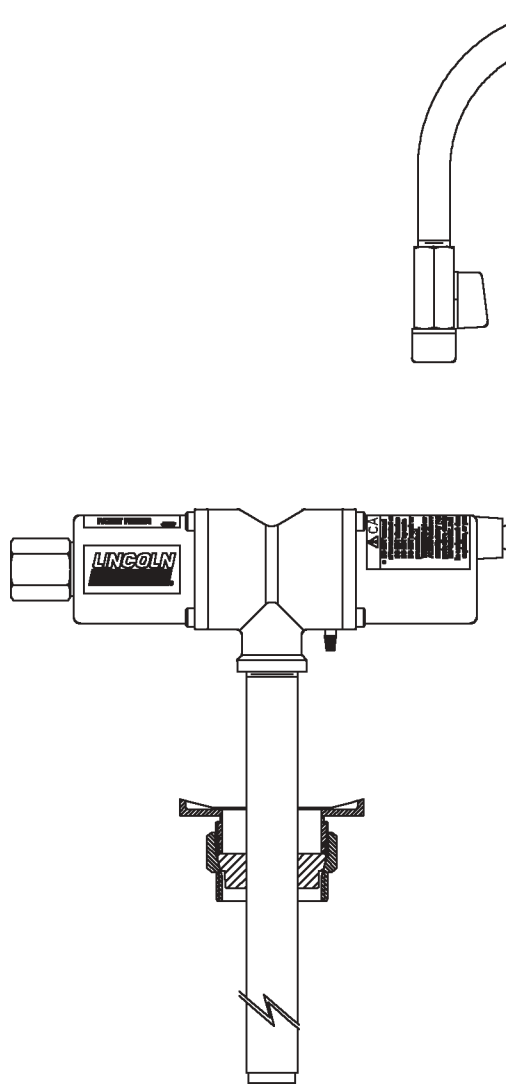


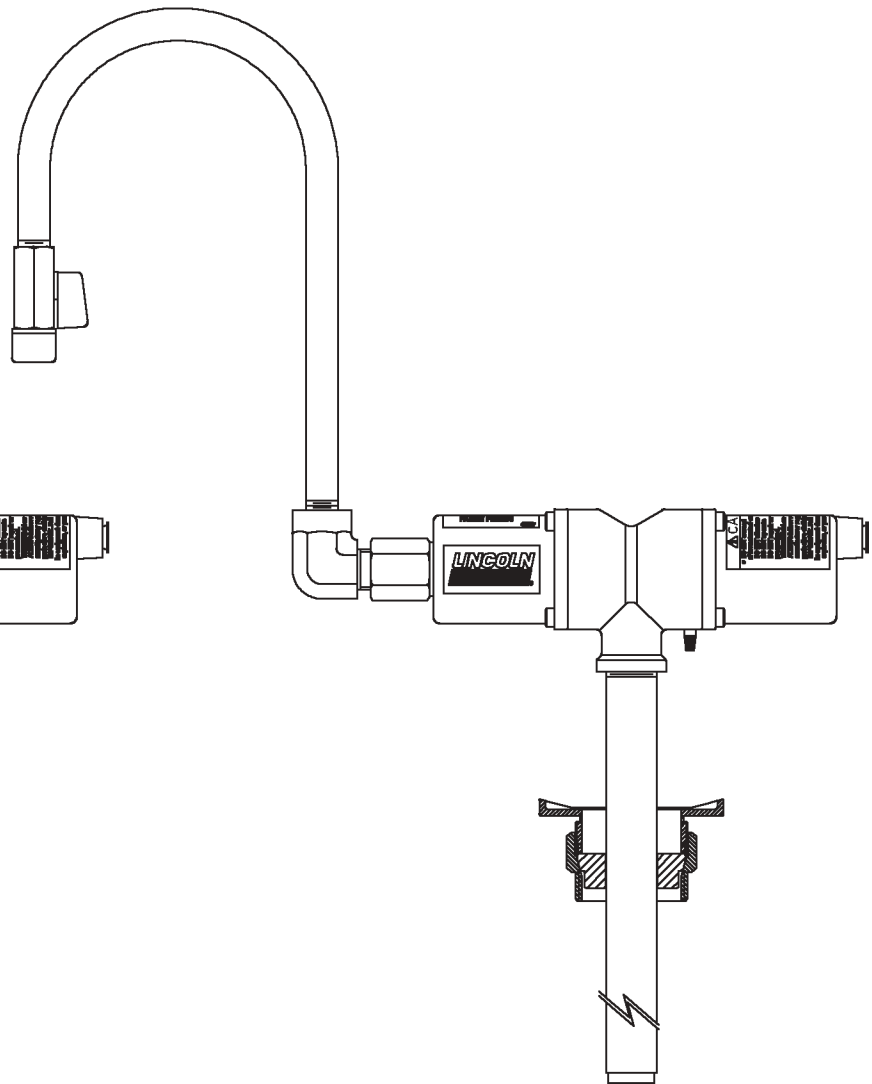


**MODELS 4475 & 4480.**  
**1:1 AIR OPERATED PUMP**  
**Series "A"**

**SINGLE ACTION FLUID PUMP**



**MODEL 4475**



**MODEL 4480**

U.S. Patent Pending  
This Pump Conforms to the European Directive for Product Safety



# MODEL 4475 & 4480

## 1:1 AIR OPERATED PUMP



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### DESCRIPTION

Models 4475 and 4480 are an air operated single acting pumps for dispensing low and medium velocity fluids from drum or other tank. The pumps are self priming. Model 4480 pump is supplied with a spigot tube and 1/4 turn dispensing valve to transfer fluid into a manageable container such as a 5 qt. can. All Models have a 36" suction tube with a foot valve to maintain prime.

**IMPORTANT:** The pump will lose prime without the foot valve. Contact Lincoln Technical Service for any modification of the tube .

### SAFETY

Read and carefully observe these operating instructions before operating the Air Pump. The pump must be operated, maintained and repaired exclusively by person familiar with the operation instructions. Operate the pump only after safety instructions and this operation manual is fully understood.

Adequate personal protection is recommended to prevent splashing of material on the skin or in the eyes.

Always disconnect air coupler from pump when the pump is not being used.

Always wear eye protection.



