



**POLYURETHANE  
MACHINERY  
CORPORATION**



## **Air Purge Spray & Pour Gun AP-3**

**For use with non-flammable Foam and  
Polyurea**

**For professional use only**

**Not for use in explosive atmospheres**

### **Service Manual**

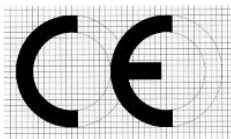
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### **Polyurethane Machinery Corp.**

**Corporate:** 1 Komo Drive, Lakewood, NJ 08701

**Manufacturing:** 2 Komo Drive, Lakewood, NJ 08701

**Phone:** 732-415-4400

**Fax:** 732-364-4025

**URL:** <http://www.polymacusa.com>



**Before installing the AP-3 Gun and start-up, carefully read all the technical and safety documentation included in this manual. Pay special attention to the information in order to know and understand the operation and the conditions of use of the AP-3 Gun. All of the information is aimed at improving user safety and avoiding possible breakdowns from the incorrect use of the AP-3 Gun.**

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## **WARRANTY**

Polyurethane Machinery Corporation (hereinafter “PMC”) provides this **LIMITED WARRANTY** (hereinafter “Warranty”) to the original purchaser (hereinafter “Customer”) covering this equipment and the original PMC manufactured accessories delivered with the equipment (hereinafter “Product”) against defects in material or workmanship of the Product (hereinafter “Defect” or “Defective”) for a period of one (1) year from the date of first purchase as shown on the original PMC invoice (hereinafter “Warranty Period”).

If during the Warranty Period under normal use, the Product is suspected by Customer to be Defective in material or workmanship, it is Customer’s responsibility to contact PMC and return the Product to PMC as directed by PMC, freight prepaid. If PMC determines that the Product is Defective and that such Defect is covered by this Warranty, PMC will credit Customer for the reasonable freight charges incurred by Customer in returning the Defective Product to PMC, and PMC (or its authorized agent) will, at PMC’s option, repair or replace the Product, subject to the following:

Original Invoice: The original invoice must be kept as proof of the date of first sale and the Product serial number. The Warranty does not cover any Product if the Original Invoice appears to have been modified or altered, or when the serial number on the Product appears to have been altered or defaced.

Product Maintenance: It is the Customer’s responsibility to maintain the Product properly. See your maintenance schedule and owner’s manual for details. The Warranty does not cover an improperly maintained Product.

Non-PMC Components and Accessories: Non-PMC manufactured components and accessories that are used in the operation of the Product are not covered by this Warranty. Such components and accessories shall be subject to the warranty offered to the Customer, if any, by the original manufacturer of such component or accessory.

Other Warranty Exclusions: The Warranty does not cover any Product that PMC determines has been damaged or fails to operate properly due to misuse, negligence, abuse, carelessness, neglect, or accident. By way of example only, this includes:

- Normal wear and tear.
- Improper or unauthorized installation, repair, alteration, adjustment or modification of the Product.
- Use of heating devices, pumping equipment, dispensers, or other parts or accessories with the Product that have not been approved or manufactured by PMC.
- Failure to follow the operating instructions and recommendations provided by PMC may cause loss or damage to personnel, equipment, or work area.
- Fire, flood, “acts of God,” or other contingencies beyond the control of PMC.

**THE WARRANTY DESCRIBED HEREIN IS THE EXCLUSIVE REMEDY FOR THE CUSTOMER AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, AND THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES ARE HEREBY DISCLAIMED. TO THE FULLEST EXTENT PERMITTED BY LAW, PMC SHALL NOT BE RESPONSIBLE, WHETHER BASED IN CONTRACT, TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE), WARRANTY OR ANY OTHER LEGAL OR EQUITABLE GROUNDS, FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, LOST PROFITS, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES, WHETHER TO PERSON OR PROPERTY, ARISING FROM OR RELATING TO THE PRODUCT, EVEN IF PMC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES.**

**Non-Warranty Service by PMC:** If PMC determines that the suspected Defect of the Product is not covered by this Warranty, disposition of the Product will be made pursuant to the terms and conditions of PMC's written estimate on a time and materials basis.

**Continuing Warranty for Products Repaired or Replaced under Warranty:** Following the repair or replacement of a Product covered by this Warranty, such Product will continue to be subject to the original Warranty for the remainder of original Warranty Period or for three (3) months from the repair or replacement date, whichever is longer.

**No Rights Implied:** Nothing in the sale, lease or rental of any Product by PMC shall be construed to grant any right, interest or license in or under any patent, trademark, copyright, trade secret or other proprietary right or material owned by anyone; nor does PMC encourage the infringement of same.

**Exclusive Warranty:** This writing is the final, complete, and exclusive expression of the Warranty covering the Product. Any statements made by PMC, its employees or agents that differ from the terms of this Warranty shall have no effect. It is expressly understood that Customer's acceptance of this Warranty, by performance or otherwise, is upon and subject solely to the terms and conditions hereof, and any additional or different terms and conditions proposed or expressed by Customer or anyone, whether in writing or otherwise, are null and void unless specifically agreed to in writing by an Officer of PMC.

## **SAFETY AND HANDLING**

This chapter contains important information on the safety, handling and use of your AP-3 Gun.



**Before installing the AP-3 Gun and start-up, carefully read all the technical and safety documentation included in this manual. Pay special attention to the information in order to know and understand the operation and the conditions of use of the AP-3 Gun. All of the information is aimed at improving user safety and avoiding possible breakdowns from the incorrect use of the AP-3 Gun.**

***WARNING!*** *Presents information to alert of a situation that might cause serious injuries if the instructions are not followed.*

***CAUTION!*** *Presents information that indicates how to avoid damage to the AP-3 Gun or how to avoid a situation that could cause injuries.*

***NOTE!*** *Is relevant information of a procedure being carried out.*

Careful study of this Manual will enable the operator to know the characteristics of the Gun and the operating procedures. By following the instructions and recommendations contained, you will reduce the potential risk of accidents in the installation, use or maintenance of the AP-3 Gun; you will provide a better opportunity for incident-free operation for a longer time, greater productivity and the possibility of detecting and resolving problems fast and simply.

Keep this Service Manual for future reference to useful information. If you lose this Manual, ask for a new copy from your PMC Service Center or go to the company website ([www.polymacusa.com](http://www.polymacusa.com)).

The AP-3 Gun has been designed and built for the application of polyurea chemical systems, polyurethane foam chemical systems and some two-component epoxy systems.

***WARNING! The design and configuration of the AP-3 Gun does not allow its use in potentially explosive atmospheres or exceeding the pressure and temperature limits described in the Technical Specifications of this Manual to be exceeded.***

Always use liquids and solvents that are compatible with the AP-3 Gun. If in doubt, consult **PMC** Technical Service.

When working with the AP-3 Gun, it is recommended that the operator wear suitable clothing and elements of personal protection, including, without limitation, gloves, protective goggles, safety footwear and face masks. Use breathing equipment when working with the Gun in enclosed spaces or in areas with insufficient ventilation. The introduction and follow-up of safety measures must not be limited to those described in this Manual. Before beginning to work with the Gun, a comprehensive analysis must be made of the risks derived from the products to be dispensed, the type of application and the working environment.



To prevent possible injury caused by incorrect handling of the materials and solvents used in the process, carefully read the Material Safety Data Sheet (MSDS) provided by your supplier.



To avoid damage caused by the impact of pressurized fluids, do not open any connection or perform maintenance work on components subject to pressure until the pressure has been completely eliminated.



Use suitable protection when operating, maintaining or being present in the area where the equipment is functioning. This includes, but is not limited to, the use of protective goggles, gloves, shoes and safety clothing and breathing equipment.

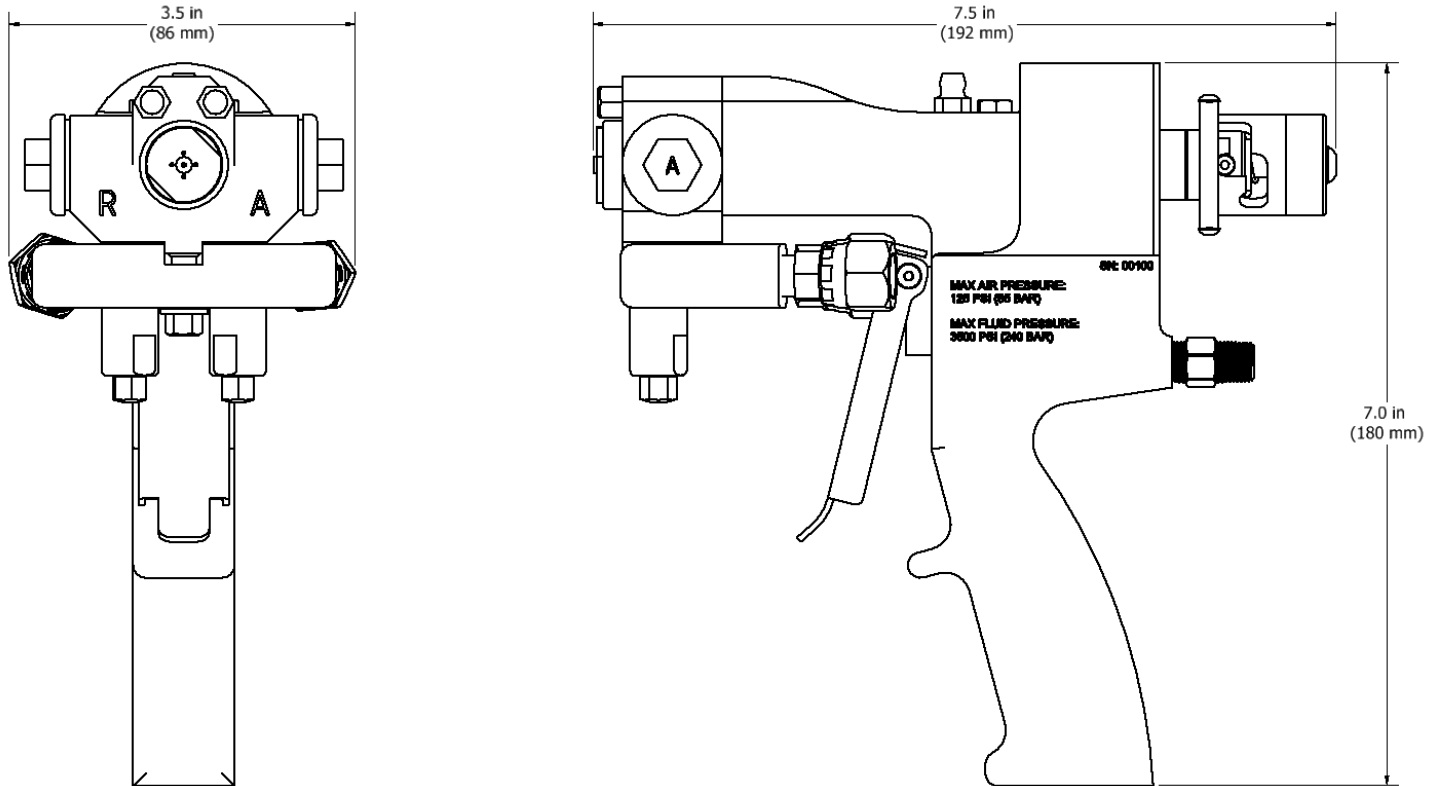


The equipment includes components that reach high temperatures and can cause burns. Hot parts of the equipment must not be handled or touched until they have cooled completely.



The equipment sprays high pressure fluids that can lead to fluid being injected under the skin or eyes. Severe injury could be incurred. Proper personal protective equipment should be used in conjunction with training and situational awareness of all personnel on the job.

