

In:Pulse™ Low Pressure Hoses

3A4646C

Temperature Maintenance Hoses and Unheated Extension Hoses

EN

For use with refillable two-component spray foam tank systems. For professional use only. Not approved for use in explosive atmosphere or hazardous locations.



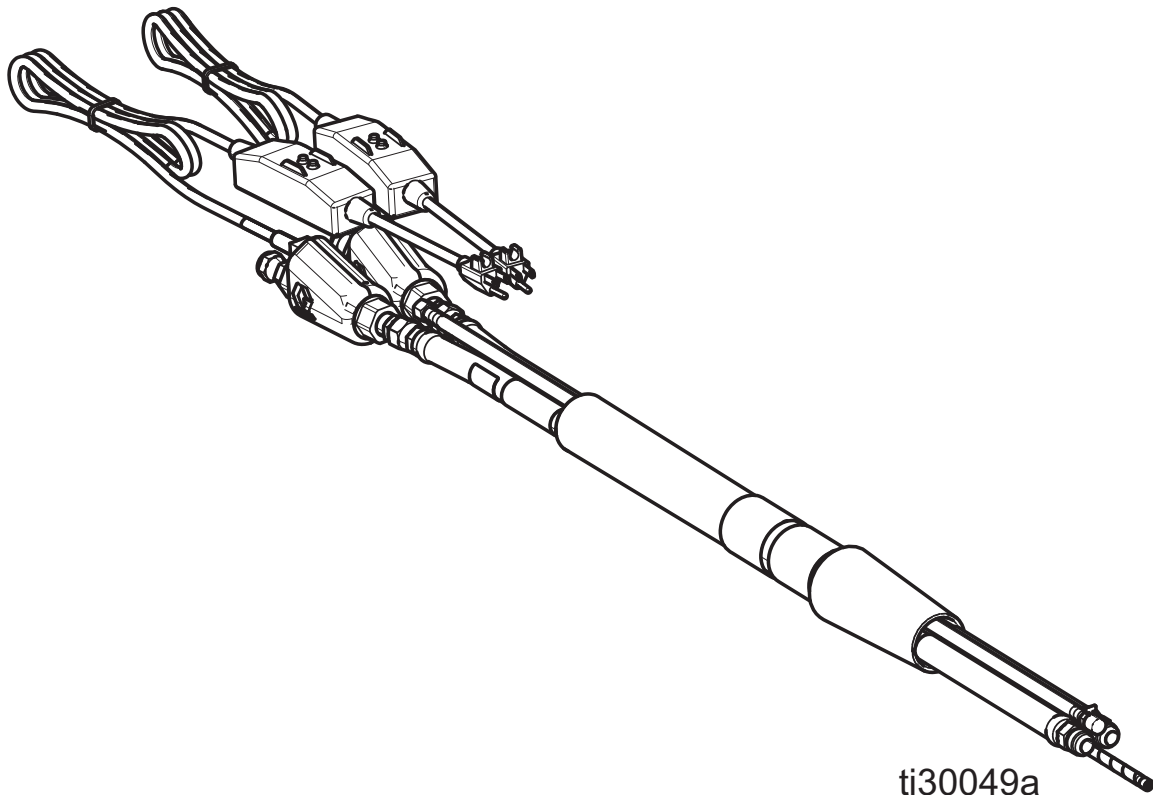
Important Safety Instructions

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

Maximum Working Fluid Pressure: 200 psi (1.4 MPa, 14 bar)

Maximum Working Air Pressure: 130 psi (0.9 MPa, 9.0 bar)

Non-Adjustable temperature controlled hoses at 75° F - 95° F (24° C - 35° C)



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Model Information

Hose Assembly	Length ft (m)	ID in. (mm)		Heated	Stranded Braided Scuff Guard	Air Hose	Alarm Cable	Hose Fittings	
		"A"	"B"					"A" Inlet (f) / Outlet (m)	"B" Inlet (f) / Outlet (m)
17L891	50 (15.2)	3/8 (10)	3/8 (10)	✓	✓		✓	-8 JIC	-8 JIC
17L892	50 (15.2)	3/8 (10)	1/2 (13)	✓	✓	✓	✓	-8 JIC	-10 JIC
17L893	50 (15.2)	3/8 (10)	3/8 (10)		✓		✓	-8 JIC	-8 JIC
17L894	50 (15.2)	3/8 (10)	1/2 (13)		✓		✓	-8 JIC	-10 JIC
17P239	50 (15.2)	1/2 (13)	3/4 (19)		✓	✓	✓	-8 JIC	-10 JIC
17P225	6 (1.8)	3/8 (10)	3/8 (10)		✓	✓		-4 JIC	-4 JIC
17P226	6 (1.8)	3/8 (10)	3/8 (10)		✓			-4 JIC	-4 JIC

