Repair - Parts

ProMix® V Package Meter Proportioner

3B0361C

EN

Meter based, electronic plural component paint proportioner for the application of two component paints and coatings. For professional use only.

Models PVMNM01-24 are not approved for use in explosive atmospheres or hazardous (classified) locations.

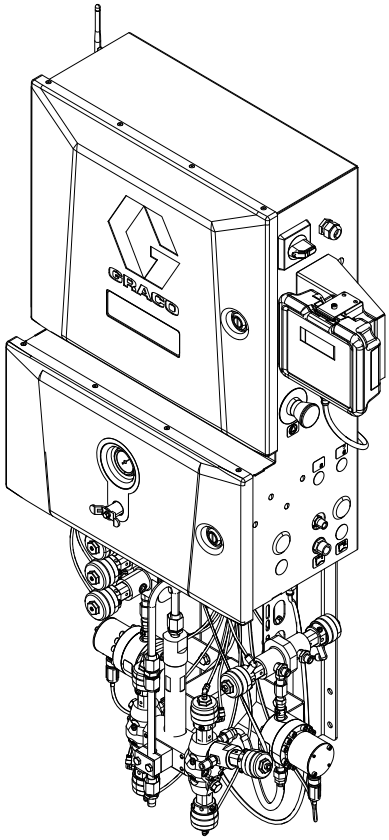
Only the booth control of models PVMBM01-24 is approved for use in explosive atmospheres or hazardous (classified) locations.

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



Important Safety Instructions

Read all warnings and instructions in this manual and related manuals before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



TI01777

PROVEN QUALITY. LEADING TECHNOLOGY.

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Related Manuals

In addition to this manual, the ProMix V will include the ProMix V Installation - Operation Manual 3B0203. Additional manuals as related to kits and accessories will come with those items.

The user can find English manuals and any available translations at www.graco.com.

Manual	Description
3B0203	ProMix V Package Meter Proportioner, Installation - Operation
3B0236	ProMix V Mix Manifold, Instruction - Parts
308778	Volumetric Fluid Flow Meter, Instructions - Parts
312783	Color and Catalyst Change Valve Stacks, Instruction
312782	Air Actuated Dispense Valve. Instruction
X050002	Booth Control Module

Models

Maximum air working pressure for all models is 100 psi (0.69 MPa, 6.89 bar).

Non Hazardous Location Models

Approvals for non hazardous location models


Part	Series	Max Fluid Working Pressure	Number of Colors	Number of Catalysts	Number of Gun Flush Boxes	Acid Catalyst Compatible	Includes WiFi
PVMNM01	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	0	-	-
PVMNM02	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	1	-	-
PVMNM03	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	2	-	-
PVMNM04	A	3000 psi, 20.68 MPa, and 206.8 bar	1	1	0	✓*	-
PVMNM05	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	0	-	-
PVMNM06	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	1	-	-
PVMNM07	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	2	-	-
PVMNM08	A	3000 psi, 20.68 MPa, and 206.8 bar	3	1	0	✓*	-

Part	Series	Max Fluid Working Pressure	Number of Colors	Number of Catalysts	Number of Gun Flush Boxes	Acid Catalyst Compatible	Includes WiFi
PVMNM09	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	0	-	-
PVMNM10	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	1	-	-
PVMNM11	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	2	-	-
PVMNM12	A	3000 psi, 20.68 MPa, and 206.8 bar	5	1	0	✓*	-
PVMNM13	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	0	-	✓
PVMNM14	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	1	-	✓
PVMNM15	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	2	-	✓
PVMNM16	A	3000 psi, 20.68 MPa, and 206.8 bar	1	1	0	✓*	✓
PVMNM17	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	0	-	✓
PVMNM18	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	1	-	✓
PVMNM19	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	2	-	✓
PVMNM20	A	3000 psi, 20.68 MPa, and 206.8 bar	3	1	0	✓*	✓
PVMNM21	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	0	-	✓
PVMNM22	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	1	-	✓
PVMNM23	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	2	-	✓
PVMNM24	A	3000 psi, 20.68 MPa, and 206.8 bar	5	1	0	✓*	✓

***** Acid compatible units are equipped with a flush and dump valve on the catalyst B side. This is to prevent the catalyst from sitting in the flow meter when not in use.

Hazardous Location Models

Approvals for hazardous location models
II 2 G Ex ia **IIB T3 Gb** **CML 25ATEX2174X** **IECEx CML 25.0059x** **CE 2575** **NOTE:** The amount of film formation and rate of crystallization varies depending on the blend of ISO Intrinsically Safe Apparatus.

Part	Series	Max Fluid Working Pressure	Number of Colors	Number of Catalysts	Number of Gun Flush Boxes	Acid Catalyst Compatible	Includes WiFi
PVMBM01	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	0	-	-
PVMBM02	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	1	-	-
PVMBM03	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	2	-	-
PVMBM04	A	3000 psi, 20.68 MPa, and 206.8 bar	1	1	0	✓*	-
PVMBM05	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	0	-	-
PVMBM06	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	1	-	-
PVMBM07	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	2	-	-
PVMBM08	A	3000 psi, 20.68 MPa, and 206.8 bar	3	1	0	✓*	-
PVMBM09	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	0	-	-
PVMBM10	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	1	-	-
PVMBM11	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	2	-	-
PVMBM12	A	3000 psi, 20.68 MPa, and 206.8 bar	5	1	0	✓*	-
PVMBM13	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	0	-	✓
PVMBM14	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	1	-	✓
PVMBM15	A	4000 psi, 27.58 MPa, and 275.8 bar	1	1	2	-	✓
PVMBM16	A	3000 psi, 20.68 MPa, and 206.8 bar	1	1	0	✓*	✓

Part	Series	Max Fluid Working Pressure	Number of Colors	Number of Catalysts	Number of Gun Flush Boxes	Acid Catalyst Compatible	Includes WiFi
PVMBM17	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	0	-	✓
PVMBM18	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	1	-	✓
PVMBM19	A	4000 psi, 27.58 MPa, and 275.8 bar	3	1	2	-	✓
PVMBM20	A	3000 psi, 20.68 MPa, and 206.8 bar	3	1	0	✓*	✓
PVMBM21	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	0	-	✓
PVMBM22	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	1	-	✓
PVMBM23	A	4000 psi, 27.58 MPa, and 275.8 bar	5	1	2	-	✓
PVMBM24	A	3000 psi, 20.68 MPa, and 206.8 bar	5	1	0	✓*	✓

***** Acid compatible units are equipped with a flush and dump valve on the catalyst B side. This is to prevent the catalyst from sitting in the flow meter when not in use.

Regulatory Compliance Information

ProMix V models listed with WiFi contain a module that is certified or approved for use in several countries. See **Models**, page 3 for models that have WiFi. The module has been integrated into the final product without modification to its radio parameters and in accordance with the terms of its original approvals. The final product has also undergone appropriate EMC testing.

United States - FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1.This device may not cause harmful interference, and

2.This device must accept any interference received, including interference that may cause undesired operation.

This product contains a radio module certified under:

- **FCC ID:** 2AET4RUT142

The module has been integrated in accordance with FCC rules. The host system has also been tested to

FCC Part 15 Subpart B (unintentional radiators).
NOTE: Any changes or modifications not expressly approved could void the user's authority to operate the equipment.

Canada - ISED

This Class A digital apparatus complies with **Canadian ICES-001**. Cet appareil numérique de la classe A est conforme à la norme **NMB-001** du Canada.
This product contains a certified radio module:

- **ISED Certification Number:** US0186.2024.00241.

The module has been integrated in accordance with ISED regulations and without alteration.

European Union

This product contains a WiFi module that is **CE-marked** and conforms to applicable requirements of the **Radio Equipment Directive (2014/53/EU)**.

- **EU Type Examination Certificate No.:** NB2906.2024.000352

The module has been integrated into this product without modification and in accordance with the manufacturer's EU Declaration of Conformity.

South Africa - ICASA

This product contains a radio module approved by the **Independent Communications Authority of South Africa (ICASA)**.

- **Equipment Type Approval Number:** TA-2024/3035

The module has been integrated according to its approval terms. The host product has not been separately certified and relies on the approved module for compliance.

Australia & New Zealand - RCM (Module Only)

This product contains a WiFi module that is **RCM-certified** for use in Australia and New Zealand.

- **RCM Certificate No.:** R24474
- Registered by: **ANZ Electrical Compliance**

The module complies with:

- **Radio communications (Low Interference Potential Devices) Class Licence 2015**
- **ACMA EMC Framework**

The module has been integrated into this product without modification and in accordance with the conditions of its RCM certification.

India - WPC ETA

This product includes a radio module approved by the **Government of India, Ministry of Communications, Department of Telecommunications, WPC Wing**

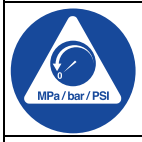
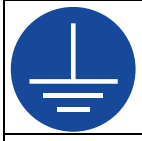
- **ETA Registration No.:** ETA-SD-202441110868
- **Approval Date:** 15-November-2024

The module has been approved through the **self-certification process** and integrated without modification. It operates in license-free spectrum under applicable Indian regulations (e.g., **G.S.R. 1048(E)**).
The full product is not separately certified under WPC. Compliance is based on the approved module.

Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Chemical Hazard
	Electric Shock Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Splash Hazard
	Toxic Fluid or Fumes Hazard

Symbol	Meaning
	Do Not Wipe with a Dry Cloth
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Do Not Place Hands or Other Body Parts Near Fluid Outlet
	Eliminate Ignition Sources
	Follow Pressure Relief Procedure
	Ground Equipment
	Ventilate Work Area
	Wear Personal Protective Equipment



Safety Alert Symbol
This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

General Warnings

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

⚠WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

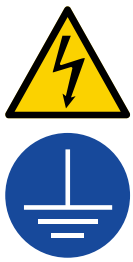
- Use equipment only in well-ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Purge the ProMix V,** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



FIRE AND EXPLOSION HAZARD

Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion:

- Clean plastic parts only in well-ventilated area.
- Do not clean with a dry cloth.
- Do not operate electrostatic guns in equipment work area.



ELECTRIC SHOCK HAZARD

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

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

⚠WARNING





INTRINSIC SAFETY

Intrinsically safe equipment that is installed improperly or connected to non-intrinsically safe equipment will create a hazardous condition and can cause fire, explosion, or electric shock. Follow local regulations and the following safety requirements.

- Be sure your installation complies with national, state and local codes for the installation of electrical apparatus in a class I, group D, Division 1Hazardous location, including all of the local safety fire codes, NFPA 33, NEC 500 and 516, and OSHA 1910.107.
- Equipment that comes in contact with the safety barrier's intrinsically safe terminals must be rated for Intrinsic safety. this includes DC voltage meters, ohmmeters, cables and connections. remove the unit from the hazardous area when troubleshooting.
- The equipment is intrinsically safe when no external electrical components are connected to it. If a printer, computer or other electrical component is connected, it must be used in conjunction with a safety barrier.
- Without the safety barrier, the equipment is no longer intrinsically safe and must not be operated in hazardous locations, as defined in article 500 of the National Electrical Code (USA) or your local electrical code.
- Do not install the ProMix V, which is non-intrinsically safe, in a hazardous area, as defined in Article 500 of the national Electrical Code (USA) or your local electrical code.
- Ground the intrinsically safe power supply. A voltage limiting safety barrier must be properly grounded to be effective. For proper grounding, use the ground wire provided (or a 12 gauge minimum ground wire), and the barrier's ground must be within 1 ohm of true earth ground.
- Do not operate the safety barrier module with the enclosure door open.







SKIN INJECTION HAZARD

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

- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

⚠WARNING





EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



TOXIC FLUID OR FUMES HAZARD

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

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



PERSONAL PROTECTIVE EQUIPMENT

Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:

- A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.
- Protective eyewear and hearing protection.

Important Isocyanate (ISO) Information

Isocyanates (ISO) are catalysts used in two component materials

Isocyanate Conditions



Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.

- Read and understand the fluid manufacturer's warnings and Safety Data Sheets (SDSs) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDSs.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors, and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDSs.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.

Material Self-Ignition



Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and material Safety Data Sheets (SDSs).

Keep Components A and B Separate



Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:

- **Never** interchange component A and component B wetted parts.
- Never use solvent on one side if it has been contaminated from the other side.

Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

Changing Materials

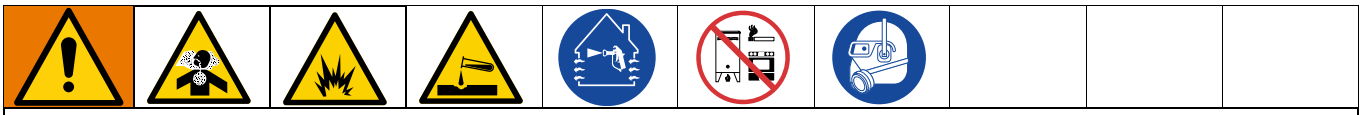
NOTICE

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

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- When manually overriding the system solenoids, an unknown amount of materials may flow. Flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluids and change hoses. Epoxies often have amines on the component B (catalyst) side. Polyureas often have amines on the component A (color) side.

Important Acid Catalyst Information

Some models of the ProMix V plural component proportioner system are designed for acid catalysts (“acid”) used in two component wood finishing materials, See **Models**, page 3. More corrosion resistant-wetted materials of construction are required for use with acid. Acids with pH levels of 1 or lower are extremely corrosive and are not intended to be used with the ProMix V system.



Acid is flammable, and spraying or dispensing acid creates potentially harmful mists, vapors, and atomized particulates. To help prevent fire, explosion and serious injury:

- Read and understand the fluid manufacturer’s warnings and Safety Data Sheet (SDS) to know specific hazards and precautions related to acid.
- Use only genuine manufacturer recommended acid-compatible parts in the catalyst system (hoses, fittings, etc). A reaction may occur between any substituted parts and the acid.
- To prevent the inhalation of acid mists, vapors, and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. ventilate the work area according to instructions in the acid manufacture’s SDS.
- Avoid all skin contact with acid. Everyone in the work area must wear chemically impermeable gloves, protective clothing, foot coverings, aprons, and face shields as recommended by the acid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. Wash hands and face before eating and drinking.
- Regularly inspect equipment for potential leaks and remove spills promptly and completely to avoid direct contact or inhalation of the acid or it’s vapors.
- Keep acid away from heat, sparks, and open flames. Do not smoke in the work area. Eliminate all ignition sources.
- Store acid in the original container in a cool dry and well ventilated area away from direct sunlight and away from other chemicals in accordance with the acid manufacturers recommendations. To avoid corrosion of containers, do not store acid in substitute containers. Reseal the original container to prevent vapors from contaminating the storage space and surrounding facility.

Moisture Sensitivity of Acid Catalysts

Acid catalysts can be sensitive to atmospheric moisture and other contaminants. It is recommended the catalyst pump and valve seal areas exposed to atmosphere are flooded with ISO oil, TSL™, or other compatible material to prevent acid catalyst build-up and premature seal damage and failure.

NOTICE

Acid catalyst build-up will damage the valve seals and reduce the performance and life of the catalyst pump. To prevent exposing acid to moisture:

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. Never store acid catalysts in an open container.
- Keep the catalyst pump and the valve seals filled with the appropriate lubricant. The lubricant creates a barrier between the acid catalyst and the atmosphere.
- Use only moisture-proof hoses compatible with acid catalysts.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

Glossary of Terms

Air Chop - the process of mixing air and solvent together during the purge cycle to help clean the lines and reduce solvent usage.

Analog - relating to, or being a device in which data are represented by continuously variable, measurable, physical quantities, such as length, width, voltage, or pressure.

BCCM - Booth Control Communication Module. Communication module for the Booth control located inside the enclosure.

Catalyst - the fluid that enables a chemical reaction in the mixture to cure the color or coating being applied.

Chop Interval-duration of each activation of the A or B purge valve during an air chop sequence.

Component A- the side of the unit that is used for color supply. It can include multiple color valves, a flush valve, and has its own flow meter, dose, and purge valve.

Component B - the side of the unit that is used for catalyst supply. It can include multiple catalyst valves, a flush valve, and has its own flow meter, dose, and purge valve.

Coriolis Meter - a non-intrusive flow meter often used in low flow applications or with light viscosity, shear sensitive, or acid catalyzed materials. This meter uses vibration to measure flow.

Digital Input and Output - a description of data which is transmitted as a sequence of discrete symbols, most commonly this means binary data represented using electronic or electromagnetic signals.

Dose Size - the amount of color and catalyst that is dispensed into an integrator.

Dose Time Alarm - the amount of time that is allowed for a dose to occur before an alarm occurs. One full dose must occur during the set time while the gun trigger is on to prevent the alarm.

Ethernet - a method for directly connecting a computer to a network or equipment in the same physical location.

Flush - the process of which the color and catalyst is cleaned out of the ProMix V from the valve stacks through to the mix manifold using an appropriate solvent.

Flush Volume Check - the ProMix V monitors flush volume. The alarm occurs if minimum volume is not achieved. Minimum flush volume is user settable.

Global - indicates that values on the screen apply to all recipes.

Grand Total - a non-resettable value that shows the total amount of material dispensed through the ProMix V.

Gun Trigger Input Signal - used to manage ratio assurance dose times and flow control processes.

HMI (Human Machine Interface) - a human-machine interface or HMI is a device that is used as an interface between an operator and a process or piece of machinery. This includes a graphic interface that allows complete control of a machine from one dashboard.

Intrinsically Safe (IS) - refers to a design or method used in electrical equipment to prevent ignition in hazardous environments.

Idle - the idle time is set by the user. If the gun is not triggered in the time set by the user, the ProMix V enters Idle mode. Trigger the gun to resume operation.

Job Total - a resettable value that shows the amount of material dispensed through the ProMix V for one job. A job is complete when a color change or complete ProMix V purge occurs.

K-factor - a value that refers to the amount of material that passes through a meter. The assigned value refers to an amount of material per pulse.

Manual Mode - when the ProMix V is controlling the inputs without any input from an outside control.

Minimum Material Fill Volume - ProMix V monitors material fill volume. The alarm occurs if minimum volume is not achieved. Minimum material fill volume is user settable.

Mix - the process by which blending of the color and catalyst occurs.

Mix Input Signal- refers to the ProMix V mode status where the ProMix V begins a dose sequence each time the mix signal is made.

Mixed Material Fill Time - the amount of time that is required to load mixed material from the dose valves to the applicator/gun.

