



INSTRUCTIONS

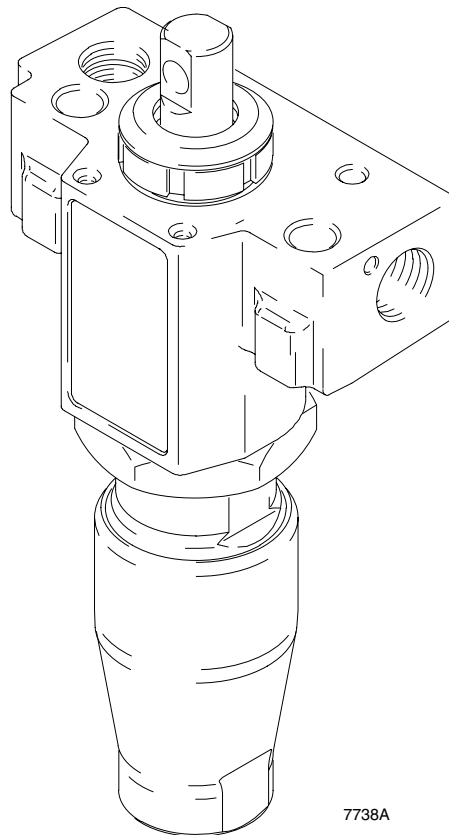
This manual contains important  
warnings and information.  
**READ AND KEEP FOR REFERENCE.**

## Displacement Pump

Used in the Ultra Max 695 Sprayers  
*3000 psi (207 bar, 21 MPa) MAXIMUM WORKING PRESSURE*

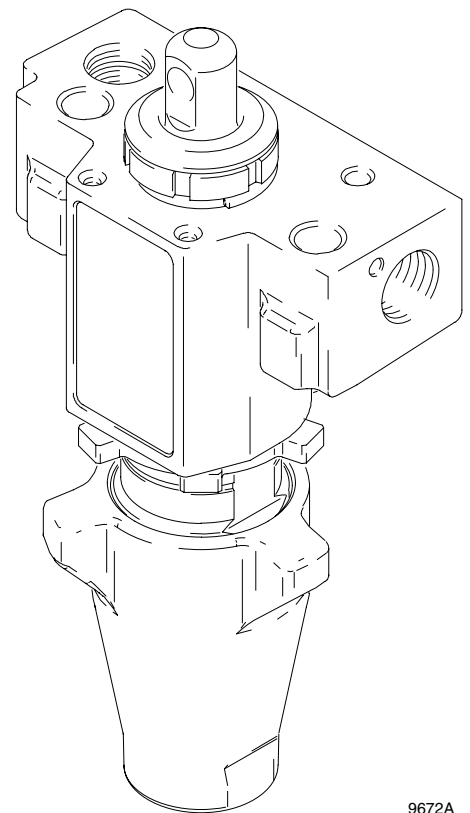
**Model 243189, Series B**

**Model 239769, Series A**



7738A

**Model 239769**



9672A

**Model 243189**

# ! WARNING



## INJECTION HAZARD

Spray from the gun, leaks or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin is a serious injury. The injury may look like just a cut, but it is a serious injury. Get immediate medical attention.
- Do not point the gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the tip guard and the trigger guard on the gun when spraying.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 4 if the spray tip clogs and before cleaning, checking or servicing the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.
- Fluid hoses must have spring guards on both ends, to help protect them from rupture caused by kinks or bends near the couplings.



## TOXIC FLUID HAZARD

Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.



## MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before servicing the equipment, follow the **Pressure Relief Procedure** on page 4 to prevent the equipment from starting unexpectedly.

# WARNING



INSTRUCTIONS

## EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. Refer to the **Technical Data** on page 9 for the maximum working pressure of this equipment.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.
- Do not use hoses to pull equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Wear ear protection when operating this equipment.



## FIRE AND EXPLOSION HAZARD

Improper grounding, poor ventilation, open flames or sparks can cause a hazardous condition and result in a fire or explosion and serious injury.

- If there is any static sparking or you feel an electric shock while using this equipment, **stop spraying immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being sprayed.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the spray area.
- Extinguish all open flames or pilot lights in the spray area.
- Do not smoke in the spray area.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not operate a gasoline engine in the spray area.
- Ground the equipment and the object being sprayed.

