

# Fluid Controls and Fittings

307016U

EN

**Part No. 223627, 208085, 223621, 208082, 223622, 223623, 223624, 208250, 214019, 223626, and 210097**

*200 psi (1.4 MPa, 14 bar) Maximum Inbound Fluid Pressure*

**Part No. 223625 and 223628**

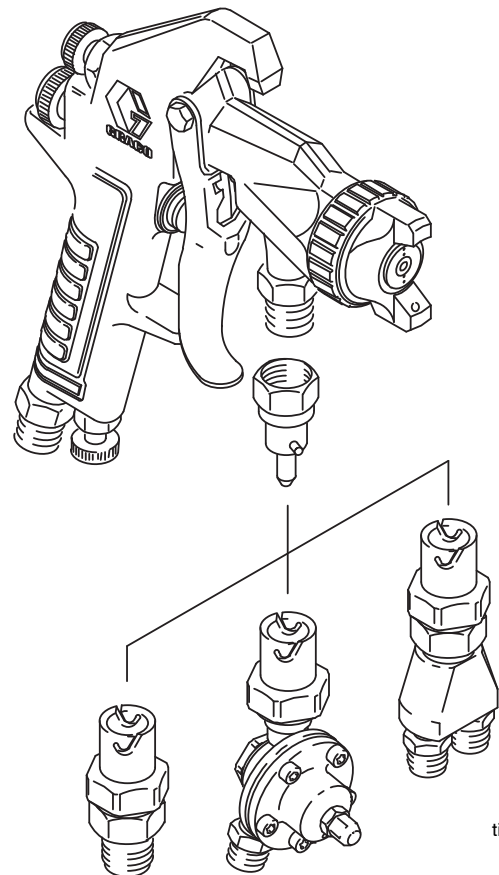
*300 psi (2.1 MPa, 21 bar) Maximum Inbound Fluid Pressure*

See page 2 for model information



## Important Safety Instructions

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


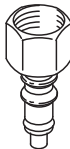

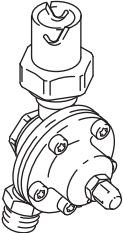
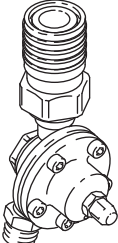
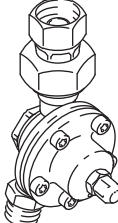
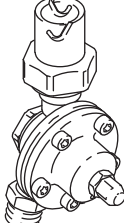
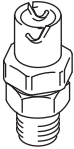

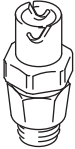

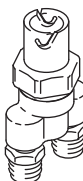


ti02286a

# Contents

Warnings .....	3	Parts .....	5
Installation .....	4	Accessories .....	10
Operation .....	4	Graco Standard Warranty .....	12
Service .....	4		

## Models

	Twist Lock	Slip Ring	Union Adapter	Twist Lock
<b>Coupler Stems</b> 3/8 npsm  Models	  223627* 1.0 oz	  208085* 1.5 oz		  223628* 1.3 oz
<b>Gun Mounted Fluid Regulators</b> 1/4 npsm inlet & return ports 5 to 35 psi (0.5 to 2.5 bar) Regulated Pressure  Models	  223621* 7.0 oz	  208082* 7.5 oz	  223622* 7.0 oz	  223623* 7.3 oz
<b>Straight Adapters</b> 3/8 npsm inlet  Models	  223624*	  208250		  223625*
<b>Circulating Adapters</b> 1/4 npsm inlet & return ports  Models	  214019 223626*			  210097
* Stainless Steel Models				

# 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 symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

**NOTE: The following warning applies only to Models 214018, 208250, 214019, and 210097, which contain aluminum housings.**

## WARNING



### **PRESSURIZED ALUMINUM PARTS HAZARD**

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

# Installation

## Connect the Fluid Hose

### Regulators or Circulating Adapters

- Connect the fluid hoses to the 1/4 npsm(m) inlet and return fittings.

