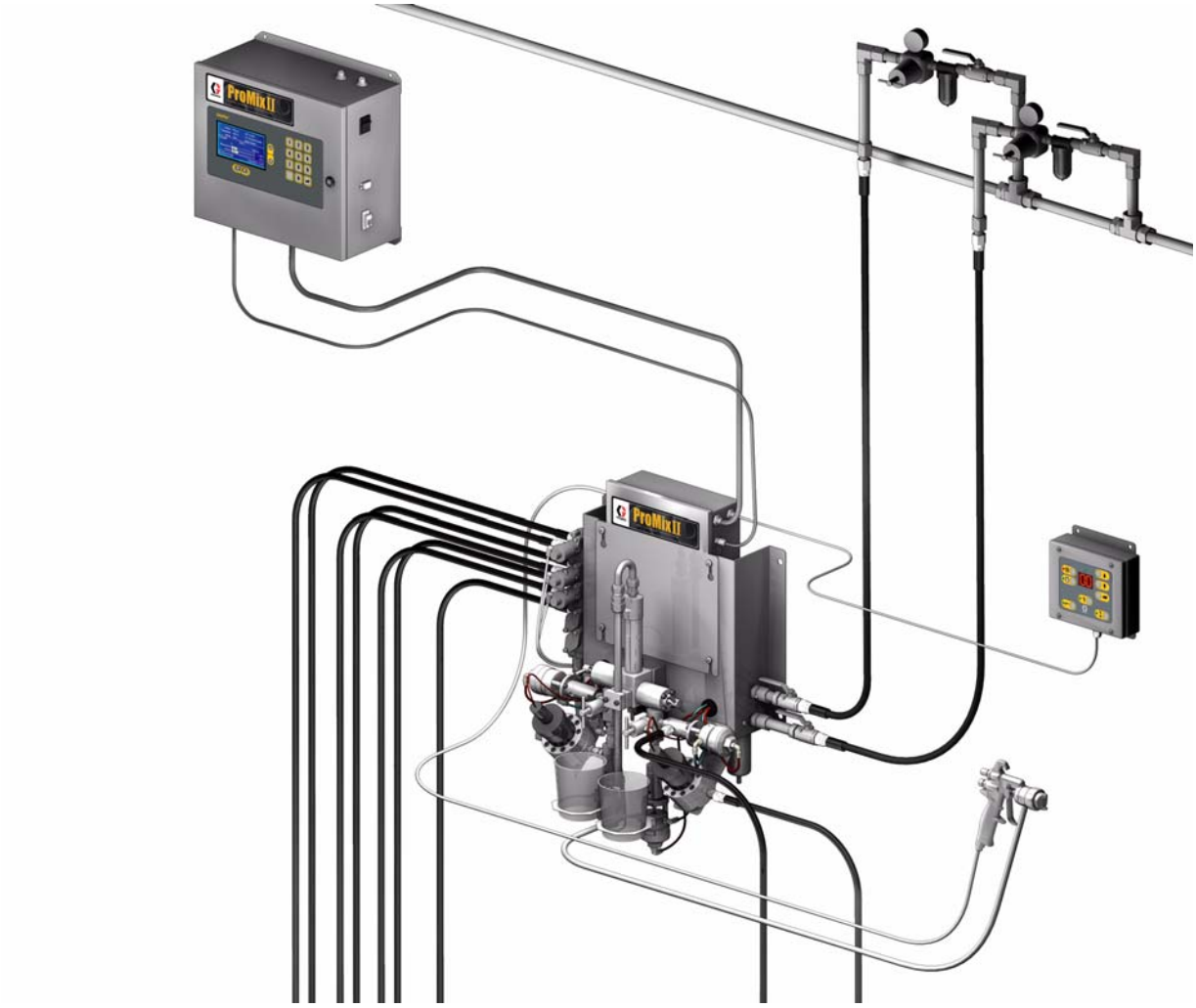
Service - Parts

ProMix™ II

310653 rev.B

For proportional mixing of plural component coatings

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



PROVEN QUALITY. LEADING TECHNOLOGY.

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™ II Models

WARNING

Do not install equipment approved only for non-hazardous location in a hazardous area. Substitution of components may impair intrinsic safety. See page 6.

WARNING

Changing the fluid manifold configuration may change its pressure rating. Do not exceed the pressure rating of the lowest rated component. See page 6.

PM	Enter Model number here									
ProMix™ II Unit	**A Meter**		**B Meter**		**Color Change**		**Gun Flush Box**	
PM	**0**	None	**0**	None	**0**	None, Single Color	**0**	No
	1	G3000	**1**	G3000	**1**	2 Color, Low Pressure	**1**	Yes
	2	G3000HR	**2**	G3000HR	**2**	4 Color, Low Pressure		
	3	Coriolis	**3**	Coriolis	**3**	6 Color, Low Pressure		
					4	2 Color, High Pressure		
					5	4 Color, High Pressure		
					6	6 Color, High Pressure		

Hazardous Location Approval

Only models with a G3000 (1) or G3000HR (2) for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3.

FM APPROVED Conforms to FM std 3600 & 3610 for use in Class I Div 1 Group D T3 Hazardous locations

CAN/CSA 22.2 No.157 & No. 1010.1-92

EEx ib IIA T3 ISSeP 04 ATEX 008 SYST

CE

Non-hazardous Location Approval

CE FM APPROVED CAN/CSA 22.2 No.1010.1

Maximum Working Pressure

Maximum working pressure rating is dependent on the A and B meter and color change option selected. The pressure rating is based on the rating of the lowest rated fluid manifold component. Refer to the component pressure ratings below. *Example:* Model PM1140 has a maximum working pressure of 3000 psi (21 MPa, 207 bar).

Check the ID plate on your EasyKey™ Display or fluid panel for its maximum working pressure. See FIG. 1, page 5.

ProMix™ II Fluid Manifold Components Maximum Working Pressure

Color Change Option 1, 2, or 3 . . . . . 300 psi (2.1 MPa, 21 bar)
Color Change Option 4, 5, or 6 . . . . . 3000 psi (21 MPa, 207 bar)
Coriolis A and B Meters Option 3 . . . . . 2300 psi (16 MPa, 159 bar)
No Meters or G3000 or G3000HR A and B Meters Option 0, 1, or 2 . . . . . 4000 psi (28 MPa, 276 bar)

Flow Meter Fluid Flow Rate Range

G3000 Meter . . . . . 75-3000 cc/min. (0.02-0.79 gal./min.)
G3000HR Meter . . . . . 38-1500 cc/min. (0.01-0.40 gal./min.)

PM	Enter Model number here			
ProMix™ II Unit	A Meter	B Meter	Color Change	Gun Flush Box
Coriolis Meter . . . . . 20-3800 cc/min. (0.005-1.00 gal./min.)				

ProMix™ II ID Plate Locations

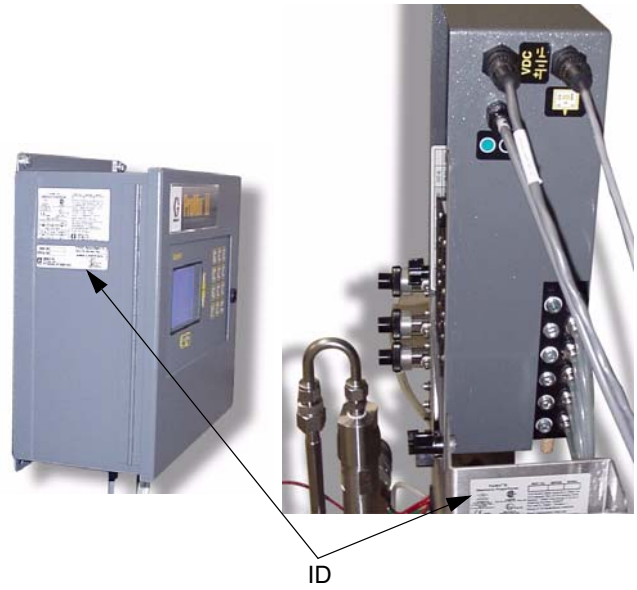


FIG. 1: EasyKey™ Display and Smart Fluid Panel

Related Manuals

Component Manuals in English

Manual	Description
310633	ProMix™ II Operation
310653	ProMix™ II Service-Parts
310654	Fluid Mix Manifold
310655	Dispense Valve
308778	G3000, G3000HR Flow Meter
310696	Coriolis Flow Meter
310656	Color Change Kit
307731	Color Change Valve Assembly, Low Pressure
307941	Color Change Valve, Low Pressure
308291	Color Change Valve Assembly, High Pressure
308977	Color Change Valve, High Pressure
310695	Gun Flush Box Kit
308818	Printer
310669	ProMix™ II Data Download Kit
310745	Gun Air Shutoff Kit

This manual available in following languages:

Manual	Language	Manual	Language
310653	English	310734	German
310731	French	310735	Chinese
310732	Spanish	310736	Japanese
310733	Italian		

Warnings

The following warnings include general safety information for this equipment. More specific warnings are included in the text 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 lights on or off when flammable fumes are present.
- Ground equipment and conductive objects 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.

INTRINSIC SAFETY

Only models with a G3000 (1) or G3000HR (2) for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3. To help prevent fire and explosion:

- Do not install equipment approved only for non-hazardous location in a hazardous area. See the ID label for the intrinsic safety rating for your model.
- Do not substitute system components as this may impair intrinsic safety.

ELECTRIC SHOCK HAZARD

Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

⚠ WARNING

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 use hoses to pull equipment.
- Comply with all applicable safety regulations.

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

Pressure Relief Procedure

I

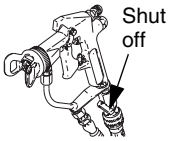
WARNING

Follow **Pressure Relief Procedure** when you stop spraying, before changing spray tips, and before cleaning, checking, or servicing equipment. Read warnings, page 6.

1. Engage the trigger lock.

2. Press Standby key on Operator Station.

3. Shut off air at the spray gun.



WARNING

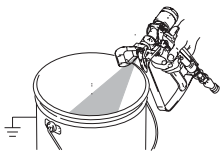
If using an electrostatic gun, shut off electrostatics before flushing.

4. Relieve fluid and air pressure at component A and B and solvent feed pumps or pressure pots as instructed in their separate manuals. Close all fluid supply shutoff valves.

5. Press Mix on Operator Station.

6. Disengage trigger lock.

7. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.



8. Engage trigger lock.

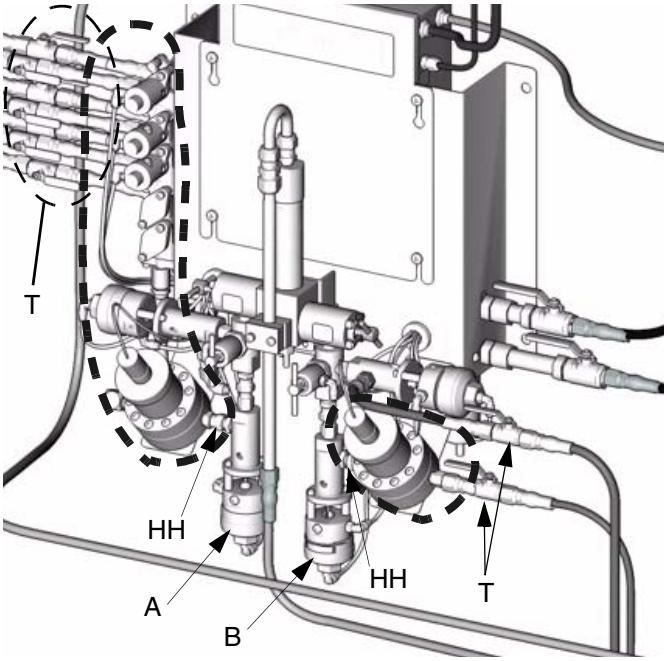
9. Press Standby on Operator Station.

10. *If you suspect that the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above,* very slowly loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

WARNING

Pressure upstream of component A and B dispense valves (A, B) may not be fully relieved.

11. *Before servicing or disconnecting flow meters, color change valves, or other components between the fluid supply shut off valves (T) and dispense valves A and B,* very slowly loosen swivel fitting (HH) to relieve pressure gradually.



Shutdown

1. To stop production at any time, press Standby on the Operator Station.

2. **WARNING**

If using an electrostatic gun with a gun flush box, shut off the electrostatics before placing the gun in the box.

3. If you have a gun flush box, place the gun inside the box when the gun is not in use.

4. ***If shutdown time WILL exceed the pot life,*** purge the ProMix™ II of mixed material. See ProMix™ II Operation manual.

   If shutdown time WILL NOT exceed the pot life, you do not need to purge the system, but you must relieve system pressure.

WARNING

Follow **Pressure Relief Procedure** on page 8 when you stop spraying, before changing spray tips, and before cleaning, checking, or servicing equipment. Read warnings, page 6.

Troubleshooting

WARNING

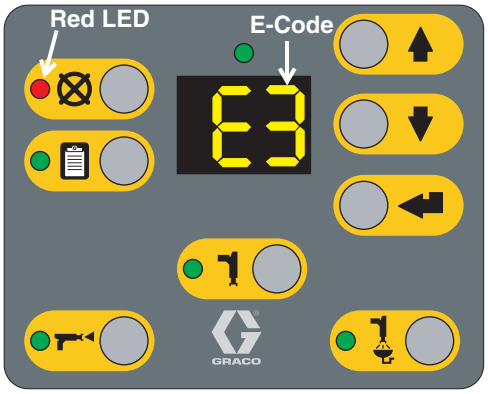
Follow **Pressure Relief Procedure**, page 8, before cleaning, checking, or servicing equipment. Read warnings, page 6.

