

Model D Spray Gun

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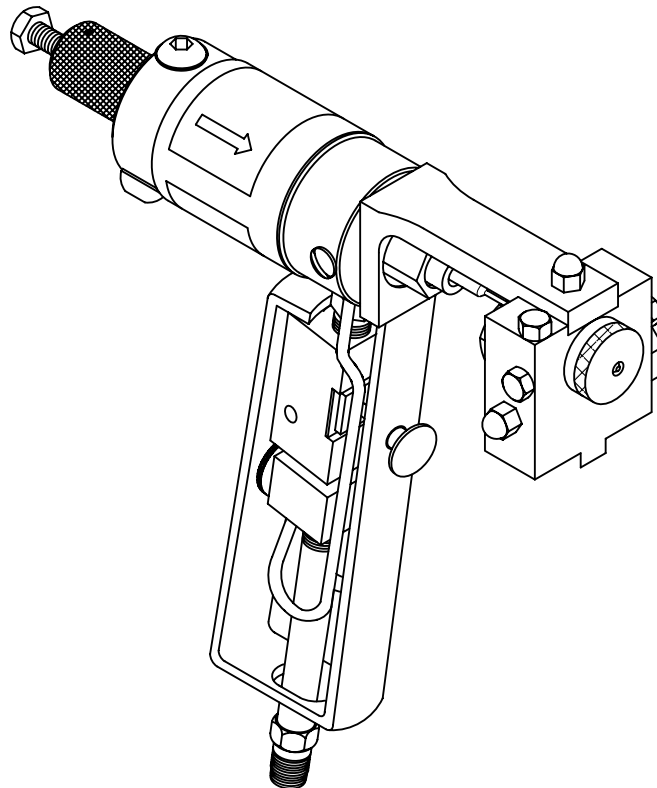
***For use with non-flammable polyurethane foams. For professional use only.
Not for use in explosive atmospheres.***

*See page 2 for model information.
1000 psi (7 MPa, 70 bar) Maximum Working Pressure*



Important Safety Instructions

Read all warnings and instructions
in this manual. Save these instructions.



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Models

Part No.	Description	Mix Module
295530	D-55	296597
295531	D-55-RECIRC	296597
295532	D-62	296598
295533	D-70	296599

Warnings

The following general warnings are for the setup, use, grounding, maintenance, and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. *Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.*

 WARNING	
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • 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.
 	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.</p> <ul style="list-style-type: none"> • 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.
 	<p>SKIN INJECTION HAZARD</p> <p>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.</p> <ul style="list-style-type: none"> • 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. • Do not spray without tip guard and trigger guard installed. • Follow Pressure Relief Procedure in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.



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 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 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.



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:

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

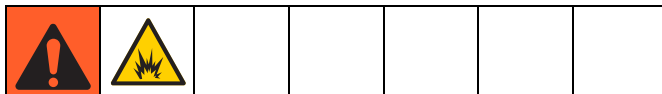
For all applications except spray foam



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

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- 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.
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- 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.

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
<p>Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.</p> <ul style="list-style-type: none">• 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

