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Form No. 522982

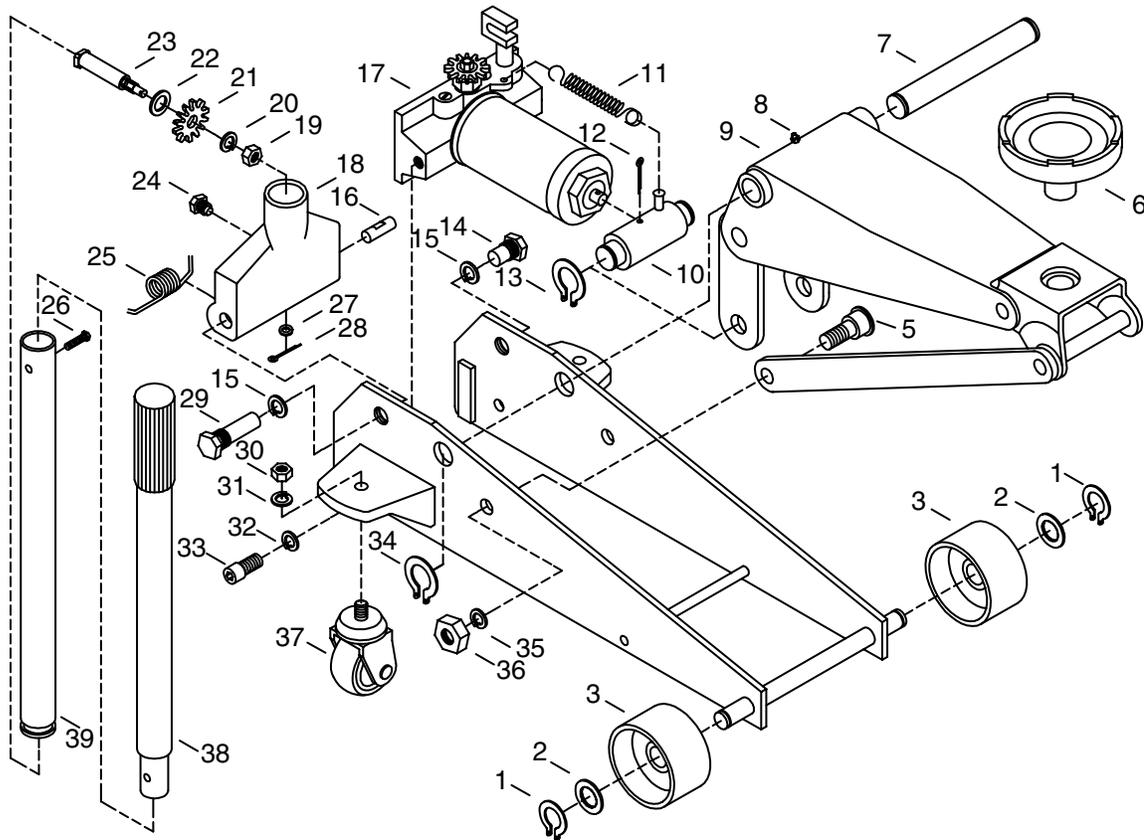
**Parts List and  
 Operating Instructions  
 for:**

