



INSTRUCTIONS

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

Displacement Pump

Model 237-527

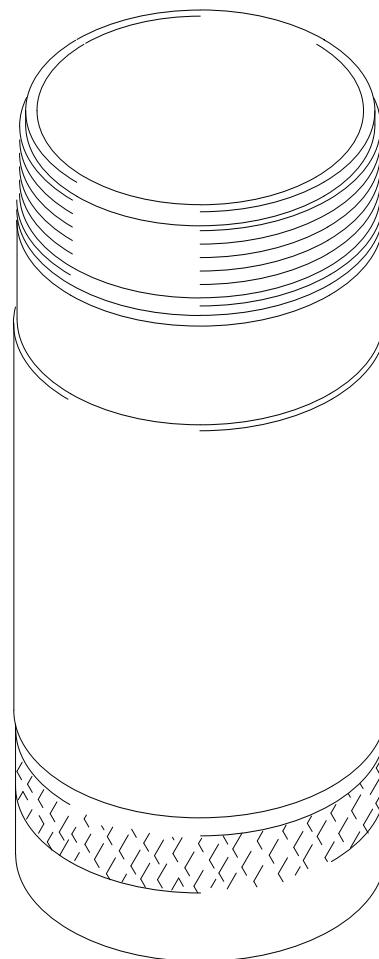
For use with petroleum-based lubricants only

540 psi (37 bar) Maximum Working Pressure

12 gpm Flow Rate

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Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

! WARNING



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 Graco Technical Assistance at 1-800-543-0339.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the **Technical Data** section of the instruction manual for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents that 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.
- Handle hoses carefully. Do not pull on hoses to move 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.

WARNING



INJECTION HAZARD

Fluid from the dispensing valve, 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 may look like just a cut, but it is a serious injury. Get **immediate medical attention**.
- Do not point the dispensing valve at anyone or at any part of the body.
- Do not put your hand or fingers over the end of the dispensing valve.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Use only extensions and no-drip tips that are designed for use with your dispensing valve.
- Do not use a low-pressure flexible nozzle with this equipment.
- Follow the **Pressure Relief Procedure** on page 5 if the dispensing valve 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.



HAZARDOUS FLUIDS

Improper handling of hazardous fluids or inhaling toxic fumes can cause extremely serious injury or death from splashing in the eyes, ingestion, or bodily contamination.

- 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.

WARNING



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.

- Ground the equipment and the object being lubricated.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop dispensing 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 dispensed.
- Keep the dispensing area free of debris, including solvent, rags, and gasoline.
- Before operating this equipment, electrically disconnect all equipment in the dispensing area.
- Before operating this equipment, extinguish all open flames or pilot lights in the dispensing area.
- Do not smoke in the dispensing area.
- Do not turn on or off any light switch in the dispensing area while dispensing or while there are any fumes in the air.
- Do not operate a gasoline engine in the dispensing area.



MOVING PARTS HAZARD

Moving parts, such as the air motor piston, 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 5 to prevent the equipment from starting unexpectedly.

Manual Change Summary

This manual was changed from Rev. A to Rev. B to include the following changes:

Page 1

- The maximum working pressure is changed from 900 psi (62 bar) to 540 psi (37 bar).
- The air motor is removed from the cover illustration.

Page 7

Ref 101 (AIR MOTOR, President) is removed from the parts list, and the air motor is removed from the parts drawing.

Service

Pressure Relief Procedure



WARNING

PRESSURIZED EQUIPMENT HAZARD

The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, accidental spray from the dispenser or splashing fluid, follow the **Pressure Relief Procedure** whenever you check, clean, or service any system equipment

1. Turn off the power supply to the pump.
2. Trigger the valve into a waste container to relieve pressure.
3. Open any bleed-type master air valves and fluid drain valves in the system.
4. Leave the drain valve open until you have completed repairs and are ready to pressurize the system.

Disassembly

NOTE: Displacement Pump Repair Kit 237–602 includes repair parts for the pump throat and piston. Use all the parts in the kit for the best results. Parts included in the kit are marked with a dagger, for example (7†), in the text and drawings. See the **Parts List** on page 7.

