

# ProMix<sup>®</sup> 2KS

Plural Component Proportioner

312777A

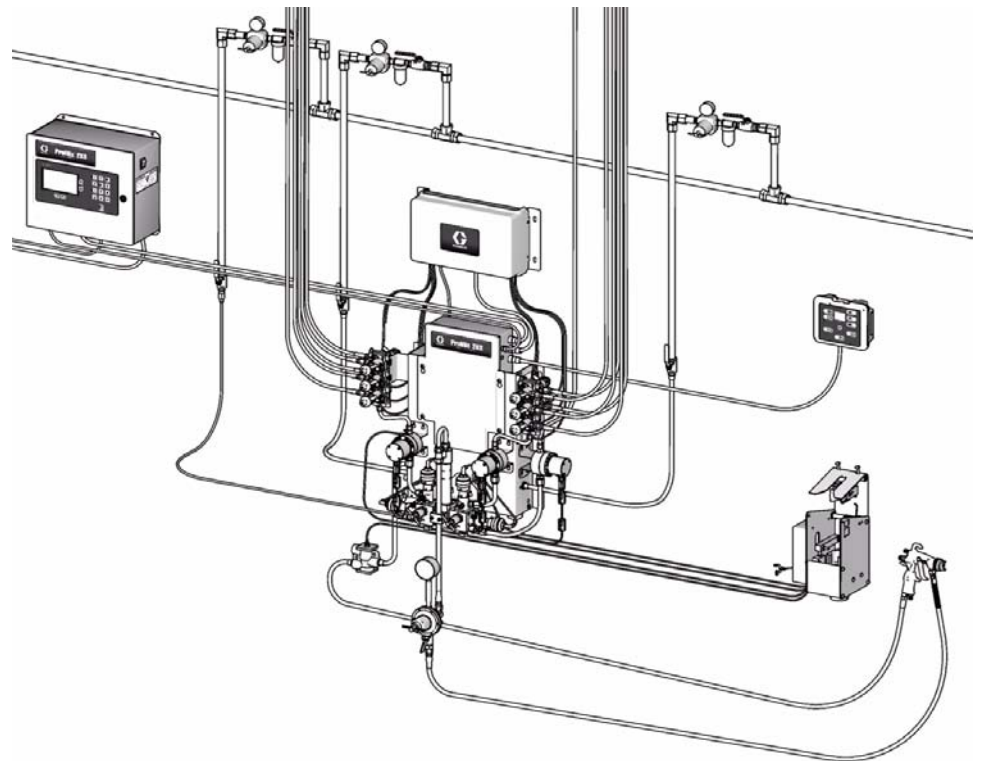
*Manual system for proportional mixing of plural component coatings.*



### Important Safety Instructions

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

See page 4 for model information, including maximum working pressure and approvals. Some components shown are not included with all systems.



T112504a



# Contents

<b>Related Manuals</b> .....	<b>3</b>	<b>Service</b> .....	<b>26</b>
<b>System Configuration and Part Numbers</b> .....	<b>4</b>	Before Servicing .....	26
Configurator Key .....	4	After Servicing .....	26
Standard Features .....	5	Servicing EasyKey .....	27
Available Accessories .....	5	Replacing Air Filter Element .....	31
<b>Warnings</b> .....	<b>6</b>	Wall Mount Fluid Station .....	31
<b>Grounding</b> .....	<b>8</b>	Servicing Flow Meters .....	35
<b>Check Resistance</b> .....	<b>8</b>	Servicing Fluid Manifold .....	36
<b>Pressure Relief Procedure</b> .....	<b>8</b>	Servicing Color Change Module and Valves ...	36
<b>Troubleshooting</b> .....	<b>11</b>	<b>Parts</b> .....	<b>37</b>
Alarm Codes .....	11	Configurator Key .....	37
Solenoid Troubleshooting .....	12	ProMix 2KS Manual System .....	38
EasyKey Barrier Board .....	15	EasyKey Controls .....	40
EasyKey Display Board .....	16	256533 Wall Mount Fluid Station .....	44
Fluid Station Control Board Diagnostics .....	18	Color Change Accessory Kits .....	46
Booth Control Troubleshooting .....	20	<b>Technical Data</b> .....	<b>47</b>
<b>Schematic Diagrams</b> .....	<b>22</b>	<b>Graco Standard Warranty</b> .....	<b>48</b>
System Pneumatic Schematic .....	22	<b>Graco Information</b> .....	<b>48</b>
EasyKey Electrical Schematic .....	23		
System Electrical Schematic .....	24		

# Related Manuals

## Component Manuals in English

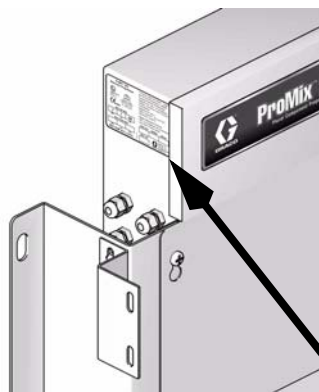
Manual	Description
312775	ProMix 2KS Manual System Installation
312776	ProMix 2KS Manual System Operation
312781	Fluid Mix Manifold
312782	Dispense Valve
312783	Color Change Valve Stacks
312787	Color Change Module Kit
312784	Gun Flush Box Kits
310745	Gun Air Shutoff Kit
312786	Dump Valve and Third Purge Valve Kits
312785	Network Communication Kits
308778	G3000/G3000HR Flow Meter
310696	Coriolis Flow Meter
313212	Gun Flush Box Integration Kit
313290	Floor Stand Kit
313386	Basic Web Interface/Advanced Web Interface

# System Configuration and Part Numbers

## Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See FIG. 1 for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system.

Manual System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Applicator Handling
M	D = EasyKey with LCD Display E = Additional Fluid Station Control Box, No LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure) 5 = Two Valves (high pressure) 6 = Four Valves (high pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Two Valves (high pressure)	1 = One Air Flow Switch Kit 2 = Two Air Flow Switch Kits 3 = One Gun Flush Box Kit 4 = Two Gun Flush Box Kits



**Label Location on Fluid Station**

T112423a



**Label Location on EasyKey**

T112418a

Maximum Fluid Working Pressure is listed here

**ProMix™ 2KS**  
Electronic Proportioner

**Ex**  
FM08ATEX0073  
II 2 G  
Ex Ia IIA T3

**CE** 0359

**C FM US**  
APPROVED  
Intrinsically safe  
equipment for Class I,  
Div 1, Group D, T3  
Ta = -20°C to 50°C

Intrinsically Safe (IS) System. Install per IS Control Drawing No. 289833. EasyKey Interface IS Associated Apparatus for use in non hazardous location, with IS Connection to Smart Fluid Plate IS Apparatus for use in: Class I, Division 1, Group D T3 C Hazardous Locations

Read Instruction Manual  
Warning: Substitution of components may impair intrinsic safety.

<b>MAX AIR WPR</b>		
.7	7	100
MPa	bar	PSI

<b>MAX FLUID WPR</b>		
MPa	bar	PSI

<b>PART NO.</b>	<b>SERIES</b>	<b>SERIAL</b>

← **Configured Part Number**

<b>MFG. YR.</b>	<b>GRACO INC.</b> P.O. Box 1441 Minneapolis, MN 55440 U.S.A.

Artwork No. T112421a

**FIG. 1: Identification Label**

<b>Hazardous Location Approval</b>	
Models using a G3000, G3000HR, or intrinsically safe Coriolis meter for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3. See FIG. 1.	
<b>Maximum Working Pressure</b>	
Maximum working pressure rating is dependent on the fluid component options selected. <b>The pressure rating is based on the rating of the lowest rated fluid manifold component.</b> Refer to the component pressure ratings below. <i>Example:</i> Model MD2531 has a maximum working pressure of 3000 psi (21 MPa, 210 bar).	
<b>Check the identification label on the EasyKey or fluid station for the system maximum working pressure. See FIG. 1.</b>	
<b>ProMix Fluid Manifold Components Maximum Working Pressure</b>	
Base System (no meters [option 0], no color/catalyst change [option 0]) . . . . .	4000 psi (27.58 MPa, 275.8 bar)
Meter Option 1 and 2 (G3000 or G3000HR) . . . . .	4000 psi (27.58 MPa, 275.8 bar)
Meter Option 3, 4, 5, 6, and 7 (one or two Coriolis Meters) . . . . .	2300 psi (15.86 MPa, 158.6 bar)
Color Change Option 1, 2, 3 and 4 and Catalyst Change Option 1 and 2 (low pressure valves) . . . . .	300 psi (2.07 MPa, 20.6 bar)
Color Change Option 5 and 6 and Catalyst Change Option 3 (high pressure valves) . . . . .	3000 psi (21 MPa, 210 bar)
<b>Flow Meter Fluid Flow Rate Range</b>	
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.)

## Standard Features






Feature	MD Models	ME Models
EasyKey with LCD	✓	
EasyKey without LCD		✓
RS 485 Network Cable, 50 ft (15.25 m)		✓
Fiber Optic and Power Cables, 50 ft (15.25 m)	✓	✓
Wall Mount Fluid Station, 50 cc Integrator and Static Mixer	✓	✓
B Side Dump Valve, if catalyst valve(s) is selected	✓	✓
Booth Control	✓	✓
Basic Web Interface	✓	✓

## Available Accessories

Accessory	MD Models	ME Models
A Side Dump Valve	✓	✓
Third Purge Valve	✓	✓
Communication	✓	✓
Solvent Flow Verification (Meter/Switch)	✓	✓
Gun Flush Box Gun Insert Selection	✓	✓
0 cc Integrator	✓	✓
10 cc Integrator	✓	✓
25 cc Integrator	✓	✓
Strobe Light Alarm Indicator	✓	✓
Advanced Web Interface	✓	✓

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>ELECTRIC SHOCK HAZARD</b></p> <p>Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> <li>• Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.</li> <li>• Connect only to grounded power source.</li> <li>• All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</li> </ul>
	<p><b>INTRINSIC SAFETY</b></p> <p>Only models with a G3000, G250, G3000HR, G250HR, or intrinsically safe Coriolis meter for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T2 C. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Do not install equipment approved only for a non-hazardous location in a hazardous area. See the ID label for the intrinsic safety rating of your model.</li> <li>• Do not substitute system components as this may impair intrinsic safety.</li> </ul>
	<p><b>SKIN INJECTION HAZARD</b></p> <p>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. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>

 **WARNING**
**EQUIPMENT MISUSE HAZARD**

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical 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. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

**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.
- Always wear impervious gloves when spraying or cleaning equipment.

**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

# Grounding

Your system must be grounded. See the Grounding instructions in your ProMix 2KS Installation manual.						

# Check Resistance

To ensure proper grounding, resistance between Pro-Mix components and true earth ground <b>must</b> be less than 1 ohm. Read <b>Warnings</b> , page 6.						

Have a qualified electrician check resistance between each ProMix component and true earth ground. If resistance is greater than 1 ohm, a different ground site may be required. Do not operate the system until the problem is corrected.

# Pressure Relief Procedure

Follow Pressure Relief Procedure when you stop spraying, before changing spray tips, and before cleaning, checking, or servicing equipment. Read <b>Warnings</b> , page 6.						

1. Engage the trigger lock (if present).

2. Press the Standby key on the Booth Control.

3. Shut off air at the spray gun.

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 the Mix key on the Booth Control.

6. Disengage the trigger lock (if present).

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





8. Engage the trigger lock (if present).

9. Press the Standby key on the Booth Control.

*Continued on page 9.*



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.

						
Pressure upstream of component A and B dose valves may not be fully relieved.						

- a. Close the component B shutoff valve.
  - b. See FIG. 2. Press the manual override on the Dose Valve B solenoid valve and hold it while opening the component B sampling valve.
  - c. Press the manual override on the Purge Valve B solenoid valve and hold it while opening the component B sampling valve.
11. Before servicing or disconnecting flow meters, color change valves, or other components between the fluid supply shut off valves and dose valves A and B, **very slowly** loosen meter swivel fitting to relieve pressure gradually.
  12. After returning to service, flush the sampling valves. See the ProMix 2KS Operation manual for instructions.



# Troubleshooting

						
Follow <b>Pressure Relief Procedure</b> , page 8, before cleaning, checking, or servicing equipment.						

<b>NOTICE</b>
Do not use the fluid in the line that was dispensed off ratio as it may not cure properly.

## Alarm Codes

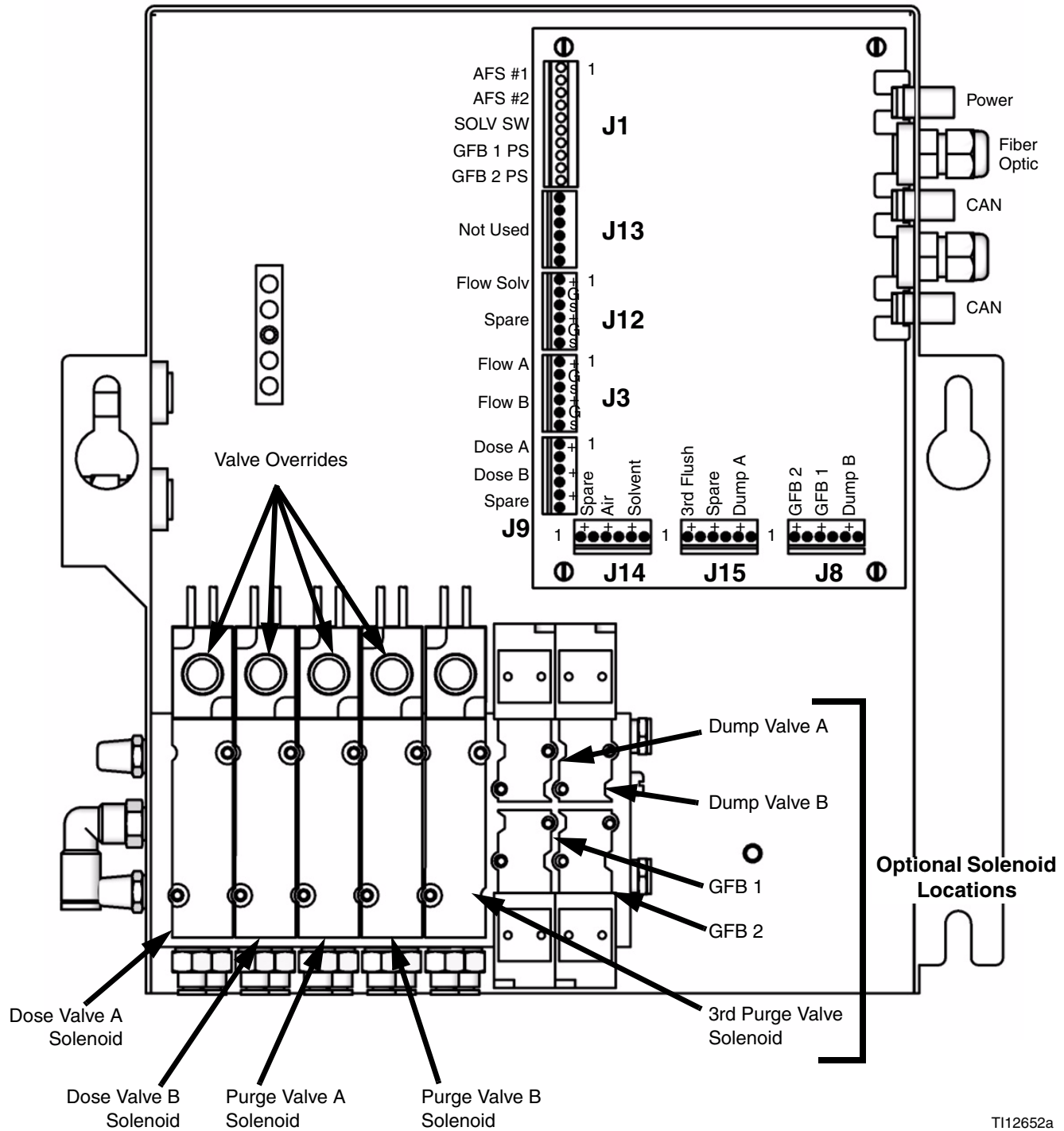
Table 1 lists the system alarm codes. See the system operation manual for complete information on alarm troubleshooting.