### Straight Adapter

- Connect a hose to the 3/8 npsm(m) inlet fitting.

## Connect the Regulator or Adapter to the Gun

### Model 223622

- Screw the regulator union adapter onto the gun fluid inlet.

### Models with Twist-lock Couplers

- Screw the coupler stem onto the gun inlet. Connect the twist-lock couplers by lining up the coupler slots with the pins on the stem, pushing the coupler onto the stem, then twisting the coupler clockwise to lock it.

### Models with Slip-ring Couplers

- Pull the slip ring back as you push the coupler onto the stem.

# Operation


**NOTICE**

To avoid damaging the regulator diaphragm, never exceed 200 psi (1.4 MPa, 14 bar) Maximum Inbound Fluid Pressure to the regulator.

## To Adjust the Fluid Pressure

Trigger the gun. Turn the fluid regulator setscrew (2) clockwise to the desired setting. Release the gun trigger, tighten the locknut (1), and install the acorn nut (16).

# Service

					
<p>To reduce the risk of serious injury, including splashing in the eyes or on the skin, always shut off the air and fluid pressure to the gun and trigger the gun to relieve pressure in the hoses before disconnecting hoses from the regulator or adapter.</p>					

## To Clean or Service the Regulator

1. Relieve the air and fluid pressures.
2. Disconnect the regulator from the gun and the hoses from the regulator.
3. Disassemble the regulator. Refer to the Parts Drawing.
4. Clean and inspect the parts carefully.
5. Replace worn or damaged parts and reassemble the regulator. Be sure the nylon side of the diaphragm (12) faces the fluid.

### Torque Notes:

*Diaphragm Nut (3) onto Valve Stem (8):*  
6 to 10 in-lb (0.7 to 1.1 N•m)

*Screws (5) into the Housing (18):*  
20 to 30 in-lb (2.3 to 3.4 N•m)

*Cap (14) into the Housing (18):*  
10 to 15 ft-lb (13.5 to 20.0 N•m)

# Parts

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	100166	NUT, hex mach; No. 10-32	1	28	168891	SPRING, compression	1
2	102433	SCREW, set, hex socket; No. 10-32 x 3/4"	1	29■		SLIP RING COUPLER ASSY. Includes items 30-34	1
3	102980	NUT, hex; stainless steel; No. 4-40	1	30	100172	BALL; chrome alloy, 0.188" (4.76 mm) dia.	3
4*	102982	O-RING; PTFE	1	31✓	157230	RING, retaining	1
5	103229	SCREW, cap, socket head; No. 8-32 x 3/8"	5	32	168874	RING, coupler	1
6	167244	RETAINER, spring	1	33	168875	SPRING, compression	1
7	167245	SPRING, compression	1	34		HOUSING, coupler	1
8	168872	VALVE STEM	1	35✓	168882	GASKET; acetal	1
9	168877	HOUSING, upper	1	36	223892	UNION, adapter; 3/8" npsm(f) swivel	1
10*	178320	GASKET; cellulose fibre	1	37**	178846	SEAL; nylon	1
11	168879	WASHER, back-up	1	38**	103075	BALL; stainless steel, 0.438" (11.1 mm) dia.	1
12*	178321	DIAPHRAGM; nylon & buna-n	1	39**	178847	GUIDE, coupler stem	1
13*	168881	WASHER; acetal	1	40**	178848	BALL SEAT; PTFE	1
14	168884	CAP	1	41✓	111279	BALL; stainless steel, 0.438" (11.1 mm) dia.	1
15*	169597	VALVE SEAT	1				
16	170303	ACORN NUT; No. 10-32	1				
17*	178322	GASKET; cellulose fibre	1				
18	208086	HOUSING, lower; Models 223621, 208082, & 223622 only	1				
	208180	HOUSING, lower; Model 223623 only	1				
19†	101947	BALL; stainless steel; 0.375" (9.5 mm) dia.	1				
20	186203	COUPLING NUT; stainless steel	1				
21†	104338	SEAL, spring loaded; PTFE	1				
22†	171887	BALL SEAT; PTFE	1				
23†	171888	HOUSING, seal; acetal	1				
24	186202	HOUSING, coupler; stainless steel	1				
25	168890	SPRING, compression	1				
26■		VALVE SEAT; acetal	1				

✓ Recommended "tool box" spare parts. Keep these spare parts on hand to reduce down time.

