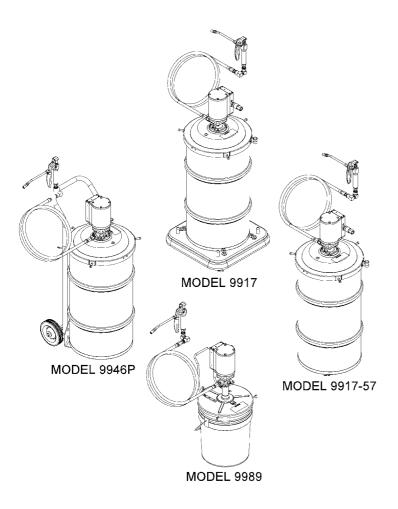


## High pressure Lubrigun



| August 2012 |              |
|-------------|--------------|
| 404461      |              |
| A5          |              |
| 84B         |              |
| 848         |              |
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|             |              |
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|             | 404461<br>A5 |



## Description

Models 9917, 9917-57, 9946P and 9989 are air operated grease pumps designed to pump low and medium viscosity materials, (grease) from drums and pails. They are high pressure pumps that are capable of creating a maximum operating pressure of 5000 psi (345 bar) with 100 psi (7 bar) air. All models include drum or pail covers, high pressure hose, control valve, grease coupling, and universal follower.

Model 9917 is for use with 120 lb (54 kg) refinery containers and includes a caster dolly base for portability. (Container drum is not included.) Two high pressure swivels are included, one straight swivel where the hose connects to the pump, and a universal swivel for connection between the hose and the control valve ( $\rightarrow$  front cover figure).

Model 9917-57 is the same as the 9917, above, but does not include the caster dolly base ( $\rightarrow$  front cover figure).

Model 9946P is the same as the 9917, above, but includes a two-wheel dolly truck for portability instead of the caster dolly base ( $\rightarrow$  front cover figure).

Model 9989 is for use with 35 lb (16 kg) refinery pails and includes a pail cover with handle for portability. One universal swivel is included for connection between the hose and control valve. No dolly base or truck is included.

## **A** 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 serious personal injury and/or equipment damage, 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.
- Do not attempt to repair or disassemble the equipment while the system is pressurized.
- Make sure all grease connections are securely tightened before using this equipment.
- Always read and follow the grease manufacturers recommendations regarding grease 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, 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.

## Assembly instructions

## **A** WARNING

This pump can develop 7500 psi (517 bar) working pressure at 150 psi (10 bar) maximum incoming air pressure. Be sure that all system equipment and accessories are rated to withstand the maximum working pressure of this pump. Do not exceed the maximum working pressure of the lowest rated component in the system. Failure to comply may result in personal injury.

## **■** Notice

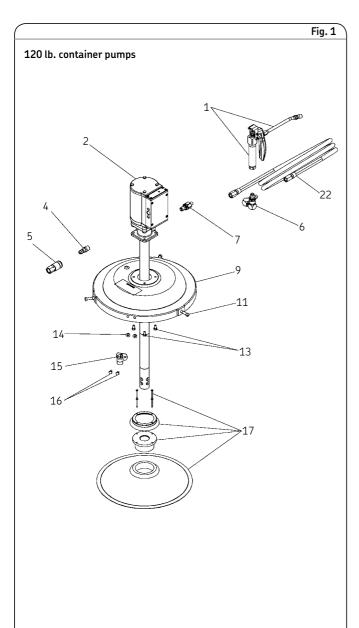
Accessory "whip" hoses for dispensing valve are rated 4500 psi (310 bar). Do not exceed 90 psi (6 bar) air pressure to pump when using "whip" hoses.

