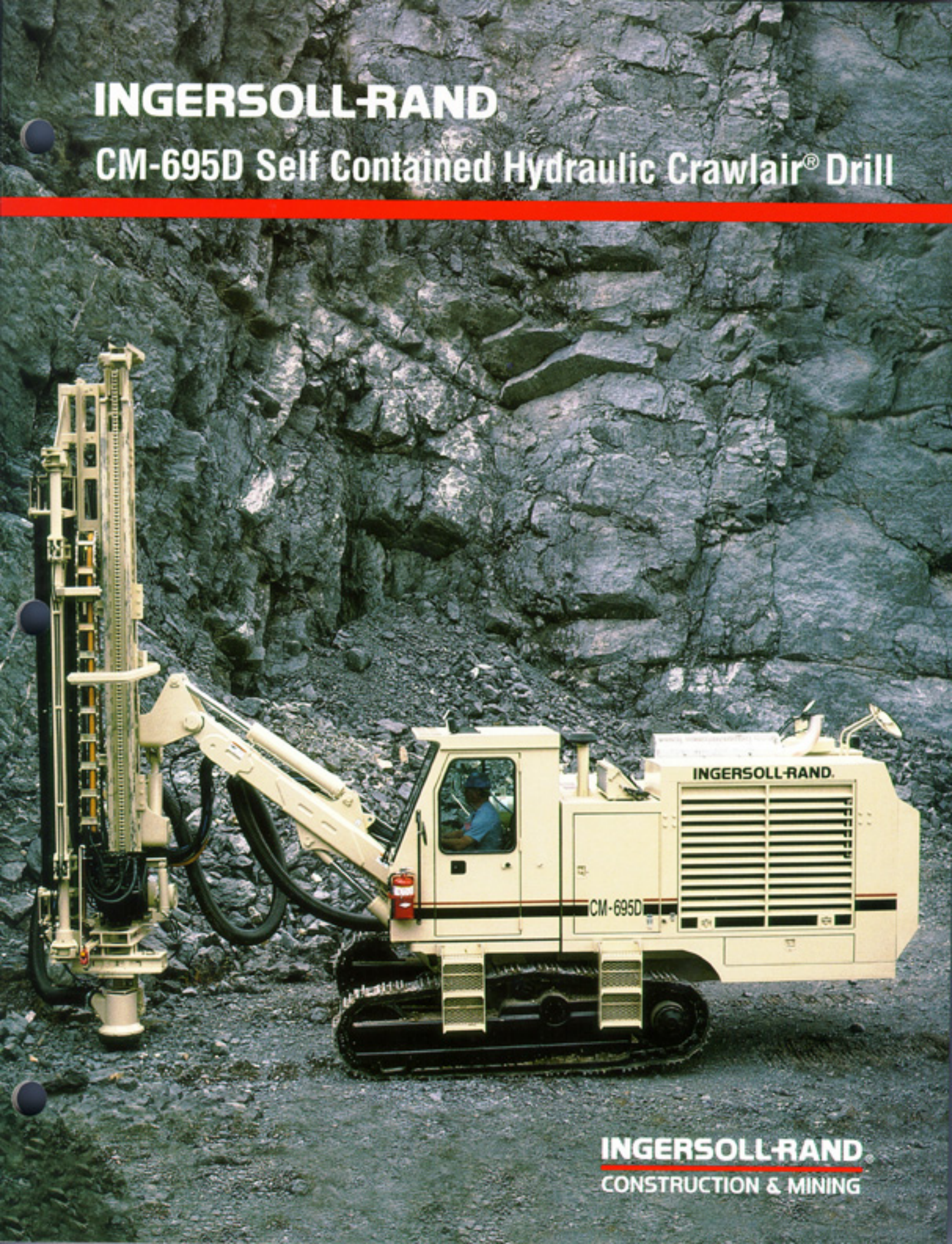
INGERSOLL-RAND

CM-695D Self Contained Hydraulic Crawlair® Drill



INGERSOLL-RAND
CONSTRUCTION & MINING

Powerful Penetration with the QL™ Series of Downhole Drills:

The QL4, QL5 and QL6 Series downhole hammers give you the straight hole you expect with a DHD. They give a 20-40%** higher penetration rate than competitive hammers. They are simple to maintain—no special tools are required for disassembly or assembly. They have the durability and long life you expect, with features such as hardened reversible hammer cases and solid pistons. These hammers will help you maximize the footage you drill with the CM-695D.

