



POLYURETHANE MACHINERY CORPORATION



PATENT PENDING

Air Purge Spray & Pour Gun AP-2

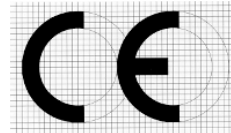
**For use with non-flammable Foam and
Polyurea**

For professional use only

Not for use in explosive atmospheres

Manual

Ref. # MN-04004



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Before installing the AP-2 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-2 Gun. All of the information is aimed at improving user safety and avoiding possible breakdowns from the incorrect use of the AP-2 Gun.



AP-2 Service Manual

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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. Cosmetic damage.
- Fire, flood, “acts of God,” or other contingencies beyond the control of PMC.



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WARRANTY (cont'd)

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.



AP-2 Service Manual

SAFETY AND HANDLING

This chapter contains important information on the safety, handling and use of your **AP-2** series Gun.



Before installing the AP-2 Gun and start-up, carefully read all the technical and safety documentation included in this Manual. Pay special attention to the information to know and understand the operation and the conditions of use of the unit. All of the information is aimed at enhancing User Safety and avoiding possible breakdowns derived from the incorrect use of the AP-2 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-2 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-2 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 directly contact Polyurethane Machinery Company.



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IMPORTANT SAFETY INFORMATION

The AP-2 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-2 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-2 Gun. If in doubt, consult **PMC Technical Service**.

When working with the AP-2 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.



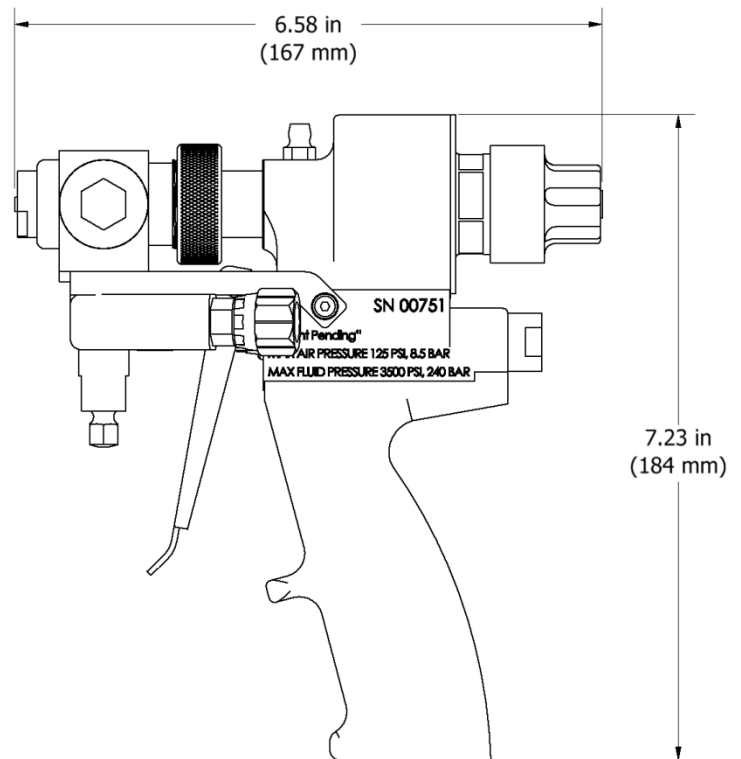
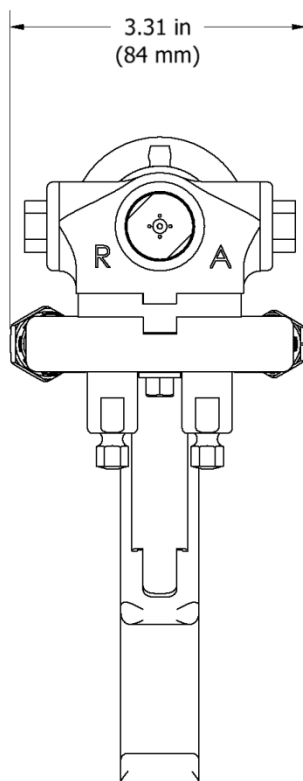
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CHARACTERISTICS

- Internal mixing from high pressure impingement
- Automatic cleaning with air pressure
- No solvents required
- Exterior lubrication of the Mix Chamber

Weight: 2.235 lbs (1.012 kg) (w/o coupling block)

2.302 lbs (1.317kg) (with coupling block)



TECHNICAL SPECIFICATIONS

Maximum Working Pressure: _____ **3,500 psi, 245 Bar**

Air Pressure: _____ **90-125 psi, 6.2-8.6 Bar**

Maximum Output (1:1 ratio): _____ **40 lb/min, 20 lit/min**

Minimum Output (1:1 ratio): _____ **3.3 lb/min, 1.55 lit/min**

Opening Force @ 110 psi:(8 Bar) _____ **200 lb, 14 Bar**

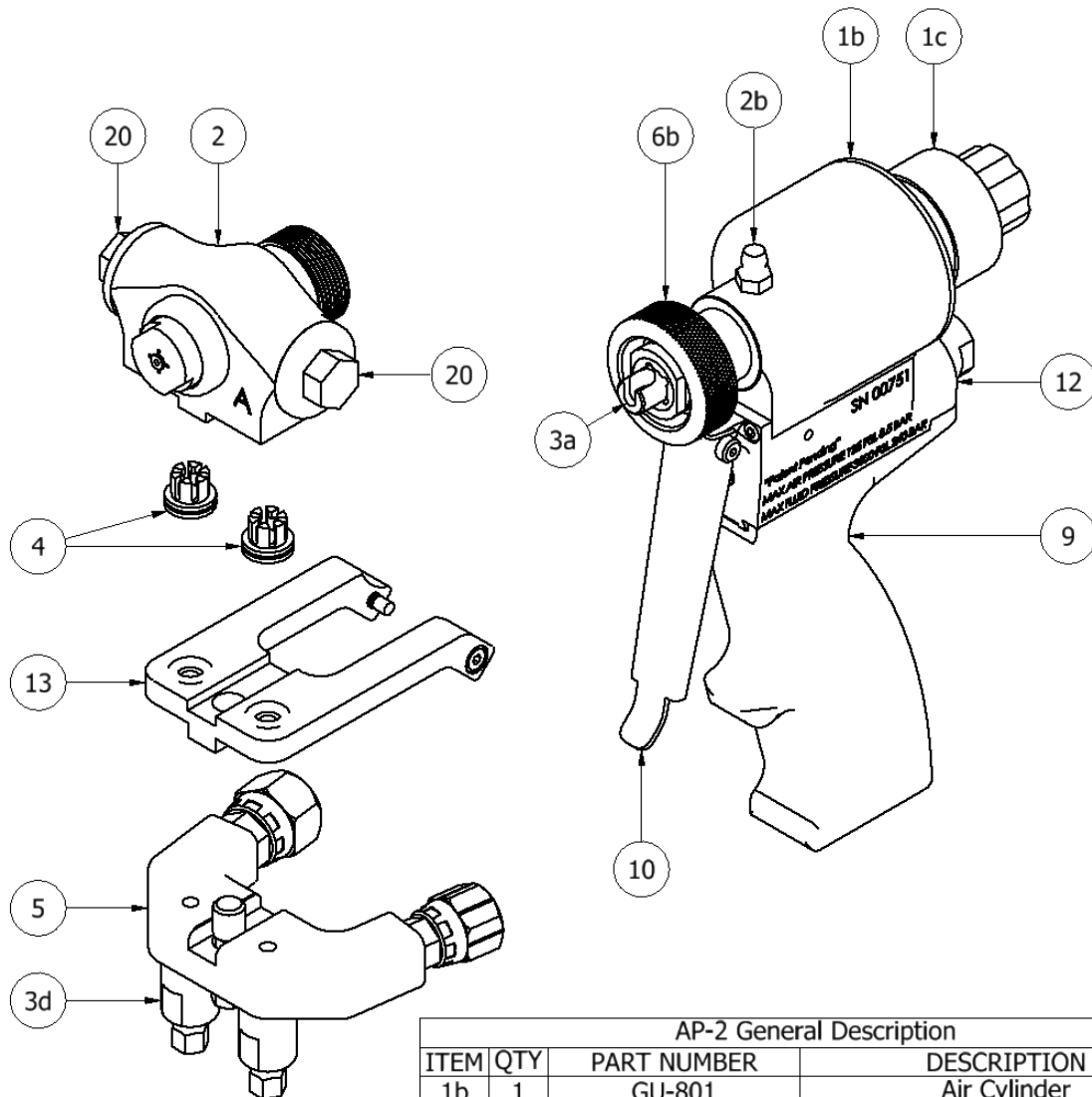
Closing Force @ 110 psi: (8 Bar) _____ **200 lb, 14 Bar**



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GENERAL DESCRIPTION

For better knowledge of the **AP-2** Gun, the main components and their description are shown. For a more precise identification, see the Parts Identification section.



AP-2 General Description			
ITEM	QTY	PART NUMBER	DESCRIPTION
1b	1	GU-801	Air Cylinder
1c	1	GU-804	Gun Lock and End Cap
2	1	GU-816	Gun Block
2b	1	GU-837	Grease Fitting
3	1	GU-802	Piston
3d	2	GU-020	Manual Valves
4	2	GU-820	Coupling Block Gasket/Check Valve
5	1	GU-04001	Coupling Block Assembly
6b	1	GU-812	Lock Collar
9	1	GU-827-1	Gun Handle
10	1	GU-828	Trigger
12	1	GU-843	Air Manifold
13	1	GU-842	Head Latch
20	2	GU-819-A/GU-819-R	A/R Screen Screw



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INSTALLATION AND START UP

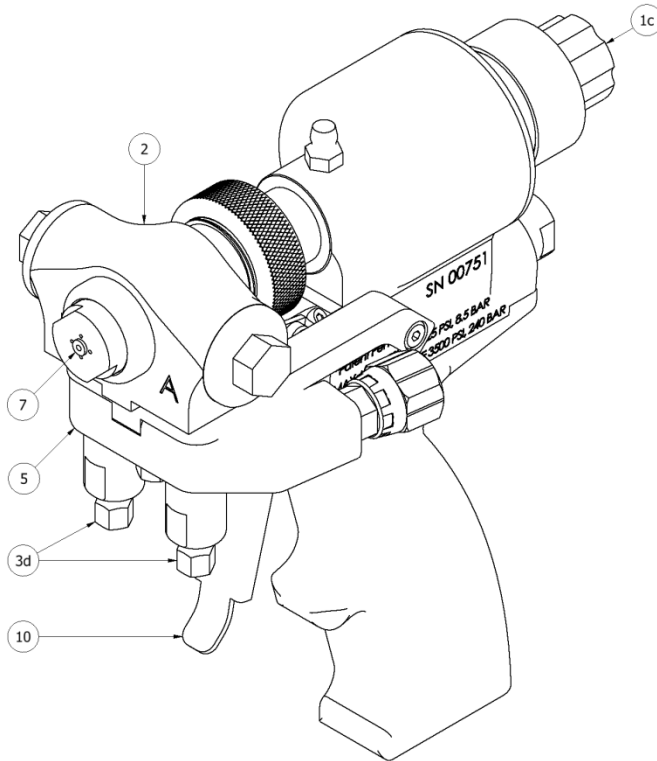
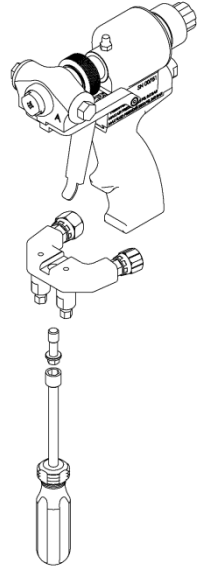
CAUTION! When working with the AP-2 Gun or performing maintenance work, wear suitable safety protection in accordance with the recommendations and specifications provided by the product suppliers

1. Install Coupling Block (GU-04001) to the hose.
2. Ensure the Coupling Block Manual Valves (3d) 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 (1c) to the **LOCKED** position.
4. Ensure Coupling Block Check Valves (4, Pg. 9) are in place.
5. Connect the Coupling Block (5) to the Gun Block (2) using the nut driver provided (TL-04001, Pg. 38). Tighten Coupling Block until there is a hand tight seal.

6. Connect air supply to the Gun (90 to 125 psi, 6.2 to 8.6 Bar).



NOTE: The material delivery hoses are color coded Red and Blue, allowing the user to recognize them. The Red corresponds to the Isocyanate (A) and the Blue to the Polyol (R). To avoid connection errors, the Coupling Connections of the Isocyanate (A) and Polyol (R) hoses are also different sizes, which makes it difficult to swap connections.

7. Set the Gun Lock (1c) to the **OPEN** position.
8. Pull the Trigger (10) several times to check for correct movement of the Mixing Chamber (6, Pg. 14) and PCT (pattern control tip) (7).



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9. Ensure that the Proportioner and the supply system is in the ready position and the material pressures at the Proportioner and the material temperatures in the Material Heaters and Heated Hoses are set as recommended by the chemical supplier (see Machine Service Manual).
10. **OPEN** each Manual Valve (3d, Pg. 10) by turning three full turns counter clockwise.
11. Perform a test spray.



