Instructions, Accessory

Circulation Manifold Kit

3B0000A

EN

Allows rapid preheating of hose on Fusion® FX Spray Gun by circulating fluid through gun manifold.
Not approved for use in explosive atmosphere or hazardous (classified) locations. For professional use only.

Model: 2002324

Maximum Fluid Working Pressure 3500 psi (24.5 MPa, 245 bar)

Maximum Fluid Temperature 200°F (94°C)

Air Inlet Pressure Range 90-130 psi (0.56-0.9 MPa, 5.6-9.0 bar)



Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.

Related Manuals

Manual in English	Description
3A9329	Fusion FX Spray Gun Manual

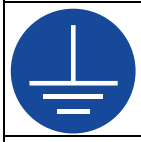
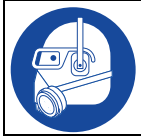
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Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Burn Hazard
	Equipment Misuse Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Splatter Hazard
	Toxic Fluid or Fumes Hazard
	Eliminate Ignition Sources

Symbol	Meaning
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Do Not Place Hands or Other Body Parts Near Fluid Outlet
	Ground Equipment
	Read Manual
	Follow Pressure Relief Procedure
	Ventilate Work Area
	Wear Personal Protective Equipment



Safety Alert Symbol
This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

General Warnings

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

⚠WARNING



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 Sheets (SDSs) 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.



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.



SKIN INJECTION HAZARD

High-pressure fluid from dispensing device, 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.**

- Engage piston safety lock when not spraying.
- 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.
- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.



BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

⚠WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. 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 sparking).
- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- 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.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** 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 Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your 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

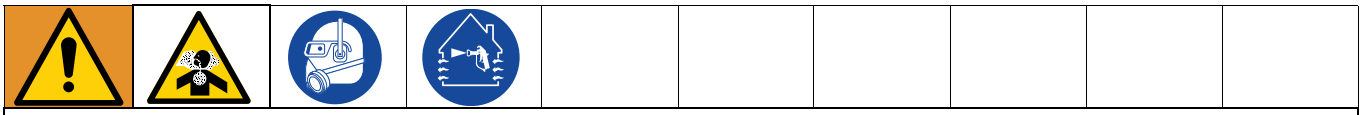
Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

Important Isocyanate (ISO) Information

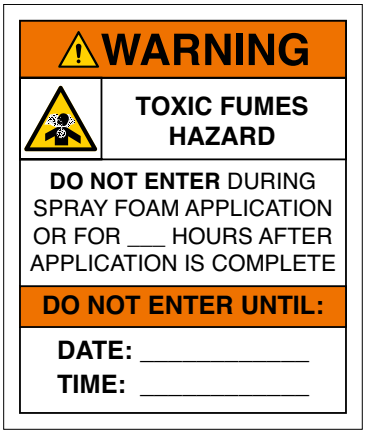
Isocyanates (ISO) are catalysts used in two component materials.

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 Sheets (SDSs) 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 SDSs.
- 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 SDSs.
- 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:



Initial Setup

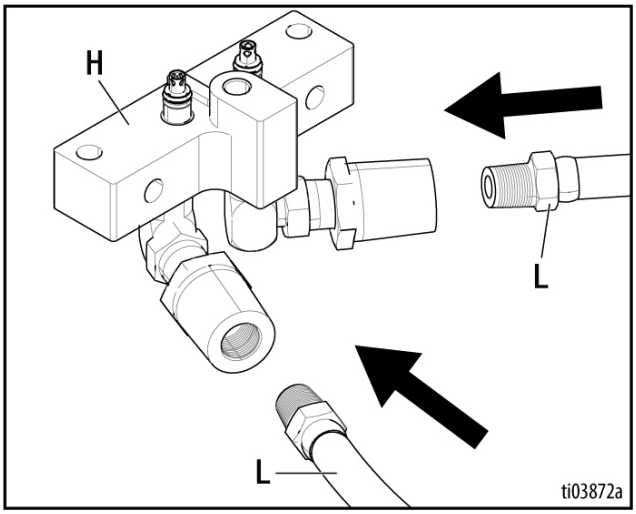


High pressure fluid from dispensing devices can pierce skin. To help prevent serious injury from pressurized fluid, always engage the piston safety lock and close the material shutoff valves to avoid accidental triggering.

