



# HYDRAULIC QUICK HITCH COUPLER

(液压式快速连接器使用)

## OPERATION MANUAL

(说明书)



Model : QC06P1005A

**IMPORTANT**

"Prior to the initial installation, operation, or maintenance of the quick hitch coupler, please thoroughly review this manual.

Carefully interpret and follow the instructions in this manual for enhanced user safety. To prevent unnecessary injuries or losses, always adhere to the relevant regulations, laws, and safety practices. "

Please contact local agents for  
information in details

\*The final interpretation right of this manual belongs to our company.



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## Important Safety Instructions for Operations

★ Prior to use, operators are strongly advised to thoroughly read and strictly adhere to this manual through repeated practice. If any questions arise concerning personal safety, product usage, or instructions, please contact the company's representative or headquarters.

★ The safety locking pin is a vital component for the secure operation of the quick hitch coupler. After attaching the work attachment, users must insert the safety pin before commencing operations.

★ The connector pipelines are critical but relatively delicate components. Operators should take care to protect them during use to prevent malfunctions or premature wear, potentially shortening the excavator's lifespan.

★ Operators must always keep the above points in mind. The company will not assume any legal responsibility for any injuries or damages resulting from operator error or non-compliant operation.

Please exercise caution and follow these safety guidelines to ensure a safe and efficient operational experience."

My company hopes that the quick hitch coupler can bring you more benefits. We sincerely thank you for choosing to purchase our company's quick hitch coupler!



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## ●Table of Contents

Chapter 1: Preface.....	5
Chapter 2: Applications And Technical Introduction.....	6
Chapter 3: General Overview.....	8
Chapter 4: Installation.....	10
Chapter 5: Safety Guidelines.....	17
Chapter 6: Inspection And Maintenance.....	18
Chapter 7: Common Failures and Troubleshooting.....	20
Chapter 8: Warranty Standards.....	22



## Chapter 1: Preface

This manual contains information on safety, operation, lubrication, and maintenance. It serves as a reference guide for new operators and as further education for experienced personnel.

Should any questions or issues arise regarding the quick hitch coupler, please consult your local dealer.



### WARNING

- Incorrect operation of the quick hitch coupler can result in serious safety incidents.
- Operators and maintenance personnel are urged to thoroughly read this manual before conducting operations or repairs related to the quick hitch coupler.
- In the event of loss or damage to this manual, prompt reordering is advised.
- When transferring the quick hitch coupler, please include this manual with the transfer.



For safety precautions, relevant sections on "Safety Measures" in this manual provide detailed explanations.



## Chapter 2: Applications and Technical Introduction

The quick hitch coupler facilitates the rapid installation and interchange of various attachments (such as buckets, rippers, hydraulic breakers, and shears) on excavators, broadening their range of applications. It saves time, reduces labor intensity, and enhances work efficiency.

### 1. Overview:

The quick hitch coupler primarily comprises a housing, hydraulic cylinder, hooks, safety locking pins, various fixed and connecting shafts, one-way hydraulic locks, and more. Powered by the hydraulic system of the excavator, the connector's hydraulic cylinder facilitates swift attachment and detachment, enabling the rapid interchange of various attachments. Quick hitch couplers are widely employed for swift attachment across diverse equipment.

- Housing: The primary structural component of the connector.
- Hooks and Jaw: Facilitate the connection of different equipment shafts on the excavator.
- Hydraulic Cylinder: Engages the hooks to connect or release the connector, utilizing hydraulic pressure from the excavator.
- Safety Locking Pins: Prevent unintended detachment of attached equipment during operation.
- One-Way Hydraulic Lock: An essential component on the cylinder that prevents detachment due to accidental pipeline ruptures.

### 2. Main Material Composition and Manufacturing Process Introduction:

The quick hitch coupler primarily utilizes high-quality Q355B and Q460 manganese plates. It undergoes a series of processes including CNC programmed cutting, followed by procedures such as beveling, bending, drilling, milling, and boring. Subsequently, it undergoes spot welding, CO2 shielded welding, shot blasting, primer spraying, assembly machine processing, post-assembly of various structural and functional components, standard component assembly,



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pipeline installation, operational testing, cleaning, and other treatments to ensure the completion of a fully functional quick hitch coupler.

The use of high-yield-strength and wear-resistant manganese plates alongside a meticulous manufacturing process ensures the product's durability and longevity.





