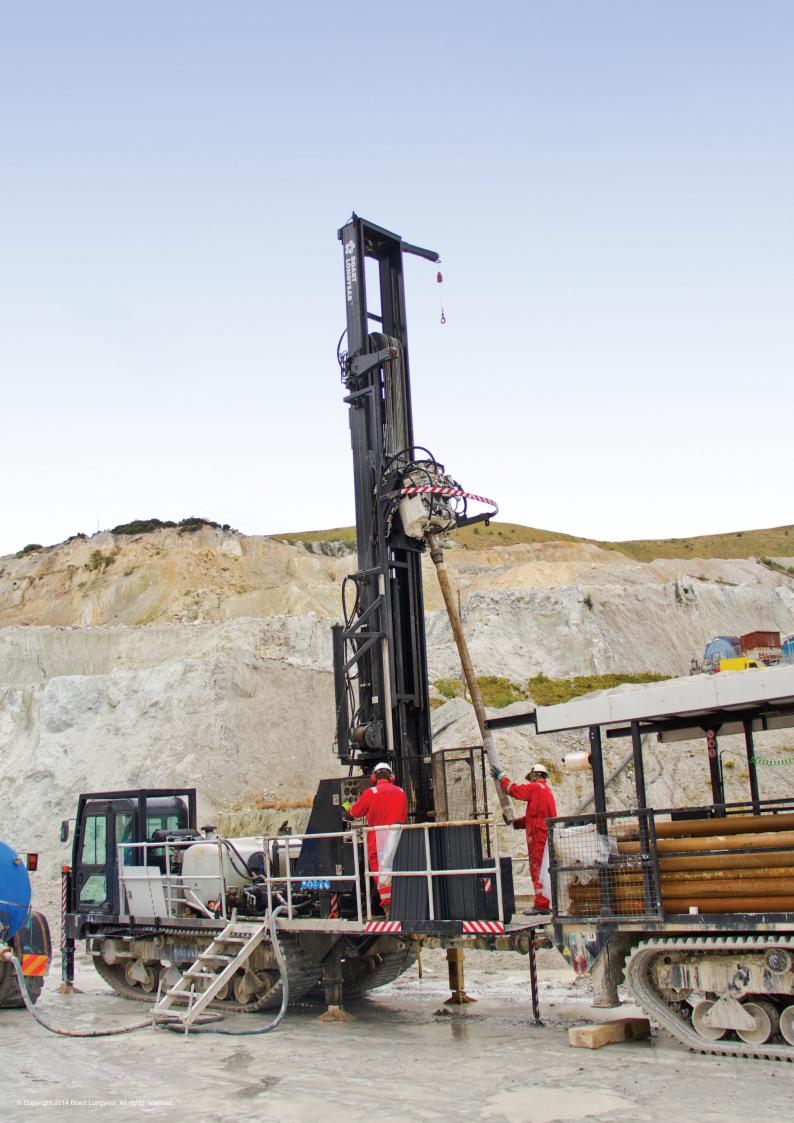


& BOART LONGYEAR



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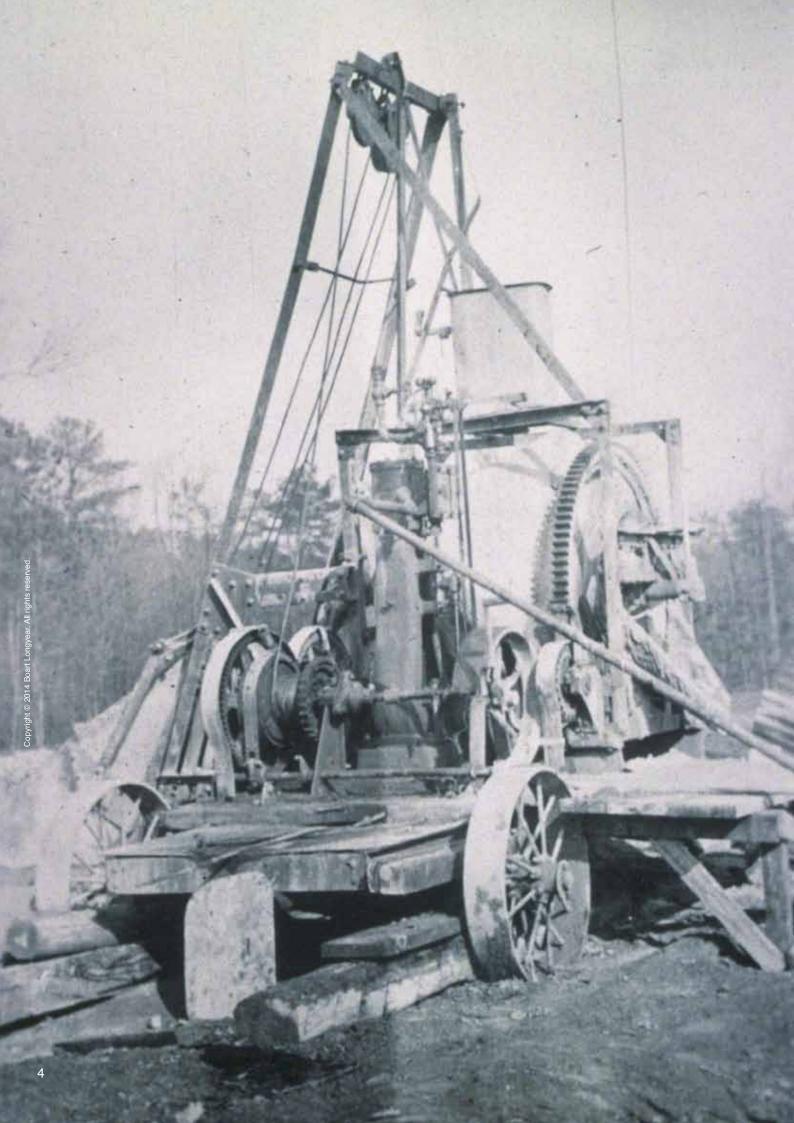
**RC** Tooling

UMX™ Bits



# INNOVATING PRODUCTIVITY

120+ Years of Drilling Innovation 5 Field-developed Reliability 5



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# 120+ YEARS OF DRILLING INNOVATION

In 1888, Edmund J. Longyear, a mining engineer from the first graduating class at the Michigan School of Mines, drilled the first diamond core hole in the Mesabi Iron Range in northern Minnesota. Shortly afterward, he formed a contract diamond drilling company to serve the rapidly growing U.S. iron ore mining and steel industry.

In 1912, the E.J. Longyear ("Longyear") Company released its first price list, which featured 19 drill models with drilling capabilities between 750 and 5,000 feet. Those drills were powered mainly by steam engines, which later would be replaced by internal combustion engines.

During the following two decades, from 1912 to 1932, the company expanded internationally into Canada, Cuba, China and Africa.

Today, Boart Longyear offers drilling services in over 40 countries throughout all regions of the globe.

# FIELD-DEVELOPED RELIABILITY

As the only global integrated drilling services and products provider, Boart Longyear is able to combine engineering excellence, global manufacturing facilities and the most experienced drilling services group in the business. The result is equipment and tooling that are the most trusted and reliable in the industry, providing maximum productivity and safety.







### THE GENUINE Q™ WIRELINE SYSTEM

**Global Drilling Equipment and Performance Tooling** 

#### INDUSTRY PROVEN, PRODUCTIVITY DRIVEN

Boart Longyear is trusted by drillers worldwide for delivering reliable, safe and powerful drilling equipment including the industry-leading genuine Q™ wireline system.

The genuine Q system, proven over years of success, delivers integrated compatibility of standard and V-Wall™ coring rods, advanced in-hole core retrieval systems and long-lasting diamond bits.

The Q system extends productivity through reliable, safe and powerful exploration tooling.

Wireline System, Please Visit:

www.BoartLongyear.com







# **SURFACE EXPLORATION**

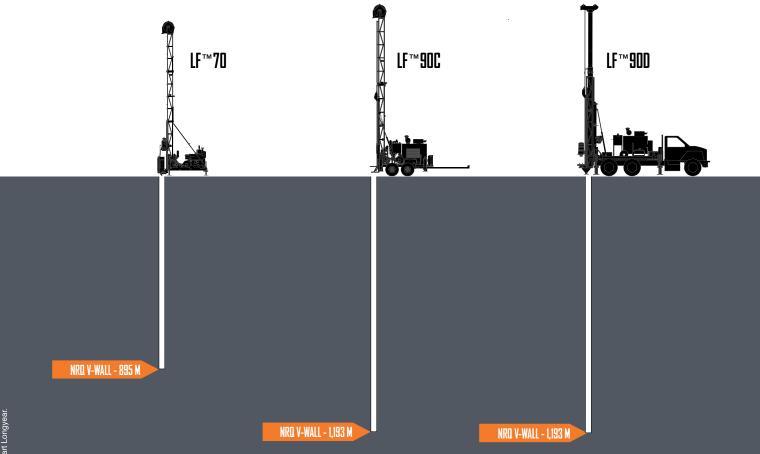
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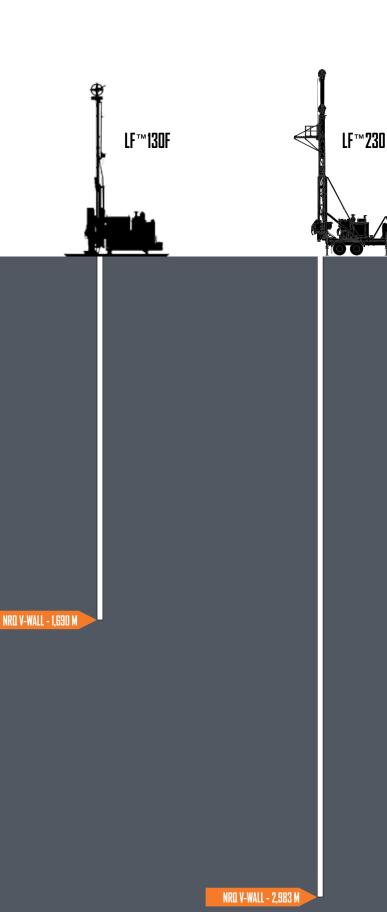
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### SURFACE DRILL DEPTH COMPARISON







# **LF**<sup>™</sup>**70**

The LF™70 is one of the most recognized small-format drills in the industry. Its lightweight, flyable components are able to be assembled and reassembled in under an hour and offers a depth capacity of 895 meters\*.

