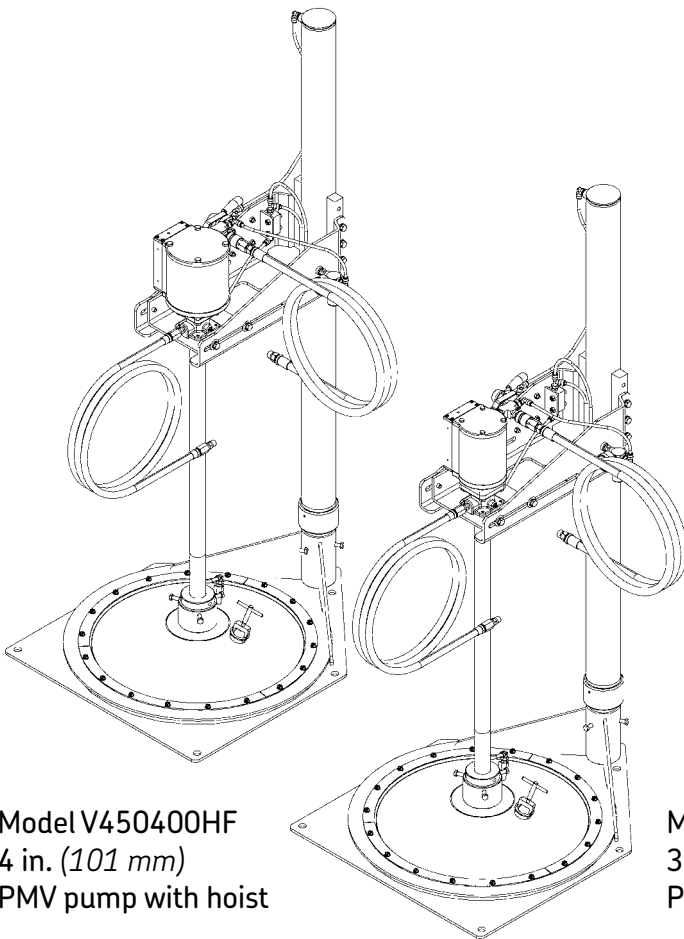


# Pump and hoist assembly

Models 275260, V350400HF and V450400HF, series "A"  
120 lb. (54 kg) and 400 lb. (181 kg) drum size, air operated,  
manually controlled



Model V450400HF  
4 in. (101 mm)  
PMV pump with hoist

Model V350400HF  
3 in. (72 mm)  
PMV pump with hoist

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Section	21A

# Models V350400HF and 275260

# Description

Model 275260 is a pump hoist (without the pump) for use with 120 lb. (54 kg) and 400 lb. (181 kg) refinery container drums, 400 lb. (181 kg) follower, and the necessary hoses and fittings to perform a basic installation (→ Fig. 1, page 3).

Model V350400HF includes the 275260 pump hoist and follower and a 3 in. (76 mm) PMV grease pump for use in 400 lb. (181 kg) container drums.

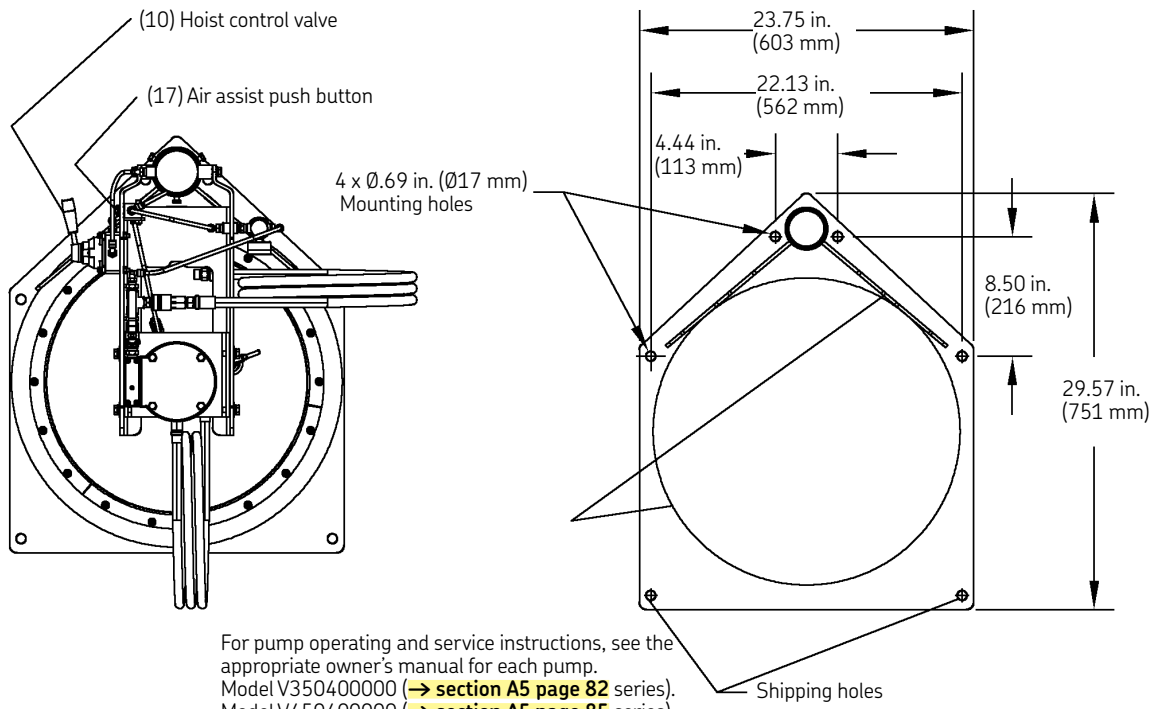
Model V450400HF includes the 275260 pump hoist and follower and a 4 in. (102 mm) PMV grease pump for use with 400 lb. (181 kg) container drums.

