



# LX™ 16 MULTI-PURPOSE DRILL (KWL1600)

Technical Overview

## LX™16 MULTI-PURPOSE DRILL

THE LX™16 DELIVERS EXCEPTIONAL PERFORMANCE COUPLED WITH USER-FRIENDLY OPERATION AND INDUSTRY LEADING SAFETY.

### **Multipurpose**

The LX16 delivers exceptional performance coupled with user-friendly operation and industry leading safety. As a true multipurpose drill, the LX16 is a robust and versatile platform that can be configured for both reverse drilling (RC) and diamond drilling applications. The RC capability is ideal for collaring new holes and negating the need for an additional rig for initial drilling through broken and loose surface material.

### **Durable**

The highest quality hydraulic pumps and motors available have been integrated into this powerful design to create a reliable machine that can cope with the toughest conditions.

With an optional RC rod handler, this multi-purpose drill is a market leader in safety and performance.



For more information on the LX™16 scan with a QR code reader on your smart phone.



### 1 TOP MOUNTED MAINLINE

Improves reliability and safety by keeping cable in tension and preventing bird nesting

### 2 TOP DRIVE 2 SPEED HEAD

Floating spindle makes for simple rod start and allows high speed for diamond drilling and high torque for RC drilling

### 3 EXTENDABLE OPERATOR CONSOLE

The simple and uncomplicated control panel of the LX16 has an advanced ergonomic layout, capable of extending 800 mm and turning 30 degrees

### 4 MAST

The LX16's powerful mast is capable of 9 m rod pulls at an impressive 16,400 kg of pullback and 9,620 kg of thrust

### 5 FOOT CLAMP

The LX16's foot clamps are eccentrically loaded and hydraulically operated, allowing for a higher weight holding capacity

### 6 ACOUSTIC ENCLOSURE

Lowers operating noise levels

### OPTIONAL BLY RC ROD HANDLER

Fail-safe hands-free rod handling and flexible pick up positions improve operator safety

# LX™ 16 TECHNICAL INFORMATION

Drilling Depth Guidelines				
Core Drilling				
Drill Rod / Core Barrel	Dry Hole Depth (m)	Fluid Filled Hole Depth (m)	Dry Hole Depth (Ft)	Fluid Filled Hole Depth (Ft)
NQ	2,076	2,379	6,811	7,805
NQ V-Wall™	2,491	2,854	8,173	9,364
HQ	1,394	1,598	4,573	5,243
HQ V-Wall™	1,918	2,198	6,293	7,211
PQ	870	962	2,756	3,156
PQ V-Wall™	1321	1514	4,334	4,967
Reverse Circulation				
Drill Rod	Hole Depth (m)		Hole Depth (Ft)	
4-1/2" (114.3 mm)	430		1,419	
	Hole Sizes: 6-1/2" (165.1 mm)			

Mast		
	Metric	U.S.
Design	Fully welded RHS lattice construction with cross bracing Box section mast with 100 mm (3.94") wide drive head wear face/ side	
Length	12.35 m	40.51 feet

Traverse Actuation		
	Metric	U.S.
Head Traverse Length	7.5 m	24.61 feet
Retract Force	181.5 kN	40,700 lb
Retract Speed @ 1800 engine RPM	1.067 m/sec	42 in/sec
Pull Down Force	94.4 kN	21,206 lb
Pull Down Speed Rapid	800 mm/sec	31.5 in/sec
Fine Feed Speed	0-110 mm/sec	0-4.33 in/sec

Rotation Drive Head		
	Metric	U.S.
Model	LX™ 16 (floating spindle)	
Floating Spindle Thread	3-1/2 inch IF RH male	
Floating Spindle Bore	70 mm	2.8 in
Spindle Thread (Upper)	70 mm (2.8 in) 8 TPI LH female	
Drive Motor	Denison M14v axial piston - variable/reversible	
Hydraulic Working Pressure	293 bar	4,250 psi
Drive Head Side Shift (hydraulic)	457 mm	18 inch



### Torque and RPM Rating

(Based on Engine Speed of 1,800 rpm)

	Displacement	Oil flow	Torque		Output Speed
	in <sup>3</sup> /rev	U.S. gpm	NM	lbft	RPM
Core Drilling		118	2,100	1,548	925
2.0:1	10	118	1,500	1,106	1,250
Reverse circulation Drilling		118	18,100	13,408	105
16.52:1	10	118	11,363	8360	157

NOTE: Maximum spindle speed on Drive head is 1300 RPM with motor at minimum displacement of 10 in<sup>3</sup>. Exceeding these speeds may result in damage to the unit.

