Operation, Parts, Service, Repair

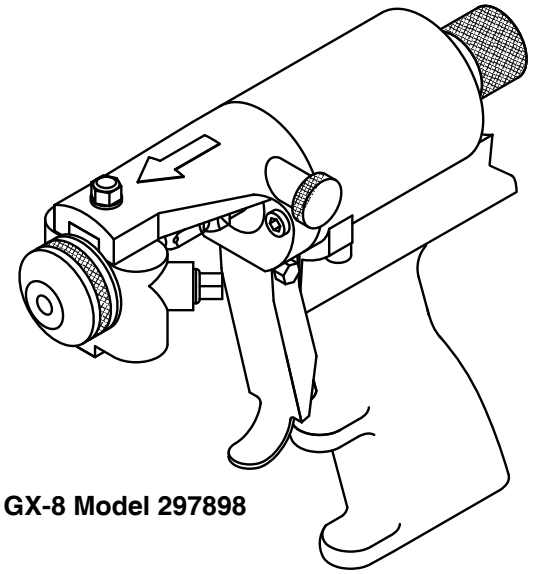
GX-8P Spray Gun

311338N
EN

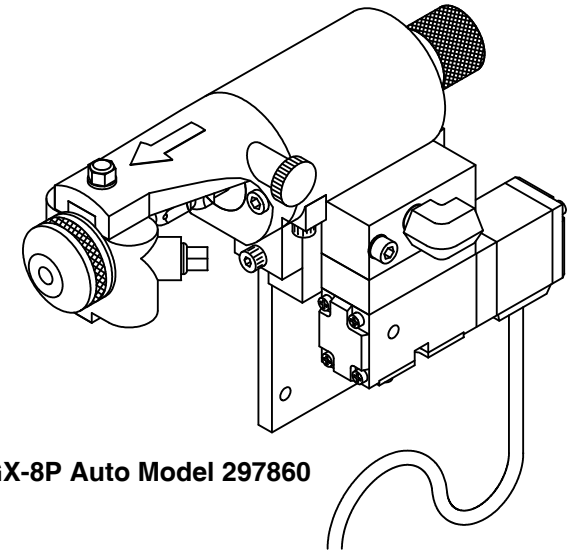
For use with non-flammable polyurethane foams, two-component coating systems (polyureas), and some two-component epoxy systems. For professional use only. Not for use in explosive atmospheres.

3500 psi (24 MPa, 240 bar) Maximum Working Pressure
125 psi (90 KPa, 9 bar) Maximum Air Working Pressure

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.



GX-8 Model 297898



GX-8P Auto Model 297860

Contents

Models

Part No.	Description	Includes:				
		Mix Module	Tip	Manifold	Starter Kit	Flushing Kit
297898 ★	Gun, GX-8	295338 (013)	297192 (201)	Not Included		
297860	Gun, GX-8, Auto					
24P633 ★	Gun, GX-8, with manifold			24N996	297911	296980

★ CE

Warnings

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

⚠ WARNING

PERSONAL PROTECTIVE EQUIPMENT

Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:

- A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.
- Protective eyewear and hearing protection.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.

- Read Safety Data Sheet (SDS) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.
- When spraying, servicing equipment, or when in the work area, always keep work area well ventilated and always wear appropriate personal protective equipment. See **Personal Protective Equipment** warnings in this manual.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

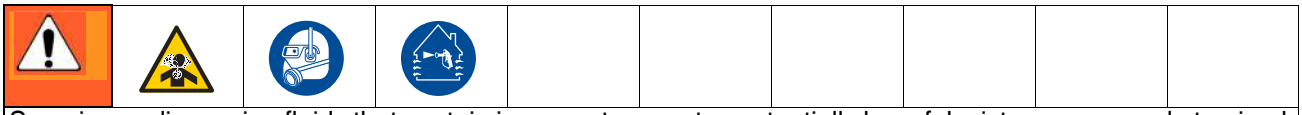
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco/Gusmer replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your Graco/Gusmer distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

PRESSURIZED ALUMINUM PARTS HAZARD

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.

Important Two-Component Material Information

Isocyanate Conditions



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

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

For all applications except spray foam

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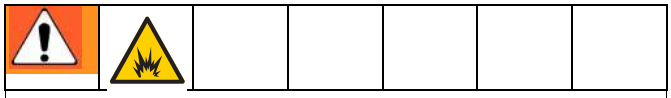
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.

Material Self-ignition



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

Keep Components A and B Separate

Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:

- **Never** interchange component A and component B wetted parts.
- Never use solvent on one side if it has been contaminated from the other side.

Moisture Sensitivity of Isocyanates

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

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

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

Foam Resins with 245 fa Blowing Agents

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

Changing Materials

NOTICE

Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.

Overall View

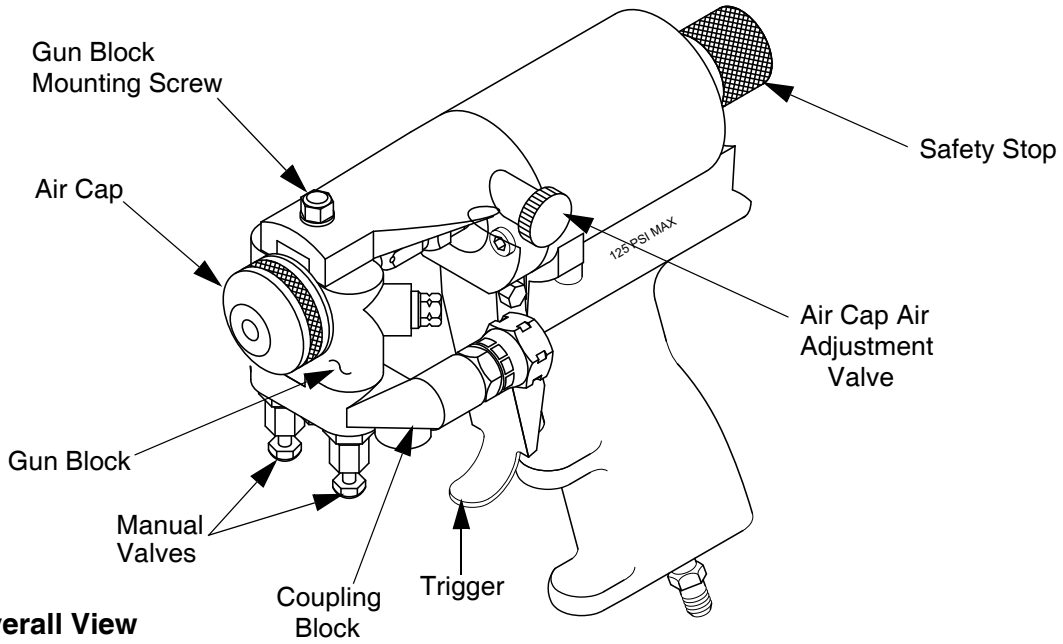


FIG. 1: GX-8P Overall View

Centerline Components

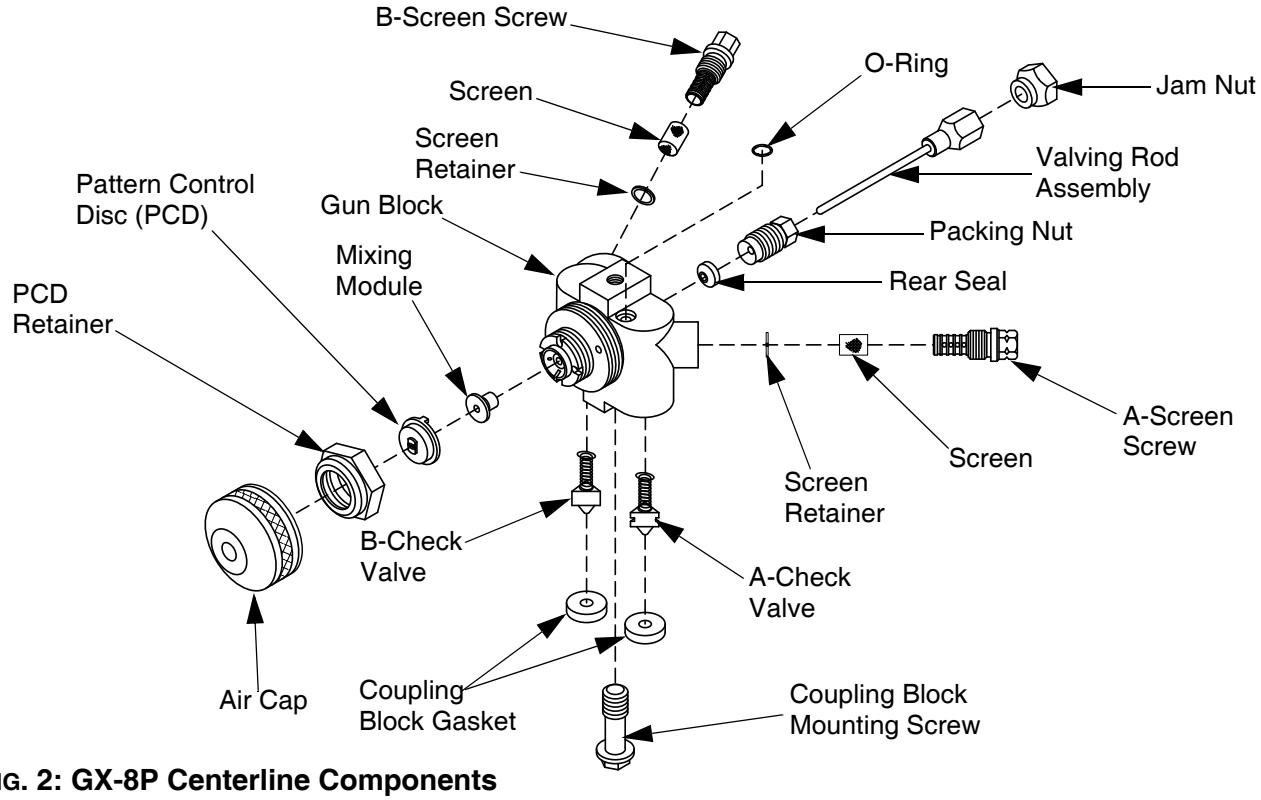


FIG. 2: GX-8P Centerline Components

Mixing Module

Graco offers a variety of spray tip configurations to meet most applications that spray fast-reaction chemical systems at low outputs. GX-8P spray tip components consist of a Pattern Control Disc (PCD) and a Mixing Module (Figure 3). Tip components are available in a range of sizes in both round and fan spray patterns. Please contact your authorized Graco distributor to help you determine the best configurations for your specific application.

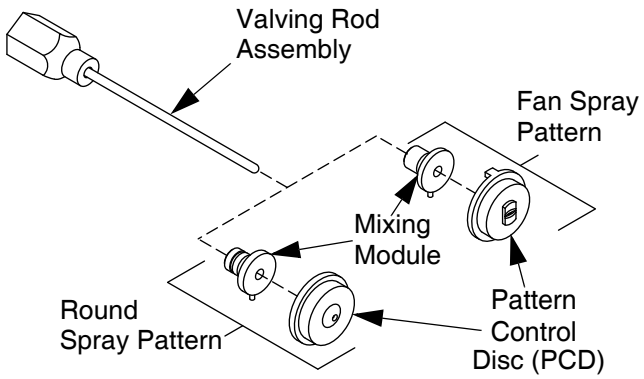


FIG. 3: Mixing Module & PCD

Operation Basics

To prevent accidental gun operation, always disconnect air supply before servicing gun or anytime gun is not in use.

