



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

INSTRUCTIONS

Rev. D
Supersedes Rev. B
and PCN C

HIGH PRESSURE AIR-ASSISTED AIRLESS

Model AA Plus™ Spray Gun

4000 psi (280 bar, 28 MPa) Maximum Working Fluid Pressure

100 psi (7 bar, 0.7 MPa) Maximum Working Air Pressure

Part No. 238-402, Series A

Spray Gun with standard spray tip, tip guard, air cap, and 1/4-18 npsm (R1/4-19) air line fitting.

Part No. 238-851, Series B

Spray Gun with AA Reverse-A-Clean® (RAC) assembly and 1/4-18 npsm (R1/4-19) air line fitting.

Part No. 238-852, Series A

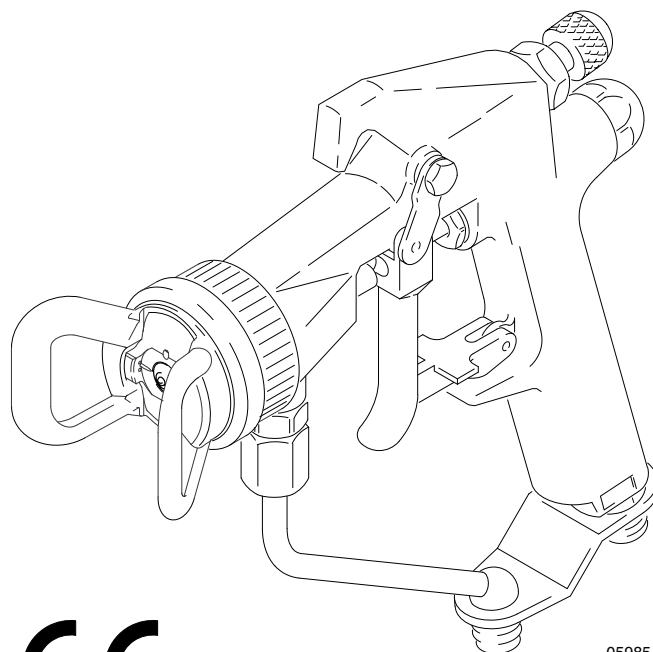
Spray Gun with standard spray tip, tip guard, air cap, and quick-disconnect air line fitting.

Part No. 238-883, Series A

Hi-Flow Spray Gun with Hi-Flow fluid needle and diffuser-seat, and standard spray tip, tip guard, air cap, and 1/4-18 npsm (R1/4-19) air line fitting.

Part No. 239-001, Series B

Hi-Flow Spray Gun with Hi-Flow fluid needle and diffuser-seat, AA Reverse-A-Clean (RAC) assembly, and 1/4-18 npsm (R1/4-19) air line fitting.



05985



Part No. 238-402 Spray Gun shown

U.S. Patent Nos. 3,843,052; 4,386,739; 5,285,965

United Kingdom Patent No. 2 111 406 B

Patented 1984 Canada

Brevete 1984

French Patent No. 82-21202

Patents Pending

Foreign Patents Pending

Table of Contents

Warnings	2	Air Caps	20
Installation	4	Dimensions	24
Operation	7	Technical Data	24
Spray Pattern Troubleshooting	13	Accessories	25
Service	14	Warranty	28
Parts	16	Graco Phone Number	28
Spray Tip Selection Chart	20		

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WARNING



INJECTION HAZARD

Spray from the gun, hose leaks, or ruptured components can inject fluid into your body and cause an extremely serious injury, including the need for amputation. Splashing fluid in the eyes or on the skin can also cause a 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 spray gun at anyone or at any part of the body.
- Do not put hand or fingers over the spray tip.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Do not “blow back” fluid; this is not an air spray gun.
- Always have the tip guard on the spray gun when spraying.
- Check the gun diffuser operation weekly.
- 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 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; or install or clean the spray tip.
- Tighten all the 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.



FIRE AND EXPLOSION HAZARD

Improper grounding, poor air ventilation, open flames, or sparks can cause a hazardous condition and result in fire or explosion and serious injury.



- Ground the equipment and the object being sprayed. See **Ground the System** on page 6.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvent or the fluid being sprayed.
- Extinguish all the open flames or pilot lights in the spray area.
- Electrically disconnect all the equipment in the spray area.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not smoke in the spray area.
- Do not operate a gasoline engine in the spray area.
- If there is any static sparking while using the equipment, **stop spraying immediately**. Identify and correct the problem.

WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly 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 the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **4000 psi (280 bar, 28 MPa) maximum working pressure at 100 psi (7 bar, 0.7 MPa) maximum incoming air pressure.**
- Route the hoses away from the traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Do not use the hoses to pull the equipment.
- Use only Graco approved hoses. Do not remove hose spring guards, which help protect the hose from rupture caused by kinks or bends near the couplings.
- Use fluids or solvents that are compatible with the equipment wetted parts. See the **Technical Data** section of all the equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.



TOXIC FLUID HAZARD

Hazardous fluids or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, swallowed, or inhaled.

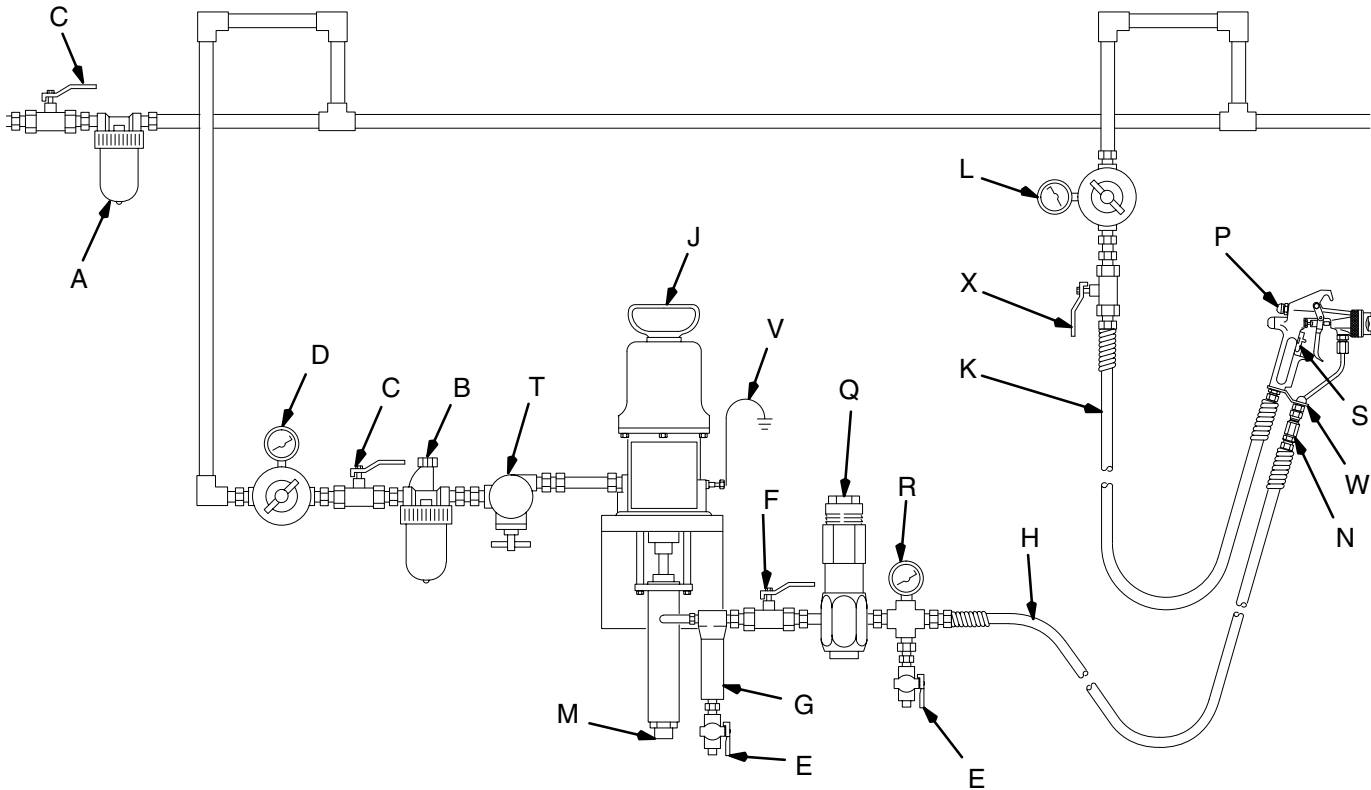
- Know the specific hazards of the fluid you are using. Read the fluid manufacturer's warnings.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Wear the appropriate protective clothing, gloves, eyewear and respirator.



RECOIL HAZARD

Due to the very high pressure fluid emitted, a strong recoil action will 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.

