

# High-Flo<sup>®</sup> Lowers

311690 rev.B

*Designed for low pressure, medium volume circulation of finishing materials.*

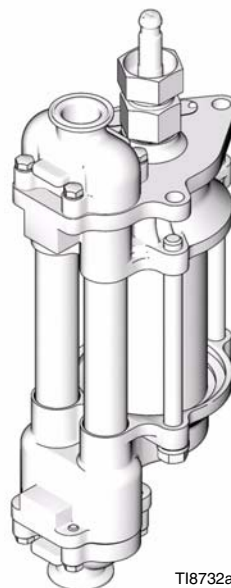


## Important Safety Instructions

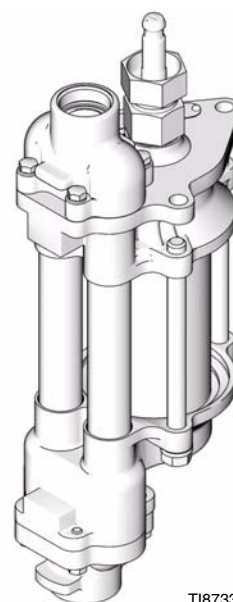
Read all warnings and instructions in your High-Flo Pump manual 311211. Save these instructions.

See page 2 for **Table of Contents** and page 3 for **List of Models** and Maximum Working Pressures.

Patent Pending



T18732a



T18733a

PROVEN QUALITY. LEADING TECHNOLOGY.

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# Models

## 1000cc Lowers

Model No.	Series	Material	Size (cc)	Maximum Pump Working Pressure psi (MPa, bar)	Rod/Cylinder Material	Connection Style	Parts Page
253033	A	SST	1000	400 (2.8, 28)	Chromex/Chrome	npt	15
253061	A	CST	1000	400 (2.8, 28)	Chromex/Nitride	npt	15
253398	A	SST	1000	400 (2.8, 28)	Max-life/Max-life	bspp	15
253423	A	SST	1000	400 (2.8, 28)	Chromex/Chrome	bspp	15
253520	A	SST	1000	400 (2.8, 28)	Chromex/Chrome	tri-clamp	15
253523	A	SST	1000	400 (2.8, 28)	Max-life/Max-life	tri-clamp	15
253568	A	SST	1000	400 (2.8, 28)	Max-life/Max-life	npt	15

## 1500cc Lowers

Model No.	Series	Material	Size (cc)	Maximum Pump Working Pressure psi (MPa, bar)	Rod/Cylinder Material	Connection Style	Parts Page
253034	A	SST	1500	460 (3.2, 32)	Chromex/Chrome	npt	16
253062	A	CST	1500	460 (3.2, 32)	Chromex/Nitride	npt	16
253085	A	SST	1500	460 (3.2, 32)	Chromex/Chrome	bspp	16
253397	A	SST	1500	460 (3.2, 32)	Max-life/Max-life	bspp	16
253521	A	SST	1500	460 (3.2, 32)	Chromex/Chrome	tri-clamp	16
253524	A	SST	1500	460 (3.2, 32)	Max-life/Max-life	tri-clamp	16
253569	A	SST	1500	460 (3.2, 32)	Max-life/Max-life	npt	16





## 2000cc Lowers





Model No.	Series	Material	Size (cc)	Maximum Pump Working Pressure psi (MPa, bar)	Rod/Cylinder Material	Connection Style	Parts Page
253035	A	SST	2000	340 (2.3, 23)	Chromex/Chrome	npt	17
253063	A	CST	2000	340 (2.3, 23)	Chromex/Nitride	npt	17
253086	A	SST	2000	340 (2.3, 23)	Chromex/Chrome	bspp	17
253396	A	SST	2000	340 (2.3, 23)	Max-life/Max-life	bspp	17
253522	A	SST	2000	340 (2.3, 23)	Chromex/Chrome	tri-clamp	17
253525	A	SST	2000	340 (2.3, 23)	Max-life/Max-life	tri-clamp	17
253570	A	SST	2000	340 (2.3, 23)	Max-life/Max-life	npt	17

**Wetted Parts:** Carbon Steel, Stainless Steel, Leather,  
Ultra High Molecular Weight Polyethylene (UHMWPE),  
Carbide

# 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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

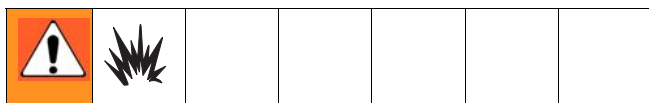
 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>

 <b>WARNING</b>	
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in this manual. Disconnect power or air supply.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> <li>• Always wear impervious gloves when spraying or cleaning equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear</li> <li>• Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>• Gloves</li> <li>• Hearing protection</li> </ul>

# Repair

- To service the pump assembly, see manual 311211.
- To service the air motor, see manual 311238.
- To service the hydraulic motor, see manual 308330.

## Grounding



The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

**Pump:** Use the ground screw (Z) and lockwasher on the motor to attach ground wire 244524 (Y). Tighten the screw securely. Connect the other end of the ground wire to a true earth ground. See FIG. 1.

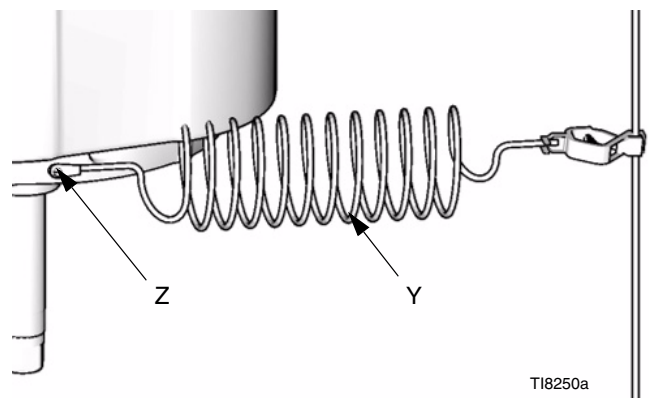


FIG. 1

**Air and fluid hoses:** use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check the electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace hose immediately.

**Air compressor:** follow manufacturer's recommendations.

**Hydraulic power supply:** follow manufacturer's recommendations.

**Surge tank:** use a ground wire and clamp.

**Spray gun:** ground through a connection to a properly grounded fluid hose and pump.

**Fluid supply container:** follow local code.

**Object being sprayed:** follow local code.

**Solvent pails used when flushing:** follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

**To maintain grounding continuity when flushing or relieving pressure:** hold metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.

