Operation

ProMix™ Easy

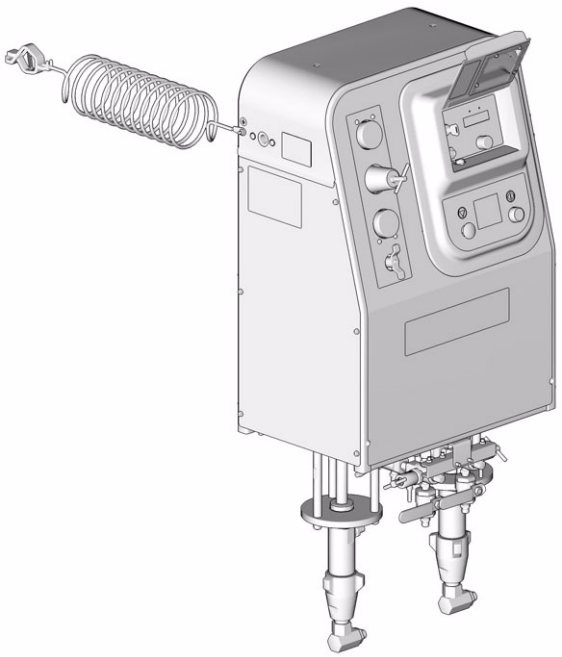
311044 rev.B

Plural Component Proportioner, with carbon steel UltraMix™ Pump and remote mix manifold

250 psi (1.7 MPa, 17 bar) Maximum Fluid Working Pressure

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

See page 3 for model information, including maximum working pressure and approvals.



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CE

Graco Inc. P.O. Box 1441 Minneapolis, MN 55440-1441

Contents

Manual Conventions

WARNING

Hazard Symbol

WARNING: a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Warnings in the instructions usually include a symbol indicating the hazard. Read the general **Warnings** section for additional safety information.

CAUTION
CAUTION: a potentially hazardous situation which, if not avoided, may result in property damage or destruction of equipment.

Note

Additional helpful information.

ProMix Easy Models

Approved for Hazardous Location Class I, Div 1, Group D (North America); Class I, Zones 1 and 2 (Europe)			
ProMix Easy Part No.	**Series**	**Description and Approvals**	**Maximum Working Pressure psi (MPa, bar)**
249322	A	UltraMix carbon steel pumps and remote mix manifold	250 (1.7, 17)
		FM APPROVED Conforms to FM std 3600 & 3610 for use in Class I Div 1 Group D T3 Hazardous Locations Ex II 2 G ISSeP 04 ATEX 020X EEx ib IIA T3 CE CSA CAN/CSA 22.2 No. 157-92 & No. 1010.1-92	

Related Manuals

Manual	Description
311045	ProMix Easy with Remote Mix Manifold, Repair-Parts Manual
310655	Dispense Valve
310662	Displacement Pumps
310671	UltraMix Pumps
310673	Circulation Kits
310675	AC Power Supply

Manual	Description
310678	TSL Pump Kits
310700	Gun Air Regulator Kits
309192	ISO Supply Kit
309623	Data Download Kits
308034	Turbine Alternator Repair Kit

Warnings

The following general warnings are related to the safe setup, use, grounding, maintenance, and repair of this equipment. Additional more specific warnings may be found throughout the text of this manual where applicable.

⚠ 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 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.

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.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- 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.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not alter or modify equipment.
- For professional use only.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or overbend hoses or use hoses to pull equipment.
- Comply with all applicable safety regulations.

⚠ WARNING

MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.

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 MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

Overview

Usage

The ProMix Easy can mix most two-component paints. It is not for use with “quick-setting” paints (those with a pot life of less than 5 minutes) without modification. Contact your distributor for information.

The ProMix Easy is operated with the User Interface, Air Controls and Fluid Controls, described below and on page 7. Refer to FIG. 1 and FIG. 3.

User Interface

The User Interface has 6 main interfaces.

1. **Function Knob** to select desired function:

Icon	Function
	Spray: proportion and spray material.
	Run A: operate A independent of B (priming, flushing) for 12 cycles.
	Run B: operate B independent of A (priming, flushing) for 12 cycles.
	Batch Dispense: dispense proportioned amounts of A and B (1 pint/500 cc).
	Pump Test: dispense predetermined amount of A and B to verify pump operation.
	Recirculation: optional; requires 248652 Circulation Kit, see page 23.
	Pot Life Timer: display potlife time left.
	Pressure Relief/Park: allows pressure relief and runs pumps to the bottom of stroke. See page 13.

- System totalizers count in Spray and Batch Dispense functions only.
- A and B Indicators (LT) show which dispense valve(s) is open.

2. **Start button**  to initiate functions.

3. **Stop button**  to terminate functions.

4. **Key switch** to change ratio, pot life time, pot life volume, or calibration data.

5. **Display** (five digits) to view:
   - Software revision level at startup
   - Ratio
   - Pot life time and reset volume
   - Alarm codes
   - Sensor calibration factor.

6. **Data port** allows for connection to a PC serial port to download volume totalizer, operation, ratio setting, and error alarm data.

WARNING

To avoid impairing intrinsic safety and reduce the risk of fire and explosion, the PC must be in a non-hazardous location and a safety barrier must be installed between the PC and ProMix Easy unit. See data download kit manual 309623.

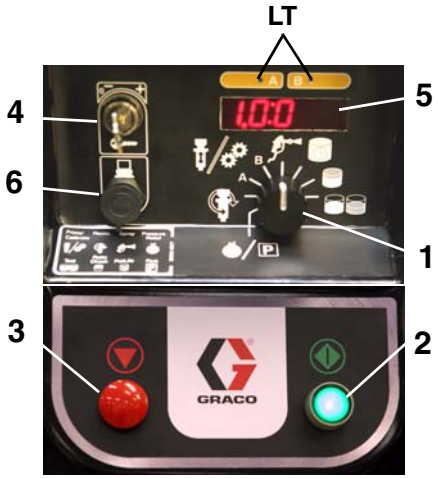


FIG. 1. User Interface

You must recalibrate the circuit board whenever the main circuit board, software, or sensor is replaced, or when Alarm 8 occurs. See **Recalibrate System**, page 25.

