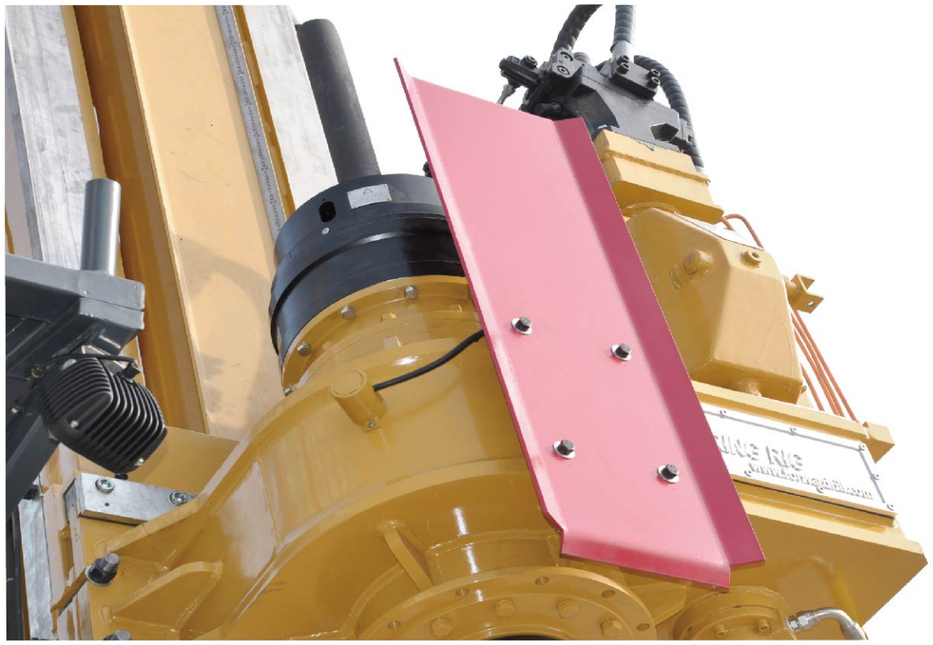
FORWARD

C8 CORING DRILL RIG

FORWARD'S C8 is a very strong crawler mounted rig with all the user-friendly functions drillers are looking for and all at their fingertips. The rigs are built under strict quality control protocols and are rigorously tested before dispatch.
The C8 has been built with reliability in mind and is assembled using only the very best first-world components such as Danfoss pumps、valves, hydraulic motors, Manuli Hoses and Cummins engines.

The C8 has the 3 speeds gear box provides free combination of torque and rotation speed. The C8 equipped PQ chuck and 4700 mm stroke of rotation facilitates handling of rods of 4.5 meters length.

The foldable mast and lifting supports ensure easy operation. The modern design with safety features such as safety guards and emergency stop buttons makes the rig user-friendly and safe to operate.



DRILL HEAD

- Drill head is suitable for drilling with rods of B-P series, rods diameter is from 55.5mm to 114.3mm, inner diameter from main axle is 121mm.
- Patented jaws with chuck and hydraulic opening/spring closing function insure fail-safe operation. Spring clap and disk chuck clutch drill rods securely.
- Drill head with direct drive from hydraulic cylinder ensure stability during drilling process, as well as more accurate and reliable pressure regulation while drilling with pressure increase or decrease.
- There is a function of lateral displacement of the drill head.

MAST

- Rigid design of the mast provides superior performance and reliability even under the toughest geological conditions. Separate allocation of operator work place and mast lift/ extend control valve seriously reduces malfunction probability during work.
- Mast is installed in working position for drilling using two hydraulic cylinders, which are equipped with balancing valves to increase security.
- The foldable telescopic mast ensures the reliability of drilling. The underside end of the drilling mast anchors the ground surface while drilling, providing additional stability.

OPERATOR PANEL

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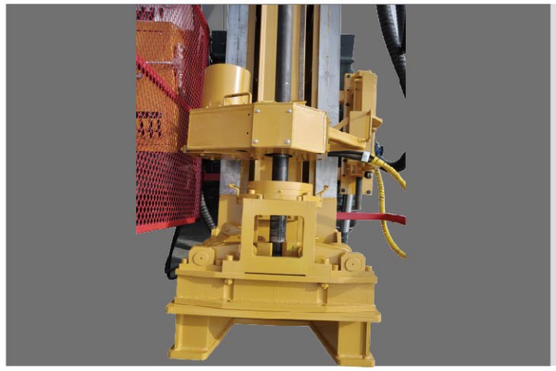
HOOD

the steel hood provides strong protection. Every wall of the Hood can be taking off when the very hot weather, and which ensure easy access to maintenance of engine and hydraulic system.

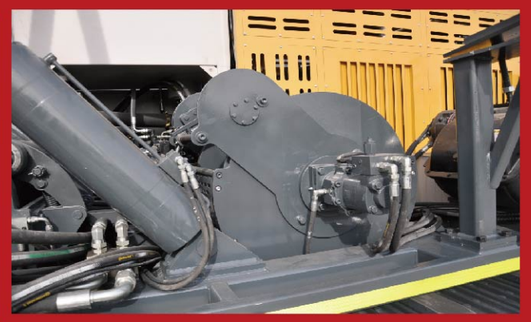


Carriage Feeding back

The carriage be driven by hydraulic cylinder, the feeding more accurate and smoothly.

