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BeiYi Machinery

北奕机械
BEIYI MACHINERY

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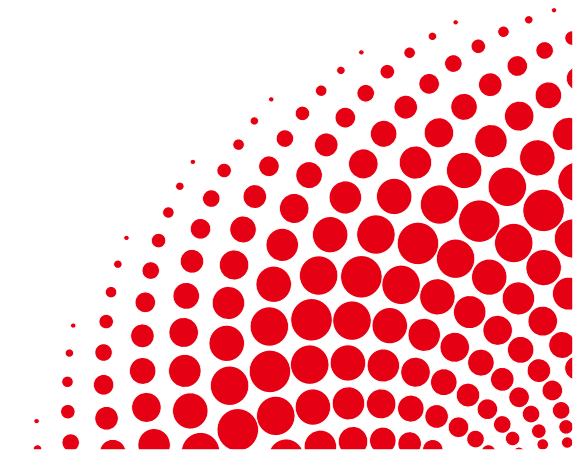
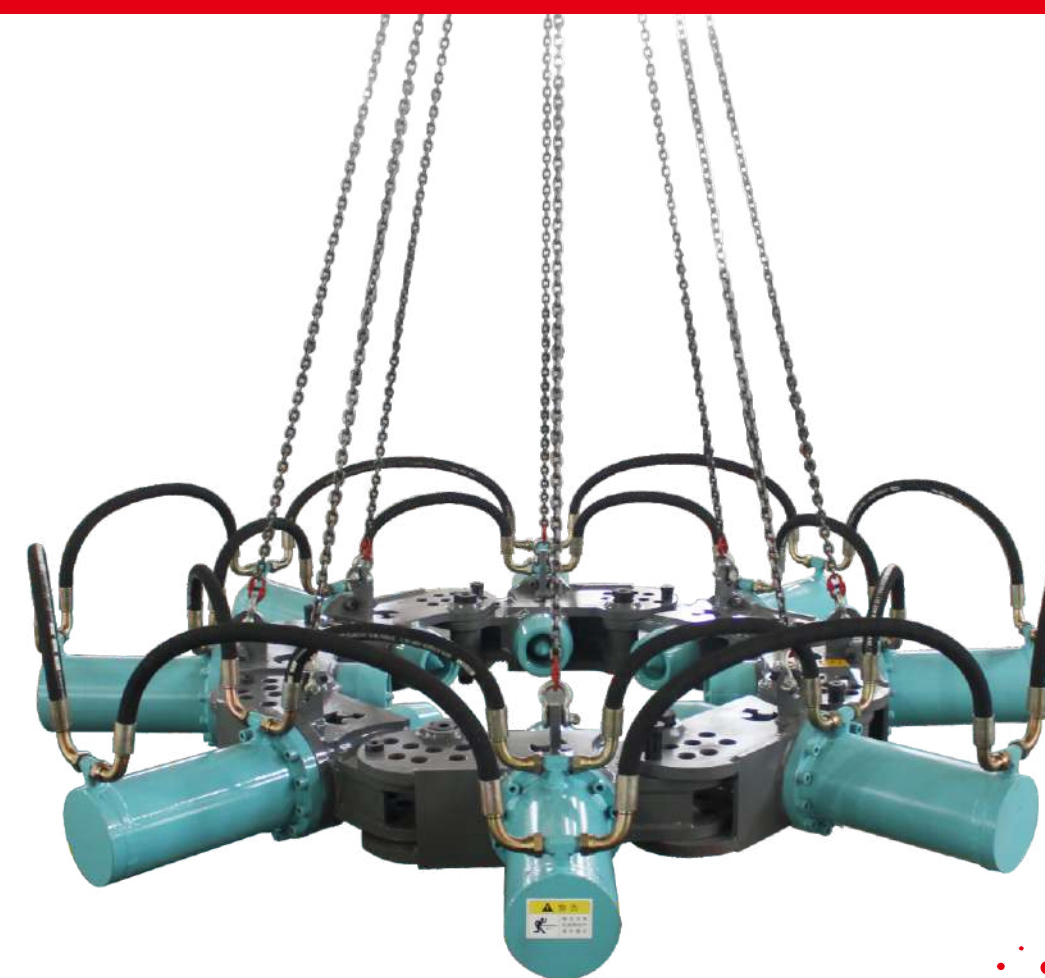
使用说明书