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## Chapter 3: General Overview

### 1. Product Identification Number

The product identification number on the quick hitch coupler's casing is a crucial credential for maintenance, replacement, and spare part ordering. Each manufactured product undergoes stringent monitoring. In the event of any quality issues, it is imperative to provide the product number to our authorized dealer.

### 2. Safety Guidelines

Before conducting operations, familiarize yourself with the tasks at hand. Prior to installing this product, thoroughly read the safety-related content in this manual. Particularly, ensure a proficient understanding of the safety switch device's operational method. Before each day's operation, conduct inspections according to the following guidelines.

### 3. Trial Operation

Conduct trial operations in an open, spacious area to avoid unnecessary losses.

### 4. Machine Operating State

During the initial extension and retraction of the hydraulic cylinder, do not exceed 60% of its capacity. Repeat this process more than 10 times to eliminate any residual gas within the cylinder, preventing damage due to cavitation.

### 5. Avoid Unauthorized Modification of the Quick hitch coupler

Unreasonable modifications can lead to hazardous accidents and equipment damage.

### 6. Do Not Operate Machines with Missing Components

### 7. Optimal Hydraulic Oil Operating Temperature



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The ideal operating temperature for hydraulic oil is between 40–60° C. High temperatures above 60° C accelerate seal aging, while temperatures lower than 15° C reduce the fluidity of hydraulic oil, affecting the optimal operating state of the cylinders.

#### 8. Maintenance

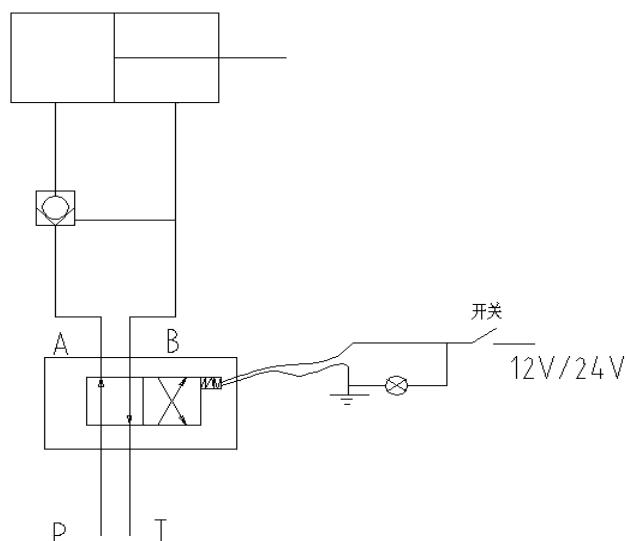
Avoid unauthorized machine repairs. Contact your local dealer when repairs or replacement of parts are necessary.



## Chapter 4: Installation

### 1 Installation Principles

快速连接器原理图



Preliminary Hydraulic Circuit:

- When the power is off, Port P connects to Port A, Port B connects to Port T, causing the cylinder to extend and "lock."
- When power is on, Port P connects to Port B, Port A connects to Port T, retracting the cylinder and "releasing."

### 2 Installation of the Quick hitch coupler

1. Place the excavator and quick hitch coupler on a relatively flat surface, aligning the fixed hooks of the quick hitch coupler with the excavator's arm for installation.
2. Depending on the excavator model, if using washers and rubber rings between the excavator arm and the quick hitch coupler, they should be assembled together.
3. Secure the upper shaft with bolts and nuts.



4. Install the hydraulic pipelines. During installation, ensure the pipeline aligns correctly with the cylinder's direction.
5. Prohibit the crossing and severe bending of pipelines. When installing the pipelines, ensure they are free from impurities to avoid cylinder damage leading to safety incidents.
6. Repeatedly operate the switch to confirm the smooth action of the quick hitch coupler's hooks.

After completing the installation, it is necessary to check the following:

1. Potential Interference Between the Quick hitch coupler and the Excavator.
2. Presence of Unusual Noises in the Quick hitch coupler.
3. Inspect for Oil Leakage at the Cylinder and Connection Pipelines.
4. Check the Condition of All Bolts and Shafts.
5. Examine for any Damage, Deformation, Cracks, or similar issues.
6. Assess the Connection Status of the Upper Shaft in the Quick hitch coupler."