\* These parts are included in Repair Kit 208380, which may be purchased separately.

\*\* These parts are included in Repair Kit 217502, which may be purchased separately.

† These parts are included in Repair Kit 210786, which may be purchased separately.

★ Accessory PTFE Diaphragm 185028 with PET Backing Diaphragm 168880 is available. See page 10.

■ These parts are included in Repair Kit 24U819, which may be purchased separately.

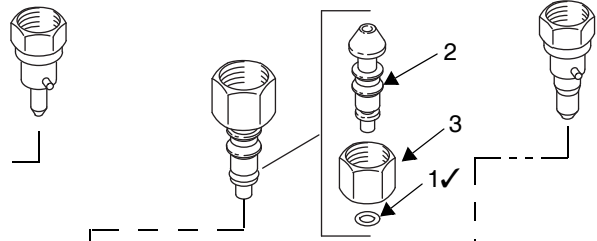
### Coupler Stems

Ref.	No.	Part No.	Description	Qty.
	1✓	103337	O-RING; fluoroelastomer	1
	2	168868	FITTING, coupler	1
	3	168869	COUPLING NUT; 3/8 npsm (f)	1

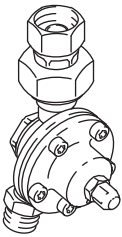
223627

208085

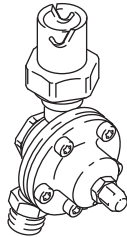
223628



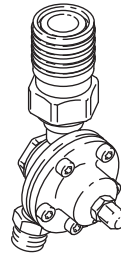
### Fluid Regulators



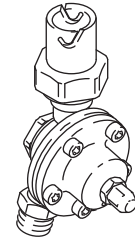
**Model 223622 Series A**  
Includes items 1-18, 35, 36



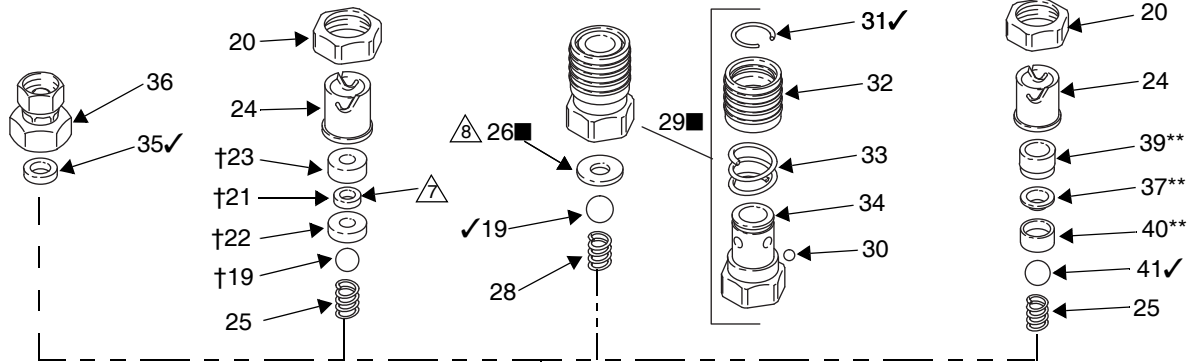
**Model 223621 Series A**  
Includes items 1-25