### WARNING

If any fluid appears to penetrate the skin, get emergency medical immediately. Do not treat injury as a simple cut. Tell attending physician exactly what fluid was injected.

### APPROPRIATE USE

#### Before using pump

The pump was designed to pump the low and medium velocity fluids using compressed air. The maximum specification rating should not be exceeded. Any other use not in accordance with instruction will result in loss of claim for warranty or liability.

**NOTE:** Do not allow pump to operate when out of material. The pump may be damage as a result.

### SPECIFICATIONS

Pump ratio (max)	1:1
Output per stroke	2.9 in <sup>3</sup> (48 cm <sup>3</sup> )
Delivery output	3.1GPM ( 11.7 Liter) @ 90 Psig air inlet
Suction head primed pump	9 PSIG(2.7Meter) Vacuum @ 90PSIG air inlet
Pneumatic Inlet pressure (max)	120 Psig (0.6 Bar)
(min)	20 Psig (1.4Bar)
Operating temperature range	0 to 120 °F(-18 to +50 °C)
Weight (empty)	4.5 Lbs. 2.0(Kg)
Pneumatic port inlet	1/4-18 NPTF
Material port outlet	3/8 or 1/2 NPTF
Recommended Fluids	Mineral & Synthetic Motor Oil, Antifreeze, Windshield washer, Transmission fluid

# MODEL 4475 & 4480

## 1:1 AIR OPERATED PUMP



### WARNING

FAILURE TO HEED THE FOLLOWING WARNINGS INCLUDING MISUSE, OVER PRESSURIZING, MODIFYING PARTS, USING INCOMPATIBLE CHEMICALS AND FLUIDS, OR USING WORN OR DAMAGED PARTS, MAY RESULT IN EQUIPMENT DAMAGE AND/OR SERIOUS PERSONAL INJURY, FIRE, EXPLOSION, OR PROPERTY DAMAGE.