## Pressure Relief Procedure



1. Engage trigger lock.
2. *Air-Powered Pumps only:* Close the bleed-type master air valve.  
  
*Hydraulic-Powered Pumps only:* Close the hydraulic supply line valve first, then the return line valve.
3. Disengage the trigger lock.
4. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the trigger lock.
6. Open all fluid drain valves in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to spray again.
7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip


guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

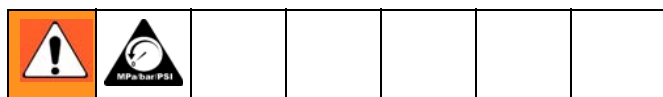
### CAUTION

*Hydraulic-Powered Pumps only:* When shutting down the hydraulic system, always shut off the hydraulic supply line shutoff valve first, and then the return line shutoff valve to prevent overpressurizing the motor or its seals. When starting the hydraulic system, open the return line shutoff valve first.

## Disconnect the Lower


To service the lower, follow the procedure on this page, and disassemble the pump as described in manual 311690. To disconnect pump from an electric circulation assembly, EPXXXX, see manual 311238.

 In stand or wall-mounted installations, you do not have to remove the entire pump from its mounting.



1. Relieve the pressure, see Pressure Relief Procedure page 6.
2. Disconnect the hoses from the lower and plug the ends to prevent fluid contamination.
3. Loosen the coupling nut (K) and remove the collars (G). Remove the coupling nut from the piston rod (H). Unscrew the locknuts (B) from the tie rods (C). Pull the lower (D) off the motor (E). See FIG. 2 and FIG. 3.

## Reconnect the Lower

 If the coupling rod (F) and tie rods (C) have been disassembled from the motor, see Reassemble the Coupling Rod and Tie Rods to the Motor on page 8.

1. Assemble the coupling nut (K) to the piston rod (H).
2. Orient the lower (D) to the motor (E). Position the lower on the tie rods (C). Lubricate the threads of the tie rods. Screw the tie rod locknuts (B) onto the tie rods. Tighten the locknuts and torque to 50-55 ft-lb (68-75 N•m).

3. Insert the collars (G) into the coupling nut (K). Tighten the coupling nut onto the piston rod (H) and torque to 145-150 ft-lb (197-203 N•m).
4. Flush and test the pump before reinstalling it in the system. Connect hoses and flush the pump. While it is pressurized, check for smooth operation and leaks. Adjust or repair as necessary before reinstalling in the system. Reconnect the pump ground wire before operating.

### NXT Pump Shown

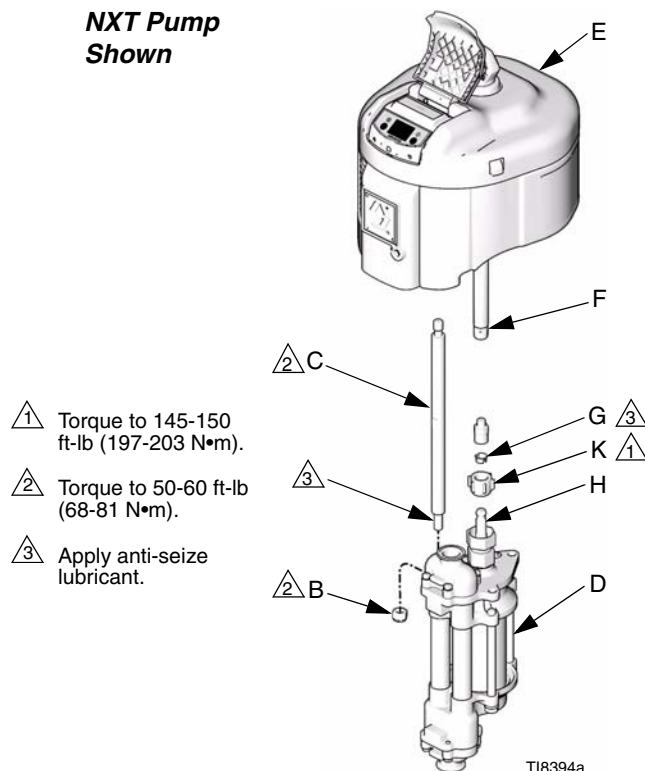
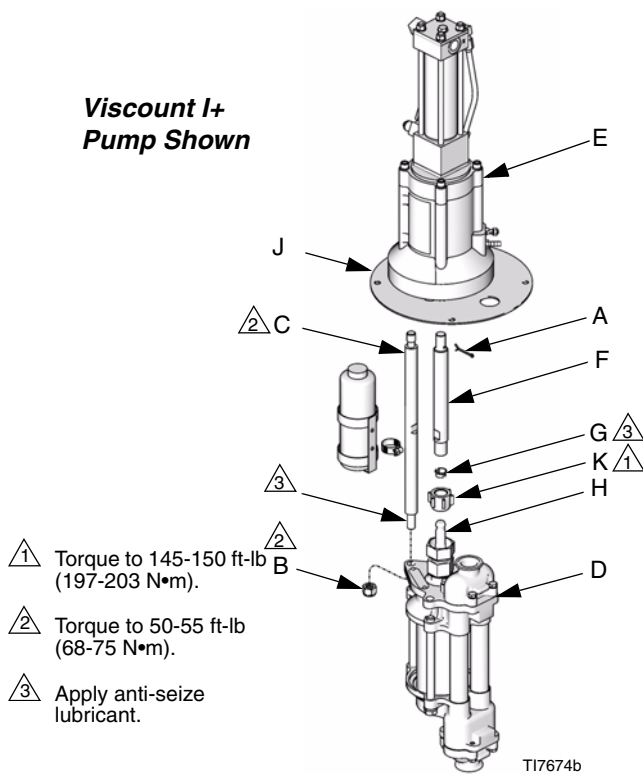


FIG. 2

**Viscount I+  
Pump Shown****FIG. 3****Reassemble the Coupling Rod and Tie Rods to the Motor**

Use this procedure only if the coupling rod (F) and tie rods (C) have been disassembled from the motor, to ensure proper alignment of the motor shaft to the piston rod.

1. Loosen, but do not remove, the screws holding the adapter plate (J) to the motor (E) on Viscount I+ pumps. See FIG. 3.
2. Screw the tie rods (C) into the adapter plate (J) and torque to 50-55 ft-lb (68-75 N•m). On Viscount I+ pumps, the tie rods will engage threaded holes in the base of the motor.
3. Fill the cavity in the bottom of the motor shaft with grease. Screw the coupling rod (F) into the motor shaft until the pin holes align. On Viscount I+ pumps, install the pin (A) in the first hole from the end of the coupling.
4. Align the lower (D) with the tie rods (C) and loosely install the tie rod locknuts (B).