### Dump Mast

	Metric	U.S.
Stroke	2 m	6.56 ft
Locking	Hydraulic Cylinder Locking System (hands free - vertical to 45°)	

### Haul Winch

	Metric	U.S.
Haul Winch Travel	11 m	36.1 ft
Hoisting Capacity	152.5 kN	34,100 lb
Hoisting Speed	1.1 m/sec	3.8 ft/sec
Rope Usable Length	14 m	45.9 feet

### Wireline

	Metric	U.S.
Drum Capacity		
Cable Size 6 mm (0.24")	2,300 m	7,545 ft
Cable Size 8 mm (0.32")	1,300 m	4,265 ft
Lift Capacity Bare Drum		
Bare Drum	14.72 kN	3,307 lb
Full Drum	7.85kN	1,774 lb
Hoist Speed Mid Drum	4 m/sec	157 in/sec
Rope to Table Alignment	Forward Tilting Drum	
Cable Supplied	1,200 m @ 8 mm	3,937 ft
or	2,000 m @ 6 mm	6,562 feet @ 0.24 in

### Hose Reeler

	Suspends all drive head travelling hoses, keeping them away from operator and in tension to prevent snaring and hose damage.
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# LX™ 16 TECHNICAL INFORMATION

Base Frame Assembly		
	Metric	U.S.
Length	7.9 m	25.92 ft
Width	2.5 m	8.2 ft

Jack Leg Assemblies		
	Metric	U.S.
Lift Capacity (per leg)	188.5 kN	42,284 lb

Power Pack		
	Metric	U.S.
Engine	Caterpillar CATC13	
Electrical System	24 Volt	
Braking @ 1800 rpm	328.2 kW	440 HP
Engine Speeds	700 - 1800 rpm	
Torque @ 1400 rpm	2010 Nm	1482.5 lb/ft
Engine Speeds (Diamond Drilling)	1200 - 1800 rpm	
Estimated Fuel Burn	20 - 24 L/hr	5 - 6 gal/hr
Air Filtration	Donaldson FVG16-0152 with safety element	
Pump Group	Dual funk pump drive 59000 series (2 Denison P16 pump groups)	
Hydraulic Piston Pump Group	Denison triple vane - rotation (water pump, servo, spare)	
Hydraulic Vane Pump Group	Denison triple vane - rapid feed (rod handler, auxiliary, hydraulic cooler fan)	

Control Console	
Position	L/H rear corner of rig base
Extension	800 mm (31.5") travel to facilitate visibility of work table whilst angle drilling
Yaw	Cabinet slews 30° away from mast to facilitate visibility of work table
Console Access	Hinged access doors both sides of console
Platform	Fold up 'jump up stand' for operator
Layout	All controls and gauges ergonomically positioned for operator comfort
Pilot Control Lever Functions	Rapid feed, rotation, haul winch, wire line winch, rod spinner
Main Load Sense Control Valve	
Rapid feed	Denison Lokomec CVG31
Rotation, haul winch and wireline winch	Denison Lokomec CVG33
Water Pressure	Panel Mounted, 0-3000 psi

Safety Cage	
Safety Cut-out	Opening cage restricts oil flow to drive head motor thus limiting drive head rotation speed

Foot Clamp	
Brand	LX™ hydraulic foot clamp
Jaws	PQ/HWC, HQ and NQ (one set of jaw holders supplied for use with HQ and NQ jaws)