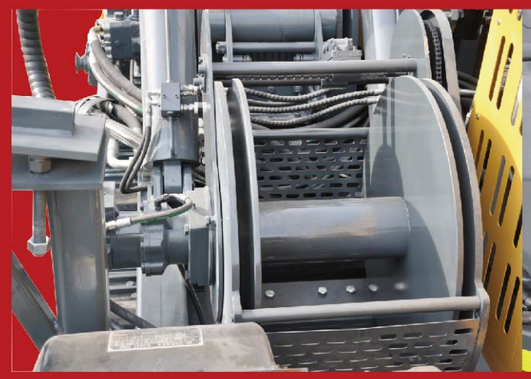
HYDRAULIC SYSTEM

Hydraulic pumps are piston variable pump, the valve is PVG32 variable valve, the motor is piston variable motor, all from Danfoss, ensuring easy maintenance.



MAIN WINCH

Mounting of main winch on mast minimizes coring drill rig's vibration.



LINE WINCH

Mounting of the line winch have 4000 mts capacity. Also equipped the line system.

CRAWLER CHASSIS

Crawler chassis of the drill rig is equipped with hydraulic motors of Korean production, which guarantee high operation quality.

TECHNICAL SPECIFICATIONS FORWARD C8

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TECHNICAL SPECIFICATIONS

ROD SIZE	Fluid Filled	
Drill Rod/Core Barrel	Hole Depth (Meters)	Hole Depth (Feet)
NRQ/NQ/NQ2	3 000	9 842
HRQ/HQ	2 400	7 874
PHD/PQ	1 750	5 742

*The figures have been calculated based on a vertical, straight, clean down hole using a 12 000Kg hoist (single line pull). Actual drilling capacity will depend on in-hole tools, conditions, drilling techniques and equipment used.

Prime Mover

Cummins QSL8.9-C360, liquid cooled, turbo changed, inter-cooled diesel engine,6 Cylinders.

	Metric	*U.S.*
Displacement	8.9 L	8.9L
Power (maximum) at 2,500 RPM	268 KW	360 HP
Emissions Certification	EU III	EU III

Torque and RPM Ratings

(Hydraulic motor at maximum/minimum displacement, prime mover at 2,100 RPM)

	Speed (no load)	*Torque (stall)*
	RPM	Nm
	277 – 553	8 120 – 3 665
	489 - 979	4 152 – 2 077
	574 - 1200	3 538 – 1 769

NOTE: Drill 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

	Metric	*U.S.*
Primary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	380 L/min	100 gpm
Maximum Pressure*	32 Mpa	4 640 psi
Secondary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	150 L/min	39.6 gpm
Maximum Pressure*	28 Mpa	4 060 psi
Tertiary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	150 L/min	39.6 gpm
Maximum Pressure*	28Mpa	4 060 psi
Fourth Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	120 L/min	31.7 gpm
Maximum Pressure*	28Mpa	4 060 psi
Auxiliary Pump I	Gear, matic axial clearance compensation mechanism assures high volumetric efficiency for long time	
Max Flow	25 L/min	6.6 gpm
Maximum Pressure*	20 Mpa	2 900 psi
Auxiliary Pump II	Gear, matic axial clearance compensation mechanism assures high volumetric efficiency for long time	
Max Flow	8 L/min	2.11 gpm
Maximum Pressure*	5 Mpa	725 psi

*Factory setting

Drill Head

Stand PQ – Hollow Spindle	
Rotation Motor	Danfoss hydraulic motor – variable/reversible
Head lateral movement	Hydraulically operation
Hydraulic PQ Chuck	Hydraulically opened. Disk spring closed.
	Axial holding capacity of 244 640 N (55 000 lbf)
Drill Head Lubrication	Force fed bearings, oil bath for gears
Drill Head Lubricating Oil Filtration	25 micron high pressure oil filter

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Drill Mast And Feed System

	Metric	U.S.
Feed Stroke	4.7 m	15.4 ft
Feed Pull	295 000 N	66 318 lbf
Feed Thrust	152 000 N	34 170 lbf
Rod pull	9 m	30 ft
Drilling Angle	30° off horizontal to 90° vertical down	

Draw Works

	Metric	U.S.
	Main Line Hoist Double speed motor	
Hook Load (single part line)		
Bare Drum	25 000 Kgf	55 115 lb
Hoisting Speed (single part line)		
High Speed (Bare Drum)	71 m/min	233 ft/min
Low Speed (Bare Drum)	44 m/min	144 ft/min
Main Hoist Cable	28mm	1.1 in
Minimum Breaking Strength	50 000 Kgf	110 230 Lbf

Wireline Hoist

Line Pull		
Bare Drum	2 500 Kg	5 500 lb
Full Drum	425 Kg	940 lb
Line Speed		
Bare Drum	157 m/min	515 m/min
Full Drum	430 m/min	1 410 m/min
Drum Capacity(6mm swaged)	4 000 m	13 100 ft
Minimum Breaking Strength	5 500 Kg	12 120 lb

Additional Information

	Metric	U.S.
Fuel Tank Capacity	200 L	52 US gal

DIMENSIONS AND WEIGHT

Foot Clamp

Has the central stabilizer， release by hydraulic cylinder, the weight of the rods itself to clamp it.

	Metric	U.S.
Max.Carry	500 KN	111 000 lbf
Max. Dia of hollow	227mm	8-1/2"
Jaws	BQ/NQ/HQ/PQ	BQ/NQ/HQ/PQ
Foot Clamp Capacity	***PWT***	

Fluid Circulation Pump

Single-Action Triplex Piston Pump, Manual shift, Pump Speed are infinitely variable.

	Metric	U.S.
Displacement	0 - 320 LPM	0 - 84.5 gpm
Pressure	0 - 7 Mpa	0 - 1 015 psi

Dimensions and Weight

Weight	25 500 Kg
Transportation Dimensions (L×W×H)	8 400 ×2 500 × 2 700 mm

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