With its innovative modular design, this lightweight exploration rig is ideal for drilling in remote locations.

#### LIGHTWEIGHT AND MOBILE

The LF70 modular design consists of seven lightweight components that are heliportable for reaching remote locations. Reduced downtime when mobilizing between sites and a compact footprint decrease the environmental impact.

#### PERFORMANCE

A rigid mast design and patented Nitro-Chuck™ provide superior performance and reliability in the toughest conditions.

#### **MAINTENANCE**

The LF70's simple hydraulic system is easy to operate and maintain and features lift-to-shift levers which provide additional operator safety.

#### VERSATILITY

The LF70 is ideal for both wireline/conventional coring and rotary drilling with tri-cone bits.



Specifications	Metric	U.S.
Depth Capacity	895 (NRQ V-Wall)*	2,936 (NRQ V-Wall)*
Drill Rod Size	BQ to PQ	
Main Hoist	53.4 kN	12,000 lb
Pull Force	62.9 kN	14,137 lb
Rod Pull	6 m	20 ft
Engine	Cummins® QSB 4.5 L	
Engine Power	110 kW	148 hp

\*See page 11

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BDARTLONGYEAR.COM/LF7D





Working from a proven platform, the LF™90C hydraulic diamond core drill comes equipped with a Cummins® Tier 3 engine to meet today's stringent emission requirements.

The simple but powerful hydraulic system and ergonomic controls make this a machine of choice when drilling in harsh conditions.

#### LIGHTWEIGHT

The LF90C is a compact drill rig weighing only 5,656 kg. The drill can be easily mounted on a towing group with hydraulic jacks and towed to remote locations.

#### RIGID CONSTRUCTION

Modeled after the LF™70 surface coring drill, the LF90C is a workhorse featuring a large power pack and solid lattice mast design.

#### RELIABLE

A simple hydraulic and structural design makes this drill easy to operate and maintain.

#### MODULAR DESIGN

Modular layout of components on the drill makes it easy to replace worn components in the field, minimizing downtime.

#### VERSATILILTY

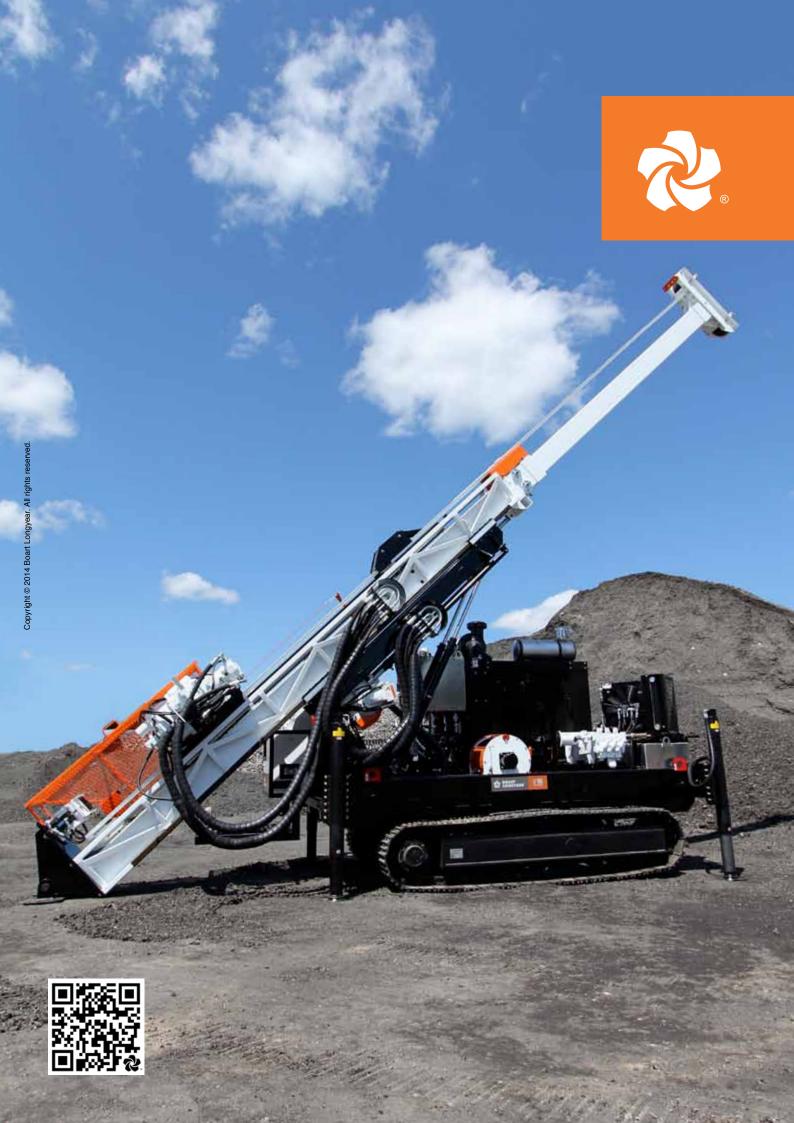
The LF90C is ideal for both wireline/conventional coring and rotary drilling with tri-cone bits.



Specification	Metric	U.S.
Depth Capacity	1,193 (NRQ V-Wall)*	3,915 (NRQ V-Wall)*
Drill Rod Size	BQ to PQ	
Main Hoist	71.2 kN	16,000 lb
Pull Force	111.8 kN	25,133 lb
Rod Pull	6 m	20 ft
Engine	Cummins® QSB 6.7 L	
Engine Power	153 kW	220 hp

\*See page 11

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LF90C





The LF™90D surface coring drill is an advanced addition to the LF™ series, featuring ergonomic controls, advanced safety features with a telescopic dump mast.

The LF90D is able to meet any operational challenge in the field.

#### MODULAR DESIGN

Modular layout of components on the drill makes it easy to replace worn components in the field, minimizing downtime.

#### SAFE

Advanced safety features such as a rotation barrier, mainline winch tensioner and an optional wireline spooler ensure safety in tough drilling conditions.

#### RFI IARI F

A simple hydraulic and structural design makes this drill easy to operate and maintain.

#### MOUNTING OPTIONS

The LF90D surface coring drill features a telescopic dump mast making it ideal for truck or crawler mounting to suit site conditions.

#### VFRSATILIITY

The LF90D is ideal for both wireline coring and rotary drilling with tri-cone bits.



Specification	Metric	U.S.
Depth Capacity	1,193 (NRQ V-Wall)*	3,915 (NRQ V-Wall)*
Drill Rod Size	BQ to PQ	
Main Hoist	71.2 kN	16,000 lb
Pull Force	111.8 kN	25,133 lb
Rod Pull	6 m	20 ft
Engine	Cummins® QSB 6.7 L	
Engine Power	153 kW	220 hp

\*See page 11

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BDARTLONGYEAR.COM/LF9DD



# LF™130F

Designed to operate in remote locations, the LF™130F coring rig is the only rig in its class that offers large diameter PQ™ drilling capabilities.

The LF130F is heliportable, breaking down into eleven easy-to-manage modules, with features like balanced lifting points and quick-connect hydraulic couplings to ensure quick and reliable setup and breakdown.

#### POWER AND VERSATILITY

The LF130F surface core drill is the only flyable rig in its class that has the capability of drilling up to PQ size. This drill brings together Boart Longyear's most successful drill technology.

#### SAFETY

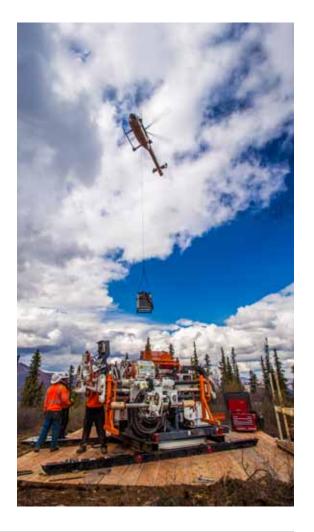
The LF130F includes the fail safe Nitro-Chuck™ and LM™ series rod handler option which dramatically reduce manual rod handling. In addition, the LF130F includes a laser safety zone and lift-to-shift control levers that prevent accidental actuation.

#### HFI IPNRTARI F

Uniquely designed to be heliportable, the LF130F consists of 11 easy-to-manage flyable modules with strategically placed lifting points and quick-connect hydraulic couplings to ensure fast setup and breakdown, in less than an hour.

#### PULL WITH HEAU

The biggest functional difference from the other LF surface drills is that the LF130F pulls with the head while the other surface drills utilize a hoist.



Specification	Metric	U.S.
Depth Capacity	1,690 m ( NRQ V-Wall)*	5,545 ft (NRQ V-Wall)*
Drill Rod Size	BQ to PQ	
Pull Force	127.6 kN	28,686 lb
Rod Pull	3 m	10 ft
Engine	John Deere™ 4045HF485 4.5 L	
Engine Power	128 kW	172 hp
Fly Weight (11 modules)	680 kg max each	1,500 lbs max each

\*See page 11

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/LF130F



## LF<sup>™</sup>230

The LF™230 has the greatest depth capacity in the LF™ series. It features a rugged design, compact footprint, high torque and rpm and a telescopic dump mast, making it a preferred choice amongst contractors.

