

HP-15 High Pressure Lubricators

311841A

EN

For dispensing non-corrosive and non-abrasive oils and synthetic based lubricants. For professional use only.

Models:

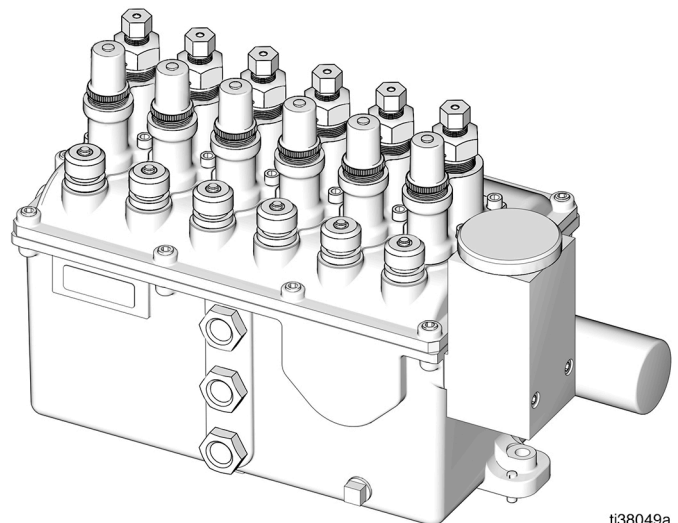
Part No.	Description	Includes
		Pumps
562918	6 Feed	
562919	6 Feed	X

18,000 psi (124.1 MPa, 1,241 bar) Maximum Working Pressure



Important Safety Instructions





Read all warnings and instructions in this manual before using the equipment. Save these instructions.



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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 or on warning labels, 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.

 <h1 style="margin: 0;">WARNING</h1>	
	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, 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.</p> <ul style="list-style-type: none"> • Do not point dispensing device at anyone or at any part of the body. • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop dispensing 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.
	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	<p>FIRE AND EXPLOSION HAZARD</p> <p>When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well-ventilated area. • Eliminate all ignition sources, such as cigarettes and portable electric lamps. • Ground all equipment in the work area. • Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline. • Do not plug or unplug power cords or turn lights on or off when flammable fumes are present. • Use only grounded hoses. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.



WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.



- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective 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.