Installation



KEY

- A Air Line Filter
- B Air Line Lubricator
- C* Bleed-type Air Shutoff Valve
- D Pump Air Regulator
- E* Fluid Drain Valve
- F Fluid Shutoff Valve
- G Fluid Filter

- H* Grounded Fluid Hose
- J Pump
- K Air Line
- L Air Pressure Regulator
- M Pump Fluid Inlet
- N In-line Fluid Filter
- P Pattern Adjustment Valve Knob
- Q* Fluid Pressure Regulator

- R Pressure Gauge
- S Trigger Safety
- T Pump Runaway Valve
- V* Pump Ground Wire
- W Gun Fluid Connector
- X Air Shutoff Valve

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**Equipment required for safe operation of the system. Must be purchased separately.*

Fig. 1

Typical Installation

The typical installation shown in Fig. 1 is only a guide for selecting and installing air-assisted airless spray systems. It is not an actual system design. Contact your Graco distributor for assistance in designing a system to meet your needs.

Ventilate the Spray Booth

! WARNING

TOXIC FLUID HAZARD
To prevent hazardous concentrations of toxic and/or flammable vapors, spray only in a properly ventilated spray booth.
Never operate the spray gun unless ventilation fans are operating.

Check and follow all of the National, State and Local codes regarding air exhaust velocity requirements.

Installation

Connect the Air Line

1. Install an air line filter (A) to ensure a clean, dry air supply to the gun. Dirt and moisture in the line can ruin the appearance of your finished piece. See Fig. 1.
2. Install an air pressure regulator (L) on the gun air supply line to control the air pressure to the gun.
3. Install an air pressure regulator (D) on the pump air supply line to control air pressure to the pump.
4. Install a bleed-type air shutoff valve (C) on the main air line and on the pump air line, downstream of the pump air regulator, to shut off air to the pump. Install an additional bleed-type valve on each pump air supply line to relieve air trapped between this valve and the pump after the air regulator is shut off.

WARNING

The bleed-type air shutoff valve is required in your system to relieve air trapped between this valve and the pump after the air regulator is closed. Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury.

NOTE:

- *Part No. 238-402, 238-851, 238-883, and 239-001 Guns:* The gun air inlet has a 1/4-18 npsm (R1/4-19) compound male thread that is compatible with NPSM and BSP female swivel connectors.
 - *Part No. 238-852 Gun:* The gun air inlet has a 1/4-18 npsm quick-disconnect fitting.
5. Install an air shutoff valve (X) on each gun air supply line, downstream of the gun air regulator, to shut off air to the gun(s).
 6. Connect the air hose (K) from the air supply to the gun air inlet.

Connect the Fluid Line

WARNING



INJECTION HAZARD

To reduce the risk of property damage or serious injury, including fluid injection, which could be caused by component rupture or unrelieved fluid pressure,

- A fluid drain valve(s) (E) is required in your system to assist in relieving fluid pressure in the displacement pump, hose and gun; triggering the gun to relieve pressure may not be sufficient.
- A fluid pressure regulator (Q) must be installed in the system if the pump's maximum working pressure exceeds the gun's maximum fluid working pressure of 4000 psi (280 bar, 28 MPa).

1. Install a fluid filter (G) and drain valve(s) (E) close to the pump's fluid outlet. The drain valve assists in relieving fluid pressure in the displacement pump, hose, and gun. See Fig. 1.
2. Install a fluid pressure regulator (Q) to control fluid pressure to the gun.

NOTE: Some applications require fine-tuned control of fluid pressure. You can control fluid pressure more accurately with a fluid pressure regulator than by regulating the air pressure to the pump.

3. Install a fluid shutoff valve (F) to shut off the fluid supply to the gun.

NOTE: The gun fluid fitting (W) has a 1/4-18 npsm (R1/4-19) compound male thread that is compatible with NPSM and BSP female connectors.

4. Install an in-line fluid filter (N) on the gun fluid fitting (W) to avoid clogging the spray tip with particles from the fluid.
5. Connect the grounded fluid hose (H) to the gun fluid fitting (W) or optional in-line filter (N).

Installation

Ground the System

WARNING



FIRE AND EXPLOSION HAZARD

Improper grounding could cause static sparking, which could cause a fire or explosion. To reduce the risk of property damage or serious injury, follow the grounding instructions below.



The following grounding instructions are minimum requirements for a system. Your system may include other equipment or objects which must be grounded. Check your local electrical code for detailed grounding instructions for your area and type of equipment. Your system must be connected to a true earth ground.

1. **Pump:** Ground the pump by connecting a ground wire and clamp between the fluid supply and a true earth ground as instructed in your separate pump instruction manual.
2. **Air compressors and hydraulic power supplies:** Ground them according to the manufacturer recommendations.
3. **Air, fluid, and hydraulic hoses connected to the pump:** Use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity. Check the electrical resistance of your air and fluid hoses at least once a week. If the resistance exceeds the recommended limits, replace the hose immediately.
4. **Spray gun:** Ground the gun by connecting it to a properly grounded fluid hose and pump.
5. **Fluid supply container:** Ground it according to local code.
6. **Object being sprayed:** Ground it according to local code.
7. **All solvent pails used when flushing:** Ground them 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.
8. **To maintain grounding continuity when flushing or relieving pressure:** Always hold a metal part of the gun firmly to the side of a grounded metal pail, then trigger the gun.

Operation

Safety

WARNING



INJECTION HAZARD

Remember, this is not an air spray gun. For your safety be sure to read and follow the Warnings on pages 2 and 3 and throughout the text of this instruction manual.

Keep the wallet sized warning card 179–960, provided with the gun, with the operator of this equipment at all times. The card contains important treatment information should an injection injury occur. Additional cards are available at no charge from Graco.

Pressure Relief Procedure

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.

1. Lock the spray gun trigger safety to avoid accidentally triggering the gun. See Fig. 2.
2. Shut off the power to the pump.
3. Close the bleed-type master air valve (required in the system).
4. Unlock the gun trigger safety.

5. Hold a metal part of the gun firmly to the side of a grounded metal waste container and trigger the gun to relieve the fluid pressure.
6. Lock the gun trigger safety again.
7. Open the pump drain valve (required in the system) to help relieve fluid pressure in the displacement pump. In addition, open the drain valve connected to the fluid pressure gauge (in a system with fluid regulation) to help relieve fluid pressure in the hose and gun. Triggering the gun to relieve pressure may not be sufficient. Have a container ready to catch the drainage.
8. Leave the drain valve(s) open until you are ready to spray again.
9. 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 hose end coupling and relieve pressure gradually, then loosen the coupling completely. Now clear the tip or hose obstruction.

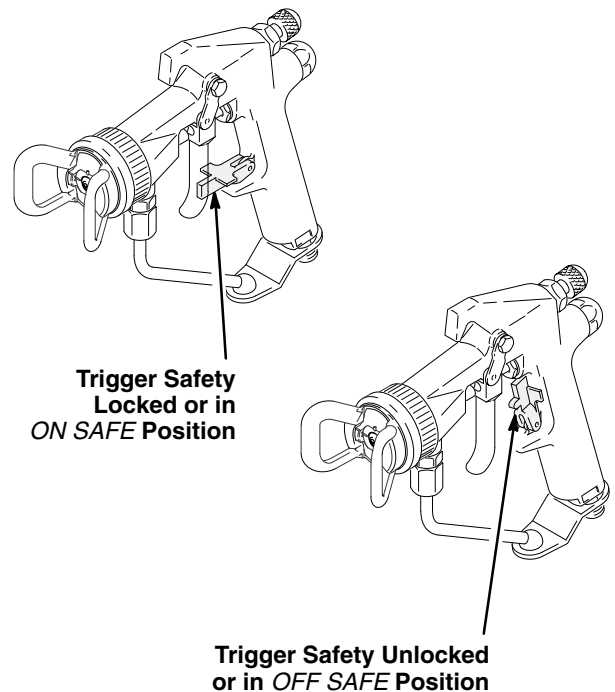


Fig. 2

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Operation

How the Air-Assisted Airless Spray Gun Operates

The air-assisted airless spray gun combines airless and air spraying concepts. The spray tip shapes the fluid into a fan pattern, as does a conventional airless spray tip. Air from the air cap further atomizes the fluid and completes the atomization of the paint tails into the pattern to produce a more uniform pattern. The width of the pattern can be slightly adjusted by the pattern adjustment valve.

Note that the air-assisted airless spray gun differs from an air spray gun in that increasing the pattern air reduces the pattern width. To increase the pattern width, less pattern air or a larger size tip must be used.

The spray gun has a built-in lead and lag operation. When triggered, the gun begins emitting air before the fluid is discharged. When the trigger is released, the fluid stops before the air flow stops. This helps assure the spray is atomized and prevents fluid buildup on the air cap.

Select a Spray Tip and Air Cap

The fluid output and pattern width depend on the size of the spray tip, the fluid viscosity, and the fluid pressure. Use the **Spray Tip Selection Chart**, on page 20, as a guide for selecting an appropriate spray tip for your application.

Install a Spray Tip

! WARNING

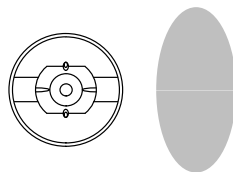
INJECTION HAZARD
To reduce the risk of a fluid injection injury, follow the **Pressure Relief Procedure** on page 7 before removing or installing a spray tip.

Install a spray tip in the gun. The air cap and spray tip position determines the direction of the spray pattern.