Air Controls

See FIG. 3.

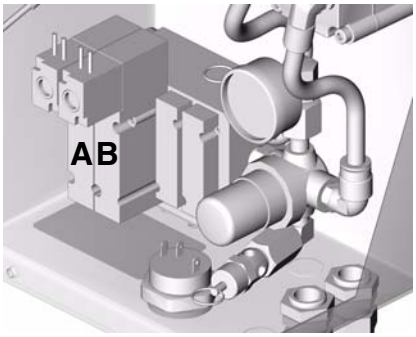
- **Bleed-type main air shutoff valve (C),** shuts off all air to ProMix Easy (including controller power).
- **Supply air pressure gauge (D),** monitors air pressure to ProMix Easy.

A minimum air pressure supply of 70 psi (483 kPa, 4.8 bar) must be maintained for the ProMix Easy to operate properly.

- **Pump air pressure regulator (E) with gauge (F),** adjusts and monitors pump air pressure.
- **Gun air regulator (P) and gauge (shipped loose),** adjusts and monitors gun air pressure.

Solenoid Module

There are two solenoids inside the pneumatic control box, one to actuate dispense valve A, one to actuate dispense valve B.



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Fluid Control Valves

- **Dispense valves (DA, DB)** dispense the correct dose of component A and component B to the remote mix manifold. Solenoids A and B turn the dispense valves ON and OFF. See FIG. 2.
- **Sampling valves (SA, SB),** to batch dispense or test pumps. See FIG. 2.
- **Fluid outlet valves** allow components A and B to enter the fluid hoses. See FIG. 2.

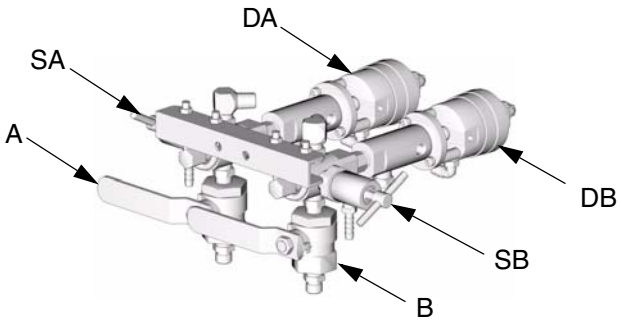

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FIG. 2. Dispense Valves, Sampling Valves, and Fluid Outlet Valves

