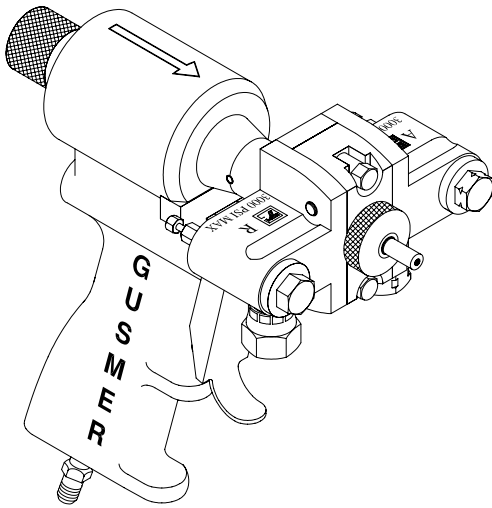


# **GUSMER**®



## ***GAP Pro Spray Gun***

### ***Operating Manual 36943-1***

***March 10, 2004***

***Issue 1***

**GUSMER CORPORATION**®

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<http://www.gusmer.com>



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***NOTICE:*** This manual contains important information for your GUSMER equipment. Read and retain for future reference.

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***NOTICE:** The equipment described in this technical manual must only be operated or serviced by properly trained individuals, thoroughly familiar with the operating instructions and limitations of the equipment. For technical service, call your local distributor. Call: 1-800-FOR-GSMR (1-800-367-4767) for the name and telephone number of your local distributor.*

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***NOTICE:** All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty or responsibility of any kind expressed or implied. Statements or suggestions concerning possible use of GUSMER equipment are made without representation or warranty that any such use is free of patent infringement, and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required for a particular circumstance or application.*

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## WARRANTY

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Gusmer Corporation (Gusmer) provides a limited warranty to the original purchaser (Customer) of Gusmer manufactured parts and equipment (Product) against any defects in material or workmanship for a period of one year from the date of shipment from Gusmer facilities.

In the event Product is suspected to be defective in material or workmanship, it must be returned to Gusmer, freight prepaid. If Product is found to be defective in material or workmanship, as determined solely by Gusmer, Gusmer will issue full credit to Customer for the freight charges incurred in returning the defective Product, and either credit will be issued for the replacement cost of the Product or a replacement part will be forwarded no-charge, freight prepaid to Customer.

This warranty shall not apply to Product Gusmer finds to be defective resulting from: installation, use, maintenance, or procedures not accomplished in accordance with our instructions; normal wear; accident; negligence; alterations not authorized in writing by Gusmer; use of “look alike” parts not manufactured or supplied by Gusmer; or Product used in conjunction with any other manufacturer's pumping or proportioning equipment. For such Product, a written estimate will be submitted to the Customer at a nominal service charge, itemizing the cost for repair. Disposition of Product will be done in accordance with the terms stated on the written estimate.

The warranty provisions applied to product that are not manufactured by Gusmer will be solely in accordance with the warranty provided by the original manufacturer of the product.

GUSMER MAKES NO WARRANTY WHATSOEVER AS TO THE MERCHANTABILITY OF, OR SUITABILITY FOR, ITS PRODUCT TO PERFORM ANY PARTICULAR PURPOSE. CREDIT FOR, OR REPLACEMENT OF, PRODUCT DEFECTIVE IN MATERIAL OR WORKMANSHIP SHALL CONSTITUTE COMPLETE FULFILLMENT OF GUSMER OBLIGATIONS TO CUSTOMER. NO OTHER WARRANTY, EXPRESS OR IMPLIED ON ANY PRODUCT IT MANUFACTURES AND/OR SELLS, WILL BE RECOGNIZED BY GUSMER UNLESS SAID WARRANTY IS IN WRITING AND APPROVED BY AN OFFICER OF GUSMER.

Under no circumstances shall Gusmer be liable for loss of prospective or speculative profits, or special indirect, incidental or consequential damages. Further, Gusmer shall have no liability for any expenses including, but not limited to personal injury or property damage resulting from failure of performance of the product, use of the product, or application of the material dispensed through the product. Any information provided by Gusmer that is based on data received from a third source, or that pertains to product not manufactured by Gusmer, while believed to be accurate and reliable, is presented without guarantee, warranty, or responsibility of any kind, express or implied.

Gusmer through the sale, lease, or rental of Product in no way expresses or implies a license for the use of, nor encourages the infringement of any patents or licenses.

To ensure proper validation of your warranty, please complete the warranty card and return it to Gusmer within two weeks of receipt of equipment.

Revised 09/02

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## **GENERAL SAFETY INFORMATION**

It is necessary to understand and follow the instructions in this manual to ensure proper and safe operation of the equipment.

As with most mechanical equipment, certain safety precautions must be taken when the equipment discussed in this manual is operated or serviced. Severe bodily injury or damage to equipment and property may result if the instructions and precautions listed throughout this manual are not followed.

Needless to say, sufficient guidelines cannot be developed to eliminate the need for good common sense in the use and servicing of this equipment, and in the use and application of the products, this equipment has been designed to process. Users of this equipment must therefore, make their own determination as to the suitability of the information contained in this manual to their specific operation and requirements. There should be no assumption made that the safety measures and instructions contained herein are all-inclusive, and that other safety measures may not be required for specific use or application.

The following safety guidelines are generally applicable to the safe and efficient use of the equipment.

### ***Acceptable Equipment Uses***

The equipment is designed for the dispensing of polyurethane foams, two-component coating systems such as polyureas, and some two-component epoxy systems. Under no circumstances should any acid or corrosive chemicals be used in the unit. Consult GUSMER if there is any doubt about the compatibility of the chemical system to be used in this equipment.

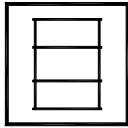
Any use of this equipment other than as indicated above constitutes misuse unless express written approval is obtained from GUSMER.

Your Gusmer equipment incorporates design parameters, features, and functionality developed in over 40 years of plural component equipment design and manufacture. It is manufactured under the stringent standards of ISO 9001, and is backed by the Gusmer Warranty included herein.

The use of genuine Gusmer replacement parts is recommended for your equipment. Substitution of parts not designed, manufactured, or recommended by Gusmer may result in reduced performance of, and/or damage to, your Gusmer equipment. Any alterations to, or substitutions for, genuine Gusmer parts shall void the provisions of the Gusmer Warranty.

## Operational Safety Procedures

This safety information will not be repeated in the text of this manual. The symbols pertaining to this information will appear where appropriate to alert the operator to potential hazards.



**Solvents and Chemicals**

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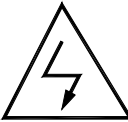
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**WARNING:** THE SOLVENTS AND CHEMICALS USED WITH THIS EQUIPMENT EXPOSE THE OPERATOR TO CERTAIN HAZARDS. ADEQUATE PERSONAL PROTECTIVE MEASURES MUST BE TAKEN SO AS TO AVOID EXCEEDING THE THRESHOLD LIMIT VALUE (TLV) OF THE PRODUCTS BEING USED, AS ESTABLISHED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) OR OTHER QUALIFIED AGENCY. OBTAIN INFORMATION CONCERNING PERSONAL PROTECTION AND PROPER HANDLING FROM THE SUPPLIER OF SUCH SOLVENTS AND CHEMICALS.