All models will place a pump and follower in position for insertion into a standard 400 lb. (181 kg) refinery container. The priming action of these models is created by gravity and the vacuum created when material is pumped from the drum. The weight of the pump and follower, plus the effects of atmospheric pressure, work with the shape of the follower, to direct the material into the pump inlet. The follower will remain on top of the material until the container is emptied by the pump. When the follower reaches the bottom of the container, very little, if any, material is left in the bottom of the drum. The follower will work well with most drum liners in good condition.

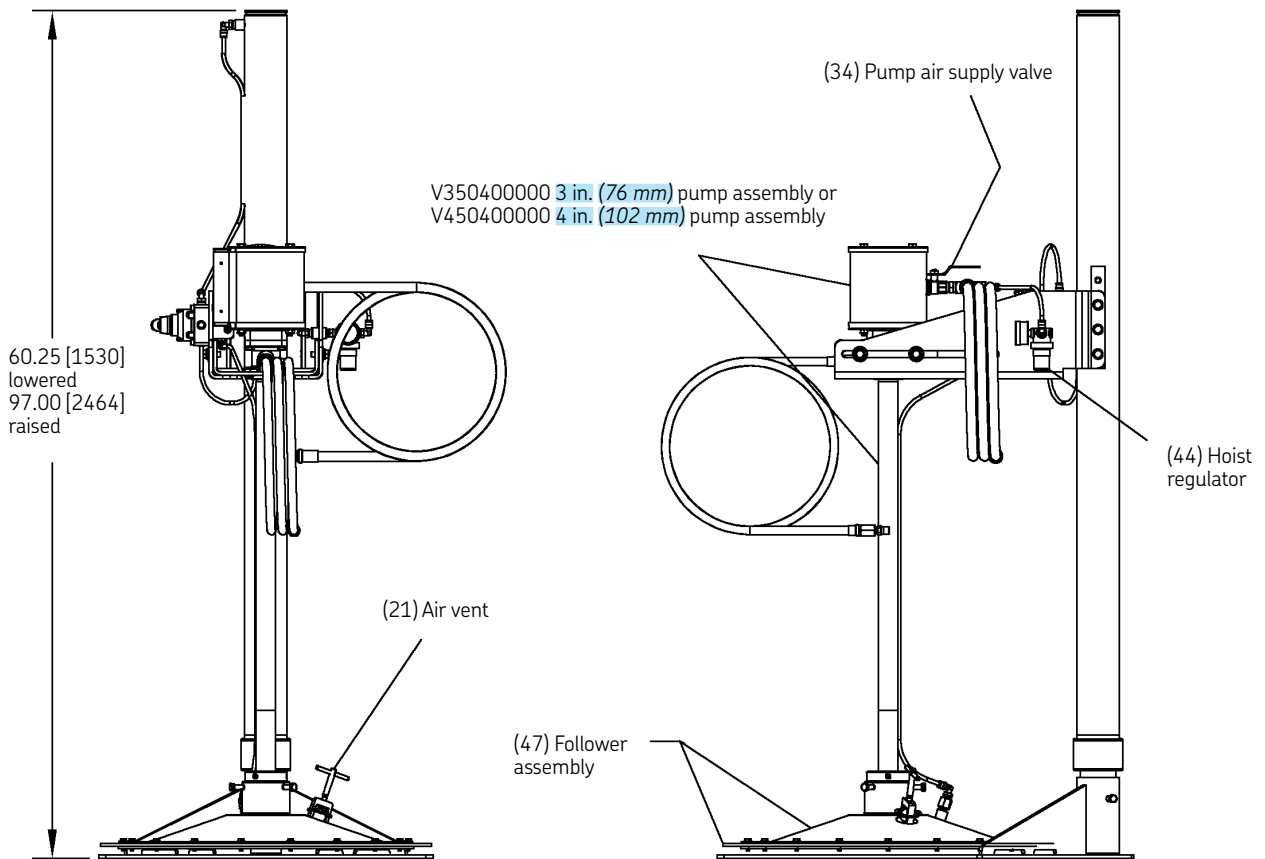
Specifications	
Unit height, lowered position	60 3/4 in. (1,530 mm)
Unit height, raised position	97.00 in. (2,464 mm)
Hoist capacity	200 lbs. (91 Kg)
Operating pressure (hoist)	40 to 100 psi (3 to 7 bar)
Pump	V350400000
Pump ratio	50:1
Pump max working pressure	5,000 psi (345 bar) (limited by hose working pressure)
Pump max air pressure	125 psi (9 bar)
Air inlet	3/8 NPT male (3/8 in. ID hose)
Lube outlet	1/4 NPT male x 84 in. (2,134 mm) (1/4 ID SAE 100R2) hose

