Repair Instructions

LD Oil or Grease Pump Air Valve Repair / Replacement Kits

3A1496B
EN

Instructions for repairing and or replacing the Air Valve for the LD Oil Pump.

Maximum Fluid Pressure - 750 psi (5.17 MPa, 51.7 bar)
Maximum Air Pressure - 150 psi (1.03 MPa, 10.3 bar)

Important Safety Instructions
Read all warnings and instructions in this manual and in your LD Series Oil or Grease Pump manual. Save all instructions.

Pilot Valve Replacement Kit - 24H749

Air Valve Repair Kit - 24H798

Air Valve Replacement Kit - 24H848, 24H849, 24H850

Air Valve Rebuild and Seal Replacement Kit - 24851

Air Valve End Cap Kit - 24H852

Air Motor Service Kit - 24J757, 24J758, 24J759

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING


SKIN INJECTION HAZARD

High-pressure fluid from dispense valve, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point dispense valve at anyone or at any part of the body.
- Do not put your hand over the end of the dispense nozzle.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:

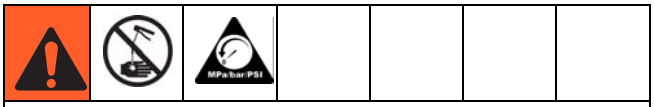
- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Instructions

Always use all new parts included in your kit and dispose of replaced parts according to all state and local regulations for disposal of discarded components.

Inspect all parts when disassembling the pump. Replace any and all worn and damaged parts.

Pressure Relief Procedure



The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, fluid from the valve, or splashing fluid, follow the procedure whenever you:

- are instructed to relieve pressure
- stop dispensing
- check, clean, or service any system equipment
- install or clean dispensing devices.

1. Close the pump's bleed-type master air valve.
2. Close the pump air regulator and disconnect the air supply hose.
3. Open the dispensing valve and dispense fluid into a waste bucket/container until pressure is fully relieved.

If you suspect that the dispensing valve is clogged, or that pressure has not been fully relieved after following the steps above, **very slowly** *loosen the dispensing valve coupler or hose end coupling to relieve pressure gradually, then loosen completely.*

Disassembly

The reference numbers used in the following instructions correspond to the reference numbers used in the LD Series Oil and Grease Pump instruction manual. When two numbers are shown the first number refers to the oil and the second number refers to the grease model.

For example for ***air valve (38/40)*** reference number 38 refers the oil model and reference number 40 refers to the grease model.

1. Stop the pump. Follow Pressure Relief Procedure, page 3.
2. Disconnect and remove the pump from its installed location.
3. Clamp the pump (1) horizontally in a vise as shown in Fig. 1.

   NOTE: Take care to only use enough clamping force to hold the pump in position. The pump cylinder is aluminum and could be damaged by using excessive clamping force.

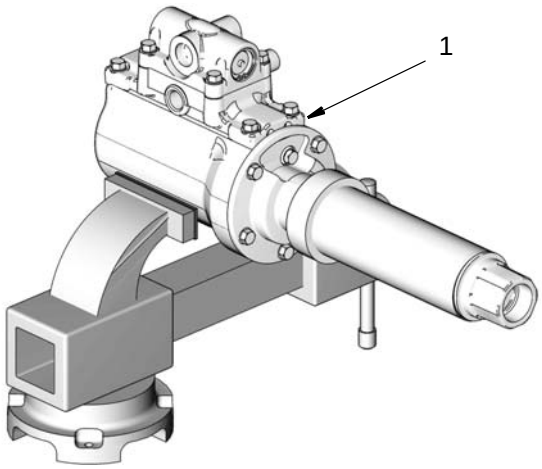


Fig. 1

4. Using a 10 mm socket wrench, remove the 4 screws (43) from the air valve (38/40) and remove air valve assembly from the manifold (37/39).

