

Instructions



AIR-OPERATED

1/4 in. NPT Fluid Port Applicator Assemblies

310549 rev.D



Important Safety Instructions

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

276 bar, 27.6 MPa (4000 psi) Maximum Working Pressure

Part No. 918533, Series A

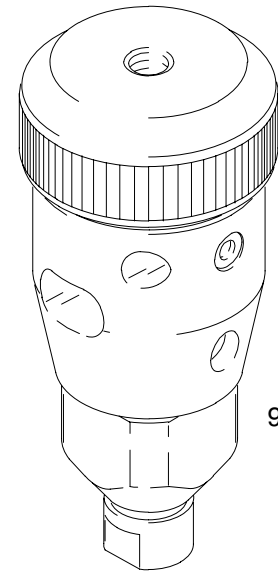
1/4 in. Port Ball Seat Applicator

The 1/4 in. port ball seat applicator controls material flow of adhesives, sealants, and other high-viscosity materials that are compatible with the wetted parts of the applicator.

Part No. 918535, Series A

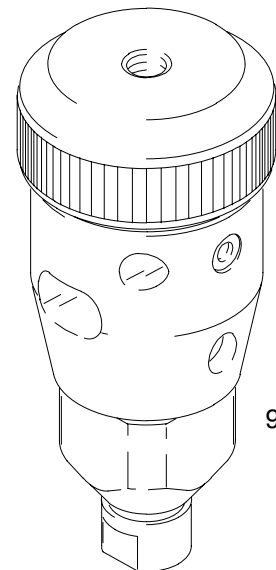
1/4 in. Port Snuff Back Applicator

The 1/4 in. port snuff back applicator controls material flow of adhesives, sealants, and other materials that are compatible with the wetted parts of the applicator. The snuff-back action produces instantaneous bead cutoff of high-viscosity materials.



918533

7603A



918533

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PROVEN QUALITY. LEADING TECHNOLOGY.

Warnings

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, malfunction, or start unexpectedly and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, warnings, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call Graco Technical Assistance at 313-416-3425.
- 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 fluid working pressure of 27.6 MPa (276 bar, 4000 psi) to the applicator or manifold.
- Never exceed the recommended working pressure or the maximum air inlet pressure stated on your pump or in the **Technical Data** on pages 14 and 15.
- Be sure that all spray/dispensing equipment and accessories are rated to withstand the maximum working pressure of the pump. Do not exceed the maximum working pressure of any component or accessory used in the system.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not expose Graco standard hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Do not expose Graco standard 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 fluids and solvents that are compatible with the equipment wetted parts. See the **Technical Data** sections of all the equipment manuals. Read the fluid manufacturer's warnings.
- Always wear protective eyewear, gloves, clothing, and respirator as recommended by the fluid and solvent manufacturers.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.

WARNING



SKIN INJECTION HAZARD

Spray from the applicator, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not point the applicator at anyone or at any part of the body.
- Do not put hand or fingers over the front of the applicator.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** on page 7 whenever you are instructed to: relieve pressure; stop dispensing; clean, check, or service the equipment; or install or clean a tip or nozzle.
- 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.
- Always wear eye protection and protective clothing when installing, operating, or servicing this dispensing equipment.
- Do not remove or modify any part of the applicator; this can cause a malfunction and result in serious bodily injury.
- Use extreme caution when cleaning or changing tips. If the tip clogs while applying material, Always follow the **Pressure Relief Procedure** on page 7, then remove the tip to clean it.
- Never wipe off build-up around the tip or air cap until pressure is fully relieved.



FIRE, EXPLOSION, AND ELECTRIC SHOCK 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 **Grounding** on page 5.
- Ground the equipment and the object being sprayed, and all other electrically conductive objects in the dispense area. Proper grounding dissipates static electricity generated in the equipment. See **Grounding** on page 5.
- Do not use this equipment with flammable liquids.
- Keep the dispense area free of debris, including solvent, rags, and gasoline.
- If there is any static sparking or you feel an electric shock while using the equipment, **stop dispensing immediately**. Do not use the equipment until you have identified and corrected the problem.
- Before operating the equipment, extinguish all open flames or pilot lights in the dispense area.
- Do not smoke in the dispensing area.
- Keep liquids away from the electrical components
- Disconnect electrical power at the main switch before servicing the equipment.
- Never exceed maximum wattage of the supply unit.

