PEREGRINE
DIAMONDS LTD.

201-1250 HOMER STREET, VANCOUVER, BRITISH COLUMBIA, CANADA V6B 1C6
TELEPHONE: (604) 408-8880 FAX: (604) 408-8881
www.peregrinediamonds.com

SUPPLEMENT #1

BOART LONGYEAR *LF-70* SURFACE-CORING FLY DRILL TECHNICAL BROCHURE (2012)

LF™70 SURFACE CORING FLY DRILL

Technical Overview

BOART LONGYEAR™

LF™70 DIAMOND CORE FLY DRILL

Mobility
The LF™70 modular design consists of seven sections that are heliportable for reaching remote locations. This drill reduces downtime when mobilizing between sites and significantly decreases the environmental impact to a drill site.

Modular Design
With just seven components, it takes less than one hour to pull down the rig and the same amount of time to reassemble it.

Lightweight
Special attention was given to the overall weight and dimension of the drill's design. Each of its seven components weigh less than 585 kg and are easily transportable by helicopter. The LF70 is ideal for drilling in confined, remote locations.

For more information on the LC™70 scan with a QR code reader on your smart phone.

1 SOLID STRUCTURAL DESIGN

Rigid design provides superior performance and reliability even under the toughest conditions.

2 NITRO-CHUCK™

The patented nitrogen gas spring jaws with hydraulic open/spring close function ensure fail safe operation

3 SIMPLE HYDRAULIC DESIGN

Direct-coupled hydraulic pumps with easy maintenance

4 FLYABLE

The LF™70 easily breaks down into seven flyable modules with a maximum weight of 585 kg

5 PQ ROTATION UNIT

Four-Speed transmission delivers high torque when needed and high speed for diamond drilling

6 SELF-CONTAINED OPERATOR PANEL

The simple hydraulic system is easy to operate and maintain while lift-to-shift levers provide additional operator safety

U.S. Patent No. 6,719,303; AU Patent No. 2002301549; CA Patent No. 2,378,372; Patent Pending.

LF™70 TECHNICAL INFORMATION

Drilling Depth Guidelines				
	Dry Hole		Fluid Filled	
Drill Rod / Core Barrel	Hole Depth (meters)	Hole Depth (feet)	Hole Depth (meters)	Hole Depth (feet)
BRQ / BQ	907	2,976	1,039	3,407
BRQTK / BQTK	1,142	3,746	1,308	4,292
NRQ / NQ / NQ2	698	2,290	798	2,619
NRQ V-Wall™	789	2,588	895	2,936
HRQ / HQ	473	1,553	542	1,778
HRQ V-Wall™	596	1,955	674	2,210
PHD / PQ	313	1,026	357	1,171
PHD V-Wall™	426	1,399	478	1,567

Prime Mover		
	Metric	**U.S.**
Standard Unit	Cummins QSB 4.5 L, 4 cylinder, turbo charged, after cooled diesel engine.	
Displacement	4.5 L	275 in3
Power (maximum) at 2,300 RPM	110 kW	148 hp
Emissions Certification	CARB Tier 3 - EU Stage III	CARB Tier 3 - US EPA
Fly Weight	585 kg	1290 lbs
Optional Unit	Deutz BF4L914, 4 cylinder, air cooled, turbo charged, diesel engine.	
Displacement	4 L	263 in3
Power (maximum) at 2,450 RPM	72 kW	98 hp
Emissions Certification	Tier 2	
Fly Weight	510 kg	1,124 lb

HQ Drill Head - Standard		
	Metric	**U.S.**
Standard HQ - Hollow Spindle		
Maximum Rod Diameter	95 mm	4 in
Rotation Motor	Rexroth hydraulic motor - variable/reversible	
Mechanical Transmission	Funk 4 speed	
Ratios	1st	6.63:1
	2nd	3.17:1
	3rd	1.72:1
	4th	1.00:1
Final Drive	Roller chain drive	
Ratio	2.58:1	
Head Opener	Pivot style — manual operation	
Hydraulic HQ Chuck	Patented Nitro-Chuck™	
	Hydraulically opened, nitrogen gas spring closed.	
	Axial holding capacity of 133 447 N (30,000 lbf)	
Drill Head Lubrication	Force fed bearings, oil bath for roller chain - PTO driven	
Drill Head Lubrication Oil Filtration	25 Micron high pressure oil filter	
Fly Weight	390 kg	860 lb

Torque And RPM Ratings - HQ Head			
(Hydraulic motor at maximum/minimum displacement, prime mover at 2,200 RPM)			
	Speed (no load)	Torque (stall)	
	RPM	Nm	lbft
1st Gear	95 - 190	4,610 - 2,305	3,400 - 1,700
2nd Gear	200 - 400	2,170 - 1,085	1,600 - 800
3rd Gear	370 - 730	950 - 610	700 - 450
4th Gear	630 - 1,250	680 - 340	500 - 250
NOTE: Head output speed and torque are infinitely variable in each gear range as indicated.			
Actual rotation speed is affected by engine RPM and hydraulic motor displacement setting.			