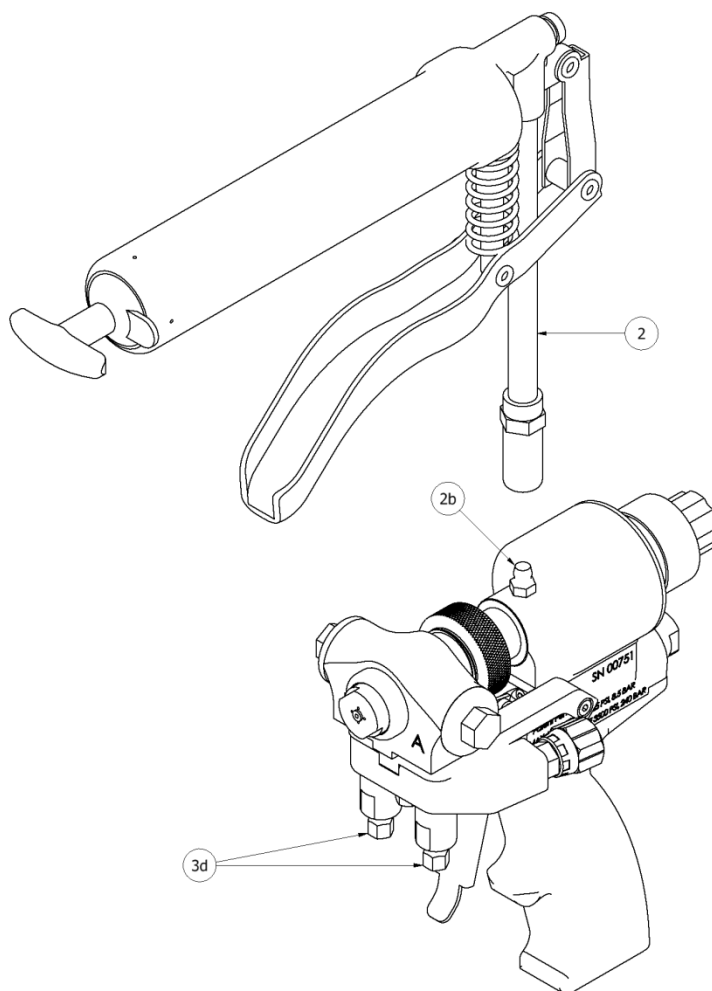
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SHUTDOWN PROCEDURES

1. CLOSE the Manual Valves (3d) 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 Grease Gun (2, TL-00002, Pg. 38) supplied in the Gun Box Kit (KT-AP-2, Pg. 38), lubricate the Mixing Chamber through the Grease Fitting (2b) until a fine mist of grease is sprayed from the gun (see page 39 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: PMC Grease is recommended. Use of incorrect grease will cause blockage in the mixing chamber.**
3. Disconnect the air supply.



NOTE: The injection of grease supplied with the Gun at the end of the day will minimize maintenance time and 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.

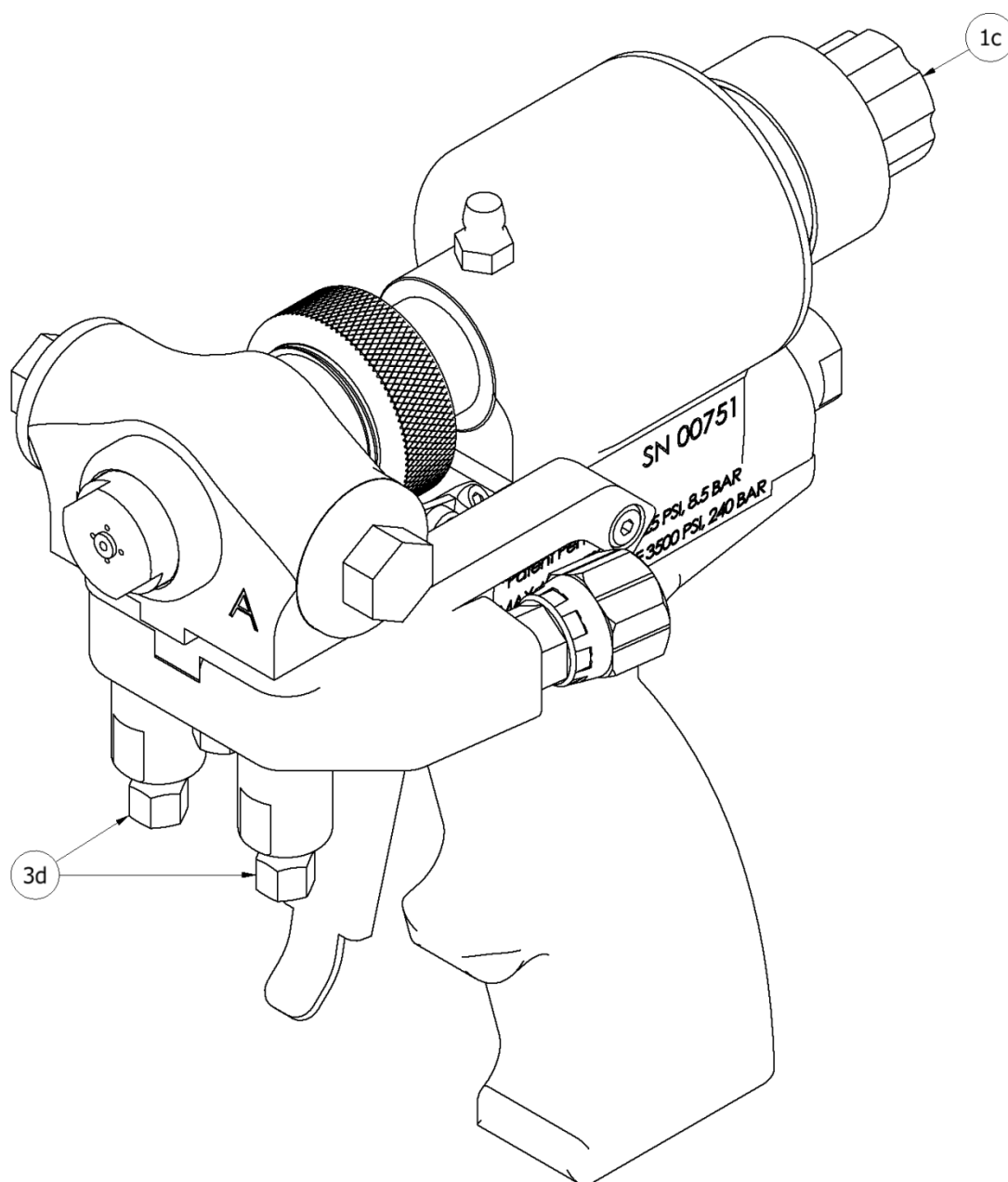


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LOSS OF AIR PRESSURE/EMERGENCY SHUT-OFF

1. Using the palm of your hand, push in on the Gun Lock (1c) and rotate clockwise to set it to the **LOCKED** position. In the locked position the Gun Lock will restrict the movement of the air piston (center line) from moving to the rear to an open position, thus rendering the gun in-operable.
2. **CLOSE** each Manual Valve (3d).

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.





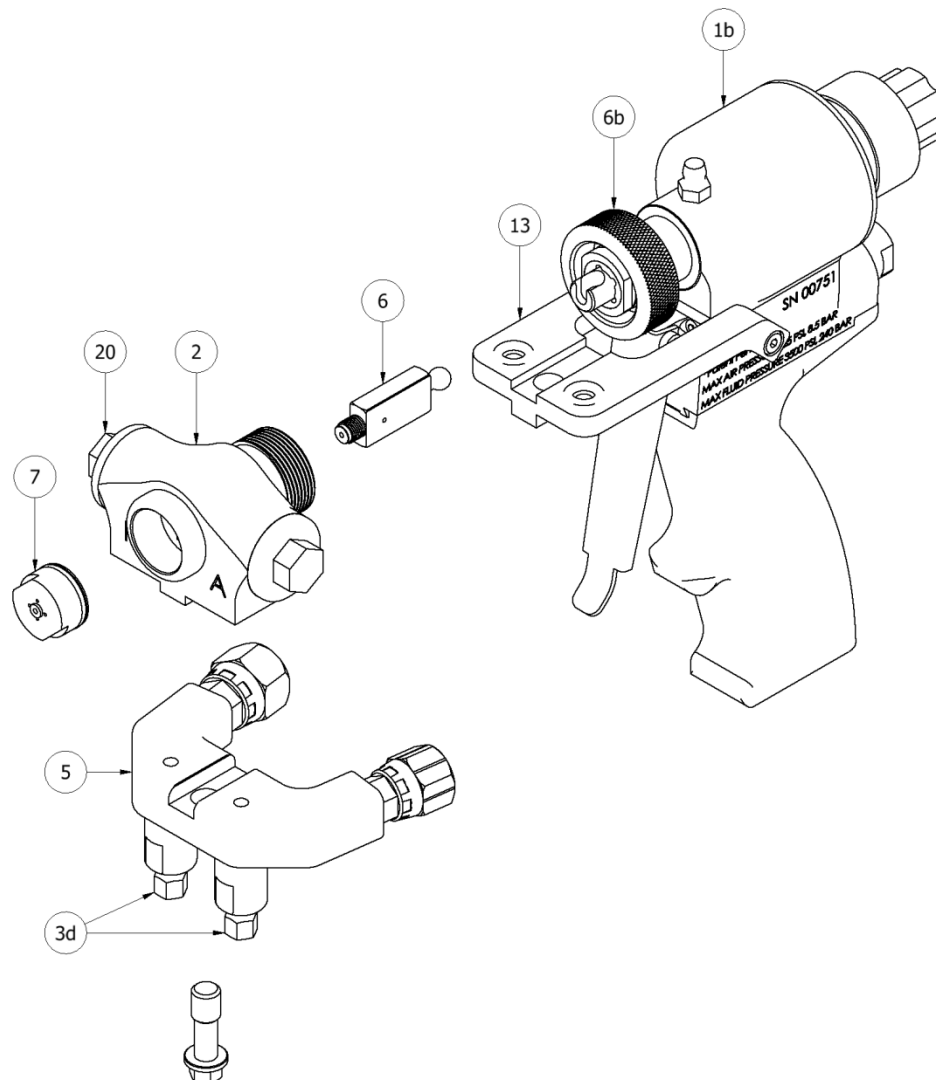
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MAINTENANCE

To obtain maximum performance from your **AP-2** Gun, it is necessary to periodically perform certain maintenance operations.

WARNING! Before proceeding with any maintenance work on the AP-2 Gun, ensure the Gun Lock is in the LOCKED position and the Manual Valves are CLOSED. Trigger the Gun to remove internal material pressure. It is recommended to remove the Gun from the Coupling Block.

GUN BLOCK AND MIXING CHAMBER REMOVAL



1. **CLOSE** the Manual Valves (3d) 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. Trigger Gun over Waste Container to release internal material pressure.

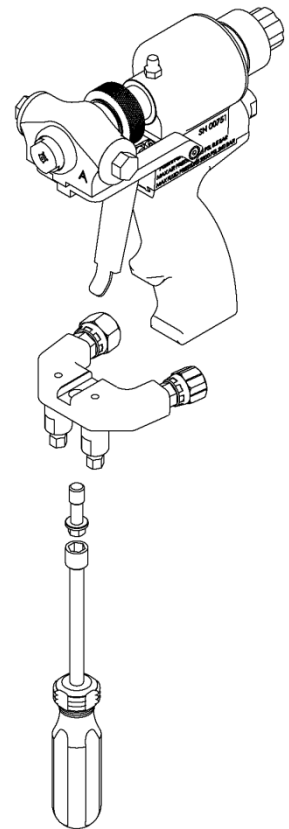
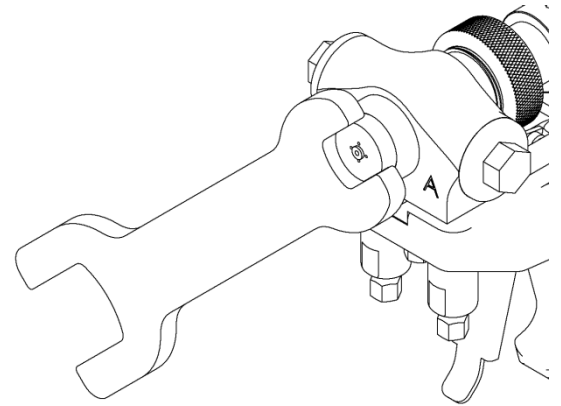


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3. Using the wrench provided (TL-09, Pg. 38), remove the Pattern Control Tip (7, Pg. 14) from the mixing chamber
4. Using a ½" wrench, loosen or remove both Screen Screws (20, Pg. 14) to facilitate easy removal of the mixing chamber.
5. Using the nut driver provided (TL-04001, Pg. 14), remove the Coupling Block (5, Pg. 14) from the Gun Block (2, Pg. 14).
6. Disengage the Head Latch (13, Pg. 14) from the Gun Block (5, Pg. 14).
7. Loosen the Locking Collar (6b) from the Gun Block (2, Pg. 14) and remove the Gun Block (2, Pg. 14) from the Air Cylinder (1b, Pg. 14).
8. Remove the Chamber from the Piston Rod (3a, Pg. 14).
9. Flush Gun Block (2, Pg. 14) to remove any residue.
10. Clean or replace the Mixing Chamber (6, Pg. 14) as required.
11. Reassemble the Mixing Chamber (6, Pg. 14) in reverse order.

NOTE! A small amount of grease applied to the Mixing Chamber (6, Pg. 14) and Side Seals (27, Pg. 16) upon assembly is recommended.