### **3. Pipeline Installation**

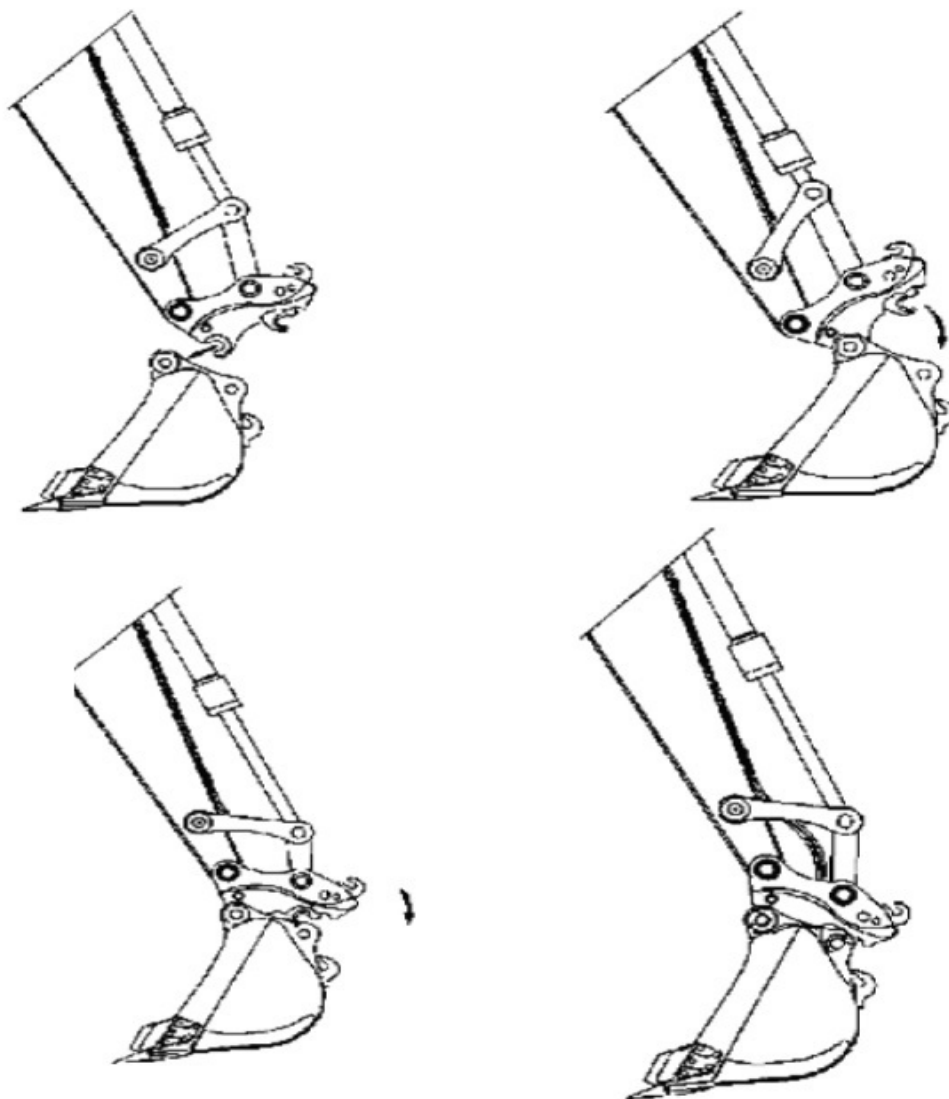
1. Secure the solenoid valve in an appropriate position, connect the coil ground wire to the excavator's grounding iron before tightening the screws.
2. Tap the pilot oil from the excavator's locomotion, connect it to the corresponding tee joint.
3. Connect one end of the switch to the fuse, connect the other end of the fuse to KL15 (power after the ignition switch).
4. Lay the pipeline along the excavator's arm and secure it with straps.



5. Weld pipe clamps at suitable positions directly above the arm, distributing them evenly.
6. Tighten the 90° joints at both ends of the metal pipe; it's crucial to tighten them fully in one go to prevent future oil leaks.
7. Fasten the metal pipe to the recently welded clamps and tighten the screws.
8. Connect with the front-end hoses, tighten the joints, and use straps to secure the hose portion.
9. Connect the front end of the metal pipe to the quick change cylinder.
10. Adjust the hose's position accordingly, then tighten the cylinder-end joints.
11. Operate the arm cylinder to ensure there is no interference between the quick changer and the arm and no pressure on the pipes.

#### **4. Operation Procedure**

1. Adjust the button of the quick hitch coupler to "release" before proceeding.
2. Slowly maneuver the fixed hooks of the quick hitch coupler to grasp the shaft of the bucket.
3. Gradually move the quick hitch coupler in the opposite direction of the bucket's shaft.
4. Position the hooks of the quick hitch coupler to entirely engage with the bucket's shaft.
5. Set the operational switch of the quick hitch coupler to "connect" before proceeding.
6. If the excavator's arm and bucket can rotate, the installation is complete. After completion, insert the safety pin.



