

In:Pulse™ Low Pressure Spray Foam Ratio Control

3A4459C

EN

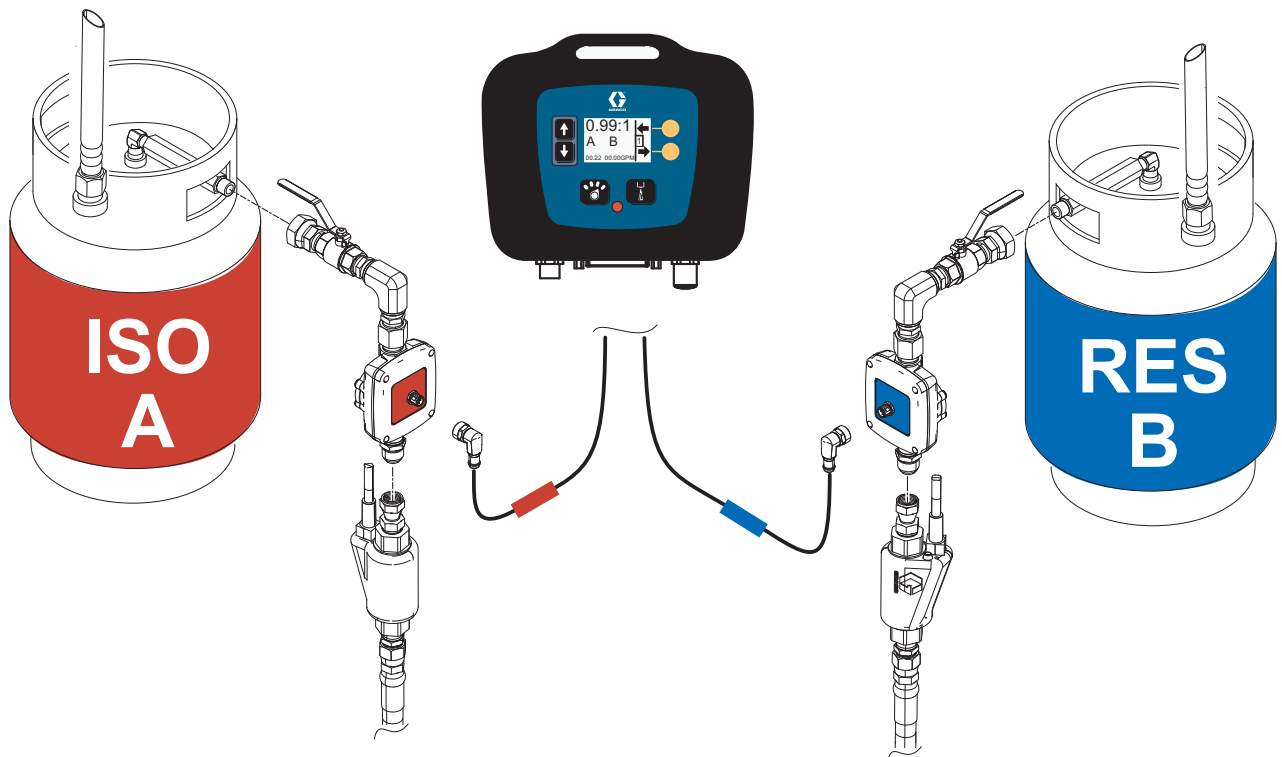
Plural component ratio control system for spraying refillable two-component spray foam tank systems. For professional use only. Not approved for use in explosive atmosphere or hazardous locations. Not for outdoor use.

See page 2 for model information.



Important Safety Instructions

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



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Model Information

Model	Description	Maximum Working Pressure
17L851	Ratio Control Kit	200 psi (1.4 MPa, 14 bar)

Package Information

Model	Description	Heated Hose	Unheated Hose	Whip Hose	Maximum Working Pressure
17P038*	Class A Low Pressure Foam Kit	17L891	17L893	17P226	200 psi (1.4 MPa, 14 bar)
		Qty: 1	Qty: 1	Qty: 1	
17P039*	Appendix X Low Pressure Foam Kit	17L892	17L894	17P225	200 psi (1.4 MPa, 14 bar)
		Qty: 1	Qty: 1	Qty: 1	

* Includes 17L851

Related Manuals

Manual	Description
3A4646	Heated and Unheated Hose 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

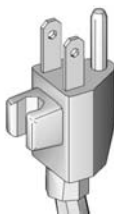


GROUNDING

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.



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.



ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of hoses can cause electric shock.

- 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.



PRESSURIZED EQUIPMENT HAZARD

Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- 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



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.



TOXIC FLUID OR FUMES HAZARD

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



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



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.

Important Isocyanate (ISO) Information


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


Isocyanate Conditions

									
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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: _____	

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:				
<ul style="list-style-type: none"> • 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.				
<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.

