

Displacement Pump

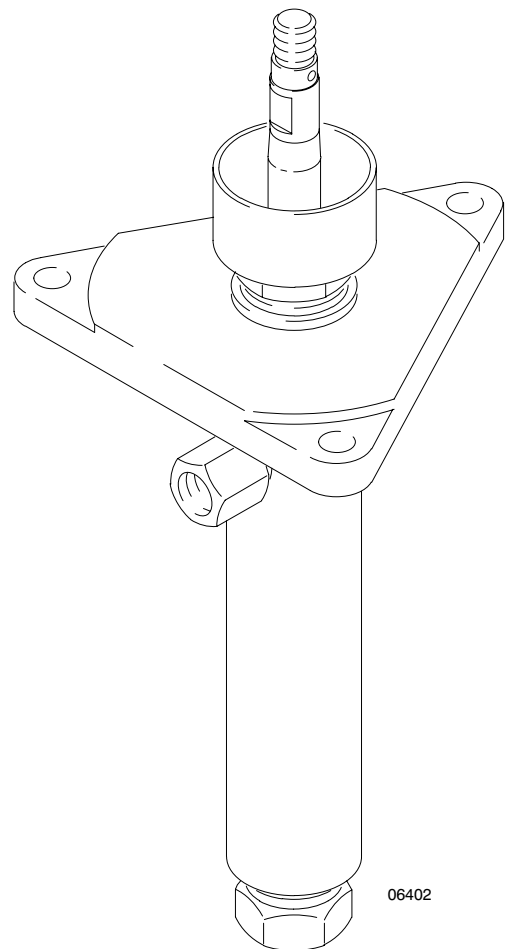
307650 Rev.G

Model 217462, Series B

4200 psi (290 bar) Maximum Working Pressure



Read warnings and instructions.



06402

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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.



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 Graco distributor.
- 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** for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- 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.
- 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 66°C (150°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not move or lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

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.
- 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 6 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.



MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before checking or servicing the equipment, follow the **Pressure Relief Procedure** on page 6 to prevent the equipment from starting unexpectedly.

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 sprayed. Refer to **Grounding** on page 5.
- 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.
- Before operating this equipment, electrically disconnect all equipment in the spray area.
- Before operating this equipment, 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 spraying or while operating if fumes are present.
- Do not operate a gasoline engine in the spray area.



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.

Installation

General Information

NOTE: Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.

NOTE: Always use Genuine Graco Parts and Accessories, available from your Graco distributor.

Grounding

 WARNING	
	FIRE AND EXPLOSION HAZARD
	Before operating the pump, ground the system as explained below. Also read the section FIRE OR EXPLOSION HAZARD on page 4.

1. *Pump:* use a ground wire and clamp as shown in Fig. 1. Loosen the grounding lug locknut (A) and washer (B). Insert one end of a 12 ga (1.5 mm²) minimum ground wire (C) into the slot in lug (D) and tighten the locknut securely. Connect the other end of the wire to a true earth ground. Order Part No. 333022 Grounding Wire.
2. *Air, and fluid hoses:* use only electrically conductive hoses.
3. *Air compressor:* follow manufacturer's recommendations.
4. *Spray gun and dispensing valve:* ground through connection to a properly grounded fluid hose and pump.
5. *Object being sprayed:* follow your local code.
6. *Solvent pails used when flushing:* follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
7. *To maintain grounding continuity when flushing or relieving pressure,* hold a metal part of the spray gun firmly to the side of a grounded *metal* pail, then trigger the gun.

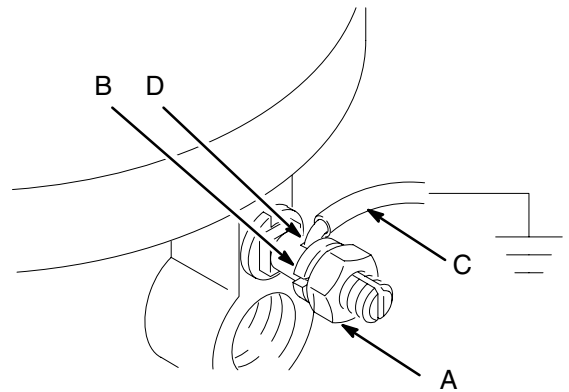


Fig. 1

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Operation

Pressure Relief Procedure

WARNING



INJECTION HAZARD

Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, 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 tips.

