



INSTRUCTIONS

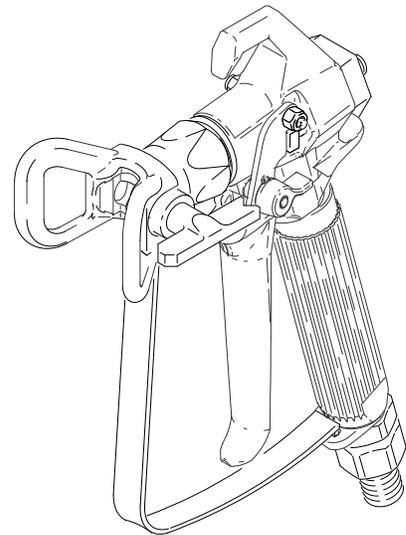
This manual contains important warnings and information.  
**READ AND KEEP FOR REFERENCE.**

## Contractor ST Airless Spray Gun

*3600 psi (252 bar) MAXIMUM WORKING PRESSURE*

### **Model 238-352, Series A**

Includes *Performance Series* RAC® DripLess™ Guard, 515 size SwitchTip™, and 4-finger trigger.



06049

**Model 238-352**

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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



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 of the lowest rated system component. Refer to the **Technical Data** on page 15 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 66°C (150°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, 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 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. See page 8.
- 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 5 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.



## MOVING PARTS HAZARD

Moving parts 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 5 to prevent the equipment from starting unexpectedly.



## RECOIL HAZARD

Due to the high pressure fluid emitted, a strong recoil action may occur when you trigger this gun. If you are unprepared, your hand could be forced back toward your body or you could lose your balance and fall, resulting in serious injury.

# 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. Refer to your pump instruction manual.



## 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/Operation

## System Requirements

### **⚠ WARNING**

Keep the wallet-sized warning card provided with this gun with the operator at all times. The card contains important treatment information should an injection injury occur. Additional cards are available at no charge from Graco Inc.

### **⚠ WARNING**

Be sure your system has a bleed-type master air valve (pneumatic pumps only) and a pressure drain valve. These accessories help reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, if you are adjusting or repairing the pump or gun.

1. The bleed-type master air valve (air-powered pumps only) relieves air trapped between this valve and the pump after the air regulator is shut off. Trapped air can cause the pump to cycle unexpectedly.
2. The pressure drain valve assists in relieving fluid pressure in the displacement pump, hose and gun: triggering the gun to relieve pressure may not be sufficient.
3. Strain the fluid you are spraying if it contains particles which could clog the spray tip.

## Grounding

To reduce the risk of static sparking, ground the sprayer 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.

### **⚠ WARNING**



#### **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.

## Pressure Relief Procedure

1. Engage the gun safety latch.
2. Turn the ON/OFF switch to OFF.
3. Unplug the power supply cord.
4. Disengage the gun safety latch. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
5. Engage the gun safety latch.
6. Open the system pressure drain valve. Leave the pressure 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 to relieve pressure gradually, then loosen completely. Now clear the tip or hose obstruction.*

## How to Use the Gun Trigger Safety

1. To engage the gun trigger safety, turn the latch counterclockwise toward the handle until the detent of the latch locks on and the pin is at a right angle with the gun body. See Fig. 1.
2. To disengage the gun trigger safety, turn the latch clockwise away from the handle to unlock the detent of the latch and turn the pin 180° from the gun body.