# Service

## Pressure Relief Procedure

### **WARNING**



#### **PRESSURIZED EQUIPMENT HAZARD**

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. To reduce the risk of an injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray nozzle.

1. Engage gun safety latch.
2. Turn ON/OFF switch to OFF.
3. Unplug power cord.
4. Disengage gun safety latch. Hold metal part of gun against grounded metal pail and trigger gun into pail to relieve pressure.
5. Engage gun safety latch.
6. Open any fluid drain valves in system. Leave drain valve open until ready to dispense again.

## Repair Kit

Pump	Repair Kit
243189, 239769	239939

## Tools Needed

Vise  
12 in. adjustable, open end wrench  
15 in. adjustable, open end wrench  
Hammer, 20 oz maximum  
Small screwdriver  
Throat Seal Liquid  
Pick or long small screwdriver  
Punch

## Cleaning and Inspecting Parts

Clean and inspect parts. Pay particular attention to the ball seats in the intake valve and piston, which must have no nicks or wear, and to the inside of the cylinder and the outside of the piston rod, which must not be worn or scratched. Replace worn or damaged parts.

# Service

## Disassembling the pump

Fig. 1. Remove packing nut (202) and throat adjustment spacer (228).

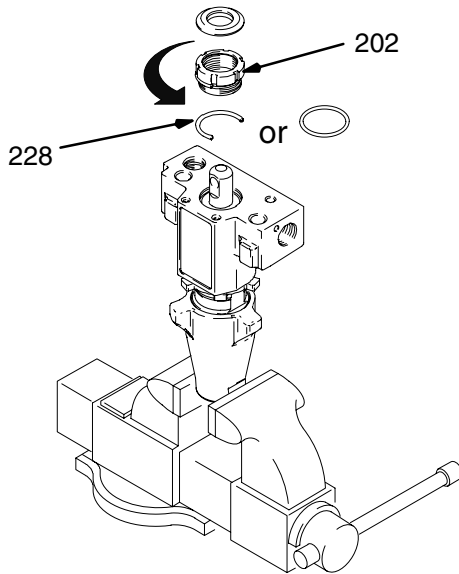


Fig. 1 ti9672b 9672A

Fig. 2. Loosen jam nut (226). Remove manifold (229) and the o-ring (221).

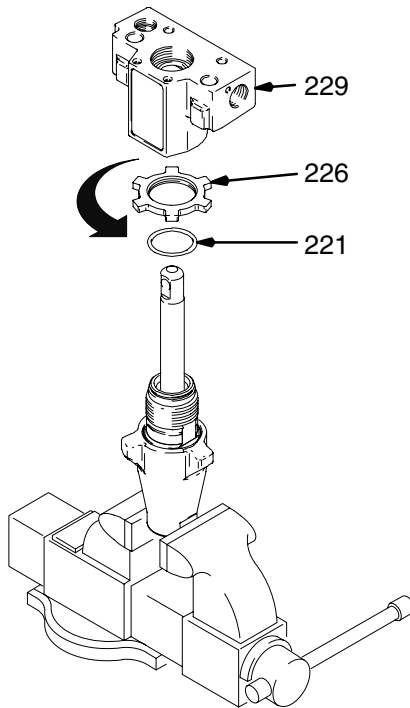


Fig. 2 9674A

Fig. 3. Unscrew cylinder from intake valve.

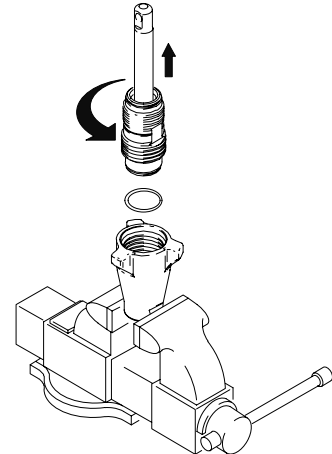


Fig. 3 9675A

Fig. 4. Disassemble intake valve. Clean and inspect. O-ring (227) may require a pick for removal. Replace o-ring (227).

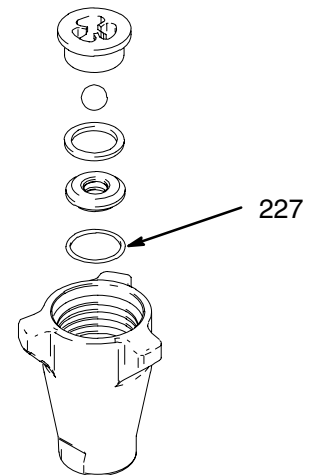


Fig. 4 9676A

Fig. 5. Tap piston rod out of cylinder with a hammer or on a bench top.