CAUTION
Do not use the fluid in the line that was dispensed off ratio as it may not cure properly.

ProMix™ II Alarms

The ProMix™ II has alarms to alert you of a problem and prevent off-ratio spraying. If an alarm occurs, operation stops and the following occurs:

- A red LED illuminates steadily or flashes on the Operator Station.
- Operator Station displays an alarm E-Code, E1 to E9.
- Alarm sounds.
- Status bar on the EasyKey™ Display shows the alarm E-Code with a description.



Operator Station

Alarms E-Codes

Description	E-Code
Communication Error	E1
Purge Error	E2
Potlife Exceeded Alarm	E3
Ratio Alarm	E4
Overdose Alarm	E5
Dose Time A Alarm	E6
Dose Time B Alarm	E7
Autodump Complete Alarm	E8
EasyKey in Setup Mode	E9

To Clear Alarm and Restart

When an alarm occurs, determine the E-Code before clearing it. You can use the EasyKey™ Report screen (FIG. 2) to view the last 10 alarms with date and time stamps.

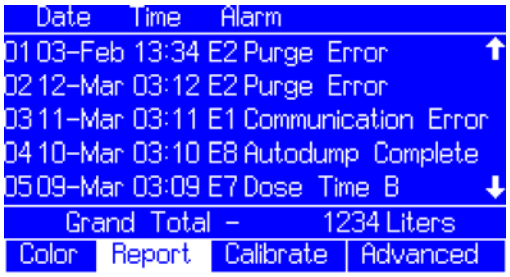


FIG. 2: Setup Mode - Report Screen

Except for Potlife Exceeded (E3) Alarm and Purge Error (E2) Alarm, all alarms can be cleared by pressing the Error Clear ⊗ key on the Operator Station.

To clear Pot Life Exceeded alarm, the system must be purged. Press the Purge key on the Operator Station. The system purges until the preset purge time is complete. Refer to purging procedure in ProMix™ II Operation manual.

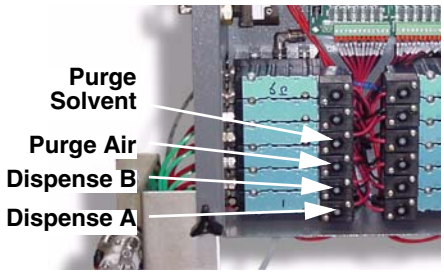
For Additional Information

See ProMix™ II Operation manual for additional alarm troubleshooting information.

Solenoid Troubleshooting

Refer to the **Pneumatic Diagram**, page 30.

If the dispense or purge valves are not turning on or off correctly, it could be caused by one of the following.

Cause	Solution
1. Air regulator pressure set too high or too low.	Check air pressure. 80 psi (550 kPa, 5.5 bar) is commonly used. Do not go below 75 psi (517 kPa, 5.2 bar) or above 100 psi (0.7 MPa, 7 bar),
2. Air or electrical lines damaged or connections loose.	Visually inspect air and electrical lines for kinks, damage, or loose connections. Service as needed.
3. Solenoid failure  **FIG. 3**	Manually operate the valves by removing the Smart Fluid Panel cover and pressing and releasing solenoid valve override buttons. FIG. 3. Use the control board diagnostics to check the signals (page 13). If signals do not occur correctly, go to Cause 4. Valves should snap open and shut quickly. If the valves actuate slowly, it could be caused by: • Air pressure to the valve actuators is too low. See Cause 1. • Solenoid is clogged. Make sure air supply has 10 micron filter installed. • Something is restricting the solenoid or tubing. Check for air output from air line for corresponding solenoid when valve is actuated. Clear restriction. • Packings on the mix manifold dispense valves are too tight. Torque should be 25 in-lbs (2.8 N•m). • A dispense valve is turned in too far. See ProMix™ II Operation manual for settings, • Fluid pressure is high and air pressure is low.
4. Solenoid, cable, or fluid panel control board failure.	Check voltage level to solenoid by pulling solenoid connector and checking voltage between pins. If voltage is 9-15 VDC, the solenoid is damaged. Replace solenoid or correct electrical line problem. If there is no voltage, replace the board.

Operator Station Troubleshooting

Problem	Cause	Solution
Nothing displayed	Power is off	Turn on power
	Faulty cable	Check or replace cable
	Circuit board failure	Replace circuit board
Error code E1	Faulty fiber optic cable between EasyKey™ and fluid panel	Check or replace cable

Fluid Panel Control Board Diagnostics

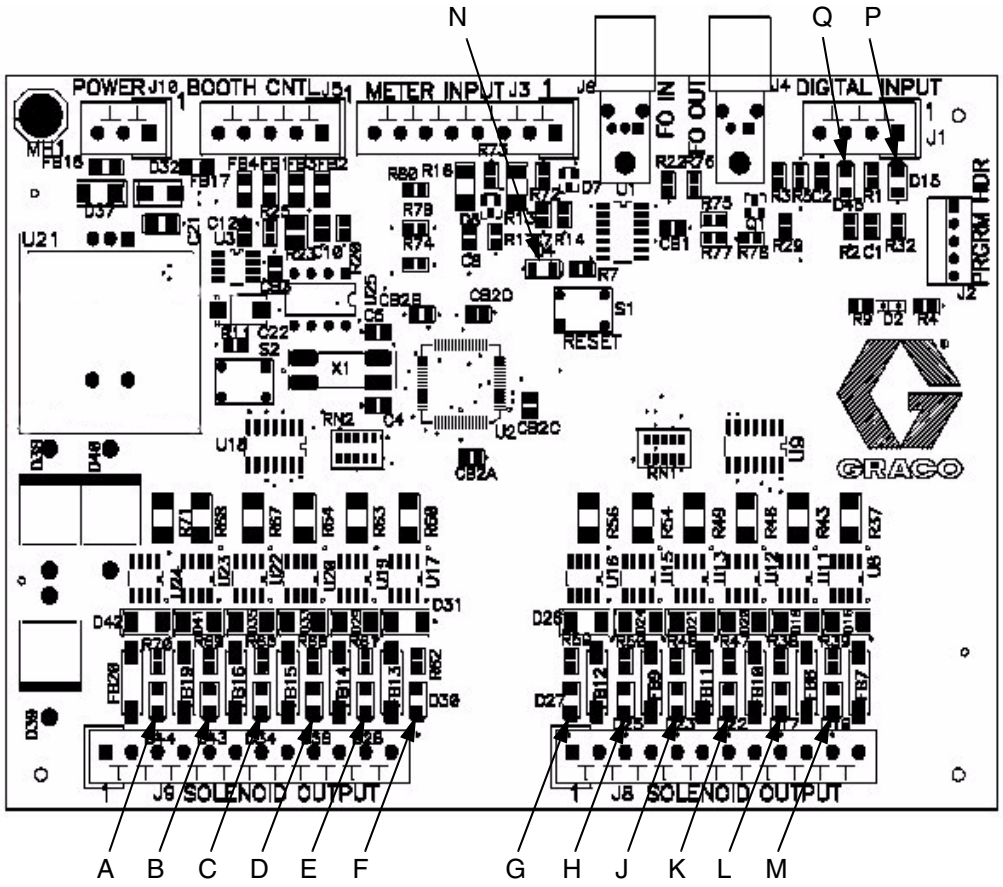


FIG. 4

LED	Signal Description	Diagnosis
A	Dispense Valve A	LED turns on when ProMix™ II sends a signal to actuate related solenoid valve
B	Dispense Valve B	
C	Air Purge Valve	
D	Solvent Purge Valve	
E	Gun Flush Box Trigger	
F	Color Change Solvent	
G	Color 1	
H	Color 2	
J	Color 3	
K	Color 4	
L	Color 5	
M	Color 6	
N	Board OK	LED blinks during normal operation
P	Gun Flush Box Pressure Switch	LED turns on when a gun is in Gun Flush Box
Q	Air Flow Switch	LED turns on when paint gun is triggered.

Service

Before Servicing

WARNING

- To avoid electric shock, turn off EasyKey™ power before servicing.
- Servicing EasyKey™ display exposes you to high voltage. Shut off power at main circuit breaker before opening enclosure.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
- Do not substitute system components as this may impair intrinsic safety.
- Read warnings, pages 6-7.

1. Follow **Shutdown** procedure, page 9, if service time may exceed pot life time and before servicing fluid components.
2. Close main air shutoff valve on air supply line and on ProMix™ II.
3. Shut off ProMix™ II power (0 position). FIG. 5.
4. If servicing EasyKey™ Display, also shut off power at main circuit breaker.

FIG. 5

After Servicing

After servicing the system, be sure to follow the **Start Up** checklist and procedure in the ProMix™ II Operation manual.

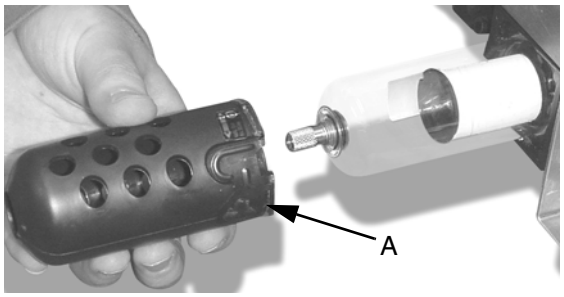
Replacing Air Filter Element

WARNING

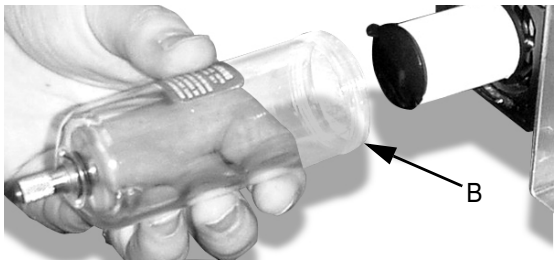
Removing a pressurized air filter bowl could cause serious injury. Depressurize air line before servicing.

Check the 5 micron air manifold filter daily and replace element (part no. 114228) as needed.

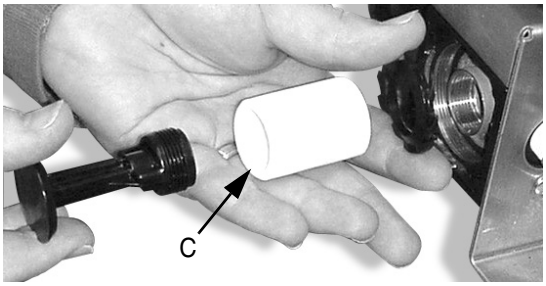
1. Close main air shutoff valve on air supply line and on unit. Depressurize air line.
2. Remove filter cover (A).



3. Unscrew filter bowl (B).



4. Remove and replace element (C).



5. Screw filter bowl (B) on securely. Install cover (A).

EasyKey™ Display

CAUTION
To avoid damaging circuit board when servicing, wear grounding strap on wrist and ground appropriately.

Updating Software

There are 2 ways to update software:

- Upload new software from your PC: Requires Graco RS-232 cable 118342 and software update file obtained from your distributor. Follow **Updating Software** procedure, page 26.

- Install new software chip: Requires Graco ProMix™ II Software Update Kit 234671. Kit includes display board flash memory chip, chip extractor tool, and grounding wrist strap. Follow **Installing New Software Chip** procedure.

Installing New Software Chip

1. Follow **Before Servicing** procedure, page 14.
2. Unlock and open EasyKey™ door with its key.
3. Remove display board chip (C - FIG. 6) with removal tool.
   a. Press removal tool into flash chip socket open holes.
   b. Squeeze the tool to grip the chip and carefully pull it straight out of the socket.

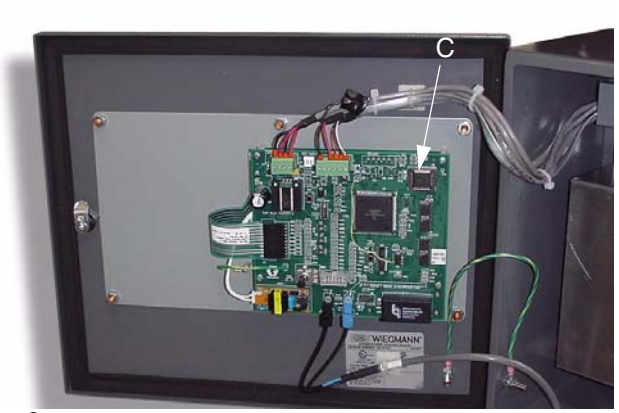


FIG. 6

4. Align beveled corner of new chip with beveled corner of socket and press chip into place. Make sure the pins are not bent or touching.
5. Close and lock EasyKey™ door with key.
6. Turn EasyKey™ power on to test circuit boards.

Replacing Display Board or Display Backlight

Before replacing the backlight, check the inverter (D - FIG. 7) on the display board for proper voltage.

a. Turn EasyKey™ power on.
b. Carefully measure AC voltage across the 2 pins of the inverter (D).
c. Voltage should be about 700 VAC. If not, replace the circuit board.