## Model 9917

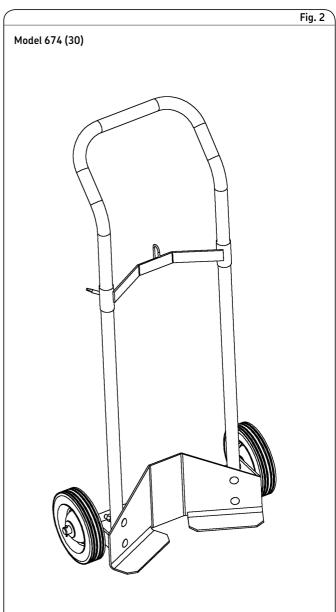
### $\rightarrow$ fig. 1, page 3

- 1 Assemble the control valve hanger (15) to the side of the drum cover (9) using the two hex head screws (16) and hex nuts (14) through the holes provided in the cover.
- Install the three fillister head screws (11) into the side of the drum cover (9) as shown. Leave the screws loose. They will be used later to secure the drum cover onto the drum.
- 3 Assemble the pump to the drum cover with the four bolts (13) supplied, as shown in the figure. Tighten securely.
- 4 Connect straight swivel (7) to pump outlet. (Note that there are two different threads on the swivel. The ½-18 NPT pipe thread will be a course thread compared with the other thread.) Make sure to place the ½-18 NPT male end of the swivel into the ¼-18 NPT female outlet on the pump body. Tighten securely.
- 5 Connect one end of the high pressure hose (22) to the special (fine pitch) male thread on the straight swivel (7) and tighten securely.





For more specific information on pumps see appropriate owner's manual for the pump.



| Maximum air pressure Air inlet Lube outlet (pump)  100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female) 100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female) 1/4 NPT (female)  |  |  |
|--|--|--|
| Pump ratio Pump maximum working pressure  50:1 5,000 psi (345 bar) (limited by hose working pressure)  Maximum air pressure Air inlet Lube outlet (pump)  100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female)  1/4 in. inner diameter x 7 ft SAE 100R2 high pressure  50:1 5,000 psi (345 bar) (limited by hose working pressure)  100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female)  1/4 in. inner diameter x 7 ft SAE 100R2 high pressure  1/4 in. inner diameter x 7 ft SAE 100R2 high pressure | Models 9917, 9917-57 and 9946P                         | Model 9989   |
| Maximum air pressure Air inlet Lube outlet (pump)  100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female)  100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female)  1/4 In. inner diameter x 7 ft SAE 100R2 high pressure  1/4 in. inner diameter x 7 ft SAE 100R2 high pressure  |  |  |
| Air inlet  3/8 NPT (female) with coupler 1/4 NPT (female)  4/8 NPT (female)  3/8 NPT (female) with coupler 1/4 NPT (female)  4/8 NPT (female)  4/9 NPT (female)  4/4 In. inner diameter x 7 ft SAE 100R2 high pressure  4/4 in. inner diameter x 7 ft SAE 100R2 high pressure  | 5,000 psi (345 bar) (limited by hose working pressure) | 5,000 psi (345 bar) (limited by hose working pressure  |
|  | <sup>3</sup> /8 NPT (female) with coupler              | <sup>3</sup> /8 NPT (female) with coupler  |
|  |  | 1/4 in. inner diameter x 7 ft SAE 100R2 high pressure hose (5,000 psi [345 bar] working pressure.  |
|  |  |  |
|  |  | V350120000 (120 lb. [54 kg] pump) 50:1 5,000 psi (345 bar) (limited by hose working pressure) 100 psi (7 bar) 3/8 NPT (female) with coupler 1/4 NPT (female) 1/4 in. inner diameter x 7 ft SAE 100R2 high pressure |

- **6** Connect the remaining end of the high pressure hose to the special male thread on the universal swivel (**6**) and tighten securely.
- 7 Connect the 1/4-18 NPT male thread on the universal swivel (6) to the control valve (1) and tighten securely.
- 8 Install the grease coupling and extension tube into the outlet end of the control valve (1) and tighten securely.
- 9 Install the air nipple (4) into the air inlet of the pump and tighten securely.
- **10** Attach the air coupler (**5**) onto a suitable <sup>3</sup>/8 in. inner diamter (minimum) air hose and tighten securely. Do not apply air pressure at this time.
- **11** Assemble the follower **(17)** per the instructions in **section K5**, **page 6** series.
- 12 Assemble the truck assembly (29)
  (→ fig. 3, page 6). Leave the hex screws, (24) and set screws, (26) loose until a container drum is placed on the truck. Install the casters, (28) into the sockets on the bottom side of the truck base. They should snap into place and not fall out when the truck is lifted from the floor.
- 13 Place the truck assembly on the floor.