Water Pump		
	Metric	U.S.
Water Pump	FMC L1118 DISC	
Water Pump Delivery Pressure	103 bar	1500 psi
Fluid Delivery	264 Lpm	65 U.S. gpm
Hydraulic Drive Motor	Volvo F12-110	
Drive Coupling	Fenner Rubber Tyre	
Pressure Gauge	Analogue read out in gallons (located in control console)	
* Location above or below deck depends on carrier chassis width		

Hydraulic Oil Cooler		
	Metric	U.S.
Hydraulic Oil Heat Rejection	45 kW	2,560 BTU/min

Power Breakout STD	
Type	Cylinder actuated mounted on lower right hand side of mast
Tool	Wrap around Spanner

Air/Fluid Manifold	
Valves	50.8 X 50.8 mm (2 x 2 inches) Ball valves with high temp seals
	1 x actuated manually
	1 x actuated hydraulically
Air Inlets	Auxiliary and booster
Air Outlets	Fitted with directional elbows to vent air away from operator

Fire Suppression	
Description	NPF fire suppression system mounted inside acoustic
Activation	Two (2) manual activation points and automatic thermal activation
Foam-based Fire Suppression System	Operating Temperatures: 12°C - 100°C

Manuals	
Operators (x2)	Standard operating and safety procedures
Spare Parts (x2)	Boart Longyear™ manufactured components and hydraulic circuits

# LX™ 16 TECHNICAL INFORMATION

Warranty	
	Six (6) months against faulty workmanship
	Individual manufactures warranty on all components as per our terms and conditions of sale

Commissioning	
	Upon commencement of normal drilling operations, BLY to coordinate on-site commissioning with client
	Travel and accommodation costs at client's expense

Options		
	Metric	U.S.
LX™ Rod Handler (Reverse Circulation)	Inclusion of a rod handler typically requires the following:	
	Tilting rod bin	
	Mast rod tray	
	Standard hand railing removed or modified	
	Mast ladder MUST be removed	
Tilting Rod Bin	Recommended if rod handler is fitted	
	This includes rod bin verniers, tilt plates, head board and associated hydraulics	
	Verniers tubes are included in standard base frame structure enabling this to be retro fitted at a later date	
Mast Rod Tray	Required if rod handler is fitted	
	Fitted into the mast, this supports the drill rod to facilitate alignment during make/break actions while using a rod handler	
	Mounting points are included in standard mast frame structure enabling this to be retro fitted at a later date	
Fuel Tanks	1000 L (264 US gal) deck mounted fuel tank mounted behind mast rest	
	540 L (143 US gal) alloy round mounted to truck chassis rail, depending on available space	
Drilling Platform		
Base	Folds up for rig transport when mast is lowered	
Width	1,825 mm	71.85 in
Length	2,065 mm	81.3 in
Rig Lighting	Tower Mounted Floodlights (x4)	
	Console light (x1)	
	High Amperage alternator (customer's choice)	
Rod Spinner		
Rod Sizes	BQ, NQ, HQ, PQ	
Extension Subs	BQ, NQ, HQ, PQ	
Mounting	Lower right hand side with swing in/out	



### Weight

Weight = 21 000 kg (46,297 lb)

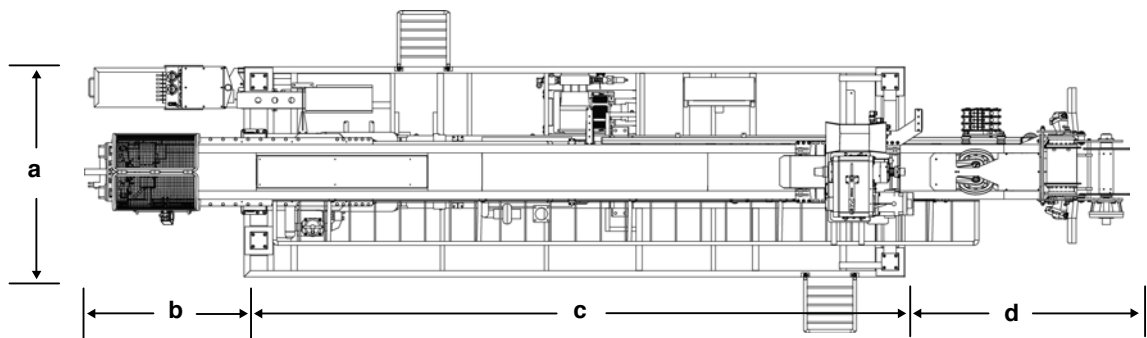
Consisting of:

- Mast
- Hydraulic Module c/w Control Console
- Haul and Wireline Winch
- Power Pack
- Rotation Drive Head
- Base Frame Assembly
- Safety Cage
- Acoustic Cover
- Foot Clamp
- Water Pump

### Drill - Top View

a = 2,500 mm (98.42 in)  
c = 7,900 mm (311.02 in)

b = 1,909 mm (75.16 in)  
d = 2,684 mm (105.67 in)

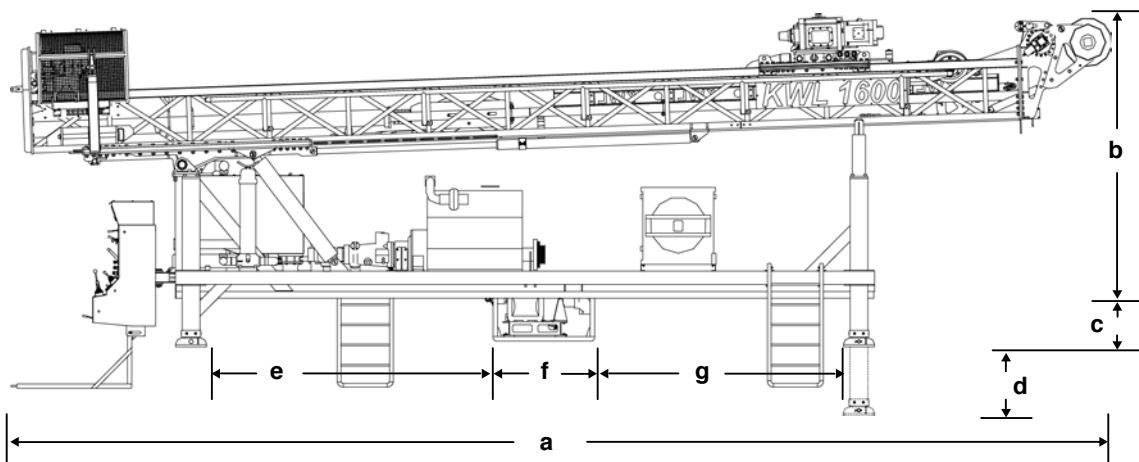


# LX™ 16 TECHNICAL INFORMATION

## Drill - Side View

a = 12,494 mm (491.89 in)  
 c = 554 mm (21.81)  
 e = 3,237 mm (127.44 in)  
 g = 2,812.5 mm (110.73 in)

b = 3,232 mm (127.24 in)  
 d = 1,250 mm (49.21 in) - Jack Leg Extended  
 f = 1,145 mm (45.08 in)



### Rig Carrier (by Client)

The standard LX™ 16 drill is designed to suit a Mercedes Across 4144 8x8 truck. Selection of an alternate carrier should be done in conjunction with the above diagram to ensure wheels, fuel tanks, transmission, suspension and other 'furniture' will not foul with the rig jack legs. A minimum chassis specification will need to be met prior to the rig being mounted to it. Additionally, care should be taken that weight and dimensional envelopes are in accordance with local statutory vehicle guidelines. In some instances, permits may be required.

NOTE: Mounting the rig to tracks is non-standard, please contact your Boart Longyear representative.



CD 14894

104

109

14894

104 - 109

#2

CD 146

74-78M

#19

CD 14894

50-54M

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CD 14894

50-54M

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## MINING AND EXPLORATION DRILLING PRODUCTS



Diamond Products



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Tooling



Rods and Casing