

# Fusion<sup>®</sup> PC Spray Gun

3A7314G

EN

**Plural component, impingement mix air purge spray gun with ProConnect™ fluid cartridge for dispensing non-flammable foam and polyurea. For professional use only.**

**Not approved for use in European explosive atmosphere locations.**

3500 psi (24.5 MPa, 245 bar) Maximum Fluid Working Pressure

80-130 psi (0.56-0.9 MPa, 5.6-9.0 bar) Air Inlet Pressure Range

200°F (94°C) Maximum Fluid Temperature

See page 4 for model information.



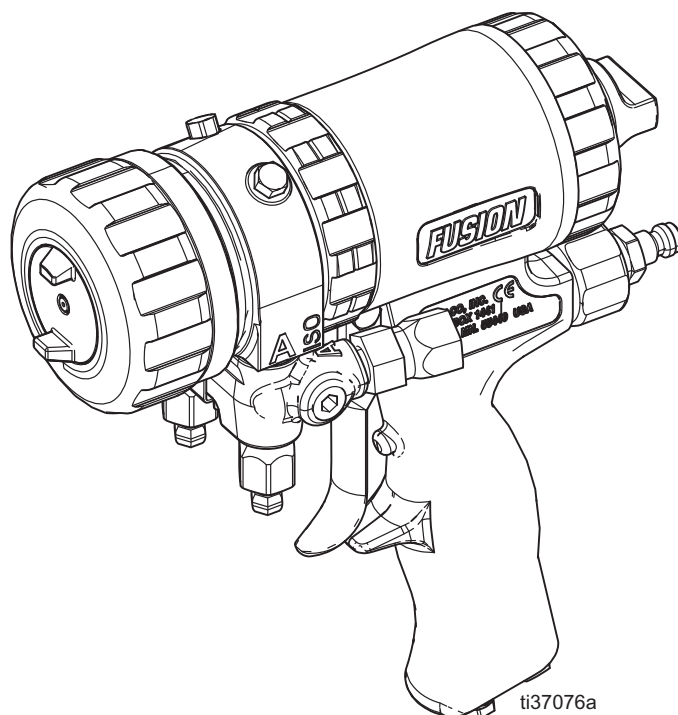
## Important Safety Instructions

Read all warnings and instructions in this manual and in all related manuals before using the equipment. Save these instructions.



## Important Medical Information

Read the medical alert card provided with the gun. It contains injection injury treatment information for a doctor. Keep it with you when operating the equipment.



ti37076a

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## Related Manuals

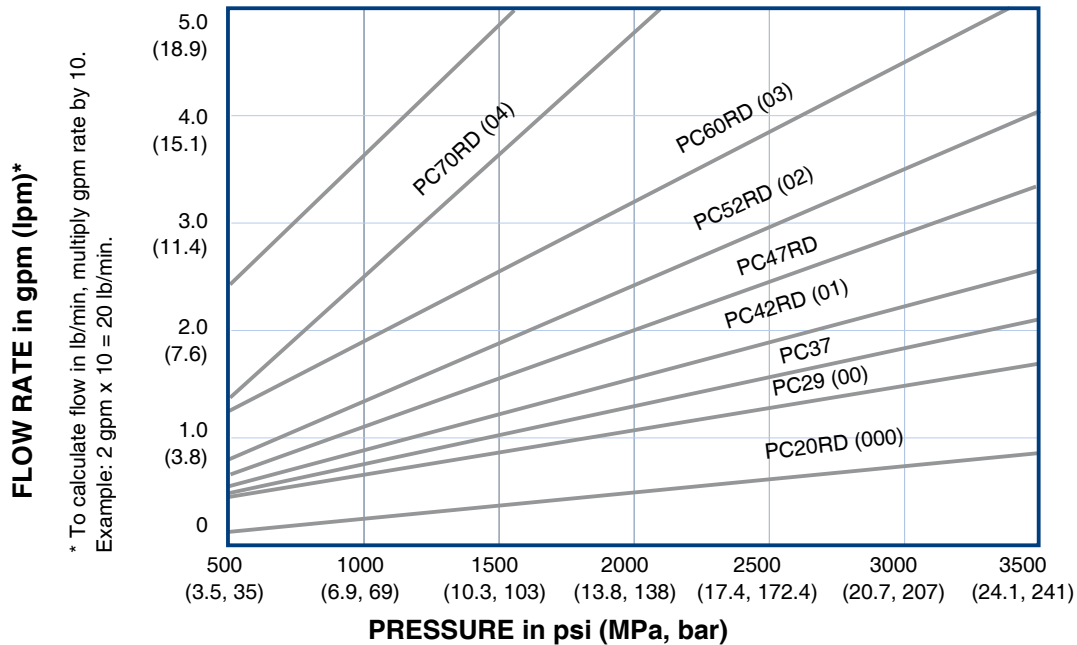
<b>Manual in English</b>	<b>Description</b>
309550	Fusion AP Spray Gun Instruction Manual
3A7318	Fusion PC Conversion Kit
309963	Fusion Solvent Flush Kit
309818	Circulation Manifold Kit
311071	Stud Wall Foam Kit and TP100 Kit

# Models

## Round Pattern Guns

Gun (Part, Series)	Mix Chamber			
	Part Number	Impingement Port Size in. (mm)	Equivalent Size	Pattern at 24 in. (61 cm) from target in. (mm)
25P587, A	PC29RD	0.029 (0.70)	00	8 (203)
25R084, A	PC37RD	0.037 (0.94)	00-01	9 (227)
25P588, A	PC42RD	0.042 (1)	01	11 (279)
25P590, A	PC47RD	0.0469 (1.18)	01-02	11 (279)
25P589, A	PC52RD	0.052 (1.3)	02	12 (305)
25R085, A	PC60RD	0.060 (1.50)	03	14 (356)

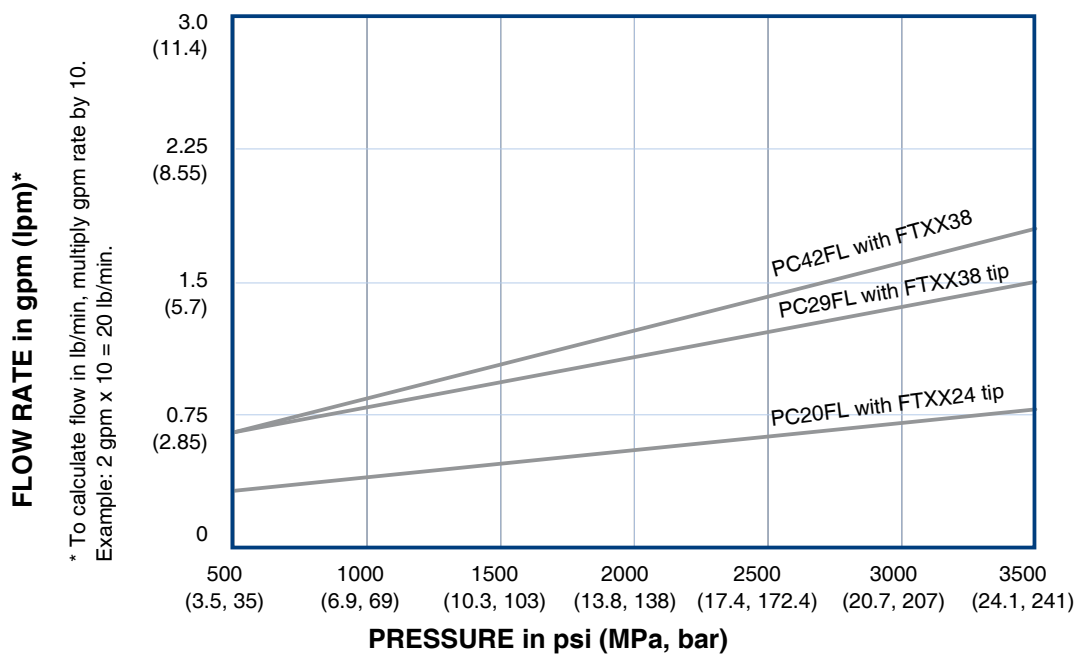
### Round Pattern Mix Chambers by Pressure and Flow Rate



## Flat Pattern Guns

Gun Part, Series	Mix Chamber			Flat Tip		
	Part Number	Impingement Port Size in. (mm)	Equivalent Size	Part Number	Pattern Size in. (mm)	Orifice Size in. (mm)
25R086, A	PC29FL	0.029 (0.70)	00	FT0438	8-10 (203-254)	0.038 (0.97)

### Flat Pattern Mix Chambers by Pressure and Flow Rate











## Bare Gun

Gun Part, Series
25P591, A

\* Bare guns include the same accessories as standard guns without a mix chamber and drill bits. A round air cap (C) is provided.

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.</li> <li>• When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See <b>Personal Protective Equipment</b> warnings in this manual.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.</li> <li>• Protective eyewear and hearing protection.</li> </ul>
    	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Engage piston safety lock when not spraying.</li> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses and couplings daily. Replace worn or damaged parts immediately.</li> </ul>



# WARNING

**BURN HAZARD**

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

**FIRE AND EXPLOSION HAZARD**

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:



- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



# WARNING



## EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.



- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



## PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

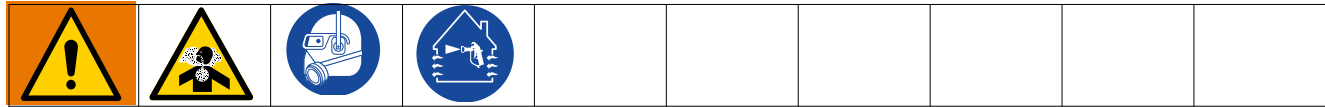
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.



# Important Isocyanate (ISO) Information


Isocyanates (ISO) are catalysts used in two component materials.

## Isocyanate Conditions





Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.




- Read and understand the fluid manufacturer’s warnings and Safety Data Sheets (SDSs) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer’s application instructions and SDSs.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material, which could cause off gassing and offensive odors. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer’s SDSs.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.
- Hazard from exposure to isocyanates continues after spraying. Anyone without appropriate personal protective equipment must stay out of the work area during application and after application for the time period specified by the fluid manufacturer. Generally this time period is at least 24 hours.
- Warn others who may enter work area of hazard from exposure to isocyanates. Follow the recommendations of the fluid manufacturer and local regulatory authority. Posting a placard such as the following outside the work area is recommended:

<b>! WARNING</b>	
	<b>TOXIC FUMES HAZARD</b>
DO NOT ENTER DURING SPRAY FOAM APPLICATION OR FOR ___ HOURS AFTER APPLICATION IS COMPLETE	
<b>DO NOT ENTER UNTIL:</b>	
DATE: _____	
TIME: _____	

## Material Self-Ignition

				
Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and Safety Data Sheets (SDSs).				

## Keep Components A and B Separate

				
Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:				
<ul style="list-style-type: none"> <li>• <b>Never</b> interchange component A and component B wetted parts.</li> <li>• Never use solvent on one side if it has been contaminated from the other side.</li> </ul>				

## Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE	
Partially cured ISO will reduce performance and the life of all wetted parts.	
<ul style="list-style-type: none"> <li>• Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. <b>Never</b> store ISO in an open container.</li> <li>• Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.</li> <li>• Use only moisture-proof hoses compatible with ISO.</li> <li>• Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.</li> <li>• Always lubricate threaded parts with an appropriate lubricant when reassembling.</li> </ul>	

**NOTE:** The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

## Foam Resins with 245 fa Blowing Agents

Some foam blowing agents will froth at temperatures above 90°F (33°C) when not under pressure, especially if agitated. To reduce frothing, minimize preheating in a circulation system.

## Changing Materials

NOTICE	
Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.	
<ul style="list-style-type: none"> <li>• When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.</li> <li>• Always clean the fluid inlet strainers after flushing.</li> <li>• Check with your material manufacturer for chemical compatibility.</li> <li>• When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.</li> </ul>	

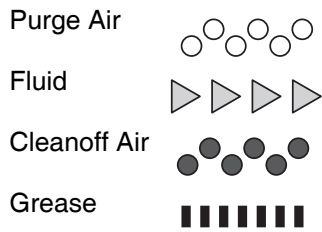
# Overview

## Theory of Operation

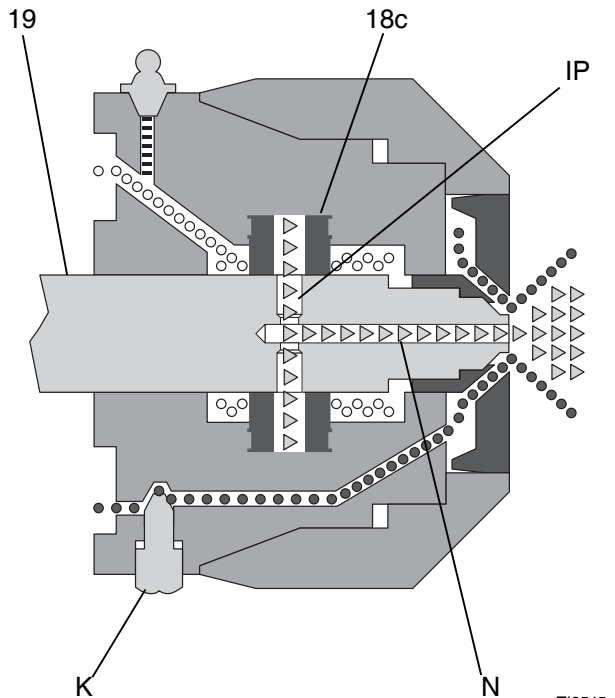
### Gun Triggered (Fluid Spraying)

Mix chamber (19) moves back, shutting off purge air flow. Impingement ports (IP) align with fluid ports of side seals (18c), allowing fluid to flow through mix chamber nozzle (N).

**Key**



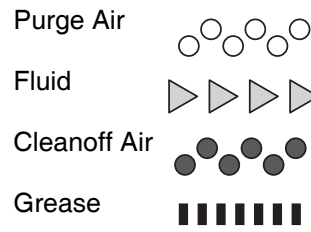
**NOTE:** Flow paths are not shown to scale.