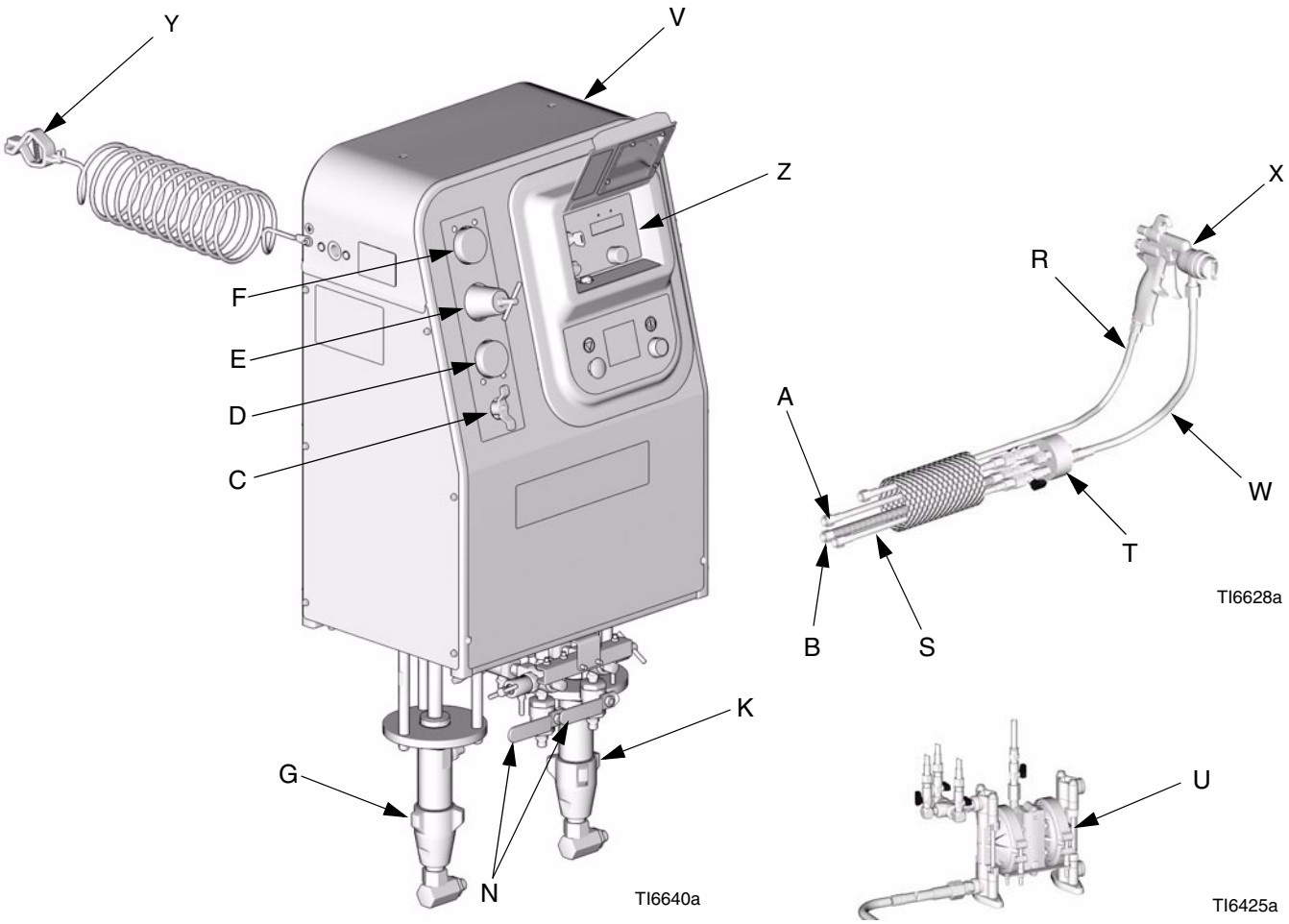


FIG. 3. ProMix Easy Proportioner, Major Components

Key for FIG. 3

A Component A Fluid Hoses
B Component B Fluid Hose (braided)
C Bleed-Type Main Air Shutoff Valve
D Air Supply Pressure Gauge
E Pump Air Regulator
F Pump Air Pressure Gauge
G Component A Pump
K Component B Pump
N Fluid Outlet Valves
P Gun Air Pressure Regulator (not shown)
R Gun Air Supply Hose
S Solvent Supply Hose
T Remote Mix Manifold
U Solvent Pump
V ProMix Easy Plural Component Proportioner
W Fluid Whip Hose/Static Mixer
X Air Spray Gun (not included with system)
Y Ground Wire
Z User Interface (see page 6)

Solvent Control Valves

Solvent pump (U) pumps solvent from a user-supplied solvent container.

- **Solvent pump air valve (SV)** turns on the solvent pump.
- **A and B solvent valves (VA, VB)** allow flushing of sampling valves A and B.
- **Solvent valves** allow flushing of the mix manifold, whip hose, and gun. Valve **S1** is at the solvent pump outlet. Valve **S2** is at the mix manifold.

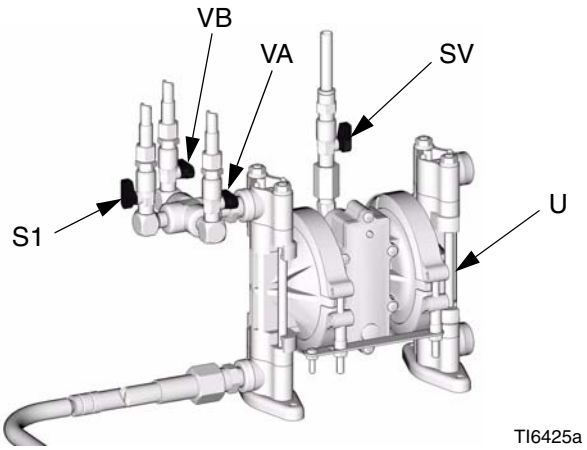


FIG. 4. Solvent Pump and Valves

Hose Bundle/Mix Manifold

See FIG. 5. Hose bundle includes a gun air supply hose (R), solvent hose (S), and component A and B hoses. The component B hose is steel braid. The component A hose is nylon. Hoses are encased in a protective cover.

The component A and component B hoses have fluid shutoff valves upstream of the mix manifold. These valves are both open when spraying. Close these valves at **Shutdown**, page 24.

Solvent valve (S2) is always closed except when flushing (see **Mix Manifold Flushing**, page 15). Check valves (CB) are provided to prevent cross-contamination of the solvent line and fluid lines.

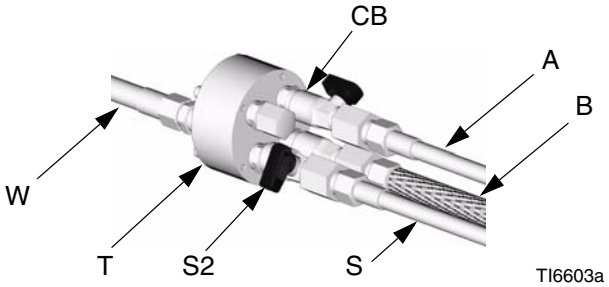
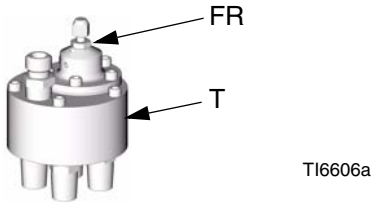


FIG. 5. Mix Manifold Valves

Remote Mix Manifold

- Components A and B are pre-mixed in the mix manifold (T), then uniformly blended in the whip hose/static mixer (W) before being sprayed.
- Use the built-in fluid regulator (FR) to adjust fluid pressure to the spray gun. Regulator must be open to permit flow.



Installation

The Typical Installation shown in FIG. 3 is not an actual system design. Contact your Graco distributor for assistance in designing your system. Be sure all accessories are adequately sized and pressure-rated to meet system requirements.

Reference numbers and letters in the text refer to numbers and letters in the figures.

Icons in the text refer to icons on the User Interface.

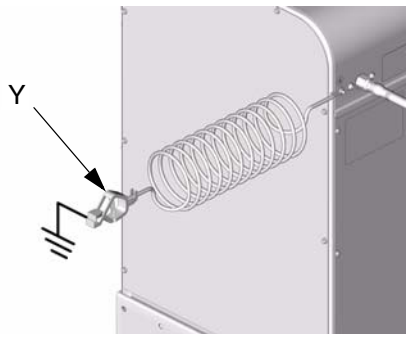
When the unit is first started up or has been shutdown for longer than 2 months, you must turn it on for 8 hours to recharge battery. Reset the date and time with the Setup program, which is available with the data download kit.

The unit should be run continuously for 8 hours or more at least once per month to maintain proper charge. If the battery is not recharged on a regular schedule, the date information may be reset. If the date is reset, the date information will be incorrect in the data log.

WARNING

Read warnings, page 4. Ground equipment as instructed below.

1. Connect ProMix Easy ground wire (Y) to a true earth ground.



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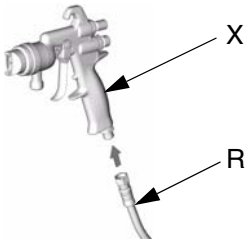
2. Locate the ProMix Easy in a convenient location. Ensure there is adequate clearance on all sides for operator access and servicing.

