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JCD1000 Crawler Mounted Diamond Core Drilling Rig



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Introduction

The core drill rig of full hydraulic and rotator adopted the technology of wire-line coring has been the dominant type rig for solid mineral deposits prospecting in developed countries in the world. It is also the developing direction of drilling technique and drilling equipment in China. Under these circumstances, JCDRILL has developed the JCD1000 core drill rig successfully according to the situation of China. This type of drill rig could substitute imported products. It could be applied to exploration and prospecting of geology, metallurgy, coal, petroleum, natural gas, groundwater and other industries.

The drill rig is equipped with a series motor driving pump. The feeding and lifting of rotator are driven in the structure of cylinder directly pushing, with a 3.5m(11.5 feet) stroke. The rotation of spindle is driven by a single engine. It has four mechanical shifts of range of speeds, and the speed could be adjusted hydraulically with stepless change.

The rig is simple in structure. It is light and easy for transference; the mast has the functions of sliding and touching ground; the spindle lifted and lowered with hydraulic cylinder; it could be folded for transport and relocation. The spindle hole is in large diameter.

Main Parameters

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.

Specification

Item	Specification	Data
Diesel Engine	Model	Cummins 6BTA5.9-C180 (turbocharged and charge water cooled)
	Displacement	5.9L (1.56 US Gallons)
	Power	132Kw (180HP)
	Rated RPM(Factory setting)	2200rpm
Drilling Capacity	BQ	1000m(3280feet)
	NQ	700m(2296 feet)
	HQ	500m(1640 feet)
	PQ	300m(984 feet)
Drill Head	RPM	Four Shifts/ Stepless Change 0-1100 RPM
	Max. Torque	4200 N·m(3108lbf·ft)
	Hold Diameter	98mm(3.85 inch)
	Max. Lifting capacity of Spindle	150 kN(33720 lbf)
	Max. Feeding Power	60 kN(13480 lbf)
Primary Pump	Hydraulic pump	1st Pump: 140LPM at 30MPa
	Axial Piston variable displacement Triplex	2nd Pump: 120LPM at 25MPa
	With load sensing system.	3rd Pump: 50 LPM at 20MPa
Hydraulic Tank	Capacity	310 L (82 US Gallons)
Capacity of Main Hoist	Hoisting force (single wire)	57kN(12814 lbf) (bare drum)
	Hoisting Speed (single wire)	38-40m/min (bare drum)
	Steel Wire Diameter	16 mm(0.62 inch)
	Steel Wire Length	50 m(164 feet)
Capacity of Wireline Hoist	Hoisting Force (single wire)	1200 Kg(2646 lb) (bare drum)
	Hoisting Speed (single wire)	130-400m/min (bare drum)
	Steel Wire Diameter	6 mm(0.23 inch)
	Steel Wire Length	1000 m(3280 feet)
Mast	Mast Height	9 m(29.52 feet)
	Mast Adjusting Angle	0°—90°
	Drilling Angle	45° off horizontal to 90°vertical down
	Feed Pull	15000kg(33075 lb)
	Feed Thrust	6000kg(13230 lb)
	Rod Pull	3m or 6m(9.84feet or 19.68feet)
	Feeding Stroke	3500 mm(11.48ft)
	Slippage Stroke	1100 mm(3.6ft)
Mud Pump	Type	Reciprocating pump Triplex Plunger
	Model	BW160/10
Foot Clamp	Clamping Scope	55.5-110 mm(2.19-4.33 inch)
		through hole Φ154mm(6.06 inch)
Others	Weight (platform type)	9300 Kg(20506 lb)
	Dimensions (L×W×H)	5100×2200×2450mm
		(16.73×7.21×8.03ft)
	Transport Way	Crawler