Follow these steps prior to installation of the circulation manifold to ensure the system is properly setup. See the **System Setup Diagram**, page 8, for the system layout.

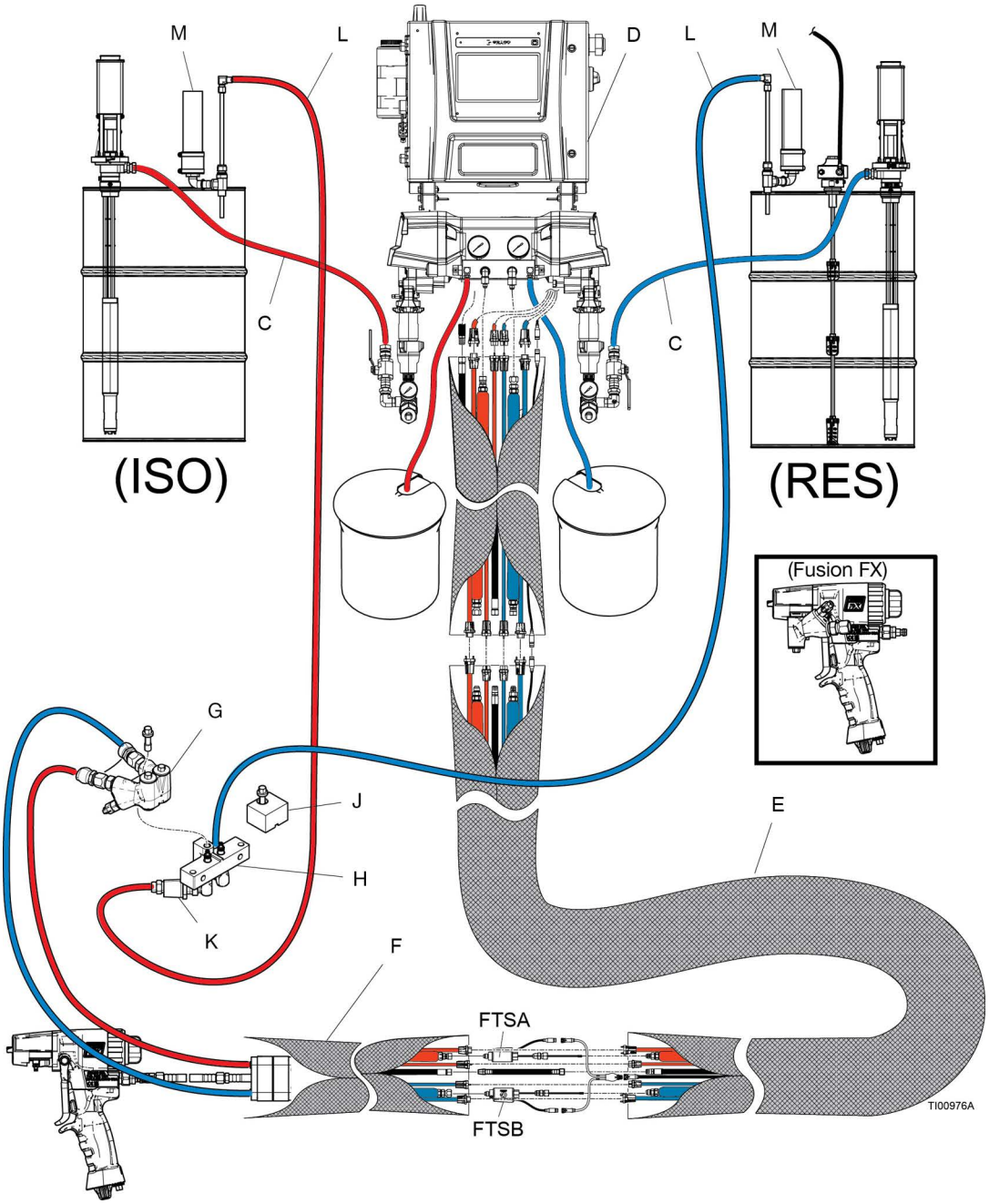
NOTE: Some of the parts provided in this step are NOT included with this kit and must be separately supplied.