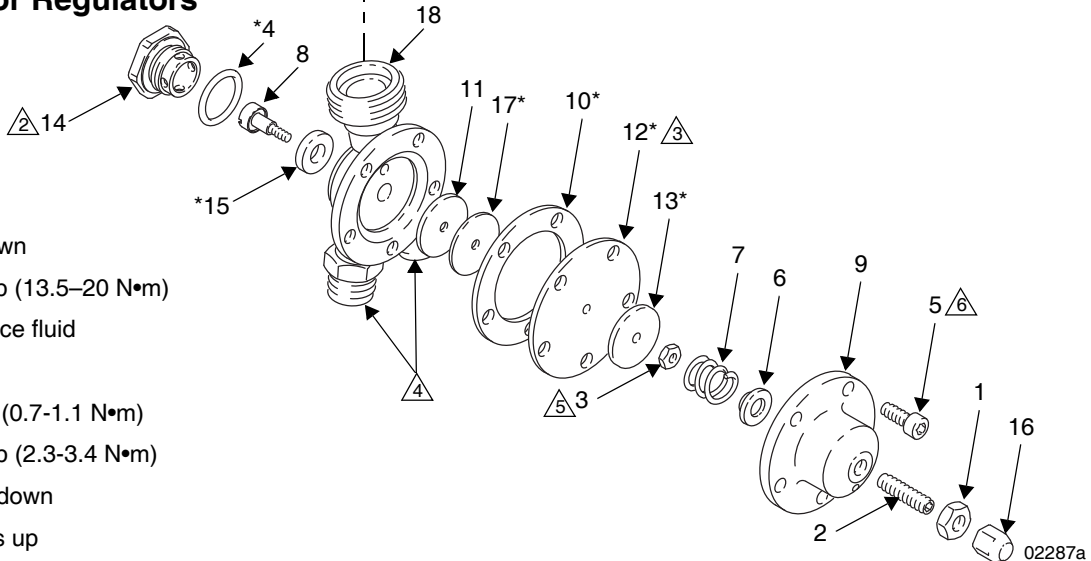
**Model 208082 Series E**  
Includes items 1-19, 26-34



**Model 223623 Series A**  
Includes items 1-18, 20, 24, 25, 37-40



### Common Parts for Regulators



### NOTES

- ① Small hole faces down
- ② Torque to 10–15 ft/lb (13.5–20 N•m)
- ③ Nylon side MUST face fluid
- ④ 1/4 npsm(m)
- ⑤ Torque to 6-10 in/lb (0.7-1.1 N•m)
- ⑥ Torque to 20-30 in/lb (2.3-3.4 N•m)
- ⑦ Spring inside faces down
- ⑧ Large chamfer faces up

### Straight Adapters

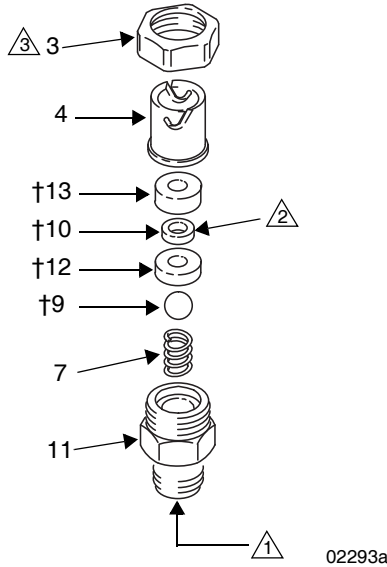
**NOTES**

- ① 3/8 npsm(m)
- ② Spring inside faces down
- ③ Torque to 15-25 ft/lb (20-34 N•m)



**Model 223624 Series A  
TWIST LOCK COUPLER**

Includes items 3-13



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
3	186203	COUPLING NUT; stainless steel	1	10†	104338	SEAL, spring loaded; PTFE	1
4	186202	HOUSING, coupler; stainless steel	1	11	170755	HOUSING, straight adapter	1
7	168890	SPRING, compression	1	12†	171887	BALL SEAT; PTFE	1
9†	101947	BALL; stainless steel; 0.375" (9.5 mm) dia.	1	13†	171888	HOUSING, seal; acetal	1