**Table 1: System Alarm Codes**

Code	Description
E-1	Communication Error Alarm
E-2	Potlife Alarm
E-3	Ratio High Alarm
E-4	Ratio Low Alarm
E-5	Overdose A Alarm
E-6	Overdose B Alarm
E-7	Dose Time A Alarm
E-8	Dose Time B Alarm
E-9	Mix in Setup Alarm
E-10	Remote Stop Alarm
E-11	Purge Volume Alarm
E-12	Color Change Communication Error Alarm
E-13	High Flow Alarm
E-14	Low Flow Alarm
E-15	System Idle Warning
E-16	Setup Change Warning
E-17	Power On Warning
E-18	Defaults Loaded Warning
E-20	Purge Initiate Alarm
E-21	Material Fill Alarm
E-22	Tank A Low Alarm
E-23	Tank B Low Alarm
E-24	Tank S Low Alarm
E-25	Auto Dump Complete Alarm
E-26	Color/Catalyst Purge Alarm
E-27	Color/Catalyst Fill Alarm

# Solenoid Troubleshooting

**NOTE:** Refer to the **Schematic Diagrams**, page 22.



**FIG. 2: Fluid Station Board and Solenoids**

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

**Table 2: Solenoid Troubleshooting**

Cause	Solution
Air regulator pressure set too high or too low.	Check air pressure. 80-90 psi (550-630 kPa, 5.5-6.3 bar) is commonly used. Do not go below 70 psi (490 kPa, 4.9 bar) or above 120 psi (0.8 MPa, 8 bar),
Air or electrical lines damaged or connections loose.	Visually inspect air and electrical lines for kinks, damage, or loose connections. Service as needed.
Solenoid failure.	<p>Manually operate the valves by removing the Fluid Station cover and pressing and releasing solenoid valve override buttons. FIG. 2.</p> <p>Use the control board diagnostics to check the signals. If signals do not occur correctly, go to Cause .</p> <p>Valves should snap open and shut quickly. If the valves actuate slowly, it could be caused by:</p> <ul style="list-style-type: none"> <li>• Air pressure to the valve actuators is too low. See Cause .</li> <li>• Solenoid is clogged. Make sure air supply has 10 micron filter installed.</li> <li>• Something is restricting the solenoid or tubing. Check for air output from air line for corresponding solenoid when valve is actuated. Clear restriction.</li> <li>• A dose valve is turned in too far. See ProMix Operation manual for settings,</li> <li>• Fluid pressure is high and air pressure is low.</li> </ul>
Solenoid, cable, or fluid station control board failure.	<p>Check voltage level to solenoid by pulling solenoid connector and checking voltage between pins.</p> <p>If voltage is 9-15 VDC, the solenoid is damaged. Replace solenoid or correct electrical line problem.</p> <p>If there is no voltage, replace the board.</p>



# EasyKey Barrier Board

See FIG. 3 and Table 3 to troubleshoot the EasyKey barrier board. Also see the **EasyKey Electrical Schematic** on page 23 and the **System Electrical Schematic** on pages 24 and 25.

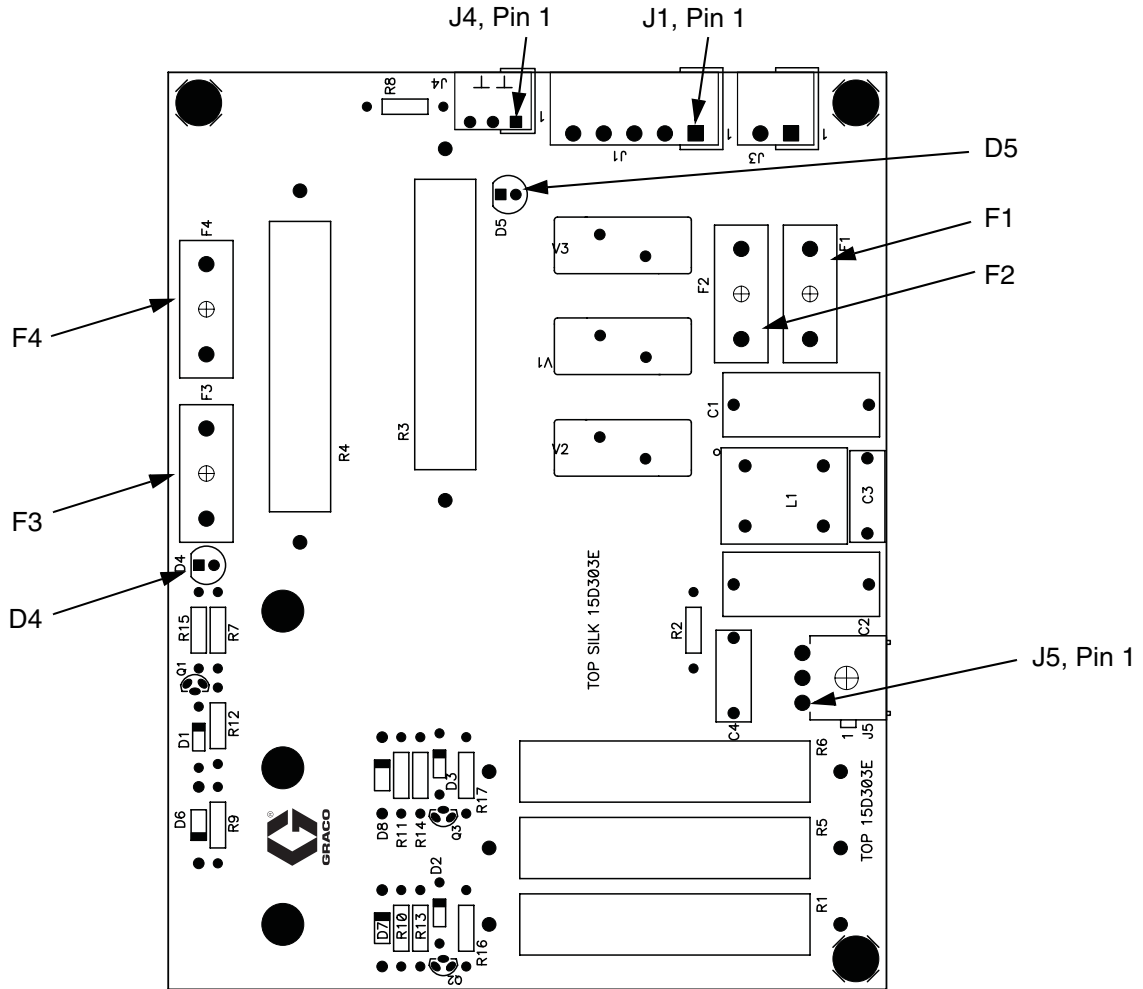


FIG. 3: 255786 EasyKey Barrier Board

Table 3: EasyKey Barrier Board Diagnostics

Connector	Description	Diagnosis
J1	AC Power Input	
J4	24 Vdc Power Input to EasyKey Display Board	D5 turns on.
J5	12 Vdc Power Output to Fluid Station Board	D4 turns on if barrier board is functioning. If D4 does not turn on, fuses F3 or F4 (Graco Part No. 15D979) are blown or there is no input power at J4.  If there is no input power (D5 does not light), fuses F1 and F2 (Graco Part No. 114788) may be blown.

# EasyKey Display Board

See FIG. 4 and Table 4 to troubleshoot the EasyKey barrier board. Also see the **EasyKey Electrical Schematic** on page 23 and the **System Electrical Schematic** on pages 24 and 25.

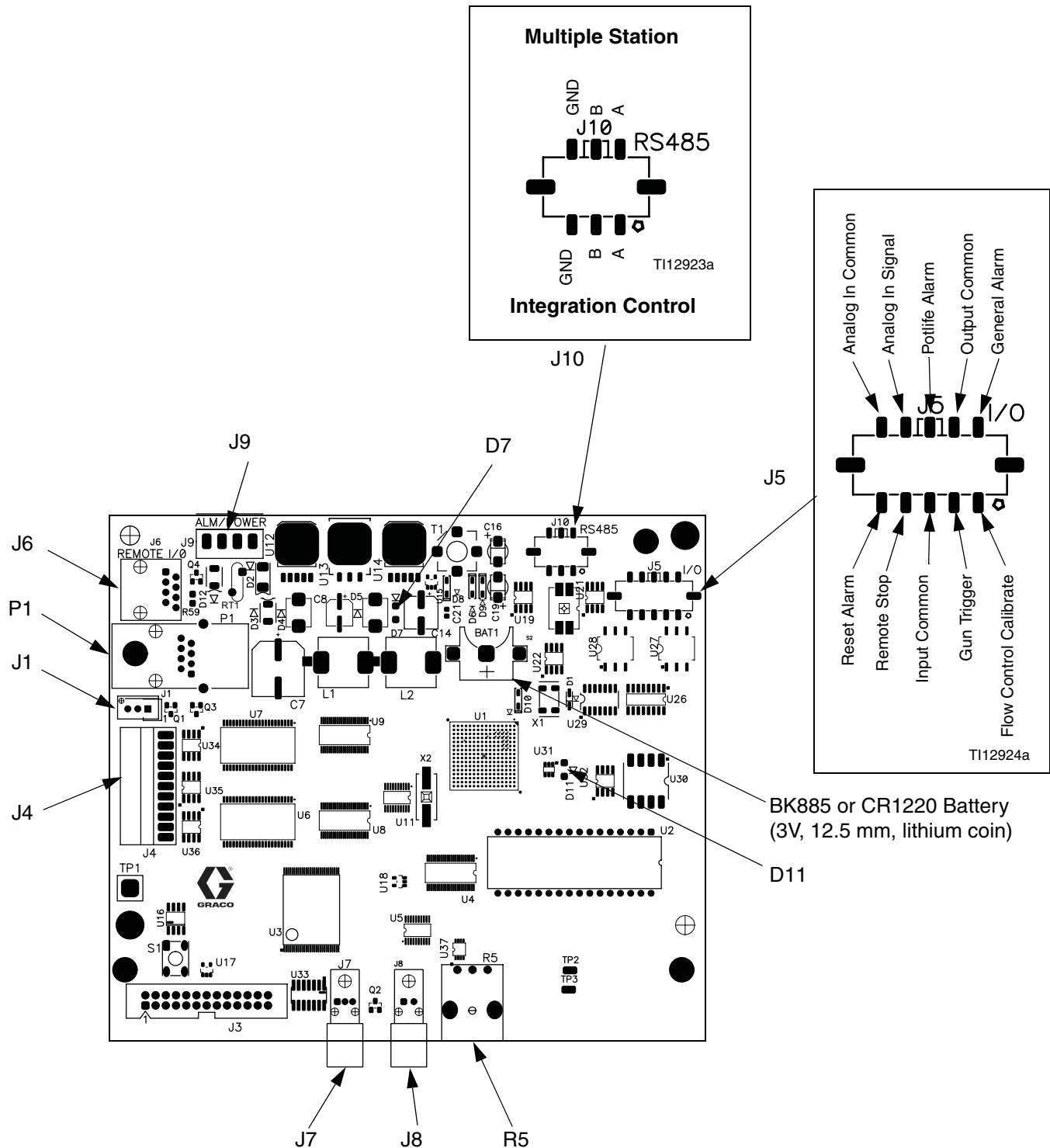


FIG. 4: 255767 EasyKey Display Board



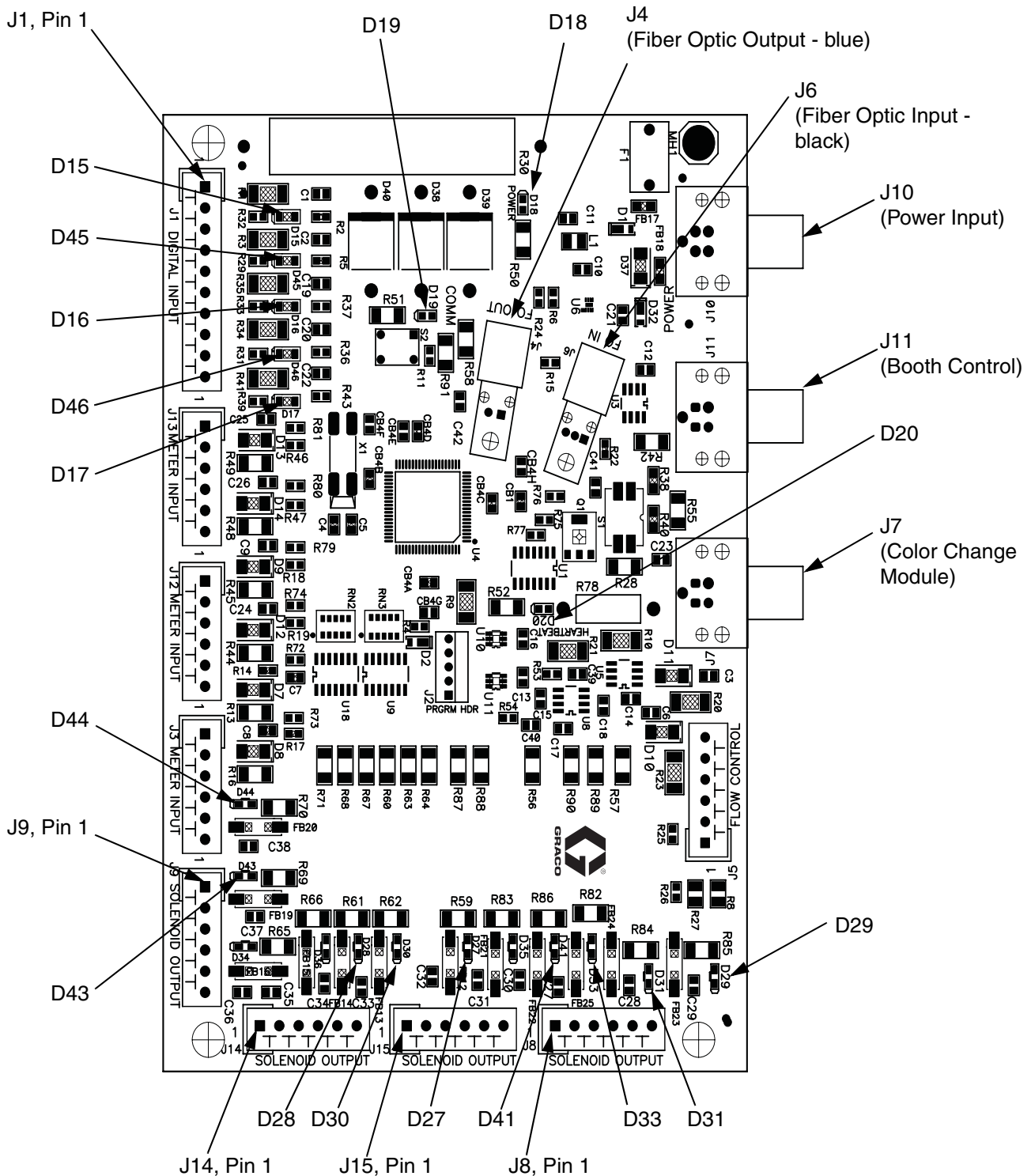
**Table 4: EasyKey Display Board Diagnostics**

Connector/ Indicator	Description
J1	Graphic Display Backlight
J4	Ribbon Cable to Membrane
J5	Inputs and Outputs
J6	Remote I/O
J7	Fiber Optic Cable Input (black)
J8	Fiber Optic Cable Output (blue)

Connector/ Indicator	Description
J9	24 Vdc Power Input/Alarm Output
J10	RS485 Communication Terminals
D7 (green)	LED turns on when power is supplied to board
D11 (yellow)	LED blinks (heartbeat) when board is operating
P1	Ethernet Port
R5	Display Contrast/Dimmer Switch (turn by hand)

# Fluid Station Control Board Diagnostics

See FIG. 5 and Table 5 to troubleshoot the fluid station control board. Also see the **System Electrical Schematic** on pages 24 and 25.



