

Instruction Manual

Hydraulic pile breaker

KP315A



JIANGSU KINHAN HEAVY INDUSTRY COR.,LTD

Foreword

Welcome to use the KINHAN Heavy Industry KP315A hydraulic pile breakers, KP315 hydraulic pile breakers is full hydraulic pile equipment independent R & D and manufacture by Jiangsu KINHAN Heavy Industry Co., Ltd .KP315 absorbing advantages of similar foreign products and combined with the special conditions of the pile foundation and bridge engineering.

KP315 is currently the most advanced in the world break off trailer coupling equipment, which uses multiple hydraulic ram extrusion pile, at the same time from the same end face different point squeeze, cut off the pile head, the job is simple, efficient and environmentally friendly.

KINHAN Heavy Industry Co., Ltd. will continue to improve the device, update the information and technical specifications are subject to change without notice. Equipment or parts for previous sales, and does not assume the obligation for improvement.

For inadequate part, need to be improved about the device, welcome to provide valuable comments and suggestions.

Safety Warning

1. Before installing, commissioning, use and maintaining of this machine, please read the manual.
2. The operating construction machinery drivers must undergo a rigorous training certificates.
3. In the process of use and maintenance, must hew to the maintenance and instructions .
4. Belong to the safety sign control management of the supporting products, must obtain safety sign. Such as in use of change, also have to be this way.
5. When hydraulic pile breaker in process of install, commission, use and maintenance , there is no people stand in the working equipment. When repairing or maintenance, the hanger must have protection support,any one can not operating under the hanger in dangerous.
6. A security alert needed before the engineering machinery start to work.



If you ignore these instructions, due to incorrect operation of KP315 may cause death or serious damage.



If you ignore these instructions, due to incorrect operation of KP315 may result in injury or equipment damage.



If you ignore these instructions, due to incorrect operation of KP315, may result in minor personal injury or damage to the equipment.



Only qualified personnel allowed to install and operate this equipment. In this manual, qualified personnel is the people know intimately about safety regulations and standards and authorized to carry out the installation, commission, use and maintenance.

Content

1. Overview.....	5-6
2. Structural characteristics and working principle.....	7-9
3. Installation instructions.....	9-11
4. Installation operation and Notes.....	11
5. Maintenance instructions.....	12

1. Overview

KP315 hydraulic pile breakers is full hydraulic pile equipment independent R & D and manufacture by Jiangsu KINHAN Heavy Industry Co., Ltd .KP315 absorbing advantages of similar foreign products and combined with the special conditions of the pile foundation and bridge engineering.

KP315 is currently the most advanced in the world break off trailer coupling equipment, which uses multiple hydraulic ram extrusion pile, at the same time from the same end face different point squeeze, cut off the pile head, the job is simple, efficient and environmentally friendly.

When the equipment works it needs a power source, the power source can be fixed pumping station or other removable engineering machinery and equipment, pile foundation construction of high-rise buildings, pumping stations more normal circumstances, The overall investment of this combination is relatively small, but very easy to move, suitable for pile group pile head cut off; easy to move the excavator in bridge construction as a power source, remove the excavator bucket in the bucket any one cylinder cut pile breakers lifting chain connecting the shaft at the big arm suspension, mechanical combination of these two devices together, then excavator hydraulic oil through the balance valve connected to the cut pile breakers, the fuel tank of oil on the road. This combination of pile breakers is easy to move and work surface, apply to piles not concentrate and long front construction project.

The hydraulic pile breakers adapted to high-speed rail bridge engineering and civil engineering , there are some other cut pile equipment and labor cut pile method at home and abroad , but have low efficiency, high cost, and can not meet the demand of large-scale cross-sectional pile.