Hydraulic Pile Breaker Operation Instruction



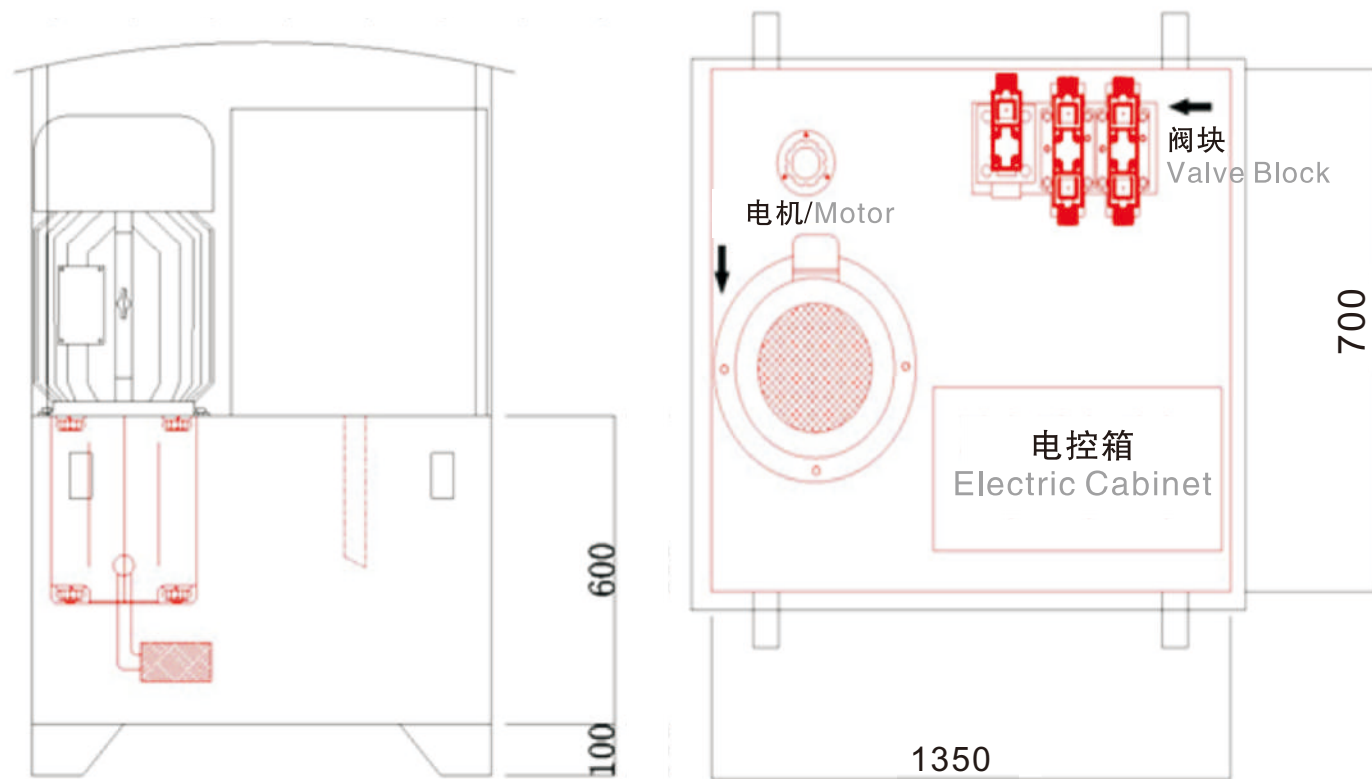
无锡市北奕挖掘机配件制造厂
WUXI BEIYI EXCAVATOR PARTS FACTORY

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液压站系统说明: (用挖掘机供油的可以忽略参考)

Hydraulic Power Station system introduction: (Ignore the reference if oil supplied by excavator)



操作说明 Operating Instructions

- 1、拧开注油口盖子, 将液压油 (ISOVG32、46、68或相当等级液压油) 注入, 并观察油位计中的油位高低, 油面淹至油位计最上端刻度线即可 (日常使用中若发现油面低于油位计最下端刻度线, 表示油箱中油量不足, 请加油后方可使用, 否则易造成系统不稳定及泵浦损坏) 油少损坏不保修。
- 2、拧下电机侧面接线盒上的固定螺丝, 取下盖子, 按照电机铭牌所示接线图接线, 并保证输入电压不超过电机的最大允许使用电压。
- 3、连接各液压管路及电气控制回路。
- 4、启动电机, 约1秒后关断, 观察电机转动方向是否与泵浦标示转动方向一致电机正常是顺时针, 若不一致, 请将电机3相线中任意2相线对调, 电机不在顺时针请不要长时间使用导致油泵烧坏不保修。(电机不是顺时针转液压站不会有压力不能正常使用)
- 5、再次启动电机, 即可使用系统 (第一次使用时, 请先让系统空荷运行一段时间, 方便排出管路中空气)。

