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# LX™ 4 GEO-TECHNICAL DRILL (DB520)

Technical Overview

## LX™ 4 GEO-TECHNICAL DRILL

HIGH DRILLING POWER IN A SMALL PACKAGE, THE MULTIPURPOSE LX™ 4 IS AN ESSENTIAL TOOL ON TODAY'S JOB SITE

### Power and Versatility

The LX4 features a powerful Deutz D914 L04 air cooled diesel engine that produces 53 kW (71 hp) of power at 2,300rpm. The LX4 also has a maximum breaking torque of 20.5 kNm (15,120 lb-ft) and 55 kN (12,364 lbf) of pull back force.

### Design

The LX4 is capable of both wireline and conventional coring as well as DTH, rotary and auger drilling methods. This multipurpose rig was specifically designed to be extremely versatile with its powerful steel crawlers, mast dump/raising ability and 220 mm double clamps.

### Safety

The LX4 comes loaded with standard safety features. The safety cage ensures drillers remain a safe distance from the drill string, while low speed and low torque rotation ensures safe rod management. The steel crawlers coupled with the LX4's upright stability make this machine extremely stable on uneven formations.



For more information on the LX™ 4 scan with a QR code reader on your smart phone.



## 1 TECHNOLOGY

500 mm mast dump for improved positioning on rough terrain

## 2 INNOVATION

Hydraulic side shift for easy rod-pulling and clear access to center line

## 3 SAFETY

Standard safety features include a safety cage, low speed and low torque rotation for safe rod management

## 4 VERSATILITY

220 mm double clamp for making and breaking rod joints quickly and safely

## 5 DRILL ANYWHERE

Powerful steel crawlers ensure mobility on difficult terrain

# LX™ 4 TECHNICAL INFORMATION

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<b>Drilling Depth Guidelines</b>		
	<b>Hole Depth Meters</b>	<b>Hole Depth U.S.</b>
<b>Core drilling</b>		
NQ / NQ2" / NV / NV2"	210 m	690 ft
HQ / HV	150 m	490 ft
PQ / PV	100 m	330 ft
<b>Rotary drilling (Tricone)</b>		
Hole diameter 216 mm (8.5 in)	120 m	390 ft
<b>Auger drilling</b>		
Hole diameter 150 mm (5.9 in)	15-20 m	49-65 ft
<b>DTH drilling package</b>		
Maximum size DTH hammer	98 mm (3-7/8 in) @ max 17,2 m <sup>3</sup> / min @ max 24 bar	
Maximum depth capacity	200 m	656 ft
Recommended hole size	115 mm	4.5 in
Maximum hole size	127 mm	5 in
Recommended rod size	76.1 mm	3 in

<b>Prime Mover</b>		
	<b>Metric</b>	<b>U.S.</b>
Standard	DEUTZ D914 L04 air cooled engine, COM III, 4 cylinder	
Fuel	Diesel	
Fuel Consumption	225 g/kWh	
Maximum Power	53 kW @ 2.300 rpm	71 hp @ 2,300 rpm
Electrical Circuit	12V	
Fuel Tank Capacity	60 l	16 gal

<b>Prime Mover for Higher Ambient Temperature / Elevations - Optional Equipment</b>		
	<b>Metric</b>	<b>U.S.</b>
Engine	DEUTZ BF4L914 air cooled engine, COM II, 4 cylinder turbocharged	
Fuel	Diesel	
Fuel Consumption	223 g/kWh	
Maximum Power	72,4 kW @ 2.300 rpm	94 hp @ 2,300 rpm
Electrical Circuit	12V	
Fuel Tank Capacity	60 l	16 gal

<b>Rotary Head DD52</b>		
	<b>Metric</b>	<b>U.S.</b>
Low Gear	4,890 - 977 Nm / 48-25 rpm	3,606 - 720 lb-ft / 48 - 250 rpm
High Gear	1,859 - 371 Nm / 140 - 740 rpm	1,371 - 273 lb-ft / 140 - 740 rpm
Bore - Inside Diameter	62 mm	2.44 in
Flushing Head - Inside Diameter	22 mm	0.87 in
Top Drive Flange	3 1/2" API Reg PIN	
Hydraulic Motor at Max / Min Displacement, Diesel Engine at 2200 rpm		
Gear Ratio	1st - 7.68 : 1	2nd - 2.92 : 1
Rotary Head Carriage with Side Shift		

