



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

MODEL

## ZHP-90, ZHP-120, ZHP-150 & ZHP-180 Heavy-Duty Two-Speed Hydraulic Hand Pumps

# Operation & Maintenance Manual

### Important 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 repairs and replacement costs during product shipping.

### Safety Information

Read and follow all **instructions, warnings, cautions** and carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. **ZINKO** is not 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. Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

### Caution Remarks Used In This Manual

**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.

### Operator Responsibility

It is the operator's responsibility to read and understand all of the following safety statements:

<b>WARNING</b>
<ol style="list-style-type: none"> <li>1. Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges, and corrosive chemicals.</li> <li>2. <b>WEAR PROPER PERSONAL PROTECTIVE GEAR WHEN OPERATING HYDRAULIC EQUIPMENT.</b></li> <li>3. Always check product limitations regarding pressure ratings, load capacities, and setup requirements. The system operating pressure <b>MUST NOT</b> exceed the pressure rating of the lowest rated component in the system.</li> <li>4. <b>NEVER</b> 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.</li> </ol>

### Installation

#### Connecting the Pump

1. Thread hose into pump outlet. Use 1-1/2 wraps of Teflon tape (or suitable thread sealant) on hose fitting, leaving the first complete thread free of tape to ensure that tape does not shed into the hydraulic system causing damage. Trim loose ends.
2. Install a pressure gauge in-line from the pump for added safety and better control.
3. Connect the hose(s) to your cylinder or tool.

NOTE: **For single-acting cylinders:** Connect one hose from the pump to the cylinder.

**For double-acting cylinders:** Connect two hoses. Connect one from the pressure port of the pump to the pressure port of the cylinder. Connect another hose from the retract port of the pump to the retract port of the cylinder.

#### Pump Venting

Vented pumps provide slightly better performance. For pumps with a nylon reservoir, turn vent/fill cap 1/4 turn counter-clockwise to vent. Close vent prior to transporting pump to prevent oil leakage.

NOTE: When operating the pump in the vertical position, the hose end must be pointed down or the pump will pick up air and will not build pressure properly.

### Operation

#### Before Using the Pump

1. Check all system fittings and connections to make sure they are tight and leak-free.
2. Check oil level in reservoir before operating pump. See *Maintenance* on page 2.

**WARNING** a) **Never add extensions to the pump handle.** Extensions cause unstable pump operation.  
b) In certain situations the pump handle can "kick back". Always keep your body to the side of the pump and away from the line of force.

NOTE: To reduce handle effort at high pressure, take short strokes. Maximum leverage is obtained in the last 5 degrees of the stroke.

# Zinko Hydraulic Jack

## Models: ZHP Two-Speed Series (*Operation continued*)


### *Using Two-Speed Pumps*

These pumps provide two-stage flow. Under no load, the pump operates in the high flow stage for rapid advance. When the load is contracted, the pump automatically shifts to the second stage for building pressure. When pump pressure reaches approximately 200 psi, you must momentarily stop pumping and raise the handle to shift to the high pressure stage. After the pump shifts, pumping takes less effort.

NOTE: For best performance, operate handle at moderate speed during the high flow first stage. Rapid handle speed in the first stage will prevent the pump from delivering a full volume of oil.

### *Single-Acting Applications with Release Valve*

1. Close the release valve by turning clockwise.

 **Close release valve finger tight ONLY.** Using tools on release valve can damage it and cause the pump to malfunction.

2. Operate pump handle to deliver hydraulic power to the system. Pressure will be maintained until release valve is opened.
3. Open release valve (turn counterclockwise) to release pressure allowing oil to flow back to the reservoir.

### *Single-Acting Applications with 3-Way Position Manual Valve*

1. Shift valve handle to position 1.
2. Operate pump handle to deliver hydraulic power to the system. Pressure will be maintained until the valve is shifted.
3. To allow oil to return to the reservoir, shift valve handle to position 2.

### *Relief Valve Adjustment*

All pumps contain a factory set relief valve to prevent over pressurization of the system. Lower pressure settings can be obtained: contact your Authorized Service Center for more information.

## **Bleeding Air From the System**

### *Air Removal*

Removing air from the hydraulic system will help the cylinder to advance and retract smoothly. Air can accumulate in the hydraulic system during the initial setup, or after prolonged use, which causes the cylinder to respond slowly or in an unstable manner.