1. Flush the pump. Follow the **Pressure Relief Procedure** above before proceeding.
2. Disconnect the hoses, remove the pump from its mounting, and clamp the air motor base in a vise horizontally by closing the vice jaws on the flange.

Intake Valve. See Fig 1.

1. Follow the **Pressure Relief Procedure** at left.
2. Unscrew the valve housing (111). Remove the o-ring (105†), retainer (112), and ball (104).
3. Inspect the parts for wear or damage. If the ball is nicked, replace it. Reassemble, using grease on the male threads.

Displacement Pump. See Fig 1.

NOTE: Clean and inspect all parts for wear or damage as you disassemble them. Replace parts as needed. For best results, always replace all the o-rings and packings when you disassemble the pump.

1. Flush the pump. Follow the **Pressure Relief Procedure** at left before proceeding.
2. Disconnect the hoses, remove the pump from its mounting, and clamp the air motor base in a vise horizontally by closing the vice jaws on the flange.
3. Use a strap wrench on the displacement pump cylinder (110) to screw it out of the air motor base.
4. Remove the piston/valve seat (109) from the piston rod with wrenches or with the vice and a wrench.
5. Remove the piston ball (103), u-cup packing (107†), and piston washer (113).
6. Remove the air motor base from the vice, and place the piston rod flats in the vice with the air motor up.
7. Carefully inspect the smooth, inner surface of the cylinder (110) for scoring or irregular surfaces. Such damage causes premature seal wear and leaking. Replace the cylinder as needed.

Service

Reassembly

1. Install the u-cup packing (107†) with the lips up, and place the piston washer (113) on the piston/valve seat (109).
- NOTE:** Make sure the lips of the u-cup packing (107†) face up. See Fig. 1.
2. Place the piston ball (103) in the piston rod.
3. Apply Loctite® to the threads of the piston/valve seat (109), and thread the assembly from Step 1 onto the piston rod.
4. Clamp the flats of the piston/valve seat (109) in a vice, and, using a crow's-foot wrench, torque the the piston rod to the piston valve seat to 40 to 60 ft-lb.
5. Clamp the air motor base in a vise horizontally by closing the vice jaws on the flange
6. Use a strap wrench to screw the displacement pump cylinder (110) to the air motor base (28), and torque with a crow's-foot wrench to 95 to 105 ft-lb.
7. Before remounting the pump, connect an air hose and run the air motor slowly (at about 40 psi [3 bar]) to see that it operates smoothly.
8. Reconnect the ground wire before regular operation of the pump.