5. Remove the gasket (23/16). If you are replacing this part, discard gasket. (Fig. 2).

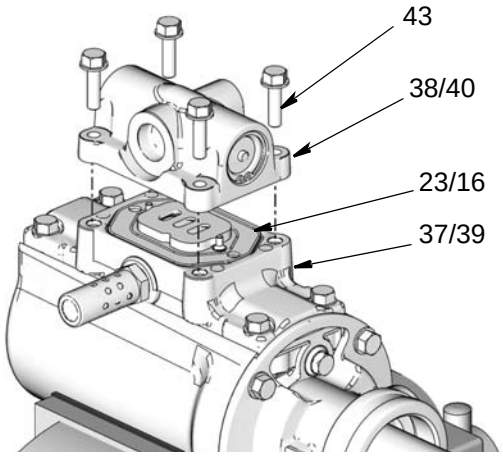


Fig. 2

Reassembly

1. Be sure seal (23/16) is lightly greased and installed on manifold (37/39).

2. Install air valve (38/40) on manifold (37/39).

   NOTE:

   - A very thin coat of grease applied to the seal (23/16) will help align and keep the seal in place during assembly.

   - The air valve (38/40) can be installed in any configuration. There is not just one correct way to install these parts.

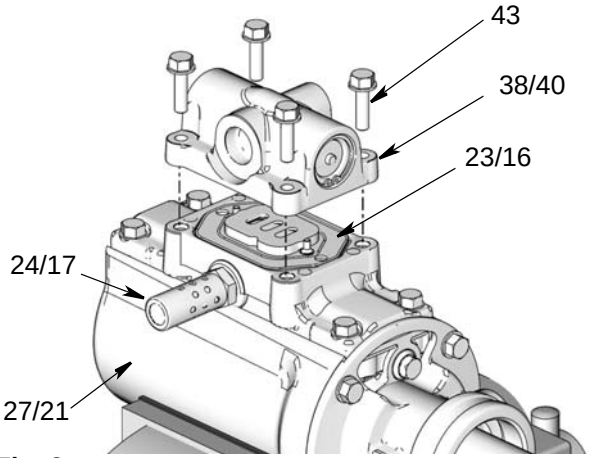


Fig. 3

3. Install screws (43). Torque to 60-70 in. lbs (6.8 - 7.9 N.m).

Muffler (24/17) Installation (Fig. 3)

Depending on your installation, the air valve (38/40) can be mounted with the muffler (24/17) on either side of the air valve.

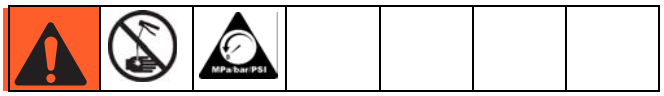
To change the installation location:

a. Remove the 4 screws (43).

b. Remove the air valve (38/40) and manifold (37/39) from its current mounted position on the air cylinder (27/21) and rotate the air valve 180 degrees, which will reposition the muffler to face the other side of the pump.

Repair Kits

All Repairs:



- Properly discard all replaced parts according to local and state regulations for disposal of discarded components.
- Always use all new parts included in the kit to replace the identical part on the pump.
- Grease all parts prior to reassembly with a thin coat of lightweight grease.

Air Valve Replacement Kit - 24H848, 24H849, 24H850

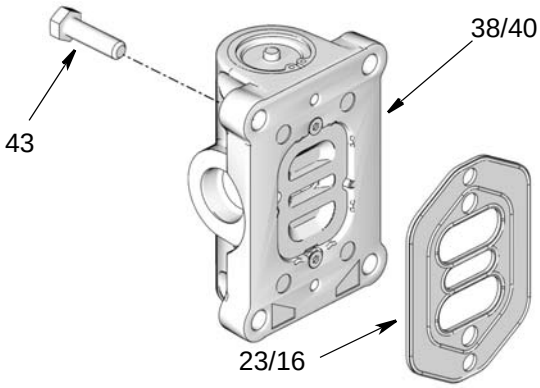


Fig. 4

Ref.	Description	Qty.
23/16	SEAL, air valve	1
38/40	VALVE, air, small	1
43	SCREW, M6 x 25	4

1. Follow ***ALL*** Disassembly instructions, page 3.
2. Follow ***ALL*** Reassembly instructions, page 4.
3. Reconnect the air line to the motor.

Pilot Valve Replacement Kit - 24H749 (Fig. 5)

This kit only includes the pilot valves (20), If you need to repair/replace the air valve (38/40) and air valve seal (23/16) order the Air Motor Service Kit - 24J757, 24J758 or 24J759.

Ref.	Description	Qty.
20	VALVE, pilot	2

Air Motor Service Kit - 24J757, 24J758, 24J759 (Fig. 5)

If you are only replacing the pilot valve, order the Pilot Valve Replacement Kit 24H749. It does not include the air valve (38/40) and air valve seal (23/16).