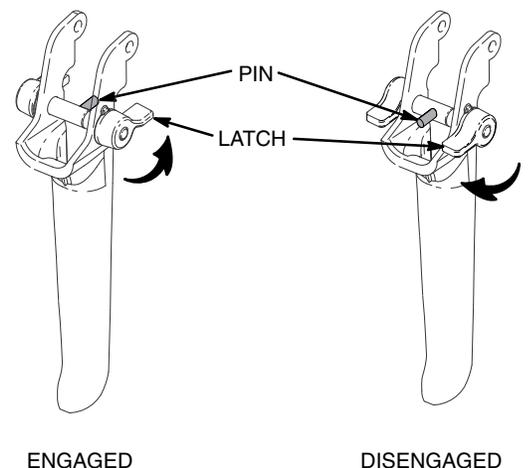


Fig. 1

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# Installation/Operation

## How to Use the Gun

1. Connect a grounded fluid hose to the gun inlet. See Fig. 2
2. With no tip installed, start the pump. Flush the pump according to the instructions supplied with it. Prime the system with the fluid.
3. Follow the **Pressure Relief Procedure** on page 5. Be sure the gun trigger safety is engaged. See Fig. 1.
4. Graco Flat Tip Style Dripless™ Guard  
Install the tip (A) and the gasket (B) in the nut of the tip guard (C). Screw the assembly firmly onto the gun. Tighten the assembly with a wrench. See Fig. 2.  
**NOTE:** If the gasket (B) is not installed, the gun will leak.
5. Reverse-A-Clean (RAC) IV Model 238–352  
Install the RAC IV SwitchTip (40) and the tip guard (41). See manual 308–644, supplied. See Fig. 2.

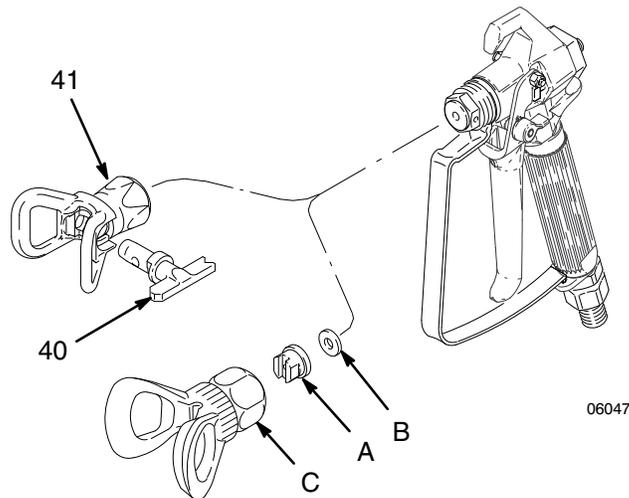


Fig. 2

6. Start the pump. Adjust the fluid pressure until the spray is completely atomized. Use the lowest pressure necessary to get the desired results. Higher pressure may not improve the spray pattern and will cause premature tip wear and pump wear.

7. If adjusting the pressure does not give a good spray pattern, follow the **Pressure Relief Procedure** on page 5 and then try another tip size.
8. Use a full-open, full-close triggering action. Hold the gun about 12 in. (350 mm) from and at right angles to the work surface. Don't swing the gun in an arc. Practice to find the best length and speed of stroke.

## How to Adjust the Spray Pattern

1. To adjust the spray pattern direction, follow the **Pressure Relief Procedure** on page 5. Loosen the tip guard retaining nut (B). Turn the tip guard/ tip groove horizontally (C) for a horizontal pattern and vertically (A) for a vertical pattern. Tighten the nut. See Fig. 3.
2. The spray tip orifice and spray angle determines the coverage and size of pattern. When more coverage is needed, use a larger spray tip rather than increasing fluid pressure.

## CAUTION

The openings in the tip guard reduce paint buildup on the tip guard while spraying. Any damage to the sharp edges of the openings causes paint to collect at that area. Never hang the gun by the tip guard.

### KEY

- A Tip guard shown in position for vertical spray pattern
- B Retaining nut
- C Tip guard shown in position for horizontal spray pattern

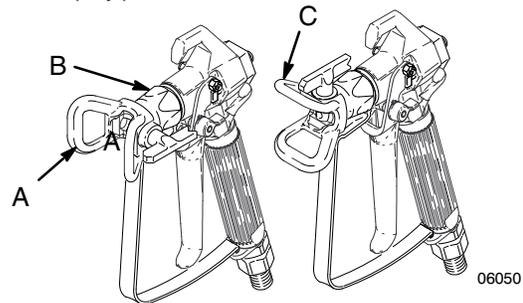


Fig. 3

# Installation/Operation

## How to Clean the Spray Tip and Clear a Spray Tip Obstruction

### **⚠ WARNING**

To reduce the risk of fluid injection or splashing in the eyes or on the skin, **do not** hold a hand, body or rag in front of the spray tip when cleaning or checking a clogged tip. Point the gun toward the ground or into a waste container when checking to see if the spray tip is cleared.

DO NOT try to “blow back” paint; this is NOT an air spray gun.

DO NOT wipe fluid buildup off the gun or spray tip until pressure is relieved.

### ***Cleaning during the day.***

1. Follow **Pressure Relief Procedure** on page 5.
2. Clean the front of the tip frequently during the day to help reduce buildup. Also clean the tip and tip guard at the end of each work day. Use a solvent-soaked brush to clean the spray tip.

