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恒天九五重工

CHTC JOVE HEAVY INDUSTRY CO., LTD



**长螺旋钻机**

Long Auger Drilling Rig

## 长螺旋钻机 Long Auger Drilling Rig

长螺旋钻机是我公司吸收国内外先进技术研制的新产品。它是一种建筑基础设施设备，广泛应用于民用建筑的基础施工，也适用于交通、能源、软地基处理等工程的施工，其中 CFG 复合桩工法已被列为国家最新工法和国家施工规范。

Long auger drilling rig is a new product which is based on domestic and international advanced technology. It is a construction foundation equipment, which is not only applied for piling foundation in housing construction, but also for the traffic, energy engineering and soft base enhance, etc. Currently CFG is listed as national new method and national construction standard.

## 主要性能特点 Main Features

能够一次成孔，就地灌注成桩，并能完成放置钢筋笼的操作，由此具有成桩效率高、质量好、成本低的特点。

It can finish the pile in one time, peruse pile at site and also finish the operation of placing the steel cage. Efficiency, high quality and low cost are the main advantages of this machine.

操纵结构比较简单，现场就位灵活、快速。操作容易、维修方便。

Simple structure ensures flexible move, easy operation and convenience maintenance.

适用于粘性土、粉土、填土等各种土质，能在有砾石的软土、流沙层、沙卵石层、有地下水等复杂地质条件下成桩。可以施工成孔灌注桩、高压注浆桩、超流态混凝土桩、CFG 复合桩和扩底桩等多种施工工艺和施工工法。

It is applicable for clay soil, silt and fill, etc. It can pile in different complicated geological conditions such as soft soil, draft sand formation, sand and gravel layers, with groundwater and so on. Besides, it can construct cast-in-place pile, hi-pressure grouting-pile, grouting ultra-fluidized pile, CFG composite pile, pedestal pile and other ways.

在施工中无震动、无噪音、无污染，是工业与民用建筑桩基础施工的理想施工设备。

There is no vibration, noise and pollution during construction. It's an excellent equipment for infrastructure construction.



## 结构特点 Structure Features

### 动力头及钻具 Power Head And Drill Tool

动力头由双电机和三环减速机及吊架组成。电动机通过弹性联轴器与三环减速机的输入轴联接。三环减速机的输出轴通过法兰盘与钻具联接。减速机装在吊架上，通过滑轨与钢丝绳悬挂在框架的立柱导轨上。通过卷扬机带动可以沿立柱导轨上下移动，完成钻孔和成桩作业。

The power head is composed by double electronic motor, three-ring reducer and hoist frame. The axes of the reducer connect the drill tool by flange. The reducer fixes in the hoist frame and hung in the pillar rail. The drilling and piling work of reducer is completed by the hoister's drive.

### 桩架 Pile Frame

桩架为三支点结构，立柱与机身的联接采用十字轴结构，因此立柱调整比较灵活、方便。步履式底盘由行走油缸和液压支腿配合进行步履式行走移位。履带式底盘则通过行走电机和行走减速机驱动履带装置进行场地的行走移位。主机上装有主卷扬和副卷扬机。主卷扬机用来下放和提升动力头和钻具进行桩的施工。副卷扬机用来桩架的安装和提升工具、下钢筋笼等作业。

The pile frame is three-point support structure and the pillar connects with the machine by cross axes. This structure ensures flexible operation. The walk type chassis' move is based on the cooperation between walk cylinder and hydraulic leg and the crawler type chassis' move is based on the electronic motor and reducer. The up structure has main hoister and auxiliary hoister. The function of main hoister is to finish the drilling work by moving the power head and drill tool. The auxiliary hoister is used to install pillar and remove the steel.