Kits available:

Part No.	Description
118337	Backlight Repair Kit
234447	Display Interface Replacement Kit Includes membrane switch, graphic display, display board, mounting plate, and screws.

WARNING

Servicing the EasyKey™ Display exposes you to high voltage. To avoid electric shock, turn off EasyKey™ power and shut off power at main circuit breaker before servicing.

1. Follow **Before Servicing** procedure, page 14.
2. Unlock and open EasyKey™ door with its key.
3. Note position of all connections (J2, J5, J6, J8, J9) to display board then unplug the connectors. FIG. 7.

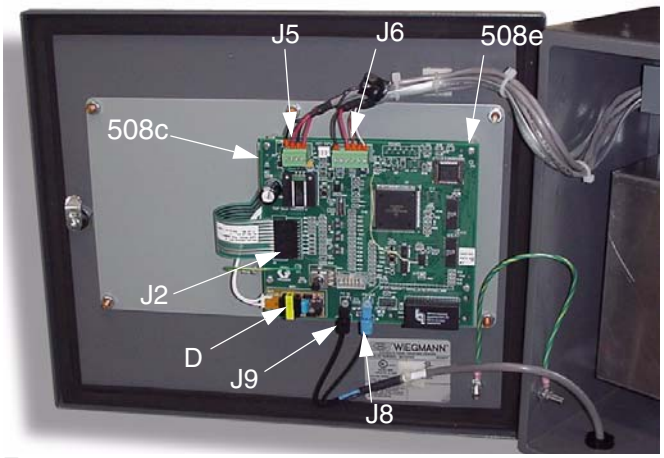


FIG. 7

4. Remove 4 screws (508e) and display board assembly (508b, 508c). FIG. 8.
5. Separate graphic display (508b) from circuit board (508c).

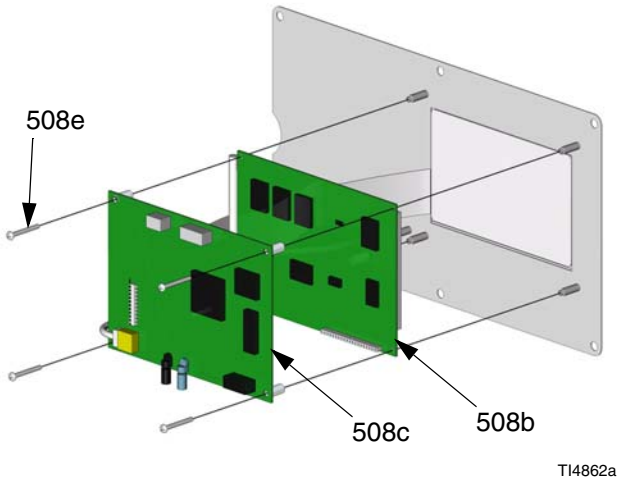
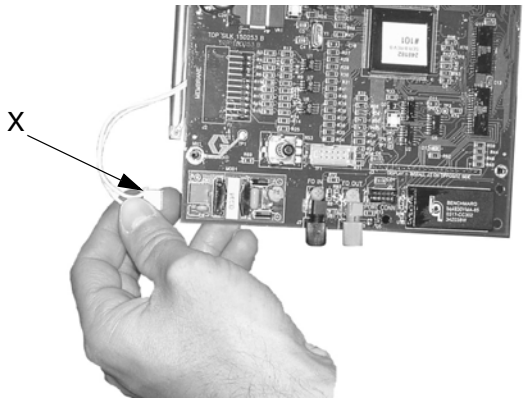


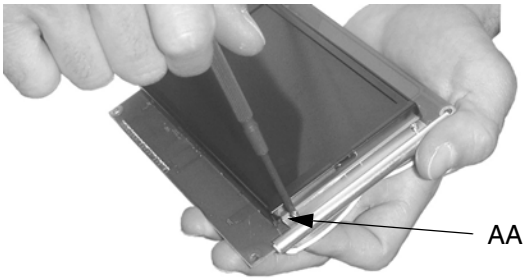
FIG. 8

6. **If replacing display backlight, using Backlight Kit 118337:**

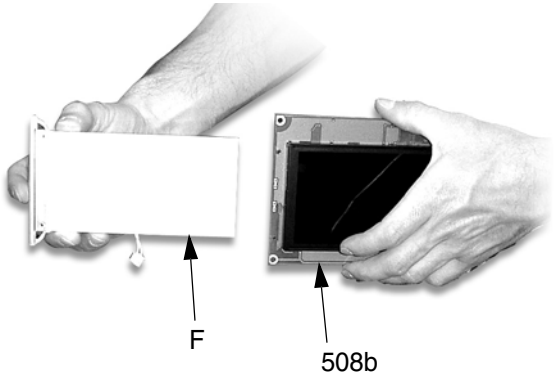
   a. Unplug inverter connector (X).



   b. Remove the two small screws and nuts (AA) - be careful not to drop them.



c. Slide the backlight (F) out of the display board (508b). Install new backlight (F)



7. Align display board (508c) and graphic display (508b). FIG. 8. Press them together.
8. Mount display board with screws (508e).
9. Plug all connectors into display board (508c). FIG. 7.
10. Close and lock EasyKey™ door with key.
11. Turn EasyKey™ power on to test circuit board.

Replacing Keypad

1. Follow **Before Servicing** procedure, page 14.
2. Unlock and open EasyKey™ door with its key.
3. Disconnect keypad ribbon cable (J2) from the display board. FIG. 7.
4. Peel keypad (508a) off plate (508d) and carefully slide ribbon cable through slot in plate. FIG. 9.
5. Remove adhesive liner from back of new keypad.
6. Slide the ribbon cable through the plate (508d) slot, align the keypad (508a) with the recessed area on the plate, and press it into place.
7. Connect the ribbon cable (J2) to the display board. FIG. 7.
8. Close and lock EasyKey™ door with key.
9. Turn EasyKey™ power on to test operation.

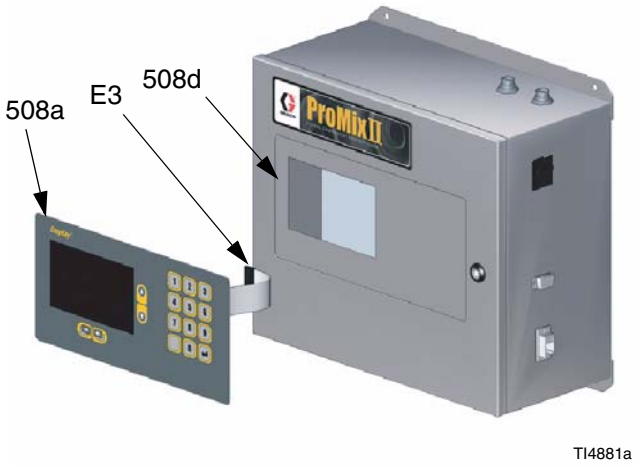


FIG. 9

Replacing Power Supply Board

WARNING

Servicing the power supply board exposes you to high voltage. To avoid electric shock, turn off EasyKey™ power and shut off power at main circuit breaker before servicing.

1. Follow **Before Servicing** procedure, page 14.
2. Unlock and open EasyKey™ door with its key.
3. Disconnect cables (G1, G2, G3). FIG. 10.
4. Remove 2 screws (H) and remove cover (J).
5. Noting their location, remove 5 screws (Y) from power supply board (521a). Remove board.
6. Apply thermal compound to the heatsink (Z) on the back of the new power supply board (521a).
7. Install the new power supply board with the 5 screws (Y).
8. Install cover (J) with 2 screws (H).
9. Connect cables (G1, G2, G3).
10. Close and lock EasyKey™ door with key.
11. Turn on power at main circuit breaker.
12. Turn EasyKey™ power on to test operation.

Replacing Power Supply Fuses

WARNING

Servicing the power supply board exposes you to high voltage. To avoid electric shock, turn off EasyKey™ power and shut off power at main circuit breaker before servicing.

Fuse	Part No.	Description
F1, F2	114899	2 amp, time lag
F3, F4	15D979	.4 amp, quick acting

1. Follow **Replacing Power Supply Board**, steps 1-4.
2. Remove the fuse (F1, F2, F3, or F4) from its fuse holder. FIG. 10.
3. Snap new fuse into holder.
4. Follow **Replacing Power Supply Board**, steps 8-12.

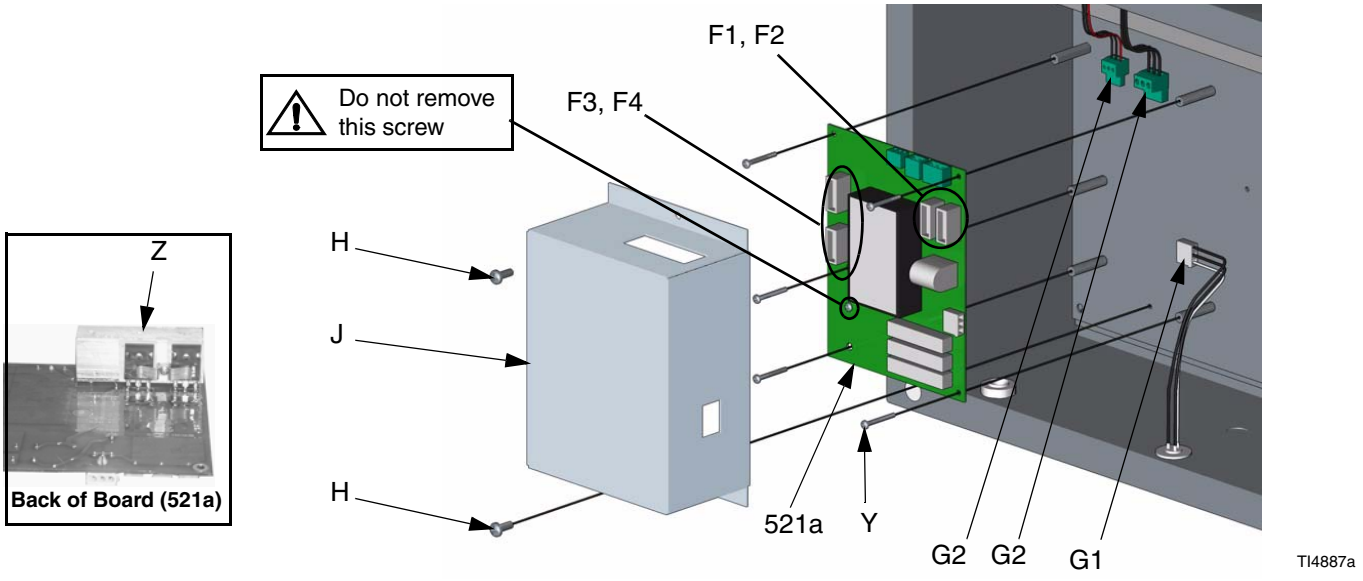


FIG. 10

Operator Station

CAUTION
To avoid damaging circuit board when servicing, wear grounding strap on wrist and ground appropriately.

Replacing Circuit Board

1. Follow **Before Servicing** procedure, page 14.
2. Remove 4 screws (212) and lockwasher (213), and remove cover (202).
3. Disconnect cable connector (219) from circuit board (206).
4. Remove 4 screws (210) and circuit board (206).
5. Install new circuit board (206) with 4 screws (210).
6. Connect cable (219).
7. Install cover (202) with 4 screws (212).
8. Turn EasyKey™ power on to test operation.

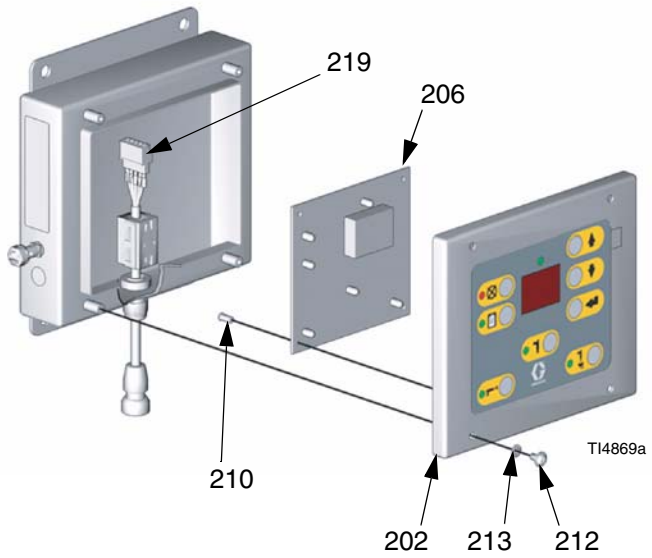


FIG. 11

Smart Fluid Panel

Preparation

WARNING

Read warnings, page 6.

1. Follow **Pressure Relief Procedure**, page 8.
2. Close main air shutoff valve on air supply line and on ProMix™ II.
3. Shut off ProMix™ II power (0 position). FIG. 12.