#### COMPACT AND LIGHTWEIGHT

The LF230 is one of the most compact drills in its class measuring around 37' long x 12' wide (11.28 m x 3.66 m). Its small footprint allows access in tight places.

#### **PERFORMANCE**

The LF230 has the ability to drill through the most challenging conditions, featuring a powerful 275 hp Cummins® 8.3 L engine, a 4-speed rotation head with 200 cc motor and intelligent hydraulic design.

#### SAFF

Advanced safety features such as a rotation barrier, mainline winch tensioner and wireline spooler ensures driller's safety.

#### MOUNTING OPTIONS

The LF230 surface coring drill features a telescopic dump mast making it ideal for truck or crawler mounting to suit various site conditions.

#### VERSATILILTY

The LF230 is ideal for both wireline coring and rotary drilling with tri-cone bits.



Specification	Metric	U.S.
Depth Capacity	2,983 m (NRQ V-Wall)*	9,788 ft (NRQ V-Wall)*
Drill Rod Size	BQ to PQ	
Main Hoist	177.9 kN	40,000 lb
Pull Force	223.3 kN	50,200 lb
Rod Pull	9 m	30 ft
Engine	Cummins® QSC 8.3 L	
Engine Power	205 kW	275 hp

\*See page 11

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LF23D





### **ULTRAMATRIX™ DIAMOND CORE BITS**

**Global Drilling Equipment and Performance Tooling** 

#### EXTREME PERFORMANCE

Boart Longyear is proud to announce the Ultramatrix<sup>™</sup> line of diamond coring bits. Engineered to meet our customers' demand for extreme performance, UMX<sup>™</sup> bits offer enhanced penetration and bit life to optimize exploration productivity in any ground formation.

UMX Bits feature large diamonds, the strength of the patented Ultramatrix crown, advanced flushing options, and crown heights up to 25 mm with Stage™ waterway.

UMX Bits are an integrated part of the Genuine Q™ Wireline System.

www.BoartLongyear.com · ASX: BLY

To Learn More About The UMX™ Bits, Please Visit Us Online At:

www.BoartLongyear.com/umx







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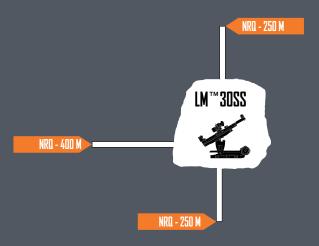
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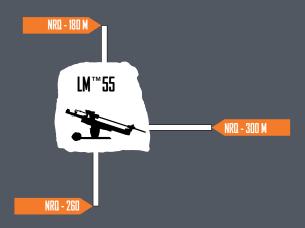
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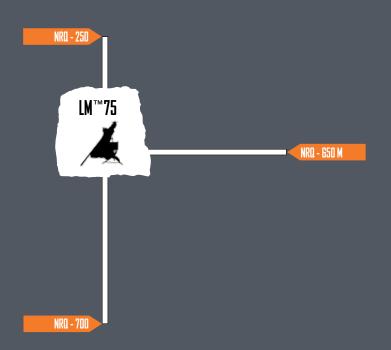
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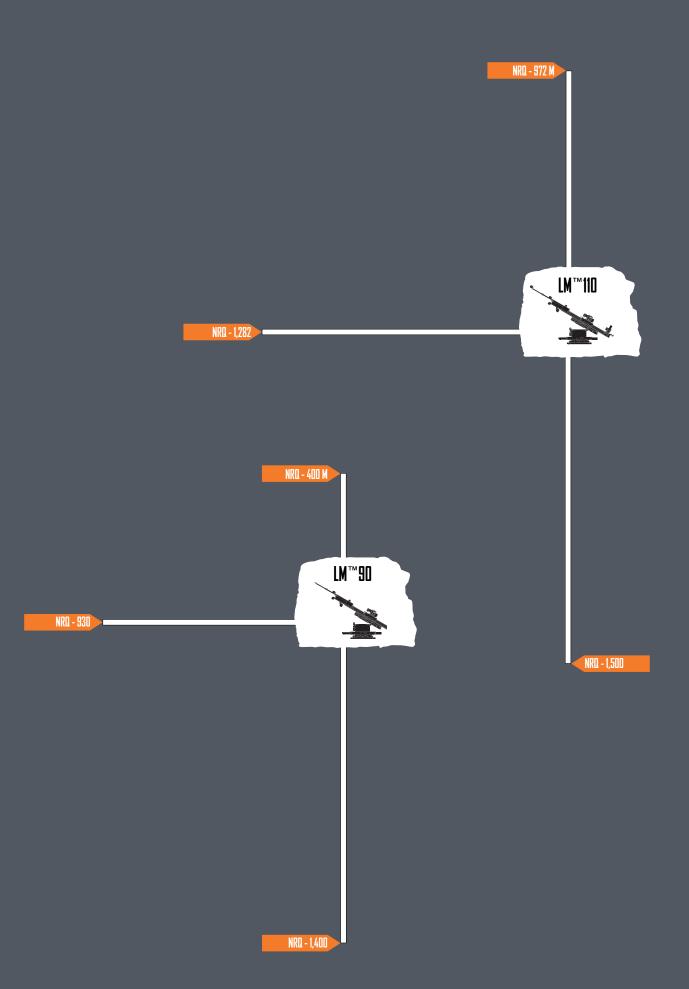
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### UNDERGROUND DRILL DEPTH COMPARISON











# LM™30SS

The LM™30SS is a compact and mobile drill rig, designed for quick setup and ease of moving from site to site.

The drill utilizes a standard LM30 drill rig powered by a CAT®246C Skid Steer with a 54 kW diesel engine. Along with a lightweight control panel and hydraulic system, the LM30SS comes with an integrated positioner and turntable that enables it to drill holes in all angles from vertically-up to vertically-down.

#### **COMPACT AND MOBILE**

A Skid Steer prime mover is used as the carrier to transport the feed frame and water pump. This compact, mobile unit ensures quick set up time and ease of moving from site to site.

#### LIGHTWEIGHT

The independent mounted control panel uses a lightweight polyethylene enclosure weighing only 40 kgs. Option BQ<sup>™</sup> head and BQ rod holder further minimizes the weight of this drill.

#### DURABLE

The direct drive 400 series feed frame is fitted with a regenerative circuit that provides high rod handling speed, increased safety and significantly reduced maintenance requirements.

#### DRILLING APPLICATION

The LM™30SS is capable of both wireline and conventional coring.



Specification	Metric	U.S.
Vertical Depth Capacity (400 FF)	250 m (NRQ)*	820 ft (NRQ)*
Drill Rod Size	AQ to HQ	
Feed Force	42 kN	9,440 lb
Pull Force	40.3 kN	9,060 lb
Feed Length	1.1 m	3 ft 7 in
Head Torque	135 N-m @ 1,100 RPM 500 N-m @ 500 RPM	100 ft-lb @ 1,100 RPM 370 ft-lb @ 500 RPM
Diesel Engine	54 kW	73 hp

\*See page 27

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/LM3OSS





The LM<sup>™</sup>55 is a compact drill rig for underground diamond coring with a 55 kW electric motor. Its size and power make it a versatile drill for confined locations where space is a premium.

Designed to be modular with a number of options, the LM55 is easily tailored to specific needs and can be upgraded when requirements change.

#### CUMPAC

Equipped with a 400 Series feed frame and a compact positioner and turntable the LM55 is easy to transport and set up in tight situations and can drill holes at any angle.

#### **PRODUCTIVE**

Equipped with a 40 kN feed frame, the LM55 drill provides high pullback force and a relatively quick rod-handling rate. The feed frame is available in two different sizes to suit operating conditions.

#### RELIABLE

With proven design over the last 20 years in the field, the LM55 is designed with quality materials and components. The simplicity of the design makes the machine easy to operate and maintain under tough conditions.

#### MODULAR DESIGN

The LM55 was designed as a modular drill rig with a number of options for site-specific customization. This drill is easy to upgrade and reduces training requirements for drillers.