Grounding

Check your local electrical code and proportioner manual for detailed grounding instructions.

Ground spray gun through connection to Graco-approved grounded fluid supply hose.

Safety Position

GX-8P guns have a two-position safety stop. When engaged, it prevents accidental triggering of gun during servicing or down time. When disengaged, it allows gun to dispense.

Engage Safety Stop

To engage safety stop, push in and turn safety stop clockwise to place gun in CLOSED safety position.

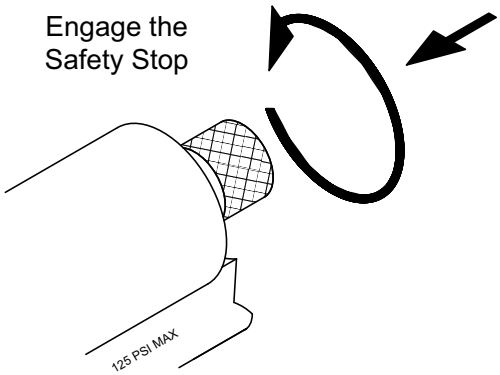


FIG. 4: Safety Stop - Engaged

Disengage Safety Stop

To disengage safety stop, push in and turn safety stop counterclockwise to place gun in OPEN position.

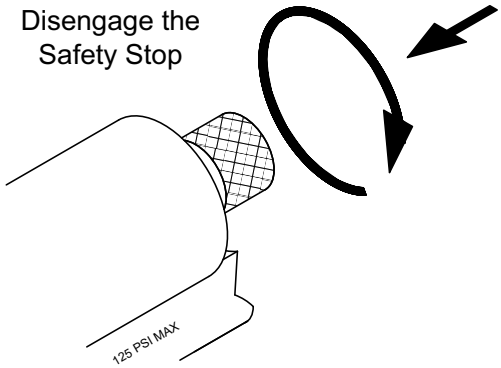


FIG. 5: Safety Stop - Disengaged

Air Hose Connection

Connect Air Hoses

Pull back sleeve of female fitting, insert male fitting and slide sleeve forward to secure connection.

Disconnect Air Hoses

Pull back sleeve of female fitting and pull out male fitting.

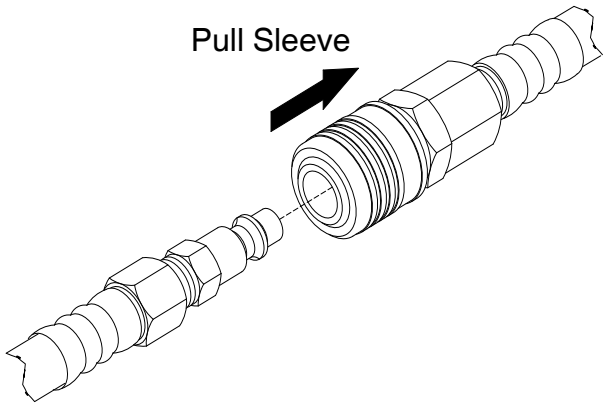


FIG. 6: Disconnect Air Hose

Coupling Block

Chemical hoses are joined to gun block by a coupling block to ease installation and removal of gun.

Manual Valves

Two manual valves located on coupling block control flow of each chemical component to gun.

Never open manual valve unless coupling block is secured to gun or unless you point gun into waste container.

NOTE: Triggering gun with manual valves closed may cause crossover if any residual chemical remains in gun ports.

Open Manual Valves

Use 5/16 in. nut driver to turn manual valve counterclockwise approximately three full turns.

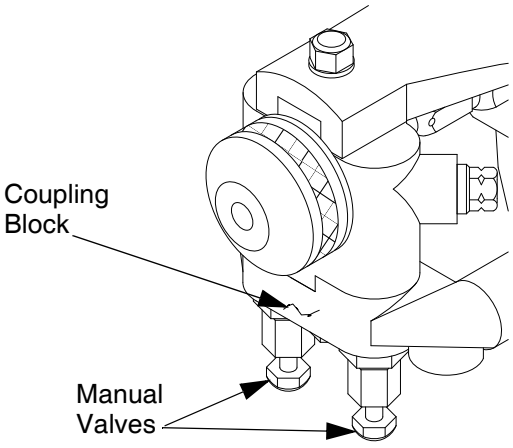


FIG. 7: Open Manual Valves

Close Manual Valves

Use 5/16 in. nut driver to turn manual valve fully clockwise.

To prevent accidental gun operation, always set safety stop to CLOSED, close both manual valves, and disconnect air supply.

Installation and Removal

To prevent release of pressurized chemicals, close both manual valves before coupling block is removed.

Install Coupling Block

1. Replace nicked, damaged, or worn coupling block gaskets.
2. Ensure A-(isocyanate) and B-(resin) check valves are inserted into their proper recesses in gun block. Isocyanate valve is notched for easy identification.

3. Fit coupling block into gun block and insert coupling block mounting screw. Use 5/16 in. nut driver to tighten to gun block.

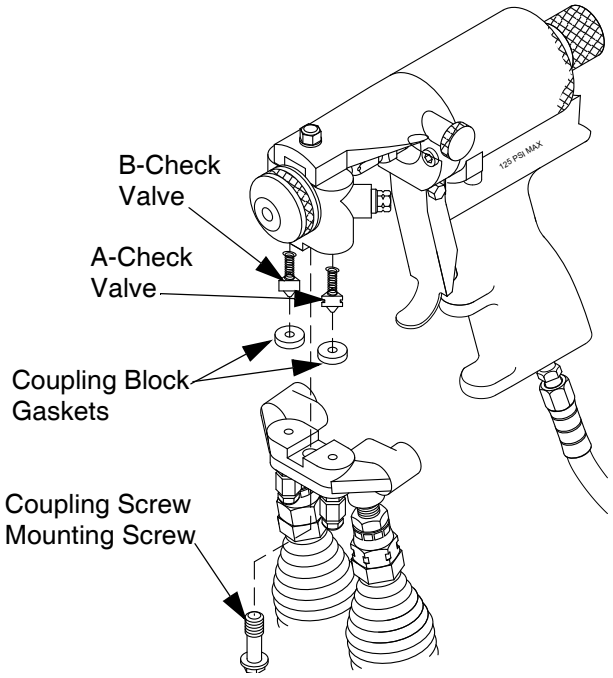


FIG. 8: Install Coupling Block

Remove Coupling Block

1. CLOSE safety stop.
2. Disconnect air hose.
3. Close both manual valves.
4. Remove coupling block mounting screw.
5. Separate coupling block from gun.
6. Wipe mating surfaces of gun block and coupling block to remove residual chemicals.
7. Cover exposed openings with grease.

NOTE: To avoid accidental gun operation, ensure coupling block manual valves are closed before attempting to service gun, or any time gun is not in use.

Air Inlet Configuration

There are two configurations for the air inlet. In the standard configuration, the air inlet is at base of handle. In the alternate configuration, the air inlet is at rear of gun.

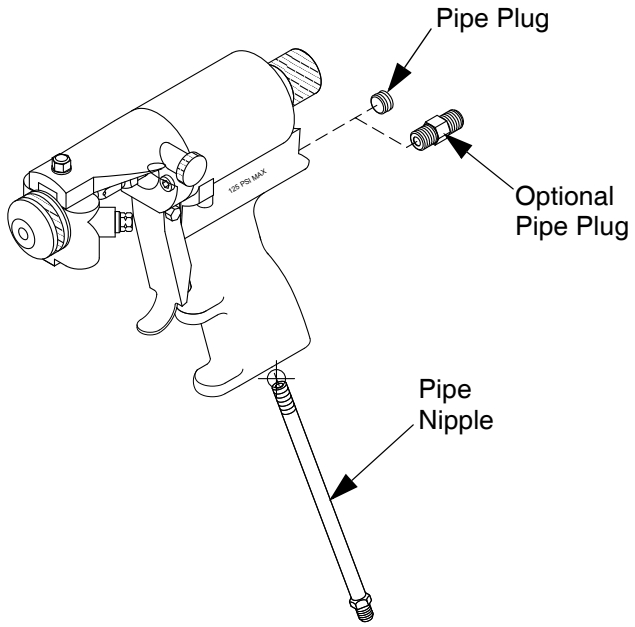


FIG. 9: Air Inlet Configuration

To change to alternate configuration:

1. Use 6 in. adjustable wrench to remove 4 in. pipe nipple from base of gun.
2. Use 3/16 in. hex key to remove 1/8 in. pipe plug from rear of gun.
3. Use 3/16 in. hex key to install 1/8 in. pipe plug in location previously occupied by 4 in. pipe nipple.
4. Use 6 in. adjustable wrench to install pipe nipple in location previously occupied by 1/8 in. pipe plug.

Mixing Module and PCD Installation

1. Loosen air cap by hand and remove.
2. Install mixing module:
   a. Disconnect gun from coupling block.
   b. Connect air supply to gun.
   c. Set safety stop to OPEN.
   d. Hold down trigger and place module over tip of valving rod.
   e. Align keying pin with slot in gun block and keep gun trigger held down.
3. Install PCD:
   a. Hold down gun trigger and thread PCD retainer in place by hand.
   b. Use 10 in. adjustable wrench to carefully tighten PCD retainer until snug enough to ensure no leak will occur.
   c. Release gun trigger.
4. Install air cap and tighten by hand.
5. Adjust valving rod (see **Valving Rod Adjustment**, page 14).

Valving Rod Adjustment

Valving rod should not require adjustment if it was shipped from factory with mixing module and PCD installed. Valving rod should only require adjustment when:

- Piston/rod assembly/ring is changed
- Valving rod is changed
- PCD is installed or changed
- Mixing module is installed or changed

To adjust valving rod:

1. Perform **Clean Spray Gun Procedure**,(see page 19.
2. Connect air supply to gun.
3. Use 5/16 in. open-end wrench to loosen packing nut 3 or 4 turns. This relieves pressure between seals and makes adjustment easier.