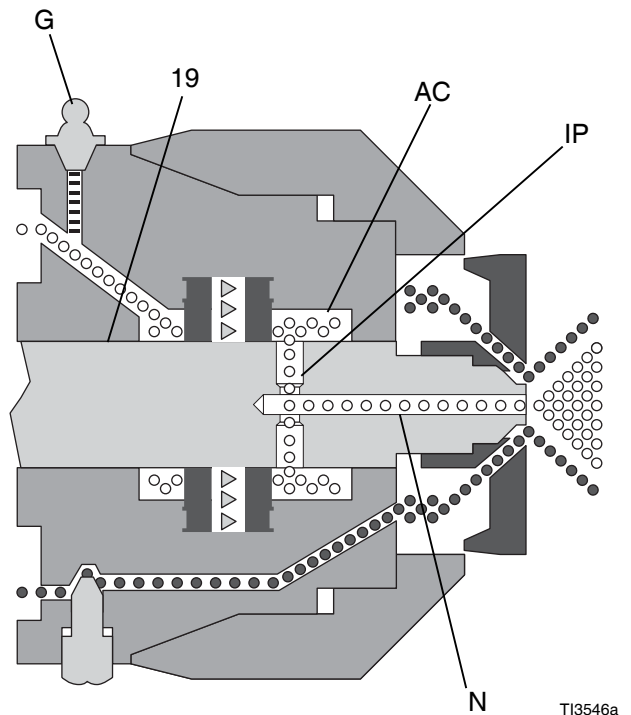
### Gun Detriggered (Air Purging)

Mix chamber (19) moves forward, shutting off fluid flow. Impingement ports (IP) open to air chamber (AC), allowing purge air to flow through mix chamber nozzle (N).

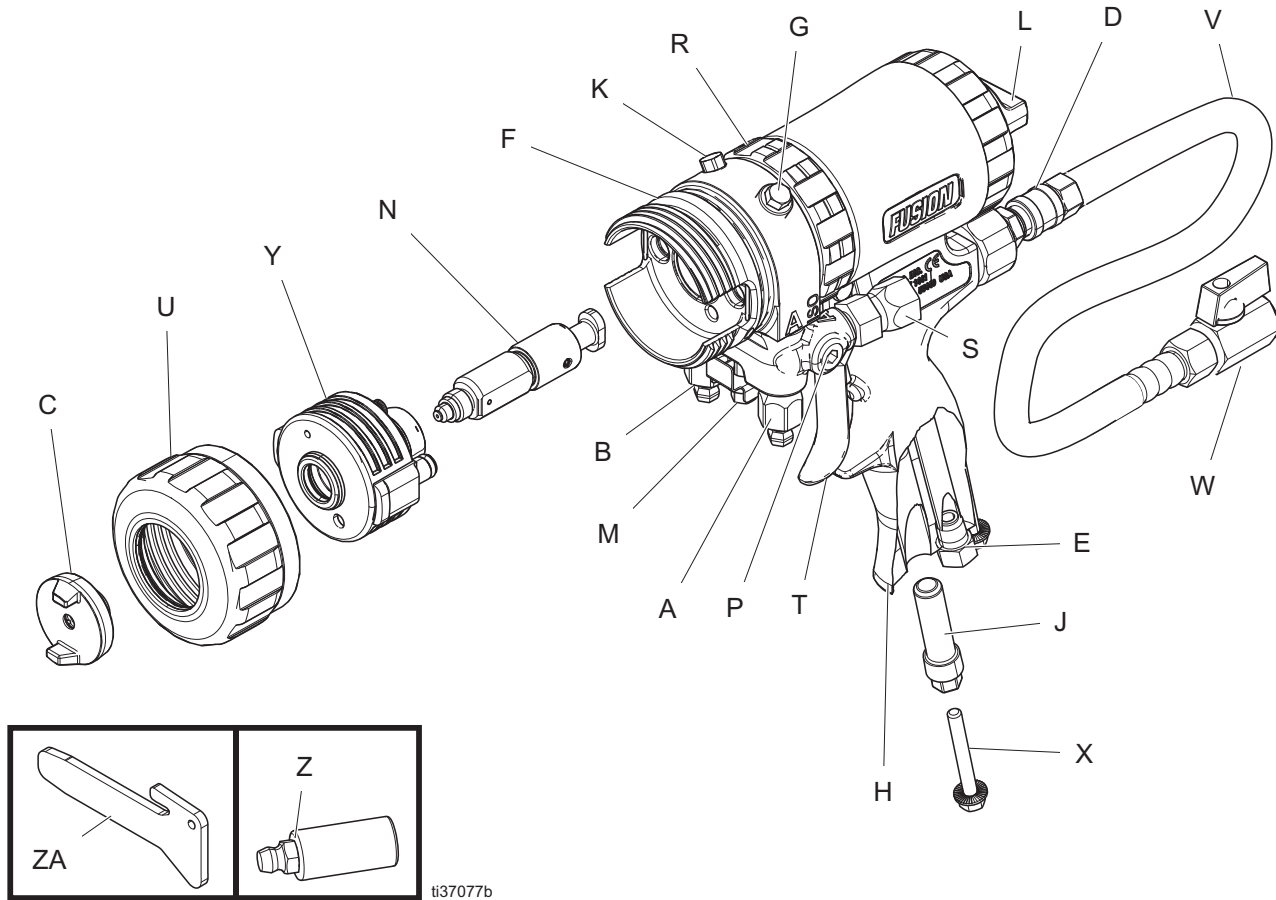
**Key**



**NOTE:** Flow paths are not shown to scale.



# Component Identification



t137077b

**FIG. 1 Component Identification**

**Key**

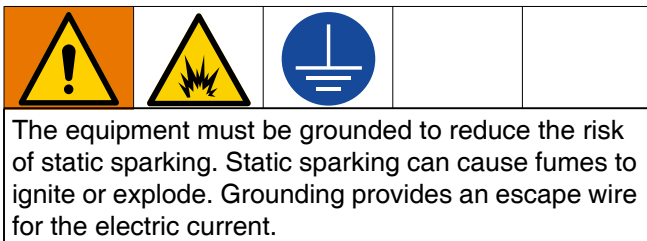
- A A Side Fluid Valve (ISO)
- B B Side Fluid Valve (RESIN)
- C Air Cap
- D Air Line Quick Coupler
- E Muffler
- F Fluid Housing
- G Grease Fitting (under cap)
- H Handle
- J Jack Screw Holder/Optional Air Inlet
- K Cleanoff Air Valve
- L Piston Safety Lock
- M Gun Fluid Manifold
- N Mix Chamber

**Key**

- P Optional Fluid Inlets (A Side Shown)
- R Lock Ring
- S Fluid Inlet Swivels (A Side Shown)
- T Trigger
- U Front Retaining Ring
- V Gun Air Whip Hose
- W Air Valve
- X Jack Screw
- Y PC Fluid Cartridge
- Z Grease Tool
- ZA Divider Tool

# Installation

## Grounding



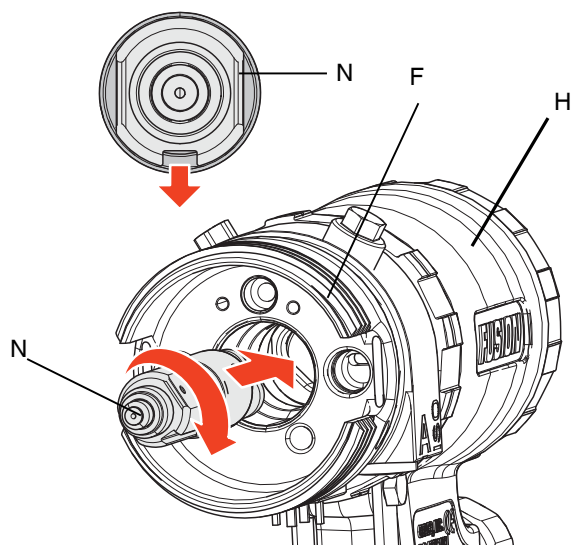
**Spray gun:** Ground through connection to a properly grounded fluid hose and pump.

**Proportioner:** Follow the instructions in your proportioner manual.

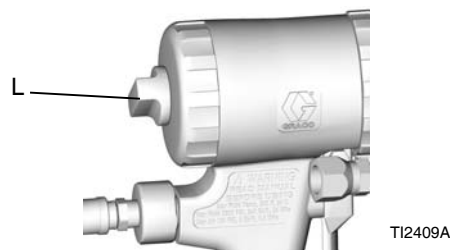
## Assemble the Spray Gun

1. Install the mix chamber (N).
  - a. Lubricate the fluid housing (F) and mix chamber (N) sealing surfaces and ramp. See **Lubricant for Gun Rebuild**, page 43.
  - b. Match A and B sides of the mix chamber (N) to corresponding sides of the fluid housing (F). Insert keyed end of the mix chamber into the socket on the handle (H).

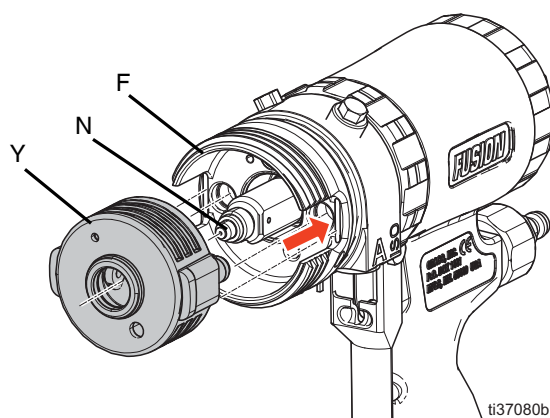
**NOTE:** The slot on the mix chamber should be facing downward.



2. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.

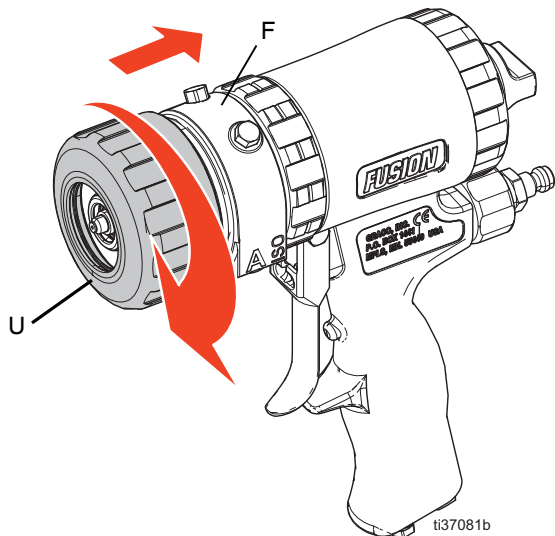


3. Install the PC fluid cartridge (Y).
  - a. Align the cartridge so it slides over the mix chamber (N) until the side seals engage the ramp.
  - b. Press the PC fluid cartridge (Y) onto the mix chamber (N). The fluid ports on the cartridge will engage the fluid housing (F). Resistance will be felt as the side seals are depressed.



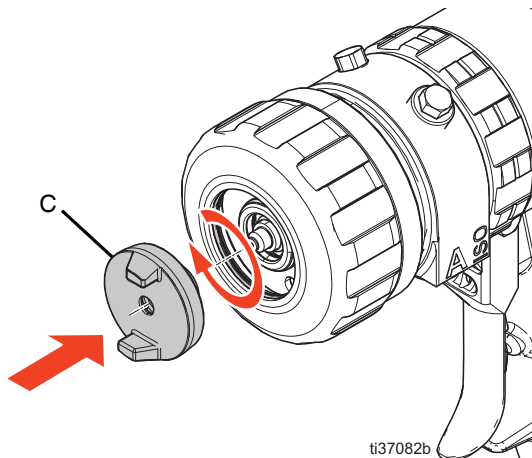
- c. Fully engage the fluid cartridge (Y) into the fluid housing (F) until the back face of the cartridge is flush with the fluid housing.

4. Install the retaining ring (U).
  - a. Lubricate the front retaining ring (U). See **Lubricant for Gun Rebuild**, page 43.
  - b. Tighten the front retaining ring (U) until the PC fluid cartridge (Y) is fully engaged and secure in the fluid housing (F).



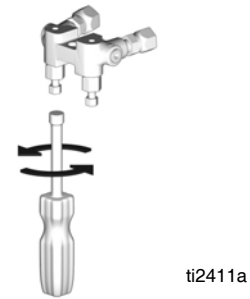
<p>To prevent damage to the fluid o-ring or injury from splashing chemical, verify that the fluid cartridge (Y) is fully engaged into the fluid housing (F), and the front retaining ring (U) is tight.</p>				

5. Install the air cap (C).

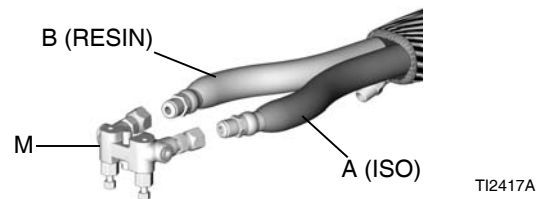


## Setup

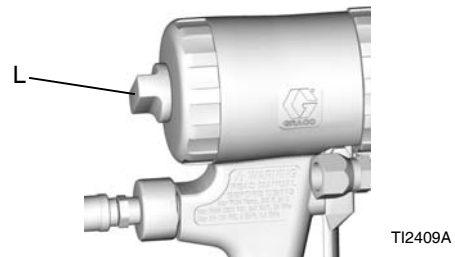
1. Close fluid valves A and B.



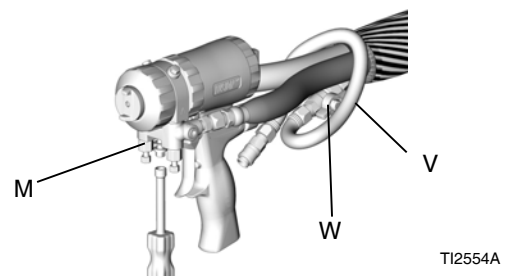
2. Connect A (ISO) and B (RESIN) fluid hoses to fluid manifold (M).



