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BEIYI MACHINERY

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24 小时售后电话：
18900636693(微信同号)
座机：0510-85101123
技术部：18068352969

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微信ID:wxbei360



北奕机械

BeiYi Machinery

方形破桩机

HYDRAULIC SQUARE PILE BREAKER

使用说明书

Operation Instruction

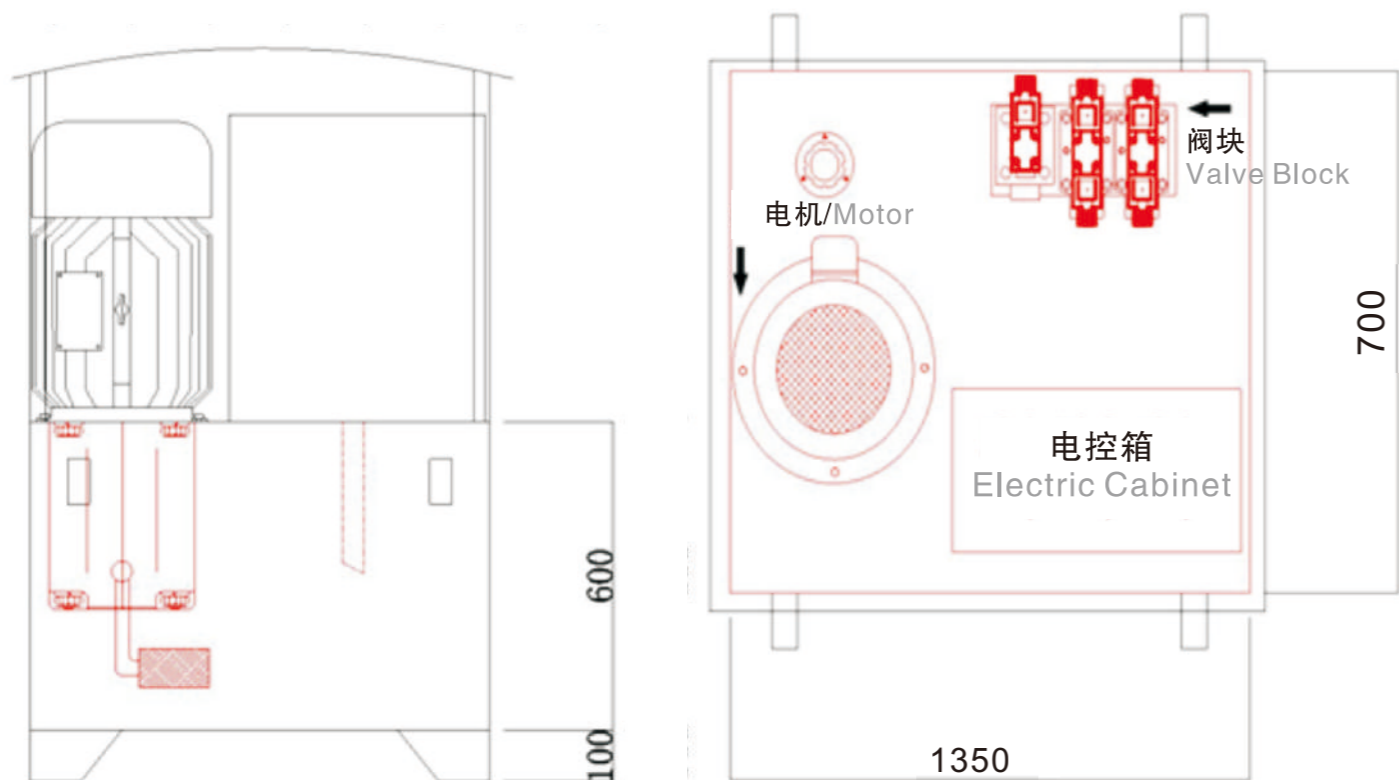


无锡市北奕挖掘机配件制造厂
WUXI BEIYI EXCAVATOR PARTS FACTORY

地址/Address:无锡市洛社镇双庙工业园A区
Shuangmiao Industry ParkA,Luoshe Town,Huishan District,Wuxi
传真/Fax:0510-85167422
网址/Website:www.by997.com
邮箱/Email:wxby997@163.com