Machine operation has the following characteristics:

A. High efficiency

Continuous working eight hours and can cut 60 trailer coupling, but a worker can only cut 2-3 trailer coupling during the same time;

B. Low operating noise

All-hydraulic break, not disturb people in suburban;

C. Long life

The main components are made of special materials and it has 10 years life time ;

D. Highly modular design

It is easy to adjust to the pile diameter for each site through changes in the number of modules,, it is also easy to operate and maintain, need no special skills;

E. safety

The cut piles jobs rely on engineering robotic operation, need no workers, construction is very safe;

F. Between the module and the module oil less bearings and the pin is rotated to increase the life of the pin rotational flexibility and pin;

Working environment:

1. KP315 has a power source, which can be fixed pumping station or other removable engineering machinery and equipment;
2. Engineering machinery and pile material exist uncertainties, cut pile construction a maximum height of 0.3 m;
3. Power source engineering machinery works, the number of modules and cut pile diameter range and required construction machinery tonnage and machine weight as the following table:

Modules number	6	7	8	9	10	11	12	13
Range of diameter (mm)	300-350	350-450	450-550	550-650	650-760	760-860	860-960	960-1050
Tonnage of construction machinery (t)	12	12	16	16	16	20	20	20
Whole weight (KG)	900	1000	1100	1150	1250	1350	1450	1600

4. Before pile the equipment tubing select the appropriate hydraulic tubing and fittings according to the engineering mechanical tubing , before work you need to check whether hydraulic tubing is in good connection ,engineering mechanical pressure should check whether hydraulic hoses and tanks tainted oil. The hydraulic lines do not leak then it can work .

2. Structural characteristics and working principle

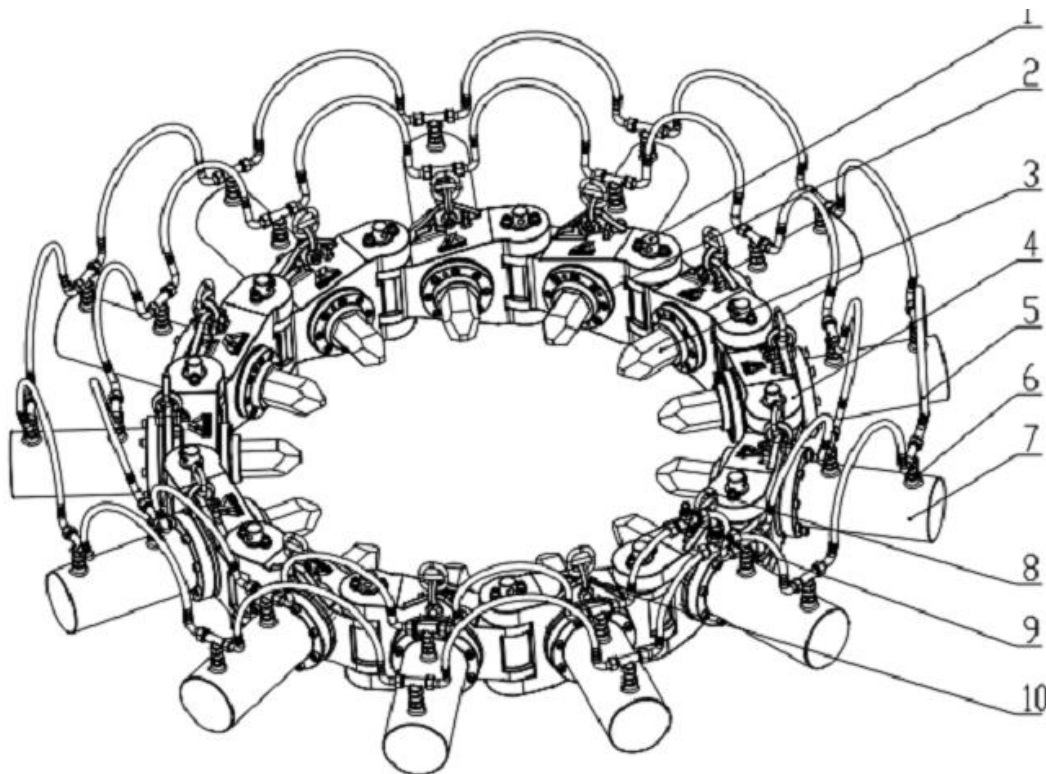
Out standing features of KP315:

1. Module design with pin connection ,make assembly and maintenance easy;
2. Cylinder piston and alloy head linked by pin , cylinder piston from the radial force in the construction ,prolong the life of cylinder piston;
3. Small machine, easy to move and lifting.

