

# Instructions–Parts List



HIGH PRESSURE, STAINLESS STEEL, WATERBASE COMPATIBLE

## Back Pressure Valve with Carbide

## Needle and Seat

307892K

ENG

For use in air–assisted circulating system to control back pressure to the gun(s) and maintain proper pressure for circulation. Also for use with XM proportioners as an adjustable restriction valve.

For professional use only.

*7250 psi (50 MPa, 500 bar) Maximum Fluid Inlet Pressure*

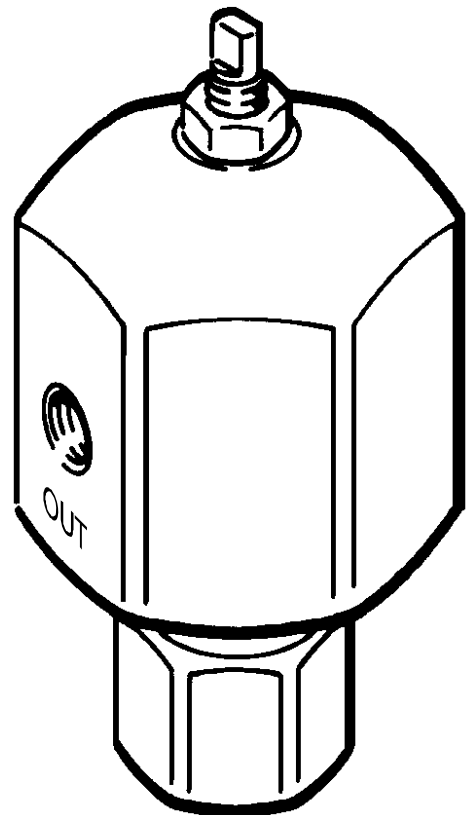
*150 – 7250 psi (1 – 50 MPa, 10 – 500 bar) Fluid Back Pressure Range*

Part No. 222200, Series D



### Important Safety Instructions

Read all warnings and instructions in this manual.  
Save these instructions.



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# 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 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 of the lowest rated system component. The maximum working pressure of this equipment is 5000 psi (350 bar).
- 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.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



## SKIN 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 might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Follow the **Pressure Relief Procedure** on page 5 if the spray tip clogs and before cleaning, checking or servicing the equipment.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Be sure all equipment safety devices are operating properly before each use.

# Installation

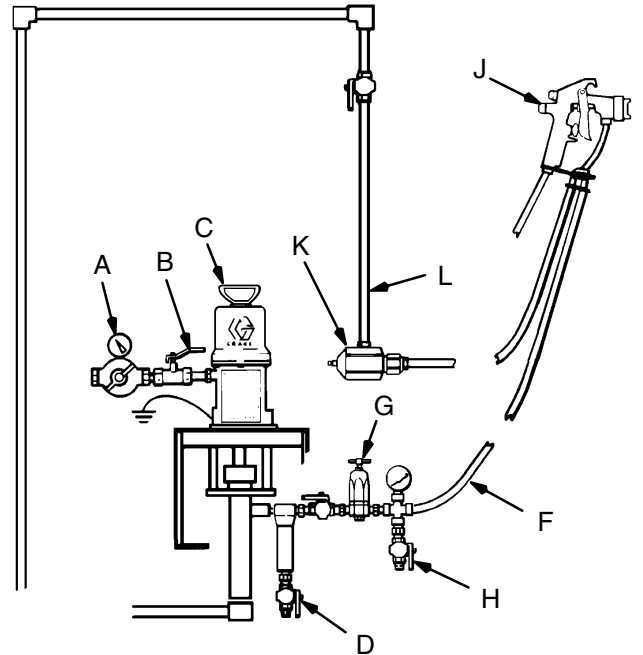
**NOTE:** The Typical Installations shown in Fig. 1 are only guides for selecting and installing a circulating system. Contact your Graco representative or Graco Technical Assistance (see back page) for assistance in designing a system to meet your particular needs.

Install the back pressure valve (K) in the spray gun return line (L) as shown in the Typical Installation drawing below or at right. Using pipe sealant on pipe threads, connect the lines to the 3/8 npt(f) inlet and outlet. **Be sure** the flow direction agrees with the markings on the valve housing.

If more than one spray station is used, install a back pressure valve (K) in the circulating line (M), after the last spray station to maintain proper system pressures.