Modbus/TCP - a type of communication protocol used to communicate digital I/O signals over an Ethernet connection.

Overdose (A, B, C) Alarm - when either the color or catalyst dispenses too much material for the selected integrator, and the ProMix V cannot compensate for the additional material.

Potlife Time - the amount of time before a material becomes unsprayable.

Potlife Volume - the amount of material that is required to move through the mix manifold, hose and applicator before the potlife timer is reset.

Pre Fill - refers to the time required to fill the lines from the color or catalyst valve stack to the mix manifold.

Purge - when all mixed material is cleaned from the from the ProMix V mix manifold, hose, and applicator.

Purge Source- source of the media used in the first, second, or third purge cycle. User settable to purge valve A (air), purge valve B (solvent), A-B chop, or purge valve A2.

Purge Time- duration of the first, second, or third purge cycle required to clean mixed material from the ProMix V. User settable.

Purge Valve A, A2, and B- refers to the use of valves used to flush various types of materials. The valves are used to purge with air, water, and solvent.

Ratio Tolerance - the settable percent of acceptable variance that the ProMix V will allow before a ratio alarm occurs.

Sequential Dosing - component A and B dispense sequentially in the necessary volumes to attain the mix ratio.

Solvent- the fluid used to clean either the color, catalyst, or mixed material.

Solvent Push - This method uses solvent to push mixed material out the spray gun while in Mix/Spray mode. Creating an initial clean at the same time reducing mixed material waste.

Standby - Refers the state the ProMix V is in, waiting for next command from the operator to Spray/Purge or Recipe change.

System Idle - this warning occurs if the ProMix V is set to mix and enters the idle state after not receiving a flow meter pulse.

Overview

The ProMix V is an electronic two component paint proportioner. It can blend most two component paints. It is not for use with quick-setting paints (those with a pot life of less than 5 minutes).

PVMNM01-24 is not approved for use in explosive atmospheres or hazardous (classified) locations.

The booth control of PVMBM01-24 is approved for use in explosive atmospheres or hazardous (classified) location.

It has sequential dosing capabilities where it dispenses component B (catalyst), confirms the dose amount, and dispenses the proper amount of component A (color) through an integrator to ensure that the mixture is on ratio.

It can proportion at ratios from 1:1 to 50.0:1 and flow rates up to 3,800 cc/min. Note that maximum ratio and maximum flow rate can not be achieved at the same time.

All alarms are displayed on the booth control and detailed information such as date, time, error type, and description are stored in the HMI. Job logs with material usage info are stored there as well.

The ProMix V has the ability to be configured for use with up to two guns. Examples include electrostatic guns such as the Graco ProBell® or Pro Xp® series and conventional non-electrostatic guns such as the Perform AA® and Stellair® series spray guns. At this time electrostatic guns can only be used with solvent borne paint. Conventional non-electrostatic guns can use solvent borne or waterborne paint with the ProMix V.

Up to two gun flush boxes may be used with the proportioner. The hardware to control two gun flush boxes can be mounted to the main cabinet.

Pre-configured proportioners support 1, 3, or 5 colors. These can be upgraded to 7 colors with the room available where the color stack is mounted.

Pre-configured proportioners support 1 catalyst. Acid units come with catalyst flush and all units can be upgraded to support 2 catalysts.

Do not exceed the maximum rated working pressure shown on the ProMix V identification label or the lowest rated component in the system such as the spray gun, fluid hose, fluid pressure regulator, etc. The ProMix V meter based unit itself does not generate fluid pressure.

Component Identification

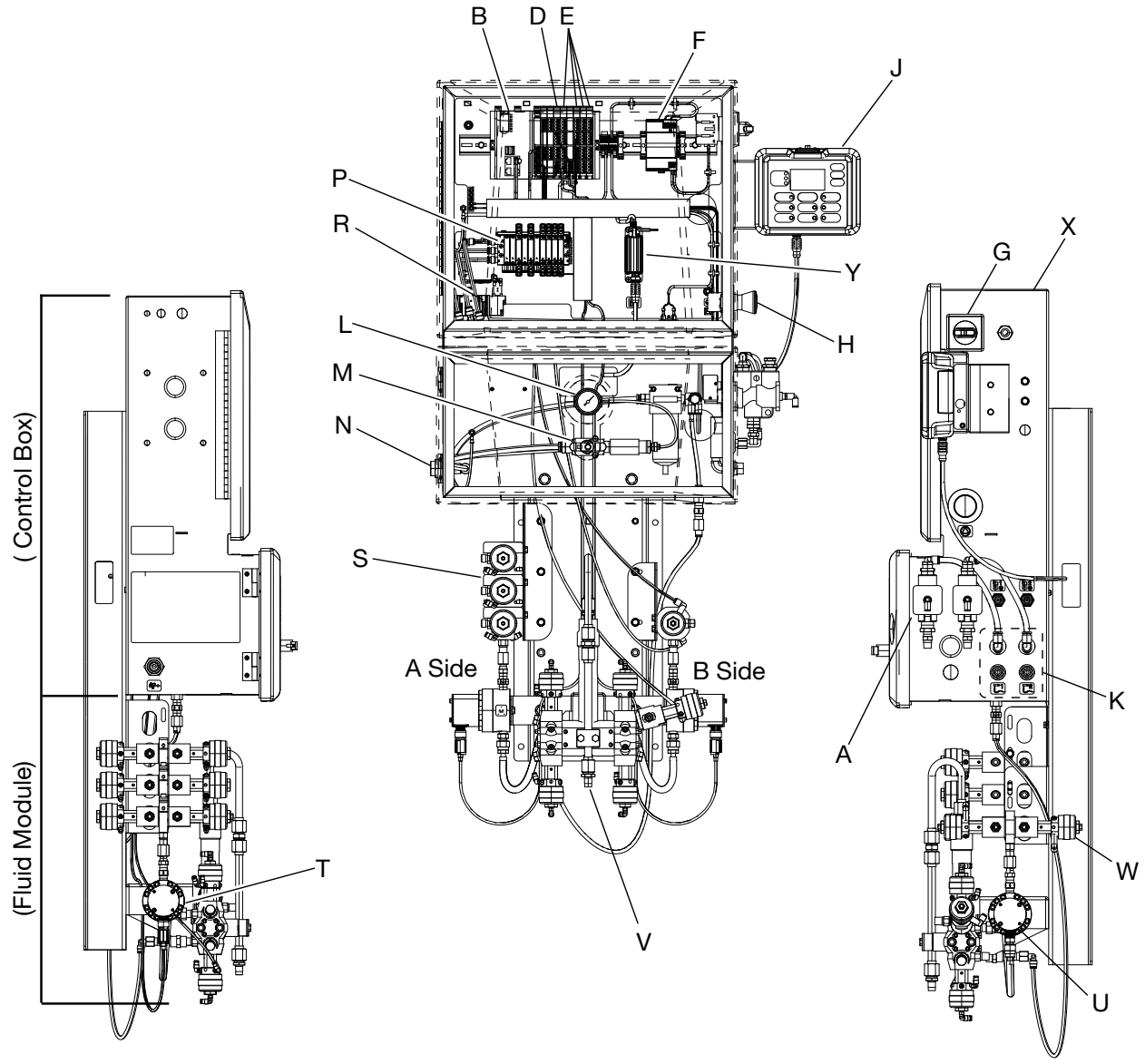


FIG. 1: ProMix V Package Meter Proportioner Identification

Key:

A Atomizing Air Shut Off valve (when using Gun Flush Box)
B Controller Module
C Wireless Module (Not Shown)
D Input Module
E Output Modules
F 24 Volt Power Supply
G Power Switch
H E-Stop Switch
J Booth Control
K Air Flow Switches
L Inlet Air pressure gauge
M Air Inlet Shutoff Valve
N Main Air Inlet
P Solenoid Module Single Acting
R Solenoid Module Double Acting
S Color Stack A
T Meter A
U Meter B
V Mix Manifold
W Catalyst Stack B
X Enclosure Assembly
Y Booth Control Communication Module (BCCM) or Intrinsically Safe Barrier.

Mix Manifold Identification

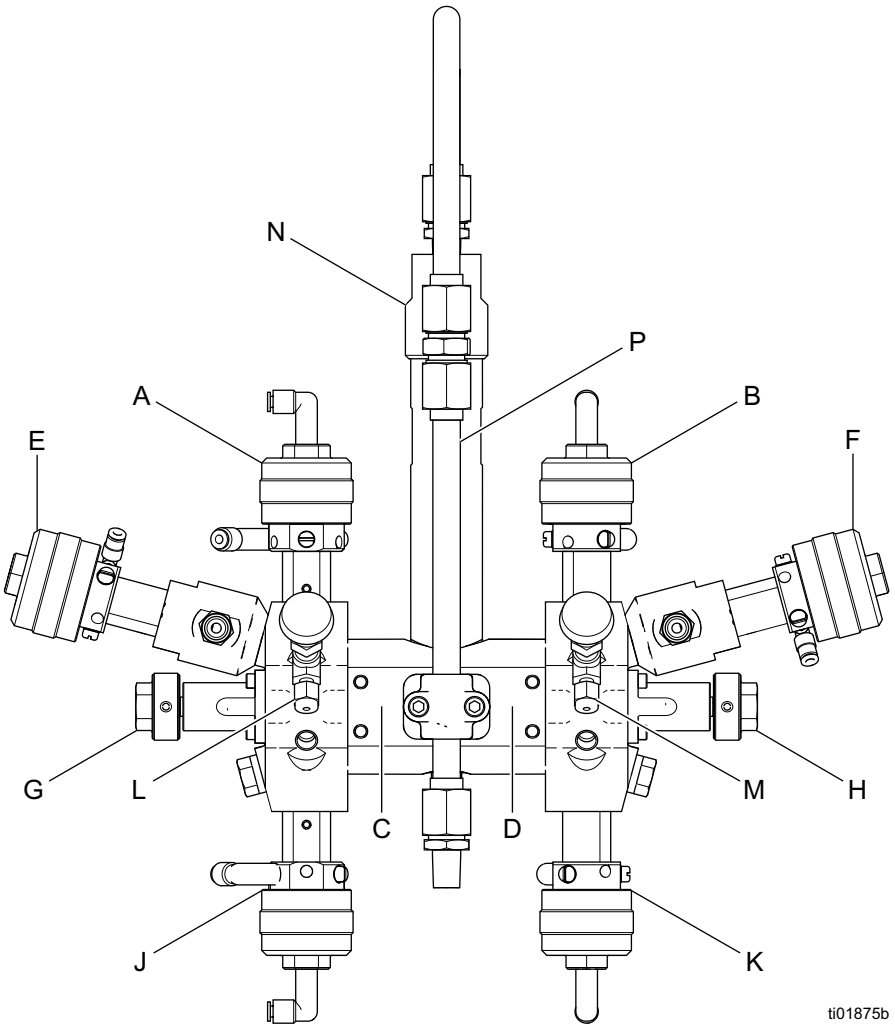


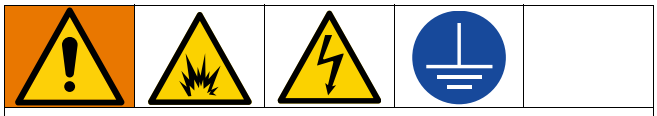
FIG. 2: ProMix V Mix Manifold Identification

Key:

A Dose Valve A
B Dose Valve B
C Check Valve A
D Check Valve B
E Dump Valve A (Optional)
F Dump Valve B (Optional)
G Isolation Valve A (Optional)
H Isolation Valve B (Optional)
J Purge Valve A
K Purge Valve B
L Sample Valve A (Optional)
M Sample Valve B (Optional)
N Integrator
P Mixer

Maintenance

Grounding



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

Confirm the ProMix V ground wire is connected to the ground screw on the back panel inside the upper enclosure. Pull the wire and clamp out of the bottom of the lower enclosure and connect the clamp to a true earth ground. If wall power is used to power controls ground the electrical connection according to local codes.

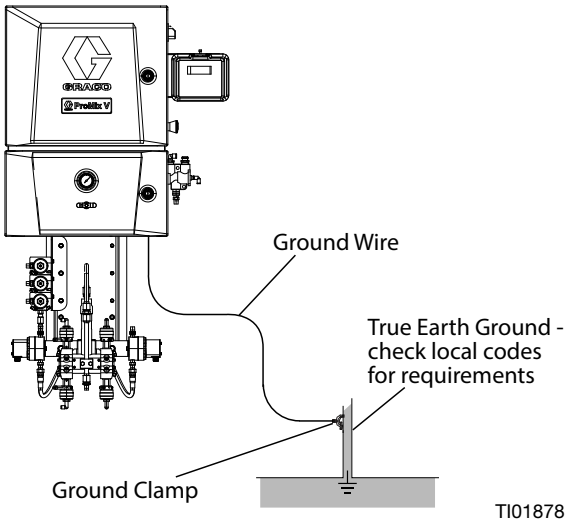


FIG. 3. Grounding

Gun flush box: connect a ground wire from the gun flush box ground lug to a true earth ground.

Flow meters: verify that the meter cables are connected. Failure to properly connect the shield may cause incorrect signals.

Air and fluid hoses: use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace hose immediately.

Spray gun:

- **Non-Electrostatic:** Ground the spray gun through connection to a grounded fluid supply hose.
- **Electrostatic:** Ground the spray gun through connection to a grounded air supply hose. Connect the air hose ground wire to a true earth ground.

Fluid supply container: follow local codes and regulations.

Object being sprayed: follow local codes and regulations.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.

Electrical

Power Connection



All electrical wiring must be completed by a qualified electrician and comply with all local codes and regulations.

Enclose all cables routed in the spray booth and high traffic areas in conduit to prevent damage from paint, solvent, and traffic.

The ProMix V operates with 100-240 VAC, 50/60 Hz input power, with a maximum of 1.34 amp current draw. The power supply circuit must be protected with a 15 amp maximum circuit breaker.

The input power cord access port has a cord strain relief bulkhead and can accept a cord diameter of .170 - .450 inches (4.3 - 11.4 mm).

1. Verify that the electrical power at the main panel is shut off. Open control box cover.
2. Connect electrical cord to the ground terminal block and disconnect switch as shown. Electrical connections must be installed by a qualified electrician
3. Close the control box. Restore power from the main panel.
4. Follow **Grounding**, page 21.

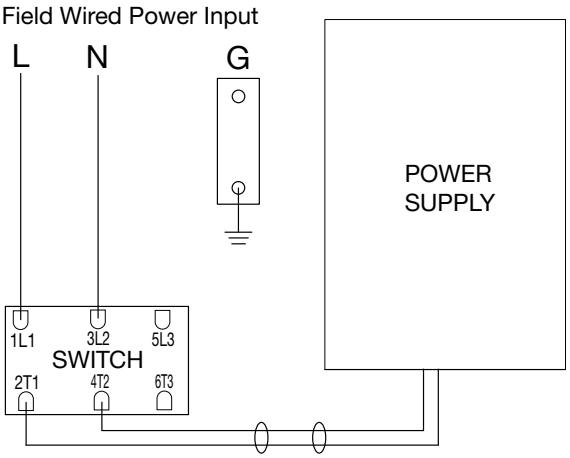


FIG. 4. Electrical Schematics

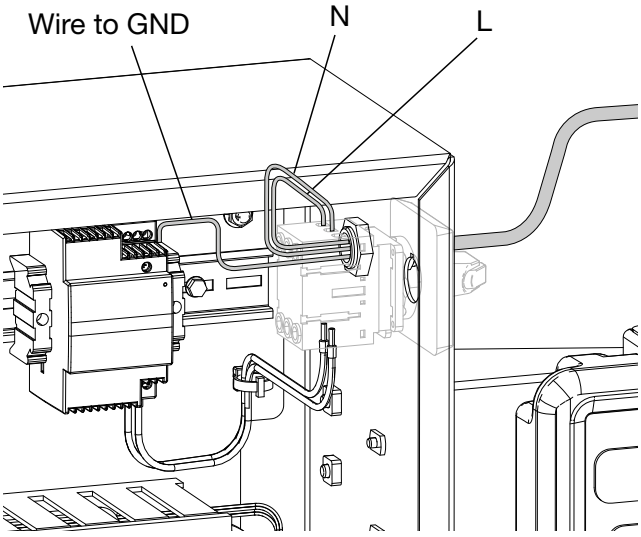


FIG. 5. Control Box Connection

Emergency Stop (E-Stop) Function

Machine operation may be halted at any time by pushing in the E-Stop switch (H). When the switch is pushed in the unit is put into the standby state and electrical power is removed from the output modules (E). Solenoids are de-energized and the associated fluid valves are closed.

Alarm and light tower functions continue to operate. Pot life time continues to be monitored. The unit remains in the active recipe.

To resume operation rotate and pull out the E-Stop switch. The unit will remain in standby, but return to normal functionality. At this point the operator can continue painting, change recipes, or purge the unit.

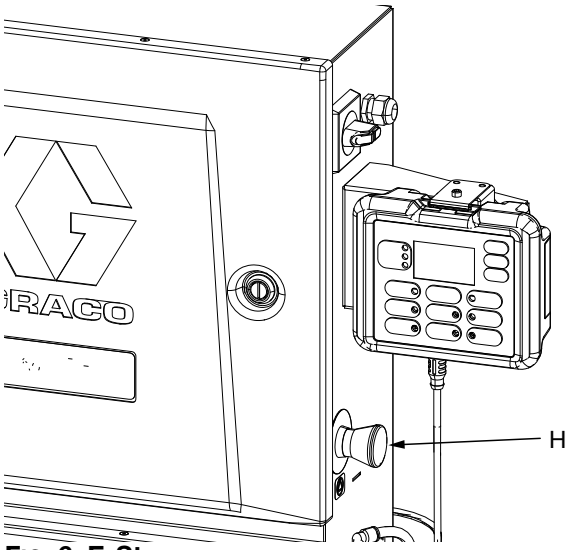


FIG. 6. E-Stop

Disconnect Ethernet Cables

Disconnect Ethernet cables connected to the Controller Module to prevent remote operation when trouble shooting and performing maintenance and repair.



Risk of Injury from Unexpected Machine Operation.

Initiating Fill/Spray or Purge mode will pressurize the system. To prevent injury caused by unexpected pressurization due to a mode change from a remote controller, disconnect the Ethernet wireless/wired communication connection(s) before performing any maintenance or troubleshooting.