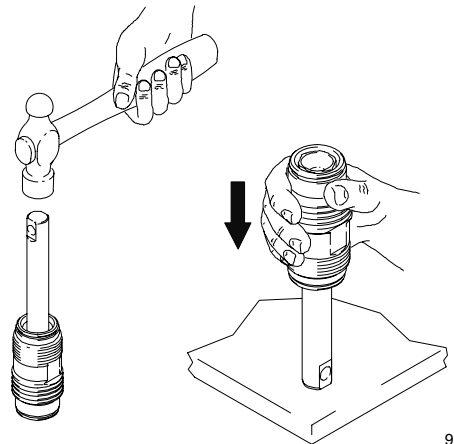


Fig. 5 9697A

# Service

Fig. 6. Remove throat packings and glands from manifold. Discard throat packings and glands.

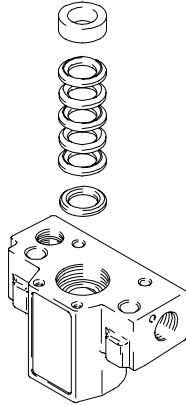


Fig. 6

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## ⚠ WARNING

### COMPONENT RUPTURE HAZARD

Do not clean or wipe the piston valve threads. Cleaning the piston valve threads could destroy the plastic patch and cause the piston valve to come loose during operation, causing pump bursting and possible serious bodily injury.

Fig. 7. Unscrew piston valve from piston rod. Clean and inspect parts. The piston has a plastic sealing patch. Do not remove the patch. The patch allows four disassembly/assembly procedures before it is necessary to apply Loctite® to the threads.

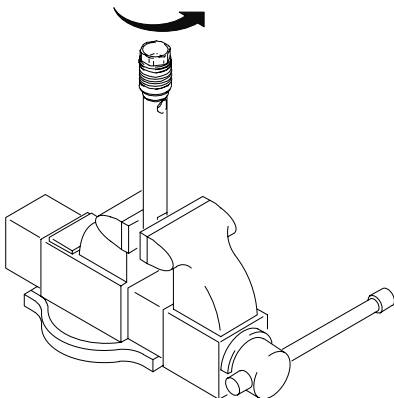


Fig. 7

9677A

Fig. 8. Remove packings and glands from piston rod.

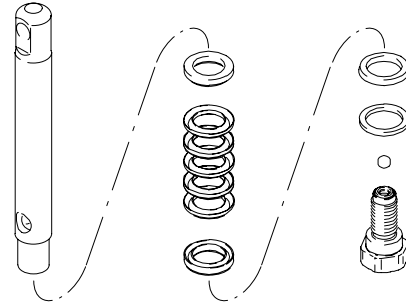


Fig. 8

9680A

## Reassembling the pump

Fig. 9. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Stack male gland (219) on piston rod. Alternately stack UHMWPE (208) and leather (218) packings (note orientation) on piston rod. Install female gland (217). Install backup washer (216) and u-cup (209) (note orientation) on piston valve (210). The special sealing patch on piston valve threads is good for four repackings. Use Loctite® on piston valve threads after four repackings.

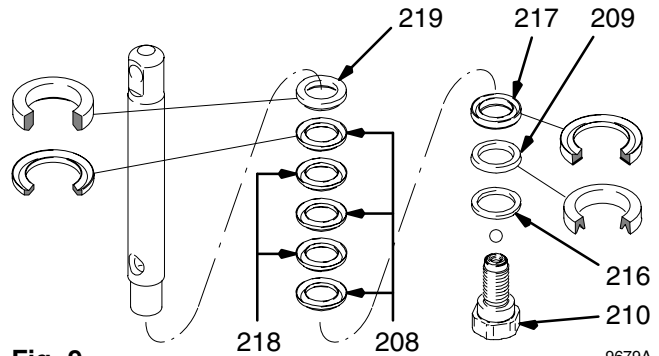


Fig. 9

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Fig. 10. Install ball (206) in piston rod. If Loctite® is used, ensure no Loctite® gets on ball.