LF™70 TECHNICAL INFORMATION

PQ Drill Head - Optional		
	Metric	**U.S.**
Optional PQ - Hollow Spindle		
Maximum Rod Diameter	122 mm	5 in
Rotation Motor	Rexroth hydraulic motor - variable/reversible	
Mechanical Transmission	Funk 4 speed	
Ratios	1st	6.27:1
	2nd	3.12:1
	3rd	1.75:1
	4th	1.00:1
Final Drive	Straight cut gears	
Ratio	2:1	
Head Opener	Pivoting style: manual operation	
Hydraulic PQ Chuck	Patented Nitro-Chuck™	
	Hydraulically opened, nitrogen gas spring closed	
	Axial holding capacity of 222 400 N (50,000 lbf)	
Drill Head Lubrication	Force fed bearings, oil bath for gears - PTO driven	
Drill Head Lubricating Oil Filtration	25 micron high pressure oil filter	
Fly Weight	580 kg	1,279 lb

Torque And RPM Ratings - PQ Head			
(Hydraulic motor at maximum/minimum displacement, prime mover at 2,200 RPM)			
	Speed (no load)	Torque (stall)	
	RPM	Nm	lbft
1st Gear	122 - 199	5,322 - 3,254	3,925 - 2,400
2nd Gear	246 - 400	2,648 - 1,620	1,953 - 1,195
3rd Gear	439 - 714	1,486 - 908	1,096 - 670
4th Gear	769 - 1,250	849 - 519	626 - 383
NOTE: Head output speed and torque are infinitely variable in each gear range as indicated.			
Actual rotation speed is affected by engine RPM and hydraulic motor displacement setting.			

Hydraulic System		
Primary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	163 L/m	43 gpm
Maximum Pressure (factory setting)	241 bar	3,500 psi
Secondary Pump	Axial piston, variable displacement, pressure compensated	
Max Flow	42 L/m	11 gpm

Hydraulic System (continued)		
Maximum Pressure (factory setting)	138 bar	2,000 psi
Auxiliary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	42 L/m	11 gpm
Maximum Pressure (factory setting)	138 bar	2,000 psi
Hydraulic Tank Capacity	114 L	30 Gal

Drill Mast And Feed System		
	Metric	U.S.
Feed Stroke	2 m	6 ft
Pull Capacity @ 2,000 psi	6,414 kg	14,137 lbf
Thrust Capacity @ 2,000 psi	4,231 kg	9,326 lbf
Rod Pull	3 or 6 m	10 or 20 ft
Drilling Angle	45° off horizontal to 90° vertical down	
Mast Dump (Crowd)	N/A	

Draw Works		
	Metric	U.S.
Main Line Hoist	Main Line Hoist Single speed motor	
Hook Load (single part line)		
Bare Drum	5 450 kg	12,000 lb
Hoisting Speed (single part line)		
Bare Drum	1 m/min	3 ft/min
Main Hoist Cable	15 mm	0.59 in
Minimum Breaking Strength	23 042 kg	50,800 lb
Note: Do not use multiple part lines with the main line hoist, use single part line only.		
Foot Clamp Capacity	HWT	
Wireline Hoist		
Level Wind	N/A	
Line Pull		
Bare Drum	990 kg	2,190 lb
Full Drum	277 kg	502 lb
Line Speed		
Bare Drum	100 m/min	337 ft/min
Full Drum	433 m/min	1,470 ft/min
Drum Capacity 4.8 mm (3/16") swaged	1,890 m	6,200 ft
Minimum Breaking Strength	2,268 kg	5,000 lb
Note: Wireline cable length to be specified at time of order		