### 液压系统 Hydraulic System

液压系统包括液压电机总成、油箱、支腿油缸、行走油缸、油臂、控制阀等组成。主要用来控制支腿油缸和行走油缸的动作。Hydraulic pump, electronic motor, oil box, outrigger cylinder, pipe and control valves compose the hydraulic system. This system controls the operation of outrigger cylinder and walk cylinder.

### 电气系统 Electric System

由电动机、电气控制柜、电气操纵箱及电气元件组成。主要用来实现电动机的启动与制动。JZL120 钻机采用变频控制，使电动机实现了“软启动和制动”，并满足了动力头和卷扬机的速度变化要求。

The electric system is composed by electromotor, control cabin and other electric components. This system controls the electro motor's start and brake. JZL120 model adopts frequency conversion control and realize soft starting and brake and also meets speed demand of power head and hoister.

### 操纵系统 Operation System

操纵室采用薄板结构，三面开窗，可保证视野开阔、安全舒适。液压操纵由 4 个多路阀手柄控制，电气操纵元件则布置在电气操纵台或操纵箱内，操作非常方便。

Operation room adopts thin board structure, three windows which ensures wide view and safety. The hydraulic system is controlled by four multway valves, and electronic control components are inside electronic operation table or box. All operations are very convenient.



## 主要技术参数

### Main Technical Parameters

型号 Model	JZB60	JZB90	JZL90	JZL120	
钻孔直径 Drilling diameter	600mm	600mm	600mm	600mm	
最大钻孔深度 Max. drilling depth	26m	31m	31m	35m	
动力头 Power head	动力头型号 Type	ZZSH480-60	ZZSH480-60	ZZSH480-60	ZZSH580-69
	主电机功率 Power	2×55Kw	2×55Kw	2×55Kw	2×75Kw
	输出转速 Output speed	16 r/min	16 r/min	16 r/min	14 r/min
	输出最大扭矩 Max. output torque	48 KN·m	48 KN·m	48KN·m	84KN·m
桩架 Pile frame	桩架形式 Type	步履式三支点桩架 Walking type three-point support	步履式三支点桩架 Walking type three-point support	履带式三支点桩架 Crawler-type three-point support	履带式三支点桩架 Crawler-type three-point support
	行走速度 Walking speed	0.08 m/s	0.08 m/s	0.067 m/s	0.084 m/s
	回转角度 Rotation angle	全回转 Full slewing	全回转 Full slewing	全回转 Full slewing	全回转 Full slewing
	回转速度 Slewing speed	0.31 r/min	0.31 r/min	0.31 r/min	0.31r/min
	接地比压 Ground pressure	0.046MPa	0.062MPa	0.085MPa	0.088MPa
	外型尺寸 Overall dimension	(11.7×5.7×33.2) m	(12.5×6.0×38.2) m	(12.5×6.0×38.08) m	(13.7×6.0×41.6) m
主卷扬机 Main hoister	型号 Type	JK5	JK8	JK8	JK8
	单绳拉力 Load of single line	50KN	80KN	80KN	80KN
	绳速 Rope speed	24m/min	22.5m/min	22.5m/min	22.5m/min
	最大提钻力 Max. pull force	400KN	640KN	640KN	640KN
副卷扬机 Auxiliary hoister	型号 Type	JK2	JK2.5	JK2.5	JK3
	单绳拉力 Load of single line	20KN	25KN	25KN	30KN
	绳速 Rope speed	18m/min	18m/min	18m/min	18m/min
油泵 Oil pump	型号 Type	CBF-E50	CBF-E50	CBF-E50	CBF-E50
	系统压力 System pressure	16MPa	16MPa	16MPa	16MPa
总质量 Total weight	50T	55T	64T	86T	

注: JZB90、JZL90 可钻孔直径 800mm, 深 20m; JZL120 可钻孔直径 800mm, 深 25m。  
 Note: The max drilling depth of JZB90 and JZL90 will be 20m when their drilling diameters are 800mm;  
 The max drilling depth of JZL120 will be 25m when its drilling diameter is 800mm.