Major Components

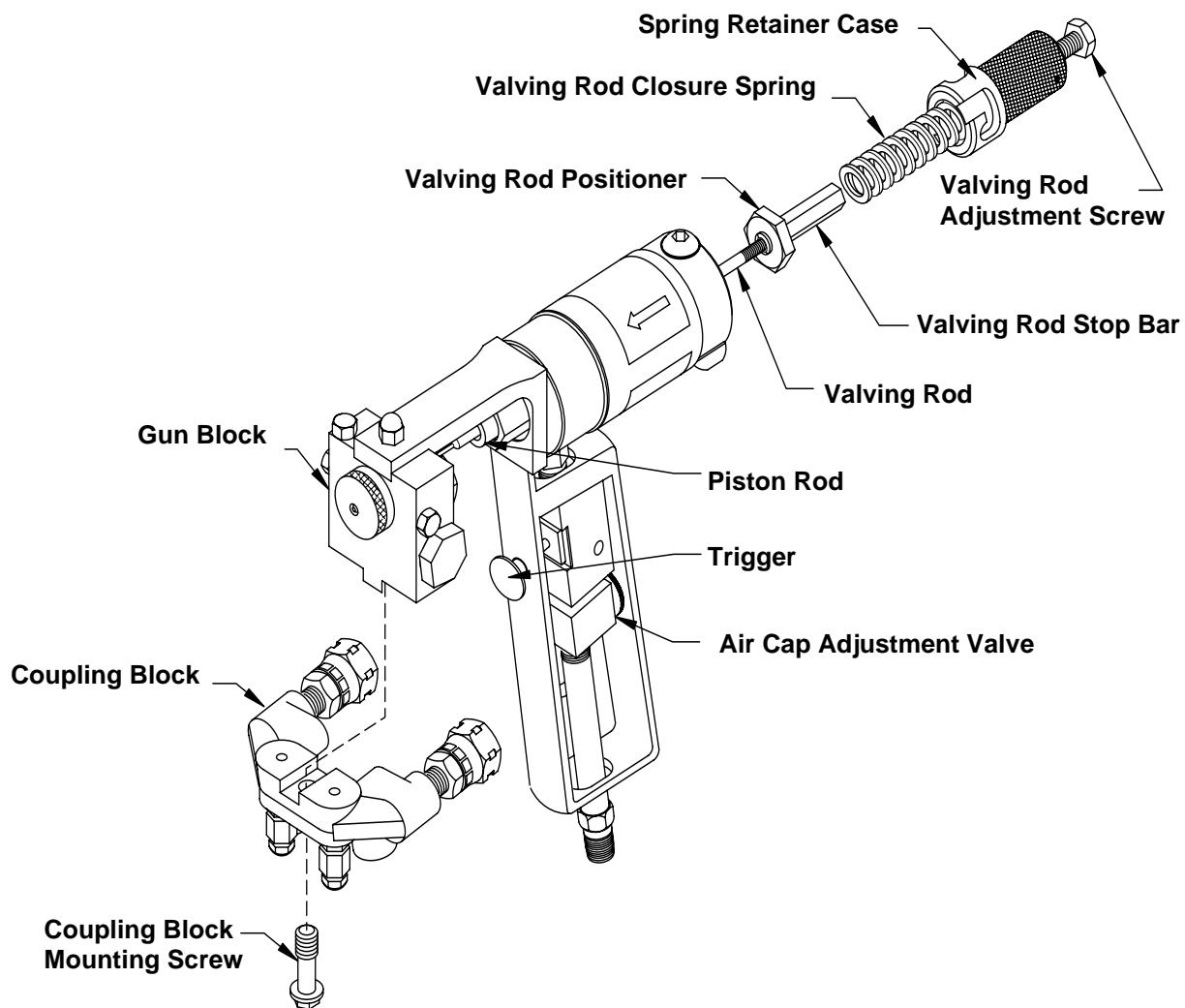


FIG. 1: Major Components

Centerline Components

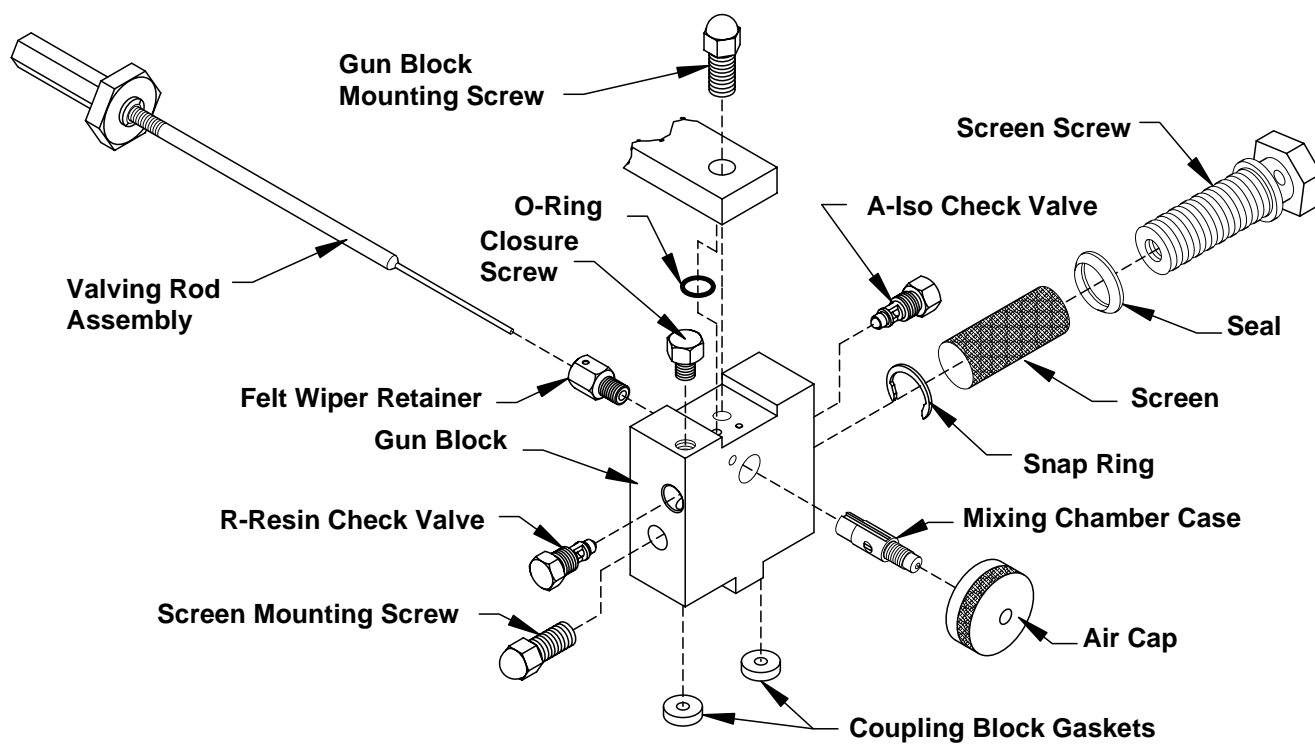


FIG. 2: Centerline Components

Operation Basics



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

Isocyanate Hazard



Spraying materials containing isocyanates creates potentially harmful mists, vapors, and atomized particulates.

Read material manufacturer's warnings and material MSDS to know specific hazards and precautions related to isocyanates.

Prevent inhalation of isocyanate mists, vapors, and atomized particulates by providing sufficient ventilation in the work area. If sufficient ventilation is not available, a supplied-air respirator is required for everyone in the work area.

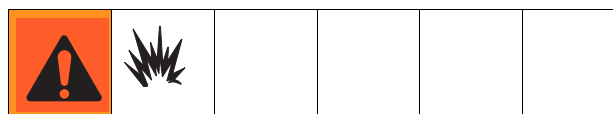
To prevent contact with isocyanates, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons, and goggles, is also required for everyone in the work area.

Keep A and B Components Separate

CAUTION

To prevent cross-contamination of the gun's wetted parts, do not interchange A component (isocyanate) and B component (resin) parts. The gun is shipped with the A side on the left.

Grounding



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

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

Coupling Block

Install Coupling Block

1. Inspect coupling block gaskets for damage and wear. Replace if necessary.
2. With gaskets in place, fit coupling block to gun block.
3. Insert coupling block mounting screw and tighten securely with 5/16 in. nut driver.

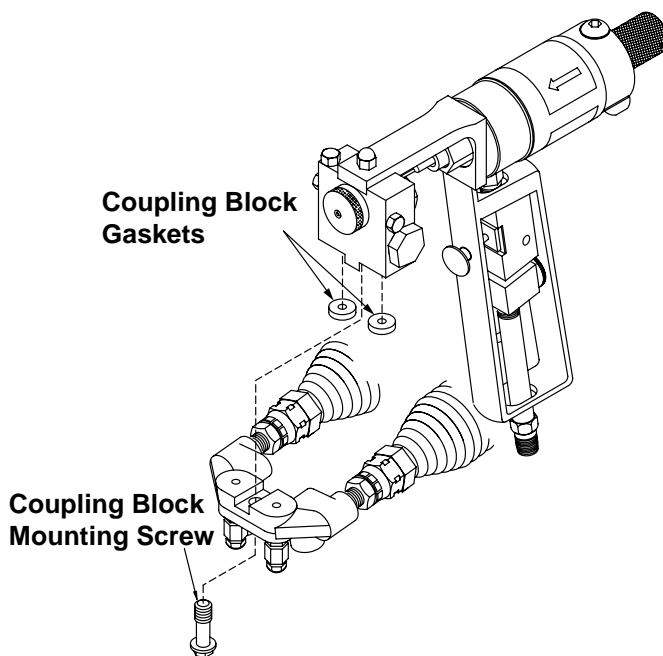








FIG. 3: Coupling Block

Manual Valves

 Triggering gun with manual valves closed may cause crossover if gun ports contain residual chemical.

						
Never open manual valves unless coupling block is secured to gun or exit port is directed into flush pail.						

1. Open manual valves using 5/16 in. nut driver; turn manual valves counterclockwise approximately three full turns. Do not open until it bottoms out.
2. Close manual valves by turning fully clockwise.

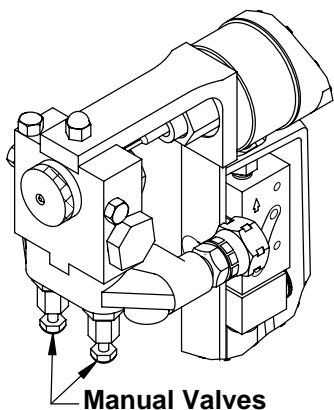







FIG. 4: Manual Valves

Remove Coupling Block

						
To prevent release of pressurized chemical, close both manual valves before removing coupling block.						

1. Disconnect air hose.
2. Close both manual valves.
3. Remove coupling block mounting screw (FIG. 3).
4. Separate coupling block from gun. Do not lose gaskets.
5. Use gun cleaner to wipe clean mating surface of gun block and coupling block. Cover exposed opening with grease.

Air Hose Connection

To CONNECT air hoses, pull back sleeve of female fitting, insert male fitting and slide sleeve forward to secure connection.

To DISCONNECT air hoses, pull back sleeve of female fitting and remove male fitting.

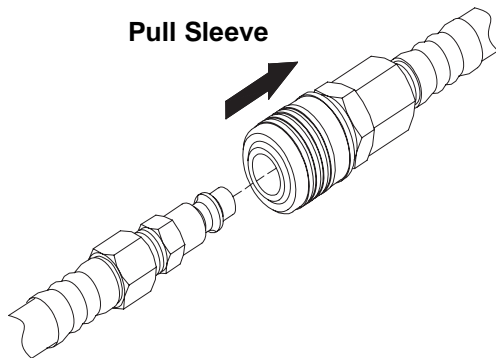


FIG. 5: Air Hose Connection

Valving Rod Adjustment Screw

Use to regulate amount of valving rod travel when gun trigger is depressed with air supply connected. Turn clockwise to decrease travel, and counterclockwise to increase travel.

1. Use 5/64 in. hex key wrench to loosen friction lock.
2. Turn adjustment screw as required and tighten friction lock until screw no longer easily turns by hand.
3. Check friction lock periodically and tighten as required to prevent screw from slipping during operation.

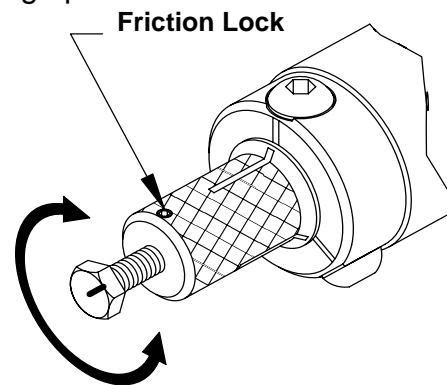


FIG. 6: Valving Rod Adjustment Screw

Air Cap Adjustment Valve

Use to control amount of air that passes through air cap and over mixing chamber tip. Airflow helps keep tip free of sprayed chemical. Too much air may distort spray pattern and create overspread. Too little air will not properly clean end of valving rod.

To OPEN valve, turn knob approximately 1/8 turn counterclockwise.

To CLOSE valve, turn knob fully clockwise.