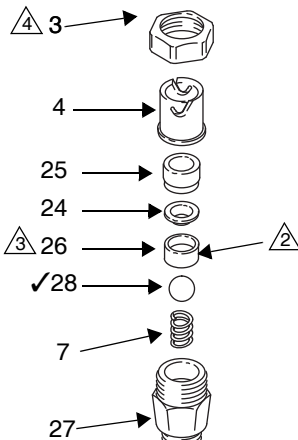
† These parts are included in Repair Kit 210786, which may be purchased separately.

## Straight Adapters



**Model 223625 Series A  
TWIST LOCK COUPLER**

Includes items 3, 4, 7, 24 - 27



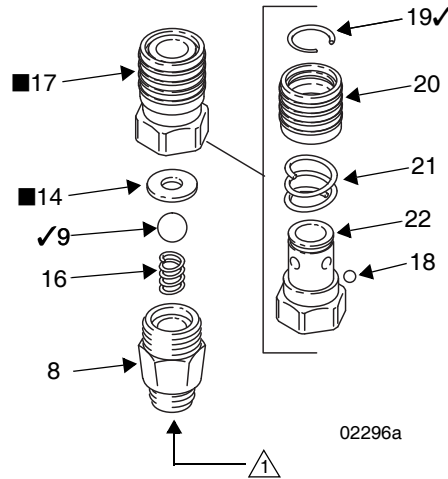
**NOTES**

- △1 3/8 npsm(m)
- △2 Small hole faces down
- △3 Large chamfer faces up
- △4 Torque to 15-25 ft-lb (20-34 N•m)



**Model 208250 Series B  
SLIP RING COUPLER**

Includes items 8, 9, 14 - 22



02296a

Ref. No.	Part No.	Description	Qty.
3	186203	COUPLING NUT; stainless steel	1
4	186202	HOUSING, coupler; stainless steel	1
7	168890	SPRING, compression	1
8	169472	HOUSING, straight adapter	1
9✓	101947	BALL; stainless steel; 0.375" (9.5 mm) dia.	1
14■		VALVE SEAT; acetal	1
16	168891	SPRING, compression	1
17■		SLIP RING COUPLER ASSY. Includes items 18-22	
18	100172	BALL; chrome alloy, 0.188" (4.76 mm) dia.	3
19✓	157230	RING, retaining	1
20	168874	RING, coupler	1

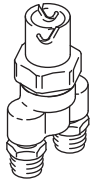
Ref. No.	Part No.	Description	Qty.
21	168875	SPRING, compression	1
22		HOUSING, coupler	1
24	178846	SEAL; nylon	1
25	178847	GUIDE, coupler stem	1
26	178848	BALL SEAT; PTFE	1
27	180050	HOUSING, straight adapter	1
28✓	111279	BALL; stainless steel, 0.438" (11.1 mm) dia.	1

✓ Recommended "tool box" spare parts. Keep on hand to reduce downtime.

■ These parts are included in Repair Kit 24U819, which may be purchased separately.

