

# ProMix™ Easy

309909H

ENG

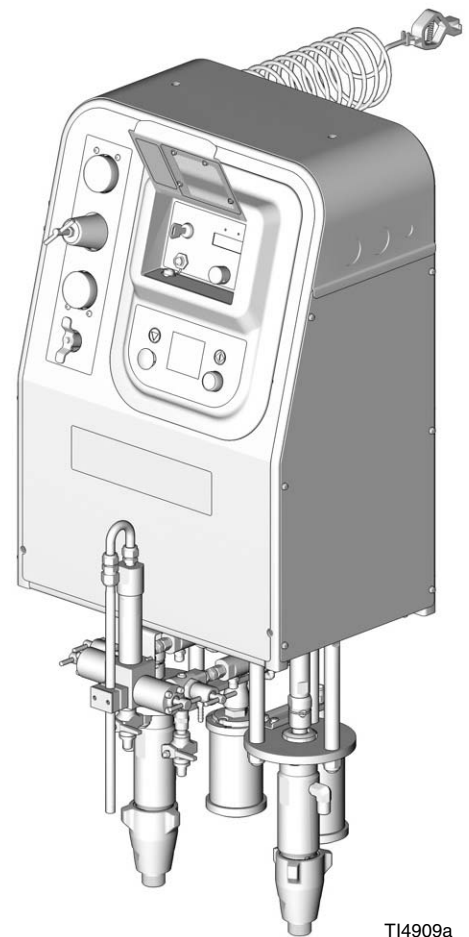
**Self-contained, single color, electronic plural component paint proportioner.  
For professional use only.**



**Important Safety Instructions**

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

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



TI4909a

# Contents

|  |           |   |           |
|--|-----------|---|-----------|
| <b>Manual Conventions</b> .....            | <b>2</b>  | <b>248349 Main Control Board Schematic</b> .....                        | <b>23</b> |
| <b>ProMix Easy Models</b> .....            | <b>3</b>  | <b>246899 Pump Solenoid Expansion Board Schematic</b> .....             | <b>23</b> |
| <b>Related Manuals</b> .....               | <b>4</b>  | <b>Parts</b> .....  | <b>24</b> |
| <b>Warnings</b> .....                      | <b>5</b>  | Part No. 234596 Series A, Pump-based, Cart-mounted Air Spray Unit ..... | 24        |
| <b>Pressure Relief Procedure</b> .....     | <b>7</b>  | Pump and Meter-based, Wall-mounted Air Spray Units .....                | 27        |
| Fluid Manifold to Gun .....                | 7         | Pump-based, Wall-mounted Air Spray Units . . .                          | 30        |
| Pump to Fluid Manifold .....               | 8         | Meter-based, Wall-mounted High Pressure Units .....                     | 33        |
| <b>Maintenance</b> .....                   | <b>9</b>  | Pump-based, Wall-mounted High Pressure Units .....                      | 36        |
| Preventive Maintenance Schedule .....      | 9         | Pump and Meter-based, Wall-mounted High Pressure Units .....            | 40        |
| Mix Manifold .....                         | 9         | Tube Connections, Low Pressure Pumps .....                              | 44        |
| Dispense Valve .....                       | 9         | Tube Connections, High Pressure Pumps .....                             | 45        |
| Pump .....                                 | 9         | Tube Connections, Meters .....  | 46        |
| Turbine Alternator .....                   | 9         | Pneumatic Schematic .....   | 47        |
| Air Filters .....                          | 9         | 248270 Intrinsically Safe Pneumatic Control . . .                       | 48        |
| Pump Test/Meter Calibration .....          | 9         | 248316 Non-intrinsically Safe Pneumatic Control .....                   | 50        |
| Wet Cup .....                              | 9         | User Interface .....  | 52        |
| Storage .....                              | 9         | 287230 Pump Air Control .....   | 53        |
| Icing .....                                | 9         | 287231 Meter Air Control .....  | 53        |
| <b>Troubleshooting</b> .....               | <b>10</b> | <b>Technical Data</b> .....   | <b>54</b> |
| <b>Alarms</b> .....                        | <b>13</b> | <b>Graco Standard Warranty</b> .....                                    | <b>56</b> |
| <b>Repair</b> .....                        | <b>15</b> | <b>Graco Information</b> .....  | <b>56</b> |
| Replacing Air Filter Element .....         | 15        |   |           |
| User Interface .....                       | 16        |   |           |
| Pneumatic Control .....                    | 19        |   |           |
| Dispense Valve/Mix Manifold Assembly ..... | 21        |   |           |
| Pump Assembly .....                        | 21        |   |           |
| <b>Electrical Schematic</b> .....          | <b>22</b> |   |           |

# Manual Conventions

**WARNING**

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

Warnings included in instructions generally have a symbol indicating the hazard. Follow the instructions and read the hazard section on warning pages 5 to 6 for additional information.

**CAUTION**

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

### Note


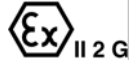




A note indicates additional helpful information.

# ProMix Easy Models

## WARNING



Do not install equipment approved only for non-hazardous location in a hazardous area. Substitution of components may impair intrinsic safety and cause personal injury. Read page 5.

| Approved for Hazardous Location<br>Class I, Div 1, Group D (North America); Class I, Zones 1 and 2 (Europe) |        |   |  |   |   |
|---|--------|---|--|---|---|
| ProMix Easy Part No.  | Series | Description                                     | Maximum Working Pressure<br>psi (MPa, bar) | Approvals   |   |
| 234596  | A      | Cart mount, UltraMix™ cst* Pumps, hose and gun  | 250 (1.7, 17)                              | <br>APPROVED<br>Conforms to<br>FM std 3600 & 3610<br>for use in<br>Class I Div 1<br>Group D T3<br>Hazardous Locations<br><br><br>ISSeP 04 ATEX 020X<br>EEx ia p IIA T3<br><br><br><br><br>CAN/CSA<br>22.2 No. 157-92<br>& No. 1010.1-92 |   |
| 234597  | A      | Wall mount, UltraMix cst* Pump/G3000 Meter      | 250 (1.7, 17)                              |   |   |
| 234598  | A      | Wall mount, UltraMix sst** Pump/G3000 Meter     | 250 (1.7, 17)                              |   |   |
| 234599  | A      | Wall mount, UltraMix cst* Pumps                 | 250 (1.7, 17)                              |   |   |
| 234601  | A      | Wall mount, UltraMix sst** Pumps                | 250 (1.7, 17)                              |   |   |
| 234602  | A      | Wall mount, HydraMix™ 500 cst* Pump/G3000 Meter | 2400 (16, 166)                             |   |   |
| 234603  | A      | Wall mount, HydraMix 500 sst** Pump/G3000 Meter | 2400 (16, 166)                             |   |   |
| 234604  | A      | Wall mount, HydraMix 600 cst* Pump/G3000 Meter  | 3400 (23, 234)                             |   |   |
| 234605  | A      | Wall mount, HydraMix 600 sst** Pump/G3000 Meter | 3400 (23, 234)                             |   |   |
| 234606  | A      | Wall mount, HydraMix 500 cst* Pumps             | 2400 (16, 166)                             |   |   |
| 234608  | A      | Wall mount, HydraMix 500 sst** Pumps            | 2400 (16, 166)                             |   |   |
| 234609  | A      | Wall mount, HydraMix 600 cst* Pumps             | 3400 (23, 234)                             |   |   |
| 234611  | A      | Wall mount, HydraMix 600 sst** Pumps            | 3400 (23, 234)                             |   |   |
| 234612  | A      | Wall mount, HydraMix 700 cst* Pumps             | 4700 (32, 324)                             |   |   |
| 234613  | A      | Wall mount, HydraMix 700 sst** Pumps            | 4700 (32, 324)                             |   |   |
| 234618  | A      | Wall mount, G3000 Meter, cst* mix manifold      | 4000 (28, 280)                             |   |   |
| 234619  | A      | Wall mount, G3000 Meter, sst** mix manifold     | 4000 (28, 280)                             |   |   |
| Approved for Non-hazardous Location   |        |   |  |   |   |
| 234600  | A      | Wall mount, UltraMix cst* Pumps                 | 250 (1.7, 17)                              |   | <br>9902471<br>Conforms to<br>UL61010A-1<br>Certified to<br>CAN/CSA<br>22.2 No. 1010.1-92<br><br> |
| 234825  | A      | Wall mount, UltraMix sst** Pumps                | 250 (1.7, 17)                              |   |   |
| 234607  | A      | Wall mount, HydraMix 500 cst* Pumps             | 2400 (16, 166)                             |   |   |
| 234826  | A      | Wall mount, HydraMix 500 sst** Pumps            | 2400 (16, 166)                             |   |   |
| 234610  | A      | Wall mount, HydraMix 600 cst* Pumps             | 3400 (23, 234)                             |   |   |
| 234827  | A      | Wall mount, HydraMix 600 sst** Pumps            | 3400 (23, 234)                             |   |   |

\* cst=carbon steel.

\*\* sst=stainless steel.

# Related Manuals

## Component Manuals in English





| Manual | Description                              |
|--------|--|
| 309908 | ProMix Easy Operation                    |
| 309909 | ProMix Easy Repair-Parts                 |
| 310654 | Fluid Mix Manifold                       |
| 310655 | Dispense Valve                           |
| 310662 | UltraMix and HydraMix Displacement Pumps |
| 310671 | UltraMix Pumps                           |
| 310672 | HydraMix Pumps                           |
| 310673 | Circulation Kits                         |
| 310674 | Stand and Caster Kits                    |
| 310675 | AC Power Supply                          |
| 310676 | Remote Manifold Kit                      |
| 310677 | Heater Installation Kit                  |
| 310678 | TSL Pump Kits                            |
| 309192 | ISO Supply Kit                           |
| 309623 | Data Download Kits                       |
| 308778 | G3000 Flowmeter                          |
| 308034 | Turbine Alternator Repair Kit            |

## This manual available in the following languages:

| Manual | Language |
|--------|----------|
| 309909 | English  |
| 310680 | French   |
| 310682 | Spanish  |
| 310684 | German   |
| 310686 | Italian  |
| 310688 | Chinese  |
| 310690 | Japanese |
| 310769 | Dutch    |
| 310771 | Finnish  |
| 310773 | Swedish  |

# Warnings

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

|  <b>WARNING</b> |  |
|--|--|
|                 | <p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in work area 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 lights on or off when flammable fumes are present.</li> <li>• Ground equipment and conductive objects in work area. See <b>Setup</b> instructions in ProMix Easy Operation manual 309908.</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 fire extinguisher in the work area.</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>• 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>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>  |
|               | <p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in this manual. Disconnect power or air supply.</li> </ul>   |


**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 kink or overbend hoses or use hoses to pull equipment.
- Comply with all applicable safety regulations.

**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

**⚠ WARNING**



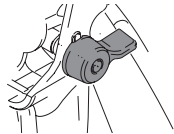
Relieve pressure from fluid manifold to gun whenever you stop spraying and before servicing gun or removing spray tip.

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

Read warnings, page 5.

## Fluid Manifold to Gun

1. Engage trigger lock.

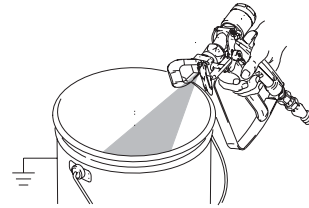


2. Press .

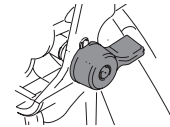
3. Disengage trigger lock.



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

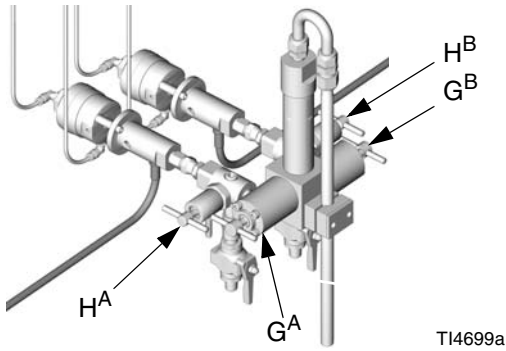



5. Engage trigger lock.




## Pump to Fluid Manifold

1. Close shutoff valves G<sup>A</sup> and G<sup>B</sup>.
2. Place waste container under sampling valves H<sup>A</sup> and H<sup>B</sup>.




3. Turn function knob to pressure relief/park .



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


5. Open sampling valve A slowly to bleed off pressure. Indicator A will stay on for 5 sec after Pump A reaches Park position, then go off.

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



6. Indicator B comes on and Pump B pressurizes.
7. Open sampling valve B slowly to bleed off pressure. Indicator B will stay on for 5 sec after Pump B reaches Park position, then go off.



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

8. Close sampling valves A and B before restarting system.



# Maintenance

## Preventive Maintenance Schedule

Establish a preventive maintenance schedule, based on the pump's repair history.

## Mix Manifold

See mix manifold manual 310654.

## Dispense Valve

See dispense valve manual 310655.

## Pump

See applicable pump manual 310671, 310672, or 310662.

## Turbine Alternator

Replace bearings every 2000 hours. See page 19.

## Air Filters

Check daily. Drain and clean as necessary. See page 15.

## Pump Test/Meter Calibration

See ProMix Easy Operation manual. If pumps/meters fail test, see **Troubleshooting**, page 10.

## Wet Cup

Check pump and dispense valve wet-cups daily. Keep filled with Graco Throat Seal Liquid (TSL), Part No. 206995.

## Storage

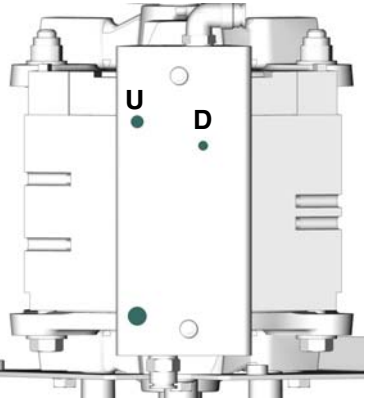
Before storing the pump, always flush it, see ProMix Easy Operation manual. Relieve the pressure, page 7.

## Icing

If you experience icing at the pump air manifold:


- Reduce pump input air pressure below 80 psi (0.56 MPa, 5.6 bar), if required spray pressure allows.
- Reduce moisture in compressed air supply, or use heated air.

If icing persists, see table below.


| Problem                                | Solution   |  <p style="text-align: right; font-size: small;">TI5294a</p> |
|--|--|---|
| Pump slows on both up and down stroke. | Turn D port bleed screw 60° (1/6 turn) counter-clockwise, to bleed 1 cfm air to melt ice.  |   |
| Pump slows on down stroke.             | Turn D port bleed screw 60° (1/6 turn) counter-clockwise, to bleed 1 cfm air to melt ice. If icing continues, turn screw to 90° (1/4 turn) to increase air flow to 2 cfm. If necessary, increase air flow to 3 cfm by turning screw to 270° (3/4 turn). Do not exceed 3 cfm (3/4 turn maximum).  |   |
| Pump slows on up stroke.               | Turn U port bleed screw 90° (1/4 turn) counter-clockwise, to bleed 1 cfm air to melt ice. If icing continues, turn screw to 120° (1/3 turn) to increase air flow to 2 cfm. If necessary, increase air flow to 3 cfm by turning screw to 180° (1/2 turn). Do not exceed 3 cfm (1/2 turn maximum). |   |

# Troubleshooting

**WARNING**






Read warnings, page 5-6.

 If an alarm code displays, see page 13.

| Problem                                | Cause  | Solution  |
|--|--|---|
| Display not lit.<br>No electric power. | Air valve not turned on.                         | Turn on main air valve to system.   |
|  | Air supply pressure too low.                     | Increase pressure to 60 psi (0.42 MPa, 4.2 bar) or greater.   |
|  | Air supply filters plugged.                      | Clean filter bowls; replace filter elements. Page 15.   |
|  | Turbine air regulator set too low.               | Adjust to proper setting.   |
|  | Turbine alternator failure.                      | Repair or replace turbine. Page 19.   |
|  | Power supply not connected to main board.        | Check power connections to main board. See <b>Electrical Schematic</b> , page 22.   |
|  | Main board not connected to display board.       | Check electrical connections between display and main board. See <b>Electrical Schematic</b> , page 22, and <b>248349 Main Control Board Schematic</b> , page 23.   |
|  | Display board failure.                           | Replace display board. Page 18.   |
| Pumps do not run.                      | Power not connected to unit (non-IS units only). | Ensure that power cord is plugged in. Check that cord is connected properly; see ProMix Easy Operation manual.  |
|  | Air pressure to pumps too low.                   | Increase pressure to 50 psi (0.35 MPa, 3.5 bar).  |
|  | Solenoid valve stuck.                            | Actuate solenoid manually, if it does not operate, replace solenoid. Page 20.   |
| Pump test volume is not correct.       | Dispense valve(s) not opening.                   | Service or replace valve(s). See 310655.  |
|  | Air pressure to pumps too low                    | Increase pressure to 50 psi (0.35 MPa, 3.5 bar).  |
|  | Sensors not functioning properly.                | Check position of sensors. See ProMix Easy Operation manual, and applicable pump manual.<br>Check board calibration and recalibrate if necessary. See ProMix Easy Operation manual.<br>Replace sensors. See pump manual 310671 or 310672. |
|  | Pump cavitating excessively.                     | Check for air in lines caused by loose fitting or use of agitator.<br>Material too viscous. Use heater.   |

| Problem  | Cause  | Solution  |
|--|--|---|
| Paint does not cure consistently.                        | Ratio not set correctly.   | Check that correct ratio is set and set by volume. See ProMix Easy Operation manual.  |
|  | Material not mixing correctly.   | Test pump. Page 9.<br>Make sure mixer is clean; flush as needed. See ProMix Easy Operation manual.                                  |
|  | Pump not operating correctly.  | Observe whether pumps are loading and checking correctly, if not, clean and repair pump. See displacement pump manual 310662.       |
| Poor spray pattern.                                      | Fluid pressure too low.  | Increase pump pressure.   |
|  | Spray tip dirty or worn.   | Relieve pressure. Clean or replace tip. Follow gun manual instructions.   |
|  | Fluid A or B filters plugged.  | Clean filters.  |
|  | Mixer or hoses partially plugged or too restrictive.                             | Inspect parts for cured material. Clean or replace, or use larger hoses and mixer.  |
| System runs erratically.                                 | Air filter(s) clogged. Replace elements.   | Clean. Replace element(s). See page 15.   |
|  | Air supply hoses undersized.   | Replace hoses with appropriate size.  |
|  | Air compressor undersized.   | Use larger air compressor.  |
|  | Air supply pressure tank undersized.   | Use larger pressure tank.   |
| Air supply relief valve opens.                           | Turbine air regulator set too high.  | Lower setting to 23-25 psi (172-241 kPa, 1.7-2.4 bar).  |
| Turbine alternator makes high-pitched whining noise.     | Turbine bearings worn. (Setting turbine air regulator too high, wears bearings.) | Replace bearings. Page 19.  |
| Display shows 88888 or unit reboots unexpectedly.        | Turbine is not supplying enough power to board.                                  | Increase turbine regulator setting to 23-25 psi (172-241 kPa, 1.7-2.4 bar).   |
|  |  | Check turbine and electrical control exhaust air for restrictions.  |
|  |  | Replace turbine bearings. Page 19.  |
| ProMix Easy does not start when start button is pressed. | Faulty start switch or wire harness.   | Check start switch and wiring harness continuity; switch is normally open circuit. See <b>Electrical Schematic</b> , page 22.       |
|  | Faulty stop switch or wiring harness.  | Check stop switch and wiring harness continuity; stop switch is normally closed circuit. See <b>Electrical Schematic</b> , page 22. |
|  | Bad I/O port on display board.   | Replace board. Page 18.   |
|  | Bad I/O port on main board.  | Replace board. Page 17.   |
| Dispense valves leaking.                                 | Loose or worn packings.  | Tighten packing nut. If leak continues, replace packings. See 310655.   |

| Problem                                     | Cause   | Solution   |
|---|---|--|
| Flow rate too low.                          | Inadequate air supply.  | Use larger CFM compressor.   |
|   | Air pressure to pumps too low.  | Increase pressure.   |
|   | Fluid A or B filters plugged.   | Clean filters.   |
|   | Spray tip too small.  | Relieve pressure. Install larger tip. Follow gun manual instructions.  |
|   | Mixer or hoses partially plugged or too restrictive.  | Inspect parts for cured material. Clean or replace, or use larger hoses and mixer.   |
|   | Insufficient dispense valve travel.   | Increase travel. See 310655.   |
|   | Shutoff valves are not fully open.  | Ensure that shutoff valves are fully open and sampling valves are closed.  |
| Pump stops after 12 cycles.                 | Knob is set to Run pump A  or B  independently. | Turn knob to spray  if spraying material. |
| Pump cycle rate slows and eventually stops. | Icing at pump air manifold.   | See <b>Icing</b> , page 9.   |

# Alarms

\* Indicates error where audible alarm sounds once briefly.      \*\* Indicates error where audible alarm sound pulses.