### *To Remove Air*

1. Position the cylinder at a lower level than the pump and turn the cylinder rod down.
2. With no load on the system and the pump vented, extend and retract the cylinder several times. Air will be released into the pump reservoir. Follow the fluid level instructions for your reservoir type to release the air from the reservoir and top off the fluid supply.

## **Maintenance**

Use only **ZINKO** hydraulic oil with these pumps to promote long pump life and protect your warranty. **ZINKO** seal kits are available for some hand pumps. Contact your **ZINKO** representative for more information on these products and/or other products.

### *Adding Oil to the Pump*

 **Check oil level regularly.** Always add oil with cylinders fully retracted (extended if pull cylinders) or the system will contain more oil than the reservoir can hold.

1. Remove vent/fill cap from reservoir.
2. Fill reservoir only to level mark shown on pump.
3. Remove air from system if necessary. Recheck oil level after removing air.
4. Return vent/fill cap to proper position.

NOTE: Non-vented hand pumps require air completely filled or a vacuum will form preventing oil from flowing out of the pump.

### *Keeping Oil Lines Clean*

When coupler halves are disconnected, always screw on dust caps. Use every precaution to guard unit from dirt entering the system because foreign matter may cause pump, cylinder, or valve failure.

### *Lubricating the Pump*

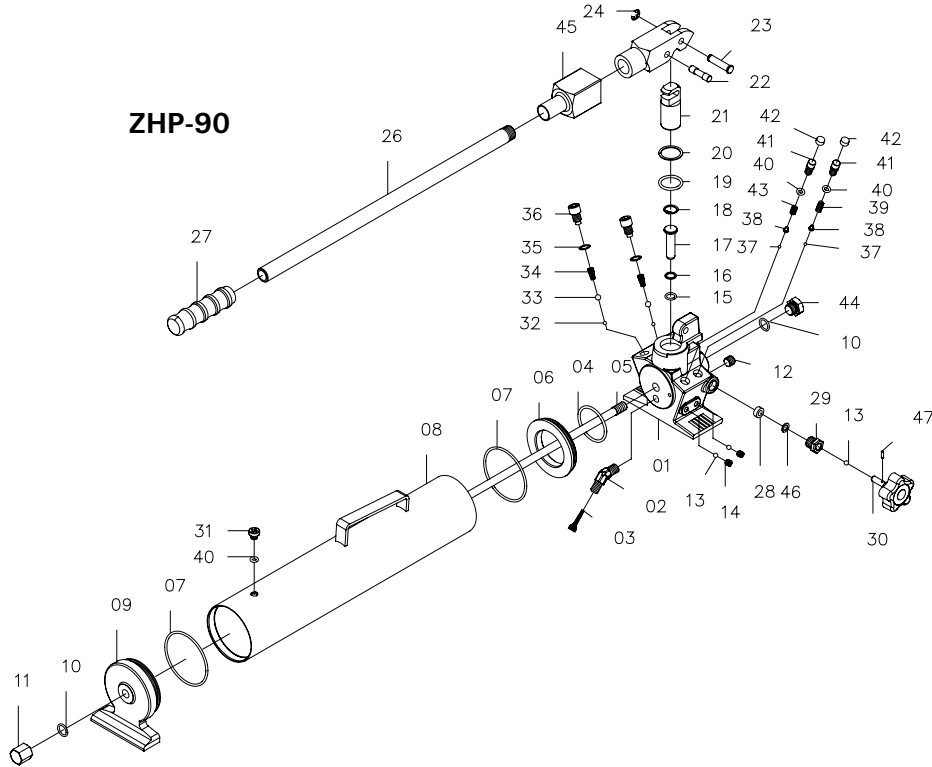
To extend pump life and improve performance, lubricate the beam pin, cross pin, and piston head and close release valve.