Ref.	Description	Qty.
20	VALVE, pilot	2
23/16	SEAL, air valve	1
38/40	VALVE, air, small	1

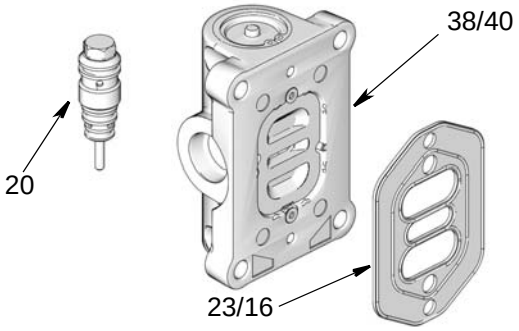


Fig. 5

1. Relieve pressure, page 3.
2. Using a 10 mm socket wrench, loosen the pilot valve (20) until threads disengage. Then remove pilot valve from air cylinder (27/21) or bottom cover (26/14).

   NOTE: If the pump is not disassembled, it may be easier to remove the pilot valve from the bottom cover (26/14) using a box end wrench instead of a socket wrench.

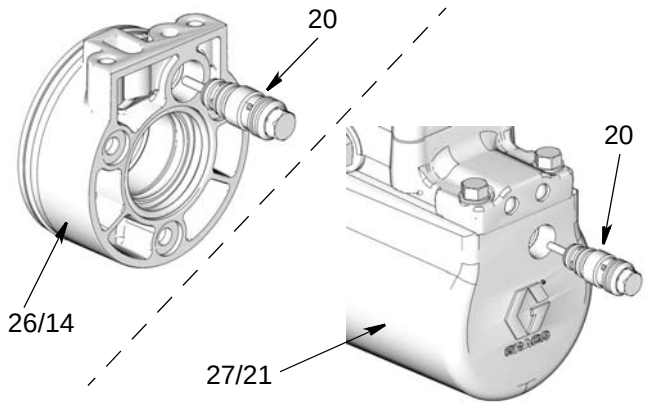


Fig. 6

3. Lightly grease o-rings. Install new pilot valve from kit.

   NOTE: The two pilot valves (20) included in the kit are identical and interchangeable. Either replacement pilot valve can be installed in the air cylinder or bottom cover.

4. Start by threading the pilot valve (20) into air cylinder (27/21) or bottom cover (26/14) using your fingers. Then torque to 20 - 30 in. pounds (2.3 – 3.4 N.m).

5. See Reassembly instructions page 4 for instructions to replace the Air Valve included in this kit.

Replace Seals or Rebuild Air Valve Kits

The following instructions refer to Air Valve Repair Kit - 24H798, Air Valve Seal Kit - 24H851 and Air Valve End Cap - 24H852 page 7.

Disassemble the Air Valve

Unless otherwise indicated, reference numbers used in the following instructions refer to Fig. 8.

1. Follow ***ALL*** Disassembly instructions, page 3.

2. Use a 2 mm or 5/64 hex key to remove two screws (383). Remove the valve plate (388), cup (390), and spring (389).

3. Remove the snap ring (385) from each end. Use the piston to push the end caps (384) out of the ends. Remove end cap o-rings (381).

4. Remove the piston (386). Remove the u-cup seals (382) from each end and the detent assembly (387) and detent cam (391) from the center.

Reassemble the Air Valve

NOTE: When reassembling the air valve, always use ALL new parts included in your kit and discard parts you are replacing according to your local and state environmental codes for proper disposal. See Fig. 8 - Fig. 10 *page 7 for parts included in each kit.*

1. Lubricate detent cam (391) and install into housing.

2. Lubricate the u-cups (382) and install on the piston (386) with lips facing toward the center of the piston.

3. Lubricate both ends of the piston (386) and install it in the housing.

4. Lubricate and install the detent assembly (387) into the piston (386).

5. Lubricate new o-rings (381) and install on the end caps (384). Install the end caps into the housing.

6. Install a snap ring (385) on each end to hold end caps in place.

7. Install the spring (389). Lubricate and install the air valve cup (390). Align the small round magnet (a) (Fig. 7) with the air inlet.