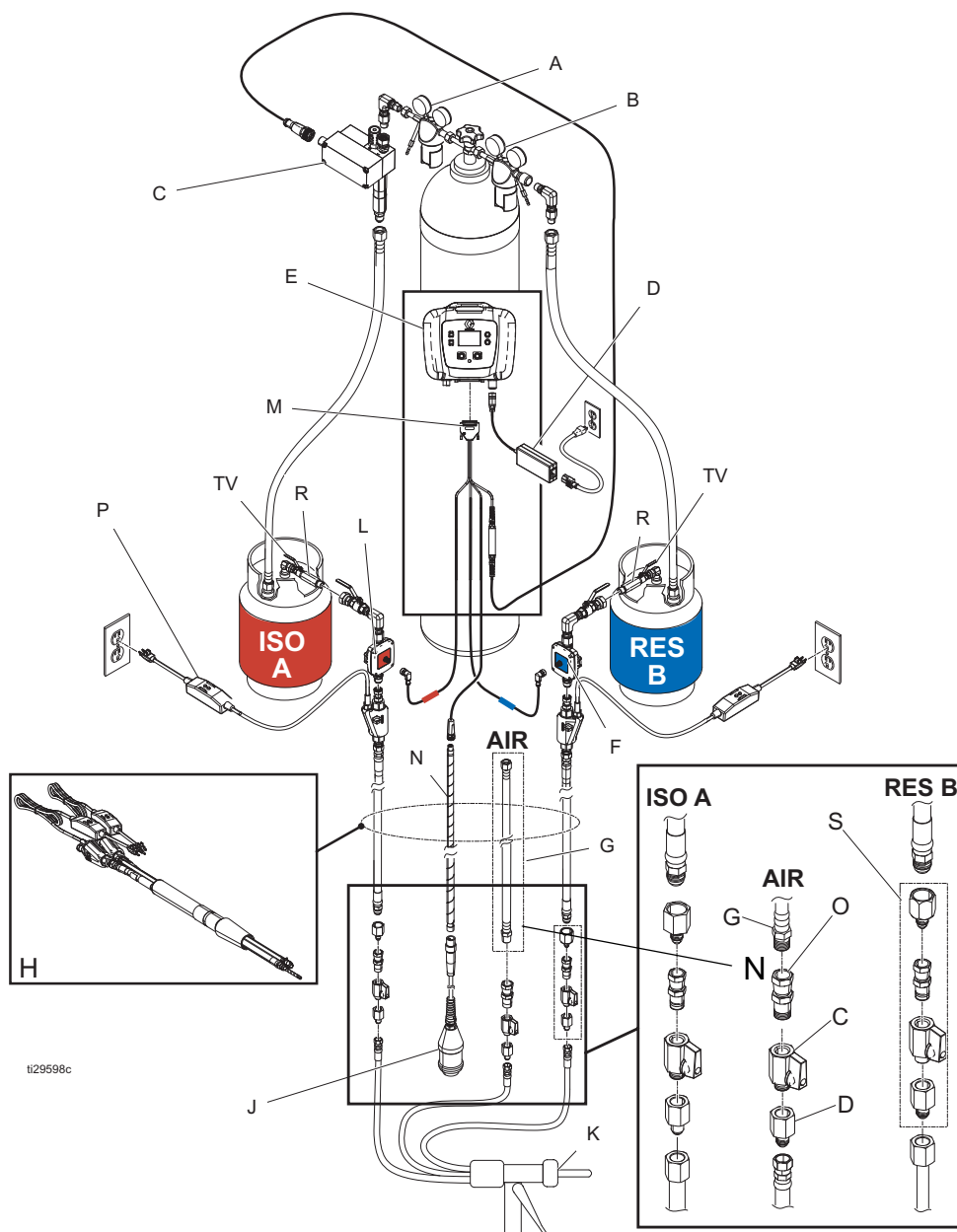
Foam Resins with 245 fa Blowing Agents

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

Changing Materials

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

Component Identification



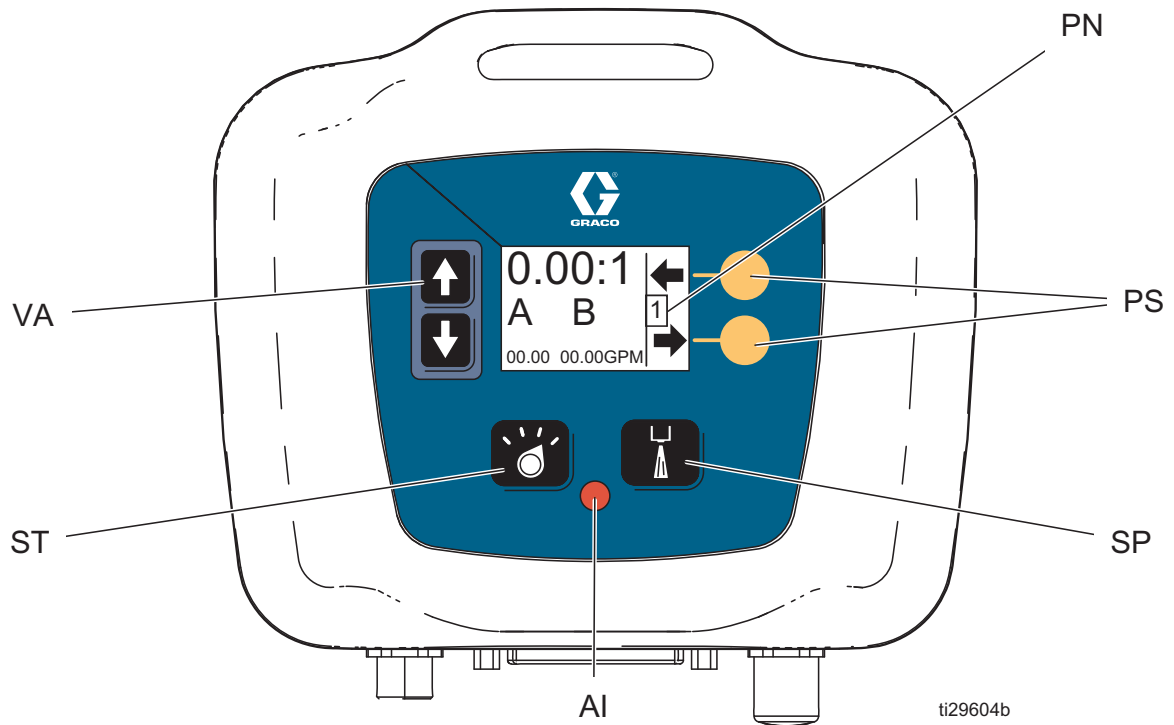
Ref. Description

A	A Regulator (required--user supplied)
B	B Regulator (required--user supplied)
C	Pressure Control
D	Power Supply GCA
E	Display Module
F	B-Flow Meter
G	Hose for Applicators with Purge Air
H	Hose Bundle, see manual 3A4646
J	Remote Alarm

