

# Instructions – Parts List



STAINLESS STEEL, AIR-OPERATED

## Paint Spray Gun

308613 rev.D

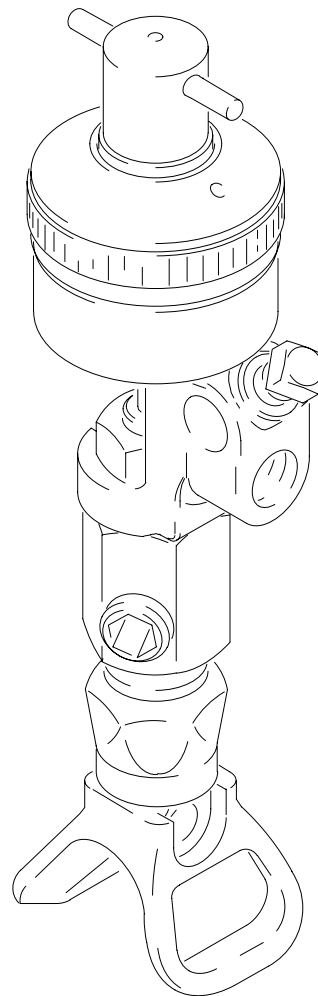
*3000 psi (21 MPa, 210 bar) Maximum Working Pressure*

**Model 238377, Series A**



### **Important Safety Instructions**

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



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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



### 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.

- 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.
- Ground the equipment and the object being sprayed. See **Grounding** on page 6.

# 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 surgical treatment.
- 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.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- 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 7 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. 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. n



## 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.

# 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 your 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 of the lowest rated system component. Refer to the **Technical Data** on page 12 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 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.
- 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).
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Wear ear protection when operating this equipment.

# Installation

**NOTE:** Reference numbers and letters in parentheses in the text refer to the callouts in Figures 1, 2, and 3, and the Parts Drawings.

Accessories are available from Graco. Be sure all accessories are properly sized to withstand the pressures in the system.

## Mount Valve

Mount the valve on a 0.50 in. (12.7 mm) diameter rod on a mounting fixture or a dispensing machine. The paint gun has a clamping set screw (6) for mounting.

## Connect the Air Lines

Clean all lines and connections of dirt, burrs, etc. and blow them out with clean air before connecting them to the system. Install an air filter in the air supply line to remove harmful dirt and moisture from the compressed air.

## Connect the Fluid Lines

Connect a grounded fluid line from the pump to the fluid inlet adapter of the paint spray gun. You should install a fluid pressure regulator to control fluid pressure to the paint spray gun. A regulator enables you to control fluid pressure more accurately than by regulating hydraulic pressure to the pump.

Install a fluid filter to remove particles and sediment which may clog the tip.

## Flush the System

Before flushing, always follow the **Pressure Relief Procedure** on page 7. Start the pump and flush the system with a compatible solvent as explained in the instructions for your pump. Check the system under pressure for leaks; if any are found, follow the **Pressure Relief Procedure** on page 7 and repair the leaks. Pressurize the system again and make sure the leaking has stopped.

## Grounding

Proper grounding is essential to maintaining a safe system.

To reduce the risk of static sparking, ground the pump, paint spray gun and all other system equipment.

1. *Pump:* use a ground wire and clamp.
2. *Air compressors and hydraulic power supplies:* follow manufacturer's recommendations.
3. *Air and fluid hoses connected to the pump:* use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity.
4. *Dispensing valve:* obtain grounding through connection to a properly grounded fluid hose and pump.
5. *Fluid supply container:* according to local code.
6. *All solvent pails used when flushing:* ground according to local code. *Use only metal pails*, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.

# Operation

## Adjustments

Before each day's operation, lubricate with a spray of oil inside the protection tube (13) to prevent fluid buildup on these parts. Any buildup could damage the valve packings (16, 17 or 18).

Set the actuating air to at least 50 psi (3.5 bar) and start the pump. Adjust the pump speed and pressure to obtain the desired flow rate. Always use the lowest pump speed necessary to get the results you want.

## Pressure Relief Procedure

### **WARNING**



#### **FLUID INJECTION HAZARD**

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow this procedure whenever you shut off the pump, when checking or servicing any part of the dispensing system, when installing, cleaning, or changing part of the valve, and whenever you stop dispensing.

1. Shut off the power to the pump.
2. Close the bleed-type master air valve (required with air-powered pumps).
3. Actuate the dispensing valve to relieve pressure.
4. Open the pump drain valve (required in your system) to help relieve fluid pressure in the displacement pump. Actuating the dispensing valve to relieve pressure may not be sufficient. Have a container ready to catch the drainage.
5. Leave the drain valve(s) open until you are ready to dispense again.