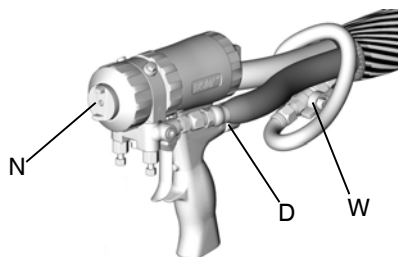
3. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



4. Connect gun air whip hose (V) and air valve (W) to main air hose. Attach fluid manifold (M) to gun.



5. Connect the air line quick coupler (D). Turn on air. Open air valve (W). Air should flow from the mix chamber nozzle (N).

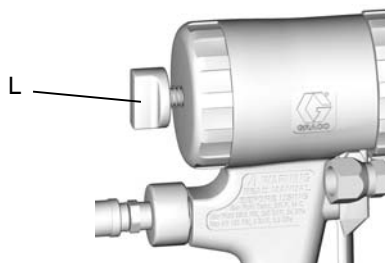


TI2414-1A

**NOTE:** If excessive noise is heard, or air is felt coming from behind the retaining ring (U), the fluid cartridge (Y) is not fully engaged into the fluid housing (F).

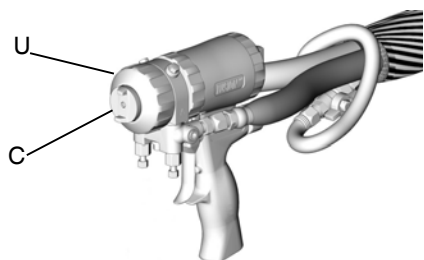
<p>A loose fluid cartridge can result in equipment damage and splashing chemical. To prevent damage to the fluid o-ring or injury from splashing chemical, verify that the cartridge is fully engaged into the fluid housing, and the front retaining ring (U) is tight.</p>				

6. Disengage the piston safety lock (L). See **Piston Safety Lock**, page 20.



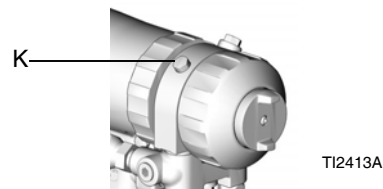
TI2410A

7. Trigger gun to check for full mix chamber travel. The front of the air cap (C) should be approximately flush with the front retaining ring (U).



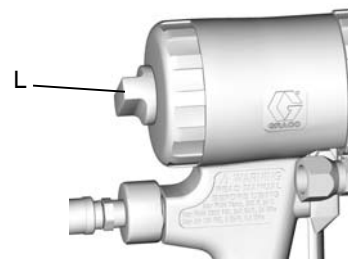
TI2414-1A

8. Open cleanoff air valve (K) 1/4-1/2 turn and trigger gun to check that cleanoff air is flowing. Adjust as desired.



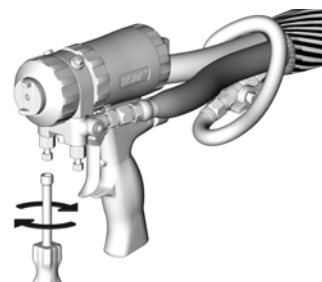
TI2413A

9. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



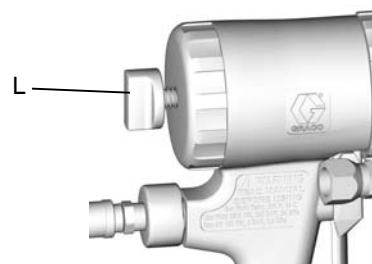
TI2409A

10. Turn on proportioner.
11. Open B (RESIN) fluid valve (about three half turns). Then open A (ISO) fluid valve.



TI2414A

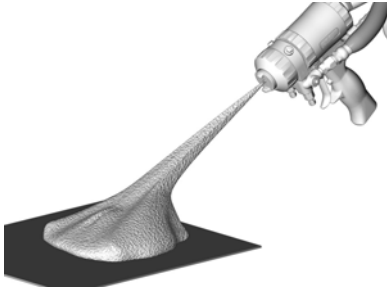
12. Disengage the piston safety lock (L). See **Piston Safety Lock**, page 20.



TI2410A

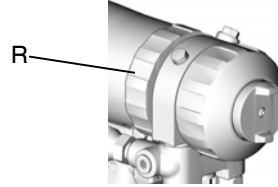
Installation

13. Test spray onto cardboard. Adjust pressure and temperature to get desired results.



T12645A

14. Apply layer of lubricant over front of gun and lock ring (R), or use gun cover to prevent overspray buildup and aid disassembly. See page **Lubricant for Gun Rebuild**, page 43, to order lubricant and gun cover.



15. Gun is ready to spray.



## Optional Configurations

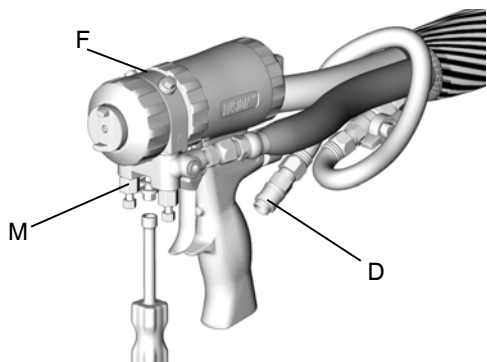
### Change Fluid Manifold Position

The fluid manifold is mounted to bottom of gun, with A side on left, viewed from operator's position at back of gun. If desired, manifold may be moved to top of gun. Doing this will reposition A side parts (fluid inlet swivel, check valve, side seal cartridge, and mix chamber) to the right.

#### NOTICE

To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

1. Follow the **Pressure Relief Procedure**, page 19.
2. Disconnect air line quick coupler (D) and remove fluid manifold (M).



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3. **Remove Front End**, page 30.
4. Rotate the fluid housing (F) 180 degrees.
5. **Attach Front End**, page 30.
6. Reattach fluid manifold. Reconnect air line. Return gun to service.

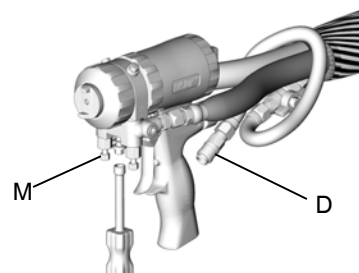
### Change Hose Position

The fluid inlet swivels and air quick disconnect fitting point to the rear of the gun. If desired, these positions can be changed so hoses travel downward.

#### NOTICE

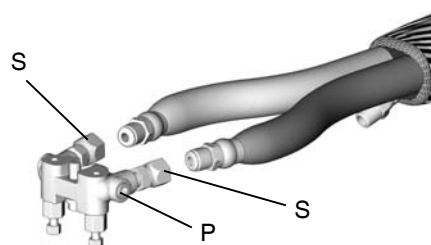
To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

1. Follow the **Pressure Relief Procedure**, page 19.
2. Relieve the system pressure. Follow the **Pressure Relief Procedure** in your proportioner manual.
3. Disconnect air line (D) and remove fluid manifold (M).



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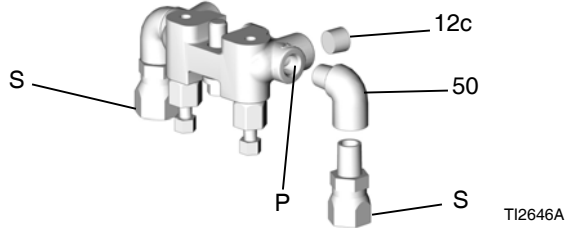
4. Disconnect fluid hoses from fluid inlet swivels (S). Remove swivels. Remove plugs from optional inlets (P).



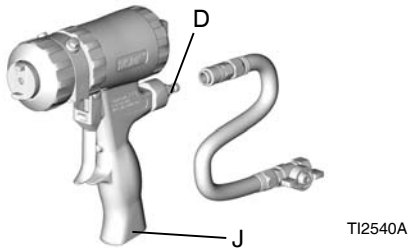
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## Installation

- Apply thread sealant to plugs (12c), elbows (50), and male threads of fluid inlet swivels (S). Install elbows (50) in optional fluid inlets (P), facing down. Install swivels (S) in elbows. Be sure to install A swivel (smaller) in A side. Install included plugs where swivels were located. Torque all parts to 235-245 in-lb (26.6-27.7 N•m).



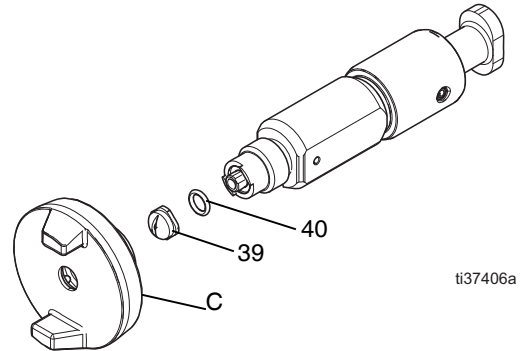
- Connect A and B hoses to A and B swivels.
- Remove air line quick coupler (D) and optional air plug (J). Reverse positions. Apply thread sealant and torque to 125-135 in-lb (14-15 N•m).



- Reattach the fluid manifold. Reconnect air. Return gun to service.

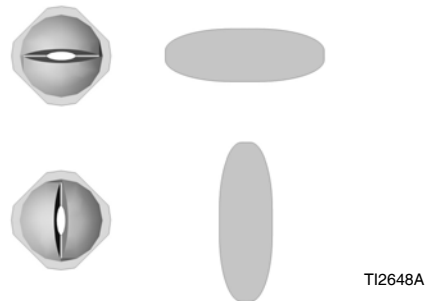
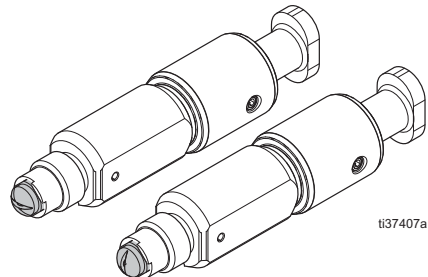
## Reposition or Replace Flat Spray Tips

- Follow the **Pressure Relief Procedure**, page 19.
- Remove air cap (C) and flat spray tip (39). Inspect o-ring (40).



**NOTE:** If tip is stuck, pry off with small screwdriver or pull off with pliers. Tip is hardened to resist damage.

- To clean, soak tip in compatible solvent, see **Clean Mix Chamber Nozzle**, page 22. Clean gently with tip cleanout tool 15D234, **Tip Cleanout Tool**, page 44, to fit tip configuration.
- Reposition tip horizontally or vertically, or install different tip size.




**NOTE:** Tips marked on back with the last three digits of the part number. See **Flat Tip Part Reference Guide**, page 39.

- Reinstall the air cap hand tight.

**NOTE:** The alignment of the clean off air ports on the air cap does not affect operation.

# Operation

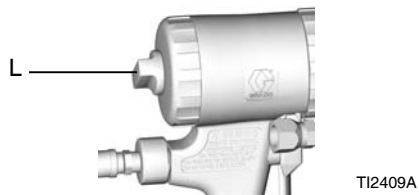
## Pressure Relief Procedure

 Follow the Pressure Relief Procedure whenever you see this symbol.

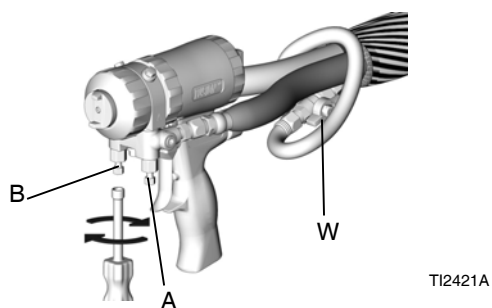


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, and splashing fluid, follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



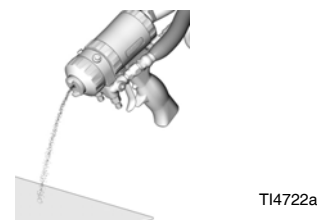
2. Close fluid valves A and B. Leave air valve (W) open.



3. Disengage the piston safety lock (L). See **Piston Safety Lock**, page 20.



4. Trigger the gun onto cardboard or into a waste container to relieve pressure.



5. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



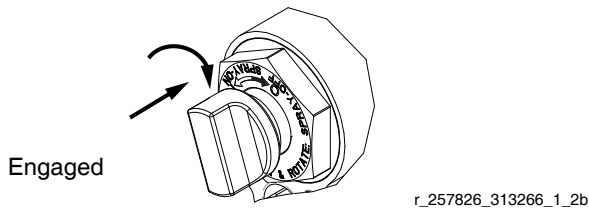
**NOTE:** After the pressure in the spray gun is relieved, the fluid in the hose and proportioner remains under pressure. Follow the **Pressure Relief Procedure** in your proportioner manual to relieve pressure in the system.

## Piston Safety Lock

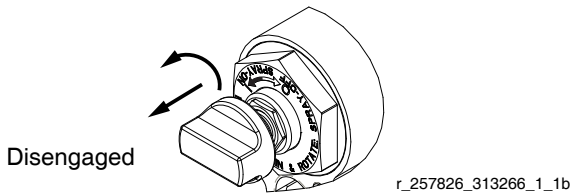
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High-pressure fluid from dispensing devices can pierce skin. To help prevent serious injury from pressurized fluid, always engage the piston safety lock and close the material shutoff valves to avoid accidental triggering whenever you stop spraying.

**To engage the piston safety lock:** Push knob in and turn clockwise. If engaged, gun will not actuate.



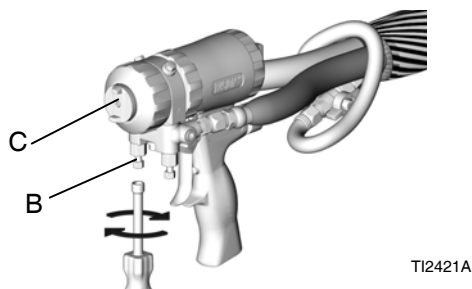
**To disengage the piston safety lock:** Push knob in and turn counterclockwise until it pops out. There will be a gap between knob and gun body.