Related Manuals

Manual	Description
3A4459	In:Pulse Low Pressure Spray Foam Ratio Control Manual

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 or on warning labels, 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

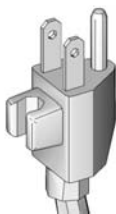


GROUNDING

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

- Improper installation of the grounding plug is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 120V circuit and has a grounding plug similar to the plugs illustrated in the figure below.





120V US



- Only connect the product to an outlet having the same configuration as the plug.
- Do not use an adapter with this product.






Extension Cords:

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary, use 12 AWG (2.5 mm²) minimum to carry the current that the product draws.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

 <h1 style="margin: 0;">WARNING</h1>	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>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:</p> <ul style="list-style-type: none"> • 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.
	<p>ELECTRIC SHOCK HAZARD</p> <p>This equipment must be grounded. Improper grounding, setup, or usage of hoses can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power cord before servicing equipment. • Connect only to grounded electrical outlets. • Use only 3-wire extension cords. • Ensure ground prongs are intact on power and extension cords. • Do not expose to rain. Store indoors.
	<p>PRESSURIZED EQUIPMENT HAZARD</p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure when you stop spraying/dispensing 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.



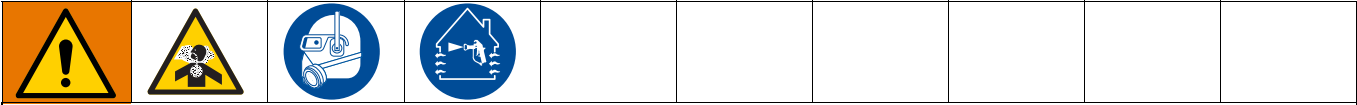
WARNING

	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • 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 Sheet (SDS) from distributor or retailer. • Do not leave the work area while equipment is energized or under pressure. • Turn off all equipment and follow the Shutdown 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.
	<p>PRESSURIZED ALUMINUM PARTS HAZARD</p> <p>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.</p> <ul style="list-style-type: none"> • 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.
 	<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>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.

Important Isocyanate (ISO) Information

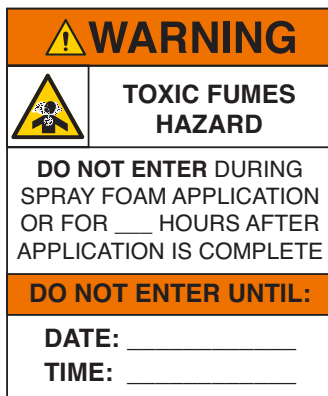
Isocyanates (ISO) are catalysts used in two component materials.

Isocyanate Conditions

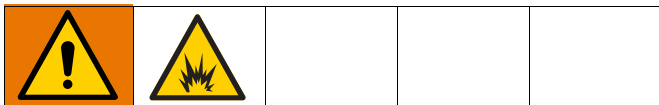


Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.

- Read and understand the fluid manufacturer's warnings and Safety Data 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:



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.