#### DRILLING APPLICATION

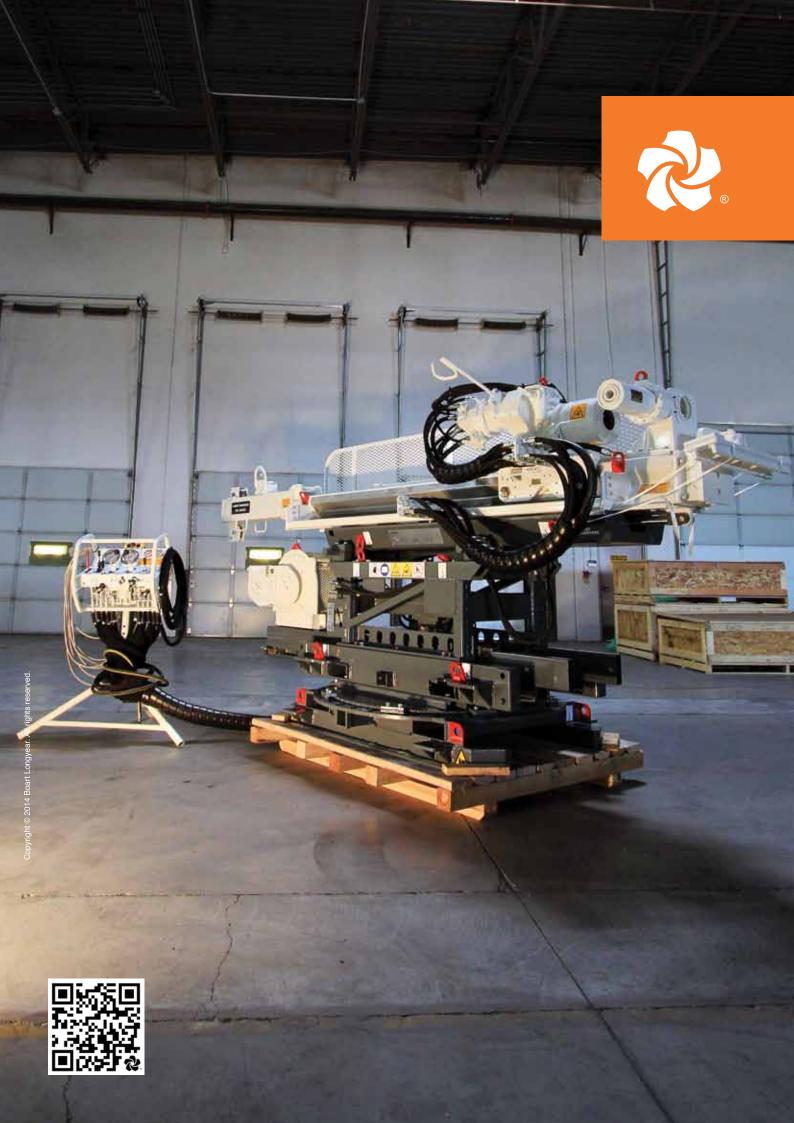
The LM55 is capable of both wireline and conventional coring.



Specification	Metric	U.S.
Vertical Depth Capacity (400 FF)	260 m (NRQ)*	853 ft (NRQ)*
Drill Rod Size	AQ to HQ	
Feed Force	42 kN	9,440 lb
Pull Force	40.3 kN	9,060 lb
Feed Length	1.1 m or 1.7 m	3 ft 7 in or 5 ft 7 in
Head Torque	135 N-m @ 1,100 RPM 500 N-m @ 500 RPM	100 ft-lb @ 1,100 RPM 370 ft-lb @ 500 RPM
Electric Motor	55 kW	74 hp

\*See page 27

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LM55



## LM<sup>™</sup>75

The LM™75 is a mid-sized drill rig for underground diamond coring with a 75 kW electric motor. Designed to be modular with a number of options, the LM75 is easily tailored to specific needs and can be upgraded when requirements change. With the assistance of a positioner and a turntable, the drill is capable of drilling holes in all angles from vertically up to vertically down.

#### PRODUCTIVE

The LM75 drill provides high pullback force and a fast rod-handling rate. The 70kN feed frame is available in three different sizes to suit overall operating conditions.

#### RELIABLE

The LM75 features a load sensing hydraulic system, proportional controls, a fail-safe rod clamp, built in troubleshooting and a spooling device. These features make the LM75 a highly reliable drill when drilling in harsh conditions.

#### MODULAR DESIGN

The LM75 was designed as a modular drill rig with a number of options for site-specific customization. This drill is easy to upgrade and reduces training requirements for drillers.

#### SAFF

An optional rod handler can be added to the LM75, which greatly increases driller's safety. The rod handler makes loading rods easier on drillers and ensures they remain away from moving parts during rod tripping.

#### DRILLING APPLICATION

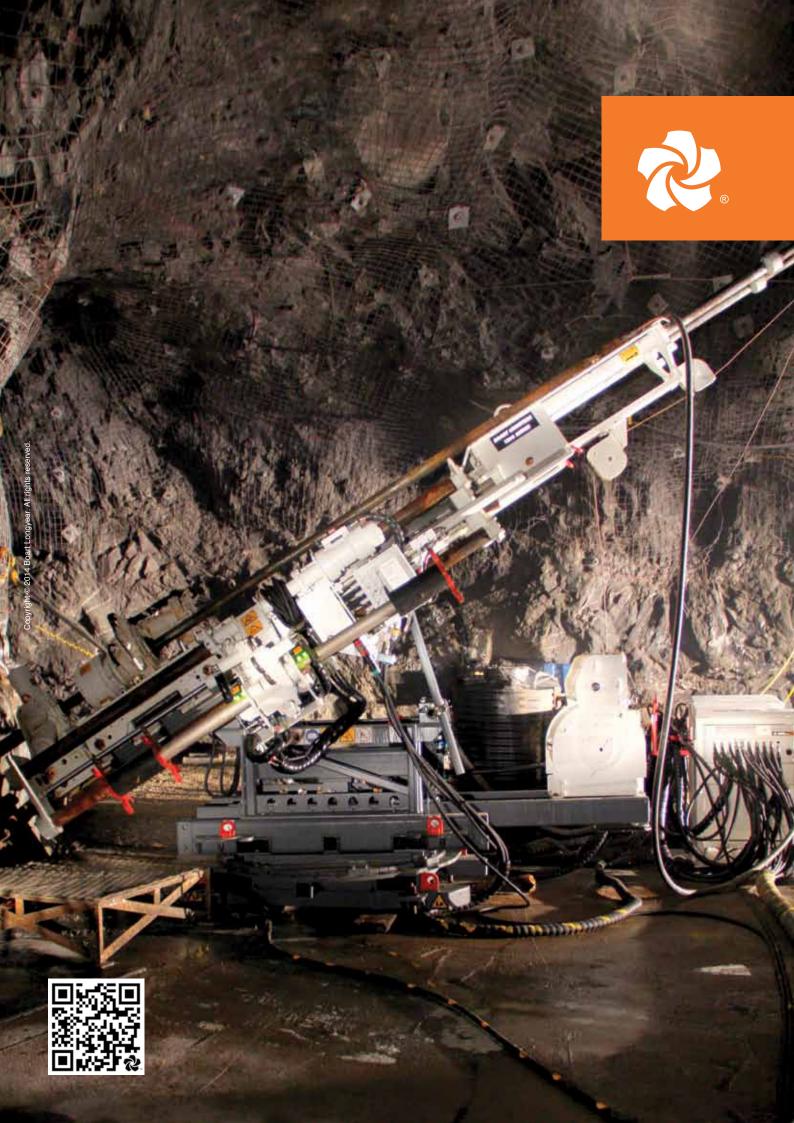
The LM75 is capable of both wireline and conventional coring.



Specification	Metric	U.S.
Vertical Depth Capacity (700 FF)	700 m (NRQ)*	2,297 ft (NRQ)*
Drill Rod Size	AQ to HQ	
Feed Force	53.9 kN	12,080 lb
Pull Force	81.4 kN	18,250 lb
Feed Length	1.83 m	6 ft
Head Torque	325 N-m @ 1,250 RPM 900 N-m @ 500 RPM	329 ft-lb @ 1,250 RPM 662 ft-lb @ 500 RPM
Electric Motor	75 kW	101 hp

\*See page 27

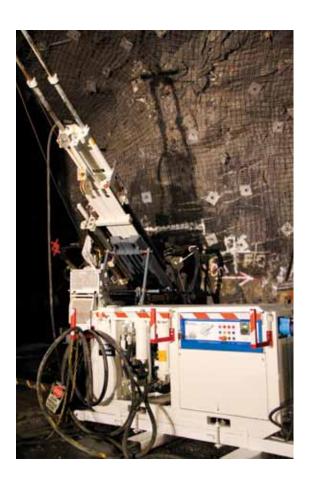
FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LM75





The LM<sup>™</sup>90 is powered by a 90 kW electric motor. It is modularly designed like the other LM rigs allowing for easy tailoring and upgrading as specific needs and conditions change.

With the assistance of a positioner and a turntable, the drill is capable of drilling holes in all angles from vertically up to vertically down.



#### MODULAR DESIGN

The LM90 was designed as a modular drill rig with a number of options for site-specific customization. This drill is easy to upgrade and reduces training requirements for drillers.

#### RELIABLE

The LM90 features a load sensing hydraulic system, proportional controls, a fail-safe rod clamp, built in troubleshooting and a spooling device. These features make the LM90 a highly reliable drill when drilling in harsh conditions.

#### SAFE

An optional rod handler can be added to the LM90, which greatly increases driller's safety. The rod handler makes loading rods easier on drillers and ensures they remain away from moving parts during rod tripping.

Specification	Metric	U.S.
Vertical Depth Capacity (1300 FF)	1,400 m (NRQ)*	4,593 ft (NRQ)*
Drill Rod Size	AQ to	o HQ
Feed Force	63.6 kN	14,291 lb
Pull Force	127.7 kN	28,708 lb
Feed Length	1.83 m	6 ft
Head Torque	257 N-m @ 1,200 RPM 845 N-m @ 500 RPM	190 lb-ft @ 1,200 RPM 623 lb-ft @ 500 RPM
Electric Motor	90 kW	120 hp

<sup>\*</sup>See page 27

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LM90





The LM<sup>™</sup>110 is the newest addition to the LM range of underground drills and is designed for drilling even deeper holes, more productively.

Powered by a new 110kW power pack, the LM110 offers the greatest depth capacity and functionality.



#### **PRODUCTIVE**

The new 110kW power pack delivers up to 33% more torque to the drill head than a similarly equipped LM™90 delivering increased productivity.

#### MODULAR DESIGN

The LM110 was designed as a modular drill rig with a number of options for site-specific customization. This drill is easy to upgrade and reduces training requirements for drillers.

#### SAFE

An optional rod handler can be added to the LM110, which greatly increases driller's safety. The rod handler makes loading rods easier on drillers and ensures they remain away from moving parts d uring rod tripping.

#### RELIABLE

The LM110 features a load sensing hydraulic system, proportional controls, a fail-safe rod clamp, built in troubleshooting and a spooling device. These features make the LM110 a highly reliable drill when operating in harsh conditions.