3. Connect the component A and component B fluid lines of hose bundle (S) to the fluid outlet valves, according to labels on the hoses.

4. Connect the solvent hose (S) to solvent valve S1 at the solvent pump (U). (Two hoses to flush sampling valves are pre-attached at the factory.)

5. Install the gun air regulator (P) in a convenient, easily accessible location for the operator. See manual 310700.

6. Connect the air hose (R) between the outlet of the gun air regulator and the air inlet of the spray gun (X).



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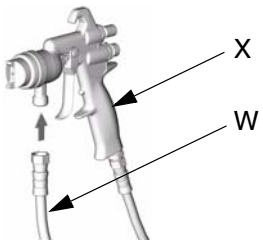
7. Connect the fluid whip hose/static mixer (W) to the fluid inlet of the spray gun (X).



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Setup

1. Tighten all hose connections and all fittings on unit.

2. Fill pumps A and B packing nuts with throat seal liquid (TSL).

3. Connect main air supply line (AL) to air inlet.

Air supply requirement: 110 psi (0.8 MPa, 8 bar) maximum, 70 psi (483 kPa, 4.8 bar) minimum; 20 scfm (0.56 m^3/min).

4. Set air regulator to 0.

5. Open main air shutoff valve. When starting up, display will show “88888”, then software revision, then current ratio (if set to or).

6. Setup ratio.

   a. Turn function knob to .

   b. Current ratio displays.

   c. To change ratio, turn key to + or – until desired ratio is displayed, then turn key back to neutral.

7. Flush and prime system. See pages 15 and 18. Run **Pump Test**, page 19 to check ratio accuracy.

Pressure Relief Procedure

WARNING

Relieve pressure from mix manifold to gun whenever you stop spraying and before servicing gun or removing nozzle.

In addition, relieve pressure from pump to gun at end of day and before cleaning, checking, or servicing pump, manifold, or fluid line accessories or transporting equipment. See page 14.

Read warnings, page 4.

Mix Manifold to Gun

1. Press  .
2. Close all valves at mix manifold.
3. Hold a metal part of the gun firmly to a grounded metal pail. Trigger gun to relieve pressure.

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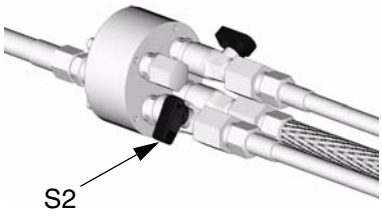
Pump to Gun

1. Open all fluid valves at mix manifold. Leave solvent valve (S2) closed.



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2. Open all fluid outlet valves.

3. Turn function knob to pressure relief/park  .

4. Press  . Indicator A comes on, and Pump A pressurizes.

Pump air supply pressure must be sufficient to cause pumps to stroke to bottom-most position when function knob to is set to pressure relief/park  .

5. Hold a metal part of the gun firmly to a grounded metal pail. Trigger gun to relieve component A pressure. Indicator A will stay on for 5 sec after Pump A reaches Park position, then go off.

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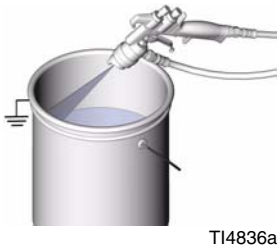
6. Indicator B comes on and Pump B pressurizes.

7. Hold a metal part of the gun firmly to a grounded metal pail. Trigger gun to relieve component B pressure. Indicator B will stay on for 5 sec after Pump B reaches Park position, then go off.



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If both pumps are not parked after 1 min, Alarm 26 will sound.

Flushing

- There are times when you only want to flush the mix manifold, such as:
  - breaks in spraying
  - overnight shutdown
  - end of potlife

  In this manual, this procedure is referred to as **Mix Manifold Flushing** (see this page).

- Other times, **Full System Flushing** (page 16) is necessary:
  - first time material is loaded into equipment*
  - material change
  - servicing
  - putting equipment into storage

  * Some **Full System Flushing** steps are not necessary for initial flushing, as no material has been loaded into the system yet.

- After doing a pump test or ratio check, you need to **Flush Sampling Valves** (page 17).

WARNING

Read warnings, page 4.

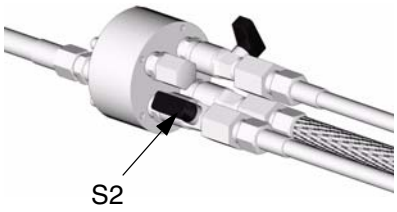
- Use the lowest possible pressure when flushing to avoid splashing.
- Before material change or shutdown for storage, flush at a higher flow rate and for a longer time.

Mix Manifold Flushing

1. Follow complete **Pressure Relief Procedure**, pages 13 and 14. Ensure that A and B pumps are parked before proceeding.

CAUTION
Do not exceed 100 psi (0.7 MPa, 7 bar) air input pressure to the solvent pump.

2. Open valve S2 at mix manifold. Close all other mix manifold valves.



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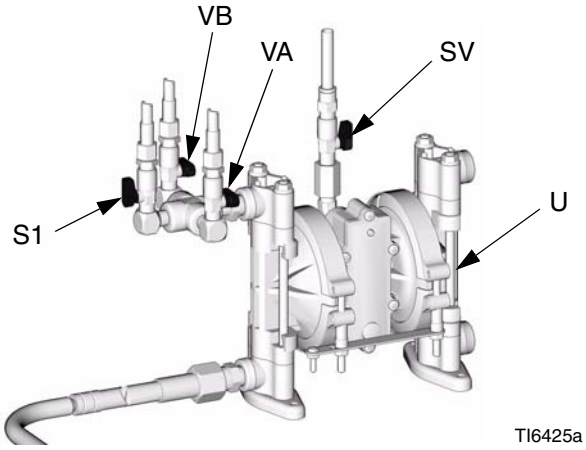
3. Ensure that valves VA and VB at solvent pump are closed. Open valve S1. Open valve SV to turn on solvent pump.