## CHARACTERISTICS

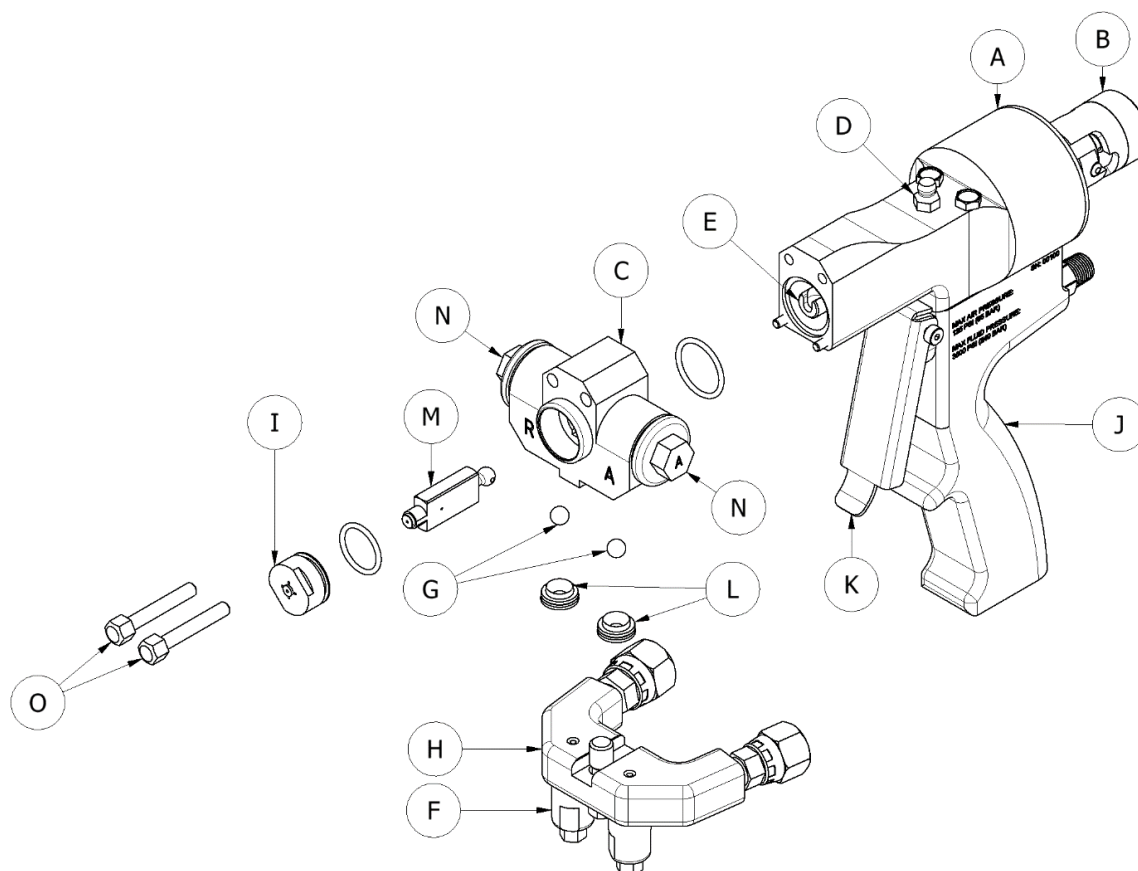


## TECHNICAL SPECIFICATIONS

<b>Maximum Working Pressure:</b>	<b>3,500 psi (245 Bar)</b>
<b>Air Pressure:</b>	<b>90-125 psi (6.2-8.6 Bar)</b>
<b>Maximum Output (1:1 ratio):</b>	<b>50 lb/min (22.7 L/min)</b>
<b>Minimum Output (1:1 ratio):</b>	<b>3.3 lb/min (1.55 L/min)</b>
<b>Opening Force @ 110 psi (8 Bar):</b>	<b>200 lb (91 kg)</b>
<b>Closing Force @ 110 psi (8 Bar):</b>	<b>200 lb (91 kg)</b>
<b>Weight (Not including Coupling Block):</b>	<b>2.4 lbs (1.1 kg)</b>
<b>Weight (Including Coupling Block):</b>	<b>3.1 lbs (1.4 kg)</b>

## **GENERAL DESCRIPTION**

For better knowledge of the **AP-3** Gun, the main components and their description are shown. For a more precise identification, see the Parts Identification section.



- |                            |                                   |
|----------------------------|-----------------------------------|
| <b>A.</b> Air Cylinder     | <b>H.</b> Coupling Block Assembly |
| <b>B.</b> Gun Lock         | <b>I.</b> PCT                     |
| <b>C.</b> Gun Block        | <b>J.</b> Gun Handle              |
| <b>D.</b> Grease Fitting   | <b>K.</b> Trigger                 |
| <b>E.</b> Socket           | <b>L.</b> Check Valve Seal        |
| <b>F.</b> Manual Valves    | <b>M.</b> Mixing Chamber          |
| <b>G.</b> Check Valve Ball | <b>N.</b> Screen Screws           |
|                            | <b>O.</b> Screws                  |

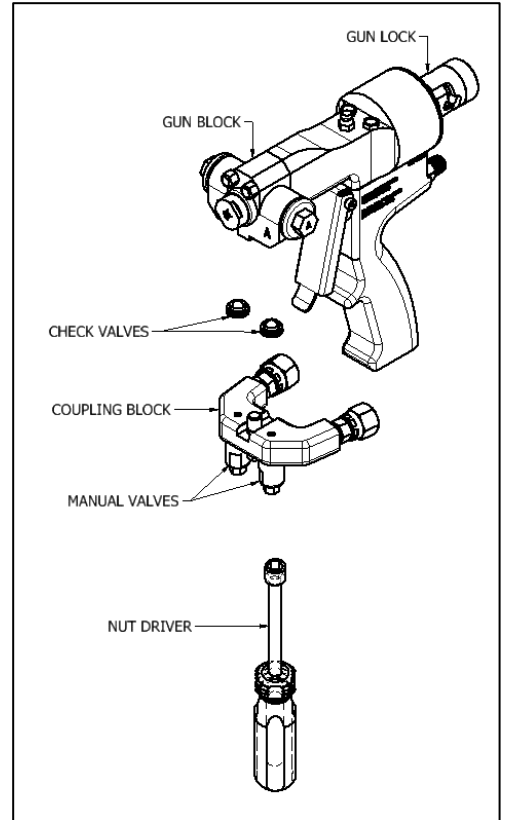
### INSTALLATION AND START UP

**CAUTION!** When working with the AP-3 Gun or performing maintenance work, wear suitable safety protection in accordance with the recommendations and specifications provided by the product suppliers.

1. Install **Coupling Block** to the hose.
2. Ensure the **Manual Valves** are **CLOSED** by turning them to the full clockwise position.

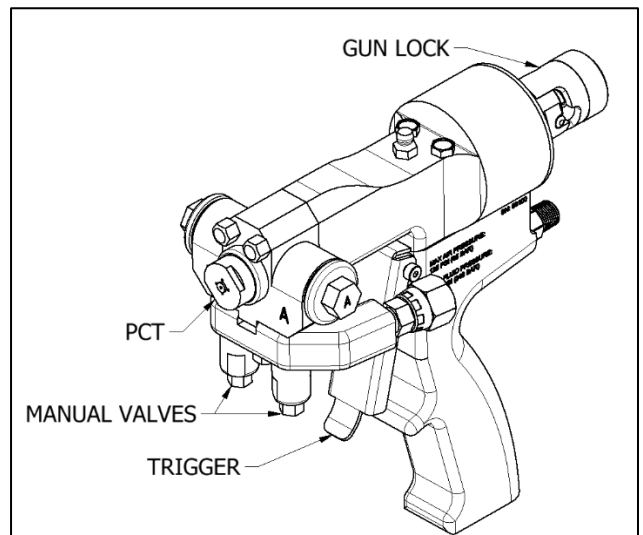
**CAUTION!** Excessive force closing or opening the **Manual Valves** may result in damage to the **Manual Valves** and/or **Coupling Block**.

3. Set the **Gun Lock** to the **LOCKED** position.
4. Ensure **Check Valve** Assemblies are properly installed in the Gun Block.
5. Connect the **Coupling Block** to the **Gun Block** using the **Nut Driver** provided (Pg. 36). Tighten **Coupling Block** until there is a hand tight seal.
6. Connect the air supply with 90 to 125 psi (6.2 to 8.6 bar) to the gun.



**NOTE!** The material delivery hoses are color coded Red and Blue. The Red corresponds to the Isocyanate (A) and the Blue to the Polyol (R). To avoid connection errors, the (A) and (R) hoses have connections with different sizes to avoid incorrect connections. [Set the **Gun Lock** to the **OPEN** position.]

7. Pull the **Trigger** several times to check for correct movement of the **Mixing Chamber** and **PCT**.
8. Ensure the Proportioner and supply system are in the ready position and the material pressures and temperatures are set as recommended by the chemical supplier (see Machine Service Manual).
9. **OPEN** each **Manual Valve** by turning three (3) full turns counter clockwise.
10. **Perform a test spray.**



## **SHUTDOWN PROCEDURES**

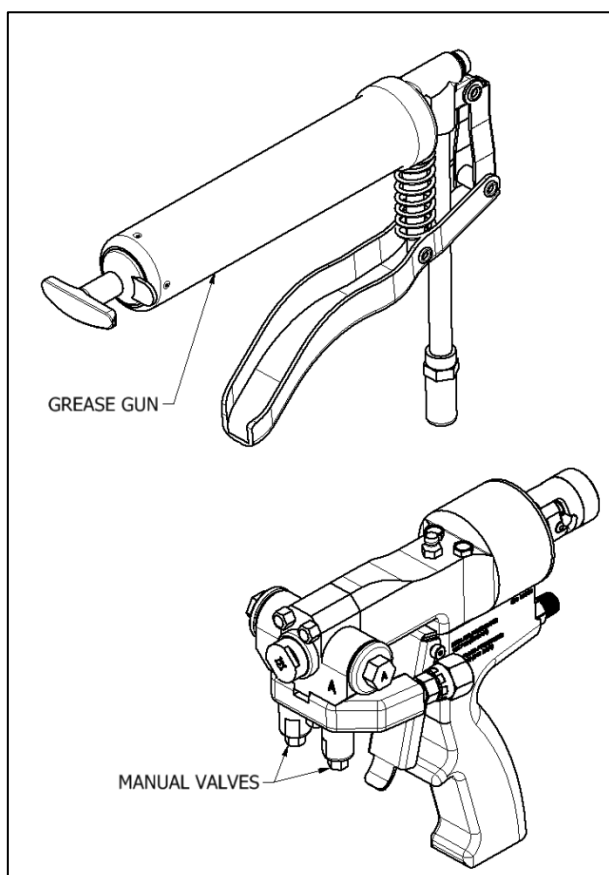
1. CLOSE the **Manual Valves** by turning them to the full clockwise position.

**CAUTION!** *Excessive force closing or opening Manual Valves may result in damage to the Manual Valves and/or Coupling Block.*

2. Using the supplied **Grease Gun** (Pg. 36), lubricate the **Mixing Chamber** through the **Grease Fitting** until a fine mist of grease is sprayed from the gun (Pg. 37 for Grease Gun Assembly Instructions). This action will help prevent Isocyanate from crystallizing on the mixing chamber which may cause damage to the internal parts.

**NOTE!** *The injection of grease supplied with the Gun at the end of the day will minimize maintenance time and can eliminate the need to remove the Mixing Chamber each day to clean it. **Use of grease with high moisture content will not achieve the desired results.** PMC Grease is recommended. **Use of incorrect grease will cause blockage in the mixing chamber.***

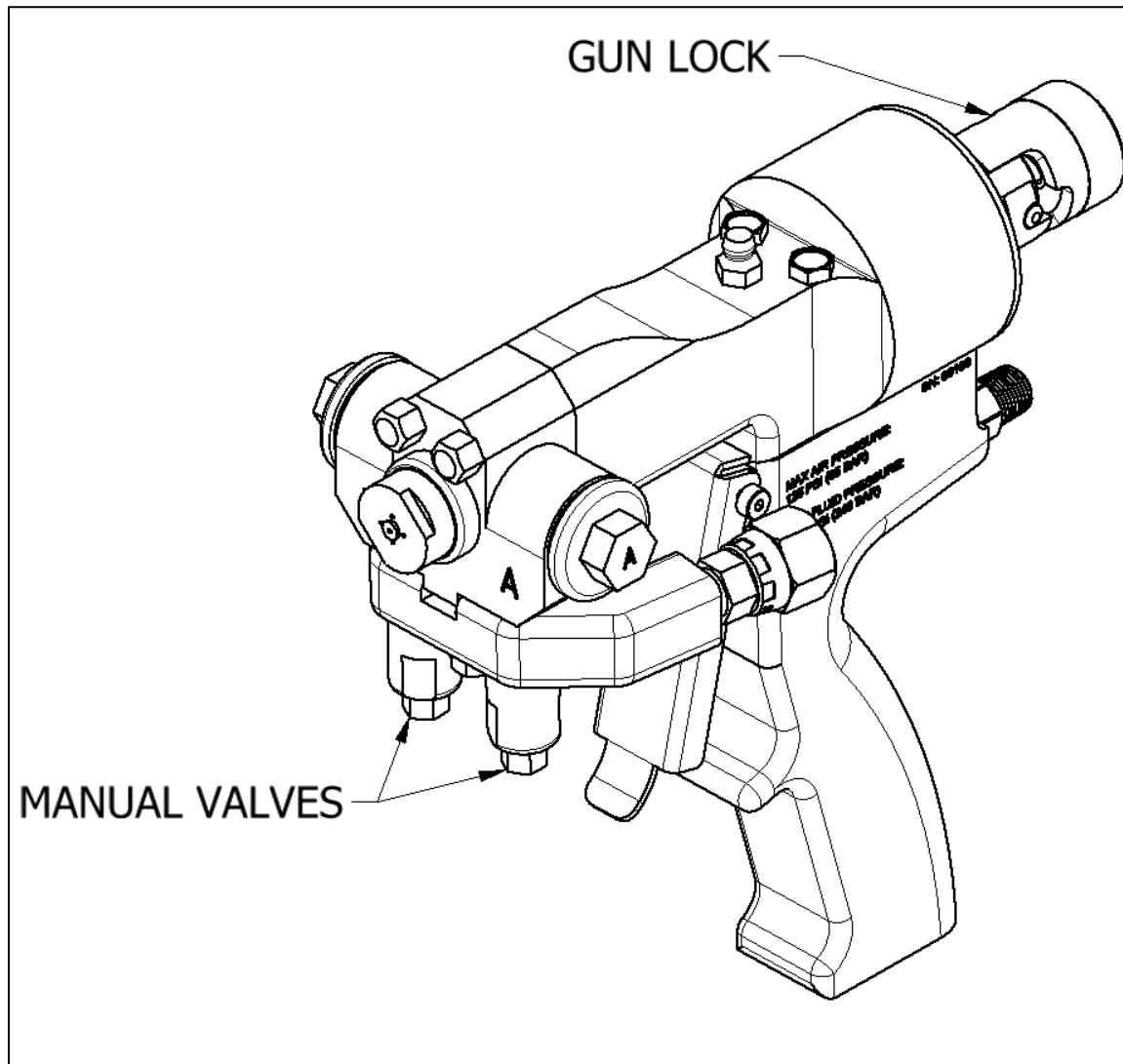
3. Disconnect the air supply.