  Place a container drum containing the lubricant to be dispensed onto the truck base. Center the drum on the base and adjust the clamp assemblies close enough to the base of the drum so that the set screws can be adjusted in to secure the drum. They should also be far enough away from the base of the drum, so that the drum can be removed by loosening the set screws (26) only. Tighten the hex screws (24) securely in four places.
- 14 Place the assembled follower (17) into the open drum, on top of the lubricant, and push down on the follower until the lubricant flows slightly into the center opening of the follower.

- 15 Place the pump tube, assembled with the drum cover, into the drum by sliding the pump tube into the center hole in the follower and sliding straight into the follower. The pump tube should slide all the way into the drum until the drum cover gasket rests on the top edge of the drum. The follower (17) will remain on top of the grease, and will move down with the lubricant as it is consumed, wiping the pail walls clean, and moving the lubricant towards the pump inlet.
- **16** Secure the drum cover to the drum with the three fillister head screws **(11)** by tightening until the screws are snug against the side of the drum.
- 17 Place the control valve grease coupler through the control valve hanger (15) on the side of the drum cover for convenient storage. The hose may be coiled around the drum as desired.
- **18** Follow the priming instructions as detailed in the pump operation manual (→ section A5, page 6 series).

### Model 9917-57

- → fig. 1, page 3 of this manual.
- 1 Assemble the control valve hanger (15) to the side of the drum cover (9) using the two hex head screws (16) and hex nuts (14) through the holes provided in the cover.
- 2 Install the three fillister head screws (11) into the side of the drum cover (9) as shown. Leave the screws loose. They will be used later to secure the drum cover onto the drum.
- 3 Assemble the pump to the drum cover with the four bolts (13) supplied, as shown in the figure. Tighten securely.
- 4 Connect straight swivel (7) to pump outlet. (Note that there are two different threads on the swivel. The ½-18 NPT pipe thread will be a course thread compared with the other thread.) Make sure to place the ½-18 NPT male end of the swivel into the ¼-18 NPT female outlet on the pump body. Tighten securely.
- 5 Connect one end of the high pressure hose (22) to the special (fine pitch) male thread on the straight swivel (7) and tighten securely.
- **6** Connect the remaining end of the high pressure hose to the special male thread on the universal swivel (**6**) and tighten securely.

- 7 Connect the 1/4-18 NPT male thread on the universal swivel (6) to the control valve (1) and tighten securely.
- 8 Install the grease coupling and extension tube into the outlet end of the control valve (1) and tighten securely.
- 9 Install the air nipple (4) into the air inlet of the pump and tighten securely.
- **10** Attach the air coupler (**5**) onto a suitable <sup>3</sup>/<sub>8</sub> in. inner diameter (minimum) air hose and tighten securely. Do not apply air pressure at this time.
- **11** Assemble the follower (**17**) per the instructions in **section K5**, **page 6** series.
- 12 Place the assembled follower (17) into the open drum, on top of the lubricant, and push down on the follower until the lubricant flows slightly into the center opening of the follower.
- 13 Place the pump tube, assembled with the drum cover, into the drum by sliding the pump tube into the center hole in the follower and sliding straight into the follower. The pump tube should slide all the way into the drum until the drum cover gasket rests on the top edge of the drum. The follower (17) will remain on top of the grease, and will move down with the lubricant as it is consumed, wiping the pail walls clean, and moving the lubricant towards the pump inlet.
- 14 Secure the drum cover to the drum with the three fillister head screws (11) by tightening until the screws are snug against the side of the drum.
- **15** Place the control valve grease coupler through the control valve hanger (**15**) on the side of the drum cover for convenient storage. The hose may be coiled around the drum as desired.