Component Identification

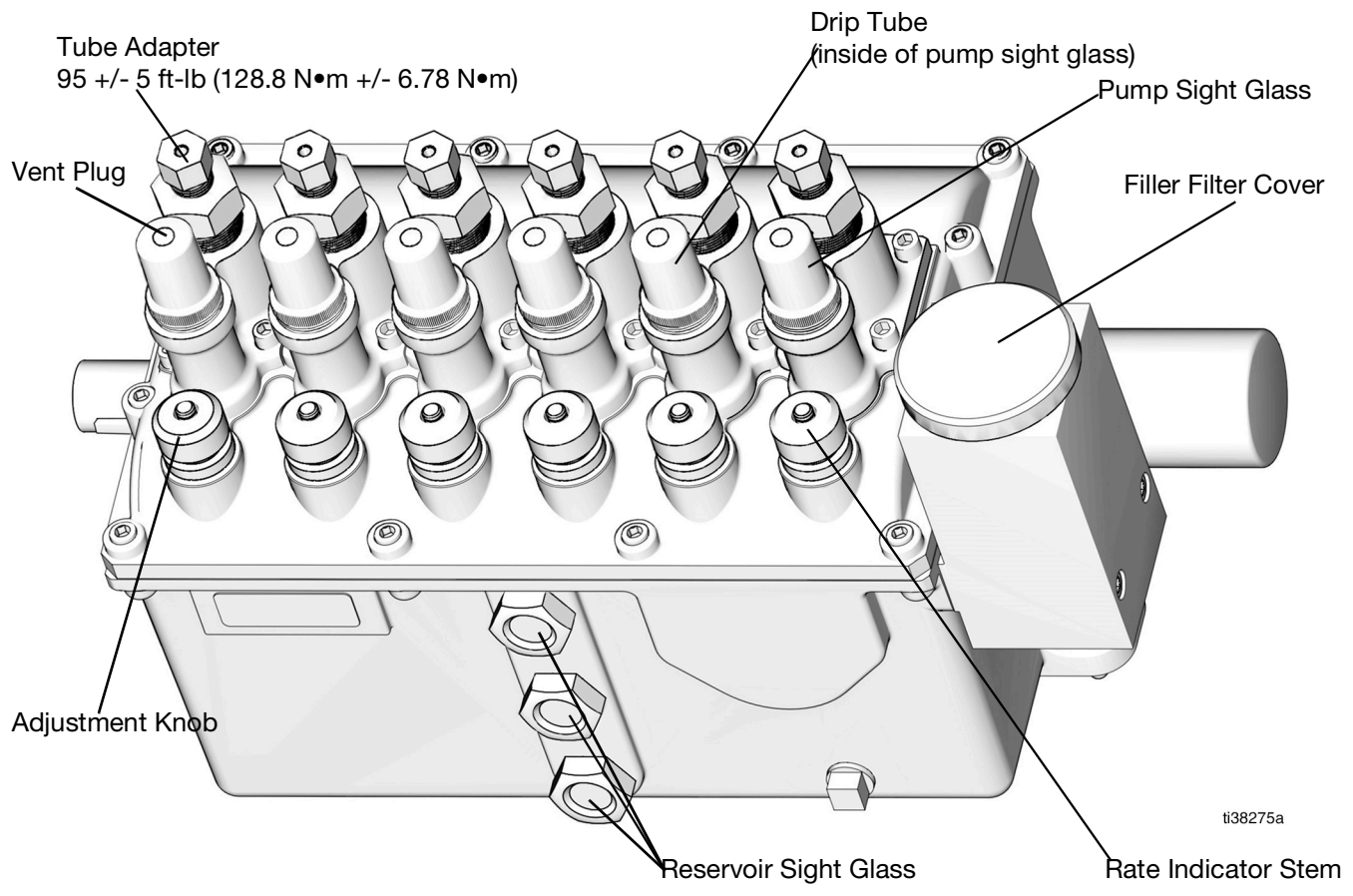


FIG. 1

Installation

Grounding



The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Verify crankshaft drive is stopped and the main power source is disconnected.
2. Open relief valve, if equipped, or slowly relieve pressure by loosening tube adapter at the pump's outlet.

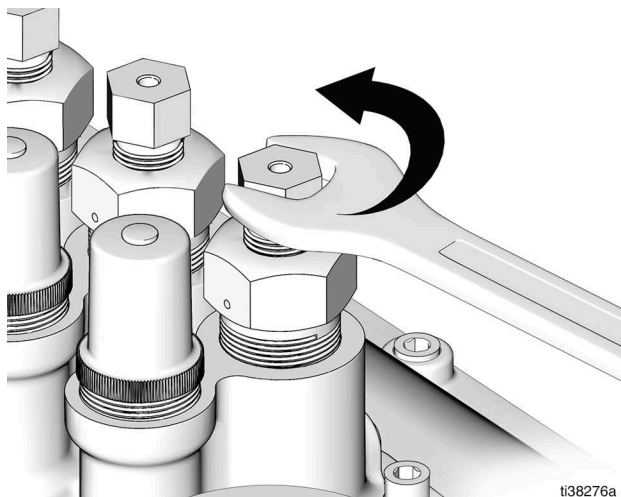


FIG. 2

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Mounting

1. Select a sturdy flat surface to mount the lubricator assembly.
2. Ensure the input shaft is properly aligned with the rotary power source.
3. Fasten the lubricator assembly to the mounting surface with two (2) 7/16 in. bolts through the end mounting lugs.

If necessary, fix lubricator orientation by drilling 1/4 in. holes in the mounting surface and inserting 1/4 in. dowel pins through the end mounting lugs.

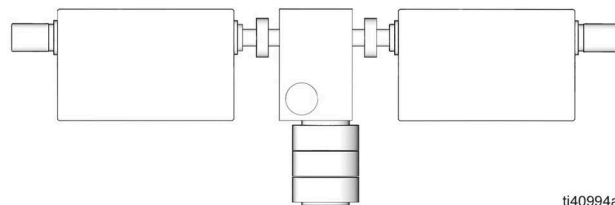
See **Dimensions**, page 16.

Drive Options



A lubricator assembly is typically driven by a rotary power source, such as an electric motor with an individual speed reduction unit with an output speed range of 3 to 36 rpm.

- A gear reduction unit with a double extension output shaft may also be used for a multiple drive arrangement (FIG. 3).



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FIG. 3

- A parallel drive system may be used through chain and sprocket devices (FIG. 4).

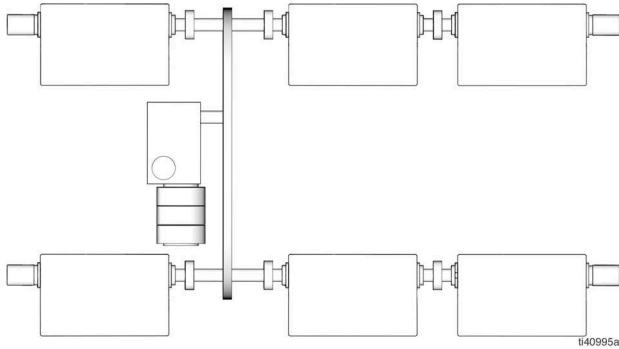


FIG. 4

- A tandem drive arrangement powered through drive shaft couplers may also be used. Note that a maximum of three high pressure lubricators can be used with this method (FIG. 5).