### *Changing the Oil*

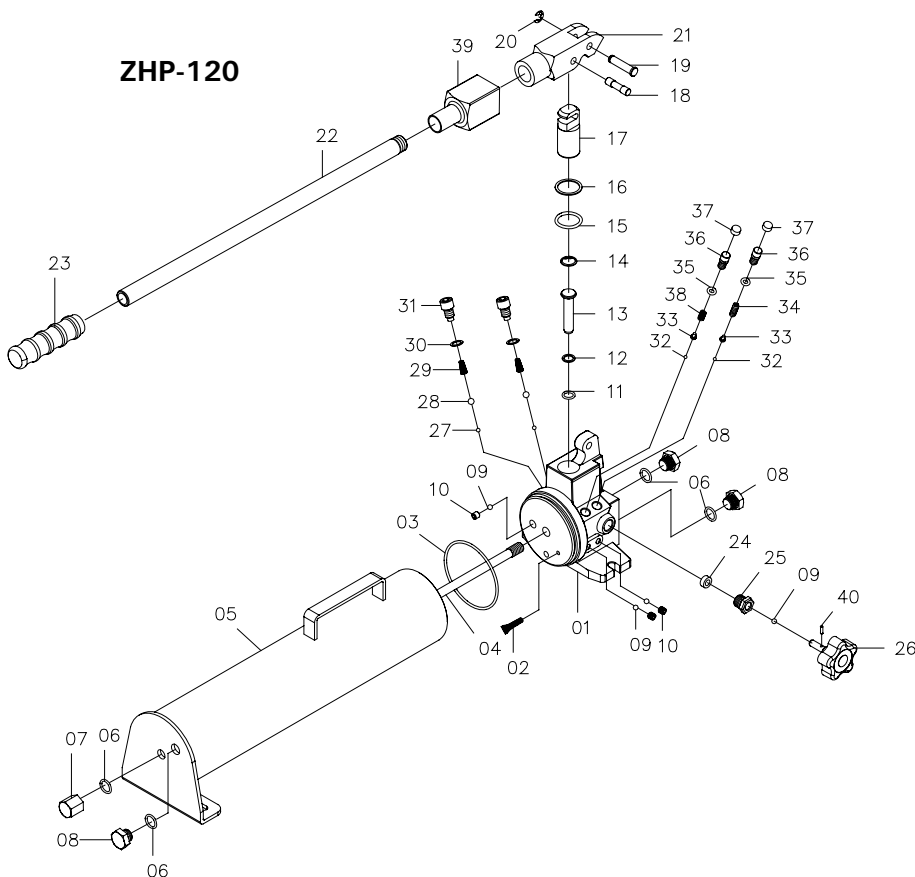
1. Drain all oil and refill with clean **ZINKO** oil every 12 months. If pump is used in dirty environments, change oil more often. Be sure to dispose of used oil properly.
2. Remove vent/fill cap or plug from reservoir.
3. Tilt pump to drain out old oil.
4. Replace the vent/fill cap or plug.
5. Regularly use roller bearing grease.

# Zinko Hydraulic Jack

## Models: ZHP Two-Speed Series



#	Description	#	Description
1	Pump Housing	25	Yoke
2	45° Elbow	26	Handle
3	Oil Filter	27	Handle Grip
4	O-Ring	28	Oil Seal
5	Screw	29	Couplers
6	Head Base	30	Release Valve
7	O-Ring	31	Air Release Screw
8	Reservoir	32	Check Ball
9	Tail Base	33	Check Ball
10	O-Ring	34	Spring
11	Nipple	35	Washer
12	Screw	36	Valve Cover Screw
13	Check Ball	37	Check Ball
14	Set Screw	38	Spring End Cap
15	O-Ring	39	Long Sep. Spring
16	Backup Ring	40	O-Ring
17	Pump Piston	41	Ovld. Cover Spring
18	Snap Ring	42	Cap
19	O-Ring	43	Short Sep. Spring
20	Backup Ring	44	Screw
21	Pump Piston	45	Yoke Cover
22	Piston Pin	46	Washer
23	Yoke Pin	47	Pin
24	Retaining Pin		