Section 1 working equipment

The working equipment design with module , and the module design with pin connection, assembly and maintenance very convenient. Cylinder by cylinder block bolt connection, assembly and maintenance easy. Hydraulic piping joints and hydraulic tubing, high pressure cylinder working pressure guarantee. Rod alloy materials and special heat treatment process, to ensure the realization of cut pile operation, to increase the service life of the drill rod.

The specific arrangement of KP315 shown as p 1:



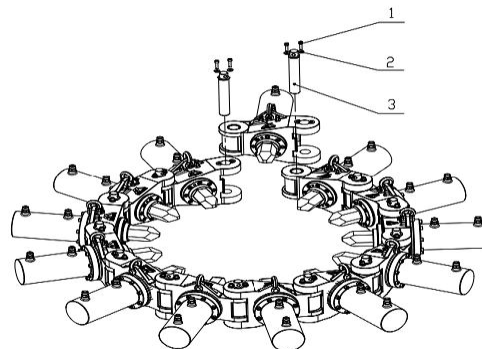
P1

- 1: Link pin 2: cover flange 3: Rod: the cylinder block 5: hydraulic tubing
6: pipe fittings 7: cylinder 8: chain shackle 9: pipe fittings 10: bow shackle

Loading and unloading mechanism of module combination :

The highly modular design, it is easy to adjust to each scene pile diameter connection between the module and the module through the pin, operation and maintenance easy, does not require special skills. As shown in the following figure when due to the pile diameter need to add and subtract the number of modules

As long as the detachable pin, the operation is very convenient. Modules and module assembly corresponding to the two holes and hole assembly module, and then insert the pin, cover gasket, bolts screwed on coupled fixed modules, specific arrangement shown in P2:



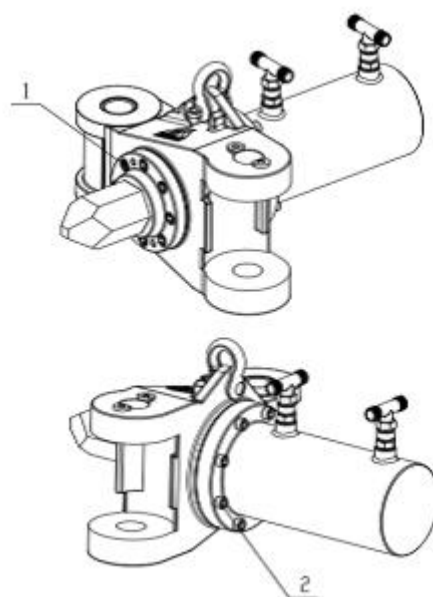
P2

1 - bolt 2 - washer 3 - pin

Single module structure:

The single module main including: cylinder end cap flange, the cylinder block, drill rods, tubing fittings, bow shackle, flange bolts, cylinder bolts.

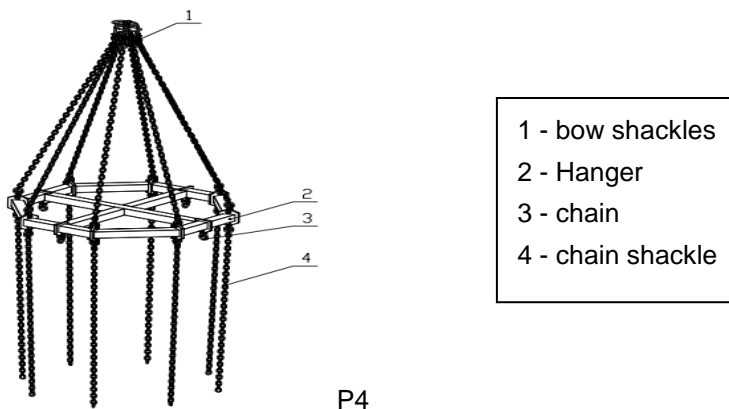
Cylinder by cylinder bolt fastened to the cylinder base cover flange bolts fastening the seat in the cylinder, the drill rod through the special structure of the coupling on the cylinder piston, drill rod movement in the cover flange of hydraulic The cut pile operation, a single module mounting bolts specific arrangement shown in P 3:



P3 1 - cover bolts 2- cylinder bolt

Section 2 lifting device

Lifting device operating work crane construction machinery ,the hoisting apparatus played the role of connectivity and lifting. Hoisting apparatus to bear the weight of the cut pile driver device, but also bear to generate tension in the work and the process of lifting the pile head and pile head weight lifting device to bear the weight of more than four tons. The lifting device specific layout shown in P4:



3. INSTALLATION INSTRUCTIONS

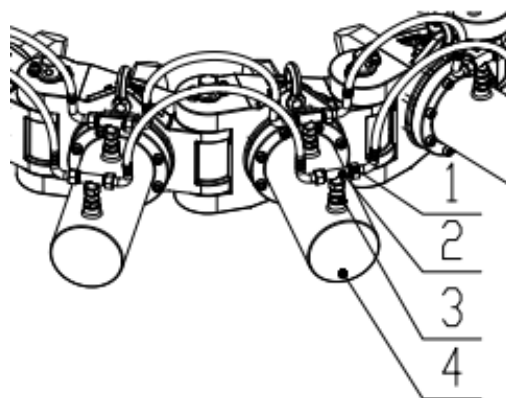
KINHAN can set and install appropriate according to customer needs , then save customers pre-operation time when it is shipped to our customers.

The excavator more easy to move is used as a power source in the construction. First remove the excavator bucket , hanging with the pile breaker's lifting chain in the connection of the bucket and big arm ,make the two devices assembly , and then make the excavator boom hydraulic oil connect to pile breaker's cylinder oil road through the balance valve, to drive the pile breaker's cylinder group.

As below :



Working device of hydraulic fittings and hydraulic tubing assembly as below (working device section):



P 5

1-hydraulic tubing 2- tee joint 3-Straight joints 4-Tubing

Straight joints M22*1.5 threaded on the side link internal thread of cylinder corresponding, and we select 27 of the torque wrench, tighten 90N.M torque ; The tee joint connect with straight joints , the choice of 32 torque wrench, tighten 180N.M torque; The hydraulic tubing connected to the side of the tee joint, the choice of 32 of the torque wrench to tighten 105N.M torque; Link into a closed loop hydraulic cylinders for each module and a tee joint, straight joints connectors phase chain, construction machinery, hydraulic cylinders, If the site do not have assembled pipe joint torque wrench, wrench hard feeling fastening on the line.

when cutting pile head , the deployment of pile breaker 's combination of the inner diameter of the cylinder body to pile type corresponding diameter range, directly through the combination cylinder excavator auxiliary sets in the pile body needs truncated surface on, fine-tuning of the cylinder piston position and tightness, until the combination cylinder tightly grip the need to truncate a pile surface, and then depending on the strength of the concrete pile cast to adjust the pressure in the system of the excavator, to the cylinder pressure until the concrete pile under strong pressure fracture. The pile cut directly to the use of the pile breaker is about to rupture waste concrete block moving to heap abandoned field, release the cylinder Spoil neatly stacked.

4. Installation operation and Notes:

1. In replacement of hydraulic pipes and hydraulic fittings shall not wear gloves to keep the interface of hydraulic parts clearly! Screw on the hydraulic pipe replaced if not replacement of the hydraulic tube must spare nut to prevent contaminants from entering the pipe joints in time!
2. When working equipment replaces bow shackle position, it must screw down bow shackle pin and shackle threaded holes, to prevent the working equipment unevenness of it that can enhance the working equipment tilt!
3. When increase or decrease the number of modules, removable pin must use copper rod knocking!
4. Pile the empty module diameter is less than equal to 500mm, and can not use it!

5.Maintenance instructions

Repair and maintenance KP315A is very convenient, check various parts of it when cut pile driver continuous work after three months or pile 2000?

First check whether the damaged and cracks happened in lifting equipment, especially lifting chain and chain shackles, carefully check each part if it is damaged and cracks replace it immediately!

Inspection working equipment, especially rod and hydraulic parts! rod is directly working parts, and when it reach a certain workload, it is easy to damage, and pressure to the drill rod fully extended, individually check each drill rod, breakage and cracks immediately , if intact, around rod butter, maintain lubrication and prevent rust; each hydraulic parts are wearing, check one, if it is damaged and cracked.