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**High Voltage**

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**WARNING:** TO PREVENT SERIOUS BODILY INJURY FROM ELECTRICAL SHOCK, NEVER OPEN THE ELECTRIC CONSOLES OR OTHERWISE SERVICE THIS EQUIPMENT AND/OR EQUIPMENT USED WITH IT BEFORE SWITCHING OFF THE MAIN POWER DISCONNECT AND SHUTTING OFF AND LOCKING OUT SUPPLY VOLTAGE AT THE SOURCE. THE ELECTRICAL SERVICE MUST BE INSTALLED AND MAINTAINED BY A QUALIFIED ELECTRICIAN.

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**High Pressure**

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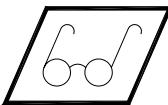
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**WARNING:** THIS EQUIPMENT HAS, OR IS USED WITH EQUIPMENT THAT HAS, HYDRAULIC AND CHEMICAL COMPONENTS CAPABLE OF PRODUCING UP TO 3500 PSI. TO AVOID SERIOUS BODILY INJURY FROM EJECTION OF FLUID, NEVER OPEN OR SERVICE ANY CONNECTIONS OR COMPONENTS WITHOUT BLEEDING ALL PRESSURES TO ZERO.

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**Personal Protective Equipment**

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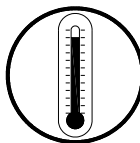
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**WARNING:** TO AVOID SERIOUS BODILY INJURY, PROPER PROTECTIVE GEAR, APPROPRIATE FOR THE TASK BEING ACCOMPLISHED, MUST BE WORN WHEN OPERATING, SERVICING, OR BEING PRESENT IN THE OPERATIONAL ZONE OF THIS EQUIPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO, EYE AND FACE PROTECTION, GLOVES, SAFETY SHOES, AND RESPIRATORY EQUIPMENT AS REQUIRED TO PROVIDE PERSONAL PROTECTION FROM SOLVENTS AND CHEMICALS; HIGH PRESSURE RELEASES; HIGH TEMPERATURES; ELECTRIC SHOCK; AND OTHER HAZARDS ASSOCIATED WITH HYDRAULIC/ELECTRO-MECHANICAL EQUIPMENT. REFER TO THE APPROPRIATE WARNINGS ON THIS PAGE FOR FURTHER INFORMATION.

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**High Temperature**

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**WARNING:** THIS EQUIPMENT HAS, OR IS USED WITH EQUIPMENT THAT HAS, HIGH TEMPERATURE COMPONENTS SUCH AS PRIMARY HEATERS AND HEATED HOSES. TO PREVENT SERIOUS BODILY INJURY FROM HOT FLUID OR HOT METAL, NEVER ATTEMPT TO SERVICE THE EQUIPMENT BEFORE ALLOWING IT TO COOL.

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**Warning**

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**WARNING:** FAILURE TO READ AND FOLLOW THE INFORMATION ASSOCIATED WITH THIS SYMBOL MAY RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THE EQUIPMENT.

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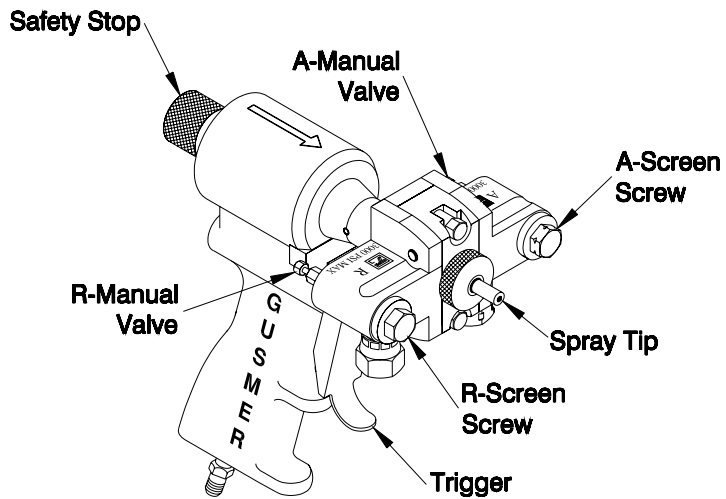


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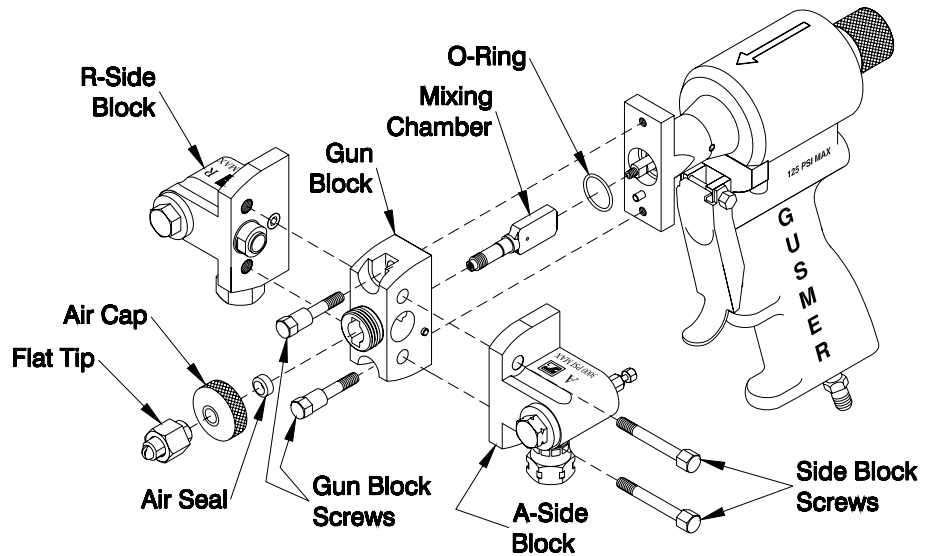
## MAJOR COMPONENTS

In keeping with the need to gain a complete and thorough understanding of the equipment, please take time to become familiar with the major components of the GAP Pro (Gusmer Air Purge) Spray Gun and its Front End Components.



**Figure 1. Major Components**  
(Gun shown with Round Spray Tip)

**NOTE:**  
For a detailed account of the components shown in Figure 1 and Figure 2, consult the GAP PRO Spray Gun Parts Identification Manual (P/N 36943-ID).



**Figure 2. Front End Components**  
(Gun shown with Flat Spray Tip Assembly)



# OPERATION



**WARNING:** NEVER POINT THE GUN AT OR NEAR OTHER PERSONNEL OR PLACE ANY PART OF THE BODY IN THE PATH OF THE MATERIAL SPRAY. DO NOT LOOK INTO THE DISPENSING END OF THE GUN. ALWAYS ENGAGE THE SAFETY STOP AND CLOSE BOTH MANUAL VALVES WHEN NOT USING THE GUN. DO THIS TO AVOID THE POSSIBILITY OF BODILY INJURY OR PROPERTY DAMAGE FROM THE ACCIDENTAL OPERATION OF THE GUN.

## Safety Stop Operation

The GAP PRO Gun has a two position Safety Stop. When engaged, it prevents accidental triggering of the gun during servicing or down time. When disengaged, it allows the gun to dispense.

- 1. TO ENGAGE THE SAFETY STOP-STOP-** Push in and turn the Safety Stop knob clockwise to place the gun in the Safety detented position.

**IMPORTANT:** Always engage the Safety Stop when the gun is not in use.

- 2. TO DISENGAGE THE SAFETY STOP-STOP-** Push in and turn the Safety Stop knob counterclockwise to place the gun in the Open detented position.



