



Toll Free: 1-800-579-8088 Web: www.zinko.com

MODEL

ZSP Series

10 - 100 Ton Shop Press

Operating Instructions

Receiving Instructions

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage during shipment.

Safety Issues

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. **ZINKO** cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact **ZINKO** when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free **ZINKO** Hydraulic safety course.

IMPORTANT

Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

Caution Remarks Used In This Manual

- ⚠ DANGER** is only used when your action or lack of action can cause serious injury or death.
- ⚠ WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.
- ⚠ CAUTION** is used to indicate correct operating maintenance procedures and practices to prevent damage to or destruction of equipment or other property.

⚠ WARNING

1. Always wear proper personal protective gear when operating hydraulic equipment.
2. **Stay clear of loads supported by hydraulics.** A cylinder, when used as a load lifting device, should **never** be used as a load holding device. After the load has been raised or lowered, it must **always** be blocked mechanically.
3. **Use only rigid pieces to hold loads.** Carefully select steel or wood blocks that are capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any lifting or pressing application.
4. **Do not exceed equipment ratings.** Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The cylinders are designed for a maximum pressure of 10,000 psi (700 bar). Do not connect a jack or cylinder to a pump with a higher pressure rating.
5. **Never set the relief valve to a higher pressure than the maximum rated pressure of the pump.** Higher settings may result in equipment damage and/or personal injury.
6. The system operating pressure **must not** exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.
7. **Do not drop heavy objects on hose.** A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.
8. **Only use hydraulic cylinders in a coupled system.** Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.
9. Avoid situations where loads are not directly centered on the cylinder plunger. Off-center loads produce considerable strain on cylinders and plungers. In addition, the load may slip or fall, causing potentially dangerous results.
10. Distribute the load evenly across the entire saddle surface. Always use a saddle to protect the plunger.
11. Immediately replace worn or damaged parts by genuine **ZINKO** parts. Standard grade parts will break causing personal injury and property damage. **ZINKO** parts are designed to fit properly and withstand high loads.
12. On 25 - 100 ton presses, **do not** load the press with the bed pins located below the press bed. This will put undue stress on the press bed.
13. **DO NOT MODIFY THE PRESS.**

⚠ DANGER 1) To avoid personal injury keep hands and feet away from cylinder and workpiece during operation. 2) **Do not handle pressurized hoses.** Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.

⚠ CAUTION **Avoid damaging hydraulic hose.** Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.

Zinko Hydraulic Jack

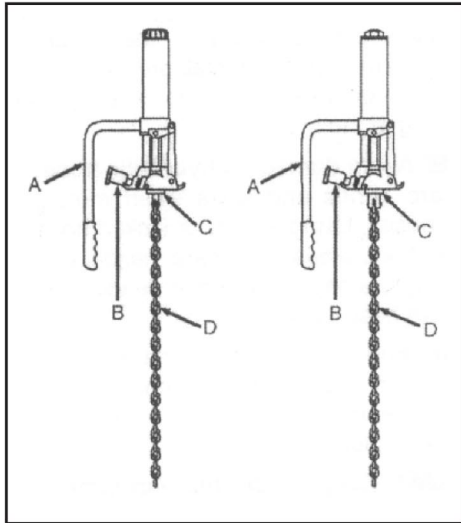
Model: ZSP Series



Keep hydraulic equipment away from flames or heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C (150°F) or higher. Protect hoses and cylinders from weld spatter.