## Turn the Air Cap

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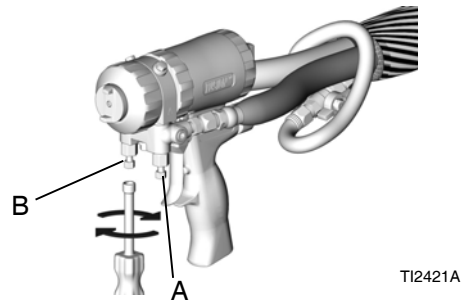
Always follow the **Pressure Relief Procedure**, page 19, before turning the air cap (C).



## Loss of Air Pressure

In event of loss of air pressure, gun will continue to spray. To shut off gun, do one of the following:

- Engage the piston safety lock. See **Flush Gun**, page 20.
- Close fluid valves A and B.



## Flush Gun


To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

- Follow the **Pressure Relief Procedure**, page 19.
- Disconnect the gun from the hose.
- Connect the gun to the flush manifold block (52).
- Flush with compatible solvent into a grounded metal pail, holding a part of fluid manifold (M) firmly to side of pail. Use the lowest possible fluid pressure when flushing.
- Follow the **Pressure Relief Procedure**, page 19.
- Disconnect the gun from the flush manifold block.

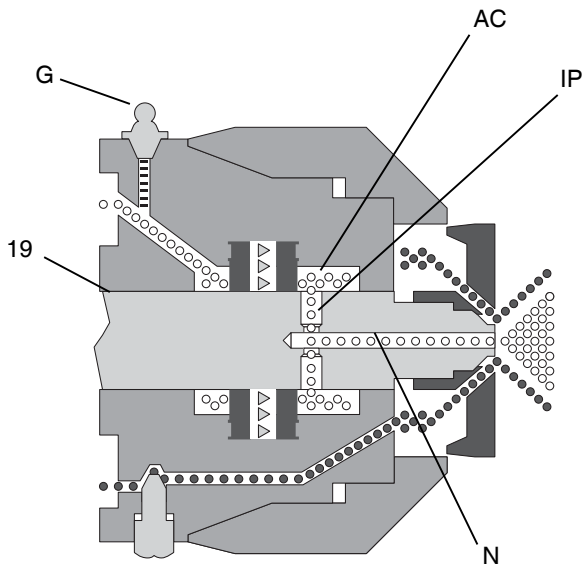
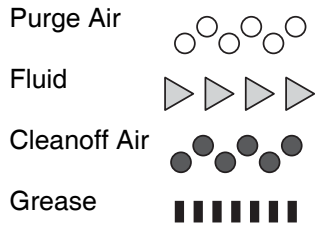
**NOTE:** For a more thorough flush, Solvent Flush Kits 248139 and 248229 are available as an accessory. The kits connect to Flush Manifold 15B817. See your Solvent Flush Kit manual for detailed flushing instructions.

## Daily Shutdown



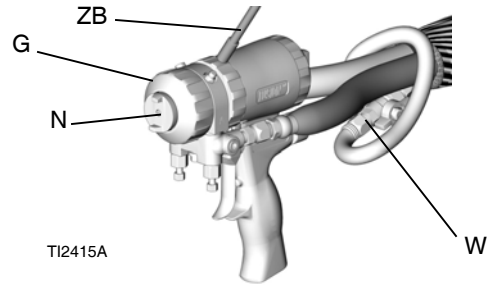
Grease your gun daily to prevent two component curing and keep fluid passages clean. Purge air carries grease mist through the air chamber (AC) and impingement ports (IP) and out the mix chamber nozzle (N), coating all interior surfaces.

### Key



1. Follow the **Pressure Relief Procedure**, page 19.
2. Leave the air turned on and gun detriggered.
3. Remove the grease fitting cap. Using the grease gun (ZB), dispense grease into fitting (G) until grease mist sprays from mix chamber nozzle (N).

**NOTE:** Do not over-grease. Use two shots maximum. Do not spray grease mist on sprayed material.



4. Replace the grease cap.
5. Turn off the air valve (W).

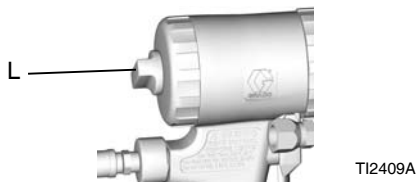
# Maintenance

## Preventative Maintenance

Recommended Schedule	Maintenance Procedure
Daily	Flush Gun, page 20.
	Clean Air Cap, page 27.
Weekly	Inspect the Check Valves, page 23. Check o-rings and filters.
	Inspect the Piston Safety Lock, page 27.
As Needed	Clean Mix Chamber Impingement Ports, page 24. Check o-rings.
	Lubrication, page 27.
	Inspect the Fluid Cartridge, page 26.
	Clean Fluid Manifold, page 27.

### Clean Mix Chamber Nozzle

1. Follow the **Pressure Relief Procedure**, page 19.
2. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



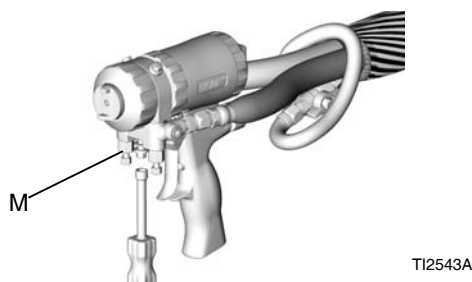
3. Use the appropriate size drill bit to clean mix chamber nozzle (N). If necessary, clean air cap (C) gently with stiff brush.

**NOTE:** Refer to TABLE 1, and **Drill Bit Kits**, page 40.

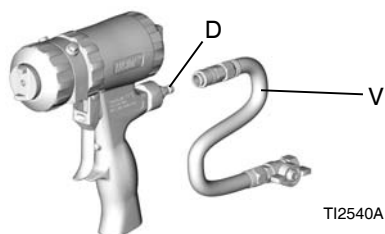
Round Spray		Flat Spray	
Mix Chamber Part Number	Drill Size in. (mm)	Mix Chamber Part Number	Drill Size in. (mm)
PC20RD	#58, 0.042 (1.00)	PC20FL	3/32, 0.094 (2.35)
PC29RD	#55, 0.052 (1.30)	PC29FL	3/32, 0.094 (2.35)
PC37RD	#55, 0.052 (1.30)		
PC42RD	#53, 0.060 (1.50)	PC42FL	3/32, 0.094 (2.35)
PC47RD	1/16, 0.0625 (1.59)		
PC52RD	#50, 0.070 (1.75)		
PC60RD	#44, 0.086 (2.15)		
PC70RD	3/32, 0.094 (2.35)		

## Inspect the Check Valves

1. Follow the **Pressure Relief Procedure**, page 19.
2. Follow **Flush Gun** procedure, page 20, to remove residual chemical.
3. Remove the fluid manifold (M). Leave air connected.



4. Disconnect gun air whip hose (V) from air line quick coupler (D).



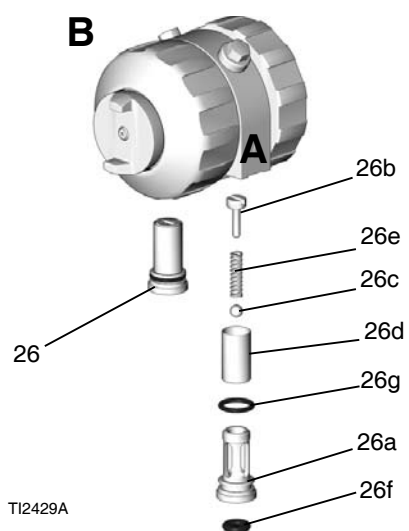
### NOTICE

To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

5. Pry out check valves (26) at notch.

<p>Damaged check o-rings (26f, 26g) may result in external leakage. To avoid potential leakage and serious injury from skin injection, replace any damaged o-rings.</p>				

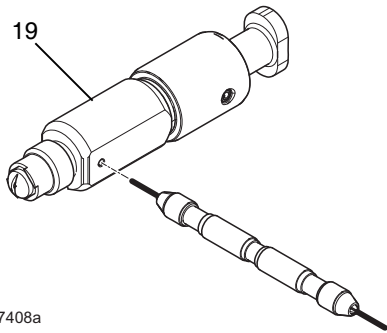
6. Slide filter (26d) off. Clean and inspect parts. Thoroughly inspect o-rings (26f, 26g). If necessary, remove screw (26b) and disassemble entire check valve.



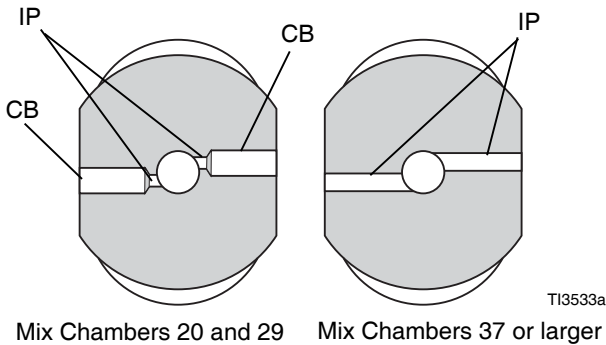
7. Reassemble check valves. Screw (26b) should be flush (within 1/16 in. or 1.5 mm) of housing (26a) surface. Liberally lubricate o-rings (26f, 26g) and carefully reinstall in fluid housing.
8. Attach the fluid manifold. Connect air. Return gun to service.

## Clean Mix Chamber Impingement Ports

1. Follow the **Pressure Relief Procedure**, page 19.
2. Follow the **Flush Gun** procedure, page 20, to remove residual chemical.
3. Follow the **Remove the Fluid Cartridge** procedure, page 24.
4. Drill impingement ports (IP).
5. Some mix chambers have counterbored holes (CB) and require two drill sizes to clean impingement ports (IP) completely. See TABLE 2, page 24, to select the appropriate drill bit size. Also see **Drill Bit Kits**, page 40.



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### NOTICE

To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

Mix Chamber Part Number	Impingement Port (IP) Drill Bit Size in. (mm)	Counterbore (CB) Drill Bit Size in. (mm)
PC20RD	#76, 0.020 (0.50)	#53, 0.060 (1.50)
PC29RD	#69, 0.029 (0.70)	#53, 0.060 (1.50)
PC37RD	#63, 0.037 (0.94)	N/A
PC42RD	#58, 0.042 (1.00)	N/A
PC47RD	#56, 0.0469 (1.18)	N/A
PC52RD	#55, 0.052 (1.30)	N/A
PC60RD	#53, 0.060 (1.50)	N/A
PC70RD	#50, 0.070 (1.75)	N/A
PC20FL	#76, 0.020 (0.50)	#53, 0.060 (1.50)
PC29FL	#69, 0.029 (0.70)	#53, 0.060 (1.50)
PC42FL	#58, 0.042 (1.00)	N/A

6. Follow the **Assemble the Spray Gun** procedure, page 13. Return gun to service.

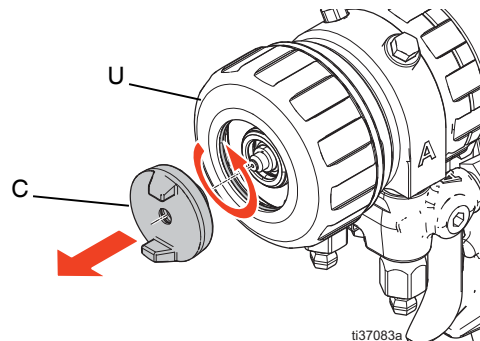
## Remove the Fluid Cartridge

1. Follow the **Pressure Relief Procedure**, page 19.
2. Verify that fluid valves are closed.
3. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.



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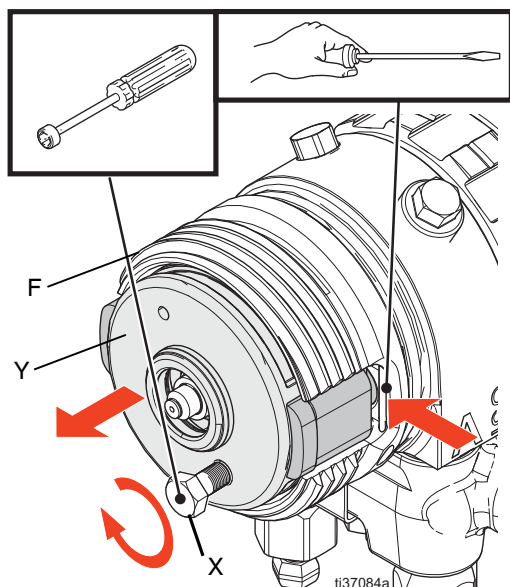
4. Turn off the air valve.
5. Remove the air cap (C).
6. Remove the front retaining ring (U).



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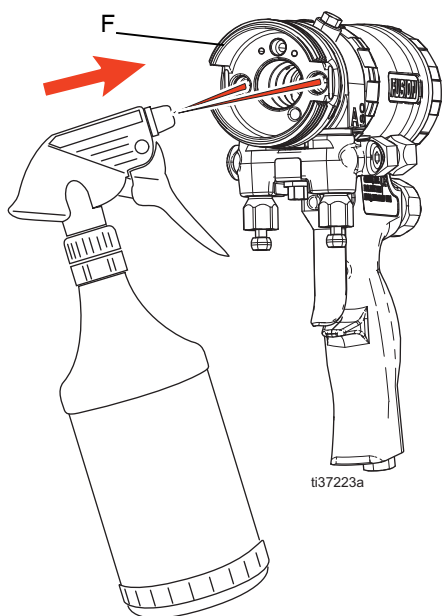


7. Remove the PC fluid cartridge (Y) by pulling forward or inserting a screwdriver into the pry slots. Sealing surfaces and opposing checks will cause resistance.



**NOTE:** If excessive force is required to remove the PC fluid cartridge, use the provided nut driver and jack screw (X) to lift the cartridge out of the fluid housing (F).

8. Clean the face of the fluid housing (F) with compatible solvent.



### NOTICE

To prevent cured material in fluid bores, clean the A and B side ports on the fluid housing (F) prior to inserting a new cartridge. Exposure to air can result in cured material in the gun. Cured material may cause gun components to stick together resulting in removal difficulty and damage to sealing surfaces.