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

| Code | Alarm                                     | Active | Problem  | Cause   |
|------|---|--------|--|---|
|      | <b>Operating Errors<br/>(continued)</b>   |        |  |   |
| 22   | High Ratio (units with meter[s] only)     | Spray  | Mix ratio higher than Target + Tolerance                                       | Flow rate too high  |
| 23   | Low Ratio (units with meter[s] only)      | Spray  | Mix ratio lower than Target - Tolerance  | Slow actuation of dispense valve A or B<br>Clogged flow meter   |
| 24   | Dose Timeout A (units with meter[s] only) | Spray  | Air flow switch indicates more than 40 sec of air flow without dose completing | Air flow switch stuck open.   |
| 25   | Dose Timeout B (units with meter[s] only) |        |  | Atomizing air leak downstream of air flow switch.<br>Clogged flow meter.<br>Gun triggered without fluid (dusting parts) |
| 26   | Park Timeout (pump-based units only)      | Park   | Pumps not at bottom of stroke  | Sampling valves closed, or gun not triggered.   |
|      | <b>Testing Error</b>                      |        |  |   |
| 15   | Piston packing/ball A*                    | Test   | Pump does not completely stall in up stroke                                    | Piston packing or ball check failure  |
| 16   | Piston packing/ball B*                    |        |  |   |
| 17   | Inlet Ball A*                             | Test   | Pump does not completely stall in downstroke                                   | Intake valve ball check failure   |
| 18   | Inlet Ball B*                             |        |  |   |
| 19   | Dispense Valve A*                         | Test   | Pump does not completely stall in both up and down strokes                     | Throat packing or dispense valve failure  |
| 20   | Dispense Valve B*                         |        |  |   |
| 27   | Pump Calibration Timeout A                | Run A  | Pump doesn't run through calibration.  | Sampling valves closed.   |
| 28   | Pump Calibration Timeout B                | Run B  |  |   |

# Repair

Flush before repairing equipment, if possible. See Pro-Mix Easy Operation manual.

## WARNING



Read warnings, page 5.

Follow **Pressure Relief Procedure**, page 7, if service time may exceed pot life time, before servicing fluid components, and before transporting equipment to a service area.

## Replacing Air Filter Element

There are 2 air filters on the unit: the 5 micron air manifold filter (7) and 40 micron pump air filter (9). Check filters daily and replace element as needed. Order 15D909 5 micron filter and 15D890 40 micron filter.

## WARNING



Removing the bowl of a pressurized air filter could cause serious injury. Do not service air filter until air line is depressurized.

1. Close main air shutoff valve on air supply line and on unit.
2. Remove left side plate (21).
3. Unlock filter bowl guard and remove.
4. Unscrew filter bowl.



5. Remove and replace element.
6. Screw filter bowl on securely.
7. Reassemble.

## User Interface

### Removal

1. Close main air shutoff valve on air supply line and on unit.
2. Remove side panels (21).
3. Remove fasteners (45). Gently pull user interface (11) away from pneumatic control (10).

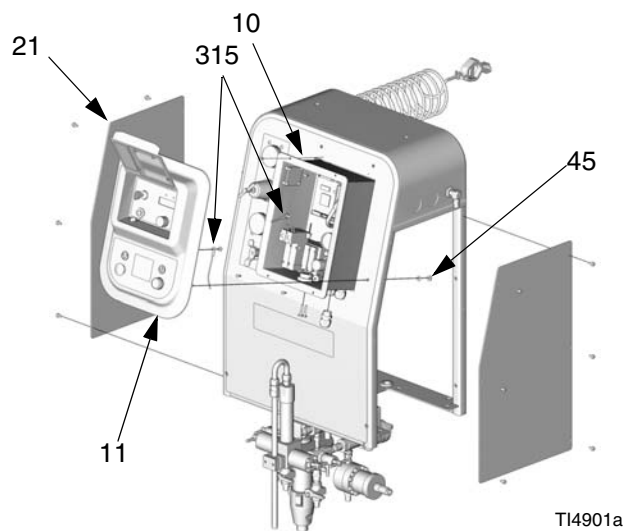


FIG. 1

4. To completely remove user interface (11), disconnect ground wire (315), and wires (416 and 406) from main control board (301). See **Electrical Schematic**, page 22.

## Software Upgrades

### CAUTION

To avoid damaging circuit board, wear a grounding strap.

1. Remove User Interface cover. See above.
2. Use a chip remover (D) to remove software chip (C). FIG. 2.

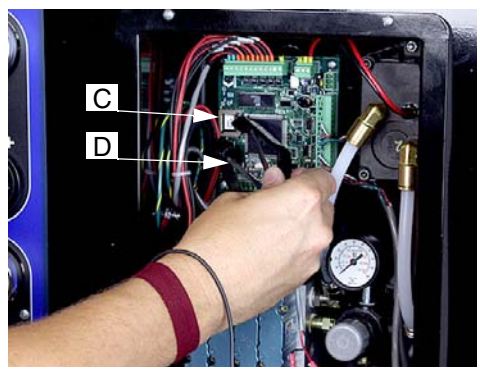


FIG. 2

3. Install new chip (beveled corner down).
4. Reassemble.
5. Recalibrate main circuit board. See ProMix Easy Operation Manual.



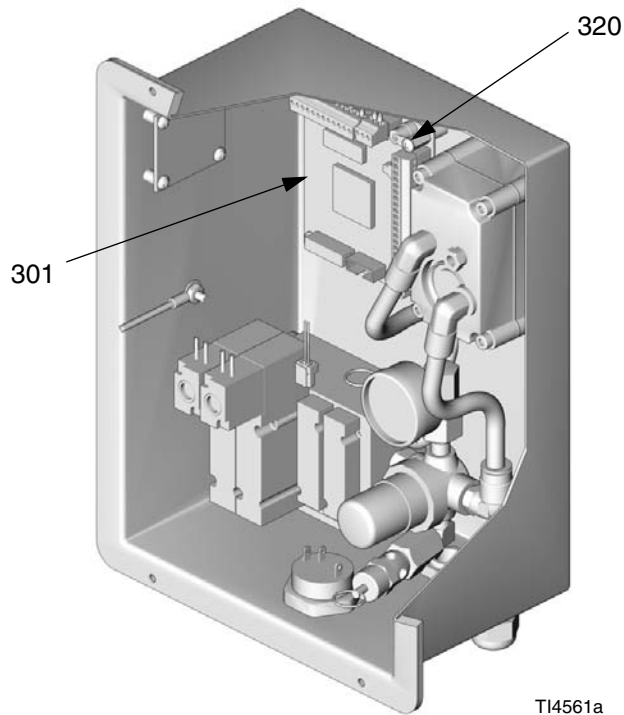
## Replacing Main Circuit Board

| CAUTION  |
|--|
| To avoid damaging circuit board, wear a grounding strap. |

1. Remove User Interface cover. See page 16.
2. Disconnect all wire connectors from board (301). FIG. 3.
3. Remove four screws (302) and replace board (301).
4. Reassemble. Refer to **Electrical Schematic**, page 22.
5. Recalibrate system. See ProMix Easy Operation Manual.



**NOTE:** If the main control board is replaced on units that use a flow meter, the flow meter calibration data must be set using a PC and a Data Download Kit (Graco P/N 248403 for hazardous locations or Graco P/N 248404 for non-hazardous locations).



**FIG. 3**

## Replacing Display Circuit Board

### CAUTION

To avoid damaging circuit board, wear a grounding strap.

1. Remove User Interface cover. See page 16.
2. Disconnect wires from display board (410). FIG. 4.

3. Remove two screws (411).
4. Loosen setscrew (419) from knob (405) and remove knob assembly. Remove jam nut (N).
5. Remove and replace display board (410).
6. Reassemble. Refer to **Electrical Schematic**, page 22.

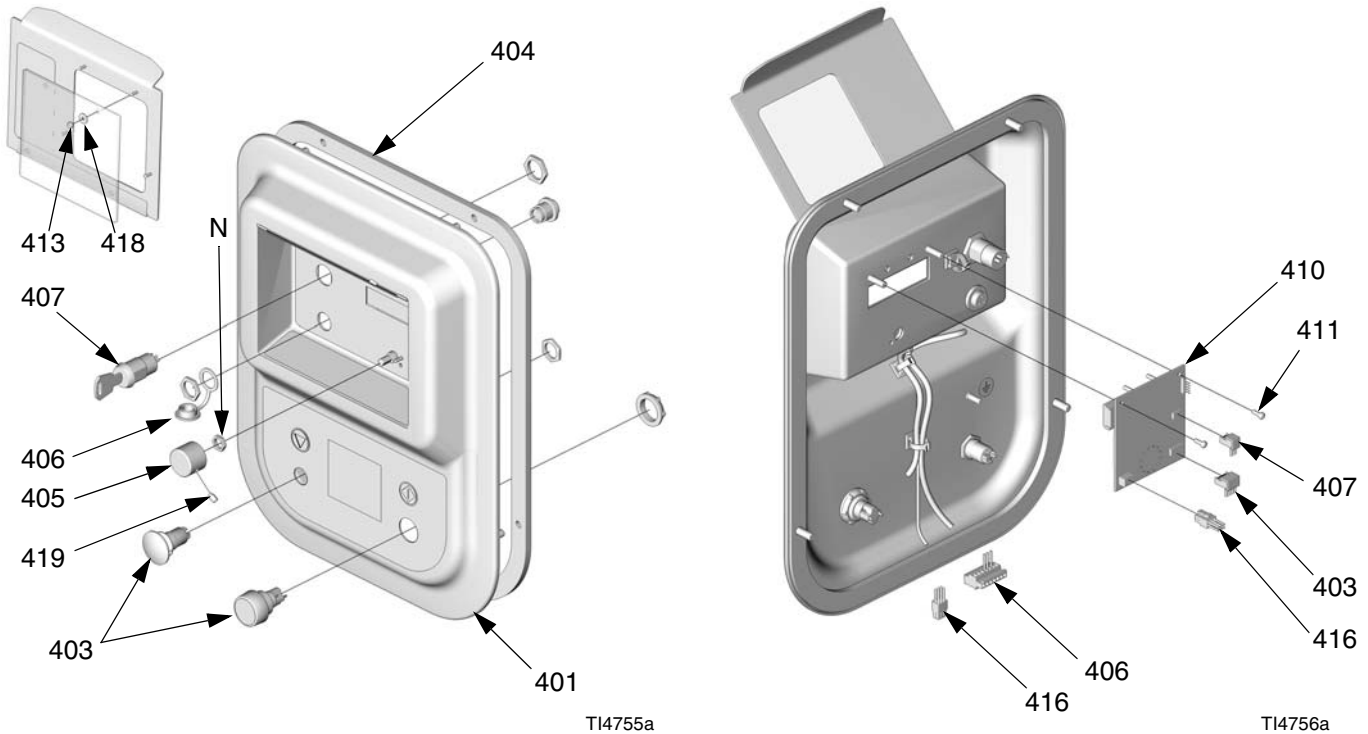


FIG. 4

# Pneumatic Control

## Alternator Repair

Turbine Alternator Repair Kit 223688 is available to replace turbine bearings.

1. Remove User Interface cover. See page 16.

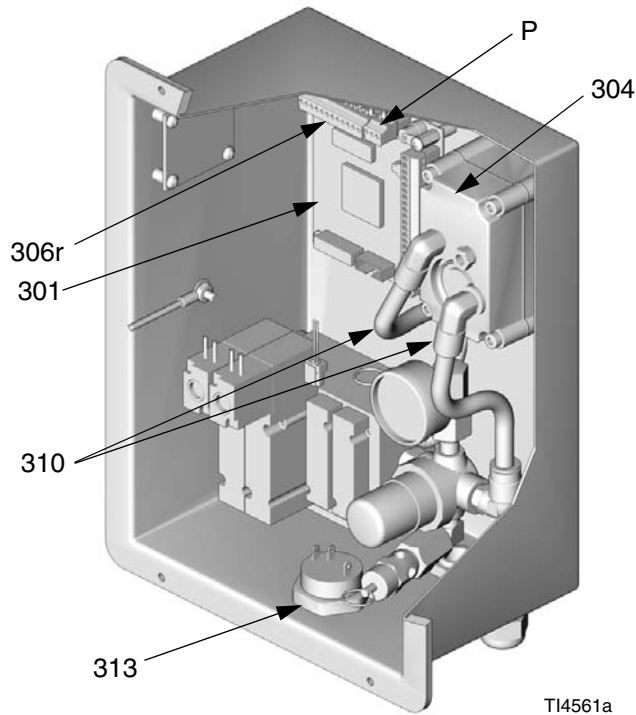


FIG. 5

2. Disconnect power supply wires (P). FIG. 5.
3. Disconnect two air lines (310) from alternator (304). FIG. 6.
4. Remove top nut (305) and loosen bottom nut. Slide alternator up and off bottom nut.
5. Remove four screws (304d) to separate alternator housings. FIG. 7.
6. Disconnect turbine (304e) from board (A). Follow instructions in turbine kit manual 308034 to remove and repair turbine.
7. Replace gasket (304a) if damaged. Place between housings before securing with screws (304d).
8. Reassemble. Refer to **Electrical Schematic**, page 22.



- Lightly lubricate turbine o-ring before installing turbine in housing.
- Connect alternator red wire to + side and black wire to – side of main circuit board.
- Connect turbine to 3-pin connector on main circuit board.

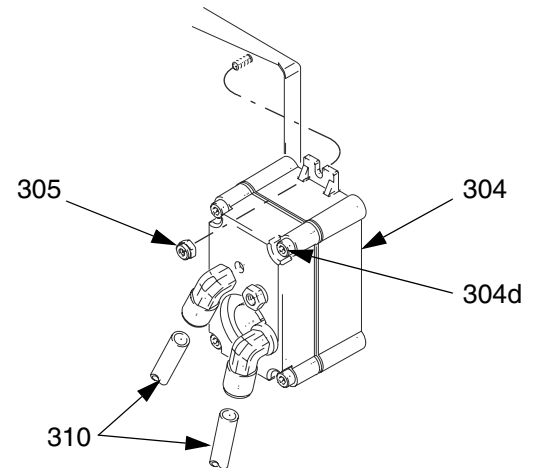
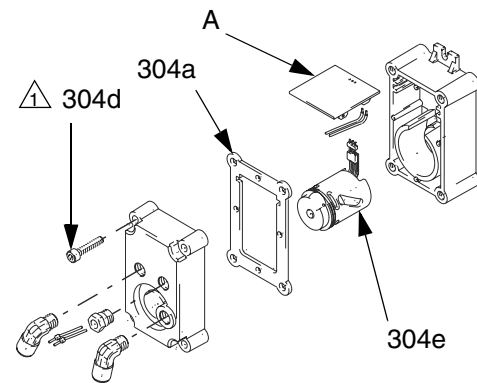


FIG. 6





 Torque to 20 in-lbs (2 N•m)

FIG. 7

## Replacing Solenoids

Follow this procedure to replace a single solenoid.

1. Remove User Interface cover. See page 16.
2. Disconnect two solenoid wires (V) from main board. FIG. 8.
3. Disconnect dispense valve pilot lines (A1, A2, B1, B2). FIG. 8.
4. Remove two screws (S).
5. Remove and replace solenoid (306b).

 From left to right, solenoid functions are as follows:


- Component A
- Component B

6. Reassemble. Solenoid wires are polarized (red +, black -). Refer to **Electrical Schematic**, page 22.

## Replacing Alternator Regulator

1. Remove User Interface cover. See page 16.
2. Remove two screws (309) from the back of the control box.

3. Disconnect supply and exhaust air lines (310). FIG. 5, page 19.
4. Disconnect solenoid wires 12 position Phoenix connector (306r) from main board.
5. Remove solenoid module (306) with regulator (306e). FIG. 8.
6. Unscrew and replace regulator (306e).
7. Reassemble. Refer to **Electrical Schematic**, page 22.

 Make sure gaskets (306j, 306k) are in place when reinstalling solenoid module.

8. Set regulator to 24 psi (160 kPa, 1.6 bar).

## Replacing Alarm

1. Remove User Interface cover. See page 16.
2. Disconnect alarm wires from main board.
3. Unscrew alarm (313) and replace. FIG. 5, page 19.
4. Reassemble. Refer to **Electrical Schematic**, page 22.

Dispense Valve  
Pilot Lines  
A1 (off), clear tube  
A2 (on), black tube  
B1 (off), green tube  
B2 (on), red tube

1. Set regulator pressure to 24 psi (160 kPa, 16 bar).
2. Safety relief valve (306t) is required on all IS units.

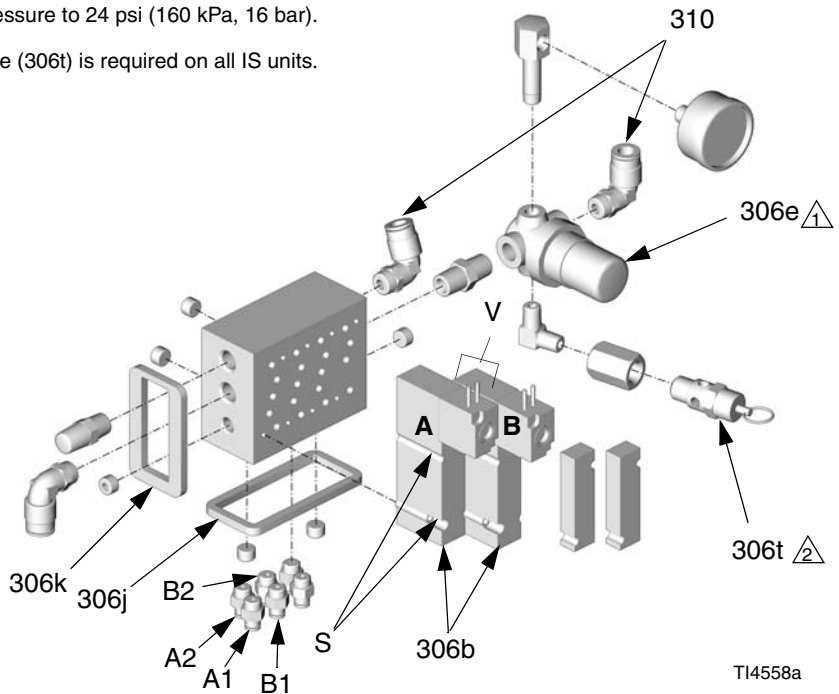
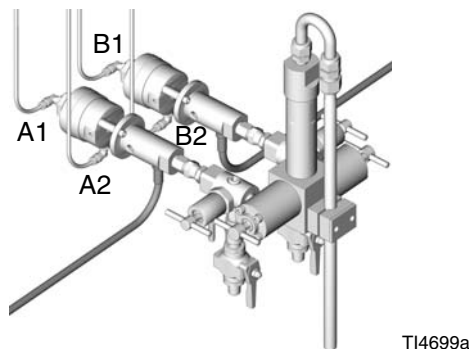


FIG. 8

## Dispense Valve/Mix Manifold Assembly



See the **Parts** drawing for your model.

1. Follow **Pressure Relief Procedure**, page 7.
2. Label all air and fluid lines, and disconnect from fittings on manifold assembly.
3. Remove fasteners.
4. Remove mix manifold (2).
5. To repair mix manifold, see manual 310654. To repair dispense valves, see manual 310655.
6. Reassemble.

## Pump Assembly

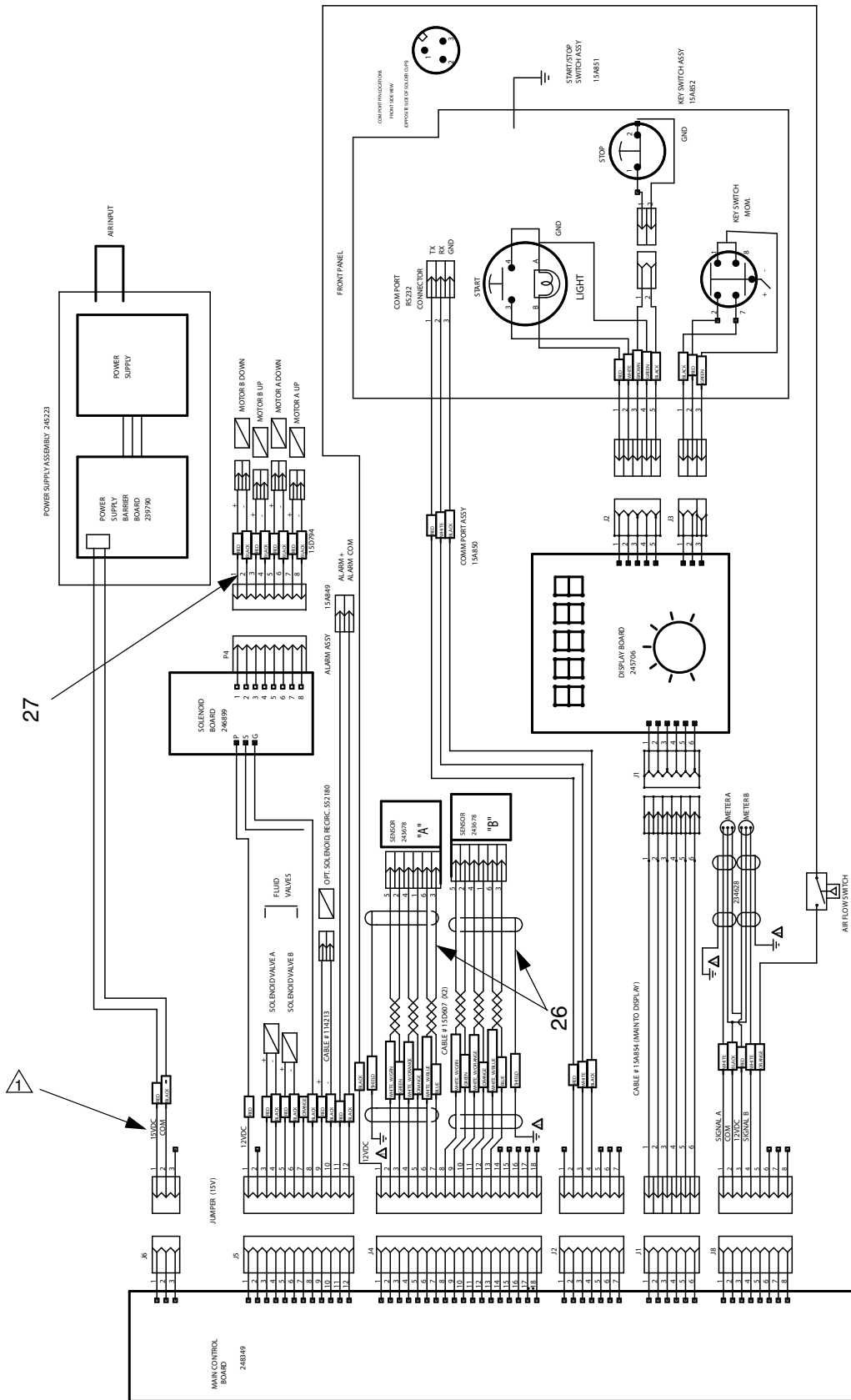


See the **Parts** drawing for your model.