1. Engage the safety latch.
2. Shut off the air to the pump.
3. Close the bleed-type master air valve (required in your system).

4. Unlock the gun trigger safety.
5. Hold a metal part of the gun/dispensing valve firmly to the side of a grounded metal pail, and trigger the gun/dispensing valve to relieve the pressure.
6. Lock the gun trigger safety.
7. Open the drain valve (required in your system), having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect that the dispensing valve, extension, or grease fitting coupler is clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the coupler or hose end coupling and relieve pressure gradually, then loosen completely, now clear the clog.

Notes

[illegible]

Service

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

Displacement Pump Repair

NOTE: Repair Kit No. 220371 is available. Use all the new parts in this kit, even if the old ones still look good. Old parts do not seal well with new ones, and the pump may leak.

An asterisk behind a reference number, for example, (13*) indicates that this part is included in the repair kit.

1. Solvent flush the pump, if possible, and **relieve the pressure**, stopping the pump at the bottom of its stroke. Then disconnect the air and fluid hoses from the pump.
2. Screw the intake valve housing (20) out of the pump housing (3). Disassemble and clean the parts of the valve.

NOTE: If your pump mounting provides enough clearance, you do not have to remove the entire pump from its mounting, just follow step 3. Otherwise, remove the pump from its mounting, and clamp it in a vise before removing the displacement pump.

3. Loosen the packing nut (2). Push the displacement rod (1) down far enough to grasp the piston (16) and pull the displacement rod out through the bottom of the pump housing.

CAUTION

Be sure not to scratch the polished inner surface of the sleeve (10) or polished outer surface of the displacement rod (1). Replace the sleeve or rod if worn or scored. New packings will not seat properly on a worn sleeve or rod, and can result in premature packing wear and leakage.

4. Secure the flats of the piston (16) in a vise. Unscrew and disconnect the displacement rod (1), piston valve housing (11), and piston (16). Remove the ball (13*), washer (14*), glands (7* & 15*), and packings (5* & 6*).
5. Unscrew the packing nut (2) from the pump housing (3). Remove the throat packings (5* & 6*) and glands (7* & 15*).

NOTE: Always use new glands with new packings.

6. Clean all parts thoroughly, and check for wear, scratches, or other damage. Check the outer surface of the displacement rod (1) and the smooth, inner surface of the sleeve (10). If either is worn or scratched, replace them. Be sure the ball seats of the piston (16) and intake valve housing (20) are not chipped or nicked. Replace any worn or damaged parts to ensure that the pump will not leak.

NOTE: If replacing the sleeve, be sure to install it with the tapered end down, and to replace the gasket (9*). If the old sleeve is hard to remove, contact your nearest Graco distributor to order the special Sleeve Removal Tool (Part No. 180174).

7. Lubricate all parts with a lightweight grease for easier assembly.

Displacement Pump Assembly

- One at a time, place the female gland (15*), a UHMWPE v-packing (5*), a leather v-packing (6*), a UHMWPE v-packing (5*), a leather v-packing (6*), a UHMWPE v-packing (5*), a male gland (7*), and the spring washer (14*) on the piston (16). *Be sure the lips of the v-packings face up on the piston.*
- Place the ball (13) on the piston. Apply Loctite® No. 242 to the threads of the piston, and screw the piston valve housing (11) onto the piston.
- Apply Loctite No. 242 to the threads of the piston valve housing (11) and screw the displacement rod (1) onto the piston valve housing. Torque the displacement rod to 75–85 ft-lb (102–115 N•m).
- One at a time, place a male gland (7*), two UHMWPE v-packings (5*), a leather v-packing (6*), a UHMWPE v-packing (5*), a leather v-packing (6*), a UHMWPE v-packing (5*), and a female gland (15*) in the throat of the pump housing (3). *Be sure the lips of the v-packings face down in the throat.*
- Loosely install the packing nut/wet cup (2).
- Install the ball (19*) and pin (17) into the intake valve housing (20). Then install the o-ring (18*) on the valve housing and screw it into the pump housing (3). Torque the valve housing to 75–85 ft-lb (102–115 N•m).
- Tighten the packing nut (2) just tight enough to stop leakage, but no tighter.
- Connect the displacement pump to the air motor, and fill the wet cup 1/2 full with Graco Throat Seal Liquid.