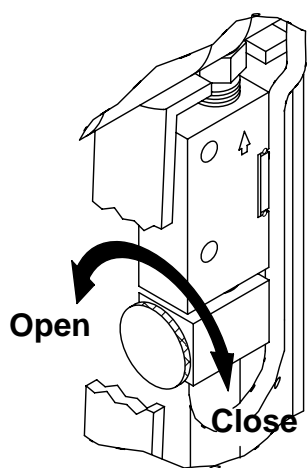


FIG. 7: Air Valve Adjustment

Felt Wiper

Adjust Felt Wiper

1. Use 5/16 in. open-end wrench to loosen retainer slightly.
2. Slowly tighten it by hand until it seats against rear packings in mixing chamber.

3. Use 5/16 in. open-end wrench to tighten retainer another half turn.

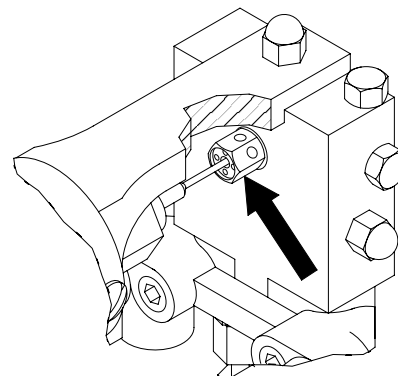


FIG. 8: Felt Wiper

Clean Felt Wiper

1. Insert nozzle of flush can into holes of felt wiper.
2. Saturate felt with gun cleaner.

Initial Set Up



1. Remove coupling block from gun.
2. Check valving rod clearance in closed position. Rod should extend approximately 1/32 in. (1 mm) beyond tip of mixing chamber. If it does not, see Valving Rod Adjustment procedure, page 24.

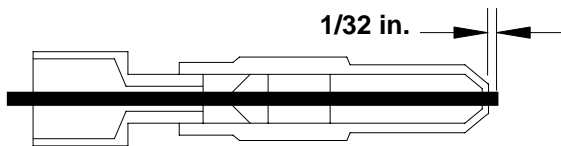


FIG. 9: Valving Rod (Closed Position)

3. Adjust valving rod travel to initial setting.
 - a. Loosen friction lock. Turn valving rod adjustment screw clockwise until it stops.
 - b. Turn valving rod adjustment screw 11 turns counterclockwise.
4. Connect air supply hose to gun.
5. Connect A-isocyanate hose (red-taped) to notched fitting on coupling block. Then connect R-resin hose (blue-taped) to fitting without notches on coupling block.
6. Close both manual valves.
7. Pressurize the A and R chemical hoses and check for leaks. (See Proportioning Unit manual.)
8. Bleed air from chemical hoses:

- a. Hold coupling block with exit ports pointed into disposable container.
- b. Open each manual valve to allow trapped air to escape. Bleed each side until chemical is free of air.
- c. Close both manual valves.

9. Use clean cloth soaked in gun cleaner to wipe clean coupling block and its mating surfaces.

CAUTION
To avoid accumulation of dirt and other contaminants, do not apply grease to mating surfaces of coupling block.

10. Install coupling block to gun block.
11. Proceed with Daily Start-up procedure or Shutdown procedure as required.

Daily Start-Up




Ensure gun is attached to coupling block and air hose, and the proportioning unit is at desired temperature and pressure.

1. Connect air supply to gun, page 12.
2. Adjust air cap valve, page 13.
3. Saturate felt in felt wiper with gun cleaner using flush can.
4. Trigger gun multiple times to ensure valving rod moves the full travel quickly and freely.

CAUTION


Sluggish valving rod action may result in valving rod sticking in open position when fluid pressure is applied. Always have a 5/16 in. nut driver available to quickly close manual valves on coupling block.

5. Open both manual valves, page 11.
6. Test spray on disposable surface and adjust spray pattern as needed. (See Spray Pattern Adjustment procedure, page 17.)

 Do not exceed 1000 psi (7 MPa, 70 bar) maximum fluid working pressure even in static de-triggered conditions, or check valve damage may result.




Daily Shutdown



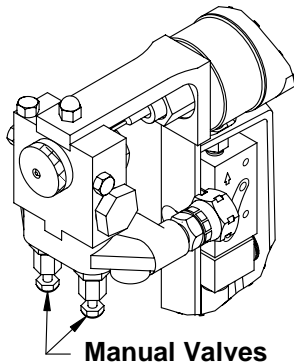
 Follow when gun is out of service for any length of time. Daily disassembly of gun for cleaning is not recommended if it has been operating properly. However, if you remove the gun from the coupling block, flush and clean thoroughly.

1. Follow Pressure Relief Procedure, page 16.
2. Shut down proportioning unit as required.




Pressure Relief Procedure

						
Relieve pressure before cleaning or repairing gun.						



1. Close both manual valves.



2. Trigger gun once onto waste area to relieve fluid pressure in front end of gun.
3. Disconnect gun air supply, page 12.
4. If gun is removed from coupling block, follow Clean Spray Gun Procedure, page 21.

						
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. Under high pressure, fluid will spray sideways from fluid ports.						

Spray Pattern Adjustment

						
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This adjustment may create a large mass “bun” of urethane foam. Very high temperatures created by chemical reaction inside a bun may not dissipate after outside surface has cooled. A large bun may continue to react for several hours after spraying until flash (burning) point of foam is reached. ALWAYS break buns into smaller pieces so heat can escape.

1. Check valving rod clearance in closed position. Rod should extend approximately 1/32 in. (1 mm) beyond tip of mixing chamber. If it does not, see Valving Rod Adjustment procedure, page 24.

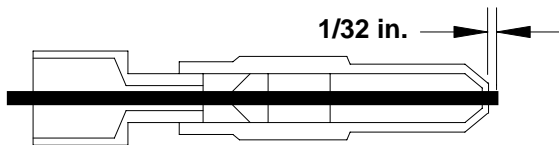


FIG. 10: Valving Rod (Closed Position)

2. Adjust valving rod travel to initial setting.
 - a. Loosen friction lock. Turn valving rod adjustment screw clockwise until it stops.
 - b. Turn valving rod adjustment screw 11 times counterclockwise.
3. Locate point of valving:
 - a. Aim gun at disposable target.
 - b. Dispense short (1 second) bursts toward target while simultaneously withdrawing valving rod adjustment screw

from retainer case by 1/4-turn increments in counterclockwise direction.

- c. Point of valving is reached when chemical stream mists as shown in FIG. 11.

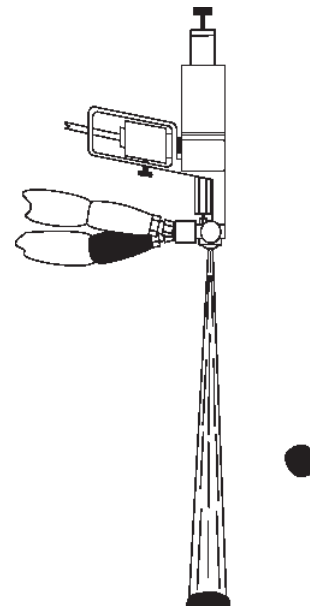


FIG. 11: Point of Valving

4. Adjust spray pattern. Note position of notch in hexhead of adjustment screw, then back screw out counterclockwise the number of turns specified in Table 1. Notice spray pattern opens as adjustment is made (FIG.

12).

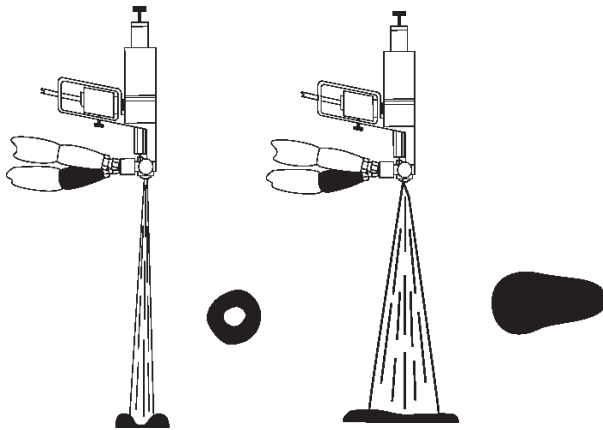


FIG. 12: Opening Spray Pattern

5. Fine tune spray pattern:

- a. After you back out adjustment screw, make fine adjustments (1/8 turns or less in either direction as required) to obtain pattern shown in FIG. 13. Moving the screw out beyond this point may cause the pattern to split, as shown in FIG. 14.