### ***Clearing an obstruction.***

If the spray tip clogs while spraying, immediately stop spraying, then:

#### Gun with Standard Flat Tip and Guard

1. Lock the gun trigger safety, open the pressure drain valve.

### **⚠ CAUTION**

Never soak the entire gun in solvent. Prolonged exposure to solvent can ruin the packings.

2. Remove the spray tip and blow out the obstruction by applying air to the front of the spray tip. Or, let the spray tip and gun nozzle soak to dissolve the obstruction. If it won't dissolve, jar it out by tapping the back of the spray tip against a flat surface.

#### Gun with RAC IV Tip and Guard; Model 238–352

1. Lock the gun trigger safety. Rotate the RAC IV tip handle 180°. See Fig. 4.
2. Unlock the gun trigger safety. Trigger the gun into a pail or onto the ground to remove the clog.
3. Lock the gun trigger safety. Rotate the tip handle to the spraying position.
4. If the tip is still clogged, lock the gun trigger safety, shut off the sprayer and disconnect the power source, and open the pressure drain valve to relieve pressure. Clean the spray tip as shown in manual 308–644, supplied with the RAC IV.



**KEY**  
A Handle shown in spraying position. Turn handle 180° and trigger gun to clear clog.

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**Fig. 4**

# Installation/Operation

## How to Check the Gun Diffuser Operation

Check the diffuser operation weekly. The gun diffuser/seat (A) breaks up spray and reduces the risk of fluid injection when the tip is not installed. Perform the test below. If it fails, replace the entire Needle Kit, Part No. 218-070, as instructed on page 7. Diffuser/seats are not sold separately since the gun will leak if an old needle is used with a new diffuser/seat.

1. Follow **Pressure Relief Procedure** on page 5.
2. Remove the tip guard and spray tip.
3. Start the sprayer and adjust it to the lowest pressure.
4. Aim the gun into a grounded metal pail while holding it firmly to the pail. Trigger the gun. If the fluid emitted *is not* diffused into an irregular stream, replace the entire needle kit immediately. See Fig. 5.

## How to Clean the Filter (See Fig. 6.)

Clean the filter assembly (17) daily, as follows:

1. Follow **Pressure Relief Procedure** on page 5.
2. Push up on the trigger guard (12) and swing it away from the trigger (5).
3. Unscrew the gun handle (6) from the housing (26). Remove the filter and clean it in compatible solvent.

4. Apply lithium-base grease to the threads of the gun handle (14) and reassemble the gun.

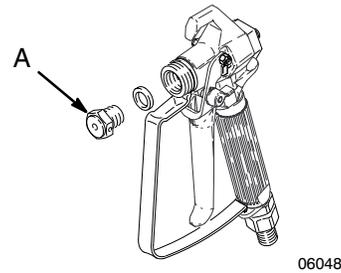


Fig. 5

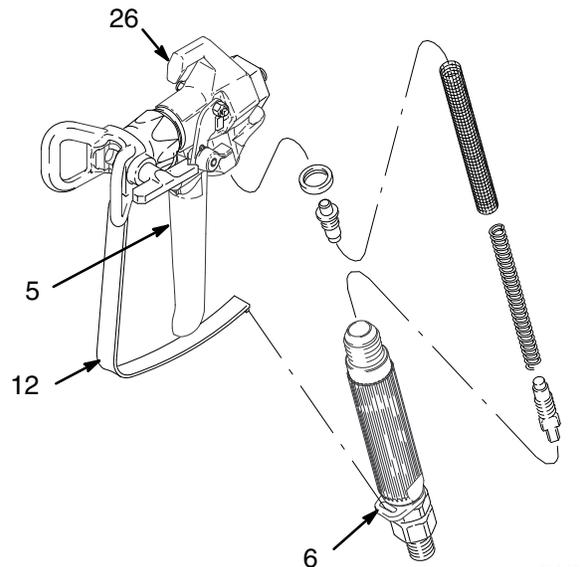


Fig. 6

# Installation/Operation

## How to Flush the Gun

### WARNING



To reduce the risk of serious bodily injury, including splashing fluid in the eyes or on the skin, or static electric discharge when flushing:

- Be sure the entire system, including flushing pails, are properly grounded.
- Remove the tip guard and spray tip.
- Maintain metal to metal contact between the gun and the flushing pail.
- Use the lowest possible pressure.

Always flush the pump and the gun before the fluid being sprayed can dry in it.