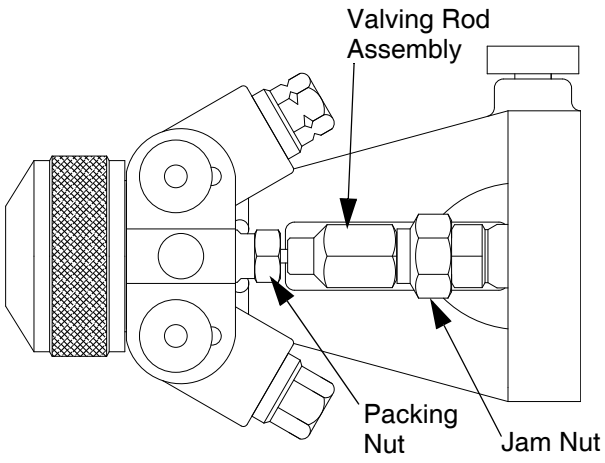


FIG. 10: Valving Rod Adjustments

4. Use 3/8 in. wrench on hex-shaped valving rod shank and 1/2 in. wrench on jam nut to loosen and back it away from valving rod by 3 or 4 full turns. Then move valving rod toward gun cylinder. Turn valving rod shank 2 or 3 full turns clockwise.
5. Slowly turn valving rod counterclockwise to move it toward PCD until resistance is felt. Valving rod tip should touch inside spherical surface of PCD.
6. Carefully maintain 3/8 in. wrench in position and tighten jam nut up against valving rod shank to lock adjustment into place.
7. Re-tighten packing nut.
8. Check rear safety stop by attempting to disengage it. If knob will not turn, valving rod is adjusted too far forward. Repeat steps 3 - 7. Make sure not to adjust valving rod past the point resistance is felt. If safety stop disengages, proceed to step 9.
9. Trigger gun with safety stop disengaged to confirm rear seal adjustment. Make sure rod moves freely. If not, loosen packing nut slightly until it does. Start to spray and check for chemical seepage from packing nut and re-tighten if necessary.

NOTE: If valving rod required adjustment as part of initial mixing module and PCD installation on a new spray gun, proceed to **Initial Set Up**, page 15.

Initial Set Up

1. Remove coupling block from gun.
2. Use two 6 in. adjustable wrenches to install female quick disconnect fitting onto air supply hose bundled with chemical supply hoses.
3. Use two 6 in. adjustable wrenches to connect A-isocyanate hose (red-taped) to notched fitting on coupling block. Connect B-resin hose (blue-taped) to fitting without notches on coupling block.
4. Close both manual valves.
5. Pressurize A and B chemical hoses and check for leaks (see Proportioner manual as needed).
6. Bleed air from chemical hoses:
   a. Hold coupling block with exit ports pointed into waste container.
   b. Use 5/16 in. nut driver to open each manual valve; this allows any trapped air to escape. Bleed each side for a short time until chemicals leaving hoses are free of air.
   c. Close both manual valves.
7. Use cloth soaked in gun cleaner to clean coupling block and mating surfaces.

NOTICE

Do not apply grease to mating surfaces of coupling block to avoid accumulation of dirt and other contaminants.

8. CLOSE safety stop.
9. Install coupling block to gun.
10. Proceed with daily start-up and shutdown procedures as required.

Daily Start-up

Ensure gun is attached to coupling block and air hose. Ensure proportioning unit is at desired temperature and pressure. Properly ground equipment to avoid static sparking that may result in fire or explosion.

1. Connect air supply to gun.
2. Adjust air cap adjustment valve. Turn knob counter-clockwise to open valve and clockwise to close valve.
3. Open both manual valves.
4. OPEN safety stop.
5. Test spray on a disposable surface and evaluate.

Daily Shutdown

NOTE: Follow daily shutdown procedure when gun is out of service for any length of time, or for mid- or end-of-day service. See **Clean Spray Gun Procedure**, page 19.

1. CLOSE safety stop.
2. Close both manual valves.
3. Disconnect air supply from gun.
4. Shut down proportioning unit as required.
5. Clean as required (see **Clean Spray Gun Procedure**, page 19).

NOTE: Disassembling gun for daily cleaning is not recommended if gun has been operating properly. However, if gun is removed from coupling block, it must be flushed and cleaned thoroughly.

Pressure Relief Procedure

Relieve pressure before cleaning or repairing gun.

1. Close both manual valves.

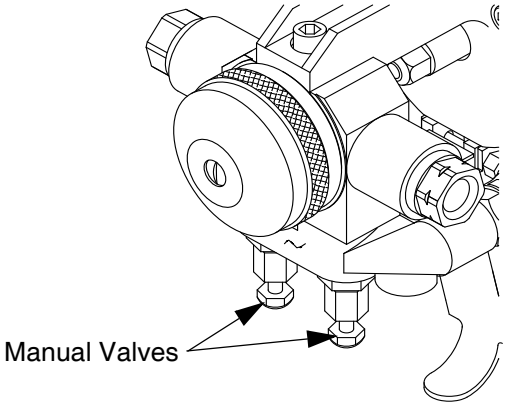


FIG. 11: Close Manual Valves

2. OPEN safety stop.
3. Trigger gun onto cardboard or into waste container to relieve pressure.

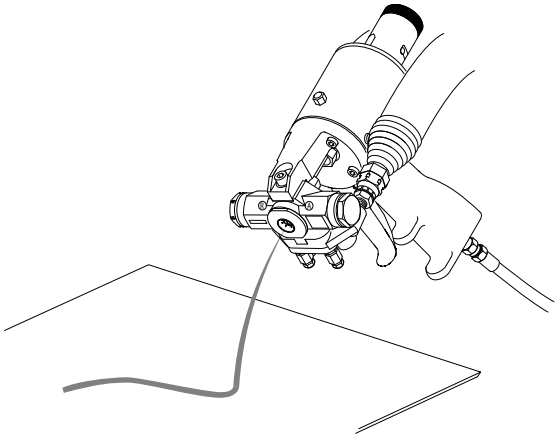


FIG. 12: Trigger Gun

4. Release gun trigger, CLOSE safety stop, and close manual valves.

If fluid in hose and proportioner is still under pressure, follow Pressure Relief Procedure in proportioner manual

To relieve pressure in hose after gun is removed, place fluid manifold over containers, facing away from you. Very carefully open fluid valves (FIG. 13). Under high pressure, fluid will spray sideways from fluid ports.

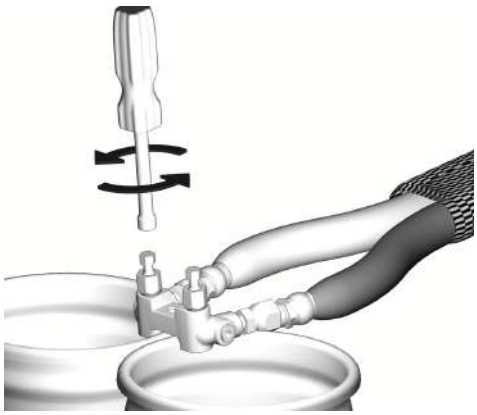


FIG. 13: Open Manual Valves

Maintenance

Gun Service Kits

Use either 1-Quart Gun Service Kit (296980) or 3-Gallon Gun Service Kit (296981) to perform daily flushing of spray gun without disassembly.

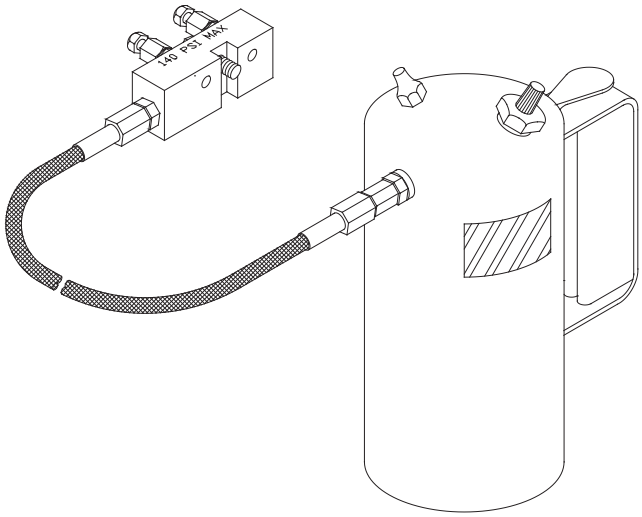


FIG. 14: 1-Quart Gun Service Kit

For more information about 1-Quart Gun Service Kit, see Manual 311340.

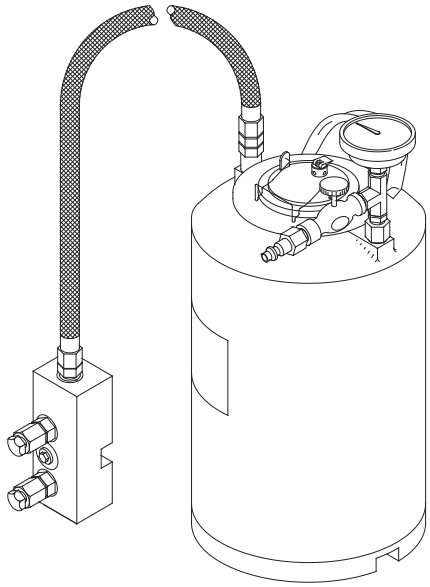


FIG. 15: 3-Gallon Gun Service Kit

For more information about 3-Gallon Gun Service Kit, see Manual 311341.

Clean Spray Gun Procedure

To avoid static sparking that may result in fire or explosion, ensure all equipment in cleaning procedure is grounded. Do not clean on or near foamed or coated surfaces or any other flammable surfaces or objects.

Thoroughly flush gun block with gun cleaner before removing valving rod or mixing components from gun block. Also allow chemicals in spray gun to cool before cleaning.

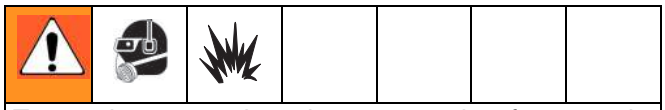
This procedure makes use of the 1-Quart or 3-Gallon Gun Service Kit.

1. CLOSE safety stop.
2. Close both manual valves.
3. Remove gun from coupling block.
4. Attach service block of gun service kit to spray gun, and then tighten using 5/16 in. nut driver.
5. Pressurize service kit container up to 100 psi. DO NOT EXCEED 100 psi (0.7 MPa, 7 bar).
6. Clean gun:
   a. Set safety stop to OPEN.
   b. Open either manual valve on service block.
   c. Trigger gun and gun service kit simultaneously with gun aimed into waste container.
   d. Release both triggers and close manual valves on service block.
   e. Repeat procedure for other side of gun.
   f. After initial cleaning, remove air cap, PCD retainer, and PCD. Flush a second time to ensure thorough cleaning.
7. CLOSE safety stop.
8. Disconnect air supply from gun.
9. Remove service block of gun service kit from gun.
10. Clean screens, check valves and screen screw (see **Service Screen Screw**, page 20.

NOTE: Inspect air cap, PCD, mixing module, and gun block for build up of material and clean as required.

Do not use metal cleaning devices to clean plastic components.

Flush Gun



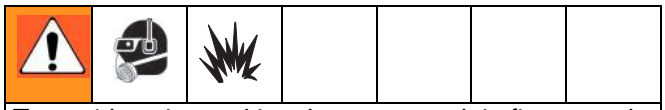
To avoid static sparking that may result in fire or explosion, ensure all equipment in flushing procedure is grounded. Do not flush on or near foamed or coated surfaces.

1. CLOSE safety stop.
2. Close both manual valves.
3. Loosen B-Screen screw and then remove by hand.
4. Use flush can to thoroughly flush screen screw and screen screw cavity.
5. Loosen A-Screen screw and then remove by hand.
6. Use flush can to thoroughly flush screen screw and screen screw cavity.
7. Service gun, see **Maintenance** procedures, page 18.

Repair

Shutdown proportioner and allow chemicals to cool before servicing gun.