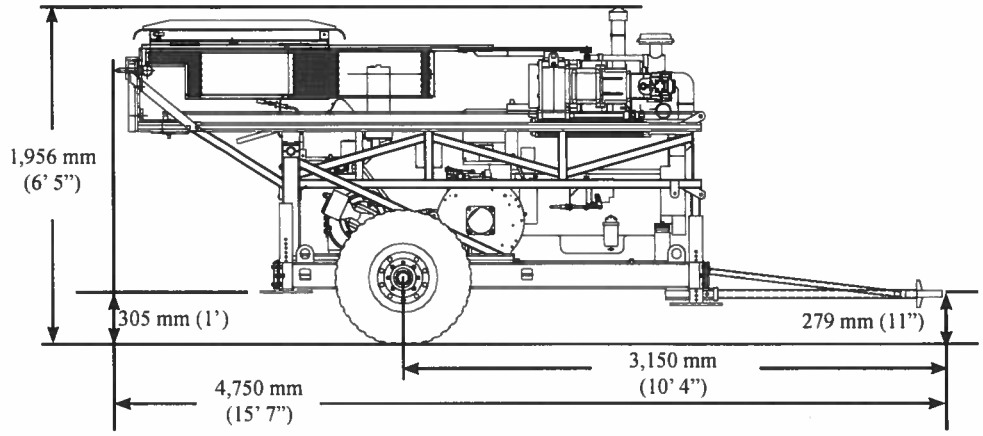
LF™70 TECHNICAL INFORMATION

Additional Information		
	Metric	**U.S.**
Fuel Tank Capacity	57 L	15 Gal

Weight - Fly Drill = 3,220 kg (6,500 lb)
Consisting of:
Cummins 4.5 L QSB , Tier 3, 4 cylinder, water cooled, turbo charged, diesel engine
Hydraulic Module
Draw Works Grp. c/w 12,000 lb Main Line Hoist, Wireline Hoist
3 Piece Lattice Mast Assembly
HQ Rotation Unit Grp. c/w Nitro-Chuck™
Base Frame
Fuel Tank (57 L/15 US gal)
Battery - 12V
Stabilizer Legs (4)

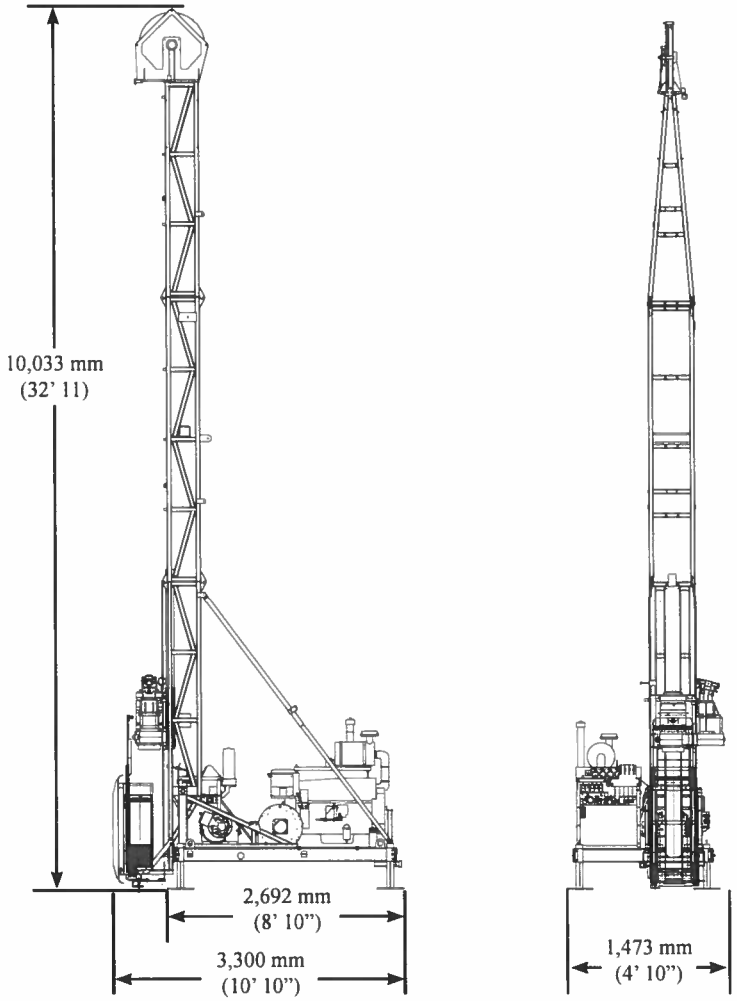
Options	
PQ rotation unit group	
Decals available in multiple languages	
Diesel engine - Deutz	
Mast raising cylinders	WARNING: Do not operate this drill with rods racked in wind velocities in excess of 85 km/h
Wireline cable	
Rod rack	
Mud tank	
Towing package	NOTE: Not highway rated
Fluid circulation pumps (diesel supply and pressure)	
Mud mixer	