## **LOSS OF AIR PRESSURE/EMERGENCY SHUT-OFF**

1. **SHUT OFF** air supply to gun.
2. Using the palm of your hand, push in on the **Gun Lock** and rotate clockwise to set it to the **LOCKED** position.
3. **CLOSE** each **Manual Valve**.

**CAUTION!** Excessive force closing or opening Manual Valves may result in damage to the Manual Valves and/or Coupling Block. Emergency shut off if trigger sticks – disconnect air line.



## **MAINTENANCE**

To obtain maximum performance from your **AP-3** Gun, it is necessary to periodically perform certain maintenance operations

***WARNING! Before proceeding with any maintenance work on the AP-3 Gun, trigger the gun to remove internal material pressure, ensure the Manual Valves are CLOSED, ensure the Gun Lock is in the LOCKED position, and SHUT OFF/DISCONNECT the air supply. It is recommended to remove the Gun from the Coupling Block.***



To prevent possible injury caused by incorrect handling of the materials and solvents used in the process, carefully read the Material Safety Data Sheet (MSDS) provided by your supplier.



To avoid damage caused by the impact of pressurized fluids, do not open any connection or perform maintenance work on components subject to pressure until the pressure has been completely eliminated.



Use suitable protection when operating, maintaining or being present in the area where the equipment is functioning. This includes, but is not limited to, the use of protective goggles, gloves, shoes and safety clothing and breathing equipment.

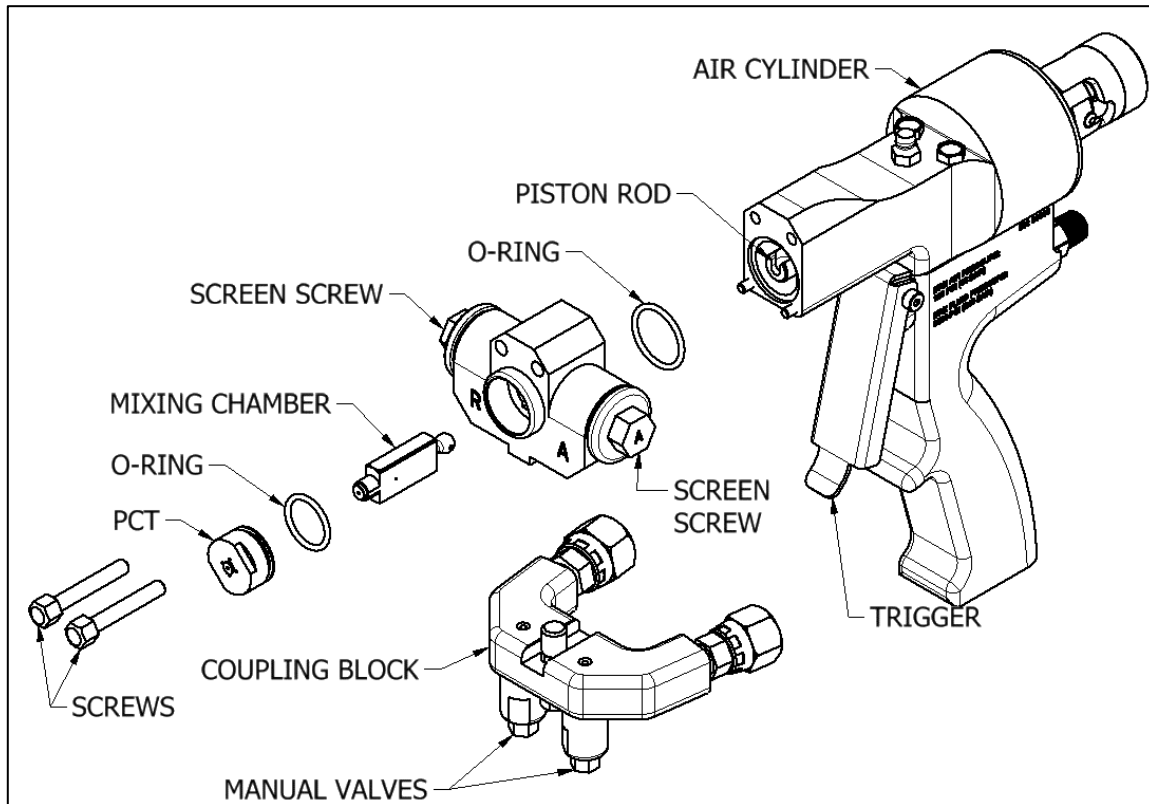


The equipment includes components that reach high temperatures and can cause burns. Hot parts of the equipment must not be handled or touched until they have cooled completely.



The equipment sprays high pressure fluids that can lead to fluid being injected under the skin or eyes. Severe injury could be incurred. Proper personal protective equipment should be used in conjunction with training and situational awareness of all personnel on the job.

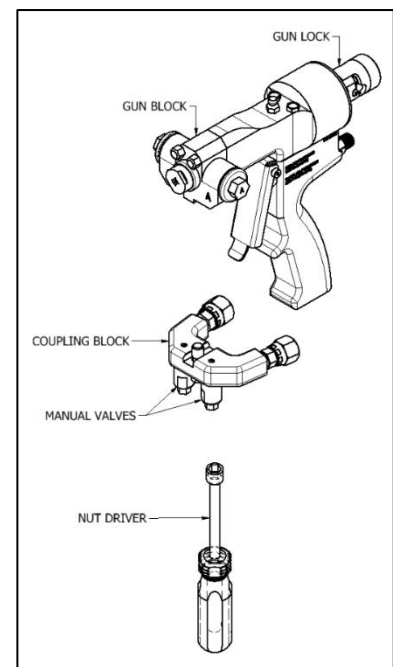
## **Gun Block and Mixing Chamber Removal**



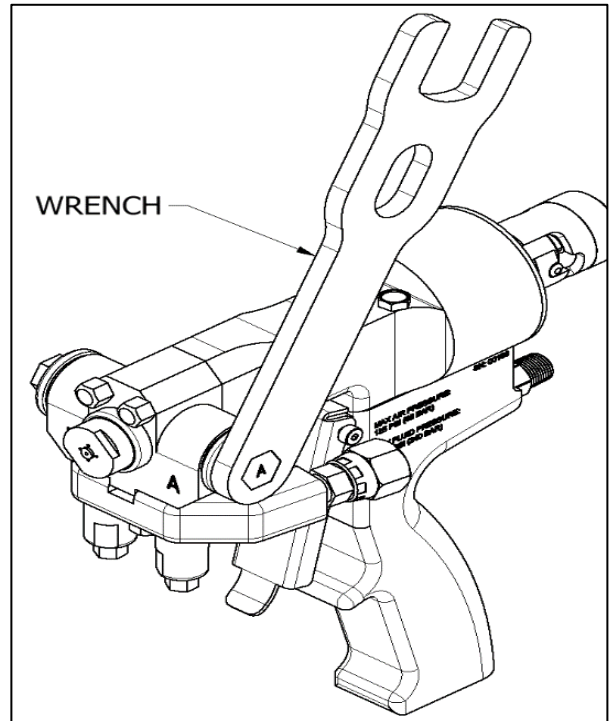
1. **CLOSE** the **Manual Valves** by turning them to the full clockwise position.

**CAUTION!** *Excessive force opening or closing Manual Valves may result in damage to the Manual Valves and/or Coupling Block.*

2. Point the gun over a waste container and pull the **Trigger** to relieve pressure.
3. Using the **Nut Driver** provided (Pg. 36), remove the **Coupling Block** from the **Gun Block**.
4. Flush the Gun Block to remove any residue. Use the recommended Flush Tank (Pg. 29)
5. Shut off air to the gun.
6. Using the **Wrench** provided (Pg. 36) or a 1/2" wrench, loosen or remove both **Screen Screws** to facilitate easy removal of the **Mixing Chamber**, as shown below.

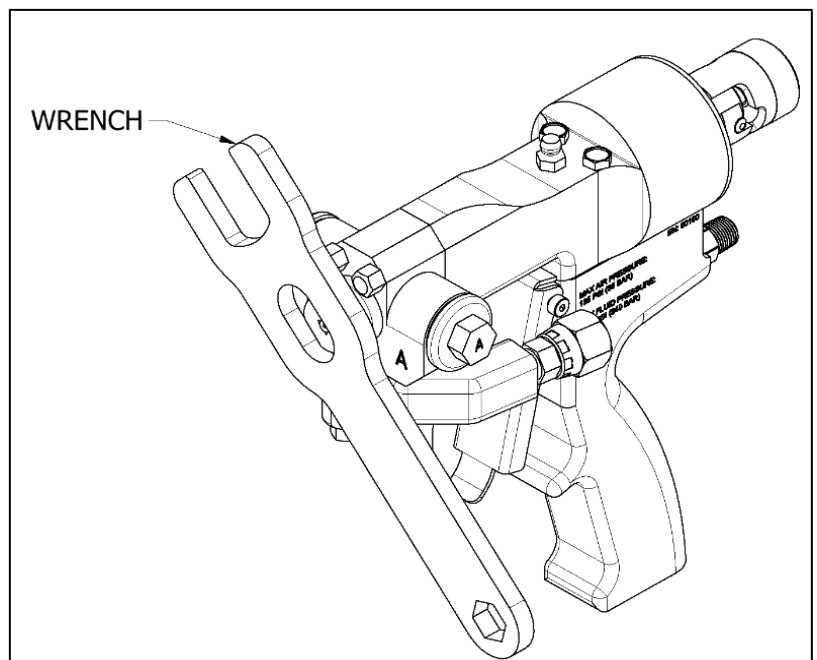


7. Loosen the PCT, but do not remove.
8. Using the Nut Driver (Pg. 36) provided, remove the gun block screws mounting screws. (see page 6, item O)
9. Disconnect the Gun Block from the Cylinder.
10. Remove the Mixing Chamber and PCT from the Gun Block.
11. Clean or replace the **Mixing Chamber** as required.
12. When reassembling in reverse order, it is recommended to screw the **PCT** onto the **Mixing Chamber** first, then insert the **Mixing Chamber** into the front of the **Gun Block**. This helps to reduce wear on the **PCT** O-ring.

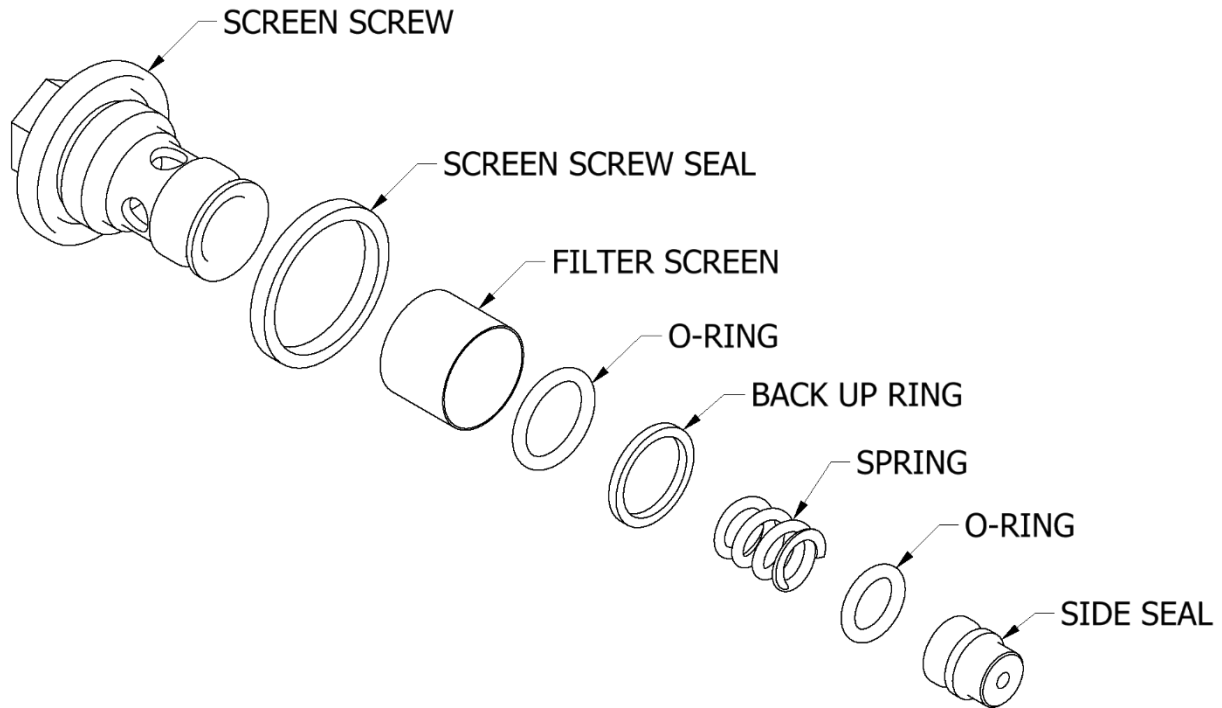


**NOTE!** A small amount of PMC grease applied to the Mixing Chamber and Side Seals upon assembly is recommended.

**CAUTION!** Use wooden or plastic tools or a brass brush for cleaning. Do not use metal or abrasive tools that can scratch or damage the contact surfaces.