9. Remove the mix chamber (N) and inspect sealing surfaces. Verify that the impingement ports are clean and that there are no scratches on the surface. See **Clean Mix Chamber Impingement Ports**, page 24.
10. Proceed to the **Reinstall or Replace the Fluid Cartridge** procedure, page 25.

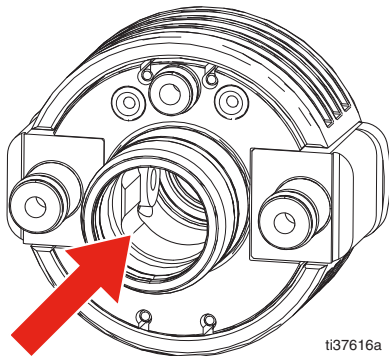
## Reinstall or Replace the Fluid Cartridge

Identify the issue with your PC fluid cartridge and determine next steps.

- **If the gun does not spray chemical when triggered:** Follow the **Inspect the Fluid Cartridge** procedure.
- **If the gun sprays only one chemical when triggered:** Follow the **Inspect the Fluid Cartridge** procedure.
- **If the gun spits chemical when dettriggered:** Replace the fluid cartridge. Follow the **Assemble the Spray Gun** procedure, page 13.

## Inspect the Fluid Cartridge

If the gun does not spray chemical, or only sprays one chemical when triggered, inspect the PC fluid cartridge for reacted chemical on the side sealing surfaces.

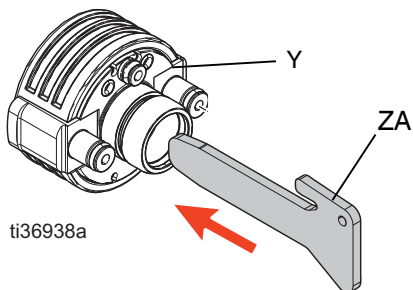


- **If reacted chemical (foam or polyurea) is found near the side seals:** Replace the fluid cartridge. Follow the **Assemble the Spray Gun** procedure, page 13.
- **If no reacted chemical (foam or polyurea) is found near the side seals:** Follow the **Test Fluid Cartridge Restriction** procedure, page 26.

## Test Fluid Cartridge Restriction

If no foam or chemicals are found on the fluid cartridge, test the fluid cartridge restriction with the grease tool (Z).

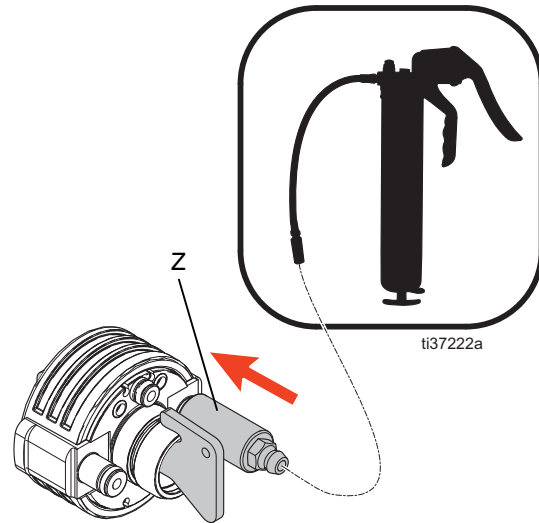
1. Insert divider tool (ZA) from the back of the cartridge (Y) so that it sits upright. The divider tool (ZA) prevents chemical from reaching the opposite side seal.



### NOTICE

To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

2. Guide the grease tool (Z) over the B side fluid port and pump grease.



- **If grease purges out of the internal side seal:** No obstruction or restriction is in the flow path and the cartridge should be reused.
  - **If the grease tool is forced backward off of the fluid port:** The flow path is restricted and the cartridge should be replaced.
3. Remove and clean the grease tool (Z) to prevent contamination and repeat previous step for the A side.
  4. Remove the grease tool (Z) and divider tool (ZA). Clean and store for the next use.
  5. Follow the **Assemble the Spray Gun** procedure, page 13, to replace or reinstall the fluid cartridge and prepare the gun to spray.

## Store the Fluid Cartridge

If a usable fluid cartridge has been exposed to chemical and removed from the gun, store the cartridge in a moisture-free environment.

1. Rinse off any residual chemical with a compatible solvent.
2. Submerge the cartridge in an acceptable storage liquid. See **Acceptable Cartridge Storage Liquids**, page 39.

### NOTICE

To prevent cured material on sealing surfaces and passages, store cartridges in a moisture-free environment. Exposure to air can result in cured material. Cured material can obstruct passages and damage seals.

### NOTICE

Air o-rings on cartridge are not chemically resistant. Soaking cartridge in solvent will cause o-rings to swell.

## Clean Gun Surface

Keep gun clean with accessory gun cover.

Applying a light coat of lubricant will make cleaning easier.

Wipe off outside of gun with compatible solvent.

Use N Methyl Pyrrolidone (NMP), Dynaloy®-brand Dynasolve CU-6, SB Versaflex-brand DzoIv®, or equivalent to soften cured material.

## Clean Air Cap

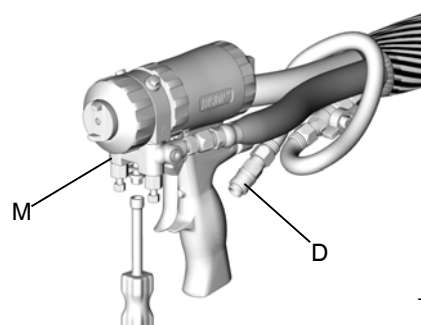
Soak air cap in compatible solvent. Clean holes with #58 (0.042) drill bit.

## Lubrication

Liberaly lubricate all o-rings, seals, and threads. Lubricate threads and outside of lock ring (11). See **Lubricant for Gun Rebuild**, page 43 to order lubricant.

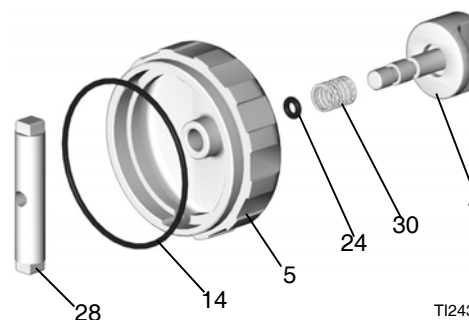
## Inspect the Piston Safety Lock

1. Follow the **Pressure Relief Procedure**, page 19.
2. Disconnect air line quick coupler (D) and remove fluid manifold (M).



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3. Unscrew cylinder cap (5). Hold piston stop (28) with wrench and unscrew from safety lock (4). Inspect spring (30) and o-rings (14, 24).

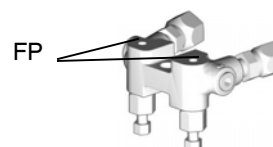


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4. Liberaly lubricate o-rings and reassemble. Clean threads with solvent or alcohol. Apply medium-strength Loctite® or equivalent to threads on stop (28) and reassemble.
5. Attach the fluid manifold.
6. Connect air. Return gun to service.

## Clean Fluid Manifold

Clean fluid manifold sealing faces with compatible solvent and a brush whenever removed from gun. Be sure to clean the two fluid ports (FP) in the top mating surface. Do not damage the flat sealing surfaces. Coat with grease if left exposed, to seal out moisture.

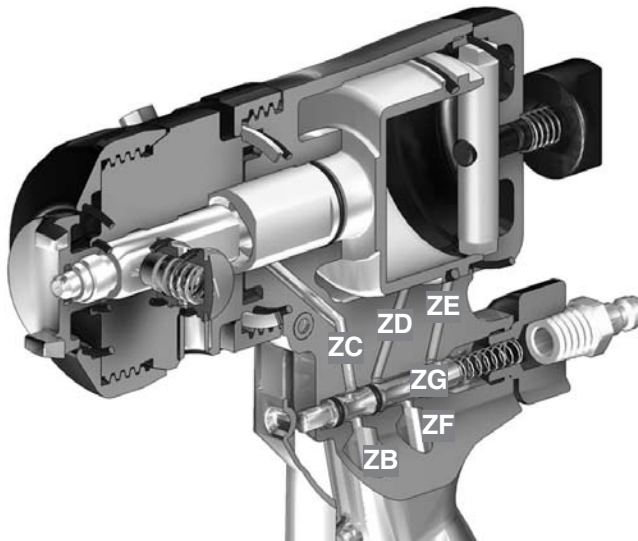


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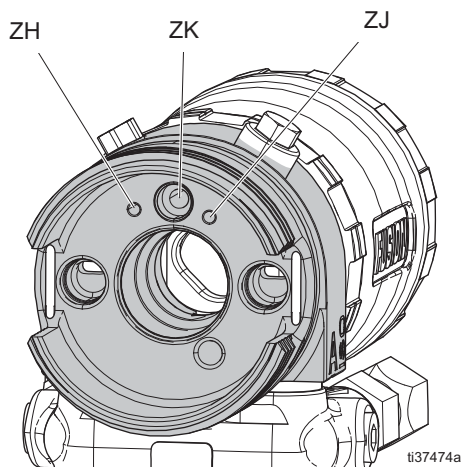
## Clean Passages

If necessary, clean out passages in fluid housing and handle with drill bits. Refer to TABLE 3 and to FIG. 2 for diameter and location of passages. All drill bits are available in an accessory kit see **Accessories**, page 42.

Table 3: Passage Diameters		
Passage Description	Ref. Letter	Diameter in. (mm)
Optional Air Inlet	ZB	7/16, 1/8 (11.0, 3.1)
Purge Air	ZC	1/8 (3.1)
Piston Air	ZD, ZE	1/8 (3.1)
Air Exhaust	ZF	11/32, 1/8 (8.7, 3.1)
Air Valve Bore	ZG	9/32 (7.1)
Cleanoff Air	ZH	3/32 (2.35)
Grease	ZJ	3/32 (2.35)
Fluid Housing Purge Air	ZK	5/32 (3.97)



**FIG. 2 Gun Handle Passages**



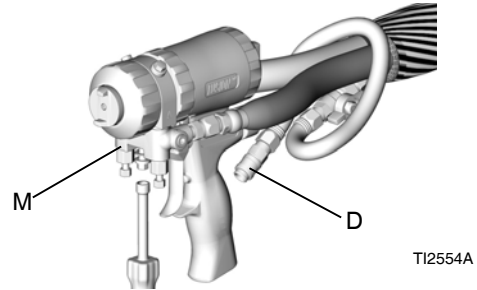
**FIG. 3 Fluid Housing Passages**

## Clean Muffler

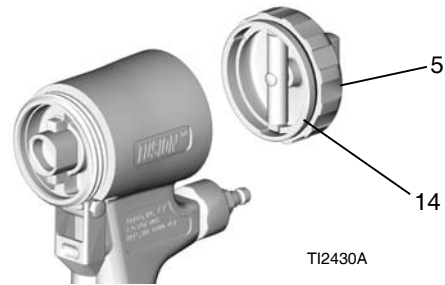
Remove and clean muffler (E) with compatible solvent.

## Inspect the Piston

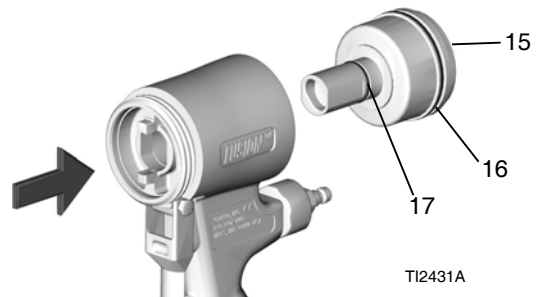
1. Follow the **Pressure Relief Procedure**, page 19.
2. Disconnect air line (D) and remove fluid manifold (M).



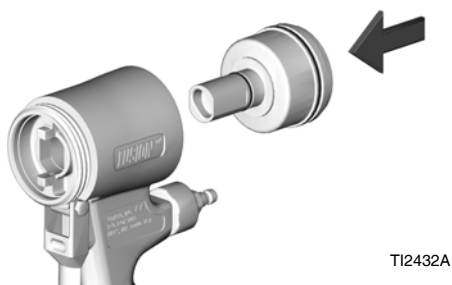
3. Follow the **Remove Front End** procedure, page 30.
4. Unscrew cylinder cap (5) and inspect o-ring (14).



5. Push piston shaft to remove piston (15).
6. Inspect piston o-ring (16) and shaft o-ring (17). Replace o-rings if worn or damaged.



7. Liberally lubricate piston o-rings. Reinstall piston. Shaft is keyed for proper assembly. Push firmly to seat piston.



8. Install the cylinder cap (5).

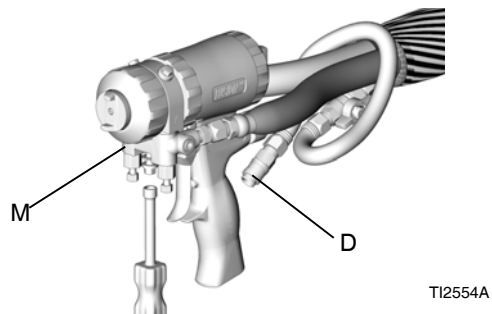


9. Follow the **Attach Front End** procedure, page 30.

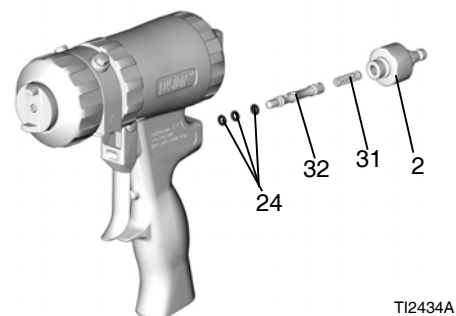
10. Attach fluid manifold. Connect air. Return gun to service.

## Inspect the Air Valve

1. Follow the **Pressure Relief Procedure**, page 19.
2. Disconnect air line (D) and remove fluid manifold (M).



3. Unscrew air valve plug (2) and remove spring (31). Using a small diameter tool, push spool (32) out from front. Inspect o-rings (24).



4. Liberally lubricate o-rings and reassemble. Torque plug (2) to 125-135 in-lb (14-15 N•m).
5. Attach the fluid manifold.
6. Connect air. Return gun to service.

