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OPERATING/ SERVICE INSTRUCTIONS USJC MODEL #: D-51223 4-TON LONG CHASSIS HYDRAULIC FLOOR/ SERVICE JACK



Assembly Instructions:

1. Check the handle set screw for tightness.
2. Check that the breathable vent built into the cap is free of any obstacles.
3. Loosen the piston ram and pump packing nuts slightly. They are tightened all the way down at the factory for shipment. Tighten until no oil seeps out; they only need to be moderately tight.

Operating Instructions:

WARNING!!! - Always use garage/ jack stands to support the vehicle before attempting any under vehicle inspections and/ or repairs.

1. Use the floor/ service jack on a smooth, hard, level surface only. Use the jack as a lifting device only.
2. Test the jack by using the foot pedal only to raise the saddle to full height without a load. The pedal should become very tight. If not, check the oil level or see the troubleshooting section. The jack is either air bound or low on hydraulic oil/ fluid.
3. The jack is easily maneuvered by depressing the Handle Lock Lever until the lock rod engages one of the two handle positions, and then pivoting the jack on its rear caster.
4. Place the jack in position so that the saddle will engage an approved lifting area of the vehicle. The saddle is raised to the contact point by the foot pedal. Light loads may be raised by the foot pedal alone. On low clearance vehicles it is often advantageous to operate the foot pedal by hand while watching to assure proper saddle contact. Surface on which jack rests should be fairly flat to prevent twisting of frame. Load should be centered in saddle.
5. Pump with handle for easy lifting. Do not attempt to raise jack beyond its travel stops.
6. To lower the load, pull back gently on the release lever.
7. Be certain that area beneath vehicle is clear before lowering vehicle. Always use the release lever lock to prevent unintentional operation of the release lever.

Refilling the Jack with Oil Instructions:

1. Remove the filler plug and with the saddle down, and add AW-32 Light Hydraulic Oil or Hand Jack Hydraulic Oil, Grade 32, ISO Viscosity 32, SAE 5W20 until the level comes up to within 1/4" to 3/8" below the filler hole.
2. Overfilling will cause oil to squirt out of the vent hole as the jack is lowered, or may prevent the jack from lowering properly.
3. Insufficient oil will cause the jack to lift only part of the way up.
4. Always be sure to put in oil only when the saddle is all the way down.
5. Be careful not to let any dirt get into the reservoir while the Filler Plug is out.
6. Do NOT use brake fluid, transmission fluid, or any other fluids or hydraulic oils! Doing so could damage the seals, cause the jack to fail, and/ or void the warranty.

Safety Precautions:

1. Follow OSHA Standards and ASME PASE-2014 'Safety Standard for Portable Automotive Service Equipment', Part 10—Service Jacks.
2. Never exceed the jack's rated load capacity. The lowering valve (release valve) is also designed to work as an overload protection device. If you attempt to raise a load that exceeds the jack's rated capacity, this valve will automatically release the cylinder pressure as an overload protection safety feature.
3. Only lift vehicles at the recommended lift points found in the vehicle's service manual.
4. Eye protection should be worn per OSHA recommendations.
5. Always check the jack prior to each use and do not use jack if any defect is observed.
6. Do not add accessories or make any modifications to the jack in any way.
7. Always use garage/ jack stands to support the vehicle and stay clear when lifting or lowering the vehicle.

Preventative Maintenance Instructions:

1. Inspect the jack before each use. Take corrective action before using the jack if a leak or defect is detected.
2. Keep all working parts thoroughly lubricated. Keep the jack clean. Dirt is the major cause of jack failure, and all openings should be kept free of debris.
3. Packing nuts at the piston and pump plunger should be kept moderately tight. These packings are NOT under high pressure, and should only be tight enough to prevent leakage.
4. Keep oil filled to within 1/4" to 3/8" of fill opening. Replace the oil at least once per year.
5. Ball Valve may be removed for inspection and cleaning by removing the Ball Chamber Plug and using a small magnet. Remove the ball and the ball weight.
6. **IMPORTANT:** Whenever it is necessary to loosen or remove the Ball Chamber Plug, the gasket should be replaced with a new one. Oil leakage at this point is usually caused by trying to use an old gasket over again.

Relieve when Air-Bound Instructions:

1. If the oil supply runs too low, the jack may become air-bound and work on only a half stroke of the handle.
2. Fill the jack with oil, raise the saddle, and then using the release lever (lowering lever), lower the saddle while holding the foot pedal depressed. This will flush out any air in the system, and excess oil may then run out of the vent.
3. Repeat if necessary. Be sure to properly fill the jack with oil before returning it to service.
4. Oil should never cover the piston rod.
5. If you cannot pump the jack saddle to full height, raise the saddle by hand and then perform this operation.

