 200 mm
Feed extension	1 650 mm
Boom weight, net	3 300 kg
Roll-over angle	358°

MIDDLE BOOM

Type of boom	1 x SB90(TS2-265)
Parallel coverage	92 m ²
Parallelism	Hydraulic
Boom extension	1 800 mm
Feed extension	1 650 mm
Boom weight, net	2 650 kg
Roll-over angle	358°

UTILITY BOOM

Type of utility boom	2 x SUB5S-JP (TS2-344)
Boom extension	2 x 2 000 mm
Turning basket	± 45°
Utility boom support	1 x Telescopic
Boom weight, net	2 800 kg
Max allowed load	330 kg (with safety canopy) 510 kg (without safety canopy)

FEED

Feed type	Feed force (Max.)	Total length (mm)	Hole length (mm)	Rod length (mm)	Net weight (kg)
TF500-12'	25 kN	5 270	3 440	3 700	500
TF500-14'	25 kN	5 880	4 050	4 305	530
TF500-16'	25 kN	6 490	4 660	4 915	560
TF500-18'	25 kN	7 100	5 270	5 525	590
TF500-20'	25 kN	7 710	5 880	6 135	620
TF500-21'	25 kN	8 015	6 185	6 440	640

HYDRAULIC SYSTEM

Operating principle	Hydraulic control
Powerpack	HPP555 (3 x 55 kW)
Filtration size (pressure / return)	20µ / 10µ
Oil tank volume	470 liters
Oil tank filling pump	Electric
Oil cooler (air actuated)	OA30 oil-to-air (1 x 30 kW)

DRILLING CONTROL SYSTEM

Type of control system	3 x THC561, hydraulic
Manual boom control	Manual boom control with hydraulic parallelism (hydraulic proportional levers)
Drilling control	Feed / percussion control
Automatic cycle	Stop and return automatics
Adjustable drilling control parameters in operator panel	Feed-percussion power level, feed force deviation, rotation speed
Other functions from operator panel	Rattling, return automatics selection, flushing selection, fast feed
Collaring	Manual collaring
Ramp to full power	Manually controlled ramp
Drilling supervision	Anti-jamming, shank lubrication oil flow, air pressure and oil level Stabilization pressure low/high (opt), air pressure, water pressure, water flow (opt), air flow (opt)
Shank lubrication	Boom specific
On-board diagnostics	Warning display with lights

ELECTRIC SYSTEM

Standard voltage	380 - 690 V (± 10%)
Total installed power	200 kW
Main switch gear	MSE30
IP classification	Specification TS2-132
Starting method	Star-delta starter 380 - 690 V
Automatic cable reel	TCR6EHD with spooling system
Cable reel control	Operator station
Front lights (combined working and driving)	12 x 50 W LED (24V)
Rear lights (combined working and driving)	4 x 50 W LED (24 V)
Rear brake / parking lights	2 x Red LED
Stair case service lights	LED (24V)

AIR AND WATER SYSTEM

Flushing of holes	By water
Water booster pump type	WBP3HP
Water pump capacity	375 l/min (15 bar)
Water pump inlet pressure	2 - 10 bar (Min.)
Flushing water pressure	10 - 20 bar
Shank lubrication device	SLU-3 (air / oil mist)
Air compressor	CTN10, (1.0 m ³ /min at 7 bar)
Oil consumption	180 - 250 g/h
Air consumption	250 - 350 l/min

OPERATOR'S SAFETY CANOPY

Safety canopy certification	FOPS (ISO 3449)
Platform elevation	1 000 mm
Operation	Standing drilling
Sound pressure level	According to EN791 Operator station: 103 dB(A) Emitted: 128 dB(A)
Safety	Safety gate in doorway Illuminated stairs
Driving panel	Brake pressure gauges in control panel
Ergonomy	Vibration dampening