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4. Trigger gun into a grounded pail. Flush through gun until clean solvent flows.

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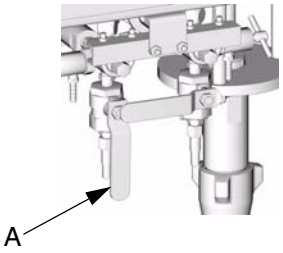
5. Close valve SV to shut off solvent pump.
6. Trigger gun to relieve solvent pressure.
7. Close solvent valve(s) S1, S2.

Full System Flushing

Use the lowest possible pressure while flushing, to avoid splashing.

1. Follow **Pressure Relief Procedure**, page 13. Set air regulator to 0, and close main air shutoff valve.

2. Replace component A and B supplies with solvent.
3. Set air regulator to 50 psi (345 kPa, 3.4 bar).
4. Turn function knob to A  . Press  .
5. Open fluid outlet valve A.



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6. Ensure that all valves at mix manifold are open.

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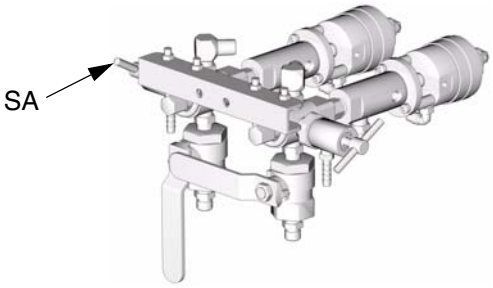
7. Open sampling valve SA slowly. Pump A will run for 12 cycles, then stop. Restart as needed. When clean solvent flows from sampling valve SA, close valve.



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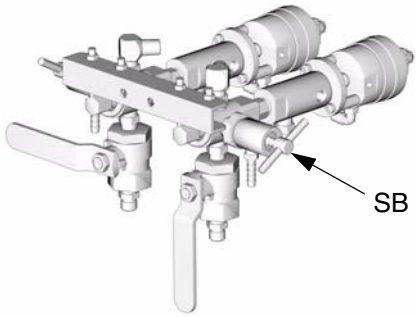
8. Trigger gun into grounded pail until clear solvent flows from gun. You may have to press  more than once. When solvent is clear, press  .
9. Repeat steps 4-8 for the B side.



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10. Follow **Pressure Relief Procedure**, page 13, and remove gun from hose. See gun manual to further clean gun.

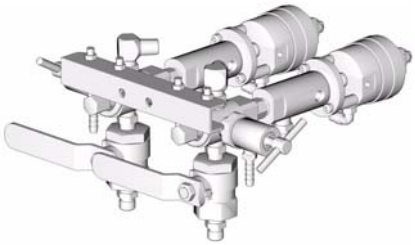
Some materials require additional cleaning. You may need to circulate solvent through the system.

Flush Sampling Valves

Flush the sampling valves after doing a pump test (page 19) or ratio check (page 21).

1. Follow **Pressure Relief Procedure**, page 13.

2. Close all fluid outlet valves.



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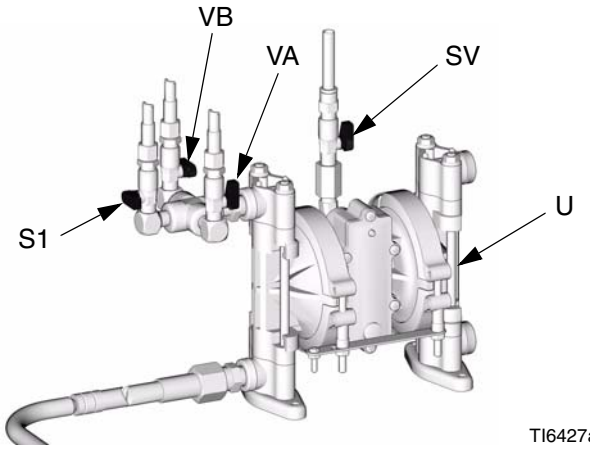
3. Open valve VA and close valves S1 and VB at solvent pump. Turn on solvent pump.



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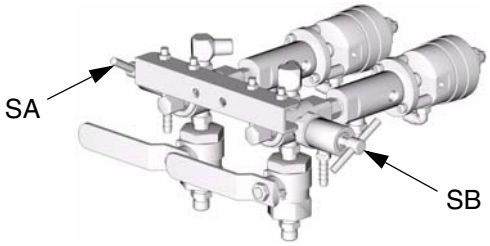
4. Open sampling valve SA. When clean solvent flows from sampling valve SA, close valve.



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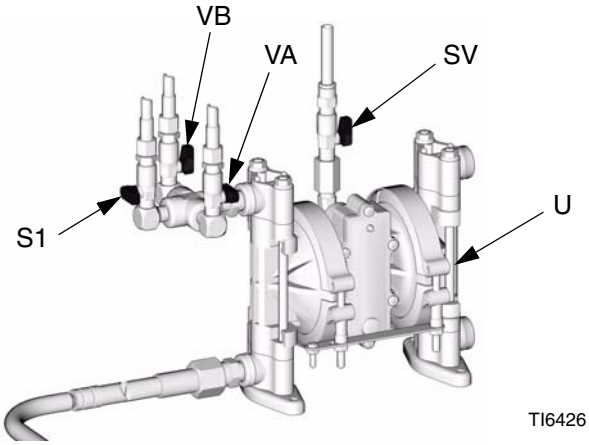
5. Close valve VA and open valve VB at solvent pump. Repeat for component B side.



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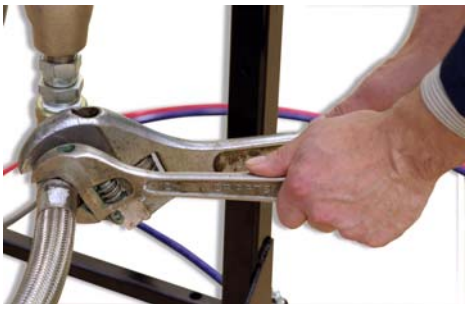
Priming

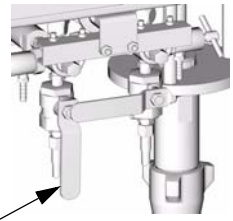
Use the lowest possible pressure while priming, to avoid splashing.