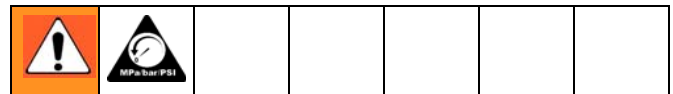
5. Insert the collars (G) and screw the coupling nut (K) onto the coupling rod (F) and torque to 145-150 ft-lb (197-203 N•m).
6. Torque the screws holding the adapter plate (J) to the motor (E) to 15-17 ft-lb (20-23 N•m). Torque the tie rod locknuts (B) to 50-55 ft-lb (68-75 N•m).

**Replace the Throat Packings Without Disconnecting the Lower**

To replace the throat packings as part of a complete service of the lower, see page 9.

Throat packing kits are available. See page 19 to order. Parts supplied in the throat packing kit are marked with a symbol, for example (19†). For the best results, use all the parts in the kit.

1. Flush the pump, if possible.
2. Stop the pump at the middle of its stroke.
3. Shut off the air or hydraulic supply.
4. Unscrew the coupling nut (K) from the piston rod (H). Allow the nut and collars (G) to rest on the piston rod. See FIG. 2.
5. Cycle the pump slowly to the bottom of its stroke.



6. Relieve the pressure, see Pressure Relief Procedure, page 6.
7. Lift the motor shaft and remove the coupling nut (K) and collars (G). See FIG. 2 and FIG. 3.
8. Loosen the packing nut (21). See FIG. 8.
- Keep packing nut installed, but loose.
9. Loosen and remove the throat cartridge (35). Remove the PTFE o-ring (36). See FIG. 8.
10. Remove the glands (19, 26) and packings (20, 25).



11. Lubricate the throat packings and glands. Install one male gland (19†), then five v-packings with the lips facing down: one UHMWPE (20†), one leather (25†), UHMWPE, leather, UHMWPE. Install the female gland (26†). Install three v-packings with the lips facing up: UHMWPE, leather, UHMWPE. Install the other male gland (19†). Install the packing nut (21) finger-tight. See FIG. 8.



Inspect the surface of the piston rod (17). If it is scratched, replace the piston rod.

12. Install the o-ring (36†) on the throat cartridge (35). Apply lubricant to the throat cartridge threads then screw the cartridge into the upper pump housing (1). Torque the throat cartridge to 100 ft-lb (135 N•m).
  13. Tighten the packing nut (21) firmly and then turn the nut another 1/4 turn. If you have a torque wrench, tighten the packing nut to 30 ft-lb (40 N•m), then re-tighten to 15-20 ft-lb (20-27 N•m).
  14. Screw the coupling nut (K) and collars (G) onto the piston rod (H). Torque to 145-150 ft-lb (197-203 N•m). See FIG. 2.
  15. On Viscount I+ pumps, reinstall the pin (A). If necessary, reconnect the hydraulic supply and move the pump to the middle of its stroke. Install the pin in the first hole from the end of the coupling.
4. Remove the four capscrews (9) and washers (8) from around the outlet manifold (22).
  5. Remove the outlet manifold (22), balls (23), seats (24), and gaskets (7).
  6. Remove the three cylinder bolts (13) and lockwashers (14). Lift off the outlet housing (16), along with the fluid tubes (3), cylinder (1), and piston assembly (17, 10, 11, 12, 39).
  7. Remove the throat cartridge (35) and o-ring (36).
  8. Remove the glands (19, 26) and packings (20, 25).
  9. Remove the tubes (3) and cylinder (1) from the inlet housing (15). Pull the piston assembly out of the cylinder.
  10. Remove the inlet manifold (18) from the vise.
  11. Remove the four capscrews (9) and washers (8) from the inlet manifold (18). Use a flatblade screwdriver inserted between the inlet housing (15) and the inlet manifold (18) to separate them.



One intake seat (6) includes a pressure relief valve (V). This seat must be located exactly where shown (the left side as viewed in FIG. 7). Use the text cast into the inlet housing as a guide.

12. Remove the balls (5), intake seats (6 and 34), and gaskets (7).
13. Inspect the pressure relief valve in the seat (6) to make sure it is not clogged. Press down on the valve's ball to see if the ball and the spring are free to move. See FIG. 4.

## Repair Kits

Pump seal kits are available for each pump size. Throat packing kits are also available. See page 18 to order.

Parts supplied in the pump seal kit are marked with one asterisk in the text and drawings, for example (2\*). Parts supplied in the throat packing kit are marked with a symbol, for example (19†). For the best results, use all the parts in the kit.

## Lower Disassembly

1. Remove the pump from the motor as described on page 6. See also FIG. 7.
2. Secure the inlet manifold (18) in a vise.
3. Loosen, but do not remove, the packing nut (21) and cartridge (35). See FIG. 7.

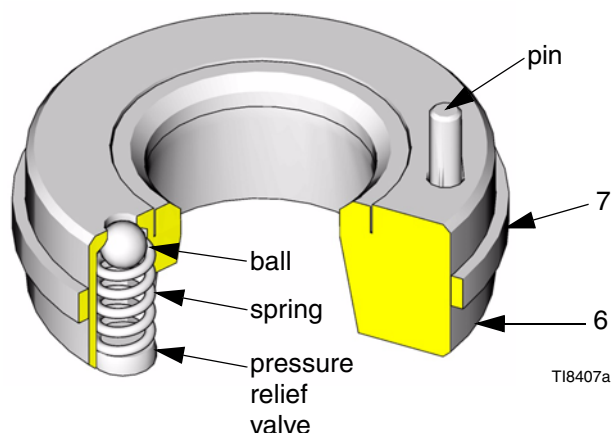


FIG. 4

**CAUTION**

If the pressure relief valve in the seat (6) is clogged or filled with material, soak the seat in a compatible solvent. Make sure all material residue is cleaned from the ball and seat area.


If the relief valve cannot be thoroughly cleaned so that the ball and spring are free to move, replace the seat (6).

14. Place the flats of the piston nut (12) in a vise. Unscrew the rod (17) from the nut and spacer. Disassemble the piston (10) and remove the seal (11).



## Clean and Inspect Parts

Clean all parts in a compatible solvent. Inspect all parts for wear or damage. If you are using a repair kit, use all the new parts in the kit, discarding the old ones they replace. Replace any other parts as needed. Worn or damaged parts may cause the pump to perform poorly or cause premature wear of the new seals and packings.