Service Screen Screw



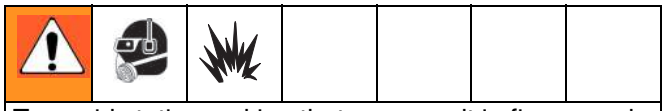
To avoid static sparking that may result in fire or explosion, ensure all equipment in flushing procedure is grounded. Do not flush on or near foamed or coated surfaces.

1. Flush gun see **Clean Spray Gun Procedure**, page 19.
2. Unthread screen screw from gun block.
3. Remove screen screw retainer before removing screen.
4. Remove screen from screen screw. Soak in gun cleaner or replace if clogged or dirty.
5. Clean screen screw cavity. If **any** particles are visible, clean with clean out drills and flush with gun cleaner.

NOTE: Any material left in cavity on downstream side of screen will clog mixing module.

6. Inspect screen screw seal for damage. Replace if necessary.
7. Reinstall screen screw in gun block. Ensure it is tight.
8. Flush gun with mixing module removed.

Remove Check Valve



To avoid static sparking that may result in fire or explosion, ensure all equipment in flushing procedure is grounded. Do not flush on or near foamed or coated surfaces.

Check valves are located in cavities of gun block under each coupling block gasket. Check valves are triangular pieces with a spring inserted in one end. The isocyanate valve is notched for easy identification.

To remove check valve:

1. Clean gun (see **Clean Spray Gun Procedure**, page 19).
2. Use check valve seal removal/cleaning tool to remove gaskets from recesses in coupling block. Inspect gaskets for damage and replace if necessary.
3. Remove check valves. If valve does not come out easily, insert machined end of removal/cleaning tool over valve and rotate it while extracting valve.
4. Clean valves and springs with gun cleaner. Inspect for damage and replace if necessary.
5. Inspect each check valve cavity. Use cleaning tool to remove any visible particles. Use gun cleaner to flush thoroughly.
6. Insert each check valve into its cavity spring end first. Ensure check valve is oriented correctly. Isocyanate valve is notched for easy identification.
7. Install coupling block gaskets.

Remove Centerline Components

Refer to page 8 for diagrams of centerline components for all gun models.

1. Flush gun (see **Clean Spray Gun Procedure**, page 19).
2. Remove air cap (loosen by hand).
3. Use 10 in. adjustable wrench to remove PCD.
4. Connect air supply to gun.
5. Lift PCD off nose of gun block and remove.

NOTE: To remove PCD that is stuck, set safety stop to OPEN, depress and release gun trigger to unseat it. CLOSE safety stop.

6. Remove mixing module retainer.
7. OPEN safety stop. Depress and release gun trigger to unseat it. Remove mixing module off end of valving rod. CLOSE safety stop.

NOTICE
Do not use sharp objects or metal tools to remove mixing module.

8. Disconnect air supply from gun.
9. Use 5/16 in. wrench to loosen packing nut 3 or 4 turns.
10. Remove gun block:
    a. Use 5/16 in. nut driver to remove gun block retaining screw.
    b. Slide gun block away from valving rod and air cylinder. If dried chemical is built up on gun block, remove dried chemicals to make removal easier.
11. Remove and clean check valves (see **Remove Check Valve**, page 20).
12. Remove valving rod:
    a. Use 3/8 in. wrench on hex-shaped valving rod shank and a 1/2 in. wrench on jam nut to loosen it and back it away from valving rod shank by 3 or 4 full turns.
    b. Unthread valving rod from piston shaft and remove.
13. Clean all components thoroughly before reassembly.
14. Inspect gun block to ensure proper operation of spray gun.

Install Centerline Components

Before installation, ensure all gun components are clean and dry. Lubricate all moving parts and threads.

1. To install valving rod, thread jam nut as far back on piston shaft as possible. Screw shank end of valving rod onto threaded end of piston rod.
2. Install rear seal and packing nut if removed. Thread packing nut into gun block by hand, but do not tighten.
3. To install gun block, carefully slide gun block onto valving rod towards air cylinder. Use 5/16 in. nut driver to install gun block onto gun block mounting bracket.
4. Connect air supply to gun.
5. OPEN safety stop.
6. To install mixing module, hold down gun trigger and slide module over end of valving rod. Make sure to align keypin with slot in gun block. Keep gun trigger depressed and proceed to step 7.
7. To install PCD, hold gun trigger in and place PCD over mixing module. If installing a fan tip, position PCD according to which spray direction is needed (vertical or horizontal). Keep gun trigger depressed and proceed to step 8.

NOTE: Parts must align properly or chemical flow from gun block ports will not enter mixing module when gun is triggered.

8. Install PCD retainer:

   a. With gun trigger depressed, thread PCD retainer in place by hand.

   b. Use 10 in. adjustable wrench to carefully tighten PCD retainer until it is snug enough to ensure no leak will occur.

   c. Release gun trigger.

NOTICE

To avoid damage to module and gun block, do not over-tighten mixing module retainer.

9. Install air cap and tighten by hand.

10. Adjust valving rod (see **Valving Rod Adjustment**, page 14).

Replace End Cap and Air Piston Assembly

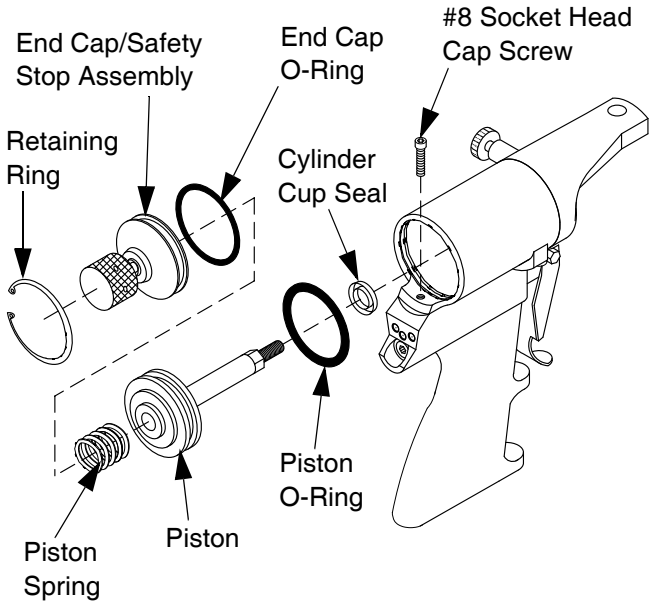


FIG. 16: End Cap and Air Piston Assembly

1. Clean gun (see **Clean Spray Gun Procedure** on page 19).

2. Disconnect air supply from gun.

3. Use 5/16 in. wrench to loosen packing nut 3 or 4 turns (remove nut completely if rear seal needs to be replaced).

4. Remove gun block:

   a. Use 5/16 in. nut driver to remove gun block mounting screw.

   b. Carefully slide gun block away from valving rod and air cylinder. If dried chemical has built up on gun block, remove dried chemical to make removal easier.

   c. Remove valving rod and jam nut (see **Remove Check Valve**, page 20):

   d. Use 3/8 in. wrench on hex-shaped valving rod shank and 1/2 in. wrench on jam nut.

   e. Loosen jam nut and back it away from valving rod shank by 3 or 4 full turns.

   f. Unthread valving rod and jam nut from piston shaft.

5. OPEN safety stop.
6. Use 9/64 in. ball point hex key to remove socket head cap screw that holds air cylinder to handle (FIG. 16).
7. Use retaining ring 45° pliers to remove retaining ring that holds end cap in place inside air cylinder.
8. Remove end cap/safety stop assembly and piston spring:
   a. Pull safety stop and attached end cap out of air cylinder.
   b. Remove piston spring located inside cylinder. Be sure to retain spring for re-installation.

NOTE: Force will be required to remove end cap because ring is tightly compressed.

9. Inspect end cap ring. Replace if damaged. Apply light coating of Lubriplate grease and install new end cap ring.

NOTE: Skip steps 11-13 and go to step 14 if only end cap ring and cup seal need to be replaced.

   a. Remove piston/rod assembly:
   Use gun block mounting screw (screw that holds gun block to bracket) to aid in removal of piston.
   b. Look into rear of air cylinder and thread mounting screw into center hole of piston at least 4 full turns.
   c. Use 6 in. pliers to grab mounting screw and pull piston rod assembly out of air cylinder.
   d. Inspect ring and replace if damaged. Apply light coat of Lubriplate grease and install new ring.

10. Inspect air cylinder cup seal. If air escapes around piston rod during operation, remove and replace cup seal located in front of air cylinder. Lubricate new cup seal with Lubriplate grease and install it. Make sure cup faces toward rear of cylinder.
11. Insert piston and rod assembly into air cylinder. Be careful not to damage cup seal in front face of air cylinder as rod passed though. Remove gun block mounting screw from piston.
12. Disassemble safety stop mechanism:
   a. Use 5/64 in. hex key to remove two set screws from knob.
   b. Slide knob off stop pin and retain stop pin spring.
   c. Pull shaft out of end cap (FIG. 17).
13. Remove cup seal from end cap and inspect for damage. Remove if damaged. Apply light coat of Lubriplate grease and install new end cap ring.

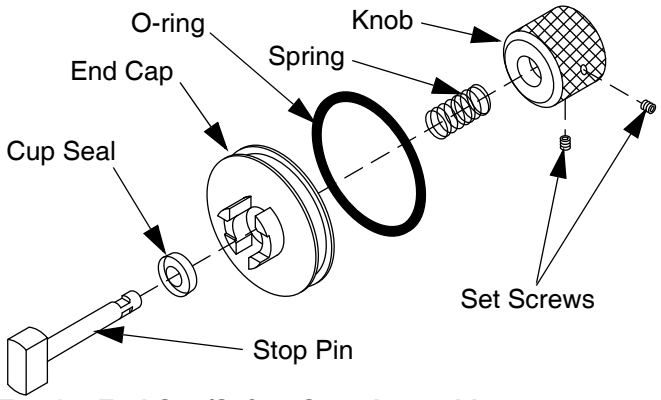


FIG. 17: End Cap/Safety Stop Assembly

14. Reassemble safety stop mechanism:
   a. Insert stop pin into end cap hole.
   b. Slide spring and knob onto stop pin.
   c. Use 5/64 in. hex key to reinstall two set screws into knob. Ensure knob is secure.
15. Reinstall end cap/safety assembly and piston spring:
   a. Insert piston spring and align over raised center of piston.
   b. Line up raised center of end cap with spring and insert end cap into air cylinder.
   c. Press end cap until it moves past retaining ring groove in cylinder.
   d. Maintain pressure on end cap. Ensure groove remains visible.
16. Use retaining ring 45° pliers to reinstall retaining ring into groove.

Retaining ring must seat completely into groove to secure end cap in place when air cylinder is pressurized. Keep clear of cap when air pressure is applied or gun is triggered after reassembly.

17. Use 9/64 in. ball-point hex key to install and tighten socket head cap screw, which holds air cylinder to handle.

18. Reinstall valving rod and jam nut:

    a. Thread jam nut as far as it will go onto threaded end of piston shaft.

    b. Ensure hex end of nut faces rear.

    c. Thread valving rod as far onto threaded portion of piston rod as possible.

