



北奕机械

BeiYi Machinery

无锡市北奕挖掘机配件制造厂

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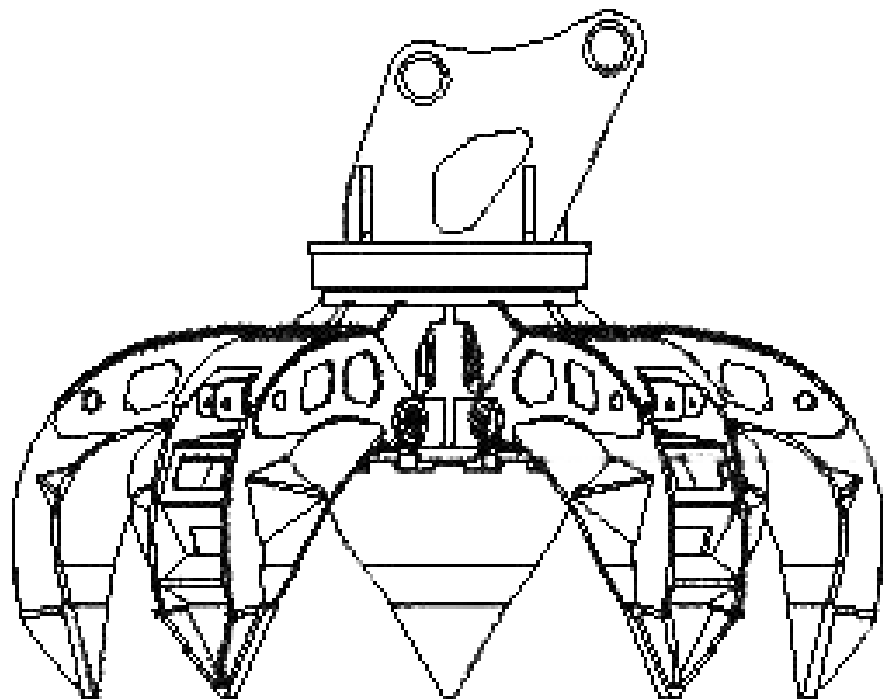
北奕机械
BeiYi Machinery

旋转式莲花抓

ORANGE PEEL GRAPPLE

使用说明书

Operation Instruction



重要说明Important note

在第一次安装，运行或维修保养莲花抓之前，请仔细阅读本手册。

请仔细解读并按照本手册运行，才能更好地保护用户者的安全。

为避免不必要的伤害或损失，请始终遵守相关法则，法规和安全生产工作实践。

Please read this manual carefully before installing, operating or maintaining the Lotus Grab for the first time.

Please carefully read and operate according to this manual to better protect the safety of users.

To avoid unnecessary injury or loss, always follow the relevant rules, regulations and safe work practices.

目录Directory

第一章：前言 -----	-3-
Chapter 1: Preface	
第二章：产品特点 -----	-4-
Chapter 2: Product characteristics	
第三章：参数 -----	-5-
Chapter 3: Parameters	
第四章：安装指导 -----	-6-
Chapter 4: Installation Instructions	
第五章：安全预防措施 -----	-8-
Chapter 5: Safety precautions	
第六章：注意事项 -----	-10-
Chapter 6: Precautions	
第七章：安全信息-----	-11-
Chapter 7: Safety information	
第八章：莲花抓的存放-----	-13-
Chapter 8: The storage of the lotus grip	

第一章 前言Chapter 1 Introduction

重要说明Important note

本手册包含安全，操作，润滑，维护等信息。

本手册既是新操作者的参考文件，也是有过操作经验人员的进修文件。

出现任何关于莲花抓的问题，请垂询厂家相关技术人员。

请不要随意使用莲花抓于其他不相关的工作项目。

*如果不正确操作莲花抓，则会导致严重事故，甚至会造成人员伤亡。

*操作者及维修人员请仔细阅读本手册，然后进行莲花抓的相关操作或维修。

*如果本手册丢失或损坏，请及时重新订购。

*如果莲花抓转让，请随附转让本手册。

为了安全起见，“安全预防措施”相关条目在本手册中给予了说明。

This manual contains information on safety, operation, lubrication, maintenance, etc.