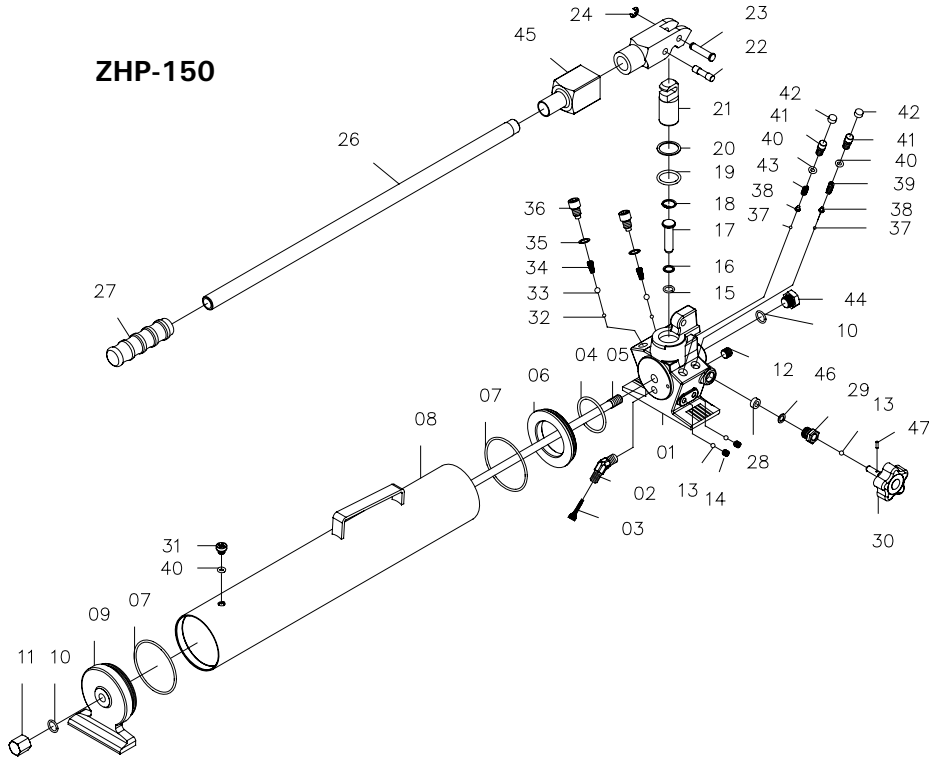


#	Description	#	Description
1	Pump Housing	21	Yoke
2	Oil Filter	22	Handle
3	O-Ring	23	Handle Grip
4	Screw	24	Oil Seal
5	Reservoir	25	Couplers
6	O-Ring	26	Release Valve
7	Nipple	27	Check Ball
8	Screw	28	Check Ball
9	Check Ball	29	Spring
10	Set Screw	30	Washer
11	O-Ring	31	Valve Cover Screw
12	Backup Ring	32	Check Ball
13	Pump Piston	33	Spring End Cap
14	Snap Ring	34	Long Sep. Spring
15	O-Ring	35	O-Ring
16	Backup Ring	36	Ovld. Cover Spring
17	Pump Piston	37	Plastic Cap
18	Piston Pin	38	Short Sep. Spring
19	Yoke Pin	39	Yoke Cover
20	Retaining Pin	40	Pin