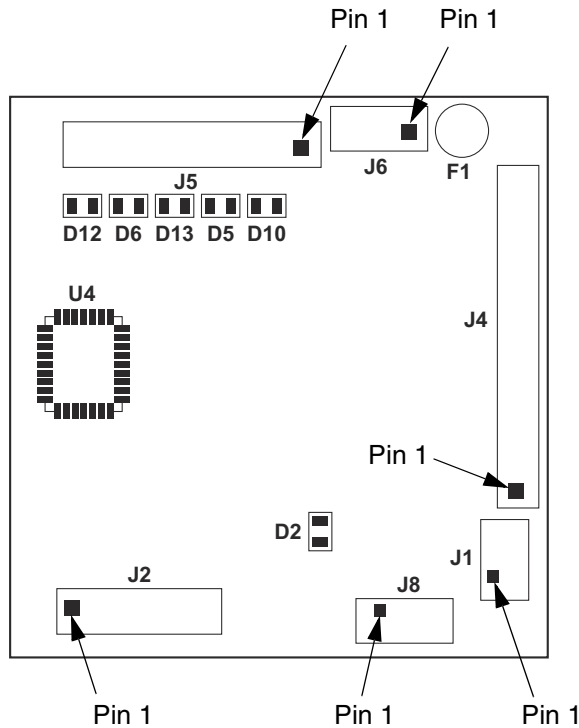
1. Follow **Pressure Relief Procedure**, page 7.
2. Remove side plates (21).
3. Remove wire harnesses from sensor and solenoids. Refer to **Electrical Schematic**, page 22.
4. Disconnect fluid inlet and outlet lines from pump lower. Disconnect air supply from pump.
5. Label all tubing and disconnect from fittings on pump assembly.
6. Remove mounting hardware and slide pump out of frame.
7. Repair as instructed in pump manuals 310671, 310672, or 310662.
8. Reassemble.

# Electrical Schematic

Under operating conditions, voltage at J6 will be approximately 12 Vdc.



# 248349 Main Control Board Schematic

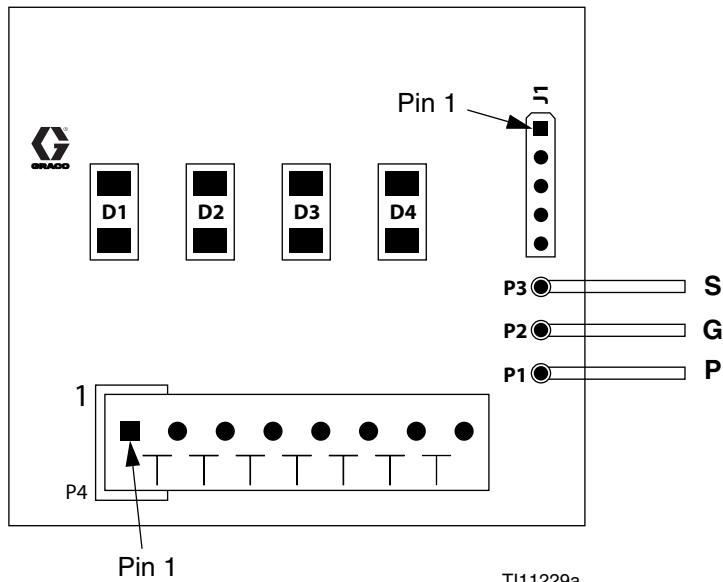


TI11316a

248349 Main Control Board LEDs

| LED | Description   |
|-----|---|
| D2  | In normal operation D2 flashes on and off in 1 second intervals. If D2 is off (not flashing), software is not booting; check for power to the board or a short circuit. |
| D5  | On: Dispense valve B is on (open).<br>Off: Dispense valve B is off (closed).  |
| D6  | Active only on units with recirculation option.<br>On: Recirculation solenoid is on.<br>Off: Recirculation solenoid is off.   |
| D10 | On: Dispense valve A is on (open).<br>Off: Dispense valve A is off (closed).  |
| D12 | On: Remote alarm output on.<br>Off: Remote alarm output off.  |
| D13 | D13 is always off. Output powers the 246899 Expansion Board, turning the board on and off.  |

# 246899 Pump Solenoid Expansion Board Schematic



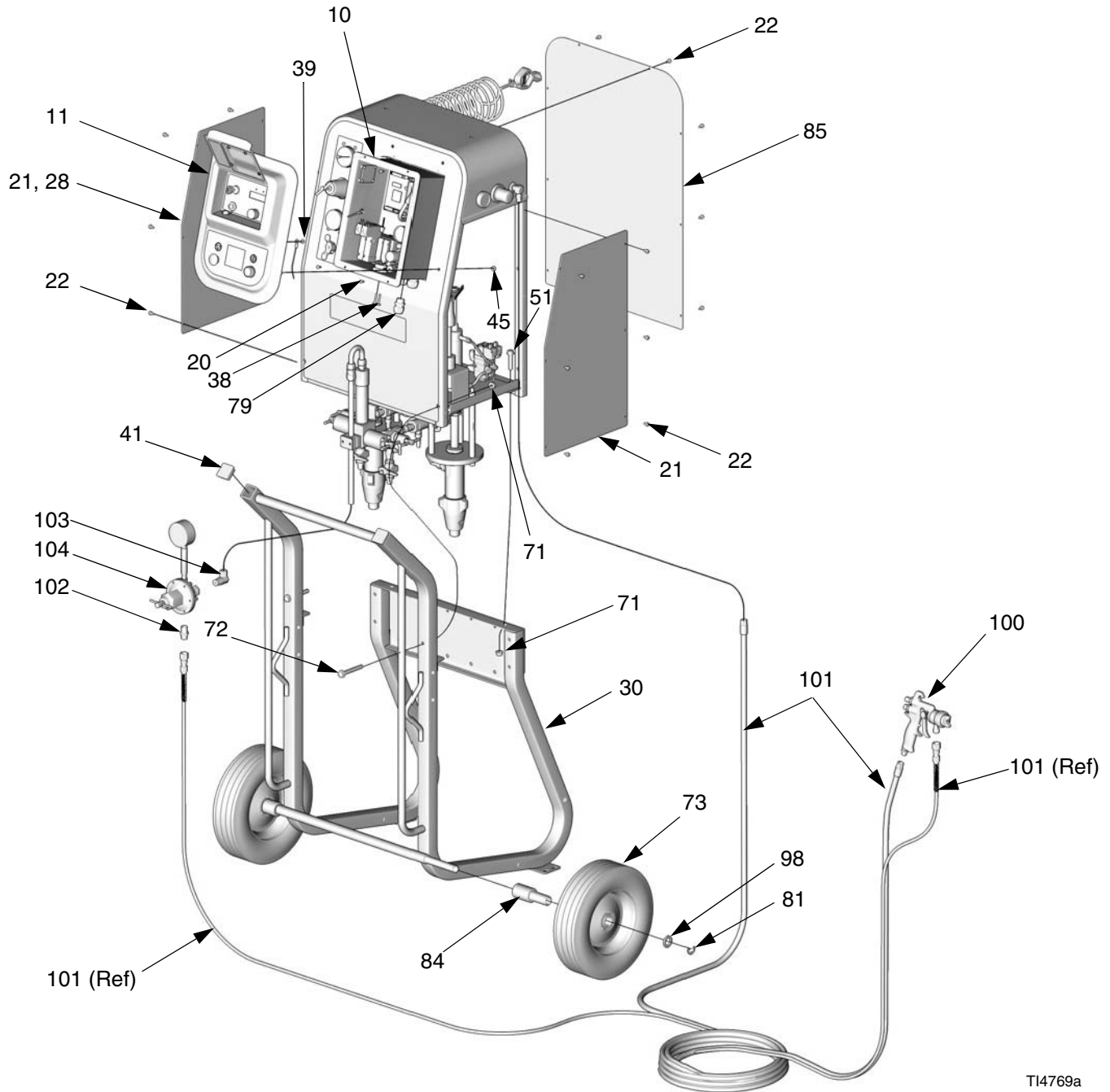
TI11229a

246899 Pump Solenoid Expansion Board LEDs

| LED | Description                      |
|-----|----------------------------------|
| D1  | On: Pump B is on the downstroke. |
| D2  | On: Pump B is on the upstroke.   |
| D3  | On: Pump A is on the downstroke. |
| D4  | On: Pump A is on the upstroke.   |

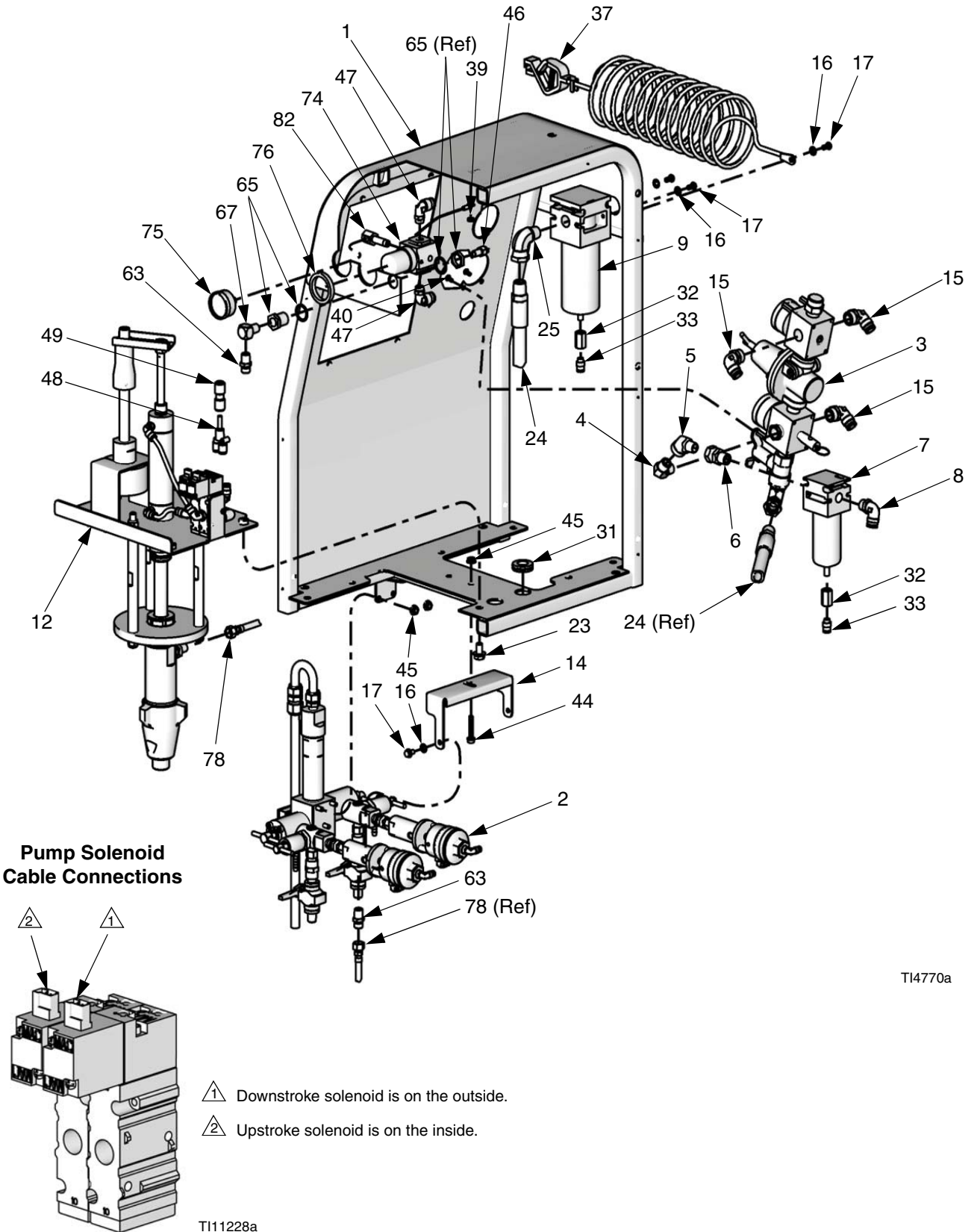
# Parts

## Part No. 234596 Series A, Pump-based, Cart-mounted Air Spray Unit





### Part No. 234596 Series A, Pump-based, Cart-mounted Air Spray Unit, continued



TI4770a

## Part No. 234596 Series A, Pump-based, Cart-mounted Air Spray Unit, continued

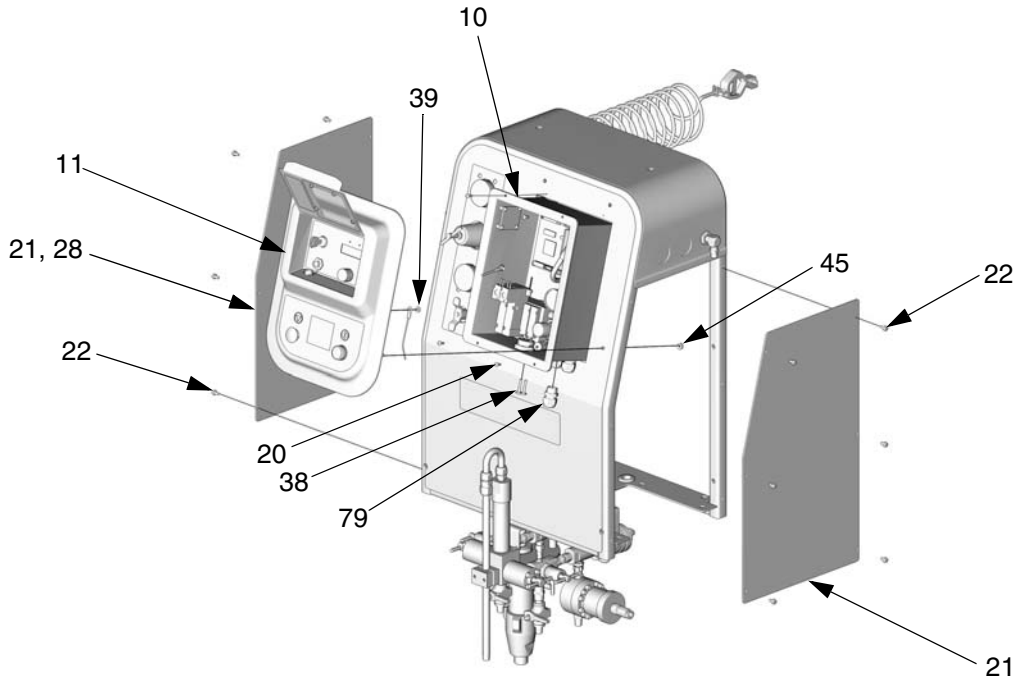
| Ref. No. | Part No. | Description  | Qty. | Ref. No. | Part No. | Description   | Qty.   |
|----------|----------|--|------|----------|----------|---|--------|
| 1        | 15D771   | FRAME, wall mount  | 1    | 46       | 113319   | FITTING, air; 1/4 npt(m) x 3/8 in. (10 mm) OD tube  | 1      |
| 2        | 234593   | MIX MANIFOLD; see 310654   | 1    | 47       | 115841   | ELBOW; 1/4 npt(m) x 3/8 in. (10 mm) OD tube   | 2      |
| 3        | 287230   | CONTROL, air; see page 53  | 1    | 48       | 114158   | FITTING, Y-adaptor; 1/4 in. (6 mm) OD tube  | 2      |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe)   | 1    | 49       | 115743   | ADAPTER; 3/8 in (10 mm) tube x 1/4 in. (6 mm) tube  | 2      |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (m x f)  | 1    | 51       | 116780   | SCREW, hex hd flanged; 3/8-16 x 1-3/4 in. (44 mm)   | 2      |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m)   | 1    | 56       | 598095   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 44 and 47                                     | 2 ft   |
| 7        | 117629   | FILTER, air; 5 micron  | 1    | 57       | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 44 and 47                                     | 2 ft   |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting  | 1    | 58       | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 44 and 47                                       | 2 ft   |
| 9        | 15D795   | FILTER, air; 40 micron   | 1    | 59       | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; green; see pages 44 and 47                                     | 2 ft   |
| 10       | 248270   | PNEUMATIC CONTROL, intrinsically safe; see page 54   | 1    | 60       | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 44 and 47                                     | 9 ft   |
| 11       | 234620   | USER INTERFACE; see page 52  | 1    | 63       | 162453   | NIPPLE; 1/4 npsm x 1/4 npt  | 3      |
| 12       | 248570   | PUMP, UltraMix; see 310671   | 2    | 65       | 104641   | FITTING, bulkhead   | 1      |
| 14       | 15D873   | BRACKET, support, fluid manifold   | 1    | 67       | 100840   | ELBOW, street; 1/4 npt (m x f)  | 1      |
| 15       | C38211   | ELBOW; 1/2 npt(m) x 3/8 in. (10 mm) OD tube  | 3    | 70       | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD; see pages 44 and 47   | 4.2 ft |
| 16       | C19038   | WASHER, lock; 1/4  | 5    | 71       | 112958   | NUT, hex, flange hd; 3/8-16   | 4      |
| 17       | 112925   | SCREW, cap, button hd; 1/4-20 x 3/8 in. (10 mm)  | 5    | 72       | 116935   | SCREW, cap; 3/8-16 x 3 in. (76 mm)  | 2      |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)  | 4    | 73       | 198720   | WHEEL   | 2      |
| 21       | 15D767   | PLATE, side  | 2    | 74       | 116513   | REGULATOR, air  | 1      |
| 22       | 119291   | SCREW, self-tapping  | 20   | 75       | 108190   | GAUGE, pressure, air  | 1      |
| 23       | 113802   | SCREW, hex hd, flanged; 3/8-16 x 5/8 in. (16 mm)   | 8    | 76       | 116514   | NUT, regulator  | 1      |
| 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 44 and 47 | 1    | 78       | 206966   | HOSE, fluid; 1/4 npsm (fbe); PTFE; 1/4 in. (6 mm) ID; 18 in. (457 mm); see also pages 44 and 47 | 2      |
| 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)  | 1    | 79       | 195889   | BUSHING, strain relief  | 2      |
| 26       | 15D607   | CABLE, sensor; see <b>Electrical Schematic</b> , page 22   | 2    | 81       | 113436   | RING, retaining   | 2      |
| 27       | 15D794   | HARNESS, connector; see <b>Electrical Schematic</b> , page 22                                    | 2    | 82       | 160701   | ELBOW, street; 1/8 npt (m x f)  | 1      |
| 28▲      | 290331   | LABEL, warning   | 1    | 84       | 15E106   | BUSHING, wheel  | 2      |
| 30       | 15D775   | CART   | 1    | 85       | 15D986   | PLATE, rear   | 1      |
| 31       | 101765   | GROMMET  | 2    | 98       | 154628   | WASHER  | 2      |
| 32       | 100451   | COUPLING; 1/8 npt (fbe)  | 2    | 100      | 239561   | GUN, spray, HVLP; see 308741  | 1      |
| 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube   | 2    | 101      | 233498   | HOSE ASSEMBLY; 3/8 npsm (f) nylon fluid hose; 1/4 npsm(f) air hose; 25 ft (7.6 m)               | 1      |
| 37       | 244524   | GROUND WIRE  | 1    | 102      | 162485   | NIPPLE; 3/8 npt x 3/8 npsm  | 1      |
| 38       | 113279   | PLUG, tube fitting; 5/32 in. (4 mm) OD tube  | 2    | 103      | 155495   | ELBOW, swivel; 3/8 npt(m) x 1/4 npsm(f)   | 1      |
| 39       | 113505   | NUT, keps, hex hd; 10-24   | 2    | 104      | 214706   | REGULATOR, pressure, fluid; see 307212  | 1      |
| 40       | 551787   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)   | 4    |          |          |   |        |
| 41       | 111218   | CAP  | 2    |          |          |   |        |
| 44       | 114104   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)   | 1    |          |          |   |        |
| 45       | 115942   | NUT, hex, flange hd; 1/4-20  | 7    |          |          |   |        |