WARNING





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.

- Provide fresh air ventilation to avoid the buildup of vapors from the fluid being dispensed.
- 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.
- Avoid exposure to heated material fumes.

Setup

Ground the System

 WARNING	
	FIRE AND EXPLOSION HAZARD To reduce the risk of a fire, explosion, and serious injury, proper electrical grounding of every part of your system is essential. Read the warning section, FIRE AND EXPLOSION HAZARD , on page 3 and follow the grounding instructions below.

The following grounding instructions are minimum requirements for a basic dispensing 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*: connect a ground wire and clamp to a true earth ground as shown in separate pump manual.
2. *Applicator*: ground the applicator by connecting it to a properly grounded fluid hose and pump.
3. *Fluid and air hoses*: use only electrically conductive material and air hoses.
4. *Dispense gun*: obtain grounding through the connection of the hose, or cable.
5. *Air compressor*: follow the manufacturer's recommendations.
6. *Object being sprayed*: according to local code.
7. *Fluid supply container*: according to local code.


Installation

NOTE: Read this manual thoroughly before installing the applicator.

The applicator has tapped holes for mounting, making it ideal for use in robotic equipment or multiple manifold high production operations.

To install the applicator, make sure you refer to the correct **Parts** information pages, listed below, while performing the following procedure.

- To install applicator 918533, refer to page 11 for **Parts** information.
 - To install applicator 918535, refer to page 13 for **Parts** information.
1. Inspect the applicator for shipping damage. If damage is found, notify the carrier immediately.
 2. Depending on the installation, attach the applicator to its mounting fixture by means of the three #10–24 x 0.25 tapped mounting holes in applicator body (16).

 CAUTION
Only use air fittings that are rated at a temperature equal to or higher than the operating temperature of your fluid dispensing system. Lower rated air fittings could melt and cause damage to the applicator.

3. Connect air lines to the applicator as follows:
 - a. Connect air line to 1/8 NPT(f) air-to-open air inlet in applicator body (16).
 - b. Connect air line to 1/8 NPT(f) air-to-close air inlet in cylinder cap (13) on applicator body (16).
4. Connect fluid line to 1/4 NPT(f) fluid inlet in applicator body (16).
5. Check each fitting for firmness to avoid pressure leakage from the applicator.

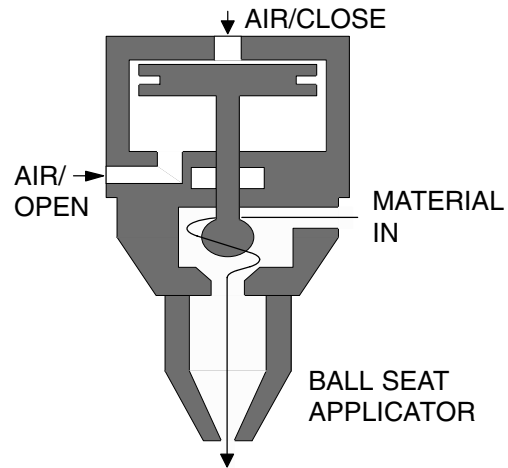
Operation

How the Applicator Operates

Both the ball seat applicator and snuff back applicator use the air-opened, air-closed mode of operation. Both applicators have two 1/8 in. NPT air ports to control the piston inside the applicator.

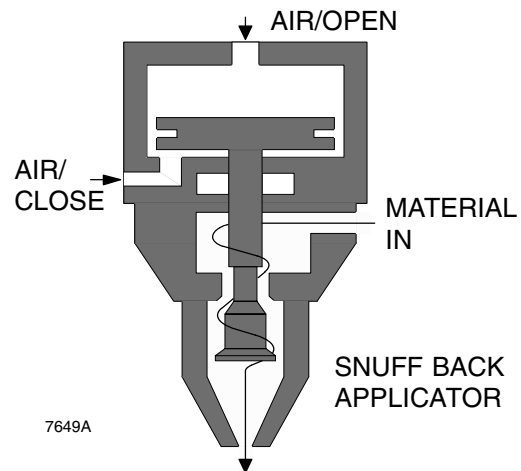
Ball Seat Applicator: Part No. 918533, Series A

The ball seat applicator has two 1/4 in. NPT fluid ports. The fluid inlet port is the supply port, feeding material into the applicator. The fluid outlet port dispenses material from the applicator through a dispense nozzle in regulated amounts. The air-operated piston and ball needle move at the same time. Applied air lifts the piston, opens the fluid outlet port, and allows material to dispense from the applicator. Applied air pushes the piston down, closing the fluid outlet port.