19. Thread packing nut into gun block by hand but do not tighten.

20. Install gun block:

    a. Ensure ring is in place in top of gun block.

    b. Carefully slide gun block onto valving rod toward air cylinder.

    c. Use 5/16 in. nut driver to install gun block onto gun block mounting bracket.

21. Adjust valving rod (see **Valving Rod Adjustment** on page 14).

Replace Trigger Valve O-Rings

1. Clean gun (see **Clean Spray Gun Procedure**, page 19).

2. Perform **Pressure Relief Procedure**, page 17.

3. Disconnect air supply from gun.
   Refer to **Parts**, page 27.

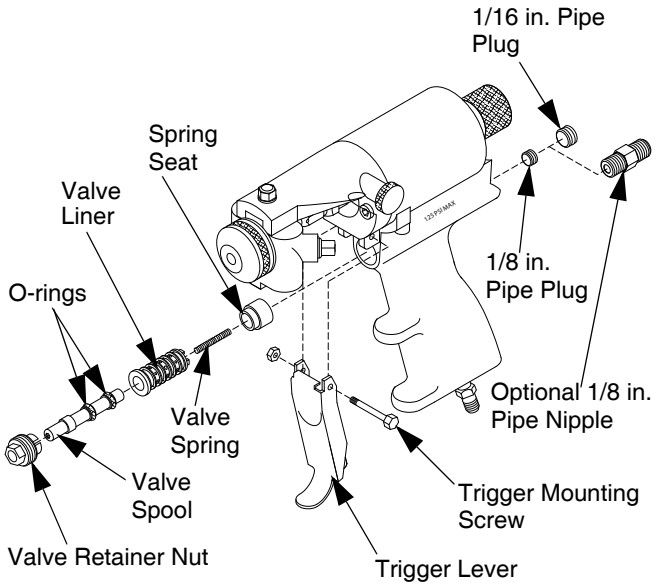


FIG. 18: Replace Trigger Valve O-Ring

4. Use 6 in. adjustable wrench and 6 in. pliers to remove screw and locknut that hold trigger lever in place. Remove trigger lever.

5. Use 3/8 in. wrench to loosen and remove valve retainer nut.

6. Remove valve spool and spring:

    a. Grab end of spool and pull out. Spring will come out with spool. **Do not** lose spring--it belongs in hole at end of spool.

    b. Remove old rings.

    c. Apply thin coat of Lubriplate grease to new rings and reinstall.

NOTE: Follow steps 7-14 to replace rings on valve liner. If rings do not need to be replaced, proceed to step 15.

7. Use 3/16 in. hex key to remove 1/8 in. rear internal plug. This plug seals another airflow path in gun handle.

NOTE: For guns configured with air inlet at rear of gun handle, pipe nipple replaces pipe plug. Remove pipe nipple.

8. Use 5/32 in. hex key to remove rear internal pipe plug (under pipe plug).

9. Use pin punch and hammer to gently tap spring seat until it and valve liner push out opposite end of hole.

10. Remove rings on liner. Apply thin coat of Lubriplate grease to new rings and install.

11. Clean valve hole. Remove any dirt and debris. Apply thin coat of Lubriplate grease to inside of valve hole.

12. Slide spring seat into gun handle air valve hole, tapered end first, until it bottoms out.

13. Push valve liner in as far as it will go. Install valve retainer nut, it will align valve liner and spool to their proper depth.

14. Use 5/32 in. hex key to screw 1/16 in. pipe plug back into place. Apply think coat of pipe thread sealant to threads prior to insertion to help prevent air leaks.

15. Apply small amount of pipe thread sealant to 1/8 in. plug threads. Screw pipe plug in place.

16. Insert valve spool into valve liner with valve spool spring still in place. Screw in valve retainer nut; tighten until snug.

17. Use screw and locknut to reinstall trigger lever.

Clean Mixing Module

1. Flush gun (see **Clean Spray Gun Procedure**, page 19).

2. Connect air supply to gun. OPEN safety stop.

3. Remove air cap by hand.

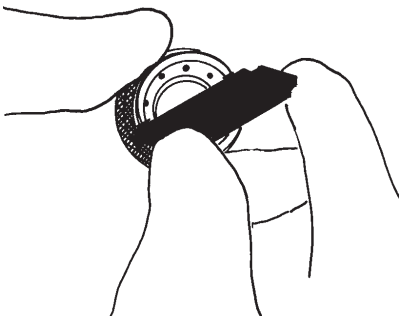


FIG. 19: Unthread Cap from PCD Body

4. Trigger gun and hold it to relieve pressure on PCD retainer.

5. Turn PCD retainer counterclockwise and remove.

6. Remove PCD from mixing module retainer.

NOTE: To remove PCD that is stuck, set safety stop to OPEN, depress and release gun trigger to unseat it. CLOSE safety stop.

7. Remove mixing module retainer.

8. OPEN safety stop. Depress and release gun trigger to unseat it. Remove mixing module from end of valving rod. CLOSE safety stop.

9. Inspect valving rod for damage and replace as required. Use cloth soaked in gun cleaner or steel wool to clean and remove buildup of mixed material from rod.

NOTE: If valving rod is replaced, reset forward stop.

10. Clean mixing module.

NOTE: Ensure cleanout tool size matches module size used.Insert cleanout tool into pin vise.

d. Use cleanout tool to clean module ports. Make sure not to insert tool too far, it will damage inside bore of module. Use cotton swab soaked in gun cleaner to clean bore of module.

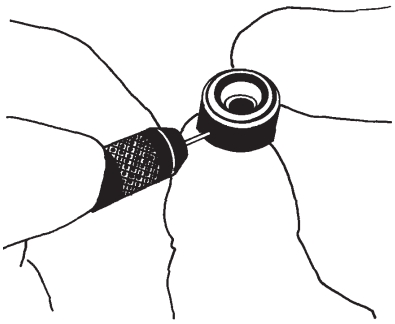


FIG. 20: Clean Module Ports

Troubleshooting

Follow **Pressure Relief Procedure**, page 17, before checking or repairing gun.

NOTICE

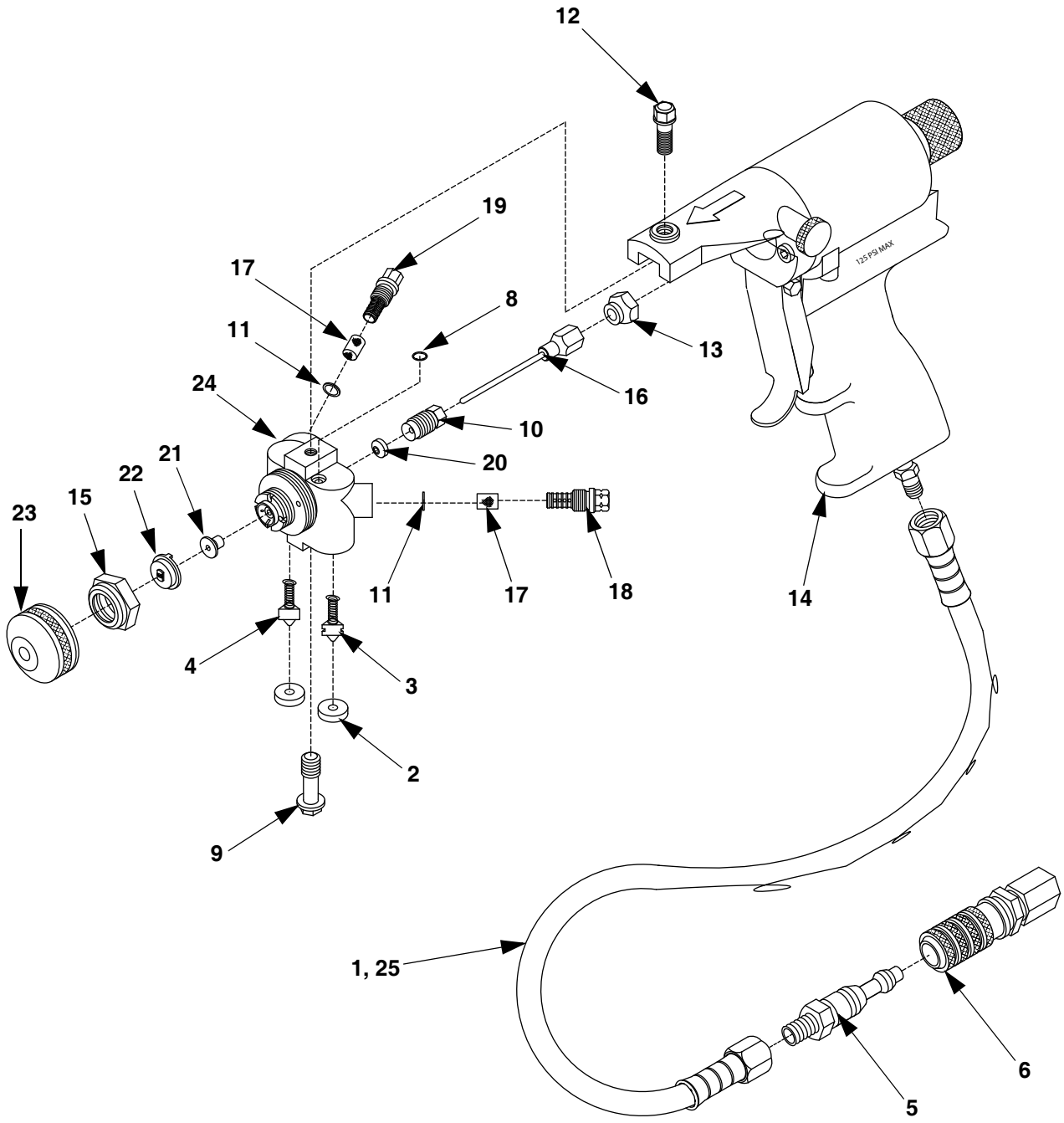
To prevent cross-contamination of the equipment's wetted parts, **never** interchange component A (isocyanate) and component B (resin) parts. The gun is shipped with the A side on the left. The gun block and the screen screw are marked.

Use the following table to check all possible problems and causes before disassembling gun. See **Maintenance** on page 18 for referenced procedures.