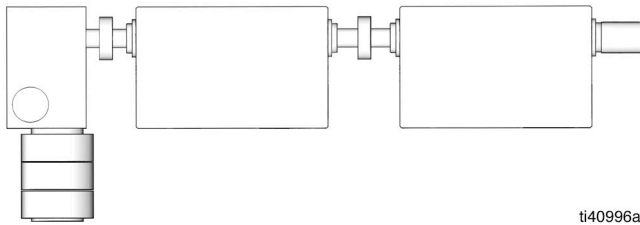


FIG. 5

NOTE: Install protective guards around all of the drive components.

System Connections

Install a high pressure check valve in the discharge line adjacent to the pumping unit in the discharge connection. When installed correctly, the pump assembly may be removed from the reservoir without any loss of lubricant in the lines.

Install a second high pressure check valve at the lubrication point to prevent line drainage and feedback of system pressure to the pump.

Operation

Fluid Level

Three sight glasses are included in the reservoir at various levels to permit observation of the fluid level.

NOTICE

To prevent loss of prime do not allow the oil level to drop below the bottom sight glass.

Remove the filler filter cover.

Completely fill the lubricator reservoir with clean, filtered lubricant until the oil level nearly covers the viewing window in the top reservoir sight glass.

- Remove the vent plugs at the top of pump sight glasses during initial filling. This allows the lubricant in the drip tube to rise to the level of the oil in the reservoir to reduce the priming required at start up.

Pump Priming

Prime the pumps if the pump sight well does not contain oil.

Pumps can be primed while the lubricator shaft is rotating:

NOTICE

The recommended speed of the box lubricator drive shaft is 3 - 36 rpm. To avoid pump damage do not exceed the maximum value of 36 rpm.

- Adjust the pump rate to the maximum setting (turning the adjustment knob on the rate indicator stem as far as possible in a clockwise direction).
- Remove the vent plug (A) on the top of the pump sight glass and fill the housing sight well with oil to 3/8 in. below the discharge of the drip tube (FIG. 6).



FIG. 6

- Replace the vent plug. Check the pump sight glass to ensure that it is properly seated against the o-ring to prevent air from leaking into the pump sight glass well.
- Readjust the pumping rate to the desired delivery.

Pump Rate

- The pump rate can be observed at the drip tube inside of the pump sight glass (number of drops per pump stroke)

The drip tube flow rate is accurate once the pressure inside of the sight well is stabilized. There is a time lag at start up, low pumping rates, and pump rate changes. Allow for sufficient time to ensure an accurate rate indication.

Pump Rate Adjustment

- Vary the pump rate by rotating the adjustment knob by hand during the pump suction stroke.
- Achieve maximum pump rate by turning the adjustment knob on the rate indicator stem clockwise as far as it can go (FIG. 7).

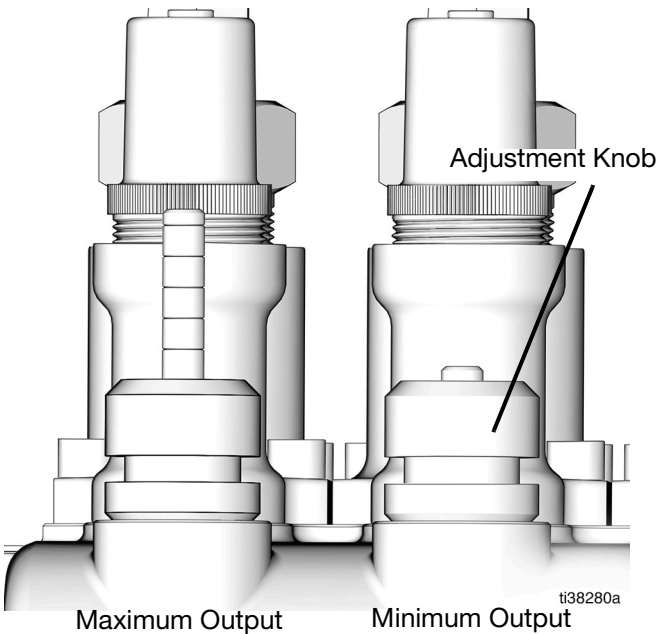


FIG. 7

- To reduce delivery, turn the adjusting knob counterclockwise.
- Minimum delivery must not go below 1/2 drop, 0.001 in³ (0.017 cm³) per stroke in order to retain the hydraulic seal between the plunger and the cylinder walls.

Maintenance

If the correct pumping rate is maintained, no servicing is required other than periodic lubricant refilling. Check the lubricator operation by observing the drip tube.

Clean the lubricator periodically to eliminate possible oil contamination.



1. Relieve pressure following the **Pressure Relief Procedure** on page 5.
2. Disconnect the discharge tubing.
3. Remove the pumping assemblies by removing the four (4) mounting screws, brush the pumps and reservoir clean, dip them in solvent, and thoroughly dry.
4. Reassemble the pump assemblies back onto the reservoir, in reverse order. Torque the four (4) mounting screws to 28-35 ft-lb (38-47.5 N•m).
5. If external leaks are observed, determine the cause (loose bolts, side plugs or defective seals) and repair as required.