Snuff Back Applicator: Part No. 918535, Series A

The snuff back applicator has two 1/4 in. NPT fluid ports. The fluid inlet port is the supply port, feeding material into the applicator. The fluid outlet port dispenses material from the applicator through a dispense nozzle in regulated amounts. The air-operated piston and snuff back needle move at the same time. Applied air pushes the piston down, opens the fluid outlet port, and allows material to dispense from the applicator. Applied air lifts the piston, closing the fluid outlet port.



Operation

Pressure Relief Procedure

WARNING



MATERIAL FLUID HAZARD

To reduce risk of injury, wear eye protection, gloves and protective clothing when installing, operating, or servicing this dispensing system.



SKIN 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/dispensing
- install or clean the nozzle
- check or service any of the system equipment



PRESSURIZED FLUID HAZARD

High pressures can cause serious personal injury. Be sure to **open the applicator during system start-up** to alleviate pressure which might occur in the system due to material expansion.

This procedure describes how to relieve pressure from the applicator. See your supply unit or system documentation for instructions on relieving pressure for the entire system. Use this procedure whenever you shut off the applicator and before checking or adjusting any part of the system, to reduce the risk of serious injury.

1. Shut off the material supply.
2. Close all air bleed valves to shut off the air supply to the applicator.
3. Actuate the applicator repeatedly until no fluid flows. Have a container ready to catch the drainage from the applicator.
4. If the applicator nozzle or fluid hose is completely clogged or if pressure has not been fully relieved after following the preceding steps very slowly loosen the ball seat (17) or snuff back seat (17) or hose coupling from applicator body (16) and relieve pressure gradually, then loosen completely. Now clear the nozzle or hose.

For **Parts** information, refer to page 11 (918533) or page 13 (918535).

Adjusting the Applicator

There are no adjustments for the ball seat applicator or the snuff back applicator. If fluid begins to discharge, drip, string, or weep irregularly from the fluid inlet or outlet ports, the applicator may require cleaning, servicing, or replacement.

A repair kit is available to service the applicator. See **Parts** on pages 11 and 13 for information. For the best results, replace the original parts with the new parts in the repair kit.

Applicator Inspection Frequency

Inspect the applicator, material, and air hoses at least once every two weeks specifically for leakage and other visible damage.

Notes

[illegible]

Troubleshooting

Some solutions require disassembling the applicator. Always relieve system pressure before performing these procedures.

WARNING



To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** (page 7).

Refer to the **Parts** information on pages 11 and 13 for the parts that require service or replacement.

Problem	Cause(s)	Solution(s)
Applicator fails to open or close as required.	Actuating air line leaking, or is improperly connected.	Check air line connections.
	Material or debris in applicator is blocking needle movement.	Check applicator interior for materials or debris impeding needle assembly movement. Remove impeding material.
	Worn piston seal or o-rings.	Replace piston seal or o-ring.
Air leaks from applicator	Loose air connections.	Check air connections.
	Worn o-rings.	Replace o-rings on piston.
Material leaks from front of applicator	Worn needle seat.	Replace needle seat.
	Obstruction inside applicator.	Remove seat adapter. Check and replace needle seat, if necessary.
	Worn needle.	Check and replace needle assembly, if necessary.
Material leaks from applicator body	Seal not installed correctly.	Check needle seat and replace if necessary.
	Seal is worn.	

Service

Preparing to Service the Applicator

Some fluid material in the applicator may thicken or cure when cooled to room temperature, or when exposed to air. If you are working with such a fluid material, service the applicator while the material is uncured or at a temperature where it is soft enough to work with.