Ref. Description

K	Spray Applicator (user supplied)
L	A-Flow Meter
M	Breakout Cable
N	Remote Alarm Cable
P	GFCI Cord
Q	Meter Filter
R	Tank Fluid Filter (user supplied)
S	Hose Outlet Ball Valve Assembly
TV	Tank Outlet Ball Valve (user supplied)

Display Module



Ref.	Description
VA	Value Adjust Buttons
PN	Current Display Page Number
PS	Page Select Buttons
ST	Setup Button
SP	Spray Button
AI	Alarm LED Indicator

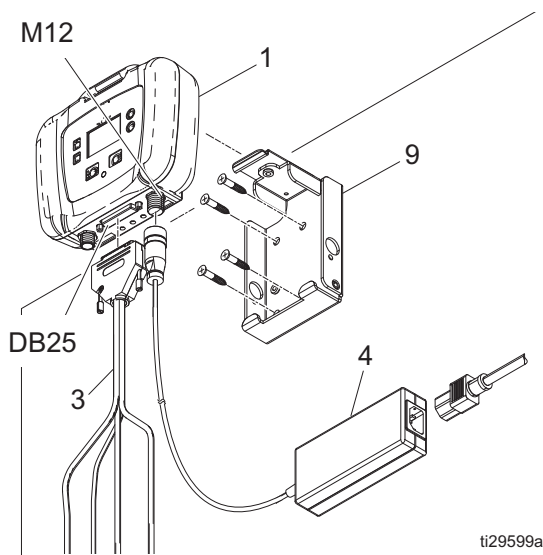
Setup



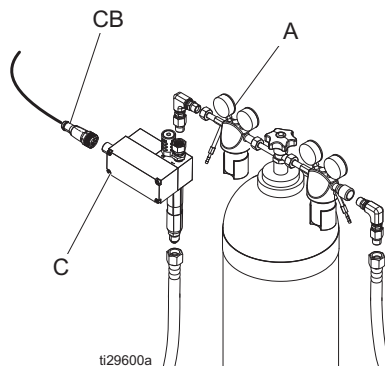
NOTE: Froth-type foam fluids need to be kept at a minimum pressure in the tanks from which they were originally supplied. Before adding or removing components from the system, make sure A and B tanks are pressurized to the recommended minimum pressure, both the inlet and outlet ball valves are closed,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

NOTE: For additional parts identification and descriptions, see **Parts** on page 24.

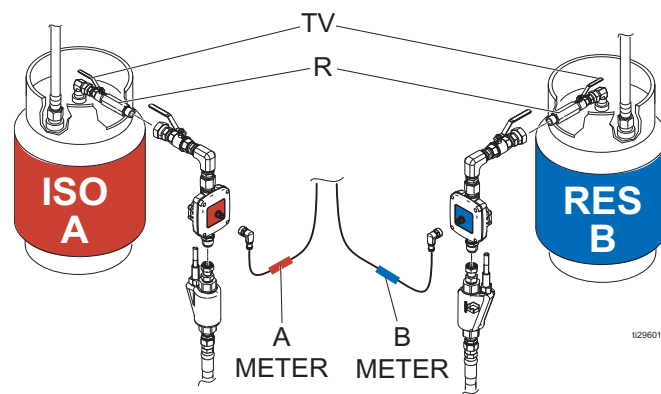
1. Attach the bracket (9) to a wall or mount display (1) to bracket. **NOTE:** Make sure the bracket is in a location that allows the breakout cable to reach all components.
2. Connect the cable harness (3) to the DB25 port on the bottom of the display (1).
3. Attach the power supply (4) to either M12 port on the bottom of the display (1).
4. Position the power supply so that the weight of the power supply is not supported by the M12 connector.



5. Attach pressure control (C) to the A regulator (A).
6. Connect the cable labeled "PRESSURE CONTROL" (CB) from the display to the pressure control (C).



7. Assemble the meter inlet fitting (706 or 707) to the A and B meter (704) depending on the type of refillable foam being used--15E511 for Class A, 113344 for Appendix X. See **Repair Parts**, page 26.
8. Attach the flow meters to the material tank outlets after the tank outlet ball valve (TV) and tank fluid filter (R).



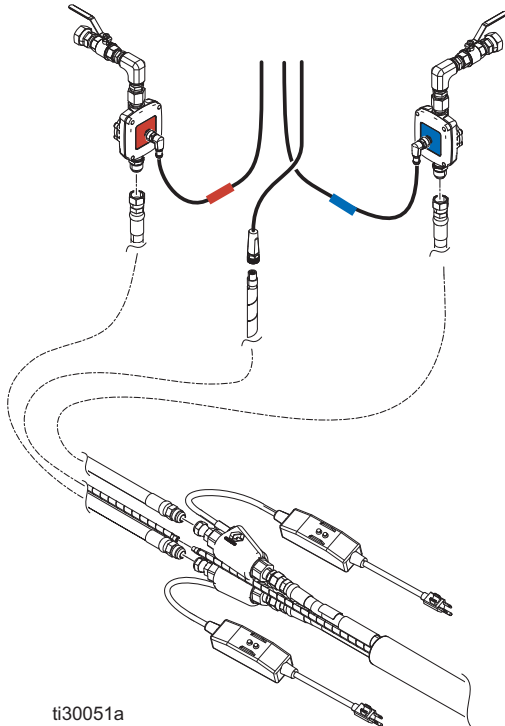
9. Assemble the meter outlet fitting (708) to the A meter (701). Assemble (708 or 709) to the B meter (701) depending on the hose setup being used--17K616 for Class A, 17K617 for Appendix X. See **Repair Parts**, page 26.
10. Connect cables labeled "METER A" and "METER B" from the display to the respective A and B meters.