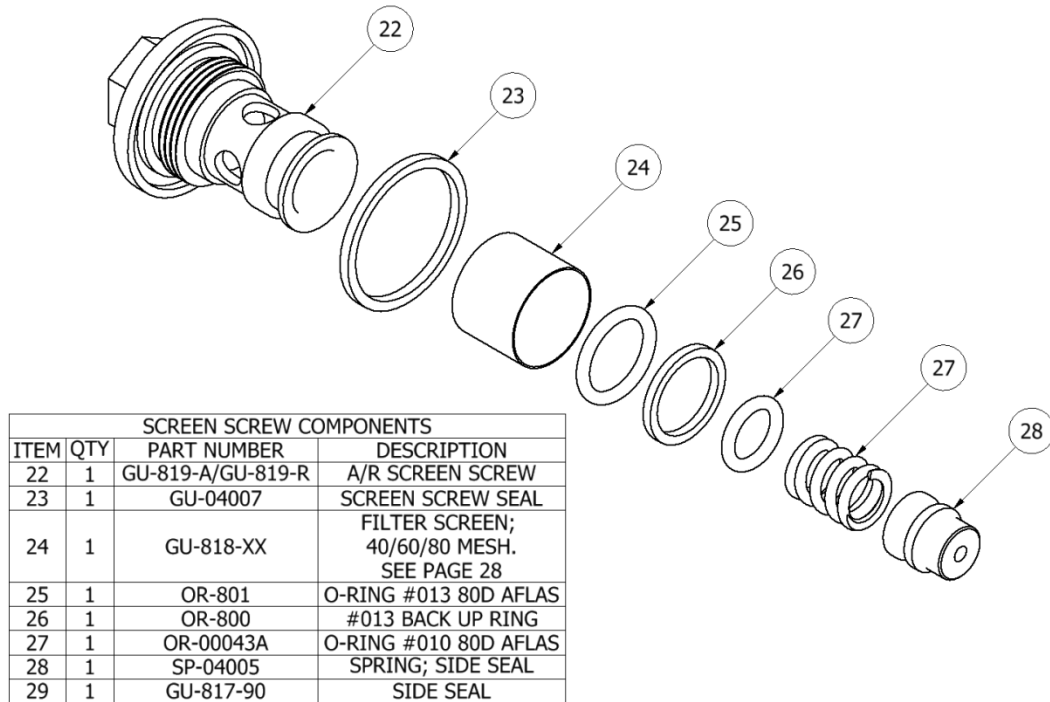
CAUTION! Use wooden or plastic tools or a brass brush for cleaning. Do not use metal or abrasive tools that can scratch or damage the contact surfaces.





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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 (3d, Pg. 9) 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.

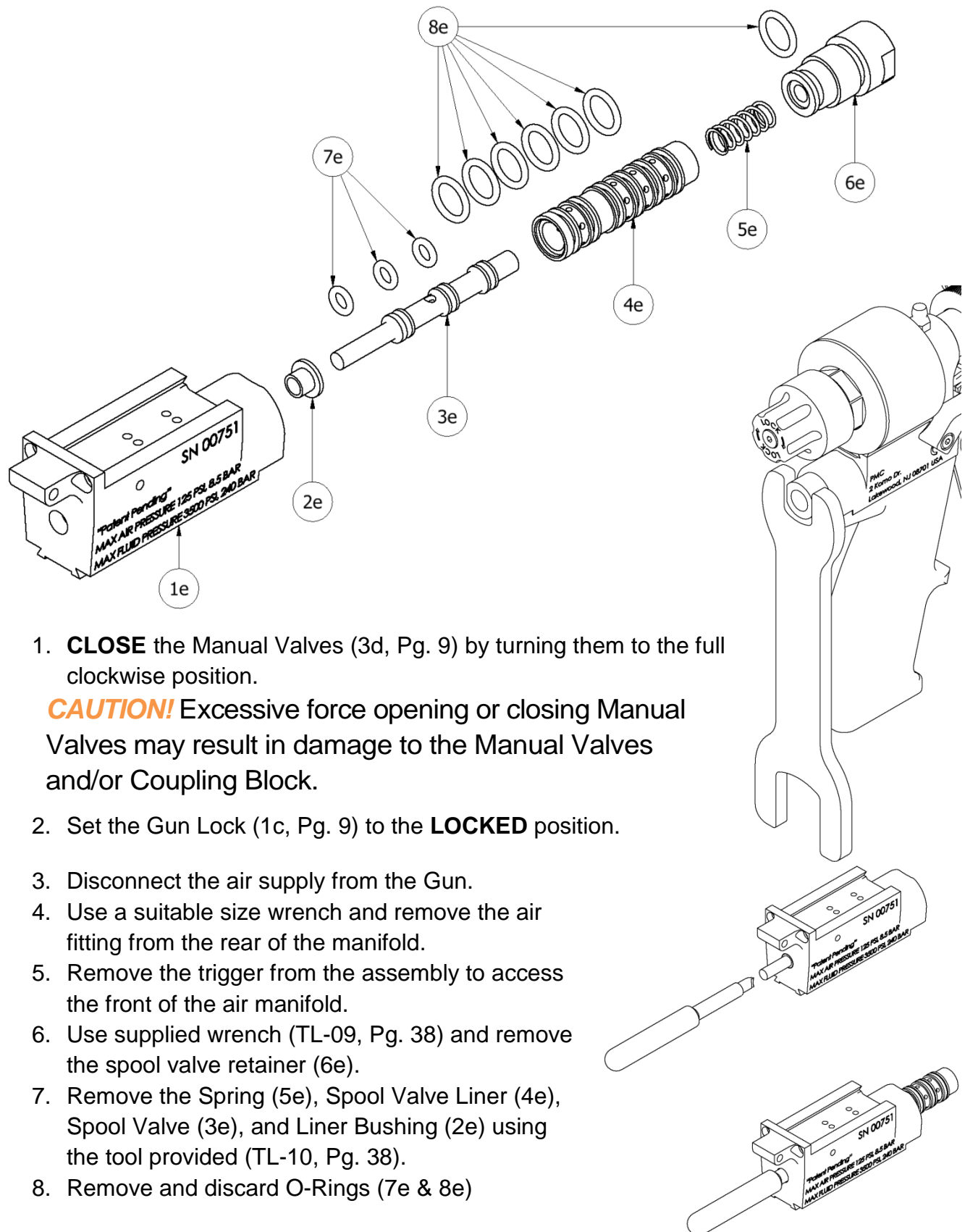
2. Trigger Gun over Waste Container to release internal material pressure.
3. Set the Gun Lock (1c, Pg. 9) to the **LOCKED** position.
4. Use a ½" wrench to remove the Screen Screw (20).
5. To clean or replace the Screen (22), remove O-Ring (23) and Back Up Ring (24).
6. Remove the Side Seal (27) and Spring (26) from the Screen Screw. Inspect the components and O-rings. Clean or replace as required.
7. Inspect for damage and apply lubrication to the O-rings and threads and reassemble in reverse order.
8. The Gun is now ready for service.

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



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AIR MANIFOLD MAINTENANCE



1. **CLOSE** the Manual Valves (3d, Pg. 9) 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. Set the Gun Lock (1c, Pg. 9) to the **LOCKED** position.
3. Disconnect the air supply from the Gun.
4. Use a suitable size wrench and remove the air fitting from the rear of the manifold.
5. Remove the trigger from the assembly to access the front of the air manifold.
6. Use supplied wrench (TL-09, Pg. 38) and remove the spool valve retainer (6e).
7. Remove the Spring (5e), Spool Valve Liner (4e), Spool Valve (3e), and Liner Bushing (2e) using the tool provided (TL-10, Pg. 38).
8. Remove and discard O-Rings (7e & 8e)



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9. Replace the O-rings (7e & 8e, Pg. 17) and Spring (5e, Pg. 17) supplied in KT-826 (Pg. 26). Extra grease will facilitate reassembly.

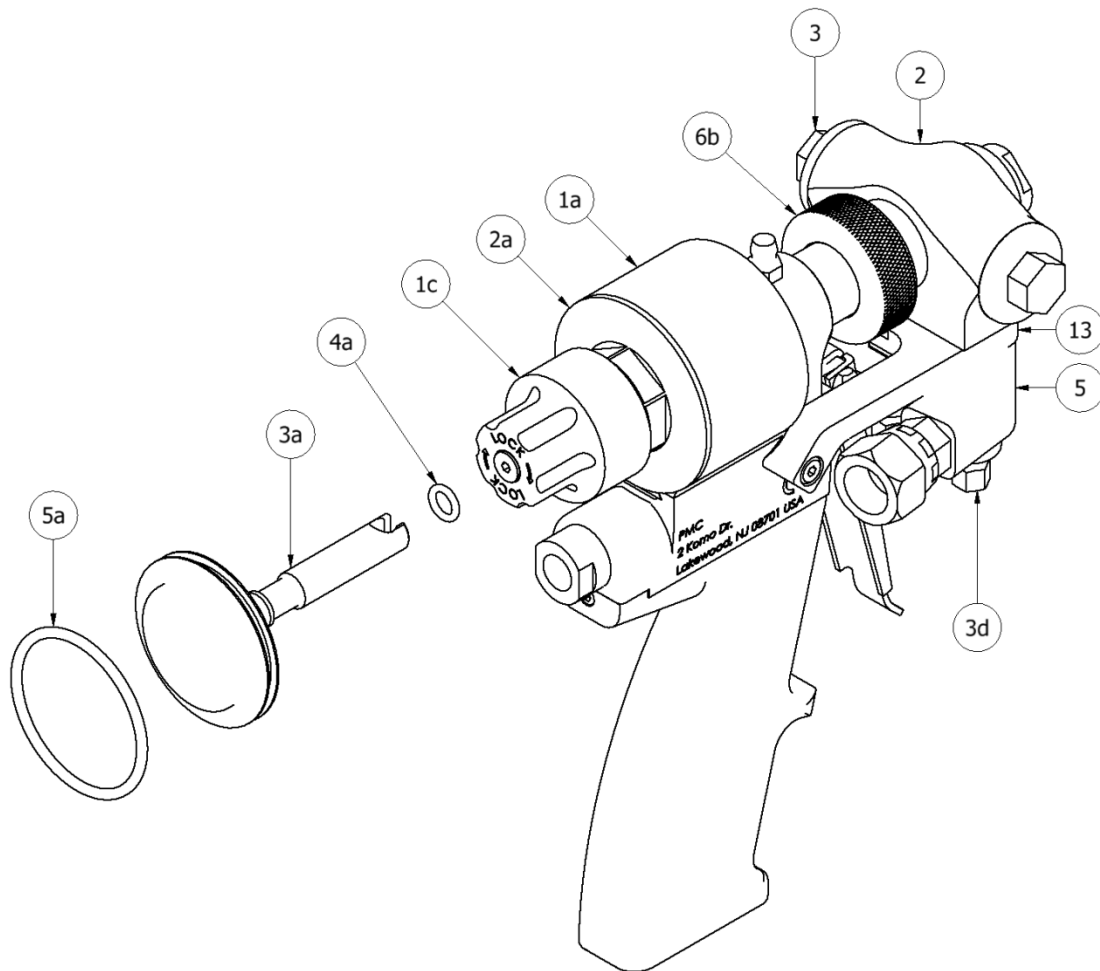
NOTE! When replacing O-rings, replace ALL O-rings included in KT-826 Rebuild Kit.

10. Inspect, clean and/or replace all remaining assembly components. Apply a small amount of grease to the inside of the manifold cavity and to the O-rings on the Spool Valve to facilitate reassembly.
11. Reattach the Trigger and Air Manifold assembly in reverse order.



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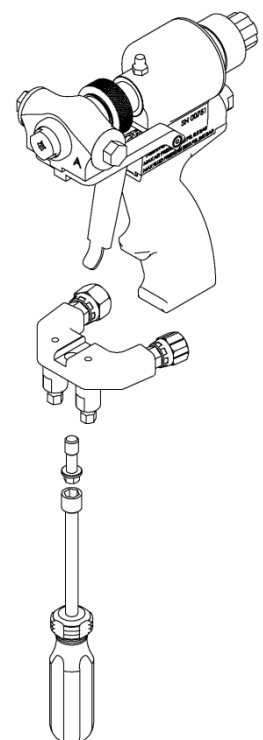
AIR CYLINDER MAINTENANCE



1. **CLOSE** the Manual Valves (3d) 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. Trigger Gun over Waste Container to release internal material pressure.
3. Set the Gun Lock (1c) to the **LOCKED** position.
4. Loosen the Screen Screws (20) using a ½" wrench.
5. Disconnect Coupling Block (5) from Gun Block (2) using the Nut Driver provided (TL-04001, Pg. 38).
6. Disengage the Head Latch (13) from the Gun Block (2)
7. Loosen the Locking Collar (6b) from the Gun Block (2) and remove the complete Gun Block assembly from the Air Cylinder (1a).





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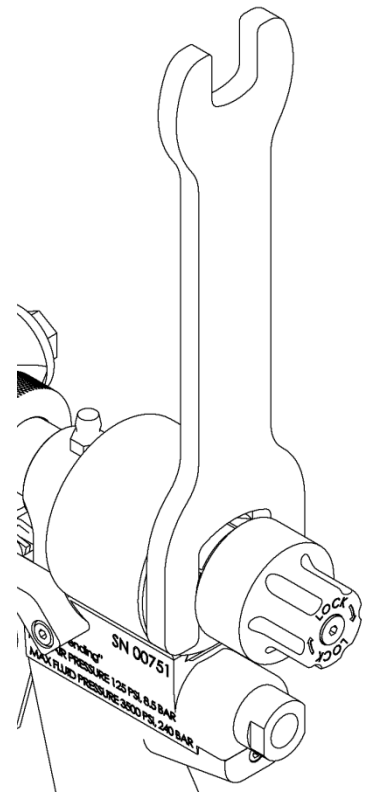
8. Using the Wrench (TL-09, Pg. 38) provided, remove the End Cap (2a, Pg. 19).
9. Push on the exposed Piston (3a, Pg. 19) by the Locking Collar (6b19) to remove the Piston (3a, Pg. 19) from the rear of the Air Cylinder (1a, Pg. 19).
10. Inspect the O-rings (4a, 5a, Pg. 19) on the Piston and shaft and replace as required.
11. Inspect the O-ring on the End Cap (2a, Pg. 19) and replace as required.

NOTE! When replacing O-rings, replace ALL O-rings included in the KT-801 Rebuild Kit.

12. Coat the inside of the Cylinder and all O-rings with grease to facilitate reassembly.
13. Reassemble the Air Cylinder in reverse order.

CAUTION! Use wooden or plastic tools or a brass brush for cleaning.