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

### Pump and Meter-based, Wall-mounted Air Spray Units

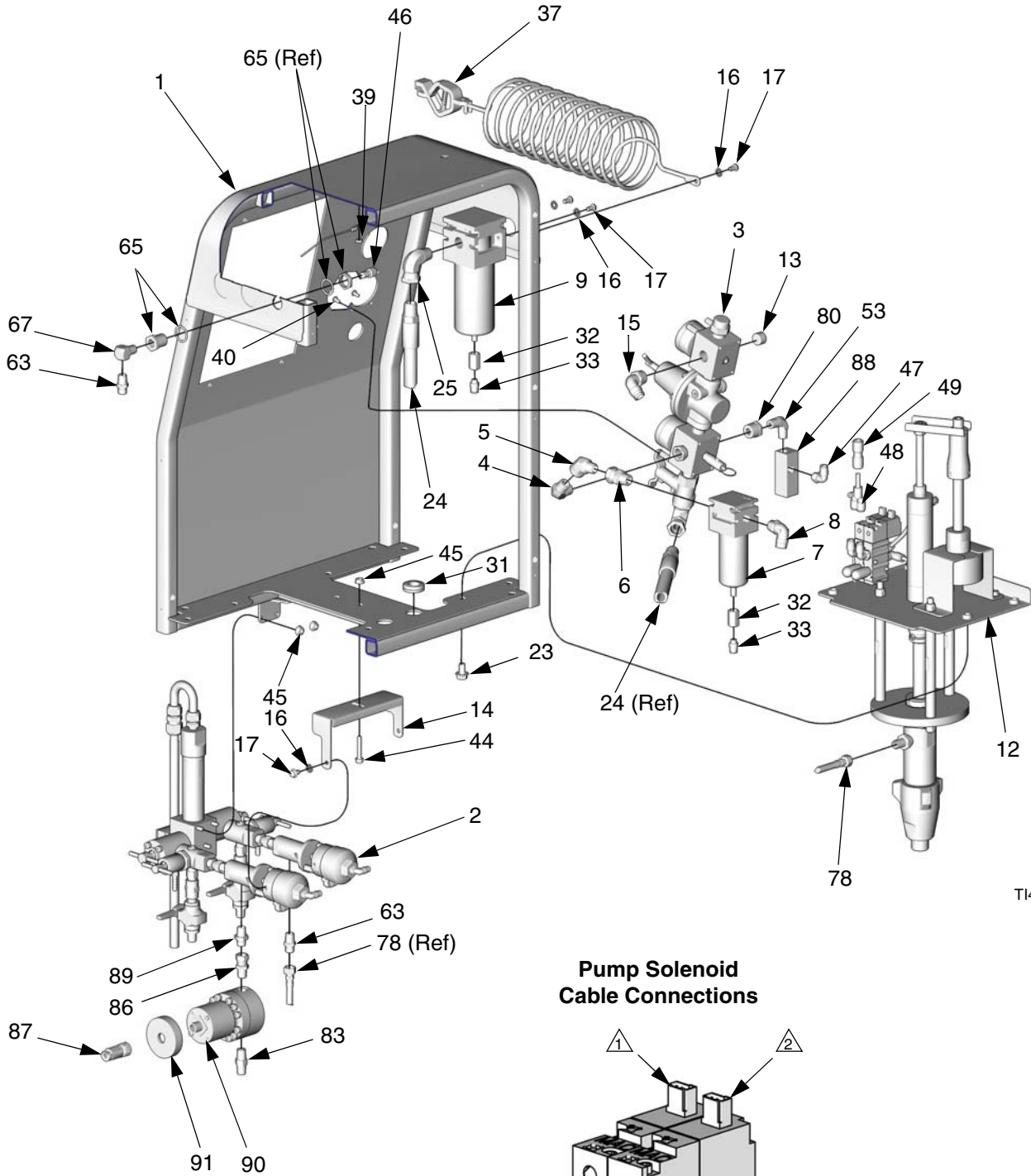
Part No. 234597 Series A, UltraMix carbon steel pump and G3000 Meter

Part No. 234598 Series A, UltraMix stainless steel pump and G3000 Meter



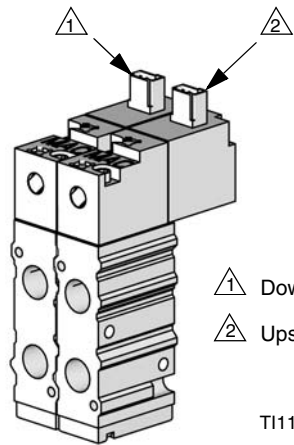
T14901b

**Pump and Meter-based, Wall-mounted Air Spray Units, continued**



TI4902a

**Pump Solenoid Cable Connections**



- ① Downstroke solenoid is on the outside.
- ② Upstroke solenoid is on the inside.

TI11262a

## Pump and Meter-based, Wall-mounted Air Spray Units, continued

See page 27 for model numbers and descriptions.

| Ref. No. | Part No. | Description   | Qty. | Ref. No. | Part No. | Description   | Qty.   |
|----------|----------|---|------|----------|----------|---|--------|
| 1        | 15D771   | FRAME, wall mount   | 1    | 38       | 113279   | PLUG, tube fitting;   | 2      |
| 2        | 234593   | MIX MANIFOLD; cst; carbon steel models only; see 310654   | 1    | 39       | 113505   | 5/32 in. (4 mm) OD tube   | 2      |
|          | 234451   | MIX MANIFOLD; sst; stainless steel models only; see 310654  | 1    | 40       | 551787   | NUT, keps, hex hd; 10-24  | 4      |
| 3        | 287230   | CONTROL, air; see page 53   | 1    | 44       | 114104   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)  | 1      |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe)  | 1    | 45       | 115942   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)  | 7      |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (mxf)   | 1    | 46       | 113319   | NUT, hex, flange hd; 1/4-20   | 1      |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m)  | 1    | 47       | 115841   | FITTING, air; 1/4 npt(m) x 3/8 in. (10 mm) OD tube  | 1      |
| 7        | 117629   | FILTER, air; 5 micron   | 1    | 48       | 114158   | ELBOW; 1/4 npt(m) x 3/8 in. (10 mm) OD tube   | 1      |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting   | 1    | 49       | 115743   | FITTING, Y-adapter; 1/4 in. (6 mm) OD tube  | 1      |
| 9        | 15D795   | FILTER, air; 40 micron  | 1    | 53       | 111763   | ADAPTER; 3/8 in (10 mm) tube x 1/4 in. (6 mm) tube  | 1      |
| 10       | 248270   | PNEUMATIC CONTROL, intrinsically safe; see page 48  | 1    | 56       | 598095   | ELBOW; 1/4 npt (mbe)  | 2 ft   |
| 11       | 234620   | USER INTERFACE; see page 52   | 1    | 57       | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 44, 46, and 47                                | 2 ft   |
| 12       | 248570   | PUMP, UltraMix, cst; carbon steel models only; see 310671   | 1    | 58       | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 44, 46, and 47                                | 2 ft   |
|          | 248571   | PUMP, UltraMix, sst; stainless steel models only; see 310671  | 1    | 59       | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 44, 46, and 47                                  | 2 ft   |
| 13       | 100361   | PLUG, pipe; 1/2 npt   | 1    | 60       | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 44, 46, and 47                                | 4.7 ft |
| 14       | 15D873   | BRACKET, support, fluid manifold  | 1    | 63       | 162453   | NIPPLE; 1/4 npsm x 1/4 npt  | 2      |
| 15       | C38211   | ELBOW; 1/2 npt(m) x 3/8 in. (10 mm) OD tube fitting   | 2    | 65       | 104641   | FITTING, bulkhead   | 1      |
| 16       | C19038   | WASHER, lock; 1/4   | 5    | 67       | 100840   | ELBOW, street; 1/4 npt (m x f)  | 1      |
| 17       | 112925   | SCREW, cap, button hd; 1/4-20 x 3/8 in. (10 mm)   | 5    | 70       | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD; see pages 44, 46, and 47  | 4.2 ft |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)   | 4    | 78       | 206966   | HOSE, fluid; 1/4 npsm (fbe); PTFE; 1/4 in. (6 mm) ID; 18 in. (457 mm); see also pages 44 and 47 | 1      |
| 21       | 15D767   | PLATE, side   | 2    | 79       | 195889   | BUSHING, strain relief  | 1      |
| 22       | 119291   | SCREW, self-tapping   | 12   | 80       | 100206   | BUSHING; 1/2 npt(m) x 1/4 npt(f)  | 1      |
| 23       | 113802   | SCREW, hex hd, flanged; 3/8-16 x 5/8 in. (16 mm)  | 4    | 83       | 501867   | CHECK VALVE   | 1      |
| 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 44, 46, and 47 | 1    | 86       | 114339   | UNION, swivel; 1/4 npsm(f) x 1/4 npt(m)   | 1      |
| 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)   | 1    | 87       | 15D957   | HARNESS, wire   | 1      |
| 26       | 15D607   | CABLE, sensor; see <b>Electrical Schematic</b> , page 22  | 2    | 88       | 119159   | SWITCH, air flow  | 1      |
| 27       | 15D794   | HARNESS, connector; see <b>Electrical Schematic</b> , page 22   | 2    | 89       | 166846   | ADAPTER; 1/4 npsm x 1/4 npt (mbe)   | 1      |
| 28▲      | 290331   | LABEL, warning  | 1    | 90       | 239716   | METER, G3000; see 308778  | 1      |
| 31       | 101765   | GROMMET   | 2    | 91       | 195283   | SHIELD, ESD, G3000  | 1      |
| 32       | 100451   | COUPLING; 1/8 npt (fbe)   | 2    |          |          |   |        |
| 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube  | 2    |          |          |   |        |
| 37       | 244524   | GROUND WIRE   | 1    |          |          |   |        |

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

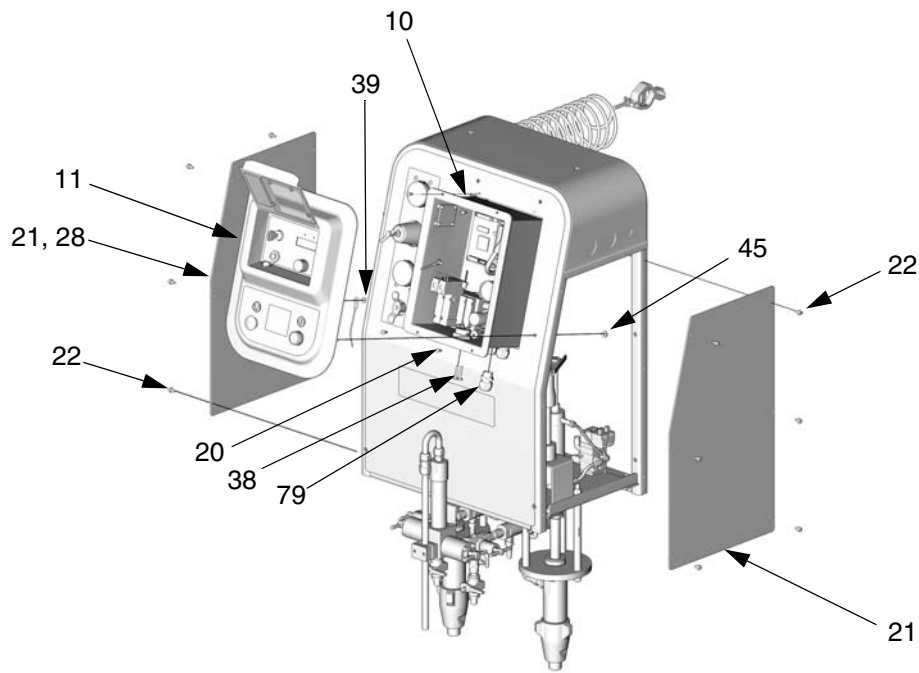
## Pump-based, Wall-mounted Air Spray Units

Part No. 234599 Series A, carbon steel, intrinsically safe

Part No. 234600 Series A, carbon steel, non-intrinsically safe

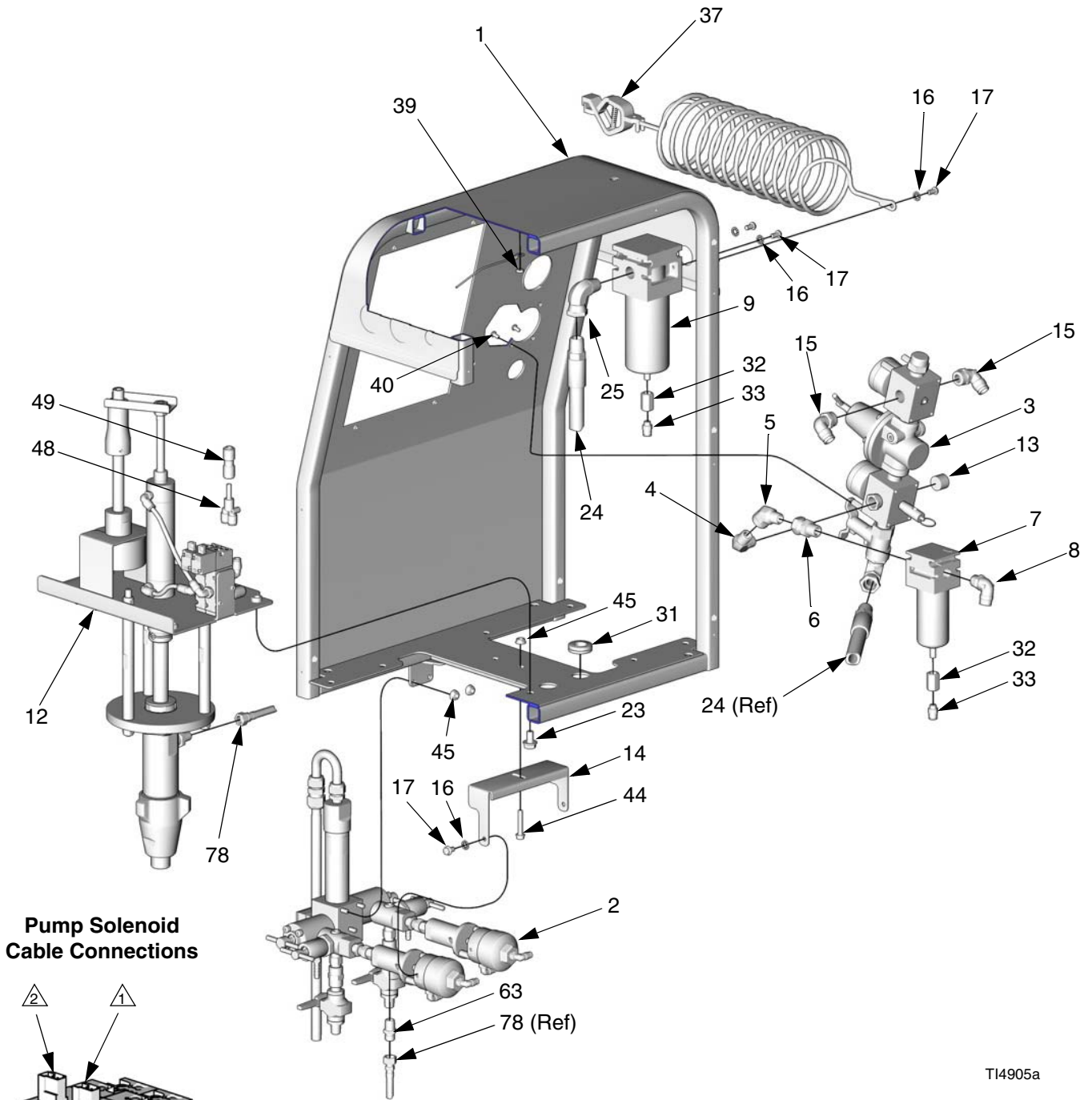
Part No. 234601 Series A, stainless steel, intrinsically safe

Part No. 234825 Series A, stainless steel, non-intrinsically safe



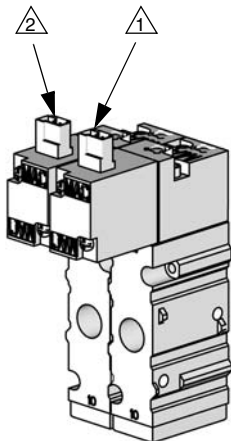
TI4904b

### Pump-based, Wall-mounted Air Spray Units, continued



T14905a

#### Pump Solenoid Cable Connections



- 1 Downstroke solenoid is on the outside.
- 2 Upstroke solenoid is on the inside.

T111228a

## Pump-based, Wall-mounted Air Spray Units, continued

See page 30 for model numbers and descriptions.

| Ref. No. | Part No. | Description  | Qty. | Ref. No. | Part No. | Description   | Qty.   |
|----------|----------|--|------|----------|----------|---|--------|
| 1        | 15D771   | FRAME, wall mount  | 1    | 26       | 15D607   | CABLE, sensor; see <b>Electrical Schematic</b> , page 22                                      | 2      |
| 2        | 234593   | MIX MANIFOLD; cst; carbon steel models only; see 310654  | 1    | 27       | 15D794   | HARNESS, connector; see <b>Electrical Schematic</b> , page 22                                 | 2      |
|          | 234451   | MIX MANIFOLD; sst; stainless steel models only; see 310654                                       | 1    | 28▲      | 290331   | LABEL, warning  | 1      |
| 3        | 287230   | CONTROL, air; see page 53  | 1    | 31       | 101765   | GROMMET   | 2      |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe); intrinsically safe models only                                       | 1    | 32       | 100451   | COUPLING; 1/8 npt (fbe); intrinsically safe models only                                       | 2      |
|          | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting; non-intrinsically safe models only          | 1    |          | 100451   | COUPLING; 1/8 npt (fbe); non-intrinsically safe models only                                   | 1      |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (mx); intrinsically safe models only                                 | 1    | 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube; intrinsically safe models only                | 2      |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m); intrinsically safe models only                         | 1    |          | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube; non-intrinsically safe models only            | 1      |
| 7        | 117629   | FILTER, air; 5 micron; intrinsically safe models only  | 1    | 37       | 244524   | GROUND WIRE   | 1      |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting; intrinsically safe models only              | 1    | 38       | 113279   | PLUG, tube fitting; 5/32 in. (4 mm) OD tube   | 2      |
| 9        | 15D795   | FILTER, air; 40 micron   | 1    | 39       | 113505   | NUT, keps, hex hd; 10-24  | 2      |
| 10       | 248270   | PNEUMATIC CONTROL; intrinsically safe models only; see page 48                                   | 1    | 40       | 551787   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)  | 4      |
|          | 248316   | PNEUMATIC CONTROL; non-intrinsically safe models only; see page 50                               | 1    | 44       | 114104   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)  | 1      |
| 11       | 234620   | USER INTERFACE; see page 52  | 1    | 45       | 115942   | NUT, hex, flange hd; 1/4-20   | 7      |
| 12       | 248570   | PUMP, UltraMix, cst; carbon steel models only; see 310671  | 2    | 48       | 114158   | FITTING, Y-adapter; 1/4 in. (6 mm) OD tube  | 2      |
|          | 248571   | PUMP, UltraMix, sst; stainless steel models only; see 310671                                     | 2    | 49       | 115743   | ADAPTER; 3/8 in (10 mm) tube x 1/4 in. (6 mm) tube  | 2      |
| 13       | 100361   | PLUG, pipe; 1/2 npt  | 1    | 56       | 598095   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 44 and 47                                   | 2 ft   |
| 14       | 15D873   | BRACKET, support, fluid manifold   | 1    | 57       | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 44 and 47                                   | 2 ft   |
| 15       | C38211   | ELBOW; 1/2 npt(m) x 3/8 in. (10 mm) OD tube fitting  | 2    | 58       | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 44 and 47                                     | 2 ft   |
| 16       | C19038   | WASHER, lock; 1/4  | 5    | 59       | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; green; see pages 44 and 47                                   | 2 ft   |
| 17       | 112925   | SCREW, cap, button hd; 1/4-20 x 3/8 in. (10 mm)  | 5    | 60       | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 44 and 47                                   | 6.7 ft |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)  | 4    | 63       | 162453   | NIPPLE; 1/4 npsm x 1/4 npt  | 2      |
| 21       | 15D767   | PLATE, side  | 2    | 70       | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD; see pages 44 and 47   | 4.2 ft |
| 22       | 119291   | SCREW, self-tapping  | 12   | 78       | 206966   | HOSE, fluid; 1/4 npsm (f); PTFE; 1/4 in. (6 mm) ID; 18 in. (457 mm); see also pages 44 and 47 | 2      |
| 23       | 113802   | SCREW, hex hd, flanged; 3/8-16 x 5/8 in. (16 mm)   | 8    | 79       | 195889   | BUSHING, strain relief  | 2      |
| 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 44 and 47 | 1    |          |          |   |        |
| 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)  | 1    |          |          |   |        |

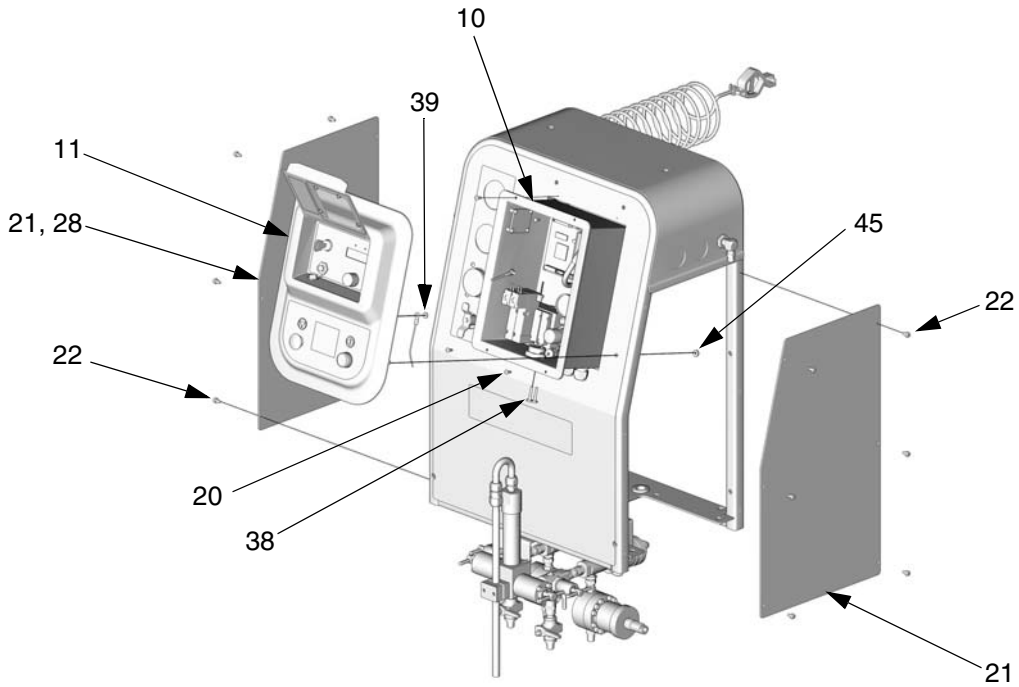
▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.