1. Unscrew the cover of oil filling port and fill the hydraulic oil (ISOVG32, 46, 68 or such grades of hydraulic oil). Observe the oil level in the oil level gauge till the oil approach the top scale line of the oil level gauge. (If you find the oil is below the bottom scale line of the oil level gauge in your daily use then it means the oil is not enough; please add oil then use it or it will easily cause system instability and pump damage and the oil less damage will not be guaranteed.)
2. Unscrewed the fixed screw on the motor side junction box, take off the cover and connect the wire according to the wiring diagram showed on the motor nameplate and insure the input voltage is not exceed the maximum permissible use voltage of the machine.
3. Connect all the hydraulic lines and the electrical control circuit.
4. Start the motor and shut off after about 1 second to observe whether the motor rotation direction is the same as the pump rotation direction. The normal motor rotation direction is clockwise, if different, then please exchange any two phase lines in the 3 lines of the motor. Pay attention to that the motor can't be used for a long time if its direction is not clockwise or it will cause the pump to burn out which has no warranties. (The hydraulic power station will has no pressure and will not work normally if the motor rotation direction is not clockwise.)
5. Restart the motor again and the system can be used. (Please let the system run empty load for a period of time to be convenient to discharge the air in the piping.)

维护保养 Maintenance

一般而言，液压系统经过正确的安装与调试，无须特别保养维护即可长时间无故障地工作。好的维护的基本原则就是经常检查传动介质的质量和状态及油路的清洁状况，这一点决定了液压系统的可靠性。

推荐下列日常维护措施：

- 1、外部清洁，每月一次，以这种方式可更容易发现泄漏及故障隐患。
- 2、经常性检查滤油器，发现污损及时清洁或更换。
- 3、加油，当油面低于油位计最低刻度线，即表示油量不足，须向油箱中补充液压油，新加的油必须与上一次加的相同。注意：不同生产厂商之液压油不可混用，同一厂商之不同规格的液压油不可混用，加油时请避免水份混入。
- 4、条件允许的话，至少每月过滤一次液压油。
- 5、换油，一般使用3000小时左右更换一次（视工作环境而定，在环境较好的条件下可延长换油时间间隔，环境较恶劣的情况下要缩短换油时间间隔），更换时需认真清洁油箱，必要时冲洗整个油路。
- 6、油温保持在70°C以下，最佳运行温度为35~55°C。在特殊条件下，要注意加热及降温。

Generally speaking, if the hydraulic system installed and adjusted in a correct way, the hydraulic pile breaker can be trouble-free working for a long time without a special maintenance. The basic principles of good maintenance is often check the quality and status of transmission medium, also the oil cleaning condition, which determines the reliability of the hydraulic system.

Recommend the following maintenance measures:

- 1.External cleaning, once a month. In this way can be more easy to check the leakage and hidden fault trouble.
- 2.Regularly check the oil filter to find the stained and clean or replace in time.
- 3.Refuel, when the oil is below the oil level gauge minimum scale line then it means oil is not enough. You must refuel enough hydraulic oil to the tank and the new refuel oil quantity should be the same as the last time. Notice: Different manufacturers hydraulic oil can't be mixed together and the same manufacture's different specifications hydraulic oil can't be mixed together. Please avoid water mixed with oil.
- 4.Conditions permitting, please filter the hydraulic oil at least once every month.
- 5.Oil change: Normally change the oil when using around 3000 hours(Depending on the working environment. Under the better environment can extend the oil change interval and the under the bad condition need to shorten the oil change intervals).Replacement need to carefully clean fuel tanks, washing the whole oil line when necessary.
- 6.Keep the oil temperature below 70°C and the best operating temperature is 35-55°C.Under the special condition, pay attention to the heating and cooling.

技术参数 Technical Parameters

电机功率/Motor Power:		
极数/Number Of Poles :		4 极
电机转速/Motor Speed:		
电机电压/Motor Voltage :	三相 Three phase	380 V
泵浦额定排量/Pump Rated Capacity:		
系统正常使用压力/System Normal Working Pressure		25 Mpa
系统最高使用压力/System Max Working Pressure		
油箱容量/Tank Capacity:		400 L
电磁阀控制电压/Solenoid Valve Control Voltage:		

破桩机的安装及注意事项 Hydraulic Pile Breaker Installation and Notes

- 1、根据所破的混凝土圆桩的直径，确定所需模块数量。
Chose the numbers of the module according to the diameter of your concrete round piles.