**NOTE:** If it is available, the flushing procedure provided in your pump or sprayer manual should be used instead of this procedure.

1. Follow **Pressure Relief Procedure** on page 5.
2. Remove the tip guard and spray tip. Soak and clean the parts.
3. Put the pump intake in a grounded pail of water or solvent.
4. Start the pump at its lowest pressure.
5. Trigger the gun into the original pail. When water or solvent appears, release the trigger.
6. Follow the **Pressure Relief Procedure**, page 5.

### WARNING

Do not spray paint from the gun with the gun safety latch set to the cleaning position.

7. Trigger the gun. Rotate the latch clockwise all the way up to the cleaning position as shown in Fig. 7. Release the trigger. The gun is now in continuous cleaning mode without the need to manually trigger the gun.
8. Aim the gun into the solvent pail. Start the pump at its lowest pressure. Circulate the fluid until the system is thoroughly flushed.
9. Trigger the gun and turn the latch counterclockwise to rotate the pin parallel with the gun. Release the trigger to stop flushing.
10. Follow the **Pressure Relief Procedure**, page 5.

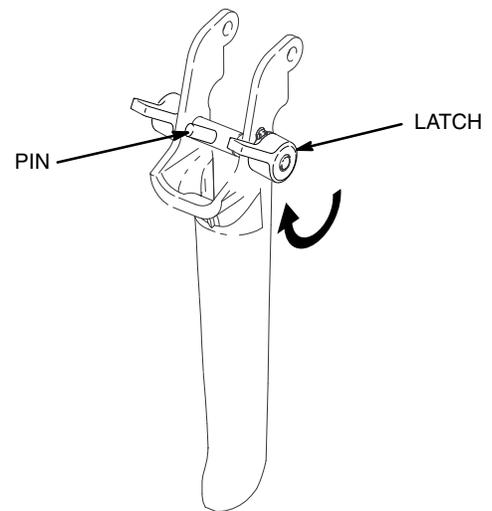
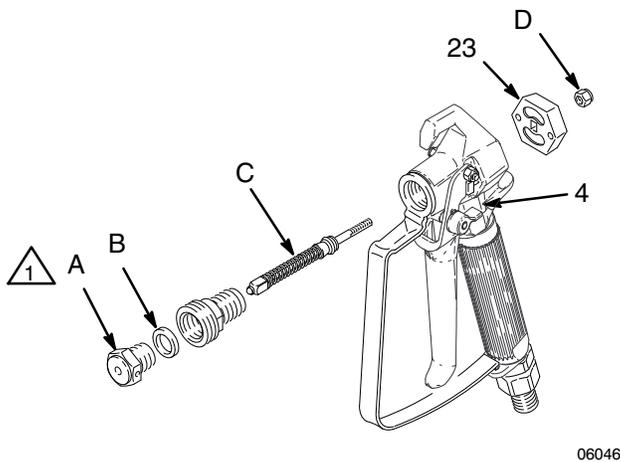


Fig. 7

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# Service



Torque to 20-25 ft-lb  
(27-34 N.m)

**Fig. 8**

**NOTE:** The needle (C), diffuser/seat (A), gasket (B) and locknut (D) must be replaced together. They are included in Kit 218-070.

## Disassembly (See Fig. 8)

1. Follow the **Pressure Relief Procedure** on page 5.
2. Remove the tip guard assembly. See Fig. 2.
3. Squeeze the trigger while unscrewing the diffuser/seat (A) and gasket (B).
4. Remove the locknut (D) and end cap (23).
5. Tap the rear of the gun with a plastic mallet to push the needle assembly out the front.

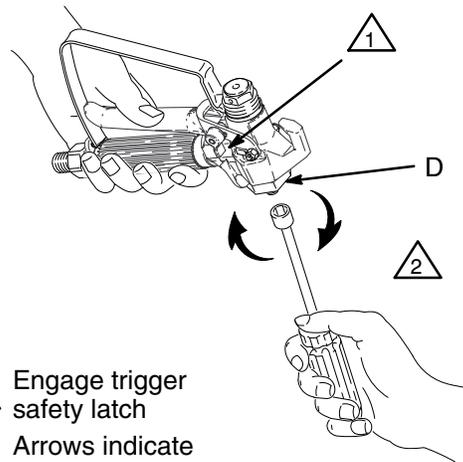
## Reassembly (See Fig. 8)

1. Guide the threaded end of the needle assembly into the front of the gun.
2. Install the end cap, aligning its guides with the holes in the rear of the gun. Install the locknut (D) loosely.
3. Squeeze the trigger while installing the gasket (B) and diffuser/seat (A). Torque the diffuser seat to 20–25 ft-lb (27–34 N.m).