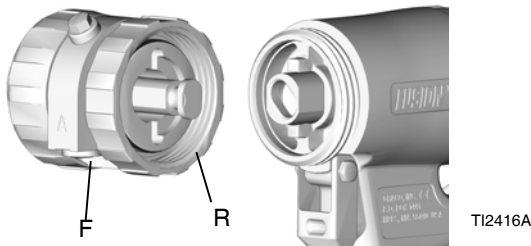
## Remove Front End

1. Follow the **Pressure Relief Procedure**, page 19.
2. Follow the **Flush Gun** procedure, page 20.

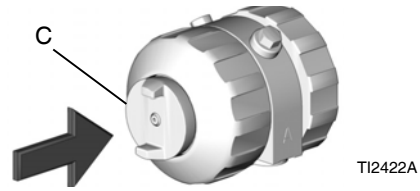
### NOTICE

If lock ring (R) is stuck due to material buildup, do not force it by turning entire front end. Locating tabs (Z) may break off. Soak front of gun in solvent to soften cured material and free lock ring.

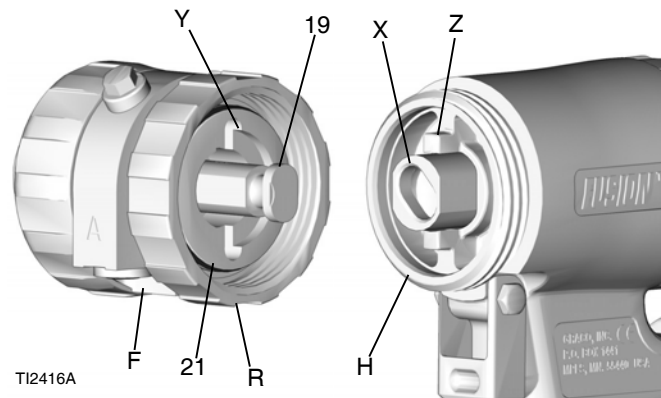
3. Unscrew lock ring (R) until front end of gun is loose. Turn fluid housing (F) 1/8 turn counterclockwise. Unscrew lock ring completely and remove front end of gun.



2. Push on air cap (C) until it is flush with front of gun. This ensures that mix chamber is all the way back.



3. Check that o-ring (21) is in position. Liberally lubricate o-ring, threads of lock ring (R) and handle (H), and outside of lock ring. Orient fluid housing (F) as required for desired fluid manifold mounting (bottom mounting is shown).
4. Insert keyed end of mix chamber (19) in socket (X). Screw lock ring onto handle as far as possible by hand.

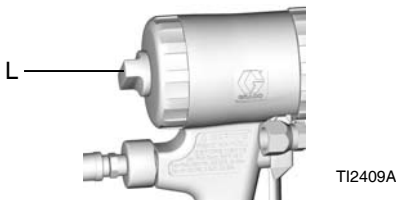


## Attach Front End

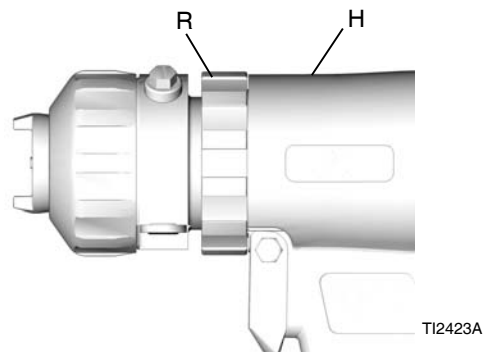


Improper attachment of the front end may result in serious injury from skin injection. To avoid injury, check that the front end is securely attached and the lock ring is snug against the handle before gun operation.

1. Engage the piston safety lock (L). See **Piston Safety Lock**, page 20.

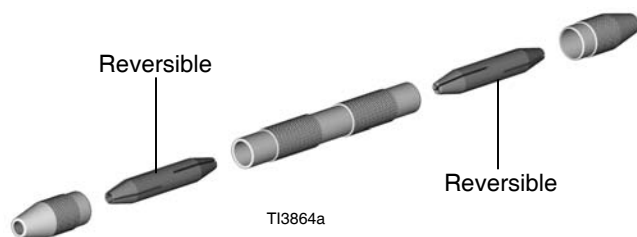


5. Turn fluid housing 1/8 turn clockwise to engage slots (Y) and tabs (Z). Push on front end to ensure it is properly seated. Continue screwing lock ring (R) onto handle (H) very securely. When properly assembled, lock ring is snug against handle.



## Supplied Tool Kit

- Hex nut driver, 5/16
- Screwdriver, 1/8 blade
- \* Nozzle drill bit. Various sizes depending on nozzle size.
- \* Impingement port drill bit, various sizes depending on port size. See TABLE 1, page 22.
- 117661 pin vise, dual reversible chucks



- 551189 grease gun, with 3 oz grease
  - 15B817 flush manifold
- \* Not included with Bare Gun.



# Troubleshooting



1. Follow the **Pressure Relief Procedure**, page 19, before checking or servicing the gun.
2. Check all possible problems and causes before disassembling the gun.

### NOTICE

To prevent cross-contamination in the gun, do not interchange A component (isocyanate) and B component (resin) parts. Cross-contamination can result in cured material in the gun. Cured material may damage the sealing surfaces, block fluid passages, and prevent gun function.

Problem	Cause	Solution
Gun does not fully actuate when triggered	The safety lock is engaged.	Disengage safety lock. See <b>Piston Safety Lock</b> , page 20.
	The muffler (22) is plugged.	Clean the muffler. See <b>Clean Muffler</b> , page 28.
	The air valve o-rings (24) are damaged.	Replace the air valve o-rings. See <b>Inspect the Air Valve</b> , page 29.
	Cured material is inside the cartridge (18).	Inspect the fluid cartridge (18) and mix chamber (19) for scratches. See <b>Inspect the Fluid Cartridge</b> , page 26. Replace.
	The retaining ring (9) is not bottomed out.	Tighten retaining ring until bottomed out.
Fluid does not spray when the gun is fully actuated	The fluid valves (12b) are closed.	Open the fluid valves.
	The impingement ports are plugged.	Clean the impingement ports. See <b>Clean Mix Chamber Impingement Ports</b> , page 24.
	The check valves (26) are plugged.	Clean the check valves. See <b>Inspect the Check Valves</b> , page 23.
	The cartridge (18) is plugged.	<b>Remove the Fluid Cartridge</b> , page page 24, then <b>Test Fluid Cartridge Restriction</b> , page page 26.
Gun actuates slowly	The muffler (22) is plugged.	Clean the muffler. See <b>Clean Muffler</b> , page 28.
	The piston o-rings (16, 17) are damaged.	Replace the piston o-rings. See <b>Parts</b> , page 35.
	The air valve is dirty, or the o-rings (24) are damaged.	Clean air valve or replace o-rings. See <b>Inspect the Air Valve</b> , page 29.

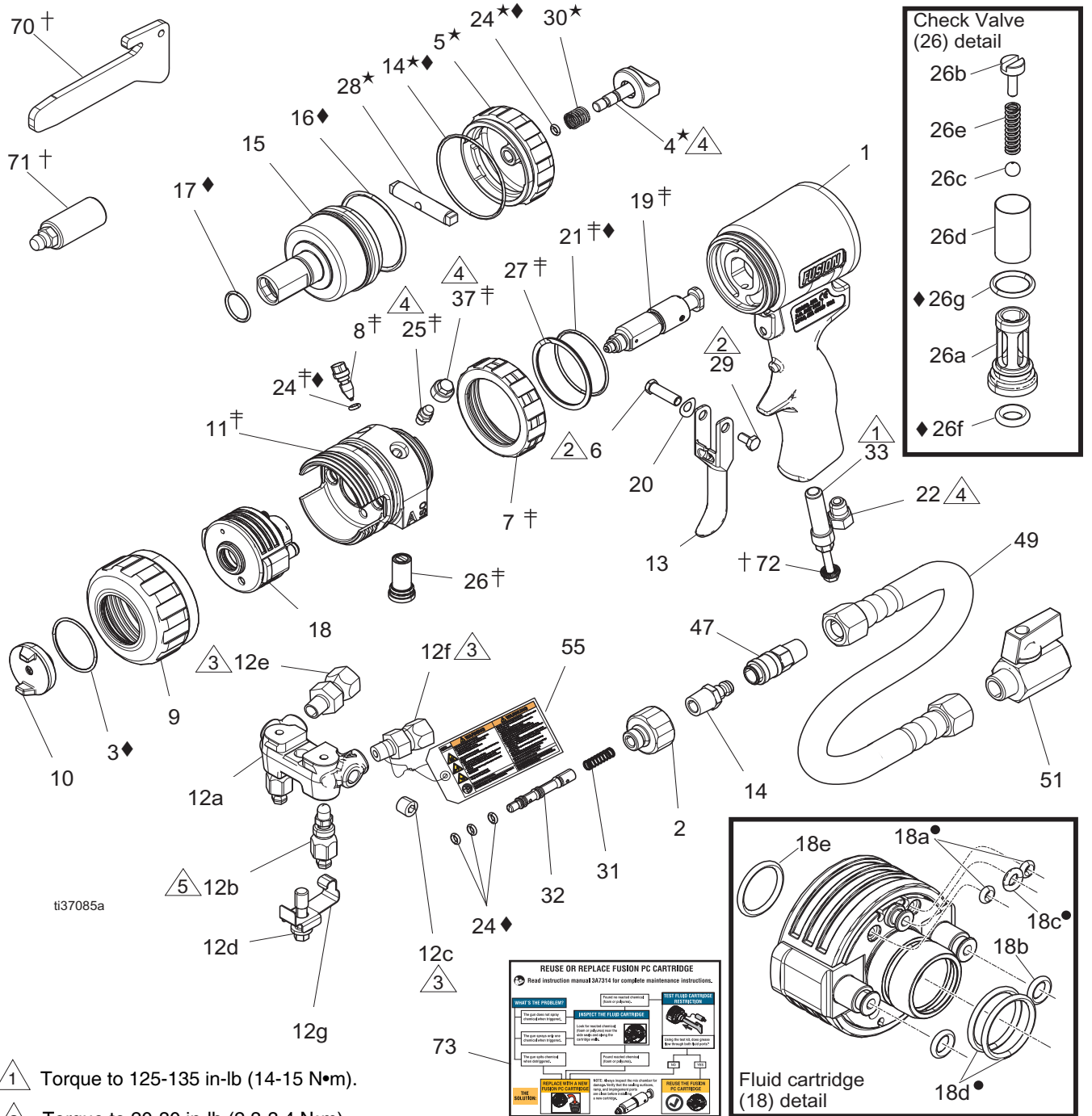


Problem	Cause	Solution
Gun delays, then actuates abruptly.	Chemical or material has cured around the side seals in the fluid cartridge (18).	See <b>Inspect the Fluid Cartridge</b> , page 26. Replace.
	The retaining ring (9) is not bottomed out.	Tighten retaining ring until bottomed out.
	Cured material is inside the cartridge (18).	Inspect the fluid cartridge (18) and mix chamber (19) for scratches. See <b>Inspect the Fluid Cartridge</b> , page 26. Replace.
	The retaining ring (19) is not bottomed out.	Tighten retaining ring until bottomed out.
Loss of round pattern.	The mix chamber nozzle is dirty.	Clean the mix chamber nozzle. See <b>Clean Mix Chamber Nozzle</b> , page 22.
Loss of flat pattern.	The spray tip is plugged.	Clean in compatible solvent. See <b>Reposition or Replace Flat Spray Tips</b> , page 18.
	The tip is worn.	Replace the flat spray tip. See <b>Reposition or Replace Flat Spray Tips</b> , page 18.
	The mix chamber nozzle is dirty.	Clean the mix chamber nozzle. See <b>Clean Mix Chamber Nozzle</b> , page 22.
Leakage between flat tip and mix chamber.	The tip is not seated properly.	Reassemble. See <b>Reposition or Replace Flat Spray Tips</b> , page 18.
	The o-ring (40) is damaged or missing.	Replace the flat spray tip o-ring. See <b>Reposition or Replace Flat Spray Tips</b> , page 18.
Pressure imbalance.	The impingement ports are plugged.	Clean the impingement ports. See <b>Clean Mix Chamber Impingement Ports</b> , page 24.
	The check valves (26) are plugged.	Clean the check valves. See <b>Inspect the Check Valves</b> , page 23.
	The viscosities not equal.	Adjust temperature to compensate.
	The cartridge (18) is plugged.	<b>Remove the Fluid Cartridge</b> , page page 24, then <b>Test Fluid Cartridge Restriction</b> , page page 26.
A and/or B fluid inside of the cartridge.	The side seals in the fluid cartridge (18) are damaged.	Replace. See <b>Inspect the Fluid Cartridge</b> , page 26.
	The mix chamber (19) is damaged.	Replace. See <b>Remove the Fluid Cartridge</b> , page 24.
	The side seal o-rings in the fluid cartridge (18) are damaged.	Replace the fluid cartridge. See <b>Inspect the Fluid Cartridge</b> , page 26.
	The air cap is tightened while the fluid valves (12b) are open.	Close valves first.