Figure 3. Engage the Safety Stop



Figure 4. Disengage the Safety Stop

## Manual Valve Operation

The manual valves located on the each Side Block control the flow of each chemical component to the gun.

### TOOLS REQUIRED

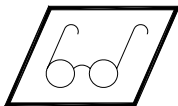
- 5/16" Nut driver

- 1. TO OPEN MANUAL VALVE-** Using the 5/16" nut driver, turn manual valve counter clockwise approximately three full turns.

**WARNING:** NEVER OPEN A MANUAL VALVE UNLESS THE SIDE BLOCK IS SECURED TO THE GUN, OR THE EXIT PORT IS DIRECTED INTO A SUITABLE CONTAINER.

- 2. TO CLOSE MANUAL VALVE-** Using the 5/16" nut driver, turn manual valve fully clockwise.

**WARNING:** TO PREVENT ACCIDENTAL GUN OPERATION, ALWAYS ENGAGE THE SAFETY STOP, CLOSE BOTH MANUAL VALVES AND DISCONNECT THE AIR SUPPLY BEFORE SERVICING THE GUN, OR ANY TIME THE GUN IS NOT IN USE.



**NOTE:** Triggering of the gun with the manual valves closed may cause crossover if there is any residual chemical in the gun ports.

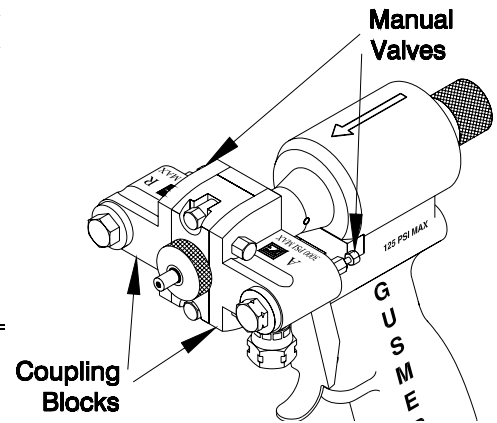


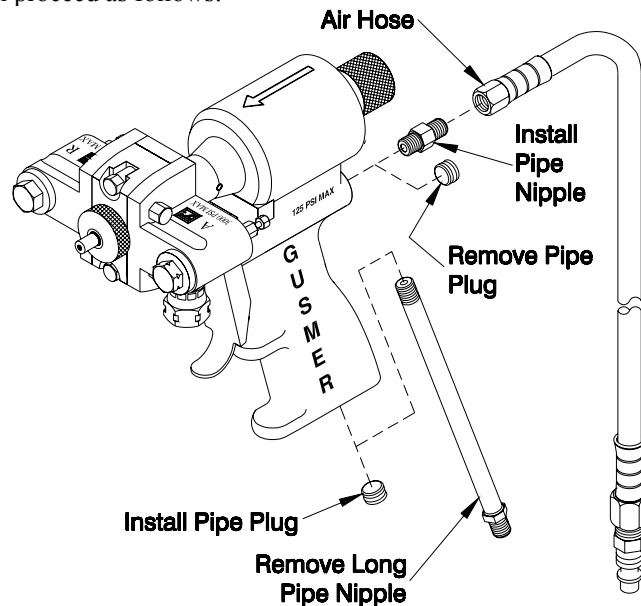
Figure 5. Manual Valves

## Air Hose Configurations

### TOOLS REQUIRED

- 3/16" Hex Key
- (2) 6" Adjustable Wrench

The GAP PRO Gun design allows for two different Air Hose configurations. The standard configuration has the air connection at the base of the handle. The optional configuration has the air connection at the rear of the gun. To change to the optional configuration proceed as follows:



**Figure 6. Air Hose Configuration**




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**WARNING:** BEFORE ATTEMPTING THIS PROCEDURE, CLOSE BOTH MANUAL VALVES, ENGAGE THE SAFETY STOP, AND DISCONNECT THE AIR FROM THE GUN.

---

1. **REMOVE THE AIR HOSE-** Using a 6" Adjustable Wrench remove the Air Hose from the Long Pipe Nipple at the base of the gun handle.
2. **REMOVE THE LONG PIPE NIPPLE-** Using a 6" Adjustable Wrench, remove the Long Pipe Nipple from the base of the gun handle.
3. **REMOVE THE PIPE PLUG-** Using the 3/16" Hex Key, remove the Pipe Plug from the back of the gun.
4. **INSTALL THE PIPE PLUG-** Using the 3/16" Hex Key, install the Pipe Plug in the base of the gun handle in the hole previously occupied by the Air Hose.
5. **INSTALL THE PIPE NIPPLE (Supplied with Gun)-** Using a 6" Adjustable Wrench, install the Pipe Nipple in the back of the gun.
6. **INSTALL THE AIR HOSE-** Using a 6" Adjustable Wrench, connect the Air Hose to the Pipe Nipple at the back of the gun.

## Initial Set Up Procedure

### TOOLS REQUIRED

- 5/16" Spintite
- (2) 6" Adjustable Wrench
- Clean Rag
- Gun Cleaner
- (2) Clean Container

1. **CLOSE BOTH MANUAL VALVES-**
2. **ENGAGE THE SAFETY STOP-**
3. **INSTALL THE FEMALE QUICK DISCONNECT FITTING-** Using two 6" Adjustable Wrenches install the Female Quick Disconnect Fitting on to the Air Supply Hose which is bundled with the Chemical Supply Hoses.
4. **CONNECT THE CHEMICAL HOSES-** Using two 6" Adjustable Wrenches connect the A and R Chemical Hoses to the corresponding A and R Side Blocks.
5. **PRESSURIZE THE CHEMICAL HOSES-** Pressurize the A and R Chemical Hoses and check for leaks.
6. **CHECK THE PROPORTIONING UNIT-** Check the Proportioning Unit for proper hose temperature, heater temperature, and pressure.
7. **CONNECT THE AIR SUPPLY-** Connect the Air Hose to the Quick Disconnect Fitting on the Air Supply Hose.
8. **OPEN BOTH MANUAL VALVES-**
9. **DISENGAGE THE SAFETY STOP-**
10. **TEST SPRAY OFF TARGET-**

**NOTE:**  
The A (Isocyanate) and R (Resin) hose connection thread sizes are different, making it virtually impossible to improperly connect the hoses. The, A (Isocyanate) thread is 1/2-20, whereas the R (Resin) thread is 9/16-18.

## Daily Start Up Procedure

### TOOLS REQUIRED

- 5/16" Spintite

**IMPORTANT:** Before attempting the following procedures, make sure the Side Blocks are properly attached to the gun, the proportioning unit is at the desired temperature and pressure, and the system is ready for operation.

1. **CONNECT THE AIR SUPPLY-** Connect the Air Hose to the Quick Disconnect Fitting on the Air Supply Hose and check for proper Mixing Chamber movement.
2. **OPEN BOTH MANUAL VALVES-**
3. **DISENGAGE THE SAFETY STOP-**
4. **TEST SPRAY OFF TARGET-**

## Daily Shutdown Procedure

### TOOLS REQUIRED

- 5/16" Spintite

**IMPORTANT:** Follow this procedure whenever the gun is out of service for any length of time.

1. **PERFORM PROPORTIONING UNIT DAILY SHUT-DOWN PROCEDURE-**
2. **CLOSE BOTH MANUAL VALVES-**
3. **ENGAGE THE SAFETY STOP-**
4. **DISCONNECT THE AIR SUPPLY-** Disconnect the Air Hose from the Quick Disconnect Fitting on the Air Supply Hose.