**FIG. 5: 255765 Fluid Station Control Board**

**Table 5: Fluid Station Control Board Diagnostics**

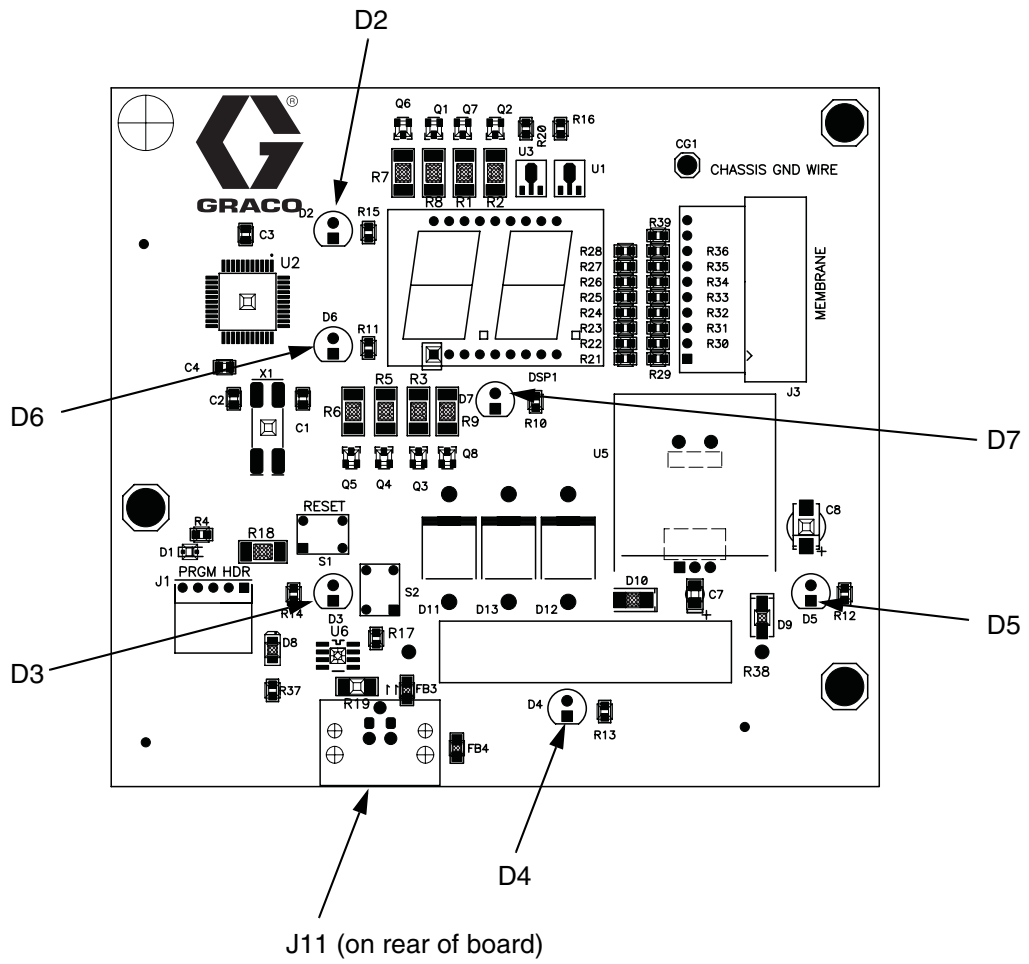
<b>LED</b>	<b>Connector and Pin Nos.</b>	<b>Signal Description</b>	<b>Diagnosis</b>
D15	J1, 1 & 2	Air Flow Switch 1	Turns on when gun 1 is triggered.
D16	J1, 5 & 6	Solvent Flow Switch	Turns on when solvent is flowing.
D17	J1, 9 & 10	Gun Flush Box 2 Pressure Switch	Turns on when a gun is in Gun Flush Box 2.
D18	J10	Power	Turns on when power is supplied to the board.
D19	n/a	Communication (yellow)	Turns on when board is communicating with EasyKey.
D20	n/a	Board OK	Blinks (heartbeat) during normal operation.
D27	J15, 1 & 2	Purge Valve C (Water Purge)	D27 through D44 turn on when ProMix sends a signal to actuate the related solenoid valve.
D28	J14, 3 & 4	Purge Valve A (Air Purge)	
D29	J8, 5 & 6	Dump Valve B	
D30	J14, 5 & 6	Purge Valve B (Solvent Purge)	
D31	J8, 1 & 2	Gun Flush Box 1 Trigger	
D33	J8, 3 & 4	Gun Flush Box 2 Trigger	
D41	J15, 5 & 6	Dump Valve A	
D43	J9, 3 & 4	Dose Valve B	
D44	J9, 1 & 2	Dose Valve A	
D45	J1, 3 & 4	Air Flow Switch 2	Turns on when gun 2 is triggered.
D46	J1, 7 & 8	Gun Flush Box 1 Pressure Switch	Turns on when a gun is in Gun Flush Box 1.

## Booth Control Troubleshooting

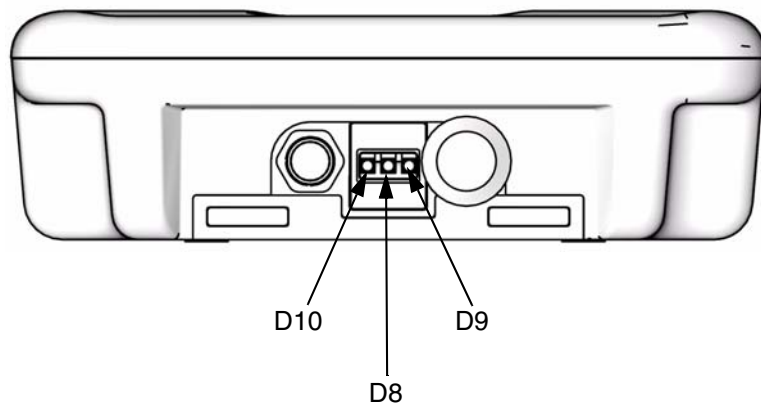
See FIG. 6 and Table 6 to troubleshoot the fluid station control board. Also see the **System Electrical Schematic** on pages 24 and 25.

**Table 6: Booth Control Board Diagnostics**

LED	Description	Diagnosis
D2	Alarm Reset Indicator (red)	LED blinks when an alarm occurs and turns off after alarm is reset.
D3	Mix Indicator (green)	LED turns on when in Mix mode.
D4	Standby Indicator (green)	LED turns on when in Standby mode.
D5	Purge Indicator (green)	LED blinks during purge sequence and turns solid when purge is complete. LED turns off when another mode is started.
D6	Job Complete Indicator (green)	LED blinks once after key is pressed, signalling that job is complete, and A and B totalizers are reset.
D7	Recipe Indicator (green)	LED turns on when a recipe is in use, and shuts off when a new recipe is being selected or if an alarm occurs.  LED blinks when a new recipe is loading and turns solid after loading is complete.
D8	Board OK (green)	Blinks (heartbeat) during normal operation.
D9	Communication (yellow)	Turns on when board is communicating with EasyKey.
D10	Power (green)	Turns on when power is supplied to the board (J11).



**Bottom View of Booth Control**

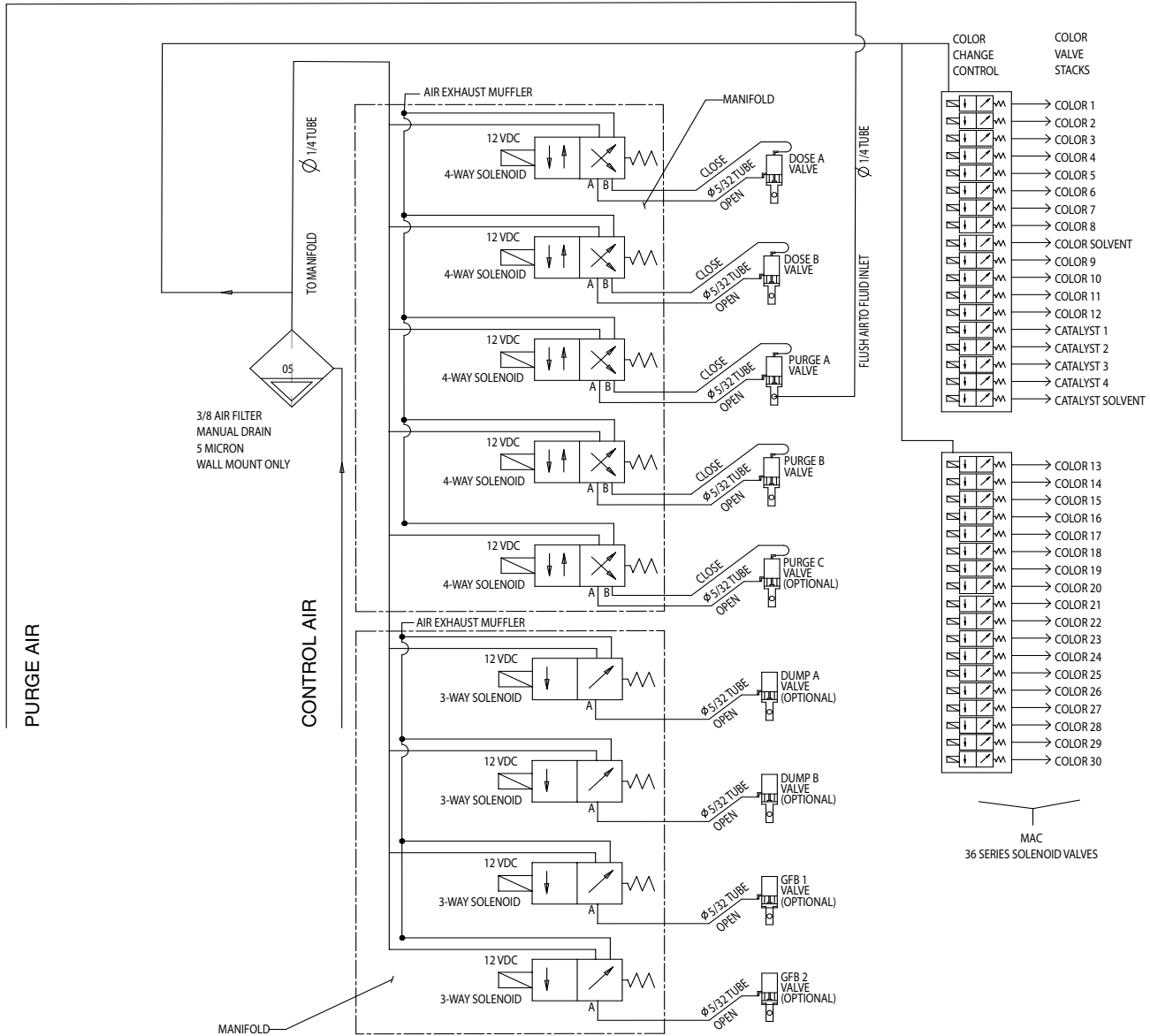


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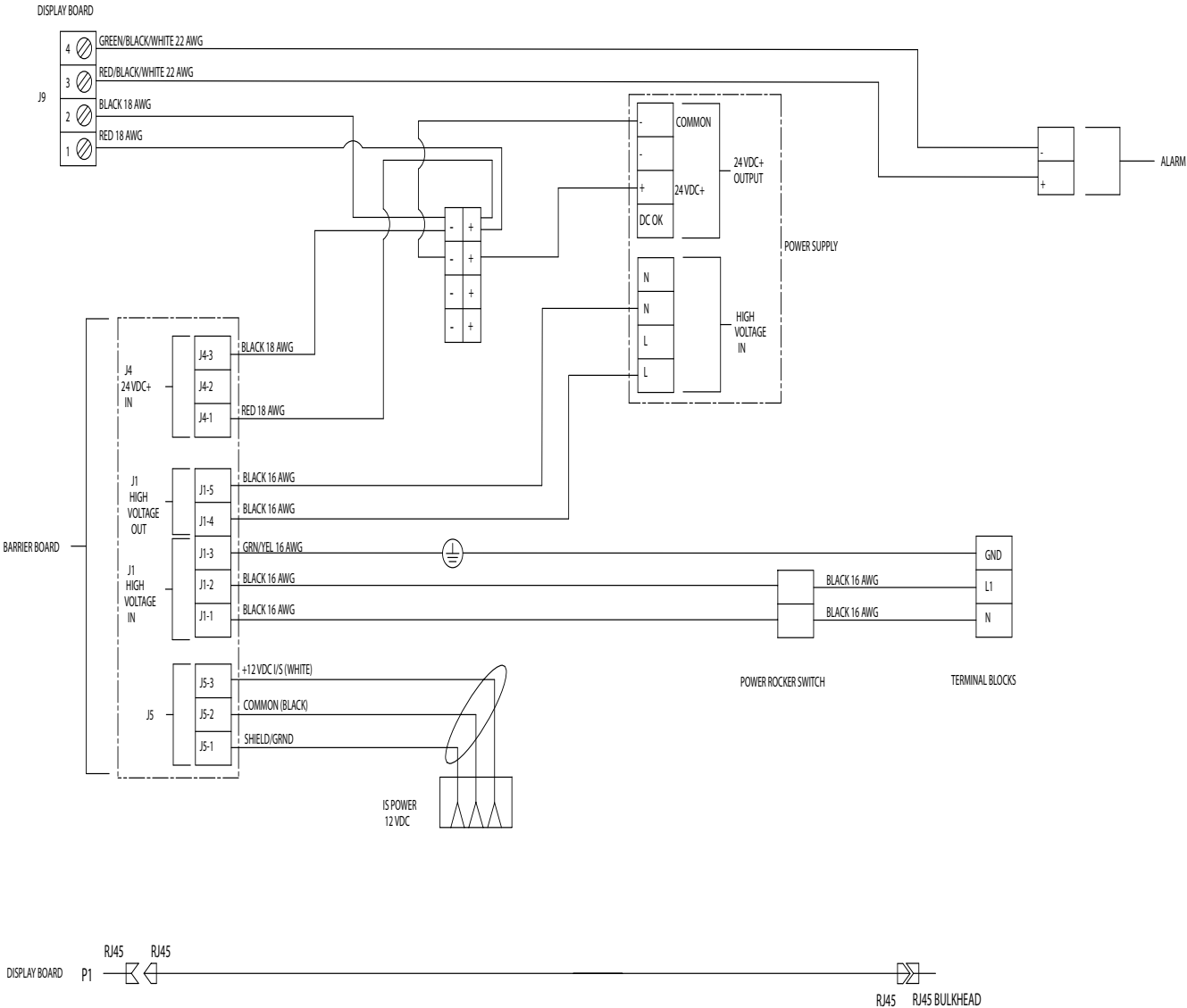
**FIG. 6: Booth Control Board**