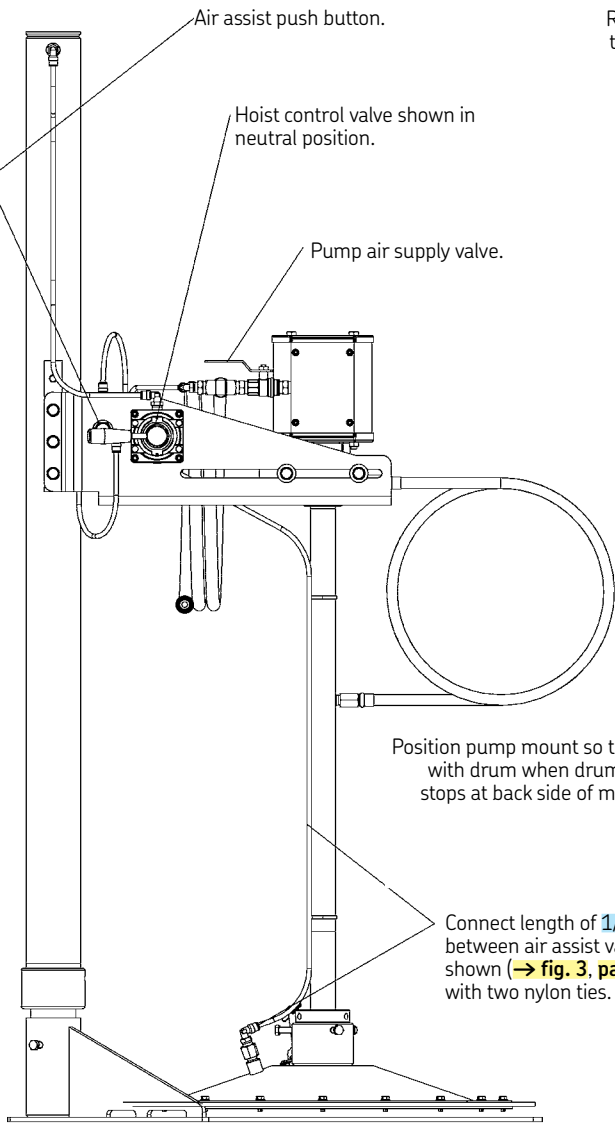
# Model V450400HF

Specifications	
Unit height, lowered position	60 3/4 in. (1,530 mm)
Unit height, raised position	97 in. (2,464 mm)
Hoist capacity	200 lbs. (91 Kg)
Operating pressure (hoist)	40 to 100 psi (3 to 7 bar)
Pump	V450400000
Pump ratio	50:1
Pump max working pressure	5,000 psi (345 bar) (limited by hose working pressure)
Pump max air pressure	100 psi (7 Bar)
Air inlet	3/8 NPT male (3/8 in. ID hose)
Lube outlet	1/4 NPT male x 84 in. (2,134 mm) (1/4 ID SAE 100R2) hose

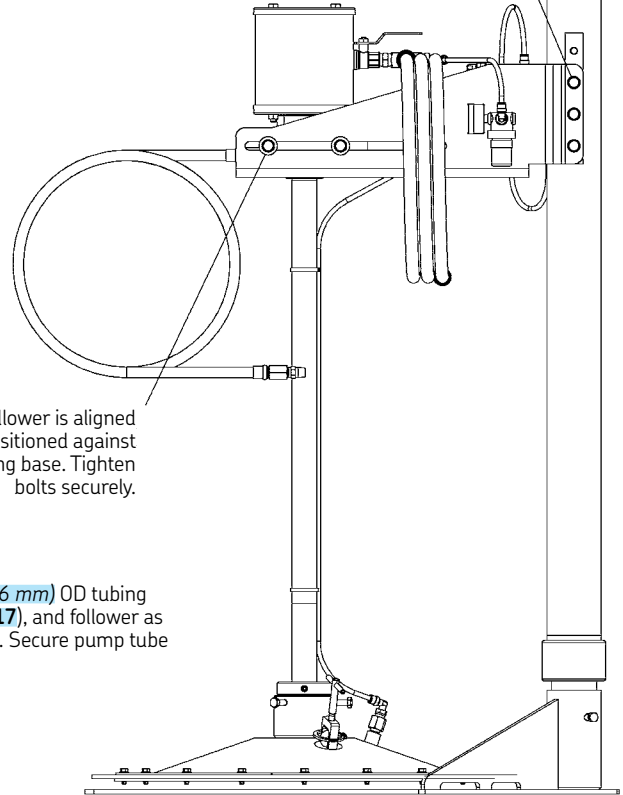


Base mounting detail





Remove six bolts, move mount down one set of holes to position shown. Reinstall bolts, adjust mount to be level with floor. Tighten bolts securely.



Position pump mount so that follower is aligned with drum when drum is positioned against stops at back side of mounting base. Tighten bolts securely.

Connect length of 1/4 in. (6 mm) OD tubing between air assist valve (17), and follower as shown (→ fig. 3, page 6). Secure pump tube with two nylon ties.

Left side view

Right side view

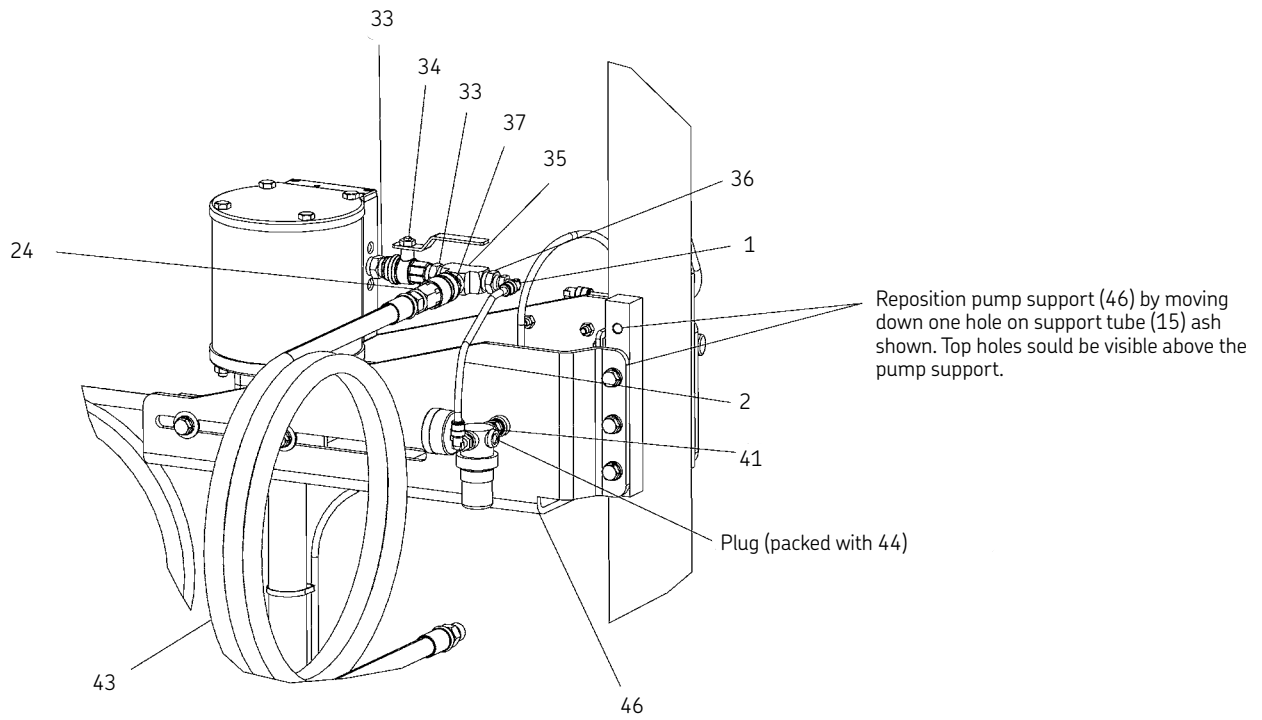
# Installation

- 1 Select a location where there is adequate clearance around the hoist to operate and maneuver around the hoist and pump assembly when installing and removing drums.
- 2 The mounting base must be securely fastened to the floor before use. Mounting dimensions are provided on base mounting detail in **fig. 1, page 3** or the base may be used as a template for drilling and positioning anchors.