Troubleshooting Instructions:

<u>Issue</u>	<u>Corrective Action</u>
Saddle will not raise:	1. Check the oil level. 2. Perform the ball valve test.
Oil spurts out of the vent hole:	1. The jack is overfilled with oil.
Jack will only lift part of the way up:	1. It may be low on oil; check and refill.
Jack will not lift load:	1. Check for proper oil level. 2. If pumping fails to raise the rated load, the lower ball valve may be leaking, and it should be inspected for dirt or other debris.
The load rises on the down stroke of the handle and then immediately settles back down while forcing the jack handle back up:	1. The upper ball valve may be leaking, and it should be inspected for dirt or other obstructions.
Jack bleeds down while under load:	1. The release handle may not be closed. 2. The release valve may be leaking. Replace the release valve packing housing O-rings. 3. The release needle valve may need to be adjusted.
Jack only rises on half-stroke, and then settles back down while forcing the handle back up:	1. The jack may be air-bound.

Ball Valve Test Instructions:

1. If the jack will not raise at all, the ball valve may be obstructed by debris.
2. Open the release valve and keep it open.
3. Raise the saddle lift arm manually to full height.
4. Lower the saddle by pushing it all the way down (this will flush out any debris in the ball seats).
5. Close the release valve and try to pump up the jack.
6. If it now will not raise and hold, then the ball valve may need to be serviced.

Removing the Hydraulic Power Unit/ Cylinder Instructions:

1. Remove the cotter in the cross head.
2. Remove the cotter and pin in the pump.
3. Remove the cotter and pin in the release yoke.
4. Place cotter key in while depressing foot pedal. This allows for easy removal and reassembly if spring is left on return rod.
5. Raise the lifting arm by means of the saddle, and place a block of wood between the arm and frame to hold up the arm.
6. This release the cylinder at the forward end so that it may be removed as a complete unit for service.

Replacing the Hydraulic Power Unit/ Cylinder Cup Instructions:

1. After removing the cylinder unit as described above, place it in a vise. Note that the vise jaws should grip the steel block, not the steel cylinder. Set the unit in the vise with the steel cylinder and piston up. Remove the vent plug.
2. Unscrew the cylinder cap and lift the piston out of the cylinder.
3. Remove the nut and washer which holds the cup at the end of the piston; put in the new cup, and replace nut and washer.
4. In fitting the new cup into the cylinder, USE GREAT CARE as the cup passes the filler plug hole not to cut or otherwise damage the cup. Then replace the cylinder cap.
5. To replace the small cup on the pump, turn the cylinder unit pump end upward in the vise.
6. Unscrew the packing nut and pull out the pump plunger. Remove the nut that holds cup to end of plunger, insert new cup, and replace nut.

Release Group Needle Valve Adjustment Instructions:

In the release group assembly, the spring governs the load that the jack will lift. When the pressure with the cylinder overcomes the spring tension, the release valve floats off the seat. It is imperative that the release valve floats freely in the release group assembly. To check: use your forefinger and thumb to grasp the release valve where the release clevis pin passes through and wiggle it from side to side. There should be a minimum of 0.002 to 0.004 clearance in the release valve guide. If no movement is noted, follow these steps below:

1. Measure the distance from the bracket to the first nut on the compression spring accurately and write it down (~ 2 inches).
2. Remove nuts, the spring, the valve rod, and the valve guide. It is not necessary to loosen the packing nut.
3. Insert the valve rod through the bracket's opening.
4. Slide the release valve guide onto the rod, but not seated in the hole, and insert the rod into the packing nut's opening.
5. Gently tap the end of the release rod with a hammer until it stays firmly seated in the internal needle seat.
6. Slide the release valve guide towards the bracket. Normally it will fit smoothly into the bracket hole. Note where the center alignment of the rod in the bracket hole is off. Tap the welded bracket accordingly with a hammer to gently bend the bracket and correct the misalignment. It is in alignment when you can smoothly slide the valve guide into the bracket's hole.
7. Reassemble the release valve parts.
8. Tighten the adjusting nut to the original dimension you wrote down in Step 1.
9. Test the jack for proper operation.