# Schematic Diagrams

## System Pneumatic Schematic

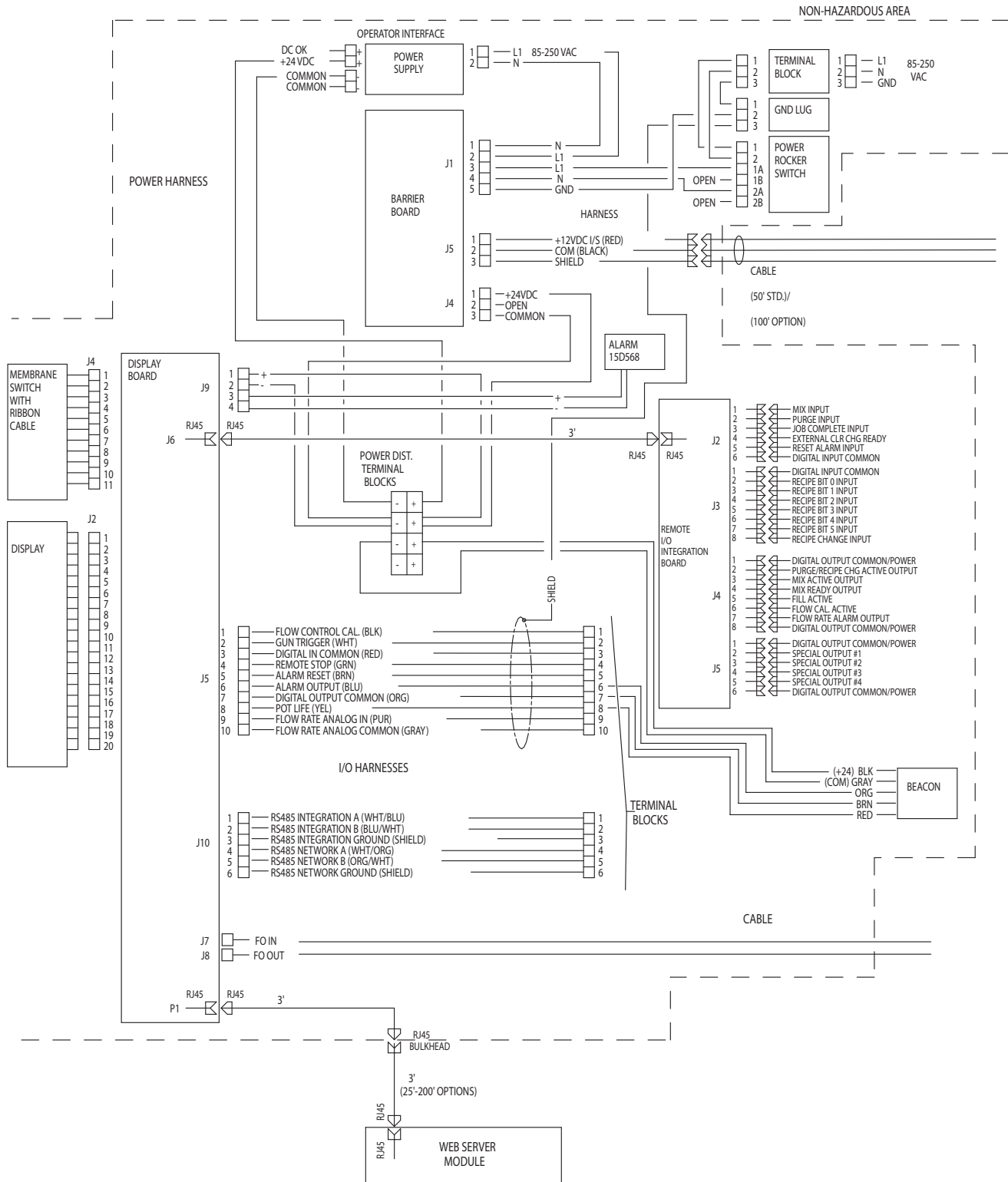


# EasyKey Electrical Schematic



# System Electrical Schematic

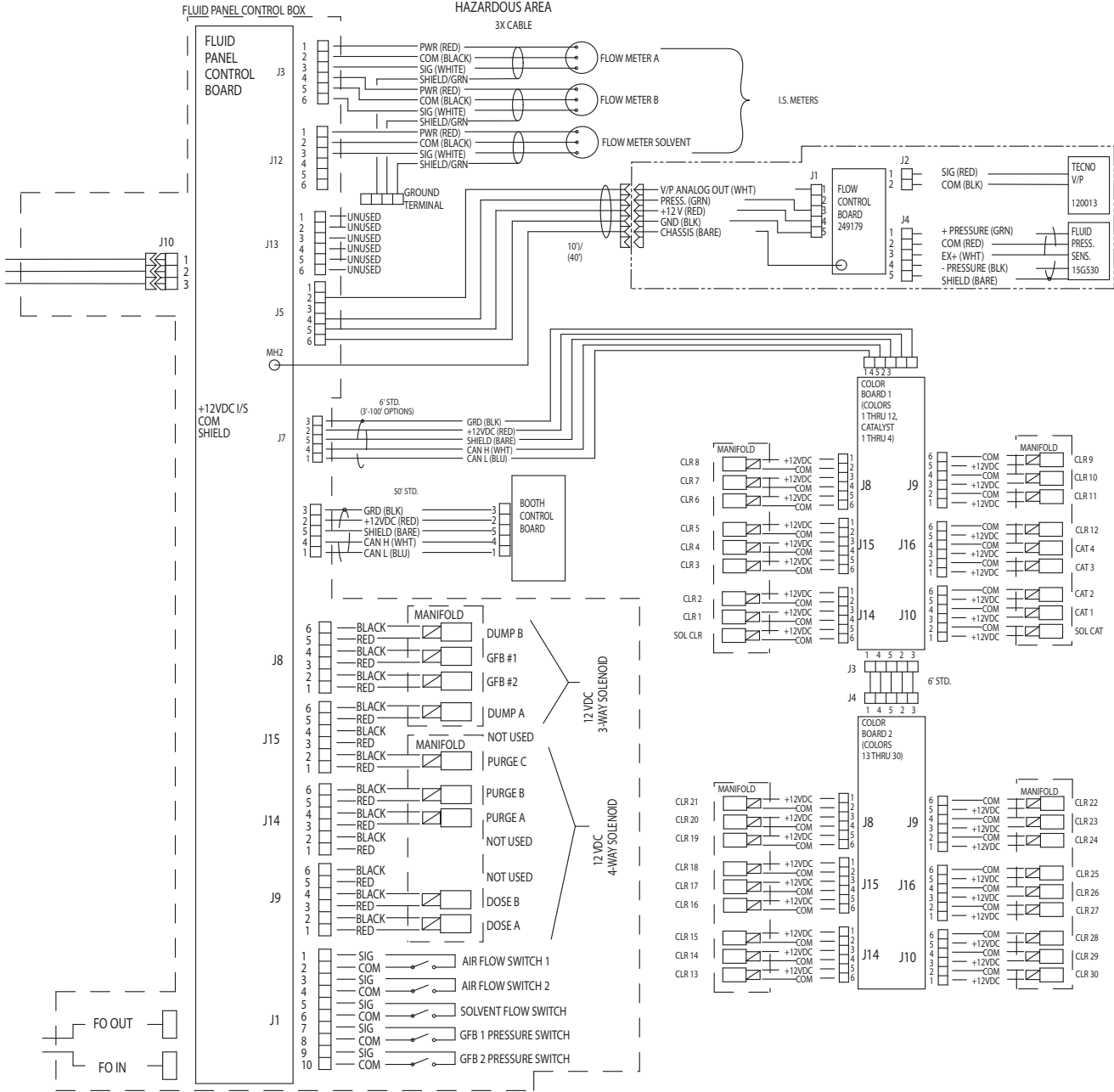
## Non-Hazardous Area





# System Electrical Schematic

## Hazardous Area



# Service

## Before Servicing

--	--	--	--	--	--	--

- To avoid electric shock, turn off EasyKey power before servicing.
- Servicing EasyKey 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**, page 6.

<b>NOTICE</b>
To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Flush system and follow **Pressure Relief Procedure**, page 8, 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 2KS.

3. Shut off ProMix 2KS power (0 position). FIG. 7.
4. If servicing EasyKey Display, also shut off power at main circuit breaker.

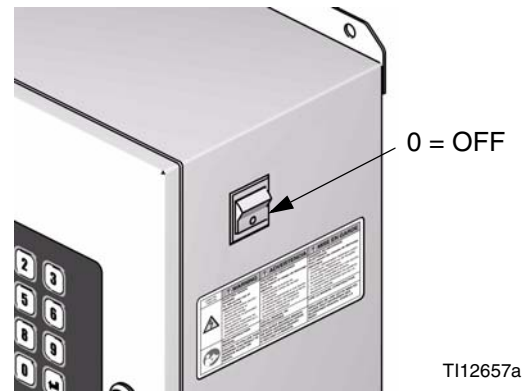


FIG. 7: Power Off

## After Servicing

After servicing the system, be sure to follow the **Start Up** checklist and procedure in the ProMix 2KS Operation manual.

# Servicing EasyKey

## Updating Software

To update software, upload new software from your PC using the basic web interface. See manual 313386.

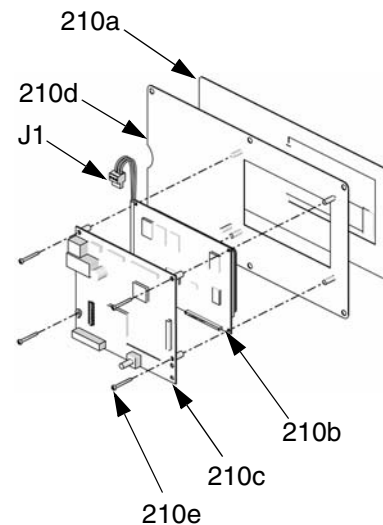
## Replacing Display Board or Graphic Display



### NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 26.
2. Unlock and open EasyKey door with its key.
3. Note position of all external connections (J4, J5, J6, J7, J8, J9, J10) to display board, then unplug the connectors. See FIG. 4 on page 16.
4. Remove 4 screws (210e) and the display board assembly (210b, 210c). FIG. 8.
5. Disconnect graphic display power cable (J1) from the display board (210c).
6. Separate graphic display (210b) from display board (210c) [connector J2 on back of board].



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**FIG. 8: Display Interface**

7. Align connector J2 on the display board (210c) with the socket on the graphic display (210b). Press them together. FIG. 8.
8. Reconnect the graphic display power cable (J1) to the display board (210c).
9. Mount display board assembly with screws (210e).
10. Plug all connectors into display board (210c). FIG. 8. Confirm that the cables do not pinch when opening or closing the door.
11. Locate the battery on the board (see FIG. 4 on page 16). Pull the strip to remove the protective isolator and activate the battery.
12. Close and lock EasyKey door with key.
13. Turn EasyKey power on to test display board.

## Replacing Barrier Board



### NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 26.
2. Unlock and open EasyKey door with its key.
3. Disconnect the cables and connectors from J1, J4, and J5. FIG. 10.
4. Using the security tool provided (Part No. 122239), remove 2 screws (214k) and the cover (214b). See FIG. 9.
5. Noting their location, remove 5 screws (214g, 214h) from the barrier board (214a). Do not remove the screw noted in FIG. 10. Remove board.
6. Apply thermal compound to the heatsink (Z) on the back of the new barrier board (214a). See FIG. 10.
7. Install the new barrier board with the 5 screws (214g, 214h).

8. Install the cover (214b) with 2 screws (214k), using the security tool.
9. Connect cables to J1, J4, and J5.
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 Barrier Board Fuses



Fuse	Part No.	Description
F1, F2	114788	Power In Fuses; 2 amp, time lag
F3, F4	15D979	Power Out Fuses; 0.4 amp, quick acting

1. Follow **Replacing Barrier 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 Barrier Board**, steps 8-12.

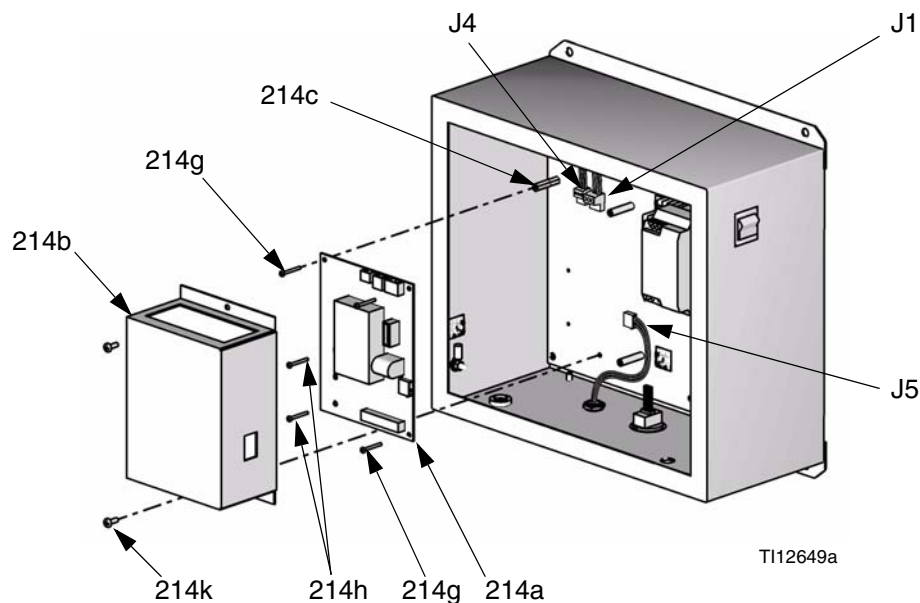
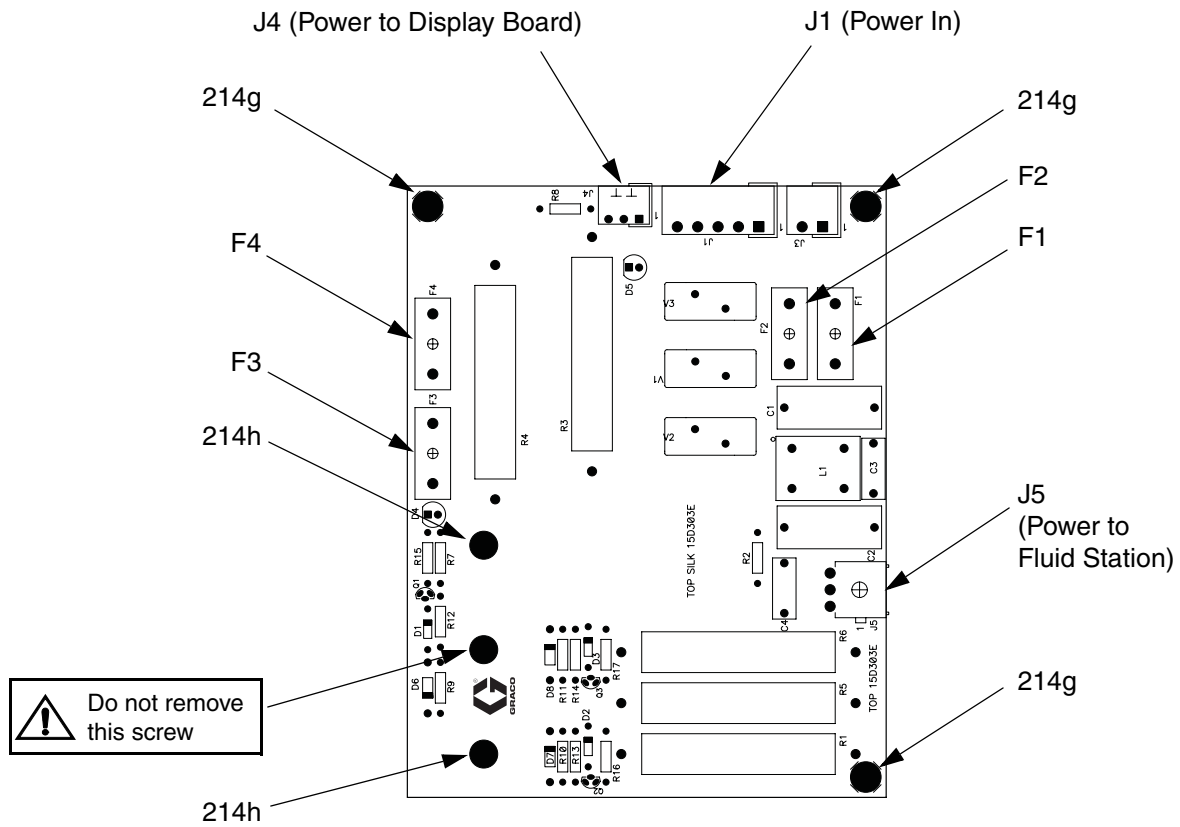
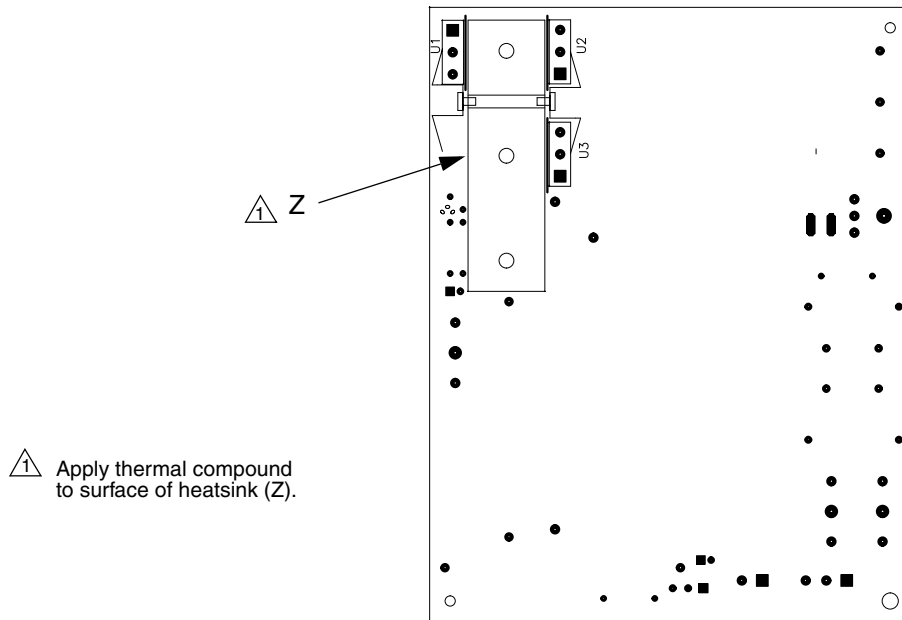