**Important** Do Not perform steps 4 through 8 if gun is to be serviced following shutdown.

**NOTE:**  
To determine the correct amount, to dispense, remove the air cap. While dispensing view the chamber area. When lubricant becomes visible, an adequate amount has been dispensed.

5. **GREASE MIXING CHAMBER-** Insert the Gusmer GAP Gun Chamber Lubricant Needle into nozzle of the mixing chamber. Dispense a small amount of lubricant into mixing chamber.
6. **CONNECT THE AIR SUPPLY-** Connect the Air Hose to the Quick Disconnect Fitting on the Air Supply Hose.
7. **TRIGGER GUN-** Leave the Safety Stop engaged and trigger the gun 2 to 3 times to discharge excess lubricant.
8. **DISCONNECT THE AIR SUPPLY-** Disconnect the Air Hose from the Quick Disconnect Fitting on the Air Supply Hose.

# SERVICING PROCEDURES

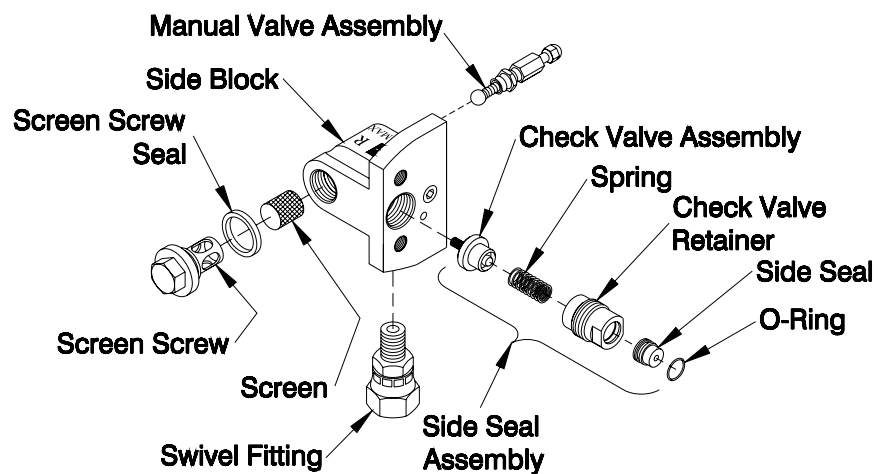
## Side Block Service Procedure

### TOOLS REQUIRED

- 5/16" Spintite
- 6" Adjustable Wrench
- 1/2" Wrench
- Cotton Swabs
- Clean Out Drills
- Gun Cleaner
- Brass Brushes

The Side Block Components consist of the following:

**NOTE:**  
Consult the GAP PRO Spray Gun  
Parts Identification Manual  
(P/N 36943-ID) for specific  
Part Numbers.



**Figure 7. Side Block Component Removal / Installation**

( R-Side Block shown )

1. **PERFORM SHUTDOWN PROCEDURE-** See the Daily Shutdown Procedure on Page 12.
2. **INSPECT THE SCREEN SCREW ASSEMBLIES-** Using the 6" Adjustable Wrench remove the A- Side Block Screen Assembly. Inspect the Screen Screw Seal for damage. Thoroughly rinse the Screen and dry. Inspect the Screen by holding it up to a bright light. The Screen mesh should be free of particles and varnish build-up. Replace as required. Repeat steps for R- Side Block Screen Assembly.
3. **REMOVE THE GUN FROM THE SIDE BLOCKS-** Using the 5/16" Spintite, alternately loosen the Side Block Mounting Screws. Carefully separate each Side Block from the Gun Block. Wipe mating surfaces clean with a rag soaked in gun cleaner.
4. **REMOVE THE SIDE SEAL ASSEMBLY-** Using the 1/2" Wrench, remove the Check Valve Retainer/Side Seal Assembly from the Side Block.

5. **CLEAN AND INSPECT THE SIDE SEAL ASSEMBLY COMPONENTS**– Remove the Check Valve. Clean the valve with gun cleaner. Inspect, and replace if damaged. Remove the Side Seal. Inspect it, and the O-Ring, replace if damaged.



**NOTE:**  
Repeat Steps 4, 5, and 6 for the opposite Side Block and proceed to Step 7.

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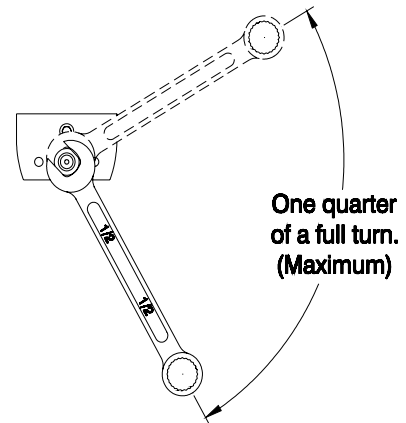
**WARNING:** DO NOT CLEAN THE SIDE SEAL(S) WITH A POCKETKNIFE, RAZOR BLADE, OR ANY OTHER TOOL WHICH COULD MAR OR SCRATCH THE SURFACE. USE A WOODEN / PLASTIC SCRAPER TOOL OR BRASS BRUSH INSTEAD.

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6. **CLEAN ALL COMPONENTS THOROUGHLY**-Using the appropriate Brass Brushes, Clean Out Drills, etc. remove residual chemical from the Gun Block. This is important to ensure unrestricted movement of the Mixing Chamber. Use Cotton Swabs soaked with Gun Cleaner if necessary.

7. **REINSTALL THE SIDE SEAL ASSEMBLY-**

- a) Place Check Valve Assembly in the Check Valve Retainer and thread into the Side Block by hand. Using a 1/2” Wrench tighten the Side Seal Assembly by one quarter of a full turn and ***No More***.



**Figure 8. Tightning the Check Valve Retainer**

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**WARNING:** TIGHTENING ANY MORE THAN ONE QUARTER OF A TURN CAN DAMAGE THE CHECK VALVE AND OR RETAINER AND MAY CAUSE LEAKAGE WHEN THE GUN IS PRESSURIZED.

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- b) Place Spring In Check Valve Retainer
  - c) Lightly coat the O-Ring with grease and install it on the Side Seal.
  - d) Push the Side Seal into Check Valve Retainer until the O-Ring engages the detent groove and remains in place.
8. **REINSTALL THE SIDE BLOCKS ON THE GUN BLOCK**- Using the 5/16” Spintite, alternately tighten the A and R Side Blocks to the Gun Block with the two mounting screws. Make sure to sufficiently tighten the screws equally to prevent leakage.
  9. **PERFORM START UP PROCEDURE**- See Daily Start Up Procedure on Page 11.