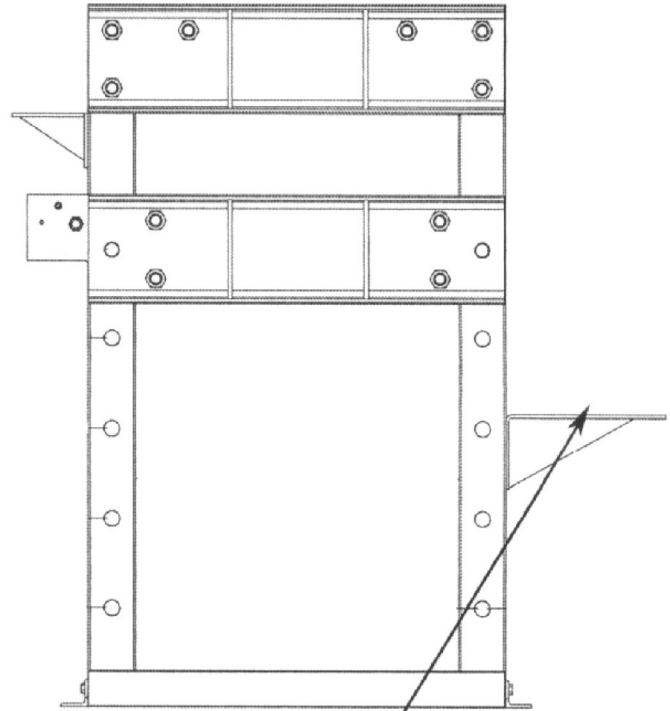
Installation

Bed Lifting Jack



Bed Lifting Jack

- A: Handle C: Plunger
B: Release Valve D: Lifting Chain



Location of Pump Mounting Bracket



Mount the press securely. Unstable positioning may cause the press to tip, resulting in serious personal injury or equipment damage.

Hydraulic Connections



Check all hydraulic hoses to be sure that fittings and couplers are tight and leak free. Check hose position to be sure that hoses are located correctly to avoid damage during press operations. Tighten all connections fully, but not excessively.

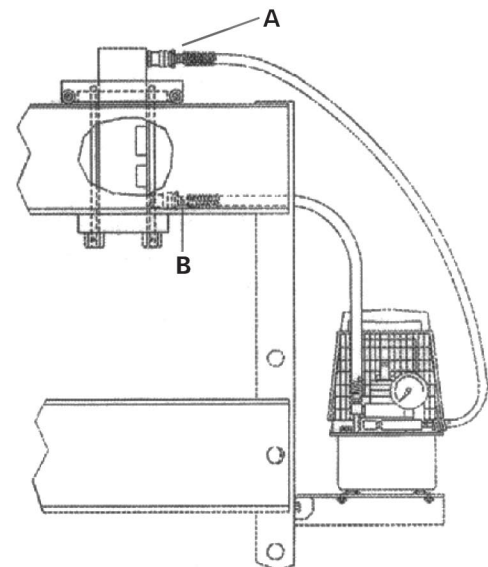
Double-Acting Cylinders

1. Connect the gauge adapter to the appropriate outlet port (refer to following note) of the 4-way valve mounted on the pump. The ports are labeled as follows: **A: Pressure Port** - Advance, **B: Return Port** - Retract

NOTE: For Pushing - place the gauge in the *advance* hydraulic line.
For Pulling - place the gauge in the *retract* hydraulic line.

2. Attach the gauge to the NPTF gauge port on the gauge adapter.
3. Connect the 3/8 street elbow to the outlet port of the gauge adapter. Connect the second 3/8 street elbow to the remaining port of the 4-way valve.
4. Attach the male threaded end of the two hydraulic hoses to the 3/8 street elbows.
5. Attach the coupler of the *advance* hydraulic hose to the mating coupler on the double-acting cylinder nearest the base end (A).
6. Attach the coupler of the *retract* hydraulic hose to the mating coupler on the double-acting cylinder nearest the plunger end (B).

NOTE: Make sure all couplers are completely engaged.



Hydraulic Connections for Double-Acting Cylinders

Zinko Hydraulic Jack

Model: ZSP Series

Press Bed Adjustment

Raising & Lowering the Press Bed

WARNING Keep hands away from the bolster and frame when repositioning the bolster with the lifting jack.

1. To raise the press bed, open the release valve on the lifting jack and pull the plunger down to fully extend the jack.
(If lowering the press bed, push jack plunger up until fully retracted.)
2. Slide chain into the lifting hook on press bed.

WARNING Make sure that the lifting chain is fully and securely engaged when the lifting hook prior to repositioning the press bed.

3. Remove retaining rings or o-rings from the back side of the bed pins.
4. Close release valve on bed lifting jack.
5. Pump bed lifting jack until bed pin on the same side as chain becomes loose.
6. Twist and pull to remove bed pin.
7. Pump bed lifting jack until the remaining bed pin becomes loose.
8. Twist and pull to remove the remaining bed pin.
9. Continue to pump bed lifting jack until lowest press bed hole aligns with hole in press frame. The lowest press bed hole will always be on the opposite side of the press from the lifting chain. Insert bed pin. (If lowering the press, slowly open release valve on lifting jack, lowering press bed until lowest press bed hole aligns with hole in press frame. Close release valve and insert bed pin.)
10. Slowly open release valve on bed lifting jack, lowering press bed until remaining press bed pin holes are aligned. Close release valve on bed lifting jack and insert bed pin.
11. Install retaining rings or o-rings on back side of bed pins.
12. Open release valve on bed lifting jack.
13. Disconnect chain from lifting hook to prevent inadvertent loading of the chain.