<b>Rotary Head HY79</b>		
	<b>Metric</b>	<b>U.S.</b>
Low Gear	6,540 Nm / 39 rpm	4,824 lb-ft / 39 rpm
High Gear	320 Nm / 800 rpm	236 lb-ft / 800 rpm
Bore - Inside Diameter	52 mm	2 in
Flushing Head - Inside Diameter	24 mm	1 in
Top Drive Flange	2 3/8" API Reg PIN	
Gear Ratio	4.047:1	
Distance From Drilling Line to Chain	435 mm	17.12 in
Rotary Head Carriage with Side Shift and tip-out		

<b>Hydraulic System</b>		
	<b>Metric</b>	<b>U.S.</b>
Primary Pump	Bent axis, fixed displacement	
Maximum Flow	66 lpm @ 2,200 rpm	17.5 gpm @ 2,200 rpm
Maximum Pressure	250 bar	3,626 psi
Secondary Pump	Cassappa gear pump	
Maximum Flow	59 lpm @ 2,200 rpm	15.5 gpm @ 2,200 rpm
Maximum Flow (2nd)	48 lpm @ 2,200 rpm	12.5 gpm @ 2,200 rpm
Maximum Pressure	175 bar	2,538 psi hp
Oil Tank Capacity	200 l	53 gal

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<b>Drill Mast and Feed System</b>		
	<b>Metric</b>	<b>U.S.</b>
Feed Stroke	3400 mm	11.2 ft
Feed Speed - Up	21 m/min	69 ft/min
Feed Speed - Down	34 m/min	111 ft/min
Fast Feed Speed - Up	48 m/min	157 ft/min
Fast Feed Speed - Down	75 m/min	246 ft/min
Pull Down Force	25 kN	5,620 lbf
Pull Back Force	38 kN	8550 lbf
Drilling Inclination	45° horizontal to 90° vertical down	
Mast Dump	500 mm	1.6 ft
Max. Rod Length	3000 mm	10 ft

<b>Main Winch</b>		
	<b>Metric</b>	<b>U.S.</b>
Line Pull	20 kN	4,500 lbf
Line Speed - Bare Drum	44 m/min	114 ft/min
Cable Length, 12 mm	30 m	98.4 ft

<b>Rod Clamps</b>		
	<b>Metric</b>	<b>U.S.</b>
Maximum Diameter	220 mm	8.6 in
Maximum Clamping Capacity	175 kN	4,500 lbf
Maximum Breaking Torque	20,5 kNm	15,120 lb ft

<b>Centralizer - Rod Guide</b>		
	<b>Metric</b>	<b>U.S.</b>
Exchangeable Inserts for Rods	76, 89, 114, 127, 140, 168, 193, 220 mm (Choose required sizes)	

<b>Undercarriage</b>		
	<b>Metric</b>	<b>U.S.</b>
Type	Crawler mounted triple grouser steel tracks	
Maximum Driving Speed	1,5 km/h	1 mph
Axis Distance	1715 mm	67.5 in
Maximum Ground Pressure	0,053 MPa	7.7 psi
Climbing Capacity (with winch support)	(Grade ability 60%) approximately 30°	
Optional Undercarriage	Trailer Mounted, Skid Mounted	

<b>Mast Extension for Longer Rod Pull</b>		
	<b>Metric</b>	<b>U.S.</b>
Maximum Rod Pull	2 x 3 m (6 m)	20 ft
Fitted onto Standard Mast to Pull 6 m Rod		
Rod Storage	30 pieces of 76 mm (3 in) rods	
Towing Hook on Rear of Rig		
Air Connection on Rear of Rig for DTH Compressor		