*Illustration of Bucket Installation: Please refer to the diagram upon for the installation steps.*

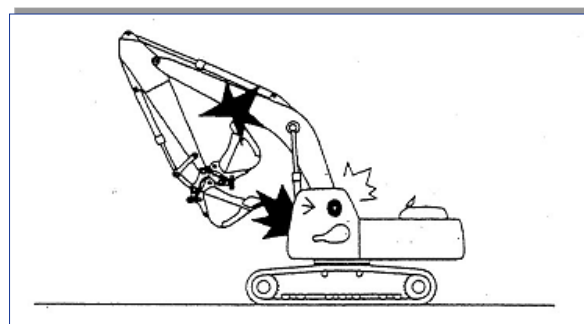


## 5. Guidelines for Pipeline Installation

1. Improper installation of the pipelines may shorten the excavator's lifespan or cause malfunctions. Consult our company's technical service center when installing pipelines.
2. Purchase original company parts for pipelines, hoses, solenoid valves, and other components to ensure normal operation under the excavator's maximum pressure.
3. Ensure thorough cleaning if dust or impurities enter the pipeline.
4. The pipeline of the quick hitch coupler can be connected to either the main pump or the pilot pump.
5. For proper direction of the pipelines, when viewed from the excavator's cab, the left side indicates "connect," while the right side indicates "release." After securing, connect the left pipeline to the solenoid valve's Port A and the right pipeline to Port B.

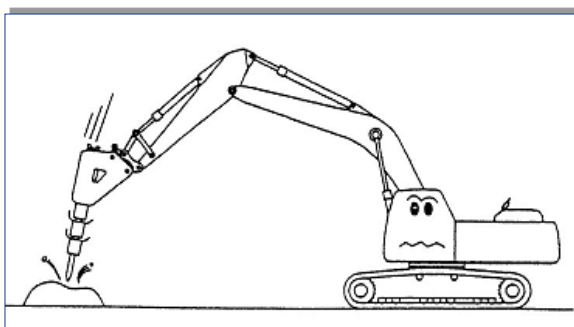
## 6. Safety Guidelines

1. After installing the quick hitch coupler, the excavator's swing radius increases, making it more prone to contact with the cab and the boom.

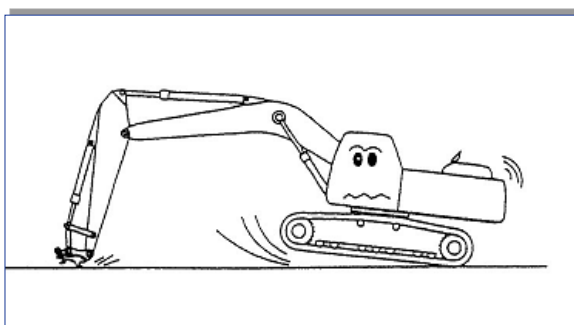




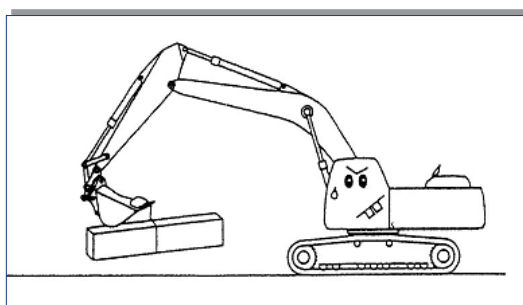
2. High-stress operations can reduce the lifespan of the quick hitch coupler and its attachments.



3. When the quick hitch coupler makes contact with the ground, avoid applying pressure. Use it only when connecting the bucket or attachments.



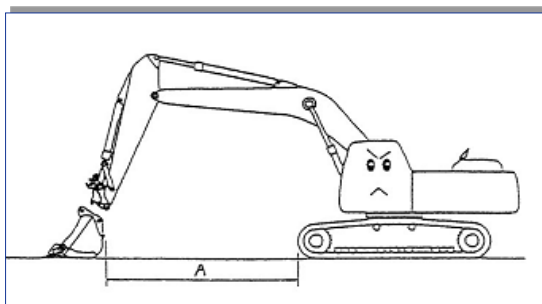
4. Moving heavy loads using the quick hitch coupler is extremely dangerous and can also shorten the product's lifespan."