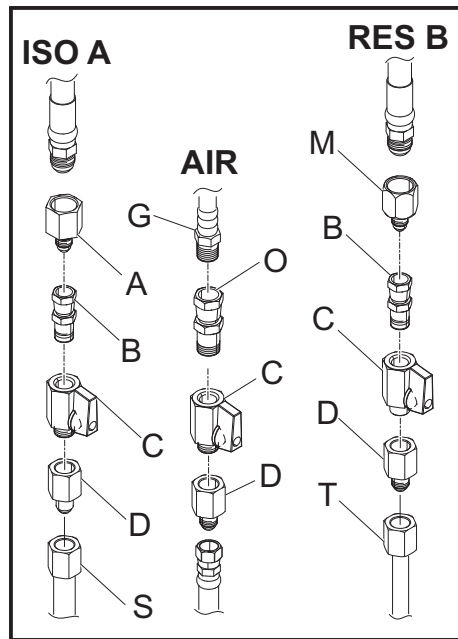
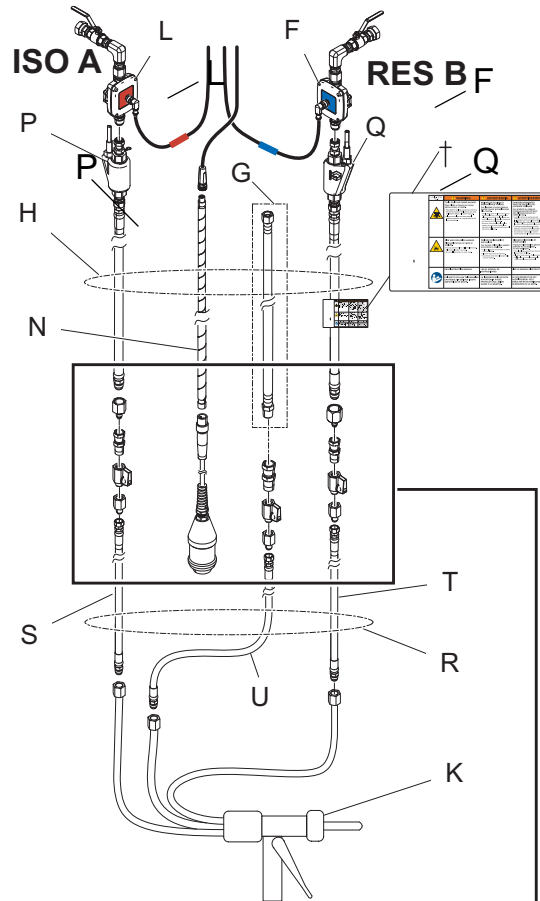
<i>NOTICE</i>
<p>Partially cured ISO will reduce performance and the life of all wetted parts.</p> <ul style="list-style-type: none"> • Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. Never store ISO in an open container. • Keep the ISO pump wet cup or reservoir (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.

Description

- The heated hoses are designed to maintain a proper fluid temperature of 75 F - 95 F (24 C - 35 C) while spraying at typical low pressure setting rates of 0.15 to 0.40 gpm (0.57 - 1.14 lpm).
- Fluid hoses are marked with red tape for the A side (ISO hardening), blue tape for the B side (resin).
- Heated and unheated hose length is 50 ft (15.2 m).
- Whip hose length is 6 ft (1.8 m).

Ref.	Description
*A	Fitting reducer A hose outlet adapter (-8 to -4 JIC)
*B	Swivel fitting (-4 JIC to 1/4 npt m)
*C	Hose outlet ball valve (1/4 npt)
*D	Applicator adapter (1/4 npt f to -4 JIC)
*F	B flow meter (-8 or -10 JIC)
*G	Hose for applicator with purge air (1/4 npt)
H	Hose bundle
*J	Remote alarm
*K	Spray applicator
*L	A flow meter (-8 JIC)
*M	B hose outlet adapter (-8 to -4 JIC or -10 to -4 JIC)
*N	Alarm cable
*O	Swivel fitting (1/4 npt)
P	A fluid hose (-8 JIC)
Q	B fluid hose (-8 or -10 JIC)
R	Whip hose bundle
S	A whip hose -4 JIC
T	B whip hose -4 JIC
U	Air whip hose -4 JIC
† Replacement warning label 17P804 is available at no additional cost.	
* Not included with the hose bundle.	



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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 splashing fluid, follow the Pressure Relief Procedure before cleaning, checking, or servicing the equipment.

NOTE: Only fully relieve system pressure when performing maintenance to the system.

1. Unplug the hoses from their power source to turn off hose heat.
2. Close the tank inlet and outlet ball valve.
3. Close the nitrogen tank valve.
4. With a clean calibration tip, trigger the applicator into a waste container until the flow stops.