FIG. 9: Replacing Barrier Board



**Front of Barrier Board, showing Fuses and Connectors**



**Back of Barrier Board, showing Heatsink (Z)**

**FIG. 10: Barrier Board Connectors and Fuses**

## Replacing Power Supply

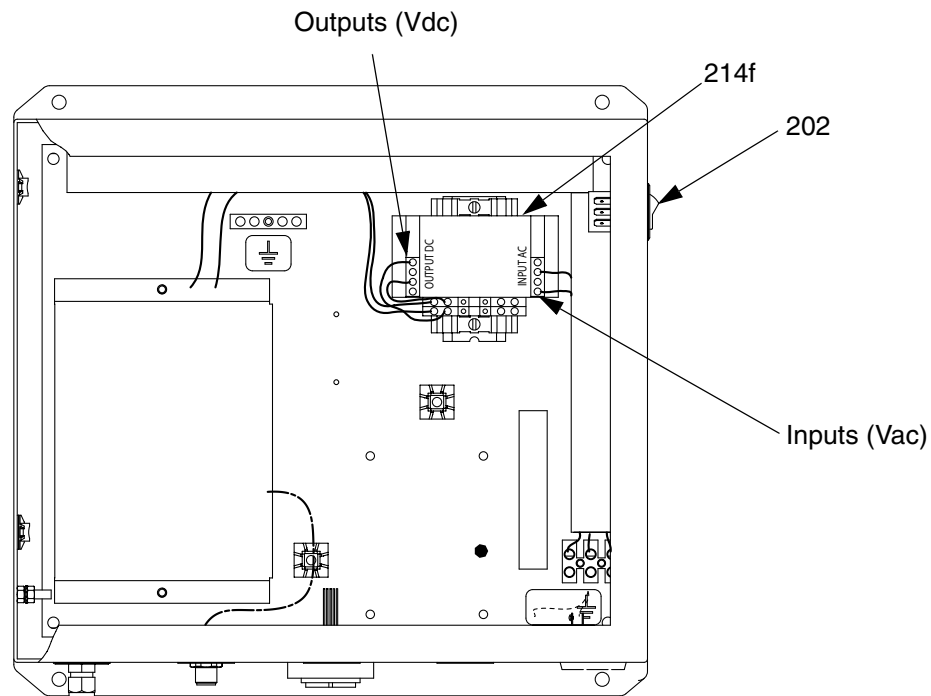


1. Follow **Before Servicing**, page 26.
2. Unlock and open EasyKey door with its key.
3. Note position of power supply input and output wires. Disconnect wires from power supply (214f). See FIG. 11.
4. Remove power supply from din rail.
5. Install new power supply (214f). Reconnect input and output wires in positions noted in step 3.
6. Close and lock EasyKey door with key.
7. Turn on power at main circuit breaker.
8. Turn EasyKey power on to test operation.

## Replacing Power Switch



1. Follow **Before Servicing**, page 26.
2. Unlock and open EasyKey door with its key.
3. Note position of power switch wires. See **System Electrical Schematic**, page 24. Disconnect wires and remove switch (202, FIG. 11).
4. Install new power switch (202). Reconnect wires in positions noted in step 3.
5. Close and lock EasyKey door with key.
6. Turn on power at main circuit breaker.
7. Turn EasyKey power on to test operation.



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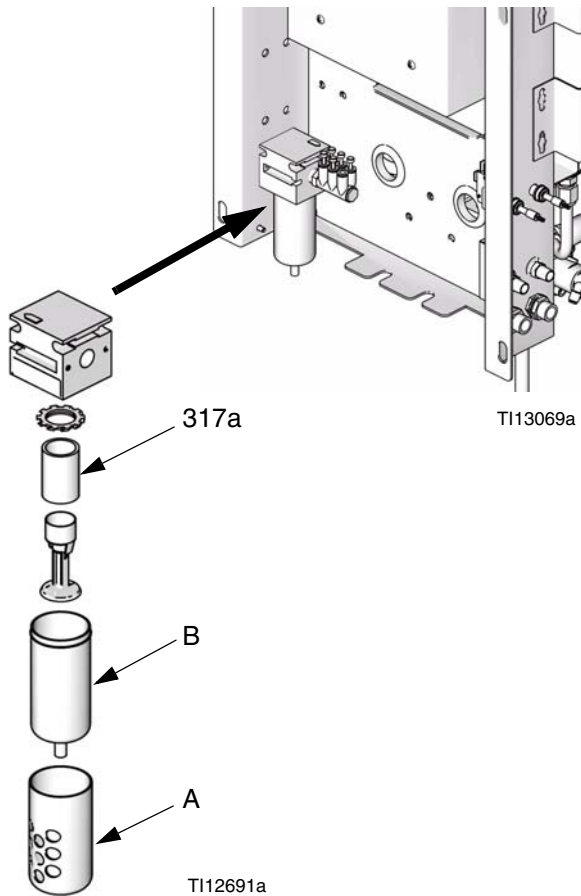
**FIG. 11: Power Supply**

## Replacing Air Filter Element

<p>Removing a pressurized air filter bowl could cause serious injury. Depressurize air line before servicing.</p>						

Check the 5 micron air manifold filter daily and replace element (317a, 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). See FIG. 12.
3. Unscrew filter bowl (B).
4. Remove and replace element (317a).
5. Screw filter bowl (B) on securely. Install cover (A).



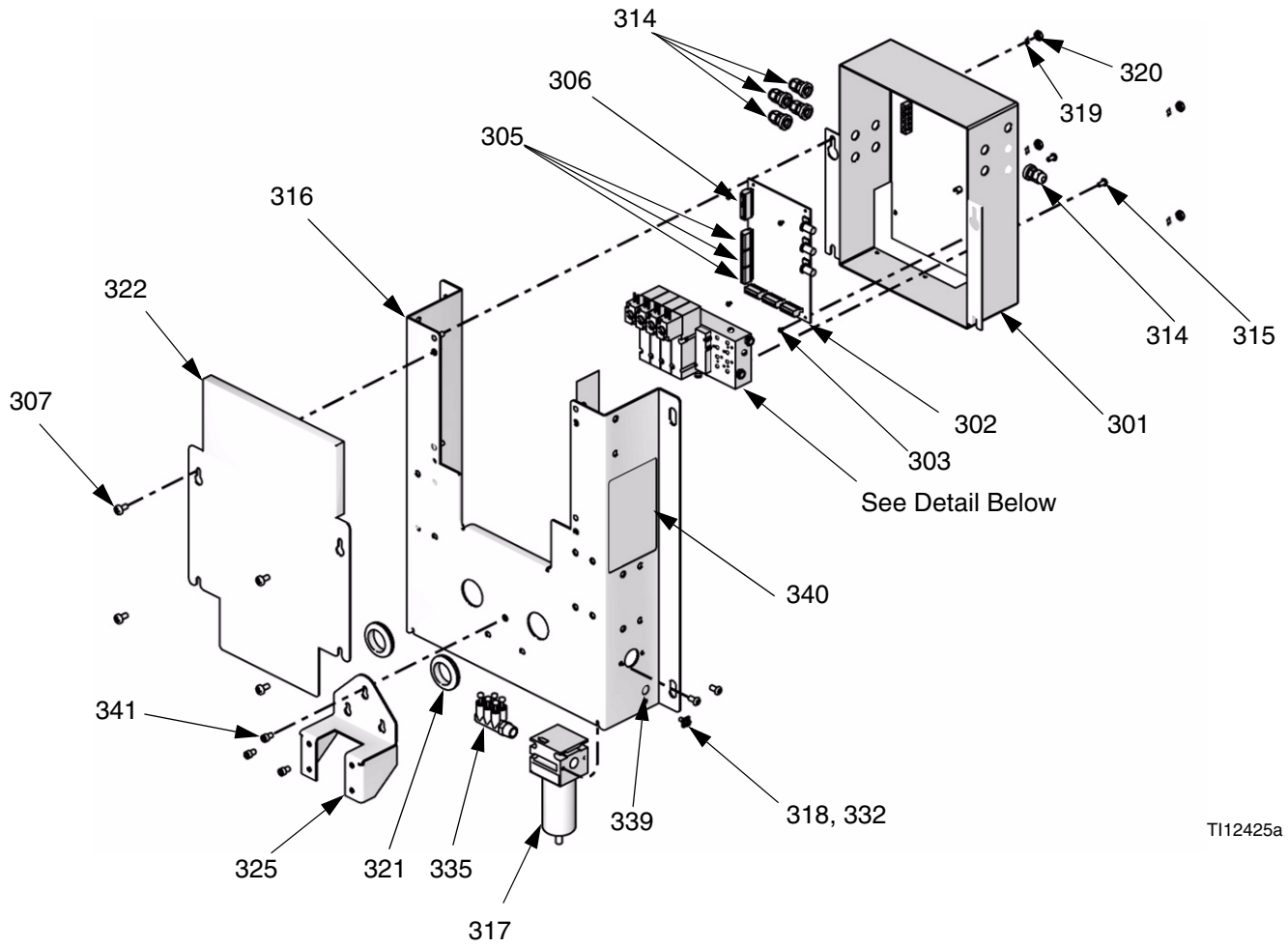
**FIG. 12: Replacing Air Filter Element**

## Wall Mount Fluid Station

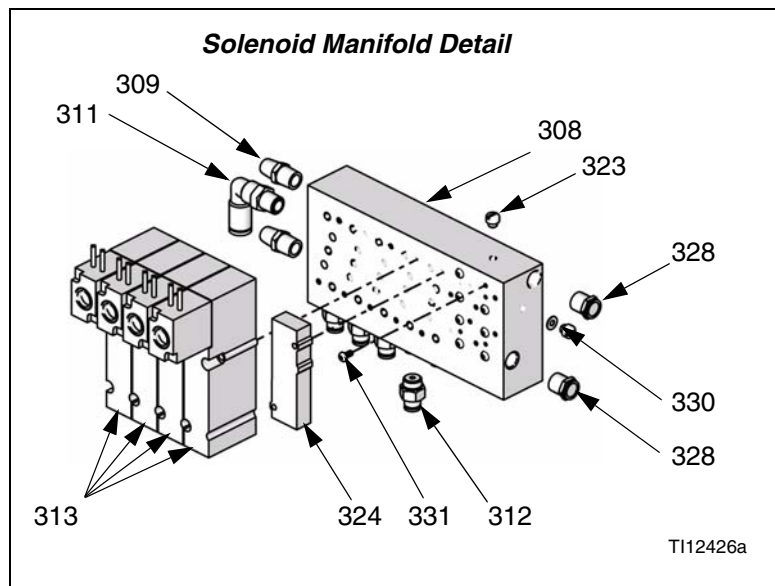
### Preparation

--	--	--	--	--	--	--

1. Follow **Before Servicing**, page 26.
2. Loosen the 4 screws (307), then remove the Wall Mount Fluid Station cover (322). FIG. 13.