FIG. 12

4. Loosen the 4 screws (16), then remove the Smart Fluid Panel cover (15). FIG. 13.

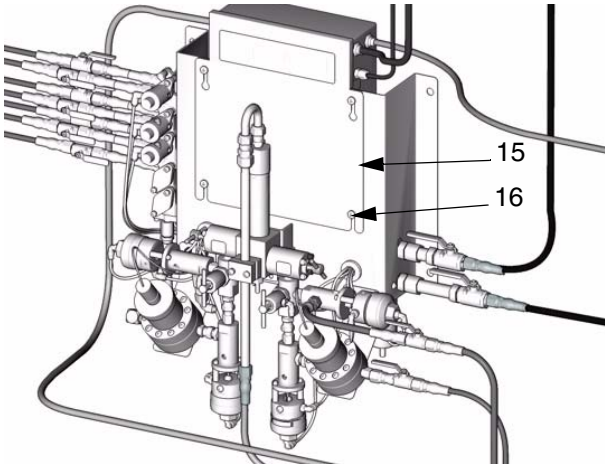


FIG. 13

5. Slide the panel (14) until its bottom slots (KK) align with the top screw holes and secure the box in place with the 2 screws. FIG. 14.

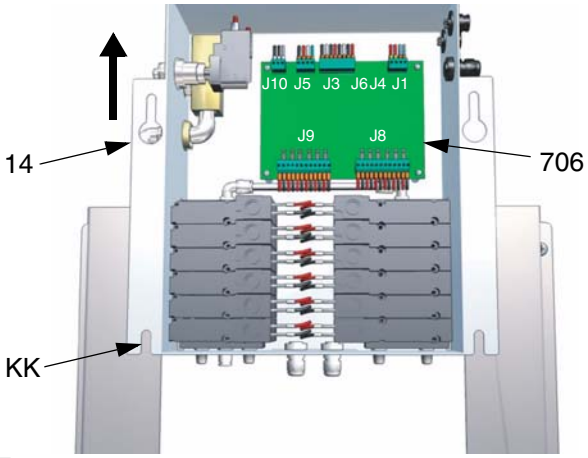


FIG. 14

CAUTION
To avoid damaging circuit board when servicing, wear grounding strap on wrist and ground appropriately.

Replacing Control Board

1. Follow **Preparation** procedure, page 19.
2. Disconnect fiber optic wires and all cables (J1, J3, J4, J5, J6, J8, J9, J10) from control board (706). FIG. 14.
3. **Fluid Panels with Color Change:** Carefully remove color change EEPROM (U25) from the control board with a chip puller. FIG. 16. Save it to install in the new board.

Panels without color change do not include the EEPROM.

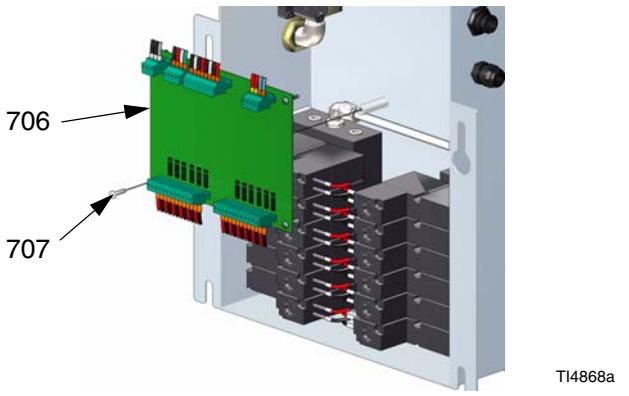


FIG. 15

4. Remove 4 screws (707). Remove control board (706). FIG. 15.
5. Install new control board (706) with 4 screws (707).
6. Connect cables to control board (706). FIG. 14. Insert fiber optic cable connectors (J4, J6) into board connectors (E), matching blue with blue, black with black, and hand-tighten connectors (E). FIG. 16.
7. **Fluid Panels with Color Change:** Orient the EEPROM (U25) so its notch lines up with the notch marked on the fluid control board and install it in the board. The EEPROM leads may need to be bent slightly inward to fit in the socket.

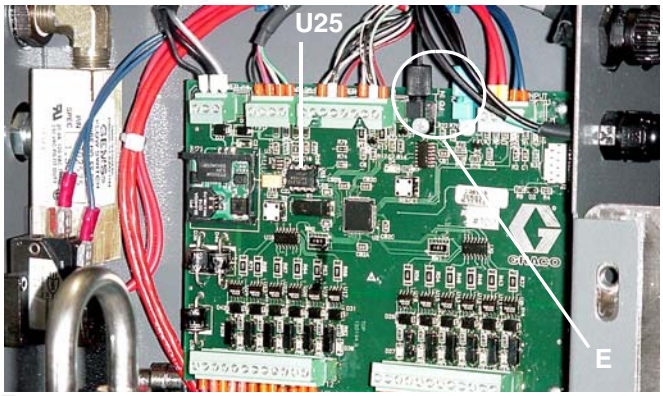


FIG. 16

8. Reassemble Smart Fluid Panel (page 22).
9. Turn EasyKey™ power on to test operation.

Replacing Air Flow or Pressure Switch

The air flow switch (702) detects whether there is atomizing air flow to the gun (gun is triggered).

The pressure switch (717) detects if a gun is in the gun flush box with the box door closed.

1. Follow **Preparation** procedure, page 19, and shut off power at main circuit breaker.
2. **Air Flow Switch (702):** Disconnect wires from connector (V). FIG. 17.

   Pressure Switch (717): Disconnect wires from switch, noting their connection points. FIG. 17.
3. **Air Flow Switch (702):** Unscrew nut from fitting (704a), and remove assembly from enclosure. Remove fittings from air flow switch (702).

   Pressure Switch (717): Unscrew bushing (716) from fitting (704b). Remove bushing from pressure switch (717).
4. Apply pipe thread sealant to new air flow or pressure switch threads and install.
5. Reconnect wires that were disconnected in step 2.

Switch wires are not polarized.

6. Reassemble Smart Fluid Panel (page 22).

Replacing Solenoids

The Smart Fluid Panel has a minimum of 4 solenoids. If you have a color change valve option installed, you have additional (optional) solenoids for each additional color. Refer to **Pneumatic Diagram**, page 30.

To replace a single solenoid.

1. Follow **Preparation** procedure, page 19, and shut off power at main circuit breaker.
2. Disconnect 2 solenoid wires (N) from control board (706). FIG. 17.
3. Unscrew 2 screws (P) and remove solenoid (712).

Solenoid	Actuates
Standard	
1	Dispense Valve A
2	Dispense Valve B
3	Air Purge Valve A
4	Solvent Purge Valve B
Optional	
5	Gun Flush Box Pilot Valve
6	Color Change Solvent Valve
7	Color Change Valve 1
8	Color Change Valve 2
9	Color Change Valve 3
10	Color Change Valve 4
11	Color Change Valve 5
12	Color Change Valve 6

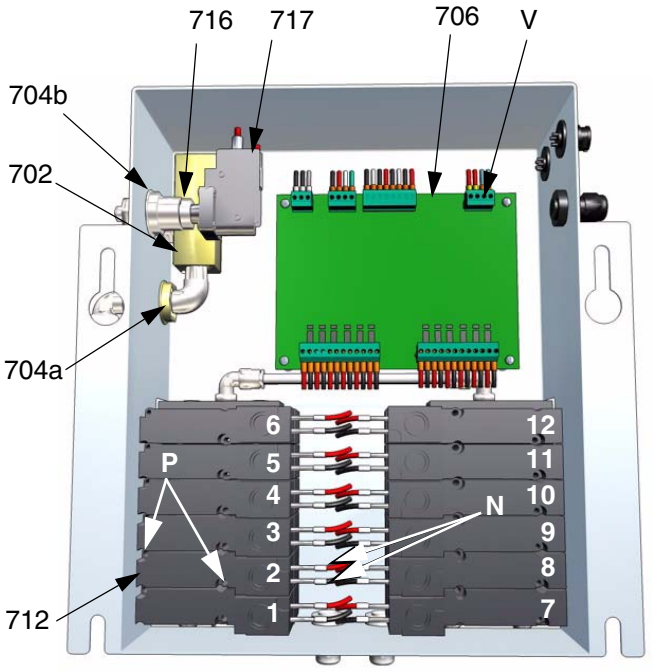


FIG. 17

4. Install new solenoid (712).
5. Connect 2 wires (N) to control board (706). Solenoid wires are polarized (red +, black –). Refer to **ProMix™ II Electrical Schematic**, page 31.
6. Reassemble Smart Fluid Panel (page 22).

Reassemble Smart Fluid Panel

1. Remove screws and slide the panel (14) back into place.
2. Secure the cover (15) and panel (14) with the 4 screws (16). FIG. 18.

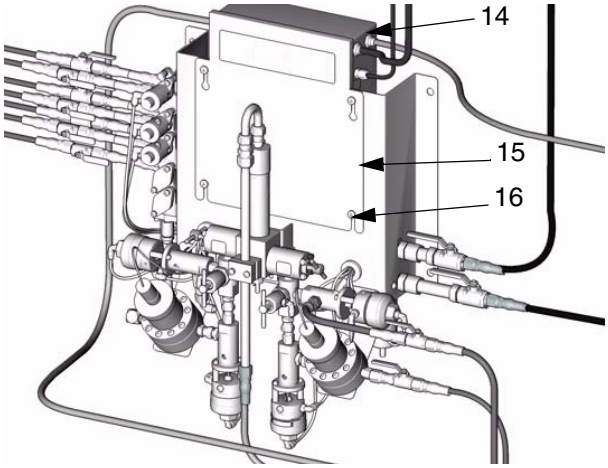


FIG. 18

Servicing Flow Meters

WARNING

Read warnings, page 6.

- **Coriolis Meter:** To remove and service see Coriolis meter manuals.
- **G3000 or G3000H Meter:** To remove, follow procedure below. To service, see meter manual.

G3000 or G3000HR Meter

Removing

1. Follow **Pressure Relief Procedure**, page 8. Make sure you complete step 11.
2. Close main air shutoff valve on air supply line and on ProMix™ II.
3. Shut off ProMix™ II power (0 position).
4. Unscrew cable connector (110) from meter (1). FIG. 20.
5. Unscrew M6 screws (107) from bottom of meter mounting plate (108) with socket wrench. FIG. 19.
6. Unscrew fluid line from meter inlet (P).

The meter shield (R) is unattached and may fall off when you remove the meter (1). FIG. 20.

7. Unscrew meter (1) from dispense valve connector (H). FIG. 20.
8. Service meter as instructed in the meter manual.

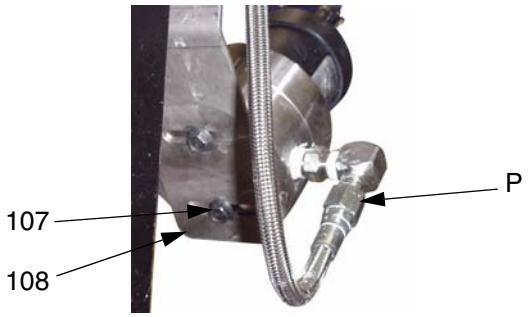


FIG. 19

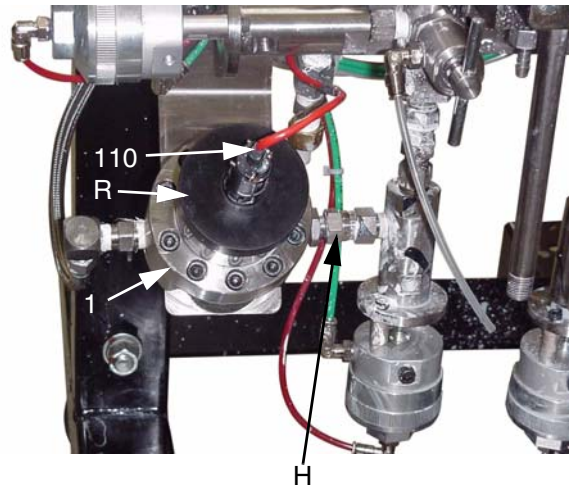


FIG. 20

Installing

9. Screw meter (1) securely onto the dispense valve connector (H), using a wrench.

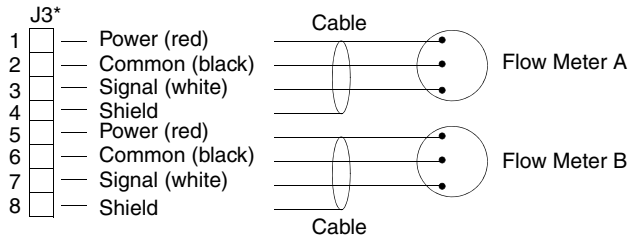
CAUTION
To avoid leakage, secure the meter (1) to the dispense valve connector (H) before connecting it to the plate (108).

10. Secure meter (1) to plate (108) with screws (107).

11. Connect meter cable (110). See FIG. 21.

12. Connect fluid line (P).

13. Calibrate meter as instructed in ProMix™ II Operation manual.



*Connector on Smart Fluid Panel circuit board

FIG. 21: G3000 or G3000HR Cable Schematic

Servicing Fluid Manifold

WARNING

Follow **Pressure Relief Procedure**, page 8, before servicing equipment. Read warnings, page 6.

Removing

1. Follow **Servicing Flow Meters** procedure, steps 1-7, page 22.

2. Disconnect air and fluid lines from the manifold (17).

3. Holding onto the fluid manifold (17), remove the 4 screws (18). To ease screw removal, use a long T-handle Allen wrench.