1. Connect fluid supply hoses to A and B pumps. Tighten all hose connections and fittings.



2. Set air regulator to 0.

3. Open fluid outlet valve A.



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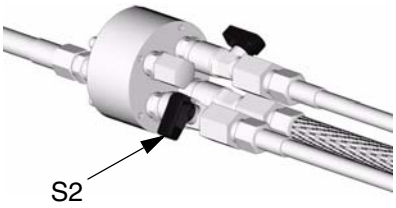
4. Open all fluid valves at mix manifold. Leave solvent valve (S2) closed. Ensure that fluid regulator (FR) is open, to permit flow.



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5. Turn function knob to A  . Press  . Turn up air regulator slowly until pump A starts. Trigger gun into grounded pail until fluid flows steadily from gun. You may have to press  more than once. When A1 hose and gun are primed, press  .

When run independently (set to A or B), the pump runs for 12 cycles, then stops. Press  and  as needed to prime.

6. Repeat steps 3-5 for the B side.

7. Test spray a pattern to ensure you get desired results. Perform **Pump Test**, page 19.

Pump Test

Follow this procedure the first time system is operated (after flushing and priming).

The volume dispensed during the pump test (5 cycles) is 270 cc. Dispense into a container with adequate graduations.

1. Turn function knob to . Set air regulator to 0. Open main air shutoff valve. Adjust air pressure to 50 psi (0.35 MPa, 3.5 bar).

2. Dispense fluid A:

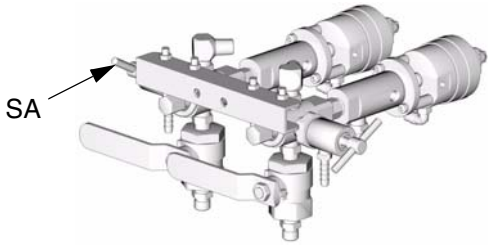
a. Close all fluid outlet valves.

b. Close sampling valves (SA and SB).

c. Place a clean 1 quart (1000 cc) container under sampling valve SA.

d. Press . Indicator A comes on.

e. Slowly open and adjust sampling valve SA to achieve desired flow. The pump stops automatically after 5 cycles. During the last cycle the pump will stop once on the upstroke and once on the downstroke to perform a pump stall test. Indicator A turns off, indicator B comes on.



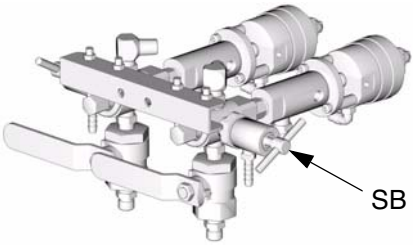
TI6510a

3. Close sampling valve SA.

4. Dispense fluid B as follows:

a. Place a clean 1 quart (1000 cc) container under sampling valve SB.

b. Slowly open and adjust sampling valve SB to achieve desired flow. The pump stops automatically after 5 cycles. Indicator B turns off.



TI6510a

5. Close sampling valve SB.

6. Compare fluid amounts in the containers; they should be about equal. Repeat test if fluids are not equal. If problem persists, contact Graco engineering.

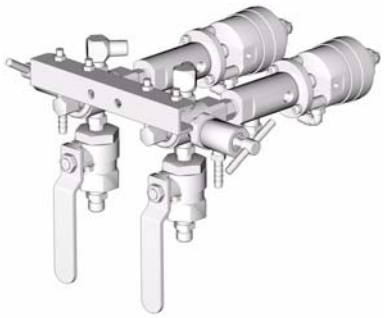
If pump fails any of pump stall tests, alarm will display (see alarms 15-20, page 27).

7. **Flush Sampling Valves**, page 17.

Spraying

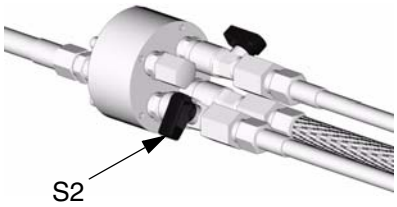
1. Close sampling valves SA and SB.

2. Open fluid outlet valves.



TI6633a

3. At remote mix manifold, close valve S2. Ensure that all other valves at mix manifold are open.



TI6603a

4. Turn function knob to . Press .

5. Trigger gun into a pail and slowly increase air regulator pressure until pump is running and consistently mixed material is dispensed.

TI4836a

6. Press .

7. Adjust air regulator to the necessary spraying pressure; see gun manual. You can also adjust fluid pressure with the fluid regulator on the mix manifold.

   Press to proportion and spray a test pattern. See gun manual for spray pattern adjustments to get desired results.

8. Follow **Mix Manifold Flushing**, page 15, or **Shutdown**, page 24, when you are done spraying or before potlife expires.

Mixed material potlife or working time decreases with increased temperature.

Batch Dispense or Ratio Check

Batch dispense is always 1 pint (500 cc) of total volume, regardless of ratio setting.

Follow this procedure to dispense a batch (into one container) or verify a ratio setting (use separate container for fluid A and B). Dispense into a container with graduations no greater than 5% of each component.

1. Turn function knob to . Set air regulator to 0. Open main air shutoff valve. Adjust air pressure to 50 psi (0.35 MPa, 3.5 bar).

2. Dispense fluid A:

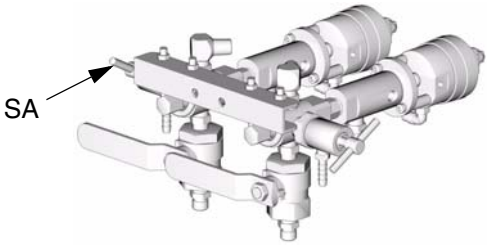
a. Close all fluid outlet valves.

b. Close sampling valves (SA and SB).

c. Place a clean 1 quart (1000 cc) container under sampling valve SA.

d. Press . Indicator A comes on.

e. Slowly open and adjust sampling valve SA to achieve desired flow. The pump stops automatically when dispense is complete. Indicator A turns off, indicator B comes on.