**1503A  
 1504A**

**Service Jacks**

No. 1503A Max. Capacity: 2-1/2 Tons

No. 1504A Max. Capacity: 3 Tons

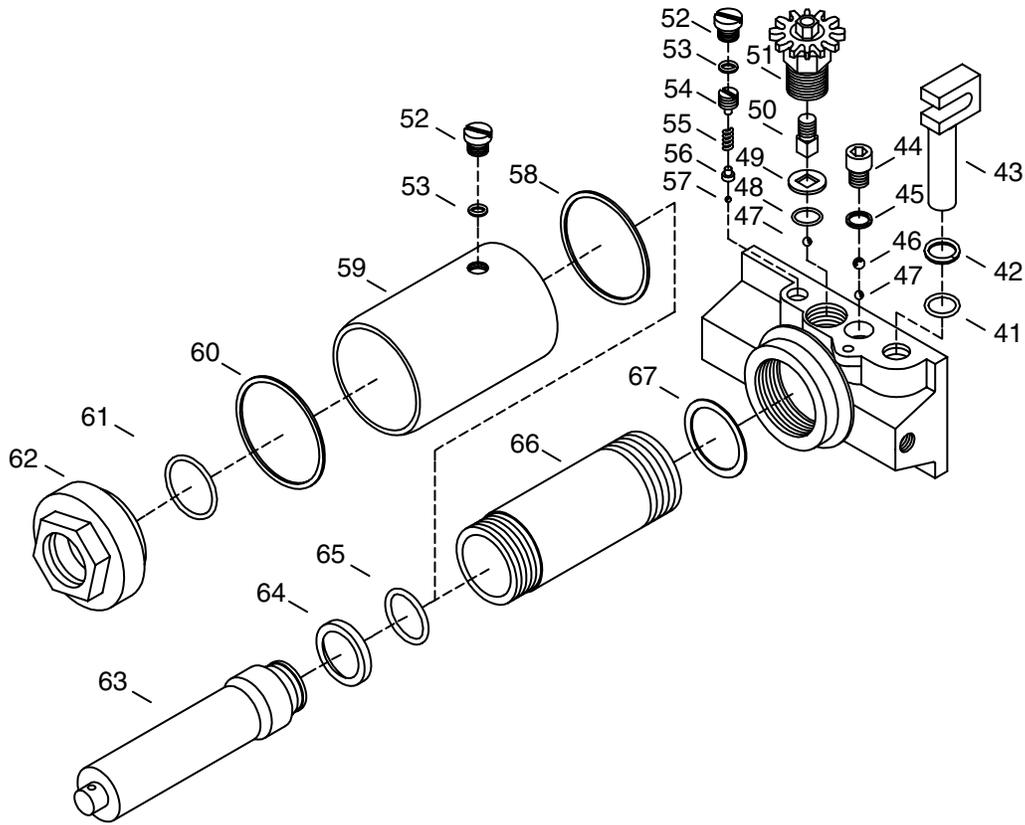


**Service Jack Item List**

Item No.	Quantity	Description	Item No.	Quantity	Description	Item No.	Quantity	Description
1	2	Retaining Ring	16	1	Plunger Pin	30	2	Hex Nut
2	2	Washer	17	1	Power Unit Assy.	31	2	Lock Washer
3	2	Wheel	18	1	Handle Socket	32	2	Lock Washer
5	2	Link Bolt	19	1	Hex Nut	33	2	Cap Screw
6	1	Saddle	20	1	Lock Washer	34	2	Retaining Ring
7	1	Shaft	21	1	Gear	35	2	Lock Washer
8	1	Grease Fitting	22	1	Washer	36	2	Hex Nut
9	1	Lifting Arm Assy.	23	1	Gear Shaft	37	2	Caster Assy.
10	1	Load Block	24	1	Handle Screw	38	1	Upper Handle
11	1	Return Spring	25	1	Torsion Spring	39	1	Lower Handle
12	1	Cotter Pin	26	1	Hex Head Screw			
13	2	Retaining Ring	27	1	Washer			
14	1	Bolt	28	1	Cotter Pin			
15	2	Lock Washer	29	1	Bolt			

Sheet No. 1 of 3

Issue Date: Rev. B, 11-04-2003



**Hydraulic Pump Item List**

Item No.	Quantity	Description	Item No.	Quantity	Description
41	2	O-ring	55	1	Spring
42	2	Back-up Ring	56	1	Spring Retainer
43	1	Plunger	57	1	Ball
44	1	Plug Screw	58	1	O-ring
45	1	Washer	59	1	Reservoir
46	1	Ball	60	1	O-ring
47	2	Ball	61	1	O-ring
48	1	O-ring	62	1	Top Nut
49	1	Guide Plate	63	1	Ram
50	1	Actuator	64	1	O-ring Retainer
51	1	Release Valve Assy.	65	1	O-ring
52	2	Plug Screw	66	1	Cylinder
53	2	Seal Washer	67	1	O-ring
54	1	Overload Valve Screw			

**Replacement Parts and Kits**

Item No.	Qty.	Description
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**Caster Kits**

Nos. 522932 (1503A) and 522955 (1504A) include:

30	1	Hex Nut
31	1	Lock Washer
37	1	Caster Assy.