4. Remove fluid manifold (17).

5. Service fluid manifold as instructed in the Fluid Mix Manifold manual.

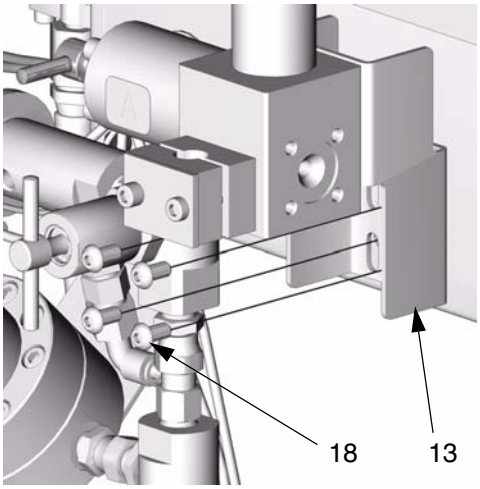
Installing

6. Secure fluid manifold (17) to mounting plate (13) with 4 screws (18).

7. Install meters (1). See steps 9-11, at left.

8. Connect air and fluid lines.

9. Calibrate meter as instructed in ProMix™ II Operation manual.



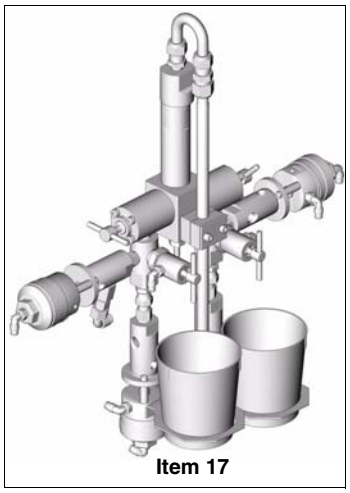


FIG. 22

Servicing Color Change Assembly

WARNING

Read warnings, page 6.

Removing

1. Follow **Pressure Relief Procedure**, page 8.
2. Close main air shutoff valve on air supply line and on ProMix™ II.
3. Shut off ProMix™ II power (0 position).
4. Raise up the panel (14) by following steps 4-5, page 19.
5. Disconnect fluid line (CC) from flow meter A (1).
6. Disconnect air and fluid lines from color change assembly (EE).

Before disconnecting, verify that air and fluid lines are clearly labeled to ease reassembly.

7. Remove mounting plate (DD) screws and color change assembly (EE).

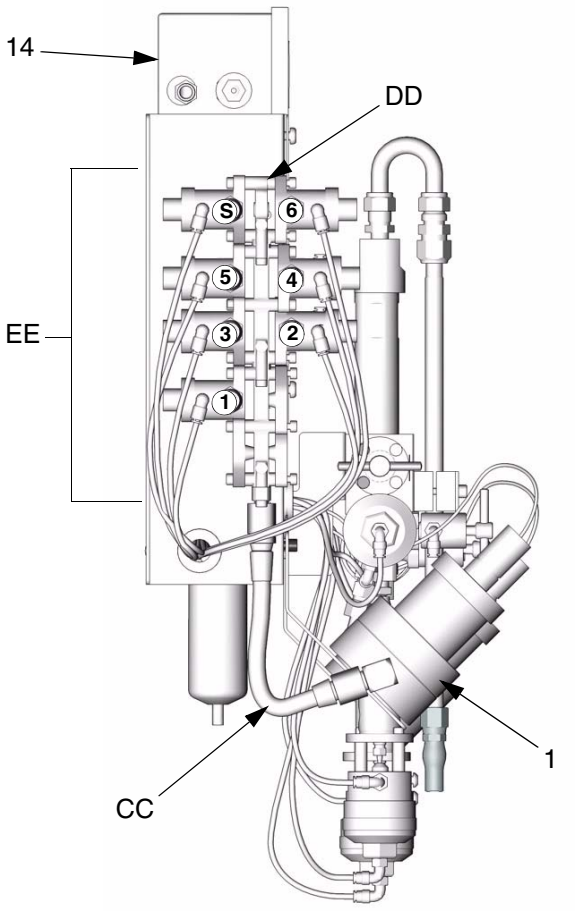
Mounting screws for the low pressure color change assembly are located on the inside panel wall.

8. Service color change valves as instructed in the following manuals:

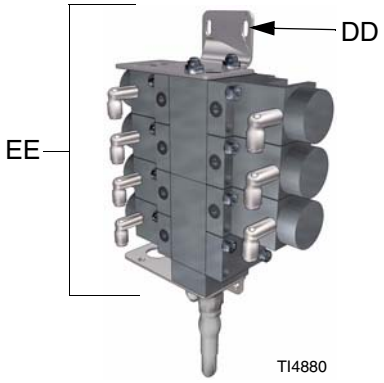
Manual	Description
307731	Color Change Valve Assembly, low pressure
307941	Color Change Valve, low pressure
308977	Color Change Valve Assembly, high pressure
308291	Color Change Valve, high pressure
310656	Color Change Kit

Installing

9. Mount color change assembly to panel wall.
10. Connect air and fluid lines.
11. Reassemble Smart Fluid Panel (page 22).



Low Pressure Color Change



High Pressure Color Change

FIG. 23

Connecting to a PC

You can connect a PC to the EasyKey™ Display to:

- Update ProMix™ II software
- Use the Data Download software, included in Graco ProMix™ II Data Download Kit 234668. This kit can be used to:
  - Update software
  - View
    - ➜ software versions
    - ➜ material usage report
  - Upload
    - ➜ setup values
    - ➜ a custom language to view on screen
  - Download
    - ➜ setup values
    - ➜ job and alarm logs
  - Clear
    - ➜ job and alarm logs
    - ➜ material usage report
  - Reset
    - ➜ factory defaults
    - ➜ password

See Data Download Kit manual for further information.

Connect Cable 118342

Connect RS-232 cable 118342 between the EasyKey™ Display connector (A) and your PC COM1 port. See FIG. 24.

The software is designed for COM1 cable connection. If a COM1 port is not available, follow **Changing the Serial Port** instructions, below.

If a serial port is not available, use an USB to Serial Port Adapter.

Changing the Serial Port

1. After installing the software, start the Setup program by double clicking on the ProMixII Setup desktop icon or select the Setup program from the Start menu (Start > Programs > Graco > ProMixII Setup).
2. Tera Term window opens, showing the current COM port being used.
3. Click Setup > Serial Port.
4. The Serial Port Setup window opens. Click the desired COM port in the Port list.
5. Click OK.
6. Click Setup > Save Setup.
7. Save the file as **teraterm.ini** in the directory C:\Program Files\Graco\Graco ProMixII Log 1.01.

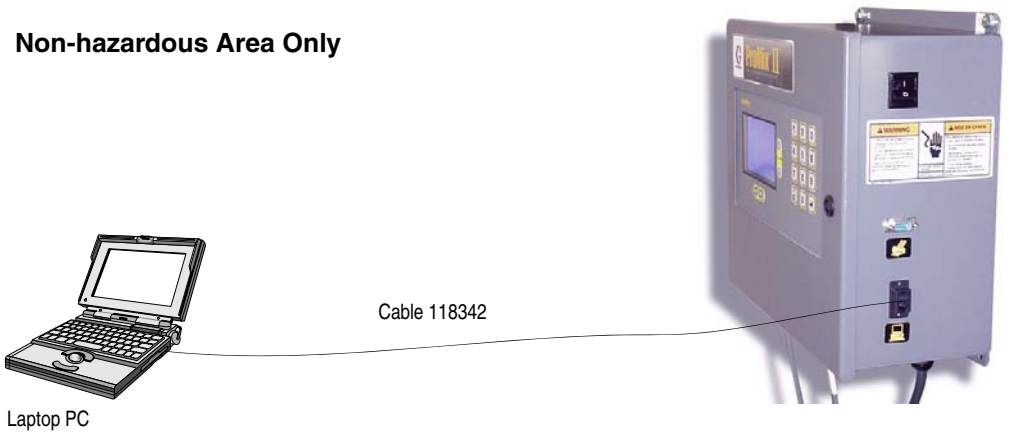


FIG. 24

Updating Software

Updating software will probably not ever be necessary, but if it is, your PC must have terminal emulation software to communicate with the ProMix™ II, for example Hyper Terminal or Tera Term.

HyperTerminal is included with most standard Windows installations.

Tera Term is freeware available at http://hp.vector.co.jp/authors/VA002416/teraterm.html.

Both programs work, but Tera Term is easy to use and has advanced features, such as macro language that can automatically download data from ProMix™ II.

1. Contact your distributor for the latest software file, and save the file to your PC.
2. Start your terminal software and enter communication parameters as shown in **Communication Parameters** table, page 26.

   If Using HyperTerminal

   a. How to start HyperTerminal varies, depending on your PC. In general, click Start > Programs > Accessories > Communications > HyperTerminal.

   b. Enter a name for the new connection. This name will appear on an icon for the connection on your desktop.

   c. Click OK.

   d. From the Connect Using list, click the PC port you connected the cable to.

   e. Click OK.

   f. A dialogue box appears to set communication parameters. Set the parameters as shown in **Communication Parameters** table.

   To access communication settings in the future: in the Hyper Terminal window click File > Properties, then click Configure.

   If Using TeraTerm

   a. Start TeraTerm program.

   b. Click Setup > Serial Port.

Communication Parameters

Tera Term	Hyper Terminal	Value
Connect using	Port	**Desired port in list**
Baud rate	Bits per second	**57600**
Data	Data bits	**8**
Parity	Parity	**None**
Stop	Stop bits	**1**
Flow control	Flow control	**None**

3. To activate the Graco software, press the PC Enter key to start the software update program.
4. The main menu displays. Follow the instructions on your screen. Refer to **Example of Software Update request**, below.

   If the main menu does not display, follow **Software Troubleshooting**, page 29.

Example of Software Update request	Sequence
Welcome to the Graco Control Application Menu Build date: Apr 1 2004 10:17:00. a. Software Update and Version Information b. Data Transfer c. Utility Enter Selection [a-c]: **a**	Main menu appears. Option **a** selected.
a. Install EasyKey Software b. Install Control Software c. Display Software Versions d. Display Entire Flash Checksum e. Return to Main Menu Enter Selection [a-e]: **a** Are you sure? Enter yes to continue:**yes**	 Option **a** selected. **Yes** entered to continue.
*****Welcome to the Graco EasyKey Display Boot Software.***** Version: 1.01.000 Built Apr 1 2004 10:17:00 Warning: you are about to erase your application software. Type 'yes' to continue upgrading software (reboot to cancel). **yes**	Boot software screen appears. **Yes** entered to continue.
Sector 1 erased. Sector 2 erased. Sector 3 erased. Sector 4 erased. Sector 5 erased.	Status screen lists each sector when it is completely erased.
Hyperterminal: Go to (Menu Transfer -> Send Text File) and select * .rec file. Tera Term: Go to (File -> Send File) and select *.rec file.	Instructional information appears.
Downloading (may take up to 5 minutes) 	You must follow preceding instructions for Hyperterminal or Tera Term before downloading begins. Download is in process, when downloading indicator line spins.
Download successful. 5943 records. 190142 bytes. 2046976175 checksum	Download is complete when this message appears.

5. After the EasyKey™ Display software is updated, the Smart Fluid Panel software automatically begins updating. The status screen in FIG. 25 will appear on the EasyKey™ Display. Wait until automatic update is complete.

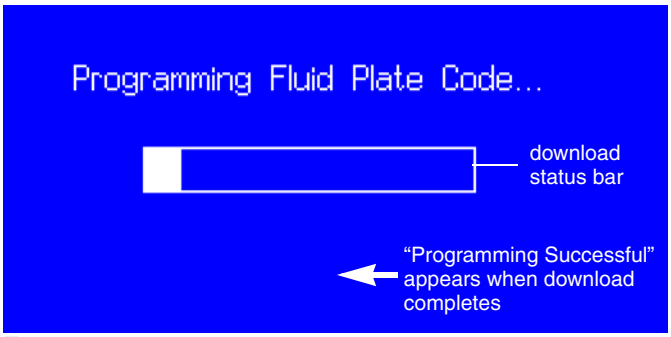


FIG. 25

6. After the update is complete, the EasyKey™ Display automatically reboots and the Graco screen briefly appears. Verify the software versions on the screen are correct.

FIG. 26

7. To verify software versions, go to the Graco software main menu and follow the screen instructions. Refer to **Example of Software Version request**, below.

Example of Software Version request	**Sequence**
Welcome to the Graco Control Application Menu Build date: Apr 1 2004 10:17:00. a. Software Update and Version Information b. Data Transfer c. Utility Enter Selection [a-c]: **a**	Main menu appears. Option **a** selected.
a. Install EasyKey Software b. Install Control Software c. Display Software Versions d. Display Entire Flash Checksum e. Return to Main Menu Enter Selection [a-e]: **c**	 Option **c** selected.
EasyKey Boot: 1.01.000, checksum=d0cac6, built: Apr 1 2004 10:17:00 EasyKey: 1.01.000, checksum=19bb13d, built: Apr 1 2004 10:04:11 Fluid Plate Control: 1.01.000	Software version information appears for EasyKey™ and Smart Fluid Panel
a. Install EasyKey Software b. Install Control Software c. Display Software Versions d. Display Entire Flash Checksum e. Return to Main Menu Enter Selection [a-e]: **e**	 Option **e** selected to return to main menu.