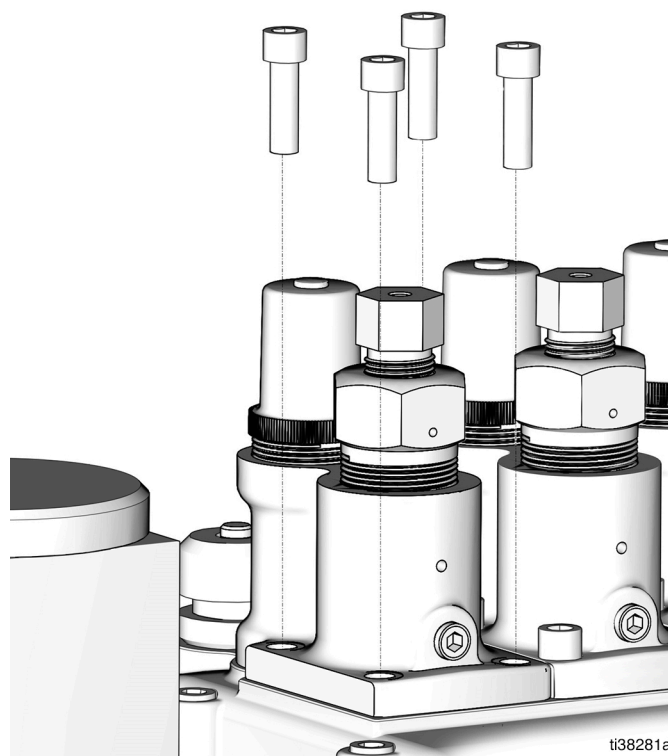


FIG. 8

Recycling and Disposal

End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Deliver remaining product to a recycling facility.

Troubleshooting

If the sight glass well pumps dry or no flow is observed, investigate and, if necessary, fix the following points:

- Check the vent plug for proper sealing. Any nicks or cracks in the rubber plug will cause air to leak into the sight glass.
- Check the shaft rotation. If the lubricator shaft is not rotating, determine the cause and repair as necessary.
- Check the oil level and viscosity. Verify that the reservoir is filled with oil.
- Check pump priming. If needed, prime the pump, see **Pump Priming** on page 7.
- Check the feed adjustment and readjust if the pumping rate is too low.
- Check the actuating linkage for proper operation. If it is defective, repair or replace any broken part.
- Check the sight glass for leakage from any crack in the sight glass, improper sight glass seating, or a defective o-ring. Repair as needed.
- Check for and remove any obstructions in the drip tube.

If none of the above identify the problem, the pump may be defective. Remove the pump according to the **Repair** procedure, page 11.

If the sight glass overfills with lubricant:

1. Remove the vent plug and allow the lubricant to decrease to the proper level. Replace the vent plug. The pump should operate normally.
2. If the sight glass continues to overfill with lubricant, check all terminal check valves for proper operation. If the valves are operating properly, remove and clean the pump assembly. Reinstall the pump in the system and check operation.
3. If the sight glass continues to overfill with lubricant the cause may be a temperature variation.
 - a. While the unit is not operating, remove the vent plug and allow the lubricant to lower to the proper level. Put the vent plug back into the assembly. The pump should now function properly. As long as the drip tube remains above the lubricant level to show the rate of pumping, the sight glass may fill with fluid without affecting the operation of the lubricator.
 - b. When the unit is operating, the sight level will vary depending on temperature. If the level falls to less than 1/4 inch above sight glass flange, add lubricant to the proper level (3/8 inch below the discharge of the drip tube) through the vent hole. If the level is too high, remove the vent plug and allow the unit to pump down before replacing the vent plug.

Repair

Pumps that require repair should be returned to the factory authorized distributor as they contain a selectively fitted cylinder and plunger.

Disassembly



1. Relieve pressure following the **Pressure Relief Procedure** on page 5.
2. Disconnect the discharge tubing.
3. Remove the pump assembly from the reservoir cover by loosening and removing the four (4) mounting screws.