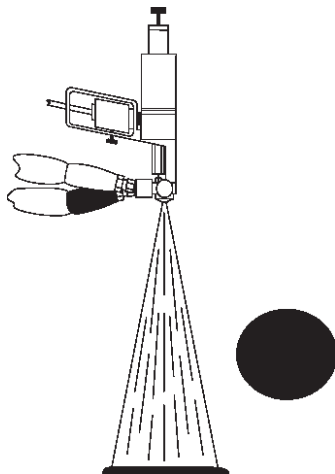


FIG. 13: Desired Pattern

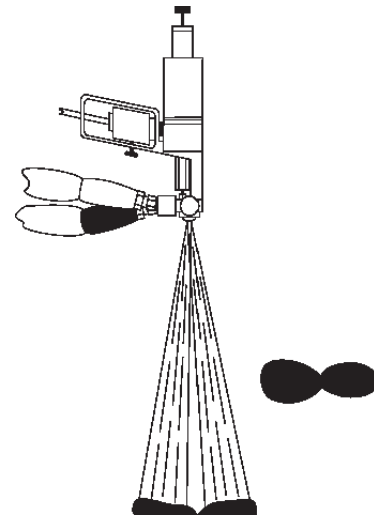


FIG. 14: Split Pattern

- b. If full-round pattern cannot be achieved, ensure that material temperature and spray pressure are correct. If pattern remains closed upon reaching maximum specified number of turns out from point of valving, material temperature is too low
- c. If pattern splits or has hollow center, even with the adjustment screw at minimum number of turns from point of valving, material temperature is too high. Refer to FIG. 12.
- d. After reaching satisfactory spray pattern, note temperatures at proportioner and hose, and position of notch on the adjustment screw. As spraying proceeds, pattern may occasionally streak or change. If this happens, inspect chamber tip and remove any build-up of solid foam with wooden stick or brass wire brush.

- e. If buildup recurs shortly after cleaning tip, remove air cap and ensure inside is clean.

Reinstall air cap and ensure airflow is properly set.

If no buildup occurred on air cap, check the following items in this order and readjust if necessary:

- Check Valving Rod Adjustment Screw/Sleeve setting.

- Check hose temperature setting.
- Check primary heater temperature setting.
- Ensure spray pressures between chemicals are balanced. If they are not, refer to Troubleshooting section of Proportioning Unit Operation Manual for the proportioner in use.
- Ensure flow of air to air cap is adequate but not excessive.

Chamber	Turns Out From Point of Valving		Recommended Distance of Gun from Surface	Pattern Size
	Minimum	Maximum		
46-800	1/2 turn	2 turns	12 in. (304-8 mm)	6 in. (152.4 mm)
46-810	1/2 turn	2 turns	12 in. (304-8 mm)	6 in. (152.4 mm)
55-776	1 3/4 turns	2 5/8 turns	18 to 20 in. (457.2 to 508 mm)	8 in. (203.2 to 228.6 mm)
62	2 turns	3 turns	18 to 20 in. (457.2 to 508 mm)	8 to 9 in. (203.2 to 228.6 mm)
70	2 turns	3 turns	18 to 20 in. (457.2 to 508 mm)	10 to 12 in. (254 to 304.8 mm)
78-851	2 turns	3 turns	24 in. (609.6 mm)	14 in. (355.6 mm)

Table 1: Valving Rod Adjustment for Standard Mixing Chambers

Maintenance

Gun Service Kits

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

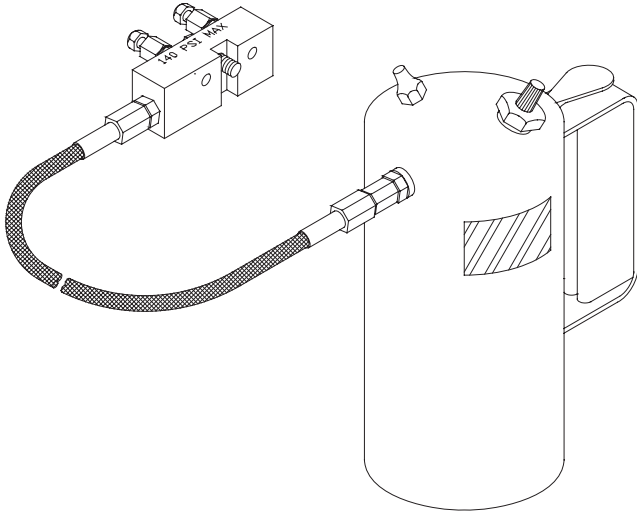


FIG. 15: 1-Quart Gun Service Kit

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

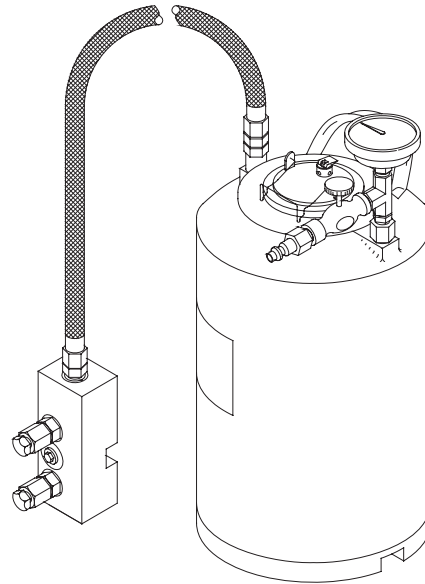


FIG. 16: 3-Gallon Gun Service Kit

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

Clean Spray Gun Procedure




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 both manual valves.
2. Remove gun from coupling block.
3. Attach service block of gun service kit to spray gun, and then tighten using 5/16 in. nut driver.
4. Pressurize container to 100 psi.
5. Open one manual valve on service block.
6. Trigger gun while holding against a grounded waste container until there is a fine, unobstructed mist of gun cleaner.
7. Release trigger of gun and 1-quart kit, and close manual valves on service block.
8. Repeat steps 5-7 for other side of gun.
9. After initial cleaning, remove air cap and flush a second time to ensure thorough cleaning.
10. Remove service block of gun service kit from spray gun.
11. Disconnect air supply.
12. Clean screens, check valves and screen screw. See Filter Screw Removal and Ser-

vice procedure, page 22.

 Inspect air cap, mixing chamber, and gun block for build up of material and clean as required.

Do not use metal cleaning devices to clean plastic components.

Repair

						
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Shut down proportioner and allow chemicals to cool before performing any repair procedures.

Clean Center Line Components using Gun Service Kit prior to performing any repair procedures.

Filter Screen Removal and Service

1. Perform Pressure Relief Procedure (page 16) and Clean Spray Gun Procedure, page 21.
2. Unthread screen mounting screw. Remove screen mounting screw and filter screen assembly from gun block.

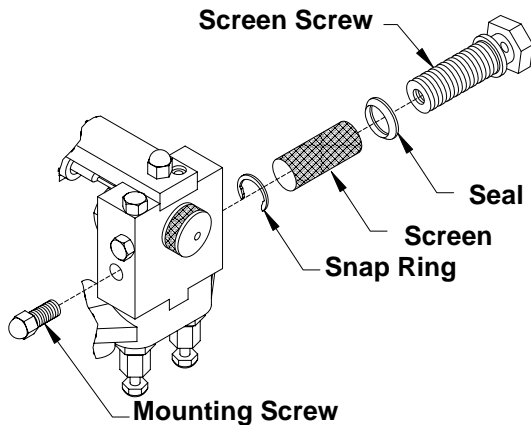


FIG. 17: Filter Screen Assembly

3. Remove screen screw retainer (snap ring at end of screw) and screen. If screen is dirty and clogged, replace it.

4. Clean and inspect screen cavity. If particles are visible, remove with cleanout drills and flush thoroughly with gun cleaner.

CAUTION
Any remaining material in cavity on down stream side of screen will clog mixing chamber.

5. Inspect seal, and replace if worn or damaged.
6. Reinstall filter screen assembly. With seal in place, install screen and retainer clip-on screen screw.
7. Install screen assembly to gun block. Ensure screw is tight to prevent leakage.
8. Flush gun after cleaning cavity and screen. See Clean Spray Gun Procedure, page 21.