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FIG. 13: Wall Mount Fluid Station

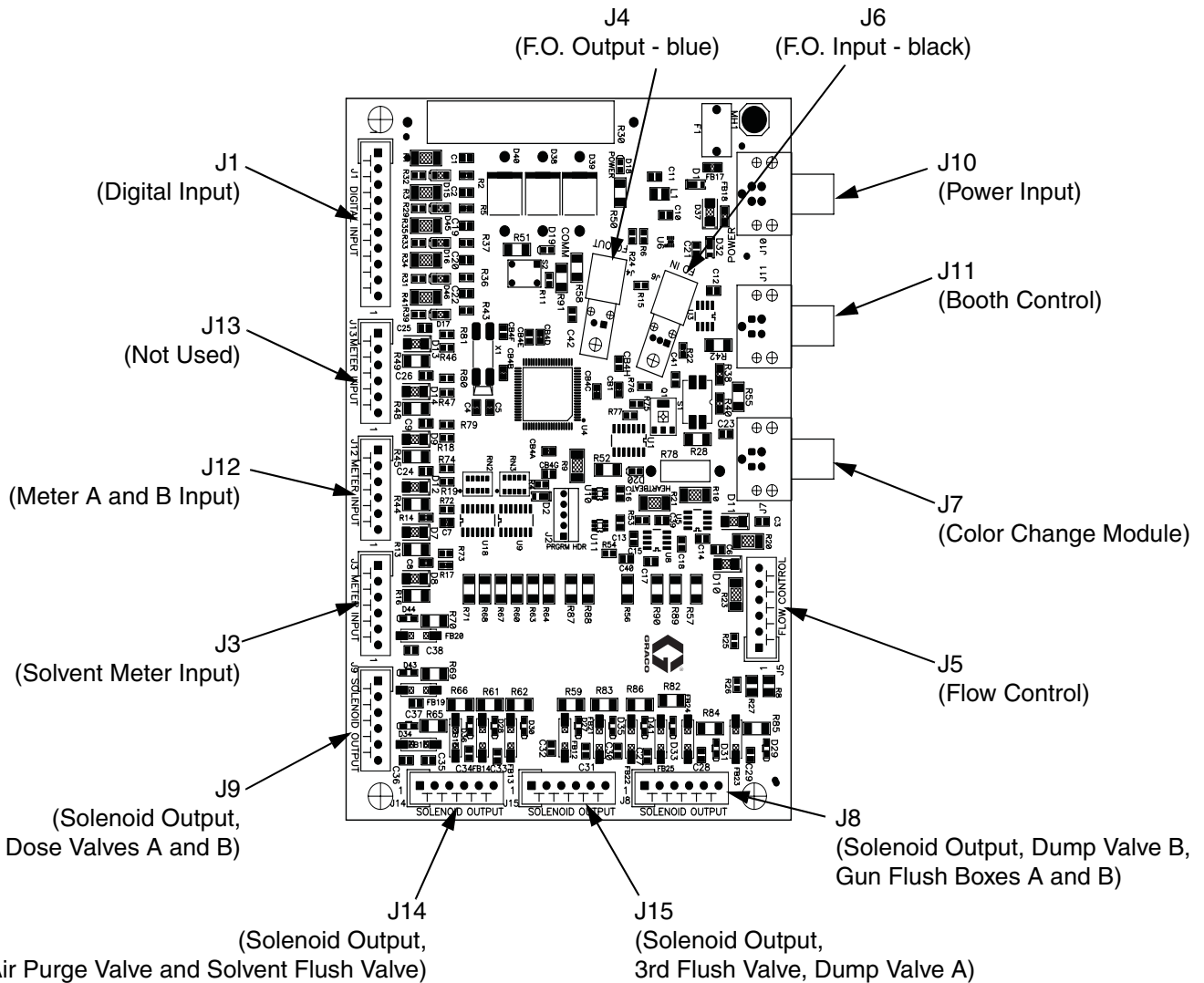


## Replacing Control Board



**NOTICE**  
To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 26.
2. Disconnect fiber optic wires (J4, J6) and all cables (J1, J3, J5, J7, J8, J9, J12, J13, J14, J15) from control board (302). FIG. 14.
3. Remove 4 screws (303). Remove connector jam nuts on the outside of the enclosure (301). Remove control board (302). FIG. 13.
4. Install new control board (302) with 4 screws (303).
5. Connect cables to control board (302). FIG. 14. Insert fiber optic cable connectors into board connectors (J4, J6), matching blue with blue, black with black, and hand-tighten connectors. Do not pinch or kink the fiber optic cables; the cables require a 2 in. (51 mm) bend radius.
6. Replace the cover (322).
7. Turn EasyKey power on to test operation.



**FIG. 14: 255765 Fluid Station Control Board**

## Replacing Solenoids

The Wall Mount Fluid Station has a minimum of 4 solenoids. If you have options installed, you have additional (optional) solenoids for each. See Table 7 and **Schematic Diagrams**, page 22.



To replace a single solenoid:

1. Follow **Before Servicing**, page 26, and shut off power at main circuit breaker.
2. Disconnect 2 solenoid wires (N) from control board (302). FIG. 15.
3. Unscrew 2 screws (P) and remove solenoid (313).
4. Install new solenoid (313).
5. Connect 2 wires (N) to control board (302). Solenoid wires are polarized (red +, black -). Refer to **System Electrical Schematic**, page 25.
6. Replace the cover (322).

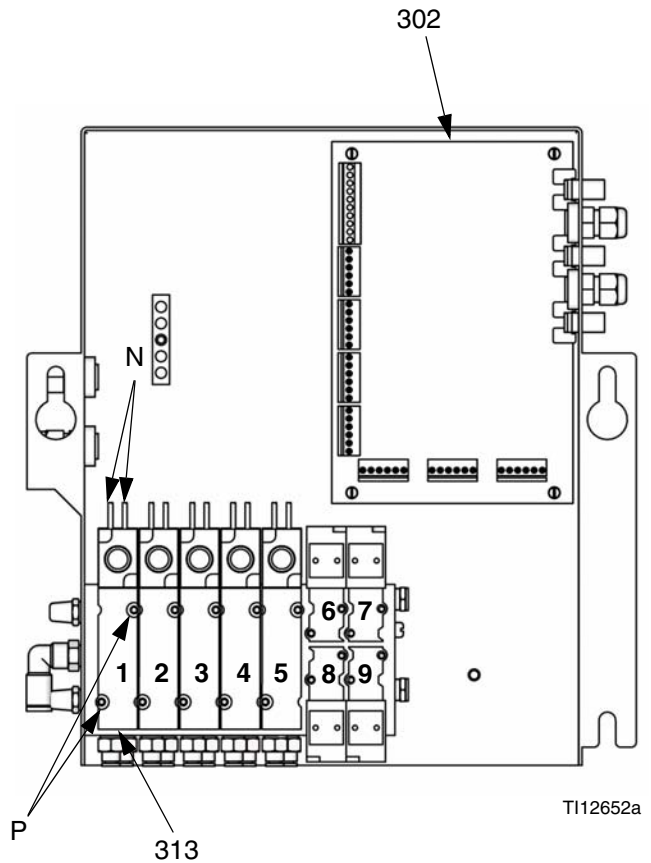
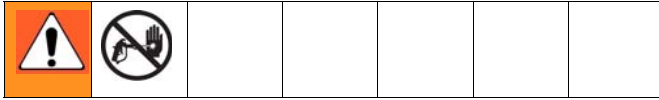


FIG. 15: Replacing Solenoids

Table 7: Wall Panel Solenoids

Solenoid	Actuates
<i>Standard</i>	
1	Dose Valve A
2	Dose Valve B
3	Air Purge Valve
4	Solvent Purge Valve
<i>Optional</i>	
5	Third Flush Valve
6	Dump Valve A
7	Dump Valve B
8	Gun Flush Box 1
9	Gun Flush Box 2

# Servicing Flow Meters



## Coriolis Meter

1. Follow **Before Servicing**, page 26.
2. To remove and service the Coriolis meter, see manual 310696.

## G3000 or G3000HR Meter

### Removal

1. Follow **Before Servicing**, page 26.
2. Unscrew cable connector (CC) from meter (M). FIG. 16.
3. Unscrew four 1/4-20 screws (MS) holding the meter mounting plate (MP). FIG. 16.
4. Unscrew fluid line from meter inlet (P).
5. Unscrew meter (M) from dose valve connector (H). FIG. 16.
6. Service meter as instructed in the meter manual 308778.

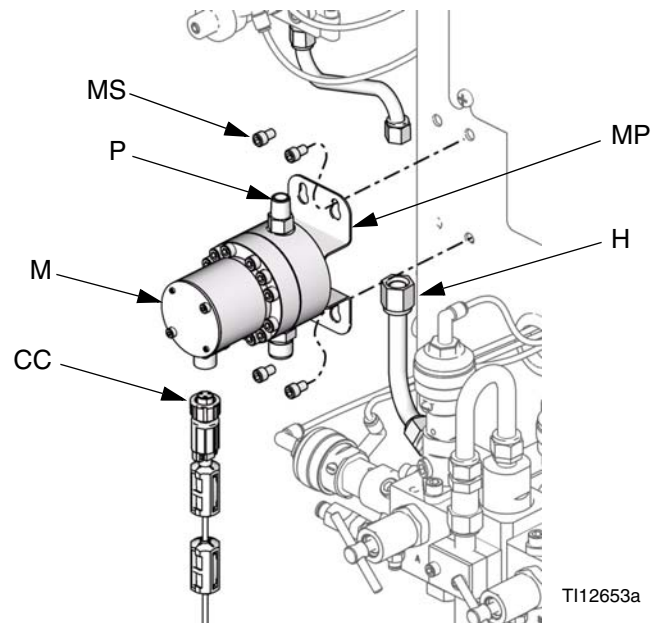
### Installation

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

**NOTICE**

To avoid leakage, secure the meter (M) to the dose valve connector (H) before connecting it to the fluid station.

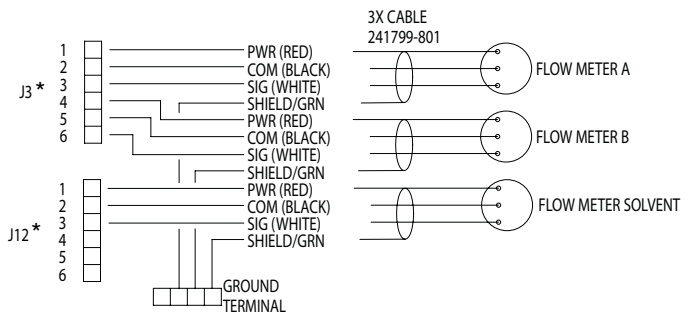
2. Secure meter (M) and plate (MP) to fluid station with screws (MS).
3. Connect meter cable (CC). See FIG. 16.
4. Connect fluid line (P).
5. Calibrate meter as instructed in ProMix Operation manual.



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**FIG. 16: G3000/G3000HR Flow Meters**

\*Connectors on Fluid Station Control Board



**FIG. 17: Meter Cable Schematic**

## Servicing Fluid Manifold

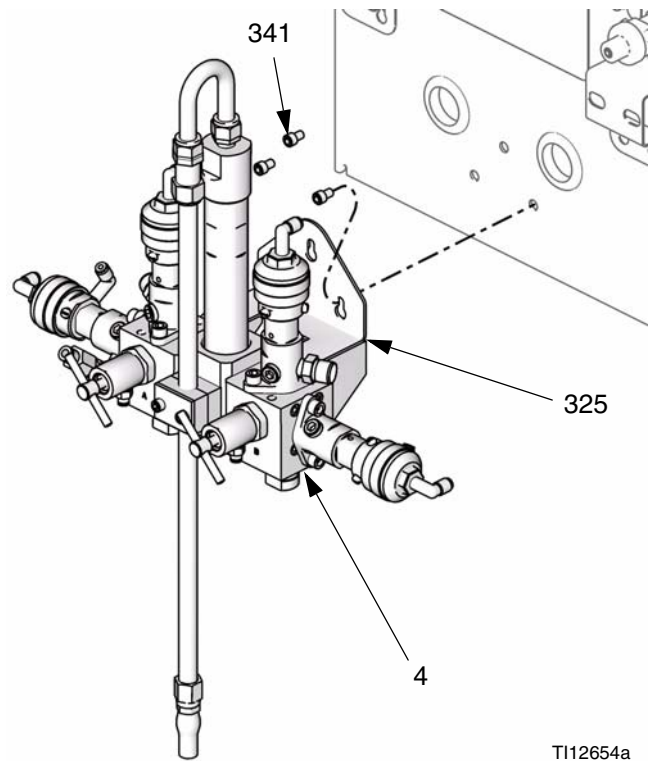


### Removal

1. Follow **Servicing Flow Meters, Removal** steps 1-5, page 35.
2. Disconnect air and fluid lines from the manifold (4).
3. Holding onto the fluid manifold (4), loosen the three screws (341) holding the bracket (325) to the fluid station. Lift the fluid manifold (4) and pull it away from the panel. Service as instructed in the Fluid Mix Manifold manual 312781.

### Installation

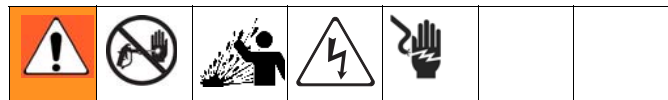
1. Secure the fluid manifold (4) and mounting plate (325) with three screws (341).
2. Install meters. See **Installation** steps 1-3, page 35.
3. Connect air and fluid lines.
4. Calibrate meters as instructed in ProMix Operation manual.



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FIG. 18: Fluid Manifold

## Servicing Color Change Module and Valves



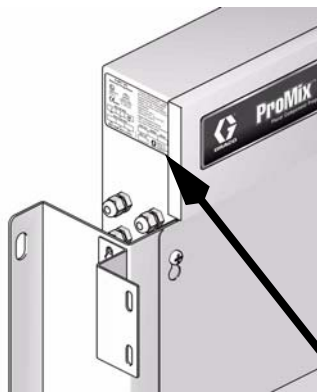
1. Follow **Before Servicing**, page 26.
2. See manual 312787 to service the color change module.
3. See manual 312783 to service the color change valves.

# Parts

## Configurator Key

The configured part number for your equipment is printed on the equipment ID plates. See the illustrations below for location of the ID plates. The part number includes one digit from each of the following six categories, depending on the configuration of your system. *The digits in this table do not correspond to ref. nos. in the parts lists or parts drawings.*

Manual System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Applicator Handling
M	D = EasyKey with LCD Display E = Additional Fluid Station Control Box, No LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure) 5 = Two Valves (high pressure) 6 = Four Valves (high pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Two Valves (high pressure)	1 = One Air Flow Switch Kit 2 = Two Air Flow Switch Kits 3 = One Gun Flush Box Kit 4 = Two Gun Flush Box Kits



**Label Location on Fluid Station**

TI12423a

Maximum Fluid Working Pressure is listed here

**ProMix™ 2KS**  
Electronic Proportioner

FM08ATEX0073  
II 2 G  
Ex ia IIA T3

APPROVED  
Intrinsically safe  
equipment for Class I,  
Div 1, Group D, T3  
Ta = -20°C to 50°C

CE 0359

MAX AIR WPR		
.7	7	100
MPa	bar	PSI
MAX FLUID WPR		
MPa	bar	PSI
MAX TEMP 50°C (122°F)		

Partwork No. \_\_\_\_\_

Intrinsically Safe (IS) System. Install per IS Control Drawing No. 289833. EasyKey Interface IS Associated Apparatus for use in non hazardous location, with IS Connection to Smart Fluid Plate IS Apparatus for use in: Class I, Division 1, Group D T3 C Hazardous Locations Read Instruction Manual Warning: Substitution of components may impair intrinsic safety.

PART NO.	SERIES	SERIAL
MFG. YR.		

GRACO INC.  
P.O. Box 1441  
Minneapolis, MN  
55440 U.S.A.



**Label Location on EasyKey**

TI12418a

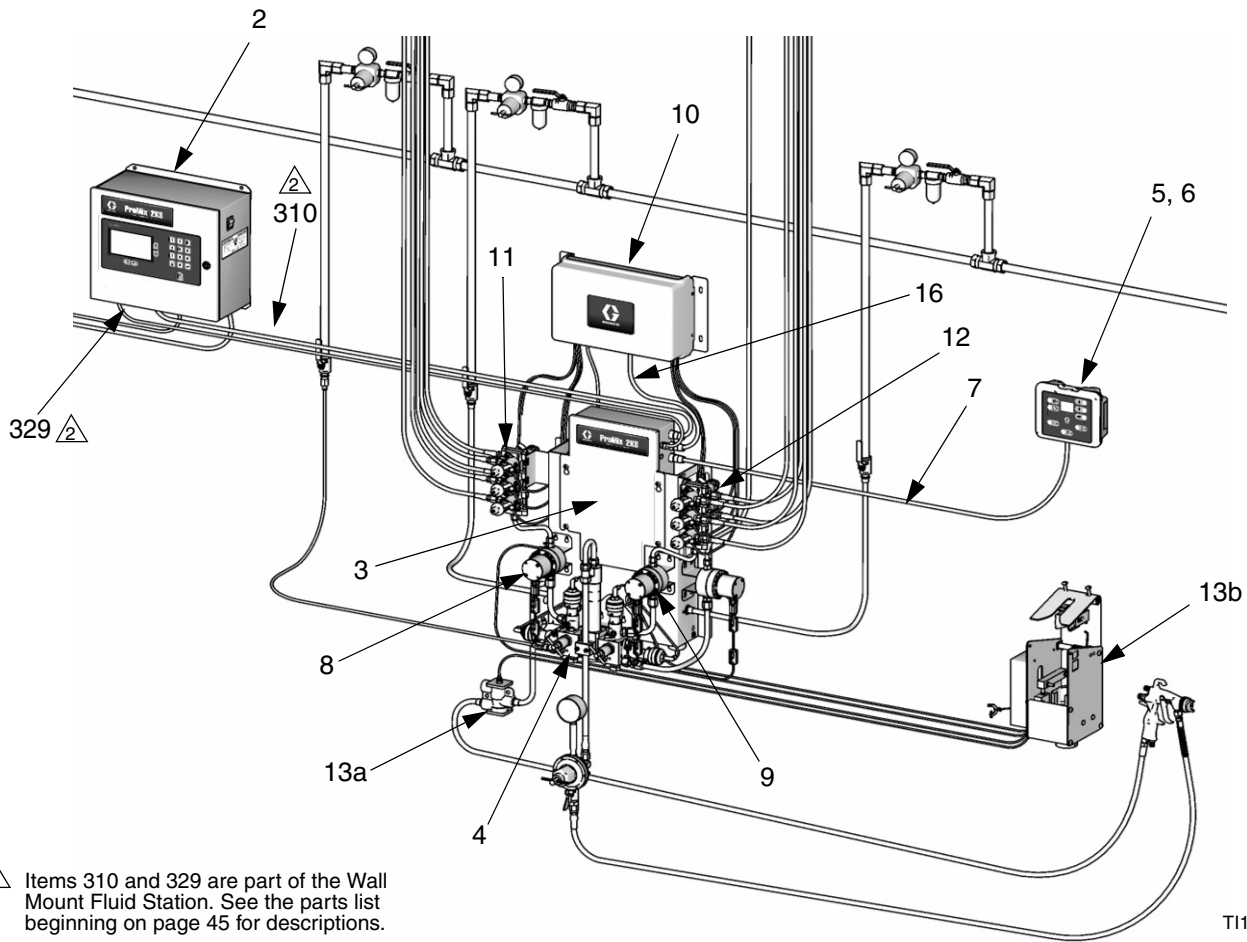
6-Digit Configured Part No.