## **Screen Screw and Component Maintenance**



***CAUTION!*** To avoid possible contamination by the residual chemical inside the Gun do not interchange the Isocyanate (A) parts with the Polyol (R) parts. The Isocyanate (A) side is identified with an (A) on the Screen Screw Head and the Polyol (R) side is marked with an (R) on the Screen Screw Head. The Gun Block is also marked with (A) and (R) designation.

1. **CLOSE** the **Manual Valves** by turning them to the full clockwise position.

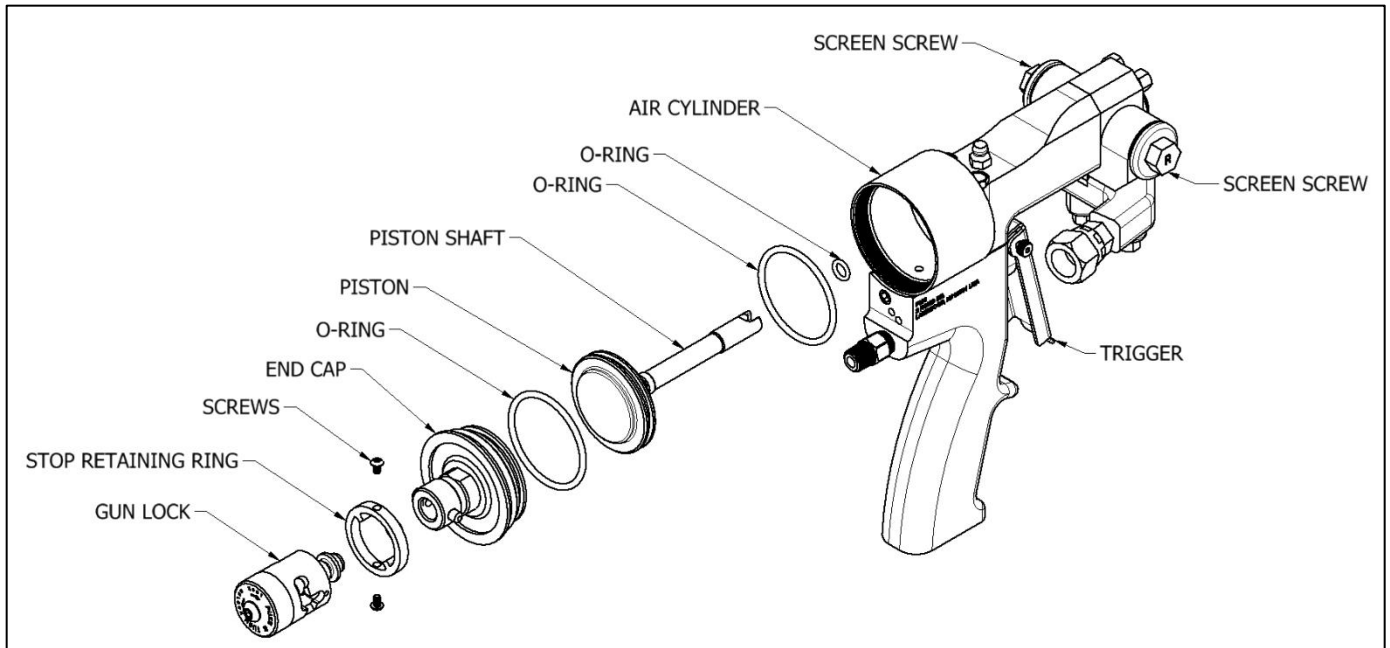
***CAUTION!*** Excessive force opening or closing Manual Valves may result in damage to the Manual Valves and/or Coupling Block.

2. Point the gun over a waste container and pull the **Trigger** to relieve pressure.
3. Using the Nut Driver provided (Pg. 35), remove the Coupling Block from the Gun Block.
4. Flush the gun block to remove any residue. Use the recommended Flush Tank (Pg. 29)
5. **SHUT OFF** air supply to the gun.

6. Set the **Gun Lock** to the **LOCKED** position.
7. Use the **Wrench** provided (Pg. 36) or a ½" wrench to remove the **Screen Screw**.
8. To clean or replace the **Screens**, remove the larger **O-Ring** and **Back Up Ring**.
9. Remove the **Side Seal** and **Spring** from the **Screen Screw**. Inspect all components and O-rings. Clean or replace as required.
10. Inspect for damage and apply PMC lubrication to all O-rings and threads and reassemble in reverse order.
11. The gun is now ready for service.

***NOTE!*** When replacing O-rings, replace ALL O-rings included in the appropriate Kit.

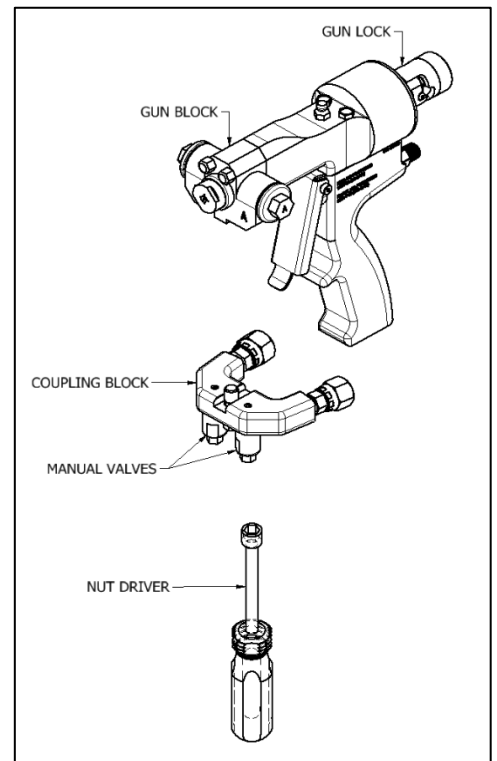
## Air Cylinder Maintenance



1. **CLOSE** the **Manual Valves** by turning them to the full clockwise position.

**CAUTION!** Excessive force opening or closing Manual Valves may result in damage to the Manual Valves and/or Coupling Block.

2. Point the gun over a waste container and pull the **Trigger** to relieve pressure.
3. **DISCONNECT** air supply to gun.
4. Set the **Gun Lock** to the **LOCKED** position.
5. Flush the gun block to remove any residue. Use the recommended Flush Tank (Pg. 29)
6. Loosen the **Screen Screws** using the **Wrench** provided (Pg. 36) a ½" wrench.
7. Disconnect **Coupling Block** from **Gun Block** using the **Nut Driver** provided (Pg. 36).
8. Using the Nut Driver provided, remove the gun block mounting screws and disconnect the Gun Block.



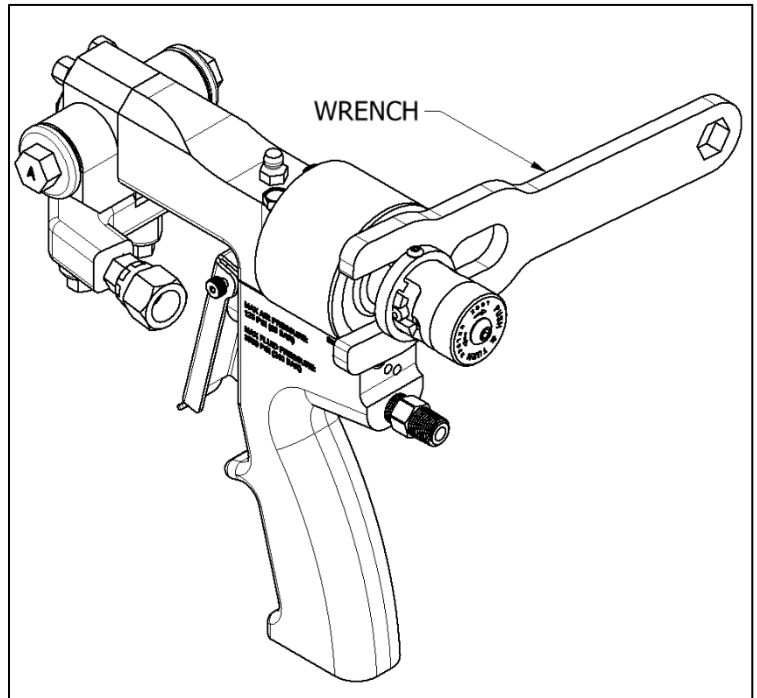
9. Using an 11/16" Wrench, remove the **End Cap**.
10. Push on the front of the **Piston** to remove the **Piston** from the rear of the **Air Cylinder**.
11. Inspect the **O-rings** on the **Piston** and **Shaft** and replace as required.
12. Inspect the **O-ring** on the **End Cap** and replace as required.

**NOTE!** When replacing O-rings, replace ALL O-rings included in the Rebuild Kit.

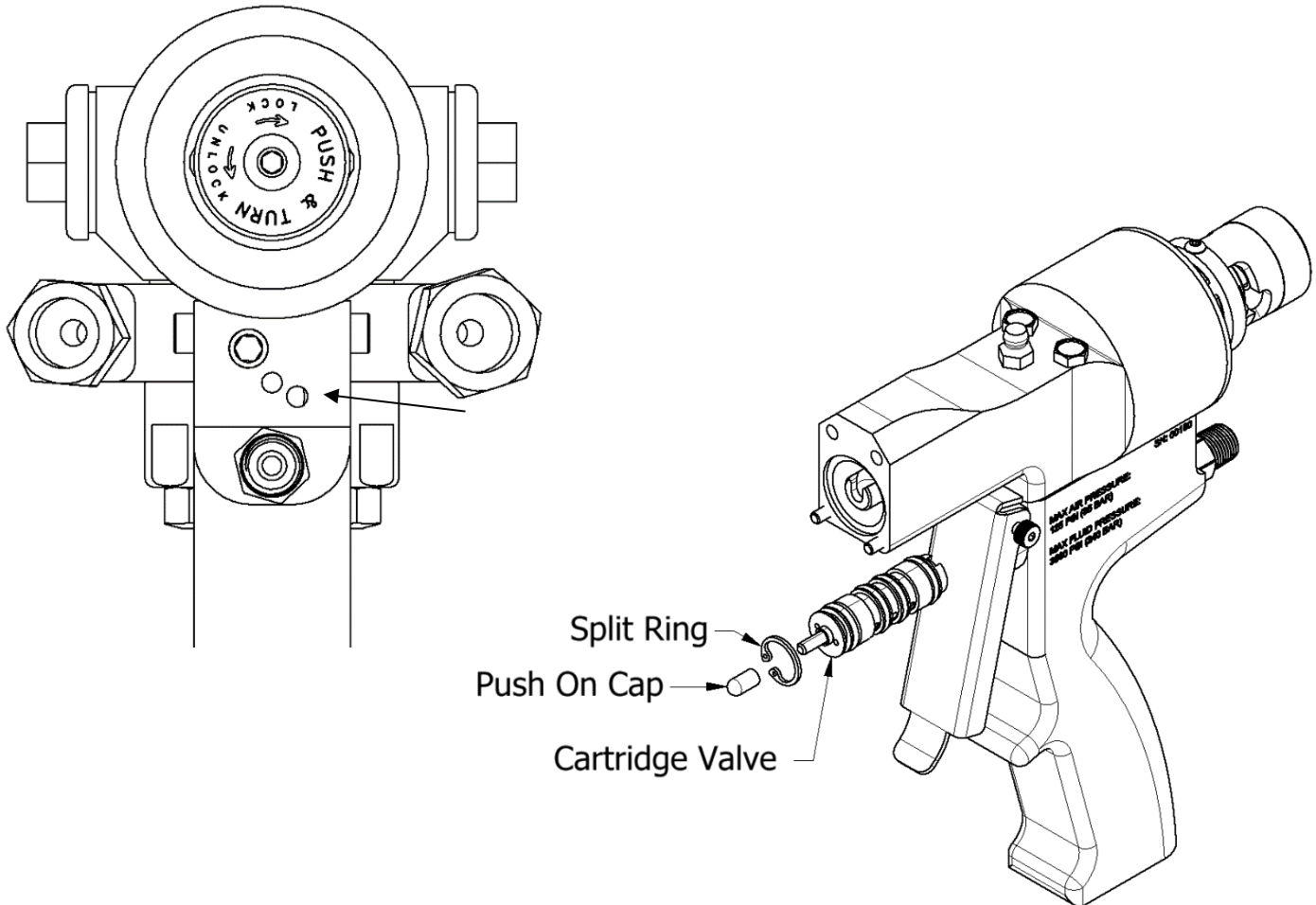
13. Coat the inside of the **Cylinder** and all **O-rings** with PMC grease to facilitate reassembly.