Setup



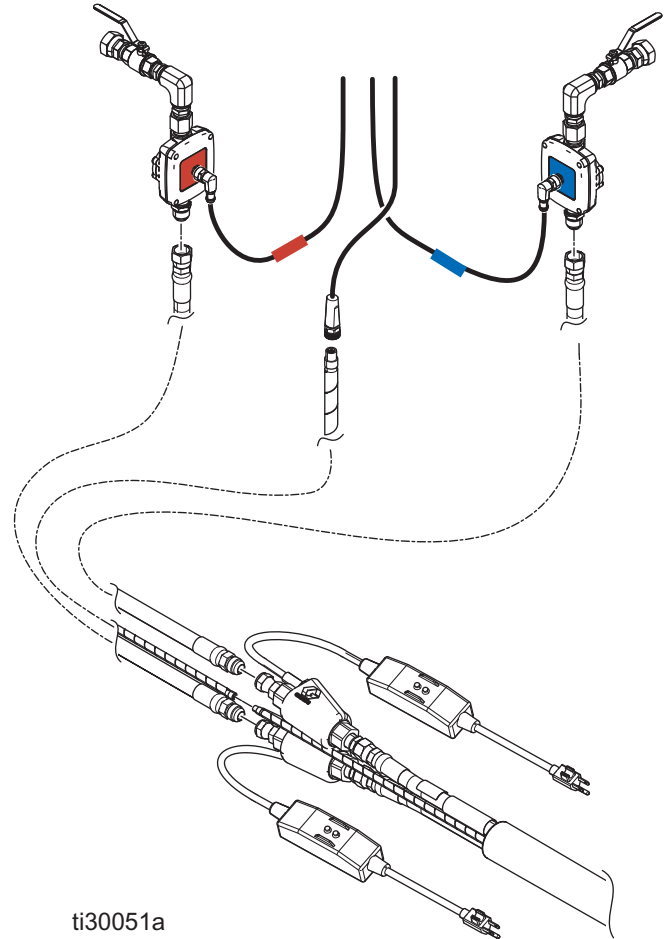
NOTE: Froth-type foam fluids need to be kept at a minimum pressure in the original tanks from the manufacturer. Before adding or removing components from the system make sure that the A and B tanks are pressurized to the recommended minimum pressure, that both the inlet and outlet ball valves are closed, and that the hoses have been relieved of pressure.

Connect Hoses to Meters

Lubricate with grease and connect the fluid hoses to the meter outlet fittings--red for hardener "ISO" (A), blue for resin "RES" (B).

Torque the hose fittings per the specifications below:

- - 4 JIC to 12 ft-lb (16 N•m)
- - 8 JIC to 38 ft-lb (51 N•m)
- - 10 JIC to 60 ft-lb (81 N•m)



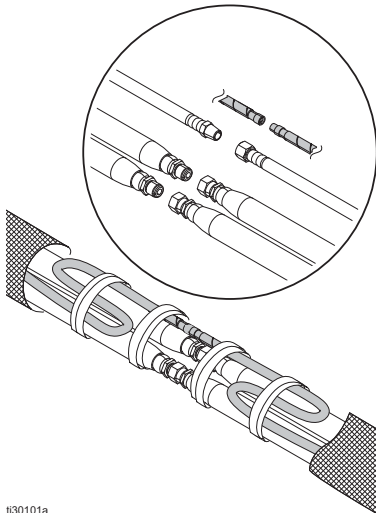
NOTE: Any combination of heated or unheated hoses (up to 200 ft) may be utilized. Attach unheated heated hoses closest to the low pressure tanks. Utilize heated hoses as the last hose section before the applicator. Orient hoses with control fitting/power cord facing the material tanks. If more than one heated hose is used, position one hose closest to the tank and the other before the applicator to maximize system flow rate.

NOTICE

- Never apply power to the heated hoses without fluid in the hoses. Damage to the hose will occur.
- Never apply power to the heated hoses with the tank outlet ball valves closed. System over-pressurization will occur, which could cause damage to the equipment.

NOTE: Do not connect the main air supply at this time.

1. Connect fluid hoses (P, Q) and tighten. See maximum torque specifications. Do not over-torque. See **Connect Hoses to Meters**, page 9.
2. Connect air hoses (G).
3. For hoses equipped with a remote alarm cable, connect the alarm cable (N).
4. Repeat for additional hoses.



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Connect Hoses to Applicator

1. Connect the hose outlet adapters (A, M) to the last section of hose.
2. Assemble the hose outlet ball valves (B, C, D). Connect the swivel fitting (B) to the hose outlet adapter. **NOTE:** Be sure to use the correct fitting (M) for the B hose (see **Model Information**, page 2).
3. Install a whip hose to the applicator adapter (D).
4. Connect the applicator to the outlet end of the whip hose.