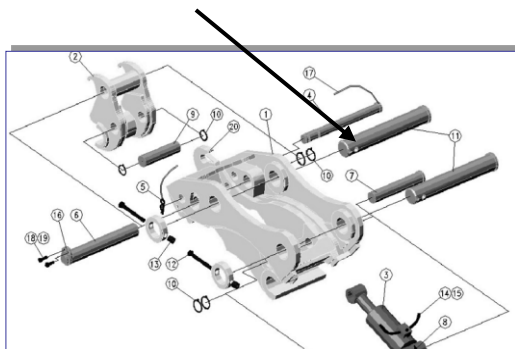




5. When the bucket or attachments are operating in the reverse direction, it's generally advisable not to use the quick hitch coupler. If necessary, ensure that the hooks are positioned correctly and securely installed in the 'A' position.



5. It is essential to install the safety pin during operations.





## Chapter 5: Safety Guidelines



During operations, ensure that no one is in close proximity to the machine to prevent accidents. Always maintain surveillance of the machine during operation to prevent injuries.



Check for any friction or interference between the quick hitch coupler and the excavator.



After installing the quick hitch coupler, be cautious as the excavator's swing radius increases. The operator must be careful to prevent accidental collisions between the quick hitch coupler, the boom, the cab, and the surrounding people or objects.



Prohibit the operation of the quick hitch coupler while the excavator is in motion or rotation.

Attention: The efficient operation and extended lifespan of the quick hitch coupler depend on proper lubrication, maintenance, and regular inspection for any issues.

Please refer to the following points for the maintenance and care of the quick hitch coupler:



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## Chapter 6: Inspection and Maintenance

1. When operating the quick hitch coupler, never place hands inside the machinery or touch any rotating components, as this can cause severe injuries.
2. When disassembling and assembling the hydraulic cylinder, take care to prevent impurities and moisture from entering the cylinder.
3. Always use genuine products from our factory for replacements. We do not assume responsibility for malfunctions resulting from the use of products from other companies.
4. Before lubricating, clean any dirt or debris from the quick hitch coupler. Perform maintenance every five alternate uses, injecting grease three times into the grease nipple.  
  
\* For the hook area, perform maintenance twice a day.
5. During concrete operations, the rod and cylinder of the hydraulic cylinder are prone to concrete adhesion, causing them to stick together. After operations, it is essential to promptly clean them. If the cylinder fails to function due to the user's negligence in these steps, we disclaim any responsibility.
6. Inspection Guidelines:
  - 1) Bolts: Check for any loosening of the bolts connecting assembly and hook shafts, as well as any gaps in the steel plates at the connection point.



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- 2) Cylinder: Inspect for damage or oil leakage after every 120 hours of work.
  - 3) Pipelines: Inspect for oil leaks at joints after every 120 hours of work.
  - 4) Hooks and Claws: Check each shift for wear, deformation, or cracks in the connection to the bucket or excavator attachment.
  - 5) Check bolts and nuts for any looseness after every 120 hours of work.
  - 6) Ensure cleanliness and the absence of damage in the cylinder rod to prevent oil leakage.



## Chapter 7: Common Failures and Troubleshooting

Situation	Check	Cause and Repair Method
Failure of the locking switch (unable to detach or connect attachments)	Check if the fuse is burnt	Replace the fuse with a new one
	Examine the control connection harness for detachment	Reconnect any disconnected wire harness
	Inspect if the solenoid valve is burnt. Check for magnetism at one end of the coil when powered	Replace the solenoid valve
	Check if the solenoid valve core functions properly. If it is stuck, remove and rinse the valve core	Rinse the valve core if stuck
Dislodgement of attached equipment during operation	Check if the safety pin is inserted and not fatigued or broken	The quick hitch coupler must be used with the safety pin inserted
	Check if the hook is loose, causing fatigue and breaking of the safety pin, leading to detachment of the equipment	Examine the cylinder for fractures or oil leakage. High-stress operations can shorten the cylinder's lifespan, causing piston rod fractures or seal aging.



Situation	Check	Cause and Repair Method
	Inspect the position of the connector switch	Check the position of the connector switch
	Inspect the switch's electrical wiring	Check for any damage in the positive and negative wires between the switch and solenoid valve that could cause a short circuit
	Examine if the cylinder's check valve is damaged	Remove and confirm any blockages, and check for damaged seals

Please note: The provided information is for troubleshooting purposes and does not eliminate the need for professional assistance. If issues persist, contact a qualified technician or service center for further assessment and repair.



