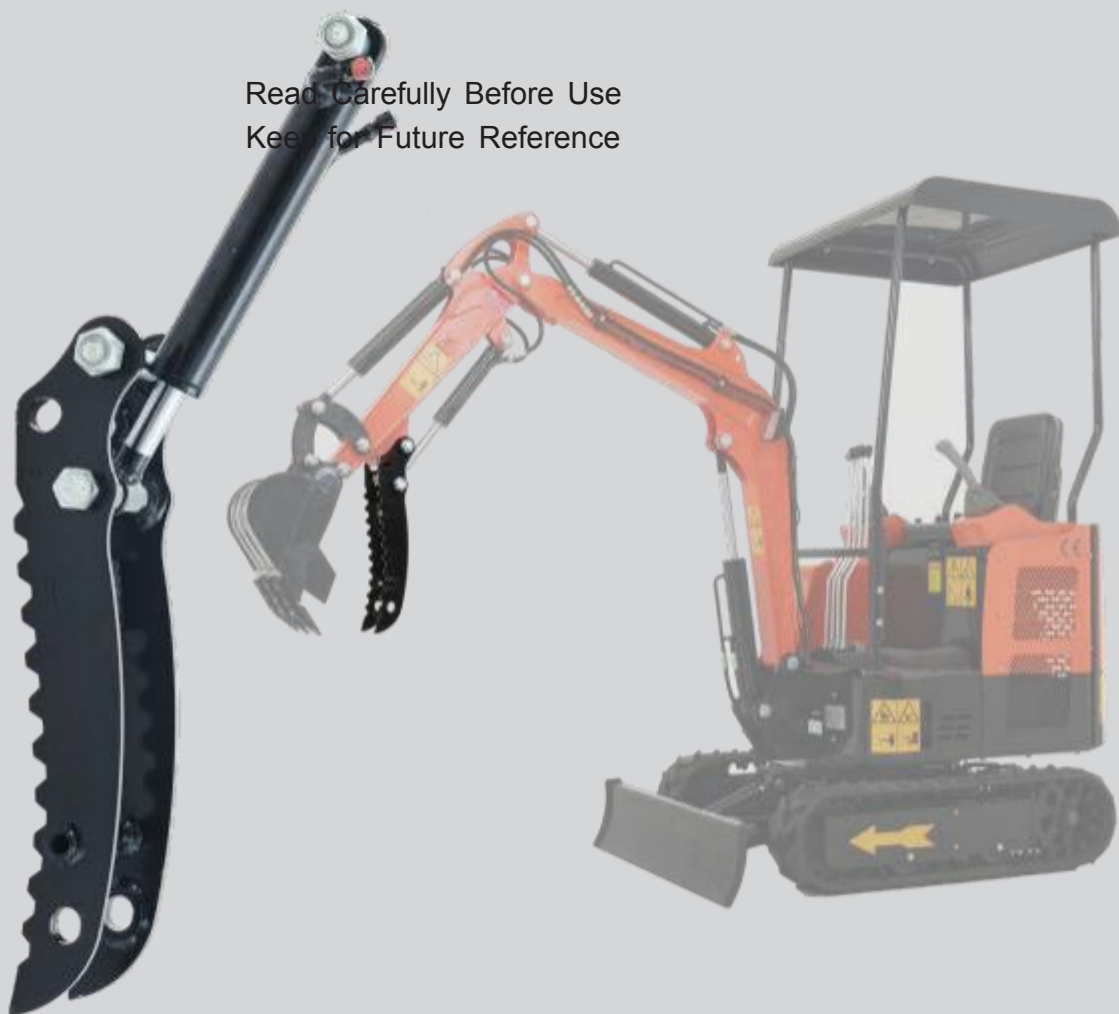


Hydraulic Thumb

Installation and Maintenance Instructions

Read Carefully Before Use
Keep for Future Reference



Safety

Symbol Guide

The following symbols and safety signal words are used in this manual. **DO** obey the accompanying messages to avoid possible injury or death.



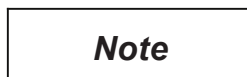
Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.