### Meter-based, Wall-mounted High Pressure Units

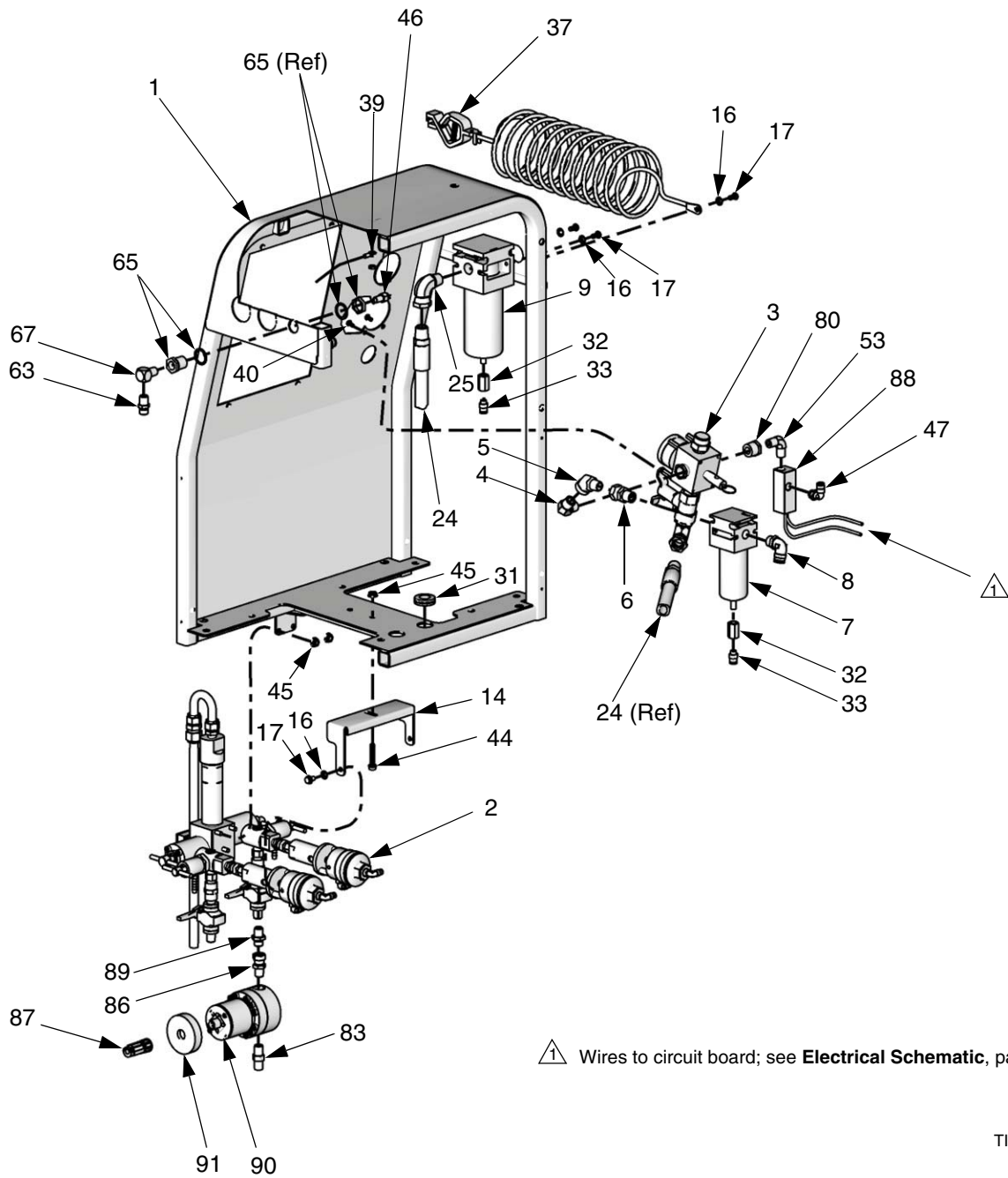
Part No. 234618 Series A, carbon steel

Part No. 234619 Series A, stainless steel



TI4917a

Meter-based, Wall-mounted High Pressure Units, continued



T14918a

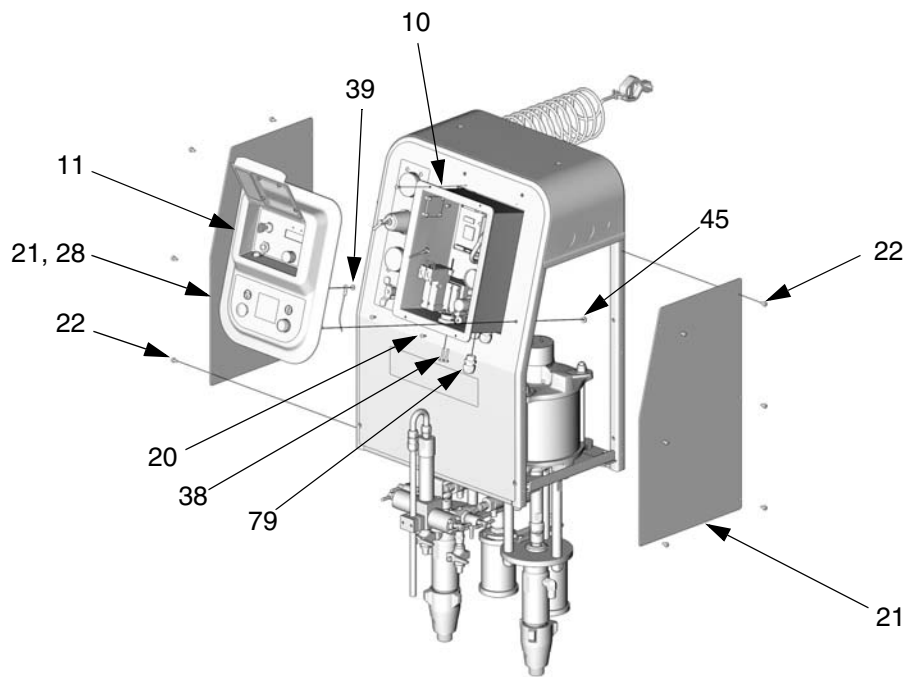
## Meter-based, Wall-mounted High Pressure Units, continued

See page 33 for model numbers and descriptions.

| Ref. No. | Part No. | Description  | Qty. | Ref. No.   | Part No. | Description   | Qty.   |
|----------|----------|--|------|--|----------|---|--------|
| 1        | 15D771   | FRAME, wall mount  | 1    | 56   | 598095   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 46 and 47 | 2 ft   |
| 2        | 234593   | MANIFOLD, mix (234618); cst; see 310654  | 1    | 57   | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 46 and 47 | 2 ft   |
|          | 234451   | MANIFOLD, mix (234619); sst; see 310654  | 1    | 58   | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 46 and 47   | 2 ft   |
| 3        | 287231   | CONTROL, air; see page 53  | 1    | 59   | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; green; see pages 46 and 47 | 2 ft   |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe)   | 1    | 60   | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 46 and 47 | 3.5 ft |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (m x f)  | 1    | 63   | 162453   | NIPPLE; 1/4 npsm x 1/4 npt                                  | 1      |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m)   | 1    | 65   | 104641   | FITTING, bulkhead   | 1      |
| 7        | 117629   | FILTER, air; 5 micron  | 1    | 67   | 100840   | ELBOW, street; 1/4 npt (m x f)                              | 1      |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube  | 1    | 70   | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD; see pages 46 and 47         | 4 ft   |
| 9        | 15D795   | FILTER, air; 40 micron   | 1    | 80   | 100206   | BUSHING; 1/2 npt(m) x 1/4 npt(f)                            | 1      |
| 10       | 248270   | PNEUMATIC CONTROL, intrinsically safe; see page 54   | 1    | 83   | 501867   | CHECK VALVE   | 2      |
| 11       | 234620   | USER INTERFACE; see page 52  | 1    | 86   | 114339   | UNION, swivel; 1/4 npsm(f) x 1/4 npt(m)                     | 2      |
| 14       | 15D873   | BRACKET, support, fluid manifold   | 1    | 87   | 15D957   | HARNESS, wire   | 1      |
| 16       | C19038   | WASHER, lock; 1/4  | 5    | 88   | 119159   | SWITCH, air flow  | 1      |
| 17       | 112925   | SCREW, cap; 1/4-20 x 3/8 in. (10 mm)   | 5    | 89   | 166846   | ADAPTER; 1/4 npsm x 1/4 npt (mbe)                           | 2      |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)  | 4    | 90   | 239716   | METER, G3000; see 308778                                    | 2      |
| 21       | 15D767   | PLATE, side  | 2    | 91   | 195283   | SHIELD, ESD, G3000  | 2      |
| 22       | 119291   | SCREW, self-tapping  | 12   | ▲ Replacement Danger and Warning labels, tags, and cards are available at no cost. |          |   |        |
| 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 46 and 47 | 1    |  |          |   |        |
| 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)  | 1    |  |          |   |        |
| 28▲      | 290331   | LABEL, warning   | 1    |  |          |   |        |
| 31       | 101765   | GROMMET  | 2    |  |          |   |        |
| 32       | 100451   | COUPLING; 1/8 npt (fbe)  | 2    |  |          |   |        |
| 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube   | 2    |  |          |   |        |
| 37       | 244524   | GROUND WIRE  | 1    |  |          |   |        |
| 38       | 113279   | PLUG, tube fitting; 5/32 in. (4 mm) OD tube  | 2    |  |          |   |        |
| 39       | 113505   | NUT, keps, hex hd; 10-24   | 2    |  |          |   |        |
| 40       | 551787   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)   | 4    |  |          |   |        |
| 44       | 114104   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)   | 1    |  |          |   |        |
| 45       | 115942   | NUT, hex, flange hd; 1/4-20  | 7    |  |          |   |        |
| 46       | 113319   | FITTING, air; 1/4 npt(m) x 3/8 in. (10 mm) OD tube   | 1    |  |          |   |        |
| 47       | 115841   | ELBOW; 1/4 npt(m) x 3/8 in. (10 mm) OD tube  | 1    |  |          |   |        |
| 53       | 111763   | ELBOW; 1/4 npt (mbe)   | 1    |  |          |   |        |

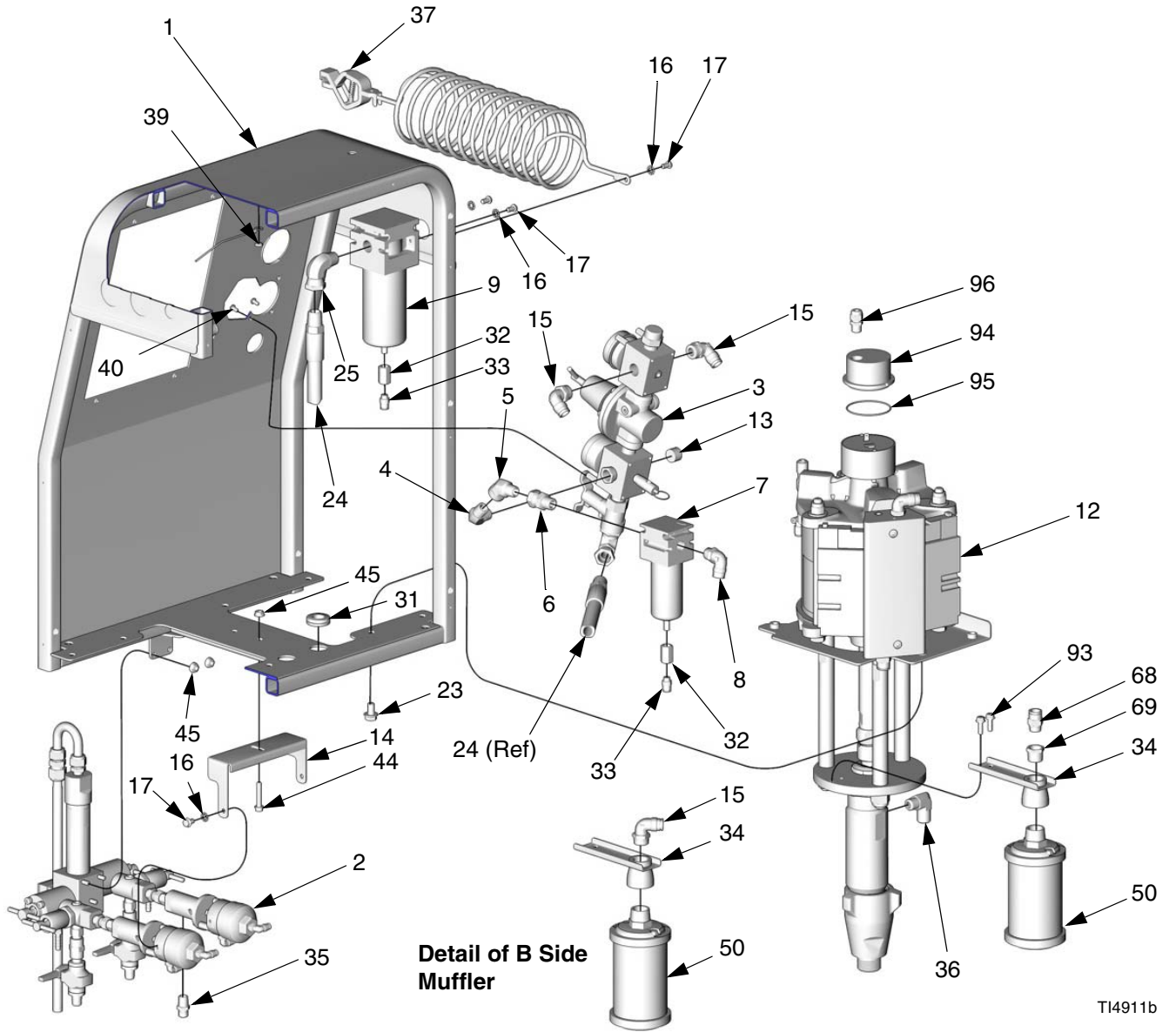
## Pump-based, Wall-mounted High Pressure Units

- Part No. 234606 Series A, HydraMix 500 carbon steel, intrinsically safe
- Part No. 234607 Series A, HydraMix 500 carbon steel, non-intrinsically safe
- Part No. 234609 Series A, HydraMix 600 carbon steel, intrinsically safe
- Part No. 234610 Series A, HydraMix 600 carbon steel, non-intrinsically safe
- Part No. 234612 Series A, HydraMix 700 carbon steel, intrinsically safe
- Part No. 234608 Series A, HydraMix 500 stainless steel, intrinsically safe
- Part No. 234826 Series A, HydraMix 500 stainless steel, non-intrinsically safe
- Part No. 234611 Series A, HydraMix 600 stainless steel, intrinsically safe
- Part No. 234827 Series A, HydraMix 600 stainless steel, non-intrinsically safe
- Part No. 234613 Series A, HydraMix 700 stainless steel, intrinsically safe



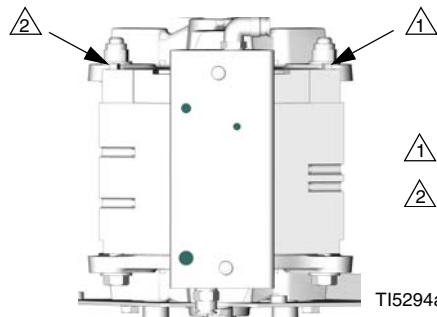
T14910b

**Pump-based, Wall-mounted High Pressure Units, continued**



TI4911b

**Pump Solenoid Cable Connections**



① Downstroke solenoid connection.

② Upstroke solenoid connection.

TI5294a

## Pump-based, Wall-mounted High Pressure Units, continued

See page 36 for model numbers and descriptions.

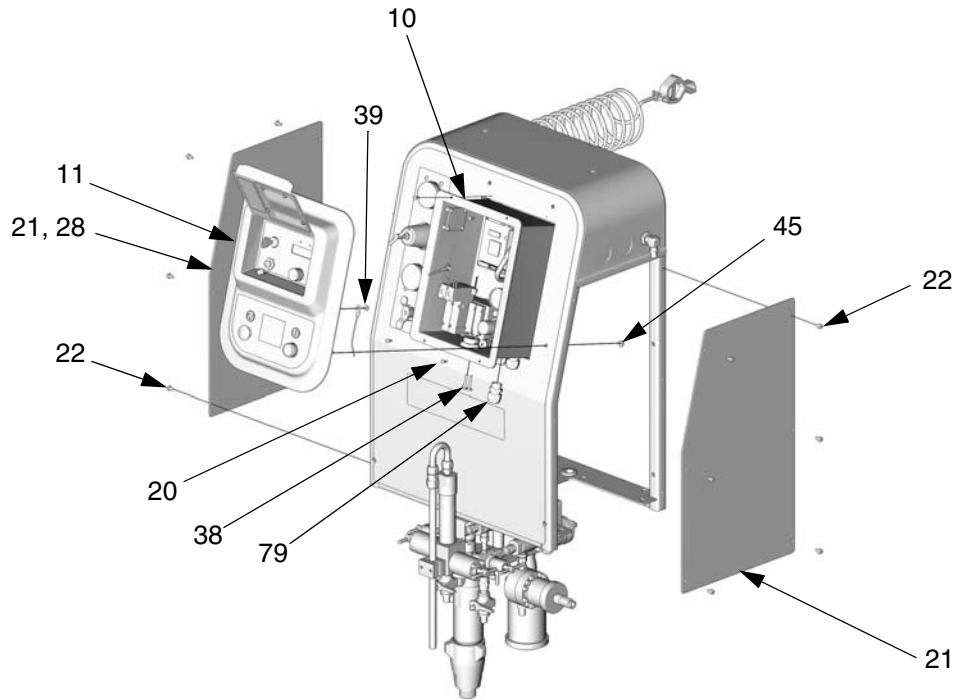
| Ref. No. | Part No. | Description   | Qty. | Ref. No. | Part No. | Description  | Qty. |
|----------|----------|---|------|----------|----------|--|------|
| 1        | 15D771   | FRAME, wall mount   | 1    | 22       | 119291   | SCREW, self-tapping  | 12   |
| 2        | 234593   | MIX MANIFOLD; cst; carbon steel models only; see 310654                                 | 1    | 23       | 113802   | SCREW, hex hd, flanged; 3/8-16 x 5/8 in. (16 mm)   | 8    |
|          | 234451   | MIX MANIFOLD; sst; stainless steel models only; see 310654                              | 1    | 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 45 and 47 | 1    |
| 3        | 287230   | CONTROL, air; see page 53   | 1    | 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)  | 1    |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe); intrinsically safe models only                              | 1    | 26       | 15D607   | CABLE, sensor; see <b>Electrical Schematic</b> , page 22   | 2    |
|          | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting; non-intrinsically safe models only | 1    | 27       | 15D794   | HARNESS, connector; see <b>Electrical Schematic</b> , page 22                                    | 2    |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (mx); intrinsically safe models only                        | 1    | 28▲      | 290331   | LABEL, warning   | 1    |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m); intrinsically safe models only                | 1    | 31       | 101765   | GROMMET  | 2    |
|          |          |   |      | 32       | 100451   | COUPLING; 1/8 npt (fbe); intrinsically safe models only  | 2    |
| 7        | 117629   | FILTER, air; 5 micron; intrinsically safe models only                                   | 1    |          | 100451   | COUPLING; 1/8 npt (fbe); non-intrinsically safe models only                                      | 1    |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting; intrinsically safe models only     | 1    | 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube; intrinsically safe models only                   | 2    |
| 9        | 15D795   | FILTER, air; 40 micron  | 1    |          | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube; non-intrinsically safe models only               | 1    |
| 10       | 248270   | PNEUMATIC CONTROL; intrinsically safe models only; see page 48                          | 1    |          |          |  |      |
|          | 248316   | PNEUMATIC CONTROL; non-intrinsically safe models only; see page 50                      | 1    | 34       | 15D966   | BRACKET, muffler   | 2    |
|          |          |   |      | 35       | 15E020   | FITTING, compression; cst; carbon steel models only; 1/4 npt(m) x 1/2 in. (13 mm) tube           | 2    |
| 11       | 234620   | USER INTERFACE; see page 52   | 1    |          | 15E021   | FITTING, compression; sst; stainless steel models only; 1/4 npt(m) x 1/2 in. (13 mm) tube        | 2    |
| 12       | 248572   | PUMP, HydraMix 500, cst; 234606 and 234607; see 310672                                  | 2    |          |          |  |      |
|          | 248573   | PUMP, HydraMix 500, sst; 234608 and 234826; see 310672                                  | 2    | 36       | 15E018   | ELBOW, compression; cst; carbon steel models only; 3/8 npt(m) x 1/2 in. (13 mm) tube             | 2    |
|          | 248574   | PUMP, HydraMix 600, cst; 234609 and 234610; see 310672                                  | 2    |          | 15E019   | ELBOW, compression; sst; stainless steel models only; 3/8 npt(m) x 1/2 in. (13 mm) tube          | 2    |
|          | 248575   | PUMP, HydraMix 600, sst; 234611 and 234827; see 310672                                  | 2    |          |          |  |      |
|          | 248576   | PUMP, HydraMix 700, cst; 234612; see 310672   | 2    | 37       | 244524   | GROUND WIRE  | 1    |
|          | 248577   | PUMP, HydraMix 700, sst; 234613; see 310672   | 2    | 38       | 113279   | PLUG, tube fitting; 5/32 in. (4 mm) OD tube  | 2    |
| 13       | 100361   | PLUG, pipe; 1/2 npt   | 1    | 39       | 113505   | NUT, keps, hex hd; 10-24   | 2    |
| 14       | 15D873   | BRACKET, support, fluid manifold  | 1    | 40       | 551787   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)   | 4    |
| 15       | 114110   | ELBOW; 1/2 npt(m) x 1/2 in. (13 mm) OD tube fitting                                     | 3    | 42       | 15D998   | TUBE, fluid, A component; see pages 45 and 47  | 1    |
| 16       | C19038   | WASHER, lock; 1/4   | 5    | 43       | 15D999   | TUBE, fluid, B component; see pages 45 and 47  | 1    |
| 17       | 112925   | SCREW, cap, button hd; 1/4-20 x 3/8 in. (10 mm)   | 5    | 44       | 114104   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)   | 1    |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)                                       | 4    | 45       | 115942   | NUT, hex, flange hd; 1/4-20  | 7    |
| 21       | 15D767   | PLATE, side   | 2    |          |          |  |      |

| Ref. No. | Part No. | Description   | Qty.   | Ref. No. | Part No. | Description   | Qty. |
|----------|----------|---|--------|----------|----------|---|------|
| 50       | 102656   | MUFFLER   | 2      | 69       | 100081   | BUSHING, pipe; 1/2 npt(m) x 3/8 npt(f)                                  | 1    |
| 56       | 598095   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 45 and 47 | 2 ft   | 70       | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD; see pages 45 and 47                     | 4 ft |
| 57       | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 45 and 47 | 2 ft   | 79       | 195889   | BUSHING, strain relief  | 2    |
| 58       | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 45 and 47   | 2 ft   | 93       | 113796   | SCREW, hex hd, flange; 1/4-20 x 3/4 in. (19 mm)                         | 4    |
| 59       | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; green; see pages 45 and 47 | 2 ft   | 94       | 15A818   | COVER, sensor; non-intrinsically safe carbon steel models only          | 2    |
| 60       | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 45 and 47 | 0.7 ft | 95       | C20272   | O-RING; non-intrinsically safe carbon steel models only                 | 2    |
| 61       | 061134   | TUBE; nylon; 1/2 in. (13 mm) OD; see pages 45 and 47        | 5.2 ft | 96       | 15E383   | BUSHING, strain relief; non-intrinsically safe carbon steel models only | 2    |
| 68       | 114129   | FITTING; 3/8 npt(m) x 1/2 in. (13 mm) OD tube fitting       | 1      |          |          |   |      |