### **Optional Equipment**

<b>Wireline Winch</b>		
	<b>Metric</b>	<b>U.S.</b>
Line Pull - Bare Drum	6,5 kN	1461 lbf
Line Pull - Full Drum	4,0 kN	90 lbf
Line Speed - Bare Drum	100 m/min	328 ft/min
Line Speed - Full Drum	200 m/min	656 ft/min
Cable Length 6 mm	250 m	820 ft

<b>Mud Pump DP100</b>		
	<b>Metric</b>	<b>U.S.</b>
Continuous Flow	90 l/min	23.7 gpm
Pressure	30 bar	435 psi

<b>Mud Pump DP200</b>		
	<b>Metric</b>	<b>U.S.</b>
Continuous Flow	160 l/min	42 gpm
Pressure	30 bar	435 psi

<b>FMC Pump L0918</b>		
	<b>Metric</b>	<b>U.S.</b>
Flow	100 l/min	26 gpm
Pressure	45 bar	652 psi

<b>Standard Penetration Test (SPT) Auto Hammer</b>		
	<b>Metric</b>	<b>U.S.</b>
Impact Rate	1-30 bpm	
Travel Length	762 mm	30 in
Hammer Weight	63,5 kg	140 lb

<b>Oil Line Lubricator for DTH Drilling</b>		
	<b>Metric</b>	<b>U.S.</b>
Oil Tank Capacity	20 l	5.3 gal

# LX™ 4 TECHNICAL INFORMATION

## High Temperature Oil Cooler

Upgraded Oil Cooler For Ambient Temperatures Over 35°C (95°F)

## Night Lights

No. of Pieces	4
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## Jaw Body for Clamp and Break Out for Coring

Jaw Plates For Coring	BQ™ / BW
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(Choose Required Sizes)	NQ™ / NW
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	HQ™ / HW
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	PW
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## Mist Pump

	Metric	U.S.
<b>Flow</b>	30 l/min	8 gpm
<b>Pressure</b>	200 bar	2,900 psi

## Accessories

<b>Auxiliary Work Vice</b>	180 mm wide, 220 mm long, 120 mm deep clamp, rotating mounting base and separate rod support work bracket
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<b>Remote Control</b>	Radio remote control for driving
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<b>Auxiliary Diesel Filling Pump</b>	Electric powered diesel filling pump
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<b>Instrument Vandal Covers</b>	Lockable covers for control panels and instruments
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<b>Rubber Crawler Pads</b>	Full set (76 pcs)
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<b>Tool Box</b>	With necessary set of tools for basic maintenance and lubrication
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## Environmental Oil In Hydraulic System