#### Model 9946P

- → fig. 1 page 3 of this manual.
- 1 Assemble the control valve hanger (15) to the side of the drum cover (9) using the two hex head screws (16) and hex nuts (14) through the holes provided in the cover.
- 2 Install the three fillister head screws (11) into the side of the drum cover (9) as shown. Leave the screws loose. They will be used later to secure the drum cover onto the drum.
- 3 Assemble the pump to the drum cover with the four bolts (13) supplied, as shown in the figure. Tighten securely.

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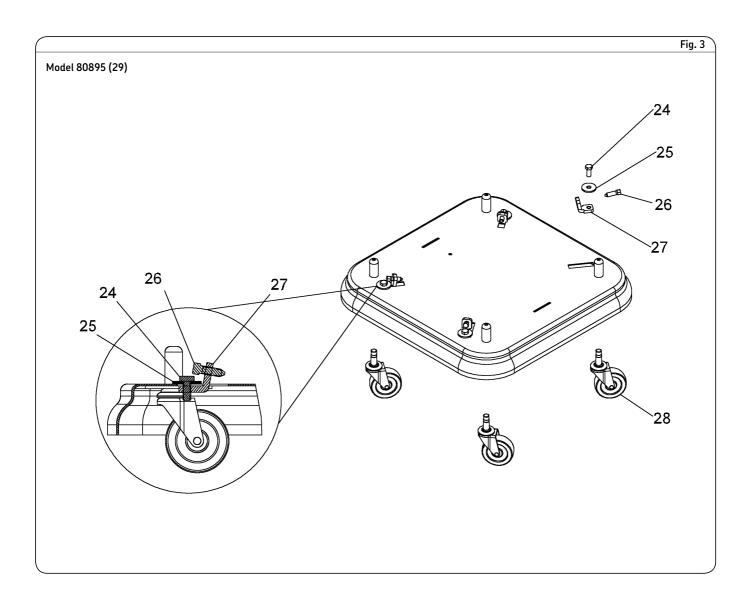
- 4 Connect straight swivel (7) to pump outlet. (Note that there are two different threads on the swivel. The ½-18 NPT pipe thread will be a course thread compared with the other thread.) Make sure to place the ½-18 NPT male end of the swivel into the ¼-18 NPT female outlet on the pump body. Tighten securely.
- 5 Connect one end of the high pressure hose (22) to the special (fine pitch) male thread on the straight swivel (7) and tighten securely.
- **6** Connect the remaining end of the high pressure hose to the special male thread on the universal swivel (**6**) and tighten securely.
- 7 Connect the 1/4-18 NPT male thread on the universal swivel (6) to the control valve (1) and tighten securely.
- 8 Install the grease coupling and extension tube into the outlet end of the control valve (1) and tighten securely.
- 9 Install the air nipple (4) into the air inlet of the pump and tighten securely.
- **10** Attach the air coupler (**5**) onto a suitable <sup>3</sup>/<sub>8</sub> in. inner diameter (minimum) air hose and tighten securely. Do not apply air pressure at this time.
- **11** Assemble the follower (**17**) per the instructions in **section K5**, **page 6** series.
- **12** Assemble the dolly truck (**30**) as detailed in the dolly truck assembly manual packaged with the dolly truck.
- **13** Place the drum on the truck and secure per the instructions with the dolly truck.
- 14 Place the assembled follower (17) into the open drum, on top of the lubricant, and push down on the follower until the lubricant flows slightly into the center opening of the follower.
- 15 Place the pump tube, assembled with the drum cover, into the drum by sliding the pump tube into the center hole in the follower and sliding straight into the follower. The pump tube should slide all the way into the drum until the drum cover gasket rests on the top edge of the drum. The follower (17) will remain on top of the grease, and will move down with the lubricant as it is consumed, wiping the pail walls clean, and moving the lubricant towards the pump inlet.
- 16 Secure the drum cover to the drum with the three fillister head screws (11) by tightening until the screws are snug against the side of the drum.