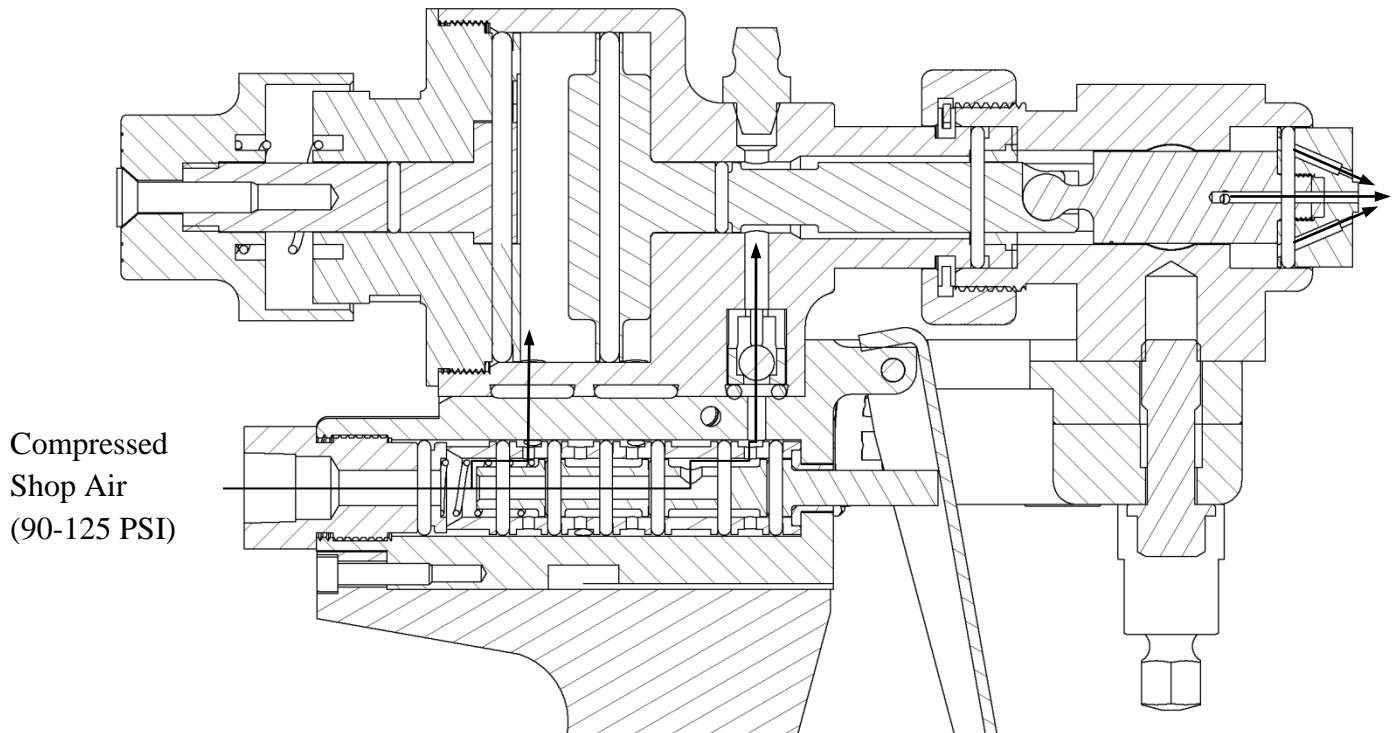
Do not use metal or abrasive tools that can scratch the contact surfaces.





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GUN OPERATION



TRIGGERED OFF

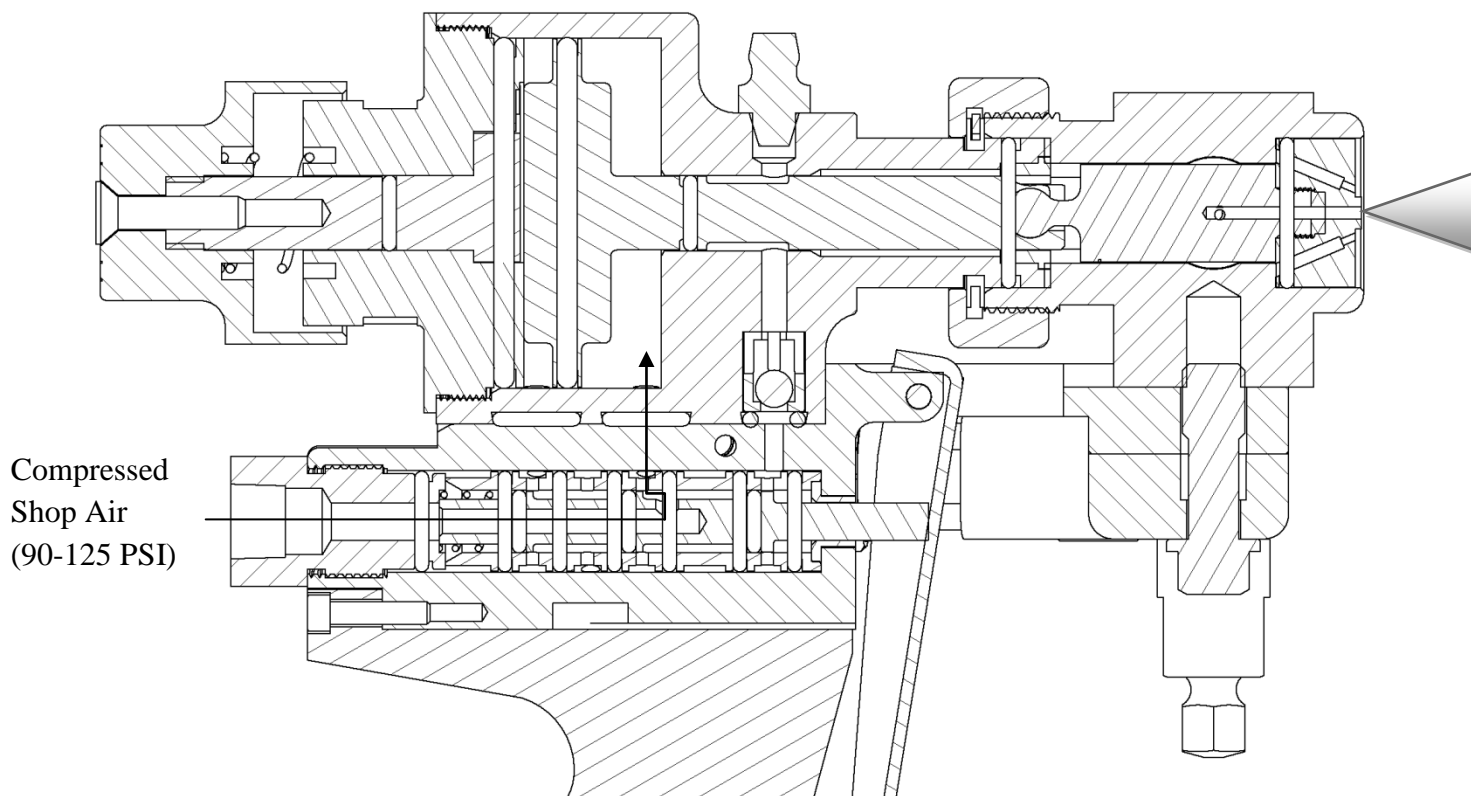
Compressed shop air:

- Enters through the rear of the Air Manifold.
- Passes around the Spool Valve to the back of the Piston moving the Piston and Chamber forward to the **CLOSED** position and maintaining it closed.
- In the closed position, the orifices in the Chamber are not concealed within the Side Seal ports and are opened to the air/grease chamber in the Gun Block.
- Purge air passes through the spool valve and past a check valve and into the air cylinder and gun block.
- Purge air and residual grease enter the mixing chamber and pass through the chamber and PCT expelling mixed material out of the chamber area.
- Purge air is also expelled from the PCT in a circular trajectory to keep the tip clean.



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GUN OPERATION



TRIGGERED ON

- Compressed shop air passes through the open Spool Valve, filling the cavity and pushing the Piston and Chamber rearward.
- The orifices in the Chamber are now captured within the Side seal and exposed to high pressure chemical.
- High pressure chemical enters the chamber from the opposing orifices. The high pressure chemicals impingement mixes, with a fifty percent shear, travels down the chamber and out the PTC.

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.



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TROUBLE SHOOTING GUIDE



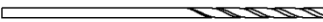



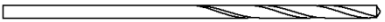


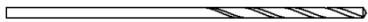


PROBLEM	POSSIBLE CAUSE	SOLUTION
PCT not flush with Gun Block when Gun is triggered	Air Safety Valve Closed	OPEN
	Insufficient Gun air pressure (minimum 90 psi, 6.2 Bar)	Ensure 90 psi (6.2 Bar) of air pressure
	Trigger Valve requires service	Rebuild, see page 17
	Air Passages plugged	Clean, See page 17
Material does not spray when Gun is triggered	Manual Valve (3d) CLOSED	OPEN, see page 10, #9
	Mixing Chamber (6) Inlet Orifices plugged	Clean, see page 14
	Side Seal (27) Orifices plugged	Clean, see page 16
	Check Valve (4) plugged	Replace, see page 36
Mixing Chamber moves slowly	Trigger Valve requires service	Rebuild, see page 17
	Piston Assembly requires service	Rebuild, see page 19
	Air Passages plugged	Clean, see page 21
Mixing Chamber moves slowly, then normal speed	Reacted material around Side Seals (27)	Inspect Side Seals(27), Mixing Chamber (6) for reacted materials, clean, see pages 14,16
Pattern deformation	Mixing Chamber Nozzle dirty	Inspect and clean
	PCT dirty	Inspect and clean
Material spray pressure imbalance	Mixing Chamber (6) Inlet Orifices plugged	Clean
	Side Seal (27) Orifices plugged	Clean, see page 16
	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 (27) damaged	Replace, see page 16
	Mixing Chamber (6) damaged	Replace, see page 14
	Side Seal/ Screen Screw O-rings (Pg 16) damaged	Replace, see page 16
Material mist from Mixing Chamber (3) or PCT (4)	Side Seal (27) damaged	Replace, see page 16
	Mixing Chamber (6) damaged	Replace, see page 14
	Side Seal/ Screen Screw O-rings (Pg 16) damaged	Replace, see page 16
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 (7) and Gun Block (1)	Clean, see page 21
Steady air leakage from Handle	Air Cylinder (1a) O-rings damaged	Replace, see page 19
	Trigger Valve O-rings damaged (8e)	Replace, see page 17



AP-2 Service Manual

REFERENCE GUIDE







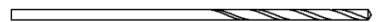






















AP-2 CHAMBER KITS (GU-814-XXX)

KIT NUMBER	PART NUMBER	QTY	DESCRIPTION	FOR USE WITH	ILLUSTRATION
GU-814-000	GU-03032	1	#61 DRILL (.0390)	MIXING NOZZEL	
	GU-03031	1	#70 DRILL (.0280)	MIXING CHAMBER PORT	
	RM-814-000	1	CHAMBER #000	-	-
GU-814-00	GU-03023	1	#56 DRILL (.0465)	MIXING NOZZEL	
	GU-03027	1	#69 DRILL (.0292)	MIXING CHAMBER PORT	
	RM-814-00	1	CHAMBER #00	-	-
GU-814-01	GU-03035	1	#54 DRILL (.055)	MIXING NOZZEL	
	GU-03021	1	#59 DRILL (.0410)	MIXING CHAMBER PORT	
	RM-814-01	1	CHAMBER #01	-	-
GU-814-02	GU-03024	1	#51 DRILL (.0676)	MIXING NOZZEL	
	GU-03023	1	#56 DRILL (.0465)	MIXING CHAMBER PORT	
	RM-814-02	1	CHAMBER #02	-	-
GU-814-03	GU-03028	1	#44 DRILL (.0860)	MIXING NOZZEL	
	GU-03035	1	#54 DRILL (.055)	MIXING CHAMBER PORT	
	RM-814-03	1	CHAMBER #03	-	-
GU-814-04	GU-03029	1	#43 DRILL (.0890)	MIXING NOZZEL	
	GU-03054	1	#50 DRILL (.0700)	MIXING CHAMBER PORT	
	RM-814-04	1	CHAMBER #04	-	-



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AP-2 PCT KITS (GU-815-XXX)

KIT NUMBER	PART NUMBER	QTY	DESCRIPTION	FOR USE WITH	ILLUSTRATION
GU-815-000	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	1	#54 DRILL (.055)	PCT DUCT	
	GU-03032	1	#61 DRILL (.0390)	PCT NOZZEL PORT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-000	1	PATTERN CONTROL TIP 000	-	
GU-815-00	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	1	#54 DRILL (.055)	PCT DUCT	
	GU-03023	1	#56 DRILL (.0465)	PCT NOZZEL PORT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-00	1	PATTERN CONTROL TIP 00	-	
GU-815-01	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	2	#54 DRILL (.055)	PCT DUCT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-01	1	PATTERN CONTROL TIP 01	-	
GU-815-02	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	1	#54 DRILL (.055)	PCT DUCT	
	GU-03024	1	#51 DRILL (.0676)	PCT NOZZEL PORT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-02	1	PATTERN CONTROL TIP 02	-	
GU-815-03	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	1	#54 DRILL (.055)	PCT DUCT	
	GU-030-28	1	#44 DRILL (.0860)	PCT NOZZEL PORT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-03	1	PATTERN CONTROL TIP 03	-	
GU-815-04	GU-03033	1	#65 DRILL (.0350)	PCT DUCT	
	GU-03035	1	#54 DRILL (.055)	PCT DUCT	
	GU-03029	1	#43 DRILL (.0935)	PCT NOZZEL PORT	
	OR-00042A	1	PCT FLAT TIP O-RING .016	-	
	RM-815-04	1	PATTERN CONTROL TIP 04	-	



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CHAMBER/PCT KIT (KT-814-XXX)

KIT NUMBER	PART NUMBER	QTY	DESCRIPTION
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-814-01	GU-814-01	1	CHAMBER 01 W/ DRILLS
	GU-815-01	1	PCT 01 RND W/ DRILLS
KT-814-02	GU-814-02	1	CHAMBER 02 W/ DRILLS
	GU-815-02	1	PCT 02 RND W/ DRILLS
KT-814-03	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