Perform this procedure before servicing the applicator.

1. Relieve the system pressure.

WARNING

To reduce the risk of serious injury, whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** (page 7).

2. Be sure material flow has been shut off.
3. Be sure system air has been shut off.

Service: 918533

Disassembly – Part No. 918533, Series A

Refer to the **Parts** information on page 11 while performing the following procedure to disassemble the applicator.

1. Remove and keep warning tag (18, not shown) for reattachment.
2. Unscrew and remove ball seat (17) from applicator body (16).
3. Remove seat gasket (12) from applicator body (16).
4. Unscrew and remove cylinder cap (13) and cap gasket (1) from body (16).
5. Push piston (3) down enough to gain access to the wrench flats on needle assembly (11) through the oblong hole in body (16).
6. Unscrew and remove piston (3) from needle assembly (11).
7. Remove two O-rings (2 and 4) from piston (3).
8. Remove lockwasher (5). Unscrew and remove hex nut (6) from needle assembly (11).
9. Push needle assembly (11) through seal (10) and remove it from body (16).
10. Unscrew and remove retaining screw (15) from body (16).
11. Push needle bearing (9) and needle seal (10) out of body (16).

Assembly – Part No. 918533, Series A

Refer to the **Parts** information on page 11 while performing the following procedure to assemble the applicator.

NOTE: Repair Kit 918534 is available to service the applicator. For the best results, replace the original parts with the new parts in the repair kit.

Prior to installation, lubricate all seals and o-rings with PARKER O LUBE™ or an equivalent lubricant. Check with the material supplier for a compatible lubricant.

1. Be sure all parts are free of solid material residue.
2. Complete the following steps to replace the core parts inside applicator body (16).
 - a. Push needle seal (10) into body (16). Exercise care not to damage the seal.
 - b. Install the needle bearing (9). Exercise care not to damage the bearing.
 - c. Install retaining screw (15) into body (16).
 - d. Push needle assembly (11) carefully through seal (10) and bearing (9).
 - e. Assemble hex nut (6) to needle assembly (11), screwing it on as far as it will go.
 - f. Install two O-rings (2 and 4) onto piston (3).
 - g. Install lock washer (5) and screw piston (3) onto needle assembly (11).
3. Install the cap gasket (1) in cylinder cap (13).
4. Screw cylinder cap (13) onto body (16).
5. Install seat gasket (12) and ball seat (17) into body (16).
6. Re-attach warning tag (18, not shown).