Drill Transport Position C/W Optional Towing Package



Side View - Mast at 90°

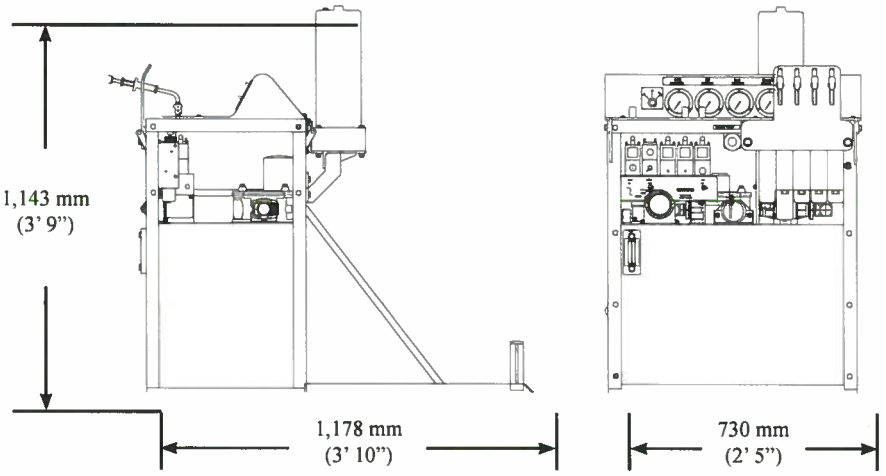
Wet Weight = 3,220 kg (6,500 lb)
Dimensions = Deduct 3,233 mm (10'7" from overhang if middle mast section is removed
Note = Base dimensions are with mechanical stabilizer legs at the uppermost position. Overall height can be increased by 247 mm (9.75") by adjusting legs downwards.



LF™70 TECHNICAL INFORMATION

Hydraulic Module

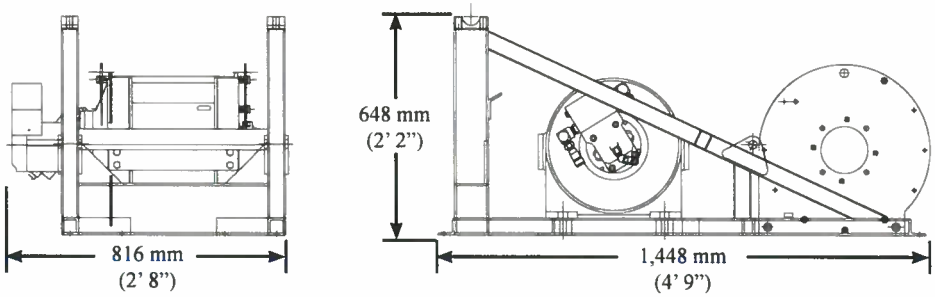
Wet Weight = 417 kg (920 lb)



Draw Works Module (KPL12)

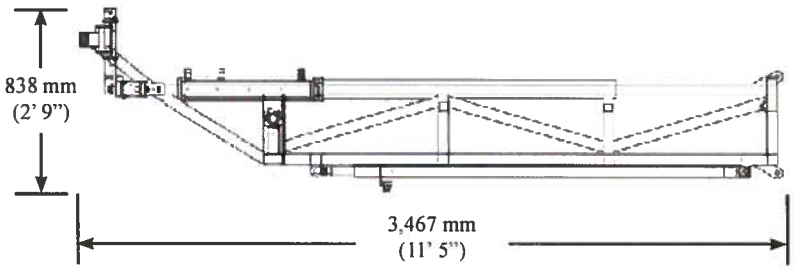
Weight = 450 kg (992 lb) (without cable and mast raising cylinders)
Mainline Hoist Cable = 15 mm x 22.9 m (0.59 in x 75 ft) Single part line - 26 kg (58 lb)
Wireline Hoist Cable = 4.8 mm x 1280 m (0.18 in x 4200 ft) 118 kg (260 lb)

Note: Lengths mentioned do not represent the max. rated drum capacity, they are typical values only.