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

## APPLICATION DATA

APPLICATION RECOMMENDATIONS*	TRAVEL SPEED IN MILES PER HOUR (KPH) Based on 15 mils (.06 mm) wet paint									
	3 (5)	4 (6)	5 (8)	6 (10)	7 (11)	8 (12)	9 (14)	10 (16)	11 (18)	12 (19)
<b>Paint Tip Size</b>										
For a 4 inch (101 mm) wide line	433	433	439	439	443	443	445	449	453	457
For a 6 inch (152 mm) wide line	539	539	543	549	559	561	565			
For a 12 inch (304 mm) wide line	643	649								
<b>Operating Pressure psi (bar)</b>										
Paint System	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)	1500 (102)
* Coverage may vary depending on paint used.										

# Maintenance

## Clean Dispensing Valve and System Daily

### **CAUTION**

Be sure that the solvent you use is compatible with the fluid being dispensed, to avoid clogging the valve's fluid passages.

An important part of the care and maintenance of your automatic dispensing valve is proper flushing. Flush the valve daily with a compatible solvent until all traces of fluid are removed from the valve passages. Follow the **Pressure Relief Procedure** on page 7 before flushing.

Clean the outside surfaces of the valve by wiping with a soft cloth dampened with a compatible solvent.

### **CAUTION**

Never immerse the entire dispensing valve in solvent. Immersing in solvent removes lubricants and tends to damage packings.

To remove a hardened particle from the orifice, blow air through the orifice from the front.

## Oil Dispensing Valve Daily

Before each day's operation, lubricate with a spray of oil inside the protection tube (13) to prevent fluid buildup on these parts. Any buildup could damage the valve packings (16, 17 or 18).

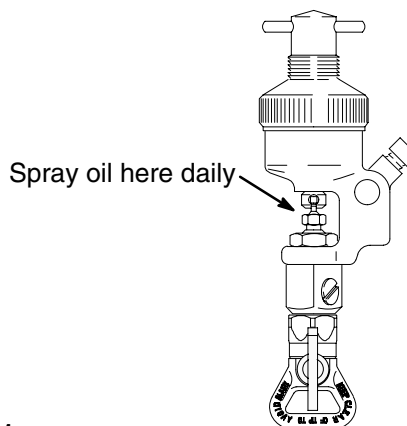


Fig. 1

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# Service

## Needle, Seat and Packings

To clean or replace the needle (19), its seat (2) or packings (16, 17 or 18), proceed as follows:

1. Follow **Pressure Relief Procedure** on page 7
2. Remove RAC guard (1).
3. Turn adjustment screw (21) out to relieve spring pressure.
4. Use a 5/8 in. open-end wrench to remove valve seat (2) from valve housing (4).
5. Use a 7/8 in. open-end wrench to loosen nut (15).
6. Remove packing nut (14) from valve body (4).
7. Remove gun needle (19) from valve body (4).
8. Remove packings (16, 17 and 18) from valve body (4).
9. Clean all parts.
10. Lubricate and install gun needle (19) into valve body (4).
11. Install packings (16, 17 and 18) on gun needle (19).

12. Install packing nut (14) and hand-tighten into valve body (4).

13. Install valve body (4). Tighten nut (15).

14. Install valve seat (2) into valve housing (4).

15. Install RAC guard (1).

Before assembly, lubricate the exposed portions of the needle (19) and the air piston (10) with a lubricant compatible with the fluid being dispensed to prevent fluid buildup on these parts. Any buildup could damage the valve packings (16, 17 or 18).

## Air Piston, Spring and Seals

Follow the **Pressure Relief Procedure** on page 7, then remove the valve as explained, preceding. Remove the air cylinder cap (7), take out the spring (8) and pull the piston (10) out. Clean and inspect all parts. Check the piston o-rings (11, 12) carefully. Lubricate all parts with a light waterproof grease and reassemble the valve using new parts as necessary.

## Repair Kit

Repair Kit 238339 includes the parts listed with an \* in **Parts** on page 12.