Problem	Cause	Solution
Gun does not fully actuate	Safety lock engaged	Disengage piston safety lock
	Air not vented on open/close ports	Vent open air port when closing, vent close air port when opening
	Loss of air	Check air source
Fluid does not pour when gun is fully actuated	Closed manual valves	Open valves
	Plugged orifice ports	Clean orifice ports
	Plugged check valves	Clean check valves
	Safety lock engaged	Disengage piston safety lock
Gun actuates slowly	Loss of air pressure	Check air source
	Damaged piston o-rings	Replace air piston o-rings
Gun delays, then actuates abruptly	Cured material around the purge rod	Inspect purge rod, mix module, and orifices. Replace if necessary
Gun does not actuate	Air supply to gun is shut off	Open air supply
	Foam build-up around front tip	Clean off front tip.
Pressure imbalance	Plugged orifice ports	Clean orifice ports
	Plugged check valves	Clean check valves
	Plugged fluid screens	Clean screens
Fluid does not shut off when fluid valves are closed	Damaged fluid valves	Replace
Leak between air cylinder and fluid housing	Damaged o-ring	Replace
Material leaking out weep ports in fluid housing near air cylinder	Mix module and rear seal worn	Inspect and replace mix module and rear seal, clean fluid housing

Parts

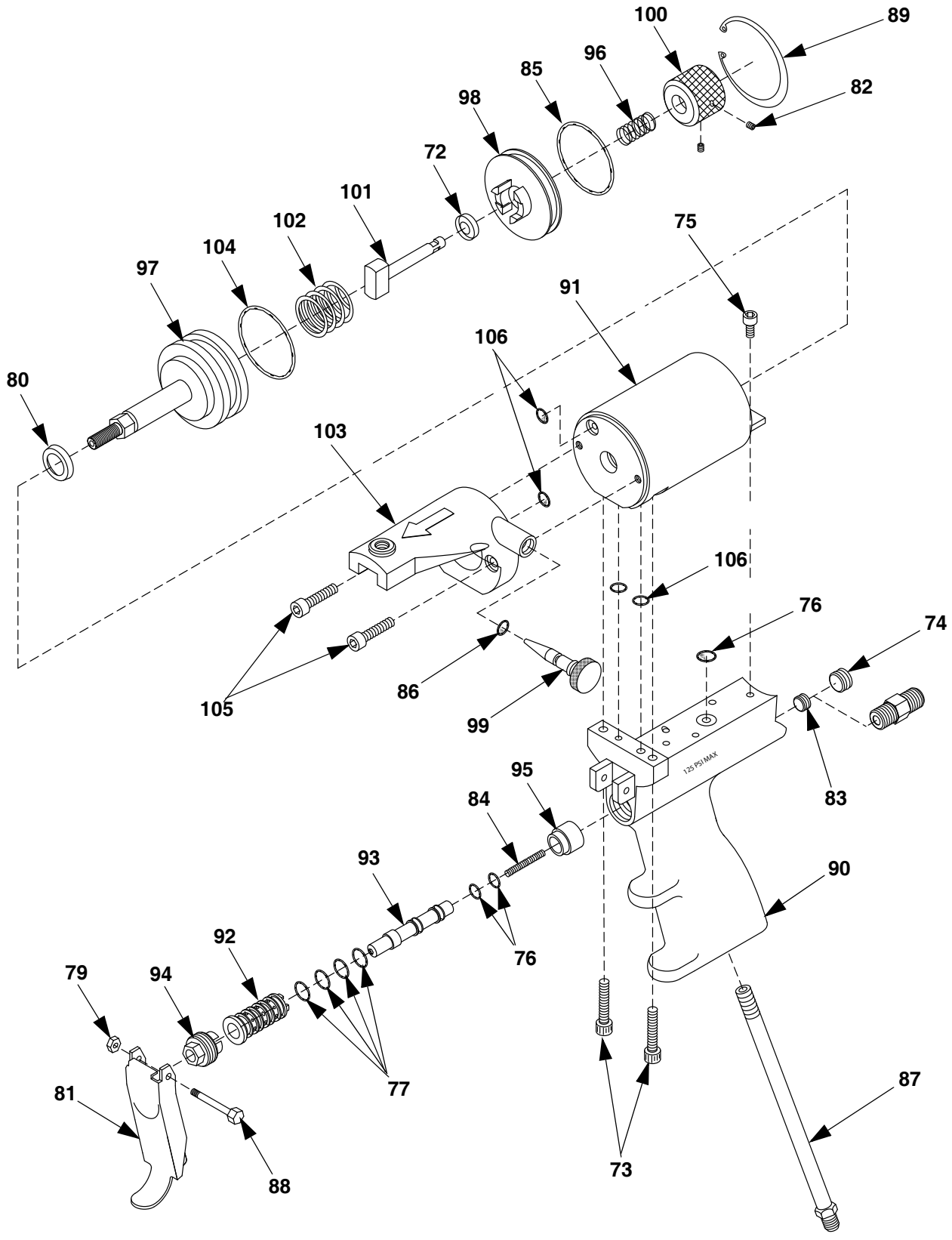
GX-8 Gun Final Assembly (297898)



GX-8 Gun Final Assembly (297898)

Ref.	Part	Description	Qty.
1	15B772	HOSE, air, 1/4 in. x 23 in. (F x F)	1
2	296128	GASKET, block, gasket	2
3	295623	VALVE, check, A	1
4	295624	VALVE, check, B	1
5	295596	PLUG, coupler	1
6	208536	Coupler, line, air	1
8	106560	PACKING, O-ring	1
9	295433	SCREW, mounting, block, coupling	1
10	297680	NUT, seal, rear	1
11	297681	RETAINER, screen	2
12	297682	SCREW, mounting, block, gun	1
13	297683	NUT, jam	1
14	297702	HANDLE, assembly	1
15	297684	RETAINER, PCD	1
16	295341	ROD, valving	1
17	297193	SCREEN, gun block, 100 mesh	2
18	297686	SCREW, screen, iso	1
19	297687	SCREW, screen, res	1
20	295437	PACKING, seal, rear	1
21	295338	MODULE, fan	1
22	297192	TIP, fan	1
23	297705	CAP, air	1
24	297901	BLOCK, gun	1
25	100030	Fitting	1

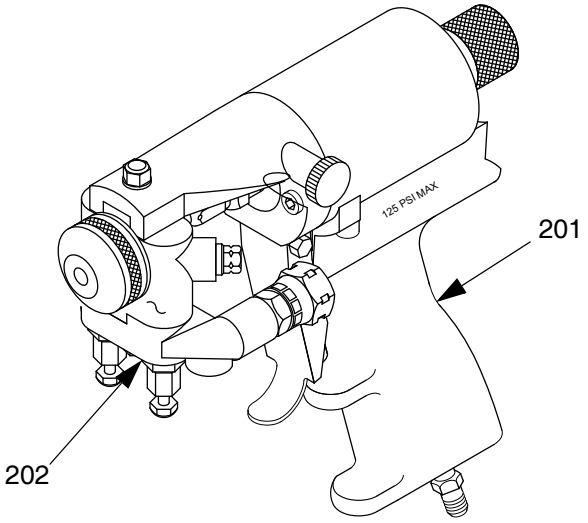
GX-8 Handle Assembly (297702)



GX-8 Handle Assembly (297702)

Ref.	Part	Description	Qty.
72	295435	SEAL, u-cup	1
73	295709	SCREW, cap, socket head	2
74	295662	PLUG, pipe	1
75	295732	SCREW, cap, sh, 8-32 x 1/4 LG	1
76	103337	PACKING, ring	3
77	106555	PACKING, ring	4
79	C02032	NUT	1
80	296627	SEAL, u-cup	1
81	295692	TRIGGER, gun, spray	1
82	116624	SCREW, set, socket head	2
83	295693	PLUG, pipe	1
84	296971	SPRING	1
85	108103	PACKING, ring	1
86	168518	PACKING, ring	1
87	295665	FITTING, nipple, pipe	1
88	295671	SCREW, mounting, trigger	1
89	296538	RING, retaining	1
90	297689	HANDLE, gun	1
91	16T691	CYLINDER, air	1
92	295686	LINER, valve	1
93	295687	SPOOL, valve	1
94	295688	NUT, retainer, valve	1
95	295689	SEAT, spring	1
96	295436	SPRING	1
97	297691	PISTON, assembly	1
98	296529	CAP, end	1
99	297693	NEEDLE, adjust, air	1
100	296530	KNOB, gap	1
101	296526	PIN, stop	1
102	295416	SPRING, piston	1
103	297694	BRACKET, assembly	1
104	114054	PACKING, ring	1
105	C20004	SCREW, cap	2
106	295685	RING	4

GX-8 Gun Kit (297832)



Ref.	Part	Description	Qty.
201	297898	GUN	1
202	295383	BLOCK, coupling	1
203★	296980	KIT, service; includes 203a-203k	1
203a		SPRAYER, solvent, flush	1
203b		VALVE, service, air	1
203c		SCREW, mounting, block, coupling	1
203d		VALVE, manual	2
203e		NIPPLE, JIC	1
203f		SCREW, block, coupling	1
203g		BLOCK, service	1
203h		FITTING; 3/8 in. x 7/16 in.	1
203k		HOSE; 3/16 ID x 3 ft	1
204★	297911	KIT, starter; includes 204a-204g	1
204a		PIN, vise	1
204b		MODULE, fan, 013	1
204c		TIP, round, 020	1
204d		MODULE, round, 020	1
204e		TIP, round, 024	1
204f		TIP, fan, 201	1
204g		TIP, fan, 202	1

★ *Not shown.*

GX-8P Spray Gun Final Assembly (297860)

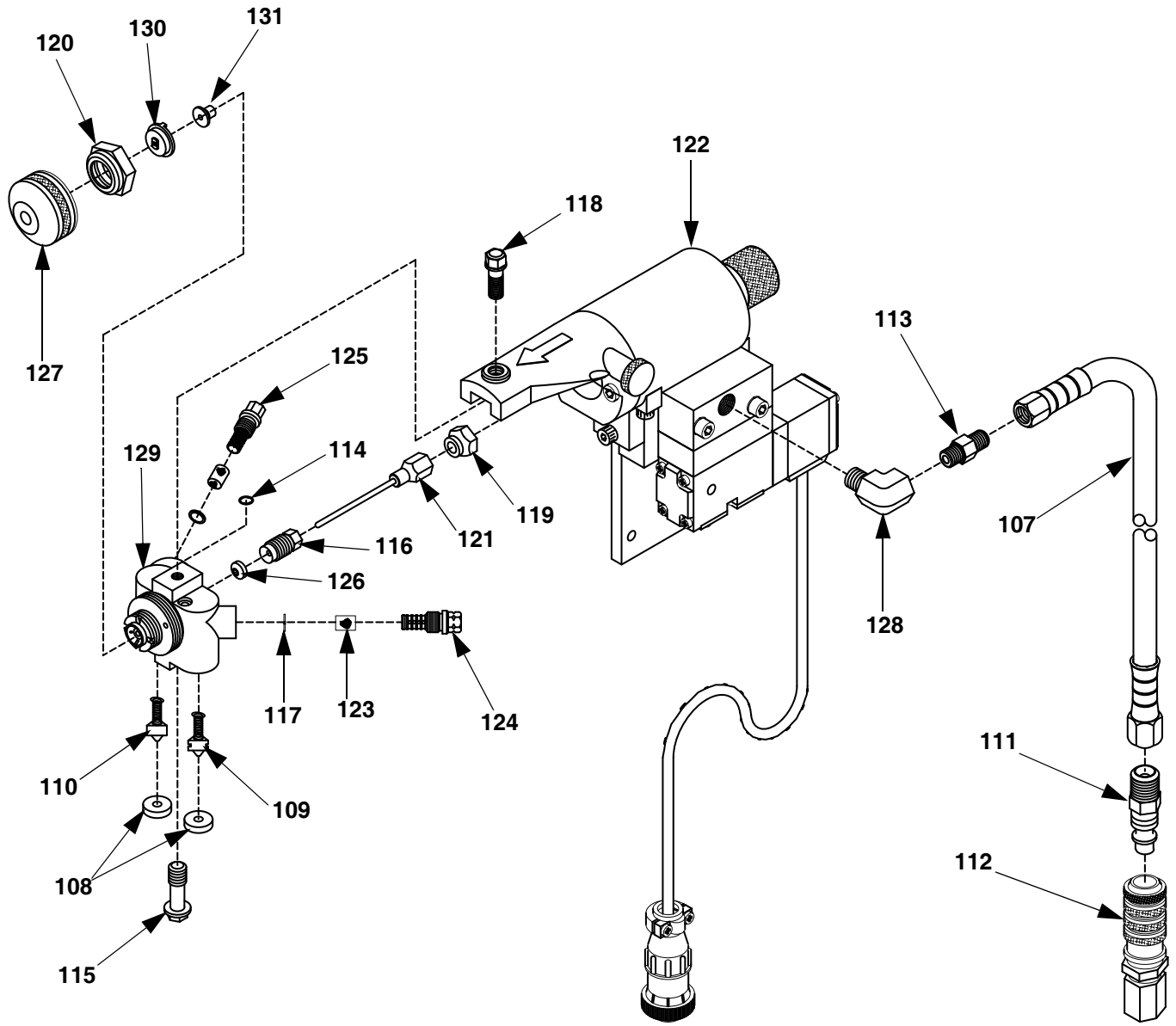


FIG. 21: GX-8P Spray Gun Final Assembly

GX-8P Spray Gun Final Assembly (297860)