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℃以下，最佳运行温度为35~55℃。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:		22 KW
极数/Number Of Poles :		4 极
电机转速/Motor Speed:		1450 rpm
电机电压/Motor Voltage :	三相Three phase	380 V
泵浦额定排量/Pump Rated Capacity:		107 L/mim
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		30 Mpa
油箱容量/Tank Capacity:		400 L
电磁阀控制电压/Solenoid Valve Control Voltage:		AC 220 V

一、首先根据方型预制桩的大小来选择用破桩设备型号

Chose the correct hydraulic square pile breaker according to the square pile size



方型桩桩机的型号及参数:
Hydraulic Square Pile Breaker Model and Parameters

适用破桩直径 Pile diameter range	200-650mm
钎杆最大加压力 Max.Thrust	300KN
液压油缸最大行程 Max.Cylinder Trip	200mm
液压油缸最大压力 Max.Cylinder Pressure	30MPa
单根油缸最大压力 Max.Cylinder required	20L/min
破桩数量/8h Quantity/8h	100/8h
单次破桩高度 Max.Hoist Capacity	≤300mm
配套工程机械吨位 Machinery Tonnage	≥7T
整机重量 Total Weight	0.78T-1.2T

二、配套工程机械的选用

Matching Construction Machinery

(1)挖掘机

(1)Excavator

(2)吊车加上北奕独立品牌液压站

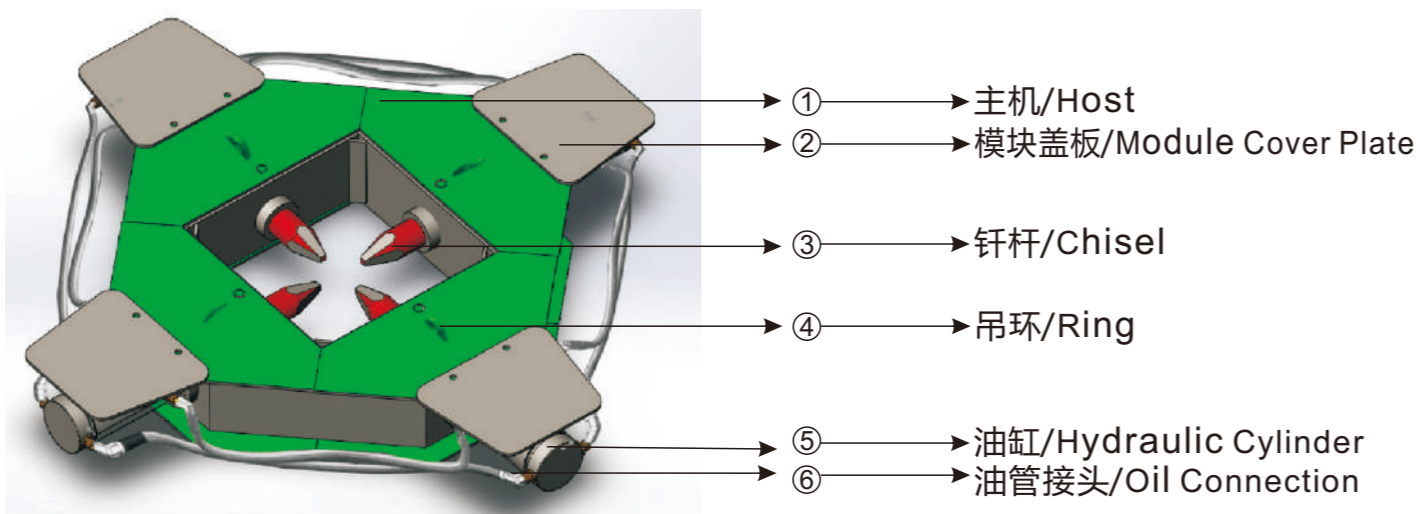
(2)、Crane and BEIYI individual brand hydraulic power station