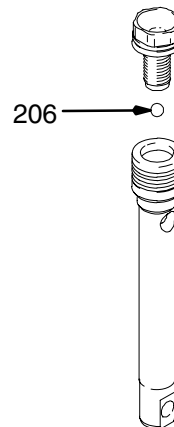


Fig. 10

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# Service

Fig. 11. Tighten piston valve to piston rod as specified:

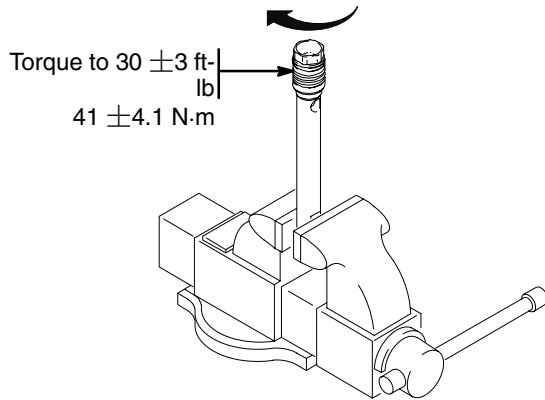


Fig. 11

7768A

Fig. 12. Soak all leather packings in SAE 30W oil for 1 hour minimum prior to assembly. Place male gland (204) in manifold. Alternately stack UHMWPE (203) and leather packings (223) (note orientation). Place female gland (224) in top of cylinder. Seat packings.

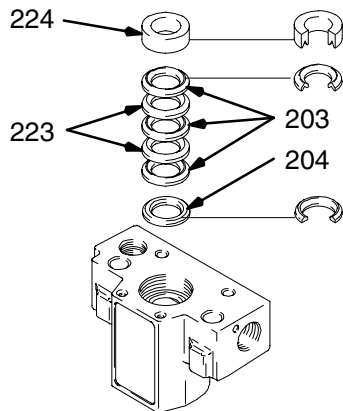


Fig. 12

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Fig. 13. Install seal (201) into packing nut (202). Install throat adjustment spacer (228) onto packing nut. Loosely install packing nut into manifold. O-ring replaces metal clip ring on older models.

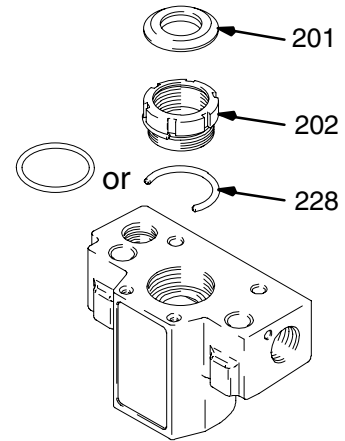


Fig. 13

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Fig. 14. Grease piston packings and top edge of cylinder.

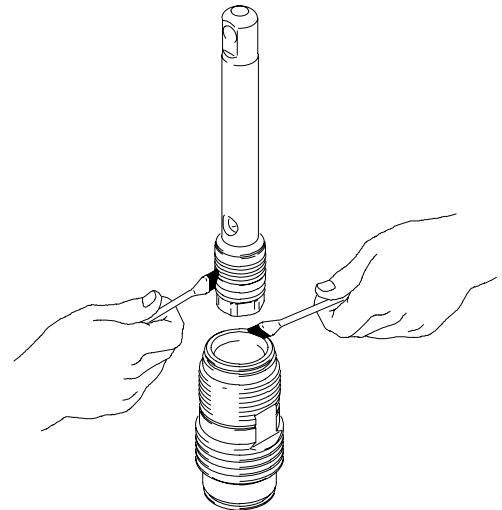


Fig. 14

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Fig. 15. Carefully slide piston assembly into top of cylinder. Assure u-cup is not rolled over or damaged.