Software Troubleshooting

✓	**If the Control Application Menu does not appear, check the following.**
	Is the ProMix™ II power on?
	Is the cable 118342 and any adapters used fully seated in both the PC and ProMix™ II ports?
	Are any other programs using the same PC communication port as ProMix™ II? Typical communication conflicts occur with fax and handheld computer software. Close or deactivate conflicting software.
	Try switching to another PC communication port.
	If using Hyper Terminal, try closing, then restarting the program. Sometimes new communications parameters do not take affect until the software is restarted.
	Try pressing the PC Enter key multiple times to display the main menu.
	To isolate the problem, try communicating with a different: • PC • RS-232 cable • ProMix™ II system if available

Schematics

Pneumatic Diagram

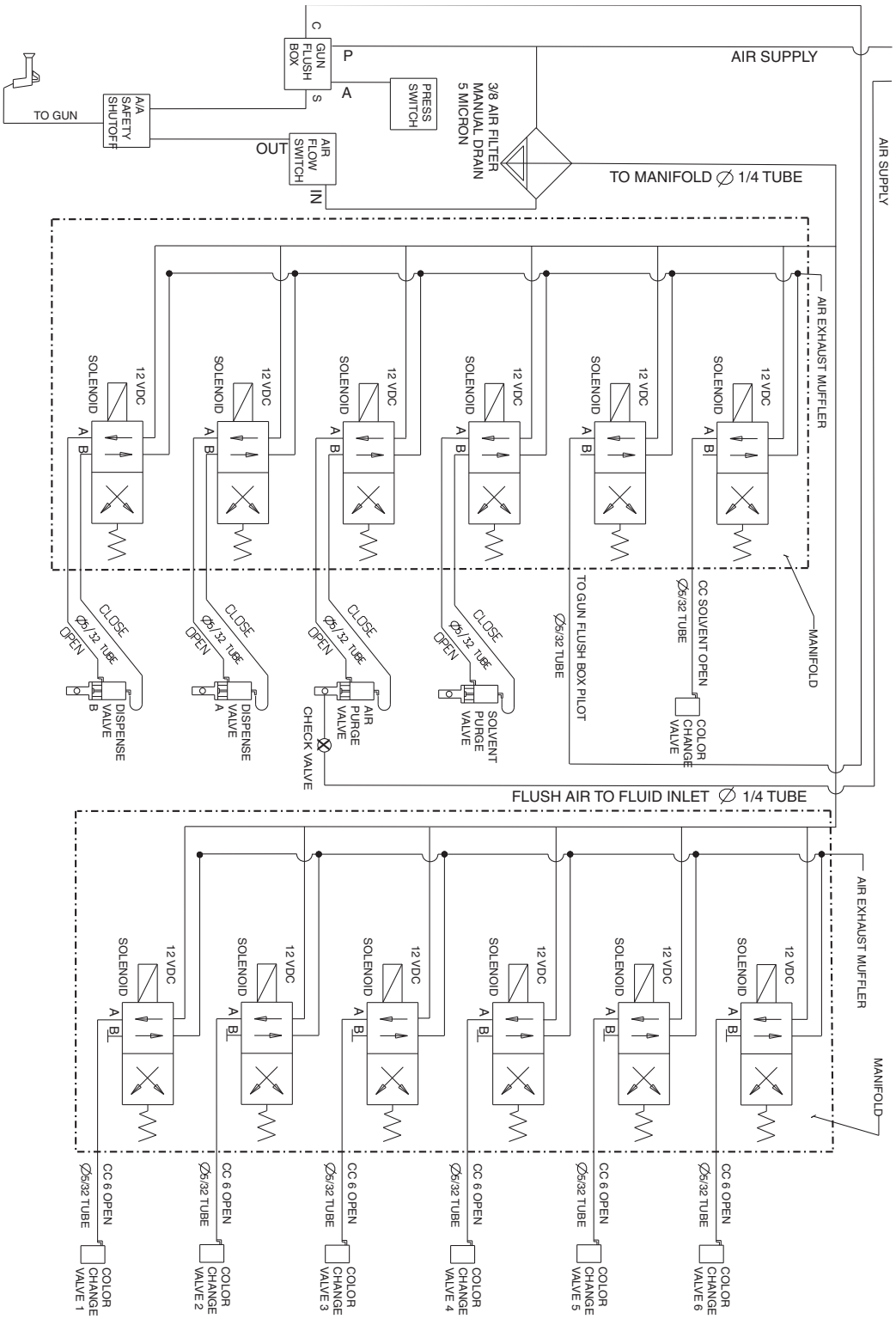
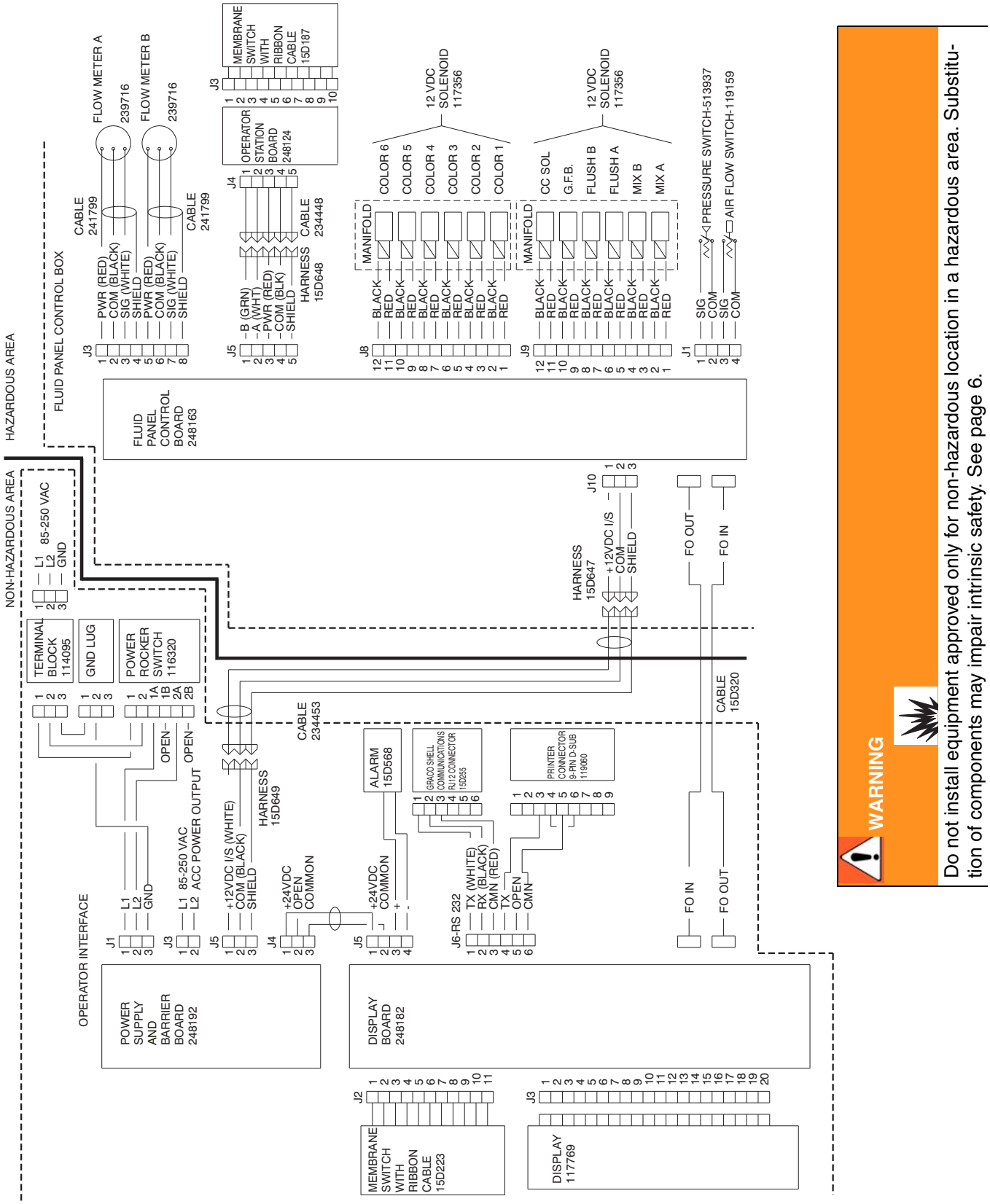


FIG. 27

ProMix™ II Electrical Schematic



WARNING

Do not install equipment approved only for non-hazardous location in a hazardous area. Substitution of components may impair intrinsic safety. See page 6.

FIG. 28

Parts

ProMix™ II Assembly

ProMix™ II Component Options Table				
Ref. No.	**Option**	**Part No.**	**Description**	**Qty.**
1			Flow Meter A Kit	
	0		None	0
	1	234564	G3000; page 34	1
	2	234566	G3000HR; page 34	1
	3	234563	Coriolis; see manual 310696	1
2	0		Flow Meter B Kit	0
	1	234564	G3000; page 34	1
	2	234566	G3000HR; page 34	1
	3	234563	Coriolis; see manual 310696	1
3			Color Change Valve Kit; see manual 310656	
	0		None	0
	1	234568	Low pressure, 2 color	1
	2	234569	Low pressure, 4 color	1
	3	234570	Low pressure, 6 color	1
	4	234572	High pressure, 2 color	1
	5	234573	High pressure, 4 color	1
	6	234574	High pressure, 6 color	1
4			Gun Flush Box; see manual 310695	
	0		None	0
	1	234588	Gun Flush Box	1

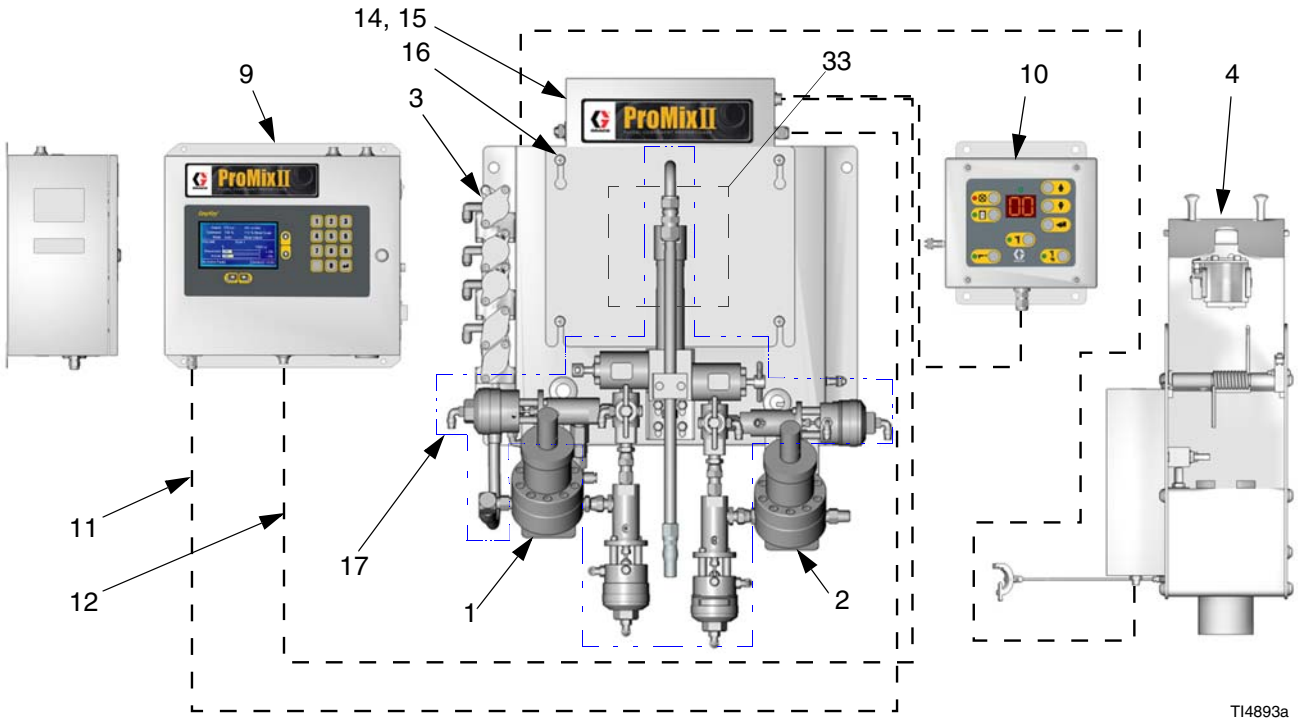
Standard ProMix™ II Parts Table			
Ref. No.	**Part No.**	**Description**	**Qty.**
9	234443	EasyKey™ Display; page 36	1
10	234441	Operator Station; page 35	1
11	15D320	Cable, fiber-optic	1
12	234453	Cable, power	1
13	15D244	Mounting Plate, manifold	1
14	248252	Smart Fluid Panel; page 38	1
15	15D247	Cover	1
16	113783	Screw, machine; 1/4-20 UNC x .5 in.	4
17	248251	Mix Manifold; see manual 310654 for mix manifold and 310655 for fluid valve	1
18	112925	Screw, cap; 1/4-20 UNC x .375 in.	4
19*	114124	Air Filter; 1/8 npt	1
20	119143	Fitting; 3/8 npt x 1/4 in. OD tube	1
21	101765	Grommet	3
22†	054175	Tube, nylon; 1/4 in. OD, 3ft. (.91 m)	**
23	104029	Ground Clamp	1
24	110874	Washer	1
30▲	290331	Warning Label	1
33	15D670	Pneumatic Diagram Label	1
34†	054757	Tube, nylon, green; .156 in. OD, 12 ft. (3.66 m)	**
35†	054754	Tube, nylon, red; .156 in. OD, 12 ft. (3.66 m	**
37†	054134	Tube, nylon; .375 in. OD, 2 ft. (3.66 m)	**
38†	234631	Instruction Manual CD	1
39	223547	Grounding Wire; 25 ft. (7.62 m)	1
40	617569	Reducer; 1/4 to 3/8 in. tube	1
41	104641	Fitting; 3/4-20 UNEF x 1/4 npt	1
42	15E058	Fitting; 1/4 npt x 1/4 in. OD tube	1
43†	15E110	Instruction Card	1