AIR MANIFOLD TRIGGER REBUILD KIT (KT-826)

PART NUMBER	QTY	DESCRIPTION
GU-825-1	1	SPOOL VALVE LINER
GU-825-2	1	LINER BUSHING
GU-824	1	SPOOL VALVE SPRING
OR-803	7	O-RING; #012 VITON
OR-00002A	3	O-RING; #008 VITON
OR-804	1	O-RING; 2MMX4MM BUNA
OR-00037B	2	QUAD RING #011 VITON

AIR CYLINDER REBUILD KIT (KT-801)

PART NUMBER	QTY	DESCRIPTION
OR-00026A	2	O-RING #129 VITON
OR-00043A	3	O-RING #010 80D AFLAS
OR-00002A	1	O-RING; #008 VITON
OR-00037B	2	QUAD RING #011 VITON
OR-00042A	1	PCT FLAT TIP O-RING .016
GU-829	1	A/P CHECK VALVE
GU-830	1	AIR CYLINDER BUSHING



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AP-2 O-RING KIT (KT-827)

PART NUMBER	QTY	DESCRIPTION
OR-800	2	#013 BACK UP RING
OR-801A	2	O-RING #013 80D AFLAS
OR-803	7	O-RING #012 VITON
OR-804	1	O-RING 2MMX4MM BUNA
OR-00002A	3	O-RING; #008 VITON
OR-00026A	2	O-RING #129 VITON
OR-00037B	2	QUAD RING #011 VITON
OR-00042A	1	PCT FLAT TIP O-RING .016
OR-00043B	4	O-RING #010 80D AFLAS

A/R SCREEN SCREW ASSEMBLY KITS (KT-819-X)

KIT NUMBER	PART NUMBER	QTY	DESCRIPTION
KT-819-R	GU-819-R	1	R SCREEN SCREW
	GU-04007	1	SCREEN SCREW SEAL
	OR-800	1	#013 Back Up Ring
	OR-801	1	O-RING #013 80D AFLAS
KT-819-A	GU-819-A	1	A SCREEN SCREW
	GU-04008	1	SCREEN SCREW SEAL
	OR-800	1	#013 Back Up Ring
	OR-801	1	O-RING #013 80D AFLAS



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RECOMMENDED SPARE PARTS

PART NUMBER	QTY	DESCRIPTION	PAGE
KT-814-XXX	1	CHAMBER 000/00/01/02/03/04 W/ DRILLS	26
KT-826	1	AIR MANIFOLD REBUILD KIT	26
KT-801	1	AIR CYLINDER REBUILD KIT	26
GU-817-90	2	SIDE SEAL	37
GU-818-XXX	4	FILTER SCREEN 40/60/80 MESH; SEE BELOW	28
GU-04007	2	SCREEN SCREW SEAL	37
OR-00043B	8	O-RING #010 80D AFLAS	37
OR-801A	8	O-RING #013 80D AFLAS	37
SP-04005	2	SPRING; SIDE SEAL	37
GU-02020-00	1	MANUAL VALVE	30
GU-820	2	CHECK VALVE ASSEMBLY	36
OR-00042A	2	PCT FLAT TIP O-RING .016	36
GU-829	1	A/P CHECK VALVE	34
TN-831	2	4-40 X ½ SHCP	36
TL-04003	1	GREASE TUBE	38
OR-800	8	#013 BACK UP RING	37

SCREEN SIZES

PART NUMBER	QTY	DESCRIPTION
GU-818-80	1	FILTER SCREEN, 80 MESH (Standard with all guns)
GU-818-60	1	FILTER SCREEN, 60 MESH
GU-818-40	1	FILTER SCREEN, 40 MESH

OPTIONAL PARTS

PART NUMBER	QTY	DESCRIPTION
GU-815-50-509	1	BLASTER TIP .059
GU-815-51	1	POUR TIP
GU-815-52	1	PCT FLAT TIP RETAINER ASSEMBLY
* GU-815-52-1	1	PCT FLAT TIP BODY
* GU-815-52-2	1	PCT FLAT TIP GASKET
* GU-815-52-3	1	PCT FLAT TIP RETAINER
* OR-00042A	1	PCT FLAT TIP O-RING .016

*DENOTES PARTS IN THE GU-815-52

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



AP-2 Service Manual

1/4" UNHEATED STAINLESS STEEL HOSE ASSY.

PART NUMBER	DESCRIPTION
MA-41	HOSE PACKAGE KIT, UNHEATED
MA-41A	REPLACEMENT HOSE, "A" SIDE
MA-41R	REPLACEMENT HOSE, "R" SIDE



Optional MA-41 Kit shown on AP-2 Gun

Optional Flush Pot Kit TL-12

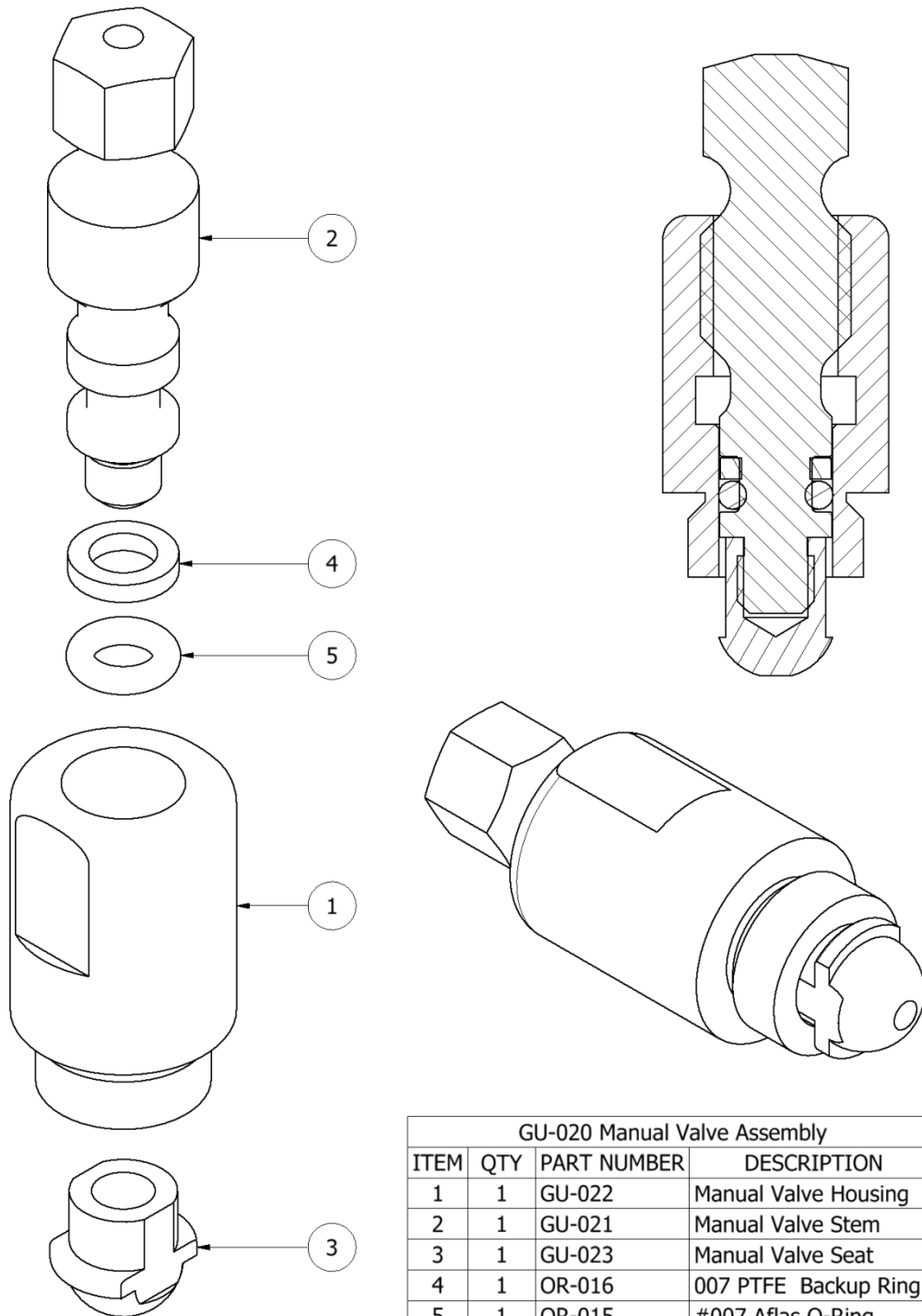




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PARTS IDENTIFICATION

MANUAL VALVE ASSEMBLY (GU-020)

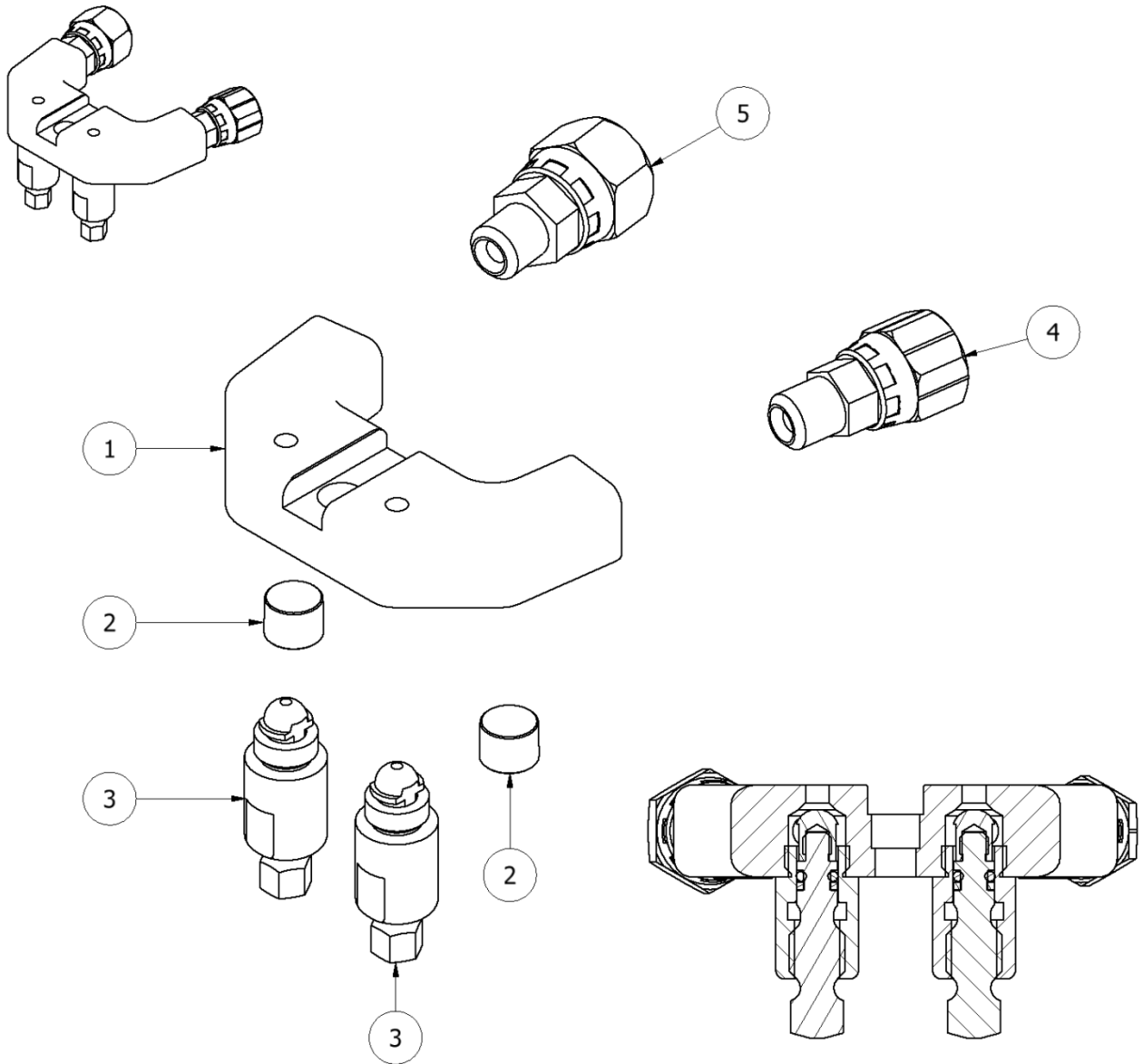


GU-020 Manual Valve Assembly				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	GU-022	Manual Valve Housing	
2	1	GU-021	Manual Valve Stem	
3	1	GU-023	Manual Valve Seat	
4	1	OR-016	007 PTFE Backup Ring	
5	1	OR-015	#007 Aflas O-Ring	



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COUPLING BLOCK ASSEMBLY (GU-04001)