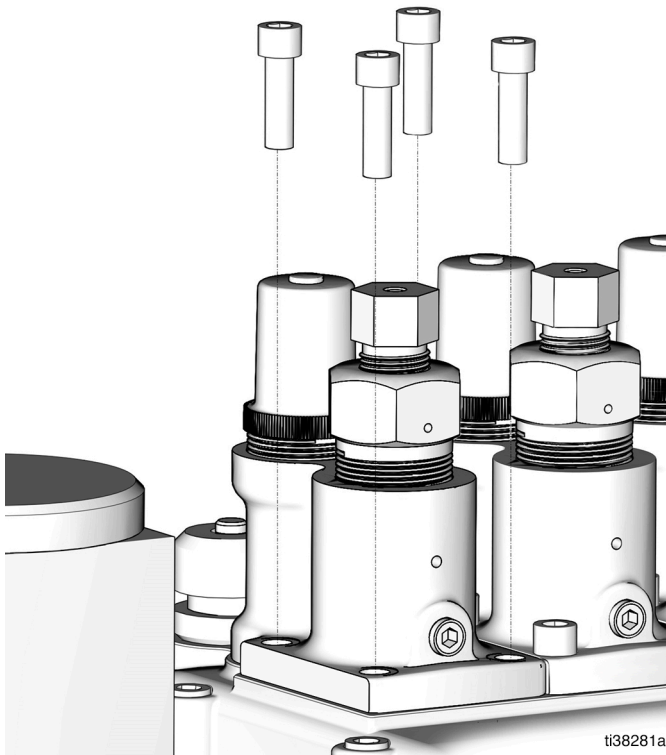
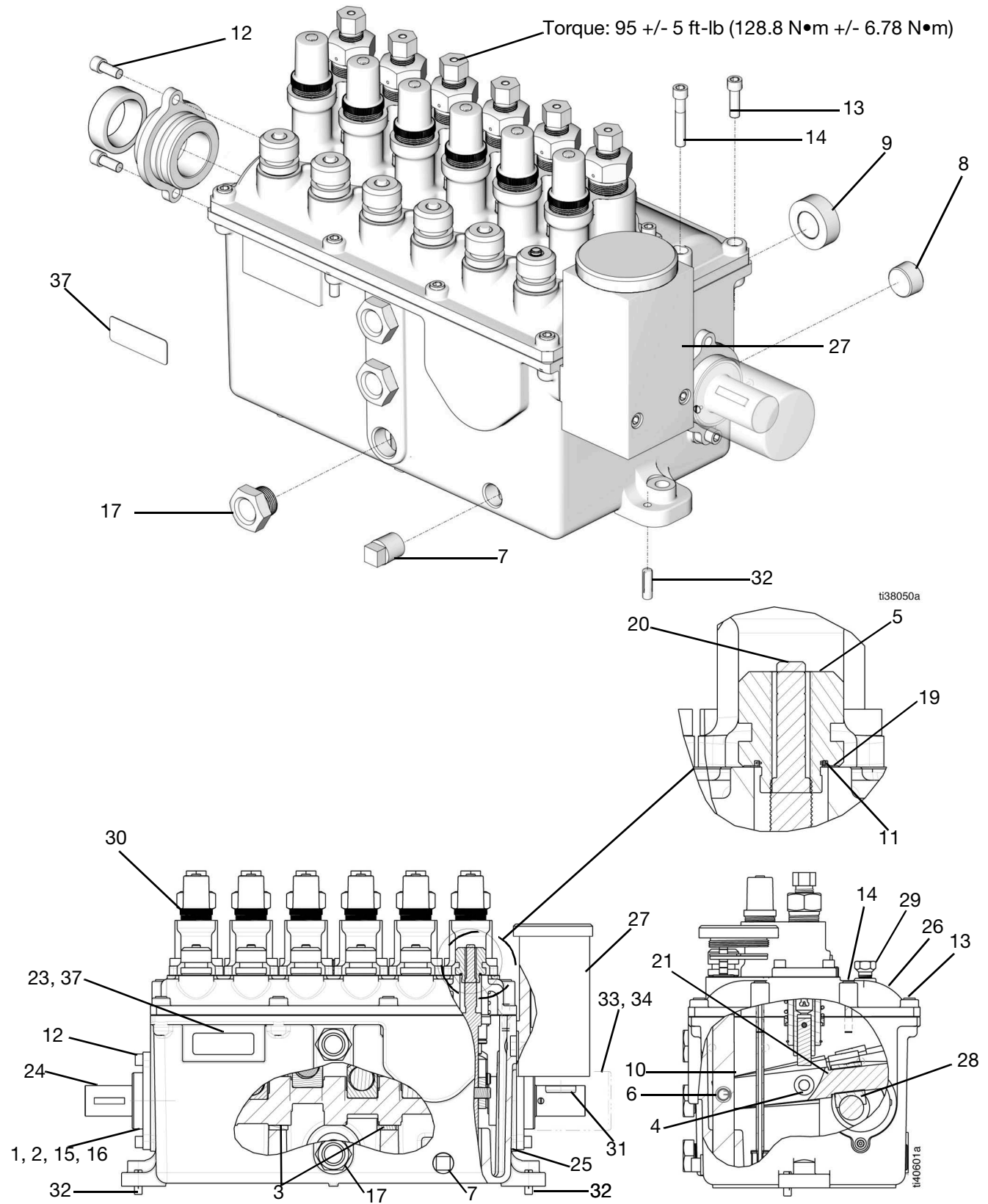