1. Follow **Purge the ProMix V**, page 26.
2. Disconnect the main power coming from the main shutoff outside the machine. Shut off the machine power switch.
3. Remove the Ethernet cables from Controller Module ports X4 and X5 to disable the possibility of remote operation.
4. Perform any service required and reconnect the Ethernet cables when finished. Port X4 is for a direct PC connection and port X5 connects to the WiFi module, if equipped.

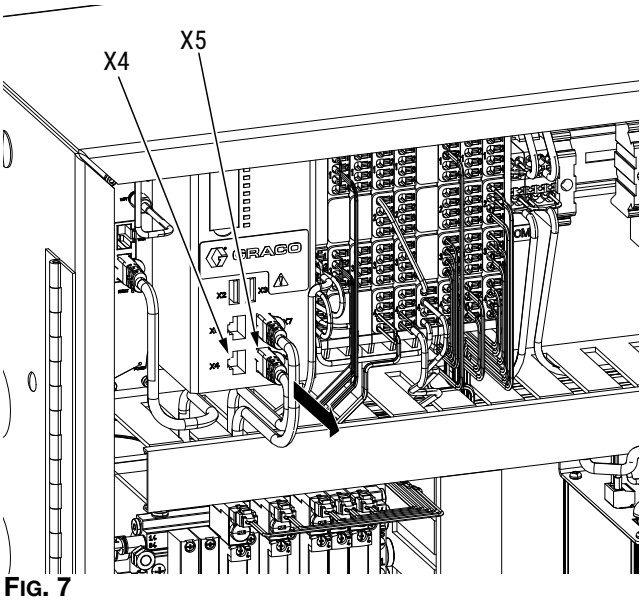


FIG. 7

Shut Down

If the ProMix V is requiring maintenance or a period of extended inactivity, the following procedure is to be used.

1. Follow **Purge the ProMix V**, page 26.
2. Close main air shutoff valve on air supply line and on ProMix V air control panel.
3. If maintenance is required perform the **Pressure Relief Procedure**, page 24.

NOTE: The ProMix V will restart in unknown recipe 999 and require a flush and purge before resuming normal operation.

Booth Control

Used by the operator for daily painting functions including: changing recipes, signaling job complete, reading/clearing alarms, and placing the ProMix V in standby, mix, or purge mode.

Soft Key Message

NOTICE

To prevent damage to soft key buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

Refer to the ProMix V Package Meter Proportioner Installation and Operations Manual for further directions. See **Related Manuals**, page 3.

Pressure Relief Procedure

Follow the pressure relief procedure whenever maintenance or repair is required.

Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection and splashing fluid, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Using the booth control, place the ProMix V in standby mode by pressing standby on the device.
2. Shut off fluid supply pumps for all colors, catalysts, and solvent by turning off the air supply valve (AS) and bleeding off the fluid supply drain valve (DV) from all of the supply pumps. FIG. 8 is shown as an example but your specific supply pump arrangement may vary.

   If the proportioner is being fed from a centralized supply or circulation system: close each supply line isolation fluid valve to the proportioner and any return line valves from the proportioner.

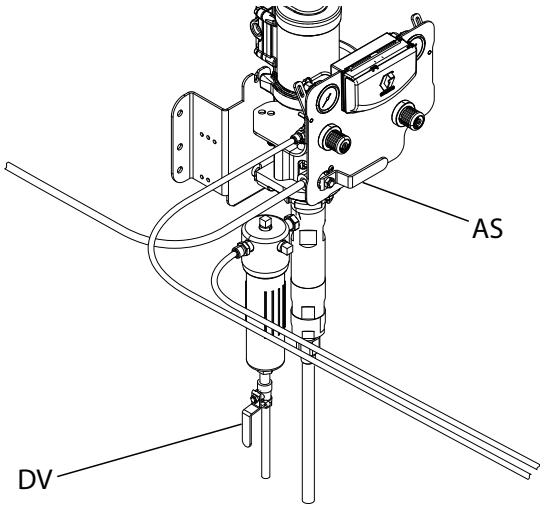


FIG. 8. Supply Pump Fluid and Air Shutoff Valves

3. Shut off the valve that is installed before the atomizing air outlet (KA) to remove air pressure going to the gun.

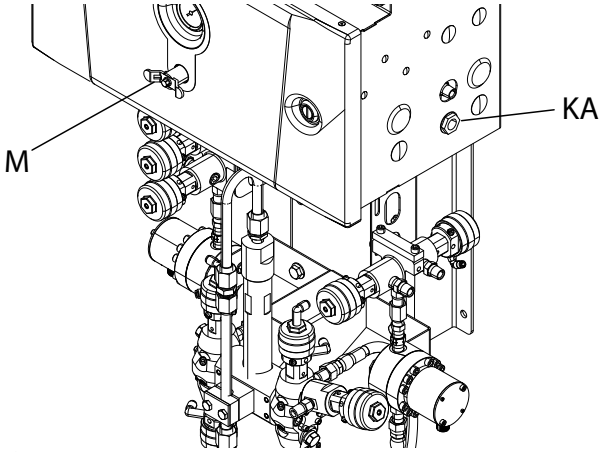


FIG. 9.

4. Trigger the gun to relive the pressure in either of the following steps:
   a. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.
   b. Place the gun into the gun flush box and close the lid.
5. Purge the solvent in the supply line, mix manifold and mixed material hoses by pressing the purge on the booth control.
6. Verify that the solvent pressure is reduced to 0.
7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
   a. Very slowly loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
   b. Loosen the nut or the coupling completely.
8. Clear the obstruction in the hose or tip.
9. Shut off the main air inlet shutoff valve (M) to the ProMix V.

10. Slowly unscrew the chop air supply fitting (SF) going to the purge valve A (PA) at the inlet check valve to remove remaining air pressure.

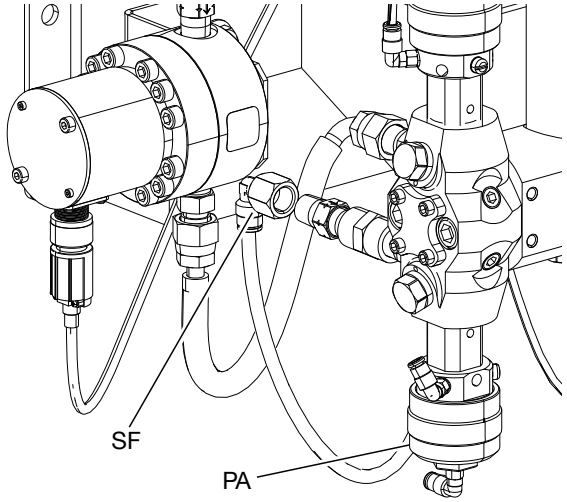


FIG. 10. Loosening the Chop Air Supply Fitting

11. Place an absorbent pad around the fluid fitting for each A side color valve to capture fluid as it relieved from the valve.
12. Slowly unscrew the fluid fitting by using a wrench on the line fitting and another wrench on the valve fitting. Relieve the pressure until there is no flow.
13. Repeat steps 12 and 13 for each A side color valve and the flush valve.

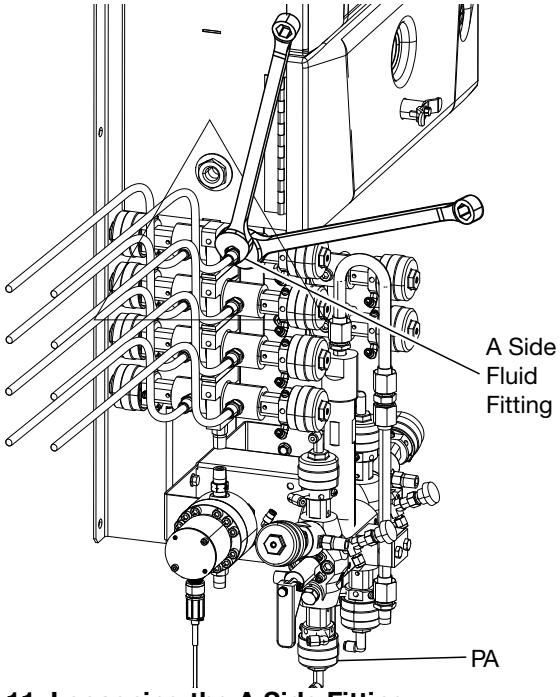


FIG. 11. Loosening the A Side Fitting

14. Slowly unscrew the chop solvent supply going to the purge valve B (PB).
15. Place an absorbent pad around the fluid fitting for each B side catalyst valve to capture fluid as it relieved from the valve.
16. Slowly unscrew the fluid fitting by using a wrench on the line fitting and another wrench on the valve fitting. Relieve the pressure until there is no flow.
17. Repeat steps 15 and 16 for each B side catalyst valve and the flush valve.

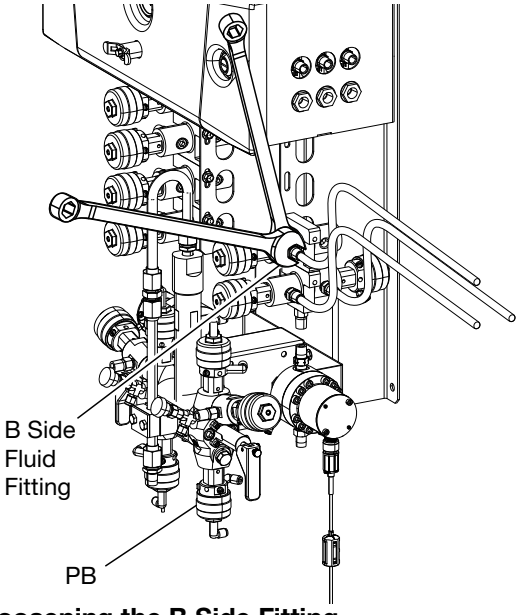
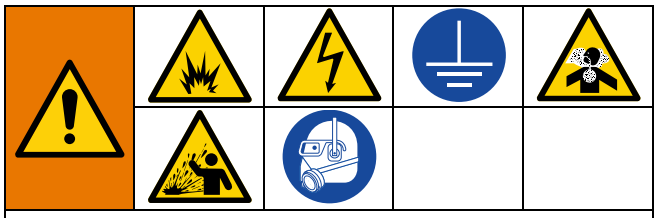


FIG. 12. Loosening the B Side Fitting

Purge the ProMix V



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Follow the **Grounding**, page 21 procedure.

Purging fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates. Wear proper protective clothing or gear to prevent injury from toxic fumes and splashing fluid.

Purge the ProMix V:

- At the end of potlife
- Breaks in spraying that exceed the potlife
- Overnight shutdown or end of shift
- The first time material is loaded into equipment
- Servicing
- Shutting down equipment for an extended period of time

1. Press standby from any screen to put the ProMix V in standby.

2. Trigger the gun to relieve pressure.



3. If you are using a high pressure gun, engage the trigger lock. Remove spray tip and clean tip separately.



To reduce the risk of fire and explosion when using an electrostatic gun, always shut off electrostatics before purging the gun

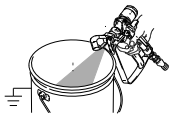
4. If using an electrostatic gun shut off the electrostatics before purging the gun.

5. Set the solvent supply pressure regulator at a pressure high enough to completely purge the ProMix V in a reasonable amount of time but low enough to avoid splashing or an injection injury. Generally, a setting of 100 psi (0.7 MPa, 7 bar) is sufficient.

6. If using a gun flush box, place the gun into the box and close the lid.

7. Press purge and the purge sequence automatically starts.

If the gun flush box is not used, trigger the gun into a grounded metal pail until the purge sequence is complete.



When done purging, the ProMix V automatically switches to standby mode.

8. If the ProMix V is not completely clean, repeat step 6.

NOTE: If necessary, adjust purge sequence times so only one cycle is required.

9. Trigger the gun to relieve pressure. Engage trigger lock.

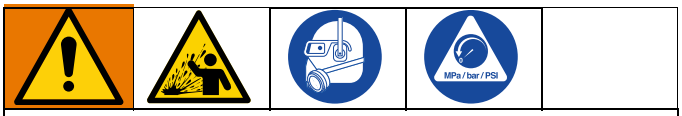
10. If spray tip was removed, reinstall it.

11. Adjust the solvent supply regulator back to its normal operating pressure.

NOTE: The ProMix V remains full of solvent.

If your ProMix V uses 2 or more guns, you must trigger both guns simultaneously during a purge to purge both guns and lines. Verify that clean solvent flows from each gun. If not, repeat purge or clear clog/blockage.

Replace the Air Filter Element



De-pressurize airline before servicing to prevent serious injury. Follow the **Pressure Relief Procedure**, page 24.

The ProMix V has a 5 micron filter that keeps the air supply clean and dry. Check filters monthly and replace as necessary.

1. Perform the **Pressure Relief Procedure**, page 24.
2. Close the main air shutoff valve to depressurize the ProMix V.
3. Open up bleed screw (A) to relieve pressure and any moisture from the filter bowl.
4. Remove the filter cover (B) by pressing the tab and twisting the cover off.
5. Unscrew the filter bowl (C) which is tightly held in place by the O-ring.
6. Remove and replace the filter element (D).
7. Replace the filter bowl and thread on securely making sure it is fully seated in the housing, and install the filter cover.

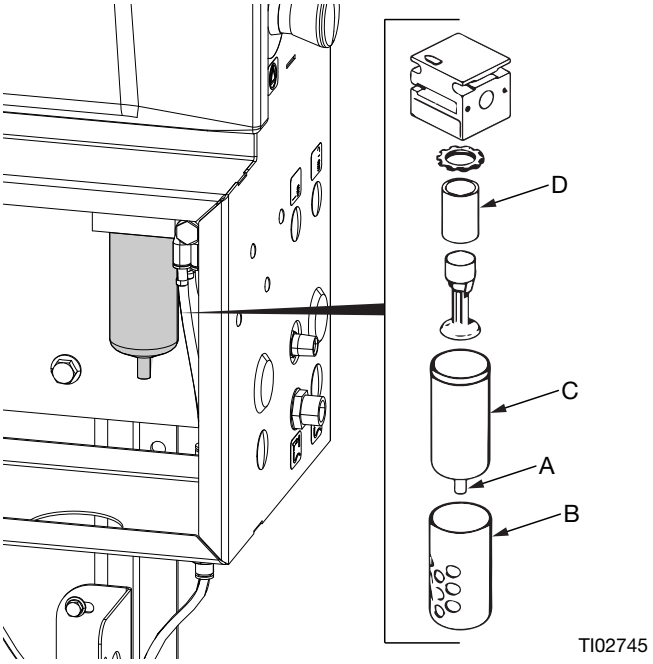


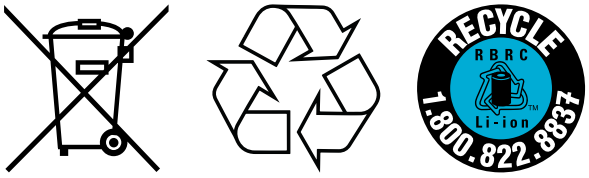
FIG. 13.

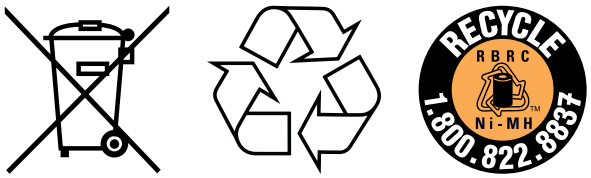
Recycling and Disposal

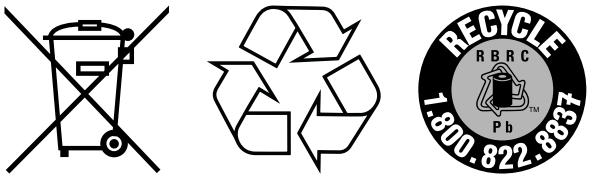
This section includes information on how to properly recycle and dispose of a product at the end of its useful life.

Rechargeable Battery Disposal

Do not place batteries in the trash. Recycle batteries according to local regulations. In the USA and Canada, call 1-800-822-8837 to find recycling locations or go to www.call2recycle.org.







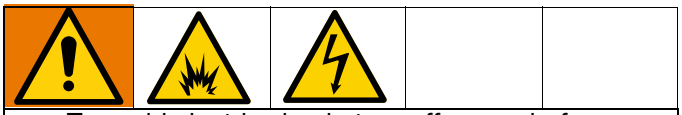
End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**, page 24.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic s. Recycle according to applicable regulations.
- Do not dispose of batteries or electronics with household or commercial waste. 
- Deliver remaining product to a recycling facility.

Repair

Prepare Equipment for Repair



- To avoid electric shock, turn off power before servicing
- Repairing the Control Box exposes you to high voltage. Shut off power at main circuit breaker before opening enclosure.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
- Read **General Warnings**, page 10.

1. Follow the **Pressure Relief Procedure**, page 24. before servicing fluid components, and before transporting equipment to a service area.
2. Close air shutoff valves.
3. If repairing or servicing the enclosure assembly, disconnect the main power coming from the main shutoff outside the machine. Shut off the machine power switch.

Replace Solenoids

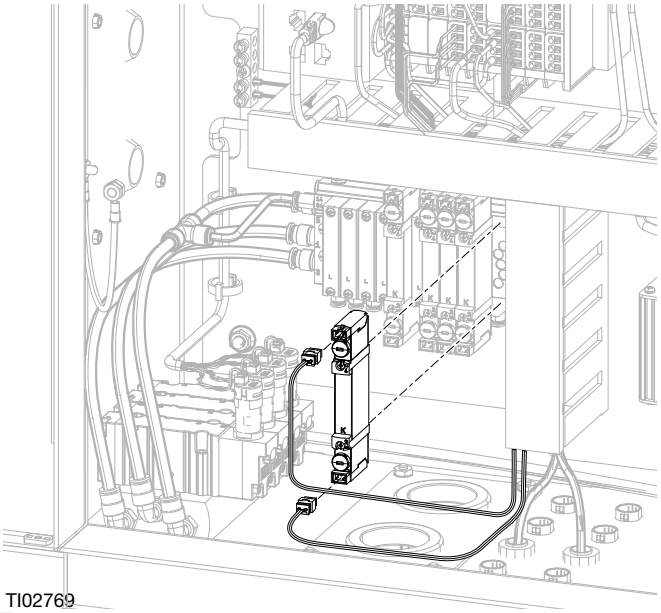
There are 2 separate sets of solenoids, the single acting stackable that controls the color stack and gun flush box, and the air manifold that controls the mix manifold dose and purge valves.