Problem	Cause	Solution
Fluid mist from mix chamber or air cap.	The side seals in the fluid cartridge (18) are damaged.	Replace. See <b>Inspect the Fluid Cartridge</b> , page 26.
	The side seal o-rings in the fluid cartridge (18) are damaged.	Replace the side seal o-rings. See <b>Inspect the Fluid Cartridge</b> , page 26.
	The mix chamber (19) is damaged.	Replace the mix chamber. See <b>Remove the Fluid Cartridge</b> , page 24.
Excessive overspray.	Too much cleanoff air.	Reduce cleanoff air. See <b>Setup</b> , page 14.
Rapid buildup of material on air cap.	The air cap holes are plugged.	Clean the air cap holes. See <b>Clean Air Cap</b> , page 27.
	Too little cleanoff air.	Increase cleanoff air. See <b>Setup</b> , page 14.
	The fluid cartridge front o-ring (18e) is damaged or missing.	Replace the fluid housing o-ring. See <b>Parts</b> , page 35.
	The front o-ring (3) is damaged.	Replace the front o-ring. See <b>Parts</b> , page 35.
Reduced cleanoff air.	The front o-ring (3) is damaged.	Replace the front o-ring. See <b>Parts</b> , page 35.
Excessive cleanoff air when fluid valves are closed and gun is triggered.	The fluid cartridge front o-ring (18e) is damaged or missing.	Replace the fluid cartridge front o-ring only. See <b>Parts</b> , page 35.
Fluid does not shut off when fluid valves are closed.	The fluid valves (12b) are damaged.	Replace the fluid valves. See <b>Parts</b> , page 35.
Burst of air from muffler when gun is triggered.	Normal.	No action required.
Steady air leakage from muffler.	The air valve o-rings (24) are damaged.	Replace the valve o-rings. See <b>Inspect the Air Valve</b> , page 29.
	The piston o-rings (16, 17) are damaged.	Replace the piston o-rings. See <b>Parts</b> , page 35.
Air leakage from front air valve.	The air valve o-rings (24) are damaged.	Replace the valve o-rings. See <b>Inspect the Air Valve</b> , page 29.
Air leak around lock ring.	The o-ring (21) is damaged.	Replace the o-ring. See <b>Parts</b> , page 35.
Cannot tighten retaining ring (9) until it bottoms out.	The air cap (10) was assembled before retaining ring (9).	Install retaining ring (9) first, then air cap (10). See <b>Assemble the Spray Gun</b> , page 13.
Excessive air leaking from sides of gun.	The retaining ring (9) is loose.	Tighten retaining ring.
	The o-ring (18a, 18c) is missing on back of cartridge.	Replace o-rings. See <b>Parts</b> , page 35.
	The rear cartridge OD o-ring (18d) is damaged or missing.	Replace o-ring. See <b>Parts</b> , page 35.
Fluid or chemical is leaking from sides of gun.	The fluid o-ring (18b) are damaged or missing.	Replace o-ring. See <b>Parts</b> , page 35.

# Parts

**NOTE:** Round Pattern gun shown. See **Detail Views**, page 37 for additional parts and detail views.



- 1 Torque to 125-135 in-lb (14-15 N•m).
- 2 Torque to 20-30 in-lb (2.3-3.4 N•m).
- 3 Torque to 235-245 in-lb (26.6-27.7 N•m).
- 4 Torque to 35-45 in-lb (4-5 N•m).
- 5 Torque to 32-40 ft-lb (43-54 N•m).

**REUSE OR REPLACE FUSION PC CARTRIDGE**  
 Read instruction manual 3A7314 for complete maintenance instructions.

<p><b>Wear is the Problem!</b></p> <p>The gun will not spray. The gun produces an irregular spray pattern. The gun will not spray. The gun produces an irregular spray pattern.</p> <p><b>THE SOLUTION:</b></p> <p>Replace with a new Fusion PC Cartridge.</p>	<p><b>Inspect the Valve Cartridge</b></p> <p>Check for proper assembly. Check for proper assembly. Check for proper assembly.</p> <p><b>THE SOLUTION:</b></p> <p>Replace with a new Fusion PC Cartridge.</p>	<p><b>Test the Cartridge</b></p> <p>Check for proper assembly. Check for proper assembly. Check for proper assembly.</p> <p><b>THE SOLUTION:</b></p> <p>Replace with a new Fusion PC Cartridge.</p>
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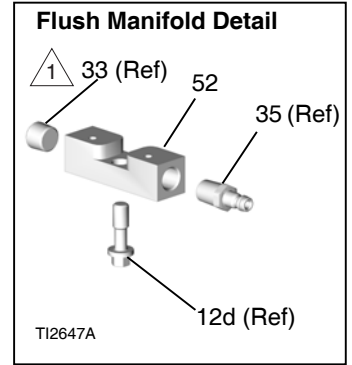
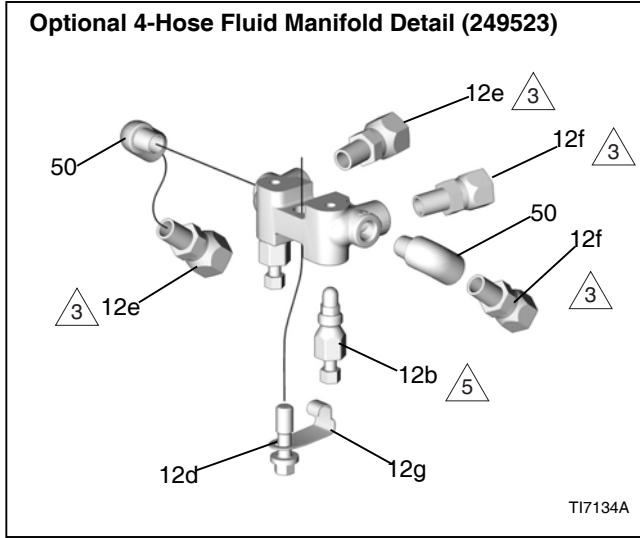
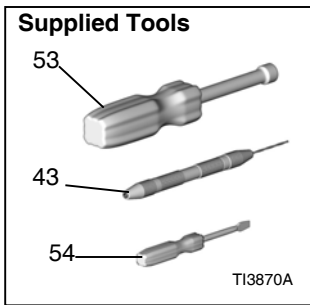
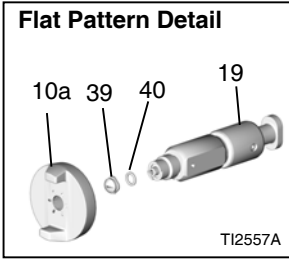
**Parts List**




Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	15K365	HANDLE	1		246352	VALVE, check, B side, includes 26a-26g	1
2	15B208	PLUG, air valve	1	26a	----	HOUSING	1
3◆	248137	O-RING, PTFE, package of 6	1	26b	15B214	SCREW, 5/16-18 x 1/2 in. (13 mm)	1
4★	15B206	LOCK, safety	1	26c	257420	BALL; carbide, package of 10	1
5★	15B204	CAP, cylinder	1	26d	----	SCREEN, see , page 39	1
6	192272	PIN	1	26e	117490	SPRING	1
7‡	26C775	RING, lock, Fusion PC, blue	1	26f◆	248133	O-RING, check valve face, package of 6	1
8‡	15B223	VALVE, cleanoff air	1	26g◆	248129	O-RING, check valve housing; package of 6	1
9	19Y302	RING, retaining, front, Fusion PC	1	27‡	116550	RING, retaining	1
10	15B210	AIR CAP, for round pattern guns	1	28★	15B205	STOP, piston	1
11‡	----	HOUSING, fluid, Fusion PC	1	29	203953	SCREW, 10-24 x 3/8 in. (10 mm)	1
12	246012	MANIFOLD, fluid, 2-hose, includes 12a-12g	1	30★	114070	SPRING	1
12a	----	MANIFOLD	1	31	117485	SPRING	1
12b	246356	VALVE, fluid	2	32	15B202	SPOOL, valve	1
12c	100139	PLUG, pipe; 1/8-27 npt	2	33	26C937	PLUG, Fusion PC tool holder, 1/4 NPT	1
12d	15B221	BOLT, 5/16-24	1	35	117509	QUICK-DISCONNECT, male, air, 1/4 npt(m), round and flat pattern guns only	1
12e	117634	SWIVEL, B side; 1/8 npt(m) x number 6 JIC(f)	1	36▲	222385	CARD, warning, not shown	1
12f	117635	SWIVEL, A sid.; 1/8 npt(m) x number 5 JIC(f)	1	37‡	15B689	COVER, grease fitting	1
12g	15B993	SPRING, ring, lock	1	46	117792	GREASE GUN, not shown	1
13	15B209	TRIGGER	1	47	117510	COUPLER, air line	1
14★◆	248136	O-RING, cylinder cap, package of 6	1	49	15B772	HOSE, air; 1/4 npsm (fbc); 18 in. (0.46 m)	1
15	15B203	PISTON	1	51	15B565	VALVE, ball, 1/4 npt (m x f)	1
16◆	248135	O-RING, piston; package of 6	1	55▲	172479	TAG, warning	1
17	248134	O-RING, piston shaft; package of 6	1	56▲	15D235	SIGN, instruction, not shown	1
18	----	CARTRIDGE, Fusion PC; see <b>Drill Bit Kits</b> , page 40	3	57	117773	GREASE CARTRIDGE, 3 oz, not shown. SDS available at <a href="http://www.graco.com">www.graco.com</a> .	1
18a•	----	O-RING, face	1	58	248279	GREASE, tube, 4 Oz, not shown. SDS available at <a href="http://www.graco.com">www.graco.com</a> .	1
18b	25P851	O-RING, fluid, pack of 6	1	70‡	----	TOOL, divider	1
18c•	----	O-RING, air	1	71‡	----	TOOL, grease	1
18d•	----	O-RING, rear	1	72‡	----	SCREW, jack	1
18e	248131	O-RING, front, pack of 6	1	73	26A955	LABEL, troubleshooting guide	1
19	PCxxxx	CHAMBER, mix, see <b>Cartridge Kits</b> , page 39	1				
20	15C480	WASHER, wave	1				
21‡◆	248132	O-RING; pack of 6	1				
22	119626	MUFFLER	1				
23	248131	O-RING, pack of 6	1				
24‡★◆	246354	O-RING, pack of 6	1				
25‡	100846	FITTING, grease	1				
26‡	246731	VALVE, check, A side, includes 26a-26g	1				

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

Symbol	Kit	Description	Included in Kit: Ref. (Qty.)
•	25P850	KIT, cartridge, o-rings, (non-chemically resistant)	18a (2), 18c (1), 18d (2)
‡	25P660	KIT, Fusion PC, cartridge, tools	70 (1), 71 (1), 72(1)
‡	19Y303	KIT, fluid housing, Fusion PC	11(1), 24 (1), 8 (1), 25 (1), 37 (1), 27 (1), 21 (1), 26; A and B side (2), 7 (1)
★	248064	ASSEMBLY, safety stop	4 (1), 5 (1), 14 (1), 24 (1), 28 (1), 30 (1)
◆	18C115	KIT, Fusion PC, gun o-rings	3 (1), 14 (1), 16 (1), 21 (1), 24 (5), 26f (2), 26g (2)

# Detail Views



-  Torque to 125-135 in-lb (14-15 N•m).
-  Torque to 235-245 in-lb (26.6-27.7 N•m).
-  Torque to 32-40 ft-lb (43-54 N•m).

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
10a	15B801	AIR CAP, for flat pattern guns	1	43	117661	WISE, pin, dual reversible chucks	1
39	FTxxxx	TIP, flat, see <b>Flat Tip Kits</b> , page 39	1	50	112307	ELBOW, street; 1/8 npt (m x f)	2
40	246360	O-RING, PTFE, flat tip models only; package of 3; see <b>Flat Tip Kits</b> , page 39	1	52	15B817	MANIFOLD, gun flush	1
				53	117642	NUT DRIVER, hex, 5/16	1
				54	118575	SCREWDRIVER, 1/8 blade	1

## Mix Chamber Kits

### Round Pattern

Mix Chamber Kit (includes drill bit)	Nozzle Orifice Size	Nozzle Drill Bit Size in. (mm)	Impingement Port Size	Impingement Port Drill Bit Size in. (mm)	Counterbore Size	Counterbore Drill Bit Size in. (mm)
PC20RD	0.042	#58 (1.00)	0.020	#76 (0.50)	0.060	#53 (1.50)
PC29RD	0.052	#55 (1.3)	0.029	#69 (0.7)	0.06	#53 (1.5)
PC37RD	0.052	#55 (1.30)	0.037	#63 (0.94)	N/A	N/A
PC42RD	0.06	#53 (1.5)	0.042	#58 (1)	N/A	N/A
PC47RD	0.0635	1/16 (1.59)	0.0469	#56 (1.18)	N/A	N/A
PC52RD	0.07	#50 (1.75)	0.052	#55 (1.3)	N/A	N/A
PC60RD	0.086	#44 (2.15)	0.060	#53 (1.50)	N/A	N/A
PC70RD	0.094	3/32 (2.35)	0.070	#50 (1.75)	N/A	N/A

### Flat Pattern

Mix Chamber Kit (includes drill bits and o-ring)	Nozzle Orifice Size	Nozzle Drill Bit Size, in. (mm)	Impingement Port Size	Impingement Port Drill Bit Size, in. (mm)	Counterbore Size	Counterbore Drill Bit Size, in. (mm)
PC20FL	0.094	3/32 (2.35)	0.020	#76 (0.50)	0.060	#53 (1.50)
PC29FL	0.094	3/32 (2.35)	0.029	#69 (0.70)	0.060	#53 (1.50)
PC42FL	0.094	3/32 (2.35)	0.042	#58 (1.00)	N/A	N/A

### Wide Pattern

Spray guns with wide pattern mix chambers spray larger diameter patterns than guns with the standard mix chambers.

Kit	Pattern Diameter at 24 in. (609.6 mm) to target in. (mm)	Equivalent flow to mix chamber size	Nozzle Drill Bit Size in. (mm)	Impingement Drill Bit Size in. (mm)
PC22WD	8 (203.2)	N/A	0.047 (1.20)	#74, 0.022 (0.56)

## Flat Tip Kits

Flat Spray Tip (Ref. 39)	Pattern Size, in. (mm)
FT0424	low flow, 8-10 (203-254)
FT0438	medium flow, 8-10 (203-254)
FT0624	low flow, 12-14 (305-356)
FT0638	medium flow, 12-14 (305-356)
FT0838	medium flow, 16-18 (406-457)
FT0848	high flow, 16-18 (406-457)

### Flat Tip Part Reference Guide

Example part number FT0848:

FT	08	48
FT=Flat tip	x2=pattern length (8x2=16 in.)	Equivalent orifice diameter size (0.048 in.)

## Check Valve Filter Screen Kits

Each kit includes ten filter screens.

The gun is shipped with 80 mesh filter screens.