NOTE: If the ground wire was disconnected before servicing, be sure to reconnect it before operating the pump, and check to be sure the entire system is properly grounded.

- △1 Lips of v-packings face down
- △2 Lips of v-packings face up
- △3 Torque to 75–85 ft-lb (102–115 N•m)
- △4 Torque to 135–140 ft-lb (184–190 N•m)

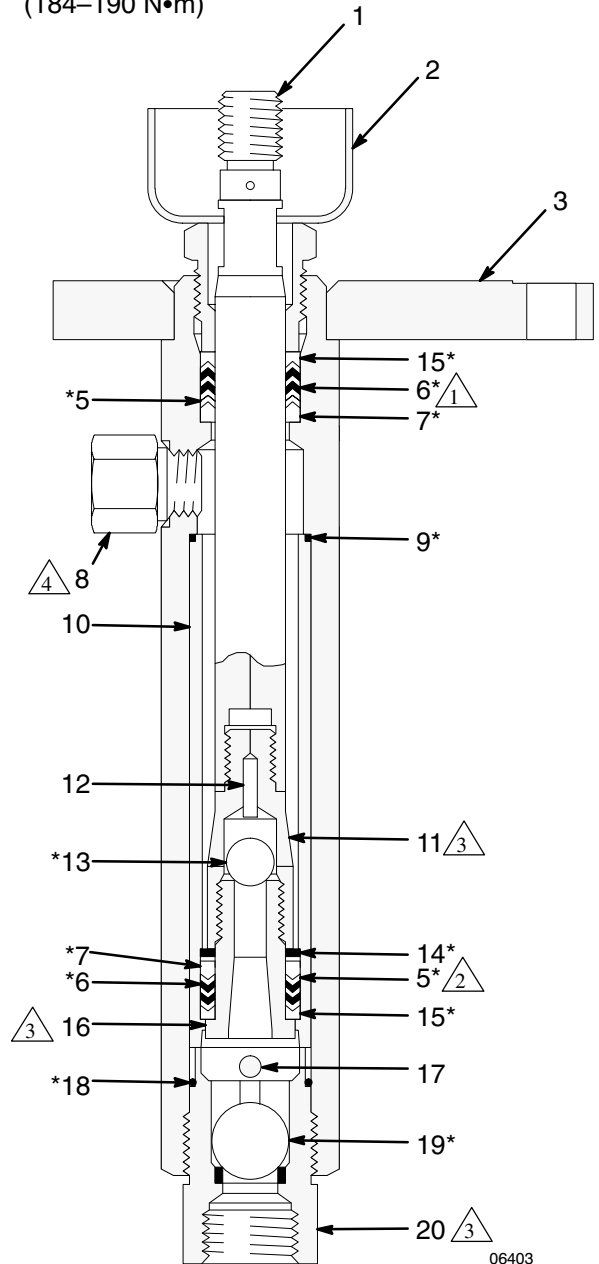
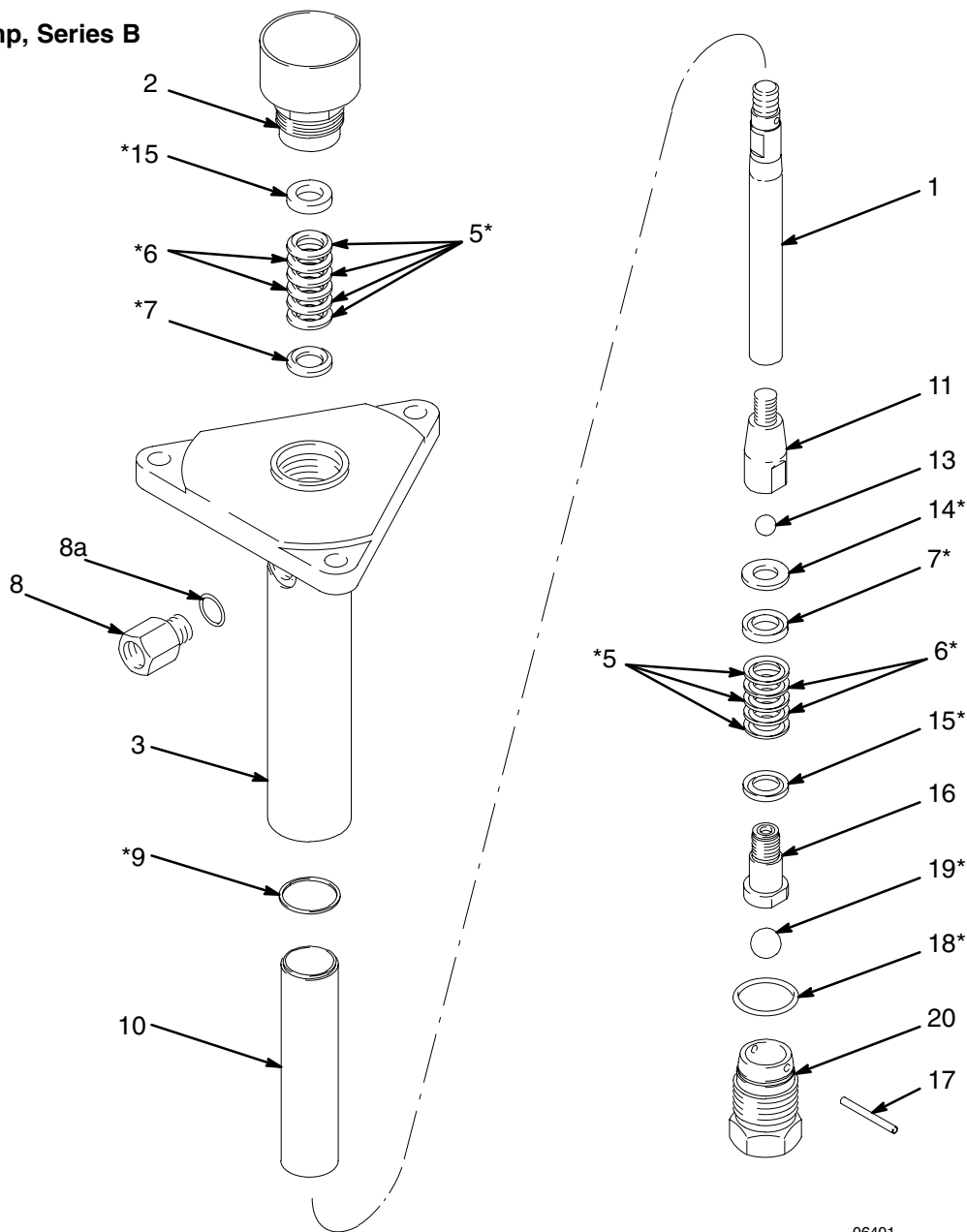