Single Acting Manifold

Replacing a Single Solenoid

NOTE: Solenoids come as pairs, with one on each end.

1. Follow the **Prepare Equipment for Repair** section.
2. Disconnect the wire connectors from either end of the solenoid in use.
3. Unscrew the two screws that secure the solenoid to the manifold.
4. Remove the solenoid and the gasket attached to the bottom of the solenoid.
5. Install the new solenoid making sure the new gasket is attached to the bottom of the solenoid.
6. Tighten the two screws that hold the solenoid to the manifold.
7. Reconnect the wire connectors from the same location that they were removed from.



TI02769

FIG. 14.

Dose and Purge Air Manifold

The solenoids from this manifold can be accessed and repaired with the manifold in place in the enclosure assembly. The manifold is shown removed for greater visibility.

Replacing a Normal Location Mac Valve Solenoid

1. Disconnect the wire connector from the top of the bullet valve solenoid (411).
2. Unscrew the two allen head screws (E) and remove the normal location mac valve (507) from the manifold (501).

3. Clean the face of the manifold (501), replace the normal location Mac Valve (507) and tighten the allen screws. Tighten to 14 In-lb (1.581787 Nm).

4. Reconnect the wiring connectors.

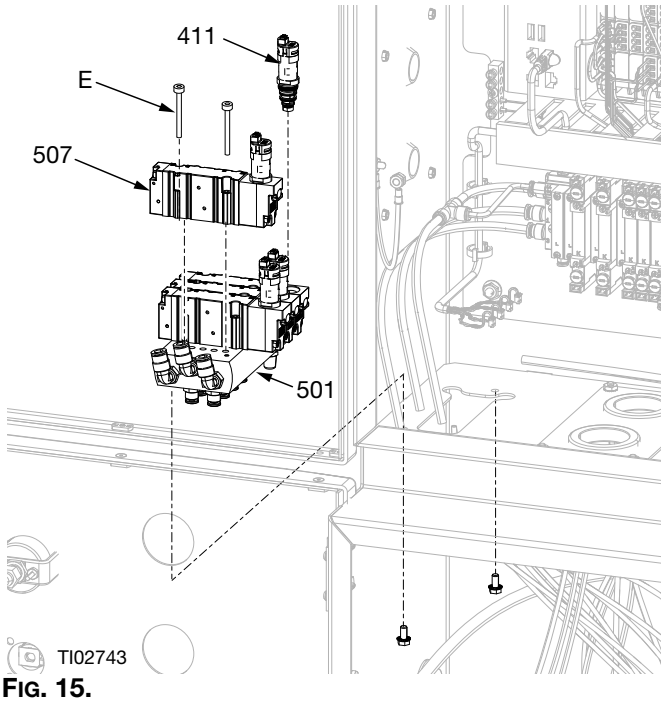


FIG. 15.

Replace Booth Control Module

The booth control module can be removed for remote relocation or replacement.

1. Follow the **Prepare Equipment for Repair** section page 29.

2. Loosen but do not remove the allen head screw (F) to allow removal of the booth control module (13).

3. Disconnect the CAN cable (14).

4. Lift up the tab of the mounting bracket and rotate the booth control module (13) off the lower mounting tabs.

5. Replacement is opposite of removal. Snug set screw (F) to secure the booth control module (13) but do not over tighten.

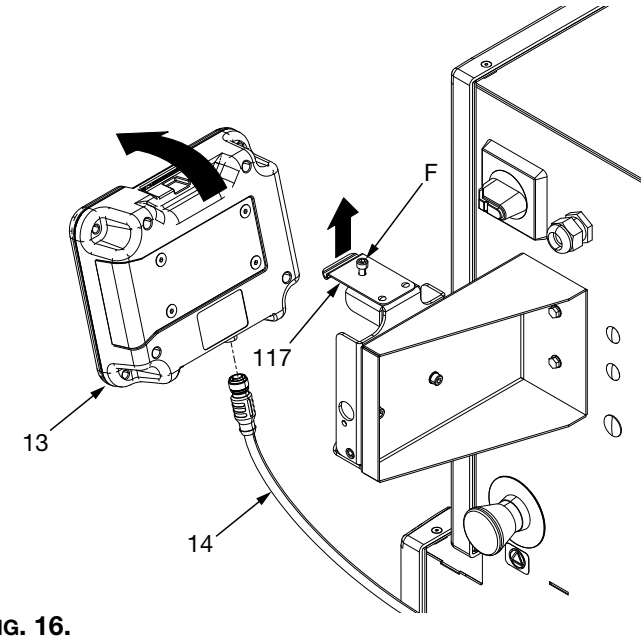


FIG. 16.

Replace Booth Control BCCM/Barrier



Do not substitute or modify system components as this may impair intrinsic safety. For installation, maintenance, or operation instructions read the instruction manuals. Do not install equipment approved only for non-hazardous locations in a hazardous location. See the identification label for the intrinsic safety rating for your model.

NOTE: The booth control, barrier and cable components of Models PVMNM01-24 are non-intrinsically safe. They are not interchangeable the intrinsically safe components of Models PVMBM01-24.

Replace G3000 Gear Meter Assembly

The G3000 gear meter assembly communicates the flow rate and dose size to the system. The gear meter is replaced as an entire unit. The following procedures include both style meters (6 and 50) for all model machines. For further repair or instructions see the Volumetric Fluid Flow Meter Instructions - Parts manual. See **Related Manuals**, page 3.

1. Follow the **Prepare Equipment for Repair** section page 29.
2. Disconnect the 4000 psi coupled hose (10) from the lower nipple fitting (9) on the G3000 meter (6/50).
3. Disassemble the nipple fitting (9) from the meter if it is a complete replacement.
4. Disconnect the flow meter cable harness (11) from the G3000 meter (6/50).
5. Unscrew the union swivel (24) from the check valve (8).
6. Remove the check valve (8) if replacing the entire G3000 meter or replacing a faulty check valve.
7. Unscrew the two hex flange machine screws (7) from the mounting bracket and remove the G3000 meter (6/50).
8. To replace G300, follow steps 2-7 of the procedure in reverse order. Use white pipe thread sealant when assembling NPT threaded fittings into the G3000 meter body. Confirm the check valve (8) is assembled in the correct direction of flow (arrow on the connector pointing down towards the meter).
9. Tighten the two hex flange machine screws (7) to 30 in-lbs (3.39 Nm).
10. Follow the meter calibration steps as instructed in the setup section of the ProMix V Package Meter Proportioner Installation and Operations manual. See the Volumetric Fluid Flow Meter Instructions - Parts manual and refer to PN 289813. See **Related Manuals**, page 3.

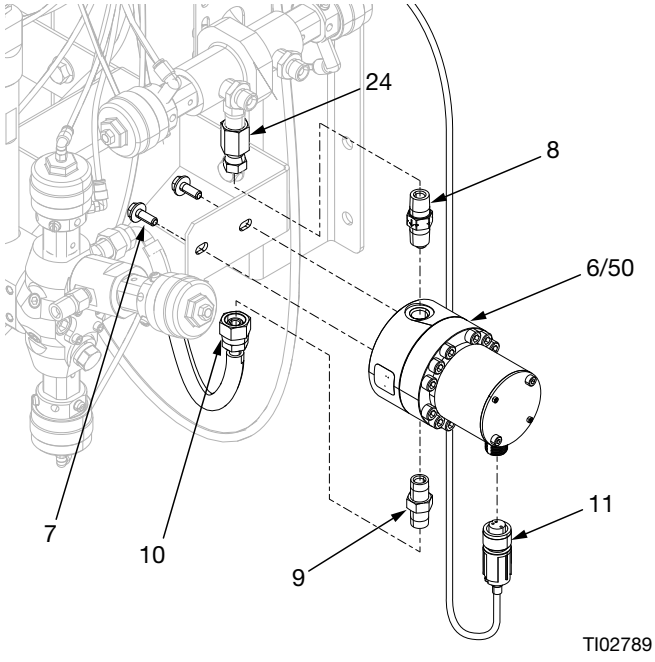


FIG. 17.

Replacing the Color and Catalyst Valve Assemblies

The color valve assembly and the catalyst valve assembly are mounted and plumbed similar to each other but mirrored on opposite sides of the frame. For further repair and disassembly of the color and catalyst valve assemblies, see the Valve Stack Repair manual and Valve Repair manual, and refer to color/cat valve 25U791 and acid color/cat valve 26a313. See **Related Manuals**, page 3.

1. Follow the **Prepare Equipment for Repair** section page 29.
2. Remove the hose connections from the inlet of each valve.
3. Mark the air hoses to confirm their correct location and remove from their quick disconnect fittings.
4. Unscrew the swivel union (24) from between the meter check valve (8) and the catalyst valve assembly (26) inlet fitting, or the color valve assembly (22) inlet fitting.

Catalyst Valve Assembly

5. Unscrew the two hex machine screws (5) from the catalyst valve assembly (26) body and remove.

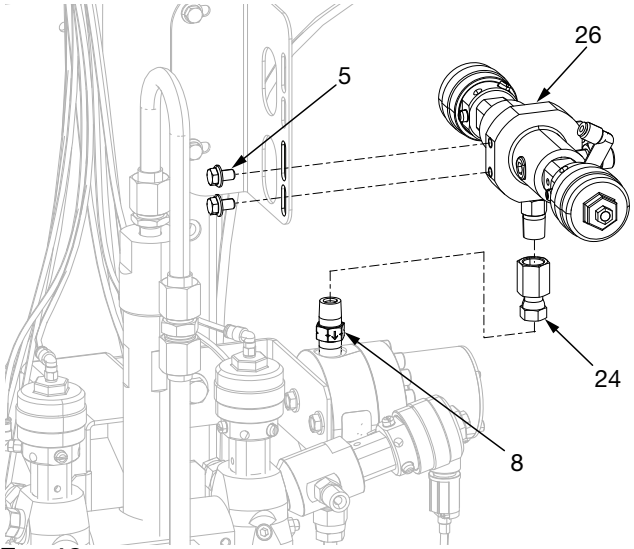


FIG. 18.

Color Valve Assembly

6. Unscrew the three hex machine screws (5) from the color valve assembly (22) body and remove.

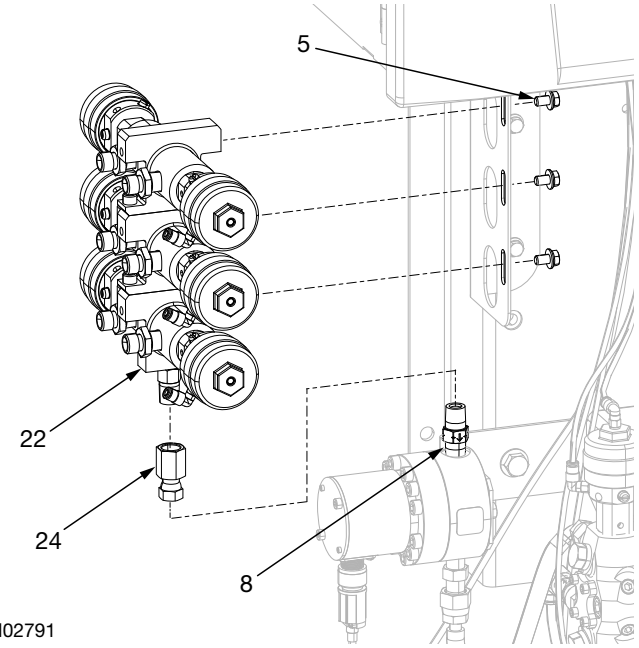


FIG. 19.

7. To replace the catalyst and color valve assemblies, follow the removal steps in reverse.

NOTE: Use thread sealant when assembling NPT threaded fittings into the catalyst valve assembly (26) body or color valve assembly (22) body.

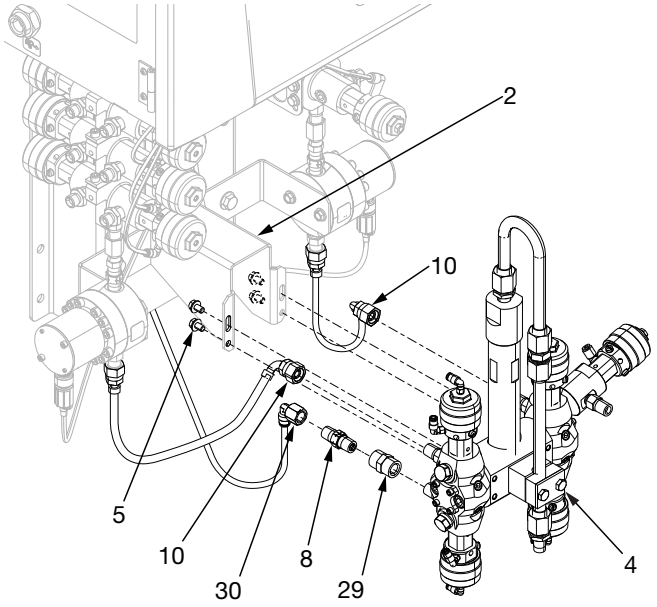
8. Tighten the hex flange machine screws (5) to 60 in-lb (6.8 Nm).

Remove the Mix Manifold

To repair individual parts of the mix manifold, see the ProMix V Mix Manifold and Color and Catalyst Change Valve Stacks manuals. Refer to dose valve 15X303 (256210) and acid dose valve 24T785 (24T784). See **Related Manuals**, page 3. The fluid and air hoses that need to be removed may depend on the options installed on your ProMix V and mix manifold.

1. Follow the **Prepare Equipment for Repair** section page 29.
2. Mark the air hoses to confirm their correct location and remove from their quick disconnect fittings.
3. Disconnect the 4000 psi coupled hoses (10) from the upper nipple fittings on the mix manifold (4).
4. Disconnect the air purge line (30) from the check valve (8). The check valve can be removed from the connector pipe (29) if it needs replaced.
5. Disconnect the hoses from the mix manifold outlet and dump valve (if installed).
6. Unscrew the four hex machine screws (5) and remove the mix manifold assembly from the proportioner frame (2).

NOTE: The mix manifold weighs approximately 17 lbs (7.7kg) and needs to be supported upon removal.



TI02795
FIG. 20.

7. To replace the mix manifold, follow the removal steps in reverse.

NOTE: use thread sealant when assembling NPT threaded fittings into the mix manifold. Confirm the check valve (8) is assembled in the correct direction of flow (Into the mix manifold).

8. Tighten the hex flange machine screws (5) to 60 in-lb (6.8 Nm).

Replace the I/O Modules, Wireless Module, and Controller Module.

There are three types of modules, the controller module and wireless module if equipped that must be completely removed as a replacement part, and the I/O modules that can either be entirely removed or the internal module card replaced leaving the module shell and wires in place.

Follow the electrical shut down section of **Prepare Equipment for Repair** page 29.

WiFi Module Replacement

1. Remove the Ethernet cable (54) from the LAN port, the power cables (45), and unscrew the antenna cable (20) from the front of the module.

2. Loosen screw in the DIN rail retainer plate (28) and move away from the WiFi module (27).

3. Slide the Wifi module away from the adjacent controller module. Push downwards and then the bottom of the module can be rotated away from the DIN rail and the module can be removed.

4. Replacement is the opposite of removal, assuring the correct wires and cables are placed into the same position they were removed from.

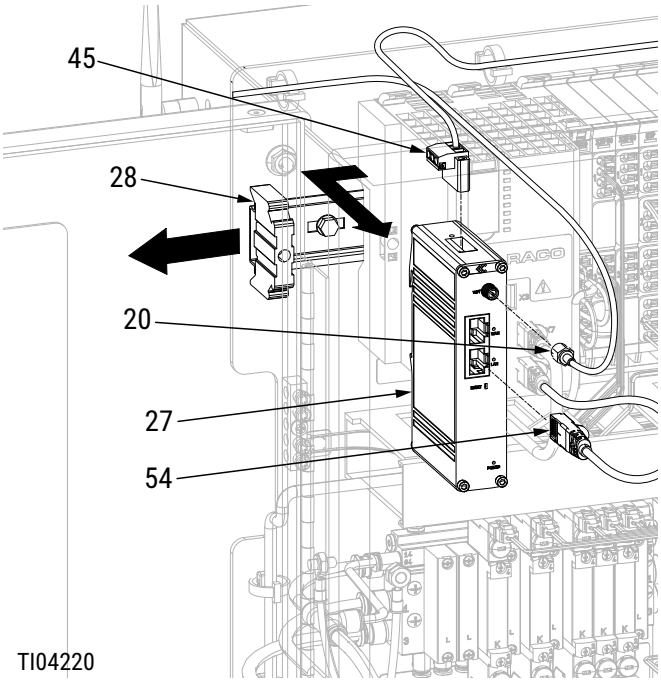


FIG. 21.

NOTE: The new WiFi module will have a unique SSID and Password printed on the module label. The existing characters are written on the cabinet door. If replacing the module, record the new characters for installment and use.

5. Follow the Connect Customer Supplied HMI instructions in the ProMix V installation manual. See **Related Manuals**, page 3.

Controller Module Replacement

1. If equipped, remove the WiFi module from the DIN rail as defined in the WiFi module replacement instructions.

2. Remove the Ethernet cable (54) from the X7 socket to the booth control module, and if installed the cable to the X5 socket which goes to the WiFi module.

3. Note the location of the front wires (AA) to replace in the same locations. Using a pick or small screwdriver, release and remove the power and jumper wires from the sockets.

4. Loosen the controller module (307) end plate set screw and move the controller module end plate (AB) away from the controller module.

5. Flip up the three orange release tabs (AC) from the controller module, and the orange release tab on the adjacent module.

6. Slide the controller module away from the adjacent module separating the module side connectors from the adjacent socket. Pull forward to remove the module from the DIN rail.

7. Replacement is the opposite of removal, assuring the correct wires and cables are placed into the same position they were removed from. Press down on the orange tabs (AC) to lock them in place.