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

### Pump and Meter-based, Wall-mounted High Pressure Units

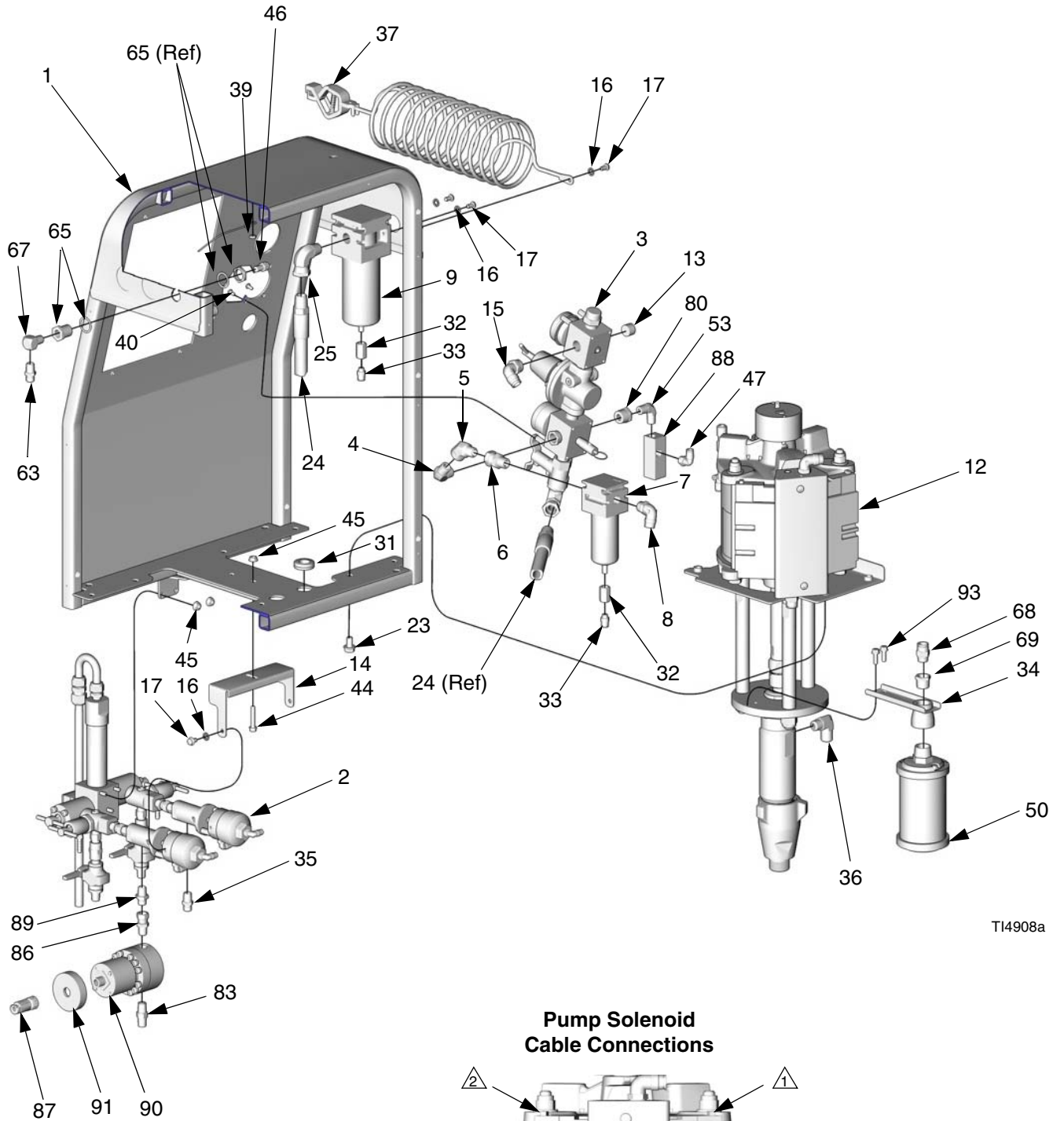
- Part No. 234602 Series A, HydraMix 500 carbon steel pump and G3000 Meter
- Part No. 234603 Series A, HydraMix 500 stainless steel pump and G3000 Meter
- Part No. 234604 Series A, HydraMix 600 carbon steel pump and G3000 Meter
- Part No. 234605 Series A, HydraMix 600 stainless steel pump and G3000 Meter



TI4907b

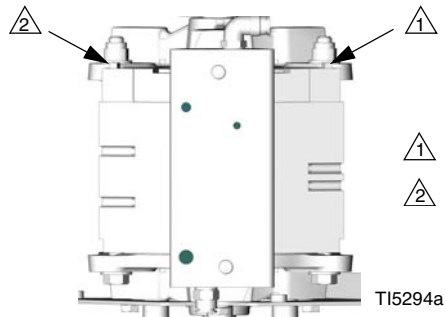


**Pump and Meter-based, Wall-mounted High Pressure Units, continued**



T14908a

**Pump Solenoid Cable Connections**



- ① Downstroke solenoid connection.
- ② Upstroke solenoid connection.

T15294a

## Pump and Meter-based, Wall-mounted High Pressure Units, continued

See page 40 for model numbers and descriptions.

| Ref. No. | Part No. | Description   | Qty. | Ref. No. | Part No. | Description   | Qty.   |
|----------|----------|---|------|----------|----------|---|--------|
| 1        | 15D771   | FRAME, wall mount   | 1    | 33       | 115671   | CONNECTOR; 1/8 npt(m) x 1/4 in. (6 mm) OD tube  | 2      |
| 2        | 234593   | MIX MANIFOLD; cst; carbon steel models only; see 310654   | 1    | 34       | 15D966   | BRACKET, muffler  | 1      |
|          | 234451   | MIX MANIFOLD; sst; stainless steel models only; see 310654  | 1    | 35       | 15E020   | FITTING, compression; cst; carbon steel models only; 1/4 npt(m) x 1/2 in. (13 mm) tube    | 1      |
| 3        | 287230   | CONTROL, air; see page 53   | 1    |          | 15E021   | FITTING, compression; sst; stainless steel models only; 1/4 npt(m) x 1/2 in. (13 mm) tube | 1      |
| 4        | 109544   | ELBOW, pipe; 3/8 npt (mbe)  | 1    |          |          |   |        |
| 5        | 116756   | ELBOW, street, 45°; 3/8 npt (mxf)   | 1    |          |          |   |        |
| 6        | 155665   | UNION, adapter; 3/8 npsm(f) x 3/8 npt(m)  | 1    | 36       | 15E018   | ELBOW, compression; cst; carbon steel models only; 3/8 npt(m) x 1/2 in. (13 mm) tube      | 1      |
| 7        | 117629   | FILTER, air; 5 micron   | 1    |          |          |   |        |
| 8        | 114316   | ELBOW; 3/8 npt(m) x 3/8 in. (10 mm) OD tube fitting   | 1    |          | 15E019   | ELBOW, compression; sst; stainless steel models only; 3/8 npt(m) x 1/2 in. (13 mm) tube   | 1      |
| 9        | 15D795   | FILTER, air; 40 micron  | 1    |          |          |   |        |
| 10       | 248270   | PNEUMATIC CONTROL, intrinsically safe; see page 48  | 1    | 37       | 244524   | GROUND WIRE   | 1      |
| 11       | 234620   | USER INTERFACE; see page 52   | 1    | 38       | 113279   | PLUG, tube fitting; 5/32 in. (4 mm) OD tube   | 2      |
| 12       | 248572   | PUMP, HydraMix 500, cst; 234602; see 310672   | 1    | 39       | 113505   | NUT, keps, hex hd; 10-24  | 2      |
|          | 248573   | PUMP, HydraMix 500, sst; 234603; see 310672   | 1    | 40       | 551787   | SCREW, cap, button hd; 10-32 x 3/8 in. (10 mm)  | 4      |
|          | 248574   | PUMP, HydraMix 600, cst; 234604; see 310672   | 1    | 42       | 15D998   | TUBE, fluid, A component; see pages 45 and 47   | 1      |
|          | 248575   | PUMP, HydraMix 600, sst; 234605; see 310672   | 1    | 44       | 114104   | SCREW, machine; 1/4-20 x 1-1/2 in. (38 mm)  | 1      |
| 13       | 100361   | PLUG, pipe; 1/2 npt   | 1    | 45       | 115942   | NUT, hex, flange hd; 1/4-20   | 7      |
| 14       | 15D873   | BRACKET, support, fluid manifold  | 1    | 46       | 113319   | FITTING, air; 1/4 npt(m) x 3/8 in. (10 mm) OD tube  | 1      |
| 15       | 114110   | ELBOW; 1/2 npt(m) x 1/2 in. (13 mm) OD tube fitting   | 1    | 47       | 115841   | ELBOW; 1/4 npt(m) x 3/8 in. (10 mm) OD tube   | 1      |
| 16       | C19038   | WASHER, lock; 1/4   | 5    |          |          |   |        |
| 17       | 112925   | SCREW, cap, button hd; 1/4-20 x 3/8 in. (10 mm)   | 5    | 50       | 102656   | MUFFLER   | 1      |
|          |          |   |      | 53       | 111763   | ELBOW; 1/4 npt (mbe)  | 1      |
| 20       | 103196   | SCREW, machine, phillips; 8-32 x 7/16 in. (11 mm)   | 4    | 56       | 598095   | TUBE; nylon; 5/32 in. (4 mm) OD; clear; see pages 45, 46, and 47                          | 2 ft   |
| 21       | 15D767   | PLATE, side   | 2    | 57       | 054753   | TUBE; nylon; 5/32 in. (4 mm) OD; black; see pages 45, 46, and 47                          | 2 ft   |
| 22       | 119291   | SCREW, self-tapping   | 12   |          |          |   |        |
| 23       | 113802   | SCREW, hex hd, flanged; 3/8-16 x 5/8 in. (16 mm)  | 4    | 58       | 054754   | TUBE; nylon; 5/32 in. (4 mm) OD; red; see pages 45, 46, and 47                            | 2 ft   |
| 24       | 220598   | HOSE, air; nitrile; 1/2 in. (13 mm) ID; 1/2 npt (mbe); 18 in. (457 mm); see also pages 45, 46, and 47 | 1    | 59       | 054757   | TUBE; nylon; 5/32 in. (4 mm) OD; green; see pages 45, 46, and 47                          | 2 ft   |
| 25       | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)   | 1    | 60       | 590385   | TUBE; polyethylene; 3/8 in. (10 mm) OD; see pages 45, 46, and 47                          | 4.6 ft |
| 26       | 15D607   | CABLE, sensor; see <b>Electrical Schematic</b> , page 22  | 1    | 61       | 061134   | TUBE; nylon; 1/2 in. (13 mm) OD; see pages 45, 46, and 47                                 | 1 ft   |
| 27       | 15D794   | HARNESS, connector; see <b>Electrical Schematic</b> , page 22   | 1    | 63       | 162453   | NIPPLE; 1/4 npsm x 1/4 npt  | 1      |
|          |          |   |      | 65       | 104641   | FITTING, bulkhead   | 1      |
| 28▲      | 290331   | LABEL, warning  | 1    | 67       | 100840   | ELBOW, street; 1/4 npt (m x f)  | 1      |
| 31       | 101765   | GROMMET   | 2    | 68       | 114129   | FITTING; 3/8 npt(m) x 1/2 in. (13 mm) OD tube fitting                                     | 1      |
| 32       | 100451   | COUPLING; 1/8 npt (fbe)   | 2    | 69       | 100081   | BUSHING, pipe; 1/2 npt(m) x 3/8 npt(f)  | 1      |

| Ref. No. | Part No. | Description   | Qty.      |
|----------|----------|---|-----------|
| 70       | 054123   | TUBE; nylon; 1/4 in. (6 mm) OD;<br>see pages 45, 46, and 47 | 3.5<br>ft |
| 79       | 195889   | BUSHING, strain relief                                      | 1         |
| 80       | 100206   | BUSHING; 1/2 npt(m) x 1/4 npt(f)                            | 1         |
| 83       | 501867   | CHECK VALVE   | 1         |
| 86       | 114339   | UNION, swivel; 1/4 npsm(f) x<br>1/4 npt(m)                  | 1         |
| 87       | 15D957   | HARNESS, wire   | 1         |
| 88       | 119159   | SWITCH, air flow  | 1         |
| 89       | 166846   | ADAPTER; 1/4 npsm x<br>1/4 npt (mbe)                        | 1         |
| 90       | 239716   | METER, G3000; see 308778                                    | 1         |
| 91       | 195283   | SHIELD, ESD, G3000  | 1         |

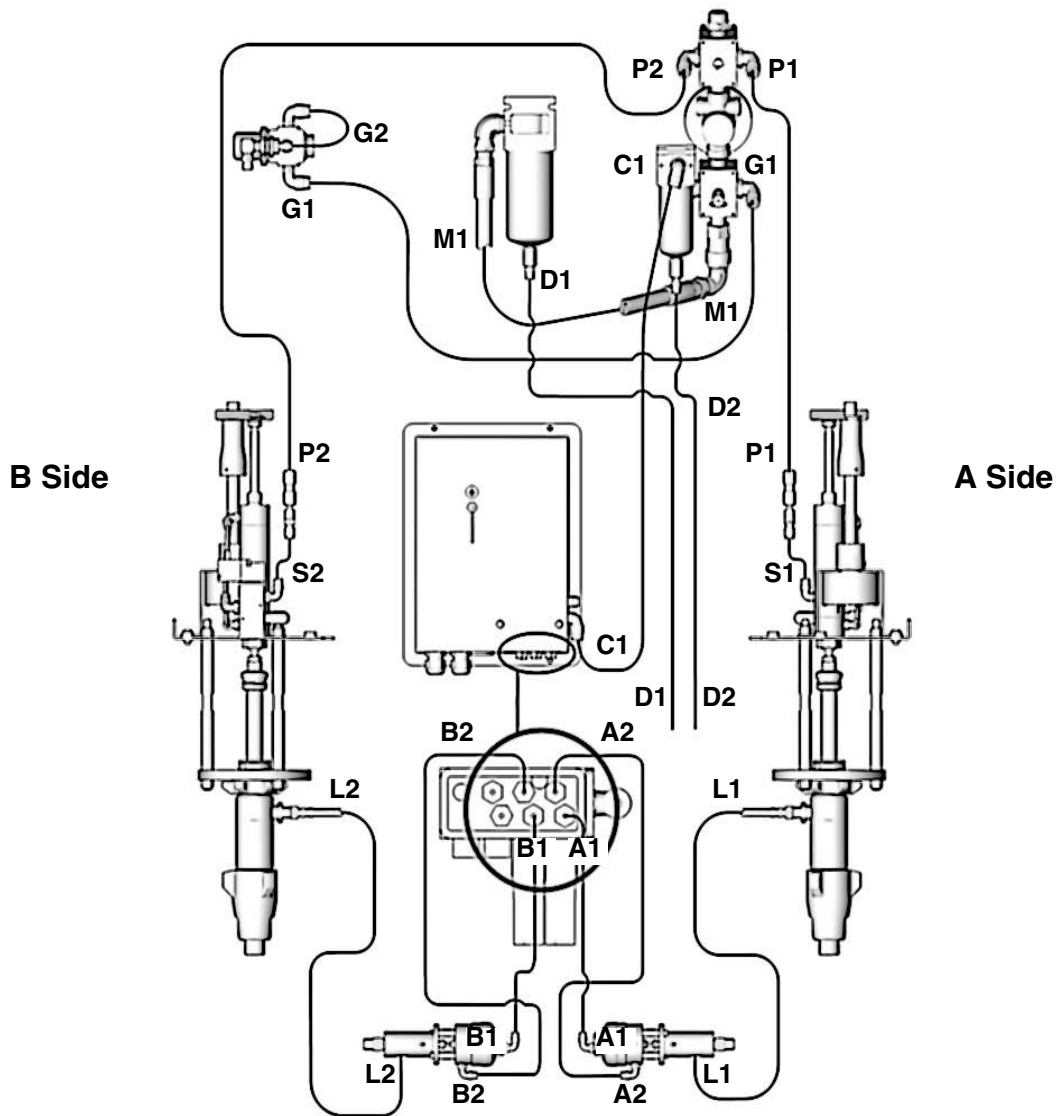
▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

### Tube Connections, Low Pressure Pumps

Find the keys on the drawing to ensure proper connections.

| Key | Description                   | Ref. No. | Length, in. (mm) |
|-----|-------------------------------|----------|------------------|
| A1  | Dispense Valve A OFF          | 56       | 24 (610)         |
| A2  | Dispense Valve A ON           | 57       | 24 (610)         |
| B1  | Dispense Valve B OFF          | 59       | 24 (610)         |
| B2  | Dispense Valve B ON           | 58       | 24 (610)         |
| C1  | Air to Pneumatic Control (10) | 60       | 8 (203)          |
| D1  | Air Filter (9) Drain Tube     | 70       | 24 (610)         |
| D2  | Air Filter (7) Drain Tube     | 70       | 18 (457)         |
| G1  | Gun Air Regulator (74) Input  | 60       | 31 (787)         |

| Key | Description                            | Ref. No. | Length, in. (mm) |
|-----|--|----------|------------------|
| G2  | Gun Air Regulator (74) Output          | 60       | 30 (762)         |
| L1  | Fluid Line, Pump A to Dispense Valve A | 78       | 18 (457)         |
| L2  | Fluid Line, Pump B to Dispense Valve B | 78       | 18 (457)         |
| M1  | Air Filter (9) to Air Control (3)      | 24       | 18 (457)         |
| P1  | Pump A Input Air                       | 60       | 17 (432)         |
| P2  | Pump B Input Air                       | 60       | 21 (533)         |
| S1  | Pump A Solenoid Inputs (2 tubes)       | 70       | 2 (51)           |
| S2  | Pump B Solenoid Inputs (2 tubes)       | 70       | 2 (51)           |