- Do not exceed the stated maximum working pressure of the pump or of the lowest rated component in your system.
- Do not alter or modify any part of this equipment.
- Do not operate this equipment with combustible gas or fuel, gasoline, diesel fuel, kerosene, etc.
- Do not attempt to repair or disassemble the equipment while the system is pressurized.
- Make sure all fluid connections are securely tightened before using this equipment.
- Always read and follow the fluid manufacturer's recommendations regarding fluid compatibility, and the use of protective clothing and equipment.
- Check all equipment regularly and repair or replace worn or damaged parts immediately.
- Never point the dispensing valve at any part of the body or at another person.
- Never try to stop or deflect material from dispensing valve or leading connection or component with your hand or body.
- Always check equipment for proper operation before each use, making sure safety devices are in place and operating properly.
- Always follow the pressure relief procedure after shutting off the pump, when checking or servicing any part of the system, and when installing, cleaning or changing any part of the system.

Annual inspection by a factory authorized service center is recommended.

### INSTALLATION

Typical bulk tank and drum system hookups are shown and described as follows only as a guide in selecting and installing a system. Contact a Lincoln factory representative for assistance in designing a system for a specific requirement.

Lincoln recommends using Mini-regulator 602003 (1/4" port size) with Gage 247843 and 1/4" I.D. Air line supply. See Figure 3.

### CAUTION

The pump was tested in lightweight oil which was left in to protect the pump from corrosion. Flushing the pump before connecting it to the system might be desired to prevent possible contamination of the fluid you are pumping.

Clean/flush the supply lines, hoses, reducers, connectors and accessories with mineral spirits or oil based solvent to purge any contaminants such as dirt, moisture, or metal shavings that could damage the pump or system components. Blow dry with air.

### CAUTION

To reduce the risk of injury from splashing or static sparking when flushing the pump with solvents, always hold a metal part of the dispensing valve firmly to the side of a grounded metal pail and operate at lowest possible fluid pressure.