**Mixing Chamber and Gun Block Service Procedure**

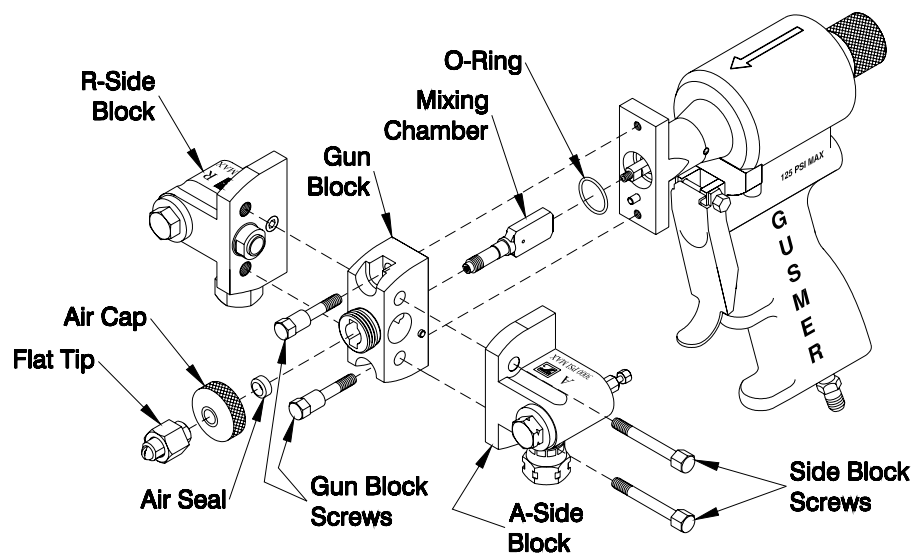
**TOOLS REQUIRED**

- 5/16” Spintite
- 3/16” Open End Wrench (or Needle Nose Pliers)
- 6” Adjustable Wrench
- 6” Pliers
- Brass Brushes
- Clean Out Drills
- Gun Cleaner

**NOTE:**  
If the gun has a Round Pattern Spray Tip, skip Step 2 and proceed to Step 3.

1. **PERFORM SHUTDOWN PROCEDURE-** See the Daily Shutdown Procedure on Page 12.
2. **REMOVE THE FLAT SPRAY TIP ASSEMBLY-** Using the 6” Adjustable Wrench remove the Flat Tip Assembly from the end of the Mixing Module.
3. **REMOVE AIR CAP-** Remove the Air Cap from the front of the gun by turning it counter-clockwise.
4. **REMOVE THE GUN FROM THE SIDE BLOCKS-** Using the 5/16” Spintite, alternately loosen the Side Block Mounting Screws. Carefully separate each Side Block from the Gun Block. Wipe mating surfaces clean with a rag soaked in gun cleaner. If the Side Blocks require servicing see the Side Block Service Procedure on page 13.

**NOTE:**  
Consult the GAP PRO Spray Gun Parts Identification Manual (P/N 36943-ID) for specific Part Numbers.



**Figure 9. Mixing Chamber and Gun Block Removal/Installation**

5. **REMOVE AND SERVICE THE GUN BLOCK-** Using the 5/16” Spintite, remove the two Gun Block Mounting Screws. Slide the block away from the gun. Wipe mating surfaces clean with a rag soaked in gun cleaner. Clean the Gun Block with gun cleaner and Brass Brushes to remove any built up foam, crystallized Isocyanate, etc. This is important to ensure unrestricted movement of the Mixing Chamber.
6. **REMOVE AND SERVICE THE MIXING CHAMBER-** Using the 3/16” Open End Wrench or Needle Nose Pliers, hold the end of the Piston Rod. Turn the Mixing Chamber by hand counter clockwise until it comes free. Clean the Mixing Chamber with gun cleaner and clean out drills as required. Inspect it for damage, and replace if necessary.
7. **REINSTALL THE MIXING CHAMBER-** Using the 3/16” Open End Wrench or Needle Nose Pliers, hold the flat end of the Piston Rod. Thread the Mixing Chamber onto the end of the Piston Rod by hand.
8. **REINSTALL THE GUN BLOCK-** Slide the Gun Block over the Mixing Chamber and toward the gun. Using the 5/16” Spintite, install the Gun Block Mounting Screws. Make sure to sufficiently tighten the screws equally to prevent leakage.

9. **REINSTALL THE SIDE BLOCKS ON THE GUN BLOCK-** Using the 5/16” Spintite, alternately tighten the A and R Side Blocks to the Gun Block with the two mounting screws. Make sure to sufficiently tighten the screws equally to prevent leakage.
10. **PERFORM START UP PROCEDURE-** See Daily Start Up Procedure on Page 11.

### **End Cap and Air Piston O-Ring Service Procedure**

**NOTE:**  
*If only the End Cap O-Ring and/or Safety Stop Cup Seal requires replacing, see the End Cap O-Ring and Safety Stop Cup Seal Service Procedure on page 18.*

**TOOLS REQUIRED**

- 5/16” Spintite
- 7/64” Ball Point Hex Key
- 3/16” Open End Wrench (or Needle Nose Pliers)
- 9/64” Hex Key
- 6” Pliers
- Lubriplate Grease
- Retaining Ring Pliers

1. **PERFORM SHUTDOWN PROCEDURE-** See the Daily Shutdown Procedure on Page 12.
2. **REMOVE THE GUN FROM THE SIDE BLOCKS-** Using the 5/16” Spintite, alternately loosen the Side Block Mounting Screws. Carefully separate each Side Block from the Gun Block. Wipe mating surfaces clean with a rag soaked in gun cleaner. If the Side Blocks require servicing see the Side Block Service Procedure on page 13.
3. **REMOVE THE GUN BLOCK-** Using the 5/16” Spintite, remove the two Gun Block Mounting Screws. Carefully remove the Gun Block from the rest of the gun. If removal is difficult, remove any dried chemical from the gun. Wipe mating surfaces clean with a rag soaked in gun cleaner. Be sure to retain the O-Ring located between the Gun Block and Mounting Flange.
4. **REMOVE THE MIXING CHAMBER-** Using the 3/16” Open End Wrench or Needle Nose Pliers, hold the end of the Piston Rod. Turn the Mixing Chamber by hand counter clockwise until it comes free. If chamber requires servicing, see the Mixing Chamber and Gun Block Service Procedure.
5. **DISENGAGE THE SAFETY STOP-** Push in and turn the Safety Stop knob counterclockwise to place the gun in the Open detented position.
6. **REMOVE CYLINDER CLAMP-** Using the 9/64” Ball Point Hex Key remove the Socket Head Cap Screw and Clamp from the rear the Air Cylinder.
7. **REMOVE THE RETAINING RING-** Using the Retaining Ring Pliers remove the Retaining Ring, which maintains the End Cap position in the Air Cylinder.
8. **REMOVE THE END CAP/SAFETY STOP ASSEMBLY-** Pull the Safety Stop until it, and the attached End Cap come free from the Air Cylinder. Be sure to retain the Piston Spring located inside of the Air Cylinder.
9. **INSPECT THE END CAP O-RING-** Inspect the O-Ring. If damaged remove it and install a new O-Ring after lightly coating it with Lubriplate Grease.