# Troubleshooting

**NOTE:** Check all possible solutions before disassembling the pump.

Problem	Cause	Solution
Uneven spray pattern	Fluid pressure too low	Increase pressure to pump, or adjust fluid pressure regulator
Spray gun will not stop spraying	Fluid pressure too high	Reduce pressure to pump, or adjust fluid pressure regulator
	Fluid needle binding	Clean, repair
	Piston packing binding	Repair
	Obstructed or worn needle seat	Clean or replace
Spray gun will not spray	Pump not operating	Refer to separate pump manual
	Fluid line clogged	Clear
	Fluid valve closed	Open
	Clogged orifice or needle seat	Clean
	No trigger or actuator air pressure	Check, clean air lines
	Worn or dry piston packings	Replace

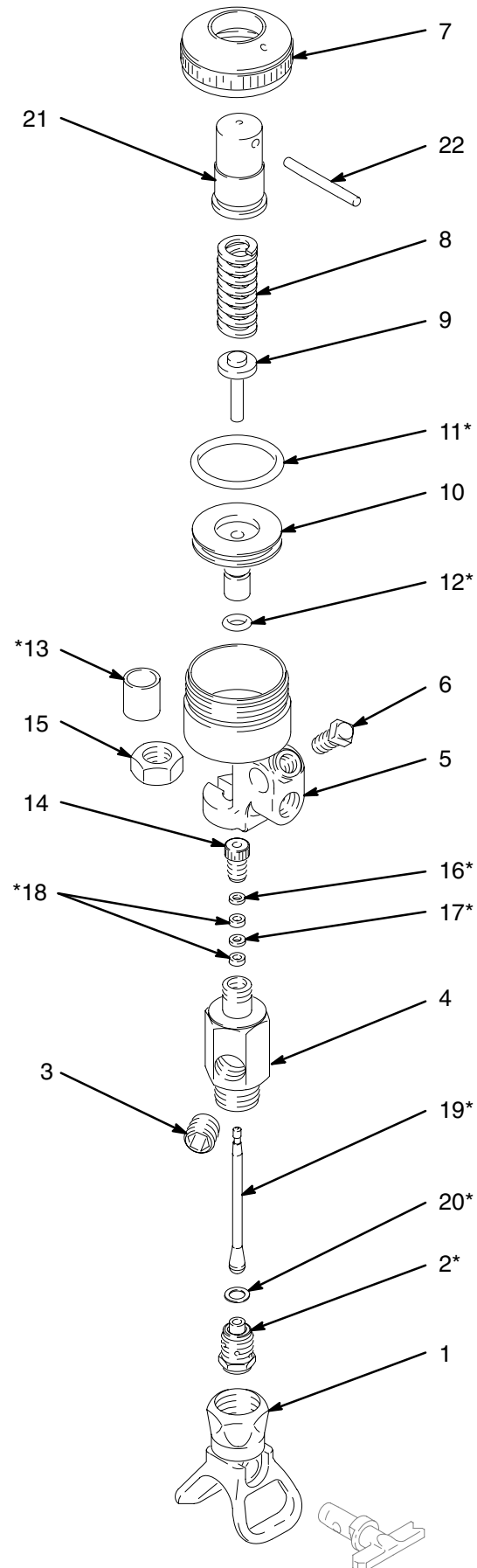


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# Parts

## Model 238377

Includes items 1–22



# Parts

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	243161	GUARD, RAC	1	13	191195*	TUBE, protection	1
2	206987*	SEAT, valve	1	14	191174	NUT, packing	1
3	101748	PLUG, pipe; 3/8 npt	1	15	102300	NUT, 9/16–18 nf	1
4	166470	HOUSING, valve	1	16	166255*	GLAND, packing	1
5	166847	HOUSING, valve	1	17	166258*	PACKING, valve	1
6	101554	SET SCREW, cup point	1	18	181523*	PACKING, valve	2
7	166848	CAP, air cylinder	1	19	220194*	NEEDLE, gun	1
8	114060	SPRING, helical compression	1	20	167730*	GASKET, copper	1
9	164740	GUIDE, spring	1	21	164737	SCREW, adjusting	1
10	164741	PISTON, air	1	22	164736	PIN, handle	1
11	156593*	O-RING; nitrile rubber	1	* Included in Repair Kit 238339. Order separately.			
12	155685*	O-RING; nitrile rubber	1				

## Technical Data

Maximum working pressure . . . . . 3000 psi (210 bar)

Operating pressure of air actuated trigger

Minimum . . . . . 50 psi (3 bar)

Maximum . . . . . 200 psi (12 bar)

Fluid connections . . . . . two 3/8 npt(f) ports

Air connection . . . . . 1/4 npt(f) air inlet

Wetted parts . . . . . 303 & 416 Series Stainless Steel,  
Tungsten Carbide, Copper,  
Acetal Homopolymer, Leather

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# 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.

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## **ADDITIONAL WARRANTY COVERAGE**

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

# Graco Information

**TO PLACE AN ORDER**, contact your Graco distributor, or call **1-800-690-2894** to identify the nearest distributor.

*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.*

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**Graco Headquarters:** Minneapolis  
**International Offices:** Belgium, China, Japan, Korea

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

**<http://www.graco.com>**

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