***Based on tests performed in lab conditions, your actual performance may vary.*

The CM-695D: A Simple, Durable

Hose Carrier Reduces Hose Wear and Lengthens Hose Life

Hydraulic hoses are carried and protected in the hose carrier. The double tier welded cross member construction is durable and easier to maintain than traveling hose reel designs. The hoses are of the highest quality available and yet they are flexible enough to provide long life. Rehosing costs are greatly reduced.

Powerful Hydraulic Rotary Head Provides Adjustable Rotation

The Direct Drive Rotary Head is convertible for either 3" (76 mm) or 4" (100 mm) rod without dismounting. Rod uncoupling is accomplished with a hydraulic Rod Lock sleeve. Drill Pipe flats and the "Z" thread design require only 1" (25 mm) of vertical movement for uncoupling. Feed and rotation are synchronized for smooth changes in and out of the hole. The torque and rotation speed are adjustable from 0-3000 lb-ft (4068 Nm) and 25-130 rpm, respectively.

Easy Drill Pipe Changes

Drill pipe is added and removed with ease. The simple swing under design has fewer moving parts.

Pipes can be indexed in the carousel to distribute wear over the entire drill string. Pipe grippers are positive and controllable. Components are robust and abuse resistant. The drill pipe grippers swing between the rotary head and the fixed pipe carousel. The operator activated drill pipe thread lubricant system improves thread life.

Powerful, Flexible Feed System

The Hydraulic feed motor produces 10,000 lbs. (44,480 N) of pull back force. Belleville washers absorb rebound energy. Separate fast and slow feed controls can be adjusted to suit rock conditions and operator preference, optimizing bit life.

Robust Hydraulic Centralizer/Fork Chuck

The massive centralizer can be used to clamp the bit for quick bit changes. These critical components are resistant to normal drilling abuse. The Fork Chuck is extended by air power and retracted by Hydraulic power. This superior design offers the shock absorption needed to extend the life of all break-out components. Bolt on foot piece extensions and 7" (178 mm) (vertical travel) sliding dust hood tame the roughest bench. Overall drill speed and dust collector efficiency increase.

and Efficient Hydraulic Drill!

Flexible Boom Movements

The robust boom has been designed to drill vertical, horizontal, inclined and toe holes. The CM-695D can drill holes 15" (381 mm) above the ground at an angle of 15° above horizontal. The drill guide will swing 90° right and 22° left to drill pre-split holes.

Transportability

The overall width of the CM-695D is only 98.5" (2.5m). This ideal width permits easy transport. Pioneering work and development of narrow benches is not a problem.

Ambient Capability

We have designed this Crawlair® to operate in ambient temperatures of 125°F (52°C).

Efficient side-by-side-by-side heat exchangers are easily cleaned to maintain the high ambient rating. Cooler fans are thermostatically controlled.

"Intelsense®" Hydraulic System Controls Rig Functions

The Axial Piston, Variable Displacement Pump is pressure limited with load sense. This system utilizes reliable hydraulic valves. This combination does not require complicated

electronic controls. No microprocessor or variable voltage controls are used. Operator "feel" is maintained. This straightforward design is easy to maintain and understand. Complex electrical schematics are not required when troubleshooting a problem. Maintenance is easy.

Protection of Important Internal Components/ Easy Access Enclosure

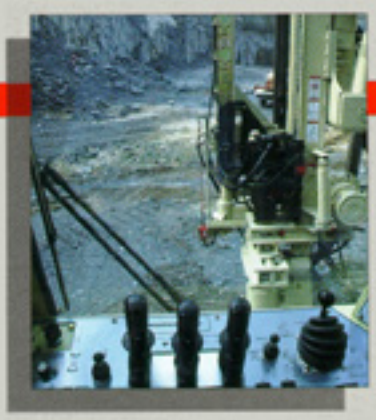
All components are protected from damage, dust and vandalism inside a well-designed lockable enclosure. This enclosure provides security, yet all service doors are large enough to permit easy access for service.