Parts: 918533

Part No. 918533, 1/4 in. Port Ball Seat Applicator

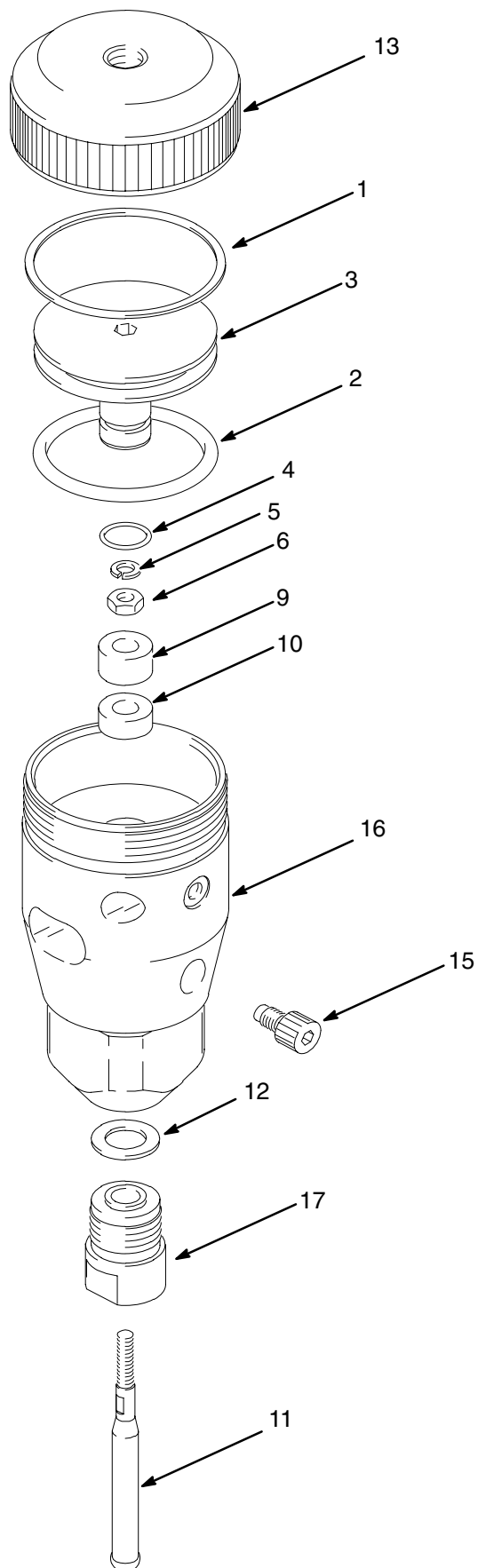
Ref No.	Part No.	Description	Qty
1✓	617644	GASKET, cap, 1.75 diameter	1
2✓	114054	O-RING, -222 fluoroelastomer	1
3	617645	PISTON, applicator, 1.75 diameter	1
4✓	106555	O-RING, -012 fluoroelastomer	1
5	C19215	WASHER, lock, #8	1
6	100284	NUT, hex, #8-32	1
9✓	617646	BEARING, applicator needle, 0.250 inside diameter	1
10✓	617647	SEAL, needle, 0.250 inside diameter	1
11✓	617648	NEEDLE BALL ASSEMBLY, 0.250 diameter	1
12✓	617649	GASKET, seat, 1/4 in. port	1
13	617650	Cap, cylinder, 1.75 diameter	1
15	617651	SCREW, retaining	1
16†		BODY, applicator, 1/4 port	1
17	617653	SEAT, applicator, ball	1
18▲*	172479	TAG, warning/instruction	1

✓ These parts are included in Repair Kit 918534, which may be purchased separately.

† This part is not offered for sale.

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

* These items are not shown on the parts illustration.



Service: 918535

Disassembly – Part No. 918535, Series A

Refer to the **Parts** information on page 13 while performing the following procedure to disassemble the applicator.

1. Remove and keep warning tag (18) for reattachment.
2. Unscrew and remove cylinder cap (13) and cap gasket (1) from applicator body (16).
3. Insert screwdriver into slot in end of needle assembly (11). Unscrew and remove piston (3) from needle assembly.
4. Remove two O-rings (2 and 4) from piston (3).
5. Push needle assembly (11) down enough to gain access to hex nut (6) through the oblong opening in applicator body (16). Unscrew and remove the hex nut from the needle assembly.
6. Push needle assembly (11) through seal (10) and remove it from body (16).
7. Unscrew and remove the snuff back seat (17) from applicator body (16).
8. Remove seat gasket (12) from body (16).
9. Unscrew and remove retaining screw (14) from body (16).
10. Push needle seal (10) and needle bearing (9) out of body (16).

Assembly – Part No. 918535, Series A

Refer to the **Parts** information on page 13 while performing the following procedure to assemble the applicator.

NOTE: Repair Kit 918536 is available to service the applicator. For the best results, replace the original parts with the new parts in the repair kit.

Prior to installation, lubricate all seals and o-rings with PARKER O LUBE™ or an equivalent lubricant. Check with the material supplier for a compatible lubricant.

1. Be sure all parts are free of solid material residue.
2. Complete the following steps to replace the core parts inside the applicator body (16).
 - a. Push needle seal (9) into body (16). Exercise care not to damage the seal.
 - b. Install needle bearing (9) in body (16). Exercise care not to damage the bearing.
 - c. Install retaining screw (15) into body (16).
 - d. Install seat gasket (12) and snuff back seat (17) in body (16).
 - e. Push needle assembly (11) carefully through seal (10) and bearing (9).
 - f. Place a small drop of PermaBond MM115 thread locker on the needle threads.
 - g. Install the two O-rings (2 and 4) onto piston (3).
 - h. Screw piston (3) onto needle assembly (11).
3. Install the cap gasket (1) in the cylinder cap (13).
4. Screw the cylinder cap (12) on the body (15).
5. Re-attach warning tag (18).