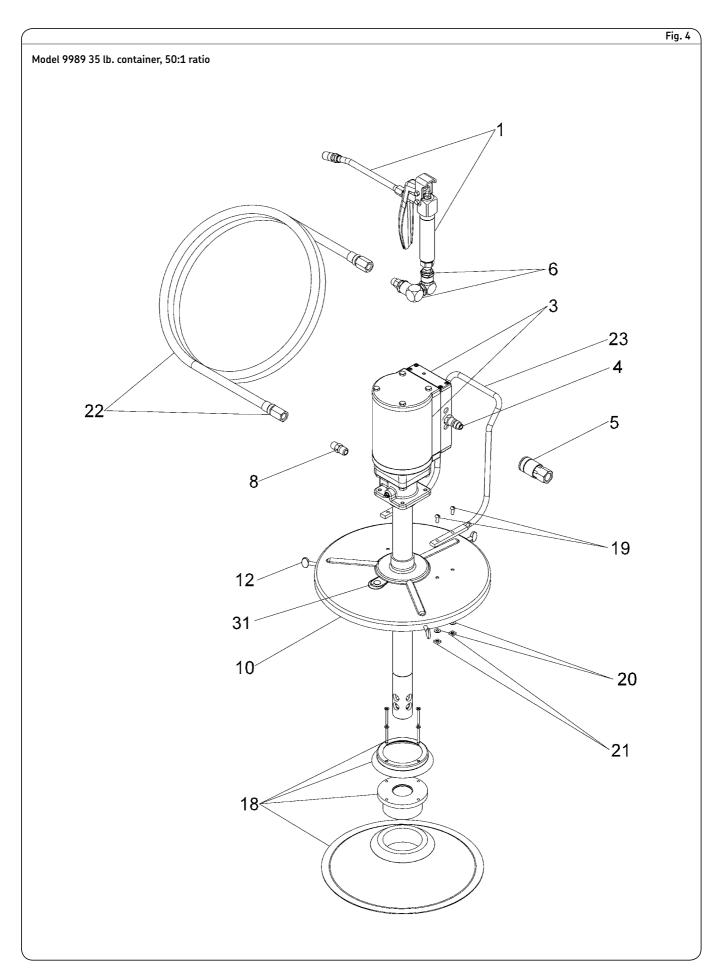
17 Place the control valve grease coupler through the control valve hanger (15) on the side of the drum cover for convenient storage. The hose may be coiled around the drum as desired.

#### Model 9989

- Assemble the pail handle (23) to the pail cover (10) using four #10-24 x <sup>1</sup>/<sub>2</sub> in. right hand machine screws (19) mating lock washers (20), and nuts (21). Assemble as shown in fig. 4, page 7. Tighten securely.
- 2 Insert snap button (31) into hole in cover opposite handle.
- 3 Insert three thumb screws (12) loosely into pail cover, as shown in fig. 4, page 7.
- 4 Assemble pump to pail cover by sliding the pump tube through the bushing on the pail cover.
- 5 Slide the cover up to the pump outlet casting as far as it will go. Note that the pump is not firmly attached to the cover, but is allowed to pivot and float inside the cover
- 6 Note that hose adapter (8) has two different threads, one finer than the other. Install the fine thread end of the adapter into one end of the high pressure hose (22) and tighten securely.
- 7 Install the course thread, 1/4-18 NPT, of the adapter (8) into the outlet of the pump and tighten securely.
- 8 The universal swivel (6) will have a similar fine thread on one end as the adapter above. Assemble the fine thread into the female opening on the opposite end of the hose (22) and tighten securely.
- 9 Assemble the control valve per the instructions in section F3, page 2 series.
- **10** Attach the <sup>1</sup>/<sub>4</sub>-18 NPT male (course thread) into the control valve (**1**) and tighten securely.
- **11** Attach the air nipple (4) to the air inlet of the pump (3).
- 12 Attach the air coupler (5) to a <sup>3</sup>/<sub>8</sub> in. inner diameter minimum air hose. Do not apply air to the pump at this time.
- 13 Assemble the follower (18) per the instructions in section K5, page 6 series. Place the assembled follower (18) into the open pail, on top of the lubricant, and push down on the follower until the lubricant flows slightly into the center opening of the follower.

