

## Full Hydraulic Drilling Rig



### I . General Introduction

The HYDX-5C new model full hydraulic core drill rig is advanced drilling equipment with reference technique of same kind equipments at home and abroad. The drill rig has a reasonable design and superior performance. It is easy for operation and maintenance.

#### 1. Overall Unit Features:

The drill rig adopts full hydraulic driving, tire trail-type. The drill head is driven by variable motor with function of two-speed mechanical gear shifts, stepless speed change with an advanced and simple structure. The drill head is fed and driven with a system connecting the hollow spindle and oil cylinder with chain. The system has the function, if the piston rods of oil cylinder moving one certain distance, the drill head moving will double the distance. The mast could be adjusted within the range of angle 0 to 90 degree for its drilling hole with a low center of gravity and good stability of the overall unit.

The rig provides operator with a nice field of vision and wide and comfortable working

condition. The rig looks pretty in overall structure and embodies the design thought of people oriented.

### (1) Reliable Performance

Basing on the guideline of purchasing the critical auxiliary equipment internationally, the diesel engine, the hydraulic pump, the main valves, the motors, crawler reducers and the key hydraulic spare parts are all adopted famous brands products at home and abroad.

### (2) High Efficiency

With big torque, high power unit allocation and with reasonable structure design and advanced operation method and 6 meters (19.7 feet) length of drill rod, all these guarantee the drill rig's high operation and performance efficiency.

### (3) Environmental Protection

With lower polluting emission of diesel engine, professional noise reducing design, the drill rig is fully suitable for urban operation and performance.

### (4) Energy Saving

Adopting the advanced load sensitive control technique, the drill rig has reduced the power consumption and heat generation to the lowest level. With an elegant outline, compact structure, reliable performance and operation easily, it is the priority equipment to be selected in the full hydraulic core drill rig of present domestic market.

## **2. Field of Application**

HYDX-5C type drill rig is mainly used for inclined and straight holes drilling. It could

be used for exploration and prospecting of geology, metallurgy, coal, nuke industry, hydrology and in other industries fields. It is a core drilling rig by using diamond and carbide-tipped bits mainly. Proper use and reasonable maintenance could guarantee the best operation and performance with availability and long working life. Therefore, all customers should follow the manual for operation and maintenance strictly. All the loss, such as equipment damage and personal injury and etc., from the following causes, the customers should be responsible for their own action.

- Any application beyond those described in this manual.
- Any change to the equipment presumptuously on their own.
- Any operation or performance contrary to the safety instruction and regulation and/or any use not following the requirements of the manual.
- Any maintenance to the overall machine and to each component against the requirements.

## **II. Main Performance Parameters of HYDX-5C**

The figures in these tables have been calculated, based on field experiences, and may be reasonably expected. Actual drilling capacity will depend on in-hole tools and conditions, drilling techniques and equipment used.

Diesel Engine	Model	Cummins 6CTA8.3-C195 (turbocharged and charge water cooled)
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	Displacement	8.3L (2.19 US Gallons)
	Power	145kW (195HP)
	Rated RPM(Factory setting)	2200rpm
Drilling Capacity	BQ	1500 m(4920 feet)
	NQ	1300 m(4264 feet)
	HQ	1000 m(3280 feet)
	PQ	680 m(2230 feet)
Drill Head	Rotation Motor	Double Hydraulic Motors –variable and Reversible Maker: SAUER-DANFOSS
	RPM	Two Shifts/ Stepless Change 0-1145 RPM
	Ratios	1st 8.776:1 2nd 2.716:1
	Head Opener	sidewise sliding way with hydraulic drive
	Hydraulic Chuck(PQ)	Hydraulically opened, Disc Spring Clamping, Normally Closed Type Axial Holding Capacity of 222 400 N

	Max. Torque	4650 N·m(3427 lbf·ft)
	Hold Diameter	121 mm(4.76 inch)
	Max. Lifting capacity of Spindle	150 kN(33720 lbf)
	Max. Feeding Power	75 kN(16860 lbf)
Primary Pump Package	Axial Piston variable displacement Triplex pump for driving of Drill Head Rotation, Main Hoist, Mud Pump & Line Winch.	Maker: DANFOSS 1st Pump: 150LPM at 28.5MPa 2nd Pump: 120LPM at 25MPa 3rd Pump: 102 LPM at 25MPa
Hydraulic Tank	Capacity	420 L (111 US Gallons)
	Hoisting Speed (single wire)	38-70m/min(bare drum)
Capacity of Main	Hoisting force (single wire)	77kN(17310 lbf)

Hoist	Steel Wire Diameter	18 mm(0.71 inch)
	Steel Wire Length	50 m(164 feet)
	Hoisting Speed (single wire)	164m/min (bare drum)
Capacity of Wire line	Hoisting Force (single wire)	12 kN(2698 lbf) (bare drum)
Hoist	Steel Wire Diameter	6 mm(0.24 inch)
	Steel Wire Length	1500 m(4920 feet)
	Mast Height	11 m(36 feet)
	Mast Adjusting Angle	0°—90°
	Drilling Angle	45°—90°

Mast	Feeding Stroke	3800 mm(150 inch)
	Slippage Stroke	1500 mm(59 inch)
	Feed Pull	15000kg(33075 lb)
	Feed Thrust	7500kg(16538 lb)
	Rod Pull	3m or 6m(9.84feet or 19.68feet)
Mud Pump	Type	Reciprocating Pump Triplex Plunger
	Model	BW250
	Stroke	100mm(3.9 inch)
	Output volume	250,145, 90, 52 L/min (66, 38, 24, 14 US Gallons/min)
	Discharge pressure	2.5, 4.5, 6.0, 6.0 Mpa (363, 653,

Foot Clamp		870, 870 psi)
	Clamping Scope	55.5-117.5 mm(2.19-4.63 inch) through hole $\Phi$ 154mm(6.06 inch)
Other	Weight	10000 Kg(22050 lb)
	Working Dimensions (L $\times$ W $\times$ H )	5652 $\times$ 2130 $\times$ 10200mm (222.5 $\times$ 83.9 $\times$ 401.6 inch)
	Transport Dimensions (L $\times$ W $\times$ H )	5970 $\times$ 2130 $\times$ 2730mm (235 $\times$ 83.9 $\times$ 107.5 inch)
	Transport Way	Tire type