

# DB320 MINI ROTA-SONIC DRILL RIG



DB320 SUMMARY		
Penetration rates and bit life are optimised through the precise control the operator has over rpm, torque and bit weight.		The main drilling control panel is mounted on a tripod and is connected to the rig by an electric cable allowing an obstructed view of the drill string from a safe distance.
The main power source is a 104kW, 4-cylinder liquid-cooled diesel engine, which drives the open-centre hydraulic circuit (at a maximum operating pressure of 280 bar).		Emergency STOP switches are fitted on all control panels. A safety tripwire is also fitted along the length of the rod rack. Activating any of these safety devices immediately stops all functions.
The diesel engine is inside a sound-proof housing that greatly reduces the amount of noise during operation. The drill rig has a 24V DC electric circuit.		An arced, double hinged, rotation barrier provides protection from, and obstructs access to, the rotating drill string in tandem with pressure switches linked to the rotation feed. This allows the drill crew to open the barrier and gain access to the drill string to perform borehole advance and sample retrieval procedures, with an in built failsafe as the rotation feed is minimised at such time as the circuit is open
Load sensing circuitry on the diesel engine ensures optimum energy efficiency and transmission by adjusting fuel consumption to the required power output of the hydraulic system which powers all operating functions, tracking, set-up and drilling.		The crawlers are operated from a remote control panel. Two levers (for the left and right track sections) are used to activate and steer the crawler undercarriage. This remote control panel is normally securely stored at the rear end of the rig, and should be removed for remote operation of the rig. An E-Stop button is available also.
The hydraulically driven drill head provides plenty of flexibility to perform most common coring operations.		The rig has a Direct Coupled Feed Cylinder. Having the drill head carriage connected to the feed cylinder provides excellent control of bit weights and penetration speed.
		
DB320 DIMENSIONS:		DB320 MAIN FEATURES:
Transport Mode:	L: 6.62m; W:1.98m; H:3.45m	Superficial & Bedrock Coring Capabilities
Drill Mode (Mast Vertical):	L: 5.68m; W:1.98m; H: 6.80m	Standard or Lined Samples
Max (laden) Weight:	10,200 kg	SPT (C) Drop Hammer Capability
Ground Pressure:	5.37 psi / 37 KPa	In-Situ Sampling (UT)
Head Travel:	3.98m	412, T2-101, SWF & Geobor Wireline Adaptability
Tooling Size:	88mm to 273mm (3.5"-10")	Rotation Guarding, Trip Wire Switches & Emergency Stops
Hydraulic Fluid Capacity:	160 litres	On board cold pressure washer
Diesel Capacity:	230 litres	Wider Steel Track option to reduce ground pressure
Depth Capacity:	70m+	Flush Containment and Re-circulation option



## DB320 TECHNICAL DETAILS

Sonic Coring Head		Prime Mover		Hydraulic System	
Vibration Motor Flow	0-110 l/min @ 0-275 bar	Standard	DEUTZ BF4M1013EC Diesel	Max Flow	280 bar
Rotation Motor Flow	0-55 l/min @ 0-275 bar	Power Maximum	104Kw@2200rpm	Max Pressure	280 bar
Lubrication Motor Flow	20 l/min @ 30-60 bar	Diesel Tank Capacity	230 litres	Hydraulic Oil Volume	160 litres
Torque at 275 bar	240 da Nm	Fuel Consumption	195 g/kWh	Oil Cooler Capacity	16 kW
Speed	80 rpm / 15 rpm (ROM)	Electrical Circuit	24V		
Drill Mast & Feed System		Winches		Break-Out Cylinder	
Feed Stroke	4000mm	Max Pull on Inner Layer	9 kN	Max Pull	80 kN
Feed Speed - Down	3,9 m/min	Line Speed	35 m/min	Max Push	115 kN
Feed Pressure Control	+/- 34 N	Cable	6mm	Rod Rack	
Fast Feed Speed - Up	40 m/min	Rod Clamps		Dimensions L x W x H	3.12m x 0.47m x 0.32m
Fast Feed Speed - Down	66 m/min	Max. Diameter	220 mm	Capacity of 2, 3/8"	21
Pull Down Force	35 kN	Max. Capacity	175 kN	SPT Auto-hammer	
Pull Back Force	70 kN	Max. Breaking Torque	20.5 kNm	Drop Weight & Travel	63.5kg / 750mm
Dimensions & Weights		FMC Water Pump		Bredel Pump	
Length in Transport / Drill Mode	6.62m / 5.68m	Flow	75 lpm R20 FMC E04	Model	SPX40
Height in Transport / Drill Mode	3.45m / 6.80m	Pressure	35 bar	Max. Continuous Flow	6 m3/H
Width in Transport / Drill Mode	1.98m / 1.98m	Speed	580 rpm	Max. Intermittent Flow	9.6 m3/h
Total (Dry) Weight Approx.	9000kg	Water Pump		Max. Pressure	16 bar
Climbing Capacity	(Grade 60%) 30° approx	Flow	30 lpm HPW 200/30-45 ST	For more information on our capabilities please visit: <a href="http://www.geosonicdrilling.co.uk">www.geosonicdrilling.co.uk</a>	
Sound Level	Below 76dbA at 10m	Pressure	200 bar		
Welding Generator		Self-suction up to	3 m		
HWG 180/5K-33		Connection	¾" G Female		