Part	Description
246357	40 mesh (0.015 in., 375 micron)
246358	60 mesh (0.010 in., 238 micron)
246359	80 mesh (0.007 in., 175 micron)

## Drill Bit Kit

### 119386

Kit includes 20 cleanout drill bits ranging in sizes of #61 through #80.

## Handle Cleanout Drill Kit

### 248969

Kit includes all 5 drill bits of extra long length needed to clean out the air passages in the Air Purge gun handle.

## Acceptable Cartridge Storage Liquids

Storage Liquid	Part
TSL	206994, 206995, 206996
ISO Pump Oil	217374, 218656

## Cartridge Kits

Part	Description	Qty.
19Y300	KIT, Fusion PC, cartridge, 1 pack	1
19Y301	KIT, Fusion PC, cartridge, 3 pack	3
19Y308*	KIT, Fusion PC, cartridge, 5 pack	5

\* Includes grease tool (71), divider (70), and jack screw (72).

## Fusion PC Cartridge Tools

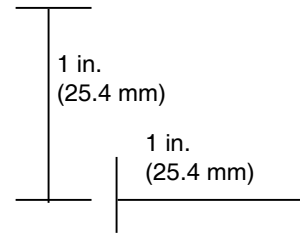
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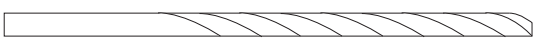
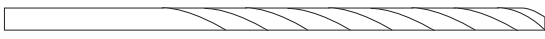
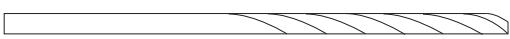
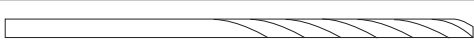
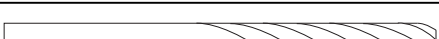
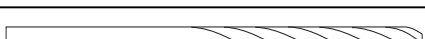
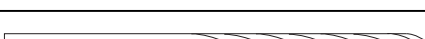
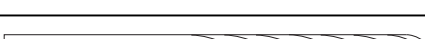
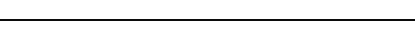
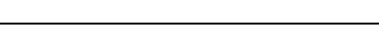
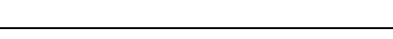
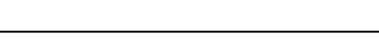



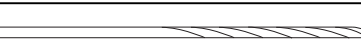

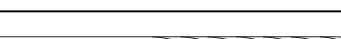
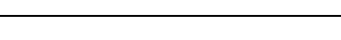
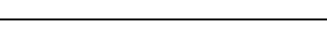
Kit includes replacement jack screw, grease tool, and divider tool for easy cartridge removal and troubleshooting.

## Drill Bit Kits













For cleaning gun ports and orifices. Illustrations are for diameter comparison. Actual length may vary.

**NOTE:** Not all sizes are used with your gun.

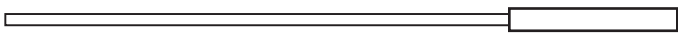

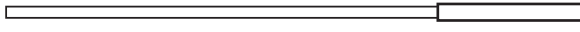

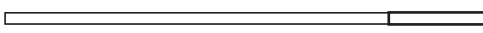
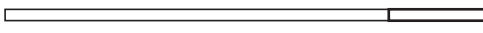




Kit Part	Qty.	Drill Bit Size			Illustration
		nominal	in.	mm	
249115	6	1/8	0.125	3.18	
246623	3	#32	0.116	2.90	
246810	3	7/64	0.109	2.77	
246813	3	#39	0.099	2.51	
246624	3	3/32	0.094	2.39	
246812	3	#43	0.089	2.26	
246625	3	#44	0.086	2.18	
248639	6	2.15 mm	0.085	2.15	
249114	6	#45	0.082	2.08	
246811	3	2 mm	0.079	2.00	
246626	6	#50	0.070	1.78	
249113	6	#52	0.64	1.63	
248893	6	1/16	0.062	1.59	
246627	6	#53	0.060	1.52	
249112	6	1.45 mm	0.057	1.45	
246809	6	#54	0.055	1.40	
246628	6	#55	0.052	1.32	
249764	6	1.20 mm	0.047	1.20	
246814	6	#56	0.046	1.18	
246629	6	#58	0.042	1.07	



Kit Part	Qty.	Drill Bit Size			Illustration
		nominal	in.	mm	
246808	6	#60	0.040	1.02	
248640	6	#61	0.039	0.99	
248618	6	#63	0.037	0.94	
248891	6	#66	0.033	0.84	
246807	6	#67	0.032	0.81	
246630	6	#69	0.029	0.74	
248892	6	#70	0.028	0.71	
246815	6	#73	0.024	0.61	
276984	6	#74	0.023	0.57	
246631	6	#76	0.020	0.51	
246816	6	#77	0.018	0.46	
246817	6	#81	0.013	0.33	

### Reamer Kits

Kit Part	Qty.	Reamer Size			Illustration
		nominal	in.	mm	
25B041	1	#32	0.116	2.90	
25B040	1	3/32	0.094	2.39	
25B039	1	#44	0.086	2.18	
25B038	1	#50	0.070	1.78	
25B037	1	1/16	0.062	1.59	
25B035	1	#53	0.060	1.52	
25B034	1	#55	0.052	1.32	
25B032	1	#58	0.042	1.07	

# Accessories

## Extension Tip Kits

Kits include extension, flat tip seal and round tip seal, cleanout drill bit, and instructions. Extension tip kits include extension tip seals. See **Extension Tip Seal Kits**.

**NOTE:** Extension tip kits require 248020 Extension Tip Air Cap Kit (purchased separately).

Kit	Hole Diameter x Length, in. (mm)	Recommended Mix Chambers	Spray Distance, ft (m)	Pattern Diameter, in. (mm)
248010	0.042 x 0.50 (1.06 x 12.7)	PC20RD/PC20FL	15 (4.57)	10 (254)
248011	0.052 x 0.50 (1.32 x 12.7)	PC29RD/PC29FL	12 (3.66)	10 (254)
248012	0.060 x 0.50 (1.52 x 12.7)	PC42RD/PC42FL	12 (3.66)	12 (305)
248013	0.070 x 0.50 (1.78 x 12.7)	PC52RD	8 (2.44)	20 (508)
248014	0.042 x 1.0 (1.06 x 25.4)	PC20RD/PC20FL	15 (4.57)	10 (254)
248015	0.052 x 1.0 (1.32 x 25.4)	PC29RD/PC29FL	12 (3.66)	8 (203)
248016	0.060 x 1.0 (1.52 x 25.4)	PC42RD/PC42FL	12 (3.66)	8 (203)
248017	0.070 x 1.0 (1.78 x 25.4)	PC52RD	8 (2.44)	8 (203)

\* Measured with less than 8 in. (203 mm) drop in stream center at 1200 psi (8.4 MPa, 84 bar) static pressure.

## Extension Tip Seal Kits

Kits include 5 seals.

**NOTE:** Extension tip seals must be series “B” or later to be compatible with Fusion PC mix chambers in extension tip kits, pour nozzle kits, and spatter conversion kit. The series “B” extension tip seal color changed from white to black for identification.

Kit Part	Description
248018	Flat Extension Tip Seal Kit
248019	Round Extension Tip Seal Kit

## Extension Tip Air Cap Kit

### 248020

Includes air cap for use with extension tip kits 248010-248017.

## Flat Pattern Stud Wall Kit

### 249421

To spray high-flow, flat patterns. For use with flat mix chambers only: PC29FL, PC42FL. Includes adapter parts and cleanout tool. Flat pattern mix chamber not included. Order separately. Optional tip FTM762 available for lower flow and smaller pattern application.

**NOTE:** Kit must be series “B” or later to be compatible with the Fusion PC mix chamber.

### 24C358

TP100 stud wall option to spray wall insulation foam into stud walls.

## Pour Nozzle Kit

### 248528

To convert air purge gun for pour applications. Includes nozzle, seals, tubing, and cleanout drill bits.

**NOTE:** Pour nozzle kit uses extension tip seals. See **Extension Tip Seal Kits** for compatibility information.

## Gun Cleaning Kit

**15D546**

Kit includes eleven tools and brushes to clean the gun.

## Hose Adapter Kits

**246944**

To connect non-Graco gun to Graco heated hose.

**248029**

To connect Graco Fusion gun to non-Graco D-gun hose set.

**246945**

To connect Graco Fusion gun to non-Graco heated hose.

## Spatter Conversion Kit

**248414**

To convert Fusion air purge gun to spray round pattern only, large droplet, low overspray applications. Includes air cap, tip, retainer, seal, and cleanout drill bits.

**NOTE:** Spatter kit uses extension tip seals. See **Extension Tip Seal Kits**, page 42.

## Gun Cover

**244914**

Keeps gun clean while spraying. Pack of 10.

## Lubricant for Gun Rebuild

**248279, 4 oz (113 gram) (Qty. 10)**

High adhesion, water resistant, lithium-based lubricant. SDS available at [www.graco.com](http://www.graco.com)

## Grease Cartridge for Gun Shutdown

**248280 Cartridge, 3 oz (Qty. 10)**

Specially formulated low viscosity grease flows easily through gun passages, to prevent two component curing and keep fluid passages clean.

## Flushing Manifold

**15B817 Manifold Block**

See Ref. 52.

## Solvent Flush Canister Kit

**248139, 1 qt (0.95 l) Solvent Cup**

Complete with 15B817 Flushing Manifold to flush gun with solvent. Portable for remote flushing. Refer to the Solvent Flush Kit manual. See **Related Manuals**, page 3.

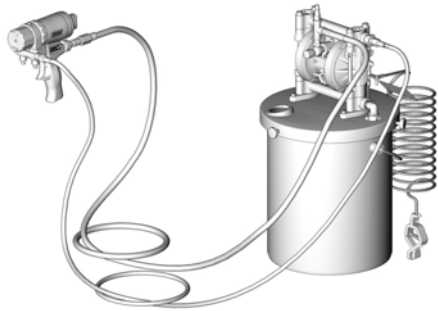


T14165a

## Solvent Flush Pail Kit

### 248229 5 gal. (19 l) Pail

Includes flush manifold with individual A and B shutoff valves, and air regulator. Refer to the Solvent Flush Kit manual. See **Related Manuals**, page 3.

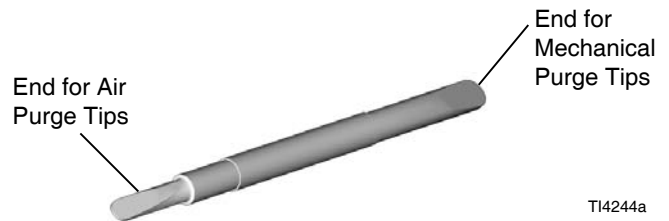


TI4211b

## Tip Cleanout Tool

### 15D234

Designed to fit CeramTip™ internal dome and flat tip slits.

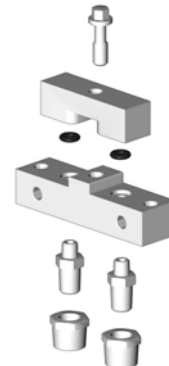


TI4244a

## Circulation Manifold

### 246362

Attach to gun fluid manifold to enable preheating of hose. Refer to Circulation Manifold Kit Instruction Manual. See **Related Manuals**, page 3.



TI3877a

# Technical Specifications

<b>Fusion PC Spray Gun</b>		
	<b>US</b>	<b>Metric</b>
Maximum Fluid Working Pressure	3500 psi	24.5 MPa, 245 bar
Minimum Air Inlet Pressure	80 psi	0.56 MPa, 5.6 bar
Maximum Air Inlet Pressure	130 psi	0.9 MPa, 9 bar
Air Flow Range	See chart below	
Typical Flow Rate of Round Pattern Guns	See <b>Round Pattern Guns</b> chart, page 4	
Typical Flow Rate of Flat Pattern Guns	See <b>Flat Pattern Guns</b> chart, page 5	
Maximum Fluid Temperature	200° F	94° C
Air Inlet Size	1/4 npt Quick Disconnect Nipple	
A Component (ISO) Inlet Size	-5 JIC	1/2-20 UNF
B Component (Resin) Inlet Size	-6 JIC	9/16-18 UNF
Dimensions	8.1 x 8.1 x 3.3 in.	206 x 206 x 84 mm
Weight	2.9 lb	1.3 kg
<b>Wetted Parts</b>		
Gun	Aluminum, stainless steel, carbon steel, carbide, chemically resistant o-rings	
Cartridge air/grease ports	Stainless steel, aluminum, anodized aluminum, non-chemically resistant o-rings, nylon	
Cartridge fluid ports	Stainless steel, chemically-resistant o-rings, anodized aluminum, aluminum, polycarbally, nylon	
<b>Noise</b>		
Maximum sound pressure	81.1 dB(A), using AR5252 at 100 psi (0.7 MPa, 7 bar)	
Maximum sound power	91.0 dB(A), using AR5252 at 100 psi (0.7 MPa, 7 bar)	
<i>Sound power measured per ISO-9416-2.</i>		
<b>Notes</b>		
All trademarks or registered trademarks are the property of their respective owners.		

## Air Flow by Mix Chamber

Air Pressure (detriggered) psi (MPa, bar)	Mix Chamber Sizes (scfm (m <sup>3</sup> /min))						
	PC20RD	PC29RD	PC37RD	PC42RD	PC52RD	PC60RD	PC70RD
80 (0.56, 5.6)	0.8 (0.022)	1.4 (0.039)	2.0 (0.056)	2.6 (0.073)	3.7 (0.104)	4.6 (0.129)	5.7 (0.160)
100 (0.7, 7)	0.9 (0.025)	1.7 (0.048)	2.9 (0.081)	3.1 (0.087)	4.6 (0.129)	5.7 (0.160)	7.1 (0.200)
130 (0.9, 9)	1.2 (0.034)	2.3 (0.064)	3.2 (0.090)	4.1 (0.115)	5.9 (0.165)	7.3 (0.204)	9.2 (0.258)

# California Proposition 65

## CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).



# 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 to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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

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

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

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

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

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

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# Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211, **Fax:** 612-378-3505