**NOTE:**  
*Removing the End Cap will require some force since the O-Ring is tightly compressed*

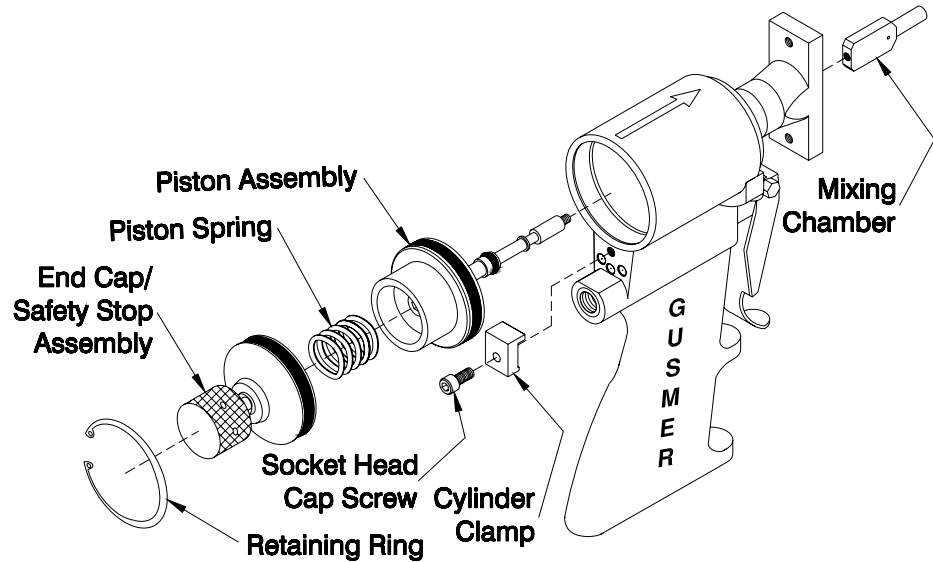


Figure 10. End Cap and Piston Assembly

10. **REMOVE THE PISTON ASSEMBLY-** Using the 6” Pliers take hold of the Piston and pull the assembly out of the Air Cylinder.




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**WARNING:** TAKE CARE NOT TO DAMAGE THE PISTON OR THE AIR CYLINDER WALL WHEN REMOVING THE PISTON ASSEMBLY.

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11. **DISASSEMBLE THE PISTON ASSEMBLY-**  
Remove the Retainer Ring from the Piston Assembly. Slide the Piston Shaft Assembly out from the backside of the Piston.

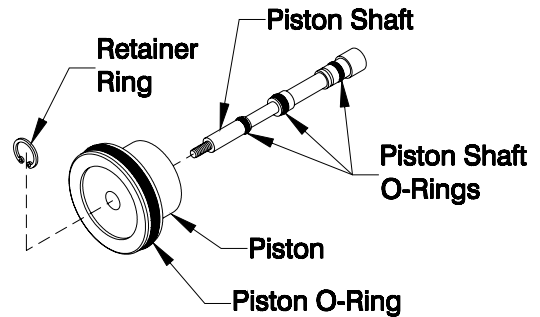


Figure 11. Piston Assembly

12. **INSPECT THE O-RINGS-**  
Inspect the O-Rings and remove if damaged. Carefully install the new O-Rings after applying Lubriplate Grease.
13. **REASSEMBLE THE PISTON ASSEMBLY-** Slide the Piston Shaft Assembly in through the backside of the Piston, taking care not to damage the O-Rings. Install the Retainer Ring on the Piston Assembly.
14. **REINSTALL THE PISTON ASSEMBLY-** Insert the Piston Assembly into the Air cylinder.
15. **REINSTALL THE END CAP ASSEMBLY AND PISTON SPRING-** Center the Piston Spring over the raised portion of the Piston and insert the End Cap into the Air Cylinder. Press the End Cap until it moves past the undercut groove in the Air Cylinder. This groove is where the Retaining Ring nests. Maintain pressure on the End Cap, making sure the groove remains visible, and install the Retaining Ring using the Retaining Ring Pliers.

16. **REINSTALL CYLINDER CLAMP** - Using the 9/64” Ball Point Hex Key reinstall the Socket Head Cap Screw and Cylinder Clamp on the rear of the Air Cylinder.




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**WARNING:** *INSERT THE RETAINING RING COMPLETELY INTO THE GROOVE SO THAT THE END CAP WILL REMAIN IN THE AIR CYLINDER WHEN THE GUN HAS AIR PRESSURE APPLIED TO IT. KEEP CLEAR OF THE CAP WHEN FIRST REAPPLYING AIR PRESSURE OR TRIGGERING THE GUN AFTER REASSEMBLY IN CASE OF IMPROPER RETAINING RING INSTALLATION.*

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17. **REINSTALL THE MIXING CHAMBER**- Using the 5/16” Spintite, or Needle Nose Pliers, hold the end of the Piston Rod. Thread the Mixing Chamber onto the threaded portion of the Piston Rod by hand until it is snug.
18. **REINSTALL THE GUN BLOCK**- Slide the Gun Block over the Mixing Chamber and toward the gun. Using the 5/32” Hex Key, install the Gun Block Mounting Screws. Make sure to sufficiently torque the screws.
19. **REINSTALL THE SIDE BLOCKS ON THE GUN BLOCK**- Using the 5/16” Spintite, alternately tighten the A and R Side Blocks to the Gun Block with the two mounting screws. Make sure to sufficiently tighten the screws equally to prevent leakage.
20. **PERFORM START UP PROCEDURE**- See Daily Start Up Procedure on Page 11.

### ***End Cap O-Ring and Safety Stop Cup Seal Service Procedure***

**TOOLS REQUIRED**

- Retaining Ring Pliers
- 6” Pliers
- 9/64” Ball Point Hex Key
- 5/64” Hex Key
- 5/16” Spintite
- Lubriplate Grease

1. **PERFORM SHUTDOWN PROCEDURE**- See the Daily Shutdown Procedure on Page 12.
2. **REMOVE THE GUN FROM THE SIDE BLOCKS**- Using the 5/16” Spintite, alternately loosen the Side Block Mounting Screws. Carefully separate each Side Block from the Gun Block. Wipe mating surfaces clean with a rag soaked in gun cleaner. If the Side Blocks require servicing see the Side Block Service Procedure on page 13.
3. **REMOVE CYLINDER CLAMP**- Using the 9/64” Ball Point Hex Key remove the Socket Head Cap Screw and Clamp from the rear the Air Cylinder.
4. **REMOVE THE RETAINING RING**- Using the Retaining Ring Pliers remove the Retaining Ring, which holds the End Cap in place in the Air Cylinder.
5. **REMOVE THE END CAP/SAFETY STOP ASSEMBLY**- Remove the End Cap and retain the Piston Spring located inside of the Air Cylinder for future use.

**NOTE:**  
*Removing the End Cap will require some force since the O-Ring is tightly compressed*

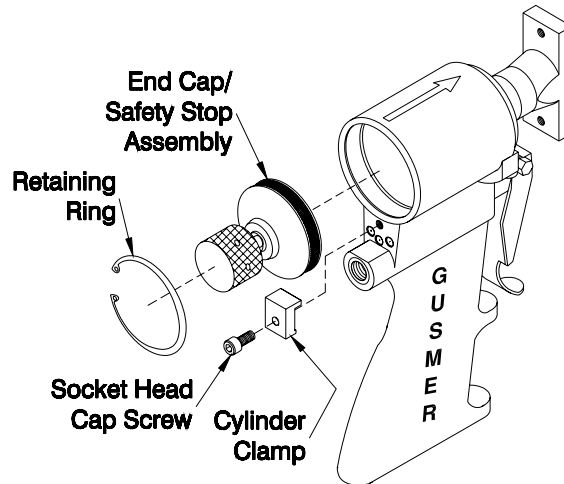


Figure 12. End Cap Assembly

6. **INSPECT THE END CAP O-RING-** Inspect the O-Ring. If damaged remove it and install a new O-Ring after lightly coating it with Lubriplate Grease.