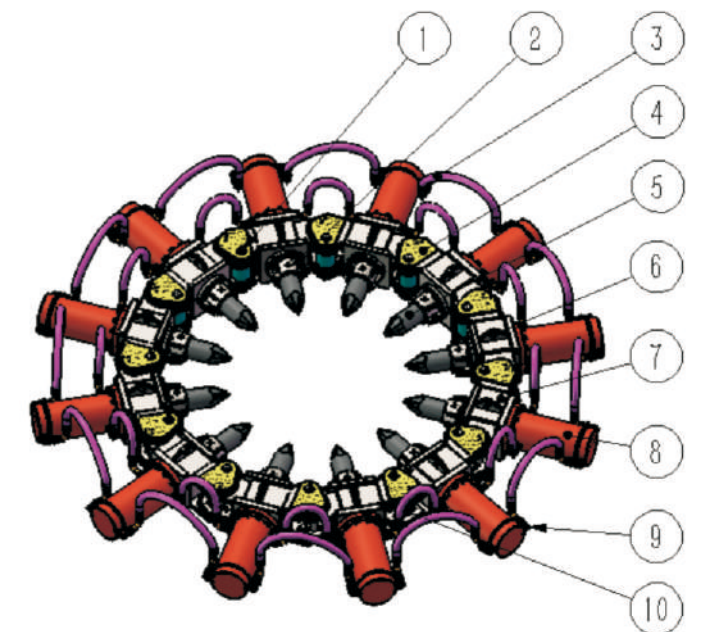
上图为：9个模块破1m的桩



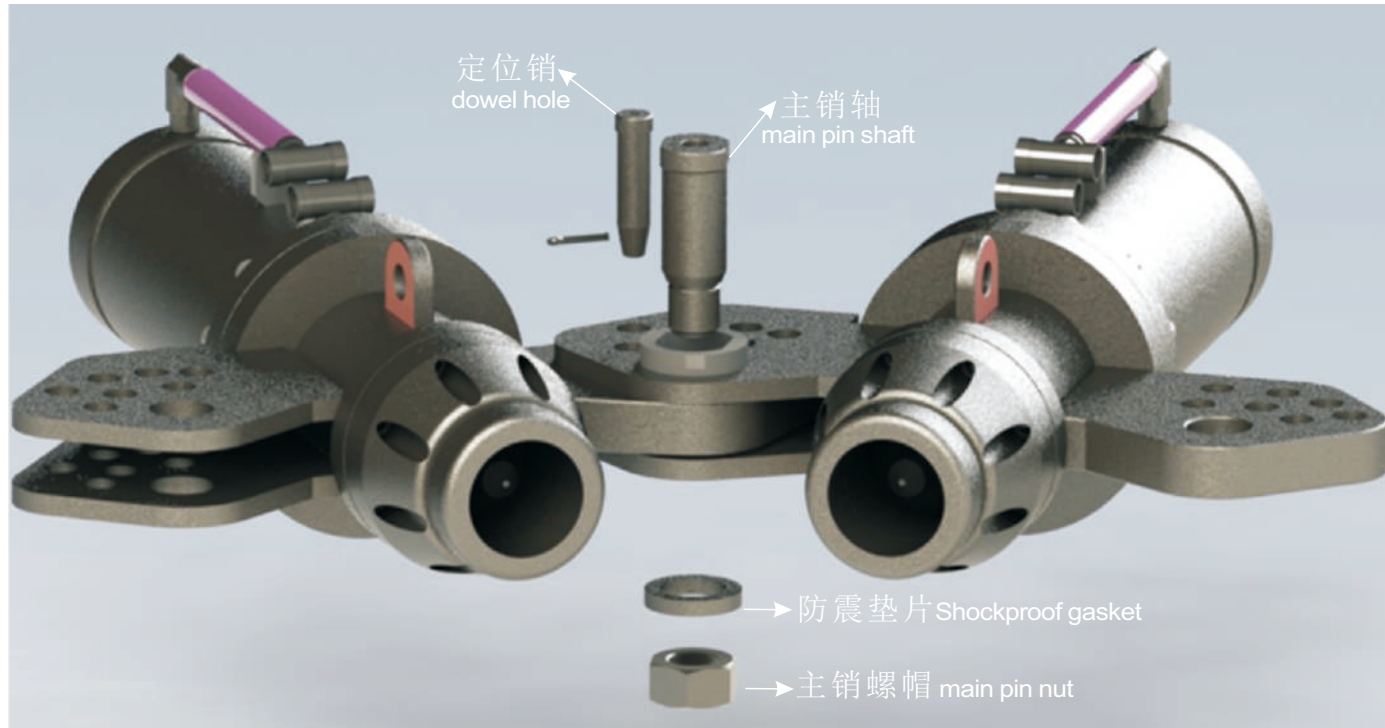
上图为：16个模块破2.2m的桩

2.模块连接方法/Module connection way

- ① ——> 主固定轴/Main Fixed Shaft
- ② ——> 弹珠切换口/Marbles Switch Port
- ③ ——> 高强液压油管/Hydraulic Oil Tube
- ④ ——> 模块盖板/Module Cover Plate
- ⑤ ——> 顶尖/Tip
- ⑥ ——> 吊环/Ring
- ⑦ ——> 模块/Module
- ⑧ ——> 油缸/Hydraulic Cylinder
- ⑨ ——> 油管接头/Oil Connection
- ⑩ ——> 定位销轴/Position Pin Shaft