Ref.	Part	Description	Qty.
107	15B772	HOSE, air, 1/4 X 23 in. (F X F)	1
108	296128	GASKET, block, gasket	2
109	295623	VALVE, check, A	1
110	295624	VALVE, check, B	1
111	295596	PLUG, coupler	1
112	208536	COUPLER, line, air	1
113	191872	FITTING, pipe, hex	1
114	106560	PACKING, o-ring	1
115	295433	SCREW, mounting, block, coupling	1
116	297680	NUT, seal, rear	1
117	297681	RETAINER, screen	2
118	297682	SCREW, mounting, block, gun	1
119	297683	NUT, jam	1
120	297684	RETAINER, pod	1
121	295341	ROD, valving	1
122	297861	CYLINDER, GX-8P, auto	1
123	297193	SCREEN, gun block, 100 mesh	2
124	297686	SCREW, screen, iso	1
125	297687	SCREW, screen, res	1
126	295437	PACKING, seal, rear	1
127	297705	AIR, cap	1
128	112307	ELBOW, street	1
129	297901	BLOCK, gun	1
130	297192	TIP, fan	1
131	295338	MODULE, fan	1

GX-8P Auto Cylinder Assembly (297861)

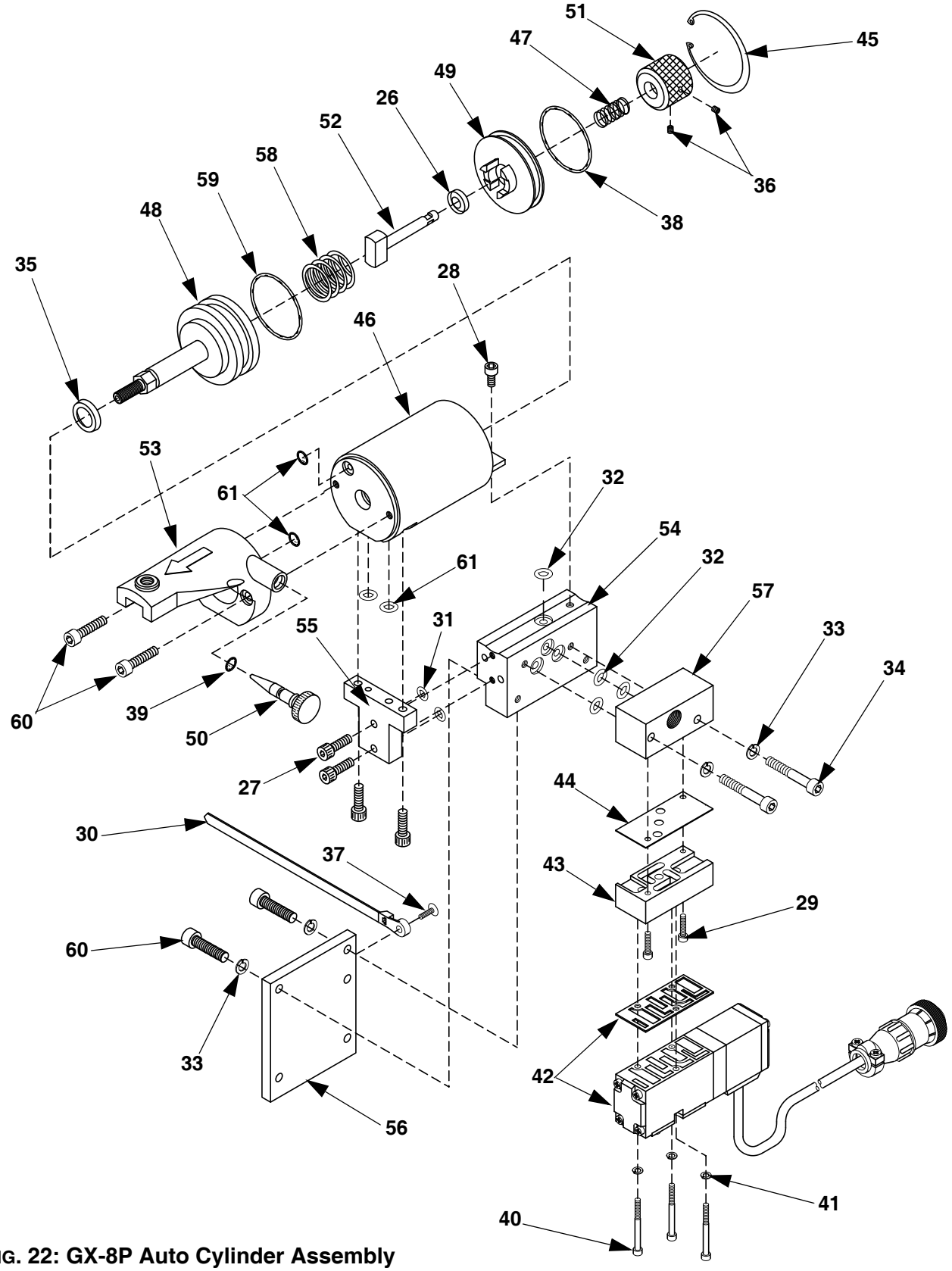
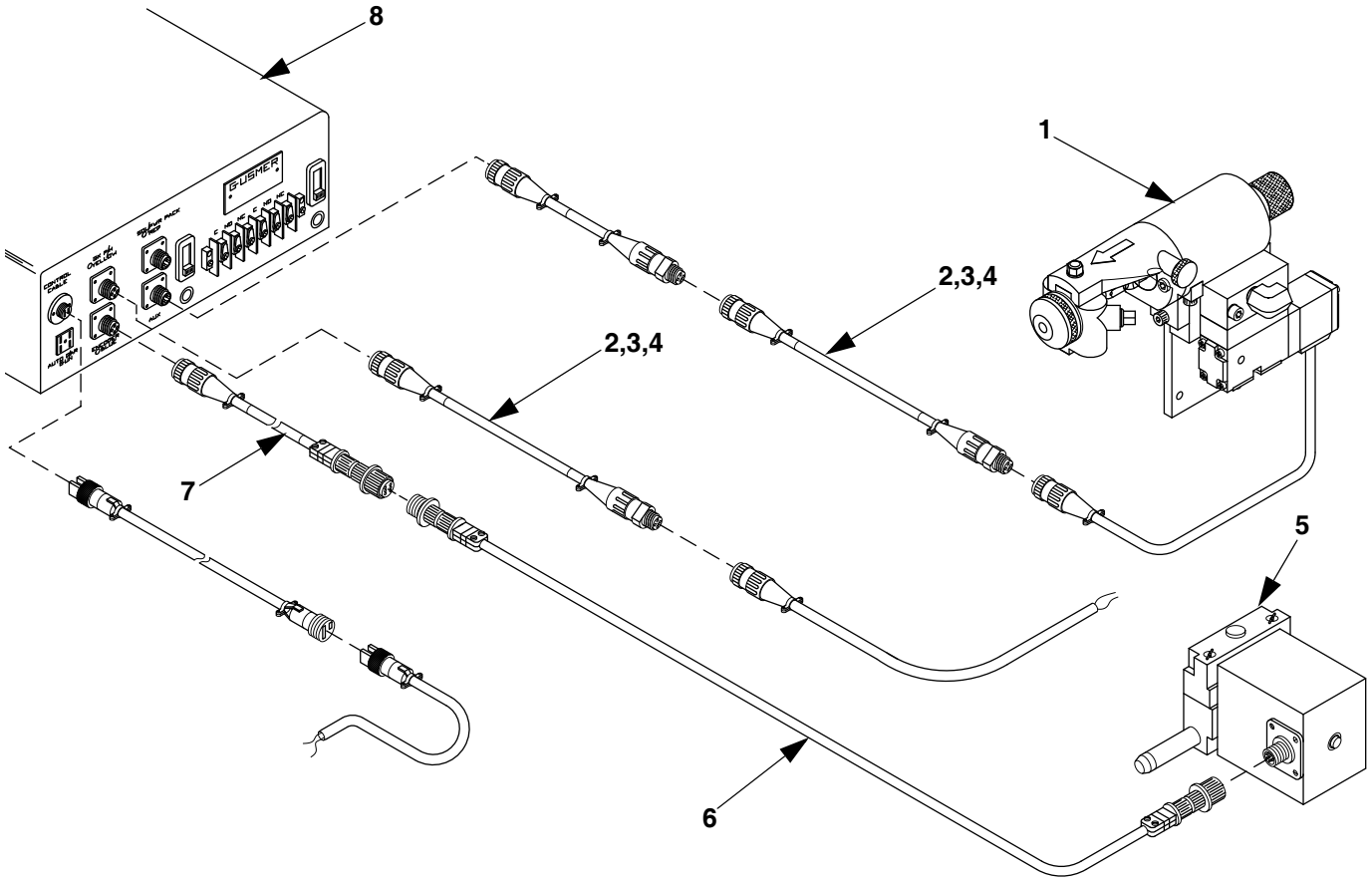


FIG. 22: GX-8P Auto Cylinder Assembly

GX-8P Auto Cylinder (297861)