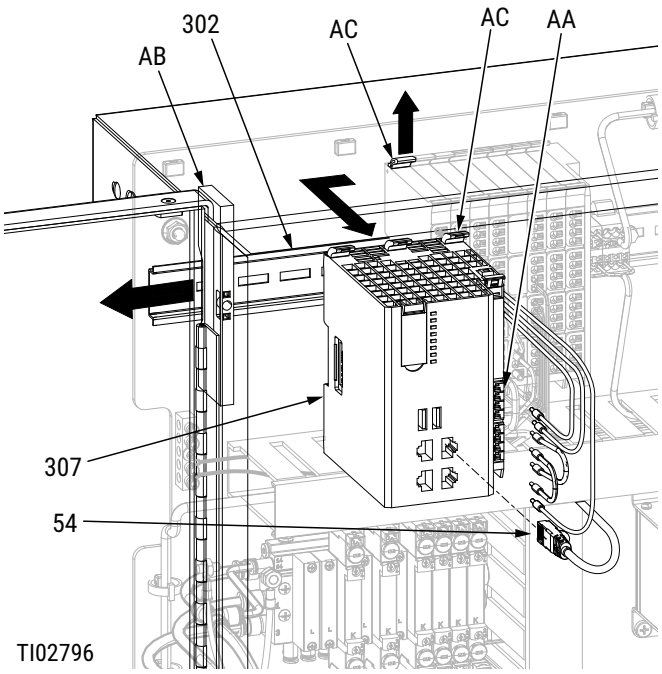


FIG. 22.

I/O Module Replacement

The I/O module has the option of replacing the entire module or the internal card without removing the module. The following instructions are to replace the entire module.

1. If equipped, remove the WiFi module, and controller module from the DIN rail as defined in the WiFi module and controller module replacement instructions.

2. Note the location of the front wires to replace in the same locations. Using a pick or small screwdriver, release and remove all wires from the sockets of the card to be removed.

3. Flip up the orange release tab (AC) from the top of the I/O module, and the orange release tab on the adjacent module.

4. Slide the I/O module away from the adjacent module (308, 309, 310, and 311) in sequence separating the module side connectors from the adjacent socket. Pull forward to remove the module from the DIN rail.

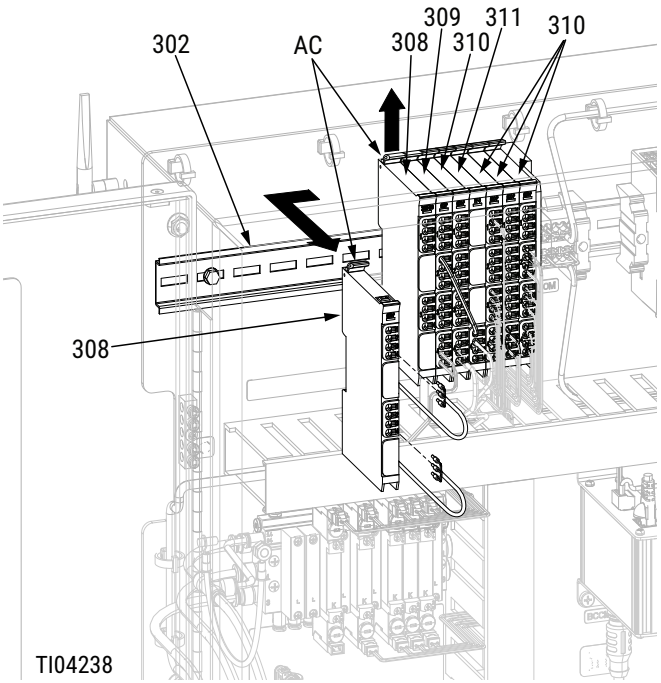


FIG. 23.

I/O Module Internal Card Replacement

The I/O module has the option of replacing only the internal card without removing the module or wires. The following instructions are to replace the internal module card.

1. To access the card inside the module casing, push the orange square on the top of the module casing (AD) to release the terminal front cover of the module casing. The front terminal cover will hinge down with the wires still attached.

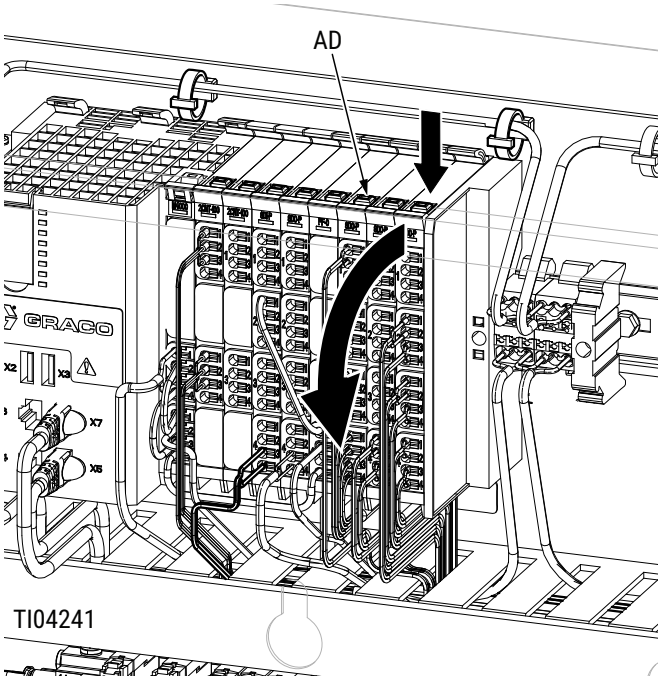


FIG. 24.

2. The internal module card has a retaining lever with release tab located towards the top of the module casing. Press on the tab to release and the lever hinges outwards to act as a pull handle to retract the card.

3. The card can only be placed in one position. To replace the card push it into the module casing until it fits snug.

4. Hinge the lever into position towards the top and click the tab into place.

5. Hinge the terminal front cover into place and press until the cover is locked into place.

Replace the Power Supply Module.

All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

The power supply module can be replaced by removing it from the mounting rail.

1. Follow the electrical shut down section of **Prepare Equipment for Repair** page 29.

2. Using a small flat blade screwdriver, unscrew the electrical connections (326/327) from the power supply (306). Disconnect the electrical connection (324) from the power supply .

3. Using a medium length flat blade screwdriver, pry down on the tab securing the power supply (306) to the rail (303). While the tab is pulled down, tilt the power supply up and remove.

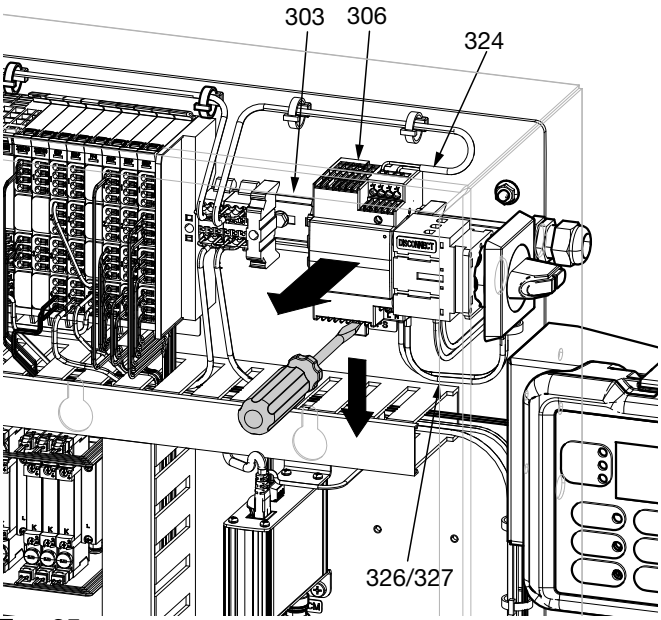


FIG. 25.

4. To replace the power supply (306), place the power supply on the rail tilted up, clip the top end onto the rail and push down until the tab clicks into place.

5. Push the mounting tab up into the power supply to lock the assembly onto the mounting rail (303).

6. Reconnect all the wire connections. See **Electrical Schematics**, page 58.

Replace the Power Switch.



All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

1. Follow the electrical shut down section of **Prepare Equipment for Repair** page 29.

2. Using a small flat blade screwdriver, unscrew the electrical connections (326 and 327) and the customer supplied power wires from the power switch (322).

3. Press down on the tab on top of the power switch. Remove the power switch by pulling it out and away from the cabinet.

4. To further remove the switch knob (116), unscrew the retaining nut (G) from the switch knob and remove.

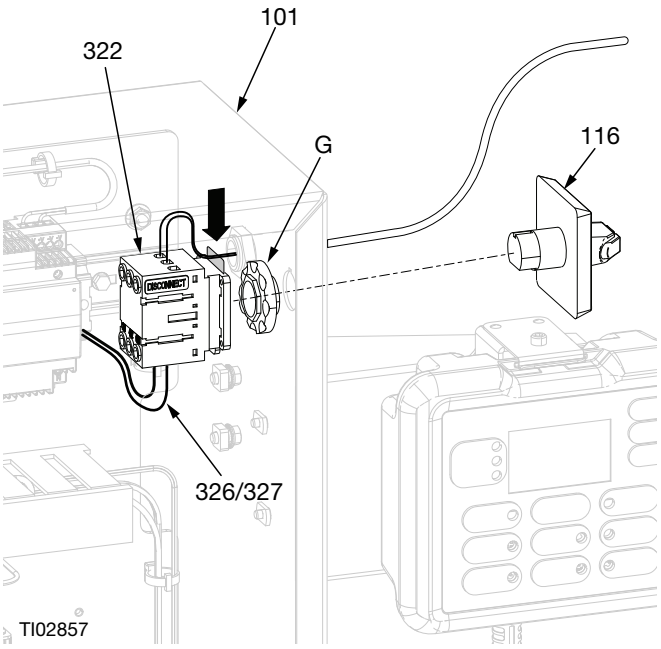


FIG. 26.

5. Replacement is the opposite of the removal.

6. Push the power switch into the switch knob. it will click into place.

7. Reconnect all the wire connections.

Updating Software

Contact your local Graco distributor for the latest ProMix V software. The update process is done through the HMI by logging in to the controller module's user interface. See the Installation - Operation manual, 3B0203, to get connected to the ProMix V before starting the software update process.

1. From a web browser on the HMI that is connected to the ProMix V remove the /promix in the address bar so that only the IP address is shown. This will be 192.168.0.101 if connected via an Ethernet cable or 192.168.1.101 if connected via WiFi.

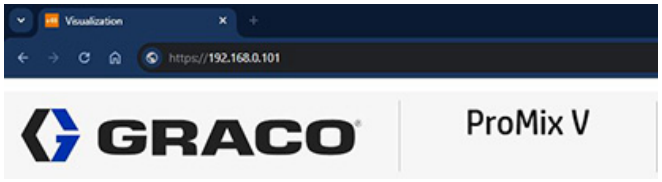


FIG. 27.

2. The controller module's user interface log in screen will now be displayed. To log in, enter administrator for the username and graco123 for the password. Additional user profiles available are maintenance and operator and all use the same default graco123 password. Profiles for administrator and maintenance have access to edit settings, update software, and perform a factory reset while the operator profile is only given access to restart the system and link to the ProMix V HMI screens.

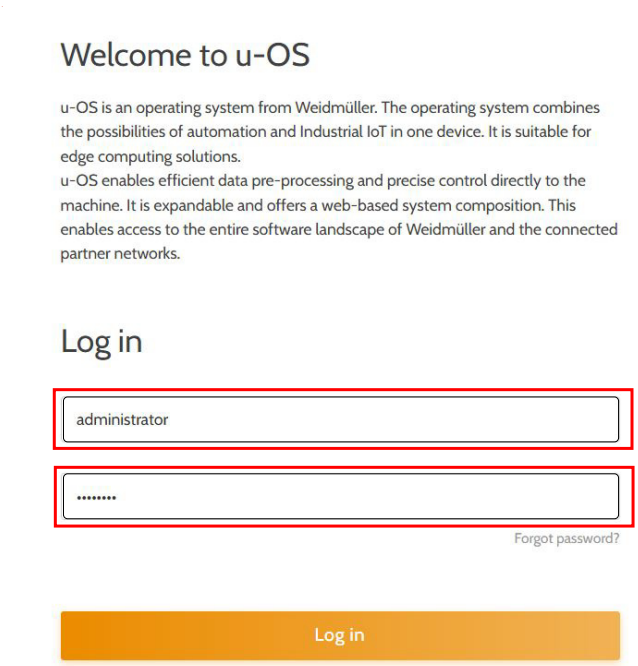


FIG. 28.

3. Once logged in there are several options:

- Clicking on the Graco ProMix V box redirects the user to the HMI screens for operating the unit.
- Clicking on u-OS Control Center advances the user to the controller module's settings. Click on this to proceed with a software update.

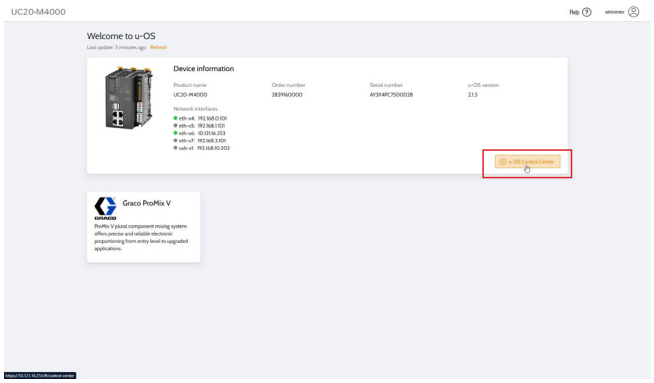


FIG. 29.

4. From the control center click on Software and updates in the left side menu. Then click the

Update and installation button that appears in the middle of the screen.

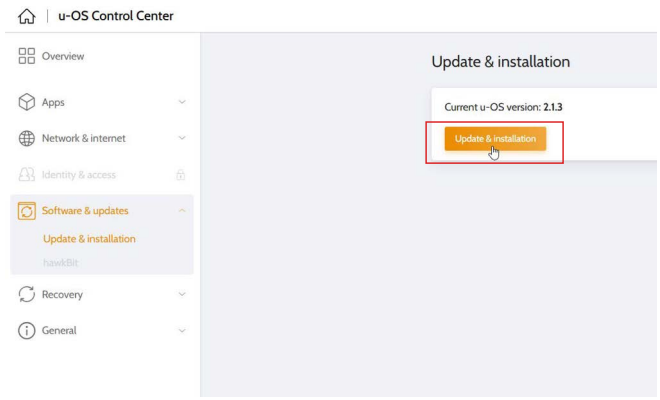


FIG. 30.

5. Locate the ProMix V software .swu update file. Once selected the software update will begin.

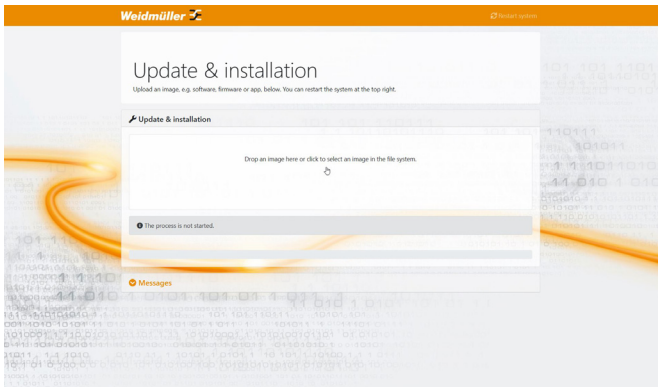


FIG. 31.

6. After the file is loaded the system will restart. During the restart process the web browser may timeout and look like there is an error. This is normal. Wait 2 minutes or confirm all of the lights on top of the I/O modules are green. Then click reload in the web browser.

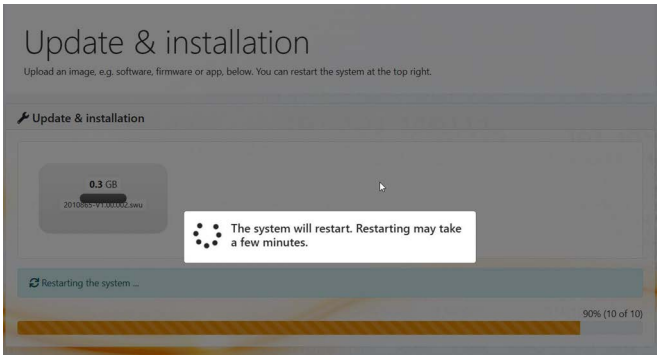


FIG. 32.

7. With the system rebooted enter the full IP address with /promix to get back to the HMI screens for operating the system. This will be 192.168.0.101/promix if connected via an Ethernet cable or 192.168.1.101/promix if connected via WiFi.

8. Navigate to the Settings - System page to confirm that the software was updated to the latest version.

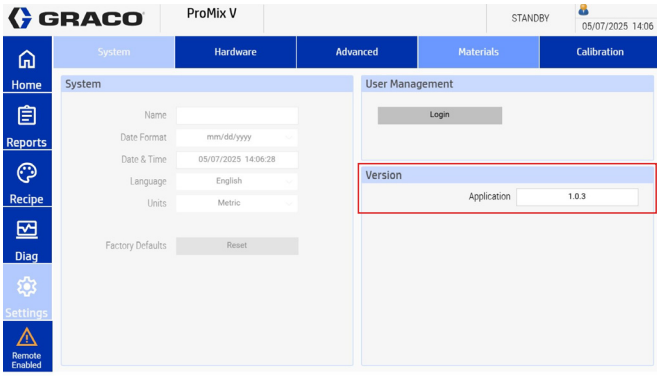


FIG. 33.