Rotate the air cap (the spray tip rotates with it) as needed for the desired spray pattern direction. See Fig. 3.

NOTE: If the gun has the AA RAC assembly, be sure to tighten the air cap retaining ring until it bottoms out, while holding the orange tip guard in the desired direction.

Vertical Spray Pattern



Horizontal Spray Pattern



Fig. 3

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Operation

Adjust the Spray Pattern

WARNING



RECOIL HAZARD

Due to the very high pressure fluid emitted, a strong recoil action will 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



INJECTION HAZARD

To reduce the risk of component rupture and serious injury, including injection, do not exceed the gun's maximum fluid working pressure of 4000 psi (280 bar, 28 MPa) or the maximum working pressure of the lowest rated component in the system.

1. Set the fluid pressure with the fluid regulator. Do not turn on the air supply yet.
2. Trigger the gun to check the atomization; do not be concerned about the pattern shape yet.
3. Increase the fluid pressure just to the point where a further increase in fluid pressure does not significantly improve fluid atomization.
4. Close the pattern adjustment valve by turning the knob (see Fig. 4) counterclockwise all the way. This sets the gun for its widest pattern.
5. Set the atomizing air pressure at about 10 psi (0.7 bar, 0.07 MPa). Check the spray pattern, then adjust the air pressure until the tails are completely atomized and pulled into the spray pattern. See Fig. 5. Do not exceed 100 psi (7 bar, 0.7 MPa) air pressure to the gun.

For a narrower pattern, turn the pattern adjustment valve knob clockwise. If the pattern is still not narrow enough, increase the air pressure to the gun slightly or use a different size tip.

NOTE:

- Pattern adjustment is not available with guns with the AA RAC assembly.
- For some spray tips, when the line air pressure to the gun is increased to a certain level, the spray pattern will become round. This is the smallest pattern width. Further increases in air pressure will force the pattern to turn from horizontal to vertical or from vertical to horizontal.

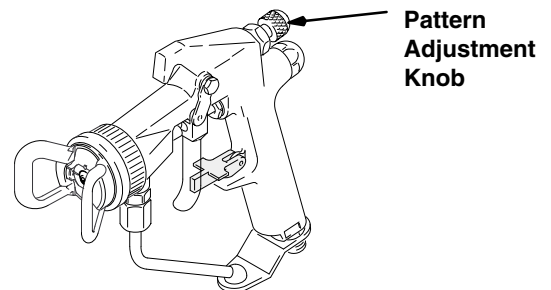


Fig. 4

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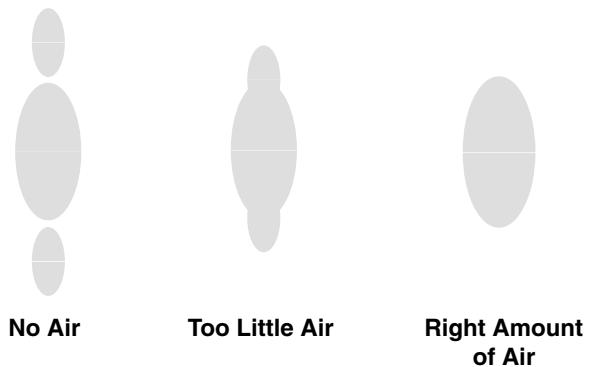


Fig. 5

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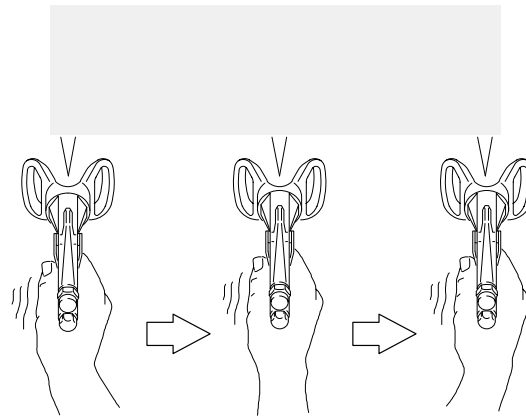
Operation

Apply the Fluid

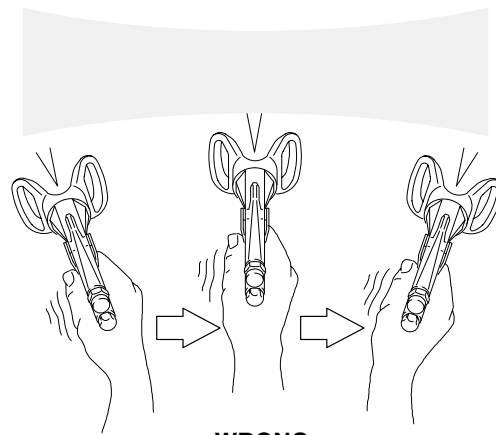
When applying the fluid, keep the gun a consistent distance, about 8 to 12 inches (200 to 300 mm) from the surface of the object being sprayed. Always hold the gun at a right angle from the surface. Do not make an arc with the gun as it causes an uneven coat of fluid. See Fig. 6.

⚠ CAUTION

Openings in the tip guard reduce paint buildup on the guard while spraying. Damage to the sharp edges of the openings will cause paint to collect at that area. To avoid damage, never hang the gun by the tip guard.



RIGHT



WRONG

Fig. 6

0793A

Operation

Clean the Spray Gun and System Daily

WARNING



INJECTION HAZARD

To reduce the risk of an injection injury or splashing fluid in the eyes or on the skin:

- Follow the **Pressure Relief Procedure** on page 7 before cleaning, removing, or installing a spray tip and whenever you are instructed to relieve pressure.
- Do not wipe fluid buildup off the gun or spray tip until pressure is relieved.

CAUTION

To avoid damaging the gun:

- Never immerse the gun in solvent as this could damage packings and allow solvent in the air passages.
- Do not use fluids containing halogenated hydrocarbons to clean the gun body as HHC is not compatible with aluminum.
- Methylene Chloride is not recommended as a flushing or cleaning solvent with this gun or any device with nylon or aluminum components.
- Do not use metal tools to clean holes in the air cap or spray tip.

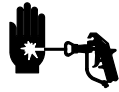
NOTE: Clean the front of the tip frequently during the day to help reduce buildup.

1. Relieve the pressure as instructed on page 7.
2. Clean the outside of the gun and the tip guard with a soft cloth dampened with compatible solvent.
3. To avoid damaging the spray tip and air cap, clean them with a compatible solvent and soft brush. To clean the air cap passages, use a soft brush or other soft tool. Dry the parts with an air blow gun.

4. If using an in-line filter, remove and clean it thoroughly in a compatible solvent.
5. Clean the system's fluid filter and air line filter.

Check the Diffuser-seat Operation Weekly

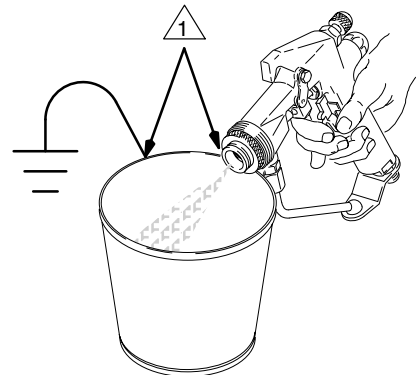
WARNING



INJECTION HAZARD

The gun diffuser-seat breaks up spray when the gun is sprayed without the spray tip installed, such as during flushing. This reduces the risk of an injection injury. Check the diffuser-seat operation weekly.

1. Relieve the pressure as instructed on page 7.
2. Remove the tip guard and spray tip.
3. Start the pump and operate it at its lowest pressure.
4. Hold a metal part of the gun firmly against a grounded metal waste container, and trigger the gun. See Fig. 7. If the fluid coming from the gun is not diffused into an irregular stream, replace the diffuser-seat immediately.




 1 Maintain firm metal-to-metal contact between the gun and a grounded metal container.

Fig. 7

05988

Operation

Flush the Gun Daily

WARNING



INJECTION HAZARD

To reduce the risk of a fluid injection injury, follow the **Pressure Relief Procedure** on page 7 before cleaning, removing, or installing a spray tip and whenever you are instructed to relieve pressure.

WARNING

To reduce the risk of serious 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 a grounded metal waste container. See Fig. 7, page 11.
- Use the lowest possible pressure.


NOTE:


- Flush the pump and gun before the fluid can dry in it.
- If it is available, the flushing procedure provided in the pump or sprayer manual should be used instead of this procedure.

1. Relieve the pressure as instructed on page 7.
2. Disconnect the atomizing air hose and the fluid supply line.
3. Remove the tip guard or AA RAC assembly (11), air cap or RAC housing (13), and spray tip (14). Refer to the parts drawing for your gun model (page 16 or 18).
4. Clean the parts.
5. Connect a compatible solvent supply to the gun.
6. Start the pump and operate it at its lowest pressure.
7. Hold a metal part of the gun firmly against a grounded metal waste container, and trigger the gun until all the paint is removed from the gun passages.
8. Relieve the pressure as instructed on page 7.
9. Disconnect the solvent supply.