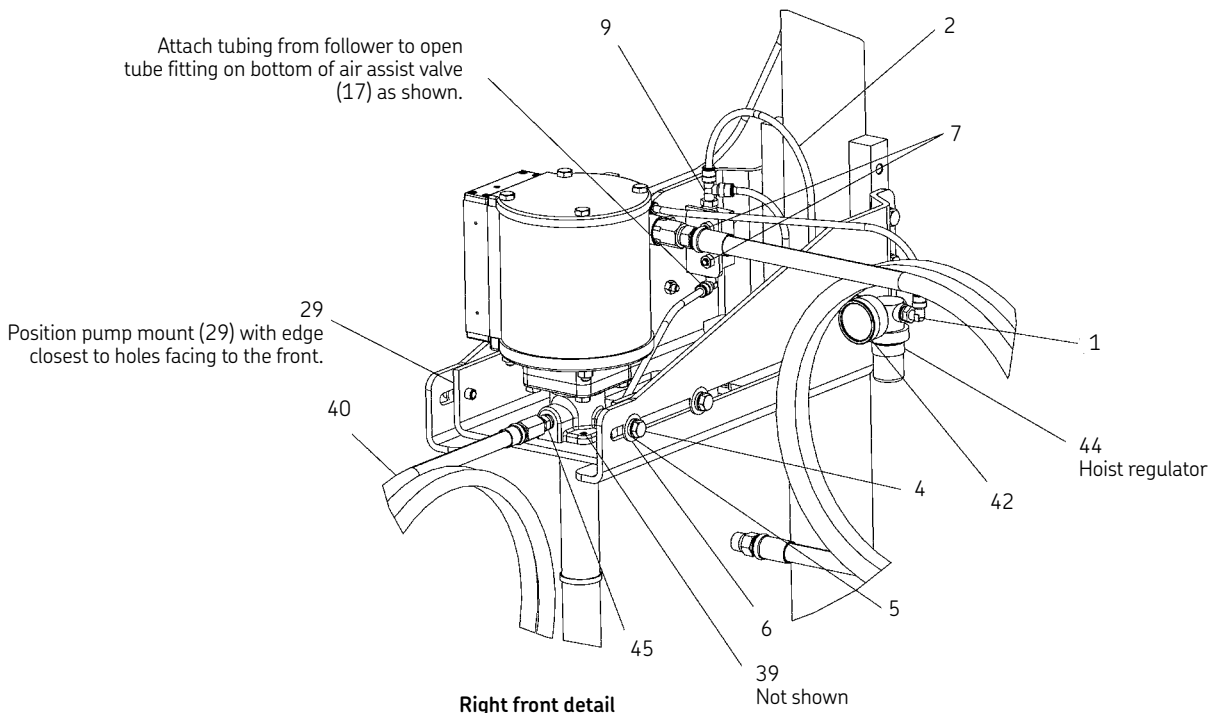
## WARNING

Failure to securely fasten the base to the floor may result in severe injury and or property damage. Pump hoist may topple over if not securely fastened.

- 3 After hoist has been secured to the floor reposition the pump support (**46**) by moving it down on the support tube (**15**) (**→ fig. 3, page 6**). Adjust the pump support so that it is parallel to the floor and secure by tightening the six mounting bolts (**4**). This will keep the pump tube parallel with the support tube.
- 4 Mount pump to pump mount (**29**). The holes in the pump mount are off center with the pump mount. When the pump mount is placed in the pump support (**46**) the pump mount should be placed with the holes closest to the open end of the pump support (**→ fig. 3, page 6**). When attaching the pump to the mount (**29**) attach pump outlet body to pump mount with four  $\frac{1}{4}$ -20 x  $\frac{9}{16}$  hex screw and washer assemblies (**39**) (**→ fig. 3, page 6**).
- 5 Place pump and mount into pump support (**46**) and loosely install hex bolts, lock washers, and flat washers (**4**, **5**, and **6**) through slots in support. Leave loose until final adjustments are made.
- 6 Assemble air inlet fittings (**→ fig. 3, page 6**). Assemble the air regulator (**44**) to the air inlet of the hoist as shown in the figure. Note that there is a  $\frac{1}{8}$  in. (**3 mm**) pipe plug packaged with each regulator for plugging the unused gage port in the regulator. Install this plug into the unused port on the regulator (**44**) as shown.
- 7 Measure and cut a length of the supplied  $\frac{1}{4}$  in. (**6 mm**) OD black polyurethane tubing to connect the air inlet to the regulator inlet (**→ fig. 3, page 6**). The tubing will simply push fit into the  $\frac{1}{4}$  in. (**6 mm**) fittings included with the model.
- 8 Assemble the air hose to the air coupler (**24**). Make sure the ball valve (**34**) is closed and the hoist control valve (**10**) is in the down position. Attach air hose to source of filtered, regulated air. The air pressure should be set initially to about **40 psi (3 bar)**.
- 9 Adjust the hoist air regulator (**44**) for a pressure of around **30 to 40 psi (2 to 3 bar)**. Check for air leaks in all connections. Slowly move the hoist control valve (**10**) to the raised position and raise pump so the end of the pump tube will clear the primer assembly.
- 10 Attach the primer assembly to the end of the pump tube. When assembling pump to the follower, a reducing adapter is used (**38**). Apply some grease to the outside of the adapter and the o-rings on the inside of the adapter and the inside of the follower. Push the adapter into the follower assembly until it seats against the shoulder. Tighten the three hex bolts on the follower (**14**) securely. Apply some grease to the end of the pump tube and slide into the reducing adapter (**38**) until the pump tube is flush with the bottom of the follower. Tighten the three set screws (**32**) securely.
- 11 Raise the follower high enough to clear an open **400 lb. (181 kg)** container. Place the container under the follower and slide the drum back on the mounting base (**8**) until the bottom is against both gusset plates on the base. Adjust the position of the pump with respect to the drum by sliding the pump mount (**29**) in the pump support (**46**) until the follower is centered over the open drum. Tighten the hex bolts (**4**) through the slots in the pump support to secure the pump mount. **Do not insert the follower into the drum at this time.**
- 12 Using the remaining polyurethane tubing, attach to the open fitting on the 2-way air valve (**17**) mounted on the pump support (**46**) by pushing one end of the tube into the fitting until secure. (**→ fig. 3, page 6**). Thread the tubing down along the pump tube to the fitting (**1**) in the top of the follower assembly. Secure the tubing to the pump tube with two nylon wire ties, supplied with the assembly (**→ fig. 2, page 4**).
- 13 Check for proper air flow by pressing button on 2-way air valve (**17**) making sure that air flows through check valve (**30**) and out under follower assembly.
- 14 Connect fluid hoses to pump outlet. These models are supplied with a  $\frac{1}{4}$  in. (**6 mm**) ID high pressure hose (**40**) with  $\frac{33}{64}$  in. (**1.3 mm**) female thread on both ends. Two male adapters (**45**) are supplied to adapt the hose to  $\frac{1}{4}$  NPT male for the pump outlet, and working end of the hose. Insert the hose adapters (**45**) into each end of the high pressure hose and tighten securely for leak proof seal. Thread one end of the hose into the pump outlet and tighten securely. Attach the other end as required for the application.