Specification	Metric	U.S.
Vertical Depth Capacity (1300 FF)	1,500 m (NRQ)*	4922 ft (NRQ)*
Drill Rod Size	AQ to	o HQ
Feed Force	63.6 kN	14,291 lb
Pull Force	127.7 kN	28,708 lb
Feed Length	1.83 m	6 ft
Head Torque	430 N-m @ 1,200 RPM 1,088 N-m @ 500 RPM	317 lb-ft @ 1,250 RPM 802 lb-ft @ 500 RPM
Electric Motor	110 kW	147 hp

<sup>\*</sup>See page 27

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LM110



# ROD HANDLER

The LM™/LF™130F rod handler sets new standards for ease-of-use, versatility, and most importantly, safety. Utilizing innovative high-capacity springs acting on three tungsten carbide insert jaws, the Rod Handler increases productivity while greatly minimizing injuries associated with manual rod handling.



#### **MOVABLE CONTROL PANEL**

Allows driller to operate the Rod Handler from an optimal viewing angle.

#### LASER SAFETY SYSTEM

The Rod Handler features an advanced laser safety system. If the laser's beam is broken operation automatically halts, preventing drillers from coming in close proximity to the moving rod handler.

#### REDUCED MANUAL HANDLING

Rods are loaded in the same optimal horizontal position and height regardless of drilling angle.

#### SAFETY SENSORS

Enable detection of drill rod, ensuring safe loading position.

#### HARD STOPS

Hard stops ensure fast and accurate rod alignment.

#### **ROD SPINNERS**

Alignment forks along with hard stops enables hands-free make and brake of drill rods.

Specification	Metric	U.S.
Rod Length	3 m	10 ft
Core Barrel	3 m	10 ft
Drill Rod Size	AQ-HQ (Underground) and BQ-PQ (Surface)	
Fly Weight	660 kgs	1,455 lbs

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/LM-RODHANDLER





The DCi<sup>™</sup> is a new control system designed to increase the efficiency, productivity and safety of the Boart Longyear LM<sup>™</sup> series of drilling rigs through a range of new automated features, including unattended 3 meter drilling and semi automated rod feed and pull functions.



#### **OPERATOR CONTROL PANEL**

Stainless steel construction housed in a lightweight and portable aluminium frame. The control layout includes a 7" colour screen and has been designed to ensure easy operator transition from pilot hydraulic to electric controls. Dual joysticks allow both rig and the latest version LM Rod Handler to be operated from a single control console for added ease and efficiency.

#### RIG UPGRADE KIT

A range of sensors control the automated functions and monitor all critical drilling parameters, returning this information back to the operator control panel for processing and retention.

#### DCI HYDRAULICS MODULE

A 'bolt-on' assembly containing all IO Modules and, hydraulic manifolds. Can be easily regressed to the original pilot hydraulic control console functionality if required.

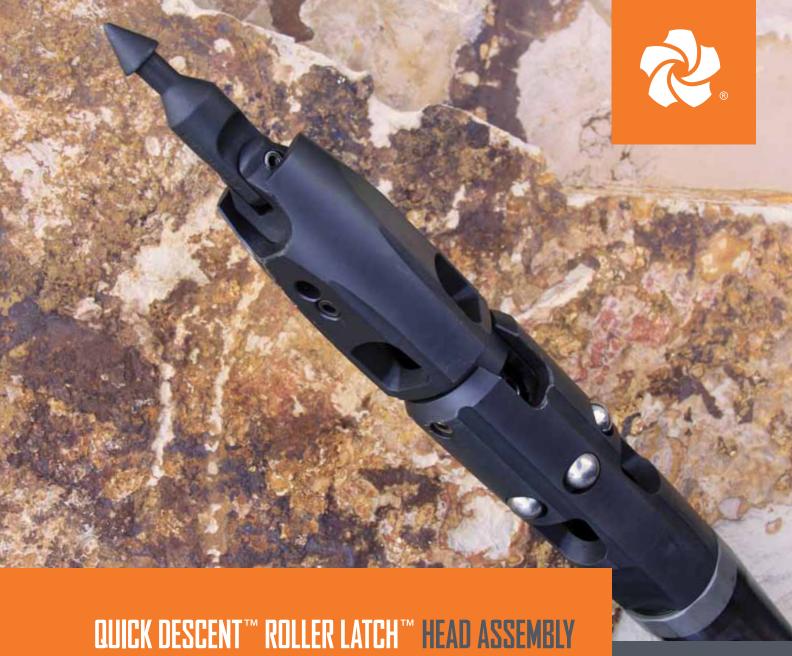
#### PERIMETER LASER PROTECTION

Auto shutdown when security laser is breached, keeping workers safe from drilling operation hazards.

Operational Functions		
Unattended Drilling	Drilling within Predetermined range c/w Auto Rechuck	
"One Touch" Rod Pull	Semi-Automatic Single Rod Pull including joint breaking	
"One Touch" Rod Feed	Semi-Automatic Single Rod Feed including joint tightening	
Rod Handler*	Integrated Rod Handler Controls	
Controllable Drilling Parameters	Supervisor "Settable" Parameters via USB Upload	
Data Logging	USB Download of System Drilling Data	

FOR COMPLETE TECHNICAL DATA AND OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/DCI





**Global Drilling Equipment and Performance Tooling** 

#### LEGACY OF INNOVATION

The Quick Descent™ Roller Latch™ head assembly continues to build on Boart Longyear's legacy of innovative drilling technology and offers precise compatibility with all genuine Q™ wireline systems.

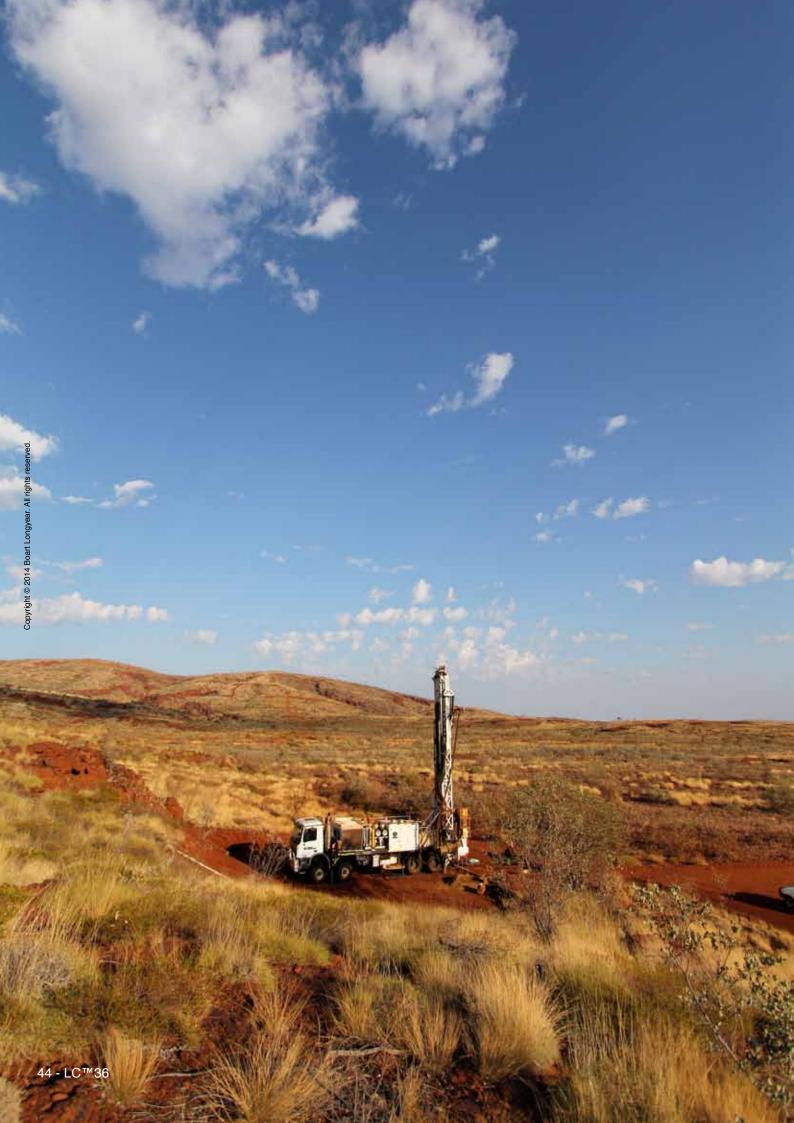
#### To Learn More, Visit:

www.BoartLongyear.com/rollerlatch



www.BoartLongyear.com • ASX: BLY

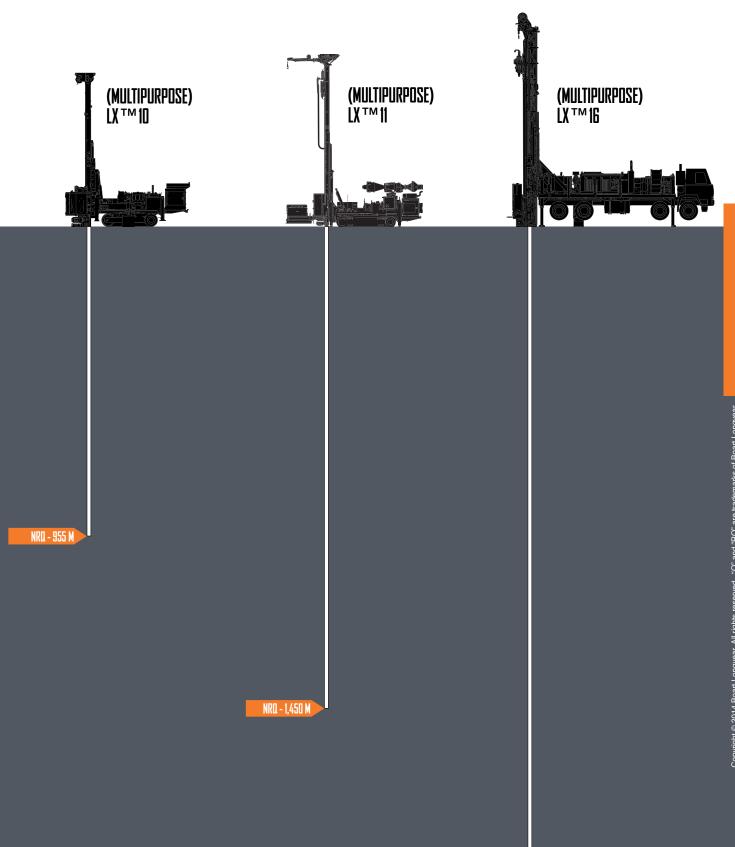




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NRQ - 2,076 M



### 

The Boart Longyear™ LC™6 is a compact, lightweight and versatile reverse circulation (RC) drill rig.