**NOTE:** The two 1/4-20 tapped mounting holes on the side of the valve housing are for mounting the valve when flexible fluid lines are used.

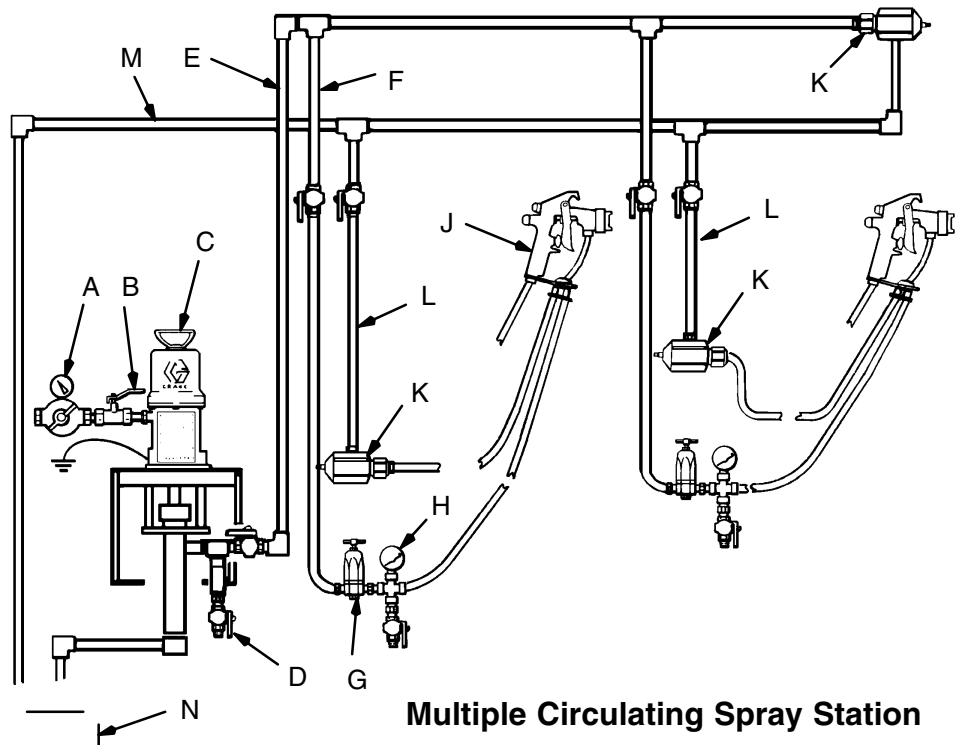
The back pressure valve was tested in lightweight oil. Flush the entire system with a solvent compatible with the fluid being sprayed or dispensed, then test the system.



**Single Circulating Spray Station**

**⚠ CAUTION**

The new system **must** be cleaned and tested thoroughly before admitting fluid to the back pressure valve, to avoid contaminants clogging or damaging the valve.



**KEY**

- A Air Regulator
- B Bleed-Type Master Air Valve
- C Pump
- D Fluid Filter & Drain Valve
- E Main Fluid Supply Line
- F Gun Fluid Supply Line
- G Fluid Regulator
- H Fluid Pressure Gauge & Drain Valve
- J Air-Assisted Airless Spray Gun
- K Back Pressure Valve
- L Fluid Return Line
- M Main Circulating Line
- N Fluid Supply Container

**Multiple Circulating Spray Station**

**Fig. 1**

# Operation

**NOTE:** The back pressure valve controls pressure ahead of the valve inlet. When used with XM proportioners, the it controls the flow across the valve.

1. Back the adjusting screw out to allow full fluid flow.
2. Turn the screw *clockwise* to *increase* the back pressure (less flow) and *counterclockwise* to *decrease* it (more flow).

3. Adjust the pump air pressure and the back pressure valve for the best spraying combination and the proper circulation of fluid. Use the lowest possible air and fluid pressures for your application.

4. Tighten the locking nut (3) to lock the setting.
5. Record all the settings for future reference.

**NOTE:** See the XM Mix Manifold Kits manual for more information about how the valve operates as a machine mounted restrictor valve.

# Cleaning and Maintenance

## Pressure Relief Procedure

### WARNING



#### SKIN INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. 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 tip.

1. Lock the gun trigger safety and other equipment safety locks.
2. Turn off the power to the pump.
3. Unlock the gun trigger safety.
4. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
5. Lock the gun trigger safety.
6. Open the drain valve (required in your system), having a container ready to catch the drainage.
7. Leave the drain valve open until you are ready to spray again.