Connect Hoses to Meters

Lubricate with grease and connect the fluid hoses to the meter outlet fittings (708 or 709)--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)

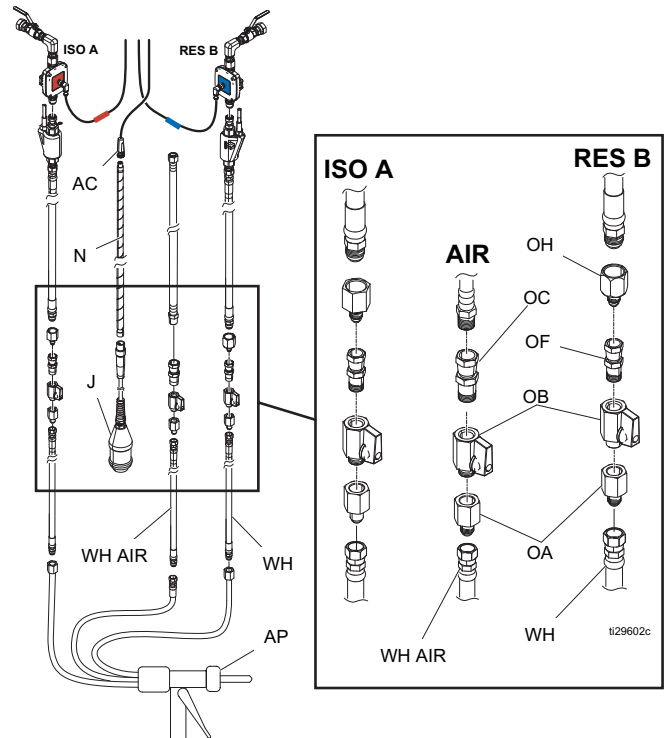


NOTE: Any combination of heated or unheated hoses (up to 200 ft) may be utilized. Attach unheated heated hoses closest to the low pressure tanks. Utilize heated hoses as the last hose section before the applicator. Orient hoses with control fitting/power cord facing the material tanks. If more than one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

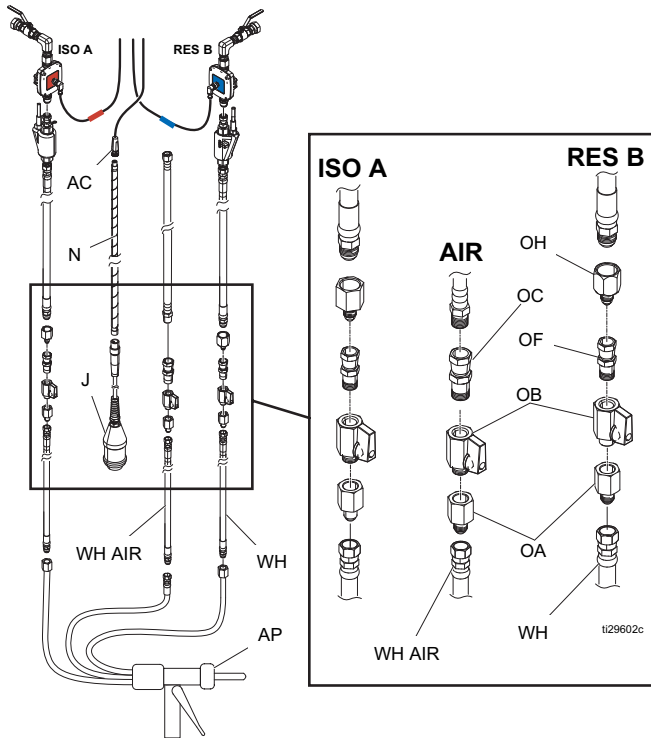
1. Connect the hose outlet adapters (OH) to the last section of hose.
2. Assemble the hose outlet ball valve assembly (OF, OB, OA). Connect the swivel fitting (OF) to the hose outlet adapter. **NOTE:** Be sure to use the correct fitting (OH) for the hose.
3. Install a whip hose to the applicator (AP).
4. Connect the applicator to the outlet end of the whip hose (WH).



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 (OC, OB, OA). Connect the hose outlet ball valve to the outlet end of the air hose.



2. Connect the whip hose air hose to applicator (OA).
3. Connect the inlet end of the air hose to a compressed air source.

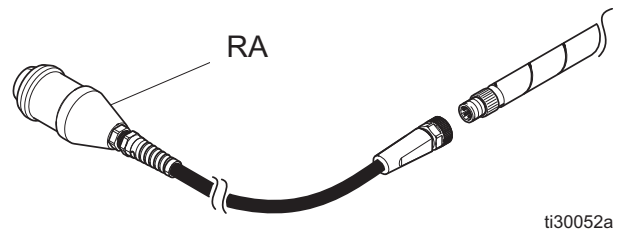
Remote Alarm

The remote alarm will sound when error codes are present.

1. Connect the remote alarm cable (N) communication cable to the breakout cable labeled "Optional Buzzer" (AC).

NOTE: The remote alarm cable can be extended up to 200 ft through the hose set communication cable.