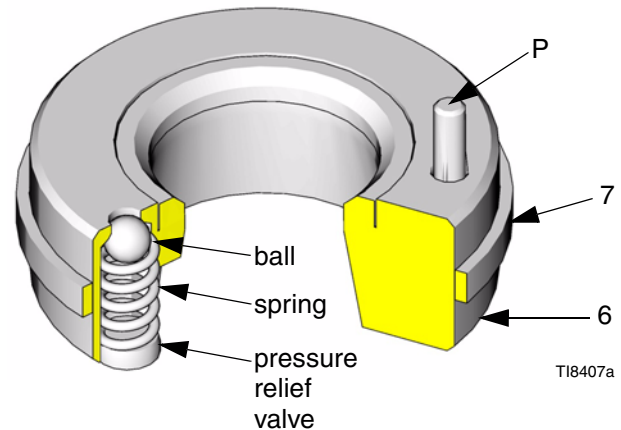
## Lower Reassembly

 When thread sealant is specified, use low strength (blue) Loctite®.

1. Place the halves of the piston (10) around the packing (11) and snap them together. See FIG. 8.
2. Apply thread sealant to the piston rod (17) threads. Screw the rod through the piston, packing, and spacer and into the piston nut (12). Torque the nut to 70-75 ft-lb (95-102 N•m).
3. With the lower pump housing (11) turned upside down, install the balls (5) and the gaskets (7\*).


						
<b>COMPONENT RUPTURE HAZARD</b> The relief valve seat (6) must be installed at the fluid intake, as shown in FIG. 8. The relief valve reduces the risk of pump overpressurization. The seat cannot relieve pressure if installed on the other side of the inlet housing.						

4. Install the relief valve intake seat (6) in the left side of the lower housing (11), as viewed in FIG. 8. (Text cast into the lower housing identifies the correct location for the relief valve seat.) The pin (P) on the seat must point up into the housing. The pin limits the positioning of the seat, ensuring that the vent hole (V) is not blocked by part of the housing. See FIG. 5.




**FIG. 5**

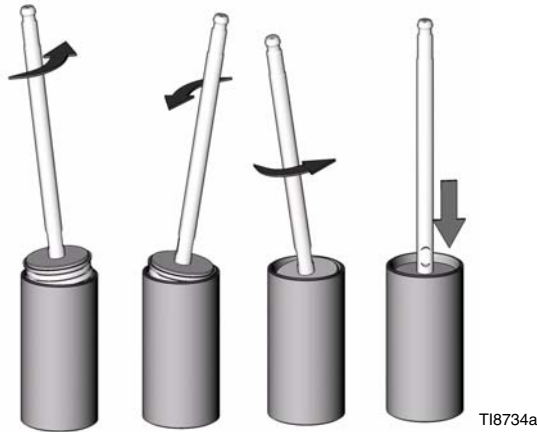
5. Install the inlet seat without a relief valve (34) in the right side of the inlet housing (15).

 The seats (6 and 34) are not reversible; the chamfered side must face the ball.


6. Place the inlet manifold (18) on the inlet housing (15). Install the lockwashers (8) and capscrews (9). Torque to 25-30 ft-lb (34-40 N•m). See FIG. 8.
7. Place the intake manifold (18) in a vise. Place one o-ring (2\*) in each side of the inlet housing (15), where the tubes (3) sit. Place o-rings (2\*) in the grooves at each end of the tubes. Place a gasket (4) in both the inlet and outlet housing (15 and 16). Position the tubes and cylinder (1) in the lower housing.

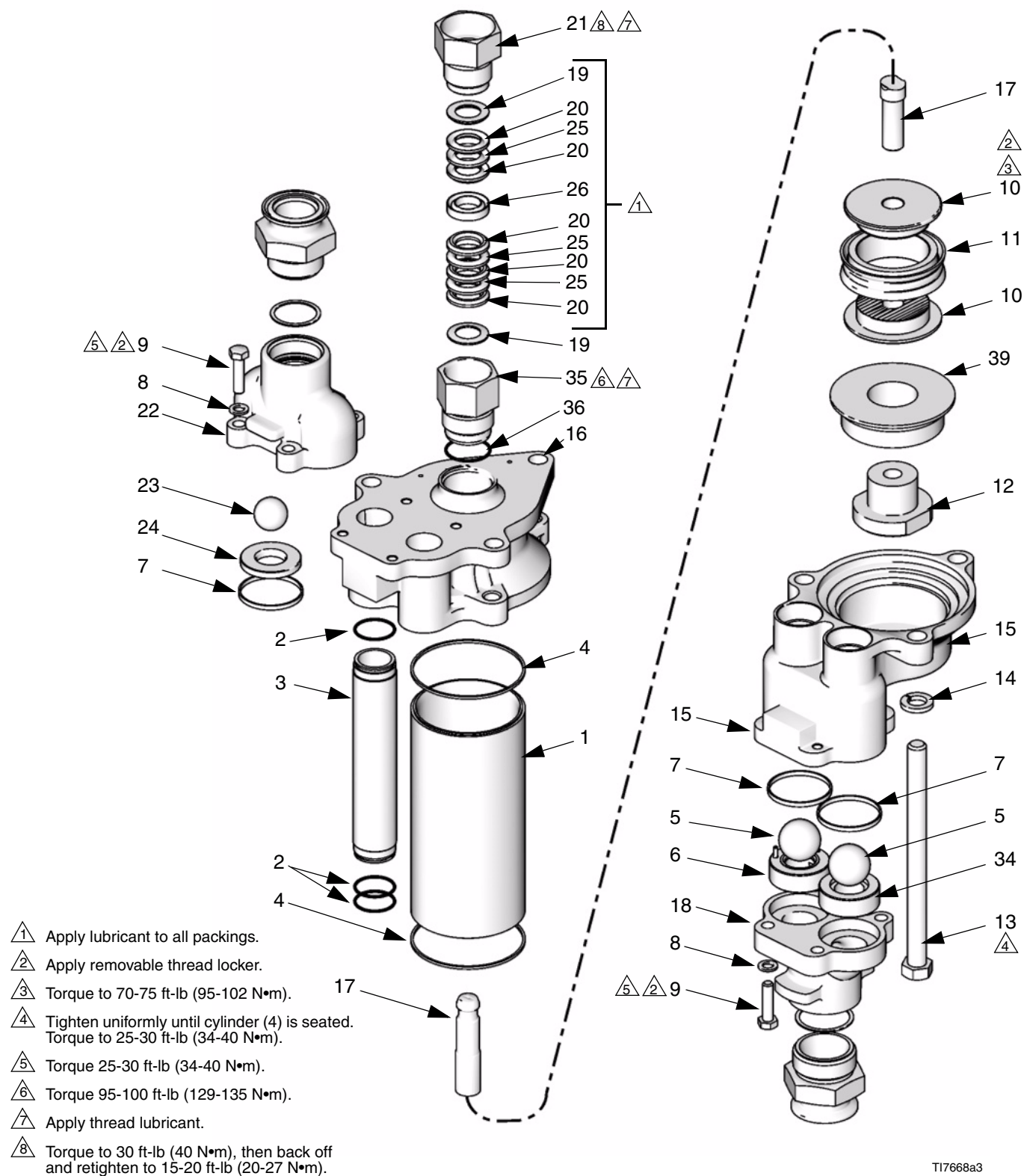
 It may be necessary to use a rubber mallet to set the fluid tubes (3) and cylinder (4) in place.