General Safety



- **ALWAYS** follow federal, state, and local laws, codes, and regulations concerning the use of construction machinery.
- Follow all other applicable instructions and precautions as stated in your excavator's manual.
- Read this manual before actually attaching this hydraulic thumb to your compatible excavator. Familiarize yourself with the instructions that provide crucial information on the installation, operation, and maintenance.
- **ONLY** use with compatible excavator models. Though this hydraulic thumb has a wide fitment, compatible with most models weighing under 3310 pounds (1.5 metric tons), **DO** research compatibility before actually mounting this hydraulic thumb. For details, see **Specifications**.
- **DO NOT** operate, inspect, or maintain the excavator when your faculties or judgment are impaired by alcohol, drugs, medicines, fatigue, or lack of sleep. **NEVER** allow any persons under such conditions to operate, inspect, or maintain this heavy machinery.
- Operating heavy equipment requires your full attention. Avoid distractions and remain focused on the task at hand.
- **IMMEDIATELY** cease to use and contact Customer Service if the hydraulic thumb shows any sign of anomalies or malfunctions, say noise, vibration, breakage, etc. **NEVER** attempt to resume use if the issues remain unsolved.

Operation Safety

Danger

- **FLYING DEBRIS CAN CAUSE SERIOUS OR FATAL INJURY.** Never operate the hydraulic thumb with bystanders or any personnel unprotected from potential flying debris. Guard the perimeter with steel mesh and reinforce the excavator with equivalent material as well. **NEVER** operate the hydraulic thumb with the excavator cabin unprotected.
- **ONLY** operate the hydraulic thumb from the excavator's cabin.
- **NEVER** haul or grab objects over the driver's cabin with even the excavator well-protected.
- **DO NOT USE THE GRAB AS A HOIST.** The hydraulic thumb is not intended to lift an object. To do so may damage the grab's hydraulic cylinder.
- Use two or more persons to attach the hydraulic thumb to the excavator's arm.

Caution

- **DO NOT** use the hydraulic thumb to move or nudge large objects, as they can cause excess wear around the hinge pin and grab cylinder.
- **DO NOT** use the hydraulic thumb as a rake, as used this way **WILL** impose huge horizontal force on the grab cylinder, causing structural damage to the cylinder.
- **DO NOT** use the hydraulic thumb as a pry bar. Doing so risks damaging the grab cylinder
- Avoid operating the hydraulic thumb with its cylinder fully extended or depressed. Prolonged time of over-extension or depression incurs excess wear and tear, thus shortening the service life of the cylinder.
- **DO NOT** operate underwater. Do not allow the cylinder to go underwater. Otherwise, the cylinder **WILL** be damaged from chronic rust.
- Maneuver the thumb tines clear of the excavator boom, especially when tucking the hammer into the boom for transportation.

Maintenance Safety

Caution

- Wear personal protective equipment (PPE) appropriate and adequate for the work at all times.
- **ONLY** use the recommended lubricant for the hammer. For the specific type, see **Maintenance**.
- Do not hardface or sharpen the thumb tine with a cutting torch. Excessive heat from torching or welding can cause embrittlement, breakage, and flying pieces.

Specifications

Hydraulic Oil	Operating Pressure	1138.7– 1567.6 psi	80–110 kg/cm ²
	Flow	2.6–7.9 GPM	10–30 L/min.
Hose	Length	59.1 in.	1500 mm
	Port Gauge	M14×1.5	
Hinge Pin	Dimensions	210×25 mm	
	Quantity	1	
Compatible Excavator Specs.	Weight	<3310 pounds (1.5 metric tons)	
	Arm Pin I.D.	25 mm	
	Arm Pin Housing Distance	92 mm	
	Pin Hole No.	3	
	Attachment Hydraulic Port	M14×1.5	
Overall Weight	21.5 lb.	9.75 kg	

Package List



No.	Item	Qty.
A	Hydraulic Thumb	1
B	Hinge Pin	1
C	Cylinder Pin	1
D	Hose	2

Installation

Mounting the Hammer

Warning

- **ONLY** mount the hydraulic thumb with the help of more than 2 persons or with the assistance of a working, easily controllable, and reliable hoist. Doing it alone risks serious personal injuries.
- If the excavator has been active before the mounting, wait till the hydraulic oil has dropped to room temperature.
- Attach the hinge pin first, then the cylinder pin, and finally the hydraulic hoses. Doing it alternatively could cause serious personal injuries or machinery damage.
- Keep your fingers clear of possible pinching points while mounting the hydraulic thumb.

