



INSTRUCTIONS

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

*First choice when  
quality counts.™*

Rev. L  
Supersedes H  
and PCN L

Portable 30:1 Ratio

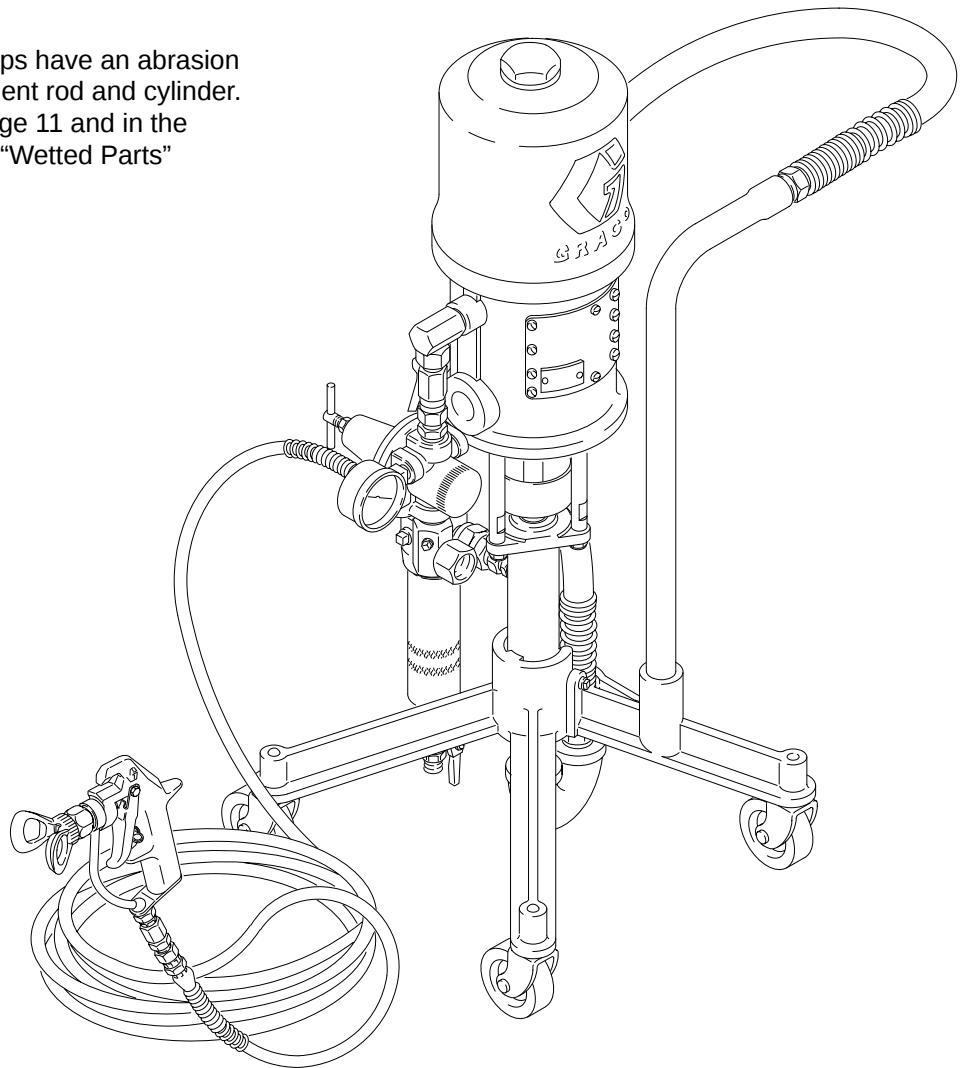
## President® Hydra-Spray® Sprayer

*3000 psi (21.0 MPa, 210 bar) Maximum Working Pressure*

**Model 231-064, Series A**

With Severe-Duty Pump\*

\* Severe-Duty Displacement Pumps have an abrasion and corrosion-resistant displacement rod and cylinder. Refer to the Technical Data on page 11 and in the separate component manuals for "Wetted Parts" information.



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

<http://www.graco.com>

©COPYRIGHT 1997, GRACO INC.