8. Lubricate the inside of the cylinder (4). Slide the piston assembly into the cylinder. Rotate the piston as shown in FIG. 6.



**FIG. 6**

9. Install the o-ring (39†) on the throat cartridge (35), then screw the throat cartridge into the outlet housing (16).
10. Lubricate the throat packings and glands. Install one male gland (19†), then five v-packings with the lips facing down: one UHMWPE (20†), one leather (25†), UHMWPE, leather, UHMWPE. Install the female gland (26†). Install three v-packings with the lips facing up: UHMWPE, leather, UHMWPE. Install the other male gland (19†). Install the packing nut (21) finger-tight.
11. Install the outlet housing (16). It may not seat well on the tubes and cylinder. Install the bolts and lock-washers (14) from the inlet housing (15). As you tighten the bolts into the outlet housing (16), they will draw the housings firmly onto the tubes and cylinders. Tighten the bolts uniformly and torque to 25-30 ft-lb (34-40 N•m).
12. Apply lubricant to the throat cartridge threads and torque the cartridge (35) to 100 ft-lb (135 N•m).
13. Tighten the packing nut (21) firmly and then turn the nut another 1/4 turn. If you have a torque wrench, tighten the packing nut to 30 ft-lb (40 N•m), then re-tighten to 15-20 ft-lb (20-27 N•m).
14. Place a ball (23), seat (24) and gasket (7\*) in each side of the outlet manifold (22). Install the outlet housing on the outlet housing (16). Install the lock-washers (8) and screws (9), and torque to 25-30 ft-lb (34-40 N•m).
-  Seat (24) is reversible.
15. Reconnect the lower to the motor. See page 7.