7. **REMOVE THE SAFETY STOP MECHANISM-** Using the 5/64” Hex Key loosen the two setscrews on the Stop Knob. Slide the knob off the shaft of the Stop Pin. Retain the Shaft Spring. Pull the Stop Pin out of the End Cap.

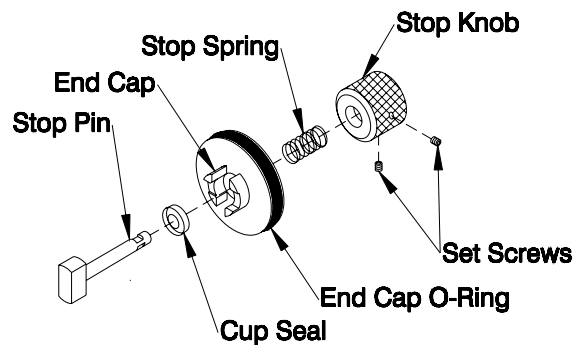


Figure 13. Safety Stop Assembly

8. **REPLACE CUP SEAL-** Remove and replace the Cup Seal located in the End Cap if necessary. Lubricate the new cup seal and install it making sure that the “cup” is facing the Air Cylinder.
9. **REINSTALL THE SAFETY STOP MECHANISM-** Insert the Stop Pin into the End Cap. Slide the Shaft Spring and Stop Knob onto the shaft of the Stop Pin. Using the 5/64” Hex Key reinstall the two set screws in the Stop Knob. Make sure the knob is secure.
10. **REINSTALL THE END CAP/SAFETY STOP ASSEMBLY-** Center the Piston Spring over the raised portion of the Piston. Line up the raised portion of the End Cap with the inside diameter of the Piston Spring and insert the End Cap into the Air Cylinder. Press the End Cap until it moves past the undercut groove in the Air Cylinder. This groove is where the Retaining Ring nests. Maintain force on the End Cap, making sure the groove remains visible, and install the Retaining Ring using the Retaining Ring Pliers.
11. **REINSTALL CYLINDER CLAMP -** Using the 9/64” Ball Point Hex Key reinstall the Socket Head Cap Screw and Cylinder Clamp on the rear of the Air Cylinder.




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**WARNING:** INSERT THE RETAINING RING COMPLETELY INTO THE GROOVE SO THAT THE END CAP WILL REMAIN IN THE AIR CYLINDER WHEN THE GUN HAS AIR PRESSURE APPLIED TO IT. KEEP CLEAR OF THE CAP WHEN FIRST REAPPLYING AIR PRESSURE OR TRIGGERING THE GUN AFTER REASSEMBLY IN CASE OF IMPROPER RETAINING RING INSTALLATION.

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12. **REINSTALL THE SIDE BLOCKS ON THE GUN BLOCK-** Using the 5/16” Spintite, alternately tighten the A and R Side Blocks to the Gun Block with the two mounting screws. Make sure to sufficiently tighten the screws equally to prevent leakage.
13. **PERFORM START UP PROCEDURE-** See Daily Start Up Procedure on Page 11.

### **Trigger Valve O-Ring Procedure**

#### **TOOLS REQUIRED**

- 6” Adjustable Wrench
- 6” Pliers
- 5/16” Spintite
- 3/16” Hex Key
- Lubriplate Grease
- Pin Punch, 1/4” diameter or less
- Ball Peen Hammer
- Gun Cleaner
- Clean Rags

1. **PERFORM SHUTDOWN PROCEDURE-** See the Daily Shutdown Procedure on Page 12.
2. **REMOVE THE GUN FROM THE SIDE BLOCKS-** Using the 5/16” Spintite, alternately loosen the Side Block Mounting Screws. Carefully separate each Side Block from the Gun Block. Wipe mating surfaces clean with a rag soaked in gun cleaner. If the Side Blocks require servicing see the Side Block Service Procedure on page 13.
3. **REMOVE THE 1/8” PIPE PLUG FROM THE GUN-** Using the 3/16” Hex Key remove the 1/8” Pipe Plug from the gun.
4. **REMOVE TRIGGER LEVER-** Using the 6” Adjustable Wrench and the 6” Pliers remove the Screw and Locknut that hold the Trigger Lever in place. Remove the Trigger Lever.
5. **REMOVE VALVE RETAINER NUT-** Using the 6” Adjustable Wrench, remove the Valve Retainer Nut. This is the hex shaped nut that surrounds the brass Valve Spool and holds it in place.
6. **REMOVE THE VALVE SPOOL-** Using the 6” Pliers carefully take hold of the end of the Valve Spool and remove it from the gun. A spring will come out with it. Make sure not to loose this spring as it belongs in the hole at the end of the Spool.
7. **REPLACE THE O-RINGS-** If necessary, replace the O-Rings on the Valve Spool after applying a thin coat of Lubriplate Grease to them.

**NOTE:**  
Guns configured with the air supply connected to the rear of the Gun, as opposed to the base of the Gun Handle, require removal of the Air Hose and Pipe Nipple using a 6” Adjustable Wrench.

**NOTE:**  
Follow Steps 8 through 15 to replace the O-rings on the Valve Liner. If they do not need replacing go to Step 18.

8. **REMOVE THE REAR INTERNAL 1/16" PIPE PLUG-** Deeper in the hole from which the 1/8" Pipe Plug (or Air Hose) was removed, locate the 1/16" Pipe Plug. Remove this Plug using the 5/32" Hex Key.