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



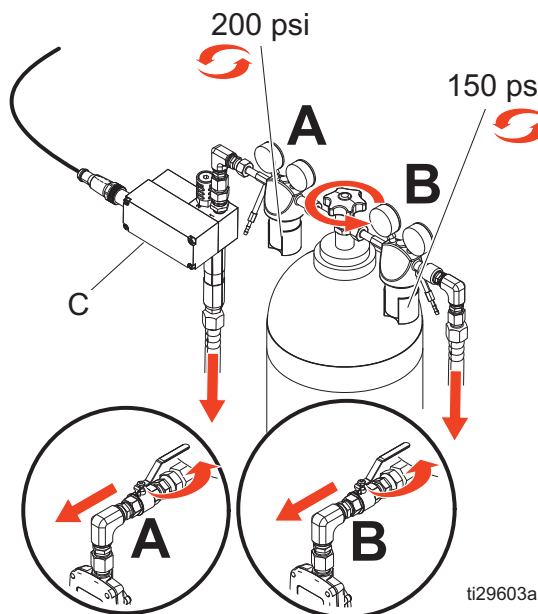
Startup

Priming



1. Set the nitrogen pressure regulators to 200 psi (1.37 MPa, 13.7 bar) on the A tank and 150 psi (1.03 MPa, 10.3 bar) on the B tank.

NOTE: If your nitrogen setup is incapable of achieving 200 psi, set the A-tank regulator to the maximum and adjust the B-tank regulator to 50 psi less than the A-tank. For example: If the A-tank regulator set at 175 psi, the B-tank regulator should be set at 125 psi.

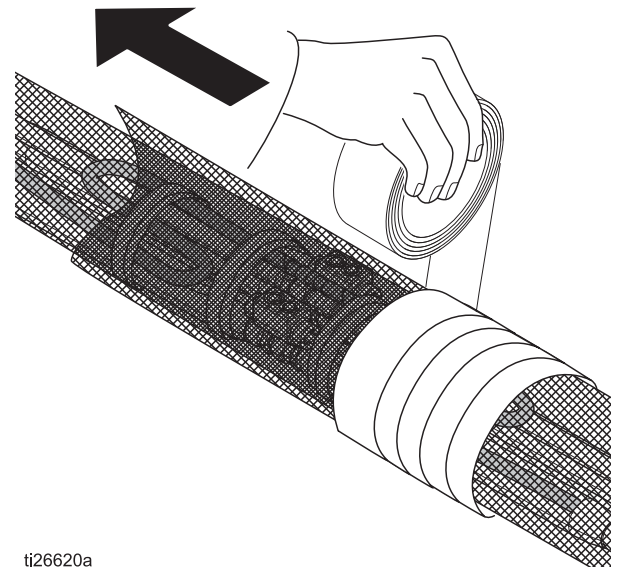


2. Open the tank inlet ball valves.
3. Open the tank outlet ball valves.
4. Plug in the display power supply into a 120V grounded circuit.
5. Make sure the calibration tip is clean, then trigger the gun into a waste container to purge all air from both A and B hoses.

Check Hoses for Leaks



1. After all lines are free of air, check for leaks. If there are leaks, perform the **Pressure Relief Procedure**, page 15.
2. Tighten connections, then pressurize again to make sure leaks have stopped.
3. If no leaks are present, wrap the hose and electrical connections with electrical tape to protect them from damage. See the **Protective Coating** section of the hose manual



System Auto Calibration



1. Make sure the tank inlet and outlet ball valves are open.
2. Plug in the display power supply into a 120V circuit.
3. If used, plug both A and B heated hoses into a 120V, 15A grounded outlet.
 - a. Make sure the heated hoses have been powered for a minimum of 20 minutes before proceeding with calibration.

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.

4. Attach a new spray static mixer onto the gun.
5. Dispense foam for a minimum of 10 seconds into a waste container while observing the ratio on display.

NOTE: The ratio control will automatically adjust the A tank pressure to maintain the desired volumetric flow ratio programmed into the display. The A pressure regulator must be set at least 50 psi (0.34 MPa, 3.4 bar) higher than the B pressure to allow the ratio monitor to control the ratio correctly.

NOTE: The ratio control can take up to 5 minutes to achieve the desired ratio. The auto calibration time depends on tank volume and remaining fluid held within.

6. If the spray ratio is within the desired ratio tolerance, begin spraying.
 - a. If the spray ratio is outside the ratio tolerance, the red light will illuminate and the alarm will sound.
 - b. Continue spraying into a waste container.
 - c. When the desired ratio is achieved, the alarm will automatically clear.

NOTE: The ratio control will continuously monitor and adjust the A tank pressure while spraying. The sound of escaping compressed gas may be heard as the pressure control lowers the A tank pressure.

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.

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**.
 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

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.

Repair



Replace the Meter or Filter

1. Fully relieve system pressure (follow the **Pressure Relief Procedure**, page 15).
2. Make sure the tank and meter ball valves are closed before servicing.
3. Remove the hose from the outlet fitting (708 or 709). See **Repair Parts**, page 26.
4. Disassemble filter (705) from meter (701) and fitting (702).
5. Clean or replace filter assembly (705).
6. Replace meter (701) as necessary. Apply thread sealant to all pipe threads, then reassemble filter assembly (705) to meter (701) and fitting (702).
7. After servicing, perform the **Priming** procedure (page 13).

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 15 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 15.
2. Follow the **Flushing** procedure, page 15.