- 14 Place the pump and pail cover over the pail, sliding the pump tube into the opening in the center of the follower (18).
- 15 Secure the pail cover to the pail using the three thumb screws (12) provided. The pump should slide into the follower until it either rests on the bottom of the pail or the pump outlet casting rests on the top of the cover bushing. The pump will be free to rotate within the pail cover. The follower (18) will remain on top of the lubricant in the pail, and will move down with the lubricant as it is consumed, wiping the pail walls clean, and moving the lubricant towards the pump inlet.
- 16 Follow the priming instructions as detailed in the pump operation manual
   (→ section A5, page 83 series) supplied with the pump.





## Purging and priming the pump

When operating the pump for the first time, or after changing lubricant containers, see the instructions below.

- **1** Make sure there is sufficient lubricant in the drum or pail.
- **2** Make sure that all hose and fitting connections are tight and leak proof.
- 3 The use of an air filter, regulator, and lubricator (F.R.L.) with these pumps is highly recommended to control the pressure of the lubricant and protect the pumping system.
- 4 See the priming instructions in the pump operation manual (→section A5, page 83 series).
- **5** Apply enough air pressure to the pump so that it operates slowly.
- 6 With lubricant in the pail, and the pump operating slowly, direct the control valve grease coupler into a suitable container, and open the control valve. Hold the valve open until grease, free of air, appears in the container.
- 7 Close the control valve. If the pump is properly primed, the pump should stall (stop operating). If the pump continues to run, repeat the above step until it does stall.
- 8 After pump is fully primed, increase air pressure to 100 psi (7 bar). As the pressure is increased, the pump will cycle several times as the lubricant pressure increases and the hose expands. This is normal. Check for leaks at all lubricant connections. Be ready to disconnect the air from the pump if a leak appears. Keep clear of all connections and hoses until pressure tightness is assured. Once maximum pressure is reached, the pump should stop cycling.
- 9 Should a leak occur, disconnect the air supply to the pump, relieve all pressure from the pump, hoses, and control valve, and correct the problem. Do not attempt to stop a leak with pressure on the system.

## Operation

Inspect the entire lubrication pump and attached hoses and valves before every use. Do not operate this lubrication pump if any damage appears to the pump or associated components. Remove a damaged pump from operation until proper repairs are made. Contact a factory authorized service center for parts or repairs.

#### **A** WARNING

Perform pressure relief procedure after operating the pump. Failure to comply may result in personal injury.

- Adjust the air pressure to the pump for an operating pressure required for the job at hand. Too much pressure can damage the pump, associated components, or cause damage to grease seals and other components on the machinery that is to be lubricated.
- 2 Make sure that the pump is fully primed and free of air. Do not operate a pump if the lubricant container is empty or low on lubricant. A pump that runs out of lubricant can cause air to enter the grease system or a pump to run-away, or increase operating speed to the point where pump damage occurs. Air in the lubricant lines under high pressure can cause lubricant to be sprayed or splattered resulting in a hazardous condition.
- 3 Once primed the pump is ready for use. Adjust the air pressure to the pump for a smooth flow of grease into the bearings being serviced.
- 4 After all bearings have been serviced it is important to remove air from the pump and discharge the control valve and hoses at the end of the day. Do not leave the pump under pressure for extended periods of time.



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## Pressure Relief Procedure

Always perform this procedure before servicing or when the pump is to be out of service for a period of time.