4. If the gun handle (6) was removed, hand tighten it into the fluid housing (26); it should fit easily.
5. Adjust the needle before using the gun. Procedure below.
6. Be sure the trigger guard and tip guard are installed before using the gun.

## Adjusting the needle (See Fig. 9)

1. Engage the gun safety latch.
2. Hold the gun with the nozzle straight up so the trigger falls onto the safety latch.
3. With light pressure, hold the trigger against the latch. Turn the locknut (D) clockwise until there is enough tension for you to **feel and see** the trigger raise slightly off the latch.
4. Turn the adjusting nut 3/4 turn *counterclockwise*.
5. Connect the fluid hose. Install the tip guard and prime the system. Trigger the gun and release it. The fluid flow should stop immediately. Engage the safety latch and try to trigger the gun. No fluid should flow. **If the gun fails either test**, relieve pressure, disconnect the hose and readjust the needle.



- Engage trigger safety latch
- Arrows indicate clockwise turn

**Fig. 9**

# Service

## Replace Swivel

(See Fig. 10)

### Disassembly

1. Follow **Pressure Relief Procedure** on page 5.
2. Push up on trigger guard (12) and swing trigger guard away from trigger (5).
3. Unscrew gun handle (6) from housing (26). Remove filter and clean in compatible solvent.
4. Remove swivel (15), guard retainer (42) and cushion o-ring (43).
5. Save guard retainer and cushion o-ring.

### Reassembly

1. Clean internal thread of handle (6).
2. Install guard retainer (42), cushion o-ring (43) and swivel (15).
3. Apply PST pipe seal (included in Swivel Kit 238–817) to external thread of swivel (15) that connects to handle (6).
4. Install swivel (15) into handle (6). Torque swivel to 250 in-lb.
5. Engage trigger guard (12) to retainer guard (42).