### SPIGOT APPLICATIONS

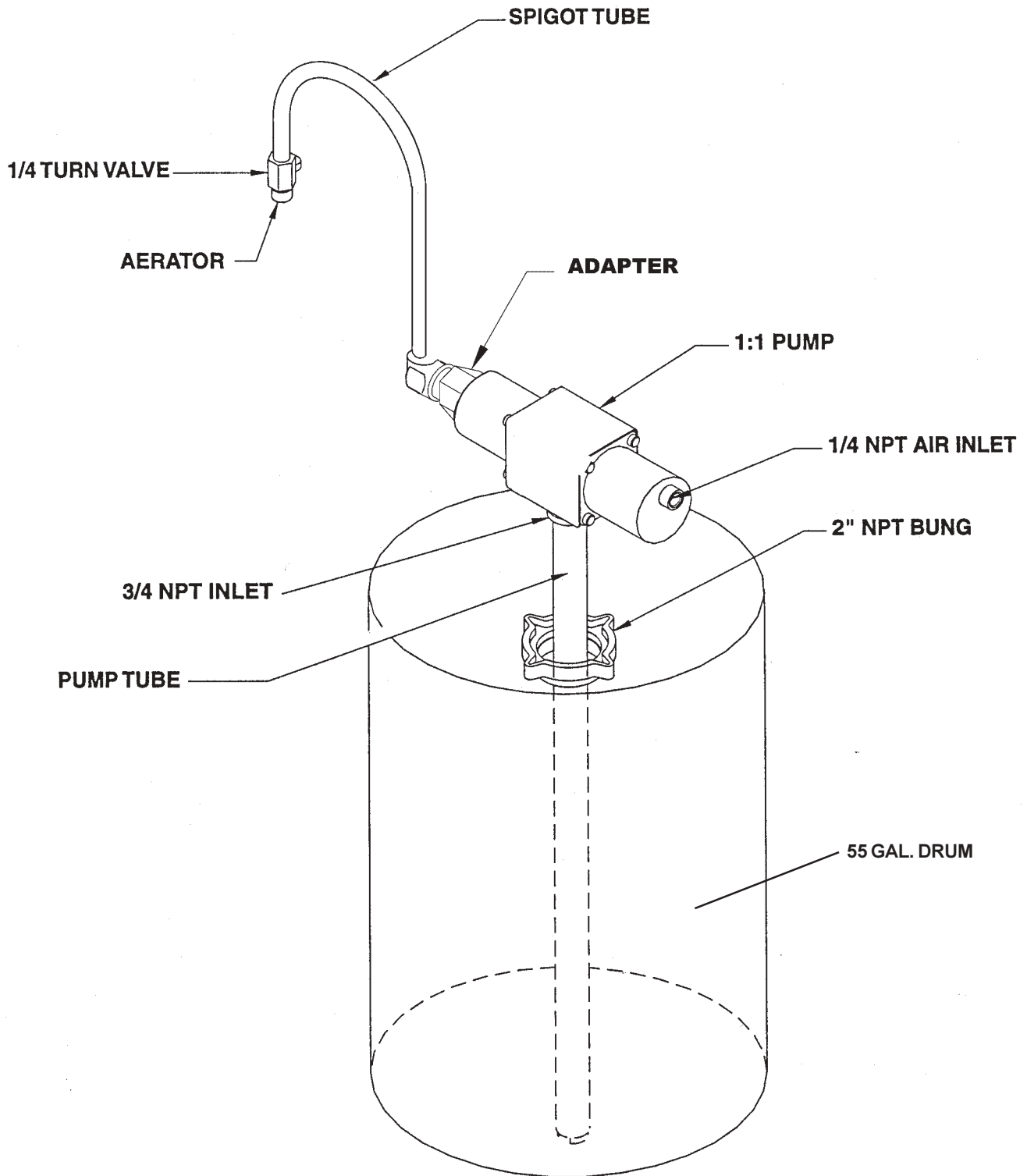
Make sure all connections are tight. Thread the pump tube into the 3/4" NPT material inlet of the pump as shown in Figure 1.

Loosen the bung collet and install the bung bushing into the 2" NPT fitting of your drum or tank. Slide the pump and pump tube into the bung collet and adjust to desired height. Make sure all connections are securely tightened.

To start pump in spigot applications, turn on the main air supply. Slowly open the air regulator. Regulate air pressure from 20-40 psig. Open the dispensing valve 1/4 turn to allow air to be purged from the system. Allow pump to cycle until fluid without air pockets flows from dispensing valve, then close dispensing valve.

In a direct supply system, with adequate air pressure supplied to the motor, the pump starts when the 1/4 turn dispensing valve is opened and stalls against pressure when it is closed.