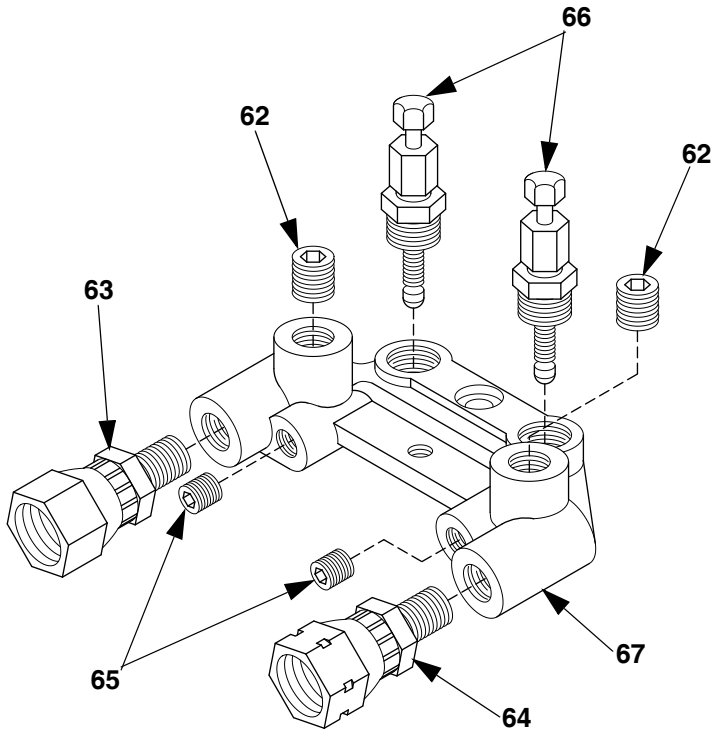
Ref.	Part	Description	Qty.
26	295435	SEAL, u-cup	1
27	295709	SCREW, cap, socket head	4
28	295732	SCREW, cap, sh, 8-32 X 1/4 LG	1
29	104376	SCREW, cap, sch	2
30	297743	TIE, cable, #6	1
31	C20988	PACKING, o-ring	2
32	103337	PACKING, o-ring	4
33	297253	WASHER, helical, .188 in. diameter	4
34	104705	SCREW, cap, sch	2
35	296627	SEAL, u-cup	1
36	116624	SCREW, set, socket head	2
37	297862	SCREW, cap, flat head	1
38	108103	PACKING, o-ring	1
39	168518	PACKING, o-ring	1
40	297863	SCREW, cap, socket head	3
41	297975	WASHER, lock	3
42	297881	VALVE, control	1
43	297882	MANIFOLD, air valve	1
44	297883	GASKET	1
45	296538	RING, retaining	1
46	297690	CYLINDER, air	1
47	295436	SPRING	1
48	297691	PISTON, assembly	1
49	296529	CAP, end	1
50	297884	NEEDLE, air adjust	1
51	296530	KNOB, gap	1
52	296526	PIN, stop	1
53	297885	BRACKET	1
54	297886	BLOCK, valve mount	1
55	297887	BLOCK, cylinder mount	1
56	297888	PLATE, mounting, gun	1
57	297889	PLATE, cover, manifold	1
58	295416	SPRING, piston	1
59	114054	PACKING, o-ring	1
60	C20004	SCREW, cap	4
61	295685	O-RING	4

Auto GX-8P Optional Parts



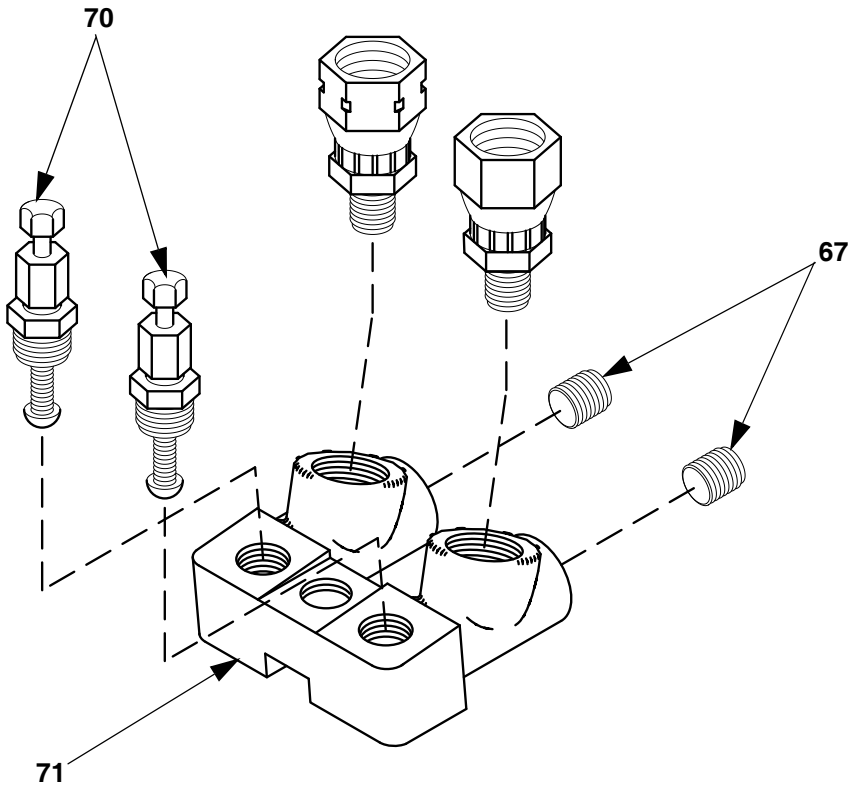
Ref.	Part	Description	Qty.
1	297899	KIT, auto, GX-8 Gun	1
2	298752	WIRE, 10 ft, extension harness	1
3	298753	WIRE, 25 ft, extension harness	1
4	298754	WIRE, 50 ft, extension harness	1
5	298611	ENCODER, assembly	1
6	299083	CABLE, VMU, extension 25 ft	1
7	297730	CABLE, encoder, assembly	1
8	297741	CONTROL BOX, TX50 processor	1

Coupling Block Assembly (295383)



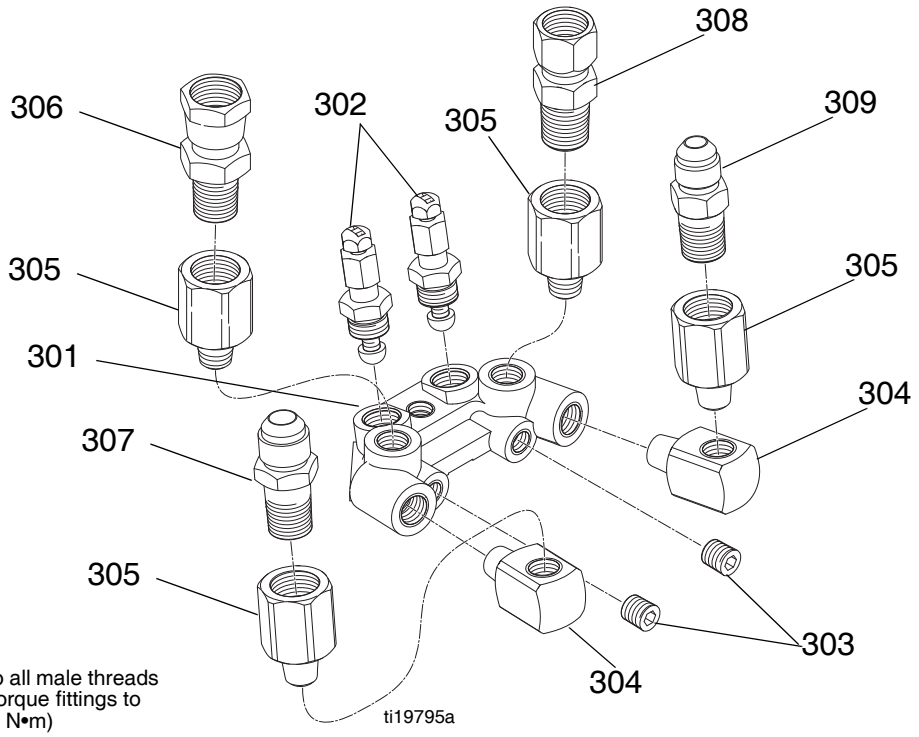
Ref.	Part	Description	Qty.
62	295662	Pipe plug, flush seal, 1/8 in.	2
63	117634	B-swivel fitting	1
64	117635	A-swivel fitting	1
65	295693	Pipe plug, flush seal, 1/16 in.	2
66	296970	Manual valve assembly	2
67	296215	Coupling block	1

Coupling Block (297902)



Ref.	Part	Description	Qty.
67	295662	PLUG, pipe	2
70	296626	VALVE, assembly, manual	2
71	260810	Block, coupling	1

Coupling Block Assembly (24N996)



Apply pipe sealant to all male threads prior to assembly. Torque fittings to 120-130 in-lb (14-15 N•m)

Ref.	Part	Description	Qty.
301	296215	BLOCK, coupling, ss	1
302	296970	VALVE, manual	2
303	104071	PLUG, pipe	2
304	112307	FITTING, street elbow	2
305	C20895	FITTING, bushing, 1/4 x 1/8	4
306	117506	FITTING, swivel, 1/4 npt x #6 jic	1
307	122722	ADAPTER, jic06x1/4npt, mm, ms, 6k	1
308	122963	ADAPTER, swvl, jic05x1/4npt, fm, ms, 6	1
309	117455	FITTING, nipple, 1/4 npt x #5 jic	1

Set-up Chart for GX-8P Modules

Pressure (psi)	Output (lbs/min)	Pattern ✖Dia. (inches)	Module Part No.	Resin Port Size	No. Orifices	Iso Port Size	No. Orifices	Tip
Round Spray Pattern								
2500	1.0	4.0	295377	.013	1	.013	1	295339 (020)
2500	1.4	5.0	295377	.013	1	.013	1	295428 (024)
Fan Spray Pattern								
2500	1.0	6	295338	.013	1	.013	1	297192 (201)
2500	1.4	7	295338	.013	1	.013	1	297841 (202)

✖ At 18-24 in. above substrate

GX-8P Model Specifications

Module/Tip Data for Chemical Sprayed at 2500 PSI				
✖Module Kit	**Cleanout Drill**	**Tip**	**❄Pattern**	**❄Output (lbs/min)**
Fan Spray Pattern				
295338 (.098 diameter)	297914 (.013 diameter)	297192 (201)	6 in. wide	1.0
		297841 (202)	7 in. wide	1.4
Round Spray Pattern				
295377 (.098 diameter)	297914 (.018 diameter)	295339 (020)	4 in. diameter	1.0
		295428 (024)	5 in. diameter	1.4

❄ *Actual results may vary due to chemical system characteristics, temperature, pressure, and ratio.*

✖ *Includes appropriate cleanout drills.*

Tool Kits

297966 GX-8P Tool Kit

Technical Data

Category	Data
Air Supply	100-125 psi (7-9 bars)
Maximum Operating Pressure	3500 psi (24 MPa, 240 bar)
Maximum Output ❄	0.4 gallons/min. (1.52 liters/min.)
Minimum Output ❄	0.1 gallons/min. (0.38 liters/min.)
Maximum sound pressure*†	78.7 db(A) 100 psi (0.7 MPa, 7 bar)
Maximum sound power**†	85.7 db(A) 100 psi (0.7 MPa, 7 bar)
Height	7 in. (17.8 cm)
Length	7.5 in. (19 cm)
Width	2.5 in. (6.25 cm)
Weight	3.5 lbs. (1.59 kg)
Mixing	Internal impingement, airless atomization, solvent-free, mechanically self cleaning
Wetted Parts	Stainless Steel, Carbon Steel, HDPE, Acetal

❄ Theoretical: actual results will vary with operating conditions.

† Measured at typical operating conditions (clean-off valve on gun is a half turn open).

** Sound pressure measured 3 feet (1 meter) from equipment.*

*** Sound power measured per ISO-9416-2.*

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

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Original instructions. This manual contains English. MM 311338

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