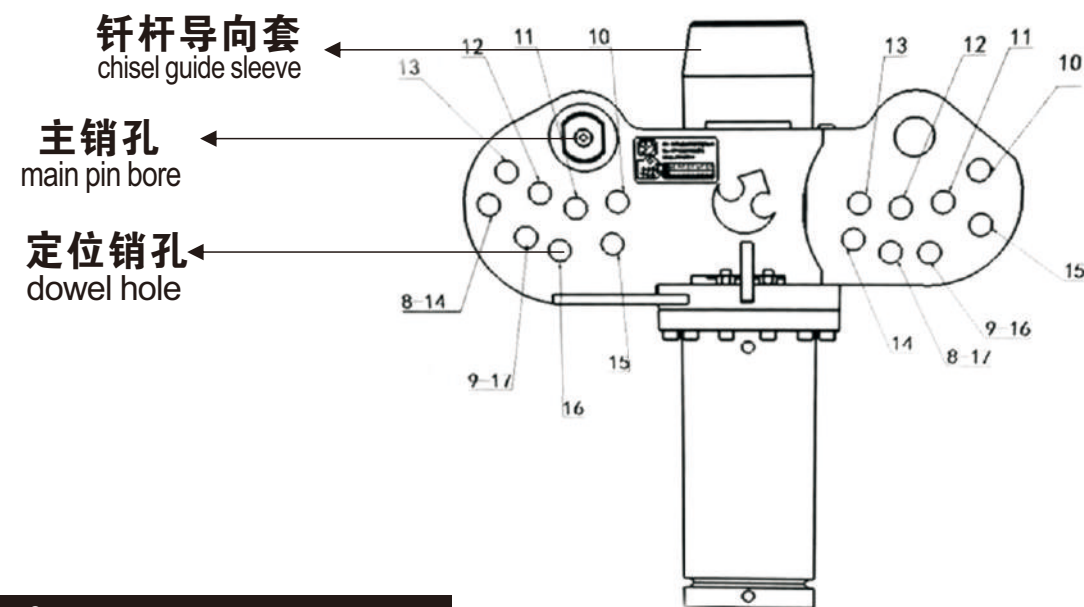


- ① 首先连接相邻的两个模块，并遵循先插入全部主固定轴，再插入定位销轴。
First connect the adjacent two modules and insert all of the main fixed shaft first then the position pin shaft.



- ② 插入定位销轴时，务必要注意模块数量所对应的定位销孔。北奕破桩机按定位孔分两种，一种是定位孔数量是9个，另一种的定位孔数量是7个。

When insert the position pin shaft, be sure to pay attention to the number of modules of the positioning pin hole. BEIYI hydraulic pile breaker has two kinds of positioning hole, one is 9 holes and another is 7 holes.



8 / Above is 8 positioning holes

- ③ 破桩机连接块
Pile breaker connection block

- 1, 适用于混凝土桩之间间距小于80cm
Suitable for spacing between concrete piles less than 80CM
- 2, 可以根据实际情况定做
Can be customized according to the actual situation
- 3, 针对不同大小的桩连接块不通用
For different size piles, the connection block is not universal



安装钎杆操作说明 Chisel installation instruction

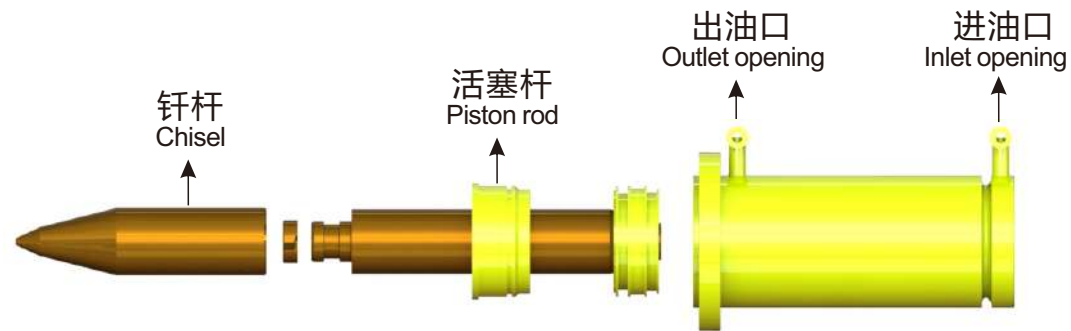


图1 (Figure 1)

1. 将破桩机模块的活塞杆完全伸出，将“长套”套入活塞杆，大头朝上（如图1所示）；

Make the pile breaker piston fully stretched out and put the long casing onto the piston rod with the big side upwards. (Shown as figure 1)



图2 (Figure 2)



图3 (Figure 3)

2. 将“短套”套入活塞杆，大头朝下（如图2、图3所示）；

Put the short casing onto the piston rod with the big side downwards (Shown as figure 2, 3)



图4 (Figure 4)



图5 (Figure 5)

3. 使用两个M14号螺丝将弹簧套固定（如图4、图5所示），使其不活动；

Fix the spring sleeve with two M14 bolts (shown as figure 4,5) to make sure it unmovable.