Engineered for fast set-up on site, superior mobility and powerful performance, the LC6 delivers increased productivity in a small and lightweight footprint.

#### COMPACT, LIGHTWEIGHT & POWERFUL

The LC6 is a powerful and compact reverse circulation drill featuring up to 5.5 tons of pull-back; a rotary head with up to 6,540 Nm torque and 800 rpm; and the ability to handle drill rods up to 3 m in length. Weighing only 14,330 lb and less than 2 m wide, it provides excellent site accessibility.

#### SAFETY

Safety features include an intuitive control panel design, a safety cage with a sabotage-free hinge switch and multiple emergency shutdowns.

#### **FLEXIBILITY**

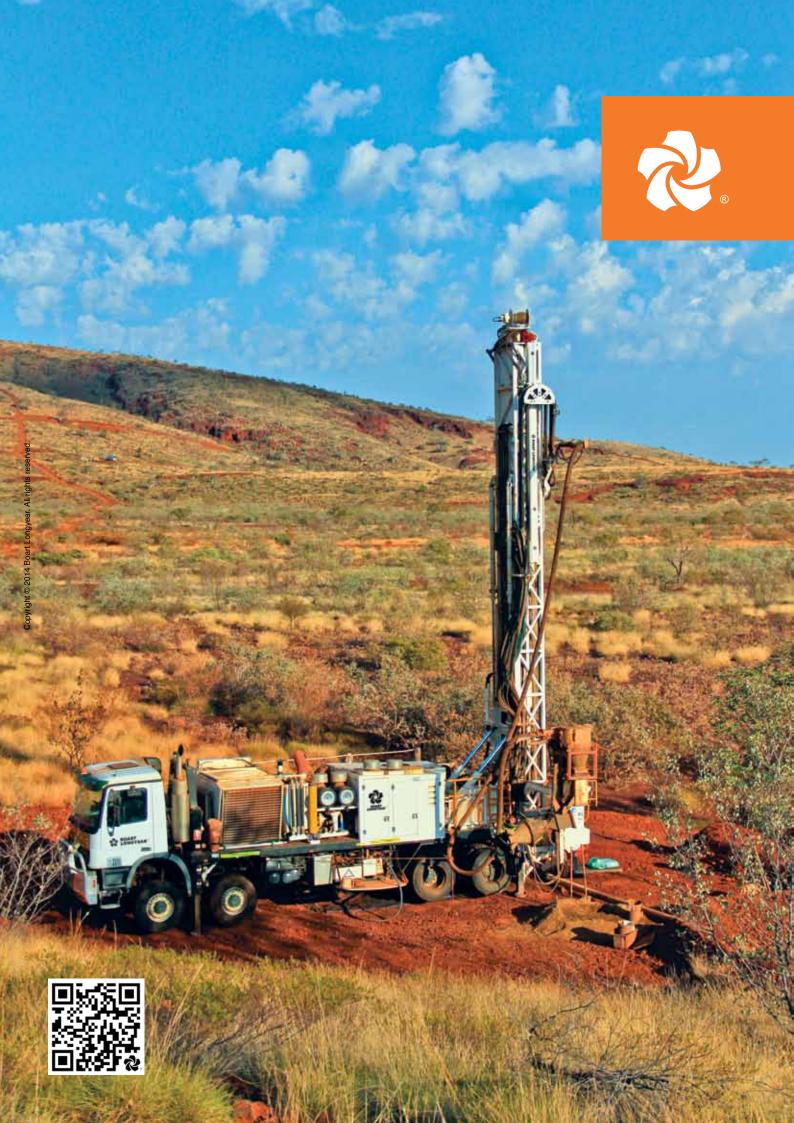
The primary application of the LC6 is reverse circulation drilling. However, the drill can be easily configured to perform diamond coring, rotary and DTH drilling. The LC6 is mounted on a steel track crawler with 4 dual-tube stabilization jacks. The optional trailer mounted cyclone & splitter can be towed behind the drill rig. It is able to drive in adverse terrain and provides a stable heavy platform for drilling operations. The LC6 offers a high degree of mobility and is quick to setup.



Specification	Metric	U.S.
Reverse circulation drilling		
Depth Capacity (RC) 4"	140 m*	460 ft*
Pull Force	55 kN	12,364 lb
Main Hoist	30 kN	6,744 lb
Engine	Deutz BF4L914 air cooled engine, COM II	
Engine Power at 1800 rpm	72.4 kW	97 HP

\*See page 47

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LCG





As the largest drill in the Boart Longyear range, the LC™36 is a high capacity Reverse Circulation Drill. A proven performer in some of the toughest conditions, the LC36 delivers 36,000 kg (79,364 lb) of pullback.

Innovative safety features, ease-of-use and a state-of-the-art optional rod handler compliment this industry leading RC drill rig.

#### **ROD HANDLING**

The LC36 is available with a hands-free rod handler, setting new standards for ease-of-use, versatility, and most importantly, safety - eliminating more than 14 tons of manual rod handling per shift. Dual clamping jaws equipped with dual locking systems eliminate rod drops while a 180° jaw roll function, 100° slew and 270° of tilting action - including 3 m height adjustment - make this the most articulate rod handling device available.

#### SAFETY

The LC36 includes an intuitive control panel, an optional RC rod handler, guards on all couplings and fans hose socks on all high pressure air hoses fixed to an anchor point.

#### POWER

The LC36's powerful engine delivers 634 kw (850 hp) and 3,682 Nm (2,715 lb/ft) peak torque at 1,800 rpm. This powerful solution allows full rotational torque to be applied at the same time as maximum pullback, reducing the chance of rods getting stuck.



Specification	Metric	U.S.
RC Rod - 114.3 mm (4.5 in)	775 m*	2543 ft*
Pull Force	36,000 kg	79,364 lb
Rapid Push Down Force	4,000 kg	29,823 lb
Rapid Push Down Speed	930 mm/sec	36.6 in/sec
Engine	MTU 12V 2000 series	
Engine Power at 1,800 rpm	634 kW	850 hp

\*See page 47

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LC36



### RC ROD HANDLER

The RC Rod Handler sets new standards for ease-of-use, versatility, and most importantly, safety - eliminating more than 14 tons of manual rod handling per shift or 4200 tons per year.



#### **DUAL CLAMPING JAWS**

Utilizing innovative dual clamping jaws equipped with dual locking systems, the RC Rod Handler eliminates rod drops. This combined with a 180° jaw roll function, 100° slew and 270° of tilting action - including 3 m height adjustment - make this the most flexible rod handling device available.

#### **INCREASED SAFETY**

The RC Rod Handler is capable of lifting 76 rods per shift. There are 300 shifts per year, resulting in 22,800 fewer manually lifted rods per year, up to 4,240,800 Kg per year.

#### EXTREME ARTICULATION

180° jaw roll function, 100° slew, 270° tilting action utilizing heavy duty rotating actuators.

#### ADJUSTABLE HEIGHT

3 m height adjustment capability enables safe rod placement for different rod lengths.

#### **ENGINEERING AND DESIGN**

- Capable of handling 127 mm diameter and 8 m length drill pipe
- Capable of handling weight up to 200 kg (based on 5" x 8 m pipe)
- · Dual clamping jaws with dual locking systems
- 180° jaw roll function
- 100° slew
- 270° tilting action
- 3 m height adjustment
- · Heavy duty rotating actuators
- Folds into mast for travel keeping max height to a minimum
- · Only requires 20 USGPM to operate
- Stability, eliminating other mast components for drill rod alignment
- Robust design and build quality delivers long service life
- · High quality components
- · Faster than manual handling
- · Eliminates human contact with drill rods

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/RC-RODHANDLER





The Boart Longyear™ LX™4 is a compact, lightweight and versatile multipurpose drill rig designed for geotechnical investigation, construction and exploration drilling.

The ability of the LX4 to perform a variety of different types of drilling makes it a valuable asset to any drill fleet.

#### **FLEXIBILITY**

Fast and easy changes between wireline coring, DTH drilling, flush rotary and auger drilling, provide excellent flexibility from one drilling platform to another. The LX4 is also available with an automatic SPT and digital blow counter.

#### COMPACT, LIGHTWEIGHT & POWERFUL

Weighing only 6,500 kg and measuring only 2 meters wide gives the LX4 a small, lightweight footprint. In addition to its small footprint, the LX4 delivers up to 4,890 NM of torque and 38 kN of pull back, making it a powerful drilling solution.

#### **SAFETY**

An intuitive control panel design, a safety cage with a sabotage-free hinge switch and multiple emergency shutdowns contribute to the inherent safety of the LX4.