*If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.*

## Cleaning

### WARNING

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

Flush the back pressure valve whenever the rest of the system is flushed. Before flushing, **relieve pressure**, then open the valve by turning the adjusting screw *counterclockwise* to open the valve.

*Before removing the back pressure valve for thorough cleaning and inspection, **relieve pressure**. Then remove the valve and clean and inspect all parts.*

### CAUTION

**Do not** allow paint or solvent to set in the system for any extended length of time. Fluid could dry on the valve stem, causing leakage at the stem packing. If leakage occurs, disassemble and clean the valve.

### CAUTION

Handle the hard carbide parts, valve stem tip (2) and seat (10), carefully to avoid damaging them. Damage will cause poor operation and leakage.

# Cleaning and Maintenance

## Seat and Valve Stem Replacement (See the Parts Drawing on page 7)

**NOTE:** Order Kit No. 223016 to repair the back pressure valve.

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 5.

1. **Relieve the pressure.** Then remove the back pressure valve from the fluid line.
2. Unscrew the seat housing (11) from the valve housing (1).
3. Remove the valve seat (10), spring (8), and o-rings (7, 9) from the seat housing (11).
4. Remove the retaining ring (6) and valve stop (5) from the valve housing (1).
5. Remove the locking nut (3) from the valve stem (2).
6. Remove the valve stem (2).
7. Clean and inspect all parts. Replace all o-rings with those provided in Kit No. 223016. **Be sure** to lubricate all the o-rings and the spring.
8. Install o-rings (4 and 13) on the valve stem (2). Install the stem into the valve housing (1).
9. Install the valve stop (5) over the tip of the valve stem (2).
10. Install retaining ring (6) into the valve housing (1).
11. Slide the o-ring (9) onto the valve seat (10). Install the valve seat into the valve housing (1), with its inside chamfer facing towards the valve stem (2).
12. Grease the spring (8) and install it into the seat housing (11). Install the o-ring (7) on the seat housing. Apply sealant to the seat housing threads and screw it into the valve housing (1). Torque to 30–35 ft-lbs (41–47 N•m).

# Parts

Ref. No.	Part No.	Description	Qty.
1	187883	HOUSING, valve	1
2*	235205	STEM, valve	1
3	110005	NUT, hex jam; 5/16–24 UNF	1
4*	110004	O-RING, PTFE	1
5	188013	STOP, valve	1
6	188003	RING, retainer	1
7*	110135	O-RING, PTFE	1
8	111738	SPRING, compression	1
9*	104319	O-RING, PTFE	1
10*	183951	SEAT, valve	1
11	187884	HOUSING, seat	1
12▲	185052	LABEL, warning (not shown)	1
13*	113137	O-RING, CU-75	1

\* These parts are included in Repair Kit 223016, which may be purchased separately.