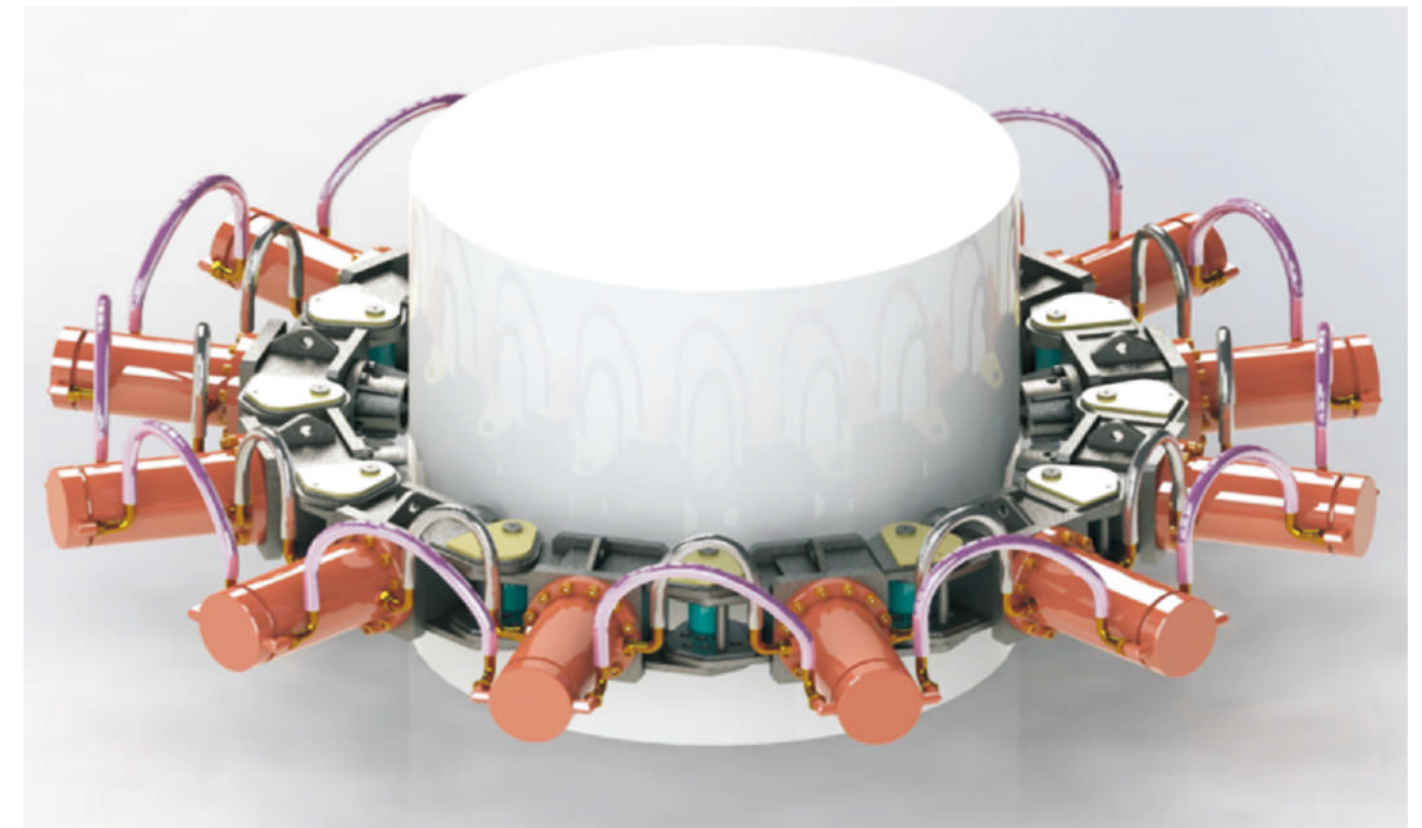


图6 (Figure 6)

4. 使用两个M18号螺丝固定长套和短套的连接处，直至钎杆顶出（如图6所示）。

Fix the connection of long casing and short casing with two M18 bolts till the chisel pushed out. (Shown as figure 6)

4 相邻模块的油缸连接/Oil cylinder connection



5 油管 and 供油设备连接:

供油设备的进油出油两条管只需要在任何一个模块中，而相邻的另一个模块的进油和出油接口，只需要相对连接好

Oil tube and oil servicing facilities connection: You just need to connect the outlet and inlet two pipes of oil servicing facility on any of the module and relatively connect the adjacent another module's outlet and inlet connector.