Clean Injection Slots

1. Perform Pressure Relief Procedure (page 16) and Clean Spray Gun Procedure, page 21.
2. Remove check valves.

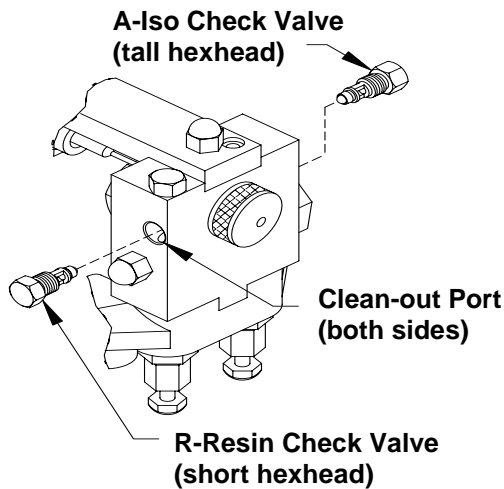


FIG. 18: Check Valves

3. Inspect check valves to ensure sleeve is secured, and place check valves in separate containers of gun cleaner.
4. Flush cleanout ports with gun cleaner.
5. Turn valving rod adjustment screw one full turn counterclockwise to ensure valving rod will be withdrawn completely past injection slot.
6. Clean mixing chamber injection slots. With air supply connected to gun, depress and hold trigger to keep valving rod in open position. Insert appropriate cleanout spade into cleanout hole and mixing chamber.

7. Flush injection slots. With valving rod in open position, flush each injection slot with gun cleaner. Press flush can needle firmly into cleanout hole to create seal. Continue until gun cleaner sprays out chamber tip.
8. Inspect and clean check valves, page 25.
9. Install tall hexhead check valve on Isocyanate side, and short hexhead on Resin side.
10. Adjust valving rod adjustment screw one turn clockwise.

CAUTION

To prevent damage to chamber, do not release trigger while cleanout spade is in chamber slot.

Valving Rod Adjustment

In closed position, valving rod should extend approximately 1/32 in. (1 mm) beyond tip of mixing chamber. If it does not, follow this procedure:

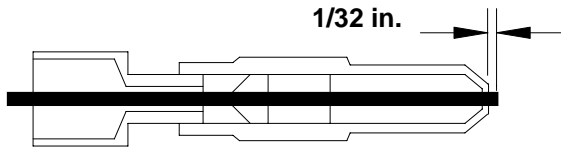


FIG. 19: Valving Rod (Closed Position)

1. Perform Pressure Relief Procedure (page 16) and Clean Spray Gun Procedure, page 21.
2. Disconnect air supply from gun.
3. Remove spring retainer case. Firmly grasp spring retainer case, push in and rotate counterclockwise. Pull spring out of air cylinder.

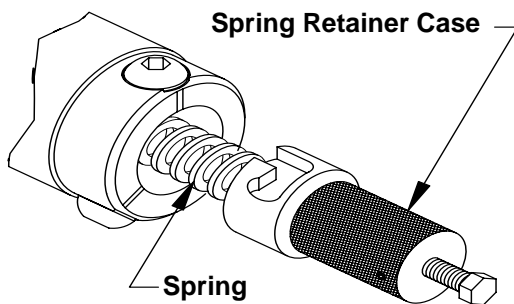


FIG. 20: Retainer Case Removal

4. Loosen felt wiper retainer 2-3 turns (DO NOT REMOVE).

5. Remove valving rod. Push back firmly on piston rod until end of Stop Bar emerges from cylinder.

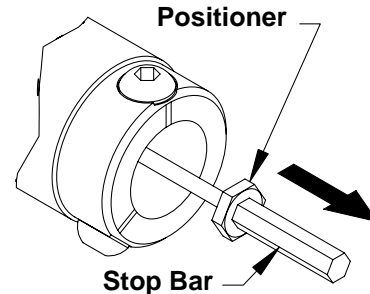



FIG. 21: Valving Rod Removal

6. Loosen stop bar from positioner. Turn positioner to adjust length of valving rod as required. Retighten stop bar against positioner.
7. Replace valving rod, spring, and spring retainer case. Grasp firmly, push in, and turn clockwise to lock in place.
8. Adjust felt wiper and soak with gun cleaner.
9. Connect air supply to gun.
10. Check action of valving rod. With manual valves closed, press trigger several times and ensure valving rod moves freely.

If you have encountered no problems, spray gun is ready for test spray. Follow Daily Start-up procedure (page 15) and Spray Pattern Adjustment procedure (page 17).

Centerline Component Removal

 Refer to Figure 2 to view centerline components.

1. Perform Pressure Relief Procedure (page 16) and Clean Spray Gun Procedure, page 21.
2. Remove air cap by hand, turning it counterclockwise.
3. Remove screen screw assembly. Flush and place in gun cleaner.
4. Remove check valves. Flush and place in gun cleaner.
5. Flush screen screw and check valve ports.
6. Remove spring retainer case by firmly grasping knob of case. Push in and rotate counterclockwise to remove from air cylinder. Pull spring out of air cylinder.
7. Loosen felt wiper retainer 2-3 turns. DO NOT REMOVE.
8. Remove valving rod. Push back firmly on piston rod until end of valving rod stop bar emerges from cylinder.
9. Remove gun block from frame.
10. Unscrew felt wiper assembly from rear of mixing chamber. Keep rear of mixing chamber in upright position to prevent possible loss of internal chamber parts. Ensure brass retaining sleeve is not stuck to felt wiper. Place wiper assembly in gun cleaner.
11. Remove mixing chamber. Hold gun block in one hand with chamber tip pointing into your palm. Insert mixing chamber knockout

tool into rear of gun block and tap with hammer until chamber ejects. Place chamber in gun cleaner.

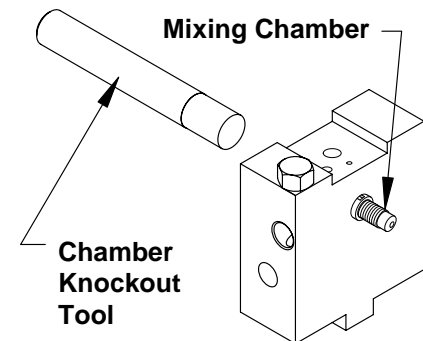


FIG. 22: Mixing Chamber Removal

CAUTION

Matching tapers on mixing chamber and center hole in gun block are machined to an exact fit to hold chambers in place and create a leak-proof seal. When handling or cleaning these parts be careful not to damage finish. Do not use metal tools to clean these parts.

12. Remove closure screw in top of gun block. Place screw in gun cleaner and clean entire gun using appropriate cleanout tools and brass brushes. Then flush thoroughly with gun cleaner.
13. Disassemble check valve assemblies.

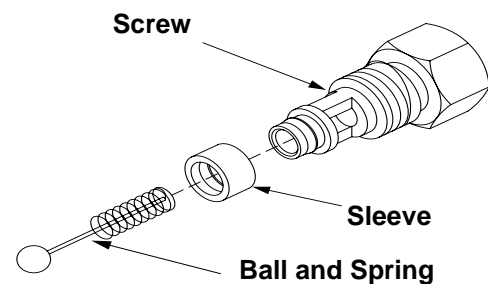


FIG. 23: Check Valves

- a. Remove ball and spring assembly. Hold ball and unscrew assembly. If dirt or material build-up prevents complete removal of the spring, screw it back in. Soak assembly in gun cleaner and try to remove it again. If ball and spring assembly cannot be removed undamaged, replace it.
- b. Use check valve cleanout drill to clean inside of closure screw. Insert the flattened end of cleanout drill into opening at end of screw, avoiding spurs in the closure screw. Do not spin drill until the flat on the drill has cleared spurs. Spin drill with your fingers to loosen any buildup, then remove drill and flush inside of screw with gun cleaner. Next, check area where ball seats for damage. Also check sleeve for damage; it should fit tightly on the end of the screw. If there is damage or if the sleeve fits loosely, replace it. Replace sleeve if check valve can be threaded all the way into gun block by hand. A good check valve requires the use of a 5/16 in. nut driver to make the last 1/4 turn, compressing the sleeve. This compression is required to create an internal seal in the gun block.
- c. Remove damaged check valve sleeve. Remove ball and spring. Insert check valve into check valve sleeve removal block (FIG. 24). While holding block, and keeping pressure on head of check valve, slice check valve sleeve with razor knife at a 10 - 15 degree angle relative to the plane of removal block. Remove check valve from block and peel sleeve off. If check valve sleeve remains in gun block after removing

check valve, use extractor tool to remove sleeve. Insert threaded end of tool into cleanout port and, while pressing tool into gun block, turn it clockwise several times. Withdraw tool from gun block; sleeve should slide out with tool.