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

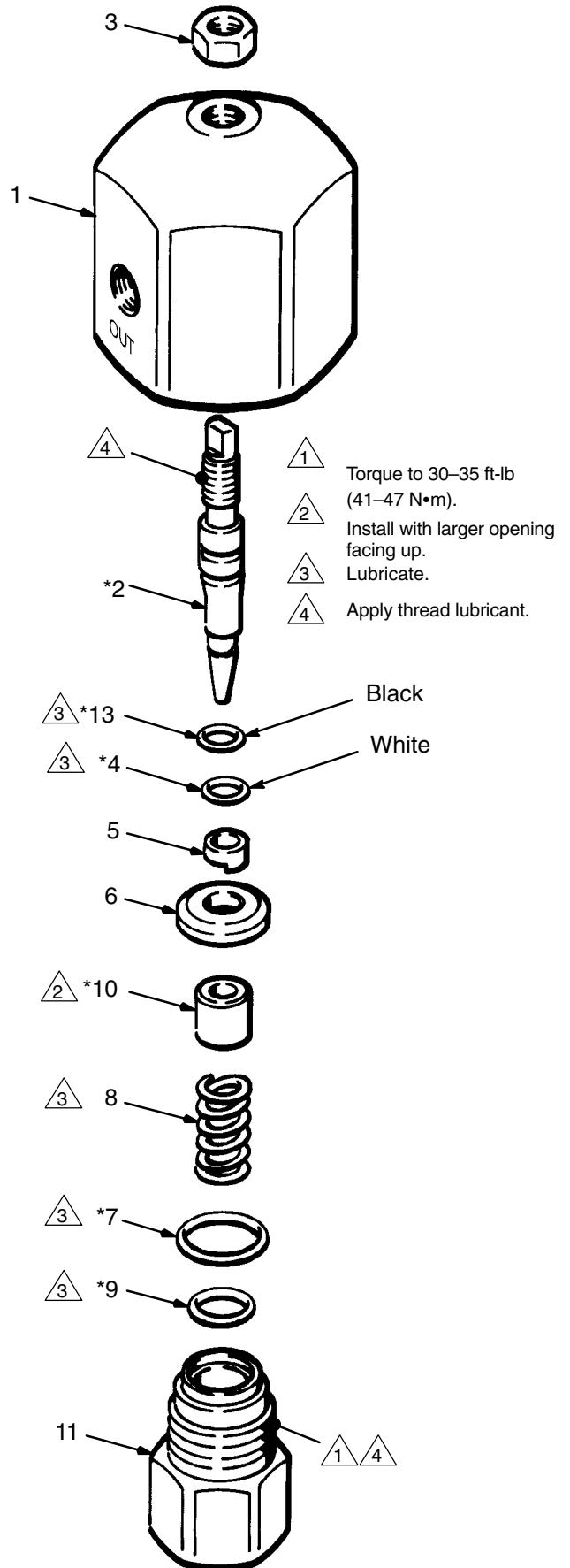
## Accessories

### Bracket Kit 222515

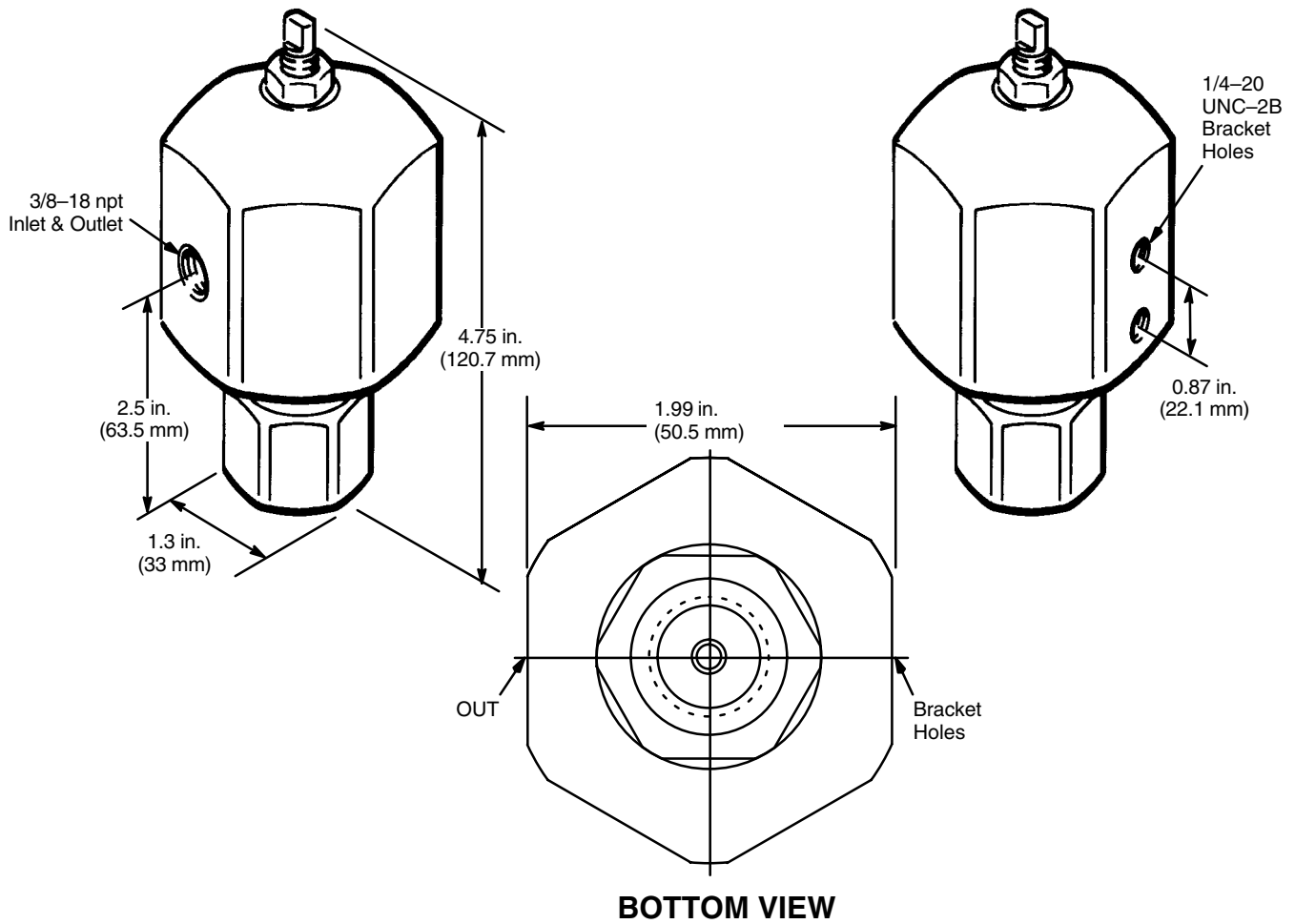
To attach back pressure valve to cart, pail, or wall units.