High Pressure Air Compressor to Power Your DHD

The Ingersoll-Rand 600 CFM/290 PSI* (17m³/min. @ 20 bar) high pressure air compressor provides more than adequate air to power the new Ingersoll-Rand QL™ series of downhole drills. Hole sizes range from 4" (100 mm) to 6" (152 mm). Conservative bailing velocities improve drill pipe life and produce straight, loadable blast holes over the full range of the boom and guide positions.

*Using DHD 3.5

Compared to All Others,



Drill Controls Help Operator Maximize Rig Performance

Operator visibility is superb. Drill control gauges are at eye level to improve operator reaction and control. A full complement of 24 volt gauges in English and metric has been thoughtfully arranged. All drill and drill pipe change controls have been arranged to reduce reaction time, reduce drill pipe cycle time and improve overall productivity.

Efficient Dust Collection System for Long Component Life

Cartridge type filters are cost effective and easily replaced. The standard pre-skimmer improves life of all dust collector components.

Super 17" (432 mm) Ground Clearance/Heavy Duty Track Components

The standard track motor covers, full length rock guard, and 17" (432 mm) ground clearance complement the D-4 size track components.

The CM-695D will not struggle in tough ground conditions. The 35° (70%) gradeability rating and 20° total track oscillation make the CM-695D almost unstoppable. This is a very agile and tough drill.

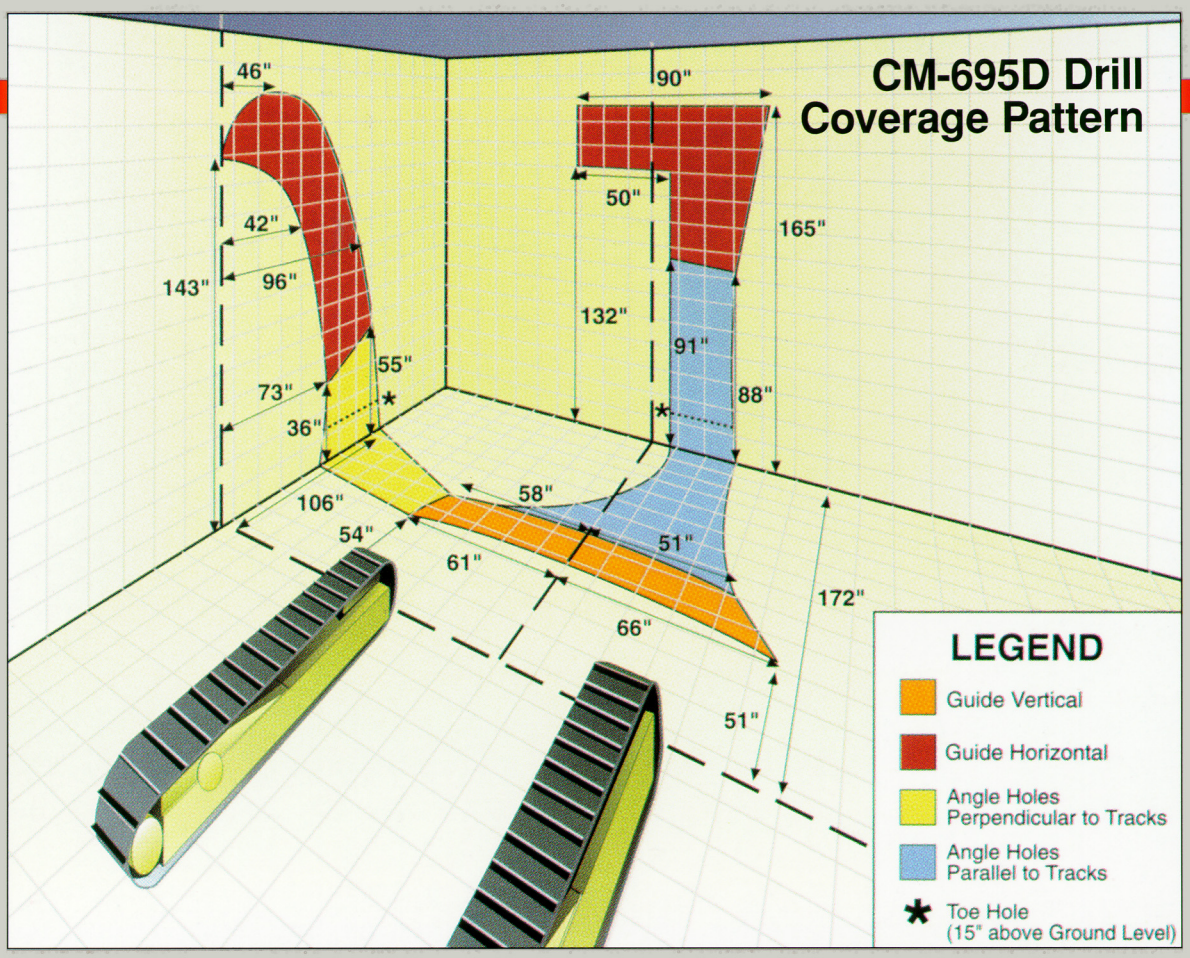
Comfortable Cabin Maximizes Operator Performance