- Disconnect the air supply from the pump
- Point the dispensing valve away from yourself and others and direct into a suitable container.
- Open the dispensing valve into the container and hold it open until the flow of lubricant stops and pressure is relieved.

## Lubrication and Care of the Pump

In order to prevent dirt and moisture from entering the pumps air motor, an air line filter, regulator, and lubricator are highly recommended for use with these pumps. This also will provide automatic air motor lubrication.

If an air lubricator is not used the following procedure must be performed daily.

- Disconnect the air coupler from the pump air inlet.
- Fill the coupler with SAE 10 motor oil and reconnect the coupler to the air nipple.

To prevent corrosion, never leave water or moisture in the pump's air motor. This will cause corrosion and shorten the life of the air motor.

Prevent damage to the hose and control valve by using the control valve hanger, or coiling the hose around the pump when not in use. Never kink the high pressure hose or drive over the hose, as damage may weaken the hose with the possibility of bursting. A burst high pressure hose is a very dangerous occurrence, which can result in severe injuries and or property damage.



| Service parts                            |   |   |                          |                              |  |  |  |  |
|--|---|---|--------------------------|------------------------------|--|--|--|--|
| No.                                      | Description   | Part no.  | Quantity<br>9917         | y per model<br>9917-57       | 9946P  | 9989   | Refer to separate instructions   |  |
| No. ———————————————————————————————————— | Control valve, high pressure 50:1 basic pump, 120 lb. (54 kg) 50:1 basic pump, 35 lb. (16 kg) Air niple, 3/8 NPT male Air coupler, 3/8 NPT female Universal swivel Straight swivel Hose adapter Drum cover, 120 lb. (54 kg) (includes 11) Pail cover 35 lb. (16 kg) Fillister head screw, 5/16-18 x 1 1/4 in. Thumb screw, 1/4-20 x 3/4 in. Hex head screw SEMS, 1/4 - 20 x 9/16 in. Lock nut 1/4 - 20 Control valve hanger Hex head screw, 1/4 - 20 x 3/8 in. Universal follower, 120 lb. (54 kg) Universal follower, 35 lb. (116 kg) Right hand machine screw, 10-24 x 1/2 in. #10 lockwasher #10-24 nut High pressure hose, 1/4 x 84 in. (6 mm x 213 cm) Handle, pail Hex head screw, 5/16 x 3/4 in. (8 x 19 mm) 5/16 in. (8 mm) flat washer | Part no.  740 V350120000 V350035000 5875 5874 81387 82399 10198 46007 275370  66130 50060 50754 45761 50113 847780 84775  75084 63088 | 9917                     |                              | 9946P  1 1 NA 1 1 1 NA 1 NA 1 NA 1 NA NA NA NA NA NA NA NA | 9989  1 NA 1 1 1 1 1 NA 1 NA N | Refer to separate instructions  Sec F3, page 2 series Sec A5, page 82 series Sec A5, page 82 series  Sec F1, page 2 series Sec F1, page 2 series Sec K5, page 6 series Sec K5, page 6 series |  |
| 26<br>27<br>28<br>29<br>30<br>31*        | 5/16 x 1 in. (8 x 25 mm) square head set screw<br>Clamp, drum<br>Caster, 2 <sup>1</sup> / <sub>2</sub> in. (64 mm) swivel<br>Truck assembly<br>Dolly truck assembly<br>Snap button  | 11123<br>360266<br>66060<br>80895<br>674<br>66057   | 4<br>4<br>1<br>OPT<br>NA | NA<br>NA<br>OPT<br>OPT<br>NA | NA<br>NA<br>NA<br>1<br>NA                                  | NA<br>NA<br>NA<br>NA<br>1  | Sec B3, page 24 series   |  |

\* Indicates change

NA - Not applicable to model OPT - May be used, but not supplied with model shown.

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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 s 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 warrantylimited 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 nniversal 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.

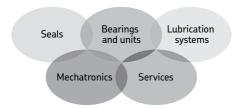
## 85623 DEF AOD (air operated diaphragm) pumps

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



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