#### MULTIPURPOSE DRILLING APPLICATIONS

Wireline and conventional coring • Undisturbed sampling and testing • Geological work • Ground consolidation drilling • Water well drilling • Auger drilling • Micropiling

Specification	Metric	U.S.	
Main Hoist	20 kN	4,500 lb	
Pull Force	38 kN	8,550 lb	
Engine (Standard)	Deutz D914L04 air co	poled engine, COM III	
Engine Power at 2300 rpm	53 kW	71 hp	
Engine (Optional	Deutz BF4L914 air co	poled engine, COM II	
Engine Power at 2300 rpm	72.4 kW	97 hp	
Core drilling depth capacity			
*NRQ	210 m	690 ft	
Rotary drilling (Tricone) depth of	Rotary drilling (Tricone) depth capacity		
Hole diameter 216 mm (8.5 in)	120 m	390 ft	
Auger drilling depth capacity			
Hole diameter 150 mm (5.9 in)	15-20 m	49-65 ft	
DTH drilling package			
Maximum size DTH hammer	98 mm (3-7/8 in) @ max 17.2 m³ / 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	

\*See page 47

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LX4



The Boart Longyear™ LX™6 is a compact, light-weight and versatile multipurpose drill rig designed for geotechnical investigation, construction and exploration drilling.

Engineered for fast set-up on site, superior mobility and powerful performance, the LX6 delivers increased productivity.

#### **FLEXIBILITY**

Fast and easy changes between wireline coring, DTH drilling, flush rotary and auger drilling, providing excellent flexibility from one drilling platform to another. The LX6 is also available with an automatic SPT and digital blow counter.

#### COMPACT, LIGHTWEIGHT AND POWERFUL

The LX6 weighs only 6,500 kg (14,330 lb) and is less than 2 m wide providing excellent site accessibility. The heavy-duty mast design and two speed drill head can deliver up to 6,000 NM (4,440 lb-ft) of torque. The pull back of the LX6 is 55 kN (12,364 lb), providing a powerful drilling solution in a small and lightweight footprint.

#### **SAFETY**

An intuitive control panel design, a safety cage with a sabotage free hinge switch and multiple emergency shutdowns contribute to the inherent safety of the LX6.

#### MULTIPURPOSE DRILLING APPLICATIONS

Wireline and conventional coring • Undisturbed sampling and testing • Geological work • Ground consolidation drilling • Water well drilling • Auger drilling • Jet grouting • Micropiling • Soil nailing

Specification	Metric	U.S.
Main Hoist	30 kN	6,744 lb
Pull Force	55 kN	12,364 lb
Engine (Standard)	Deutz D914L04 air co	poled engine, COM III
Engine Power at 2300 rpm	53 kW	71 hp
Engine (Optional	Deutz BF4L914 air c	ooled engine, COM II
Engine Power at 2300 rpm	72.4 kW	97 hp
Core drilling depth capacity		
*NRQ	350 m	1,150 ft
Rotary drilling (Tricone) depth of	apacity	
Hole diameter 216 mm (8.5 in)	175 m	570 ft
Auger drilling depth capacity		
Hole diameter 150 mm (5.9 in)	15-20 m	49-65 ft
DTH drilling package depth capacity		
Maximum size DTH hammer	98 mm (3-7/8 in) @ max 17,2 m³ / min @ max 24 bar	
Maximum depth capacity	290 m	950 ft
Recommended hole size	115 mm	4.5 in
Maximum hole size	127 mm	5 in
Recommended rod size	76.1 mm	3 in

<sup>\*</sup>See page 47

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LX6





The LX<sup>™</sup>11 is a powerful medium-sized exploration multipurpose drill capable of both diamond coring and reverse circulation drilling.

The LX11 is ideal for all drilling contractors who need the flexibility of a multipurpose machine in their fleets. The LX11 is a drill that provides increased safety and operational flexibility with a low overall cost of ownership.



#### TOP DRIVE SINGLE ROTARY DRILL HEAD

Maximum rotation speed of 1200 rpm, maximum torque of 7.8 kNm @ 100 rpm.

#### DRILLERS CONTROL PANEL

Placed for ideal visibility.

#### OPTIONAL ROD PRESENTER

For safe and efficient handling of both RC and diamond coring rods.

#### **INTERLOCKED SAFETY CAGE**

Protects the operators from the rotating drill string. If the guard is opened during drilling, feed speed and rotation is reduced.

#### OPTIONAL 1200 CFM CYCLONE

For reverse circulation drilling.

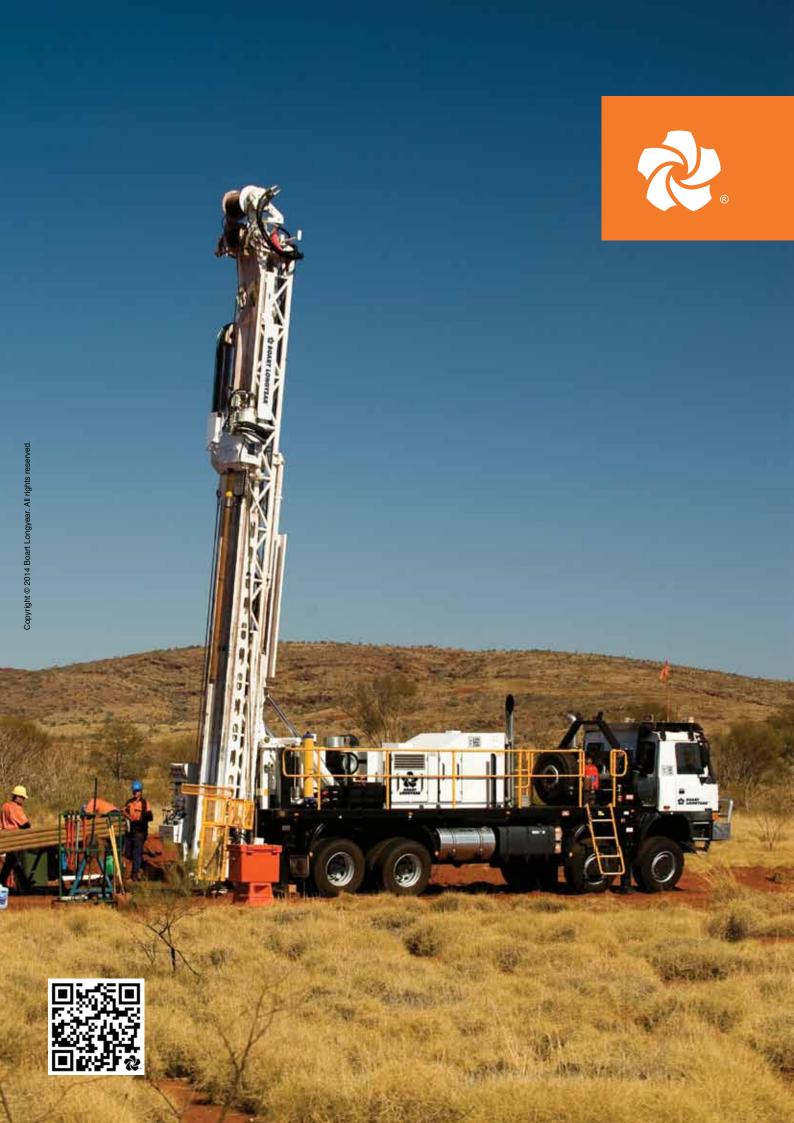
#### 7.2 M FEED STROKE AND TOP DRIVE HEAD

Allows 6-meter rods to be pulled under the head.

Specification	Metric	U.S.
Depth Capacity	1,450 (NRQ)*	4,750 (NRQ)*
Drill Rod Size	BQ to	o PQ
Main Hoist	92.0 kN	20,700 lb
Pull Force	170 kN	38,200 lbs
Rod Pull	6 m	20 ft
Engine	DEUTZ, TCD 2014 L06 2V Tier III	
Engine Power	176 kW	236 hp

<sup>\*</sup>See page 47

#### FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/LX11



**LX**<sup>™</sup>16

The LX<sup>™</sup>16 is a robust and versatile drill that can be configured for both reverse circulation drilling (RC) and diamond drilling applications.

This multi-purpose drill leads the market in both safety and performance by integrating the highest quality components available into its powerful design. The LX16 is reliable and excels in the toughest conditions.



#### MULTIPURPOSE FLEXIBILITY

Capable of drilling depths of 1,394 meters  $HQ^{TM}$  and 2,076 meters NQ, the LX16 delivers exceptional performance coupled with user-friendly operation and industry-leading safety. It is also RC capable, ideal for collaring new holes and negating the need for an additional rig for overburden drilling.

#### SAFETY

An intuitive control panel design, an available RC rod handler and a hydraulic mast locking feature all contribute to the inherent safety of the LX16.

#### PNWFR

The LX16 delivers exceptional power for ease-of-drilling in all conditions. The LX16 is powered by a tier 3 Cat® C13 engine delivering 328 KW (440 hp). The hydraulic system consists of individual circuits for rotation and feed that allows full rotation speed & full feed traverse at 1,500 rpm.

#### MULTIPURPOSE DRILLING APPLICATIONS

The LX16 is ideal for both Diamond Coring and Reverse Circulation applications.