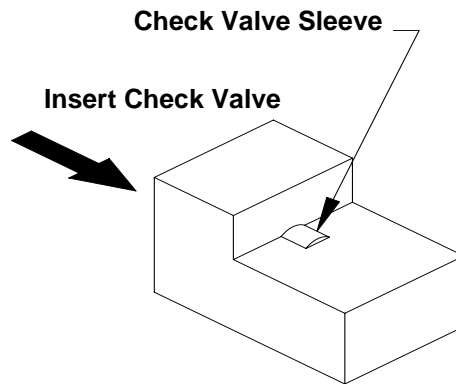



FIG. 24: Sleeve Removal Block

- d. Insert spring assembly into check valve and turn the screw clockwise. When the spring is fully inserted, stem will jump over spurs in screw and make clicking sound. Ensure ball fully seats in check valve. If not, or ball is damaged, replace with new ball and spring assembly.
14. Remove retaining ring, washer, and felt wiper from retainer. Flush retainer with gun cleaner, insert new felt wiper and washer, then install retaining ring. Loosely thread felt wiper retainer into rear of mixing chamber (DO NOT TIGHTEN). If not installing to gun block, store assembly in plastic vial with corresponding cleanout spade.

Centerline Component Installation

 All gun block parts must be clean and free of damage before installation.

1. Remove felt wiper assembly from rear of mixing chamber.
2. Ensure internal mixing chamber parts are in place.
3. Insert chamber into gun block. Align keyway in chamber with pin protruding from top of hole in block.

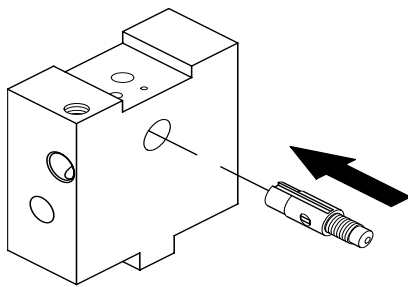


FIG. 25: Mixing Chamber Insertion

4. Press chamber into block so that flange is 1/32 - 1/16 in. above face of gun block.

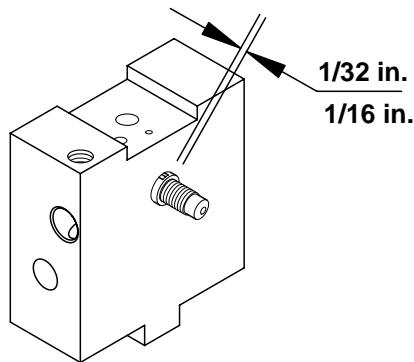


FIG. 26: Chamber Positioning

5. Thread felt wiper assembly into back of mixing chamber. Do not tighten.

CAUTION

Failure to install felt wiper in rear of chamber allows internal chamber parts to fall out when chamber is tapped into place.

6. With rear of gun block facing palm of your hand, place mixing chamber insertion block over nose of chamber so it rests squarely on the chamber flange. Firmly tap insertion block with hammer until flange of chamber is flush with face of gun block (FIG. 27).

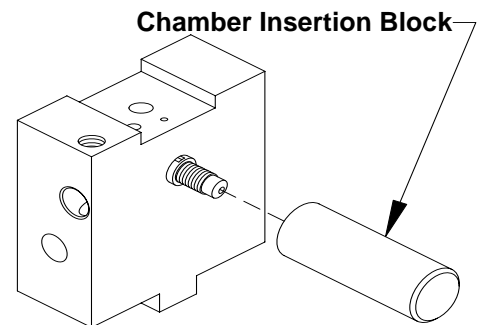


FIG. 27: Chamber Seating

7. With o-ring in place on underside of gun frame, assemble block to frame.
8. Install valving rod assembly. If using new felt wiper, push valving rod through felt with retainer case off chamber. Remove felt wiper and any felt buildup on tip of rod. Install wiper, hand tighten into rear of chamber in gun block. Then insert valving rod through piston in air cylinder, guiding it through center of felt wiper retainer. Use firm pressure to carefully push valving rod into mixing chamber until piston of air cylinder bottoms out.
9. Check valving rod clearance. If it does not extend approximately 1/32 in. (1mm) beyond tip of mixing chamber, see Valving Rod Adjustment, page 24.

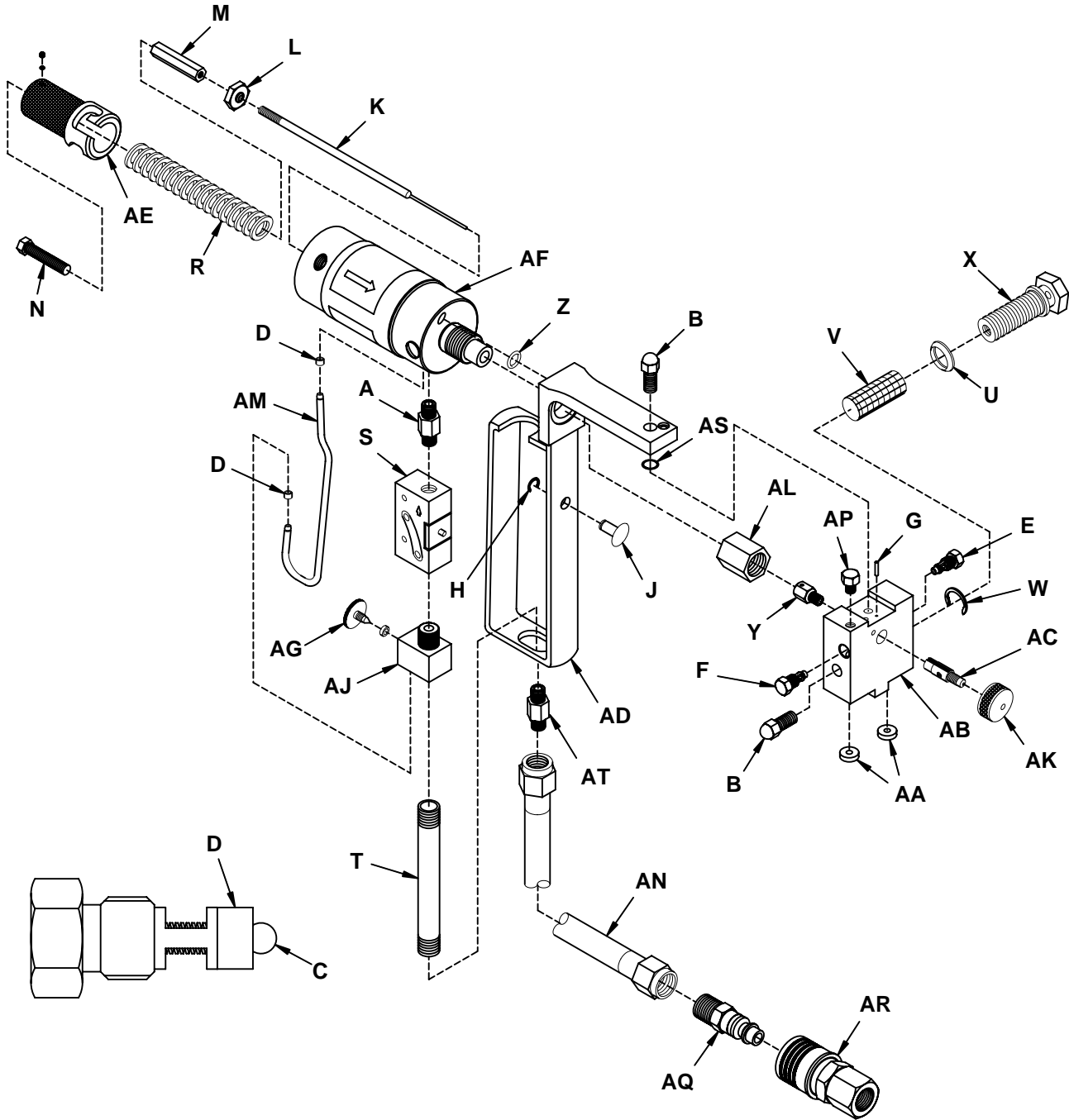
Repair

10. Replace valving rod spring and spring retainer case. Grasp knob, push in, and turn clockwise to lock in place.
11. Replace air cap.
12. Replace check valves and screen screw assembly.
13. Replace closure screw in top of gun block.
14. Mount gun onto coupling block.
15. Connect air supply to gun.
16. Adjust felt wiper and soak felt with gun cleaner.
17. Close manual valves and press trigger several times to ensure valving rod moves freely.