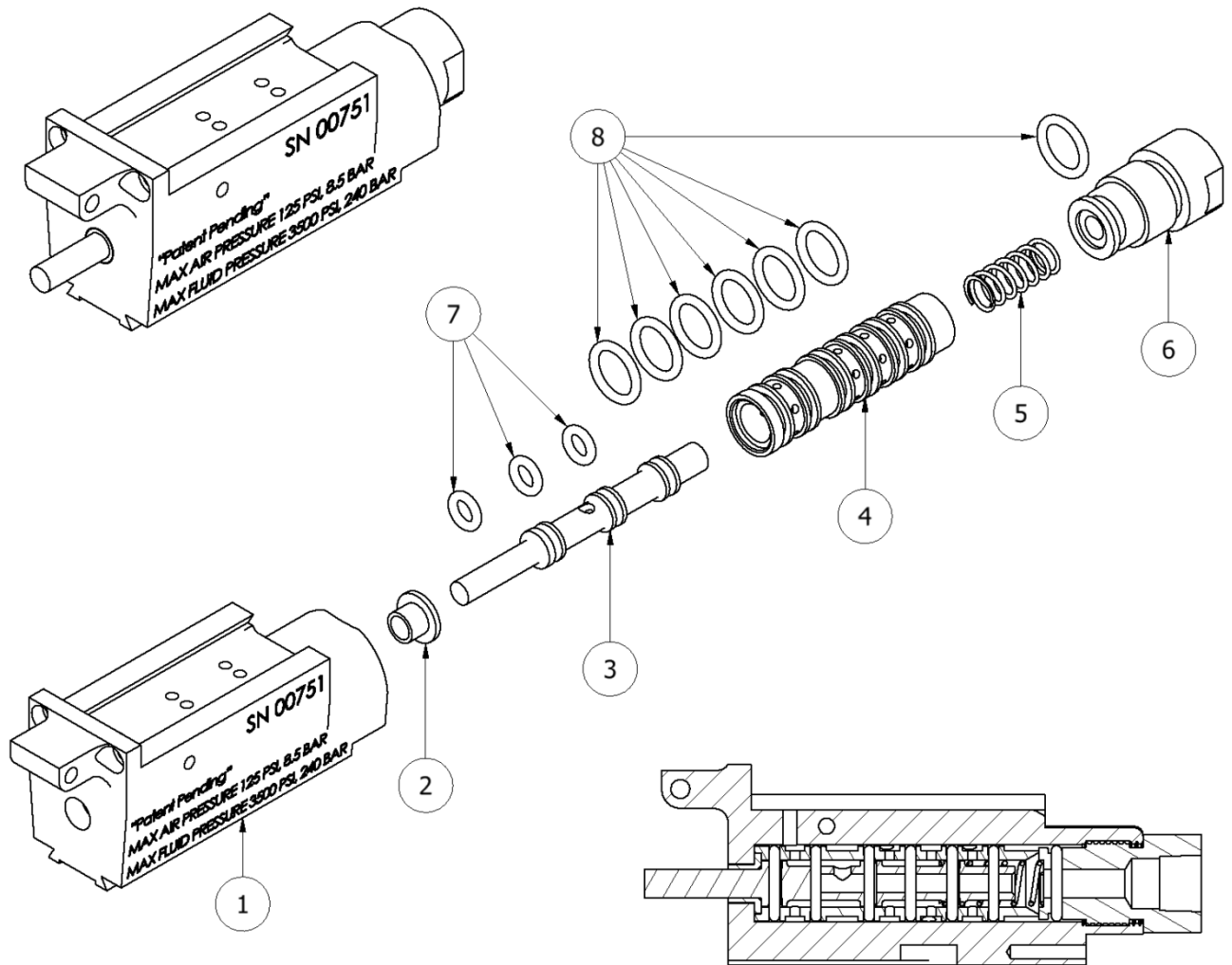


GU-04001 COUPLING BLOCK ASSEMBLY				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	GU-04001-01	COUPLING BLOCK BODY	
2	2	TN-04192	1/8 NPT PIPE PLUG	
3	2	GU-020	MANUAL VALVE ASSY	
4	1	RA-00005A	1/8 NPT X #5 JIC SWIVEL	
5	1	RA-00006A	1/8 NPT X #6 JIC SWIVEL	



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AIR MANIFOLD ASSEMBLY (GU-843)

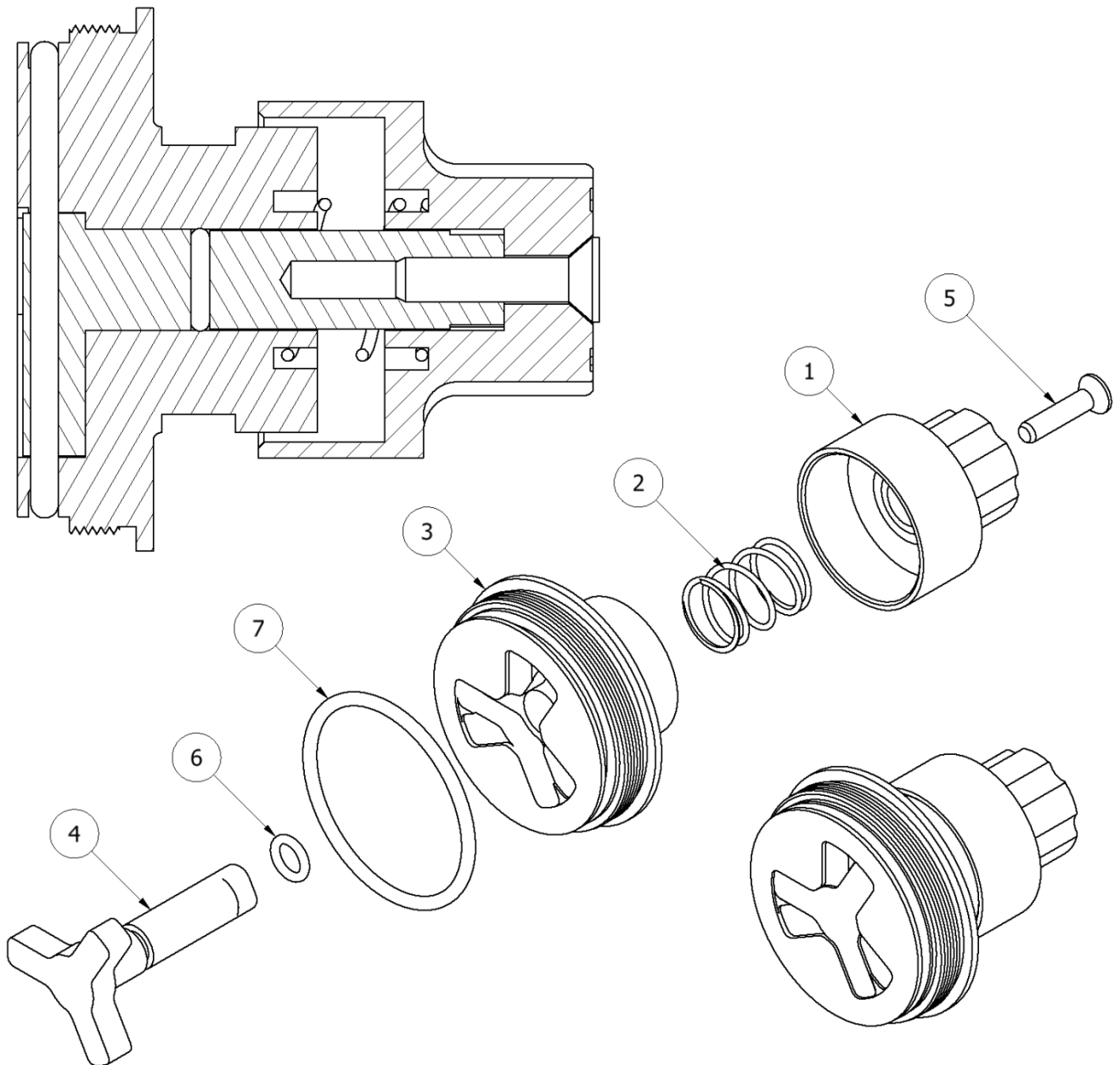


GU-843 AIR MANIFOLD ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-826	AIR MANIFOLD
2	1	GU-825-2	LINER BUSHING
3	1	GU-823	SPOOL VALVE
4	1	GU-825-1	SPOOL VALVE LINER
5	1	GU-824	SPOOL VALVE SPRING
6	1	GU-833	HOSE ADAPTER
7	3	OR-00002A	O-RING #008 VITON
8	7	OR-803	O-RING, #012 VITON



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END CAP ASSEMBLY (GU-844)

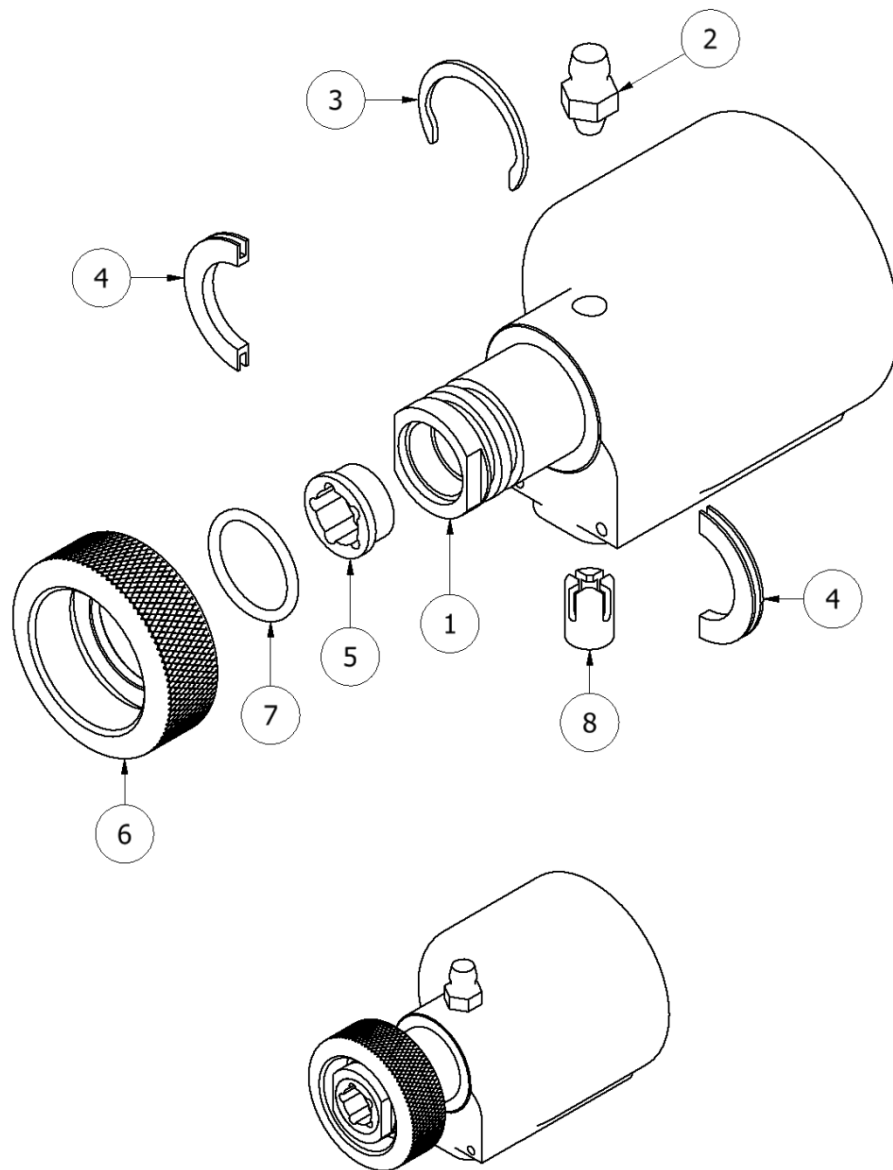


GU-844 AP-2 END CAP ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-804	LOCK KNOB
2	1	GU-806	SPRING
3	1	GU-803	CYLINDER END CAP
4	1	GU-807	TWO POSITION STOP
5	1	GU-831	RETAINING SCREW
6	1	OR-00043A	O-RING #010 80D AFLAS
7	1	OR-00026A	O-RING #129 VITON



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AIR CYLINDER ASSEMBLY (GU-801A)

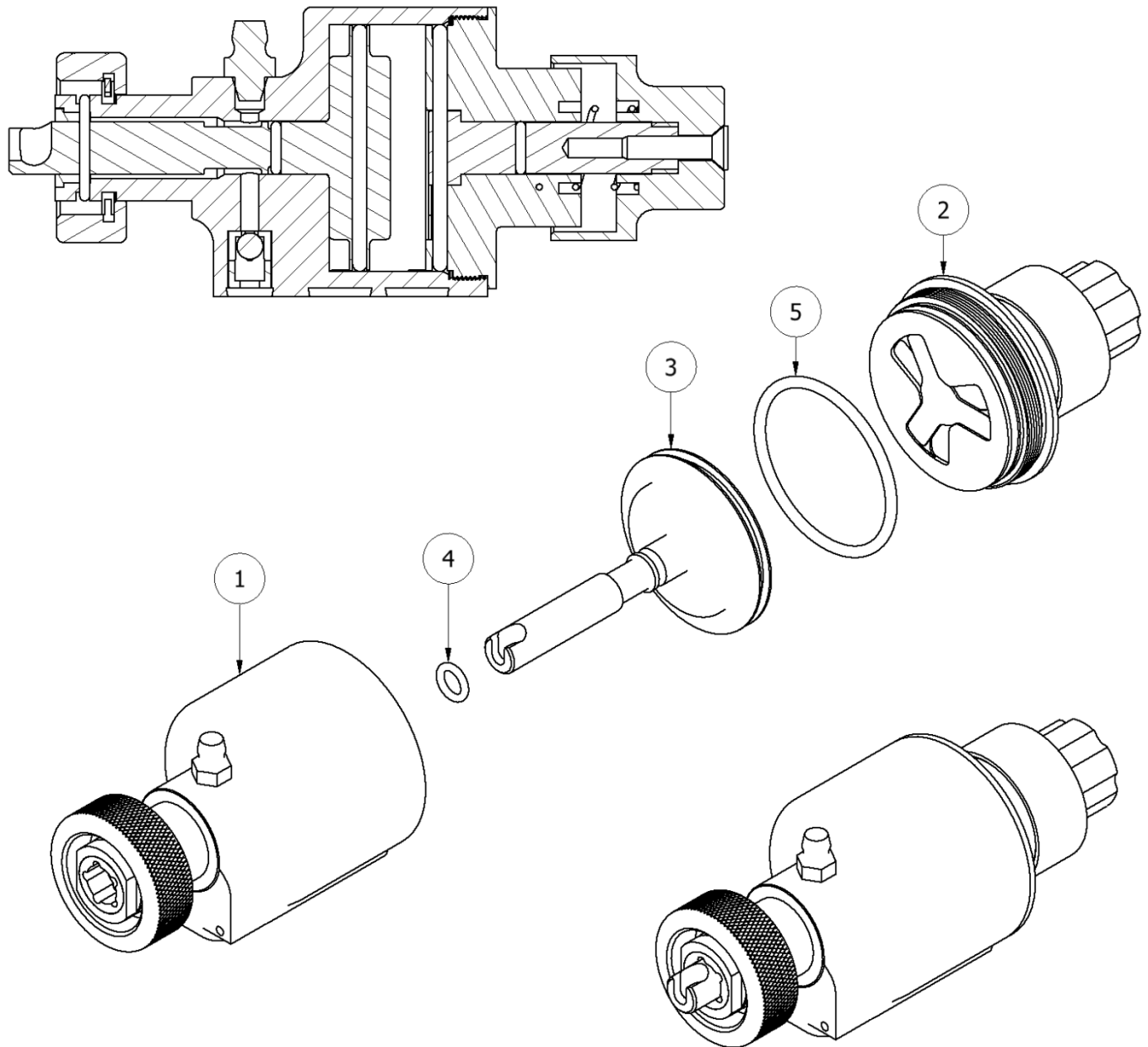


GU-801A AP-2 AIR CYLINDER ASSEMBLY			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-801	AIR CYLINDER
2	1	TN-04186	GREASE FITTING
3	1	GU-836	SIDE MOUNT EXT RETAINING RING
4	2	GU-837	RETAINER RING SPLIT-SET
5	1	GU-830	AIR CYLINDER BUSHING
6	1	GU-812	LOCK COLLAR
7	1	OR-00042A	PCT FLAT TIP O-RING .016
8	1	GU-829	A/P CHECK VALVE