Graco Inc. is registered to I.S. EN ISO 9001

# Table of Contents

|                          |    |
|--------------------------|----|
| Warnings .....           | 2  |
| Installation .....       | 5  |
| Operation .....          | 7  |
| Service .....            | 7  |
| Parts .....              | 8  |
| Technical Data .....     | 11 |
| Warranty .....           | 12 |
| Graco Phone Number ..... | 12 |

# 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



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 uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- 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 11 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 exceed the maximum working pressure of the lowest rated system component. See the Technical Data on page 11 for your unit's maximum working pressure.
- 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).
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# WARNING



## INJECTION HAZARD

Spray from the gun, hose 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 medical attention.**
- Do not point the gun/valve at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip/nozzle.
- 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/valve trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 7 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Permanently coupled hoses cannot be repaired; replace the entire hose.
- Use only Graco approved hoses. Do not remove any spring guard that is used to help protect the hose from rupture caused by kinks or bends near the couplings.



## 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 7 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.
- 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.



## 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

## Grounding

To reduce the risk of static sparking, ground the pump and all other spray equipment used or located in the spray area. Check your local electrical code for detailed grounding instructions for your area and type of equipment. Be sure to ground all of this spray equipment:

1. *Pump:* loosen the grounding lug locknut (A) and washer (B). Insert one end of a 12 ga. (1.5 mm<sup>2</sup>) minimum ground wire (D) into the slot in lug (C) and tighten the locknut securely. See Fig. 1. Connect the other end of the wire to a true earth ground. Order Part No. 237–569, Ground Wire and Clamp.
2. *Air hoses:* use only electrically conductive air hoses.
3. *Fluid hoses:* use only electrically conductive fluid hoses.
4. *Air compressor:* follow manufacturer's recommendations.
5. *Spray gun:* grounding is obtained through connection to a properly grounded fluid hose and pump.
6. *Fluid supply container:* according to your local code.
7. *Object being sprayed:* according to your local code.

8. *All solvent pails used when flushing,* according to 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.
9. *To maintain grounding continuity when flushing or relieving pressure,* always hold a metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the spray gun.