FIG. 9

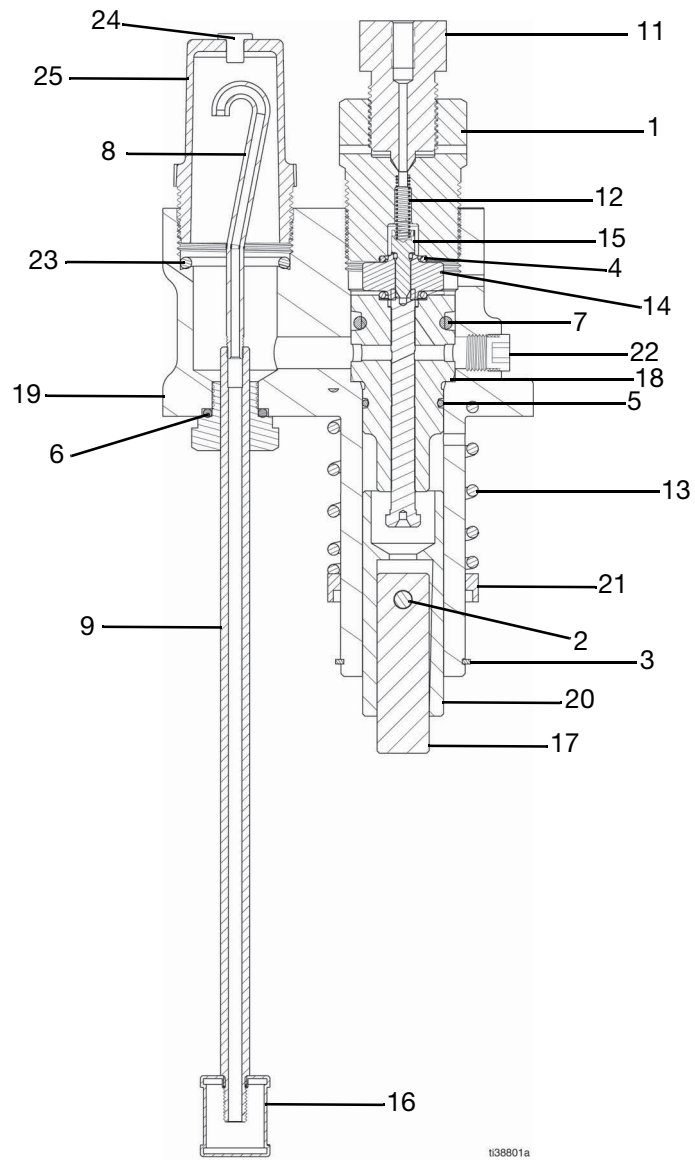
Parts



Part No./Description

Ref.	Part	Description	Qty.
1		BEARING, shaft	2
2		BEARING, bushing, 2 pieces	2
3		BEARING, bushing, 2 pieces	2
4		BEARING, roller, ID .439	6
5		NUT, feed adjustment	6
6		PIN, lever	12
7	124489	PLUG, pipe	1
8	111384	PLUG, pipe	1
9	575001	PLUG, ST 1 1/4 pipe sq soc	1
10		RING, retainer -43 basic ext	24
11	15W560	RING, retaining spiral	6
12	558673	SCREW, shcs 5/16-18 x .75	4
13	555595	SCREW, soc HD cap, 5/16	32
14	555598	SCREW, soc HD cap, 5/16	4
15		O-RING, -227 Buna-n 70 duro	2
16		SEAL, lip 1.31 ID 2.06 OD .63 W	2
17	127152	SIGHT GLASS, bullseye, 3.4 nptf	3
19		GASKET, sight feed	6
20		ROD, adj. FD	6
21		LEVER, actuating	6
23		LABEL, polyester, 2.50 x .875	1
24		SHAFT, crank HP	1
25		RESERVOIR, HP-15, painted	1
26		COVER, HP-15 res, machined, painted	1
27	563104	FILTER, filler	1
28		BLOCK, lever	6
29		BREATHING, air, 1/4 npt	1
30	562951	PUMP, assy HP 15	6
31		KEY, #21 USA 810 woodruff	2
32		PIN, .25 dia. grv type 2	2
33		SCREW, tapping, pnhd	2
34		COVER, HP shaft end	1
37		LABEL, serial	1