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FIG. 7

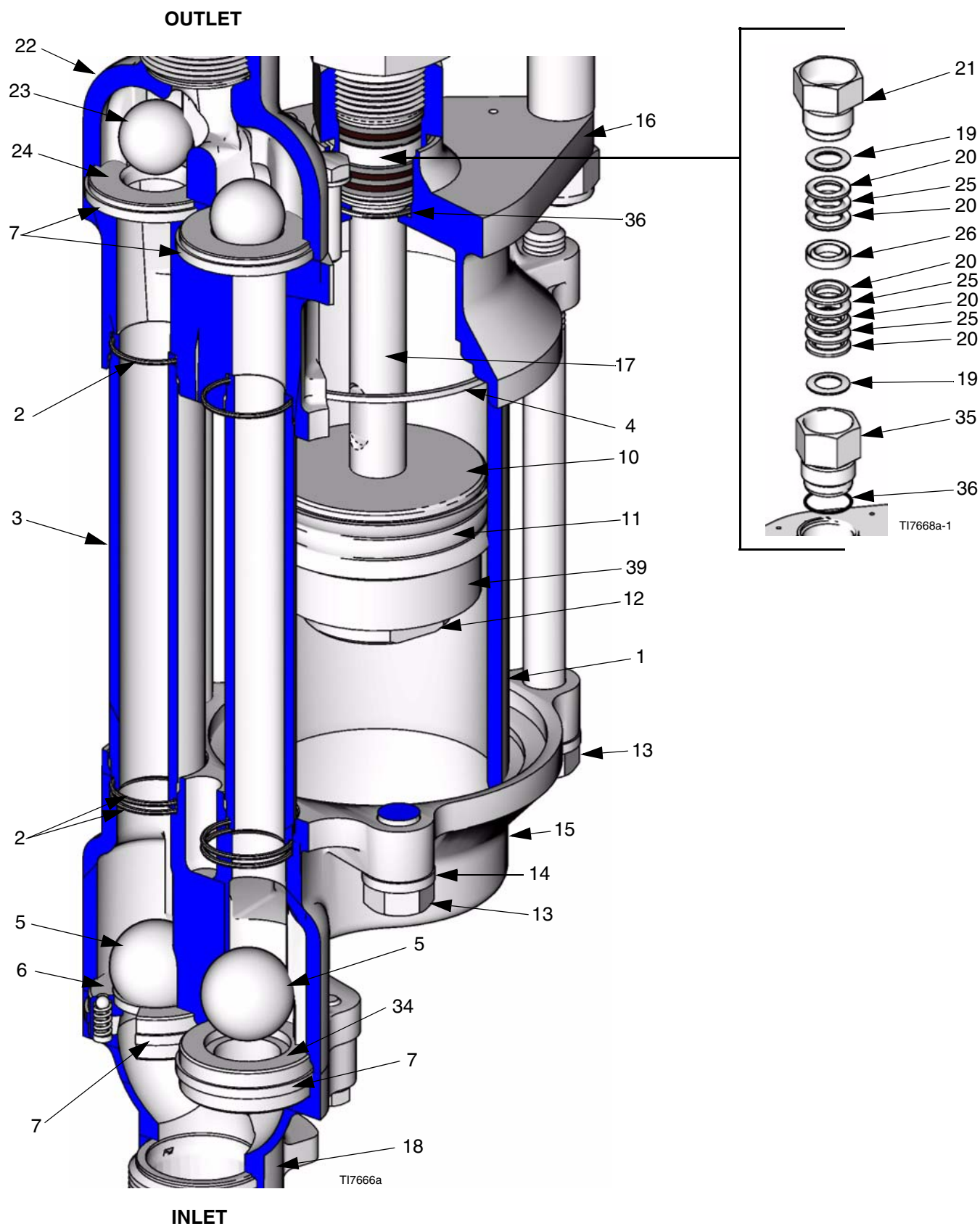


FIG. 8

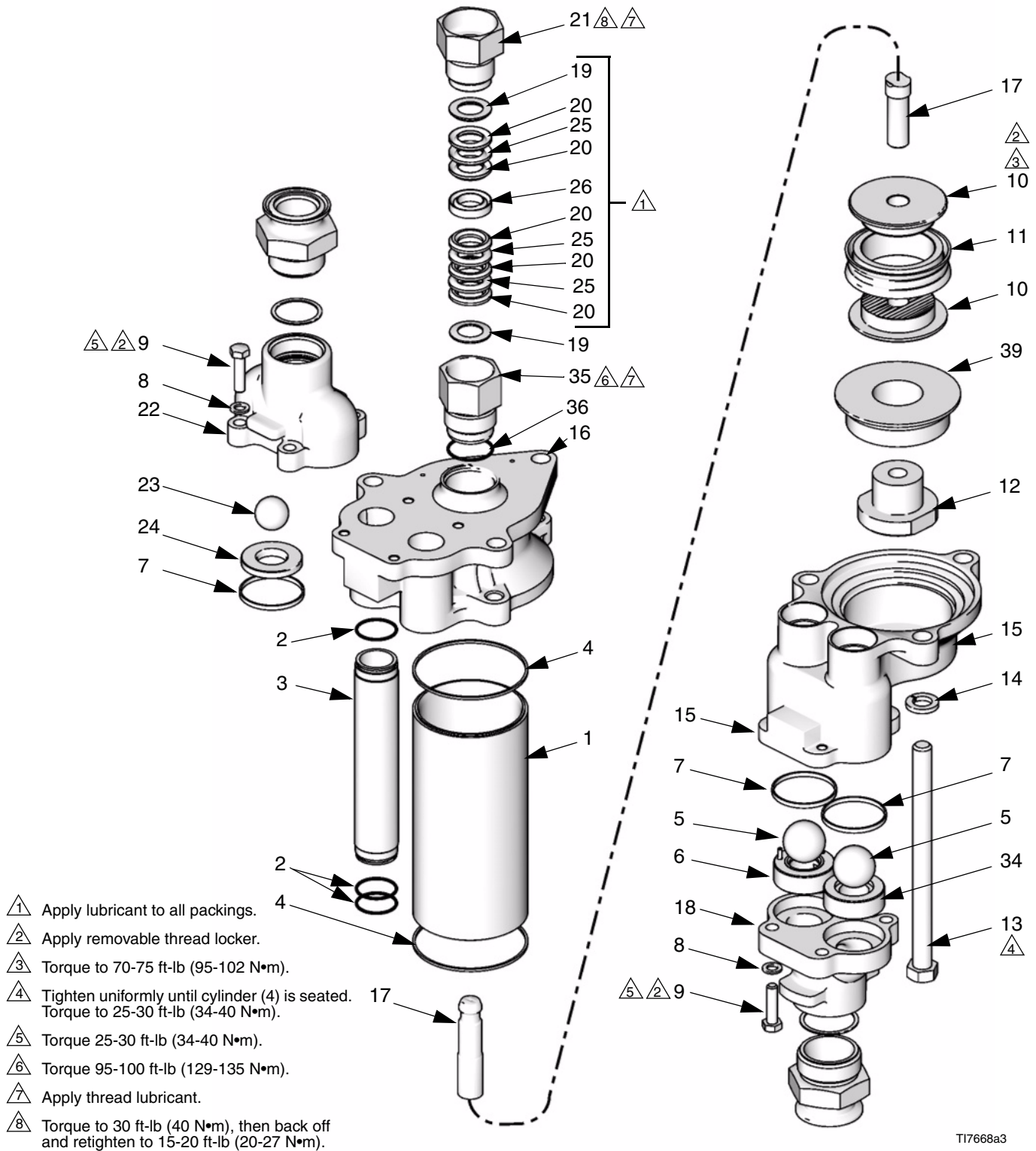


# Lower Parts

1000cc Lower parts list, see page 15

1500cc Lower parts list, see page 16

2000cc Lower parts list, see page 17



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## 1000cc Lowers

**Part No. 253033, Series A, Stainless Steel**

**Part No. 253061, Series A, Carbon Steel**

**Part No. 253398, Series A, Stainless Steel**

**Part No. 253423, Series A, Stainless Steel**

**Part No. 253520, Series A, Stainless Steel**

**Part No. 253523, Series A, Stainless Steel**

**Part No. 253568, Series A, Stainless Steel**

Ref. No.	Description	Lower							Qty .
		253033	253061	253398	253423	253520	253523	253568	
1	CYLINDER, pump, sst	183047		15H452	183047	183047	15H452	15H452	1
	CYLINDER, pump, cst		183032						1
2*	PACKING, o-ring; PTFE	108526	108526	108526	108526	108526	108526	108526	6
3	TUBE, fluid; sst	183085	183085	183085	183085	183085	183085	183085	2
4*	GASKET, cylinder; UMWPE	183094	183094	183094	183094	183094	183094	183094	2
5	BALL, intake; 1.25 in. dia; sst	101968	101968	101968	101968	101968	101968	101968	2
6	SEAT, intake valve, with relief valve; sst	253483	253483	253483	253483	253483	253483	253483	1
7*	GASKET, seat, valve; UHMWPE	181877	181877	181877	181877	181877	181877	181877	4
8	WASHER, flat; 8.4 mm; sst	111003	111003	111003	111003	111003	111003	111003	8
9	CAPSCREW, hex hd; M8 x 1.25 x 25; sst	112084		112084	112084	112084	112084	112084	8
	CAPSCREW, hex hd; M8 x 1.25 x 25; cst		107558						8
10	PISTON; 3 in.; sst	15G883	15G883	15G883	15G883	15G883	15G883	15G883	2
11*	PACKING, piston; 3 in.; UMWPE	15G886	15G886	15G886	15G886	15G886	15G886	15G886	1
12	NUT, piston; hex hd; sst	15H989	15H989	15H989	15H989	15H989	15H989	15H989	1
13	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; sst	120199		120199	120199	120199	120199	120199	3
	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; cst		120446						3
14	LOCKWASHER, spring; 9/16 in.; sst	108525		108525	108525	108525	108525	108525	3
	LOCKWASHER, spring; 9/16 in.; cst		101333						3
15	HOUSING, inlet; sst	15G770		15G770	15G770	15G770	15G770	15G770	1
	HOUSING, inlet; cst		15G891						1
16	HOUSING, outlet; sst	15G771		15G771	15G771	15G771	15G771	15G771	1
	HOUSING, outlet; cst		15G892						1
17	ROD, piston; sst	15H280	15H280	15H589	15H280	15H280	15H589	15H589	1
18	MANIFOLD, inlet; sst	192259		193205	193205	15H663	15H663	192259	1
	MANIFOLD, inlet; cst		192260						1
19†	GLAND, male; sst	192263	192263	192263	192263	192263	192263	192263	2
20†	V-PACKING, throat; UHMWPE	183295	183295	183295	183295	183295	183295	183295	5
21	NUT, packing; sst	181684	181684	181684	181684	181684	181684	181684	1
22	MANIFOLD, outlet; sst	15G873		15G874	15G874	15G664	15H664	15G873	1
	MANIFOLD, outlet; cst		181728						1
23	BALL, outlet; 1 in. (25 mm) dia.; sst	110259	110259	110259	110259	110259	110259	110259	2
24	SEAT, valve; sst	15H746	15H746	15H746	15H746	15H746	15H746	15H746	2
25†	V-PACKING, throat; leather	120238	120238	120238	120238	120238	120238	120238	3
26†	GLAND, female; sst	192264	192264	192264	192264	192264	192264	192264	1
34	SEAT, intake valve; sst	239865	239865	239865	239865	236865	239865	239865	1
35	ADAPTER; sst	192490	192490	192490	192490	192490	192490	192490	1
36†	PACKING, o-ring; PTFE	107313	107313	107313	107313	107313	107313	107313	1
37▲	TAG, warning (not shown)	172479	172479	172479	172479	172479	172479	172479	1
39	SPACER	15H990	15H990	15H990	15H990	15H990	15H990	15H990	1