NOTE: *If the gun is being used with plural component materials, remove the needle cartridge and thoroughly clean it with a soft brush to ensure that the material does not cure in the spring area and make the gun inoperable. See page 14 to remove the needle cartridge.*

Troubleshooting


WARNING



INJECTION HAZARD
To reduce the risk of a fluid injection injury, follow the **Pressure Relief Procedure** on page 7 before checking or servicing any of the system equipment and whenever you are instructed to relieve pressure.

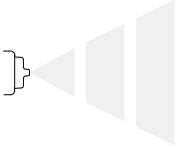

NOTE:

- Check all possible remedies in the troubleshooting charts before disassembling the gun.
- Some improper patterns are caused by the improper balance between air and fluid.

General Troubleshooting

Problem	Cause	Solution
Fluid leakage from back of fluid needle	Worn packings or needle shaft	Replace external needle packings or entire fluid needle cartridge. See page 14.
Air leakage from front of gun	Air valve not seating properly	Clean/service air valve. See page 14.
Fluid leakage from front of gun	Fluid needle worn or damaged Worn diffuser-seat housing	Replace fluid needle cartridge. See page 14. Replace the diffuser-seat and gasket. The gasket must be replaced whenever the diffuser-seat is removed. See page 14.
Fluid in air passages	Fluid tip seal leaking Leaking around diffuser-seat housing Fluid inlet fitting leaking	Tighten or replace fluid tip. Replace the diffuser-seat gasket. The gasket must be replaced whenever the diffuser-seat is removed. See page 14. Replace the fluid fitting gasket. The gasket must be replaced whenever the fluid fitting is removed. See page 15.
Slow fluid shut-off	Fluid buildup on fluid needle cartridge components.	Remove and clean or replace the fluid needle cartridge. See page 14.

Spray Pattern Troubleshooting

Problem	Cause	Solution
Fluttering or spitting spray 	Insufficient fluid supply Air in paint supply line	Adjust fluid regulator or fill fluid supply tank. Check, tighten siphon hose connections, bleed air from paint line.
Irregular pattern 	Fluid build-up or spray tip partially plugged On defective side of pattern, air horn holes are partially or totally plugged	Clean spray tip. See page 11. Clean air horn holes with solvent and soft brush. See page 11.
Pattern pushed to one side, same side of air cap gets dirty	Air horn holes partially or totally plugged	Clean air horn holes with solvent and soft brush. See page 11.

Service

WARNING



INJECTION HAZARD

To reduce the risk of a fluid injection injury, follow the **Pressure Relief Procedure** on page 7 before checking or servicing any of the system equipment and whenever you are instructed to relieve pressure.

NOTE:

- Follow the **Service Notes** in Fig. 8 when reassembling the gun. Refer to the parts drawing for your gun model (page 16 or 18) for parts not shown in Fig. 8.
- Repair Kits are available. See page 17 or 19 for the kits for your gun model.

Air Valve Service

1. Relieve the pressure as instructed on page 7.
2. Remove the trigger (3) and valve cap (7). See the parts drawing and Fig. 8.
3. Unscrew the needle nut (23) while holding the flats (C) of the air valve (26) stem with a long nose pliers.

CAUTION

To avoid leakage, be careful not to scratch the air valve stem.

4. Remove the spring (6) and air valve (26).
5. If there is air leakage at the air valve (26), unscrew the packing nut (24) and carefully remove the u-cup packing (25). Replace packing if worn or damaged. When re-installing, be sure the u-cup faces inward.
6. If leakage occurs internally or the front of the gun leaks air when it's not triggered, clean and inspect the air valve and the spring for wear or damage. Replace as needed.
7. For best air valve life, lubricate the external air valve stem (C) with light oil after each day's use.

Fluid Needle Cartridge Service

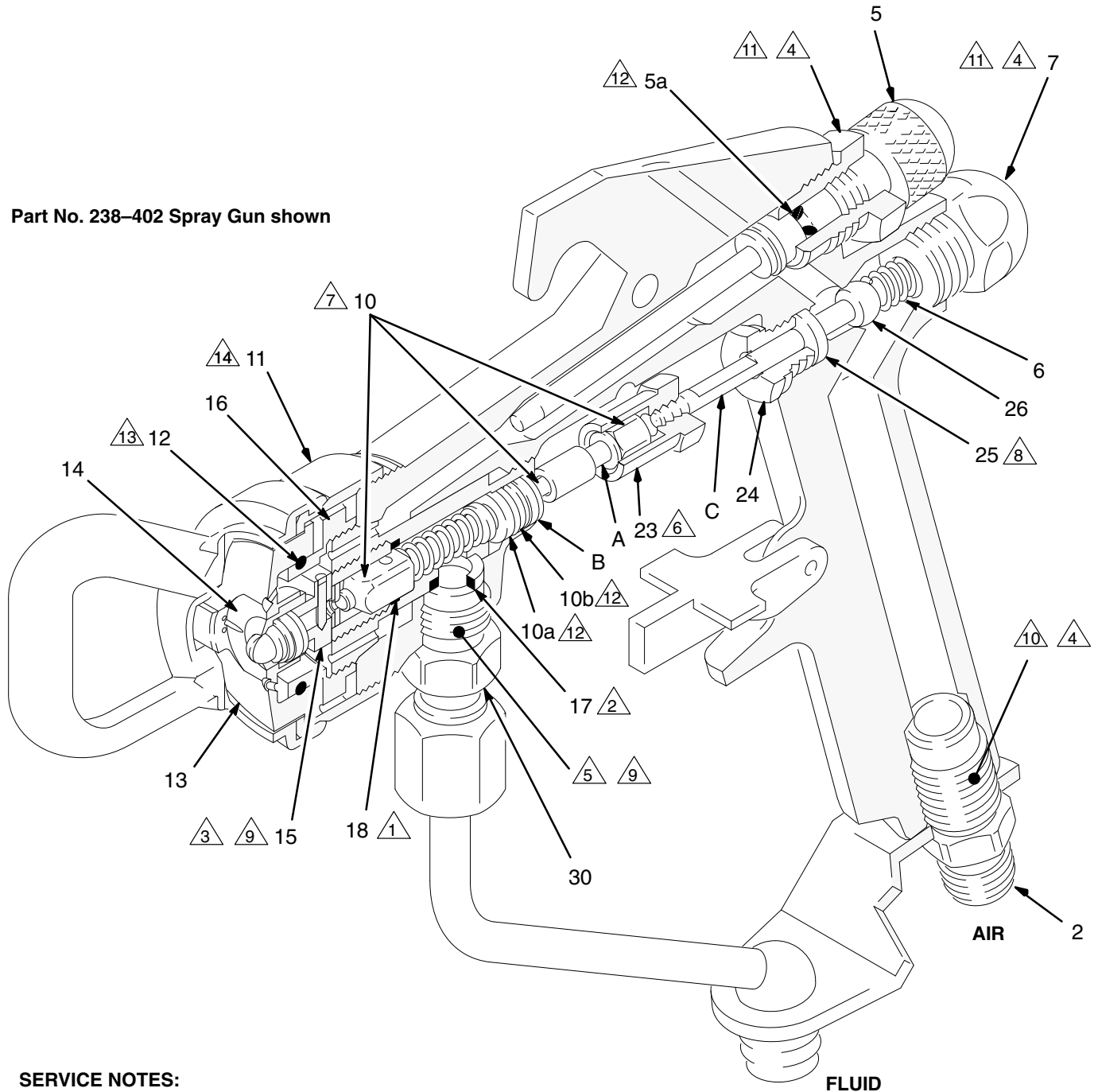
Follow the procedure below to remove the fluid needle cartridge for cleaning or for replacement.

1. Relieve the pressure as instructed on page 7.
2. Remove the tip guard or AA RAC assembly (11), air cap or RAC housing (13), spray tip (14), and air separator (16 – *part no. 238–402, 238–852, and 238–883 guns only*). See Fig. 8.
3. Trigger the gun to back the fluid needle ball off the seat. Remove the diffuser-seat (15).
4. Remove the trigger (3) and trigger extension pieces (19). See the Parts Drawing, page 16.
5. To remove the fluid needle cartridge (10), slide the notch of the packing tool (34) around the small diameter of the trigger guide (A) and pull the cartridge toward the front of the gun.
6. Remove the fluid gasket (18).
7. If the fluid needle cartridge was removed for cleaning, remove the external o-ring (10a) and backup ring (10b). Clean the needle cartridge thoroughly with a compatible solvent and a soft brush. Install a new o-ring (10a) and backup ring (10b).
8. Lubricate the o-ring (10a) and backup ring (10b) of the new or cleaned needle cartridge with light-weight oil.
9. Insert the fluid needle cartridge into the front end of the gun body. Use the packing tool (34) to pull back on the cartridge until it snaps into place; the cartridge must be bottomed out in the gun body insert. If the cartridge is seated properly, the needle cartridge washer (B) will be visibly seated flat through the back end of the gun body insert.
10. Insert a new gasket (18).
11. Install the gun trigger and trigger extension pieces.
12. Lubricate the diffuser-seat (15) thread. Trigger the gun while screwing the diffuser-seat back into the gun. Torque the diffuser-seat to 23 to 27 ft-lbs (31 to 37 N•m).
13. Install the gun air separator (*part no. 238–402, 238–852, and 238–883 guns only*), spray tip, air cap or RAC housing, and tip guard or AA RAC assembly.