The quiet, comfortable ROPS/FOPS operator's cabin is mounted to the main frame of the CM-695D. This design takes advantage of the full 20° of track oscillation. Inside air is continuously pressurized with filtered air. The maximum noise level at the operator's ear with the door and sliding window closed is 80 dBA.

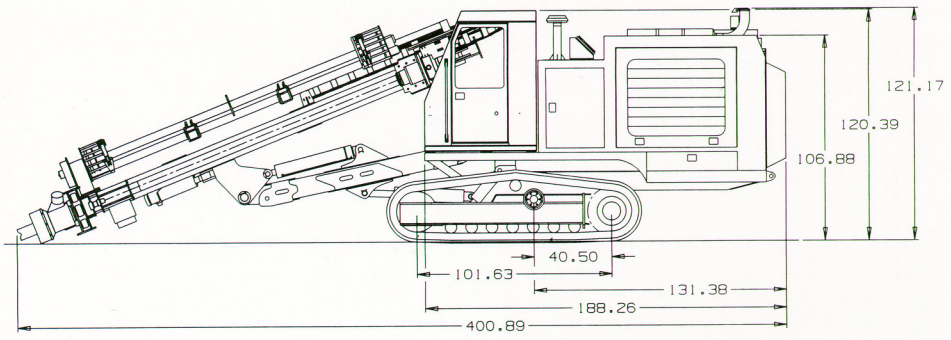
The DHD Crawlair® Concept produces less noise than comparable drifter machines. The noise created by the piston striking the drill bit is direct and reduced, since both components are down in the hole. Impact energy transfer through expensive and exotic rod systems is not required. The steel-on-steel noise of the rod system is eliminated.

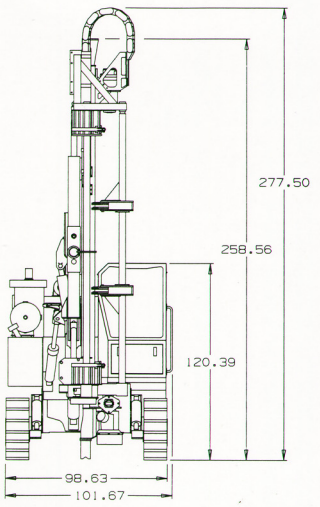
The 6-way adjustable spring suspension with hydraulic shock absorber seat reduces operator fatigue and increases production. Hole visibility is excellent. Set up time is reduced. There is plenty of heating 28,000 BTU/hr. (29,540 kJ/hr.) and cooling 17,500 BTU/hr. (18,462 kJ/hr.) to maintain a comfortable operating environment.