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COMPLETE AIR CYLINDER ASSEMBLY (GU-845)

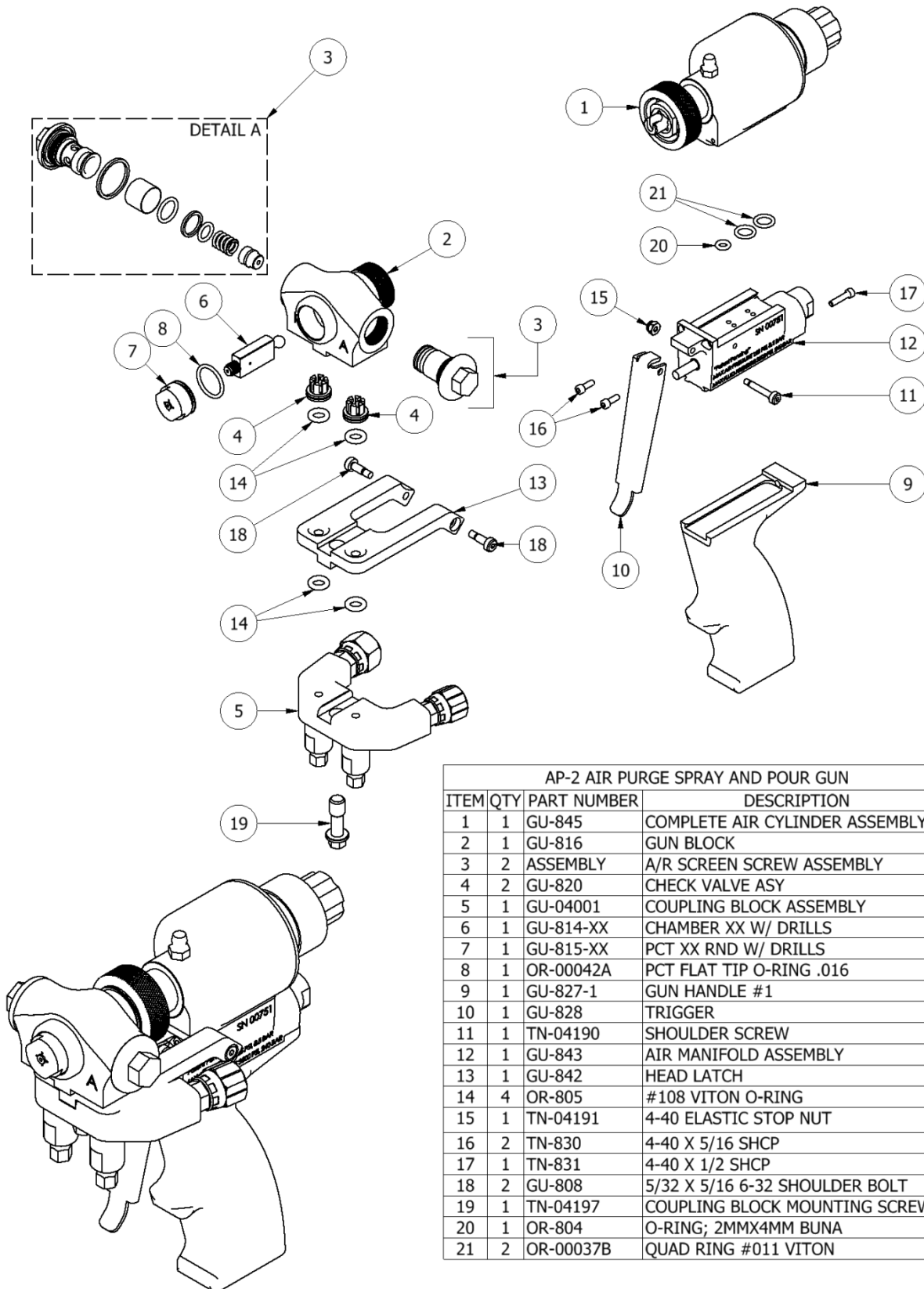


GU-845 COMPLETE AIR CYLINDER ASSEMBLY				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	GU-801A	AP-2 AIR CYLINDER ASSEMBLY	
2	1	GU-844	AP-2 END CAP ASSEMBLY	
3	1	GU-802	PISTON	
4	1	OR-00043A	O-RING #10 80D AFLAS	
5	1	OR-00026A	O-RING #129 VITON	



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AIR PURGE SPRAY AND POUR GUN (GU-850)

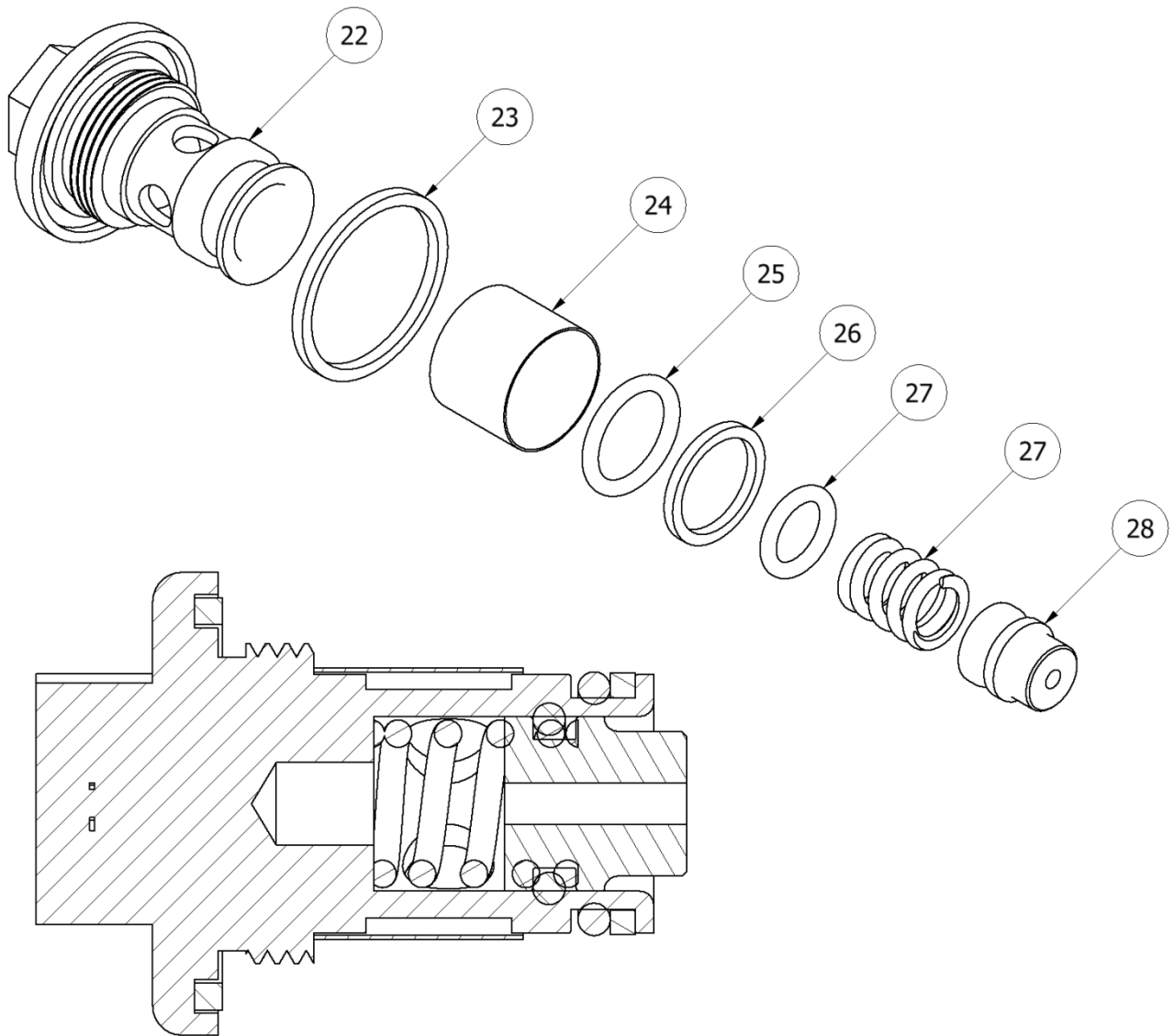


AP-2 AIR PURGE SPRAY AND POUR GUN			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GU-845	COMPLETE AIR CYLINDER ASSEMBLY
2	1	GU-816	GUN BLOCK
3	2	ASSEMBLY	A/R SCREEN SCREW ASSEMBLY
4	2	GU-820	CHECK VALVE ASY
5	1	GU-04001	COUPLING BLOCK ASSEMBLY
6	1	GU-814-XX	CHAMBER XX W/ DRILLS
7	1	GU-815-XX	PCT XX RND W/ DRILLS
8	1	OR-00042A	PCT FLAT TIP O-RING .016
9	1	GU-827-1	GUN HANDLE #1
10	1	GU-828	TRIGGER
11	1	TN-04190	SHOULDER SCREW
12	1	GU-843	AIR MANIFOLD ASSEMBLY
13	1	GU-842	HEAD LATCH
14	4	OR-805	#108 VITON O-RING
15	1	TN-04191	4-40 ELASTIC STOP NUT
16	2	TN-830	4-40 X 5/16 SHCP
17	1	TN-831	4-40 X 1/2 SHCP
18	2	GU-808	5/32 X 5/16 6-32 SHOULDER BOLT
19	1	TN-04197	COUPLING BLOCK MOUNTING SCREW
20	1	OR-804	O-RING; 2MMX4MM BUNA
21	2	OR-00037B	QUAD RING #011 VITON



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SCREEN SCREW ASSEMBLY



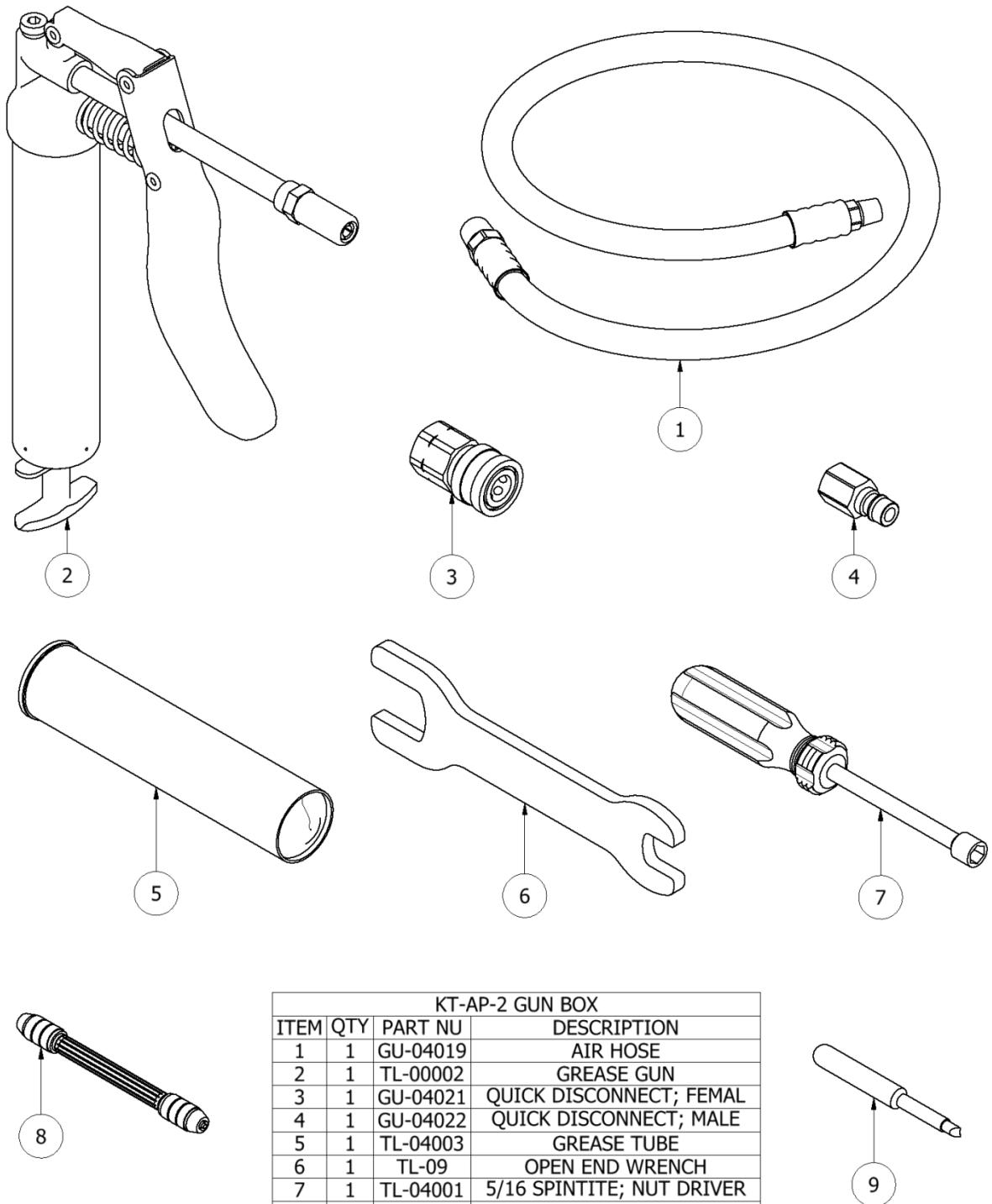
SCREEN SCREW COMPONENTS			
ITEM	QTY	PART NUMBER	DESCRIPTION
22	1	GU-819-A/GU-819-R	A/R SCREEN SCREW
23	1	GU-04007	SCREEN SCREW SEAL
24	1	GU-818-XX	FILTER SCREEN; 40/60/80 MESH SEE PAGE 28
25	1	OR-801	O-RING #013 80D AFLAS
26	1	OR-800	#013 BACK UP RING
27	1	OR-00043A	O-RING #010 80D AFLAS
28	1	SP-04005	SPRING; SIDE SEAL
29	1	GU-817-90	SIDE SEAL