**MODEL 4475 & 4480  
1:1 AIR OPERATED PUMP**



**TYPICAL SPIGOT APPLICATION**

**FIG. 1**

# MODEL 4475 & 4480 1:1 AIR OPERATED PUMP

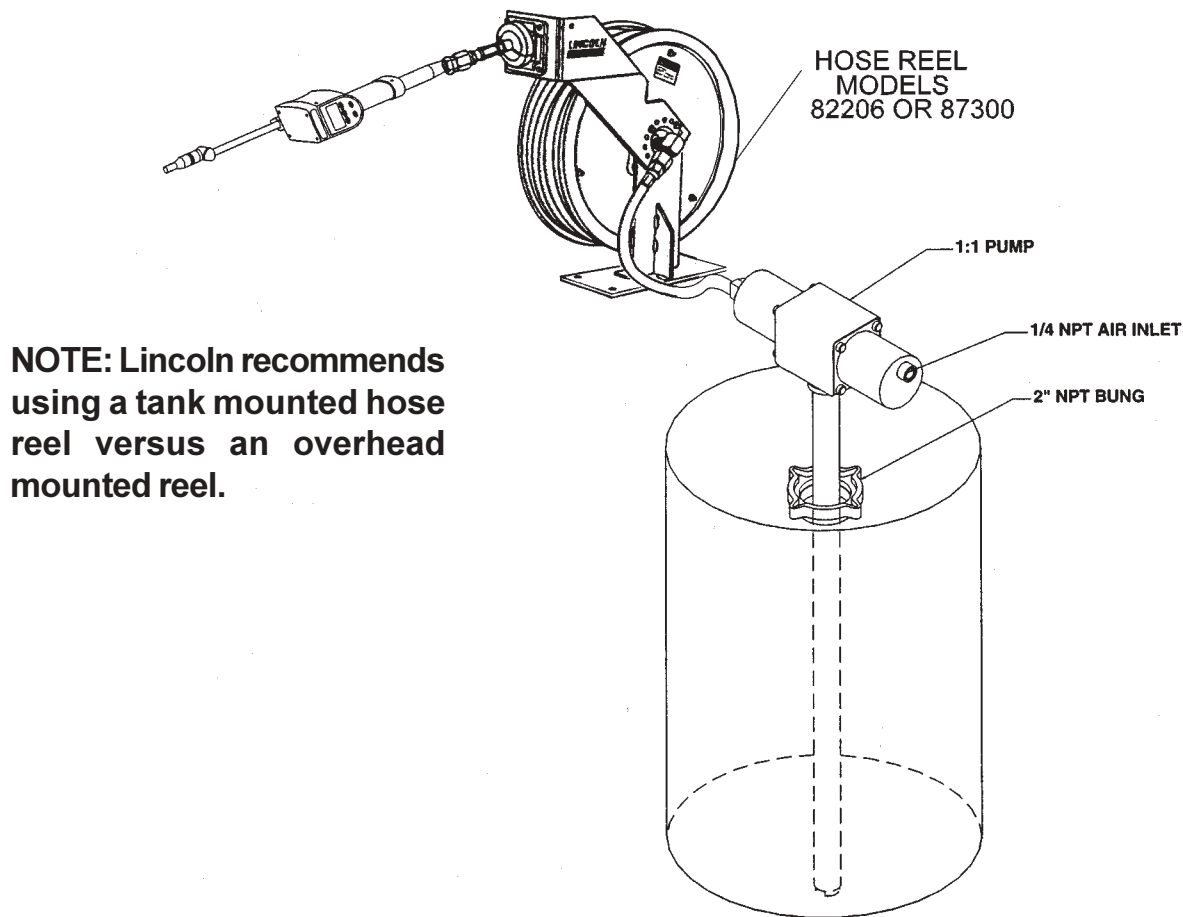


FIG. 2  
SYSTEM APPLICATION

## SYSTEM APPLICATIONS

To start the pump in a system application, air must be purged from the system before installing. Connect the pump outlet to a short 1/2" NPT hose. Turn on the main air supply, and slowly open the air regulator. Regulate the air pressure from 20-40 psig. Allow the pump to cycle until fluid without air pockets flows from the outlet hose. Disconnect the outlet hose and connect the primed pump to the system, as shown in Figure 2.

## PRESSURE RELIEF PROCEDURE

Always perform this procedure when the pump is shut off and before checking, servicing, installing, cleaning or repairing any part of this system.

Perform the following procedure:

- Close the dispensing valve 1/4 turn.
- Disconnect air supply to the pump.
- Point dispensing valve away from yourself and others.
- Open the dispensing valve into an appropriate container until the pressure is relieved.

