

HYDX-5A Full Hydraulic Drilling Rig



I. General Introduction

The HYDX-5A new model Full Hydraulic Core Drill Rig is developed by Lianyungang Huanghai Machinery Co., Ltd. with reference of advanced technique of same kind equipment at home and abroad. The drill rig has a reasonable design and superior performance. It is easy to operate and for maintenance.

1. Overall Unit Features :

The drill rig adopts full hydraulic driving, traveling with crawlers itself. 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 rotator is fed and driven with a system connecting the 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 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 pollution discharge of diesel engine, professional noise reducing design, the drill rig is 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 should be the priority equipment to be selected in the full hydraulic core drill rig of present domestic market.

2. Field of Application

HYDX-5A Type Drill Rig is mainly used for slope and straight holes drilling. It could be used for exploration and prospecting of geology, metallurgy, coal, nuke industry, hydrology and for other industries fields. It is a core drilling rig by using diamond and carbide-tipped bits mainly.

II. Main Performance Parameter of HYDX-5A

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

Diesel Engine	Model	Cummins 6CTA8.3-C195 (turbocharged and charge water cooled)
	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	Maker: DANFOSS 1st Pump: 150LPM at 28.5MPa 2nd Pump: 120LPM at 25MPa 3rd Pump: 102 LPM at 25MPa

	Pump & Line Winch.	
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)
	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 Hoist Mast	Hoisting Force (single wire)	12 kN(2698 lbf) (bare drum)
	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°
	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, 870, 870 psi)
Foot Clamp	Clamping Scope	55.5-117.5 mm(2.19-4.63 inch) through hole Φ 154mm(6.06 inch)
Other	Weight	13000 Kg(28665 lb)
	Dimensions (L × W ×H)	5600×2240×2650mm (220×88.2×104.3 inch)
	Transport Way	Steel Crawler