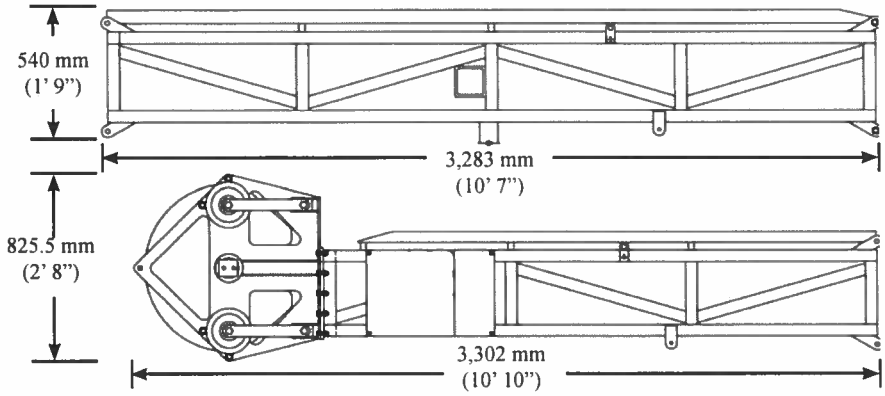
Lower Mast Section

Weight = 554 kg (1,222 lb) (Footclamp removed)



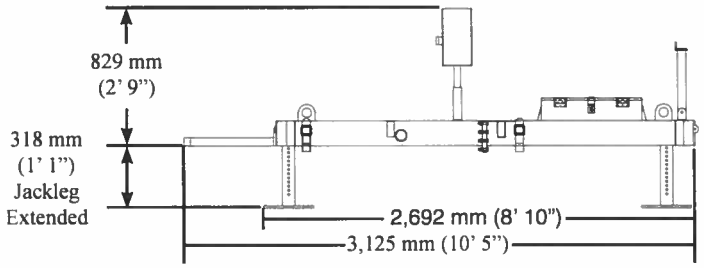
Middle And Upper Mast Sections

Combined Weight = 363 kg (800 lb)



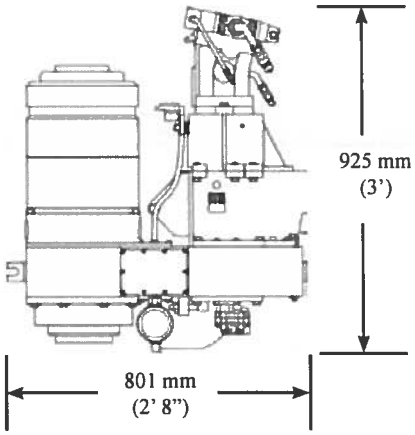
Drill Base

Wet Weight (Bare)	286 kg (630 lb)	Battery Box (including Battery) =	61 kg (134 lb)
Wheel and Stub Axle (each) =	51 kg (112 lb)	Mud Tank Outriggers (each) =	12 kg (26 lb)
Towing Hitch =	25 kg (55 lb)	Stabilizer Legs (each) =	11 kg (25 lb)
Fuel Tank (wet) =	57 kg (125 lb)	Operator Platform =	12 kg (26 lb)



HQ Drill Head C/W Nitro-Chuck™

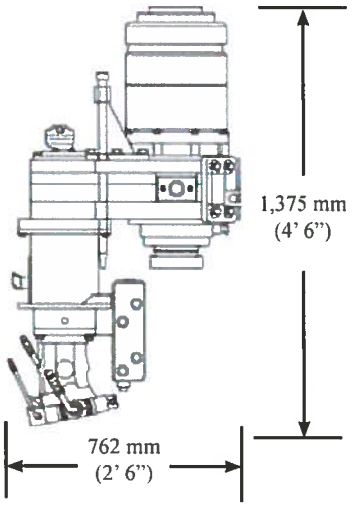
Dry Weight = 376 kg (860 lb)



LF™70 TECHNICAL INFORMATION

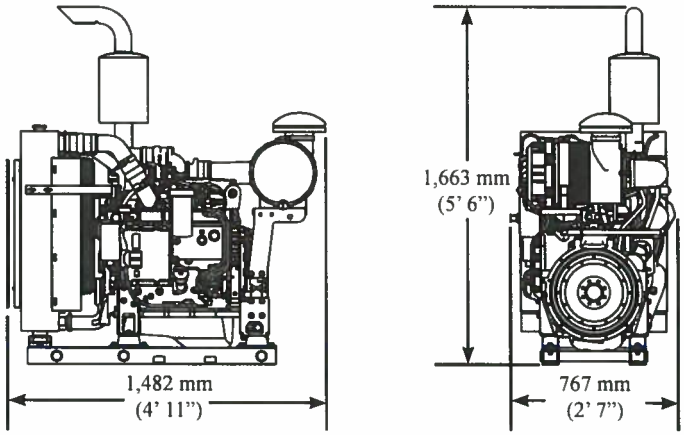
PQ DRILL HEAD C/W NITRO-CHUCK™ (OPTIONAL)