This manual is not only a reference document for new operators, but also a refresher document for personnel with operating experience.

If you have any questions about Lotus Grab, please contact the relevant technicians of the manufacturer.

Please do not use Lotus Grab randomly for other irrelevant work items.

*If the lotus gripper is not operated correctly, it will lead to serious accidents and even casualties.

*The operator and maintenance personnel should carefully read this manual, and then carry out the relevant operation or maintenance of the lotus gripper.

*If this manual is lost or damaged, please re order it in time.

*If Lianhua Grab transfers, please attach the transfer manual.

For the sake of safety, the relevant items of "safety precautions" are described in this manual.

第二章 产品特点Chapter 2: Product characteristics

◆莲花抓料机俗称莲花抓是专门搭配挖掘机使用，操作灵活，有效利用了挖掘机的液压动力，充分发挥了挖掘机的机动性，大幅节约成本，提高工作效率，使再生资源行业迈向新阶段，让您的挖掘机实现一机多用，提高投资效益。特别适用于散装废料，报废汽车等各种金属物料的抓取工程。

◆莲花抓由摇摆上架、连接体、卡爪、油缸以及其他附件组成，从而使莲花抓能够实现快速开合，十字摇摆等动作，而且具有宽大的张合幅度、动作灵活、结构简单易于维护，以及使用寿命长等特点。

◆莲花抓目前分为全封闭款和半封闭款，满足了客户在不同需求、不同场合的情况下使用。

◆莲花抓具有结构合理不易损坏，维修简捷，工作效率高，对挖机无任何损伤，工作噪音低等特点。在抓取作业时，动作灵活、张合速度快，从而大大提高工作效率。

◆ The Lotus Grab is commonly known as the Lotus Grab, which is specially used with excavators. It is flexible in operation, effectively uses the hydraulic power of the excavator, gives full play to the mobility of the excavator, greatly saves costs, improves work efficiency, and makes the renewable resources industry enter a new stage, so that your excavator can achieve multiple uses and improve investment efficiency. It is especially suitable for grasping various metal materials, such as bulk waste, scrapped automobiles, etc.

◆ The lotus gripper is composed of swinging upper frame, connecting body, claw, oil cylinder and other accessories, so that the lotus gripper can realize quick opening and closing, cross swinging and other actions, and has wide opening and closing range, flexible action, simple structure and easy maintenance, and long service life.

◆ Lotus Grab is currently divided into fully closed and semi closed models, which can meet customers' needs and occasions.