A1: 进油口
Inlet opening

B1: 出油口
Outlet opening



安装操作说明 Installation and operating instructions

液压油管安装前
Hydraulic pipe before installation



液压油管分离和安装部分
Hydraulic pipe separation and installation part



液压油管安装完成
Hydraulic pipe installation is complete



挖掘机衔接 Excavator connection

将挖掘机的挖斗取下，在挖斗与大臂连接轴处悬挂截桩机的吊装链，将这两种设备机械组合在一起，然后再将挖掘机的大臂液压油路通过平衡阀连接到截桩机的油缸油路上，用以驱动截桩机的油缸组工作。

Take off the excavator bucket and hang the hydraulic pile breaker lifting chains at the connecting shaft of bucket and arms. Connect these two machines and then connect the excavator arm hydraulic circuit with the hydraulic pile breaker circuit by balance valve to drive the pile breaker cylinder to work.



液压站
Hydraulic power station



汽吊衔接 Crane connection

北奕自主品牌液压站提供源动力

BEIYI autonomous brand hydraulic power station offer source power

性能参数/Performance Parameter

模块数量 Module Number	个	4	8	9	10	11	12	13	14	15	16	17	18
组合总重量 Combination total weight	KG	1600	2640	2970	3300	3630	3960	4290	4620	4950	5280	5610	5940
破桩直径范围 Pile diameter range	mm	400-600	600-800	800-1000	1000-1150	1150-1300	1300-1500	1500-1650	1650-1800	1800-1970	1970-2200	2200-2360	2360-2500
适用挖掘机吨位 Hydraulic excavator	T	20T-30T			30T-40T			液压系统/泵站Hydraulic system/pump station					
钎杆最大加压力 Max.Thrust		300KN		单根油缸最大压力 Max.Cylinder required		20L/min		配套工程机械吨位 Machinery Tonnage		≥20t		定位销 Location pin Φ40	
液压油缸最大行程 Max.Cylinder Trip		300mm		钎杆直径 Chisel diameter		110mm		单一模块重量 Single module weight		335KG			
液压油缸最大压力 Max.Cylinder Pressure		30MPa		单次破桩高度 Max.Hoist Capacity		≤500mm		单一模块尺寸 Single module size		1015*865*340			

注意事项 Attention:

必须遵循从上到下破桩，破桩高度由混凝土标号决定，建议每次截面不超过40CM。

Must break the pile from top to bottom, breaking height depends on the concrete grade. We suggest each breaking height less than 40cm.



1、在破桩过程中，禁止在钎杆没完全收进缸体时用力猛提和猛拉。

When breaking the concrete piles, don't lift or pull the machine forcibly when the chisels not fully back into the cylinder.

(左图是错误操作方法，容易把钎杆和导向法兰拉断)

(Left is the wrong operating way which will easily pull cut the chisels and guide flange.)