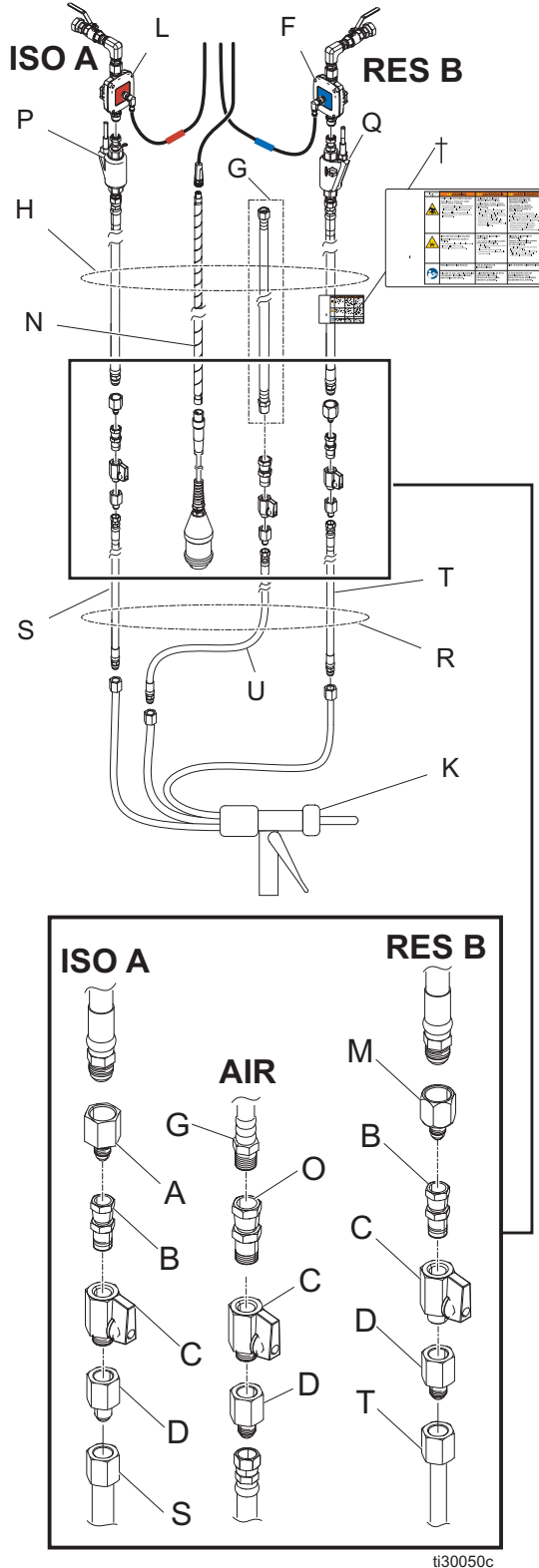
Connect the Air Hose

On systems that utilize an air purging applicator, perform the following steps:

1. Assemble the air hose outlet ball valve assembly (O, C, D). Connect the hose outlet ball valve to the outlet end of the air hose.
2. Connect the whip hose air hose to applicator (D).
3. Connect the inlet end of the air hose to a compressed air source.

Connect the Remote Alarm

1. On systems with a remote alarm (J), connect the alarm communication cable (N) to the breakout cable labeled "Optional Buzzer".



NOTE: The Remote Alarm cable can be extended up to 200 ft through the hose sets communication cable.

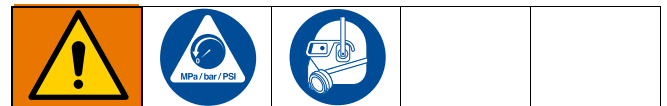
2. Attach the remote alarm (J) to the applicator whip hoses. Secure with the supplied strap.



NOTICE

- Never apply power to the heated hoses without fluid in the hoses. Damage to the hose will occur.
- Never apply power to the heated hoses with the tank outlet ball valves closed. System over-pressurization will occur, which could cause damage to the equipment.