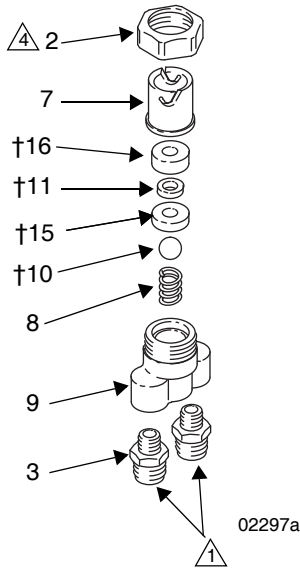


### Circulating Adapters



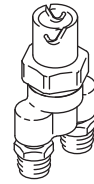
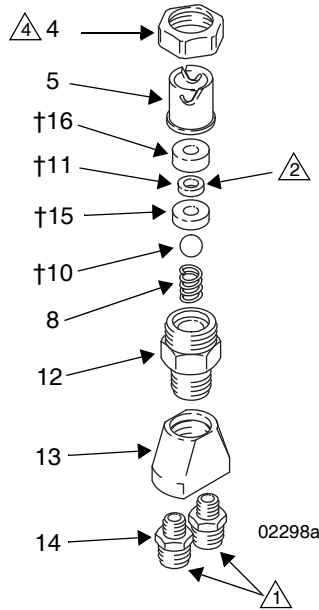
**Model 214019 Series B  
TWIST LOCK COUPLER**

Includes items 2, 3, 7 - 11, 15, 16



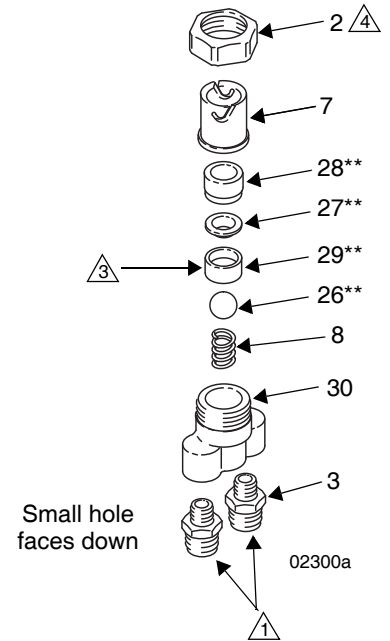
**Model 223626 Series A  
TWIST LOCK COUPLER**

Stainless Steel



**Model 210097 Series B  
TWIST LOCK COUPLER**

Includes items 2, 3, 7, 8, 26 - 30



**NOTES**

△1 1/4 npsm(m)

△3 Small hole faces down

△2 Spring inside faces down

△4 Torque to 15–25 ft/lb (20–34 N•m)

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
2	167394	COUPLING NUT	1	16†	171888	HOUSING, seal; acetal	1
3	167395	HOSE ADAPTER; 1/4 npsm(m)	2	26**	103075	BALL; stainless steel, 0.438" (11.1 mm) dia.	1
4	186203	COUPLING NUT; stainless steel	1	27**	178846	SEAL; nylon	1
5	186202	HOUSING, coupler; stainless steel	1	28**	178847	GUIDE, coupler stem	1
7	181578	HOUSING, coupler	1	29**	178848	BALL SEAT; PTFE	1
8	168890	SPRING, compression	1	30	169471	HOUSING, circulating adapter	1
9	169473	HOUSING, circulating adapter	1				
10†	101947	BALL; stainless steel; 0.375" (9.5 mm) dia.	1				
11†	104338	SEAL, spring loaded; PTFE	1				
12	170755	HOUSING, straight adapter	1				
13	171233	HOUSING, circulating adapter	1				
14	171234	HOSE ADAPTER; 1/4 npsm(m)	2				
15†	171887	BALL SEAT; PTFE	1				

† These parts are included in Repair Kit 210786, which may be purchased separately.

\*\* These parts are included in Repair Kit 217502, which may be purchased separately.

## Accessories

*Accessories must be purchased separately*

### **PTFE Diaphragm 185028, with PET Backing Diaphragm 168880\***

Use when regulator must be submersed in a solvent incompatible with the buna-n backing of the standard diaphragm 178321.

\* *The PTFE diaphragm must face the fluid, with the PET diaphragm used as backing.*



# 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.

**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 présente 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.

# Graco Information

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

For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

**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**

*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 307016

**Graco Headquarters:** Minneapolis

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

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**

**Copyright 1997, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.**

[www.graco.com](http://www.graco.com)

Revision U, July 2015