Notes

Parts

Model D Spray Gun Assembly



Model D Spray Gun Assembly

Ref. Part	Description	Qty.	Ref. Part	Description	Qty.
A	295591 Hex nipple, 1/8 in. MPT, steel	1	Y	296611 Felt wiper assembly (includes retainer, wiper, washer) (pack of 5)	
B	295185 Mounting screw, 1/2 in. LG	2			
C	296090 Ball and spring assembly (pack of 10)			297139 Felt wiper (pack of 15) and retainer washers (pack of 3)	
D	296091 Check valve sleeve (pack of 10)		Z	111450 O-ring	1
E	296614 Kit, A-check valve, includes C and D (pack of 10)		AA	296625 Coupling block gasket (pack of 2)	
F	296615 Kit, R- check valve, includes C and D (pack of 10)		AB	296121 D gun block, complete (includes G, AA, AP)	1
G	295592 Roll pin, 1/16 x 5/16 in. SST	1	AC	Mixing chamber (includes Y) (see Table 1)	1
H	Snap ring (see J)	1			
J	296616 Trigger button; includes H	1	AD	295590 Gun frame	1
K	Valving rod (see Table 1)	1	AE	296629 Spring retainer case (includes N)	1
L	Valving rod positioner (see M)	1	AF	Air cylinder (see page 34)	1
M	296617 Valving rod stop bar; includes L	1	AG	296633 Needle valve and packing kit	1
N	295171 Valving rod stop adjustment screw	1	AJ	295182 Needle valve body	1
R	296618 Valving rod closure spring	1	AK	Air cap (see Table 1)	1
S*	296619 Air valve	1	AL	295183 Retainer nut/dust cover	1
T	296620 Pipe nipple	1	AM	296126 Gun air tube, includes D (qty. 2)	
U	296621 Screen screw seal (pack of 10)		AN	15B772 Air hose	1
V	296622 Screen-80 mesh (pack of 10)		AP	295482 Closure screw	1
	296623 Screen-80 mesh (pack of 50)		AQ	295596 Coupler plug	1
W	295595 Snap ring	1	AR	295597 Coupler	1
X	296624 Kit, gun block screen screw (includes U, V, W)	1	AS	103557 O-ring	1
			AT	100030 Fitting	1

* Purchase Air Valve Repair Kit 296125 (purchase separately). Includes Needle Valve Packing.

★ Not shown.

Model No.	Description	Valving Rod (K)	Mixing Chamber (AC)	Air Cap (AK)	Cleanout Spade★	Coupling Block (see page 35)	Tool Kit★
295530	D-55	296579	296597	296634	295934	295887	296636
295531	D-55-RECIRC	296579	296597	296634	295934	295884	296636
295532	D-62	296580	296598	296634	295935	295887	296636
295533	D-70	296581	296599	296635	295935	295887	296636

Table 1: Model D Gun Assembly, Parts by Model Number

Mixing Chamber Size					
Reference Size	46	55	62	70	78
K (valving rod)	296578	296579	296580	296581	296582
AC (chamber)	296594 (N-800) 296595 (N-810) 296584 (L-800) 296590 (L-800-LM) 296585 (L-810) 296591 (L-810-LM)	296597 (N) 296586 (L) 296592 (L-LM)	296598 (N) 296587 (L)	296599 (N) 296588 (L)	296600 (N) 297592 (L)
AK (air cap)	296838	296634	296634	296635	296635
Cleanout spade	297007 (pack of 2)	295934 (pack of 2)	295935 (pack of 2)	295935 (pack of 2)	295935 (pack of 2)

Table 2: Model D Gun Assembly, Parts by Mixing Chamber Size

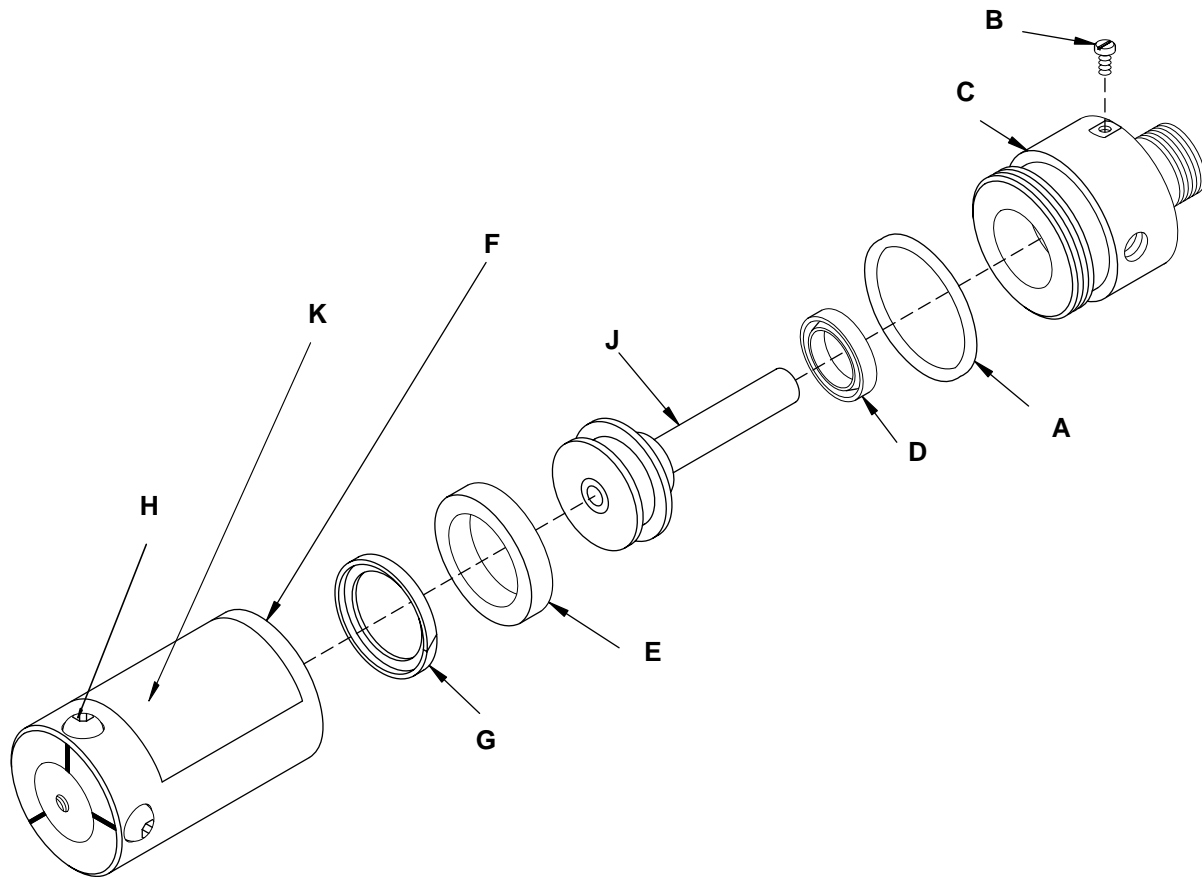
Standard Mixing Chambers

Six standard mixing chambers are available. The following table provides a general description about use and operational performance of each chamber. Actual pattern sizes and outputs achieved may vary depending on material viscosity, hose length, condition of equipment, environment, working pressure, and additional factors.