14. Reassemble the **Air Cylinder** in reverse order.

**CAUTION!** Use wooden or plastic tools or a brass brush for cleaning. Do not use metal or abrasive tools that can scratch the contact surfaces.



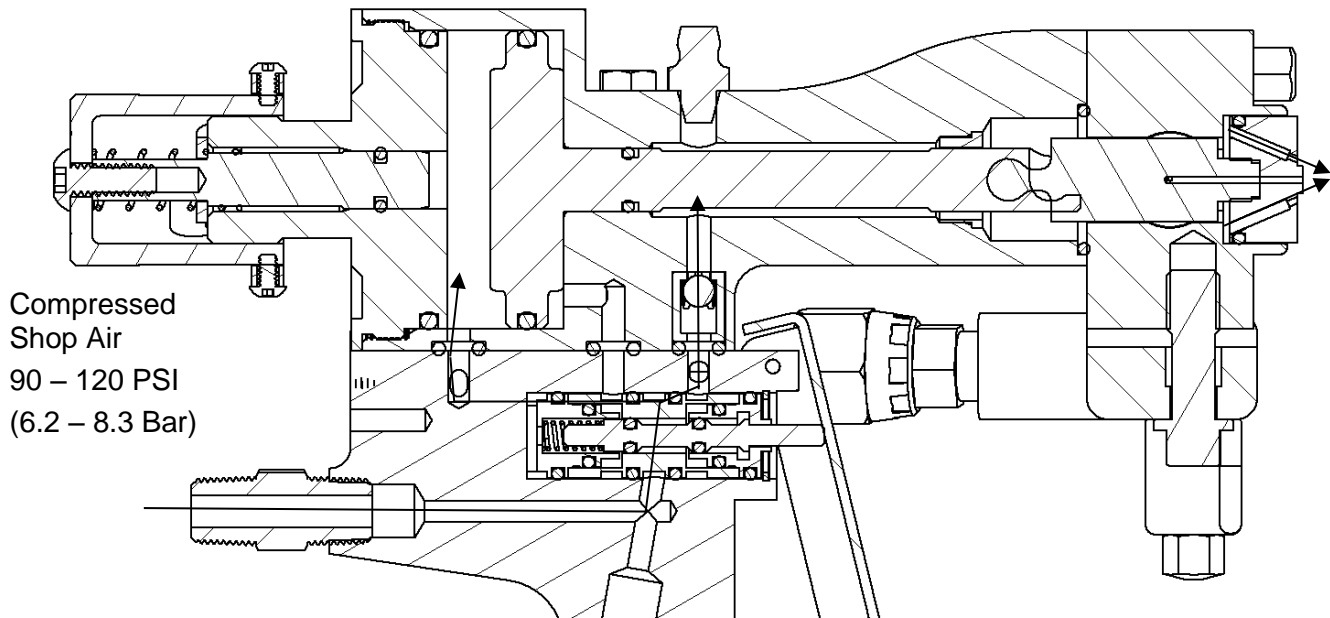
## **Cartridge Valve Removal**



1. Remove the trigger from the handle.
2. Remove Push On Cap.
3. Remove the Split Ring from in front of the Cartridge Valve.
4. Eject the Cartridge Valve by pushing it out through the hole indicated by the arrow above.

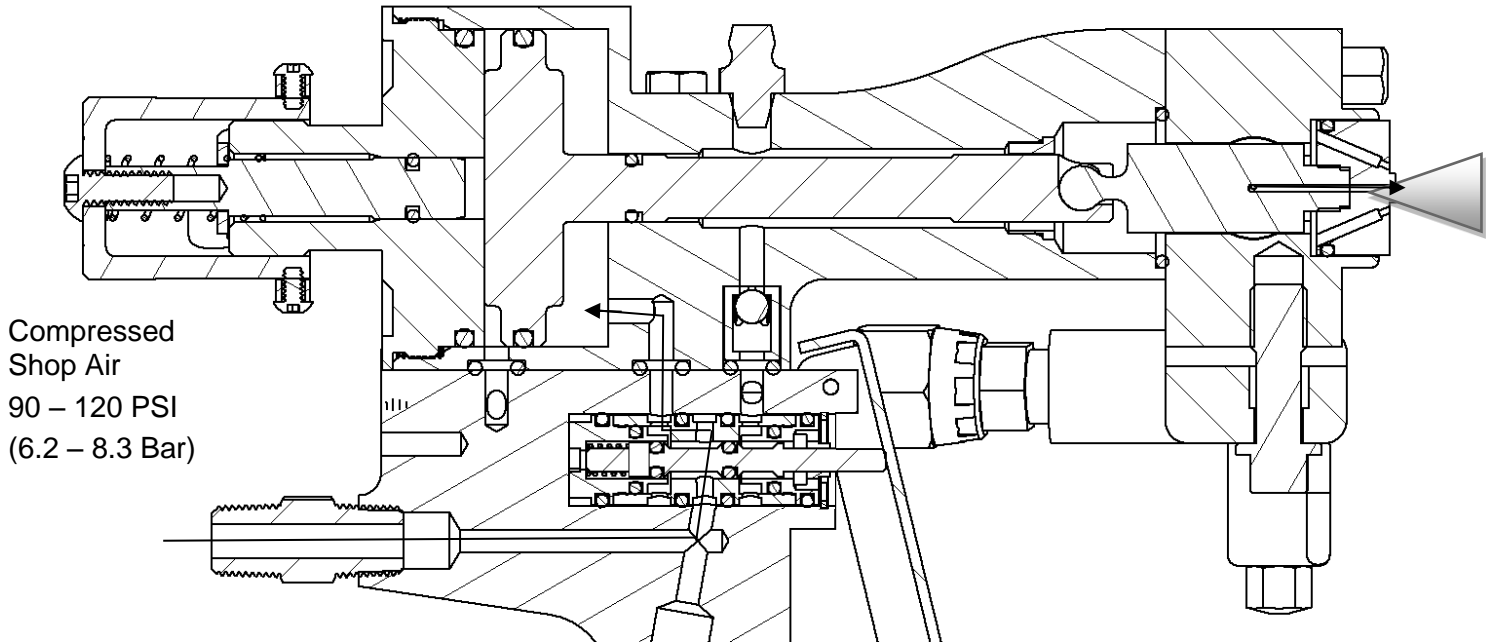
## GUN OPERATION

### Triggered Off



1. Compressed **dry** air enters through the rear or bottom of the Gun Handle.
2. The air is directed through the cartridge valve and into the Rear of the Piston in the Air Cylinder, moving the Piston (and Mixing Chamber) forward to the **CLOSED** position.
3. In the **CLOSED** position, the orifices in the Mixing Chamber are **NOT** aligned with the Side Seal ports. The orifices in the Mixing Chamber are exposed to the air/grease chamber in the Gun Block.
4. Purge air passes through the Spool Valve and the Check Valve, and into the Air Cylinder and Gun Block.
5. Purge air and residual grease enter the Mixing Chamber and pass through the Mixing Chamber and PCT, expelling mixed material out of the chamber area in the process.
6. Purge air is also expelled from the PCT in a circular trajectory to keep the tip clean.

### Triggered On



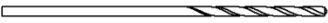
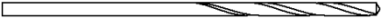
1. Compressed **dry air** is directed through the cartridge valve and into the front, filling the cavity and pushing the Piston and Chamber backwards.
2. The orifices in the Chamber are now aligned with the Side Seals and exposed to high pressure chemical.
3. High pressure chemical enters the chamber from the opposing orifices. The high pressure chemicals mix by impingement, and the mixture then travels down the chamber and out the PCT.






**NOTE!** While the trigger is pulled, the purge air is shutoff during spraying and the PCT will be retracted to the point of being flush with the front surface of the Gun Block.








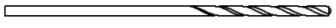


## **TROUBLE SHOOTING GUIDE**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
PCT not flush with Gun Block when Gun is triggered	Insufficient air pressure (minimum 90 psi, 6.2 bar)	Ensure 90 psi (6.2 Bar)
	Failed cartridge valve	Replace, see page 17
	Air Passages plugged	Clean, See page 18-19
Material does not spray when Gun is triggered	Lock is in "Locked" position	Unlock gun
	Air supply is not on	Turn on air supply
	Manual Valve CLOSED	OPEN, see page 7
	Mixing Chamber Inlet Orifices plugged	Clean, see page 11
	Side Seal Orifices plugged	Clean, see page 13
	Check Valve plugged	Replace
Mixing Chamber moves slowly	Failed Cartridge Valve	Replace, see page 32
	Insufficient Gun air pressure (minimum 90 psi, 6.2 Bar)	Ensure 90 psi (6.2 Bar) of air pressure
	Piston Assembly requires service	Rebuild, see page 15
	Air Passages plugged	Clean, see page 18-19
Mixing Chamber moves slowly, then normally	Reacted material around Side Seals	Inspect Side Seals, Mixing Chamber and clean, see pages 11, 13
Pattern deformation	Incorrect chemical temperature	See Proportioner Manual
	Mixing Chamber Nozzle and/or PCT dirty	Inspect and clean
Material spray pressure imbalance	Mixing Chamber Inlet Orifices plugged	Clean
	Side Seal Orifices plugged	Clean, see page 13
	Dirty screens	Replace
	Material temperatures not as recommended by material supplier	Adjust, see Proportioner Operating Manual
Iso and/or Resin in Gun Air Passages	Side Seal damaged	Replace, see page 13
	Mixing Chamber damaged	Replace, see page 11
	Side Seal/ Screen Screw O-rings damaged	Replace, see page 13
Material mist from Mixing Chamber or PCT	Side Seal damaged	Replace, see page 13
	Mixing Chamber damaged	Replace, see page 11
	Side Seal/Screen Screw O-rings damaged	Replace, see page 13
Excessive overspray	Material temperatures and/or spray pressures not as recommended by material supplier	Adjust, see Proportioner Operating Manual
Buildup of material on PCT	Plugged air passages in PCT and Gun Block	Clean, see page 11
Air leakage from Handle	Air Cylinder O-rings damaged	Replace, see page 32
	Cartridge Valve Damaged	Replace, see page 17





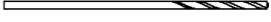









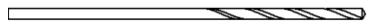
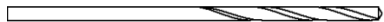


## REFERENCE GUIDE












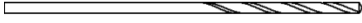








<b>Chamber Kits</b>					
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION (INCH)</b>	<b>FOR USE WITH</b>	<b>ILLUSTRATION</b>
GU-814-000	200476	1	#63 DRILL (.0370)	MIXING NOZZLE	
	GU-03031	1	#70 DRILL (.0280)	MIXING CHAMBER PORT	
	RM-814-000	1	CHAMBER #000	-	-
GU-814-00	200477	1	1.25mm DRILL (.0492)	MIXING NOZZLE	
	GU-03027	1	#69 DRILL (.0292)	MIXING CHAMBER PORT	
	RM-814-00	1	CHAMBER #00	-	-
GU-814-00X	200478	1	1.35mm DRILL (.0531)	MIXING NOZZLE	
	GU-03032	1	#61 DRILL (.0390)	MIXING CHAMBER PORT	
	RM-814-00X	1	CHAMBER #00X	-	-
GU-814-01	200479	1	1.45mm DRILL (.0571)	MIXING NOZZLE	
	GU-03021	1	#59 DRILL (.0410)	MIXING CHAMBER PORT	
	RM-814-01	1	CHAMBER #01	-	-
GU-814-01X	GU-03053	1	#52 DRILL (.0635)	MIXING NOZZLE	
	GU-03052	1	#57 DRILL (.0430)	MIXING CHAMBER PORT	
	RM-814-01X	1	CHAMBER #01X	-	-
GU-814-02	GU-03024	1	#51 DRILL (.0676)	MIXING NOZZLE	
	GU-03023	1	#56 DRILL (.0465)	MIXING CHAMBER PORT	
	RM-814-02	1	CHAMBER #02	-	-
GU-814-02X	200480	1	2mm DRILL (.0787)	MIXING NOZZLE	
	GU-03050	1	#55 DRILL (.0520)	MIXING CHAMBER PORT	
	RM-814-02X	1	CHAMBER #02X	-	-

<b>Chamber Kits (Continued)</b>					
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION (INCH)</b>	<b>FOR USE WITH</b>	<b>ILLUSTRATION</b>
GU-814-03	GU-03028	1	#44 DRILL (.0860)	MIXING NOZZLE	
	GU-03035	1	#54 DRILL (.055)	MIXING CHAMBER PORT	
	RM-814-03	1	CHAMBER #03	-	-
GU-814-04	200481	1	2.4mm DRILL (.0945)	MIXING NOZZLE	
	GU-03054	1	#50 DRILL (.0700)	MIXING CHAMBER PORT	
	RM-814-04	1	CHAMBER #04	-	-
200920	GU-03028	1	#44 Drill (.0860)	MIXING NOZZLE	
	201120	1	#33 DRILL (0.1130)	MIXING CHAMBER PORT	
	RM-814-05	1	CHAMBER #05	-	-