Right rear detail



Right front detail

# Operating controls

Refer to **fig. 1, page 3**.

## Hoist control valve (10)

Three position air valve used to raise and lower the pump into and out of the drum. When the handle is moved up, the hoist will raise. When placed in the neutral position, with handle level with floor, hoist will stop and hold position. When the handle is placed in down position, the hoist will lower the pump into the drum.

## Air assist push button (17)

Two-way air valve used to force air under the follower assembly to assist in lifting the pump and follower from the drum. The air assist is used in conjunction with the hoist control valve when removing the pump and follower from the drum.

## Air vent (21)

Used to vent air trapped under the follower plate when the follower and pump is lowered into the drum. This valve should be open when the pump and follower are lowered into the drum. Air will escape from the valve as the follower is lowered into the drum. After the follower rests on top of the lubricant, the valve is closed by turning clockwise to seal the ball against the seat.

## Hoist regulator (44)

Used to control the air pressure to the hoist only. The air pressure should be set to the necessary pressure required to raise the pump and follower. Too much pressure will cause the hoist to rise very quickly and may damage the hoist.

## Pump air supply valve (34)

Used to control air to the air motor and pump assembly. When the pump is in operation this valve must be open to allow air to flow to the air motor. When servicing, relieving pressure or operating the hoist, this valve must be closed to stop air motor and pump operation when the pump is removed from the drum.

# Operation

Before operating, ensure that the hoist is securely fastened to the floor. All connecting bolts must be tightened securely. Air connections and tube fittings are all tight and leak proof. Fluid connections are tight and leak proof.

All fluid and air hoses are to be connected as required.

## Installing a material drum:

- 1 Adjust the hoist regulator (44) to about 30 psi (2 bar). Move the hoist control valve (10) to the raise position to lift the pump clear of the rim of the drum. Adjust the hoist regulator as required to a pressure high enough to raise the pump clear of the drum with out rapid uncontrolled rising of the pump. Move the hoist control valve to the neutral position to hold the pump in position.
- 2 Position the drum of lubricant on the mounting base (8) so that the drum rests against both gussets on the back side of the base.
- 3 Adjust, if necessary, the location of the pump support (29) to center the follower assembly over the top of the drum. Tighten the bolts (4) if an adjustment was made.
- 4 Open the air vent (21) to allow air to vent from below the follower as the follower is lowered into the drum.
- 5 Move the hoist control valve (10) to the down position and guide the follower into the drum of lubricant. As the follower is lowered into the drum, air will vent from the vent valve. Continue to lower the pump and follower into the drum until it stops. Some lubricant may appear at the vent valve as it is lowered into the drum. This is normal. Close the air vent (21) after the follower stops moving.
- 6 **Leave the hoist control valve in the down position at all times** except when removing the follower from the drum. This will allow the follower to drop as the lubricant is depleted from the drum.
- 7 Turn on the pump air supply valve (34) and adjust the air pressure to the air motor and pump tube assembly to prime the pump as required. Refer to the owner's manual for the air motor and pump tube.

- 8 While in operation, as the pump removes material from the drum, the pump will continue to drop into the drum, following the level of material down to the bottom of the drum. Note that air pressure is not used to exert force on the pump hoist to force the follower into the drum.

## Removing a material drum

When the pump follower reaches the bottom of the drum and drum replacement is necessary the pump may be removed from the drum as follows:

- 9 Close the pump air supply valve (34) to stop the pump.
- 10 Move the hoist control valve (10) to the raise position, and press the air assist push button (17) at the same time.
- 11 Hold the base of the drum into the slots formed in the gussets on the mounting base with one foot while raising the pump from the drum.
- 12 Modulate the hoist control valve and air assist pushbutton as necessary to work the follower out of the drum. If the follower hangs up at the drum chimes, it may help to allow the drum to rise off the base slightly and allow the air assist to force the drum off the follower while guiding the drum by hand.
- 13 When the follower reaches the top of the drum, release the air assist push button, and place the hoist control valve in the neutral position to hold the pump in position while the drum is replaced.
- 14 After removing the drum, remove any grease from the bottom side of the follower in the area of the air vent check ball (22), so that air will flow freely through the vent and grease is not forced on top of the follower when placing the follower back into the lubricant.