**Handle Kits**

Nos. 522934 (1503A) and 522957 (1504A) include:

26	1	Hex Head Screw
38	1	Upper Handle
39	1	Lower Handle

**Handle Pivot Kits**

Nos. 522939 (1503A) and 522962 (1504A) include:

14	1	Bolt
15	2	Lock Washer
16	1	Plunger Pin
18	1	Handle Socket
29	1	Bolt

**Handle Retaining Bolt**

Nos. 522938 (1503A) and 522961 (1504A):

24	1	Handle Screw
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**Handle Return Spring**

Nos. 522935 (1503A) and 522958 (1504A):

25	1	Torsion Spring
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**Grease Zerk**

Nos. 522945 (1503A) and 522968 (1504A):

8	1	Grease Fitting
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**Hardware Kits**

Nos. 522951 (1503A) and 522974 (1504A) include:

44	1	Plug Screw
45	1	Washer
46	1	Ball
47	1	Ball
52	2	Plug Screw
53	2	Seal Washer
54	1	Overload Valve Screw
55	1	Spring
56	1	Spring Retainer
57	1	Ball

Item No.	Qty.	Description
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**Lift Arm Kits**

Nos. 522943 (1503A) and 522966 (1504A) include:

5	2	Link Bolt
8	1	Grease Fitting
9	1	Lifting Arm Assy.
35	2	Lock Washer
36	2	Hex Nut

**Lift Arm Return Spring**

Nos. 522936 (1503A) and 522959 (1504A):

11	1	Return Spring
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**Load Block Kits**

Nos. 522940 (1503A) and 522963 (1504A) include:

10	1	Load Block
12	1	Cotter Pin
13	2	Retaining Ring

**Main Pivot Pin Kits**

Nos. 522942 (1503A) and 522965 (1504A) include:

7	1	Shaft
34	2	Retaining Ring

**Power Unit Kits**

Nos. 522937 (1503A) and 522960 (1504A) include:

17	1	Power Unit Assy.
32	2	Lock Washer
33	2	Cap Screw

**Pump Plunger Kits**

Nos. 522948 (1503A) and 522971 (1504A) include:

41	2	O-ring
42	2	Back-up Ring
43	1	Plunger

**Ram Kits**

Nos. 522950 (1503A) and 522973 (1504A) include:

63	1	Ram
64	1	O-ring Retainer
65	1	O-ring
66	1	Cylinder
67	1	O-ring

**Release Gear Assembly Kits**

Nos. 522947 (1503A) and 522970 (1504A) include:

47	1	Ball
48	1	O-ring
49	1	Guide Plate
50	1	Actuator
51	1	Release Valve Assy.

Item No.	Qty.	Description
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**Release Gear Kits**

Nos. 522944 (1503A) and 522967 (1504A) include:

19	1	Hex Nut
20	1	Lock Washer
21	1	Gear
22	1	Washer
23	1	Gear Shaft
27	1	Washer
28	1	Cotter Pin

**Reservoir Kits**

Nos. 522949 (1503A) and 522972 (1504A) include:

52	1	Plug Screw
53	1	Seal Washer
58	1	O-ring
59	1	Reservoir
60	1	O-ring
61	1	O-ring
62	1	Top Nut

**Saddle**

Nos. 522941 (1503A) and 522964 (1504A):

6	1	Saddle
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**Seal Kits**

Nos. 522946 (1503A) and 522969 (1504A) include:

41	2	O-ring
42	2	Back-up Ring
45	1	Washer
48	1	O-ring
53	2	Seal Washer
58	1	O-ring
60	1	O-ring
61	1	O-ring
64	1	O-ring Retainer
65	2	O-ring
67	1	O-ring

**Wheel Kits**

Nos. 522933 (1503A) and 522956 (1504A) include:

1	1	Retaining Ring
2	1	Washer
3	1	Wheel

## Safety Precautions



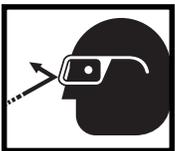
**Caution:** To prevent personal injury and damage to equipment,



- Read, understand, and follow all instructions, including ASME PALD Part 10 for service jacks. If the operator cannot read English, operating instructions and safety precautions must be read and discussed in the operator's native language.

*Si el operador no puede leer inglés, las instrucciones de operación y las precauciones de seguridad deberán leerse y comentarse en el idioma nativo del operador.*

*Si l'utilisateur ne peut lire l'anglais, les instructions et les consignes de sécurité doivent lui être expliquées dans sa langue maternelle.*



- Before using the service jack to lift a vehicle, refer to the vehicle service manual to determine recommended lifting surfaces on the vehicle chassis.
- Wear eye protection that meets ANSI Z87.1 and OSHA standards.
- Inspect the jack before each use; do not use the jack if it's damaged, altered, or in poor condition. Take corrective action if any of the following conditions are found: cracked or damaged housing; excessive wear, bending, or other damage; leaking hydraulic fluid; scored or damaged piston rod; loose hardware; modified or altered equipment.



- A load must never exceed the rated lifting capacity of the jack.
- Use the jack on a hard, level surface. The jack must be free to roll without any obstructions while lifting or lowering the vehicle. The wheels of the vehicle must be in the straight-ahead position, and the hand brake released.
- Use the jack for lifting purposes only. Stay clear of a lifted load. Place support stands under the axles before working on the vehicle.
- Center the load on the jack saddle. Off-center loads can damage seals and cause jack failure. Lift only dead weight.
- Do not use blocks or other extenders between the saddle and the load being lifted.
- Do not modify the jack or use adapters unless approved or supplied by OTC.
- Lower the jack slowly and carefully while watching the position of the jack saddle.
- Use only approved hydraulic fluid (Chevron AW Hydraulic Oil or equivalent). The use of alcohol, hydraulic brake fluid, or transmission oil could damage seals and result in jack failure.

This guide cannot cover every situation, so always do the job with safety first.

## Setup

### Assembling the Handle

1. Loosen the thumb screw on the back of the handle socket.
2. Grease the socket opening. Insert the handle.
3. Torque the thumb screw again to 150–200 in. lbs.

### Bleeding Air from the Service Jack

Air can accumulate within a hydraulic system during shipment or after prolonged use. This entrapped air causes the jack to respond slowly or feel “spongy.” To remove the air:

1. Open the release valve by turning the handle all the way counterclockwise (CCW).
2. Pump the handle six full strokes.
3. Close the release valve by turning the handle all the way clockwise (CW).
4. Pump the handle until the lift arm is fully extended.
5. Lower the lift arm by turning the handle all the way counterclockwise (CCW). If the jack does not immediately respond, repeat steps 2–4.

## Operating Instructions

1. Close the release valve by turning the handle clockwise (CW) as far as it will go.
2. Position the jack under the vehicle. **IMPORTANT: Use the manufacturer’s recommended lifting points on the chassis.**
3. Pump the jack handle to raise the saddle to the contact point.
4. Check the placement of the jack; the load must be centered on the jack saddle. **IMPORTANT: Avoid wheel obstructions such as gravel, tools, or uneven expansion joints.**
5. Finish lifting the vehicle by pumping the handle. Do not attempt to raise the jack beyond its travel stops.
6. Place approved support stands under the vehicle at points that will provide stable support. Before making repairs on the vehicle, lower it onto the support stands by SLOWLY and CAREFULLY turning the handle counterclockwise (CCW).