三、操作方法 Operation Method

- 1.将截桩机移动至工作桩头截桩处;
- 2.调整截桩机高度至合适截桩位置 (单次截桩高度不应超过40cm) 夹住需要截断的桩面;
- 3.根据桩所浇筑的混凝土的强度来调节挖掘机的系统压力, 向油缸加压, 直至混凝土桩身在强压下断裂;
- 4.桩身截断后直接利用平台提升力将混凝土块提升;
- 5.将碎桩块移至指定位置。

- 1.Move the pile breaker to the top of concret piles
- 2.Adjust the height of pile breaker to a proper position for cutting piles(we suggest each breaking height less than 40cm) ;clamp the piles surface(need to be broken).
- 3.Adjust the excavator system pressure acctording to concret strength ,pressure to oil cylinder ,until concret piles broken.
4. After pile broken, to raise the concret blocks by crane or excavator
5. Move broken piece to specified location



性能参数/Performance Parameter

单根油缸最大压力 Max.Cylinder required	20L/min	液压油缸最大行程 Max.Cylinder Trip	200mm	钎杆最大加压力 Max.Thrust	320KN
单次破桩高度 Max.Hoist Capacity	≤300mm	液压油缸最大压力 Max.Cylinder Pressure	30MPa	破桩数量/8h Quantity/8h	
适用破桩直径 Cut Pile Dia	BY-PB500S:350*350 400*400 450*450 500*500 550*550 BY-PB600S:500*500 550*550 600*600 650*650				
整机重量 Total Weight	BYP500S:0.78T	BYP600S:1.2T	配套工程机械吨位 Machinery Tonnage	BYP500S:≥7t	BYP600S:≥15t

五、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



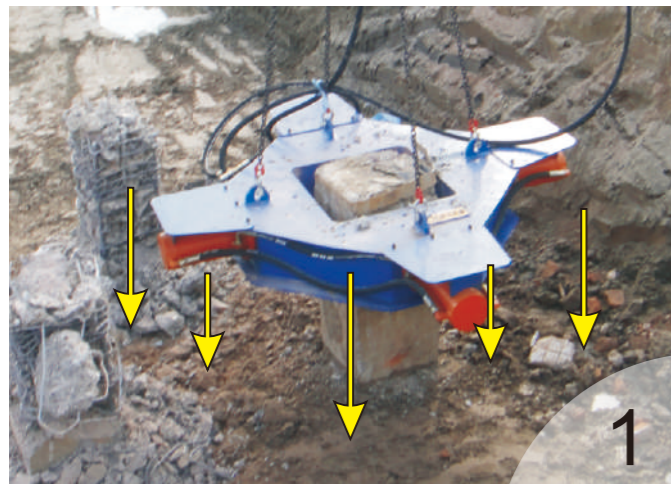
液压油管安装完成
Hydraulic pipe installation is complete