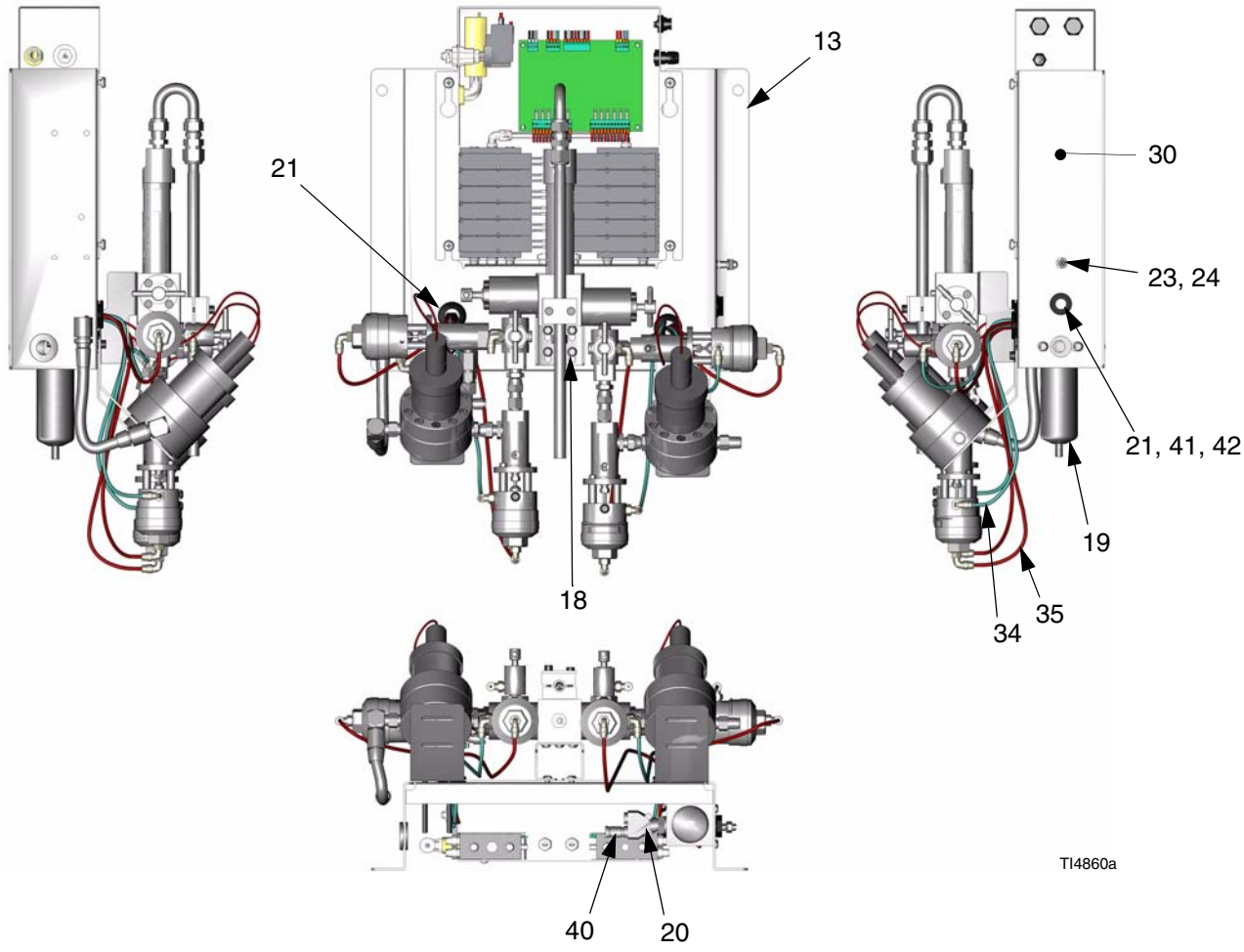
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

* *Replacement element 114228 available.*

† *Not shown*

** *Order length needed.*


14, 15
16
3
9
33
10
4
11
12
17
1
2
TI4893a

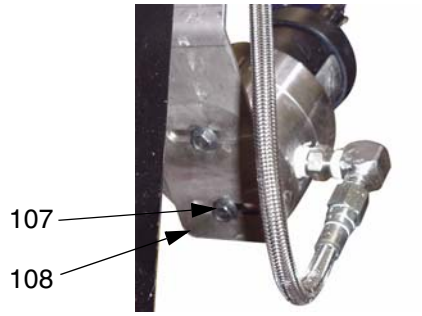

13
21
30
23, 24
21, 41, 42
19
18
34
35
40
20
TI4860a

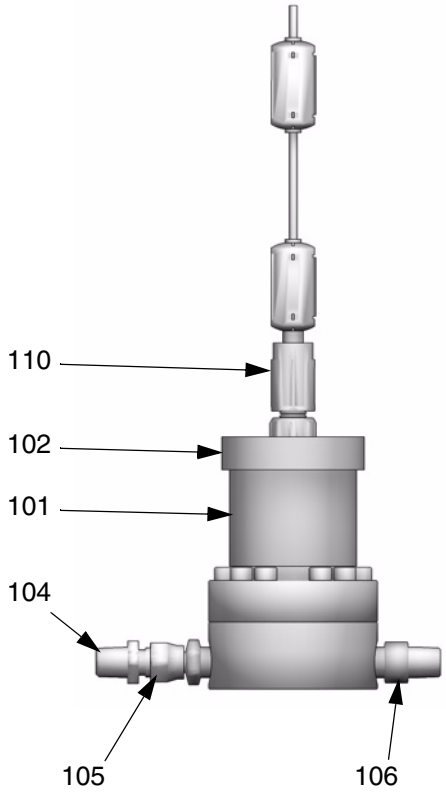
Flow Meter Kits

Part No. 234564, G3000
Part No. 234566, G3000HR

Ref. No.	Part No.	Description	Qty.
101	239716	G3000 Flow Meter, 234564 only; see manual 308778	1
	244292	G3000HR Flow Meter, 234566 only; see manual 308778	1
102	195283	Shield	1
104	166846	Adapter, 1/4 npt x 1/4 npsm	1
105	114339	Swivel Union; 1/4 npt x 1/4 npsm	1
106	501867	Check Valve; 1/4-18 npt	1
107	114182	Screw, machine; M6 x 16	2
108	15D248	Mounting Plate	1
109†	112925	Screw, cap; 1/4-20 UNC x .375 in.	2
110	234628	Cable Assembly; 42 ft. (12.8 m)	1

† *Not shown*





Operator Station

Part No. 234441

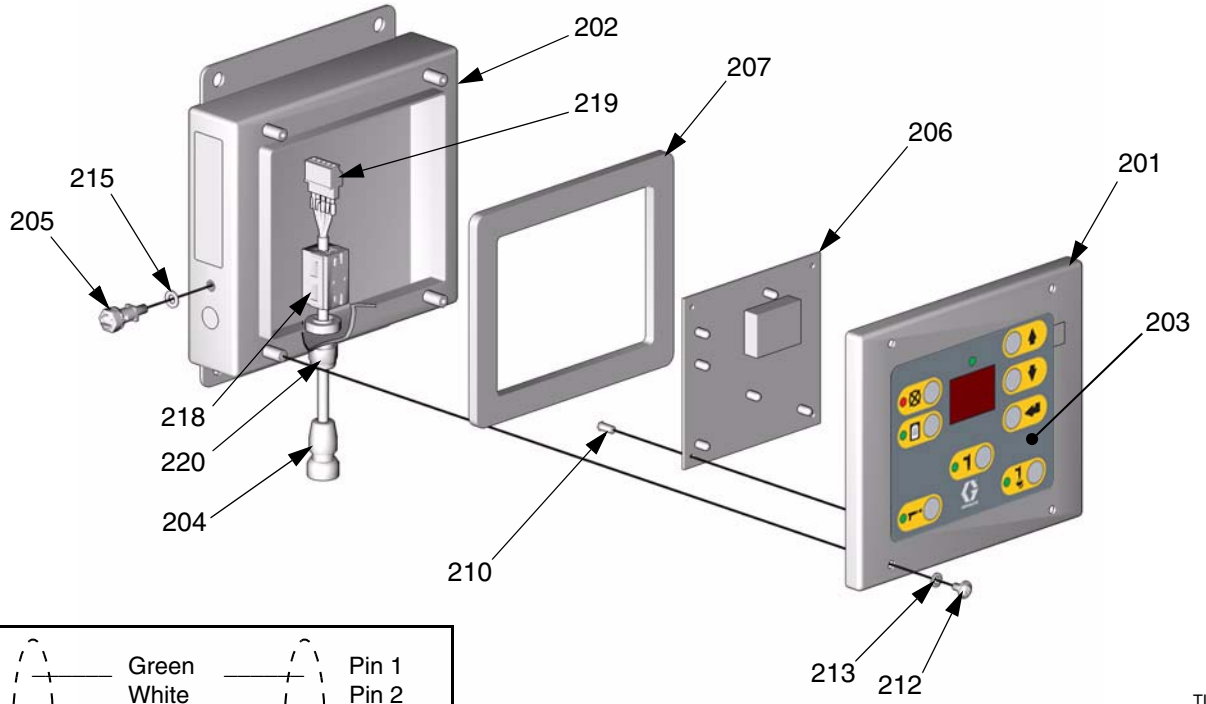
Ref. No.	Part No.	Description	Qty.
201*		Enclosure	1
202*		Cover	1
203	15D187	Keypad Membrane	1
204	234448	Cable	1
205	104029	Ground Clamp	1
206	248124	Circuit Board	1
207	15D432	Gasket	1
210	107388	Screw, machine; 4-40 UNC x .375 in.	4
212	114993	Screw, machine; M4 x .7 x 8	4
213	115322	Lock Washer, 4 mm	4
215	110874	Washer	1
217†	223547	Ground Wire, 25 ft. (7.6 m) (	1
218*		Suppressor	1
219	119248	Connector, 5 position, 3.81 mm	1
220	111987	Connector, strain relief	1

Kit available:

Part No.	Description
15D547	Operator Station Paint Shields, package of 10

† *Not shown.*

* *Not a replacement part.*



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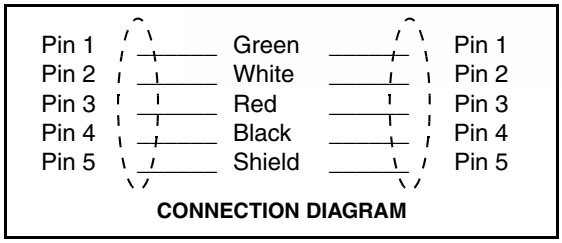


CONNECTION DIAGRAM

EasyKey™ Display

Part No. 234443

Ref. No.	Part No.	Description	Qty.
501*		Enclosure	1
502	15D568	Alarm	1
503▲	118334	Warning Label	1
505	15D255	Jack, RJ12	1
506	116320	Power Switch	1
507	117787	Latch with key; includes 507a	1
507a	117818	• Key	1
508	234447	Display Kit; includes 8a-8e	1
508a	15D223	• Keypad Membrane	1
508b	117769	• Graphic Display	1
508c	248182	• Display Circuit Board	1
508d*		• Plate	1
508e*		• Screw; #4-40 x 1 in.	4
509*		Connector, D-sub solder cup	1
510	111987	Connector, strain relief	1
514	110911	Nut, hex; M5	4
515	111307	Lock Washer; M5	8
518	C19293	Nut, machine hex; 10-32 UNF	6
519	194337	Grounding Wire, door	1
520†	223547	Grounding Wire, unit; 25 ft. (7.6 m)	1
521*		Back Plate; includes 521a-521d	1
521a	255240	• KIT, Circuit Board; includes items 521b-521c	1
521b	15D979	• Fuse, quick acting; 0.4 amp	2
521c	114788	• Fuse, time lag; 2 amp	2
521d*		• Screw, machine; 10-24 UNC x .375 in.	
522*		Harness	1
525*		Suppressor	1

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

† *Not shown.*

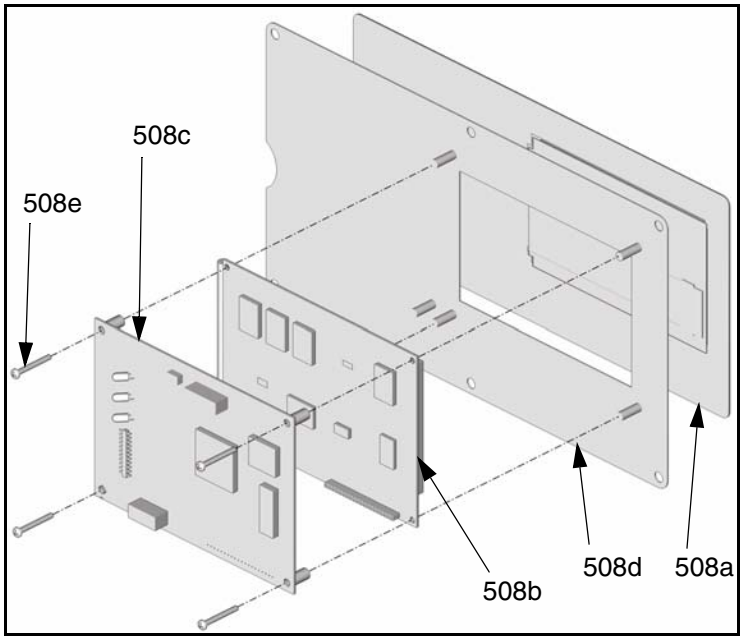
* *Not a replacement part*

Kits available:

Part No.	Description
118337	Backlight Repair Kit
118342	PC Connection RS-232 Cable
197902	EasyKey™ Display Paint Shields, package of 10
234671	ProMix™ II Software Upgrade Kit; includes software chip, chip extractor tool, and grounding wrist strap
234668	ProMix™ II Data Download Kit; includes data download CD and cable 118342
234670	ProMix™ II Printer Kit; includes printer and cables to connect to ProMix™ II. Order appropriate power supply separately.