Dry Weight = 580 kg (1,279 lb)



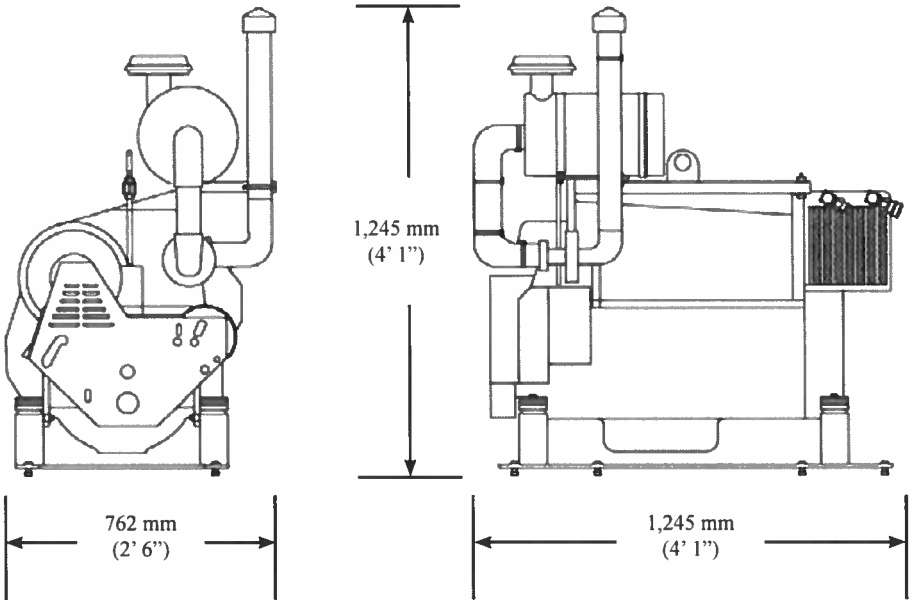
Power Unit - Cummins 4.5 L QSB, Tier 3

Dry Weight = 580 kg (1,279 lb)



Power Unit - Deutz BF4L914, Tier II (Optional)

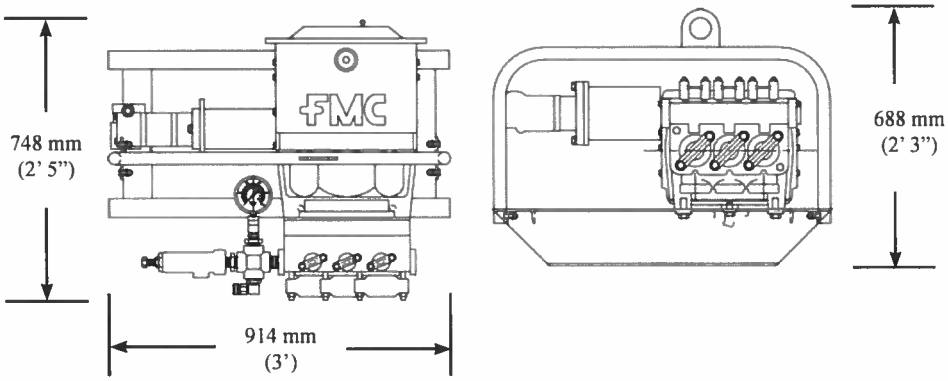
Dry Weight = 496 kg (1,094 lb)



(W11) Fluid Circulation Pump Group (optional)

Wet Weight = 254 kg (560 lb)

The Max. output of the standard 2-speed motor of the W11 is as follows:
High vol. / low pres. 35 gpm @ 300 psi 6.2 hp
Low vol. / high pres. 17 gpm @ 800 psi 7.9 hp