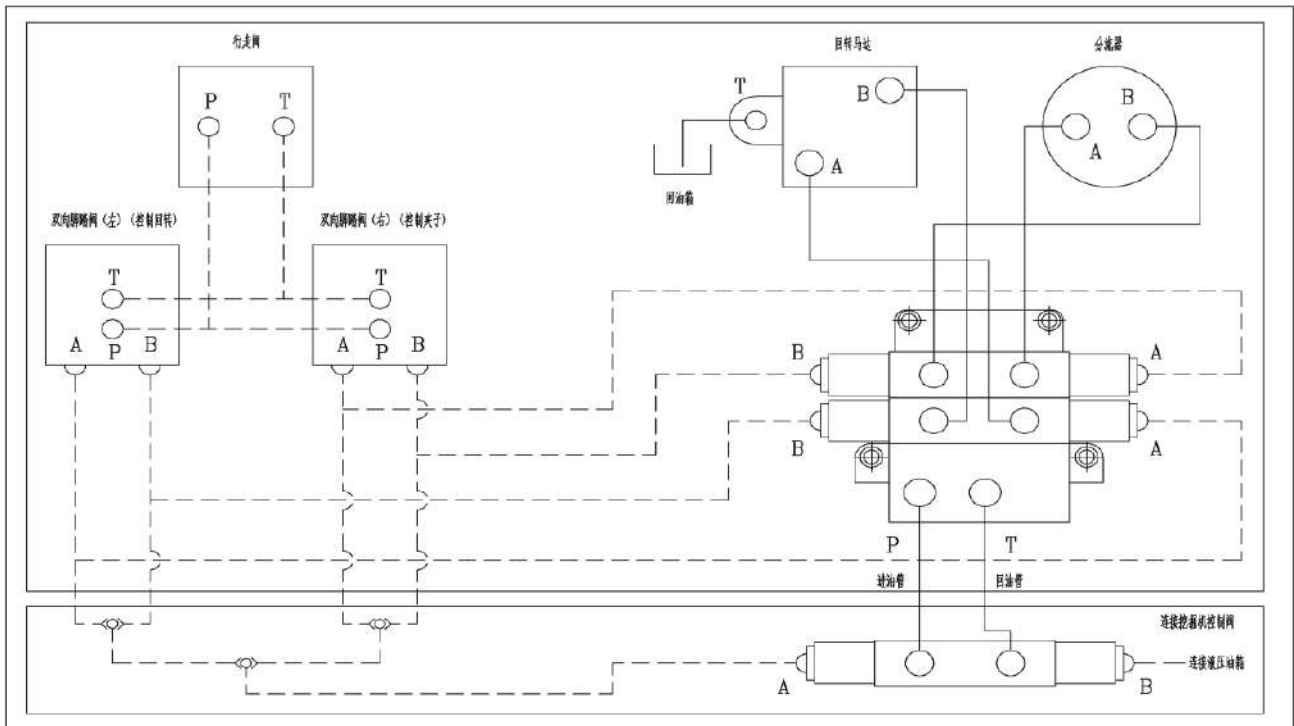
◆ The Lotus Grab is characterized by reasonable structure, easy maintenance, high working efficiency, no damage to the excavator and low working noise. During the grasping operation, the action is flexible and the opening and closing speed is fast, thus greatly improving the working efficiency.

第三章 参数 Chapter 3: Parameters

型号Module	单位Unit	BYKM 04	BYKM 06	BYKM 08	BYKM 10
重量 Weight	kg	355	800	1900	2200
最大开口 Max jaw opening	mm	1200	1600	2500	2900
闭合高度 Height of closed grapple	mm	1127	1480	2000	2500
最大压力 Set up pressure	bar	260	260	320	320
最大流量 Operating flux	lpm	20-70	60-120	200-250	250-300
容量 Cylinder volume	litre	400	500	1000	1200
瓣数 No.of jaw	piece	4-5	4-5	4-5	4-5
适用挖掘机 Suitable excavator	Ton	6-8	10-15	18-24	26-35