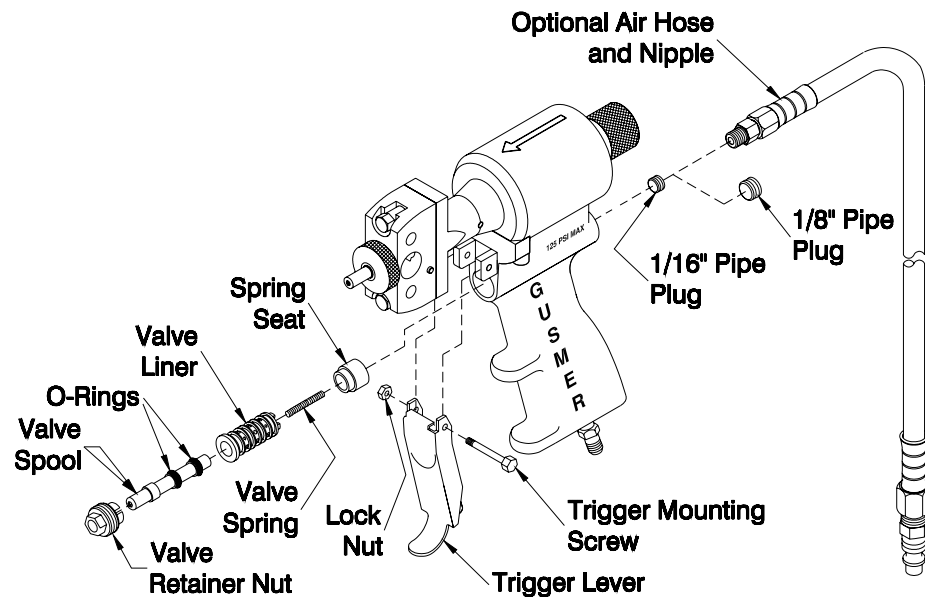


Figure 14. Trigger/Air Valve Assembly

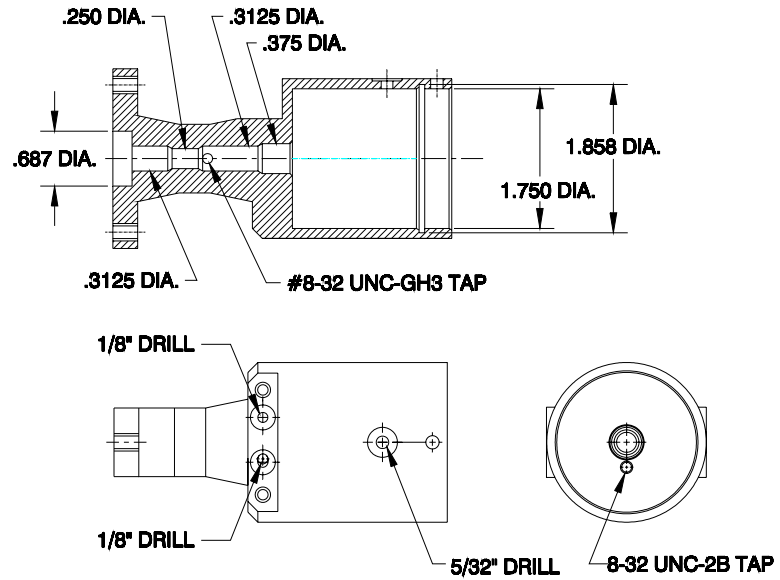
9. **REMOVE THE VALVE LINER-** Looking into the hole from which both Plugs were removed the brass surface of the Spring Seat can be seen. Using the Pin Punch of 1/4" diameter or less, and the Ball Peen Hammer, gently tap the Spring Seat until both it and the Valve Liner are pushed out the valve cavity.
10. **REMOVE & REPLACE THE O-RINGS-** Remove and replace the four O-Rings on the Valve Liner. Apply a liberal coat of Lubriplate Grease to the O-Rings.
11. **CLEAN THE VALVE CAVITY-** After insuring hole is free of any debris apply a thin coat of Lubriplate to the inside of the hole.
12. **REINSTALL THE SPRING SEAT-** Slide the brass Spring Seat back into the Gun Handle Air Valve hole tapered end first until it bottoms out in the valve cavity.
13. **REINSTALL THE VALVE LINER-** Push in the brown Valve Liner as far as it will go. Some resistance is normal, as there is interference between the O-rings on the Valve Liner and the inside diameter of the hole. Push it in until two or three internal threads in the hole are visible. These threads allow engagement of the Valve Retainer Nut which when screwed in, will align the Valve Liner and Spool to their proper depth.
14. **REINSTALL THE 1/16" PLUG-** Using the 5/32" Hex Key thread the 1/16" Pipe plug back in place. Apply a small amount of pipe thread sealant to the threads prior to insertion. This helps seal the threads and prevent air leaks.
15. **REINSTALL THE 1/8" PIPE PLUG-** Using the 3/16" Hex Key reinstall the 1/8" Pipe Plug in the gun.

16. **REINSTALL THE VALVE SPOOL-** Insert the Valve Spool, with the Valve Spool Spring in place into the Valve Liner. Screw in the Valve Retainer Nut. Be careful not to over tighten it, just tighten until it is “snug”.

**NOTE:**  
*Guns configured with the air supply connected to the rear of the Gun, as opposed to the base of the Gun Handle, require reinstallation of the Air Hose and Pipe Nipple using a 6” Adjustable Wrench.*

17. **REASSEMBLE THE TRIGGER LEVER-** Reinstall the Trigger Lever using the Screw and Lock Nut. Tighten using the 6” Adjustable Wrench and the 6”Pliers.
18. **REINSTALL THE SIDE BLOCKS ON THE GUN BLOCK-** Using the 5/16” Spintite, alternately tighten the A and R Side Blocks to the Gun Block with the two mounting screws. Make sure to sufficiently tighten the screws equally to prevent leakage.
19. **PERFORM START UP PROCEDURE-** See Daily Start Up Procedure on Page 11.

# AIR PASSAGE DIAGRAMS



**NOTE:**  
 Be sure to use thread sealant when reinstalling any threaded components removed from the gun. In addition, all sets crews should be reinstalled flush to the outside surface of the gun handle.

Figure 15. Air Cylinder Air Passages

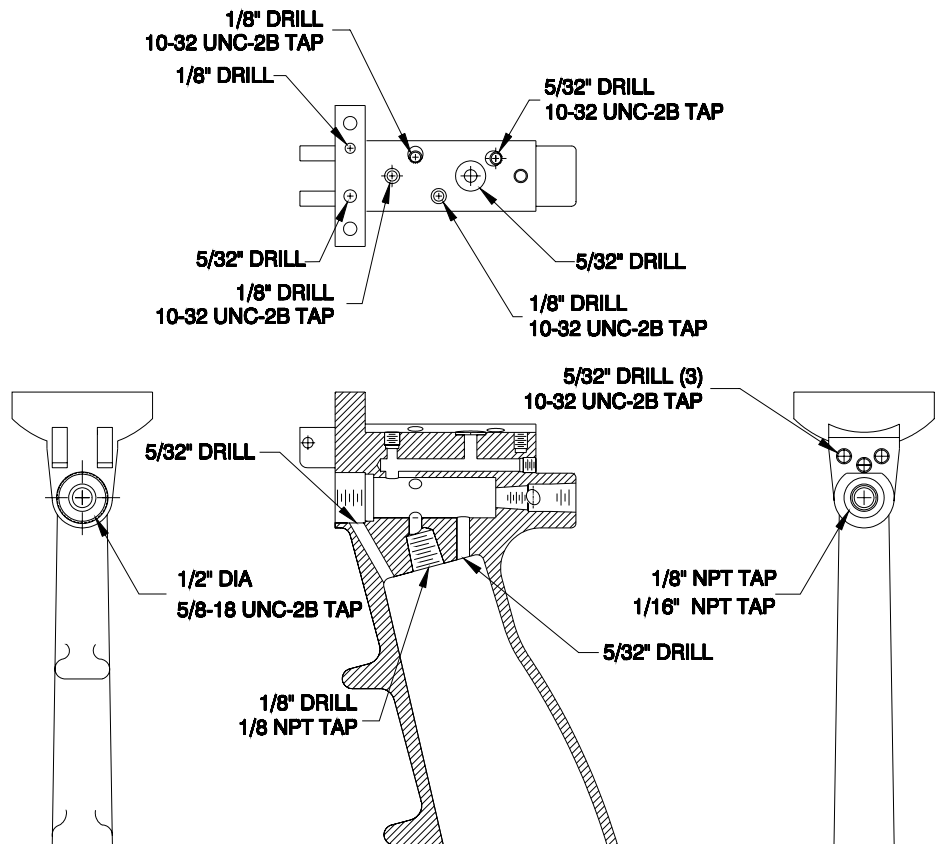


Figure 16. Handle Air Passages



## APPENDIX

### Specifications

Technical Data	US	Metric
<b>Maximum Output:</b>	40 lbs./min	18 kg/min
<b>Maximum Operating Pressure:</b>	3000 psi	207 bar
<b>Air Supply</b>	100-125 psi	7-9 bar
<b>Weight:</b>	2.34 lbs.	1.06 kg
<b>Dimensions:</b>	H=7"/W=7"/D=4.4"	H=17.8cm/W=17.8cm/D=11.2cm



Field Number	Field Title	Description
1	Date	Enter date report is submitted.
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