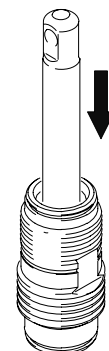
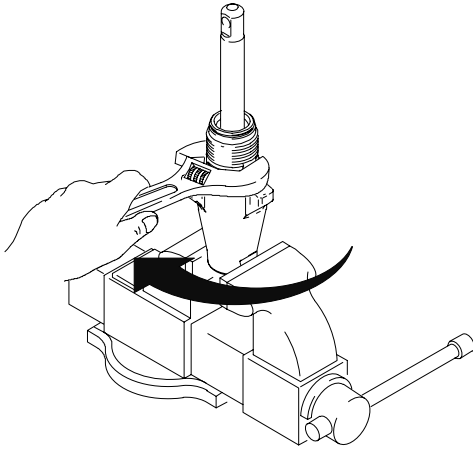


Fig. 15

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# Service

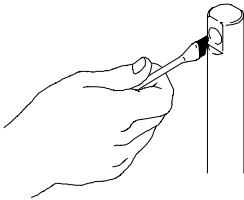
Fig. 16. Install cylinder in intake valve. Tighten to  $60 \pm 5$  ft-lb ( $81 \pm 6.8$  N-m).



9684A

**Fig. 16**

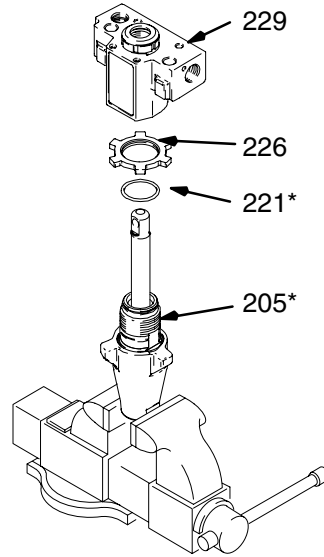
Fig. 17. Grease top inch or two of piston rod.



7773A

**Fig. 17**

Fig. 18. Install jam nut (226) onto cylinder. Grease o-ring (221\*) and place on cylinder. Install manifold (229) onto cylinder (205) and tighten to  $60 \pm 5$  ft-lb ( $81 \pm 6.8$  N-m). Tighten jam nut (226) to  $75 \pm 5$  ft-lb ( $101.7 \pm 6.8$  N-m).

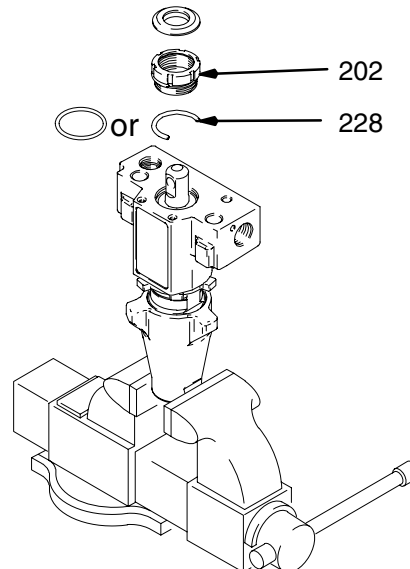


9685A

**Fig. 18**

Fig. 19. Torque seal and packing nut (202) down onto throat nut spacer (228) to  $75 \pm 5$  in-lb ( $8.5 \pm 0.5$  N-m) or an additional 1/2 turn from hand tight.

Remove throat nut spacer (228) when pump packings begin to leak. Tighten packing nut (202) until leakage stops or lessens. This allows approximately 100 gallons of operations before repacking. O-ring replaces metal clip ring on older models.