<b>PCT Kits</b>					
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>	<b>FOR USE WITH</b>	<b>ILLUSTRATION</b>
GU-815-000	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	2000476	1	#63 DRILL (.0370)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-000	1	PATTERN CONTROL TIP 000	-	
GU-815-00	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	200477	1	1.25mm DRILL (.0492)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-00	1	PATTERN CONTROL TIP 00	-	

### PCT Kits (Continued)

KIT NUMBER	PART NUMBER	QTY	DESCRIPTION	FOR USE WITH	ILLUSTRATION
GU-815-00X	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	200478	1	1.35mm DRILL (.0531)	PCT PURGE AND NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-00X	1	PATTERN CONTROL TIP 00.X	-	
GU-815-01	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	200479	1	1.45mm DRILL (.0571)	PCT PURGE & NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-01	1	PATTERN CONTROL TIP 01	-	
GU-815-01X	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	GU-03053	1	#52 DRILL (.0635)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-01X	1	PATTERN CONTROL TIP 01X	-	
GU-815-02	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	GU-03024	1	#51 DRILL (.0676)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-02	1	PATTERN CONTROL TIP 02	-	

<b>PCT Kits (Continued)</b>					
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>	<b>FOR USE WITH</b>	<b>ILLUSTRATION</b>
GU-815-02X	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	200480	1	2mm DRILL (.0787)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-02X	1	PATTERN CONTROL TIP 02X	-	
GU-815-03	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	GU-03028	1	#44 DRILL (.0860)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-03	1	PATTERN CONTROL TIP 03	-	
GU-815-04	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	200481	1	2.4mm DRILL (.0945)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	RM-815-04	1	PATTERN CONTROL TIP 04	-	
200919	GU-03033	1	#65 DRILL (.0350)	PCT PURGE PORT	
	GU-03035	1	#54 DRILL (.055)	PCT PURGE PORT	
	201093	1	2.9mm DRILL (.114)	PCT NOZZLE PORT	
	OR-00042A	2	PCT FLAT TIP O-RING .016	-	
	200918	1	PATTERN CONTROL TIP 05	-	

<b>Chamber/PCT Kits</b>			
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
KT-814-000	GU-814-000	1	CHAMBER 000 W/ DRILLS
	GU-815-000	1	PCT 000 RND W/ DRILLS
KT-814-00	GU-814-00	1	CHAMBER 00 W/ DRILLS
	GU-815-00	1	PCT 00 RND W/ DRILLS
KT-814-00X	GU-814-00X	1	CHAMBER 00X W/ DRILLS
	GU-815-00X	1	PCT 00X W/ DRILLS
KT-814-01	GU-814-01	1	CHAMBER 01 W/ DRILLS
	GU-815-01	1	PCT 01 RND W/ DRILLS
KT-814-01X	GU-814-01X	1	CHAMBER 01X W/ DRILLS
	GU-815-01X	1	PCT 01X RND W/ DRILLS
KT-814-02	GU-814-02	1	CHAMBER 02 W/ DRILLS
	GU-815-02	1	PCT 02 RND W/ DRILLS
KT-814-02X	GU-814-02X	1	CHAMBER 02X W/ DRILLS
	GU-815-02X	1	PCT 02X RND W/ DRILLS
KT-814-03	GU-814-03	1	CHAMBER 03 W/ DRILLS
	GU-815-03	1	PCT 03 RND W/ DRILLS
KT-814-04	GU-814-04	1	CHAMBER 04 W/ DRILLS
	GU-815-04	1	PCT 04 RND W/ DRILLS
201119	200920	1	CHAMBER 05 W/ DRILLS
	200918	1	PCT 05 RND W/ DRILLS

<b>Soft Chamber Kits</b>		
<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
GU-814-S00	1	Chamber Soft 00
GU-814-S000	1	Chamber Soft 000
GU-814-S0000	1	Chamber Soft 0000
GU-814-S01	1	Chamber Soft 01
GU-814-S02	1	Chamber Soft 02
GU-814-S03	1	Chamber Soft 03
GU-814-S04	1	Chamber Soft 04

**\*FOR USE WITH PLASTIC SIDE SEALS (GU-817-90D)  
NOT COMPATIBLE WITH STANDARD SIDE SEALS**

### Air Cylinder Rebuild Kit (KT-801)

PART NUMBER	QTY	DESCRIPTION
OR-00026A	2	O-RING #129 VITON
OR-00043B	2	O-RING #010 80D AFLAS
OR-804	1	O-RING 2mmx4mm BUNA
OR-00037B	2	QUAD RING #011 VITON
OR-00042A	1	#016 O-RING
GU-829	1	A/P CHECK VALVE
GU-830	1	AIR CYLINDER BUSHING
200459	1	#018 O-RING

### AP-3 O-Ring Kit (201118)

PART NUMBER	QTY	DESCRIPTION
OR-800	2	#013 BACK UP RING
OR-801A	2	O-RING #013 80D AFLAS
OR-804	3	O-RING 2MMX4MM BUNA
OR-00026A	2	O-RING #129 VITON
OR-00037B	2	QUAD RING #011 VITON
OR-00042A	1	#016 O-RING
OR-00043B	4	O-RING #010 80D AFLAS
200459	1	#018 O-RING

### PMC Recommended O-Ring Grease

PART NUMBER	QTY	DESCRIPTION
GP-LUBEGREASE	1	LUBRIPLATE GREASE
TL-04003	1	GREASE TUBE FOR USE W/ GREASE GUN

### Screen Sizes

PART NUMBER	QTY	DESCRIPTION
GU-818-80	1	FILTER SCREEN, 80 MESH (STANDARD)
GU-818-60	1	FILTER SCREEN, 60 MESH
GU-818-40	1	FILTER SCREEN, 40 MESH
KT-818-80	1	FILTER SCREEN, 80 MESH (PKG 10)
KT-818-60	1	FILTER SCREEN, 60 MESH (PKG 10)
KT-818-40	1	FILTER SCREEN, 40 MESH (PKG 10)

<b>A &amp; R Screen Screw Assembly Kits</b>			
<b>KIT NUMBER</b>	<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
KT-819-R	GU-819-R	1	R SCREEN SCREW
	GU-04007	1	SCREEN SCREW SEAL
	OR-800	1	#013 BACK UP RING
	OR-801A	1	O-RING #013 80D AFLAS
KT-819-A	GU-819-A	1	A SCREEN SCREW
	GU-04007	1	SCREEN SCREW SEAL
	OR-800	1	#013 BACK UP RING
	OR-801A	1	O-RING #013 80D AFLAS

<b>Recommended Spare Parts</b>			
<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
KT-801	1	AIR CYLINDER REBUILD KIT	26
KT-817-90	1	SIDE SEAL KIT	-
GU-818-40	4	FILTER SCREEN 40 MESH	26
GU-818-60	4	FILTER SCREEN 60 MESH	26
GU-818-80	4	FILTER SCREEN 80 MESH (STANDARD)	26
GU-04007	2	SCREEN SCREW SEAL	13
OR-00043B	8	O-RING #010 80D AFLAS	13
OR-801A	8	O-RING #013 80D AFLAS	13
SP-04005	2	SPRING; SIDE SEAL	13
GU-020	1	MANUAL VALVE ASSEMBLY	30
KT-850	2	CHECK VALVE ASSEMBLY	28
OR-00042A	2	#016 O-RING	26
GU-829	1	A/P CHECK VALVE	28
TL-04003	1	GREASE TUBE	37
OR-800	8	#013 BACK UP RING	13
201118	1	AP-3 O-RING KIT	26

<b>Optional Parts</b>		
<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
<b>GU-815-50-509</b>	1	BLASTER TIP .059
<b>GU-815-50</b>	1	BLASTER TIP 3.5
<b>GU-815-51</b>	1	POUR TIP
<b>GU-815-53</b>	1	POUR NOZZLE
<b>GU-815-52</b>	1	PCT FLAT TIP RETAINER ASSEMBLY
<b>* GU-815-52-1</b>	1	PCT FLAT TIP BODY
<b>* GU-815-52-2</b>	1	PCT FLAT TIP GASKET
<b>* GU-815-52-3</b>	1	PCT FLAT TIP RETAINER
<b>* OR-00042A</b>	1	#016 O-RING
<b>GU-817-90D</b>	1	SIDE SEAL; DELRIN

\*DENOTES PARTS IN THE GU-815-52

NOTE: SPRAY TIP NOT INCLUDED WITH PART NUMBER GU-815-52

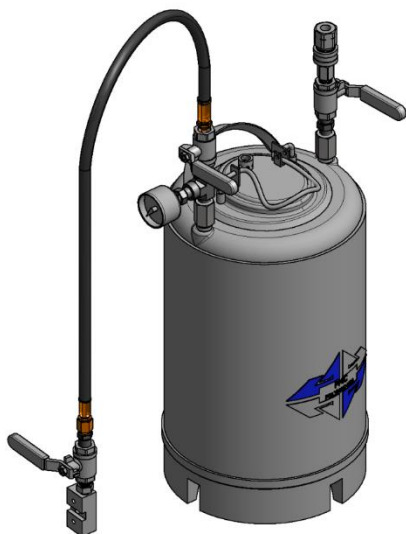
<b>Check Valve Assembly (KT-850)</b>		
<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
GU-851	4	CHECK VALVE SEAT
GU-852	2	CHECK VALVE SPRING
GU-853	2	1/4" CHECK VALVE BALL

<b>Manual Valve Software Kit (KT-020)</b>		
<b>PART NUMBER</b>	<b>QTY</b>	<b>DESCRIPTION</b>
GU-LOCTITE	1	LOCTITE #242
GU-015	4	O-RING #007 AFLAS
GU-016	4	#007 VITON CURVED BACKUP RING

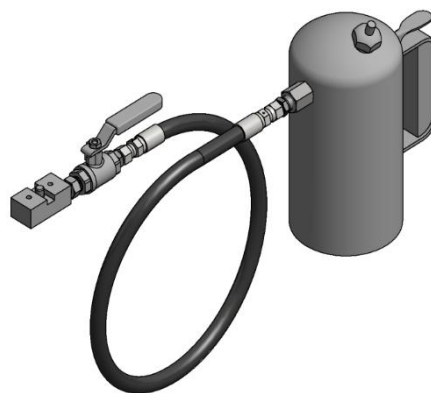
<b>1/4" Unheated Stainless Steel Hose Assy.</b>	
<b>PART NUMBER</b>	<b>DESCRIPTION</b>
MA-41	HOSE PACKAGE KIT, UNHEATED
MA-41A	REPLACEMENT HOSE, "A" SIDE
MA-41R	REPLACEMENT HOSE, "R" SIDE

## **Flush Tanks**

Optional 2.5 Gallon Flush Tank (200426, 200427) and 1QT Mini Flush Tank (200216, 200217) shown.



**2.5 Gallon Flush Tank**



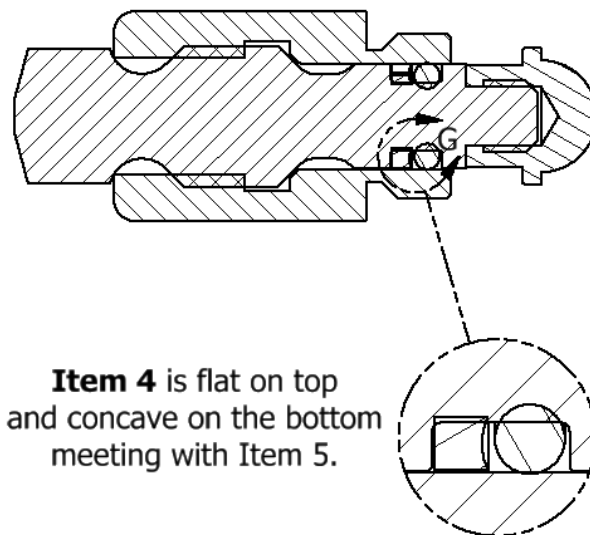
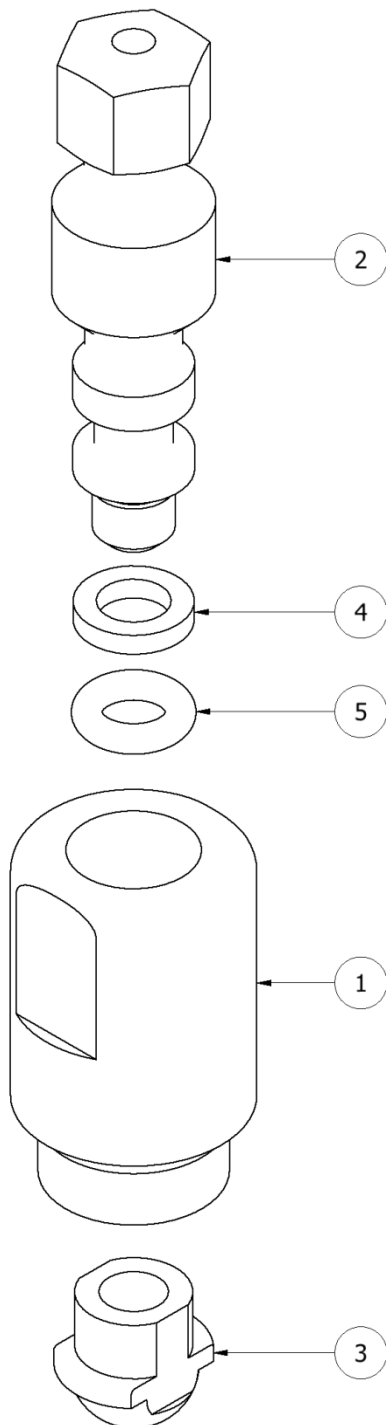
**1 QT Mini Flush Tank**