NOTE: If the gun has the AA RAC assembly, be sure to tighten the air cap retaining ring until it bottoms out, while holding the orange tip guard in the desired direction.

Service

Part No. 238-402 Spray Gun shown



SERVICE NOTES:

- △1 Gasket (18) must be replaced if diffuser-seat (15) is removed or replaced to avoid fluid leakage
- △2 Gasket (17) must be replaced if fluid connector (30) is removed or replaced to avoid fluid leakage
- △3 Lubricate threads
- △4 Apply anaerobic pipe sealant to threads
- △5 Apply high strength sealant to threads
- △6 Thread nut to bottom thread of needle
- △7 Use tool (34) to pull needle cartridge until it bottoms in gun body front end insert.

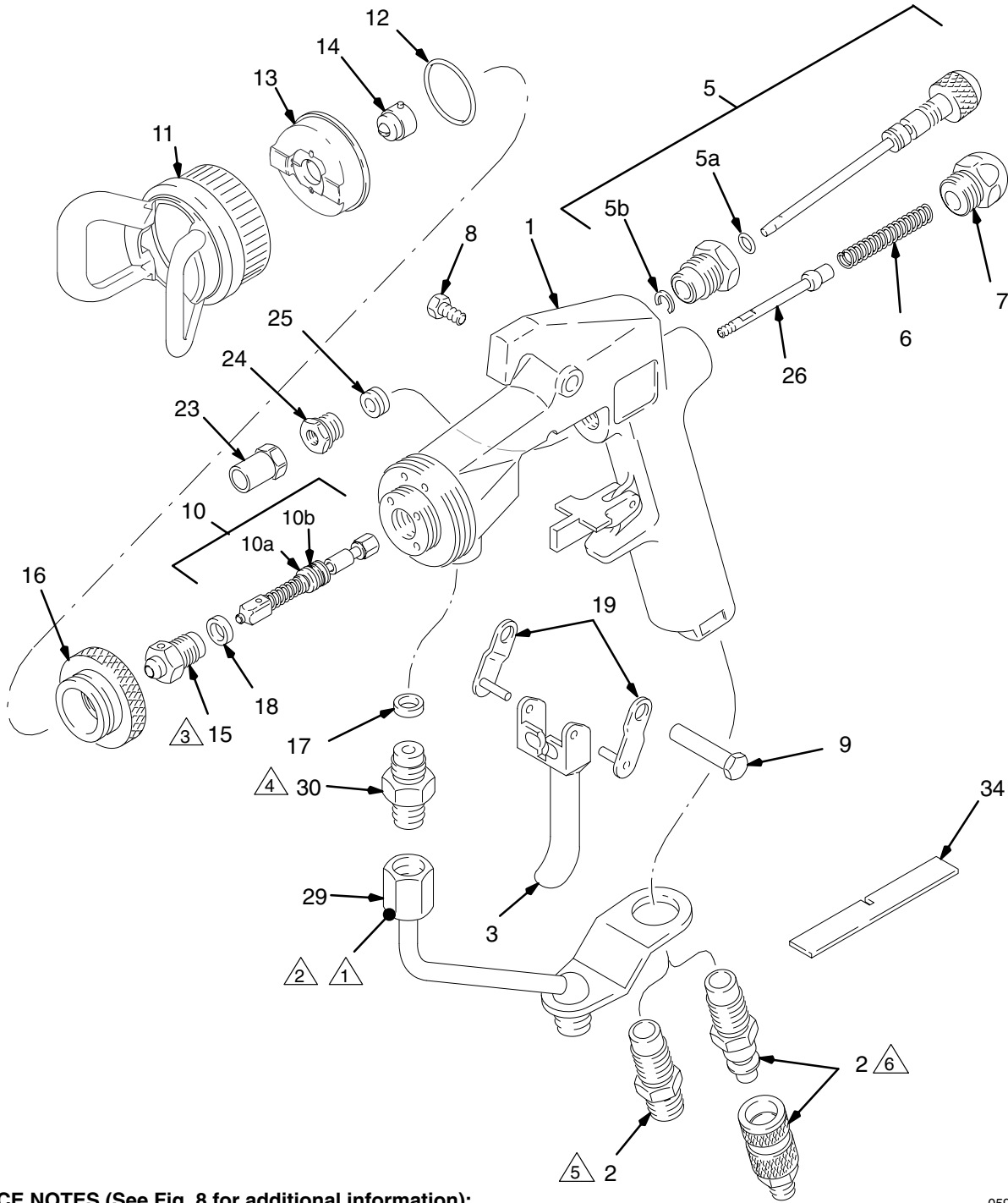
- △8 U-cup lips face inward
- △9 Torque to 23-27 ft-lb (31-37 N•m)
- △10 Torque to 20-24 ft-lb (27-32 N•m)
- △11 Torque to 15-19 ft-lb (20-26 N•m)
- △12 Lubricate with light-weight oil
- △13 Do not lubricate
- △14 If the gun has the AA RAC assembly, tighten the air cap retaining ring until it bottoms out, while holding the orange tip guard in the desired direction.

Fig. 8

05989

Parts

Part No. 238-402, 238-852, and 238-883



SERVICE NOTES (See Fig. 8 for additional information):

- ① Lubricate threads
- ② Torque to 23-27 ft-lb (31-37 N•m)
- ③ Gasket (18) must be replaced if diffuser-seat (15) is removed or replaced to avoid fluid leakage.

- ④ Gasket (17) must be replaced if fluid connector (30) is removed or replaced to avoid fluid leakage.
- ⑤ Included with Gun 238-402 and 238-883 only.
- ⑥ Included with Gun 238-852 only.

05990

Parts

Use Only Genuine Graco Parts and Accessories

Part No. 238-402, 238-852, and 238-883

Ref. No.	Part No.	Description	Qty.
1	238-750	BODY, gun	1
2	106-917	ADAPTER, air; Included with Gun 238-402 and 238-883 only	1
	113-367	COUPLING, air, quick-disconnect; Included with Gun 238-852 only	1
3	276-429	TRIGGER, gun	1
5	217-489	VALVE, pattern adjustment; Includes items 5a and 5b	1
5a	168-110	•O-RING, nitrile rubber	1
5b	105-456	•RETAINER, clip	1
6	106-903	SPRING, compression, air valve	1
7	178-408	CAP, valve, air	1
8	203-953	CAP SCREW, hex hd, 10-24 x 0.375" long	1
9	187-562	PIN, pivot	1
10	238-754	NEEDLE, fluid; Included with Guns 238-402 and 238-852 only; Includes replaceable items 10a and 10b	1
	238-755	NEEDLE, fluid, hi-flow; Included with Gun 238-883 only; Includes replaceable items 10a and 10b	1
10a	111-516	•O-RING; CV75	1
10b	111-517	•RING, backup; PTFE®	1
11	238-248	TIP GUARD	1
12	107-079	O-RING, PTFE	1
13	238-628	AIR CAP	1
14	GG4-XXX	SPRAY TIP; Customer's choice; See Chart on page 20. Includes replacement gasket 183-616	1
15	238-427	DIFFUSER-SEAT; Included with Gun 238-402 and 238-852 only	1
	224-855	DIFFUSER-SEAT, hi-flow; Included with Gun 238-883 only	1
16	178-414	SEPARATOR, air	1
17	178-422	GASKET, fluid, Delrin®; 1 sent unassembled	2
18	187-521	GASKET, fluid; acetal homopolymer (black), 1 sent unassembled	2
19	224-868	TRIGGER EXTENSION	2
23	187-504	NUT, needle	1
24	178-765	NUT, packing, air	1
25	105-452	U-CUP, PTFE	1
26	217-487	VALVE, air	1
29	238-228	GUARD, trigger	1
30	191-026	CONNECTOR, fluid	1
31▲	222-385	WARNING CARD (not shown)	1
34	187-737	TOOL, needle assembly	1
35▲	172-479	TAG, instruction (not shown)	1