9686b

**Fig. 19**

# Service

## Cross Sectional Reference

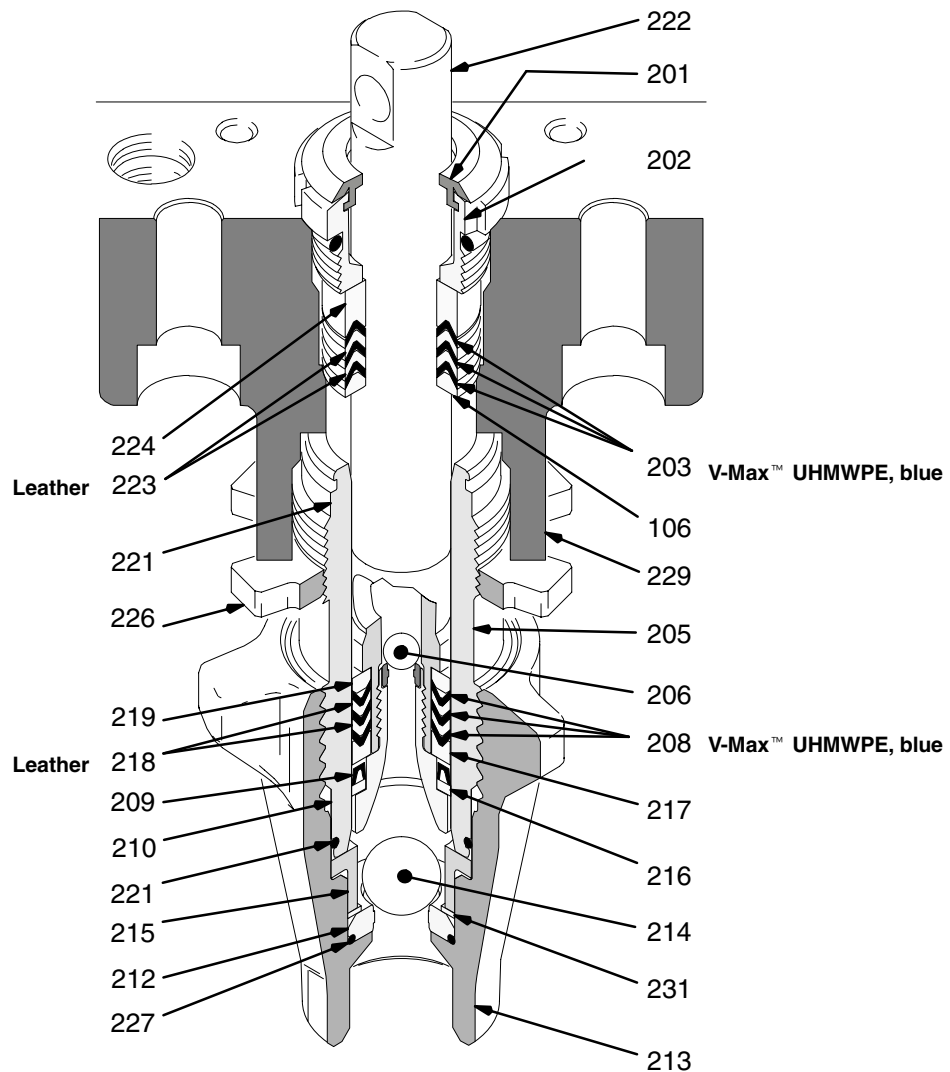


Fig 20

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## Technical Data

Working Pressure Range ..... 0 – 3000 psi  
(0 – 207 bar, 21 MPa)  
Pump Inlet Size ..... 3/4 npt(f)  
Pump Outlet Size ..... 1/4 npt  
Wetted Parts ..... Aluminum, stainless steel,  
zinc plated carbon steel, polyethylene,  
acetal, PTFE, leather,  
tungsten carbide, chrome plating, polyurethane