# Service

When service is required see the appropriate owner's manual for the pump. Service on the hoist is limited to the hoist air cylinder assembly and the follower assembly. All other hoist components are not serviceable items.

## WARNING

Before any service is attempted it is important to disconnect the air supply to the pump and hoist unit and bleed off all material pressure from the pump outlet and attached hoses.

## Air cylinder service

The pump must be removed from the hoist to service the air cylinder assembly.

- 1 Disconnect all air lines between the pump and hoist assembly.
- 2 Disconnect the air line to the follower assembly. The pump and pump mount (29) and the follower assembly, can be removed as a unit from the pump support (46) by removing the four attachment hex bolts, and washers, (4, 5, and 6). Place the pump and follower on large sheet of clean paper or cardboard to keep follower clean.
- 3 Loosen set screw (12), and remove tube cap (11) from upper support tube (15).
- 4 Slide the upper support tube off of the lower support tube (18) and set aside.
- 5 The seal (20) is accessible and may be replaced by removing from the piston (19) and replacing with a new seal.
- 6 Carefully inspect the condition of the upper support tube (15) before reassembly, checking for scratches or damage to the inside surface. Before re-assembly, apply a liberal coating of grease to the inside surface of the upper support tube (15), piston (19), and seal (20).
- 7 Reassemble in the reverse order of disassembly. Check all tubing and connections for leaks.

## Follower service

The follower must be removed from the bottom of the pump for service. The pump does not need to be removed from the hoist.

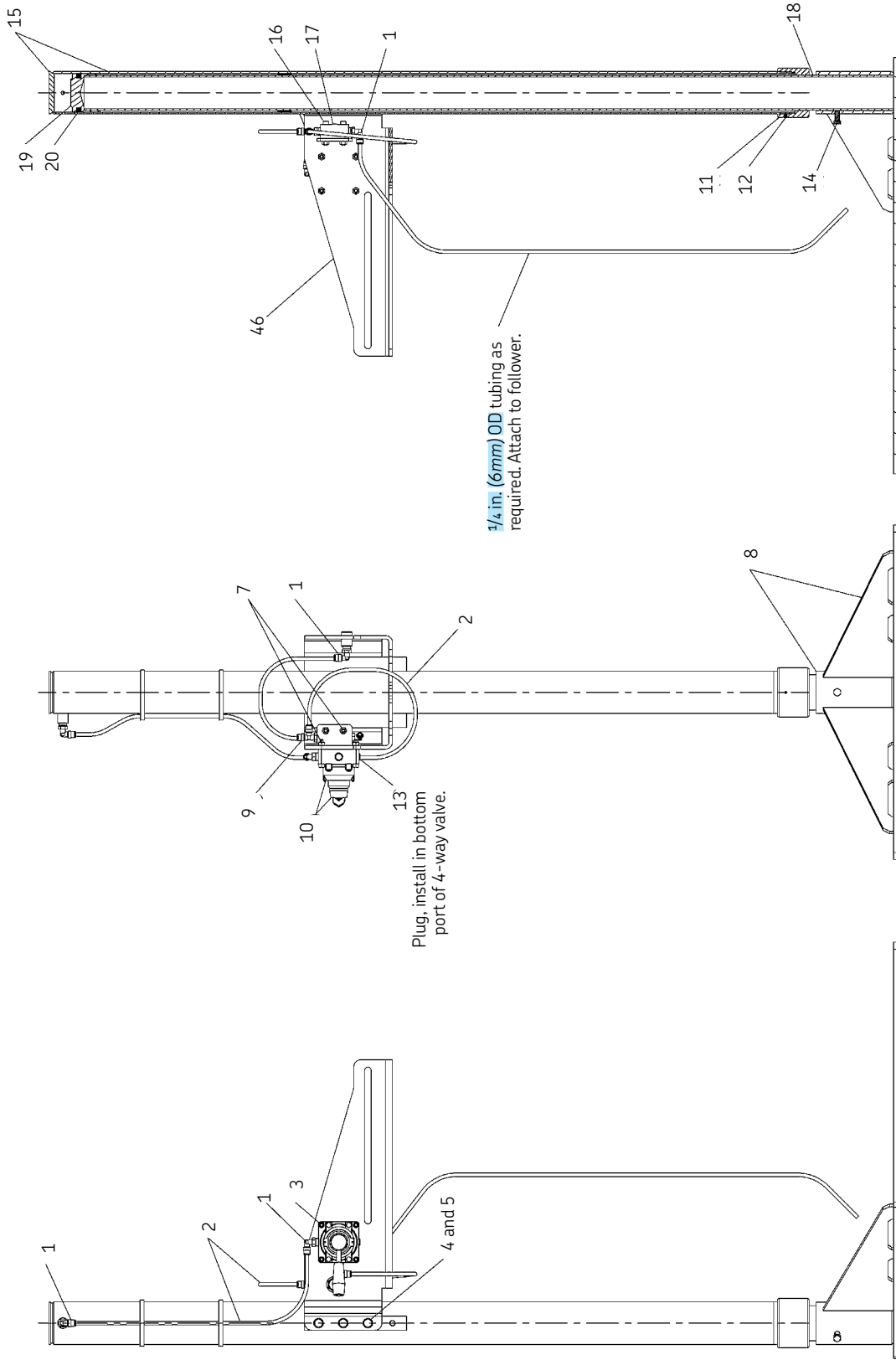
- 1 To remove the follower, remove the pump and follower from the material drum.
- 2 Remove the drum from the base of the hoist.
- 3 Lower the pump and follower to the base on top of a piece of clean cardboard or paper.
- 4 Place hoist control valve in neutral position.
- 5 Disconnect the air line from the follower.
- 6 Loosen the three hex screws (24) and slide the follower off the end of the pump tube. The follower may be tight due to the O-ring seals (25) around the pump tube.
- 7 Place follower on clean flat surface with air vent and pump tube bushing facing the top side.
- 8 Remove the 18 hex screws (26), three segment rings (27) and follower wiper ring (28).
- 9 Inspect all components for wear or damage, replacing any damaged or worn components.
- 10 Re-assembly is the reverse of the disassembly process. When installing the hex screws (26) take care not to tighten too tight. The screws only need to be tight enough to seal the wiper to the follower. There should be no deflection to the segment rings (27) when the screws are tightened.
- 11 Check for leaks and test after re-assembly.