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

\* Parts included in Seal Repair Kit (purchase separately). See page 18.

† Parts included in Throat Packing Repair Kit (purchase separately). See page 19.

## 1500cc Lower

Part No. 253034, Series A, Stainless Steel

Part No. 253062, Series A, Carbon Steel

Part No. 253085, Series A, Stainless Steel

Part No. 253397, Series A, Stainless Steel

Part No. 253521, Series A, Stainless Steel

Part No. 253524, Series A, Stainless Steel

Part No. 253569, Series A, Stainless Steel

Ref. No.	Description	Lower							Qty .
		253034	253062	253085	253397	253521	253524	253569	
1	CYLINDER, pump, sst	183048		183048	15H453	183048	15H453	15H453	1
	CYLINDER, pump, cst		181900						1
2*	PACKING, o-ring; PTFE	108526	108526	108526	108526	108526	108526	108526	6
3	TUBE, fluid; sst	183085	183085	183085	183085	183085	183085	183085	2
4*	GASKET, cylinder; UMWPE	181876	181876	181876	181876	181876	181876	181876	2
5	BALL, intake; 1.25 in. dia; sst	101968	101968	101968	101968	101968	101968	101968	2
6	SEAT, intake valve, with relief valve; sst	253483	253483	253483	253483	253483	253483	253483	1
7*	GASKET, seat, valve; UHMWPE	181877	181877	181877	181877	181877	181877	181877	4
8	WASHER, flat; 8.4 mm; sst	111003	111003	111003	111003	111003	111003	111003	8
9	CAPSCREW, hex hd; M8 x 1.25 x 25; sst	112084		112084	112084	112084	112084	112084	8
	CAPSCREW, hex hd; M8 x 1.25 x 25; cst		107558						8
10	PISTON; 3 in.; sst	15G884	15G884	15G884	15G884	15G884	15G884	15G884	2
11*	PACKING, piston; 3 in.; UMWPE	15G887	15G887	15G887	15G887	15G887	15G887	15G887	1
12	NUT, piston; hex hd; sst	15H989	15H989	15H989	15H989	15H989	15H989	15H989	1
13	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; sst	120199		120199	120199	120199	120199	120199	3
	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; cst		120446						3
14	LOCKWASHER, spring; 9/16 in.; sst	108525		108525	108525	108525	108525	108525	3
	LOCKWASHER, spring; 9/16 in.; cst		101333						3
15	HOUSING, inlet; sst	15G770		15G770	15G770	15G770	15G770	15G770	1
	HOUSING, inlet; cst		15G891						1
16	HOUSING, outlet; sst	15G771		15G771	15G771	15G771	15G771	15G771	1
	HOUSING, outlet; cst		15G892						1
17	ROD, piston; sst	15H280	15H280	15H280	15H589	15H280	15H589	15H589	1
18	MANIFOLD, inlet; sst	192259		192259	193205	15H663	15H663	192259	1
	MANIFOLD, inlet; cst		192260						1
19†	GLAND, male; sst	192263	192263	192263	192263	192263	192263	192263	2
20†	V-PACKING, throat; UHMWPE	183295	183295	183295	183295	183295	183295	183295	5
21	NUT, packing; sst	181684	181684	181684	181684	181684	181684	181684	1
22	MANIFOLD, outlet; sst	15G873		15G874	15G874	15H664	15H664	15G873	1
	MANIFOLD, outlet; cst		181728						1
23	BALL, outlet; 1 in. (25 mm) dia.; sst	110259	110259	110259	110259	110259	110259	110259	2
24	SEAT, valve; sst	15H746	15H746	15H746	15H746	15H746	15H746	15H746	2
25†	V-PACKING, throat; leather	120238	120238	120238	120238	120238	120238	120238	3
26†	GLAND, female; sst	192264	192264	192264	192264	192264	192264	192264	1
34	SEAT, intake valve; sst	239865	239865	239865	239865	239865	239865	239865	1
35	ADAPTER; sst	192490	192490	192490	192490	192490	192490	192490	1
36†	PACKING, o-ring; PTFE	107313	107313	107313	107313	107313	107313	107313	1
37▲	TAG, warning (not shown)	172479	172479	172479	172479	172479	172479	172479	1
39	SPACER	15H991	15H991	15H991	15H991	15H991	15H991	15H991	1

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

\* Parts included in Seal Repair Kit (purchase separately). See page 18.

† Parts included in Throat Packing Repair Kit (purchase separately). See page 19.