Parts: 918535

Part No. 918535, 1/4 in. Port Snuff Back Applicator

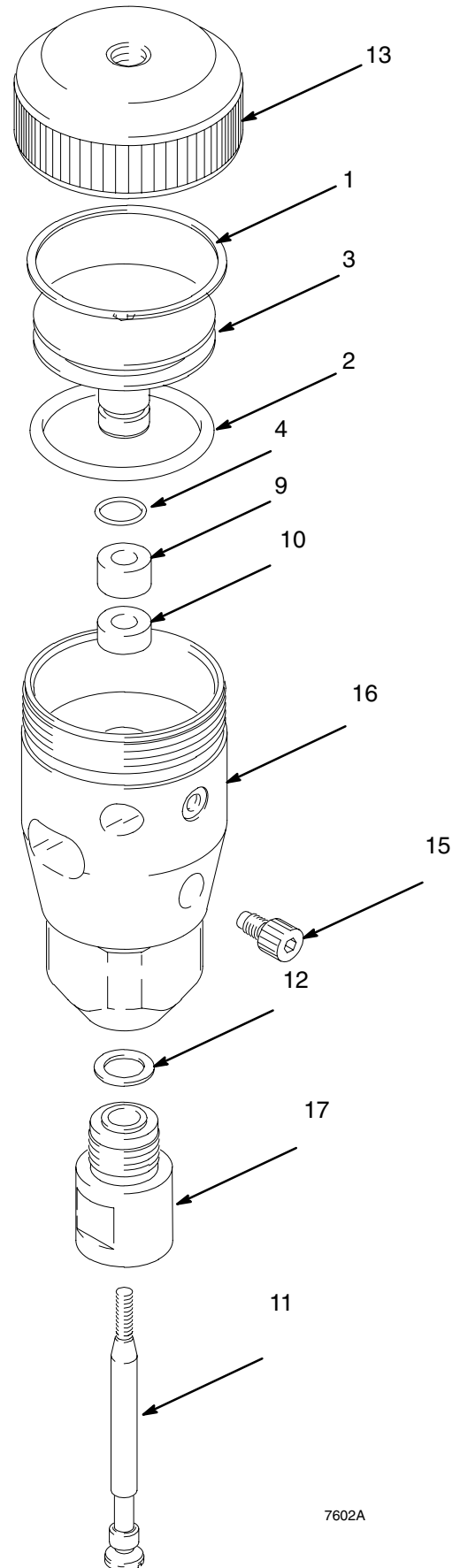
Ref No.	Part No.	Description	Qty
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2✓	114054	O-RING, -222 fluoroelastomer	1
3	617645	PISTON, applicator, 1.75 diameter	1
4✓	106555	O-RING, -012 fluoroelastomer	1
9✓	617646	BEARING, applicator needle, 0.250 inside diameter	1
10✓	617647	SEAL, needle, 0.250 inside diameter	1
11✓	617654	NEEDLE ASSEMBLY, snuff back, 0.250 diameter	1
12✓	617649	GASKET, seat, 1/4 in. port	1
13	617650	GASKET, cap, 1.75 diameter	1
15	617651	SCREW, retaining	1
16†		BODY, applicator, 1/4 port	1
17	617655	SEAT, applicator, snuff back	1
18▲*	172479	TAG, warning/instruction	1

✓ These parts are included in Repair Kit 918536, which may be purchased separately.

† This part is not offered for sale.