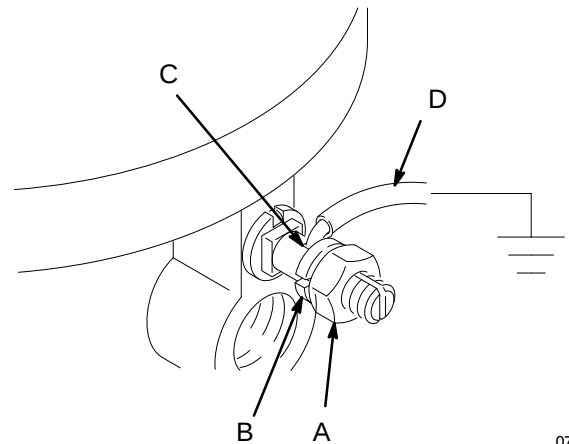


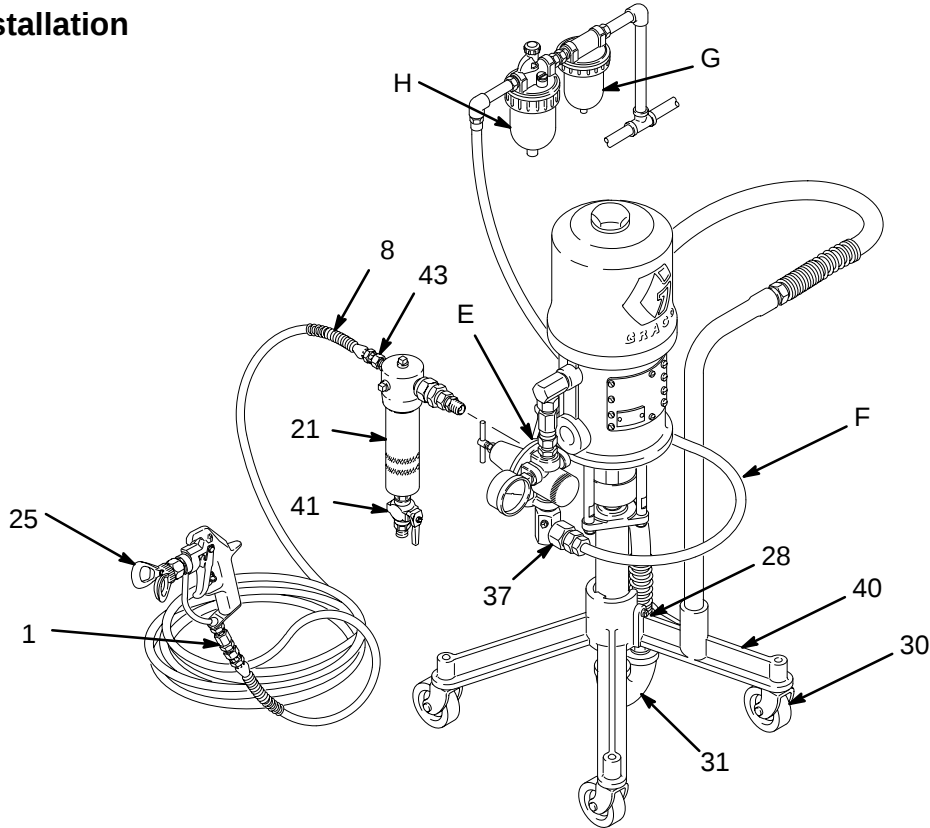
Fig. 1

## Flushing Safety

Before flushing, be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** at left. **Relieve the pressure** and remove the spray tip from the spray gun. Always use the lowest possible fluid pressure, and maintain firm metal-to-metal contact between the spray gun and the pail during flushing to reduce the risk of fluid injection injury, static sparking, and splashing.

# Installation

## Typical Installation



7883

The following manuals are supplied with this sprayer:

|         |                     |         |                           |
|---------|---------------------|---------|---------------------------|
| 308-168 | Air Regulator       | 308-236 | Spray Gun                 |
| 307-273 | Fluid Filter        | 306-686 | Spray Tips                |
| 306-981 | 30:1 President Pump | 306-861 | Ball Valves, Check Valves |
| 307-068 | Ball Valves         |         |                           |

Connect a 1/2 in. (13 mm) minimum ID grounded air supply hose (F) to the 1/2 npt(f) air inlet union (37). The main air supply line must include a bleed-type master air valve (E) for shutting off and relieving air pressure in the system. Install the bleed valve at the air inlet, using an adapter for clearance.

## WARNING

A bleed-type master air valve (E) is required in your system, to relieve air trapped between this valve and the pump after the air is shut off. Trapped air can cause the pump to cycle unexpectedly, which can cause serious injury from moving parts if you are adjusting or repairing the pump.

## NOTES

- If your manual is lost or missing, order a new one at no charge, directly from Graco, Inc.
- Reference numbers and letters in the text refer to the Figures and Parts Drawing.
- Accessories mentioned in the text are available from your Graco distributor.

Use thread sealant on all non-swiveling connections.

Install the casters (30) in the pump mounting stand (40). Loosen the setscrews (28) and lower the pump into the stand until the bottom of the u-fitting (31) clears the floor by 1/2 in. (13 mm). Tighten the setscrews.

Connect one end of the fluid hose (8) to the filter outlet nipple (43). Connect the swivel (1) to the other end of the hose. Connect the spray gun (25) to the swivel. Do not use thread sealant, which prevents the swivel from rotating freely.

Install the air line filter (G) to remove dirt and moisture from your compressed air supply. Downstream from the filter, install an air line lubricator (H) for automatic air motor lubrication. If you supply your own accessories, be sure they are adequately sized to meet the system's air requirements.

Install the ball valve (41) in the bottom of the fluid filter (21). Install the gauge in the air regulator (12) as shown in the parts drawing on page 8.

Ground the pump and spray system as described on page 5.

Read the section **Flushing Safety** on page 5. Then, flush the sprayer as described in the pump manual 306-981 to remove the oil left in the pump after factory testing.

# 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/dispensing,
- check or service any of the system equipment,
- or install or clean the spray tip/nozzle.

1. Lock the spray gun trigger safety.
2. Shut off the air to the pump.

3. Close the bleed-type master air valve (required in your system).
4. Unlock the spray gun trigger safety.
5. Hold a metal part of the spray gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
6. Lock the spray 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 spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.