## Weight

Operational Weight = approx. 6,500 kg (14,330 lb)	Consisting of: Diesel power unit group Deutz D914L04 4.10 liter 4 cylinder Hydraulic module Main winch c/w cable Hydraulic mast raising (independent) Lower mast assembly Levelling jacks (hydraulic) Rotary head Crawler - triple grouser type 12V Battery Foot Clamp and breaking clamp
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Dry Weight = 6,200 kg (13,670 lb)
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Max. pull on inner layer climbing capacity without support winch grade ability 37%, approx. 20°
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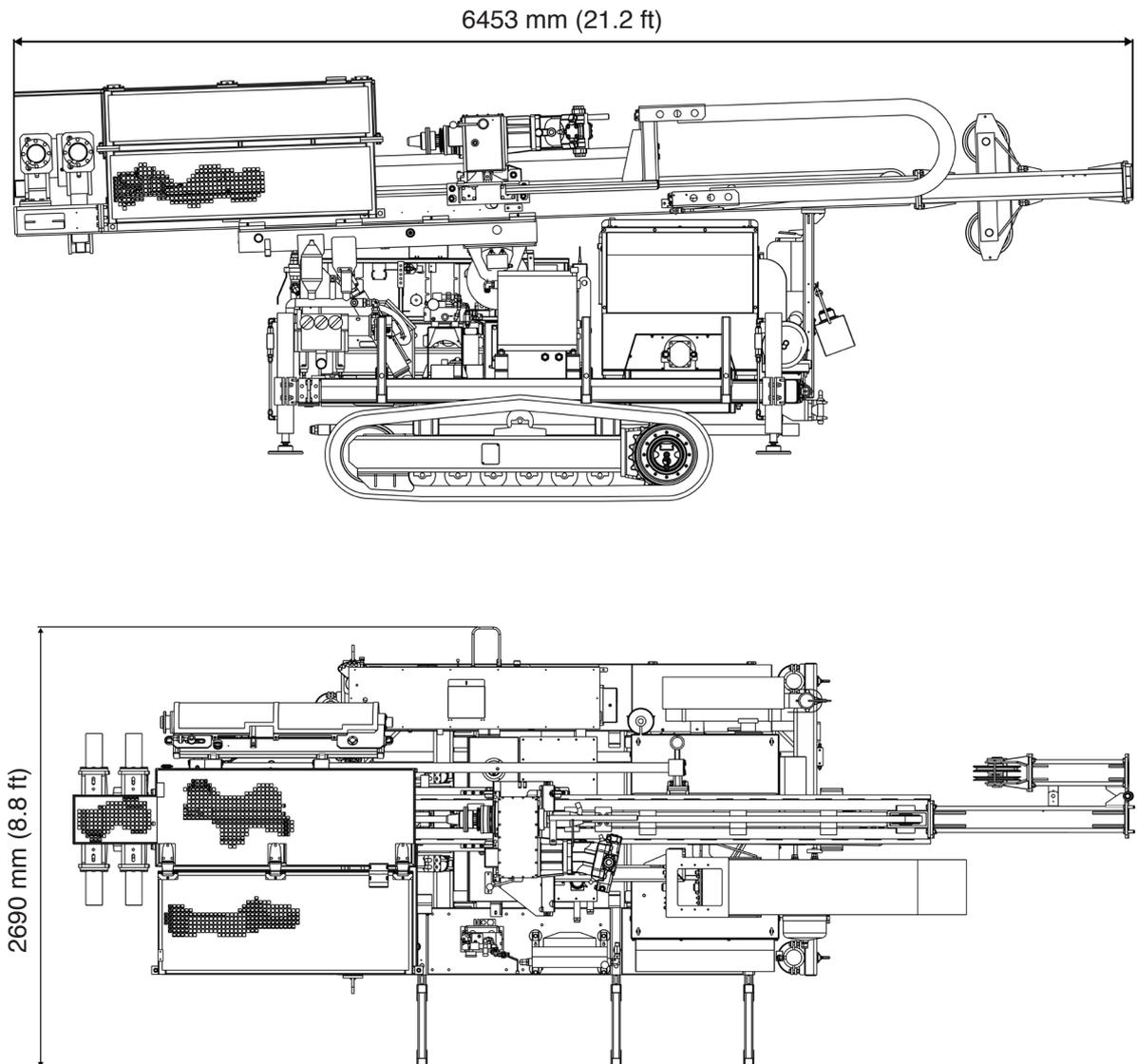
## Measurements

Length:  
6500 mm (21.3 ft)