固定莲花抓液控管路原理图

Schematic Diagram of Hydraulic Control Pipeline for Fixed Lotus Grab



第四章安装指导 Installation Instructions

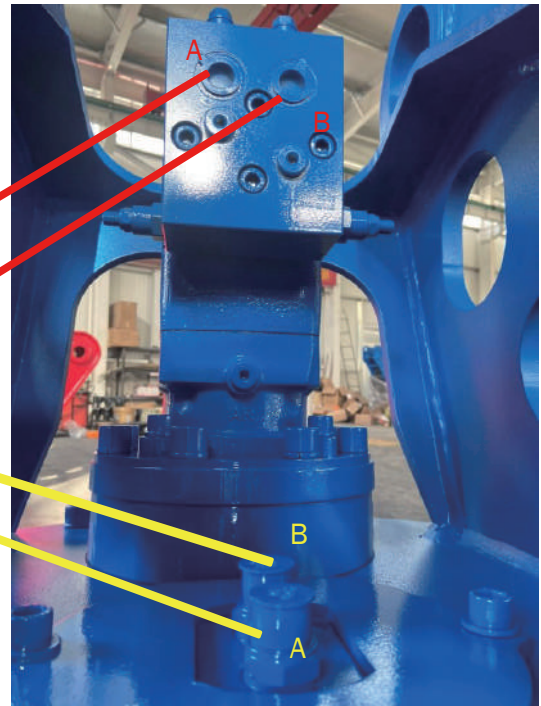
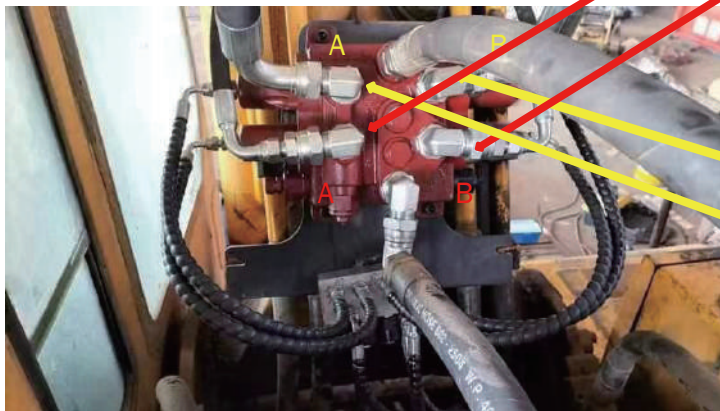
爪子油管安装 Grasp oil pipe installation

1. 旋转马达油口A和B连接双联阀油口A和B

1. Connect the oil ports A and B of the rotary motor to the oil ports A and B of the double valve

2. 分流器油口A和B连接双联阀油口A和B

2. The flow divider ports A and B are connected to the double valve Ports A and B



双联阀安装

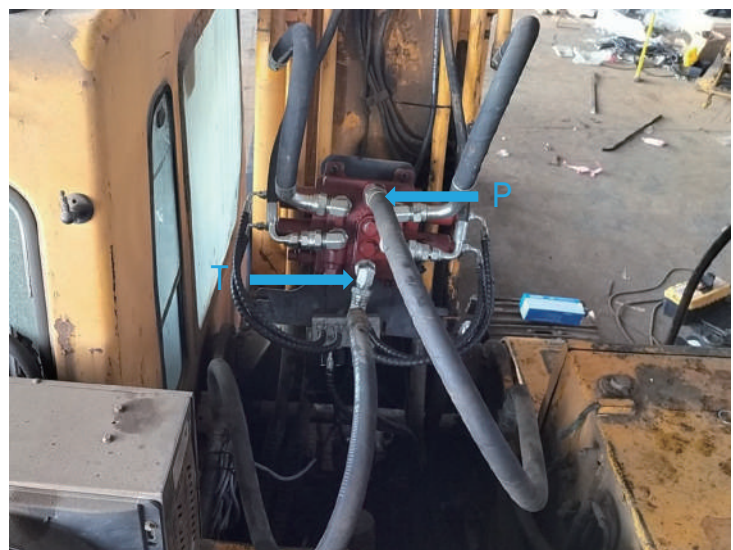
Double valve installation

1. 先将双联阀支架安装于大臂后面，然后将双联阀安装于支架上固定。

1. First install the double valve bracket on the back of the boom, then install the double valve on the bracket and fix it.

2. 双联阀进回油管P和T，同挖掘机控制阀P和T油口相连接。

2. The in-let and return oil pipes P and T of the double valve are connected to the P and T oil ports of the excavator control valve.



第四章安装指导 Installation Instructions

双向脚踏阀的安装 Installation of two-way foot valve

1. 两个双向脚踏阀油口P和T两两连接, 其中一个脚踏阀安装三通, 用于连接挖掘机行走阀。

1. Two two-way foot valve ports P and T are connected in pairs. One of the foot valves is equipped with a tee to connect the excavator travel valve.