TI12421a

# ProMix 2KS Manual System

Part No. MD0001 to MD7634, includes EasyKey with LCD display

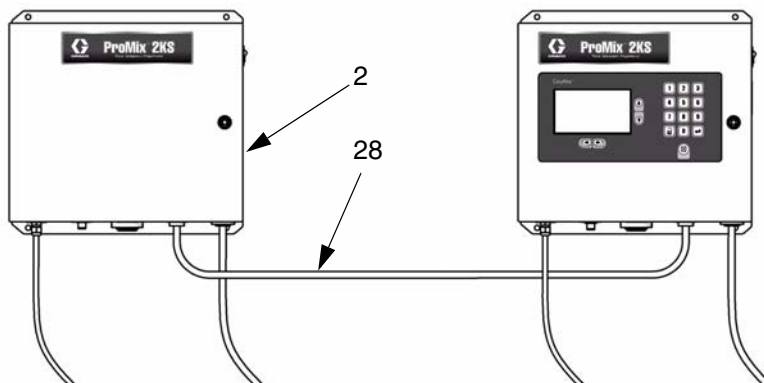
Part Nos. ME0001 to ME7634, includes fluid station control box without LCD display



⚠ Items 310 and 329 are part of the Wall Mount Fluid Station. See the parts list beginning on page 45 for descriptions.

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## Detail of Part Nos. ME0001 to ME7634

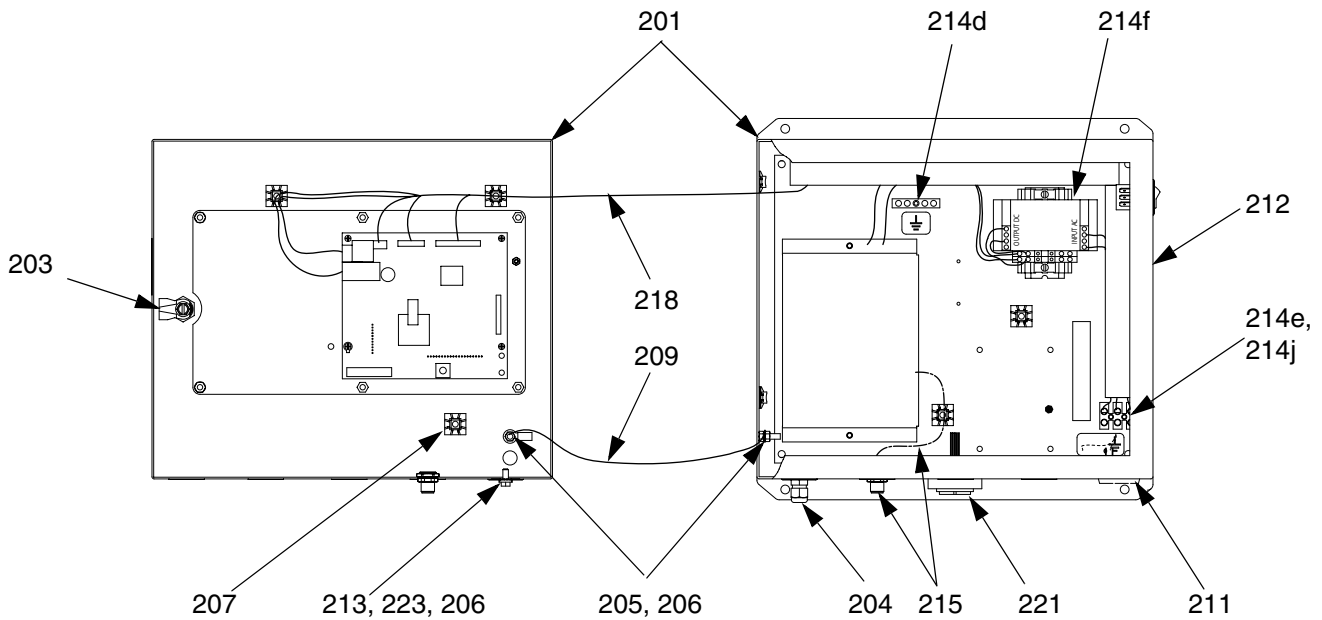
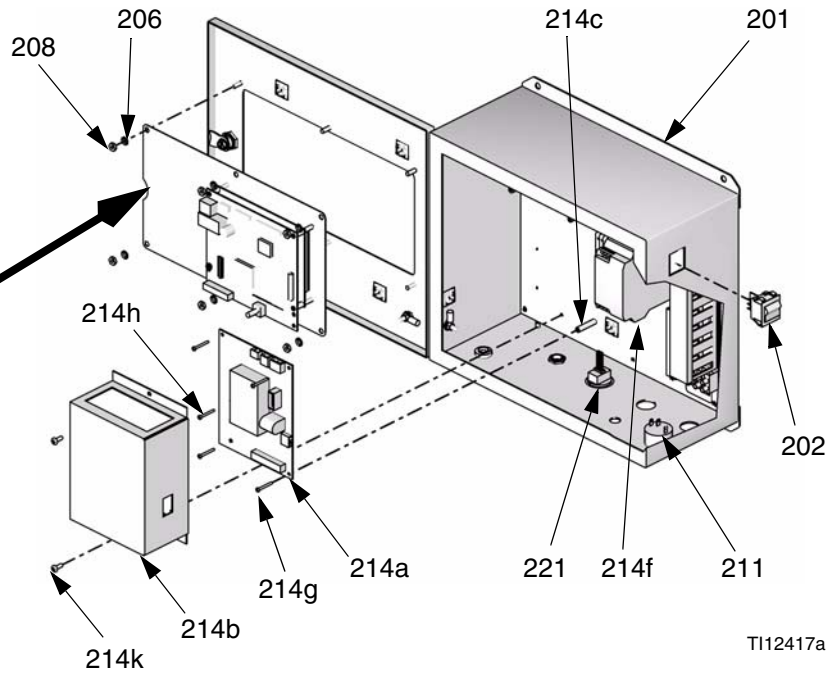
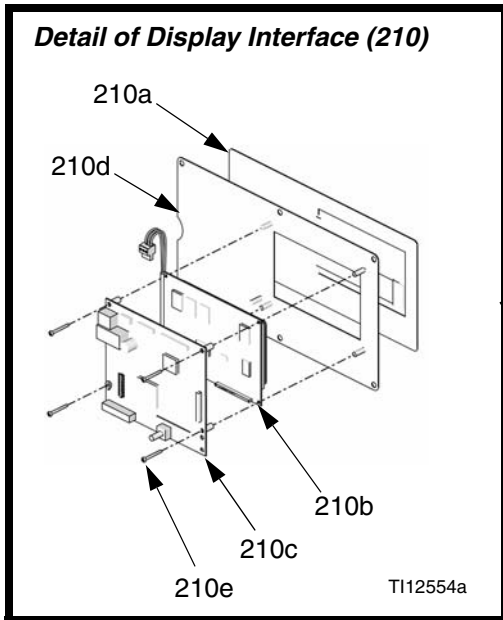


TI12505a

Ref. No.	Configured Digit (see page 37) or part usage	Part No.	Description	Qty
2	D	277869	CONTROL/DISPLAY, EasyKey; used on MD0001 to MD7634; see page 40	1
	E	277870	CONTROL BOX; used on ME0001 to ME7634; see page 40	1
3	standard part	256533	PANEL, fluid; see page 44	1
4	standard part	289695	MANIFOLD, mix; see manual 312781	1
5	standard part	15V350	BOOTH CONTROL; includes items 6 and 7	1
6	standard part	277853	BRACKET, mounting, booth control	1
7	standard part	15U533	CABLE, CAN, intrinsically safe; connects booth control to fluid station; 50 ft (15.25 m)	1
8			KIT, flow meter A	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V806	KIT, Coriolis flow meter; see manual 310696	1
	4	15V804	KIT, G3000 flow meter; see manual 308778	1
	5	15V806	KIT, Coriolis flow meter; see manual 310696	1
	6	15V827	KIT, G3000HR flow meter; see manual 308778	1
9			KIT, flow meter B	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V804	KIT, G3000 flow meter; see manual 308778	1
	4	15V806	KIT, Coriolis flow meter; see manual 310696	1
	5	15V827	KIT, G3000HR flow meter; see manual 308778	1
	6	15V806	KIT, Coriolis flow meter; see manual 310696	1
10	0 - 6	see page 46	MODULE, control, color/catalyst change; see page 46	see page 46
	0 - 6	see page 46	VALVE STACK, color change; see page 46	see page 46
12	0 - 3	see page 46	VALVE STACK, catalyst change; see page 46	see page 46
13			APPLICATOR HANDLING (AFS or GFB)	
13a	1	15T632	KIT, air flow switch	1
	2	15T632	KIT, air flow switch	2
13b	3	15V826	KIT, gun flush box; see manual 312784	1
	4	15V826	KIT, gun flush box; see manual 312784	2
16	used with color change only	15U532	CABLE, CAN, intrinsically safe; connects color change control module to fluid station; 3 ft (1 m)	0 or 1
28	used on ME0001 to ME7634 only	121700	CABLE, network; connects EasyKey with display to control box without display; 24 gauge; 2 conductor; 50 ft (15.25 m)	1

# EasyKey Controls

## 277869 EasyKey, with Display





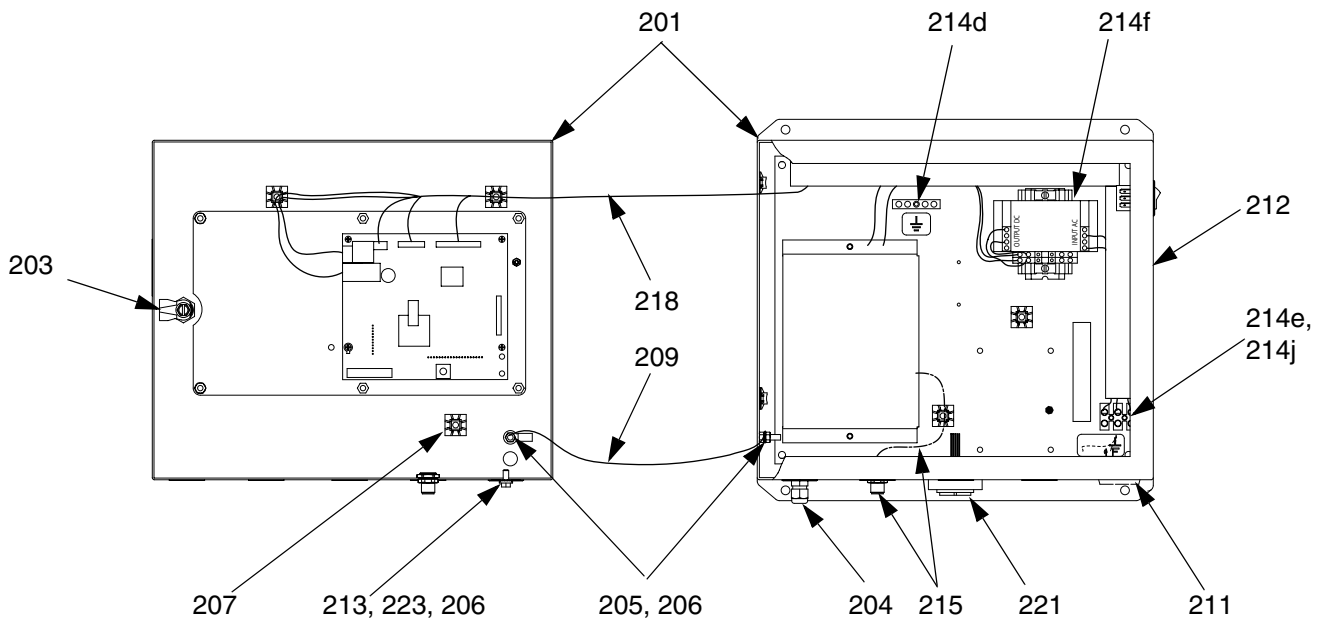
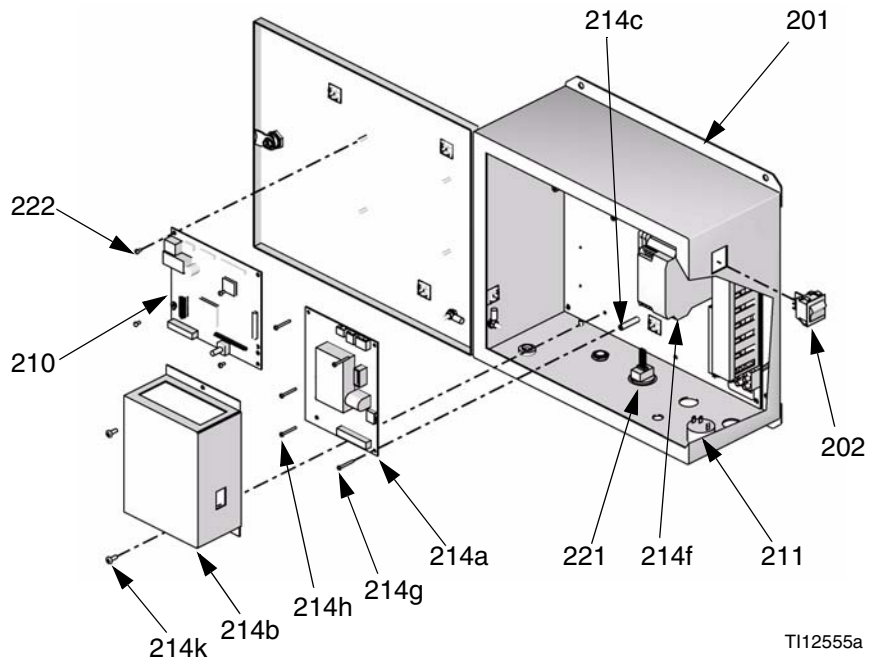
**277869 EasyKey, with Display**

Ref. No.	Part No.	Description	Qty	Ref. No.	Part No.	Description	Qty
				214	n/a	PLATE, application; includes items 214a-214k	1
201	n/a	CONTROL BOX, with display	1				
202	116320	SWITCH, power	1	214a	255786	• BOARD, barrier, IS; (includes fuses 15D979 and 114788, see page 29 for fuse location)	1
203	n/a	LATCH; includes item 3a	1				
203a	117818	• KEY	1				
204	111987	CONNECTOR, cord strain relief	1	214b	n/a	• COVER	1
205	110911	NUT, hex; M5 x 0.8	4	214c	117526	• SPACER	3
206	111307	WASHER, lock, external tooth; M5	9	214d	119257	• BAR, ground	1
207	n/a	HOLDER, tie	8	214e	114095	• BLOCK, terminal	1
208	C19293	NUT, hex	6	214f	121314	• POWER SUPPLY; 24 Vdc; 2A	1
209	194337	WIRE, grounding, door	1				
210	280538	DISPLAY, interface; includes items 210a-210e	1	214g	n/a	• SCREW, machine, pan-hd; 6-32 x 3/8 in. (10 mm)	3
210a	n/a	• MEMBRANE	1	214h	n/a	• SCREW, machine, pan-hd; 6-32 x 1-1/2 in. (38 mm)	2
210b	n/a	• GRAPHIC, display	1				
210c	255767	• BOARD, EasyKey display	1	214j	n/a	• SCREW, machine, pan-hd; 8-32 x 3/4 in. (19 mm)	2
210d	n/a	• PLATE	1				
210e	n/a	• SCREW; 4-40 x 1 in. (25 mm)	4	214k	n/a	• SCREW, machine, pan-hd; 10-24 x 3/8 in. (10 mm)	11
211	15D568	ALARM	1	215	15V280	HARNESS, connection	1
212▲	15W776	LABEL, warning	1	216▲	15G569	LABEL, EasyKey inputs	1
213	223547	GROUND WIRE; 25 ft (7.6 m)	1	218	15R642	HARNESS, wire	1
				220	n/a	SOFTWARE, application	1
				221	198165	CONNECTOR, RJ45, with bulk-head fitting	1
				223	116343	SCREW, ground; M5 x 0.8	1
				224	15G869	CABLE, ethernet, CAT5; 6 ft (1.8 m); to make web interface connection to a computer	1

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

Parts labeled n/a are not available separately.