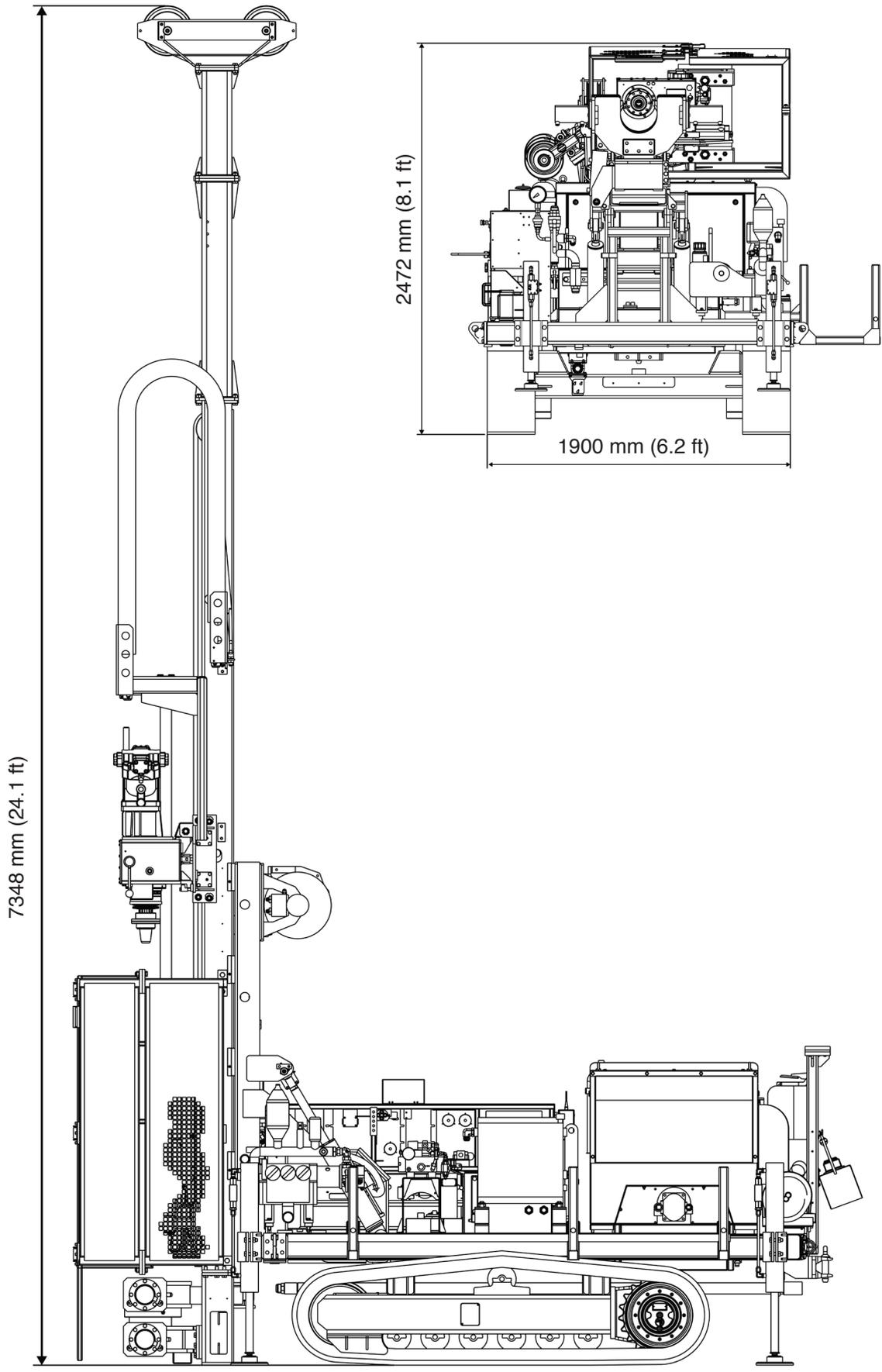
Height:  
2470 mm (8.1 ft)

Height (with mast extended): 7400 mm (24.3 ft)

Width (without rod rack):  
2000 mm (6.6 ft)



Measurements



# NOTES



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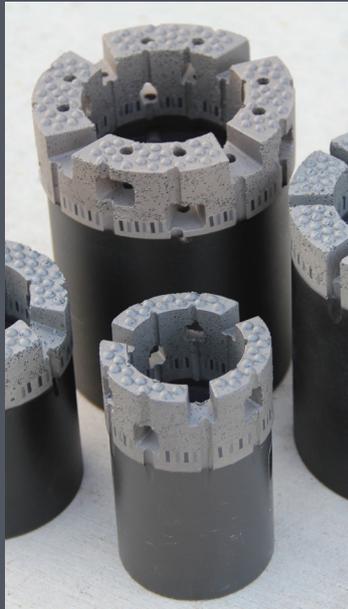
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## MINING AND EXPLORATION DRILLING PRODUCTS



Diamond Products



Genuine Q™ Wireline  
Tooling



Rods and Casing