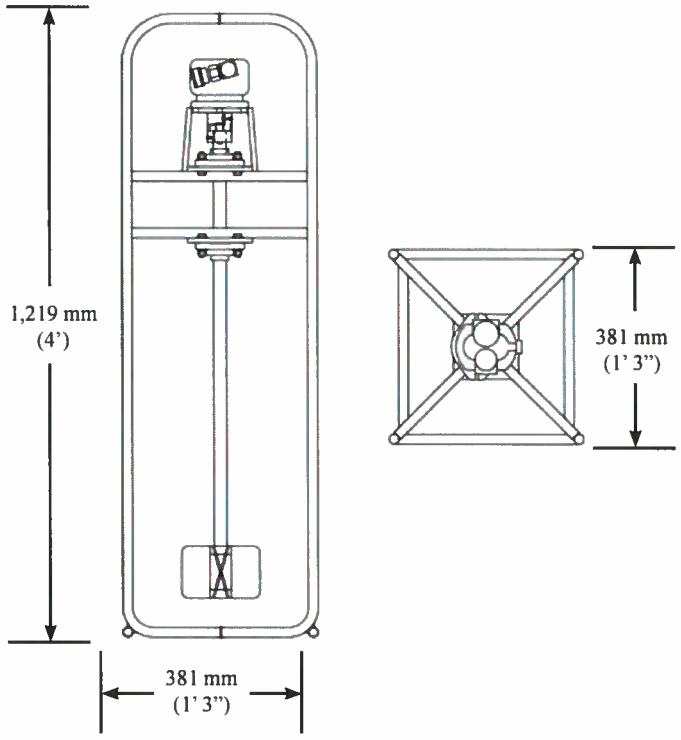


LF™70 TECHNICAL INFORMATION

Mud Mixer Assembly (optional)

Wet Weight = 31 kg (68 lb)

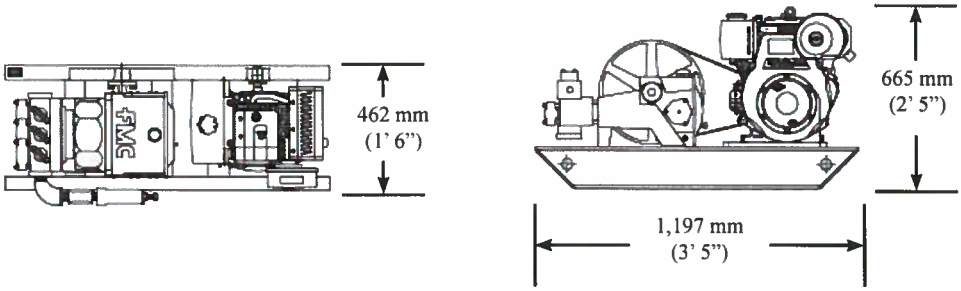
Note = Maximum speed of the mud mixer shaft at full flow is 2300 rpm.