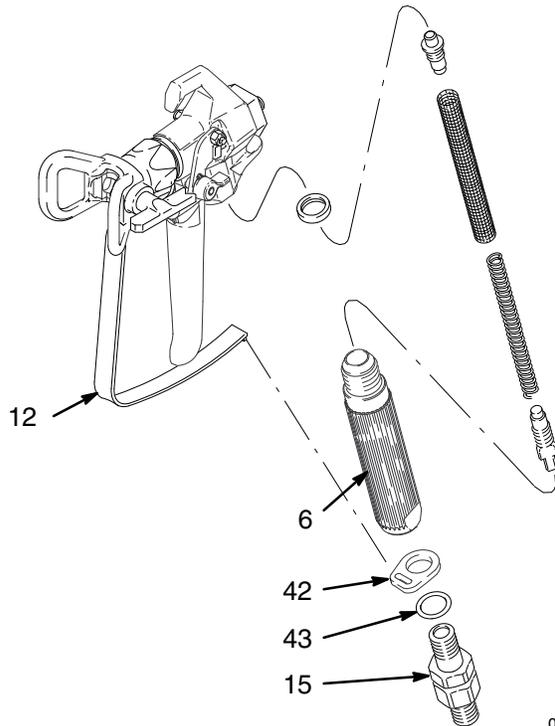
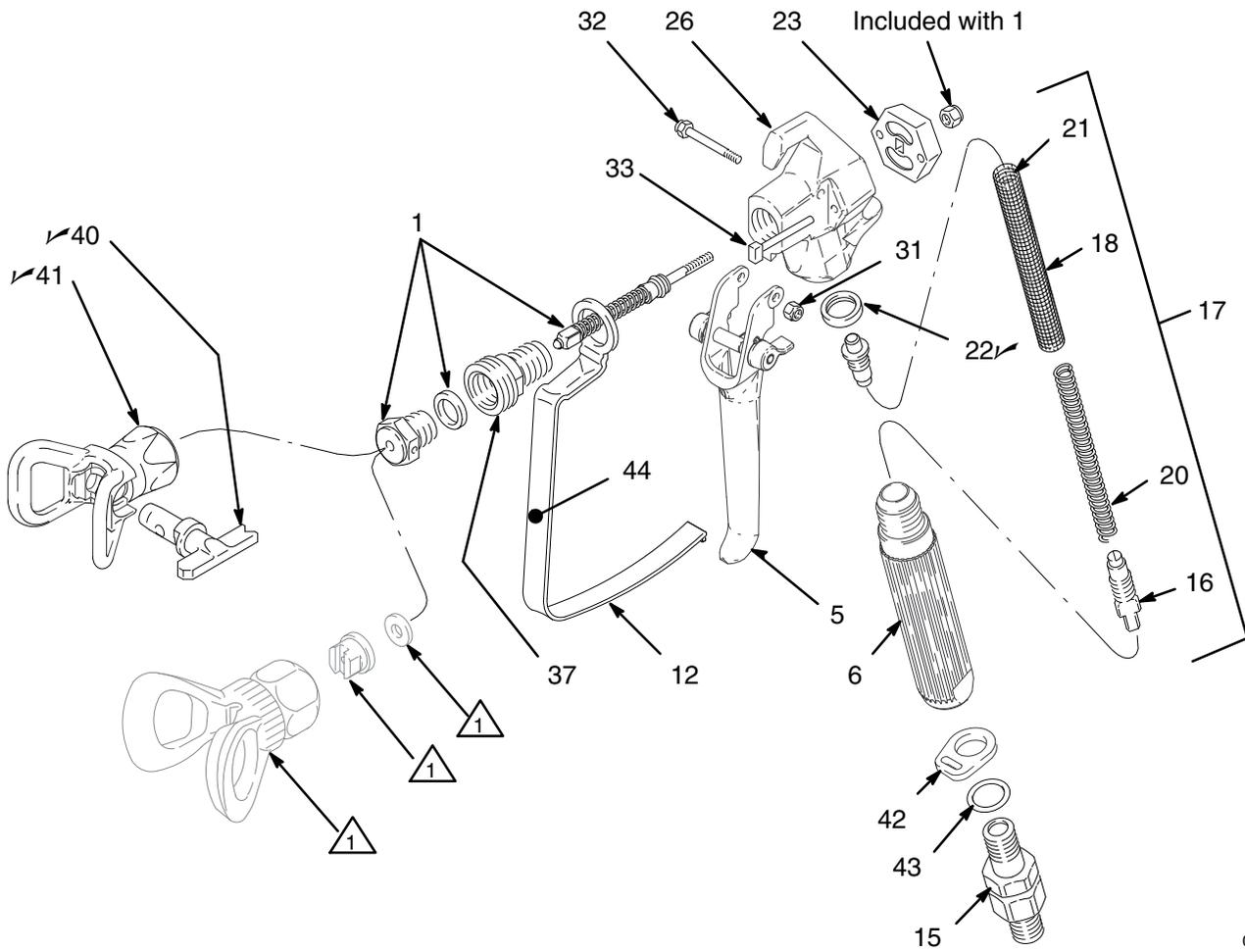


Fig. 10

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# Parts Drawing

Model 238-352, Series A



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 Purchase separately

# Parts List

## Model 238–352, Series A

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	218–070	NEEDLE–DIFFUSER/SEAT KIT	1	31	105–334	LOCKNUT; M4 x 0.7 thread	1
5	238–202	4-FINGER TRIGGER (standard)	1	32	177–538	TRIGGER STUD	1
6	191–081	HANDLE, round	1	33	179–737	ACTUATOR PIN	2
10▲	222–385	KIT, warning card	1	37	179–729	NEEDLE HOUSING	1
11▲	187–348	COVER, warning	1	39▲	222–385	WARNING CARD (not shown)	1
12	190–975	TRIGGER GUARD	1	40✓	221–515	SWITCHTIP SPRAY TIP, SZ 515	1
15	238–817	SWIVEL, kit	1	41✓	237–859	<i>Performance Series</i> RAC DripLess Guard	1
16	179–750	SPRING RETAINER	1			See manual 307–644 for other tip sizes	1
17✓	218–131	FLUID FILTER ASSEMBLY (standard 50 mesh) includes replaceable items 16, 18, 20, 21	1	42	113–409	RETAINER, guard	1
18	179–731	STRAINER ELEMENT (standard 50 mesh)	1	43	104–938	O-RING, cushion	1
20	179–763	SPRING	1	44▲	290–230	LABEL, warning	1
21	179–722	SPRING RETAINER (color coded blue) (for standard 50 mesh filter)	1	▲ <i>Replacement Danger and Warning labels, tags and cards are available at no cost.</i>			
22✓	179–733	GASKET	1	✓ <i>Keep these spare parts on hand to reduce down time.</i>			
23	191–244	END CAP	1				
26	190–973	FLUID HOUSING	1				

# Accessories

## FILTERS

3000 psi (210 bar) Maximum Working Pressure.