Parts

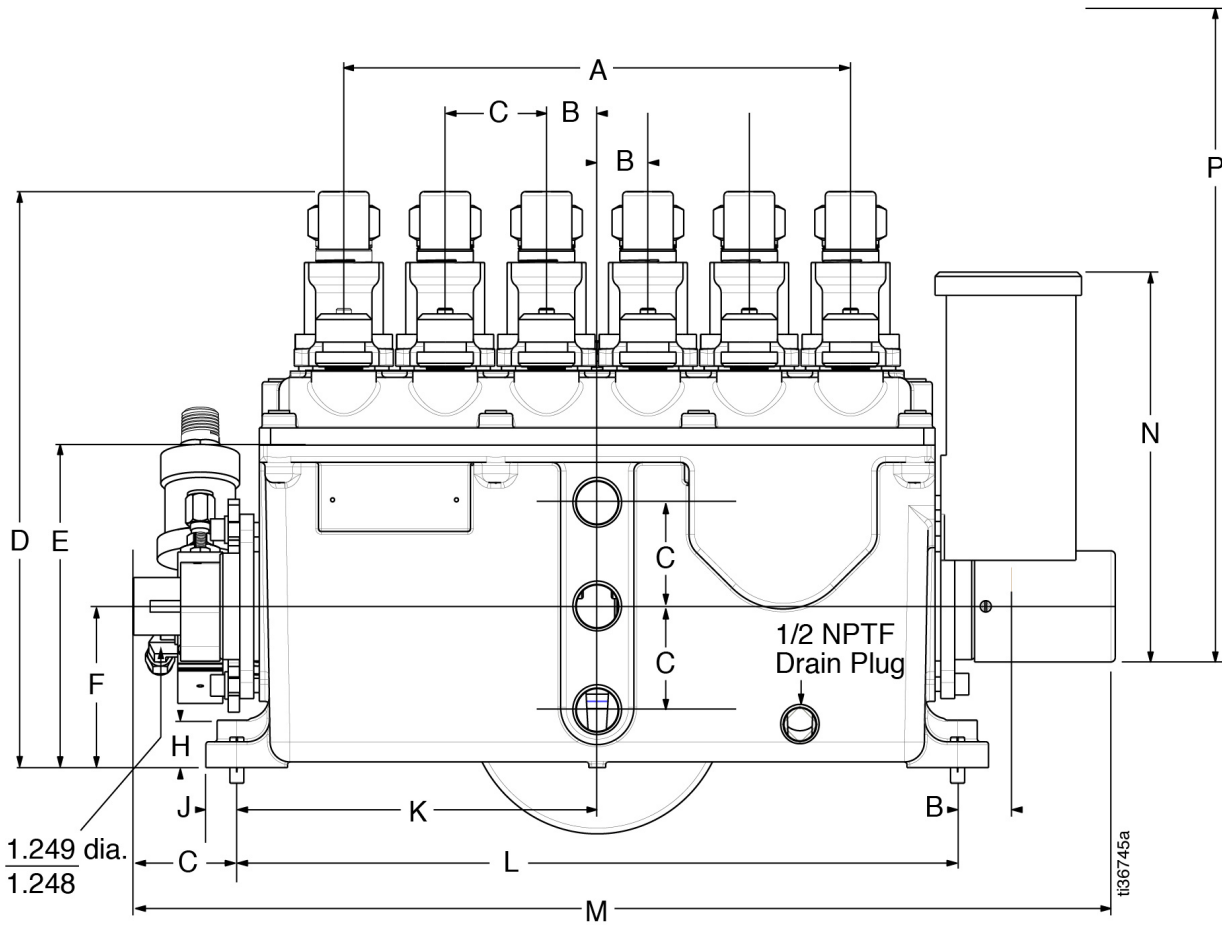


Part No./Description

Ref.	Part	Description	Qty.
1		NUT, hsg	1
2		PIN, pump, HP 15	1
3		RING, retainer -137 basic ext	1
4	556555	O-RING, -012 Viton-a 75 duro	2
5		O-RING, -018 Viton-a 75 duro	1
6		O-RING, -112 Viton-a 75 duro	1
7		O-RING, -212 Viton-a 75 duro	1
8		TUBE, drip	1
9	560235	TUBE, assy suction	1
11		ADAPTER, 3/8 x 1/4, HP	1
12		SPRING, check valve, HP pump	1
13		SPRING, plunger, HP 15	1
14		SEAT, valve	1
15		BODY, valve	1
16		STRAINER, suction	1
17		PIN, pusher	1
18	563113	CYLINDER, assy HP 15	1
19		HOUSING, pump, painted	1
20		SLEEVE, pusher	1
21		COLLAR, spr	1
22	110208	PLUG, pip, headless	1
23		O-RING, -213 Viton-a 75 duro	1
24		PLUG, rubber	1
25		SIGHT GLASS, pump, HP 15	1