## Air vent service

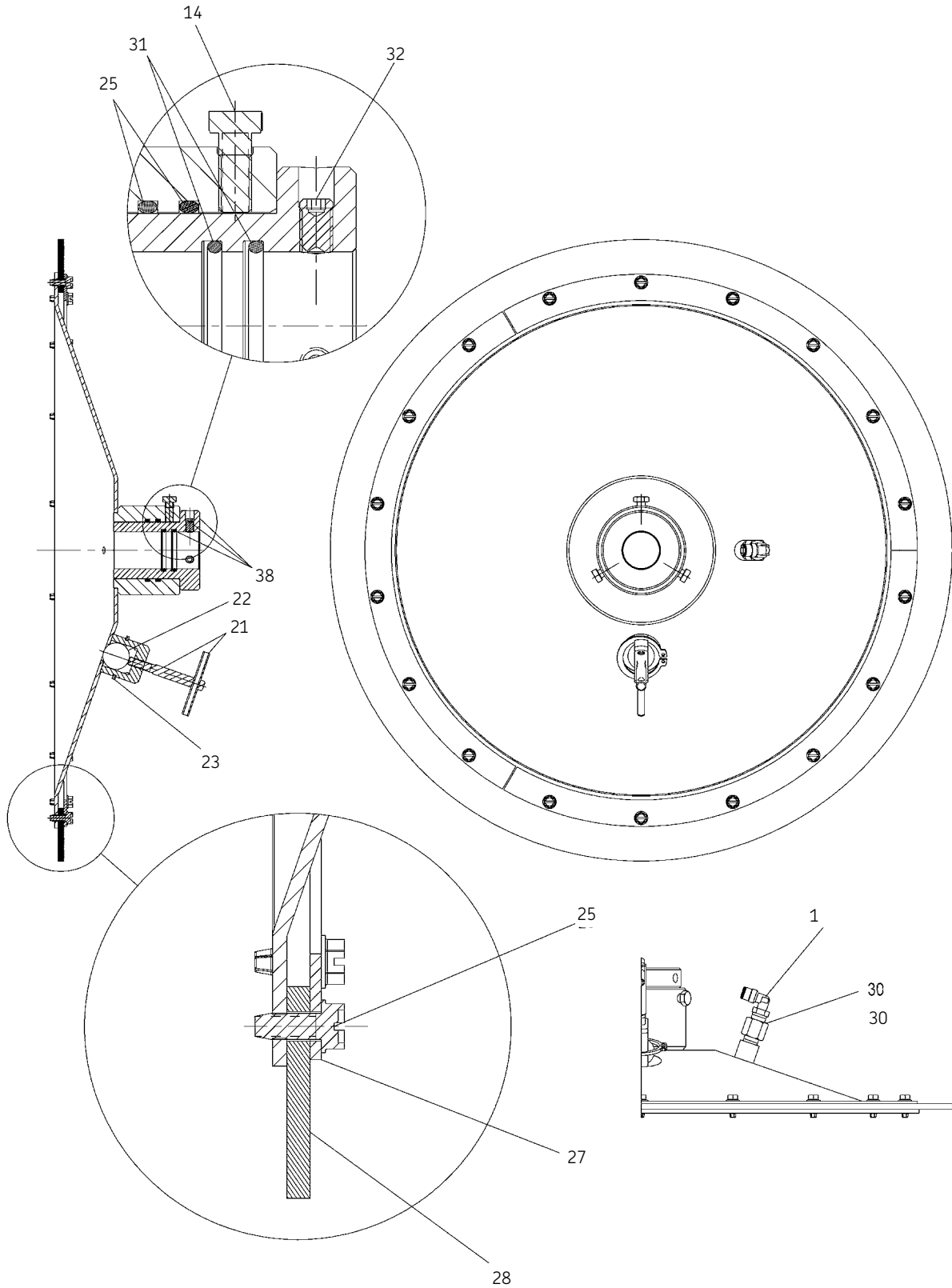
The air vent (21, 22, and 23) may be serviced without removing the pump or the follower from the pump. The pump and follower must be removed from the drum.

- 1 Lower the pump and follower to the base on top of a piece of clean cardboard or paper.
- 2 Place hoist control valve in neutral position.
- 3 Remove the valve screw assembly (21) by turning counterclockwise.
- 4 Remove the retaining ring (23).
- 5 The ball can now be removed through the slots on the sides of the valve body.
- 6 Inspect the ball for any signs of wear or damage. Replace as necessary. Clean and inspect the valve body and follower surfaces where the ball is seated. Repair or replace as necessary.
- 7 Reassemble in the reverse order of disassembly. Do not tighten the valve screw too tightly. It should only be tight enough to form a seal. If tightened too tightly, damage to the ball may occur.