Fig. 2

Parts

Model 217462 Displacement Pump, Series B

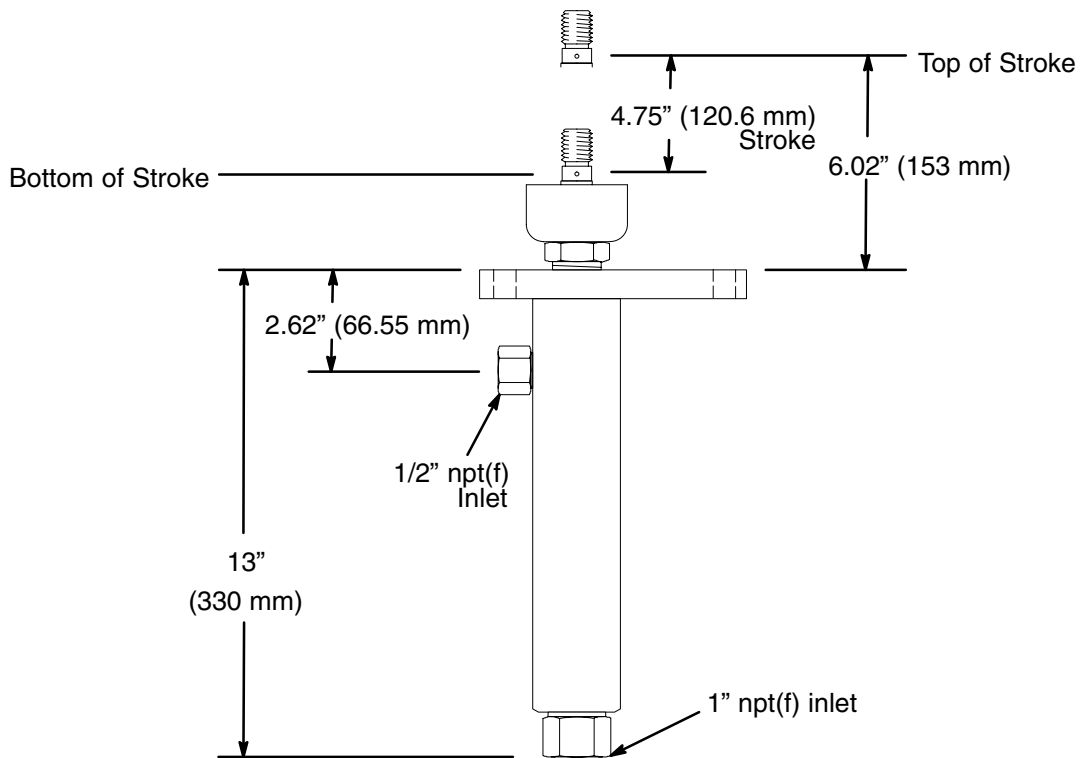


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Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	178977	ROD, displacement	1	11	218038	HOUSING, valve, piston	1
2	218194	NUT, packing, w/wet cup	1	13*	101454	BALL; steel, 0.625" dia	1
3	218350	HOUSING, pump	1	14*	178973	WASHER, spring	1
5*	108457	V-PACKING; UHMW polyethylene	7	15*	178979	GLAND, female	2
6*	178976	V-PACKING; leather	4	16	217582	PISTON	1
7*	178974	GLAND, male	2	17	178978	PIN, stop, ball	1
8	107099	ADAPTER, pipe (includes item 8a)	1	18*	107098	O-RING; PTFE	1
8a*	107148	O-RING; Viton®	1	19*	101190	BALL; steel 1" dia	1
9*	178981	GASKET; PTFE	1	20	220418	HOUSING, valve, intake	1
10	178984	SLEEVE, cylinder	1	23	172477	TAG, warning (not shown)	1
10	307650						

* These parts are included in Repair Kit 220371, which may be purchased separately.

Dimensions



06404

Technical Data

Maximum working pressure 4200 psi (290 bar)
Wetted parts Chrome Plated Stainless
Steel, Chrome Alloy, Zinc
Plated Steel, PTFE, Leather,
UHMW Polyethylene.

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Graco Warranty

Graco warrants all equipment listed in this manual 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. 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 for 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.

Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
Phone: 612-623-6921 or Toll Free: 1-800-328-0211, Fax: 612-378-3505

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International Offices: Belgium, Korea, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441
PRINTED IN U.S.A. 307650 May 1983, Revised 12/2004