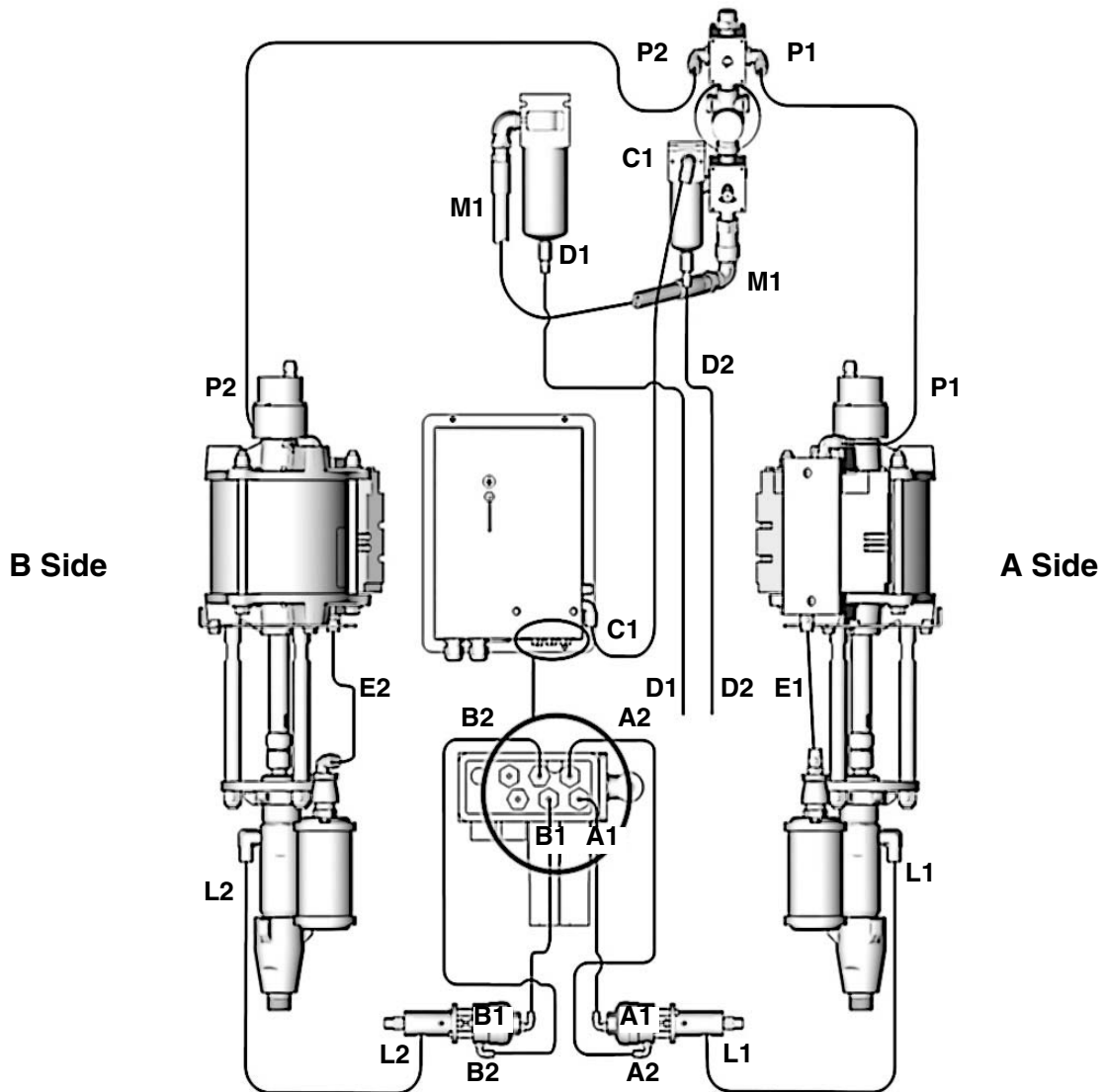
TI5278a

### Tube Connections, High Pressure Pumps

Find the keys on the drawing to ensure proper connections.

| Key | Description                   | Ref. No. | Length, in. (mm) |
|-----|-------------------------------|----------|------------------|
| A1  | Dispense Valve A OFF          | 56       | 24 (610)         |
| A2  | Dispense Valve A ON           | 57       | 24 (610)         |
| B1  | Dispense Valve B OFF          | 59       | 24 (610)         |
| B2  | Dispense Valve B ON           | 58       | 24 (610)         |
| C1  | Air to Pneumatic Control (10) | 60       | 8 (203)          |
| D1  | Air Filter (9) Drain Tube     | 70       | 24 (610)         |
| D2  | Air Filter (7) Drain Tube     | 70       | 18 (457)         |
| E1  | Pump A Exhaust                | 61       | 8 (203)          |
| E2  | Pump B Exhaust                | 61       | 12 (305)         |

| Key | Description                            | Ref. No. | Length, in. (mm) |
|-----|--|----------|------------------|
| L1  | Fluid Line, Pump A to Dispense Valve A | 42       | molded tube      |
| L2  | Fluid Line, Pump B to Dispense Valve B | 43       | molded tube      |
| M1  | Air Filter (9) to Air Control (3)      | 24       | 18 (457)         |
| P1  | Pump A Input Air                       | 61       | 18 (457)         |
| P2  | Pump B Input Air                       | 61       | 24 (610)         |



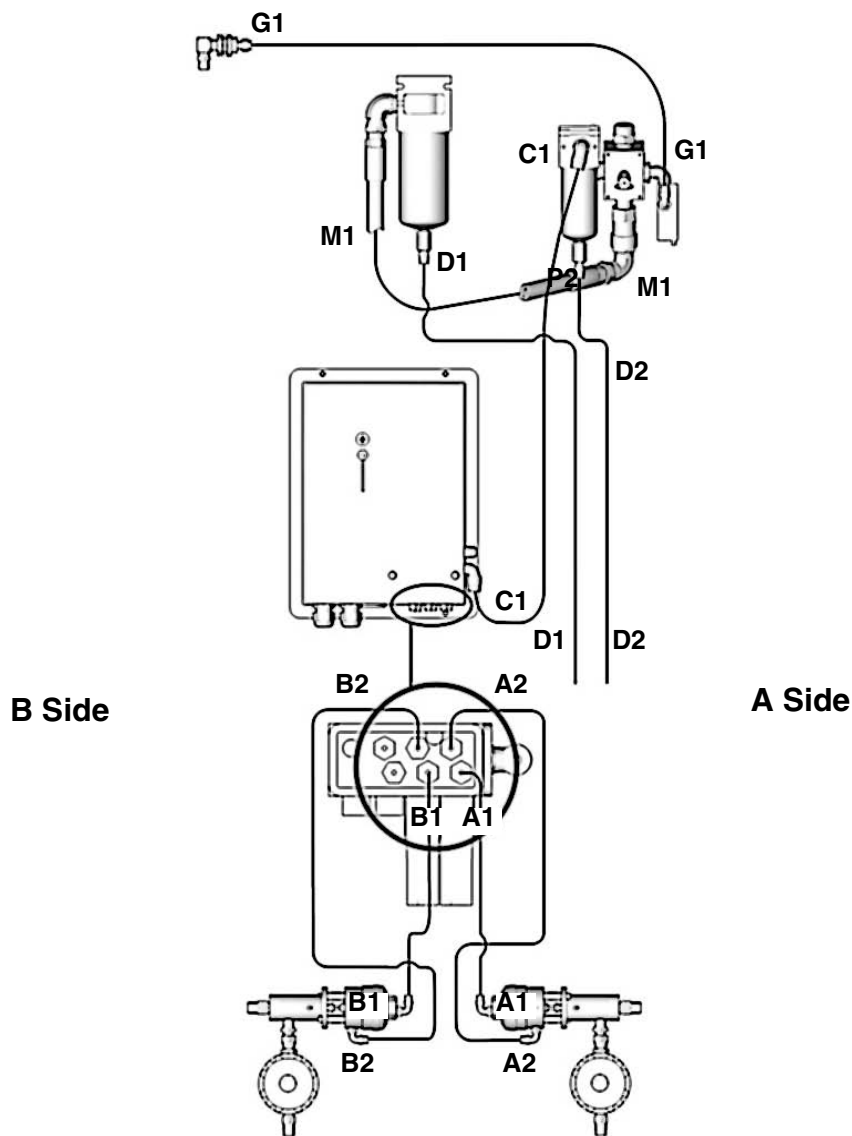
T15279a

### Tube Connections, Meters

Find the keys on the drawing to ensure proper connections. This page shows a unit with meters on both sides. If your model is a pump/meter combination unit, also refer to pages 44 and 45 for additional connections.

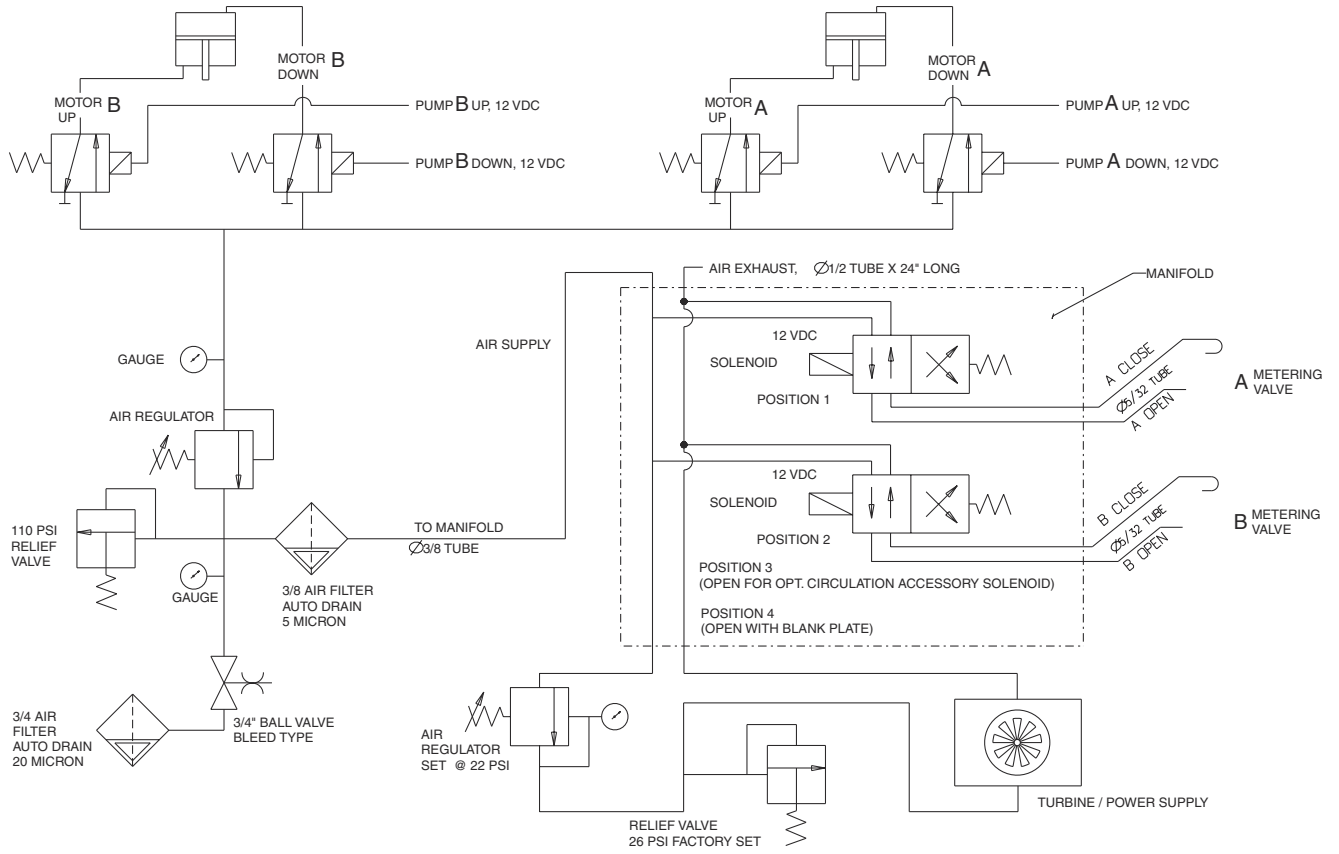
| Key | Description                   | Ref. No. | Length, in. (mm) |
|-----|-------------------------------|----------|------------------|
| A1  | Dispense Valve A OFF          | 56       | 24 (610)         |
| A2  | Dispense Valve A ON           | 57       | 24 (610)         |
| B1  | Dispense Valve B OFF          | 59       | 24 (610)         |
| B2  | Dispense Valve B ON           | 58       | 24 (610)         |
| C1  | Air to Pneumatic Control (10) | 60       | 8 (203)          |

| Key | Description                              | Ref. No. | Length, in. (mm) |
|-----|--|----------|------------------|
| D1  | Air Filter (9) Drain Tube                | 70       | 24 (610)         |
| D2  | Air Filter (7) Drain Tube                | 70       | 18 (457)         |
| G1  | Gun Air Flow Switch (88) to Gun Air Line | 60       | 30 (762)         |
| M1  | Air Filter (9) to Air Control (3)        | 24       | 18 (457)         |



T15280a

# Pneumatic Schematic



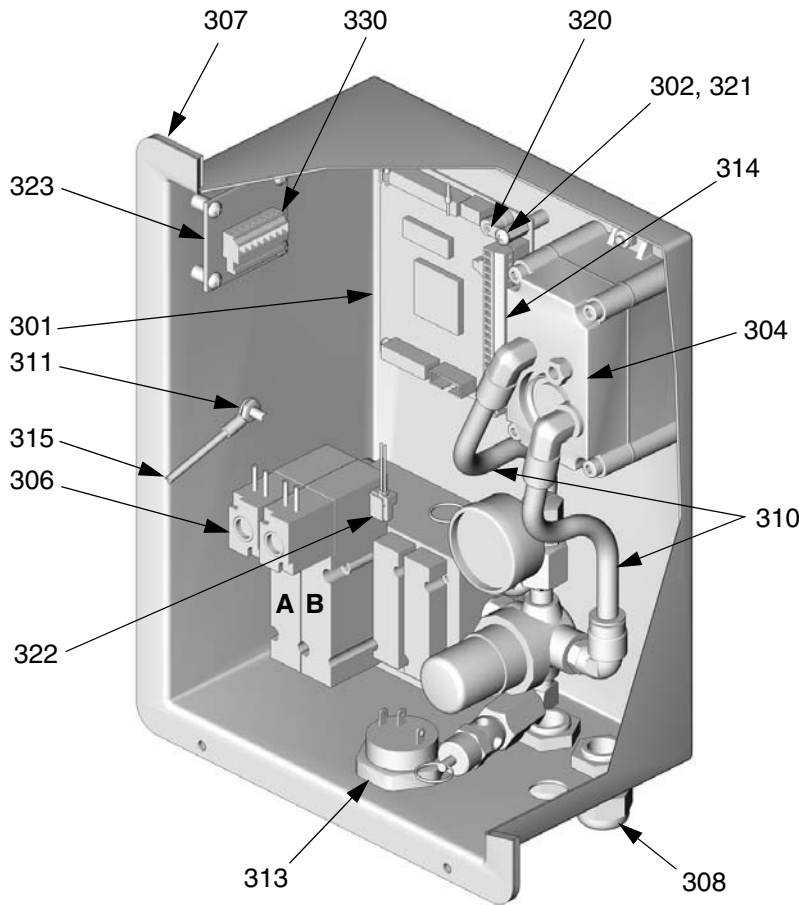
**248270 Intrinsically Safe Pneumatic Control**

| Ref. No. | Part No. | Description  | Qty. | Ref. No. | Part No. | Description                                      | Qty. |
|----------|----------|--|------|----------|----------|--|------|
| 301*     | 248349   | CIRCUIT BOARD, main                                | 1    | 306q     | 112512   | • WIRE FERRULE, orange (not shown)               | 4    |
| 302      | 100035   | SCREW, machine, phillips; 8-32 x 5/16 in. (8 mm)   | 8    | 306r     | 117369   | • CONNECTOR, 12 position                         | 1    |
| 304      | 245854   | MODULE, alternator; includes items 304a-304e       | 1    | 306s     | 150278   | • ADAPTER, 1/4 x 1/8 npt                         | 1    |
| 304a     | 193154   | • GASKET; LDPE foam                                | 1    | 306t     | 117480   | • SAFETY RELIEF VALVE, 26 psi (179 kPa, 1.8 bar) | 1    |
| 304b     | 15A853   | • WIRE HARNESS                                     | 1    | 306u     | 552183   | • PLATE  | 2    |
| 304c     | 111225   | • ELBOW; 1/8 npt(m) x 3/8 in. (10 mm) tube fitting | 2    | 307      | 15A800   | GASKET; neoprene                                 | 1    |
| 304d     | 114380   | • SCREW; M5 x 25                                   | 4    | 308      | 195889   | BUSHING, strain relief                           | 2    |
| 304e     | 249254   | • TURBINE ALTERNATOR                               | 1    | 309      | 106084   | SCREW, machine; M5 x 0.8; 10 mm                  | 2    |
| 305      | 109466   | NUT, lock, w/nylon insert; 8-32                    | 2    | 310      | C12508   | TUBE, nylon, black; 3/8 in. (10 mm) OD           | 1 ft |
| 306      | 248268   | MODULE, solenoid, IS; includes items 306a-306u     | 1    | 311      | 113505   | NUT, keps; 10-24                                 | 1    |
| 306a     | 15A822   | • MANIFOLD   | 1    | 312      | 104029   | CLAMP, ground                                    | 1    |
| 306b     | 117356   | • VALVE, 12 VDC, IS                                | 2    | 313      | 15A849   | HARNESS, wire, alarm                             | 1    |
| 306c     | 114263   | • FITTING; 1/8 npt x 5/32 in. (4 mm) tube          | 6    | 314      | 117442   | CONNECTOR, plug, 18 position                     | 1    |
| 306d     | 156971   | • NIPPLE; 1/4 npt                                  | 1    | 315      | 15B090   | WIRE, grounding, door                            | 1    |
| 306e     | 115243   | • AIR REGULATOR; 1/4 npt                           | 1    | 317      | 111307   | WASHER, lock, external tooth; M5                 | 1    |
| 306f     | 115841   | • ELBOW; 1/4 npt x 3/8 in. (10 mm) tube fitting    | 3    | 318      | 065213   | WIRE, copper                                     | 1 ft |
| 306g     | 160701   | • ELBOW, street; 1/8 npt(m x f)                    | 1    | 320      | 118132   | TERMINAL, lug, lockwasher                        | 1    |
| 306h     | 108190   | • GAUGE  | 1    | 321      | 118129   | SPACER   | 1    |
| 306j     | 15A798   | • GASKET, neoprene                                 | 1    | 322      | 114213   | HARNESS, connector                               | 1    |
| 306k     | 15A799   | • GASKET, neoprene                                 | 1    | 323      | 246899   | CIRCUIT BOARD                                    | 1    |
| 306m     | 110207   | • ELBOW; 1/8 npt (mbe)                             | 1    | 324      | 112512   | FERRULE, wire                                    | 2    |
| 306n     | 104765   | • PLUG, pipe; 1/8 ptf                              | 6    | 330      | 119163   | CONNECTOR, plug, 8 position                      | 1    |
| 306p     | 517449   | • MUFFLER  | 1    |          |          |  |      |

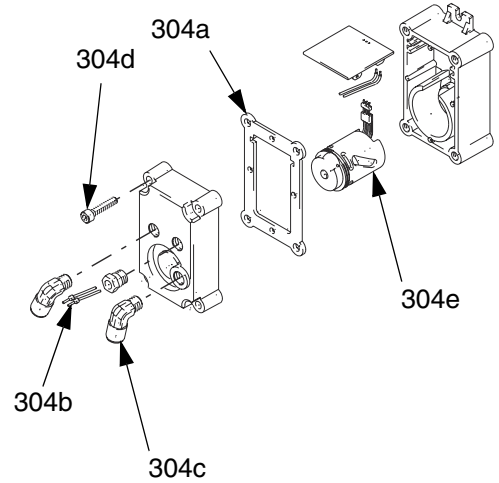
\* When ordering 248349 as a replacement part, you must also order a data download kit to program the circuit board to the specific machine configuration. Order Kit 248403 for hazardous locations or Kit 248404 for non-hazardous locations. See manual 309623 for further instructions.