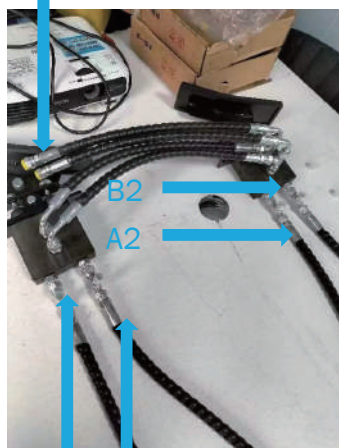
2. 双向脚踏阀油口A和B安装三通, 用于连接双联阀A和B油口。

2. The oil ports A and B of the two-way foot valve are equipped with tees for connecting the oil ports A and B of the double valve.

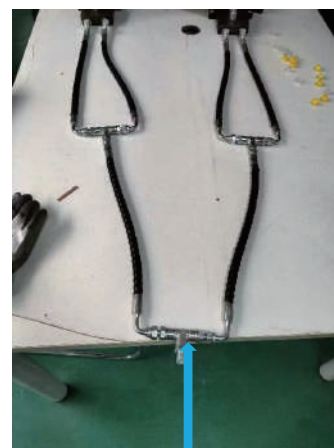
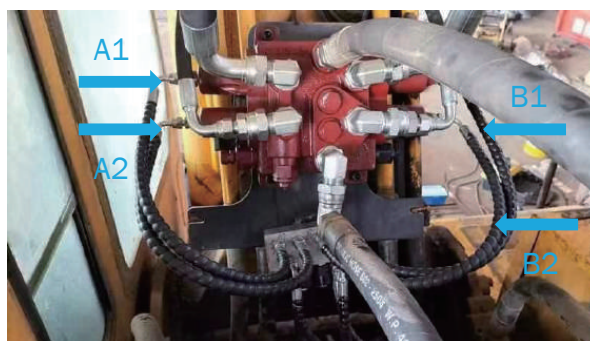
3. 另外的三通上的油口安装三通, 用于连接挖掘机控制阀油口。

3. The other oil port on the tee is equipped with a shuttle valve to connect the oil port of the excavator control valve.

连接行走阀



A1 B1



连接挖机控制阀

第五章 安全预防措施

1. 操作人员须经专业练习，了解所操作的莲花抓的构造、原理、操作和维护保养方法。并持有操作证，方可操作。
2. 莲花抓的故障不能擅自进行处理，应与售后人员及时联系。
3. 莲花抓的试车、安装、拆卸，拖运等应严格执行相关规定。
4. 遇雷、雨、雪、雾和六级以上风等恶劣气候时，应停止作业，风速超过七级或有强台风警报时，应将莲花抓迎风向停置，必要时，应将其张开防止，人员必须远离莲花抓。
5. 作业前首先空运转，待确定各部件状态正常后方可作业。
6. 操作人员不能擅自离开岗位。
7. 出现下列情况应立即停机检修
 - ① 莲花抓有零部件脱落。
 - ② 操作时，如发现不正常杂音或油箱过热现象，应立即停车检查，油箱温度最高温度 $\leq 60^{\circ}\text{C}$ 。
8. 严禁非指定人员操作该设备，平常必须做到人离机停。
9. 工作结束后切断电源，及时清理工作场地的边角余料。
10. 拆卸油管时，应保证管接头不受污染。
11. 操作人员在操作时，必须精力集中。不得与无关人员说、笑、打、闹，操作中不准吸烟及吃食物。
12. 严格遵守莲花抓的有关保养规定，认真的做好各级保养，确保莲花抓经常处于良好状态。并注意合理使用，正确操作。
13. 莲花抓在工作前，应向施工人员了解施工条件和任务、及施工过程中发现的问题与本班应注意的事项。
14. 发动机起动后应低速预温，预热最低十分钟后，检查发动机运转是否正常，检查莲花抓各部分是否有漏油情况，禁止发动机在预温时猛轰油门。挖掘机预热完成后，慢慢伸展小臂，确保管路无挤压处，然后启动莲花抓。
15. 莲花抓操作中，各项动作要“稳、准、慢”绝对禁止“猛、急、快”否则会造成部件的损坏或造成危险和事故。
16. 夜间工作时应有足够的照明，严禁无照明操作。
17. 在装配拆卸作业前必须对所有使用的工具、吊钩、钢丝绳等作仔细的检查，确定无缺陷后方可使用。为防止无关人员进入组装拆卸现场，应设置醒目的标牌或围栏。
18. 必须佩带防噪音耳罩、安全眼镜，以及防毒面具。