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## Chapter 8: Warranty Standards

### 1. Scope and Duration of Warranty

Juxiang Machinery (hereinafter referred to as Juxiang) manufactures and sells excavator attachments and genuine parts. Under normal usage and management, based on the materials of the various components that constitute the product and the manufacturer's considerations, the warranty period for the end consumer is 12 months from the date of installation or a warranty of 2000 hours of operation, whichever comes first. For exported products, the warranty period starts from the date of shipment and will not exceed 18 months regardless of whether the installation time is less than 12 months or if it remains in storage. Both periods are counted towards the warranty.

### 2. Exclusions from Warranty Coverage

Even within the warranty period, the company will not provide free repair services for the following conditions:

- Malfunctions caused by contaminants in the hydraulic lines of the product.
- Malfunctions resulting from the use of contaminated hydraulic oil.
- Failures caused by using non-genuine Juxiang parts.
- Product malfunctions resulting from unauthorized alterations made without Juxiang's approval.
- Failures due to excessive operations beyond the manual instructions.
- Failures caused by improper operation, inspection, or maintenance as described in the service guide.
- Malfunctions resulting from use outside the product's specified range.



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- Wear and tear that does not affect the functionality of the connectors, such as fading or slight deformation.
  - Faults arising from incidents during product transportation or installation due to user negligence in narrow spaces.
  - Damaged product coding or unauthorized modifications to the product.
  - Malfunctions of durable parts recognized for their long-lasting nature that are not due to the material or manufacturer's fault. Examples include various hydraulic seals, connecting fittings, hydraulic lines, and other recognized durable parts.

### **3. Implementation of Warranty Measures**

- Free repair services are only applicable to new products manufactured and sold by the company. In case of a malfunction within the 12-month period from installation or 2000 hours of operation, inform the company within 15 days of the malfunction. Services and parts will be provided based on the written material received.
- The company reserves the right to recover related components to understand the cause of related component issues. Maximum assistance from users and agents is required if photographs or data are needed for component recovery.
- The principle of free repair involves component replacement (for products used for more than 6 months). However, the company is not responsible for transportation costs, any additional expenses incurred outside, or compensation required for after-sales personnel.
- Repairs under the free repair policy must be carried out by the company's after-sales service personnel or authorized agents. Repair times and labor fees will be calculated according to a separate standard.

### **4. Transfer of Warranty**

If a product's ownership changes due to sale or transfer during the warranty period, the remaining warranty period will still be valid for the new owner.





This warranty policy applies based on the specified guidelines in the manual and shall be carried out in adherence to the terms and conditions defined by Juxiang Machinery.

(Note: The above information is based on the original text provided and might need to be reviewed to ensure it conforms to specific legal regulations and local standards as per the company's requirements.)



<h1 style="text-align: center;">安装报告</h1> <h2 style="text-align: center;">INSTALLATION REPORT</h2>						报告编号 NO.		
						报告日期 DATE		
1、代理商及客户 Dealer&Customer								
代理商名称 Dealer			客户名称 Customer					
地址 Address			地址 Address					
负责人 Manager			负责人 Manager					
电话 Telephone		传真 FAX		电话 Telephone		传真 FAX		
2、挖掘机及快速连接器 Carrier&Quick coupler								
连接器型号 Coupler Model		连接器机号 Serial Number		安装日期 Date				
挖掘机型号 Carrier Model		挖掘机机号 Carrier Number		工作时间 Date in use				
3、安装参数 Parameter								
挖掘机臂宽mm Width		挖斗中心距mm Bucket Center distance						
轴销直径mm diameter		连接物中心距mm Connected Object Center distance						
4、测试及备注 Test&Remark								
5、讲解 Explanation								
正常保养 Normal maintenance		<input type="checkbox"/> 明白 understand <input type="checkbox"/> 不明白 no understand		操作说明 the operation explained		<input type="checkbox"/> 明白 understand <input type="checkbox"/> 不明白 no understand		
故障预防 Accident prevention		<input type="checkbox"/> 明白 understand <input type="checkbox"/> 不明白 no understand		故障处理 Fault analysis		<input type="checkbox"/> 明白 understand <input type="checkbox"/> 不明白 no understand		
6、签字 Signature								
安装人员签字 Installer's signature			客户负责人签字 Customer's signature					
7、客户答复 Customer reply								
调查回复 Investigation reply		<input type="checkbox"/> 满意 Satisfaction		<input type="checkbox"/> 一般 general		<input type="checkbox"/> 不满意 unsatisfied		