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3. Close sampling valve SA.

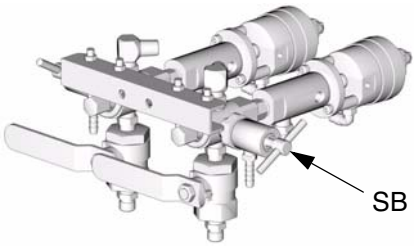
4. Dispense fluid B:

a. *Batch dispense:* move the 1 quart (1000 cc) container under sampling valve SB.

Ratio check: place clean 1 quart (1000 cc) container under sampling valve SB.

On higher ratio settings, use a smaller container for more accurate readings.

b. Slowly open and adjust sampling valve SB to achieve desired flow. The pump stops automatically when dispense is complete. Indicator B turns off.



TI6510a

5. *Batch dispense:* stir material until mixed.

Ratio check: compare A and B fluid dispense.

6. **Flush Sampling Valves**, page 17.

7. To resume **Spraying**, see page 20.

Pot Life Timer

To Display Pot Life Time Left (in minutes)

Turn the function knob to .

How Pot Life Timer Works

Pot life timer starts to countdown at the start of Spray mode. Once the pot life timer is active, it will continue to time down, regardless of which mode the system is in.

When the timer reaches zero, the system closes all dispense valves and a pot life (code 21) alarm occurs (audible alarm sounds). Refer to page 26.

To Change Pot Life Time

Hold down . Turn the key to increase/decrease pot life time (minutes).

Recommend setting pot life time to 1/2 of material pot life.

Approximate Pot Life Volume

Volume of mix manifold, whip hose, and gun = 100 cc.

Pot Life Reset Volume

The timer resets when the total spray volume exceeds the pot life reset volume.

To change reset value, hold down . Turn the key to increase/decrease pot life reset volume (cc).

When an Alarm Occurs

Press to clear alarm, then flush system (page 15), or press and spray until fresh material is loaded into system.

Recirculation Setting

Fluid can be circulated up to the dispense valves with the addition of Graco's Circulation Kit 248652. Consult your distributor.

During recirculation only the pump runs; A and B dispense valves do not operate. Material pumped in recirculation mode is not counted by the totalizer.

To set the ProMix Easy to circulate:

1. Decrease the pump air pressure supply to the minimum required to maintain the desired circulation volume.
2. Turn function knob to  .

3. Press  .

To terminate circulation, press  .

To begin circulating again, press  .

To begin spraying, turn function knob to  , reset system to desired ratio, and adjust pump to spray pressure.

CAUTION
Be sure recirculation valve does not leak material back to fluid supply while spraying.

Shutdown

1. Follow **Pressure Relief Procedure**, page 13. Set air regulator to 0, and close main air shutoff valve.

2. See **Flushing**, page 15.
   a. For overnight shutdown, follow **Mix Manifold Flushing**, page 15.
   b. For prolonged shutdown, follow **Full System Flushing**, page 16.
3. Follow **Pressure Relief Procedure**, pages 13 and 14.
4. Close all valves at the mix manifold.
5. *Before prolonged shutdown:* cap fluid outlets to keep solvent in the lines. Fill pump A and B packing nuts and dispense valve A and B wet cups with throat seal liquid (TSL).

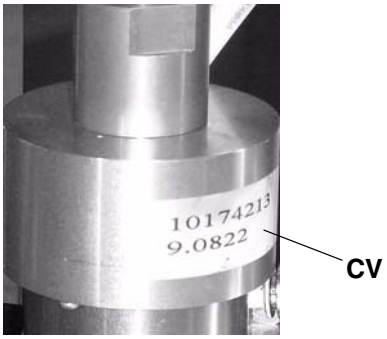
Recalibrate System

Follow steps 1-9 whenever the main circuit board, software, or sensor is replaced, or when Alarm 8 occurs (refer to page 26). If sensor only needs recalibration, follow steps 7-9.

If data download is used, set date and time after calibrating, using ProMix Easy software.

Set Pump Calibration Value

1. Note calibration value (CV) on pump sensor.



2. Open main air valve to start unit. Allow time for system to boot up and display ratio setting.

3. Turn function knob to A or B .

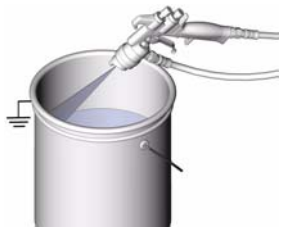
4. Hold down (continue to hold until calibration value is set in step 6). After 5 seconds, the default calibration value (between 85000 - 95000) displays.

5. Turn key to change default to calibration value noted in step 1 (left to decrease, right to increase).

6. Release after entering calibration value.

Calibrate Pump Sensor

7. Trigger gun into a pail or open sampling valve SA or SB.



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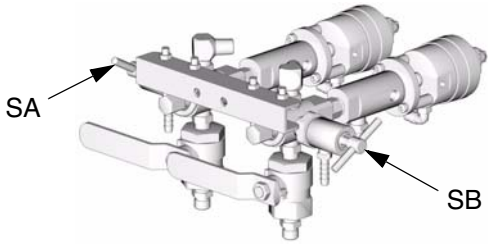

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8. Hold down (continue to hold until told to release). The current calibration value displays.

9. Press . Release first, then release . The pump will cycle to the board end of sensor first, then to the opposite end, and stop.

Alarms

- An alarm condition will shutdown equipment.
- See ProMix Easy Repair manual for trouble-shooting and repair.

* Indicates error where audible alarm sounds once briefly.