Operation

System Setup

WARNING 1) Check all press setups and load fixtures for safe operation.
2) Before operating press, make sure all bed support pins are fully inserted and retaining rings are installed on ends of the bolster pins before pressurizing the cylinder or loading the press.

Center the work piece and all parts of the setup on the line of force. If spacers are used in the setup, they should be constructed in one solid piece or tack welded together for stability.

Removing Air From the Hydraulic System

NOTE: Air removal will go faster if hose(s) are bled of air before connecting them to cylinder port(s).

Advance and retract the cylinder several times, avoiding pressure build-up. Air is fully removed from the system when the cylinder advances and retracts smoothly.

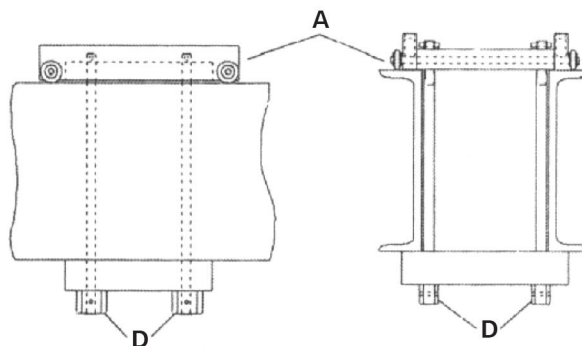
Power Pumps

1. To advance the cylinder, shift valve to the *advance* position and run the pump.
2. Shift valve to *neutral* when desired stroke is reached.
3. To retract the cylinder, shift valve to the *retract* position and run the pump.

Repositioning the Cylinder

50 - 100 Ton Models

1. Loosen, DO NOT REMOVE, the two tie rod nuts (D) located under the lower cylinder support bracket.
2. Slide the cylinder mounting block assembly (A) to the desired position on the press frame.
3. Tighten tie rod nuts (D) securely when cylinder is in the desired location.



50 - 100 Ton Models

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Maintenance

Hydraulic System

1. Keep all hydraulic components free of dirt, grease, chips, and unnecessary equipment.
2. Periodically check hydraulic system for damaged components, loose connections, or leaks. Replace or repair damaged or leaking components immediately.
3. Change hydraulic oil in your system every 50 hours of operation.
4. Use only approved hydraulic oil. Use of fluids other than approved hydraulic oil may cause damage to your system and may void your warranty.
5. For complete hydraulic component instructions, refer to the instructions enclosed with your pump and cylinder.

Press Frame

1. Keep work area and press bed free of dirt, chips, and unnecessary tools and fixtures.
2. Periodically check press frame to make sure all bolts are tight and frame parts are undamaged. Replace or repair damaged parts immediately.
3. If the paint becomes badly chipped, the unit should be repainted to prevent rusting and to keep frame appearance neat.

Troubleshooting

Problem	Possible Cause	Solution
Cylinder does not advance, advances slowly, or advances in spurts.	1) Oil level in pump is low.	1) Add oil according to the pump instructions.
	2) Pump release valve open.	2) Close pump release valve.
	3) Loose hydraulic coupler.	3) Check that all couplers are fully tightened.
	4) Load is too heavy.	4) Do not attempt to exert more than rated tonnage.
	5) Air trapped in system.	5) Remove air according to the instructions on page 3.
	6) Cylinder plunger binding.	6) Check for damage to cylinder. Have cylinder serviced by a qualified hydraulic technician.
Cylinder advances, but does not hold pressure.	1) Leaking connection.	1) Check that all connections are tight and leak free.
	2) Leaking cylinder seals.	2) Locate any external leaks and have equipment serviced by a qualified hydraulic technician.
	3) Internal leakage in pump.	3) Have pump serviced by a qualified hydraulic technician.
Cylinder does not retract, retracts part way, or retracts more slowly than normal.	1) Pump reservoir is overfilled.	1) Drain oil level to full mark. See pump instructions for adding oil.
	2) Loose hydraulic coupler.	2) Check that all couplers are fully tightened.
	3) Air trapped in system.	3) Remove air according to the instructions on page 3.
Single-Acting Systems:		
Cylinder does not retract, retracts part way, or retracts more slowly than normal.	1) Pump release valve closed.	1) Open pump release valve.
	2) Cylinder retraction spring broken or other cylinder damage.	2) Have cylinder serviced by a qualified hydraulic technician.
	3) Cylinder attachments are too heavy for a single-acting cylinder.	3-4) Use a double-acting cylinder to check that all couplers are fully tightened.
	4) Coupler not fully connected.	