NOTICE

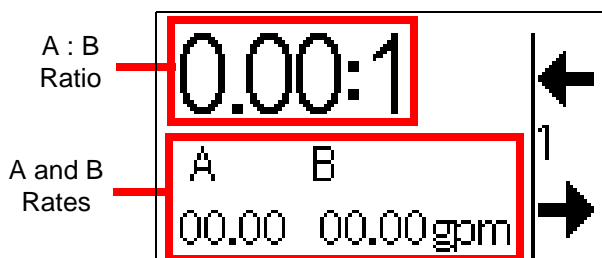
Isocyanate residue within the meters will react with moisture, damaging and freezing the meter gears. To prevent moisture from reacting with isocyanate, always leave the system filled with a moisture-free plasticizer or oil. Do not use water. Never leave the system dry.

Display Screens

Screen Navigation

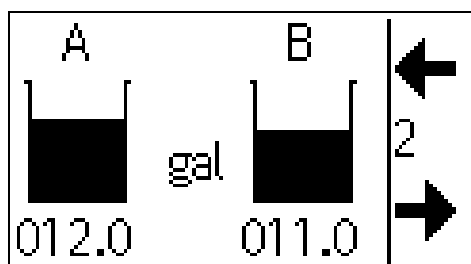
Page 1 - Ratio (HOME) Screen




- Ratio A : B
- Flow rates (gpm or l/min depending on the units selected during setup)



Page 2 - Tank Level Screen

- Tank levels are updated as the fluid is dispensed
- Resolution of tank levels are: 0.1 gal or 1 liter (depending on the units selected during setup)

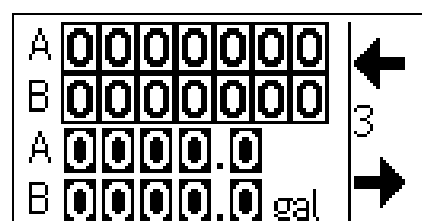


- Reset the tank levels whenever the tanks are replaced.
- To Adjust the tank levels:
 - Press the Spray button  to toggle between A and B tanks (the A or B Tank letter will be high-lighted).
 - Press the Arrow Up  or Arrow Down  button to adjust the tank level.

Page 3 - Volume Totalizer Screen


- Non-resettable grand totalizer on top for each A and B fluid
- Batch totalizer for each A and B fluid
- Resolution of batch totalizers are 0.1 gallon or 0.1 liter (depending on the units selected during setup)
- Batch totalizers can be reset

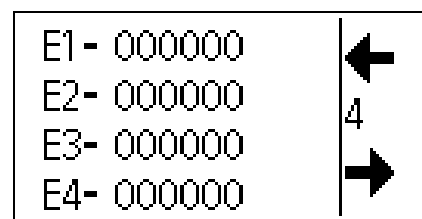
NOTE: Press the Arrow Down  button for 3 seconds to reset.





Page 4 - Error Screen

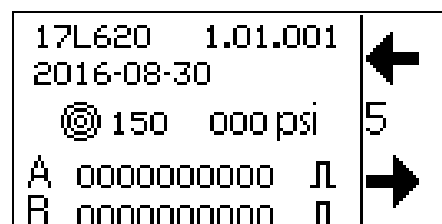
- Resettable error totalizers

NOTE: Press the Arrow Down  button for 3 seconds to reset all error totalizers.



Page 5 - Diagnostic Screen

- Software Revision (including part number, version and date)
- Target and actual pressure of A fluid
- Target pressure is automatically adjusted by the control. To manually adjust the pressure, press the Arrow Up  or Arrow Down  button
- Non-resettable A and B meter pulse counters

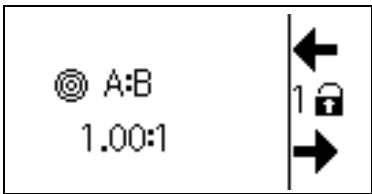




Setup Screens

NOTE: To enter the Setup Screen, press the Setup button . Press the Setup button again to exit the setup screens at any time.

Setup Page 1 - Target Volumetric Ratio

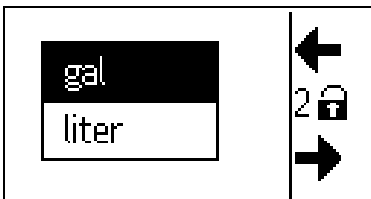
Material Type	Density (g/cc)		Weight Ratio	Volumetric Ratio
	A side	B side		
Class A Sealant	1.23	1.09	1.05	0.93
Class A Insulation	1.24	1.18	1.15	1.09
Appendix X Insulation	1.24	1.206	1	0.97



- Press the Arrow Up  or Arrow Down  button to adjust the target volumetric ratio A : B.

Setup Page 2 - Units

- Select Units of Measure:
 - Gallons (Volume: U.S. Gallons, Flow: U.S. gallons per minute)
 - Liters (Volume: liters, Flow: liters per minute)



- Press the Arrow Up  or Arrow Down  button to select the desired units of measure.

Setup Page 3 - A Tank Volume

- Set A fluid tank volume

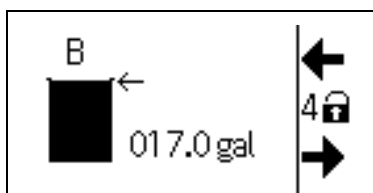


- Press the Arrow Up  or Arrow Down  button to adjust the A tank volume.