## 2000cc Lower

Part No. 253035, Series A, Stainless Steel

Part No. 253063, Series A, Carbon Steel

Part No. 253086, Series A, Stainless Steel

Part No. 253396, Series A, Stainless Steel

Part No. 253522, Series A, Stainless Steel

Part No. 253525, Series A, Stainless Steel

Part No. 253570, Series A, Stainless Steel

Ref. No.	Description	Lower							Qty.
		253035	253063	253086	253396	253522	253525	253570	
1	CYLINDER, pump, sst	15G882		15G882	15H451	15G882	15H451	15H451	1
	CYLINDER, pump, cst		15G882						1
2*	PACKING, o-ring; PTFE	108526	108526	108526	108526	108526	108526	108526	6
3	TUBE, fluid; sst	183085	183085	183085	183085	183085	183085	183085	2
4*	GASKET, cylinder; UMWPE	15G881	15G881	15G881	15G881	15G881	15G881	15G881	2
5	BALL, intake; 1.25 in. dia; sst	101968	101968	101968	101968	101968	101968	101968	2
6	SEAT, intake valve, with relief valve; sst	253483	253483	253483	253483	253483	253483	253483	1
7*	GASKET, seat, valve; UHMWPE	181877	181877	181877	181877	181877	181877	181877	4
8	WASHER, flat; 8.4 mm; sst	111003	111003	111003	111003	111003	111003	111003	8
9	CAPSCREW, hex hd; M8 x 1.25 x 25; sst	112084		112084	112084	112084	112084	112084	8
	CAPSCREW, hex hd; M8 x 1.25 x 25; cst		107558						8
10	PISTON; 3 in.; sst	15G885	15G885	15G885	15G885	15G885	15G885	15G885	2
11*	PACKING, piston; 3 in.; UMWPE	15G888	15G887	15G888	15G888	15G888	15G888	15G888	1
12	NUT, piston; hex hd; sst	15H989	15H989	15H989	15H989	15H989	15H989	15H989	1
13	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; sst	120199		120199	120199	120199	120199	120199	3
	CAPSCREW, hex hd; 9/16-12 unc x 7.5 in.; cst		120446						3
14	LOCKWASHER, spring; 9/16 in.; sst	108525		108525	108525	108525	108525	108525	3
	LOCKWASHER, spring; 9/16 in.; cst		101333						3
15	HOUSING, inlet; sst	15G770		15G770	15G770	15G770	15G770	15G770	1
	HOUSING, inlet; cst		15G891						1
16	HOUSING, outlet; sst	15G771		15G771	15G771	15G771	15G771	15G771	1
	HOUSING, outlet; cst		15G892						1
17	ROD, piston; sst	15H280	15H280	15H280	15H589	15H280	15H589	15H589	1
18	MANIFOLD, inlet; sst	192259		193205	193205	15H663	15H663	192259	1
	MANIFOLD, inlet; cst		192260						1
19†	GLAND, male; sst	192263	192263	192263	192263	192263	192263	192263	2
20†	V-PACKING, throat; UHMWPE	183295	183295	183295	183295	183295	183295	183295	5
21	NUT, packing; sst	181684	181684	181684	181684	181684	181684	181684	1
22	MANIFOLD, outlet; sst	15G873		15G874	15G874	15H664	15H664	15G873	1
	MANIFOLD, outlet; cst		181728						1
23	BALL, outlet; 1 in. (25 mm) dia.; sst	110259	110259	110259	110259	110259	110259	110259	2
24	SEAT, valve; sst	15H746	15H746	15H746	15H746	15H746	15H746	15H746	2
25†	V-PACKING, throat; leather	120238	120238	120238	120238	120238	120238	120238	3
26†	GLAND, female; sst	192264	192264	192264	192264	192264	192264	192264	1
34	SEAT, intake valve; sst	239865	239865	239865	239865	239865	239865	239865	1
35	ADAPTER; sst	192490	192490	192490	192490	192490	192490	192490	1
36†	PACKING, o-ring; PTFE	107313	107313	107313	107313	107313	107313	107313	1
37▲	TAG, warning (not shown)	172479	172479	172479	172479	172479	172479	172479	1
39	SPACER	15H992	15H992	15H992	15H992	15H992	15H992	15H992	1

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

\* Parts included in Seal Repair Kit (purchase separately). See page 18.

† Parts included in Throat Packing Repair Kit (purchase separately). See page 19.



Handwriting practice lines consisting of multiple horizontal lines. Each line set includes a solid top line, a dashed middle line, and a solid bottom line, providing a guide for letter height and placement.

## Pump Seal Kits

### Pump Seal Repair Kit 277360

#### Pump PTFE Seal Conversion Kit 277361

Viscount 1+ Models: 253642, 253644, 253646, 253648, 253650, 253652, 253654

Part No.	Description	Qty.
181877	GASKET, seat, valve	4
108526	PACKING, o-ring	6
183094	GASKET, cylinder	2
15G886	PACKING, piston, 3 in., uhmwpe	1
15H467	PACKING, piston, 3 in., ptfe	1

### Pump Seal Repair Kit 277362

#### Pump PTFE Seal Conversion Kit 277363

3:1 and 4.5:1 Ratio NXT Pump Models: J C/S 30, 45, Viscount 1+ Models: 253643, 253645, 253647, 253649, 253651, 253653, 253655

Part No.	Description	Qty.
181877	GASKET, seat, valve	4
108526	PACKING, o-ring	6
181876	GASKET, cylinder	2
15G887	PACKING, piston, 3.5 in., uhmwpe	1
15H468	PACKING, piston, 3.5 in., ptfe	1

### Pump Seal Repair Kit 277358

#### Pump PTFE Seal Conversion Kit 277359

2:1 and 3.5:1 Ratio NXT Pump Models: J C/S 20, 35

Part No.	Description	Qty.
181877	GASKET, seat, valve	4
108526	PACKING, o-ring	6
15G881	SEAL, gasket, cylinder	2
15G888	PACKING, piston, 4 in., uhmwpe	1
15H469	PACKING, piston, 4 in., ptfe	1

## Throat Packing Kits

### Throat Packing Kit 277357

With leather and UHMWPE throat packings.  
For all pumps listed on this page.

Part No.	Description	Qty.
192264	GLAND, female	1
183295	PACKING, vee, uhmwpe	5
120238	PACKING, vee, leather	3
192263	GLAND, male	2
107313	PACKING, o-ring	1

### Throat Packing Kit 239866

With PTFE throat packings.  
For all pumps listed on this page.

Part No.	Description	Qty.
192264	GLAND, female	1
183352	PACKING, vee	8
192263	GLAND, male	2
107313	PACKING, o-ring	1

### Throat Packing Kit 277356

With leather throat packings.  
For all pumps listed on this page.

Part No.	Description	Qty.
192264	GLAND, female	1
120238	PACKING, vee, leather	8
192263	GLAND, male	2
107313	PACKING, o-ring	1

# 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.

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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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**TO PLACE AN ORDER,** contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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