Chapter 5: Safety precautions

1. The operator must have professional practice to understand the structure, principle, operation and maintenance methods of the lotus gripper. The operation can only be carried out with operation certificate.
2. The fault of Lotus Grab cannot be handled without authorization, and the after-sales personnel should be contacted in time.
3. The commissioning, installation, disassembly and hauling of the lotus gripper shall strictly comply with relevant regulations.
4. In case of severe weather such as thunder, rain, snow, fog and wind above force 6, the operation shall be stopped. When the wind speed exceeds force 7 or there is a strong typhoon alarm, the lotus gripper shall be stopped against the wind. If necessary, it shall be opened to prevent, and the personnel must stay away from the lotus gripper.
5. Before operation, it shall be idling first, and the operation can be started only after all components are confirmed to be in normal condition.
6. Operators shall not leave their posts without authorization.
7. In case of the following conditions, stop the machine for maintenance immediately
 - ① Parts and components caught by Lotus fell off.
 - ② In case of abnormal noise or overheating of the oil tank during operation, stop the machine immediately for inspection. The maximum temperature of the oil tank is $\leq 60^{\circ}\text{C}$.
8. It is strictly forbidden for non designated personnel to operate the equipment, and people must leave the machine and stop.
9. Cut off the power supply after the work is completed, and clean up the leftover materials at the work site in time.
10. When disassembling the oil pipe, ensure that the pipe joint is not polluted.
11. Operators must concentrate on operation. It is not allowed to talk, laugh, fight or make noise with irrelevant personnel, and it is not allowed to smoke or eat food during operation.
12. Strictly abide by the relevant maintenance regulations of the Lotus Grab, carefully perform maintenance at all levels, and ensure that the Lotus Grab is always in good condition. Pay attention to reasonable use and correct operation.
13. Before working, Lianhua should know about the construction conditions and tasks, problems found in the construction and matters needing attention of the shift from the construction personnel.
14. After the engine is started, it shall be preheated at low speed. After preheating for at least ten minutes, check whether the engine operates normally, whether there is oil leakage at each part of the Lotus Grab, and prohibit the engine from slamming the accelerator during preheating. After preheating the excavator, slowly extend the jib to ensure that there is no extrusion in the pipeline, and then start the lotus claw.
15. During the operation of the lotus gripper, each action should be "stable, accurate and slow". It is absolutely prohibited to "fierce, urgent and fast", otherwise it will cause damage to components or cause danger and accidents.
16. Sufficient lighting shall be provided during night work, and operation without lighting is strictly prohibited.
17. Before assembly and disassembly, all tools, hooks, wire ropes, etc. used must be carefully inspected and can be used only after they are confirmed to be free of defects. To prevent irrelevant personnel from entering the assembly and disassembly site, eye-catching signs or fences shall be set up.
18. Must wear noise proof earmuffs, safety glasses and gas masks.