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



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GUN BOX KIT (KT-AP-2)



KT-AP-2 GUN BOX				
ITEM	QTY	PART NU	DESCRIPTION	
1	1	GU-04019	AIR HOSE	
2	1	TL-00002	GREASE GUN	
3	1	GU-04021	QUICK DISCONNECT; FEMAL	
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	

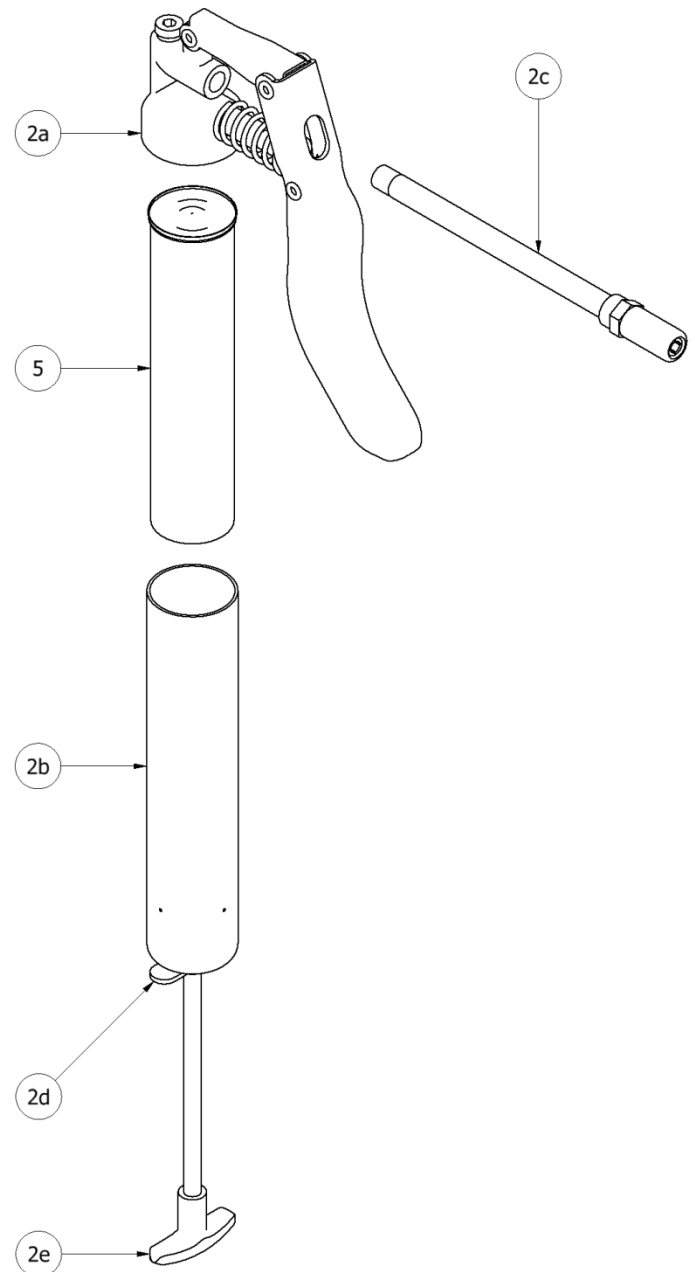


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APPENDIX

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. 38).
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.





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MIXING CHAMBER FLOW RATE*

CHAMBER	Lbs/Per/Min @ 1000 PSI	Lbs/Per/Min @ 2000 PSI
GU-815-000	4	6
GU-815-00	7	11
GU-815-01	9	16
GU-815-02	12	22
GU-815-03	18	32
GU-815-04	25	47

CHAMBER	KG/Per/Min @ 69 Bar	KG/Per/Min @ 138 Bar
GU-815-000	2	3
GU-815-00	3	5
GU-815-01	4	7
GU-815-02	5	10
GU-815-03	8	14
GU-815-04	11	21

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

CHAMBER/ORIFICE COMPARISON CHART

COMPETITIVE AIR PURGE		PMC AIR PURGE	
CHAMBER NUMBER	ORIFICE SIZE	CHAMBER NUMBER	ORIFICE SIZE
000 (AR2020)	0.02	000	0.028
00 (AR2929)	0.029	00	0.0292
01 (AR3737)	0.042	01	0.041
02 (AR4242)	0.052	02	0.0465
03 (AR6060)	0.06	03	0.0595
04 (AR7070)	0.07	04	0.07



AP-2 Service Manual

TECHNICAL SERVICE BULLETIN

April 24, 2013

REF: **AP-2 SCREEN SCREW IMPROVEMENT PART NUMBER GU-819-A and GU-819-R**

All AP-2 spray guns starting with serial #347 Screen Screw have the improved screen screws. The screen screws have been improved to extend the service life of the Screen Screw O-Ring when operating at high pressure. The improvement entails a back up ring (OR-800) in addition to the O-Ring (OR-801). See Details below.

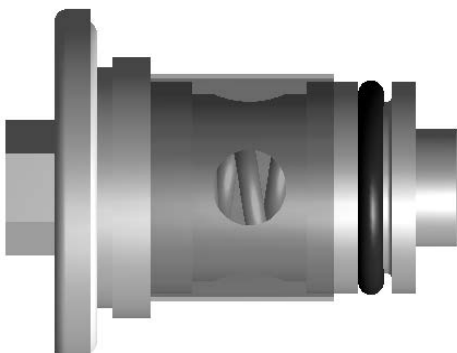
The original screen screw **Will Not** accept the backup ring and o-ring. The customers using the original Screen Screw can continue to use this design. Any new Screen Screws sold will be the new style and will be ordered under Part Numbers KT-819-A (A side) and KT-819-R (Resin Side). These part numbers will include the following, Screen Screw (GU-819-A or GU-819-R, O-Ring (OR-801), backup ring (OR-800), Screen Screw Gasket (GU-04007).

NOTE: The new style Screen Screw also has a larger hex on the end for easy removal from the gun block.

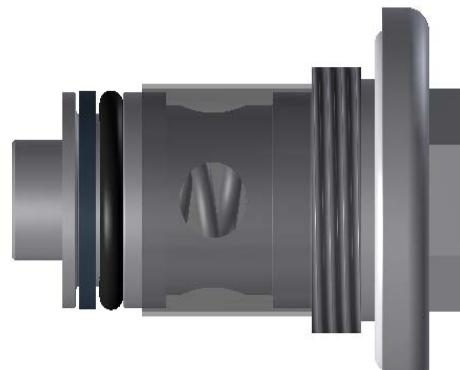
Backup Ring (PN# OR-800) must be installed as shown on the detail below.

Backup Ring PN# (OR-800)

O-Ring PN# (OR-801A)



Original Style



Improved Style



AP-2 Service Manual

TECHNICAL SERVICE BULLETIN

August 16, 2013

REF: **AP-2 STABILIZER BAR KIT # KT-828**

See exploded drawing and parts details attached.

PMC has recently added the #KT-828 Stabilizer Bar Kit to all guns produced after this date. The new Stabilizer Kit will help prevent racking to the gun caused by the chemical hoses dangling during the spray operation. The addition of the Stabilizer Bar creates a more rigid gun assembly which leads to an improved alignment between the chamber and the side seals. The result is less wear on the chamber and side seals and longer parts life.

The #KT-828 Stabilizer Bar Kit can be field retrofit onto any AP-2 gun manufactured prior to this date. The installation is quite easy and only requires two Allen wrenches, 5/16" spin-tite and PMC grease.

Installation Instructions

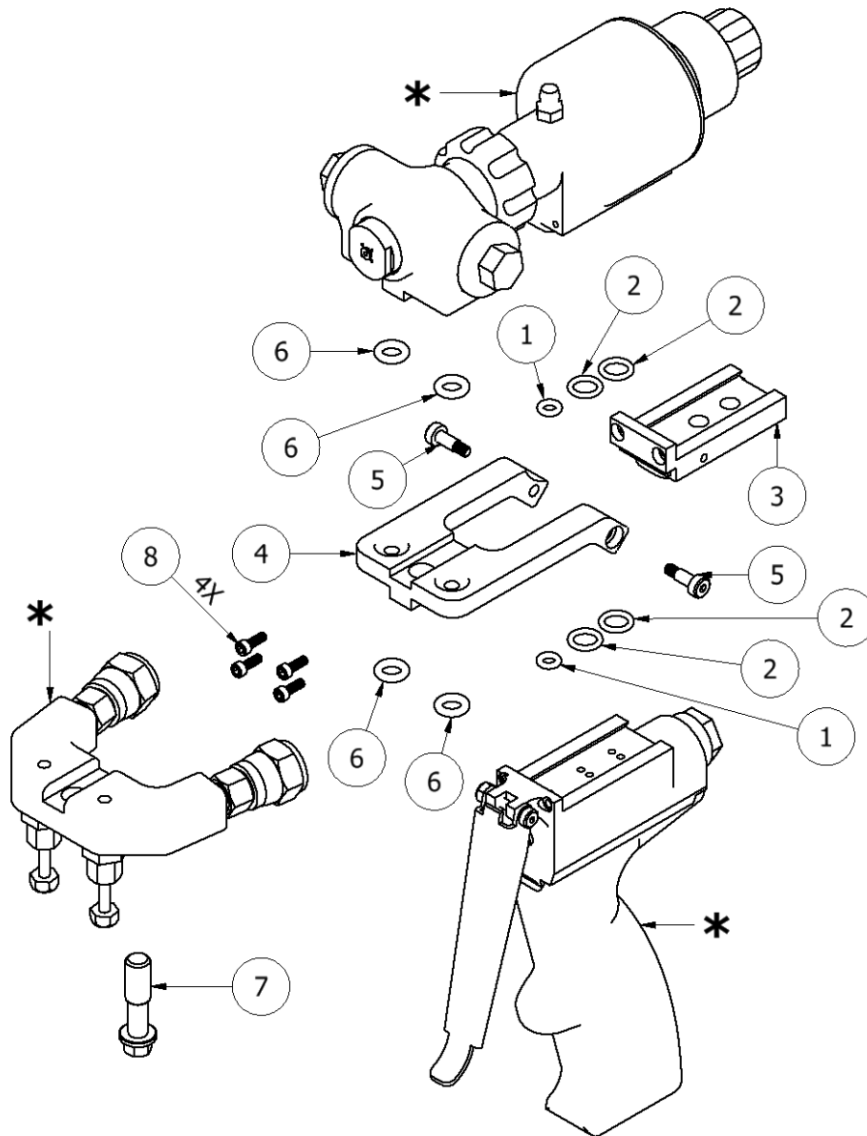
- 1) If the gun is connected to the coupling block turn off the manual valves and remove the gun from the coupling block.
- 2) Remove two TN-830 socket head cap screws from front of existing trigger manifold.
- 3) Slide off the air cylinder from the trigger manifold.
- 4) Remove all old O-rings.
- 5) Clean the parts and apply a small amount of grease into each O-ring location.
- 6) Install all new supplied O-rings as per the exploded view.
- 7) Install the Riser Block #GU-841 onto the air cylinder.
- 8) Install the trigger manifold onto the Riser Block.
- 9) Secure with 4 supplied screws #TN-830.
- 10) Install Stabilizer Bar #GU-842 onto Riser Block # GU-841. Secure with two supplied shoulder bolts #GU-828.
- 11) Insert 4 O-rings #OR-805 into Stabilizer Bar.
- 12) Secure Gun to Coupling Block using the supplied Coupling Block Screw # TN-04197.

You are now ready to Spray!



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AP-2 Stabilizer Kit #KT-828



KT-828 AP-2 STABILIZER KIT PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	OR-804	O-RING
2	4	OR-00037B	QUAD O-RING
3	1	GU-841	RISER BLOCK
4	1	GU-842	STABILIZER
5	2	GU-808	SHOULDER BOLT
6	4	OR-805	O-RING
7	1	TN-04197	COUPLING BLOCK SCREW (BLACK)
8	4	TN-830	SHCS BOLT

* NOT INCLUDED IN KIT KT-828



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Revision	Date	Changes	Approved
1.0	30-Apr-14	P1 Changed Address to Komo Dr, Added Rev Control Number; Updated entire manual to reflect current AP-2 Gun as of 30APR2014; Added Appendix - Technical Service Bulletins; Added Revision Sheet	Vadams