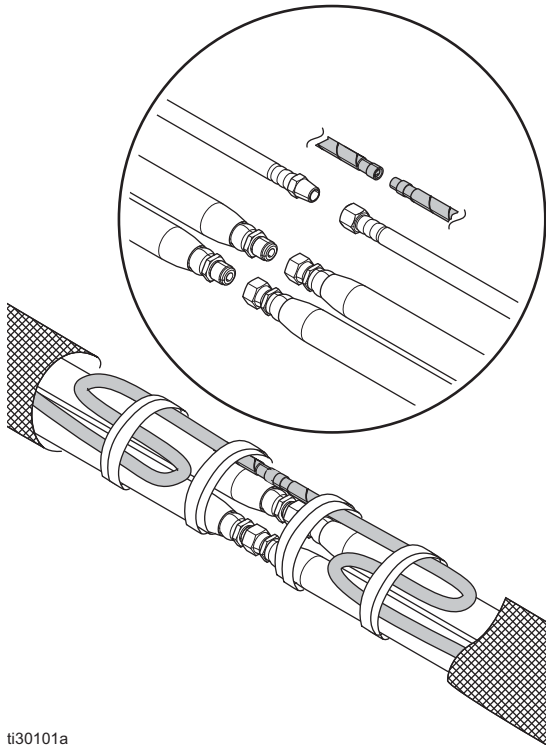
Check Hoses for Leaks



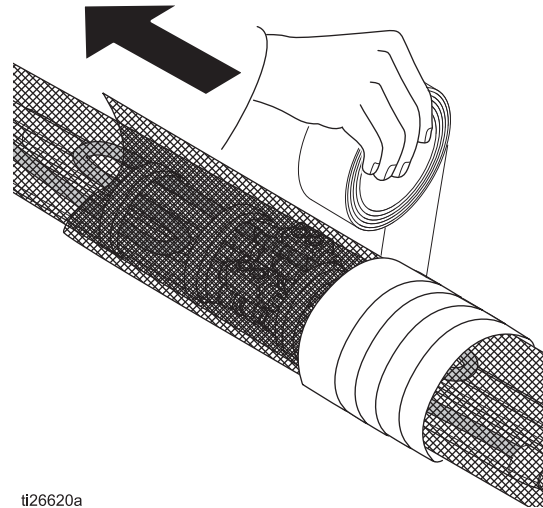
1. Pressure check the hose. See the Ratio Control manual for priming instructions.
2. After all lines are free of air, check for leaks. If there are leaks, perform the **Pressure Relief Procedure** on page 9.
3. Tighten connections, then pressurize again to make sure leaks have stopped.
4. If no leaks are present, proceed to the **Protective Coating** section on page 12.

Protective Coating

1. Wrap all fluid hose connections with electrical tape.
2. Fold the alarm cable wire back against the hose to ensure adequate strain relief. Wrap all electrical connections and cable connections with electrical tape to protect them from abrasion and pulling apart.
3. Unroll the excess cover over the hose and electrical connections. Use electrical tape to secure the connections into position.



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Operation



Do not operate a coiled hose. A coiled hose creates uneven heat build-up, which can result in hose rupture and cause serious injury.

The hose must be properly supported to avoid excessive strain due to weight, bending, sharp edges, or stress caused by running over a roof edge.

Fluids subjected to heat in confined spaces, including hoses, can create a rapid rise in pressure due to thermal expansion. Over-pressurization can result in equipment rupture and serious injury.

- Open a valve to relieve the fluid expansion during heating.
- Replace hoses proactively at regular intervals based on your operating condition.

System Startup

1. Make sure the tank inlet and outlet ball valves are open.
2. Plug the display power supply into a 120V circuit.
3. Plug both the A and B heated hoses into a grounded 120V, 15A circuit.
4. Test the GFCI:
 - a. Press the Test button (the indicator will change from red to black, indicating that the GFCI has tripped).
 - b. Press the Reset button (the indicator will change back to red when the GFCI has been reset back to active).

NOTE: Test the GFCI on a daily basis.

NOTICE
<ul style="list-style-type: none"> • Never apply power to the heated hoses without fluid in the hoses. Damage to the hose will occur. • Never apply power to the heated hoses with the tank outlet ball valves closed. System over-pressurization will occur, which could cause damage to the equipment.