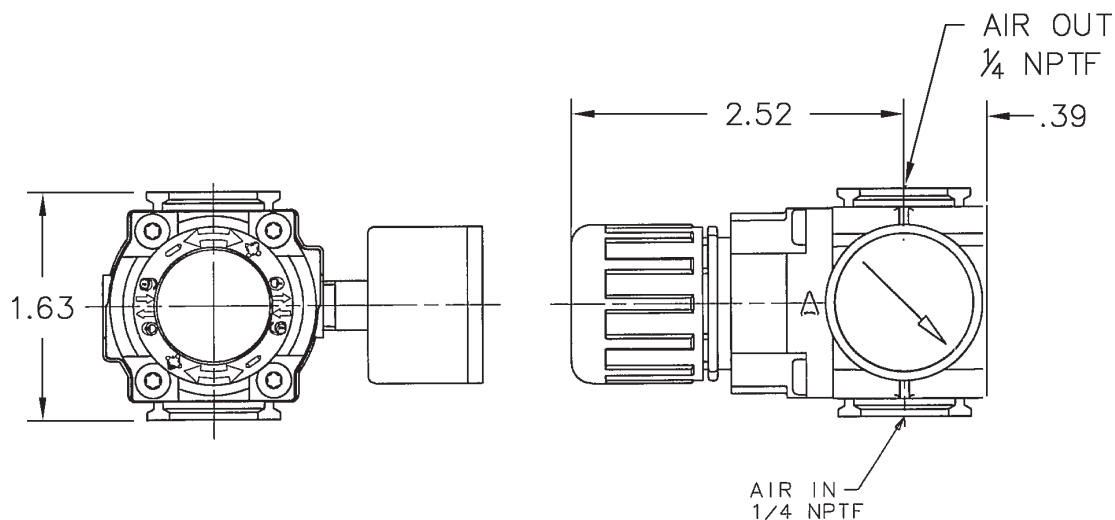
If the above procedure does not relieve the pressure, the dispensing valve or hose may be restricted. To relieve the pressure, very slowly loosen the aerator from the 1/4 turn dispensing valve. Then loosen completely and clear the dispensing valve.

## REPAIR

Repair is limited to replacement of listed service parts. Special procedures and tools are required. Contact Lincoln Customer Service, One Lincoln Way, St. Louis, MO 63120-1578, (314) 679-4200 for your nearest authorized service center.

When ordering replacement parts, list: part number, description, model number and series letter.