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

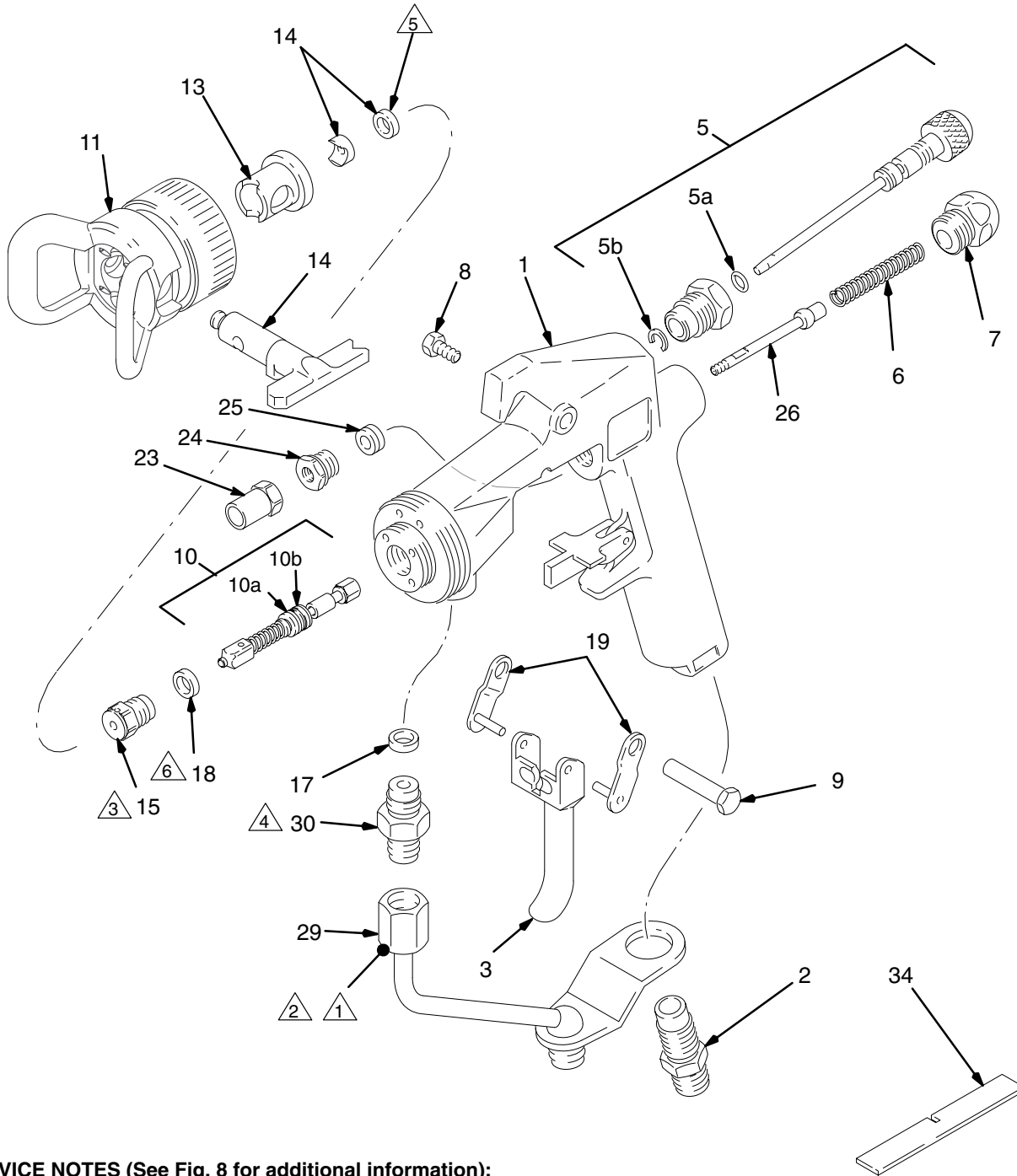
Repair Kits

Kit No. and Description	Includes:		
	Ref. No.	Part No.	Description
224-949 Gun Repair Kit	5a	168-110	O-Ring
	5b	105-456	Retainer
	6	106-903	Spring
	10	238-754	Needle
	10a	111-516	O-Ring
	10b	111-517	Backup Ring
	12	107-079	O-Ring
	15	238-427	Diffuser-seat
	17	178-422	Gasket
	18	187-521	Gasket
235-304 Fluid Section Repair Kit	25	105-452	U-Cup
	26	217-487	Valve
	10	238-754	Needle
	10a	111-516	O-Ring
	10b	111-517	Backup Ring
	15	238-427	Diffuser-seat
238-739* Hi-flow Gun Repair Kit	17	178-422	Gasket
	18	187-521	Gasket
	25	105-452	U-Cup
	26	217-487	Valve
	5a	168-110	O-Ring
	5b	105-456	Retainer
	6	106-903	Spring
	10	238-755	Needle
	10a	111-516	O-Ring
	10b	111-517	Backup Ring
238-738* Hi-flow Fluid Section Repair Kit	12	107-079	O-Ring
	15	224-855	Diffuser-seat
	17	178-422	Gasket
	18	187-521	Gasket
	10	238-755	Needle
	10a	111-516	O-Ring
10b	111-517	Backup Ring	
15	224-855	Diffuser-seat	
17	178-422	Gasket	
18	187-521	Gasket	

* Must be used with tips larger than 0.025 in. (0.635 mm).

Parts

Part No. 238-851 and 239-001



SERVICE NOTES (See Fig. 8 for additional information):

- 1 Lubricate threads
- 2 Torque to 23-27 ft-lb (31-37 N•m)
- 3 Gasket (18) must be replaced if diffuser-seat (15) is removed or replaced to avoid fluid leakage.
- 4 Gasket (17) must be replaced if fluid connector (30) is removed or replaced to avoid fluid leakage.
- 5 Black gasket with orange dot
- 6 Solid black gasket

06759

Parts

Use Only Genuine Graco Parts and Accessories

Part No. 238–851 and 239–001

Repair Kits

Ref. No.	Part No.	Description	Qty.
1	238–750	BODY, gun	1
2	106–917	ADAPTER, air	1
3	276–429	TRIGGER, gun	1
5	217–489	VALVE, pattern adjustment; Includes items 5a and 5b	1
5a	168–110	•O-RING, nitrile rubber	1
5b	105–456	•RETAINER, clip	1
6	106–903	SPRING, compression, air valve	1
7	178–408	CAP, valve, air	1
8	203–953	CAP SCREW, hex hd, 10-24 x 0.375" long	1
9	187–562	PIN, pivot	1
10	238–754	NEEDLE, fluid; Included with Gun 238–851 only; Includes replaceable items 10a and 10b	1
	238–755	NEEDLE, fluid, hi-flow; Included with Gun 239–001 only; Includes replaceable items 10a and 10b	1
10a	111–516	•O-RING; CV75	1
10b	111–517	•RING, backup; PTFE®	1
11	238–701	AA RAC TIP GUARD/ AIR CAP ASSY.	1
13	192–096	RAC HOUSING	1
14	AAR–XXX	AA RAC SPRAY TIP; Customer's choice. See Chart on page 23.	1
15	239–172	DIFFUSER-SEAT; Included with Gun 238–851 only	1
	239–173	DIFFUSER-SEAT, hi-flow; Included with Gun 239–001 only	1
17	178–422	GASKET, fluid, Delrin®; 1 sent unassembled	2
18	187–521	GASKET, fluid; acetal homopolymer (black), 1 sent unassembled	2
19	224–868	TRIGGER EXTENSION	2
23	187–504	NUT, needle	1
24	178–765	NUT, packing, air	1
25	105–452	U-CUP, PTFE	1
26	217–487	VALVE, air	1
29	238–228	GUARD, trigger	1
30	191–026	CONNECTOR, fluid	1
31▲	222–385	WARNING CARD (not shown)	1
34	187–737	TOOL, needle assembly	1
35▲	172–479	TAG, instruction (not shown)	1

Kit No. and Description	Includes:		
	Ref. No.	Part No.	Description
239–176 Gun Repair Kit	5a	168–110	O-Ring
	5b	105–456	Retainer
	6	106–903	Spring
	10	238–754	Needle
	10a	111–516	O-Ring
	10b	111–517	Backup Ring
	12	107–079	O-Ring
	15	239–172	Diffuser-seat
	17	178–422	Gasket
	18	187–521	Gasket
239–178 Fluid Section Repair Kit	25	105–452	U-Cup
	26	217–487	Valve
	10	238–754	Needle
	10a	111–516	O-Ring
	10b	111–517	Backup Ring
	15	239–172	Diffuser-seat
239–177* Hi-flow Gun Repair Kit	17	178–422	Gasket
	18	187–521	Gasket
	5a	168–110	O-Ring
	5b	105–456	Retainer
	6	106–903	Spring
	10	238–755	Needle
239–179* Hi-flow Fluid Section Repair Kit	10a	111–516	O-Ring
	10b	111–517	Backup Ring
	12	107–079	O-Ring
	15	239–173	Diffuser-seat
	17	178–422	Gasket
	18	187–521	Gasket
	25	105–452	U-Cup
	26	217–487	Valve

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

* Must be used with tips larger than 0.025 in. (0.635 mm).

Spray Tip Selection Charts

NOTE: Part No. 238–755 Fluid Needle and 224–855 Diffuser-seat must be used with GG4 tips larger than 0.025 in. (0.635 mm).