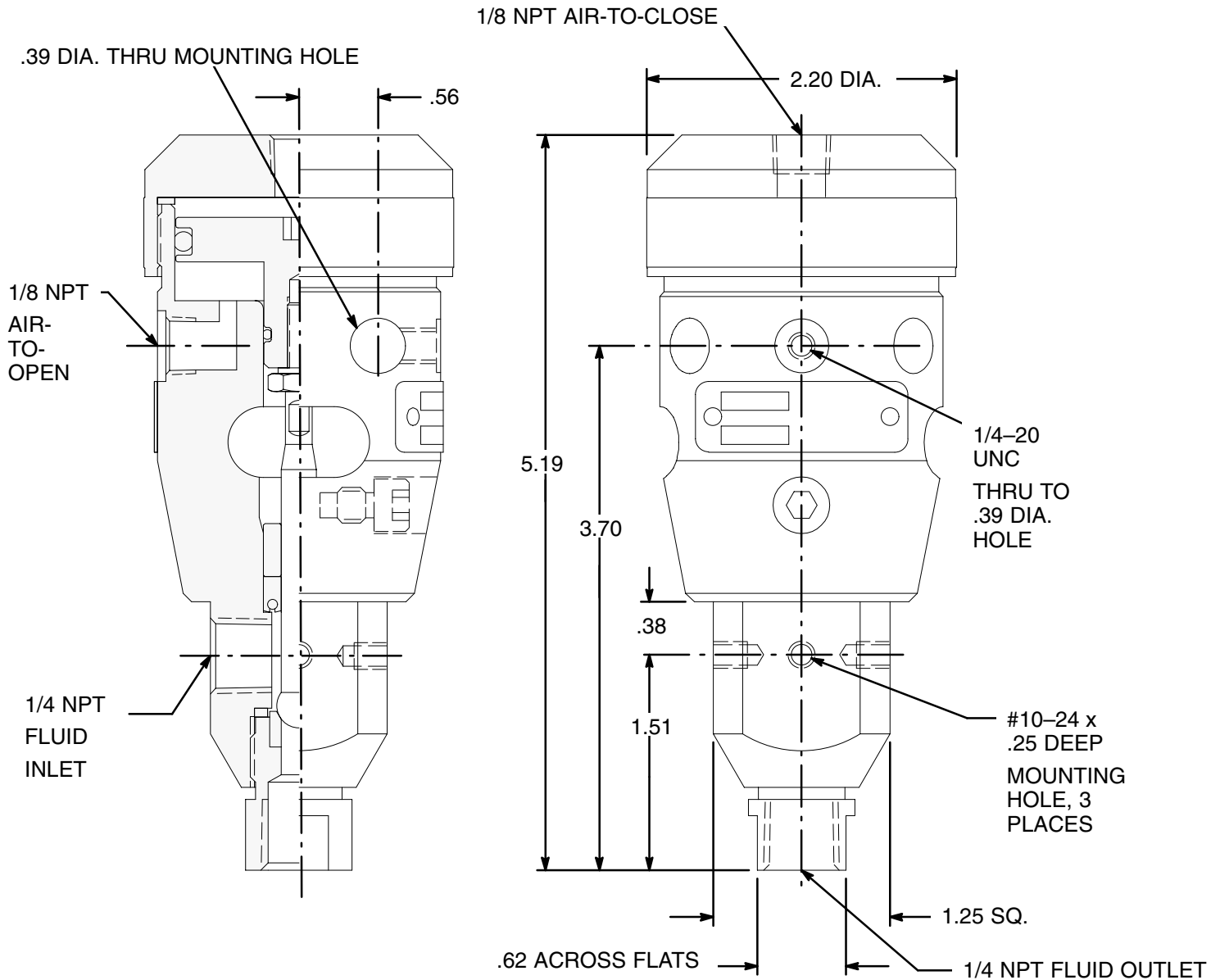
▲ Replacement Danger and Warning labels, tags and cards are available at no cost.