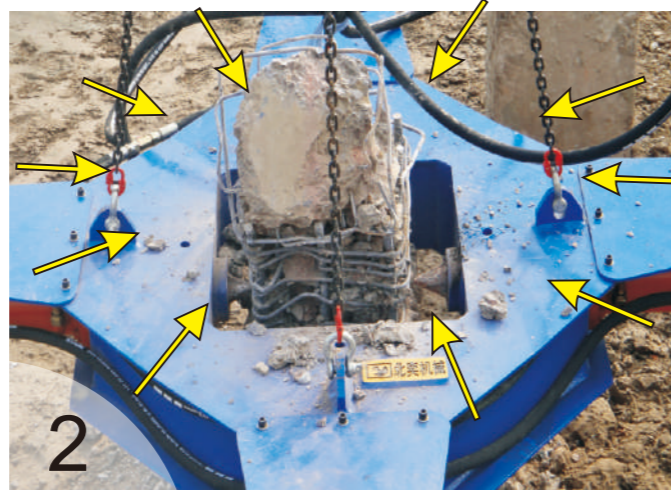
挖掘机衔接 Excavator connection

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。

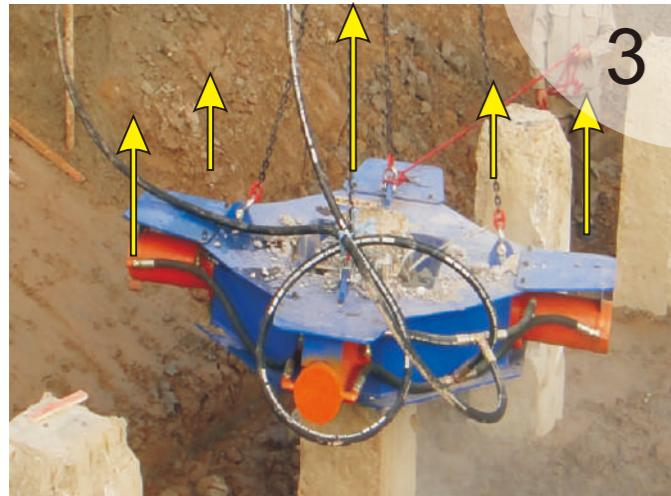
Take off the excavator bucket and hang the hydraulic pile breaker lifting chains at the connecting shaft of bucket and arms. Connect these two machines and then connect the excavator arm hydraulic circuit with the hydraulic pile breaker circuit by balance valve to drive the pile breaker cylinder to work.



特定的结构使破桩机固定在桩上
The particular structure allows the pile Breaker to be positioned over the pile to be demolished



释放钎杆使桩一起被破碎
The release of the chisels allows the pile to be uniformly cropped



抬起破桩机使破碎的桩与钢筋分离开来
Once the pile has been demolished by lifting the Pile Breaker it keeps hold of the material freeing it from the reinforced structure.



完整拔出
The final result is the perfect cleaning of the reinforced structure while the structure of the pile remains unchanged without creating cracks on the lower part which is still below ground.

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.

安装钎杆操作说明 Chisel installation instruction

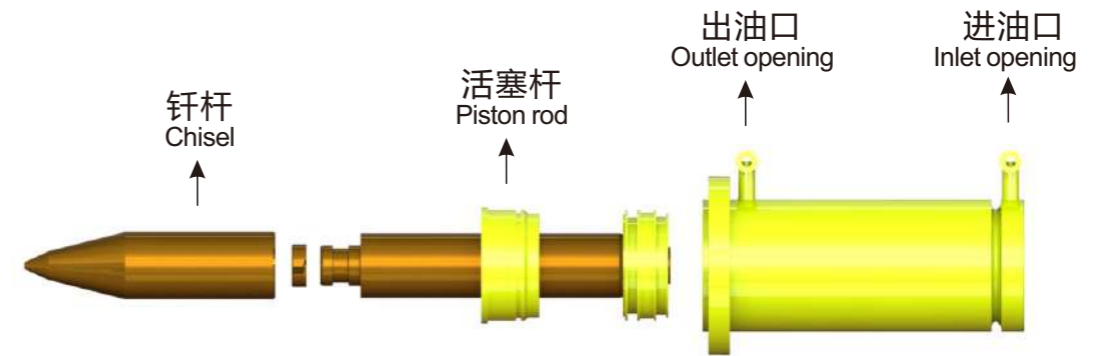


图1 (Figure 1)

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)

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3 (Figure 3)

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4 (Figure 4)



图5 (Figure 5)

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)



图6 (Figure 6)