Dimensions

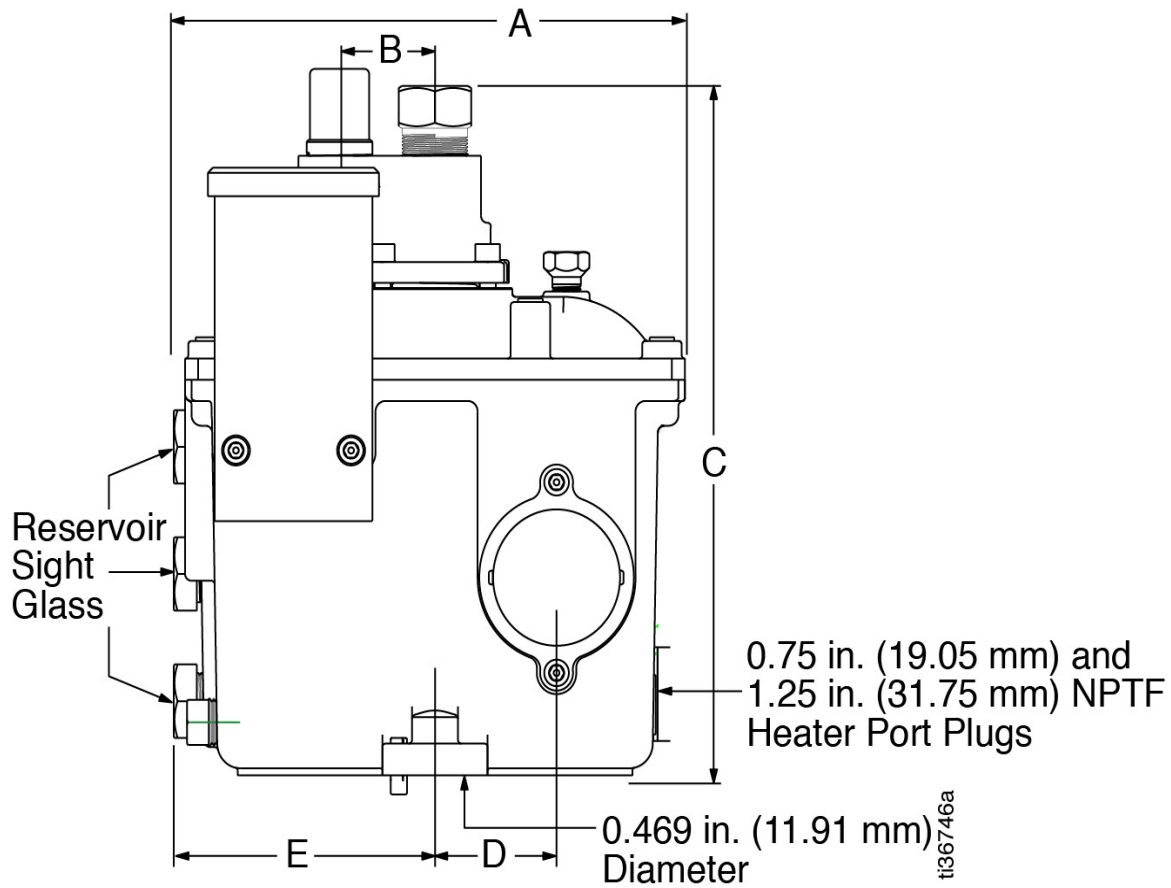
Front View



Ref.	Inches	mm
A	11.25	285.70
B	1.125	28.57
C	2.25	57.15
D	12.69	322.30
E	7.0	177.80
F	3.5	88.90
H	1.031	26.19
J	0.69	17.46
K	8.0	203.2
L	16.0	406.4
M	21.375	542.9
N	10.5	266.7
P*	21.0	533.40

*Minimum clearance for pump removal

End View



Ref.	Inches	mm
A	9.75	247.6
B	1.813	46.05
C	12.0	304.8
D	2.3125	57.74
E	5.0	127.0

Accessories

Description	Part No.
Line Check Valve Assembly, 3/8 in. O.D. Tube	564336
Discharge Check Valve Assembly, 3/8 in. Tube	564335
HP-15 Plunger and Cylinder Assembly	563113
Electric Heater, 300 Watts, 120 VAC, Hazardous Area Class 1, Groups B, C, and D	557207
Electric Heater, 300 Watts, 230 VAC, Hazardous Area Class 1, Groups B, C, and D	557208
Ren Auto Fill	556808
Sight Glass Kit	564151

Technical Specifications

HP-15 High Pressure Lubricator		
	US	Metric
Pressure and Pumping		
Maximum Operating Pressure	18,000 psi	124.1 MPa, 1,241 bar
Maximum Pumping Rate	0.008 in. ³ / stroke*	0.133 cm ³ / stroke
Minimum Pumping Rate at max. pressure	0.001 in. ³ / stroke	0.017 in. ³ / stroke
Operating Temperature	-20°F to 120°F	-29°C to 49°C
Plunger Diameter	1/4 inch	6.35 mm
Reservoir	7 quarts	6.6 liters
Material Data		
Lubricant Viscosity	100 to 5000 SUS	
Wetted Materials	Cast Iron, Alloy Steel, Bronze, Forged Steel	
Reservoir Heating (optional)	Steam or Electric	

* Approximately four (4) drops per stroke, based on SAE 30 oil.

California Proposition 65

CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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

For patent information, see www.graco.com/patents.

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:** 612-378-359

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Original instructions. This manual contains English. MM 311841

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