Flushing



- Flush out old fluid with new fluid, or flush out old fluid with a compatible solvent before introducing new fluid.
 - Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
 - **NOTE:** All wetted parts are compatible with common solvents. Use only moisture-free solvents.
1. Perform the **Pressure Relief Procedure** on page 9
 2. Attach a low pressure diaphragm pump or pressure pot containing the solvent to the meter inlet to flush meters and hoses.
 3. Continue flushing until clear solvent is dispensed from the applicator.

NOTICE
<p>Isocyanate residue within the meters will react with moisture, damaging and freezing the meter gears. To prevent moisture from reacting with isocyanate, always leave the system filled with a moisture-free plasticizer or oil. Do not use water. Never leave the system dry.</p>

Maintenance






1. Before disconnecting, adding, or replacing hoses, perform **Pressure Relief Procedure** (page 9) and remove all electrical power to the hose.
2. Make sure all fluid is cool before disconnecting the hoses.
3. Hoses contain no serviceable components. Replace as necessary.

Shutdown

NOTICE
To prevent possible damage to equipment and chemicals, always maintain the minimum tank pressure recommended by your chemical manufacturer.

Daily Shutdown Procedure

				
All components will remain pressurized after performing the Daily Shutdown Procedure below. To help prevent serious injury from pressurized fluid, such as splashing fluid, follow the Pressure Relief Procedure on page 9 before cleaning, checking, or servicing the equipment.				

1. Unplug the hoses from their power source to turn off hose heat.
2. Close the A and B tank inlet and outlet ball valves.
3. Close the nitrogen valve on the tank.
4. Unplug the display power supply.

Shutdown Procedure to Remove System from Service



1. Follow the **Pressure Relief Procedure**, page 9.
2. Follow the **Flushing** procedure, page 13.

NOTICE
Isocyanate residue within the meters will react with moisture, damaging and freezing the meter gears. To prevent moisture from reacting with isocyanate, always leave the system filled with a moisture-free plasticizer or oil. Do not use water. Never leave the system dry.

Troubleshooting



Error Codes

To quickly view online help for the error code, scan the QR code with your smartphone, or visit <http://help.graco.com/inpulse.html> and search for the error code to view online help for that code.



Error	Description	Cause	Solution
No heat	No light illumination on hose cuff	No electrical power (tripped electrical breaker, tripped GFCI)	Plug in the hose. Inspect the power supply for the tripped breaker and reset the breaker as necessary. Inspect the GFCI for tripping and reset as necessary.
		Internal fluid temperature is above the preset thermal set-point	No heat is required. As cold material enters the hose, the hose will heat as needed to maintain the preset temperature.
Low fluid temperature	Fluid temperature is below the preset temperature of 75° F (24° C)	Fluid entering the hose is colder than 55° F	Add additional heated hose sections to improved outlet temperature. Reduce the flow rate to increase thermal transfer to fluids.
High fluid temperature	Fluid temperature is above the preset temperature of 95° F (35° C).	Fluid entering the hose is just below the preset thermostat setting of 75° F (24° C).	Unplug the heated hose. NOTE: Additional heated hose is not needed. Increase the flow rate to reduce thermal transfer to fluids.
The tip is plugging	The applicator tip is plugging prematurely	Elevated fluid temperatures reduce the tip life when the applicator is de-triggered.	Normal operation, reduce downtime between triggers or replace the applicator tip more frequently. No additional heat is required. Reduce fluid temperatures. Increase air pressure to applicator if equipped with purge/nucleating air.
The GFCI is tripped	GFCI trips instantly	Incorrect outlet wiring	Make sure the power outlet is wired correctly with hot and neutral wires in the correct locations.
		Unexpected current flow	Damage to the heated hose. Replace the hose.

Technical Specifications

Temperature Maintenance Hose, Unheated Extension Hose, and Whip Hose		
	US	Metric
Pressure and Temperature Ranges		
Maximum fluid working pressure	200 psi	1.4 MPa, 14 bar
Environmental temperature range	40° – 120° F	4° – 49° C
Temperature control range	75° – 95° F	24° – 35° C
Heated Hose Incoming Power		
Voltage	120 VAC single phase - grounded circuit	
Amps (per hose)	5.5 A	
Wetted Parts		
Wetted Parts	Nickel, zinc, LCP, PTFE, ETFE, polyolefin, nitrile rubber, aluminum, zinc plating, carbon steel	

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.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

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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