Caution

- Cover the excavator hydraulic ports once their plugs are removed, preventing foreign matter from entering the hydraulic system.
- **ALWAYS** follow the protocols for using a hoist.

Tools required: adjustable wrench, work gloves, goggles, plastic wrap, hoist, or an extra couple of hands

1. Park the excavator on level ground, lower the dipper (arm) to a height that is easily accessible for mounting, and shut the engine.
2. When the engine and hydraulic oil have cooled to ambient temperature, remove the hinge and cylinder pins and nuts attached to the hydraulic thumb.

Hinge Pin Nut

Cylinder Pin Nut



3. With the help of a hoist, lift the hydraulic thumb to where its pin holes can align with the arm pin holes as shown.

⚠ Warning

Attach the hinge pin first, then the cylinder pin, and finally the hydraulic hoses. Doing it alternatively could cause serious personal injuries or machinery damage.

4. Aligning the hinge pin holes with those on the excavator dipper (arm), feed the removed hinge pin sequentially through
 - the side of the hydraulic thumb
 - the excavator dipper and
 - the other side of the hydraulic thumb.



5. Secure the hinge pin with its removed nut.
6. Aligning the cylinder pin holes with those on the excavator dipper (arm), feed the removed cylinder pin sequentially through
 7. the side of the cylinder pin hole on the arm.
 8. the thumb cylinder and the other side of the cylinder pin hole on the arm.
9. Secure the hinge pin with its removed nut

Connecting the Hydraulic Hoses

Caution

- Cover the exposed hydraulic ports and hose ends
- **ALWAYS** wait till the hydraulic oil has cooled to ambient temperature.
- **ALWAYS** follow the protocols for using a hoist.
- The hoses and their ends are interchangeable but **DO** cover their ports when the cap is removed, preventing introducing contamination to the excavator's hydraulic system.

1. Check the hose ends attached to the boom or the dipper. If they are as shown right, proceed with the sub-steps of step 1. Otherwise, go right ahead to step 2.



- a. Go start the engine, and raise the boom so that it's slanted upward but still within reach.
- b. After the engine and hydraulic oil have cooled to room temperature, remove both hose caps on the excavator hose ends, by holding the hose male port still and removing the hose caps.

Note: If the core of the hose cap remains stuck inside the male port, remove it with a pair of pliers. Store it with the removed hose cap.

Hose Cap

Hose Cap Core



Male Port

Hose Cap



- c. Cover the male ports with plastic wrap
- d. Remove the caps as shown, covering the exposed ports with plastic wrap.

Note: *Keep the caps in place. If the hydraulic thumb is to be detached for storage, they will do a better job protecting the cylinder than plastic wrap.*

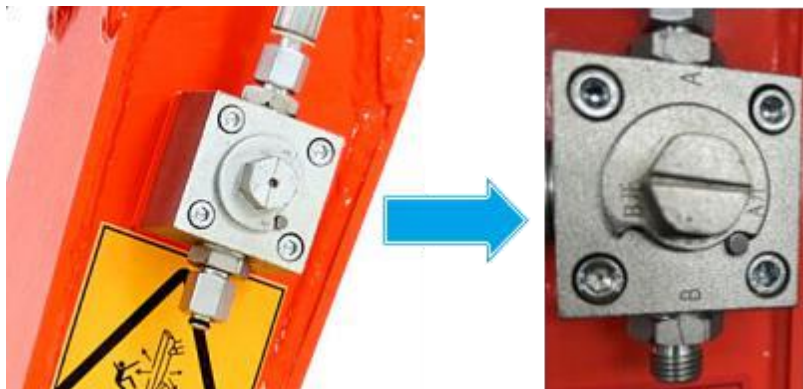


- e. Having removed the plastic wrap around the **LEFT** hydraulic port on the hydraulic thumb and the plastic plug on either end of one hydraulic hose, connect the hose to the thumb by hand turning.
- f. Connect the other end of the connected hose to the excavator hydraulic hose by removing the plastic wrap and then hand-turning the female port on the hose.
- g. Repeat steps e–f for the other provided hydraulic hose.
- h. Fasten each connection on both ends of the provided hoses with an adjustable wrench.