<p>46 Size</p> <p>296594 (N-800) 296584 (L-800) 296590 (L-800-LM)</p>	<p>Designed for operation in confined areas and for spraying 3/8 to 1/2-in. (.7 to 1.3 cm) thicknesses. Gun may be held within 4 in. (10.2 cm) of target without blowing away freshly applied foam. Pattern diameter is approximately 4 in., with gun 4-in. (10.2-cm) distance from target. Output is approximately 2 to 3-1/4 pounds/min. (.9 to 1.5 kg/min.).</p>
<p>46 Size</p> <p>296595 (N-810) 296585 (L-810) 296591 (L-810-LM)</p>	<p>For the same uses as above. These chambers have an increased output of approximately 3 to 4-1/2 pounds/min. (1.4 to 2.0 kg/min.).</p>
<p>55 Size</p> <p>296597 (N) 296586 (L) 296592 (L-LM)</p>	<p>Designed for stud areas of trucks and small- to medium-sized wall applications. Pattern diameter is about 8 in. (20.3 cm), with gun 18 to 20 in. (45.7 to 50.8 cm) from target. Output is approximately 6 to 8 pounds/min. (2.7 to 3.6 kg/min.).</p>
<p>62 Size</p> <p>296598 (N) 296587 (L)</p>	<p>For very large area applications. Pattern diameter is about 9 in. (22.9 cm) with gun 18 to 20 in. (45.7 to 50.8 cm) from target. Output range is about 7 to 10 pounds/min. (3.2 to 4.5 kg/min.).</p>
<p>70 Size</p> <p>296599 (N) 296588 (L)</p>	<p>For very large area applications. Pattern diameter is about 10 in. (25.4 cm) with gun 18 to 20 in. (45.7 to 50.8 cm) from target. Output range is about 9 to 12 pounds/min. (4.1 to 5.4 kg/min.).</p>
<p>78 Size</p> <p>296600 (N) 297592 (L)</p>	<p>For very large area applications. Pattern diameter is about 14 in. (35.6 cm) with gun 24 in. (60.9 cm) from target. Output range is about 13-1/2 to 16-1/2 pounds/min. (6.1 to 7.5 kg/min.).</p>

Air Cylinder Assembly

Part Number 296632

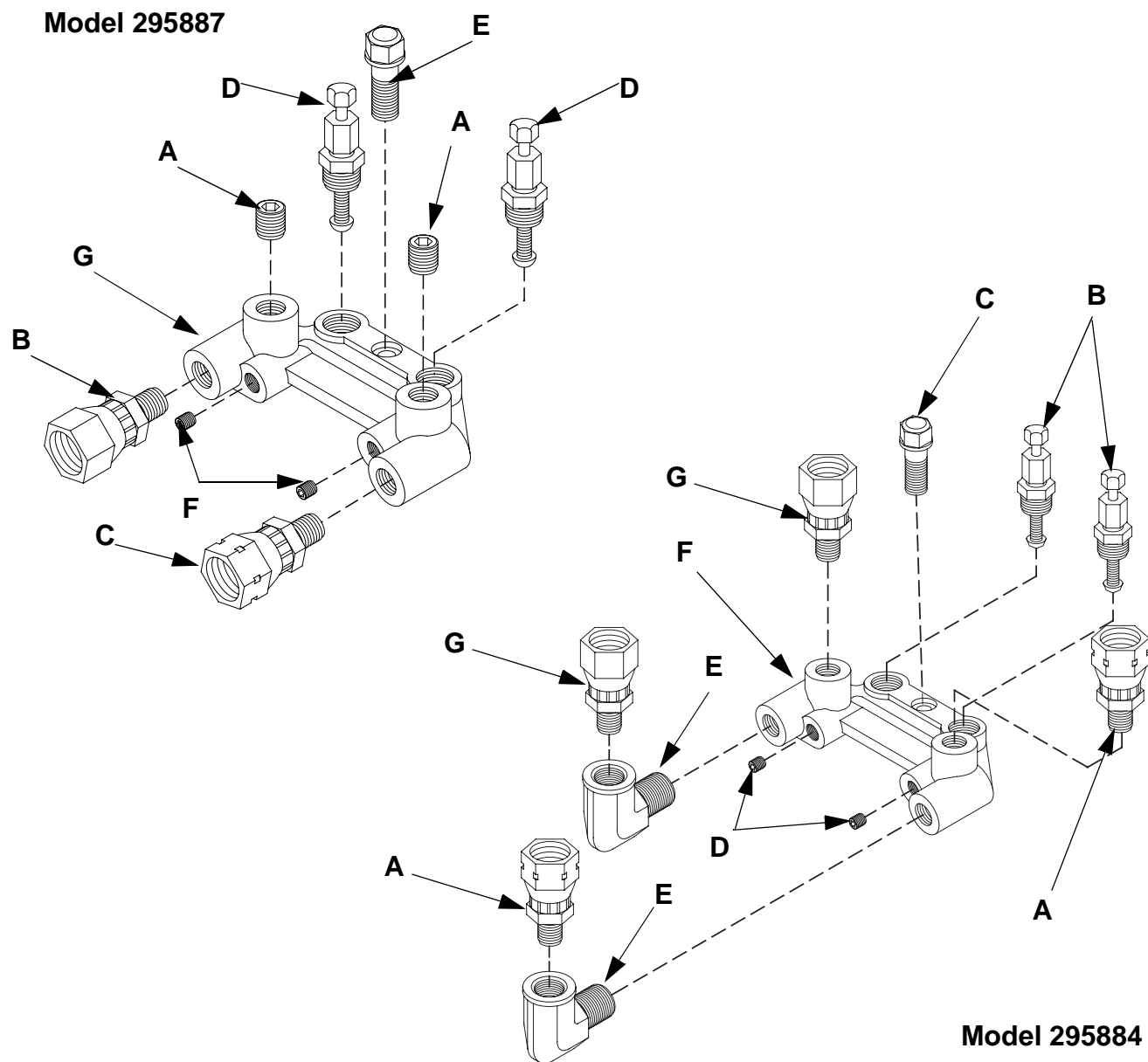


Ref.	Part	Description	Qty.
A*	107083	O-ring, fluoroelastomer	1
B	295494	Pan head machine screw, 8-32 x 3/16 in.	1
C	295177	Front head blank	1
D*	296627	U-cup (pack of 5)	
E*	296628	U-cup (pack of 5)	
F	295178	Cylinder	1
G*	296631	Wear ring	1
H	295179	Buttonhead cap screw	3
J	295484	Piston assembly	1
K▲	295492	Label, warning	1

* Parts included in Air Cylinder Seal Kit 296725 (purchase separately)

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

Coupling Block Assembly



Model 295887 (Standard)

Model 295884 (Recirc)

Ref. Part	Description	Qty.	Ref. Part	Description	Qty.
A	295662 Flush seal pipe plug, 1/8 in.	2	A	295889 A-swivel fitting	2
B	295888 R-swivel fitting	1	B	296626 Manual valve assembly (pack of 2)	-
C	295889 A-swivel fitting	1	C	295619 Mounting screw	1
D	296626 Manual valve assembly (pack of 2)	-	D	295693 Pipe plug	2
E	295619 Mounting screw, 15/16 in.	1	E	112307 Street elbow	2
F	295693 Flush seal pipe plug, 1/36 in.	2	F	295886 Coupling block	1
G	295886 Coupling block	1	G	295888 R-swivel fitting	2

Notes



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Technical Data

Category	Data
Maximum Fluid Working Pressure	1000 psi (7 MPa, 70 bar)
Maximum Air Inlet Pressure	100 psi (0.75 MPa, 7.5 bar)
Minimum Air Inlet Pressure	90 psi (0.6 MPa, 6 bar)
Maximum Output (flow rate)	16 lbs/min (7.3 kg/min) *
Minimum Output (flow rate)	2 lbs/min (0.9 kg/min) *
Air Inlet Size	x npt
A Component (ISO) Inlet Size	-5 JIC; 1/2-20 UNF
R Component (Resin) Inlet Size	-6 JIC; 9/16-18 UNF
Length	9.25 in. (24 cm)
Height	8 in. (20 cm)
Width (without coupling block)	2.4 in. (6 cm)
Weight	3 lbs. (1.4 kg)
Wetted Parts	Stainless steel, carbon steel, brass, nylon, acetal, PTFE

* Theoretical: actual results will vary with operating conditions

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