Parts

PVMNM01, PVMNM02, PVMNM03, PVMNM05, PVMNM06, PVMNM07, PVMNM09, PVMNM10, PVMNM11, PVMNM13, PVMNM14, PVMNM15, PVMNM17, PVMNM18, PVMNM19, PVMNM21, PVMNM22, PVMNM23, PVMBM01, PVMBM02, PVMBM03, PVMBM05, PVMBM06, PVMBM07, PVMBM09, PVMBM10, PVMBM11, PVMNM13, PVMBM14, PVMBM15, PVMBM17, PVMBM18, PVMBM19, PVMBM21, PVMBM22, and PVMBM23 Parts

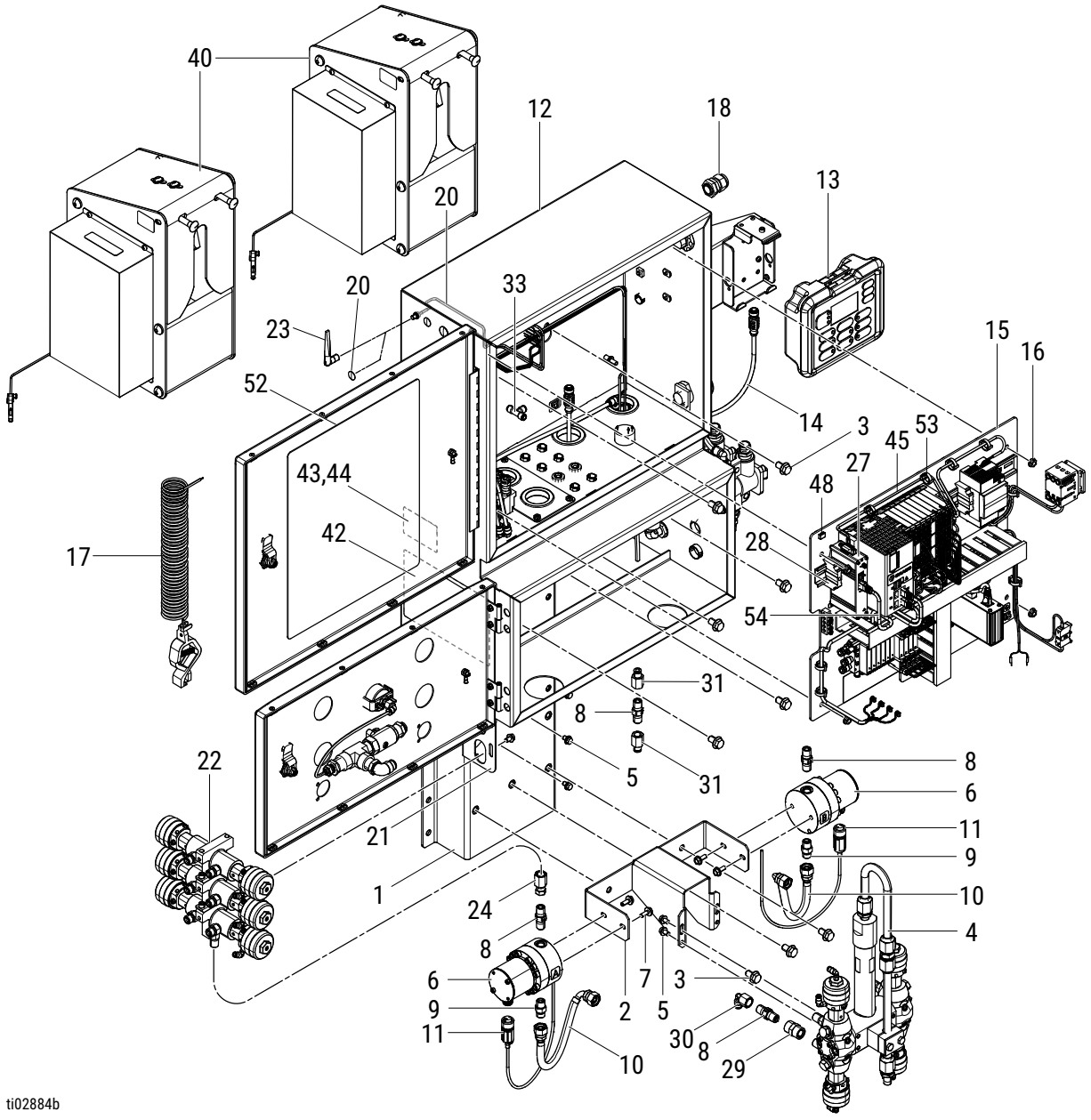


FIG. 34

PVMNM04, PVMNM08, PVMNM12, PVMNM16, PVMNM20, PVMNM24, PVMBM04, PVMBM08, PVMBM12, PVMBM16, PVMBM20, and PVMBM24 Parts

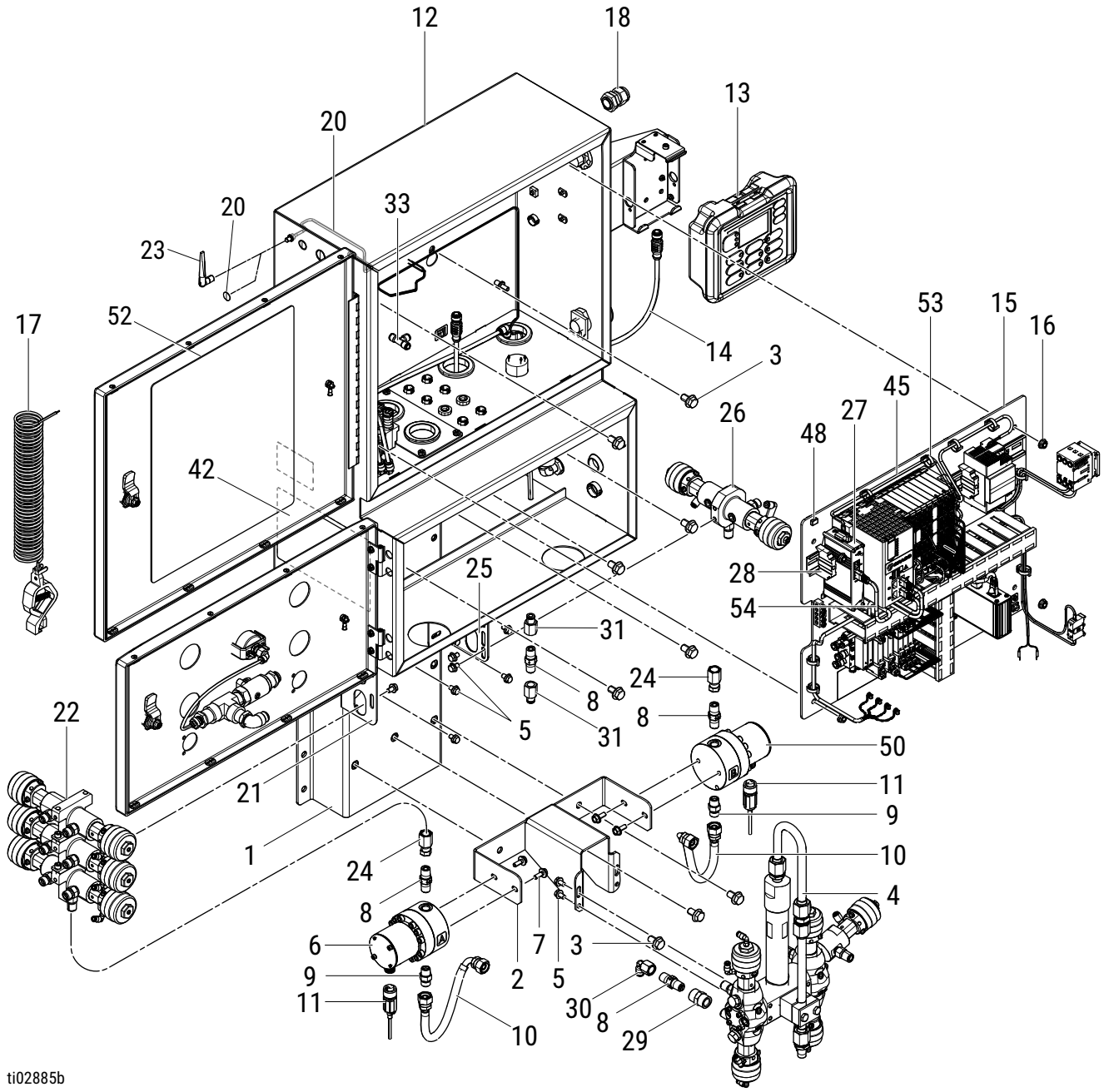


FIG. 35

PVMNM01, PVMNM02, PVMNM03, PVMNM04, PVMNM05, PVMNM06, PVMNM07, PVMNM08, PVMNM09, PVMNM10, PVMNM11, PVMNM12, PVMNM13, PVMNM14, PVMNM15, PVMNM16, PVMNM17, PVMNM18, PVMNM19, PVMNM20, PVMNM21, PVMNM22, PVMNM23, and PVMNM24 Parts

Ref.	Part	Description	Quantity											
			PVMNM01, PVMNM13	PVMNM02, PVMNM14	PVMNM03, PVMNM15	PVMNM04, PVMNM16	PVMNM05, PVMNM17	PVMNM06, PVMNM18	PVMNM07, PVMNM19	PVMNM08, PVMNM20	PVMNM09, PVMNM21	PVMNM10, PVMNM22	PVMNM11, PVMNM23	PVMNM12, PVMNM24
1	---	FRAME, proportioner system, painted	1											
2	---	BRACKET, mounting, mix manifold, painted	1											
3	113802	SCREW, hex hd, flanged	9											
4★	---	MANIFOLD, mix, 2k, integ, no sampling	1	1	1	-	1	1	1	-	1	1	1	-
	---	MANIFOLD, mix, 2k, integrator, 2k, acid	-	-	-	1	-	-	-	1	-	-	-	1
5	---	SCREW, mach, hex serrated	4	4	4	8	9	9	9	13	10	10	10	14
6	289813	METER, gear, assy, g3000	2	2	2	1	2	2	2	1	2	2	2	1
7	114182	SCREW, mach, hex flange	4											
8	24T894	VALVE,CHECK,316 SST	4											
9	---	FITTING, nipple, 1/4 NPSM x 1/4 NPT, SST	2											
10	---	HOSE, coupled, 10" lg. 90 deg one end, 4000 psi	2											
11	2008711	HARNESS, cable, G3000, 66 in.	2											
12	---	ASSEMBLY, enclosure, no gfb, meter	1	-	-	1	1	-	-	1	1	-	-	1
	---	ASSEMBLY, enclosure, gfb, meter	-	1	-	-	-	1	-	-	-	1	-	-
	---	ASSEMBLY, enclosure, 2 gfb, meter	-	-	1	-	-	-	1	-	-	-	1	-
13*	---	MODULE, booth control	1											
14*‡	18D195	CABLE, Non-Hazardous booth control, 3.5M	1											
15	---	PANEL, control, normal location, meter	1											
16	115942	NUT, hex, flange head	4											
17	238909	WIRE, grounding assembly	1											
18	114421	BUSHING, strain relief	1											

Ref.	Part	Description	Quantity											
			PVMNM01, PVMNM13	PVMNM02, PVMNM14	PVMNM03, PVMNM15	PVMNM04, PVMNM16	PVMNM05, PVMNM17	PVMNM06, PVMNM18	PVMNM07, PVMNM19	PVMNM08, PVMNM20	PVMNM09, PVMNM21	PVMNM10, PVMNM22	PVMNM11, PVMNM23	PVMNM12, PVMNM24
19†	2005169	LABEL SHEET, ProMix V, enclosure	1											
20	---	PLUG, hole, 0.281 in. dia.	1 for PVMNM01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, and 12											
	2005834	CABLE, bulkhead, RP-SMA jack to RP-SMA plug	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
21	---	BRACKET, mounting, color change, left, painted	-	-	-	-	1	1	1	1	1	1	1	1
22★	---	ASSEMBLY, color/cat change,4000 psi, 4 valve	-	-	-	-	1	1	1	1	-	-	-	-
	---	ASSEMBLY, color/cat change,4000 psi,6 valve	-	-	-	-	-	-	-	-	1	1	1	1
23	---	ANTENNA, rf, 2.4GHZ, whip, tilt, rp-sma 3 in.	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
24	16P309	SWIVEL, union	-	-	-	1	1	1	1	2	1	1	1	2
25	---	BRACKET, mounting, catalyst change, painted	-	-	-	1	-	-	-	1	-	-	-	1
26★	---	ASSEMBLY, catalyst change, acid,2 valve	-	-	-	1	-	-	-	1	-	-	-	1
27	---	MODULE, router, wireless, DIN mount	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
28	---	CLAMP, end	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
29	110336	CONNECTOR, pipe	1											
30	17E556	FITTING, ptc, elbow ,1/4 npt,1/4 t	1											
31	114112	FITTING, connector, female	2											
32†	590332	TUBE, poly-flo 5/32id x 1/4od x ft:	3.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
33	125424†	FITTING, plug, tube, push, 1/4 (PVMNM01 and PVMNM13 only, plugs dose manifold ports)	3	-		-	-	-	-	-	-	-	-	-
	---8	FITTING, tee , push to connect	-	1	1	1	1	1	1	1	1	1	1	1
34†	054753	TUBE, nylon, rd, black	3.17											
35†	054754	TUBE, nylon, rnd	11.67											
36†	---	TUBE, nylon, rnd, blue, 0.156 od	2.75											
37†	---	TUBE, nylon, rnd, yellow, 0.156 od	3.17											
38†	054757	TUBE, nylon, rnd	11.67											

Ref.	Part	Description	Quantity											
			PVMNM01, PVMNM13	PVMNM02, PVMNM14	PVMNM03, PVMNM15	PVMNM04, PVMNM16	PVMNM05, PVMNM17	PVMNM06, PVMNM18	PVMNM07, PVMNM19	PVMNM08, PVMNM20	PVMNM09, PVMNM21	PVMNM10, PVMNM22	PVMNM11, PVMNM23	PVMNM12, PVMNM24
39†	598095	TUBE,5/32 od, nylon	-	-	-	9.7	11	11	11	19	15	15	15	23
40	---	KIT, gun flush box, no afs or pressure switch	-	1	2	-	-	1	2	-	-	1	2	-
41†	070408	SEALANT, pipe, sst	1											
42▲	2006379	SAFETY, warning, multiple, promix v	1											
45	---	CABLE, DC pwr, 14 in., 18AWG, 2 con	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
48	19A945	CLIP. tie, down, table	3											
49†	103473	STRAP, tie, wire	3											
50	26A119	METER, gear, assy, G3000A	-	-	-	1	-	-	-	1	-	-	-	1
52	---	LABEL, installation	1											
53	103546	STRAP, tie, wire	3 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
54	---	CABLE, ethernet, CAT6A, 1.64 ft.	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											

PVMBM01, PVMBM02, PVMBM03, PVMBM04, PVMBM05, PVMBM06, PVMBM07, PVMBM08, PVMBM09, PVMBM10, PVMBM11, PVMBM12, PVMBM13, PVMBM14, PVMBM15, PVMBM16, PVMBM17, PVMBM18, PVMBM19, PVMBM20, PVMBM21, PVMBM22, PVMBM23, and PVMBM24 Parts

Ref.	Part	Description	Quantity											
			PVMBM01, PVMBM13	PVMBM02, PVMBM14	PVMBM03, PVMBM15	PVMBM04, PVMBM16	PVMBM05, PVMBM17	PVMBM06, PVMBM18	PVMBM07, PVMBM19	PVMBM08, PVMBM20	PVMBM09, PVMBM21	PVMBM10, PVMBM22	PVMBM11, PVMBM23	PVMBM12, PVMBM24
1	---	FRAME, proportioner system, painted	1											
2	---	BRACKET, mounting, mix manifold, painted	1											

Ref.	Part	Description	Quantity											
			PVMBM01, PVMBM13	PVMBM02, PVMBM14	PVMBM03, PVMBM15	PVMBM04, PVMBM16	PVMBM05, PVMBM17	PVMBM06, PVMBM18	PVMBM07, PVMBM19	PVMBM08, PVMBM20	PVMBM09, PVMBM21	PVMBM10, PVMBM22	PVMBM11, PVMBM23	PVMBM12, PVMBM24
3	113802	SCREW, hex hd, flanged	9											
4★	---	MANIFOLD, mix, 2k, integ, no sampling	1	1	1	-	1	1	1	-	1	1	1	-
	---	MANIFOLD, mix, 2k, integrator, 2k, acid	-	-	-	1	-	-	-	1	-	-	-	1
5	---	SCREW, mach, hex serrated	4	4	4	8	9	9	9	13	10	10	10	14
6	289813	METER, gear, assy, g3000	2	2	2	1	2	2	2	1	2	2	2	1
7	114182	SCREW, mach, hex flange	4											
8	24T894	VALVE,CHECK,316 SST	4											
9	---	FITTING, nipple, 1/4 NPSM x 1/4 NPT, SST	2											
10	---	HOSE, coupled, 10" lg. 90 deg one end, 4000 psi	2											
11	2008711	HARNESS, cable, G3000, 66 in.	2											
12	---	ASSEMBLY, enclosure, no gfb, meter	1	-	-	1	1	-	-	1	1	-	-	1
	---	ASSEMBLY, enclosure, gfb, meter	-	1	-	-	-	1	-	-	-	1	-	-
	---	ASSEMBLY, enclosure, 2 gfb, meter	-	-	1	-	-	-	1	-	-	-	1	-
13*	---	MODULE, booth control	1											
14*‡	2008434	INTRINSICALLY SAFE CBL, booth control, 3.5M	1											
15	---	PANEL, control, normal location, meter	1											
16	115942	NUT, hex, flange head	4											
17	238909	WIRE, grounding assembly	1											
18	114421	BUSHING, strain relief	1											
19†	2005169	LABEL SHEET, ProMix V, enclosure	1											
20	---	PLUG, hole, 0.281 in. dia.	1 for PVMNM01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, and 12											
	2005834	CABLE, bulkhead, RP-SMA jack to RP-SMA plug	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
21	---	BRACKET, mounting, color change, left, painted	-	-	-	-	1	1	1	1	1	1	1	1

Ref.	Part	Description	Quantity											
			PVMBM01, PVMBM13	PVMBM02, PVMBM14	PVMBM03, PVMBM15	PVMBM04, PVMBM16	PVMBM05, PVMBM17	PVMBM06, PVMBM18	PVMBM07, PVMBM19	PVMBM08, PVMBM20	PVMBM09, PVMBM21	PVMBM10, PVMBM22	PVMBM11, PVMBM23	PVMBM12, PVMBM24
22★	---	ASSEMBLY, color/cat change,4000 psi, 4 valve	-	-	-	-	1	1	1	1	-	-	-	-
	---	ASSEMBLY, color/cat change,4000 psi,6 valve	-	-	-	-	-	-	-	-	1	1	1	1
23	---	ANTENNA, rf, 2.4GHZ, whip, tilt, rp-sma 3 in.	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
24	16P309	SWIVEL, union	-	-	-	1	1	1	1	2	1	1	1	2
25	---	BRACKET, mounting, catalyst change, painted	-	-	-	1	-	-	-	1	-	-	-	1
26★	---	ASSEMBLY, catalyst change, acid,2 valve	-	-	-	1	-	-	-	1	-	-	-	1
27	---	MODULE, router, wireless, DIN mount	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
28	---	CLAMP, end	1 for PVMNM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
29	110336	CONNECTOR, pipe	1											
30	17E556	FITTING, ptc, elbow ,1/4 npt,1/4 t	1											
31	114112	FITTING, connector, female	2											
32†	590332	TUBE, poly-flo 5/32id x 1/4od x ft:	3.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
33	125424†	FITTING, plug, tube, push, 1/4 (PVMNM01 and PVMNM13 only, plugs dose manifold ports)	3	-		-	-	-	-	-	-	-	-	-
	---8	FITTING, tee , push to connect	-	1	1	1	1	1	1	1	1	1	1	1
34†	054753	TUBE, nylon, rd, black	3.17											
35†	054754	TUBE, nylon, rnd	11.67											
36†	---	TUBE, nylon, rnd, blue, 0.156 od	2.75											
37†	---	TUBE, nylon, rnd, yellow, 0.156 od	3.17											
38†	054757	TUBE, nylon, rnd	11.67											
39†	598095	TUBE,5/32 od, nylon	-	-	-	9.7	11	11	11	19	15	15	15	23
40	---	KIT, gun flush box, no afs or pressure switch	-	1	2	-	-	1	2	-	-	1	2	-
41†	070408	SEALANT, pipe, sst	1											
42▲	2006379	SAFETY, warning, multiple, promix v	1											

Ref.	Part	Description	Quantity											
			PVMBM01, PVMBM13	PVMBM02, PVMBM14	PVMBM03, PVMBM15	PVMBM04, PVMBM16	PVMBM05, PVMBM17	PVMBM06, PVMBM18	PVMBM07, PVMBM19	PVMBM08, PVMBM20	PVMBM09, PVMBM21	PVMBM10, PVMBM22	PVMBM11, PVMBM23	PVMBM12, PVMBM24
45	2015483	CABLE, DC pwr, 14 in., 18AWG, 2 con ,(16M)	1 for PVMBM 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
48	19A945	CLIP. tie, down, table	3											
49†	103473	STRAP, tie, wire	3											
50	26A119	METER, gear, assy, G3000A	-	-	-	1	-	-	-	1	-	-	-	1
52	---	LABEL, installation	1											
53	103546	STRAP, tie, wire	3 for PVMBM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											
54	---	CABLE, ethernet, CAT6A, 1.64 ft.	1 for PVMBM13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24											

★ *See **Related Manuals**, page 3 for parts and repair of these items.*

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

† Not shown.