the CM-695D is a Very Quiet



Shipping Dimensions





Design that's Easily Serviced,

GENERAL SPECIFICATIONS

Hole size	4 - 6 in. (100-152 mm)
Dry Weight	41,000 lbs., without rods (18,636 kg)
O.A. Trans. Length	33.3 ft. (10.14 m)
O.A. Width	8.2 ft. (2.5 m)
Max height (top of cab)	10.2 ft. (3.1 m)
(top of guide)	21.6 ft. (6.58 m)
Ground Clearance	17 inches (432 mm)
Gradeability	35 degrees 70%
Track Oscillation	20° (total)
Tram Speed	2.0 mph (3.2 km/h)
Cab	Air conditioned/heat pressurized, ROPS/FOPS
Cab Noise Level	80 dBA
Dust Collector	(3) elements, with preskimmer
Vaposol® (opt.)	40 gal. (151L)
Engine Type	Caterpillar 3306 DITA
Rated	310 bhp @ 2100 RPM (231 kW @ 2100 RPM)
Fuel Capacity	147 usable gal. (556 L)

BOOM & GUIDE

Boom Swing Range (right/left)	45 deg./20 deg.
Boom Lift Range (above/below)	50 deg./20 deg.
Boom Length	120 inches (3.0 m)
Guide Dump (+,-)	90 deg./20 deg.
Guide Extension	4 feet (1.2 m)
Guide Swing (right/left)	90 deg./22 deg.

COMPRESSOR

Type	Ingersoll-Rand two stage rotary screw
Volume	600 CFM (17m3/min.)
Pressure	290 psi (20 bar)

FEED MOTOR

Operational speed	25-130 RPM
Available Torque	3000 ft.-lbs.max. (4068 Nm)

ROTARY HEAD

Feed Force	10,000 lbs. (44,480 N)
Pull Back	10,000 lbs (44,480 N)

PIPE HANDLING

Pipe Handling System	3 in. (76 mm) or 4 in. (102 mm) dia. Rod System
Capacity	6 x 13.1 ft. (4 m) Length Plus starter rod Optional: 7 plus starter rod
Pipe Breaking	Hydraulic Rod Lock Sleeve
Remote thread greaser	standard feature

AVAILABLE DOWNHOLE DRILLS

Model	DHD 3.5	QL4	350R	SF6M	QL50	QL55QM	QL60	QL65QM
Weight w/o bit	65 lb. (29.5 kg.)	71 lb. (22 kg.)	151 lb. (68.5 kg.)	215 lb. (97.5 kg.)	132 lb. (290.4 kg)	162 lb. (356.4 kg)	200 lb. (440 kg)	244 lb (536.8 kg.)
Outside Diameter	3.12 in. (79 mm)	3.63 in. (92 mm)	4.5 in. (114 mm)	5.37 in. (137 mm)	4.6 in. (116.8 mm)	4.88 in. (124 mm)	5.44 in. (138.2 mm)	5.75 in. (146.1 mm)
Length w/ bit retracted	35.6 in. (904 mm)	38.13 in. (968 mm)	46 in. (1168 mm)	49.5 in. (1257 mm)	45.3 in. (1149.4 mm)	45.3 in. (1149.4 mm)	48.1 in. (1220.7 mm)	48.1 in. (1220.7 mm)
Bit Range	4 in. (100 mm)	4.125-4.5 in. (105-114 mm)	5.125-6 in. (130-152.4 mm)	6 in. (152.4 mm)	5.125-6 in. (130.3-152.4 mm)	5.5-6 in. (139.7-152.4 mm)	6 - 8.5 in. (152.4-215.9 mm)	6.5-8.5 in. (165.1-215.9 mm)
Std. B. head Connection	2.375 in. API reg. pin	2.375 in. API reg. pin	3.5 in. API reg. pin	3.5 in. API reg. pin	3.5 in. API reg. pin	3.5 in. API reg. pin	3.5 in. API reg. pin	3.5 in. API reg. pin

and Built Tough to Last!