Specification	Metric	U.S.
Depth Capacity (Coring)	2,854 m (NRQ V-Wall)*	9,364 ft (NRQ V-Wall)*
Depth Capacity (RC)	430 m (4-1/2", 114.3 mm)	1,410 ft (4-1/2", 114.3 mm)
Drill Rod Size (Coring)	BQ to PQ	BQ to PQ
Main Hoist	152.5 kN	34,100 lb
Pull Force	181.5 kN	40,700 lb
Rod Pull Capacity	9 m	30 ft
Engine	Caterpillar® CATC13	
Engine Power at 1800 rpm	328.2 kW	440 hp

<sup>\*</sup>See page 47

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BOARTLONGYEAR.COM/LX16





#### GENUINE BOART LONGYEAR™ RC TOOLING

Boart Longyear offers a full line of RC tooling, including drill rods, subs and other drill string components. These products are manufactured by Boart Longyear with state-of-the-art equipment using high-grade alloys, providing maximum reliability and productivity. And with Boart Longyear's exceptional warranty, you can be confident our products will exceed expectations.

To Learn More About RC Tooling, Visit: www.BoartLongyear.com/rctooling







## SONIC

LS™600 67



### LS™600

Following its tradition of innovative drilling solutions, Boart Longyear is proud to offer the most advanced Sonic drill on the market. With innovative designs and patented technologies, the LS™600 drills deeper, produces more accurate samples and serves more markets than any other Sonic rig to date

#### **ADVANCED DESIGN**

The LS600 features a pneumatic isolation system inside the head, preventing resonant energy from transmitting to the drill rig. This directs the maximum amount of energy down the drill string to the face of the bit for improved penetration rates.

#### ADVANCED ROD AND CASING MANAGEMENT SYSTEM

The LS600 utilizes a fingerboard for rod storage, a patented spring-loaded Clam Shell for safe rod management, a 90° head tilt for easy tripping and a full support vehicle equipped with a Gantry crane for presenting rods to the head.

#### SUPERIOR INFORMATION

The LS600 drills through and samples overburden and soft rock formations at or near 100% core recovery without the risk of refusal and without the use of fluids. In addition to producing a relatively undisturbed sample, the LS600 drills with as little as one percent deviation to depth enabling the driller to pinpoint exact sampling locations.

#### **GREATER DEPTHS**

A turbo-charged 6.6 liter CAT® engine with 228 horsepower fuels the LS600, allowing drillers to reach depths of up to 600 feet.



General Performance Rating			
	Metric	U.S.	
Drilling Depth	152 mm - 182 m	6 in - 600 ft	
Max Drilling Diameter	305 mm	12 in	
Pull Back	67.5 kN	15,175 lb	
Down Force	40.5 kN	9,105 lb	
Output Force	222 kN	50,000 lb	
Frequency Range	0 - 150 Hz		
Max Casing Length	6 m	20 ft	

<sup>\*</sup> The figures in these tables are estimates which have been calculated using the applicable pullback capacity of the drill. Actual drilling results may vary and will depend on in-hole tools, subsurface and other environmental conditions, drilling techniques and equipment used.

#### FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS, VISIT WWW.BDARTLONGYEAR.COM/LSGOO





### **SONIC TOOLING AND ACCESSORIES**

**Global Drilling Equipment and Performance Tooling** 

### GENUINE BOART LONGYEAR™ SONIC TOOLING AND

Boart Longyear offers a full line of Sonic tooling and accessories, including drill rods, casing, bits, shoes, sub savers, adapters and other drill string components. These products are manufactured by Boart Longyear with state-of-the-art equipment using high-grade alloys, providing maximum reliability and productivity. And with Boart Longyear's exceptional warranty, you can be confident our products will exceed expectations.

**To Learn More About Sonic Tooling and** 

www.BoartLongyear.com/ls600







# ROCK DRILL AND BLAST



# **STOPEMATE**<sup>™</sup>

The StopeMate™ production drill provides a compact drilling platform combined with the industry-leading S36™ pneumatic rock drill. Its smaller size allows for ideal drilling when used in narrow-vein applications. It delivers an ideal balance of efficiency and productivity in confined spaces.



### COMPACT AND MOBILE

The StopeMate drill is ideal for narrow vein applications. Able to tram through a  $1.27~m\times1.9~m$  opening. Back height drilling can be as low as 2.44~m (8 ft). It can fit in most cages without disassembly.

# **ACCURACY AND FLEXABILITY**

The StopeMate incorporates the optional Helac Positioning System. Full 360° radius drilling with extreme accuracy. The Travers pivots more than 180° in tight spaces without ever moving the carrier. Capable of parallel drilling, ring drilling, service holes, drop raises, and cable bolting.

## POWERFUL AND EFFICIENT

Uses the industry leading S36 IR pneumatic rock drill. Fully pneumatic operation is ideal for captive areas. The S36 IR is a powerful 114 mm (4.49 in) diameter bore drifter-type drill designed for deep hole drilling. The S36 IR can drill 37 m (122 ft) in ideal ground conditions.

### MODULAR

Efficient dismantling and re-assembly enables faster move times and increased productivity.

Drilling Depth Guidelines		
Rock Drill	Fully independent rotation motor	
	22 kW (30 hp.) Radial Piston air motor	
Carrier	4 wheel Skid Steer carrier	
	Up to 30% gradeability	
Drill Positioner	Traverse side to side travel of 1.2 m (48 in.)	
	Traverse movement via hydraulic motor driven feed screw	
	HD rotation slew bearing driven by a hydraulic cylinder for 90°	
	traverse rotation	
	Dual hydraulic rack and pinion rotary actuator with manual	
	locking system - 360° rotation	
Options	0.76 m, 0.91 m, and 1.52 m Traverse Travel (center line to	
	center line)	
	Laser hold alignment system	
Dimensions	Overall weight is 13,742 kg (8,250 lbs)	
	Raise transport - undercarriage (largest module only) Length	
	2,794 mm, width 1,220 mm, Height 813 mm @ 1,795 kgs	

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/STOPEMATE



# **STOPEMASTER™**

The StopeMaster™ production drill is a powerful, compact platform. Ideal for narrow-vein applications, the StopeMaster is designed with a high range of articulation for drilling accuracy and a modular body for ease of dismantling and reassembly.



## **COMPACT AND MOBILE**

The StopeMaster drill is ideal for narrow-vein applications. With a small footprint and tramming capability, it is compact enough for cage transport, level-to-level mobility and optimum maneuverability in confined areas.

## HIGH PERFORMANCE

The StopeMaster utilizes a proven high performance hydraulic rock drill for high productivity and deep accuracy. It incorporates the Hercules Rod Mate Centralizer for positive centering and simple operation.

## MODULAR

Efficient dismantling and re-assembly enables faster move times and increased productivity.

## ACCURACY AND FLEXABILITY

The StopeMaster incorporates the Helac Positioning System which provides full 360° radius drilling with extreme accuracy. It is capable of parallel drilling, ring drilling, service holes, drop raises, and cable bolting. The StopeMaster uses dual in-line hydraulic feed cylinders to provide balanced thrust to the drill string center.

Drilling Depth Guidelines			
Rock Drill	HD 155 Hydraulic Rock Drill		
Carrier	4 wheel Skid Steer carrier		
	Up to 30% gradeability		
	4 wheel independent drive and braking (SAHR) system		
Drill Positioner	Traverse side to side travel of 1.5 m (60 in.)		
	Traverse movement via dual opposed hydraulic cylinders		
	Dual motor/planetary drive system coupled with SAHR braking		
	system		
	Independent feed crowd		
Options	0.9 m, and 1.2 m, and 1.83 Traverse widths		
	Laser hold alignment system		
	ITH conversion package		
Dimensions	Overall weight is 7,258 kg (16,000 lbs)		
	Raise transport - Powerpack (largest module)		
	Length 2570 mm, Width 1320 mm, Height 1220 mm		
	Cage Transport – Length 4010 mm, Width 1370 mm, Height		
	1800 mm @ 5230 kgs.		

FOR COMPLETE TECHNICAL DATA AND CUSTOMIZATION OPTIONS. VISIT WWW.BOARTLONGYEAR.COM/STOPEMASTER





# **ROCK DRILL AND BLAST TOOLING**

Global Drilling Products

# **RELIABILITY AND PRODUCTIVITY**

Boart Longyear designs and manufactures the most technologically advanced production tooling in the industry and our legacy of innovation and expertise is evident in our extensive percussive tool offering. Boart Longyear offers a full line of rods, couplings, adaptors and accessories that are compatible with handheld (shorthole drilling, production drilling) and tunnel / ground support drilling.

To Learn More About Rock Drill and Blast Tooling, Visit:

www.BoartLongyear.com/rdbtooling







# AFTERMARKET PARTS & SERVICES

# TECHNICAL SERVICES GROUP

Your equipment investment is supported by experienced Boart Longyear teams of factory-based service technicians. In-house and field-based repair services are available, as well as technical advice and support.

# FIELD SERVICE, In-House Repair, Technical Support

With fully equipped facilities and professional staff, we provide:

- OEM-trained staff and genuine parts to optimize your Boart Longyear™ drilling fleet
- · Guaranteed component repair and overhaul
- Drill rig repair, overhaul and modification
- Direct access to OEM manufacturing support staff, technical data and engineering
- Training programs presenting proper operation, maintenance and basic repair
- Preventative maintenance agreements to avoid unexpected repairs







# BOART LONGYEAR™ GENUINE PARTS

Each Boart Longyear drill rig is a highly engineered system, rugged and reliable, with every part designed and built to precise specifications. To maintain quality and maximize efficiency, it is critical to use only genuine Boart Longyear parts. Parts repair and rebuild services are offered as a more efficient replacement parts option for major components. The result is equipment and tooling that are the most trusted and reliable in the industry providing maximum productivity and safety.

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# DRILLING SERVICES | DRILLING EQUIPMENT | PERFORMANCE TOOLING

for Mining and Drilling Companies Globally







For over 120 years, Boart Longyear has served mines around the world, providing innovative and reliable drilling services, drilling equipment and performance tooling – all from one global source.

Learn more at: www.BoartLongyear.com/OneSource



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