## Preventive Maintenance

**IMPORTANT: The greatest single cause of failure in hydraulic units is dirt.** Keep the service jack clean and well lubricated to prevent foreign matter from entering the system. If the jack has been exposed to rain, snow, sand, or grit, it must be cleaned before it is used.

1. Store the jack in a well-protected area where it will not be exposed to corrosive vapors, abrasive dust, or any other harmful elements.
2. Regularly lubricate the moving parts in the wheels, arm, and handle.
3. Replace the oil in the reservoir at least once per year. To check the oil level, lower the lift arm completely. Remove the rubber filler plug. Oil level should be at the bottom of the filler plug hole. If necessary, add approved anti-wear hydraulic jack oil, and install the filler plug. **IMPORTANT: The use of alcohol, hydraulic brake fluid, or transmission oil could damage the seals and result in jack failure.**
4. Inspect the jack before each use. Take corrective action if any of the following problems are found:
  - a. cracked, damaged housing
  - b. excessive wear, bending, other damage
  - c. leaking hydraulic fluid
  - d. scored, damaged piston rod
  - e. loose hardware
  - f. modified equipment
5. Keep warning labels and instructional decals clean and readable. Use a mild soap solution to wash external surfaces of the jack.

*These instructions are written to help you, the user, more effectively use and maintain your OTC jacks. Some of the information applying to construction, installation, operation, inspection, and maintenance of hydraulic jacks was selected from ANSI B30.1. It is strongly recommended that the user read ANSI B30.1. The document may be ordered from the American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, or by calling them at 1-800-843-2763.*

## Troubleshooting Guide

Repair procedures must be performed in a dirt-free environment by qualified personnel who are familiar with this equipment. **CAUTION: All inspection, maintenance, and repair procedures must be performed when the jack is free of a load (not in use).**

Trouble	Cause	Solution
<b>Jack does not lift</b>	<ol style="list-style-type: none"> <li>1. Release valve is open.</li> <li>2. Low/no oil in reservoir.</li> <li>3. Air-locked system.</li> <li>4. Load is above capacity of jack.</li> <li>5. Delivery valve and/or bypass valve not working correctly.</li> <li>6. Packing worn out or defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Close release valve.</i></li> <li>2. <i>Fill with oil and bleed system.</i></li> <li>3. <i>Bleed system.</i></li> <li>4. <i>Use correct equipment.</i></li> <li>5. <i>Clean to remove dirt or foreign matter. Replace oil.</i></li> <li>6. <i>Replace hydraulic unit.</i></li> </ol>
<b>Jack lifts only partially</b>	<ol style="list-style-type: none"> <li>1. Too much or not enough oil.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Check oil level.</i></li> </ol>
<b>Jack advances slowly</b>	<ol style="list-style-type: none"> <li>1. Pump not working correctly.</li> <li>2. Leaking seals.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Replace hydraulic unit.</i></li> <li>2. <i>Replace hydraulic unit.</i></li> </ol>
<b>Jack lifts load, but doesn't hold</b>	<ol style="list-style-type: none"> <li>1. Cylinder packing is leaking.</li> <li>2. Valve not working correctly (suction, delivery, release, or bypass).</li> <li>3. Air-locked system.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Replace hydraulic unit.</i></li> <li>2. <i>Inspect valves. Clean and repair seat surfaces.</i></li> <li>3. <i>Bleed system.</i></li> </ol>
<b>Jack leaks oil</b>	<ol style="list-style-type: none"> <li>1. Worn or damaged seals.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Replace hydraulic unit.</i></li> </ol>
<b>Jack will not retract</b>	<ol style="list-style-type: none"> <li>1. Release valve is closed.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Open release valve all the way counterclockwise (CCW). May be necessary to clean release valve.</i></li> </ol>
<b>Jack retracts slowly</b>	<ol style="list-style-type: none"> <li>1. Cylinder damaged internally.</li> <li>2. Link section is binding.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Send jack to OTC-authorized service center. (Refer to OTC Form No. 104060.)</i></li> <li>2. <i>Lubricate or replace link section.</i></li> </ol>