Standard Spray Tips, for use with Air Cap 238–628

Orifice Size <i>inches</i> <i>(mm)</i>	Fan Width at 12" (300 mm) <i>Inches</i> <i>(mm)</i>	*Light to Medium Viscosity <i>fl oz/min</i> <i>(liters/min)</i>	*Heavy Viscosity <i>fl oz/min</i> <i>(liters/min)</i>	Part No.
0.007 (0.178)	2–4 (50–100)	4.0 (0.1)		GG4–107
	4–6 (100–150)			GG4–207
	6–8 (150–200)			GG4–307
0.009 (0.229)	2–4 (50–100)	7.0 (0.2)		GG4–109
	4–6 (100–150)			GG4–209
	6–8 (150–200)			GG4–309
	8–10 (200–250)			GG4–409
	10–12 (250–300)			GG4–509
0.011 (0.279)	2–4 (50–100)	10.0 (0.3)		GG4–111
	4–6 (100–150)			GG4–211
	6–8 (150–200)			GG4–311
	8–10 (200–250)			GG4–411
	10–12 (250–300)			GG4–511
	12–14 (300–350)			GG4–611
0.013 (0.330)	4–6 (100–150)	13.0 (0.4)		GG4–213
	6–8 (150–200)			GG4–313
	8–10 (200–250)			GG4–413
	10–12 (250–300)			GG4–513
	12–14 (300–350)			GG4–613
	14–16 (350–400)			GG4–713

Orifice Size	Fan Width at 12" (300 mm)	*Light to Medium Viscosity	*Heavy Viscosity	Part No.
0.015 (0.381)	4–6 (100–150)	17.0 (0.5)		GG4–215
	6–8 (150–200)			GG4–315
	8–10 (200–250)			GG4–415
	10–12 (250–300)			GG4–515
	12–14 (300–350)			GG4–615
	14–16 (350–400)			GG4–715
	16–18 (400–460)			GG4–815
0.017 (0.432)	4–6 (100–150)	22.0 (0.7)	17.0 (0.5)	GG4–217
	6–8 (150–200)			GG4–317
	8–10 (200–250)			GG4–417
	10–12 (250–300)			GG4–517
	12–14 (300–350)			GG4–617
	14–16 (350–400)			GG4–717
	16–18 (400–460)			GG4–817
	18–20 (457–508)			GG4–917
0.019 (0.483)	4–6 (100–150)	28.0 (0.8)	21.0 (0.6)	GG4–219
	6–8 (150–200)			GG4–319
	8–10 (200–250)			GG4–419
	10–12 (250–300)			GG4–519
	12–14 (300–350)			GG4–619
	14–16 (350–400)			GG4–719
	16–18 (400–460)			GG4–819
	18–20 (457–508)			GG4–919

Spray Tip Selection Charts

Standard Spray Tips, for use with Air Cap 238–628

Orifice Size	Fan Width at 12" (300 mm)	*Light to Medium Viscosity	*Heavy Viscosity	Part No.
0.021 (0.533)	6–8 (150–200)	35.0 (1.0)	27.0 (0.8)	GG4–321
	8–10 (200–250)			GG4–421
	10–12 (250–300)			GG4–521
	12–14 (300–350)			GG4–621
	14–16 (350–400)			GG4–721
	16–18 (400–460)			GG4–821
	18–20 (457–508)			GG4–921
0.023 (0.584)	8–10 (200–250)	40.0 (1.2)	34.0 (0.97)	GG4–423
	10–12 (250–300)			GG4–523
	12–14 (300–350)			GG4–623
	14–16 (350–400)			GG4–723
	16–18 (400–460)			GG4–823
	18–20 (457–508)			GG4–923
0.025 (0.635)	8–10 (200–250)	50.0 (1.5)	42.0 (1.2)	GG4–425
	10–12 (250–300)			GG4–525
	12–14 (300–350)			GG4–625
	14–16 (350–400)			GG4–725
	16–18 (400–460)			GG4–825
0.027 (0.686)	6–8 (150–200)	58.5 (1.7)	50.0 (1.4)	GG4–327
	8–10 (200–250)			GG4–427
	10–12 (250–300)			GG4–527
	12–14 (300–350)			GG4–627
	16–18 (400–460)			GG4–827

Orifice Size	Fan Width at 12" (300 mm)	*Light to Medium Viscosity	*Heavy Viscosity	Part No.
0.029 (0.737)	8–10 (200–250)	68.0 (1.9)	59.0 (1.7)	GG4–429
	12–14 (300–350)			GG4–629
0.031 (0.787)	8–10 (200–250)	78.0 (2.2)	69.0 (2.0)	GG4–431
	12–14 (300–350)			GG4–631
	18–20 (457–508)			GG4–931
0.033 (0.838)	12–14 (300–350)	88.0 (2.5)	79.0 (2.3)	GG4–633
	16–18 (400–460)			GG4–833
	18–20 (457–508)			GG4–933
0.035 (0.889)	8–10 (200–250)	98.0 (2.8)	89.0 (2.5)	GG4–435
	10–12 (250–300)			GG4–535
	12–14 (300–350)			GG4–635
	16–18 (400–460)			GG4–835
	18–20 (457–508)			GG4–935
0.037 (0.940)	14–16 (350–400)	108.0 (3.1)	99.0 (2.8)	GG4–737
0.039 (0.991)	8–10 (200–250)	118.0 (3.4)	109.0 (3.1)	GG4–439
	10–12 (250–300)			GG4–539
	12–14 (300–350)			GG4–639
	16–18 (400–460)			GG4–839

*Fluid output at 600 psi (41 bar, 4.1 MPa).

Fluid output (Q) at other pressures (P) can be calculated by this formula: $Q = (0.041) (QT) (\sqrt{\frac{P}{600}})$.

Where QT = Fluid output (fl oz/min) from the above table for the selected orifice size.

NOTE: Other tips are available on special work order. Allow 4 to 6 weeks for delivery.

Spray Tip Selection Charts

Standard Sealer Tips, for use with Air Cap 238–628

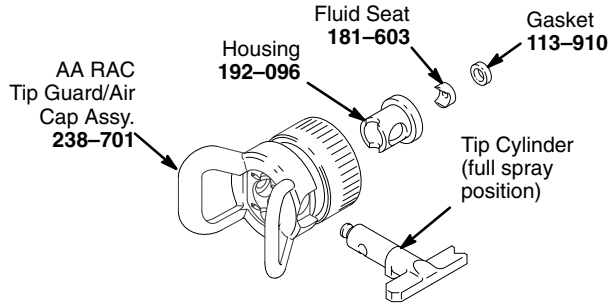
NOTE: Part No. 238–755 Fluid Needle and 224–855 Diffuser-seat must be used with GG4 tips larger than 0.025 in. (0.635 mm).

Orifice Size <i>inches</i> <i>(mm)</i>	*Light to Medium Viscosity <i>fl oz/min</i> <i>(liters/min)</i>	*Heavy Viscosity <i>fl oz/min</i> <i>(liters/min)</i>	Part No.
0.025 (0.635)	50.0 (1.5)	42.0 (1.2)	GG4–025
0.029 (0.737)	50.0 (1.5)	42.0 (1.2)	GG4–029
0.031 (0.787)	50.0 (1.5)	42.0 (1.2)	GG4–031
0.035 (0.889)	50.0 (1.5)	42.0 (1.2)	GG4–035

**Fluid output at 600 psi (41 bar, 4.1 MPa).*

Spray Tip Selection Charts

AA Reverse-A-Clean (AA RAC™) Spray Tips



NOTE:

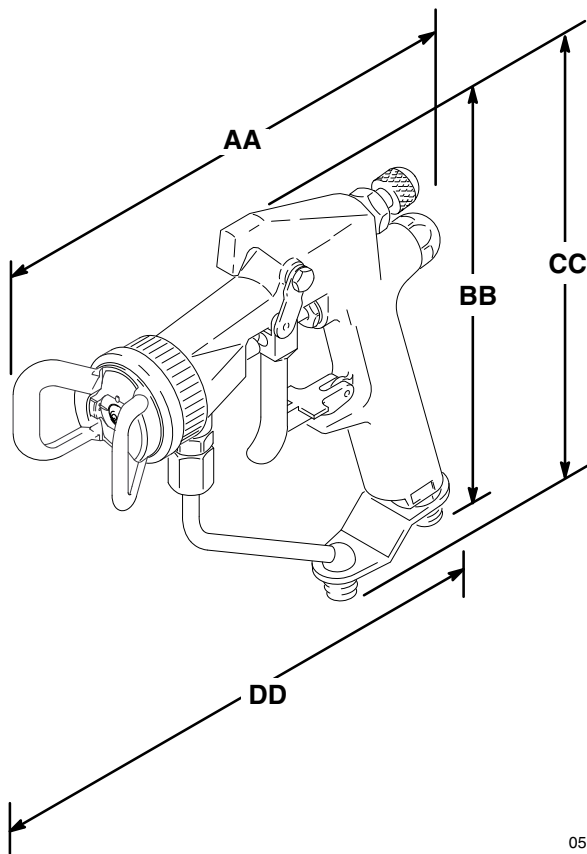
- AA RAC Spray Tips include a metal fluid seat and a black plastic gasket, marked with an orange dot.
- For AA RAC use, you must also order Part No. 238-701 RAC Tip Guard/Air Cap Assembly and Part No. 192-096 RAC Housing, and use Part No. 239-172 Diffuser (for tips 0.025 in. (0.635 mm) and smaller).
- The air separator (item 16) must be removed when using the AA RAC.
- Part No. 238-755 Fluid Needle and 239-173 Diffuser-seat must be used with AA RAC tips larger than 0.025 in. (0.635 mm).