Calculated Tank Fill Volume (gallons)										
Material Type	17 gallon		27 gallon		60 gallon		120 gallon		350 gallon	
	A side	B side	A side	B side	A side	A side	B side	B side	A side	B side
Class A Sealant	14.6	16.5	23.6	26.7	48.6	55.0	109.4	123.7	311.1	351.8
Class A Insulation	14.5	15.2	23.4	24.7	48.2	50.8	108.5	114.2	308.6	325.0
Appendix X Insulation	14.5	14.9	24.3	25.0	48.2	49.7	108.5	111.8	308.6	318.0

Setup Page 4 - B Tank Volume

- Set B fluid tank volume



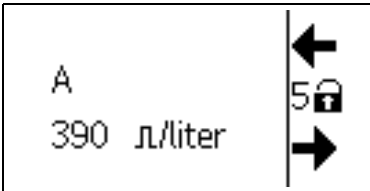
- Press the Arrow Up  or Arrow Down  button to adjust the B tank volume.

Calculated Tank Fill Volume (gallons)										
Material Type	17 gallon		27 gallon		60 gallon		120 gallon		350 gallon	
	A side	B side	A side	B side	A side	A side	B side	B side	A side	B side
Class A Sealant	14.6	16.5	23.6	26.7	48.6	55.0	109.4	123.7	311.1	351.8
Class A Insulation	14.5	15.2	23.4	24.7	48.2	50.8	108.5	114.2	308.6	325.0
Appendix X Insulation	14.5	14.9	24.3	25.0	48.2	49.7	108.5	111.8	308.6	318.0

Setup Page 5 - A fluid K-Factor

- Set the desired A fluid K-Factor (pulses per liter)

Material Type	K Factor	
	A meter	B meter
Class A Sealant	384	384
Class A Insulation	384	384
Appendix X Insulation	390	396

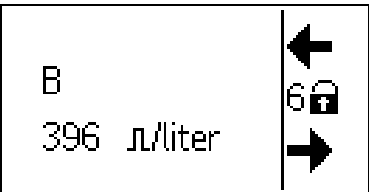


- Press the Arrow Up  or Arrow Down  button to adjust the A fluid K-Factor.

Setup Page 6 - B fluid K-Factor

- Set the desired B fluid K-Factor (pulses per liter)

Material Type	K Factor	
	A meter	B meter
Class A Sealant	384	384
Class A Insulation	384	384
Appendix X Insulation	390	396



- Press the Arrow Up  or Arrow Down  button to adjust the B fluid K-Factor.

Troubleshooting



The error codes for In:Pulse are advisories and will not turn off the system. Error codes are shown on the main run screen.

Online Troubleshooting

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



Error Code	Description	Cause	Solution
E1	High Ratio	No flow in B meter	Verify that the B material pressure regulator is turned on and set to the correct pressure.
			Verify that all ball valves before the applicator are open.
			Replace the spray tip and monitor the display for B flow rate while dispensing material.
			Verify that the B side of the gun is not clogged. Replace the spray applicator and tips as necessary.
			Inspect all cabling for proper connection and damage.
			Verify that the B meter gears spin freely.
		Low flow in B meter	If flow is registering, but at a reduced rate, inspect the B side of the system for restrictions.
			Verify that the B side of the gun is not restricted. Replace the spray applicator and tips as necessary.
			Inspect the B hose for plugging.
			Verify that the B material filters are not plugged.
			Verify that the B meter gears spin freely.

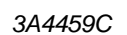
Error Code	Description	Cause	Solution
E2	Low Ratio	No flow in A meter	Verify that the A material pressure regulator is turn on and set the correct pressure.
			Verify that all ball valves before the applicator are open.
			Verify that the A side of the gun is not clogged. Replace the spray applicator and tips as necessary.
			Inspect all cabling for proper connection and damage.
			Verify that the A meter gears spin freely.
		Low flow in A meter	If flow is registering, but at a reduced rate, inspect the A side of the system for restrictions.
			Verify that the A side of the gun is not restricted. Replace the spray applicator and tips as necessary.
			Inspect the A hose for plugging.
			Verify that the A material filters are not plugged.
			Verify that the A meter gears spin freely.
		Material A pressure regulator is set too low.	Set the material A pressure regulator to the highest available pressure, but not above 200 psi (13.8 bar).
		Material B pressure regulator is set too high.	Material A pressure regulator must be approximately 50 psi (3.5 bar) less than the A pressure regulator.
			Verify that the material B pressure regulator is set at least 50 psi (3.5 bar) less than the A pressure regulator.
E3 E4	Low tank A volume Low tank B volume	Material in tank is less 1/2 gallon	Replace with a new tank of material. Go to the tank level screen and set the correct tank level.
		Tank level is set incorrectly	Go to the tank level screen and set the correct tank level.

Troubleshooting Tips

Description	Cause	Solution
Applicator tip plugs too quickly	A and B materials are reacting too quickly	If tank heaters are utilized, reduce the temperature setting or turn off heaters.
		Hose heat is not necessary. Unplug the heated hoses.
		Adjust air pressure to the applicator per material manufacturer recommendation. Verify that this specification is achieved at the applicator inlet. It may be necessary to increase the air pressure in order to account for flow losses though the hose bundle.
	Too little air pressure at the applicator inlet (for applicators utilizing compressed air)	The air compressor capacity is too small. Follow the material manufacturer recommendations for compressor sizes.