CARRIER

Type of carrier	TC12
Steering system	Axle steering in engine end Orbitrol
Rear oscillation	± 8°
Ground clearance	400 mm
Diesel engine	QSB6.7, 164 kW, Tier 4i, Stage IIIB
Transmission	Hydrodynamic, Spicer HR32 000
Axles	Spicer 43R (front) / 213 (rear)
Tires	14.00-24 28RL
Service brakes	Hydraulically operated wet disc brakes
Parking and emergency brakes	SAHR type, fail safe wet disc brakes
Tramming speed	9 km/h (Horizontal) 4 km/h (14% = 1:7 = 8°)
Gradeability / sideways tilt	Max. 15° / 5°
Fuel tank	150 liters
Carrier stabilization	TJ60 (front), TJ75 (rear)
Hand throttle	Standard
Reduced tramming speed	3rd gear lockout
Hand held fire extinguisher	7.7 kg or 9 kg (type ABC)
Carrier centralized greasing	Specification 5-2110
Tramming alarm	Standard
Colour scheme	standard
Documentation	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

OPTIONAL FEATURES AND PACKAGES

Rock drill	
*Type of rock drill	RD520 instead of HLX5
Feed	
*Feed length	14', 16', 18', 20'
*Telescopic feed	TFX6/12, TFX8/14, TFX10/16
Rod retainer	SCR with TF feed (incl. safety wire) TRR1 incl. safety wire, add 35 mm length of the feed
Utility boom	
Safety canopy for utility boom	FOPS approved, sliding
Spot lights for utility boom	2x 17 W LED
Remote control for spot lights	2 pcs
Rod rack	For utility boom
Hydraulic system	
*Oil tank filling pump	Manual pump
Vacuum pump	For hydraulic system
*Biodegradable oils	Shell Naturelle HFE46/HFE68

OPTIONAL FEATURES AND PACKAGES

Drilling control system	
Constant speed drilling	Replaces normal feed-percussion control
Access detectors system	Mandatory in Europe (TS2-211)
Instrumentation	TMS DDSS3 (TF-feed only) TCAD+ with iSURE I tunnel & II report iSURE III analysis iSure IV bolting 1 or 2 additional user interface for the TCAD+
Multi-panels for TCAD	
Electric system	
*Electric cables	Specification TS2-121
Ground fault and overcurrent protection	VYK
Remote joystick controlled spot light	2 pieces
Amber flashing light	LED (24V)
Air and water system	
Flushing flow supervision	Option
*Air compressor	CT28 (2.8 m³/min at 7 bar)
Additional air capacity for hole cleaning with air	2 x 80 liters air receivers
Air mist flushing	External air supply, (incl. air cleaner and flushing flow supervision)
Air cleaner	IP5
Cleaning system	
LP system with reel	Up to 15 bar
HP system with reel	Up to 180 bar
Greasing systems	
Centralized greasing points	Carrier, and booms (5-2110)
Manual system	Specification 5-2110
Automatic system	Carrier, booms and utility boom
Operator's safety canopy	
*Safety cabin	FOPS / ROPS (ISO 3449)
Boot washer	At operator's station entrance
Fire suppression system	
Manual system	Ansul, 8 nozzles
Automatic system	Ansul, 8 nozzles
Carrier	
*Diesel engine	MB906LA, 170 kW, Tier 3, Stage IIIA
Rod rack	Under carrier
Tramming camera	Rear and side
Wheel chocks and holders	2 pieces
Extra items	
Spare rock drill	HLX5 or RD520
Spare wheel assembly	14.00-24 28RL
Special tools for rock drill	HLX5 or RD520
Tunnel laser set	
Documentation	Extra paper, Catbase, Link one manuals
Package: Anti-freezing	Block heater for engine, heater for hydraulic oil, water circuit flushing with air, antifreeze adding in water circuit.
Package: TRS Rod handling system	TRS rod handler for 10 - 16 ft extension rods
Package: Start-up drilling tools	For 45 - 51 mm holes

*) replaces standard feature