** Indicates error where audible alarm sound pulses.

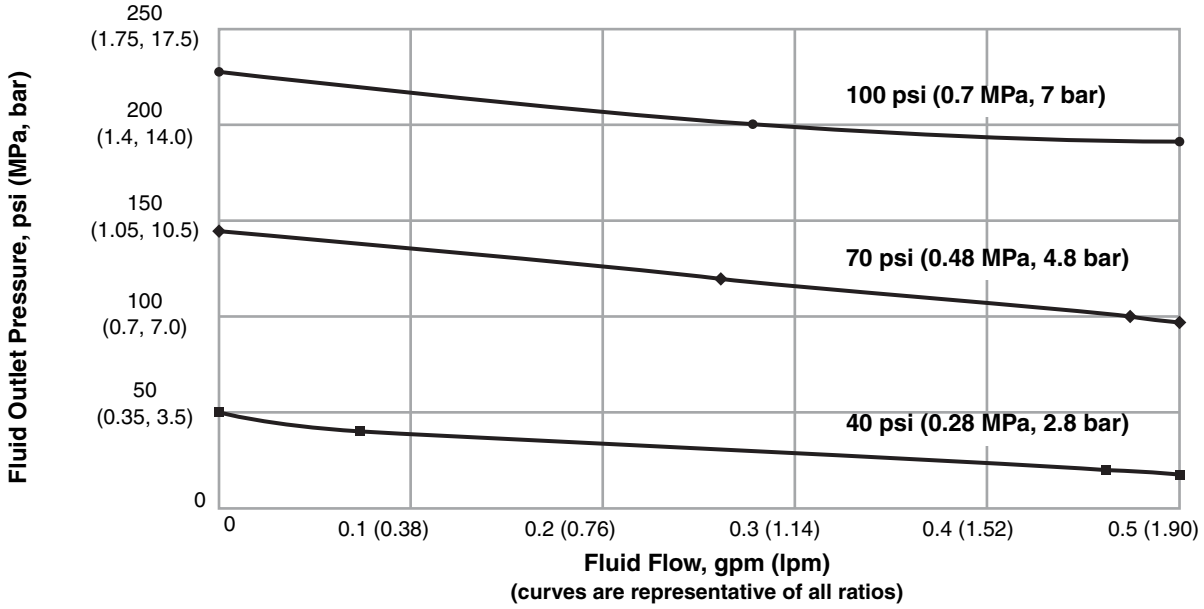
Code	Alarm	Active	Problem	Cause
	Startup Errors			
01	Sensor Error A*	Always	No signal from pump A sensor	Loose cable, failed sensor or cable, failed magnet assembly
02	Sensor Error B*	Always	No signal from pump B sensor	Loose cable, failed sensor or cable, failed magnet assembly
03	Communication Error*	Always	Loss of communication between main and display boards	Loose cable, failed board
	Operating Errors			
04	not used			
05	not used			
06	Pump Error A**	Spray Test Batch	Pump does not stall after top change over	Intake valve leak
07	Pump Error B**		Pump cavitating excessively	Air in lines caused by loose fitting or use of agitator Empty fluid supply
08	Sensor Code Error	Always	Sensor values reverted to default	Sensor value data corrupt; board needs replacement and /or recalibration
09	not used			
10	not used			
11	Sensor Reading Low A*	Spray Test Batch	Pump stroke travels beyond sensor range at top change over	Sensor or bracket loose Sensor magnet dirty
12	Sensor Reading Low B*			
13	Sensor Reading High A*	Spray Test Batch	Pump stroke travels beyond sensor range at bottom change over	Sensor or bracket loose Sensor magnet dirty
14	Sensor Reading High B*			
21	Pot Life Error	Spray first, then Always	Pot life timer timed out	Not enough material sprayed after last reset

Code	Alarm	Active	Problem	Cause
	Operating Errors (continued)			
22	not used			
23	not used			
24	not used			
25	not used			
26	Park Timeout	Park	Pumps not at bottom of stroke	Sampling valves closed, or gun not triggered
	Testing Error			
15	Piston packing/ball A*	Test	Pump does not completely stall in up stroke	Piston packing or ball check failure
16	Piston packing/ball B*			
17	Inlet Ball A*	Test	Pump does not completely stall in downstroke	Intake valve ball check failure
18	Inlet Ball B*			
19	Dispense Valve A*	Test	Pump does not completely stall in both up and down strokes	Throat packing or dispense valve failure
20	Dispense Valve B*			
27	Pump Calibration Timeout A	Run A	Pump doesn't run through calibration	Sampling valves closed
28	Pump Calibration Timeout B	Run B		

Performance Charts

2.5:1 Ratio UltraMix Pump

Tested with 10W oil



Technical Data

Mix ratio range	0.1:1-10:1 (in 0.1 increments)
Ratio tolerance range	up to +/- 5%
Flow rates	
Minimum	0.02 qt/min (0.02 lpm)*
Maximum	1 gpm (3.8 lpm)
Pump size	54 cc/cycle
Pump cycle length (one cycle = one upstroke and one downstroke)	6 in. (152 mm)/cycle
Fluid viscosity range	50-2000 cps
Fluid filtration	60 mesh (238 micron) standard
Maximum fluid working pressure	250 psi (1.7 MPa, 17 bar)
Air supply pressure range	70-110 psi (483-800 kPa, 4.8-8 bar)
Maximum air consumption at 100 psi (0.7 MPa, 7 bar)	20 scfm (0.56 m^3/min)
Air inlet size	1/2 npt(f)
Ambient temperature range	
Operating	32-104° F (0-40° C)
Storage	30-160° F (–1-71° C)
Environmental Conditions Rating	Altitude up to 4000 meters Maximum relative humidity to 99% up to 40° C Pollution degree (1)
Sound pressure**	70.3 dBA
Sound power**	78.4 dBA
Wetted parts	
Pumps	See 310662
Dispense Valves	See 310655
PC Communications	RS-232

* *Minimum flow rate is dependent on the material being sprayed and mixing capability. Test your material for specific flow rate.*

** *Tested in accordance with ISO 3744 at 100 psi (0.7 MPa, 7 bar) inlet air pressure.*

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.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211, **Fax:** 612-378-3505

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