Notes

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Parts List - 17L851

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	17L850	MODULE, gca, LCM	1	13	17L898	FITTING, reducer, -8 JIC x -4 JIC	2
3	17L844	CABLE, meter, flow, dual, LCM	1	14	17L899	FITTING, reducer, -10 JIC x -4 JIC	1
4	124149	POWER SUPPLY, gca	1	15	17K738	ALARM, remote	1
5	241998	CORD, set, USA, 10 ft, 13 amp, 120 V	1	16	C19008	FITTING, adapter, swivel	1
*6	17L882	CONTROL, volume, pressure	1	20†	----	HOSE BUNDLE (see manual 3A4646)	1
*7	17L629	METER, flow, A, assembly	1	23	----	APPLICATOR (user supplied)	1
*8	17L628	METER, flow, B, assembly	1	24	----	A and B regulator (user supplied)	1
9	255235	BRACKET	1				
10	127093	FITTING, adapter, 1/4 in. npt x (04) JIC, cs	3				
11	15B565	VALVE, ball	3				
12	17K615	FITTING, swivel, 1/4 npt x 4 JIC, mf, s	2				

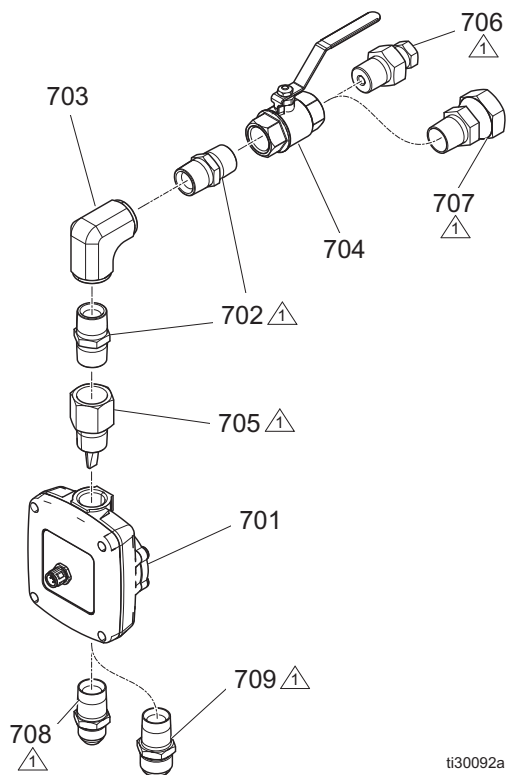
* See **Repair Parts** on page 26.

† Hose bundle included with packages 17P038 and 17P039. For details, see **Package Information** on page 2.

Repair Parts

A Flow Meter Assembly (17L629)

B Flow Meter Assembly (17L628)



Ref.	Part	Description	Qty.
701	17K528	METER, flow, B (17L628)	1
	17K735	METER, flow, A (17L629)	1
702	158491	FITTING, nipple	2
703	17L627	FITTING, elbow, 1/2 x 1/2 nptf, cs	1
704	17L626	VALVE, ball, 1/2 npt, brass	1
705	17L852	STRAINER, line	1
706†	15E511	FITTING, union, swivel, 1/2 x 1/4	1
707‡	113344	SWIVEL, union, assembly	1
708†◆	17K616	FITTING, nipple, #8 JIC x 1/2 nptm	1
709‡◆	17K617	FITTING, nipple, #10 JIC x 1/2 nptm (17L628)	1

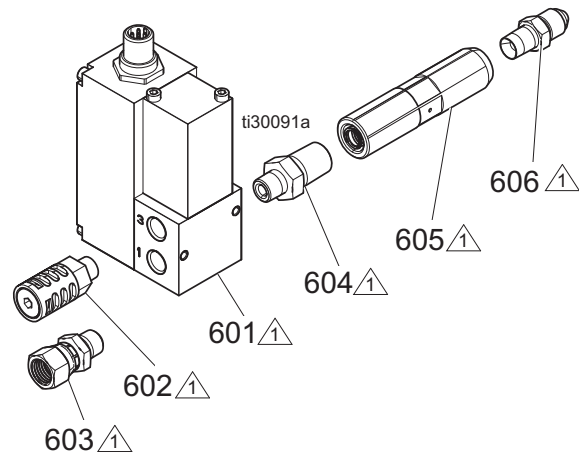
▲ Apply anaerobic sealant to all non-swiveling pipe threads.

† Class A

‡ Appendix X

◆ Assemble the meter outlet fitting (708) to the A meter (701). Assemble (708 or 709) to the B meter (701) depending on the hose setup being used--17K616 for Class A, 17K617 for Appendix X.

Pressure Control Assembly (17P576)



Ref.	Part	Description	Qty.
601	17L845	REGULATOR, electronic, pressure	1
602	126416	MUFFLER, 1/8 npt, pp	1
603	17L875	FITTING, nipple, #4 FJIC x 1/8 mnpt	1
604	151519	FITTING, nipple, reducing	1
605	26A254	VALVE, check, froth pack prop	1
606	556762	CONNECTOR, #4 JIC 1/4 pm	1

▲ Apply anaerobic sealant to all non-swiveling pipe threads.

Accessories

- Heated/Unheated Hoses (see manual 3A4646)

Extension Cables		
Part	Length	Purpose
24R710	5 meters (16.4 ft)	Fluid Meters (2 required)
124333	5 meters (16.4 ft)	Pressure control (1 required)
24N450	15.4 meters (50.5 ft)	Alarm (1 required)

Technical Specifications

Low Pressure Spray Foam - Ratio Control		
	US	Metric
Pressure and Temperature Ranges		
Flow range	0.05 to 2.5 gpm	0.2 to 9.5 lpm
Maximum fluid working pressure	200 psi	1.4 MPa, 14 bar
Minimum fluid working pressure	5 psi	34 kPa, 0.3 bar
Environmental temperature range	40°–120° F	4°–49° C
Minimum fluid temperature	50° F	10° C
Ratio Control Power		
Voltage	120VAC single phase	
Amps	0.6 A	
Ratio Control Range		
Control	+/- 5%	
Alarm	+/- 10%	
Alarm Sound Range		
Sound Pressure, 2 ft from alarm	85 - 95 dB (A)	
Wetted Parts		
Wetted Parts	Nickel, zinc, PTFE, ETFE, LCP, polyolefm, 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.

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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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Revision C, October 2017