<b>FLUSH TANKS</b>	
<b>2.5 Gallon Flush Tank</b>	<b>1 QT Mini Flush Tank</b>
200426 – Solvent Flush Kit, AP	200216 – Solvent Flush Kit, AP
200427 – Solvent Flush Kit, F-AP	200217 – Solvent Flush Kit, F-AP

## PARTS IDENTIFICATION

### Manual Valve Assembly

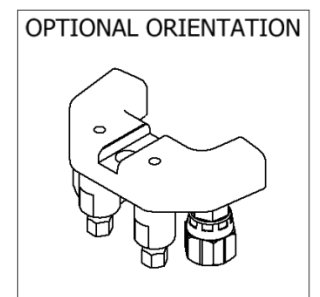
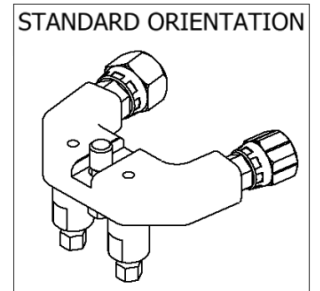
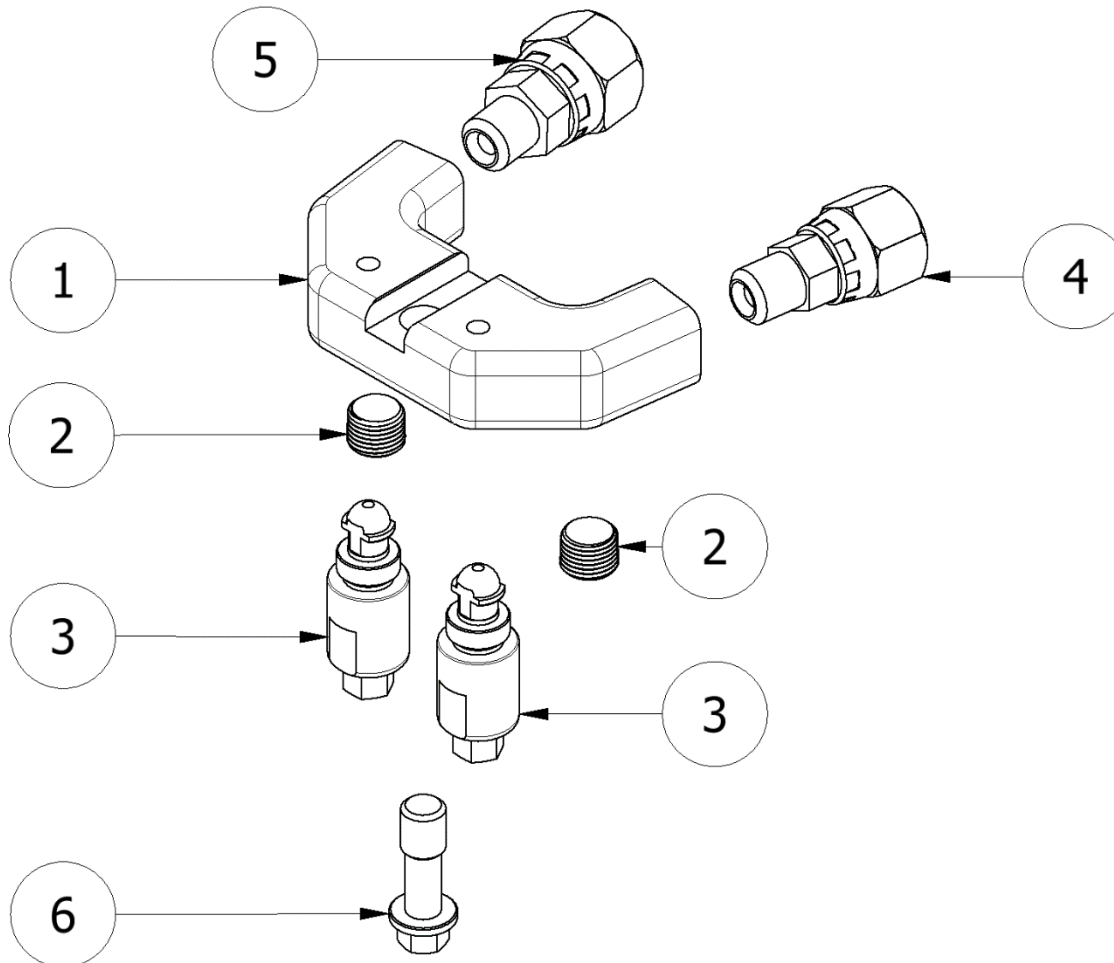
(GU-020)



NOTE: The orientation of the back-up ring is important. The concave face must point towards the O-Ring.

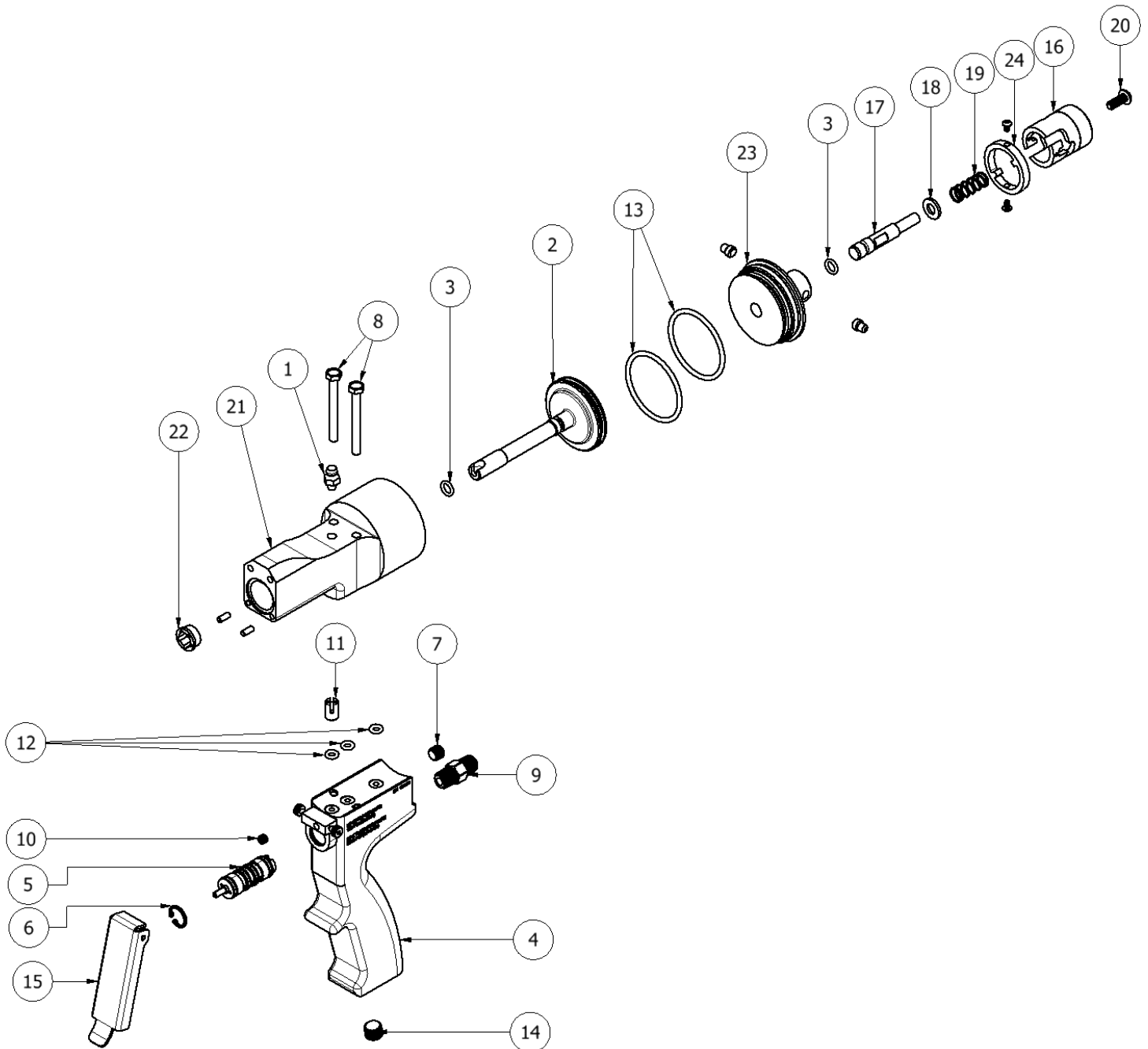
MANUAL VALVE ASSEMBLY (GU-020)			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-022	MANUAL VALVE HOUSING
2	1	GU-021	MANUAL VALVE STEM
3	1	GU-023	MANUAL VALVE SEAT
4	1	OR-016	007 VITON CURVED BACKUP RING
5	1	OR-015	#007 AFLAS O-RING

## **Coupling Block Assembly** **(GU-04001)**



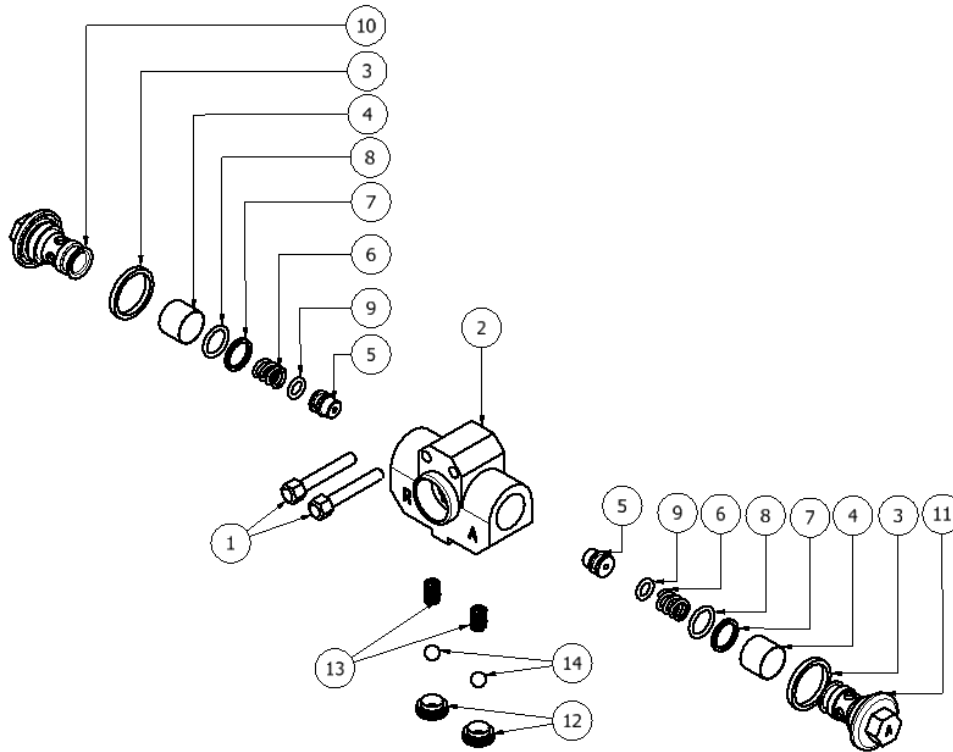
<b>COUPLING BLOCK ASSEMBLY (GU-04001)</b>			
<b>ITEM</b>	<b>QTY</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
1	1	GU-04001-01	COUPLING BLOCK BODY
2	2	TN-04192	1/8 NPT PIPE PLUG
3	2	GU-020	MANUAL VALVE ASSY
4	1	RA-00005A	1/8 NPT X #5 JIC SWIVEL
5	1	RA-00006A	1/8 NPT X #6 JIC SWIVEL
6	1	TN-04193	COUPLING BLOCK MOUNTING SCREW