Power Supply
114442: U.S.
114443: Europe
114444: Japan

Printer Paper Roll 514037
Single roll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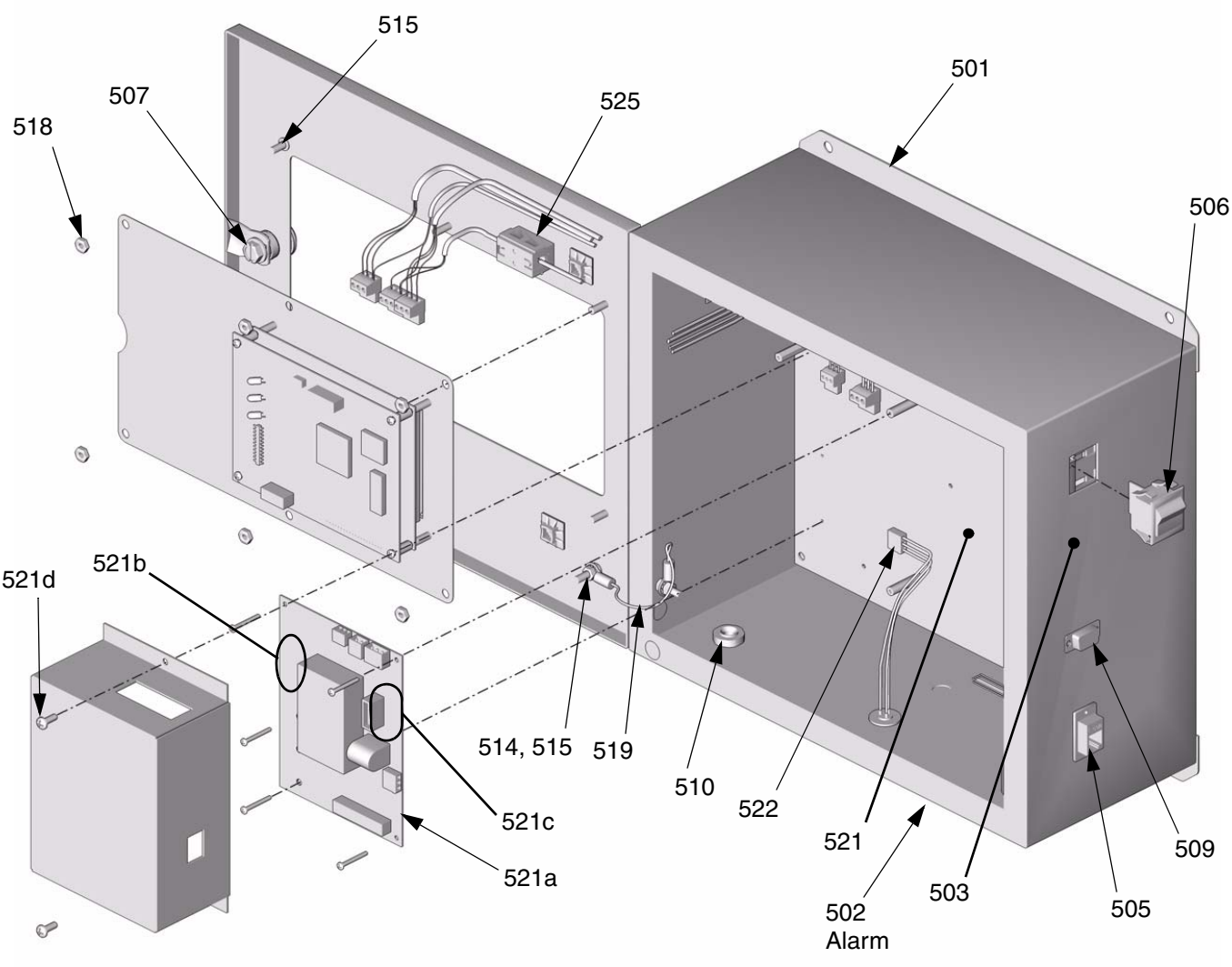
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Alarm

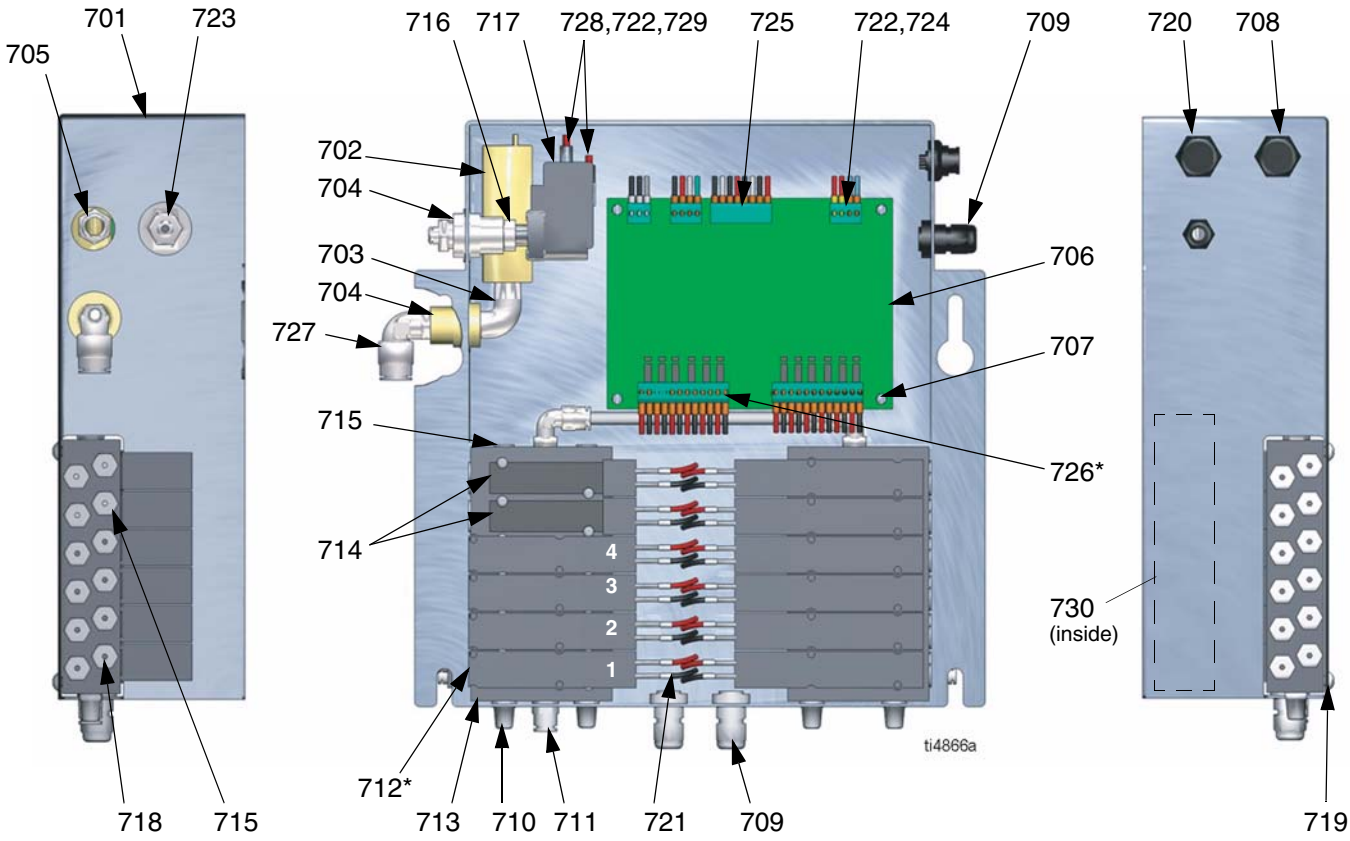
Smart Fluid Panel

Part No. 248252

Ref. No.	Part No.	Description	Qty.
701†		Solenoid Enclosure	1
702	119159	Air Flow Switch	1
703	110249	Elbow, 90 degree; 1/4-18 npt	1
704	104641	Bulkhead Fitting; 3/4-20 UNEF x 1/4-18 npt	2
705	113029	Nipple, 1/4 npt	1
706	248163	Circuit Board	1
707	514023	Screw, 4-40 x .5”	4
708	15D648	Connection Harness	1
709	111987	Connector, strain relief	3
710	C06061	Muffler	2
711	115671	Connector; 1/8 npt x 1/4 in. OD tube	1
712	117356	Solenoid Valve, 12 VDC (IS)	4
713	114230	Solenoid Manifold	1
714	552183	Plate	2
715	100139	Pipe Plug; 1/8 npt	7
716	100030	Bushing; 1/4 npt	1
717	513937	Pressure Switch	1
718	114263	Connector; 1/8 npt x 5/32 in. OD tube	8
719	114669	Screw, machine; M5 x 10	2
720	15D647	Connection Harness	1
721	112512	Wire Ferrule, orange	8
722	112514	Wire Ferrule, AWG-18	4
723	15D916	Fitting, straight; 1/4 npt x 5/32 in. OD tube	1
724	116772	Connector, 4 position, 3.81 mm	1
725	119163	Connector, 8 position, 3.81 mm	1
726	117369	Connector, 11 position, 3.81 mm	1
727	115841	Elbow; 1/4 npt x 3/8 in. OD tube	1
728	514019	Terminal Connector	2
729	065145	Copper Wire	**
730	15D579	Solenoid Connection Label	1

† *Not a replacement part.*

** *Order length needed.*



* Only solenoid 1-4 (712) and one connector (726) are included. Other solenoids/connector are included with an optional color change kit.

Technical Data

Maximum fluid working pressure	see page 4
Maximum working air pressure	100 psi (0.7 MPa, 7 bar)
Air supply	75–100 psi (0.5–0.7 MPa, 5.2–7 bar)
Air filtration	10 micron (minimum) filtration required
Mixing ratio range	0.1:1–30:1*
On-ratio accuracy	up to ± 1%, user selectable
Fluids handled	one or two component: • solvent and waterborne paints • polyurethanes • epoxies • acid catalyzed varnishes • moisture sensitive isocyanates
Viscosity range of fluid	20–5000 cps*
Fluid filtration	100 mesh minimum
Fluid flow rate range*	
G3000 Meter	75–3000 cc/min. (0.02–0.79 gal./min.)
G3000HR Meter	38–1500 cc/min. (0.01–0.40 gal./min.)
Coriolis Meter	20–3800 cc/min. (0.005–1.00 gal./min.)
External Power Supply Requirements	85–250 Vac, 50/60 Hz, 2 amps maximum draw 15 amp maximum circuit breaker required 8 to 14 AWG power supply wire gauge
Operating temperature range	41–122° F (5–50° C)
Environmental Conditions Rating	Indoor use, Pollution degree (2). Installation category II.
Noise Level	
Sound pressure level	below 70 dBA
Sound power level	below 85 dBA
Wetted parts	303, 304 SST, 17–4 SST, Tungsten carbide (with nickel binder), perfluoroelastomer; PTFE; CV75
Weight	
Base System Total (no meters color change valves or gun flush box)	66.6 lbs (30.2 kg)
EasyKey™ Display	22.2 lbs (10.1 kg)
Smart Fluid Panel (no meters)	41.3 lbs (18.7 kg)
Operator Station	3.3 lbs (1.5 kg)
Optional Components	
G3000/G3000HR Flow Meter	6 lbs. (2.7 kg) each
Coriolis Flow Meter	33 lbs. (15 kg) each
Low Pressure Color Change Stack (6 color)	3.0 lbs (1.4 kg)
High Pressure Color Change Stack (6 color)	11.0 lbs (5.0 kg)
Gun Flush Box	22 lbs. (9.6 kg)

* Dependent on programmed K-factor and application. The ProMix™ II maximum allowable flow meter pulse frequency is 425 Hz (pulses/sec.). For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

See individual component manuals for additional technical data.

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 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.

FOR GRACO CANADA CUSTOMERS

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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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Graco reserves the right to make changes at any time without notice.

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Graco Headquarters: Minneapolis
International Offices: Belgium, Korea, China, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441
www.graco.com
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