Orifice Size inches (mm)	Fan Width at 12" (300 mm) Inches (mm)	*Light to Medium Viscosity fl oz/min (liters/min)	*Heavy Viscosity fl oz/min (liters/min)	Part No.
0.015 (0.381)	6-8 (150-200)	17.0 (0.5)		AAR-315
	8-10 (200-250)			AAR-415
0.017 (0.432)	8-10 (200-250)	22.0 (0.7)	17.0 (0.5)	AAR-417
	10-12 (250-300)			AAR-517
	12-14 (300-350)			AAR-617
0.019 (0.483)	8-10 (200-250)	28.0 (0.8)	21.0 (0.6)	AAR-419
	10-12 (250-300)			AAR-519
	12-14 (300-350)			AAR-619
0.021 (0.533)	8-10 (200-250)	35.0 (1.0)	27.0 (0.8)	AAR-421
	10-12 (250-300)			AAR-521
	12-14 (300-350)			AAR-621
0.023 (0.584)	8-10 (200-250)	40.0 (1.2)	34.0 (0.97)	AAR-423
	10-12 (250-300)			AAR-523
	12-14 (300-350)			AAR-623

Orifice Size	Fan Width at 12" (300 mm)	*Light to Medium Viscosity	*Heavy Viscosity	Part No.
0.025 (0.635)	8-10 (200-250)	50.0 (1.5)	42.0 (1.2)	AAR-425
	10-12 (250-300)			AAR-525
	12-14 (300-350)			AAR-625
0.027 (0.686)	8-10 (200-250)	58.5 (1.7)	50.0 (1.4)	AAR-427
	10-12 (250-300)			AAR-527
	12-14 (300-350)			AAR-627
0.029 (0.737)	8-10 (200-250)	68.0 (1.9)	59.0 (1.7)	AAR-429
	10-12 (250-300)			AAR-529
	12-14 (300-350)			AAR-629
0.031 (0.787)	8-10 (200-250)	78.0 (2.2)	69.0 (2.0)	AAR-431
	10-12 (250-300)			AAR-531
	12-14 (300-350)			AAR-631
0.033 (0.838)	8-10 (200-250)	88.0 (2.5)	79.0 (2.3)	AAR-433
	10-12 (250-300)			AAR-533
	12-14 (300-350)			AAR-633
0.035 (0.889)	8-10 (200-250)	98.0 (2.8)	89.0 (2.5)	AAR-435
	10-12 (250-300)			AAR-535
	12-14 (300-350)			AAR-635
0.037 (0.940)	8-10 (200-250)	108.0 (3.1)	99.0 (2.8)	AAR-437
	10-12 (250-300)			AAR-537
	12-14 (300-350)			AAR-637
0.039 (0.991)	8-10 (200-250)	118.0 (3.4)	109.0 (3.1)	AAR-439
	10-12 (250-300)			AAR-539
	12-14 (300-350)			AAR-639

*Fluid output at 600 psi (41 bar, 4.1 MPa).

Dimensions



05985

Measurements, inches (mm)				
Gun Part No.	AA	BB	CC	DD*
238-402	7.5 (191)	6.9 (175)	7.5 (191)	—
238-851	7.8 (198)	6.9 (175)	7.5 (191)	—
238-852	—	—	8.3 (210)†	7.7 (196)
238-883	7.5 (191)	6.9 (175)	7.5 (191)	—
239-001	7.8 (198)	6.9 (175)	7.5 (191)	—

- * Dimension DD is taken from the end of the tip guard to the end of the quick-disconnect air line fitting.
- † On part no. 238-852, Dimension CC is taken from the top of the gun to the bottom of the quick-disconnect air line fitting.

Technical Data

Maximum Working Fluid Pressure 4000 psi (280 bar, 28 MPa)
 Maximum Working Air Pressure . . . 100 psi (7 bar, 0.7 MPa)
 Maximum Working Fluid Temperature . 120° F (49° C)
 Weight (less filter) 1.33 lb (0.59 Kg)
 Fluid Inlet 1/4-18 npsm (R1/4-19) compound male thread

Air Inlet

Part No. 238-402, 238-851, 238-883, and 239-001 Guns:

1/4-18 npsm (R1/4-19) compound male thread

Part No. 238-852 Gun:

1/4-18 npsm quick-disconnect fitting.

Wetted Parts Stainless Steel, Carbide, Ultra High Molecular Weight Polyethylene, CV75[®], PTFE[®], Delrin[®], CHEMTEMP[™]

PTFE[®] and Delrin[®] are registered trademarks of the Company.

CV75[®] is a registered trademark of the International Seal Co., Inc.

CHEMTEMP[™] is a registered trademark of the Ranier Rubber Company.

Sound Data

Gun with GG4 spray tip and 238-628 air cap

Fluid Pressure <i>psi (bar, MPa)</i>	Air Pressure <i>psi (bar, MPa)</i>	Sound Pressure† <i>dB(A)</i>	Sound Power‡ <i>dB(A)</i>
600 (41, 4.1)	30 (2.1, 0.21)	70.6	77.1
4000 (280, 28 MPa)	30 (2.1, 0.21)	84.7	89.8
4000 (280, 28 MPa)	100 (7, 0.7)	88.2	93.7

Gun with AAR spray tip and 238-701 air cap

Fluid Pressure <i>psi (bar, MPa)</i>	Air Pressure <i>psi (bar, MPa)</i>	Sound Pressure† <i>dB(A)</i>	Sound Power‡ <i>dB(A)</i>
600 (41, 4.1 MPa)	30 (2.1, 0.21)	78.7	85.8
4000 (280, 28 MPa)	30 (2.1, 0.21)	85.1	90.3
4000 (280, 28 MPa)	100 (7, 0.7)	88.4	94.4

† Sound pressure was measured per Cagi Pneurop, 1969.

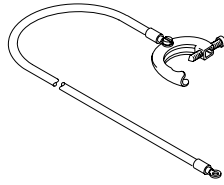
‡ Sound power was measured per ISO-3744, 1981.

Accessories

Use Only Genuine Graco Parts and Accessories

Grounding Clamp and Wire 222-011

12 ga, 25 ft (7.6 m) wire



Brush 101-892

For cleaning the gun.

High Pressure Ball Valves, Viton® Seals

5000 psi (350 bar, 35 MPa) Maximum Working Pressure

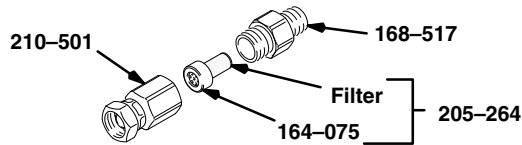
Can be used as fluid drain valve.

- 210-657 1/2 npt(m)
- 210-658 3/8 npt(m)
- 210-659 3/8 x 1/4 npt(m)

In-line Fluid Filter 210-500

5000 psi (350 bar, 35 MPa) Maximum Working Pressure

100 mesh. Fits onto the gun's fluid connector. 1/4-18 npsm. Includes the parts shown below.



Ruby-ball Needle Assembly 236-678

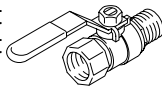
Use to decrease wear with acid catalyzed finishes. For use in place of the standard fluid needle, part no. 238-754, item 10¹ on page 17. Use with diffuser-seat 238-427 only.

Bleed-type Master Air Valve

300 psi (21 bar, 2.1 MPa) Maximum Working Pressure

Relieves air trapped in the air line between the pump air inlet and this valve when closed.

- 107-141 3/4 npt(m x f) inlet & outlet
- 107-142 1/2 npt(m x f) inlet & outlet



Air Line Quick-disconnect 113-367

Consists of:

- 113-410 Coupling, female, quick-disconnect
- 113-368 Coupling, male, quick-disconnect

Swivel Connector 189-018

To ease movement of the gun and hose. 1/4-18 npsm

Air Whip Hoses

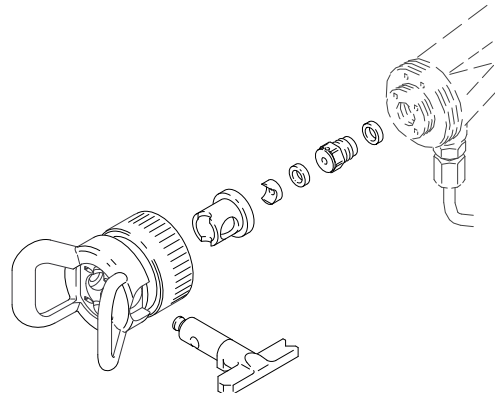
100 psi (7 bar, 0.7 MPa) Maximum Working Pressure
To ease movement of the gun and hose. 1/4-18 npsm, polyurethane with SST braid

- 238-759 3 ft. (0.92 m) hose
- 236-873 6 ft. (1.83 m) hose

Conversion Kits

Kits to convert from a gun with standard spray tip, tip guard, and air cap to a gun with the AA RAC assembly.

- 239-174 Use with gun part no. 238-402 and 238-852 to convert to gun part no. 238-851.
- 239-175 Use with gun part no. 238-883 to convert to gun part no. 239-001.



Notes

Graco Warranty and Limitation of Liability

WARRANTY

Graco warrants all equipment listed in this manual which is 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. 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.

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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

Manual revised to add Gun Part No. 239-001, to change the RAC Housing and Diffuser-seat on the AA RAC guns, and to add the repair kits for the AA RAC guns.

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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