** Items 13 and 14 are not the same and NOT COMPATIBLE OR SAFE for use between PVxMxx or PVxBxx models.*

*‡ See **Cables**, page 57 for alternate length cables. Select the cable appropriate for either intrinsically save (hazardous location) or Non hazardous safe locations.*

Enclosure Assemblies Parts

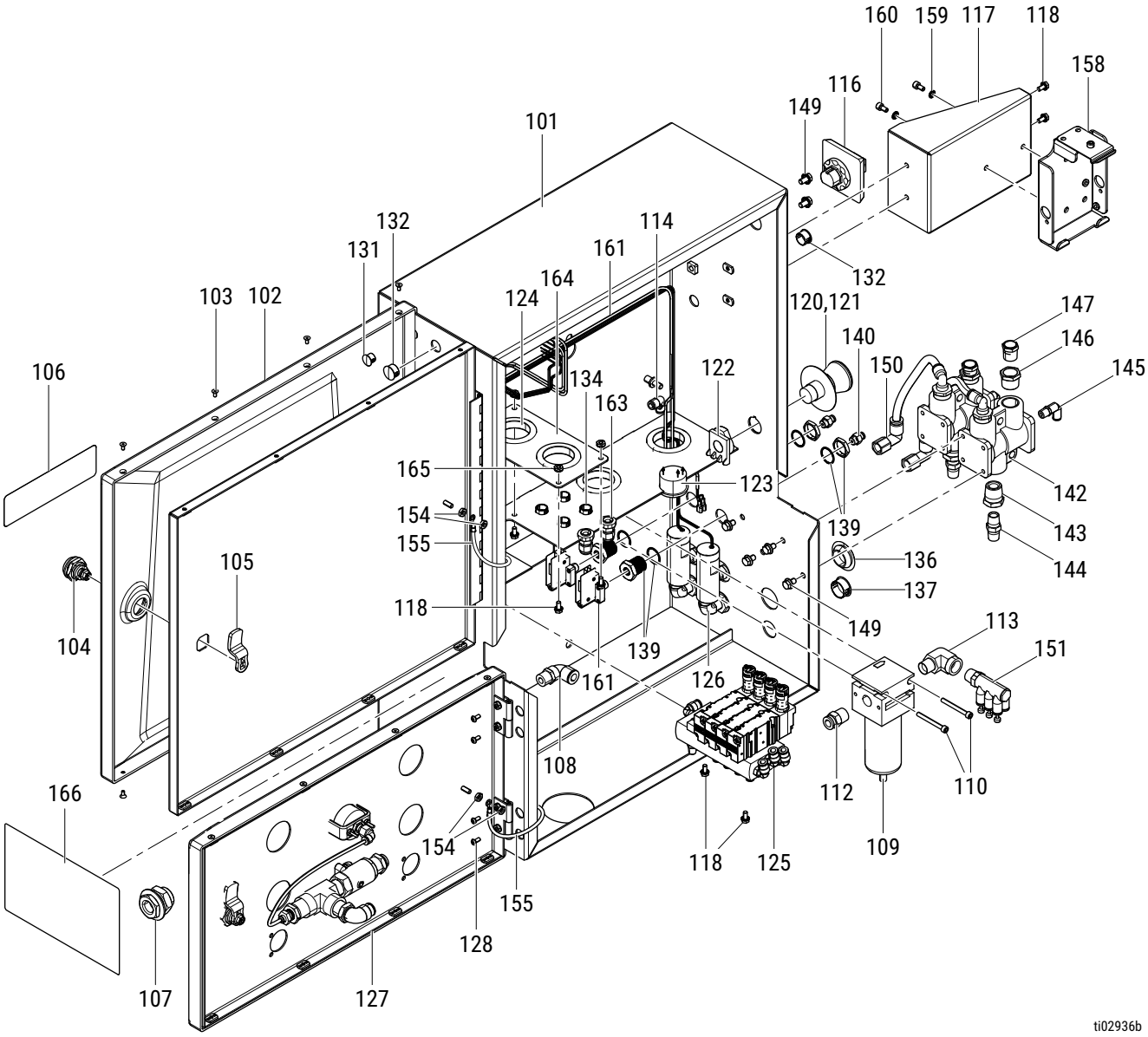


FIG. 36

Enclosure Assemblies Parts List

Ref.	Part	Description	Quantity		
			PVMNM01, 04, 05, 08, 09, 12, 13, 16, 17, 20, 21, 24	PVMNM02, 06 10, 14, 18, 22	PVMNM03, 07 , 11, 15, 19, 23
101	---	ENCLOSURE, proportioner system, painted	1		
102	---	COVER, top, painted	1		
103	---	SCREW,CAP, socket head, flat,#6-32 x 5/16	8		
104	---	LATCH, door, slotted 1/4 turn	1		
105	---	CAM, latch, door, 1/4 turn	1		
106	2004130	BRANDING, ProMix V	1		
107	125949	FITTING, bulkhead, 3/8npt, fxf, brass	1		
108	16F151	FITTING, elbow, swivel, 3/8t 3/8npt	1		
109	114124	FILTER, air, 3/8 npt	1		
110	C19986	SCREW, cap, socket, hd	2		
112	16G244	FITTING, 3/8 npt x 3/8 tube	1		
113	111856	FITTING, elbow, street	1		
114	C20354	FITTING, elbow, union,qd	1		
116	123971	KNOB, disconnect, operator	1		
117	---	BRACKET, painted	1		
118	---	SCREW, serrated flange, hex head,#10-24 x 3/8	8		
119	---	SCREW, cap	1		
120	81/2060-EL/11	OPERATIONS, legend, e-stop, 60mm	1		
121	81/2060-E/11	BUTTON, mush, maint, twist, red	1		
122	81/2070/11	LATCH, operator	1		
123	122000	ALARM, panel mount	1		
124	127475	GROMMET,1.5" dia	4		
125	---	MANIFOLD, air, dose ,and purge	1		
126	2002224	SWITCH, air flow assembly	1	1	2
127✖	2004227	ASSEMBLY, lower door meter	1		
128	15U075	SCREW, cap, bh, 8-32 x .37	4		
131	125946	PLUG, hole, 0.500in	1		
132	---	PLUG, hole, 0.625" dia	2		
134	---	PLUG, hole, m12 dd series	6		
135†	---	PLUG, hole, 0.781	2	1	-
136	---	PLUG, hole,1 1/8 inch	4	4	3
137	---	PLUG, hole, 0.875 in.	2	2	1
138†	---	PLUG,HOLE, 0.281" dia	8	6	4

Ref.	Part	Description	Quantity		
			PVMNM01, 04, 05, 08, 09, 12, 13, 16, 17, 20, 21, 24	PVMNM02, 06 10, 14, 18, 22	PVMNM03, 07 , 11, 15, 19, 23
139	---	FITTING, bulkhead 1/8" npt	-	1	2
140	114263	FITTING, connector, male	-	1	2
141	513937	SWITCH, pressure	-	1	2
142	104632	VALVE, piloted	-	1	2
143	102022	BUSHING, pipe	-	1	2
144	113029	NIPPLE,1/4 x 1/4 npt	-	1	2
145	598140	FITTING, elbow 5/32t x 1/8"npt (m)	-	1	2
146	100081	BUSHING, pipe	-	1	2
147	111881	MUFFLER	-	1	2
148	C38211	FITTING, tube	-	1	2
149	119865	SCREW, mach, hex serrated	2	4	6
150	C38161	FITTING, elbow, 3/8 tube x 1/4 NPT	-	1	2
151	15U679	MANIFOLD, pneumatic fitting, 6 port	1		
152†	590385	TUBE, poly-flo	3.9	4.7	5.4
153†	---	TUBE, poly-flo 5/32id x 1/4od	1.8		
154	100179	NUT, hex mscr	8		
155	---	CABLE, ground, 14 awg	2		
156†	070408	SEALANT, pipe, sst	1		
157†	070269	SEALANT, anaerobic, blue	1		
158	277853	BRACKET, mounting, booth control	1		
159	111307	WASHER, lock, external	2		
160	17G263	SCREW, cap, socket hd, m5 x 10mm	2		
161	---	CABLE, GFB, 31 in. lg, 24 AWG, 2 CON	-	1	2
162†	---	STRAP, Tie, wire	1		
163	111987	CONNECTOR, cord strain relief	2		
164	---	PLATE, thru, pass, pro-mix V	1		
165	---	NUT, hex, 10-24, ms, w/ex lckwshr	4		
166	2006379	SAFETY, warning, multiple, ProMix V	1		

** See **Related Manuals**, page 3 for parts and repair of these items.*

† Not shown.

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

*✖ See part section **Lower Door Meter Assembly Parts**, page 51.*

Lower Door Meter Assembly Parts

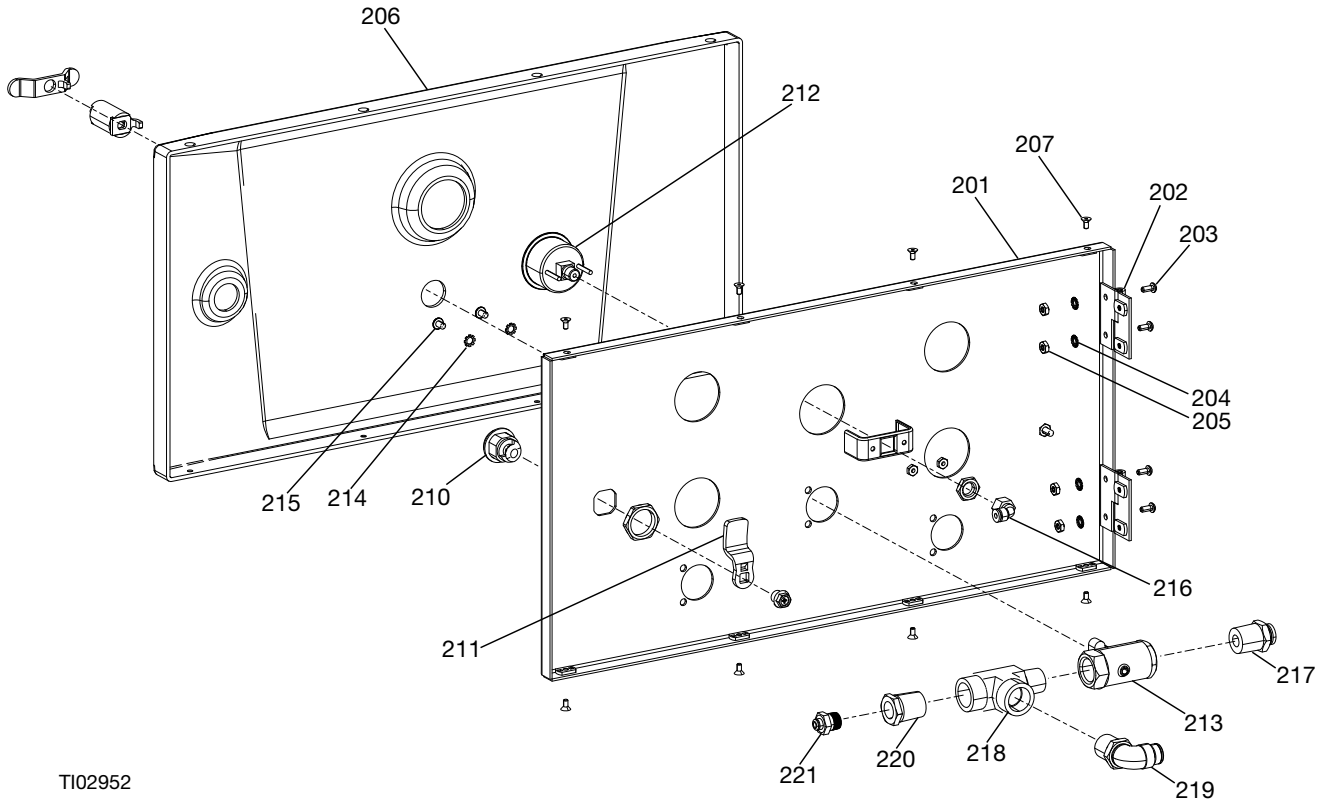


FIG. 37

Lower Door Meter Assembly Parts List

Ref.	Part	Description	Qty
201	---	DOOR, lower enclosure, painted	1
202	---	HINGE, lift off, left, surface mount with holes	2
203	---	SCREW, cap, bh,8-32 x .37	4
204	102063	WASHER, lock, ext	4
205	555388	NUT, hex, machine, 8-32	4
206	---	COVER, meter lower, painted	1
207	---	SCREW, cap, socket head,flat,#6-32 X 5/16	8
210	---	LATCH, door, slotted 1/4 turn	1
211	---	CAM, latch, door, 1/4 turn	1
212	15T500	GAUGE, pressure, air, pl mnt,1/8	1
213	---	VALVE, ball, vented, panel mount, 1/2 in. npt	1
214	C38163	WASHER, lock, ext. tooth	2

Ref.	Part	Description	Qty
215	---	SCREW, rnd hd slot, 10-24 x 0.312	2
216	15T498	FITTING,90?,swvl,5/32t x 1/8fnpt	1
217	16G247	FITTING,1/2 npt x 3/8 tube	1
218	108126	FITTING, tee, street	1
219	EQ1798	FITTING,ptc,elbow,1/2 mpt, 3/8 od	1
220	100206	BUSHING, pipe	1
221	15D916	FITTING, straight 5/32 to 1/4 npt	1
222†	517305	TUBE, nylon, 5/32"o.d.	0.84
223†	070269	SEALANT, anaerobic, blue	1
224†	070408	SEALANT, pipe, sst	1
225†	2004513	OPERATIONS, promix v, air controls, meter	1

† Not shown.