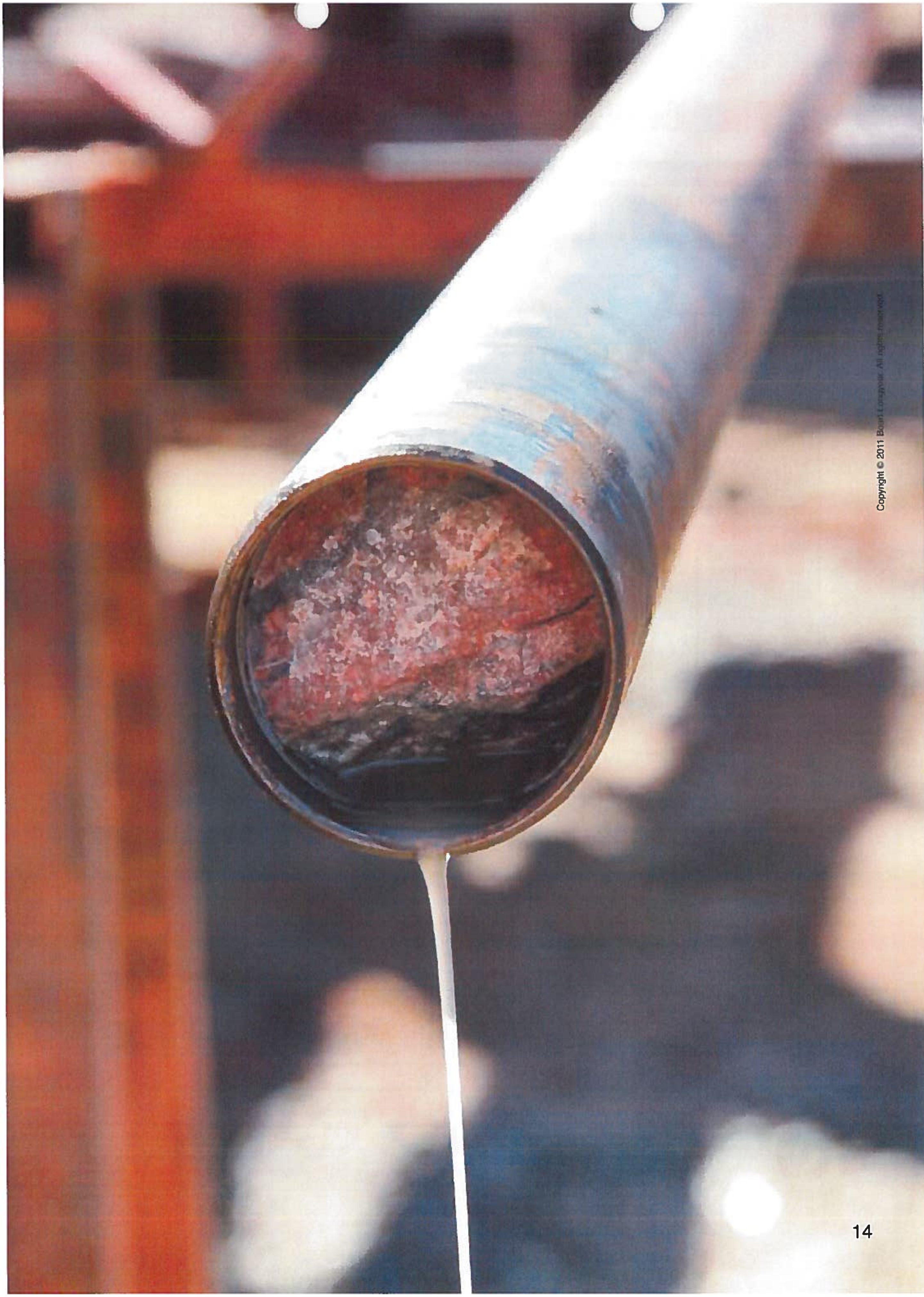


(L09) Fluid Supply Pump Group - Diesel (Optional)

Wet Weight = 145 kg (320 lb)

The max. output of the standard 2-speed motor of the L09 is as follows:
High vol./low pres. - 20 gpm @ 300 psi
Low vol./high pres. - 10 gpm @ 800 psi





BOART LONGYEAR™

Global Headquarters
Boart Longyear
10808 South River Front Parkway
Suite 600
South Jordan, Utah 84095
United States of America
info@boartlongyear.com

Tel: +1 801 972 6430
Fax: +1 801 977 3374

Canada
Boart Longyear
2442 South Sheridan Way
Mississauga, Ontario
Canada L5J 2M7
info@boartlongyear.com

Tel: +1 905 822-7922
Fax: +1 905 822-7232

Asia Pacific
Boart Longyear
26 Butler Boulevard
Adelaide, 5950
Australia
infoAP@boartlongyear.com

Tel: +61 8 8375 8375
Fax: +61 8 8375 8497

Latin America
Boart Longyear
Portal Riesco
Av. El Salto 4001, Huechuraba
Santiago, Chile 858 0641
infochile@boartlongyear.com

Tel: +56 2 595 3300
Fax: +51 242 671

Europe
Boart Longyear
12 Avenue des Morgines
CH1213 Petit-Lancy,
Geneva, Switzerland
infoEU@boartlongyear.com

Tel: +41 22 709 0800
Fax: +41 22 709 0801

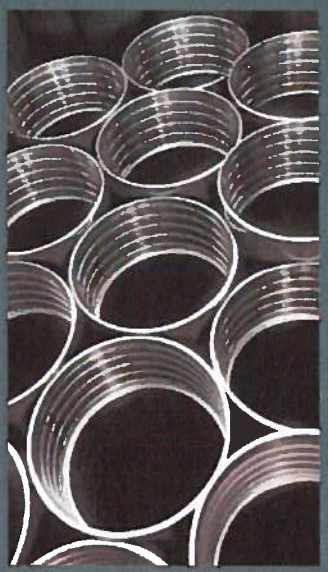
Sub-Saharan Africa
Boart Longyear
Cycad House, Constantia Office Park
Cnr 14th Avenue and Hendrik Potgieter
Weltevreden Park, 1709
Gauteng, South Africa
infosa@boartlongyear.com

Tel: +27 11 767 9300
Fax: +27 11 767 9301

MINING AND EXPLORATION DRILLING PRODUCTS

Diamond Products

Genuine Q™ Wireline Tooling



Rods and Casing

www.BoartLongyear.com • ASX: BLY

Jan 2012