1. Connect high pressure moisture-resistant circulation lines (L) go circulation manifold (H).



2. Route circulation lines back to return tube kit (M) at respective component A or B supply drum. See, **System Setup Diagram**, page 8, for routing. Use hoses rated at maximum working pressure of the equipment.

System Setup Diagram



Ref.	Description
C	Fluid Supply Lines
D	Reactor Proportioner
E	Heated Hose
F	Heated Whip Hose
G	FX Gun Fluid Manifold
H	2002324 Circulation Manifold
J	Manifold Block Cap (included in 2002324)
K	246978 Circulation Kit (includes return lines and 246477 return tube kit); see manual 309852
L	Circulation return lines (included in 246978)
M	246477 return tube kit (included in 246978); see manual 309852

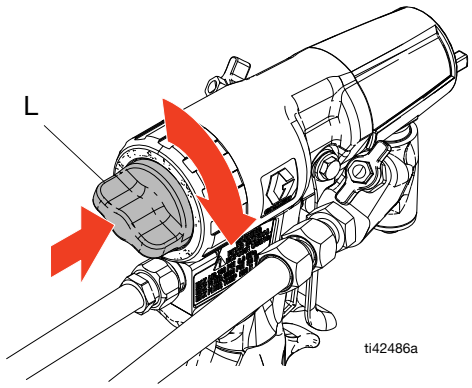
Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

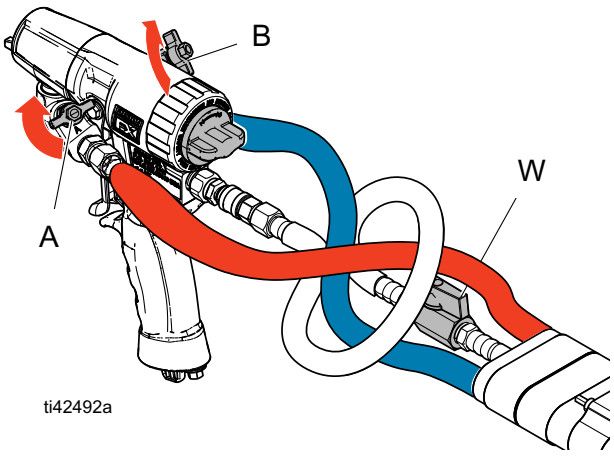


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, and splashing fluid, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

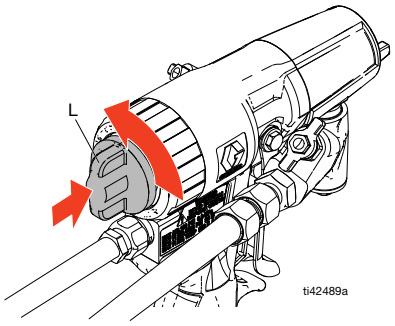
1. Engage the piston safety lock (L). See **Piston Safety Lock**, page 10.



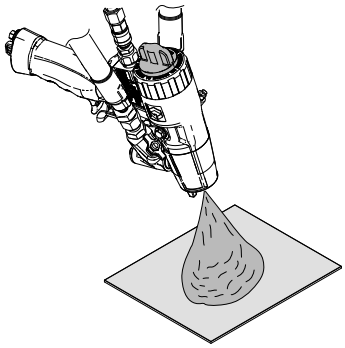
2. Close fluid valves A and B. Leave air valve (W) open.



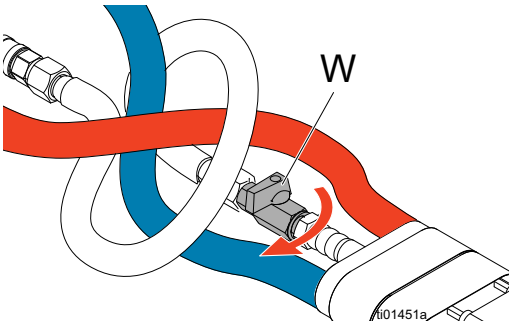
3. Disengage the piston safety lock (L). See **Piston Safety Lock**, page 10.