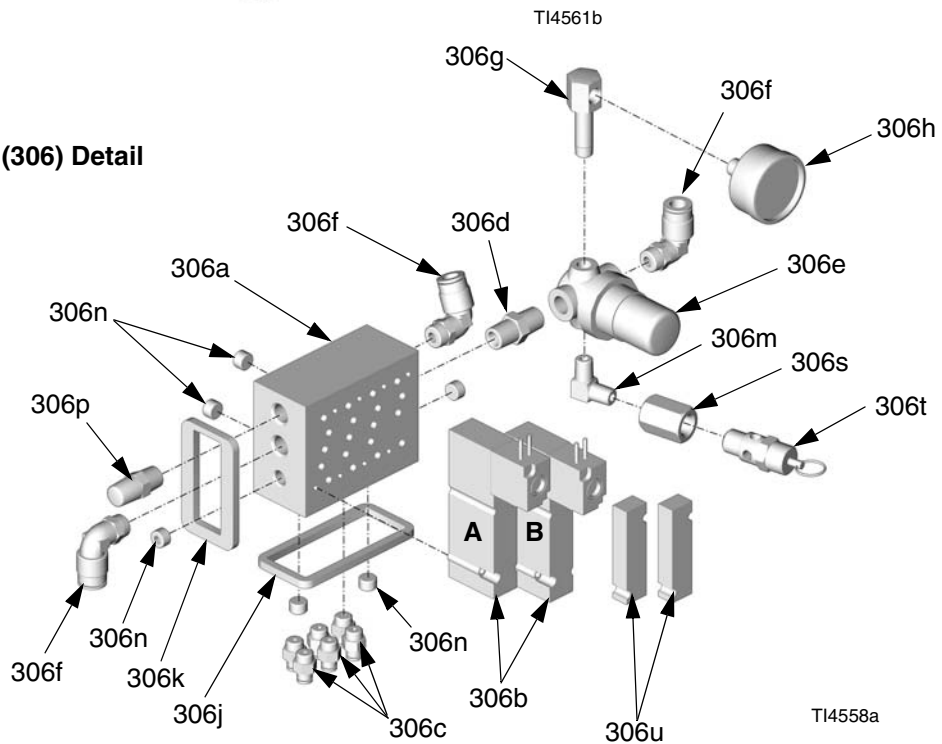
### 248270 Intrinsically Safe Pneumatic Control, continued



#### Alternator Module (304) Detail



#### Solenoid Module (306) Detail

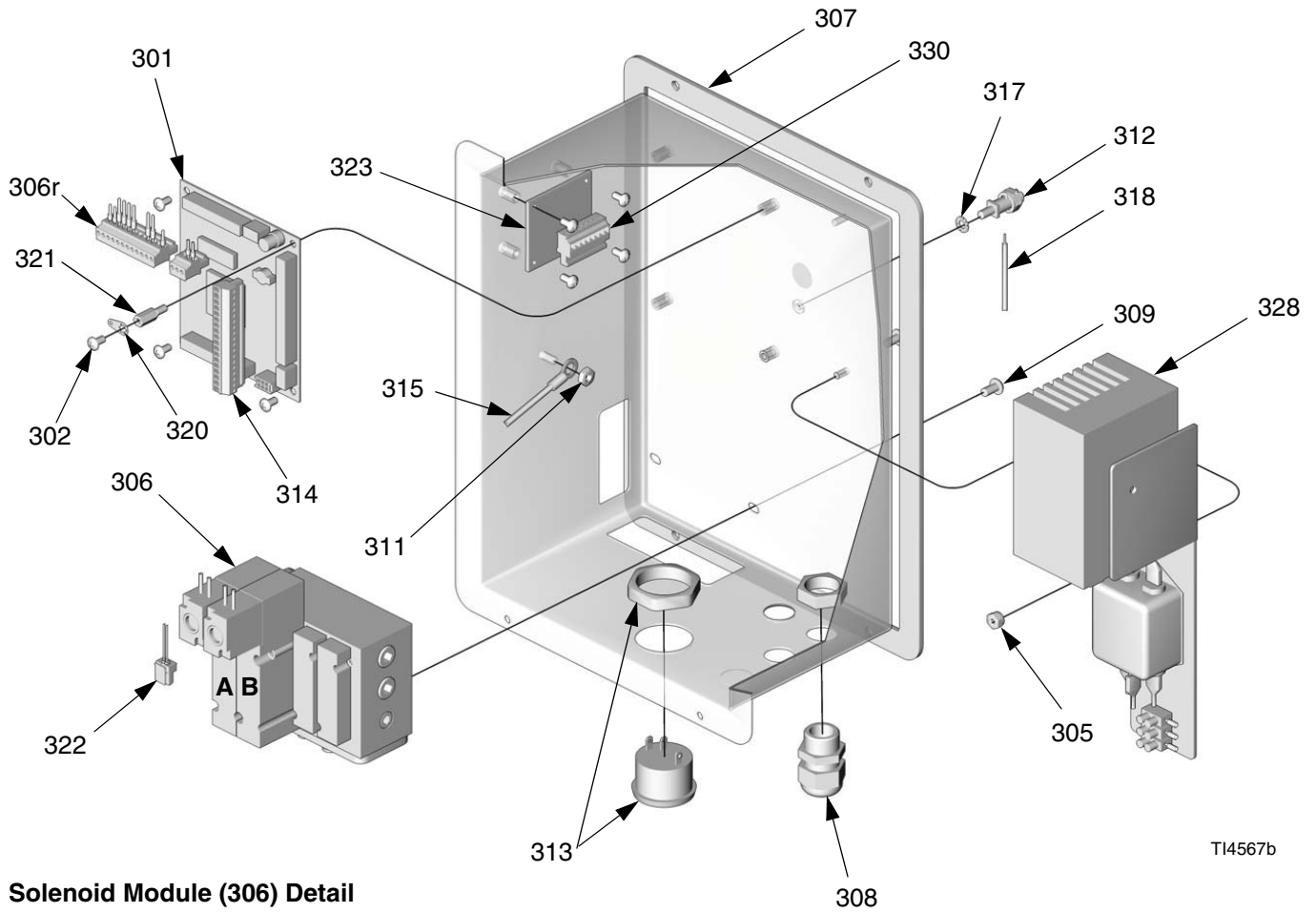


**248316 Non-intrinsically Safe Pneumatic Control**

| Ref. No. | Part No. | Description   | Qty. | Ref. No. | Part No. | Description                                    | Qty. |
|----------|----------|---|------|----------|----------|--|------|
| 301*     | 248349   | CIRCUIT BOARD                                       | 1    | 308      | 195889   | BUSHING, strain relief                         | 1    |
| 302      | 100035   | SCREW, machine, phillips;<br>8-32 x 5/16 in. (8 mm) | 8    | 309      | 106084   | SCREW, machine;<br>M5 x 0.8; 10 mm             | 2    |
| 305      | 109466   | NUT, lock, w/nylon insert; 8-32                     | 2    | 311      | 113505   | NUT, keps; 10-24                               | 1    |
| 306      | 248297   | MODULE, solenoid, non-IS                            | 1    | 312      | 104029   | CLAMP, ground                                  | 1    |
| 306a     | 15A822   | • MANIFOLD  | 1    | 313      | 15A849   | HARNESS, wire, alarm                           | 1    |
| 306b     | 117357   | • VALVE, 12 VDC, non-IS                             | 2    | 314      | 117442   | CONNECTOR, plug, 18 position                   | 1    |
| 306c     | 114263   | • FITTING; 1/8 npt x 5/32" (4 mm)<br>tube           | 6    | 315      | 15B090   | WIRE, grounding, door                          | 1    |
| 306d     | 100721   | • PLUG, pipe  | 2    | 317      | 111307   | WASHER, lock, external tooth; M5               | 1    |
| 306f     | 115841   | • ELBOW, swivel; 1/4 npt x<br>3/8" (9.5 mm) tube    | 1    | 318      | 065213   | WIRE, copper; 18 AWG;<br>green w/yellow stripe | 1 ft |
| 306j     | 15A798   | • GASKET, neoprene                                  | 1    | 320      | 118132   | TERMINAL, lug, lockwasher                      | 1    |
| 306k     | 15A799   | • GASKET, neoprene                                  | 1    | 321      | 118129   | SPACER   | 1    |
| 306n     | 104765   | • PLUG, pipe; 1/8 ptf                               | 6    | 322      | 114213   | HARNESS, connector                             | 1    |
| 306p     | 517449   | • MUFFLER   | 1    | 323      | 246899   | CIRCUIT BOARD                                  | 1    |
| 306q     | 112512   | • WIRE FERRULE, orange<br>(not shown)               | 4    | 324      | 112512   | FERRULE, wire (not shown)                      | 2    |
| 306r     | 117369   | • CONNECTOR, 12 position                            | 1    | 325      | 15D891   | WIRE HARNESS                                   | 1    |
| 306u     | 552183   | • PLATE   | 2    | 328      | 248325   | POWER SUPPLY, 12 VDC                           | 1    |
| 307      | 15A800   | GASKET; neoprene                                    | 1    | 330      | 119163   | CONNECTOR, plug, 8 position                    | 1    |

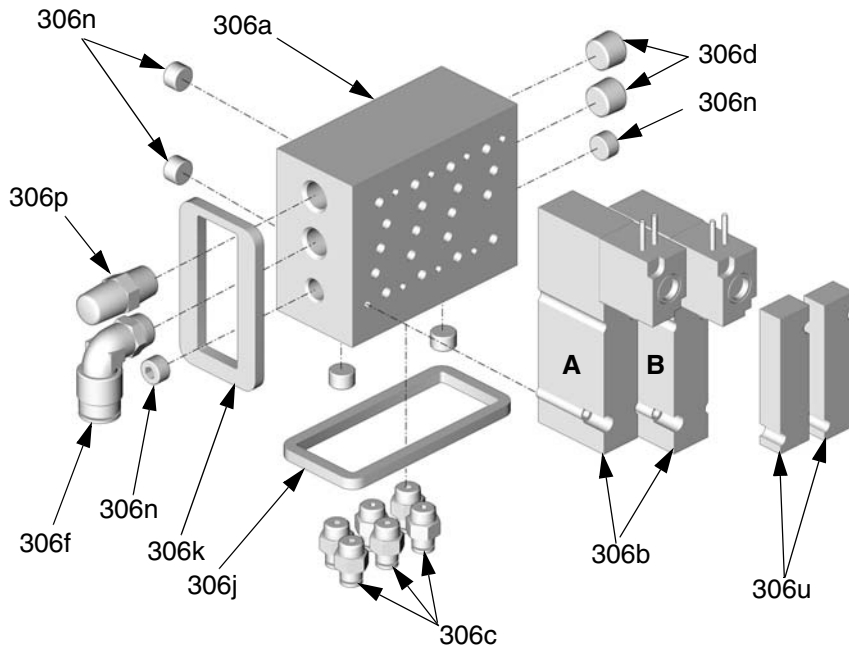
\* When ordering 248349 as a replacement part, you must also order a data download kit to program the circuit board to the specific machine configuration. Order Kit 248403 for hazardous locations or Kit 248404 for non-hazardous locations. See manual 309623 for further instructions.

### 248316 Non-intrinsically Safe Pneumatic Control, continued



TI4567b

### Solenoid Module (306) Detail



TI4564a

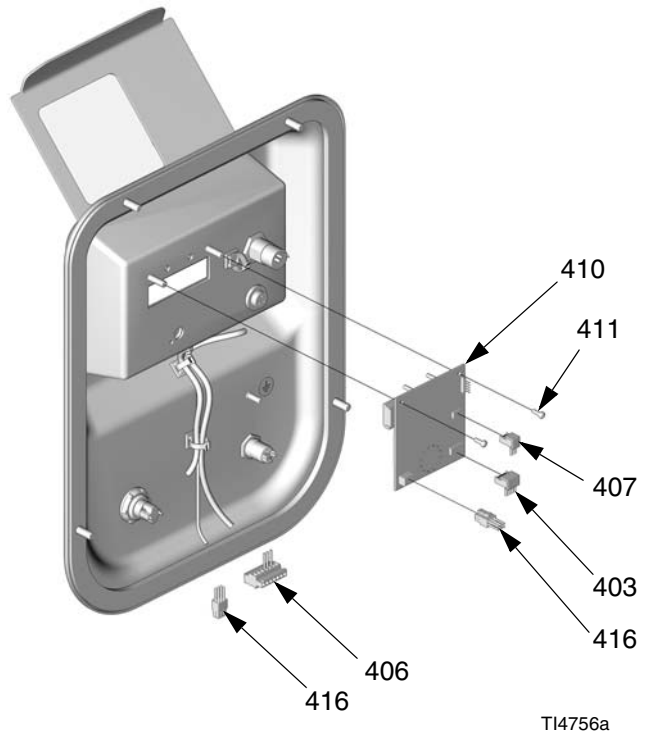
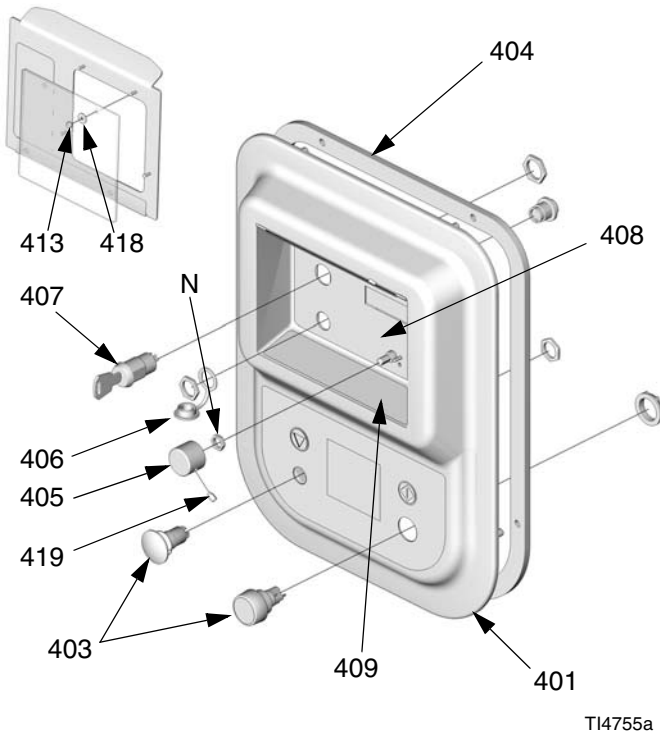
## User Interface

**234620, for pump-based and pump/meter units**

**234621, for meter-based units only**

| Ref. No. | Part No. | Description                        | Qty. |
|----------|----------|------------------------------------|------|
| 401      | 15B062   | DISPLAY                            | 1    |
| 403      | 15A851   | HARNESS, wire                      | 1    |
| 404      | 15A801   | GASKET; neoprene                   | 1    |
| 405      | 15D853   | KNOB, control                      | 1    |
| 406      | 15A850   | HARNESS, wire                      | 1    |
| 407      | 15A852   | HARNESS, wire, switch              | 1    |
| 408      | 15D796   | LABEL, control, upper; 234620 only | 1    |
|          | 15D797   | LABEL, control, upper; 234621 only | 1    |
| 409      | 15D798   | LABEL, control, lower; 234620 only | 1    |
|          | 15D799   | LABEL, control, lower; 234621 only | 1    |

| Ref. No. | Part No. | Description                                  | Qty. |
|----------|----------|--|------|
| 410      | 245706   | CIRCUIT BOARD, display; includes jam nut (N) | 1    |
| 411      | 112546   | SCREW, machine; 4-40 x 3/8 in. (10 mm)       | 2    |
| 412      | 15A856   | PANEL, display                               | 1    |
| 413      | C27076   | NUT, lock, w/nylon insert; 4-40              | 4    |
| 414      | 111907   | MOUNT, tie wrap                              | 3    |
| 416      | 15A854   | HARNESS, wire, display                       | 1    |
| 418      | 188438   | WASHER; 0.120 in.                            | 4    |
| 419      | 101366   | SCREW, set; socket hd; 10-24 x 5/16 (8 mm)   | 1    |

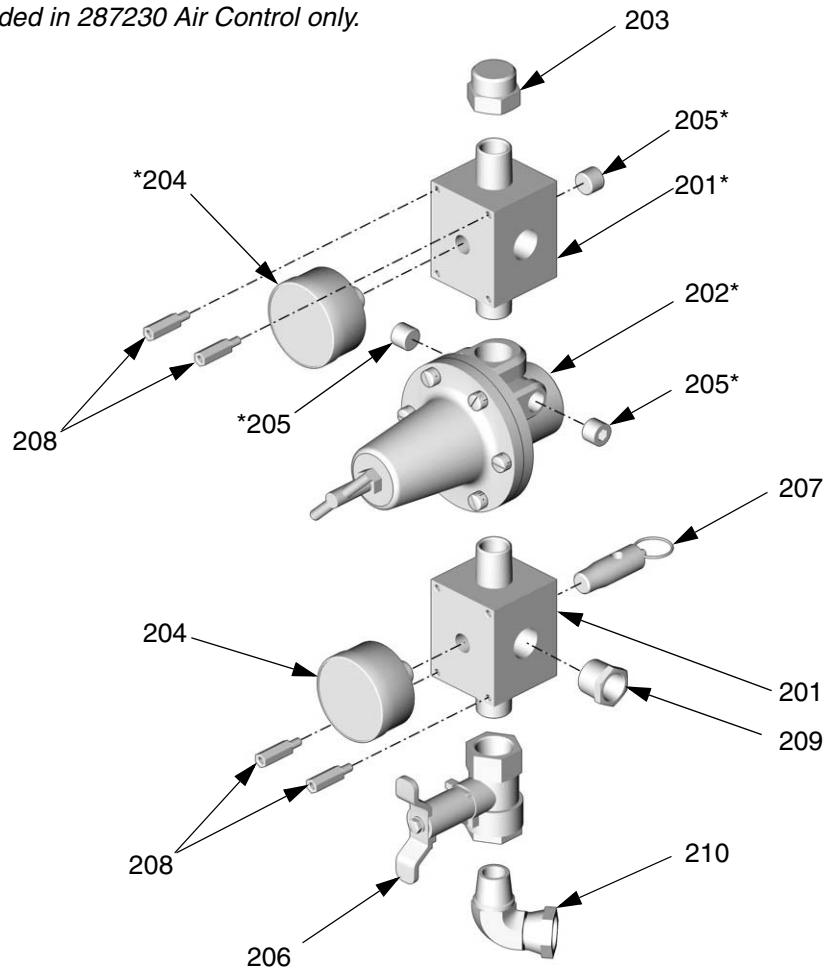


### 287230 Pump Air Control

### 287231 Meter Air Control

| Ref. No. | Part No. | Description   | Qty. | Ref. No. | Part No. | Description                                    | Qty. |
|----------|----------|---|------|----------|----------|--|------|
| 201      | 15D814   | MANIFOLD, air; 287230 only  | 2    | 207      | 113498   | VALVE, safety relief; 110 psi (0.8 MPa, 8 bar) | 1    |
|          | 15D814   | MANIFOLD, air; 287231 only  | 1    | 208      | 119246   | STANDOFF                                       | 4    |
| 202      | 206197   | REGULATOR, air; 1/2 npt(f) inlet and outlet; 287230 only; see manual 308168 | 1    | 209      | 100081   | BUSHING, pipe; 1/2 npt(m) x 3/8 npt(f)         | 1    |
| 203      | 119240   | CAP, pipe, 1/2 in. (13 mm)  | 1    | 210      | C19024   | ELBOW, swivel; 1/2 npt(m) x 1/2 npsm(f)        | 1    |
| 204      | 101689   | GAUGE, air pressure; 287230 only  | 2    |          |          |  |      |
|          | 101689   | GAUGE, air pressure; 287231 only  | 1    |          |          |  |      |
| 205      | 112678   | PLUG; 1/4 npt; 287230 only  | 3    |          |          |  |      |
| 206      | 118762   | VALVE, ball, bleed-type; 1/2 npt(fbe)                                       | 1    |          |          |  |      |

\* These parts are included in 287230 Air Control only.



T14601a

# Technical Data

|  |   |
|--|---|
| Mix ratio range .....  | 0.1:1-10:1 (in 0.1 increments), pump-based systems  |
|  | 0.1:1-30:1 (in 0.1 increments), meter-based systems   |
| Ratio tolerance range .....  | up to +/- 1%  |
| Flow rates   |   |
| Minimum .....  | 0.02 qt/min (0.02 lpm)*, pump-based systems   |
|  | 0.1 qt/min (0.1 lpm)*, meter-based systems  |
| Maximum .....  | 1 gpm (3.8 lpm)   |
| Pump size  |   |
| UltraMix .....   | 54 cc/cycle   |
| HydraMix .....   | 92 cc/cycle   |
| Pump cycle length<br>(one cycle = one upstroke and one downstroke) |   |
| UltraMix .....   | 6 in. (152 mm)/cycle  |
| HydraMix .....   | 7.6 in. (193 mm)/cycle  |
| Fluid viscosity range .....  | 50-20,000 cps (heavier viscosities can be mixed with use of optional heaters, heated hoses, and hardware) |
| Fluid filtration .....   | 60 mesh (238 micron) standard   |
| Maximum fluid working pressure                                     |   |
| 2.5:1 UltraMix .....   | 250 psi (1.7 MPa, 17 bar)   |
| 24:1 HydraMix .....  | 2400 psi (16 MPa, 166 bar)  |
| 34:1 HydraMix .....  | 3400 psi (23 MPa, 234 bar)  |
| 47:1 HydraMix .....  | 4700 psi (32 MPa, 324 bar)  |
| Meter-based systems .....  | 4000 psi (28 MPa, 280 bar)  |
| Air supply pressure range .....                                    | 60-110 psi (420-800 kPa, 4.2-8 bar)   |
| Maximum air consumption at 100 psi (0.7 MPa, 7 bar)                |   |
| 2.5:1 UltraMix .....   | 10.8 scfm at 1 gpm (0.30 m <sup>3</sup> /min at 3.8 lpm)  |
| 24:1 HydraMix .....  | 40.5 scfm at 1 gpm (1.13 m <sup>3</sup> /min at 3.8 lpm)  |
| 34:1 HydraMix .....  | 54.7 scfm at 1 gpm (1.53 m <sup>3</sup> /min at 3.8 lpm)  |
| 47:1 HydraMix .....  | 63.0 scfm at 1 gpm (1.76 m <sup>3</sup> /min at 3.8 lpm)  |
| Ambient temperature range  |   |
| Operating .....  | 32-104° F (0-40° C)   |
| Storage .....  | 30-160° F (-1-71° C)  |

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

|  |   |
|--|---|
| External Power Supply Requirements ..... | 93-250 Vac, 50/60 Hz, 1.2 amps maximum draw<br>15 amp maximum circuit breaker required<br>14 AWG power supply wire gauge                          |
| Environmental Conditions Rating .....    | Indoor/outdoor<br>Altitude up to 4000 meters<br>Maximum relative humidity to 99% up to 40° C<br>Pollution degree (1)<br>Installation category (2) |
| Sound pressure .....                     | 98 dBA at 100 psi (0.7 MPa, 7 bar)  |
| Fluid inlet size .....                   |   |
| UltraMix Pumps .....                     | See 310671  |
| HydraMix Pumps .....                     | See 310672  |
| Meters .....                             | See 308778  |
| Fluid outlet size .....                  |   |
| UltraMix Pumps .....                     | See 310671  |
| HydraMix Pumps .....                     | See 310672  |
| Meters .....                             | See 308778  |
| Air inlet size .....                     |   |
| UltraMix Pumps .....                     | See 310671  |
| HydraMix Pumps .....                     | See 310672  |
| Wetted parts                             |   |
| Pumps .....                              | See 310662  |
| Dispense Valves .....                    | See 310655  |
| Mix Manifold .....                       | See 310654  |
| Meters .....                             | See 308778  |
| PC Communications .....                  | RS-232  |

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## **FOR GRACO CANADA CUSTOMERS**

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

# Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

**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

*All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.*

Original instructions. This manual contains English. MM 309909

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**

**Copyright 2005, Graco Inc. is registered to ISO 9001**

[www.graco.com](http://www.graco.com)

Revised 02/2010



## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>