# Service

### **WARNING**

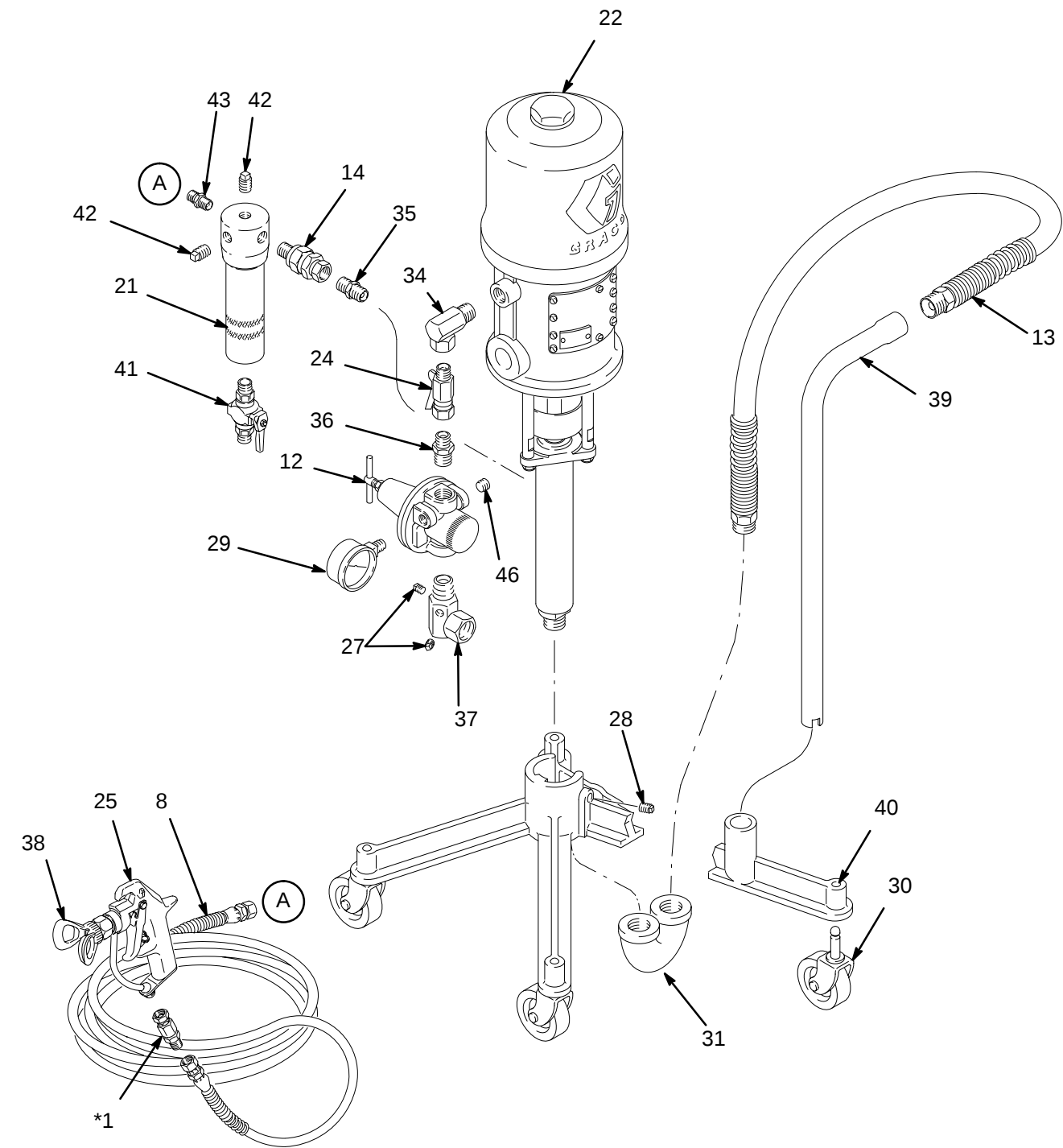
To reduce the risk of serious injury, including injection or injury from moving parts, always follow the **Pressure Relief Procedure**, above, when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

### **WARNING**

For your safety: Before operating and servicing the sprayer, be sure to read and understand all warnings, cautions, notes, and instructions in all of the manuals supplied with this sprayer, as well as those supplied with any accessories you use.