Adequate filtering is important for a good surface finish and to minimize tip clogging. Elements are available in various mesh sizes.

### Filter elements and assemblies

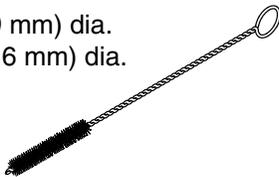
- 224-455** Two, 50 mesh elements, (179-731)
- 224-456** Two, 100 mesh elements, (179-732)
- 218-131** 50 mesh filter assembly; includes spring, 50 mesh element and two spring retainers
- 218-133** 100 mesh filter assembly; includes spring, 100 mesh element and two spring retainers

## TOOLS

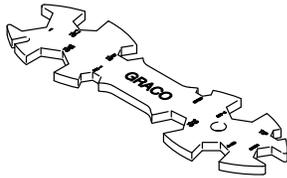
### Nylon Brushes

Use to thoroughly clean the gun's fluid passages.

- 101-891** 0.375" (9 mm) dia.
- 101-892** 0.625" (16 mm) dia.



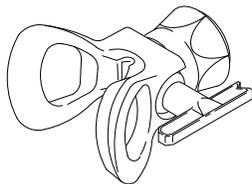
- Wrench 171-147**
- Fits all hexes on the gun.



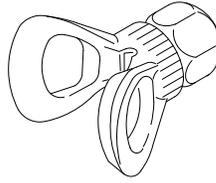
## TIP GUARDS

These tip guards fit all Graco airless spray guns. Choose the one that's right for your application. One of these tip guards is included with every Graco airless gun.

- 237-859** *Performance Series* RAC® DripLess™ Guard.  
Order SwitchTip separately. See your distributor for available sizes.



- 220-222** Standard DripLess™ Tip Guard. Order flat tip separately. See your distributor for available sizes.



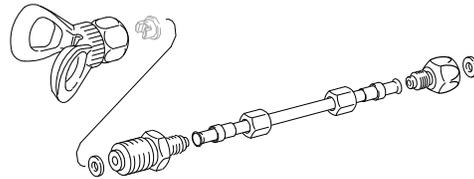
- 222-674** Heavy Duty RAC® DripLess™ Tip Guard. Order SwitchTip separately. See your distributor for available sizes.

## FINE FINISH RAC TIPS

These tips provide an extremely fine finish with more consistent material thickness. See your distributor for available sizes.

## TIP EXTENSIONS

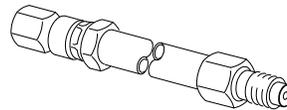
These tip extensions extend tip from the spray gun to spray hard to reach areas.



- 223-390** 12 inch extension
- 223-391** 18 inch extension
- 223-392** 24 inch extension

## HEAVY DUTY EXTENSIONS

Provides extended spraying for hard to reach applications.



- 224-413** 12 inch extension
- 224-414** 18 inch extension
- 224-415** 36 inch extension
- 224-416** 72 inch extension
- 236-406** Includes 18 in. and 36 in. heavy duty extension; RAC IV driplless tip guard; 180° directional nozzle; and 45° swivel.

# Technical Data

Maximum Working Pressure . . . . . 3600 psi (252 bar)  
Fluid Orifice Size . . . . . 0.125 in. (3.18 mm)  
Wetted Parts . . . . . Stainless steel, Polyethylene,  
Aluminum, Polyurethane, Nylon, PTFE®  
Brass, Tungsten carbide, UHMW  
Weight . . . . . 16.5 oz. (470g)  
Inlet . . . . . 1/4 npsm(m)swivel  
Maximum Material Temperature . . . . . 120°F(50°C)  
Sound Data  
Sound Pressure Level . . . . . 78 dB(A)\*  
Sound Power Level . . . . . 87 dB(A)\*  
\* Measured while spraying waterbase paint – gravity  
1.36 through a 517 tip at 3,000 psi (207 bar).  
Per ISO 3744

PTFE®

# Graco Phone Number

***TO PLACE AN ORDER***, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-328-0211 Toll Free.**

# 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 by an authorized Graco distributor 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.

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

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