4. Trigger the gun onto cardboard or into a waste container to relieve pressure.

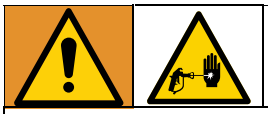


5. Engage the piston safety lock (L). See **Piston Safety Lock**, page 10.
6. Allow purge air to run for a minimum of 30 seconds.
7. Turn the air valve (W) off.



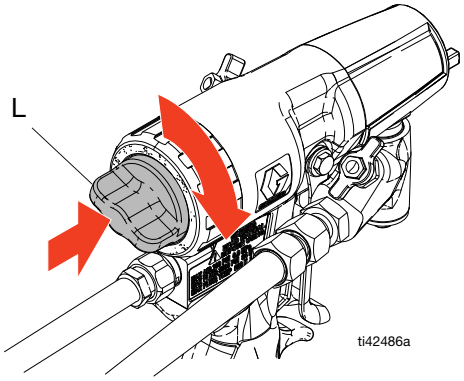
NOTE: After the pressure in the spray gun is relieved, the fluid in the hose and proportioner remains under pressure. Follow the **Pressure Relief Procedure** in your proportioner manual to relieve pressure in the system.

Piston Safety Lock

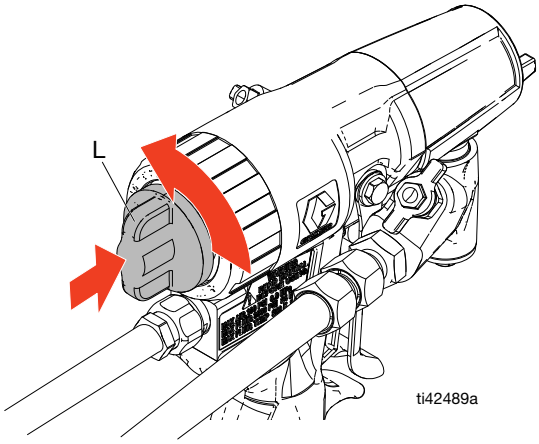


High pressure fluid from dispensing devices can pierce skin. To help prevent serious injury from pressurized fluid, always engage the piston safety lock and close the material shutoff valves to avoid accidental triggering whenever you stop spraying.

To engage the piston safety lock: Push the piston safety lock (L) in and turn it clockwise. The piston safety lock is engaged when the knob locks into place and won't rotate. If the piston safety lock is engaged, the gun will not actuate.

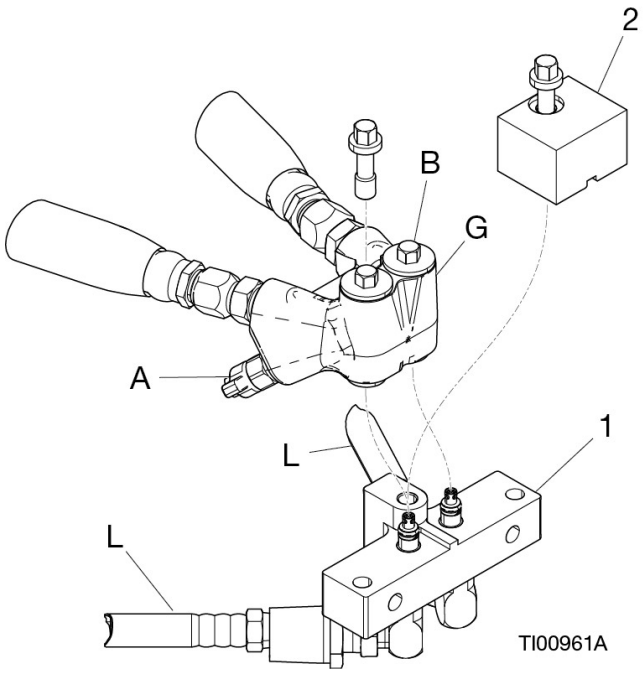


To disengage the piston safety lock: Push the piston safety lock (L) in and turn it counterclockwise until the knob stops in the vertical position.