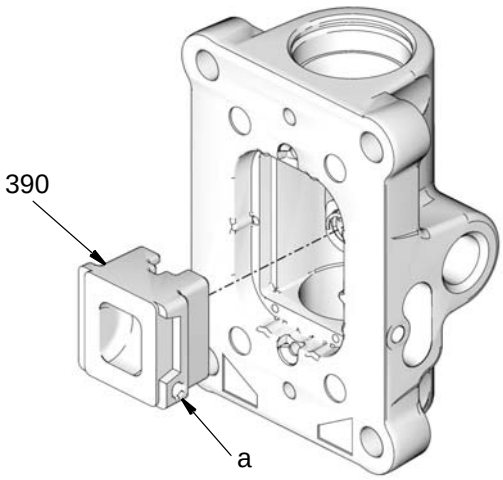


Fig. 7

8. Install the valve plate (388). Tighten the screws (383) to hold it in place.

9. Follow ***ALL*** Reassembly instructions, page 4.

Air Valve Repair Kit - 24H798

Ref.	Description	Qty.
23/16	SEAL, air valve, manifold	1
381	O-RING, 018 buna	2
382	SEAL, u-cup, bevel lip	2
383	SCREW, M3, thread forming	2
386	PISTON, air valve	1
387	ROLLER, assembly, detent	1
388	PLATE, air valve	1
389	SPRING, detent, small	1
390	CUP, air valve, small	1
391	CAM, detent, small	1

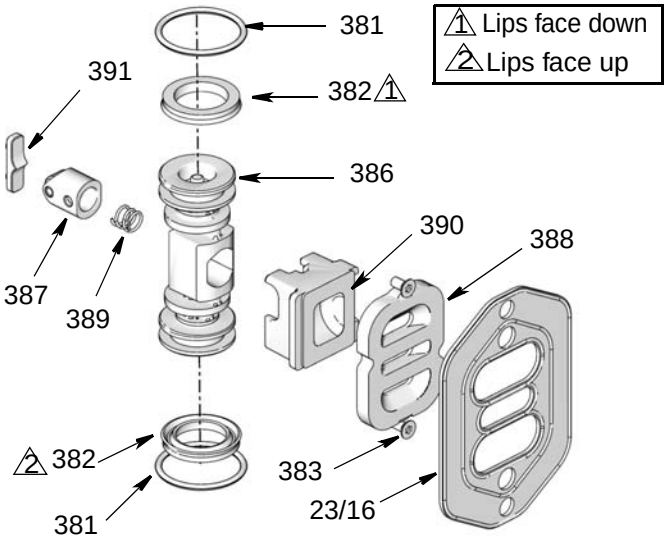


Fig. 8

Air Valve Seal Kit - 24H851

Ref.	Description	Qty.
23/16	SEAL, air valve, manifold	1
381	O-RING, 018 buna	2
382	SEAL, u-cup, bevel lip	2
383	SCREW, M3, thread forming	2

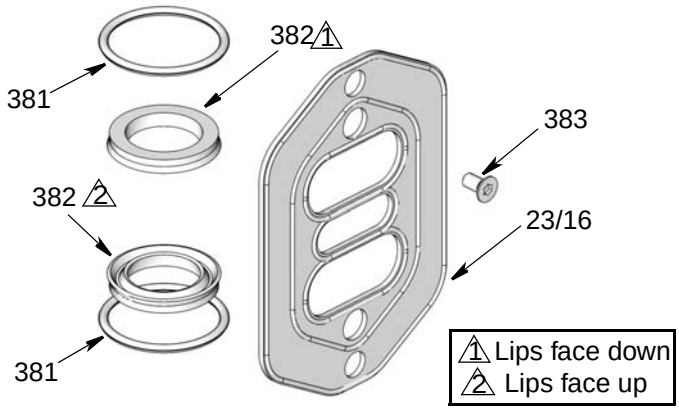


Fig. 9

Air Valve End Cap Kit - 24H852

Ref.	Description	Qty.
381	O-RING, 018 buna	2
384	PLUG, air valve	2
385	RING, snap	2

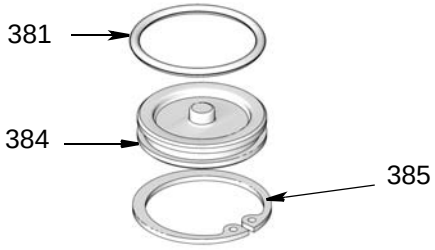


Fig. 10

Graco Information

For the latest information about Graco products, visit www.graco.com.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

Original instructions. This manual contains English. MM3A1496

For Patent Information: www.graco.com/patents

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

www.graco.com
revised October 2015