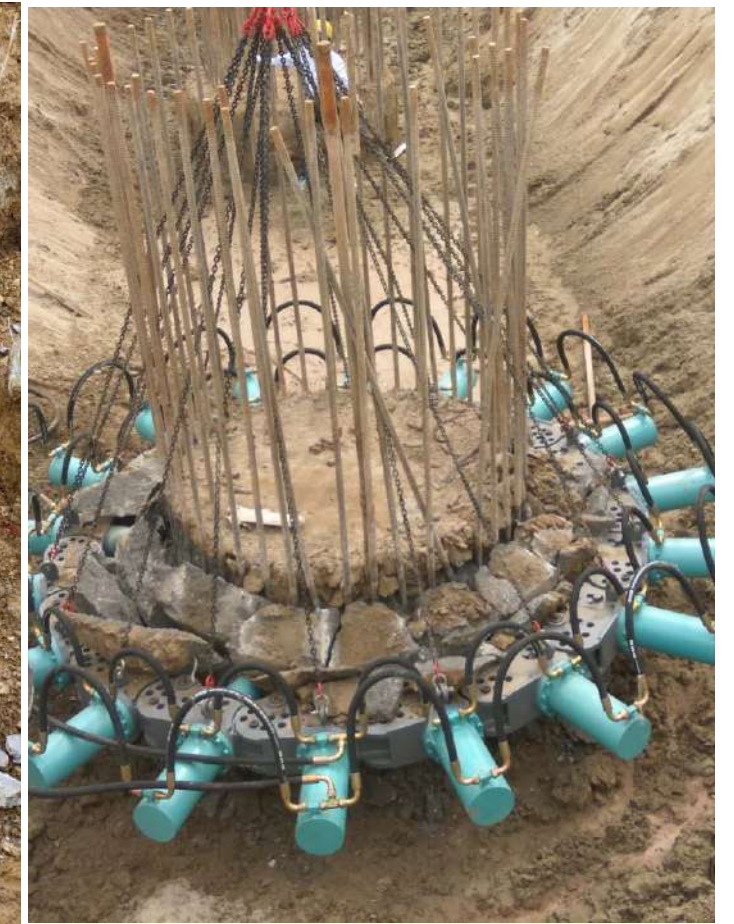
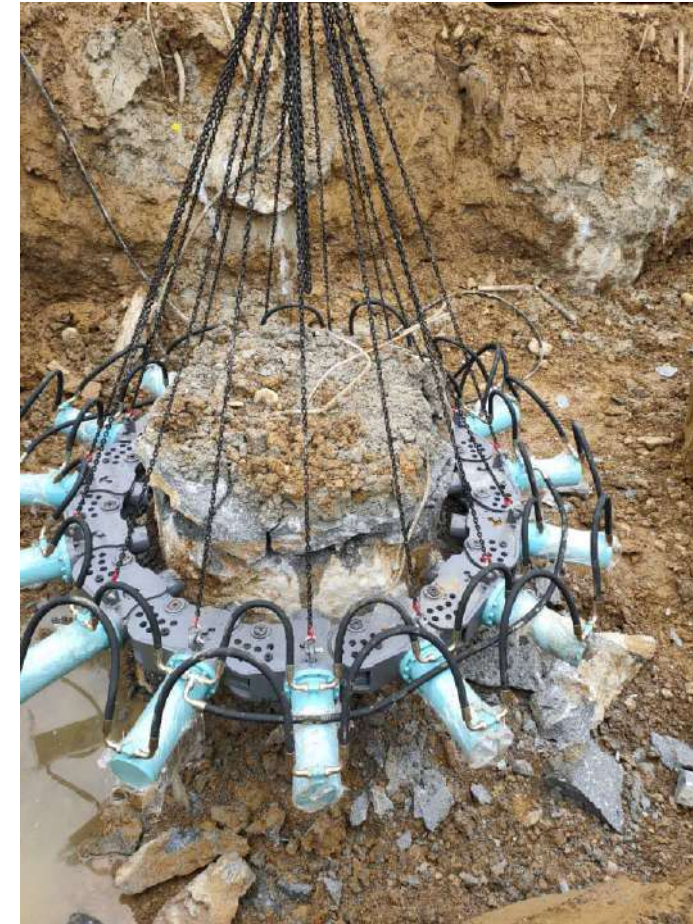


2、禁止把破桩机作为起吊平面来吊混凝土土块。

Forbid to use the hydraulic pile breaker as a lifting plane to lift the concrete clod.

(左图是严重的错误操作方法，破桩机极容易损坏)

(Right is a serious wrong operation method which can easily cause the damage of hydraulic pile breaker).



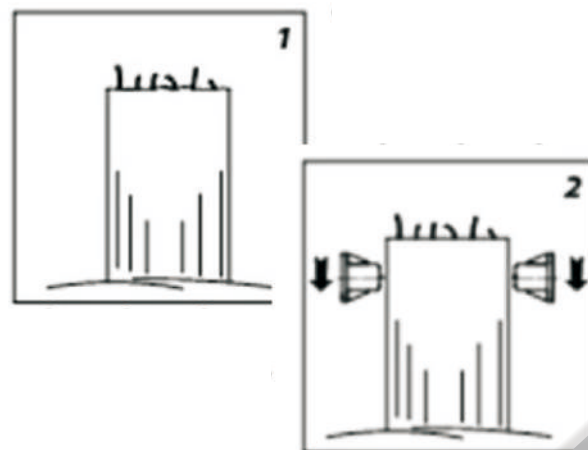
高标号混凝土桩防止断钢筋的操作办法:

Operation method to prevent the reinforcement steel broken for high grade concrete pile:
主要办法是：将高标号的混凝土桩转化为类似低标号（或是松软的）混凝土桩！
the main way is: transform the high grade concrete pile into similar to low grade concrete pile!

怎么转？把高标号的混凝土桩全身都截满小裂缝！ How to transform? Cut the high grade concrete pile body with small fissure!

当破桩机从上往下截时，认真观察，当有一支钎杆把混凝土截出裂缝时，马上停止！把钎杆全部缩回去，然后破桩机整体移到下一个截面，并把破桩机转一个角度。往下的方法同上！记住，千万不要截破整个截面，当整根桩都充满小裂缝时，再从头往下截，这样就不会断钢筋了！！

Carefully observe when the hydraulic pile breaker cut from top to bottom. When there is a chisel cut the concrete pile with cracks, then stop! Make all the chisels back into the body and then move the whole machine to the next section and turn the pile breaker to another angle. Just operate according to the above method! Please pay attention that don't cut the whole section but cut from the top to bottom when the concrete pile body filled with fissures so as not to break the reinforcement steel.



特别提示
special suggestion