# Parts

**PRESIDENT HYDRA-SPRAY**  
**Model 231-064, Series A**  
Includes items 1-46



7884

# Parts

## Model 231-064, Series A

Includes Items 1-46

| Ref. No. | Part No. | Description                                                                                      | Qty. | Ref. No. | Part No. | Description                                                            | Qty. |
|----------|----------|--------------------------------------------------------------------------------------------------|------|----------|----------|------------------------------------------------------------------------|------|
| 1*       | 204-940  | SWIVEL, See manual 306-861                                                                       | 1    | 28       | 100-672  | SCREW, sq hd cup pt set; 3/8-16 x 1"                                   | 2    |
| 8        | 223-540  | HOSE, static free; 1/4" ID nylon tube; cpld 1/4 npsm(fbe); 25 ft (7.6 m) long; with spring guard | 1    | 30       | 101-851  | CASTER                                                                 | 4    |
| 12       | 206-197  | AIR REGULATOR                                                                                    | 1    | 31       | 102-170  | BEND, return; 3/4 npt(fbe)                                             | 1    |
| 13       | 214-960  | SUCTION HOSE; 3/4" ID cpld 3/4 npt(mbe); 3-1/2 ft (1 m) long; with spring guard                  | 1    | 34       | 161-037  | UNION, 90°, adapter; 1/2 npt(m) x 3/8 npsm(f) swivel                   | 1    |
| 14       | 206-831  | CHECK-VALVE, See manual 306-861                                                                  | 1    | 35       | 156-849  | NIPPLE, hex; 3/8 npt; 1-1/2" long                                      | 1    |
| 20       | 206-994  | THROAT SEAL LIQUID, 1 pint                                                                       | 1    | 36       | 159-239  | NIPPLE, reducing; 1/2 to 3/8 npt                                       | 1    |
| 21       | 218-029  | FILTER; See manual 307-273 for parts                                                             | 1    | 37       | 162-376  | MANIFOLD; 1/2 npt(m x f) 90° swivel union; three 1/8 npt holes in body | 1    |
| 22       | 223-586  | 30:1 PRESIDENT PUMP                                                                              | 1    | 38*      | 163-xxx  | SPRAY TIP, customer's choice                                           | 1    |
| 24       | 208-391  | BALL VALVE                                                                                       | 1    | 39       | 165-767  | TUBE, suction; 3/8 npt; 18" (457 mm) long                              | 1    |
| 25       | 235-460  | SILVER AIRLESS SPRAY GUN                                                                         | 1    | 40       | 165-769  | STAND                                                                  | 1    |
| 27       | 100-403  | PLUG, pipe, sq hd; 1/8 npt                                                                       | 3    | 41       | 210-659  | VALVE, ball                                                            | 1    |
|          |          |                                                                                                  |      | 42       | 100-509  | PLUG, pipe; 1/4-18 npt(f)                                              | 2    |
|          |          |                                                                                                  |      | 43       | 162-453  | NIPPLE; 1/ npsm x 1/4 npt                                              | 1    |
|          |          |                                                                                                  |      | 46       | 100-721  | PLUG, pipe; 1/4-18 npt                                                 | 1    |

\* Recommended tool box spare parts. Keep on hand to reduce down time.

[illegible]

# Technical Data

| Category                 | Data                                          |
|--------------------------|-----------------------------------------------|
| Maximum Working Pressure | 3000 psi (21.0 MPa 210 bar)                   |
| Air Operating Range      | 40–100 psi (0.3–0.7 MPa, 3–7 bar)             |
| Air Inlet Size           | 1/2 npt(f)                                    |
| Fluid Filter             | 60 mesh (250 micron) screen                   |
| Height                   | 34–1/2" (870 mm)                              |
| Width                    | 18" (450 mm)                                  |
| Weight                   | 54 lb (25 kg)                                 |
| Wetted Parts:            |                                               |
| Spray Gun                | See manual 308–236                            |
| Pump                     | See manual 306–981                            |
| Filter                   | See manual 307–273                            |
| Hoses                    | Nylon                                         |
| Check Valve              | Carbon Steel, Stainless Steel, Nitrile Rubber |

Viton® is a registered trademark of the DuPont Co.

# 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 by an authorized Graco distributor 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 Phone Number

**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.**

# Manual Change Summary

This manual was revised to include the changes from PCN K.

*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.*

**Sales Offices:** Minneapolis, Detroit, Los Angeles  
**Foreign Offices:** Belgium, Canada, England, Korea, France, Germany, Hong Kong, Japan

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**  
**<http://www.graco.com>**

PRINTED IN U.S.A. 306-801 September 1963, Revised December 1997