# Zinko Hydraulic Jack

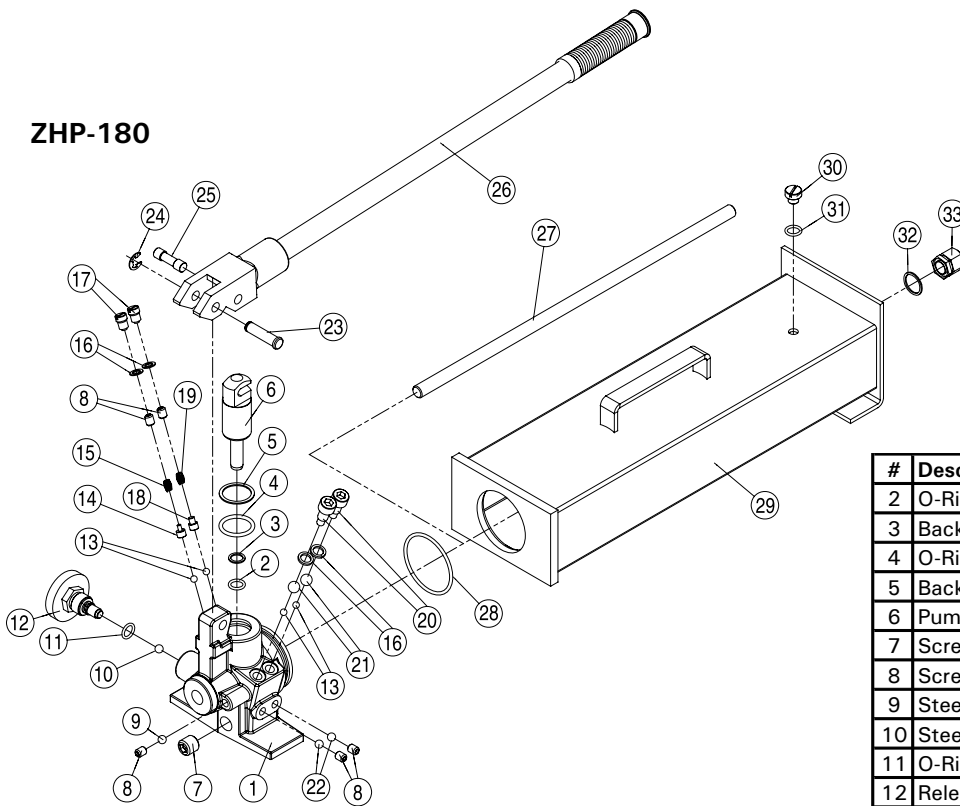
## Models: ZHP Two-Speed Series

**ZHP-150**



#	Description	#	Description
1	Pump Housing	25	Yoke
2	45° Elbow	26	Handle
3	Oil Filter	27	Handle Grip
4	O-Ring	28	Oil Seal
5	Screw	29	Couplers
6	Head Base	30	Release Valve
7	O-Ring	31	Air Release Screw
8	Reservoir	32	Check Ball
9	Tail Base	33	Check Ball
10	O-Ring	34	Spring
11	Nipple	35	Washer
12	Screw	36	Valve Cover Screw
13	Check Ball	37	Check Ball
14	Set Screw	38	Spring End Cap
15	O-Ring	39	Long Sep. Spring
16	Backup Ring	40	O-Ring
17	Pump Piston	41	Ovld. Cover Spring
18	Snap Ring	42	Cap
19	O-Ring	43	Short Sep. Spring
20	Backup Ring	44	Screw
21	Pump Piston	45	Yoke Cover
22	Piston Pin	46	Washer
23	Yoke Pin	47	Pin
24	Retaining Pin		

**ZHP-180**



#	Description	#	Description
2	O-Ring	18	Bearing
3	Backup Ring	19	Steel Ball
4	O-Ring	20	Cover screw
5	Backup Ring	21	Steel Ball
6	Pump Piston	22	Steel Ball
7	Screw	23	Pin
8	Screw	24	E Ring
9	Steel Ball	25	Pin
10	Steel Ball	26	Handle
11	O-Ring	27	Screw
12	Release Valve	28	O-Ring
13	Steel Ball	29	Reservoir
14	Bearing	30	Fill Plug
15	Spring	31	O-Ring
16	Washer	32	Gasket
17	Screw	33	Nipple

# Zinko Hydraulic Jack

## Models: ZHP Two-Speed Series

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### Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Cylinder does not advance, advances slowly, or advances in spurts.	Oil level in pump reservoir is low.	Add oil according to <i>Maintenance</i> section (page 2).
	Release valve is open.	Close the release valve.
	Loose hydraulic coupler.	Check that all couplers are fully tightened.
	Load is too heavy.	Do not attempt to lift more than rated tonnage.
	Air trapped in system.	Remove air according to instructions on page 2.
Cylinder advances, but does not hold pressure.	Cylinder plunger binding.	Check for damage to the cylinder. Have cylinder serviced by a qualified hydraulic technician.
	Leaking connection.	Check that all connection are tight and leak free.
	Leaking seals.	Locate leak(s) and have equipment serviced by a qualified hydraulic technician.
Cylinder does not retract, retracts part way, or retracts more slowly than normal.	Internal leakage in pump.	Locate leak(s) and have equipment serviced by a qualified hydraulic technician.
	Release valve close.	Open release valve.
	Pump reservoir is overfilled	Drain oil level to full mark. See page instructions for adding oil.
	Loose hydraulic coupler.	Check that all couplers are fully tightened.
	Air trapped in system.	Remove air according to instructions on page 2.
	Hose I.D. too narrow.	Use larger diameter hydraulic hose.
Cylinder retraction spring broken or other cylinder damage.	Have cylinder serviced by a qualified service technician.	

If the above procedures do not correct the problem, contact your nearest **ZINKO** service facility. When submitting any jack or equipment to be repaired, be sure to state the nature of the problem and indicate whether an estimate of the repair cost is needed.



### ZINKO HYDRAULIC JACK

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