2. If the hydraulic hoses attached to the dipper have valves, as shown right,
 - a. Shut the engine if it has been running and wait till it and the hydraulic oil has cooled to ambient temperature.

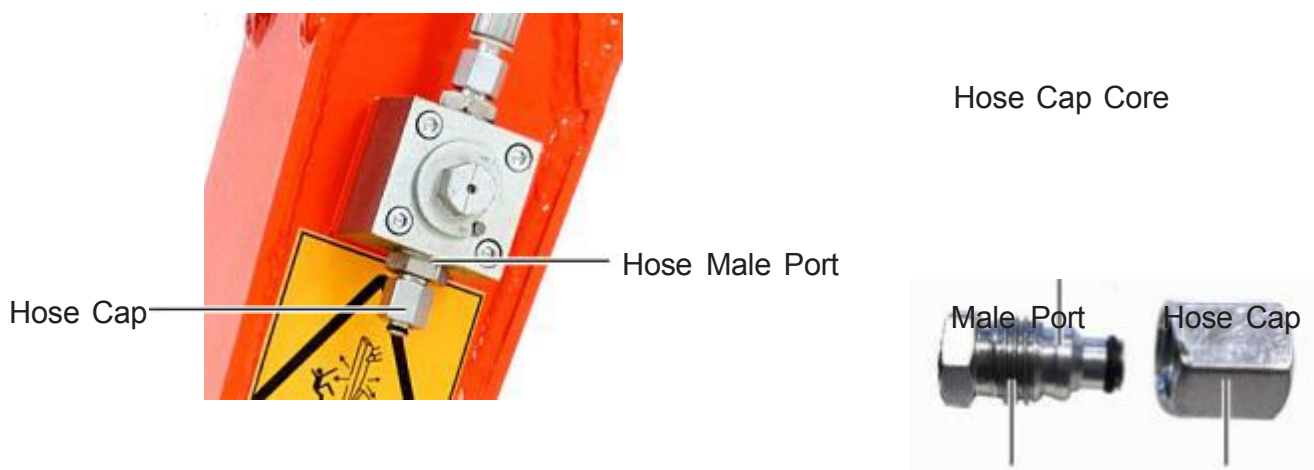


- b. Close the valves by turning them clockwise by 90° if the debossing is parallel to the hose.



- c. Repeat steps c–d for all remaining ends of the provided hoses.
- d. Remove both hose caps on the excavator hose ends, by holding the hose male port still and removing the hose caps.

Note: *If the core of the hose cap remains stuck inside the male port, remove it with a pair of pliers. Store it with the removed hose cap.*



- e. Cover the male ports with plastic wrap.
- f. Remove the caps as shown, covering the exposed ports with plastic wrap.

Note: *Keep the caps in a well-protected place. If the hydraulic thumb is to be detached for storage, they will do a better job protecting the cylinder than plastic wrap.*



- g. Having removed the plastic wrap around the LEFT hydraulic port on the hydraulic thumb and the plastic plug on either end of one hydraulic hose, connect the hose to the thumb by hand turning.
- h. Connect the other end of the connected hose to the excavator hydraulic hose by removing the plastic wrap and then hand-turning the female port on the hose.
- i. Repeat steps g–h for the other provided hydraulic hose.
- j. Fasten each connection on both ends of the provided hoses with an adjustable wrench.

- I. Open the valves by turning them anticlockwise by 90°.



- m. Start the engine and open and close the thumb.
- n. Check that no hydraulic oil is leaking from the connections, reconnect as needed.

Maintenance

- Periodically clean the hydraulic thumb, removing all mud, dirt, and grease.
- Lubricate the hinge and cylinder pins with lithium grease every 10 hours of continuous operation. Shorten the schedule if the pins become unusually squeaky.
- Apply a light coating of oil to all exposed metal parts to prohibit corrosion.
 - Inspect for visible signs of wear, breakage, or damage. Replace or repair damaged components.
- Periodically check the fasteners, retightening as needed.
- Repainted exposed metal surface before storage.
- Store in a dry and protected place, inaccessible to unauthorized personnel, and away from direct sunlight. In particular, protect from precipitation, which can significantly shorten the service life of the cylinder and cause rust.