## Technical Data

Maximum fluid input pressure ..... 7250 psi (500 bar)  
 Back pressure range ..... 150–5000 psi (10–350 bar)  
 Maximum flow capacity ..... 4.5 gpm (17 lpm) at  
 135 centipoise fluid viscosity  
 Weight ..... 2.35 lb (1.06 kg)  
 Wetted parts ..... PTFE, CU-75, 304 & 316 Stainless Steel,  
 17–7 ph Stainless Steel, Tungsten Carbide

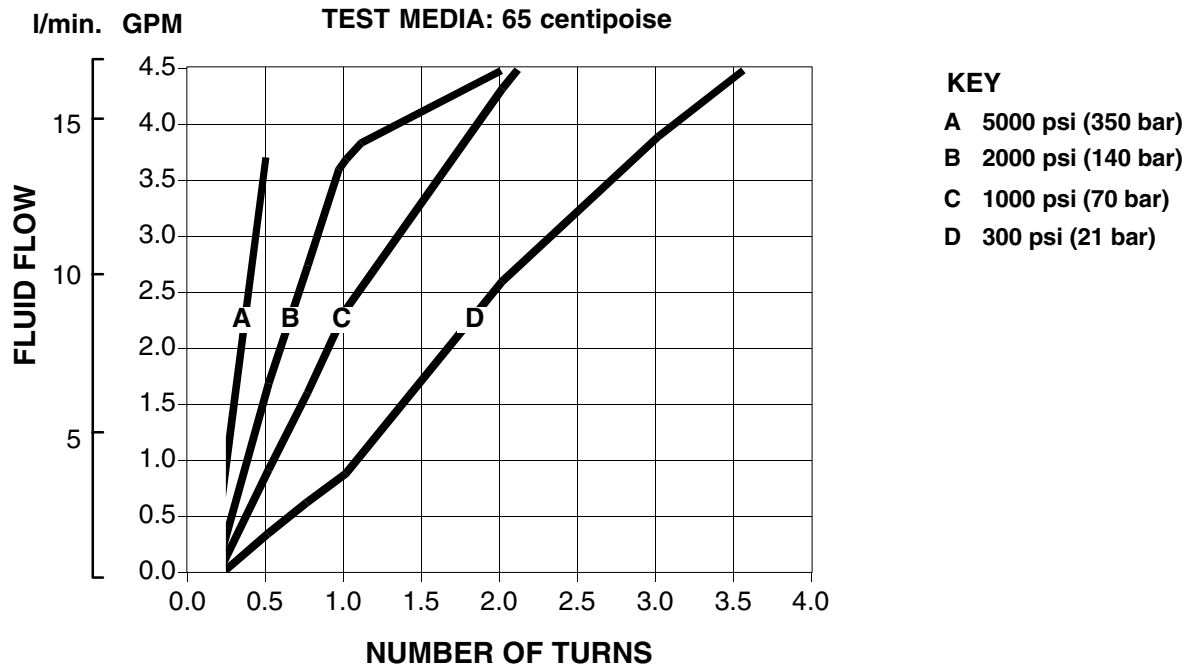


# Dimensions





# Performance Chart



# 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 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 Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the distributor closest to you:

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

*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.*

Original instructions. This manual contains English. MM 307892

**Graco Headquarters:** Minneapolis

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

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

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