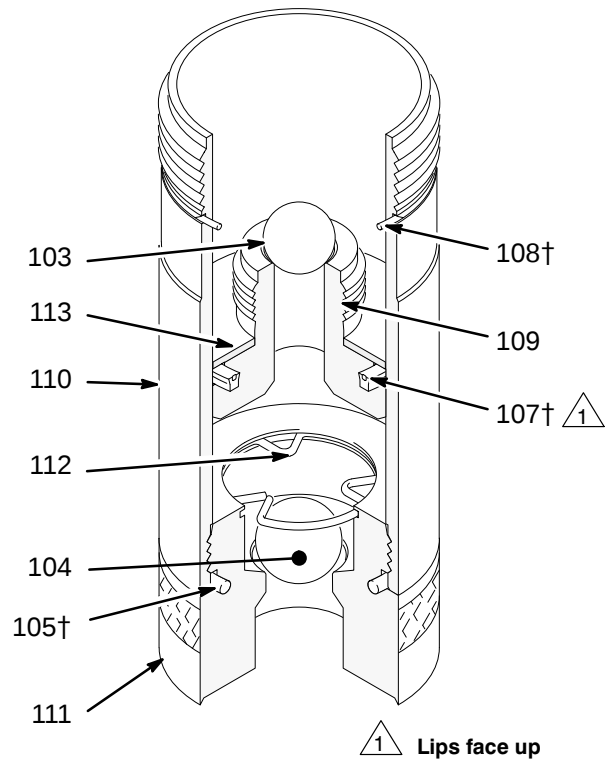


Fig. 1

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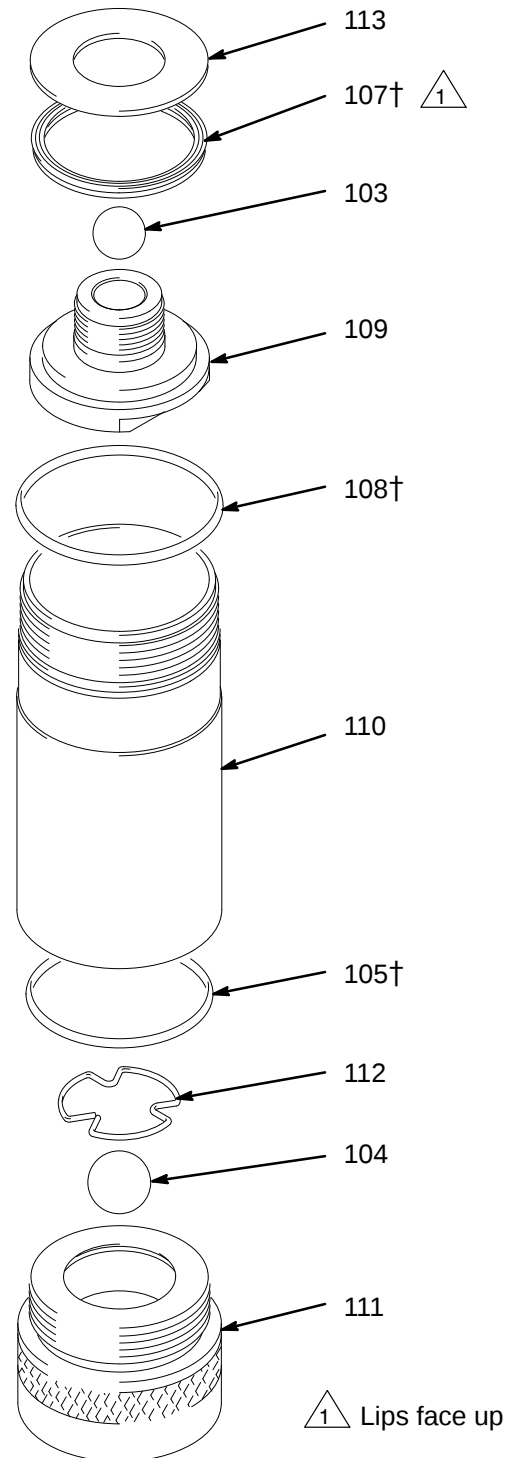
† Included in Repair Kit 237-602.

Parts Drawing and List

Model 237–527, Series A

Ref No.	Part No.	Description	Qty.
103	101–178	BALL, piston; metallic	1
104	108–001	BALL; sst	1
105†	110–828	PACKING, o-ring	1
107†	112–565	PACKING, u-cup	1
108†	166–071	PACKING, o-ring	1
109	189–707	PISTON/SEAT, valve	1
110	189–708	CYLINDER, pump	1
111	189–709	VALVE HOUSING; 1 1/2" npt(f)	1
112	189–710	RETAINER, ball	1
113	189–711	WASHER, piston	1

† These parts are included in the Pump Repair Kit 237–602, which may be purchased separately.



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Technical Data

Piston seals polyurethane
Wetted parts polyurethane, steel, nitrile
Approximate weight 18 lb (8 kg)

The Graco Warranty and Disclaimers

WARRANTY

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven 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, 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 with Graco equipment of 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 claim. 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.

DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **including warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, 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.

Graco Phone Numbers

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-367-4023 Toll Free**

FOR TECHNICAL ASSISTANCE, service repair information or assistance regarding the application of Graco equipment: **1-800-543-0339 Toll Free**

Sales Offices: Atlanta, Chicago, Detroit, Los Angeles
Foreign Offices: Belgium, Canada, England, Korea, Switzerland, France, Germany, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

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