## Graco Phone Number

**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-690-2894 Toll Free**

# Parts – Pump 243189

## Model 243189, Series A

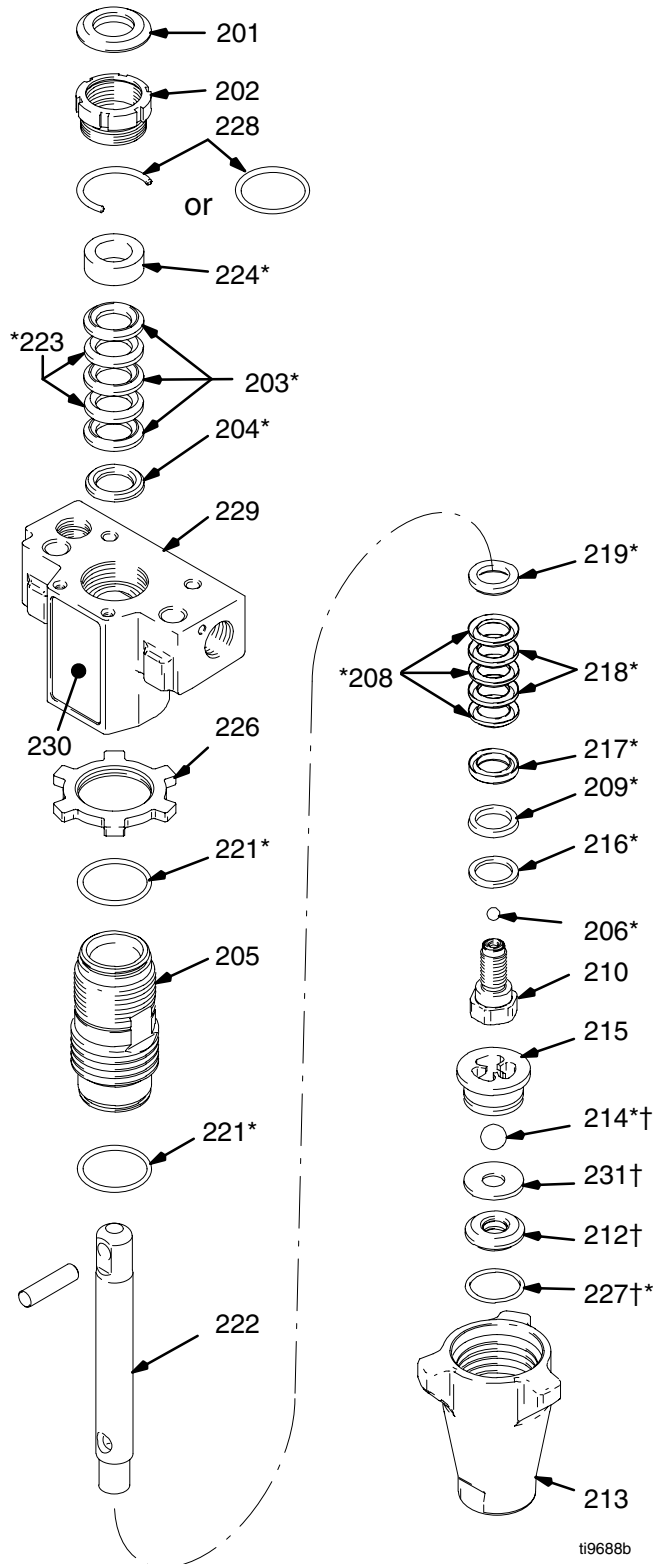
Displacement Pump

Includes items 201 to 231

Ref No.	Part No.	Description	Qty.
201	180656	SEAL, throat	1
202	193047	NUT, packing	1
203*	192710	V-PACKING, throat, V-Max™ UHMWPE, blue	3
204*	176754	GLAND, male, throat	1
205	243177	CYLINDER, pump	1
206*	105444	BALL, sst, 0.3125 in.	1
208*	192712	V-PACKING, piston V-Max™ UHMWPE, blue	3
209*	105522	SEAL, u-cup	1
210	243181	VALVE, piston	1
212*†	243190	KIT, seat, carbide includes 214 and 227	1
213	196755	VALVE, intake (foot)	1
214*†	105445	BALL, sst, 0.5000 in.	1
215	196896	GUIDE, ball	1
216*	186652	WASHER, backup	1
217*	180073	GLAND, female, piston	1
218*	176749	V-PACKING, leather, piston	2
219*	195129	GLAND, male	1
221*	108526	O-RING, PTFE	2
222	243178	ROD, piston	1
223*	176755	V-PACKING, leather, throat	2
224*	176757	GLAND, female	1
226	195548	NUT, jam, 1-3/8-18 unef-2b	1
227†*	195136	PACKING, o-ring	1
228	117459	O-RING, (replaces 195368 metal clip ring)	1
229	237661	MANIFOLD, pump	1
230	192849	LABEL, warning	1
231†	195134	Spacer, ball guide	1

\* These parts are also included in Repair Kit 239939, which may be purchased separately. Kit also includes o-ring 104938 for Lo-boy suction tube.

† These parts are also included in Carbide Kit 243190, which may be purchased separately.