Watch out for"

第六章 注意事项

只有在充分了解下述安全说明，才能使用设备。操作者应该了解操作指令，设备手册及工作程序和规定。

开始操作之前，确保熟知设备的安装、检查、操作。

1.在使用设备时，一定要小心，以避免作业中的碎片，松散的废料或飞行物迸溅使人受伤。操作人员应穿戴防护装备，然后再开始工作。

2.在操作过程中，拆卸和组装，碎废钢或引脚可能迸溅，伤害周围的人。因此，必须做好预防措施保持工作人员适当的远离施工现场。

3.在装有设备的挖掘机上就座前，为安全起见，操作人员应该检查周围，并固定设备的位置。驾驶室的隔间应用加固的防护罩以保护操作员，其应充分理解该附件的类型和形状。

4.相应位置上没有按说明书上贴标签的设备，可能不是原厂的正品设备，不应该用于工作。每个标签要粘贴在正确位置，并应定期进行检查，以确保内容可读。当标签严重损坏且无法读取时，应该立即更换新的。授权经销商和销售商处可提供标签。

5.使用该设备时，应该保护操作者的眼睛，耳朵和呼吸器官。操作者应穿合身的工作服，否则可能会因不便引起事故伤害操作者。

6.一旦设备开始工作，将会产生热量，设备会变热。请等待长时间待它冷却后方可触摸。当运送设备时，请一定附上本手册。

Chapter 6: Points for attention

Use the equipment only after fully understanding the following safety instructions. The operator shall understand the operation instructions, equipment manuals, working procedures and regulations. Before starting the operation, make sure you are familiar with the installation, inspection and operation of the equipment. 1. When using the equipment, be careful to avoid personal injury caused by debris, loose waste or flying objects. Operators shall wear protective equipment before starting work. 2. During disassembly and assembly, scrap steel or pins may splash and hurt people around. Therefore, preventive measures must be taken to keep workers away from the construction site properly. 3. Before taking a seat on the excavator equipped with equipment, the operator should check the surroundings and fix the position of the equipment for safety. The cab compartment shall be provided with a reinforced protective cover to protect the operator, who shall fully understand the type and shape of the accessories. 4. The equipment on the corresponding position that is not labeled according to the instructions may not be genuine equipment of the original factory and should not be used for work. Each label shall be pasted in the correct position and shall be checked regularly to ensure that the content is readable. When the label is seriously damaged and cannot be read, it should be replaced immediately. Labels are available from authorized dealers and distributors.





5. The operator's eyes, ears and respiratory organs should be protected when using the equipment. The operator shall wear suitable work clothes, otherwise the operator may be injured due to inconvenience.6. Once the equipment starts to work, it will generate heat and the equipment will become hot. Please wait a long time for it to cool before touching. When transporting the equipment, please be sure to attach this manual.

第七章 安全信息

工作现场造成事故的原因，大多数是由于没有全面了解基本的操作方法以及没有充分做好维修保养服务。事故大多发生于用户认为可能是危险的地方。因此，在操作设备前，应该进行必要的检查和维修。操作员应该有足够的操作设备的经验，为了操作该设备，应充分了解手册中的指示。如果仍然不熟悉本手册，请咨询其他专家学习操作，维修和检查。

检查，维修和操作之前，请阅读并完全理解本手册和其中的安全信息。

为了更好的理解本手册和设备安全的警告牌，特把安全等级及含义等相关信息在下面列出，要求用户充分了解其内容及其含义。

 危险	表示一个紧迫的危险，如果不能避免的话，可能会导致死亡或严重伤害。然而这个标志只有在极其危险的情况下发出。（表示引起死亡或严重伤害的危险）
 警告	表示危险，如果不加以避免，是极有可能导致死亡或严重伤害的。（表明可能引起死亡或严重伤害的危险）
 小心	说明肯能会导致轻至中度伤害的危险。（表明有轻到中的危险）
 注意	表示需要注意的个人安全和财产保护的直接或间接的状态。（表明公司的法规或人身安全规则）