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Dimensions: 918533



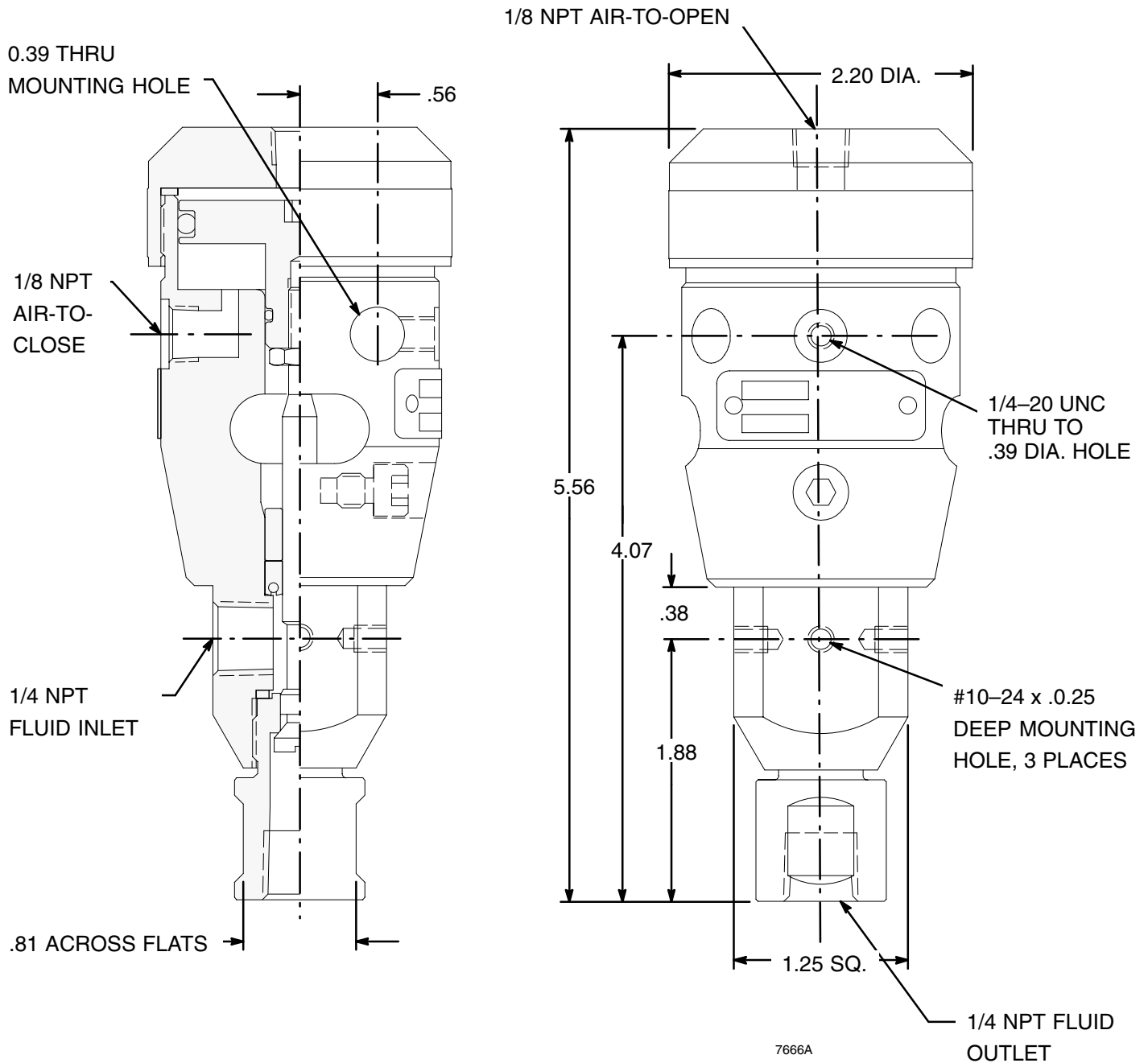
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Technical Data

Maximum operating air pressure	1.03 MPa (10.3 bar, 150 psi)
Maximum fluid working pressure	27.6 MPa (276 bar, 4000 psi)
Maximum operating temperature	275°F (135° C)
Applicator weight	1.45 lbs. (0.66 kg)
Wetted parts	Aluminum, carbon steel, tungsten carbide, chrome plate, fluoroelastomer rubber, thermoplastic polyester

PARKER O LUBE is a trademark of Parker Seal.

Dimensions: 918535



Technical Data

Maximum operating air pressure

1.03 MPa (10.3 bar, 150 psi)

Maximum fluid working pressure

27.6 MPa (276 bar, 4000 psi)

Maximum operating temperature

275°F (135° C)

Applicator weight

1.52 lbs. (0.69 kg)

Wetted parts

Aluminum, carbon steel, tungsten carbide, chrome plate, fluoroelastomer, rubber, thermoplastic polyester

PARKER O LUBE is a trademark of Parker Seal.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

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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:

1-800-328-0211 Toll Free

612-623-6921

612-378-3505 Fax

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MM 310549

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International Offices: Belgium, Korea, China, Japan

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