Installation

To reduce the risk of explosion, do not cross contaminate fluids when circulating. Be sure to circulate component A (isocyanate) to the component A drum and component B (resin) to the component B drum.



Installing the Manifold

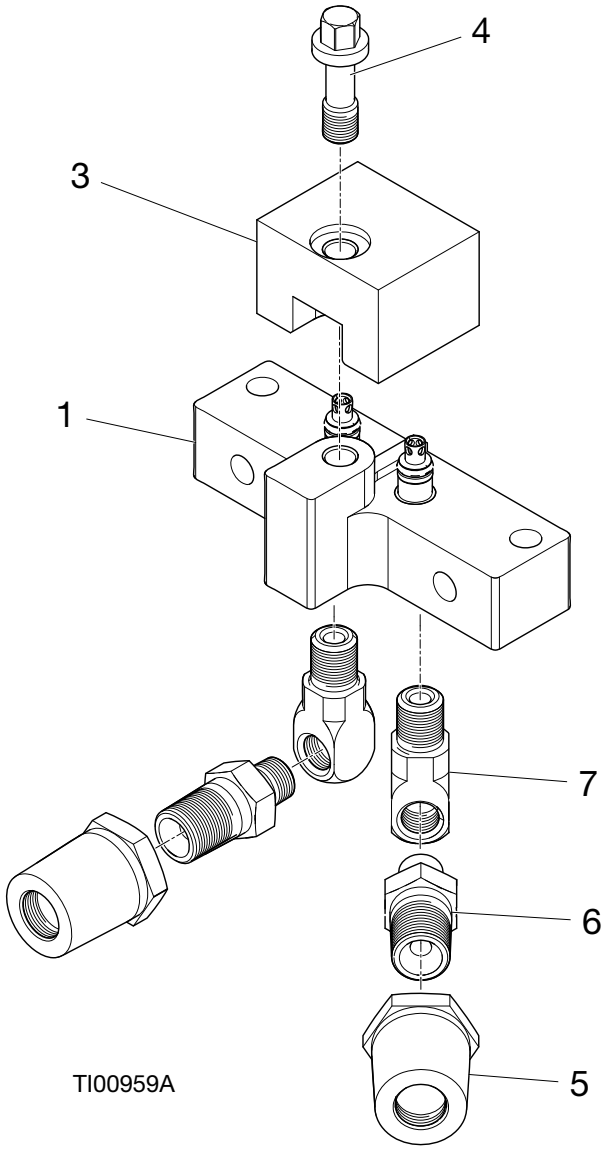
1. Follow **Pressure Relief Procedure**, page 9.
2. Remove block cap (2). Install circulation manifold (1) on gun fluid manifold (G). Open all valves in the fluid circuit.
3. Load fluid per instructions in proportioner manual.
4. Start proportioner. Set temperature targets. Circulate fluid at low pressure until temperature reaches targets.

Removing the Manifold

1. Follow **Pressure Relief Procedure**, page 9.
2. Close fluid valves A and B. Remove circulation manifold (1) from gun fluid manifold (G). Clean and apply grease to both check valves. Attach block (2) to circulation manifold to prevent air from reacting with isocyanate.

Parts

2002324 Circulation Manifold



2002324 Circulation Manifold Parts List

Ref.	Part	Description	Qty
1		BLOCK, recirculation, Fusion FX	1
3		BLOCK, cap, recirculation, Fusion FX	1
4	2001170	BOLT, manifold, Fusion FX	1
5	100206	BUSHING, pipe	2
6	151519	FITTNG, nipple, reducing	2
7	191892	FITTING, elbow, street, 90 degree	2

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Graco Standard Warranty

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.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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Graco Information

For the latest information about Graco products, visit www.graco.com.
For patent information, see www.graco.com/patents.
TO PLACE AN ORDER, contact your Graco distributor or call 1-800-690-2894 to identify the nearest distributor.

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