### 277870 Control Box, without Display



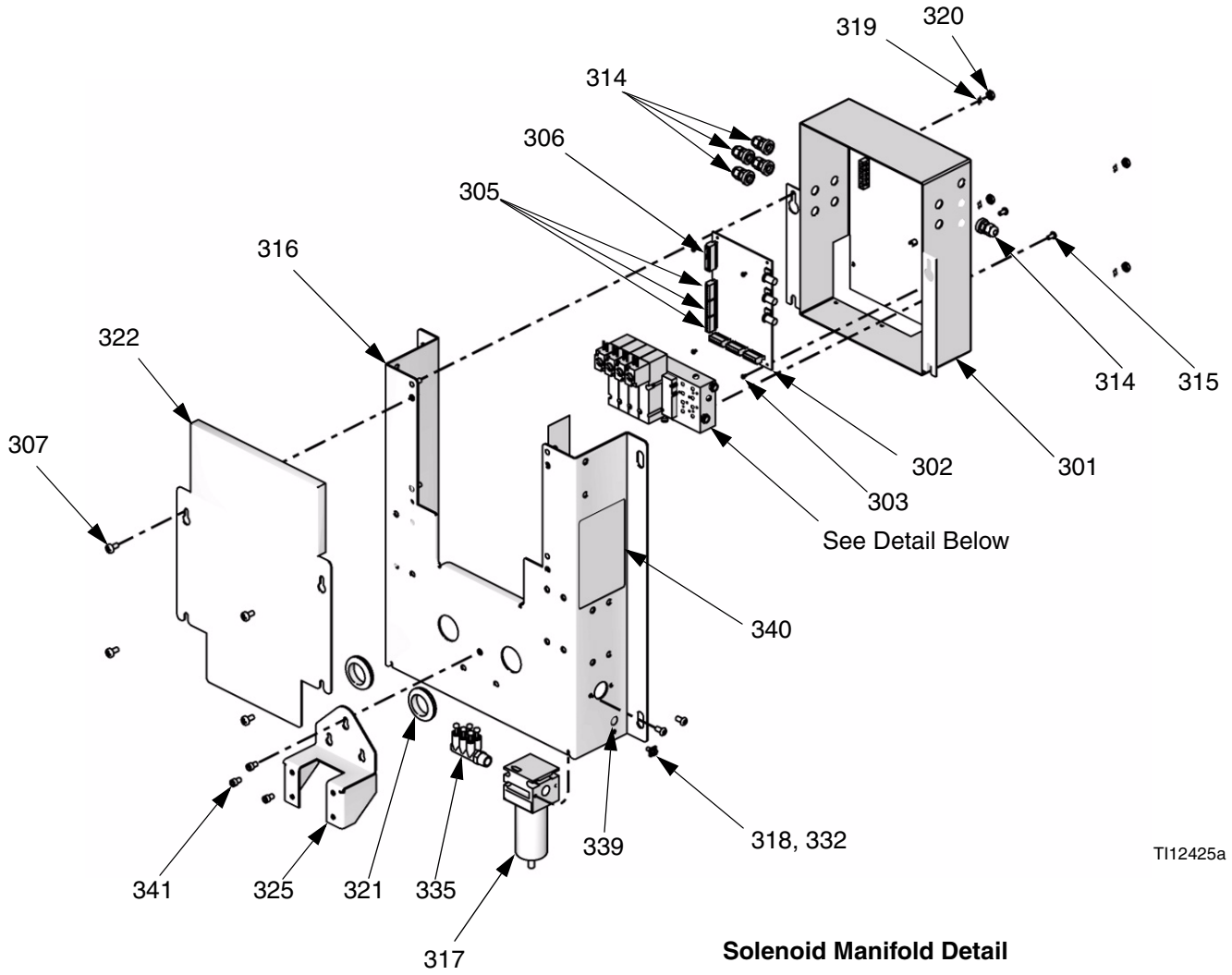
**277870 Control Box, without Display**

Ref. No.	Part No.	Description	Qty	Ref. No.	Part No.	Description	Qty
201	n/a	CONTROL BOX, without display	1	214f	121314	• POWER SUPPLY; 24 Vdc; 2A	1
202	116320	SWITCH, power	1	214g	n/a	• SCREW, machine, pan-hd; 6-32 x 3/8 in. (10 mm)	3
203	n/a	LATCH; includes item 3a	1	214h	n/a	• SCREW, machine, pan-hd; 6-32 x 1-1/2 in. (38 mm)	2
203a	117818	• KEY	1	214j	n/a	• SCREW, machine, pan-hd; 8-32 x 3/4 in. (19 mm)	2
204	111987	CONNECTOR, cord strain relief	1	214k	n/a	• SCREW, machine, pan-hd; 10-24 x 3/8 in. (10 mm)	11
205	110911	NUT, hex; M5 x 0.8	4	215	15V280	HARNESS, connection	1
206	111307	WASHER, lock, external tooth; M5	3	216▲	15G569	LABEL, EasyKey inputs	1
207	n/a	HOLDER, tie	8	218	15R642	HARNESS, wire	1
209	194337	WIRE, grounding, door	1	220	n/a	SOFTWARE, application	1
210	255767	BOARD, EasyKey	1	221	198165	CONNECTOR, RJ45, with bulk-head fitting	1
211	15D568	ALARM	1	222	112324	SCREW; 4-40 x 1/4 in. (6 mm)	4
212▲	15W776	LABEL, warning	1	223	116343	SCREW, ground; M5 x 0.8	1
213	223547	GROUND WIRE; 25 ft (7.6 m)	1	224	15G869	CABLE, ethernet; CAT5; 6 ft (1.8 m); to make web interface connection to a computer	1
214	n/a	PLATE, application; includes items 214a-214k	1				
214a	255786	• BOARD, barrier, IS; (includes fuses 15D979 and 114788, see page 29 for fuse location)	1				
214b	n/a	• COVER	1				
214c	117526	• SPACER	3				
214d	119257	• BAR, ground	1				
214e	114095	• BLOCK, terminal	1				

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

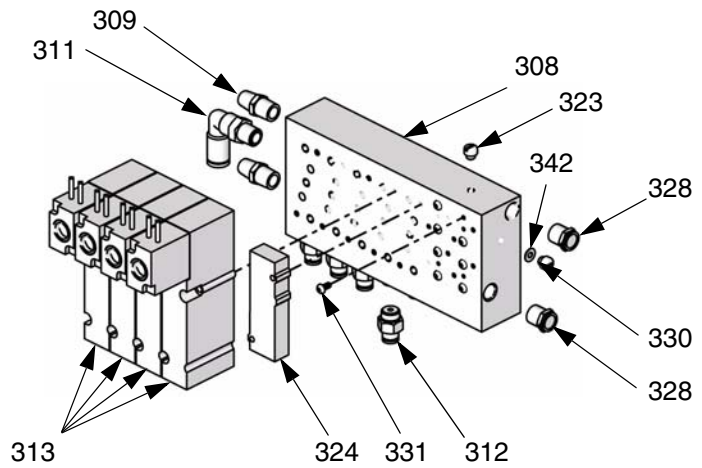
Parts labeled n/a are not available separately.

# 256533 Wall Mount Fluid Station



T112425a

## Solenoid Manifold Detail



T112426a

## 256533 Wall Mount Fluid Station

**NOTE:** Parts are shown on page 44, unless noted.

Ref. No.	Part No.	Description	Qty	Ref. No.	Part No.	Description	Qty
				323	100139	PLUG, pipe; 1/8 npt	2
301	256529	ENCLOSURE	1	324	552183	PLATE, blanking	1
302	255765	BOARD, circuit	1	325	15U510	BRACKET, valve mount	1
303	n/a	SCREW, machine, pan hd; 4-40 x 3/16 in. (5 mm)	4	327	n/a	COVER, fluid station	1
304	119257	CONNECTOR, bar, ground	1	328	121072	MUFFLER	2
305	119162	CONNECTOR, plug, 6-position	6	329	15D320	CABLE, fiber-optic, twin; 50 ft (15.25 m); see page 38 for location	1
306	116773	CONNECTOR, plug, 10-position	1				
307	113783	SCREW, machine, pan hd; 1/4-20 x 1/2 in. (13 mm)	4	330	104644	PLUG, screw; 10-32 x 5/32 in. (4 mm)	2
308	15R668	MANIFOLD, solenoid, 5 station	1	331	121628	SCREW, machine, self-seal- ing; 4-40 x 1/4 in. (6 mm)	8
309	C06061	MUFFLER	2	332	223547	WIRE, ground; 25 ft (7.6 m)	1
310	15U533	CABLE, CAN, intrinsically safe; 50 ft (15.25 m); see page 38 for location	1	334	n/a	TUBE, nylon; 1/4 in. (6 mm) OD; 27.5 ft (8.38 m) supplied	A/R
311	112781	ELBOW, swivel, 90°; 1/8 npt(m) x 1/4 in. (6 mm) OD tube	1	335	15U679	MANIFOLD, air; 3/8 npt(m) x six 1/4 in. (6 mm) OD tube ports	1
312	114263	FITTING, tube; 1/8 npt(m) x 5/32 in. (4 mm) OD tube	8	336	n/a	TUBE, nylon, green; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
313	121374	VALVE, solenoid, intrinsically safe; 12 Vdc	4	337	n/a	TUBE, nylon, red; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
314	111987	CONNECTOR, cord strain relief	5				
315	114669	SCREW, machine, phillips pan hd; M5 x 0.8; 10 mm	2	338▲	626413	LABEL, caution	1
316	n/a	PLATE, mounting	1	339▲	186620	LABEL, symbol, ground	1
317	114124	FILTER, air; 3/8 npt; includes 317a	1	340▲	15W775	LABEL, warning	1
317a	114228	• ELEMENT, filter; 5 micron	1	341	C19798	SCREW, cap, socket-hd; 1/4-20 x 3/8 in. (10 mm)	3
318	116343	SCREW, ground	1	342	104640	GASKET	3
319	100985	WASHER, lock, external tooth; 1/4	4				
320	101345	NUT, hex, jam; 1/4-20	4				
321	120685	GROMMET	2				
322	15U507	COVER, enclosure	1				

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

Parts labeled n/a are not available separately.

## Color Change Accessory Kits

### Low Pressure Color Change Kits

Kit Part No.	Kit Description	Control Module (10; see 312787)	Color Change Valve Stack (11; see 312783)	Catalyst Change Valve Stack (12; see 312783)
256581	2 color	277752	15V812	none
256582	4 color	277753	15V813	none
256583	7 color	277754	15V814	none
256584	12 color	277755	15V815	none
256585	2 color/2 catalyst	277756	15V812	15V812
256586	4 color/2 catalyst	277757	15V813	15V812
256587	4 color/4 catalyst	277771	15V813	15V813
256588	7 color/2 catalyst	277758	15V814	15V812
256589	7 color/4 catalyst	277772	15V814	15V813
256590	12 color/2 catalyst	277759	15V815	15V812
256591	12 color/4 catalyst	277773	15V815	15V813
256592	13-18 color	277754	256293	none
256593	13-24 color	277755	15V815	none
256594	13-30 color	277773	256305	none

### High Pressure Color Change Kits

Kit Part No.	Description	Control Module (10; see 312787)	Color Change Valve Stack (11; see 312783)	Catalyst Change Valve Stack (12; see 312783)
256596	2 color	277752	15V816	none
256597	4 color	277753	15V817	none
256598	7 color	277754	256343	none
256599	12 color	277755	256348	none
256600	2 color/2 catalyst	277756	15V816	15V816
256601	4 color/2 catalyst	277757	15V817	15V816
256602	4 color/4 catalyst	277771	15V817	15V817
256603	7 color/2 catalyst	277758	256343	15V816
256604	7 color/4 catalyst	277772	256343	15V817
256605	12 color/2 catalyst	277759	256348	15V816
256606	12 color/4 catalyst	277773	256348	15V817
256607	13-18 color	277754	256342	none
256608	13-24 color	277755	256348	none
256609	13-30 color	277773	256354	none

# Technical Data

Maximum fluid working pressure . . . . .	<i>Base system:</i> 4000 psi (27.58 MPa, 275.8 bar) <i>Low pressure color change:</i> 300 psi (2.07 MPa, 20.6 bar) <i>High pressure color change:</i> 3000 psi (21 MPa, 210 bar) <i>Coriolis meter:</i> 2300 psi (15.86 MPa, 158.6 bar)
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 for air logic and purge air (Graco-supplied). . . . .	5 micron (minimum) filtration required; clean and dry air
Air filtration for atomizing air (user-supplied) . . . . .	30 micron (minimum) filtration required; clean and dry air
Mixing ratio range. . . . .	0.1:1- 30:1*
On-ratio accuracy. . . . .	up to $\pm$ 1%, user selectable
Fluids handled . . . . .	one or two component: <ul style="list-style-type: none"> <li>• solvent and waterborne paints</li> <li>• polyurethanes</li> <li>• epoxies</li> <li>• acid catalyzed varnishes</li> <li>• moisture sensitive isocyanates</li> </ul>
Viscosity range of fluid . . . . .	20- 5000 cps*
Fluid filtration (user-supplied) . . . . .	100 mesh minimum
Fluid flow rate range*	
G3000 . . . . .	75 - 3000 cc/min. (0.02-0.79 gal./min.)
G3000HR. . . . .	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, Tungsten carbide (with nickel binder), perfluoroelastomer; PTFE

\* Dependent on programmed K-factor and application. The 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.

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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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