# MODEL 4475 & 4480 1:1 AIR OPERATED PUMP



AIR REGULATOR MODEL 602003  
W/PRESSURE GAUGE MODEL 247843  
FIG. 3

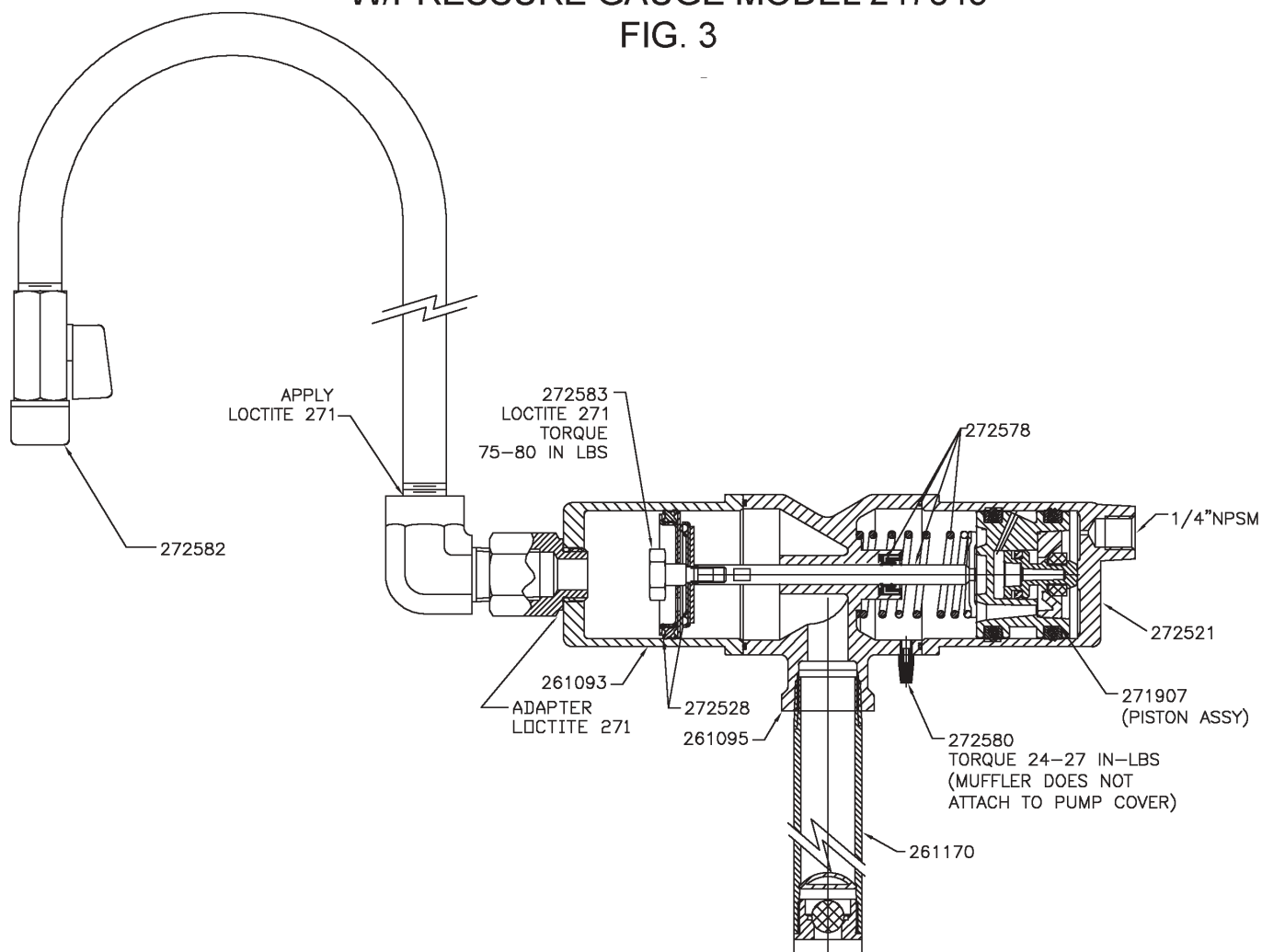


FIG. 4

**MODEL 4475 & 4480**  
**1:1 AIR OPERATED PUMP**



**SERVICE PARTS**

PART NO.	DESCRIPTION	INCLUDE	QTY
272528	Kit, seal	Ring, quad 2 OD X 1-5/8	1
		O-Ring, 2.114 x .070	1
		Seal, rod 5/16 ID x 5/8 OD	1
		O-Ring 1-1/4 ID x 1/8 buna	1
272578	Kit, spring	Ring, quad 2 OD X 1-5/8	1
		Seal, rod 5/16 ID X 9/1	1
		O-Ring, 2.114 x .070	1
		Spring, piston	1
		Piston, rod ass'y	1
		O-Ring 1-1/4 ID x 1/8 buna	1
272583	Kit, oil piston	Washer, back-up	1
		Seal, weldment	1
		Weldment, quad ring	1
		O-Ring, 2.114 x .070	1
		Bolt, pump rod	1
		O-Ring 1-1/4 ID x 1/8 buna	1
272580	Kit, muffler	Muffler sintered bronze	1
272581	Kit, air piston	Piston ass'y	1
272582	Kit, spigot	Spigot tube	1
		Valve, 1/4 turn	1
		Ell, 1/2 NPT x 3/8 NPT	1
		Aerator/Adapter ass'y	1
261170	Pump tube ass'y	Tube	1
		Seat, check	1
		Stop, ball	1
		Ball	1
261093	Housing, pump piston	Housing, pump piston	1
261095	Machined pump head	Machined pump head	1
272521	Housing, air piston	Housing, air piston	1
602003	Mini-regulator	Mini-regulator	1