Primer assembly detail



## Parts list

Item	Description	Part no.	Qty.
1	1/4 in. (6 mm) OD x 1/4 in. NPT (male) 90° ell	247761	7
2	1/4 in. (6 mm) OD x 0.160 in. (4 mm) ID polyurethane tubing	-	As req'd
3	1/4-20 x 1 3/4 socket head cap screw	50779	4
4	3/8-16 x 1 hex head cap screw	50044	10
5	3/8 in. split lock washer	66220	10
6	3/8 in. flat washer	48268	4
7	1/4-20 hex nut	51010	6
8	Mounting base	274661	1
9	1/4 in. (6 mm) male run tee	274654	1
10	4-way air valve	237588	1
11	Tube cap	274719	1
12	#10-32 x 1/4 in. cup point set screw	50522	1
13	1/4 NPT pipe plug	67359	1
14	5/16-18 x 3/4 in. hex head cap screw	50016	6
15	Upper support tube	274666	1
16	1/4-20 x 1 1/2 socket head cap screw	50051	2
17	2-way air valve	274682	1
18	Lower support tube	274664	1
19	Piston	274663	1
20	Piston seal	34327	1
21	Valve screw assy	274651	1
22	1 in. (25 mm) ball	274715	1
23	Retaining ring	274650	1
24	Air coupler	242563	1
25	O-ring (nitrile)	34337	2
26	1/4-20 x 5/8 in. tapping screw	274648	18
27	Follower segment	274644	3
28	Wiper ring (nitrile)	34371	1
29	Pump mount	274734	1
30	Check valve	274653	1
31	O-ring	34262	2
32	5/16-18 x 1/2 in. cup point set screw	50525	3
33	3/8 in. (9 mm) hex nipple	10540	2
34	3/8 in. (9 mm) ball valve, 1/4 turn	275291	1
35	3/8 in. (9 mm) tee	70159	1
36	3/8 NPT x 1/4 NPT bushing	275290	1
37	Air nipple	640106	1
38	Follower adapter (includes <b>31</b> and <b>32</b> )	275259	1
39	1/4-20 x 9/16 hex screw & washer assy	50060	4
40	1/4 x 84 in. (6 x 2,134 mm) high pressure hose	75084	1
41	1/4 NPT hex nipple	10462	1
42	Air pressure gage	247843	1
43	3/8 x 84 in. (9 x 2,134 mm) air hose	275289	1
44	Mini air regulator	602003	1
45	Hose connector	10198	2
46	Pump support	274669	1
47	400 lb (181 kg) follower assembly	274655	1

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# Lincoln industrial standard warranty

## Standard limited warranty

Lincoln warrants the equipment manufactured and supplied by Lincoln to be free from defects in material and workmanship for a period of one (1) year following the date of purchase, excluding there from any special, extended, or limited warranty published by Lincoln. If equipment is determined to be defective during this warranty period, it will be repaired or replaced, within Lincoln's sole discretion, without charge.

This warranty is conditioned upon the determination of a Lincoln authorized representative that the equipment is 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 the warranty period.

This warranty is extended to the original retail purchaser only. This warranty does not apply to equipment damaged from accident, overload, abuse, misuse, negligence, faulty installation or abrasive or corrosive material, equipment that has been altered, or equipment repaired by anyone not authorized by Lincoln. This warranty applies only to equipment installed, operated and maintained in strict accordance with the written specifications and recommendations provided by Lincoln or its authorized field personnel.

**This warranty is exclusive and is in lieu of any other warranties, express or implied, including, but not limited to, the warranty of merchantability or warranty of fitness for a particular purpose. Warranty on items sold by Lincoln, but not manufactured by Lincoln are subject to the warranty consideration, if any, of their manufacturer (such as hoses, hydraulic and electric motors, electrical controllers, etc.) Assistance in making such warranty claims can be offered as required.**

In no event shall Lincoln be liable for incidental or consequential damages. Lincoln's liability for any claim for loss or damages arising out of the sale, resale or use of any Lincoln equipment shall in no event exceed the purchase price. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, therefore 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.

Customers not located in the Western Hemisphere or East Asia: Please contact Lincoln GmbH and Co. Kg, Walldorf, Germany, for your warranty rights.

## Special limited warranties

### Special limited 2 year warranty sl-v series, single injectors-85772, 85782, and replacement injectors-85771, 85781

Lincoln warrants the SL-V Injector series to be free from defects in material and workmanship for two (2) years following the date of purchase. If an injector model (single or replacement) is determined to be defective by Lincoln, in its sole discretion, during this warranty period, it will be repaired or replaced, at Lincoln's discretion, without charge.

### Special limited 5 year warranty series 20, 25, 40 bare pumps, pmv bare pumps, heavy duty and 94000 series bare reels

Lincoln warrants series 20, 25, 40 bare pumps, PMV bare pumps, heavy duty (82206), mini bench (81133, 81323), and all 94000 LFR series (single arm and dual arm) bare reels to be free from defects in material and workmanship for five (5) years following the date of purchase. If equipment is determined by Lincoln, in its sole discretion, to be defective during the first year of the warranty period, it will be repaired or replaced at Lincoln's discretion, without charge. 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.

### Special limited 5 year warranty-limited oil meters, limited fluid control valves, aod (air-operated diaphragm pumps)

Lincoln warrants the 712 series control valves, 912 series lube meters, electronic lube meters (980, 981, 982 series), our universal inline digital meters (812/813 series), and our AOD pump offering to be free from defects in material and workmanship for five (5) years following the date of purchase. If either is determined to be defective by Lincoln, in its sole discretion, during the warranty period, they will be repaired or replaced, at Lincoln's discretion, without charge.

### Special DEF (diesel exhaust fluid) limited warranty

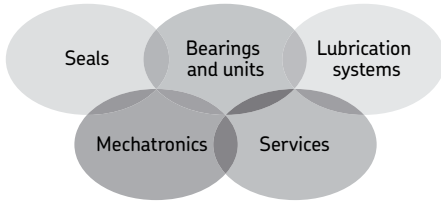
DEF products are warranted to be free from defects in material and workmanship for a period of one (1) year following the date of purchase. The following exceptions to the standard warranty period are in effect:

- **85700-30/85700-50 DEF hose reels (bare reel only),** 277251/277252 AC DEF pumps, and 277256 and 277257 DEF meters are warranted for two (2) years from date of purchase.
- **85623 DEF AOD (air operated diaphragm) pumps** are covered under the standard five (5) year AOD pump warranty.

If either is determined to be defective by Lincoln, in its sole discretion, during the warranty period, they will be repaired or replaced, at Lincoln's discretion, without charge.

### Lincoln Industrial contact information

To find Lincoln Industrial's nearest service center call one of the following number; customer service 314-679-4200 or you may also use our website [www.lincolnindustrial.com](http://www.lincolnindustrial.com)



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