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# Parts – Pump 239769

## Model 239769, Series A

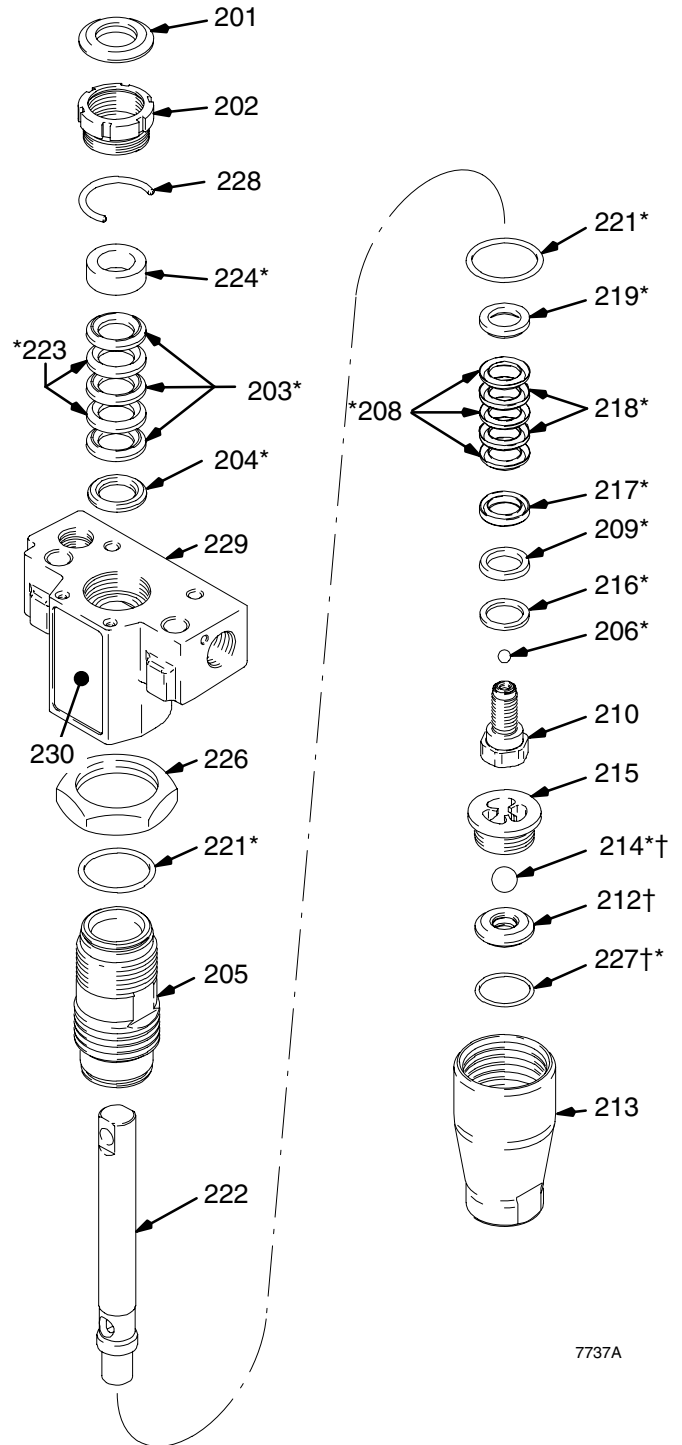
Displacement Pump

Includes items 201 to 229

Ref No.	Part No.	Description	Qty.
201	180656	SEAL, throat	1
202	193047	NUT, packing	1
203*	192710	V-PACKING, throat, V-Max™ UHMWPE, blue	3
204*	176754	GLAND, male, throat	1
205	240516	CYLINDER, pump	1
206*	105444	BALL, sst, 0.3125 in.	1
208*	192712	V-PACKING, piston V-Max™ UHMWPE, blue	3
209*	105522	SEAL, u-cup	1
210	239937	VALVE, piston	1
212*†	192642	KIT, seat, carbide includes 214 and 227	1
213	192715	VALVE, intake (foot)	1
214*†	105455	BALL, sst, 0.5000 in.	1
215	192716	GUIDE, ball	1
216*	186652	WASHER, backup	1
217*	180073	GLAND, female, piston	1
218*	176749	V-PACKING, leather, piston	2
219*	193069	GLAND, male	1
221*	108526	O-RING, PTFE	2
222	240515	ROD, piston	1
223*	176755	V-PACKING, leather, throat	2
224*	176757	GLAND, female	1
226	187614	NUT, jam, 1-3/8-18 unef-2b	1
227†*	107079	PACKING, o-ring	1
228	192729	SPACER, throat, nut	1
229	237661	MANIFOLD, pump	1
230	192849	LABEL, warning	1

\* These parts are also included in Repair Kit 239939, which may be purchased separately. Kit also includes o-ring 104938 for Lo-boy suction tube.

† These parts are also included in Seat Kit 239922, which may be purchased separately.



7737A

# Graco Standard Warranty

Graco warrants all equipment 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.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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.

## **FOR GRACO CANADA CUSTOMERS**

The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présent document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

## **ADDITIONAL WARRANTY COVERAGE**

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

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**International Offices:** Belgium, Korea, China, Japan

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