## **Gun Assembly** **(200631)**



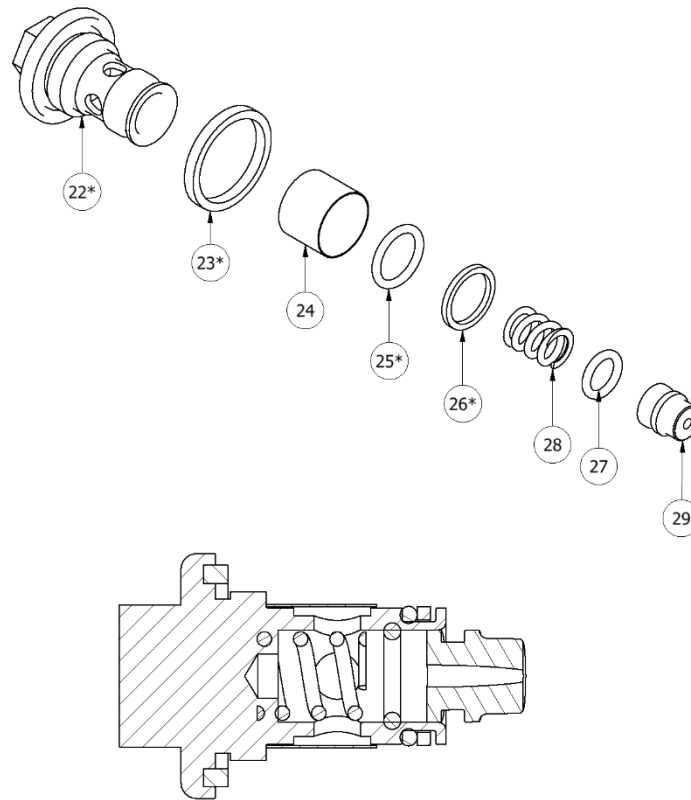
<b>GUN ASSEMBLY</b>			
<b>ITEM</b>	<b>QTY</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>1</b>	1	TN-04186	GREASE FITTING
<b>2</b>	1	200638	PISTON, AP-3
<b>3</b>	2	OR-00043B	O-RING #010 80D AFLAS
<b>4</b>	1	200637	HANDLE, AP-3
<b>5</b>	1	200634	VALVE, CARTRIDGE, 4-WAY
<b>6</b>	1	201111	RETAINING RING, INT, 1/2 ID
<b>7</b>	1	200507	PIPE PLUG, 1/16, NPT , STEEL
<b>8</b>	2	201109	10-24 X 1-3/4 HEX MACH SCREW, STEEL, ZINC
<b>9</b>	1	HI-05079	NIPPLE, 1/8 NPT
<b>10</b>	1	TN-04187	SHCS 10-32 x 3/16 PORT PLUG
<b>11</b>	1	GU-829	A/P CHECK VALVE
<b>12</b>	3	OR-804	O-RING; 2MMX4MM BUNA
<b>13</b>	2	OR-00026A	O-RING #129 VITON
<b>14</b>	1	TN-04192	1/8 NPT PIPE PLUG
<b>15</b>	1	200464	TRIGGER
<b>16</b>	1	200641	STOP HOUSING, AP-3
<b>17</b>	1	200642	STOP, AP-3
<b>18</b>	1	201113	WASHER, FLAT, .256 ID, .5 OD, .05 T, AL
<b>19</b>	1	201114	SPRING, .36 OD, .296 ID, .875 FL
<b>20</b>	1	201115	10-24 X 1/2 BHCS, SS
<b>21</b>	1	201092	AP-3 CYLINDER ASSEMBLY
<b>22</b>	1	GU-830	AIR CYLINDER BUSHING
<b>23</b>	1	201112	AP-3 END CAP ASSEMBLY
<b>24</b>	1	201117	RING, STOP RETAINING

## **Gun Block Assembly**



<b>GUN BLOCK COMPONENTS</b>			
<b>ITEM</b>	<b>QTY</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
1	2	201108	SCREW, HEX CAP, 10-32 CUSTOM
2	1	200635	ALUMINUM GUN BLOCK, AP-3
		200636	STEEL GUN BLOCK, AP-3
3	2	GU-04007	SCREEN SCREW SEAL
4	2	GU-818-80	FILTER SCREEN, 80 MESH
5	2	GU-817-90	SIDE SEAL
6	2	SP-04005	SPRING; SIDE SEAL
7	2	OR-800	#013 BACK UP RING
8	2	OR-801A	O-RING #013 80D AFLAS
9	2	OR-00043B	O-RING #010 80D AFLAS
10	1	GU-819-R	R-SCREEN SCREW
11	1	GU-819-A	A-SCREEN SCREW
12	2	GU-851	CHECK VALVE SEAT, AP-2/3
13	2	GU-852	CHECK VALVE SPRING, AP-2/3
14	2	GU-853	1/4" CHECK VALVE BALL, AP-2/3

## Screen Screw Assembly

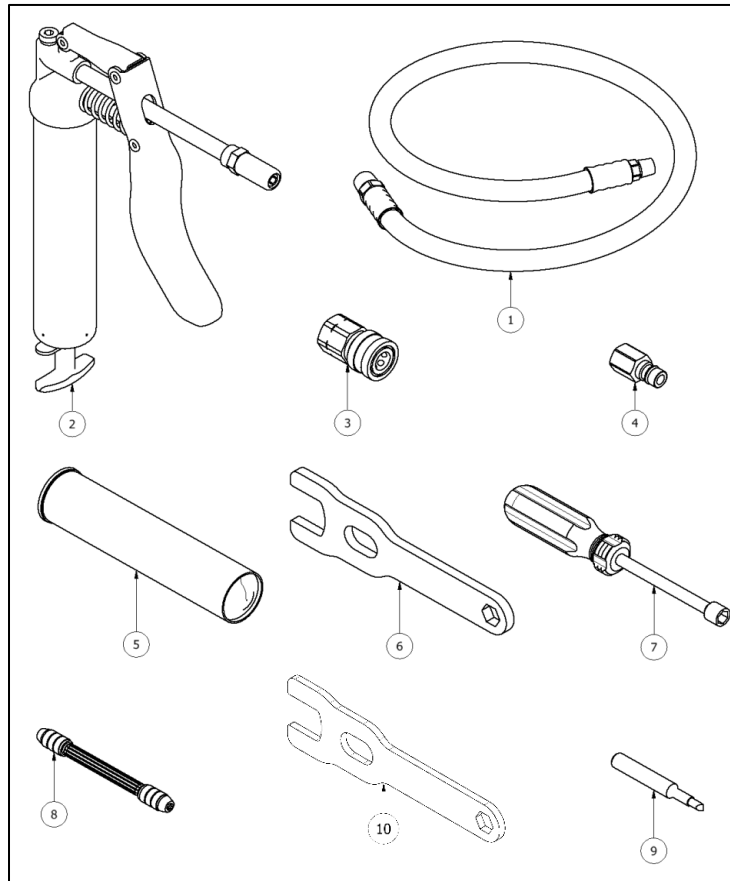


SCREEN SCREW COMPONENTS			
ITEM	QTY	PART NUMBER	DESCRIPTION
22	1	GU-819-R *	"R" SCREEN SCREW
	1	GU-819-A *	"A" SCREEN SCREW
23	1	GU-04007 *	SCREEN SCREW SEAL
24	1	GU-818-40	FILTER SCREEN; 40 MESH
	1	GU-818-60	FILTER SCREEN; 60 MESH
	1	GU-818-80	FILTER SCREEN 80 MESH <b>(STANDARD)</b>
25	1	OR-801A *	O-RING #013 80D AFLAS
26	1	OR-800 *	#013 BACK UP RING
27	1	OR-00043B	O-RING #010 80D AFLAS
28	1	SP-04005	SPRING; SIDE SEAL
29**	1	GU-817-90	SIDE SEAL
	1	GU-817-180	SIDE SEAL (FOR CHAMBERS 03,04,05)

\*Included in KT-819-R and KT-819-A (Pg. 27)

\*\*Available in plastic (GU-817-90D) for soft chambers

## List of Tools

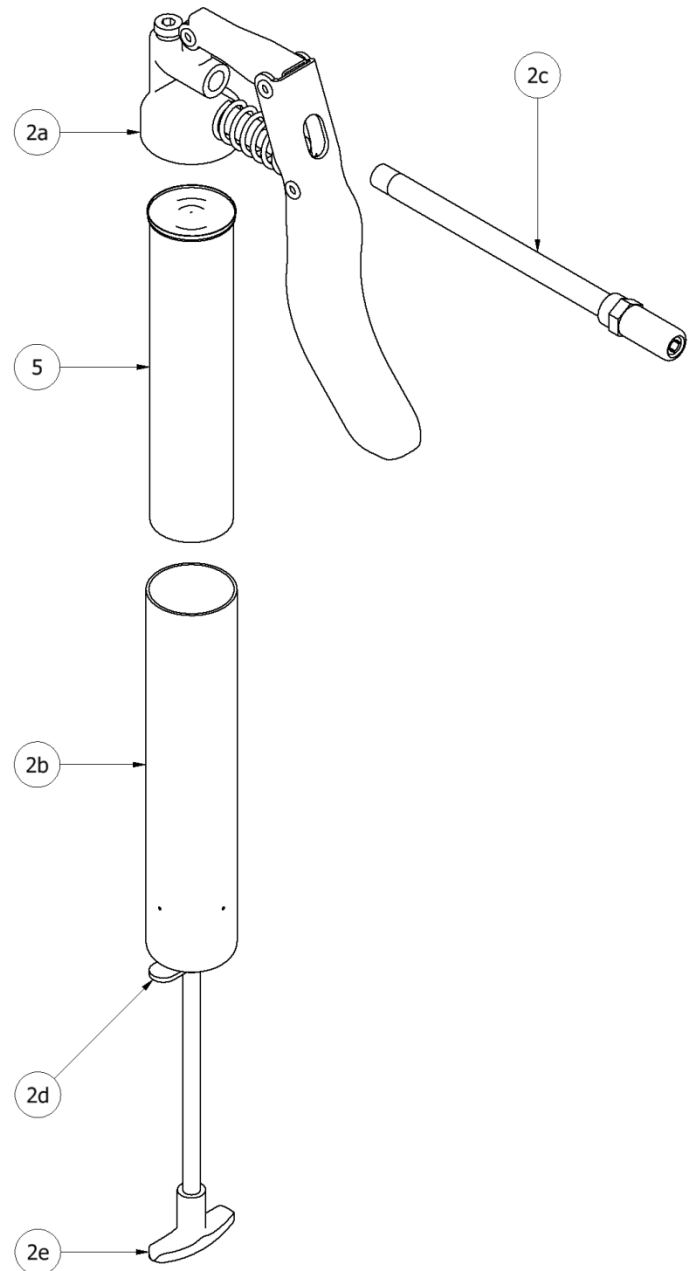


LIST OF TOOLS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-04019	AIR HOSE
2	1	TL-00002	GREASE GUN
3	1	GU-04021	QUICK DISCONNECT; FEMALE
4	1	GU-04022	QUICK DISCONNECT; MALE
5	1	TL-04003	GREASE TUBE
6	1	TL-09	OPEN END WRENCH
7	1	TL-04001	5/16 SPINTITE; NUT DRIVER
8	1	GP-00101	DOUBLE ENDED PIN VISE
9	1	TL-10	CHECK VALVE REMOVAL TOOL
10	1	201128	OPEN END WRENCH, 11/16

## **APPENDIX**

### **Grease Gun Assembly**

1. Screw the rod (2c) into the top of the grease gun (2a) so that the final assembly represents the assembled grease gun (2, Pg. 35).
2. Unscrew the top of the grease gun (2a) from the bottom of the grease gun (2b).
3. Pull the handle (2e) on the bottom of the grease gun (2b) so that it resembles the picture.
4. Remove the tape and cap from the grease tube (5) and insert the uncapped end of the grease tube (5) into the bottom of the grease gun (2b).
5. Remove the foil from the grease tube (5).
6. Screw the top of the grease gun (2a) back on to the bottom of the grease gun (2b).
7. Push down on the latch (2d) to release the plunger and push plunger completely back in.



<b>Mixing Chamber Flow Rates</b>				
<b>Chamber</b>	<b>Lbs/Min @ 1000 PSI</b>	<b>KG/Min @ 69 Bar</b>	<b>Lbs/Min @ 2000 PSI</b>	<b>KG/Min @ 138 Bar</b>
GU-814-000	4	2	6	3
GU-814-00	7	3	11	5
GU-814-00X	8	3.5	13.5	6
GU-814-01	9	4	16	7
GU-814-01X	10.5	4.5	19	8.5
GU-814-02	12	5	22	10
GU-814-02X	15	7.5	27	12
GU-814-03	18	8	32	14
GU-814-04	25	11	47	21
200920	28	20	50	23

\*Flow rates will vary depending on viscosity, hose length and machine efficiency.

<b>Chamber/Orifice Comparison Chart</b>			
<b>Competitive Air Purge</b>		<b>PMC Air Purge</b>	
<b>Chamber Number</b>	<b>Orifice Size</b>	<b>Chamber Number</b>	<b>Orifice Size</b>
000 (AR2020)	0.0200	000	0.0280
00 (AR2929)	0.0290	00	0.0350
NOT AVAILABLE		00X	0.0380
01 (AR4242)	0.0420	01	0.0410
NOT AVAILABLE		01X	0.0440
02 (AR5252)	0.0520	02	0.0520
NOT AVAILABLE		02X	0.0550
03 (AR6060)	0.0600	03	0.0610
04 (AR7070)	0.0700	04	0.0690
05 (AR8686)	0.0860	05	0.0860