Shell only
Complete cylinder Assembly
Remove vent plug before use

Release Group

Serial number

Use M-2238

Use S-2277

Model #: D-51223 (4-Ton Floor/ Service Jack) Parts List

<i>Item No.</i>	<i>Part No.</i>	<i>Description</i>	<i>Item No.</i>	<i>Part No.</i>	<i>Description</i>
1.	S-7075	Release Lock	54.	S-21023	Caution Label
2.	M-1157	Release Handle	55.	S-24747	Gov't Label
3.	S-23689	Roll Pin 1/2 x 1/2	56.	S-23023	Cover
4.	S-5261	Release Rod	57.	S-23041	Name Plate
5.	S-6551	Handle Yoke Pin	58.	S-24690	Back-up Washer
6.	M-1414	Handle Yoke	69.	S-24648	Piston Cup Washer
7.	AS-20495	Return Rod Assembly	60.	S-2505	Ball 5/16
8.	S-5263	Handle Yoke Rivet	61.	S-24497	Pump Piston
9.	S-107	Cotter Pin 1/8 x 1	62.	AS-24498	Pump Piston Assembly
10.	S-6549	Clevis Pin	63.	S-1806	Pipe Plug 3/16NPT
11.	M-1416	Foot Pedal	64.	S-3008	Lockwasher 1/2
12.	S-23872	Sq. Hd. Set Screw 1/4NC x 5/8	65.	S-9522	Hex Nut 1/2-20NF
13.	S-6552	Foot Pedal Pin	66.	S-4714	Piston Cup
14.	M-2237	Pump Link	67.	S-2782	Piston Cup Washer
15.	M-1417	Release Lever	68.	M-2166	Ram Head
16.	S-6560	Release Lever Pin	69.	S-7487A	Piston Rod
17.	S-27384	Return Plunger Rod	70.	AS-21379	Piston Rod Assembly
18.	S-9786	Return Spring	71.	M-2016	Cylinder Cap
19.	S-5123	Release Clevis	72.	M-2019	Piston Packing Nut
20.	S-4710	Release Clevis Pin	73.	S-18071	Filler Plug
21.	S-22795	Cage Roller Bearing	74.	S-5355	Ball Weight
22.	S-6605	Acorn Nut	75.	S-2750	Ball 1/2
23.	M-2238A	Swivel Caster Bracket	76.	S-1805	Pipe Plug
24.	S-22797A	Swivel Caster	77.	S-5176	Release Packing Nut
25.	S-105	Hx Hd Screw 3/8-16NC x 1	78.	S-21051	Packing Housing
26.	S-944	Hx Hd Screw 3/8-16NC x 1-1/4	79.	S-15047	O-Ring 3/8
27.	S-899	Washer 1-3/4 OD x 1-1/32 ID x 3/32 THK	80.	S-17829	O-Ring 9/16
28.	S-22796	Retaining Ring	81.	S-2591	Release Spring
29.	S-1325	Lockwasher 3/8	82.	S-5173	Release Valve Guide
30.	S-595	Hex Nut 3/8-16	83.	S-21050	Release Valve
31.	S-22745	Parallel Link Pin 3/4 x 8-1/2	84.	AS-23347A	Complete Cylinder Assembly
32.	S-1934	Hex Nut 3/8	85.	AS-15130A	Complete Shell
33.	S-114	Hx Hd. Cap Screw 1/2-13NC x 2-1/2	86.	S-20886	Handle Grips
34.	S-6546	Release Pull Rod	87.	S-23872	Sq. Hd. Set Screw 1/4-20 x 3/4
35.	M-840	Wheel	88.	AS-6550	Lock Rod
36.	S-19990	Wheel Washer	89.	AS-6660	Handle Weldment
37.	M-1716	Crosshead	90.	S-4074	Cotter Key 1/16-1/2
38.	S-6538	Parallel Link	91.	S-2329	Lock Rod Return Spring
39.	AS-23344	Lifting Arm	92.	AS-6545	Complete Handle Assembly
40.	M-1415	Saddle Bracket	93.	S-1366	Handle Return Spring
41.	M-2122	Saddle	94.	S-508	Hex Head 1/2-73
42.	S-5264	Parallel Saddle Pin	95.	S-512	Lockwasher
43.	S-6554	Saddle Bracket Pin	96.	M-2239	Tie Casting
44.	S-22744A	Lift Arm Pin 1-1/4 x 8-1/2	97.	S-15694	Roll Pin
45.	S-6655	Rd. Hd. Mach. Scw 1/4-20NC x 1/4	98.	M-1167	Pump Packing Nut
46.	S-10189	1/4 Int & Ext Star Washer	99.	S-7412	Packing Washer 7/8
47.	S-6593	Roll Pin 1/8 x 3/8	100.	S-6614	Packing Washer 1-1/4
48.	S-6575	Lift Arm Bushing	101.	S-22962	Cylinder Gasket
49.	S-22743	Crosshead Pin	102.	S-9309	Ball Chamber Plug
50.	S-22747A	Spring Retainer	103.	S-2594	Ball Chamber Gasket
51.	S-2907	Cotter Key 3/16 x 2"	104.	AS-22107	Release Handle Assembly
52.	S-16061	Lift Arm Spring	105.	S-102	Sq. Hd. Set Screw
53.	S-22746A	Caster Spring Retainer	106.	S-1863	5/16 x 24 Nut
			107.	S-7413	Pump Washer

WARNING

- A. THIS DEVICE IS A LIFTING DEVICE ONLY. THE LOAD SHALL BE SUPPORTED IMMEDIATELY BY OTHER APPROPRIATE MEANS.**
- B. DO NOT OVERLOAD. OVERLOADING CAN CAUSE DAMAGE TO OR FAILURE OF THE JACK.**
- C. LIFT ONLY ON AREAS OF THE VEHICLE AS SPECIFIED BY THE VEHICLE MANUFACTURER.**
- D. THIS JACK DESIGNED FOR USE ONLY ON HARD, LEVEL SURFACES CAPABLE OF SUSTAINING THE LOAD. USE ON OTHER THAN HARD, LEVEL SURFACES CAN RESULT IN JACK INSTABILITY AND POSSIBLE LOSS OF LOAD.**
- E. FAILURE TO HEED THESE WARNINGS MAY RESULT IN LOSS OF LOAD, DAMAGE TO THE JACK, AND/OR FAILURE RESULTING IN PERSONAL INJURY OR PROPERTY DAMAGE.**