# MODEL 4475 & 4480 1:1 AIR OPERATED PUMP



## TROUBLESHOOTING

Conditions	Possible cause	Corrective action
The pump doesn't operate.	No inlet air pressure.	Connect air supply.
	The piston is stuck.	Disassemble the pump inspect for damage, relubricate. Replace if necessary.
	Air pressure is too low.	Check air pressure supply. The pressure is to higher 20 Psig.
	Broken return spring	Replace if necessary.
The pump cycles but doesn't deliver fluid.	Loss prime	Repeat priming operation
	The container is out of liquid.	Check that container has fluid.
	The ball check valve is not functioning.	Disassemble check valve, remove ball, clean and inspect ball seat area.
The pump still doesn't operate.		Contact an authorized service center.



# MODEL 4475 & 4480 1:1 AIR OPERATED PUMP



## Declaration of Conformity as defined by Machinery Directive 98/37/EG Annex II A

This is to declare that the design of the Single Action 1:1 Air Operated Pumps (models 4475 & 4480) complies with the provisions of Directive 98/37/EG

### Applied Standards:

EN 292-1	Safety of Machinery - Basic Concepts, General Principles and Design - Part 1: Basic Terminology, Methodology
EN 292-2	Safety of Machinery - Basic Concepts, General Principles and Design - Part 2: Technical Principles and Specifications - Incorporates amendments 1 (1995) and 2 (1997)
EN 809	Pumps and Pump Units for Liquids - Common Safety Requirements
EN 349	Safety of Machinery - Minimum Gaps to Avoid Crushing of Parts of the Human Body

*Paul A. Conley*

St. Louis, MO 03/05/03, Paul Conley, Chief Engineer

### LIMITED WARRANTY

LINCOLN warrants the equipment it supplies to be free from defects in material and workmanship for one (1) year following the date of purchase. If equipment proves to be defective during this warranty period it will be repaired or replaced, at Lincoln's discretion, without charge provided that factory authorized examination indicates the equipment to be defective. To obtain repair or replacement, you must ship the equipment, transportation charges prepaid, with proof of date of purchase to a Lincoln authorized warranty and service center, within one (1) year following the date of purchase.

LIMITED 5 YEAR WARRANTY (Series 20, 25, 40 Bare Pumps, Heavy Duty and Golden Standard Bare Reels).

Lincoln warrants series 20, 25, 40 bare pumps, and heavy duty and golden standard bare reels it supplies to be free from defects in material and workmanship for one (1) year following the date of purchase. If equipment proves to be defective during the warranty period it will be repaired, or replaced, at Lincoln's discretion, without charge provided that factory authorized examination indicates the equipment to be defective. To obtain repair or replacement, you must ship the equipment, transportation charges prepaid, with proof of purchase to a Lincoln Authorized Warranty and Service Center within one (1) year following the date of purchase. Additionally, in years two (2) and three (3) the warranty on this equipment is limited to repair with Lincoln paying parts and labor only. In years four (4) and five (5), the warranty on this equipment is limited to repair with Lincoln paying for parts only.

This warranty is extended to the original retail purchaser only. It does not apply to equipment damaged from accident, overload, abuse, misuse, negligence, faulty installation or abrasive or corrosive material, or to equipment repaired or altered by anyone not authorized by Lincoln to repair or alter the equipment. This warranty applies only to equipment installed and operated according to the recommendations of Lincoln or its authorized field personnel. No other express warranty applies.

Any implied warranties applicable to equipment supplied by Lincoln, including the warranties of merchantability and fitness for a particular purpose, will last for only one (1) year from the date of purchase. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

In no event shall Lincoln be eligible for incidental or consequential damages. Lincoln's ability on any claim for loss or damages arising out of the sale, resale or use of equipment it supplies shall in no event exceed the purchase price. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights. You may also have other rights that vary by jurisdiction.

**MODEL 4475 & 4480  
1:1 AIR OPERATED PUMP**

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