手册以及每一个标签、警告牌，都对安全非常重要，因此，应经常保持清洁可辨认，损坏时也应更换新的。为了避免和防止危险，请遵守安全指示。

我们并不能提前假设所有危险工况，本手册中的任何规则或警告牌，不包括与安全有关的每

一种情况。这些操作、检查或维修服务中并不能涵盖所有的安全指令，为了安全起见，用户应根据各自的工况采取必要的安全措施。

我们不可能预测到所有可能在操作，装配或维修服务等各种工况中出现的危险。因此，本手册不涉及任何特定的警告以及安全有关的每一种情况。





对于本手册中没有描述到的操作，装配或维修服务情况下出现的危险，用户应采取必要的安全防护措施。

Chapter 7: Safety precautions

Most of the accidents at the work site are caused by the lack of comprehensive understanding of the basic operation methods and insufficient maintenance services. Most accidents occur in places that users think may be dangerous. Therefore, necessary inspection and maintenance should be carried out before operating the equipment. The operator shall have sufficient experience in operating the equipment and fully understand the instructions in the manual in order to operate the equipment. If you are still unfamiliar with this manual, please consult other experts to learn operation, maintenance and inspection.

Before inspection, maintenance and operation, please read and fully understand this manual and the safety information contained therein.

In order to better understand this manual and the warning signs of equipment safety, the

 Dangerous	Indicates an imminent danger which, if not avoided, could result in death or serious injury. However, this sign is only issued in extremely dangerous situations. (indicates risk of death or serious injury)
 Warning	Indicates a danger which, if not avoided, is likely to result in death or serious injury.(indicates risk of death or serious injury)
 Be careful	Indicates a risk of mild to moderate injury. (indicates light to medium danger)
 Pay attention	A state, direct or indirect, that requires attention to personal safety and property protection.(Indicate the company's regulations or personal safety rules)

The manual, as well as each label and warning board, are very important for safety. Therefore, they should be kept clean and legible, and should be replaced when damaged. In order to avoid and prevent danger, please follow the safety instructions. We cannot assume all dangerous working conditions in advance. Any rules or warning signs in this manual do not include every situation related to safety. These operations, inspections or maintenance services do not cover all safety instructions. For safety reasons, users should take necessary safety measures according to their working conditions.

It is impossible for us to predict all the hazards that may occur in various working conditions such as operation, assembly or maintenance services. Therefore, this manual does not cover any specific warnings and every safety related situation. The user shall take necessary safety precautions for the hazards arising from operation, assembly or maintenance services not described in this manual.

第八章 莲花抓的存放



莲花抓工作结束时，液压油和一些部件仍有高温余热，务必小心！

- (1) 存放前，要加上足够的黄油，存放到干燥的地方。在锈蚀处也要加上黄油，湿度和温度的变换能引起生锈和腐蚀。
- (2) 如果带软管存放，用插头封住软管口。如果没有连接软管，用帽封住口，以防液压油泄露或其他物质流入。
- (3) 将莲花抓放到木板上，确保木板足够结实，足够大能承受设备。拆液压软管时，检查漏油，依照废物处理法规处理。
- (4) 长期存放设备时：
 - ① 清洁干燥所有的部件，存放于通风的环境。
 - ② 每月至少清理一次，并且润滑功能部件。
 - ③ 在油缸拉杆及其他容易锈蚀的部位加润滑黄油。

Chapter 8: Storage of the Lotus grip

Warning

At the end of Lotus grip work, the hydraulic oil and some parts still have high temperature residual heat, be careful!

- (1) Before storage, add enough butter and store in a dry place. Butter should also be added to the rust. Changes in humidity and temperature can cause rust and corrosion.
- (2) If the hose is stored, seal the hose port with a plug. If hoses are not connected, seal the mouth with a cap to prevent leakage of hydraulic fluid or other material.
- (3) Put the lotus onto the board to make sure the board is strong enough and large enough to hold the equipment. When disassembling hydraulic hoses, check for oil leakage and dispose according to waste disposal regulations.
- (4) Long-term storage of equipment:
 - ① Clean and dry all parts and store in a ventilated environment.
 - ② Clean at least once a month, and lubricate the functional parts.
 - ③ Lubricating butter is added to the pull rod of the oil cylinder and other parts that are easy to rust.