Normal Location Meter Control Panel Parts

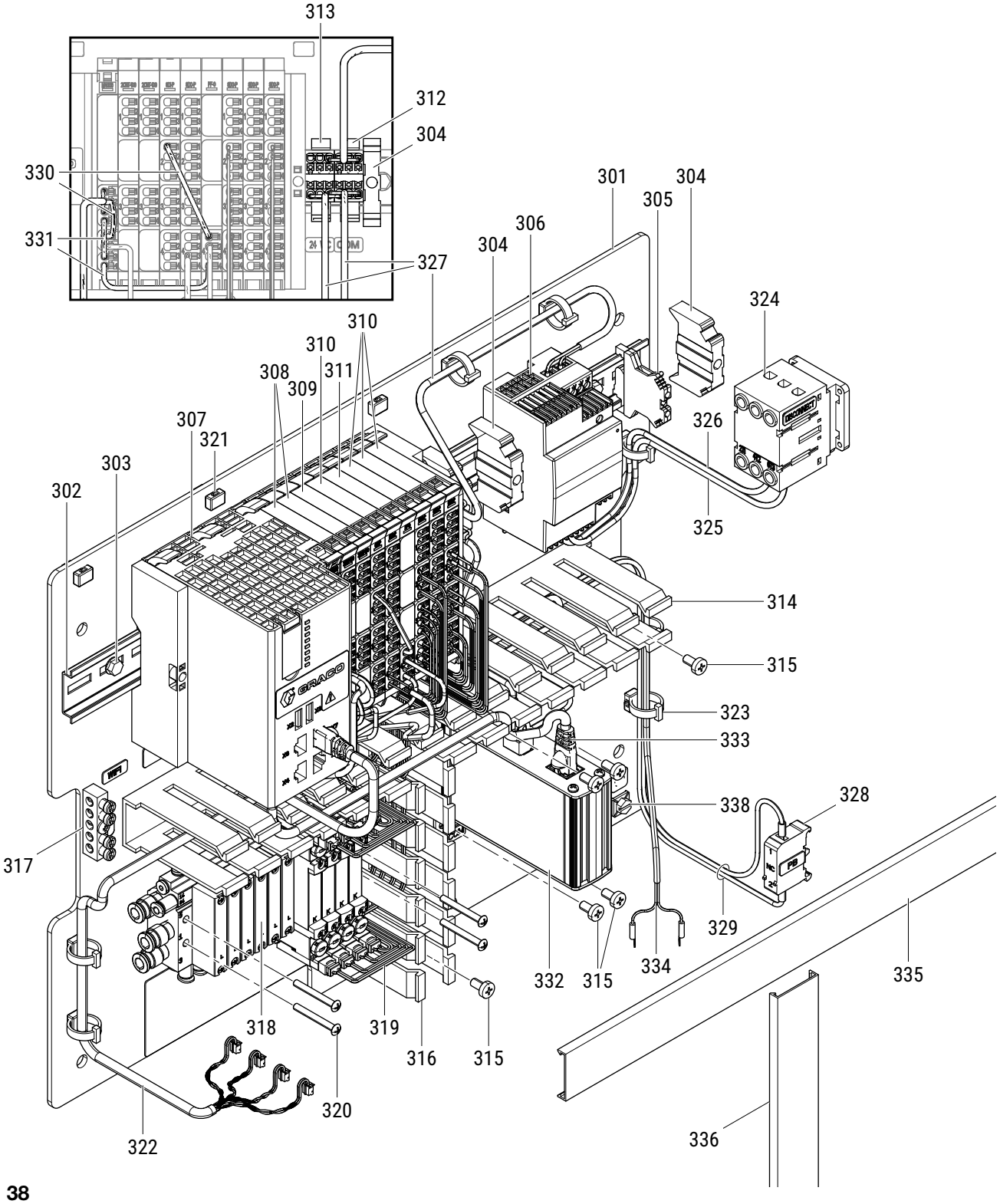


FIG. 38

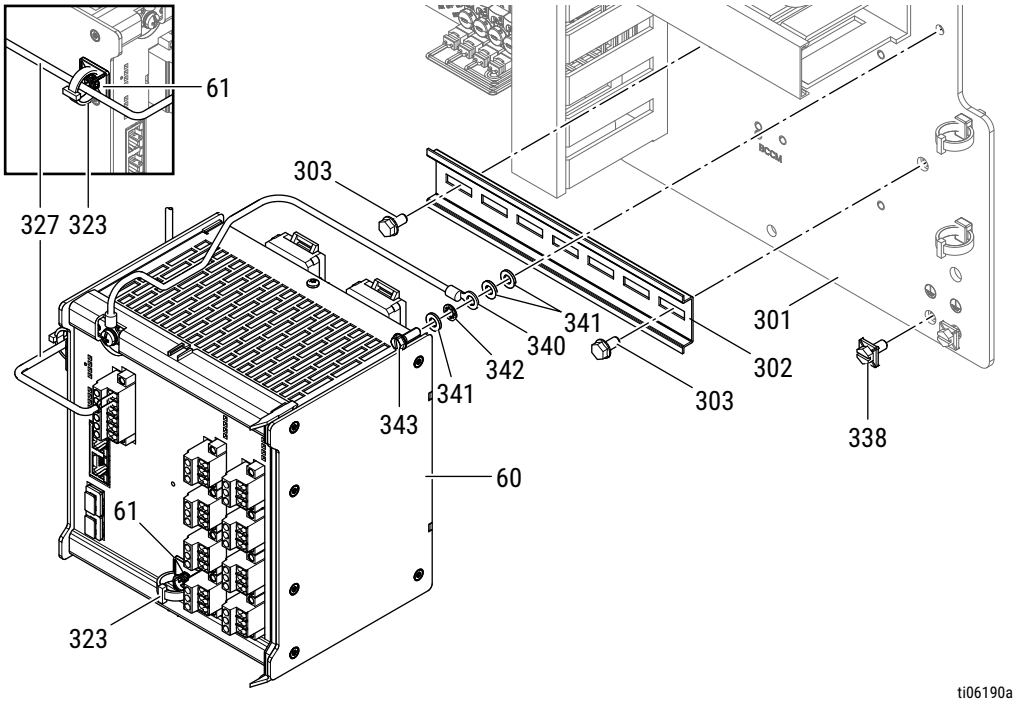


FIG. 39

Normal Location Meter Control Panel Parts List

Ref.	Part	Description	Qty
301	---	PANEL, enclosure, 2k system	1
302	---	RAIL, 35mm DIN, 18 in. long	1
303	2003371	Screw, serrated flange, hex head	4
304	---	CLAMP, end	3
305	112443	BLOCK, terminal ground	1
306✺	19Y920	SUPPLY UNIT, power, dual	1
307	2010867	MODULE, controller, 4 port, licensed	1
308	2010873	MODULE, high speed counter, dual, 100KHZ	2
309	2010871	MODULE, digital, input, 2 wire, 8 point	1
310	2010872	MODULE, digital, output, 2 wire, 8 point	4
311	2010870	MODULE, feed, power	1
312✺	---	BLOCK, terminal, 6 position distribution, red	1
313✺	---	BLOCK, terminal, 6 position distribution, black	1

Ref.	Part	Description	Qty
314	---	DUCT, wire, 1x3x14, light gray	1
315	110637	SCREW, mach, pan head	10
316	---	DUCT, wire, 1x3x4.75, light gray	1
317	119257	CONNECTOR, bar, ground	1
318✖◆	---	MODULE, solenoid, single acting	1
319✖★◆	---	HARNESS, wire, solenoid, ferruled	8
320✖†	---	SCREW, head, pan, 6-32 x 1.25	4
321	---	CLIP, tie-down, table	10
322	---	HARNESS, wiring, manifold, dosing	1
323	---	STRAP, tie, wire	7
324✿	---	SWITCH, disconnect, door mount, non fusible, 20A 3 pole	1
325✺	---	WIRE, ac line, black, 10 in. lg 14 awg	1

Ref.	Part	Description	Qty
326✺	---	WIRE, ac line, white, 10 in. lg 14 awg	1
327✺	---	CABLE, dc power, 14 in. 18 awg, 2 con	3
328✚	---	CONTACT, block, NC	1
329⁜	---	WIRE, red, 18 awg, 28in., ferruled	2
330⁜❖	---	WIRE, red, 18 awg, 4.5in., ferruled	2
331⁜	---	WIRE, black, 18 awg, 4.5in., ferruled	2
332	---	MODULE, barrier, eth-apl	1
333✓	---	CABLE, ethernet, CAT6, 1.64ft.	1
334	---	CABLE, alarm, 27in. lg, 24AWG 2 cond	1
335	---	COVER, wire duct, 1x14, light gray	1
336	---	COVER, wire duct, 1x5.75, light gray	1
338	116343	SCREW, ground	1
339▲	2005169	LABEL, installation, ProMix V, pneumatic connections	1

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

✺ *Part 306, 312, 313, 325, 326, and 327 is used in kit 2008367.*

✿ *Part 324 is used in kit 2008368.*

✚ *Part 328 is used in kit 2008367.*

⁜ *Part 329, 330, and 331 used in kits 2010870 and 2010867.*

❖ *Part 330 used in kit 2010871.*

✓ *Part 333 used in kit 2010869.*

◆ *Solenoid valve for 318 qty 1 and wire harness 319, qty 2 included in kit 2008037.*

✖ *Parts 318, 319, and 320 not included in PVMNM01 or PVMNM13.*

★ *Qty for part 319 is as follows: PVMNM01, 13 - 0; PVMNM02, 14 - 1; PVMNM03, 15 - 2; PVMNM04, 16 - 3; PVMNM05, 17 - 4; PVMNM06, 18 - 5; PVMNM07, 19 - 6; PVMNM08, 20 - 7; PVMNM09, 21 - 6; PVMNM10, 22 - 7; PVMNM11, 23 - 8; PVMNM12, 24 - 9.*

† *Not shown.*

Dose and Purge Air Manifold Parts

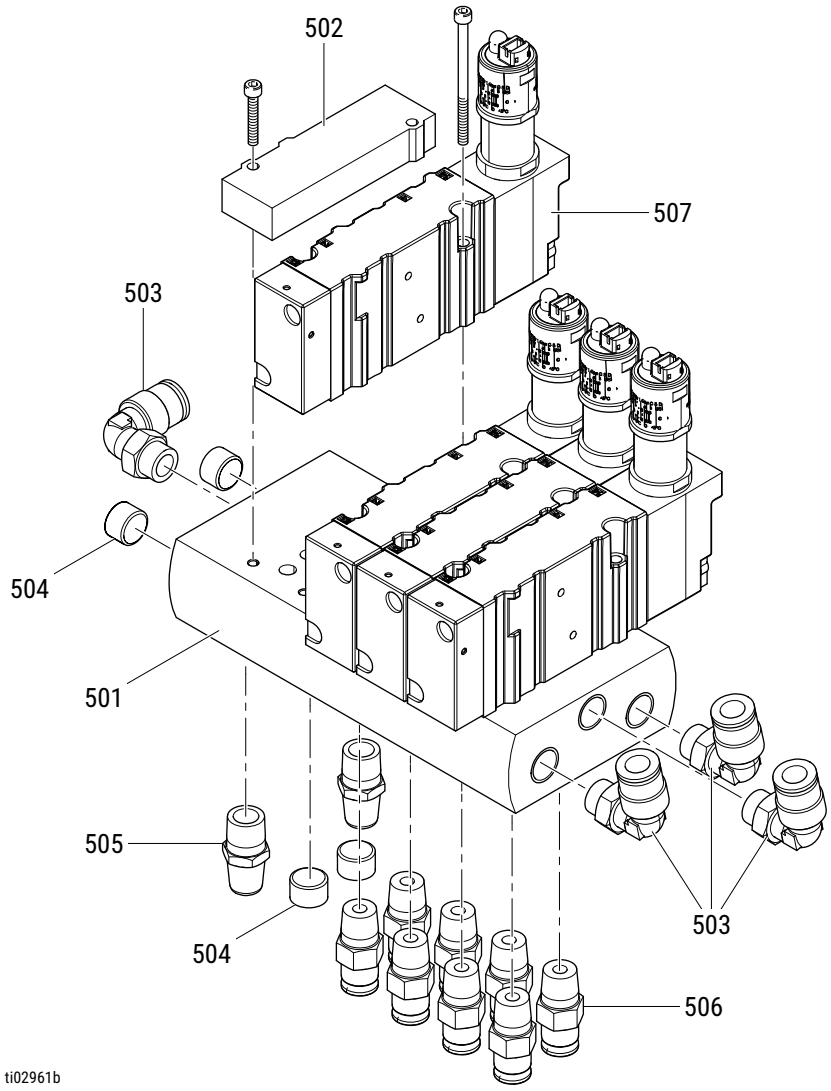


FIG. 40

Dose and Purge Air Manifold Parts List

Ref.	Part	Description	Qty
501	---	MANIFOLD, solenoid, pneumatic, 2ks	1
502	552183	PLATE, blanking 400 series mac	1
503	112698	FITTING, male, swivel	4
504	110208	PLUG, pipe, headless	4
505	C06061	MUFFLER, sintered, dia 1/8	2
506	198177	FITTING, push, straight	8
507✚	---	VALVE, solenoid mac 413 bullet pilot	4
508	---	SEALANT, pipe, sst	1
510†	---	LUBRICANT, grease	1

† Not shown.

✚ *Part 507 is used in kit 2008447.*

Accessories and Repair Kits

The following kits are available as accessories or repair kits for the ProMix V.

Accessories and Repair Kit Manuals

Part	Manual	Description
2008037	3B0203	Solenoids
2013036	3B0203	Solenoid Manifold
2008712	3B0203	Solenoid Wiring
2007852	X004840	Air Flow Switch
2008195	X030341	Purge A2
2007871	X004860	Alarm tower
2008668	X020291	Atomizing Air Off, No GFB And Reg Override
2008667	X020035	Atomizing Air Off, With GFB And Reg Override
2011370	X028817	B Side Restrictor
2009386	X004863	Color/Cat Valve Stack 2
2007859	X004863	Color/Cat Valve Stack 3
2007860	X004863	Color/Cat Valve Stack 4
2007861	X004863	Color/Cat Valve Stack 5
2007862	X004863	Color/Cat Valve Stack 6
2009387	X004863	Color/Cat Valve Stack Top 2
2007426	X004863	Color/Cat Add (Pair)
2013593	313599	Coriolis Meter
2011578	X004484	Dump Valve (Single)
2013035	3B0236	Dynamic Dosing
2010874	X030346	Flush Without Power
2007685	312784	GFB (gun adapter below)
2013897	312784	Re-Use Existing GFB
2012164	X030358	HMI Screen
2012584	3B0236	Integrator Size 100 cc
2012574	3B0236	Integrator Size 25 cc
2013034	3B0236	Integrator Size 10 cc
2008668	X020291	Atomizing Air Off, No GFB and Reg Override
2008667	X020035	Atomizing Air Off, With GFB and Reg Override
2008196	X004485	Sampling Valve (Both Sides)
2007853	X004841	Solvent Flow Switch
2008029	X004499	Solvent Meter
2006299	X004838	Stand
2011822	---	Labels For Kits (Pneumatic, Electric)
2010869	X028822	WIFI

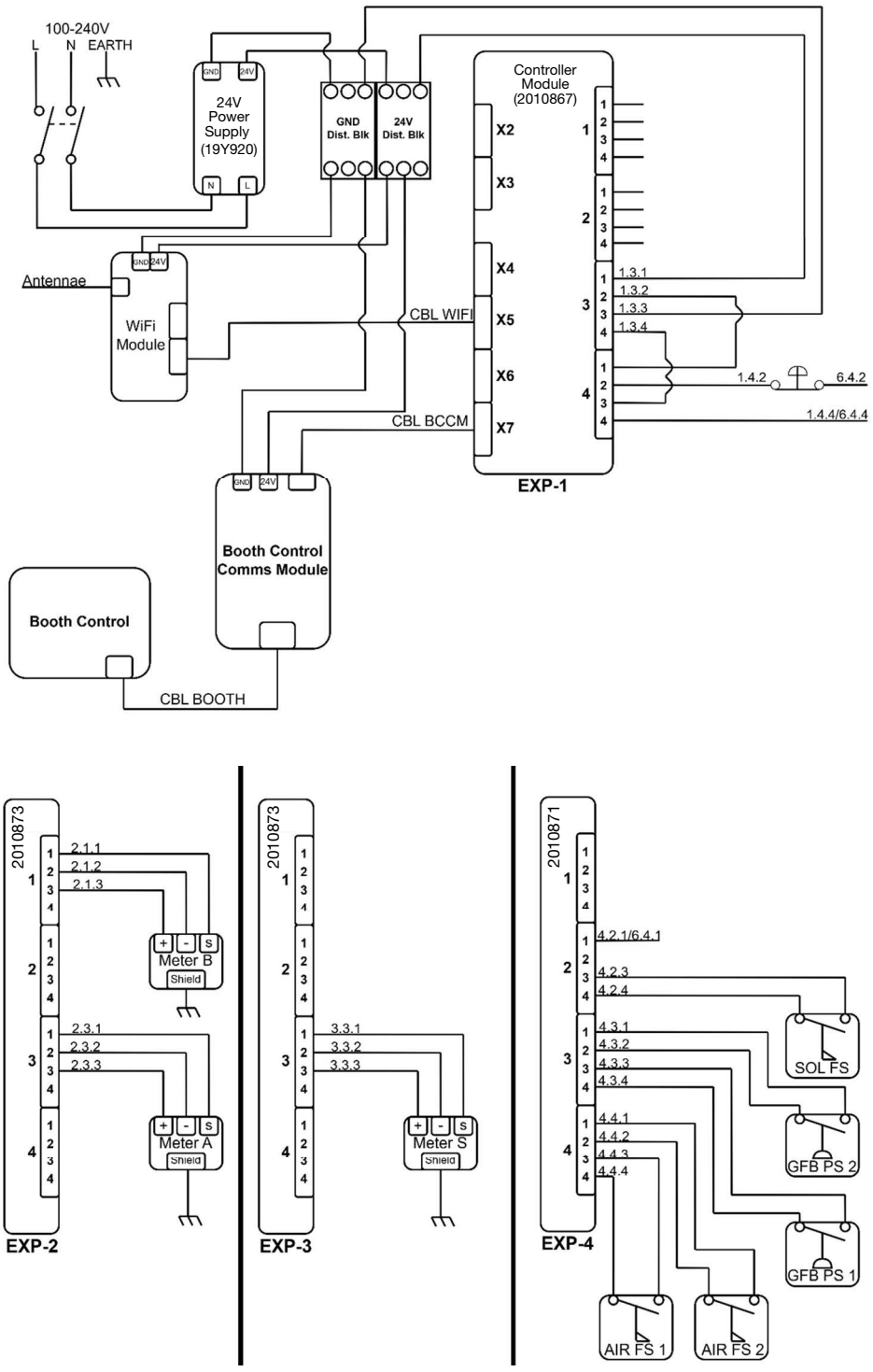
Cables

Part	Description
Intrinsically Safe for PVMBM01-24 Series A	
2015483	CABLE, 16 M
2015484	CABLE, 32 M
Non-Hazardous Booth Control Cables	
2008435	CABLE, 8 M
2008436	CABLE, 16 M
2008437	CABLE, 32 M
2008434	CABLE, 3.5 M

Repair Kits

Part	Description
2008367	KIT, repair, power supply
2008368	KIT, repair, on/off switch
2008369	KIT, repair, E-stop switch
2008370	KIT, repair, antenna
2008394	KIT, repair, shuttle valve
2008447	KIT, repair, double acting solenoid
2008449	KIT, repair, pressure gage
2008450	KIT, repair, air supply valve
2008471	KIT, repair, high pressure lines
2008472	KIT, repair, brackets
2008501	KIT, repair, mix cleaning
2008502	KIT, repair, j-pipe
2008503	KIT, repair, mix manifold rebuild
2008504	KIT, repair, mix manifold rebuild, acid
2008505	KIT, repair, dose and purge valve
2008506	KIT, repair, dose and purge valve, acid
2008507	KIT, repair, cured mix manifold
2008710	KIT, repair, pressure switch
2008711	KIT, repair, flow meter cable
2008712	KIT, repair, solenoid wiring
2009134	KIT, repair, fluid stack valve and seat
2009135	KIT, repair, fluid stack valve O-ring and fitting
2009136	KIT, repair, fluid stack valve and seat, acid
2009137	KIT, repair, fluid stack valve O-ring and fitting, acid
2011837	KIT, repair, valve, acid double acting
2011836	KIT, repair, valve, metal, acid double acting
2011838	KIT, repair, valve acid single cat
2011839	KIT, repair, valve, metal, acid single cat
2011840	KIT, repair, valve non double acting
2011841	KIT, repair, valve, metal, non double acting
2011844	KIT, repair, valve non single/cat/color
2011842	KIT, repair, valve, metal, non single/cat/color
2006610	KIT, repair, booth control PVMNM non-hazardous location only
2016042	KIT, repair, booth control PVMBM hazardous location only
15X888	KIT, repair, valve, ratio check, breakers with wall mount

Electrical Schematics



TI04207

FIG. 41 ProMix V Electrical Schematic

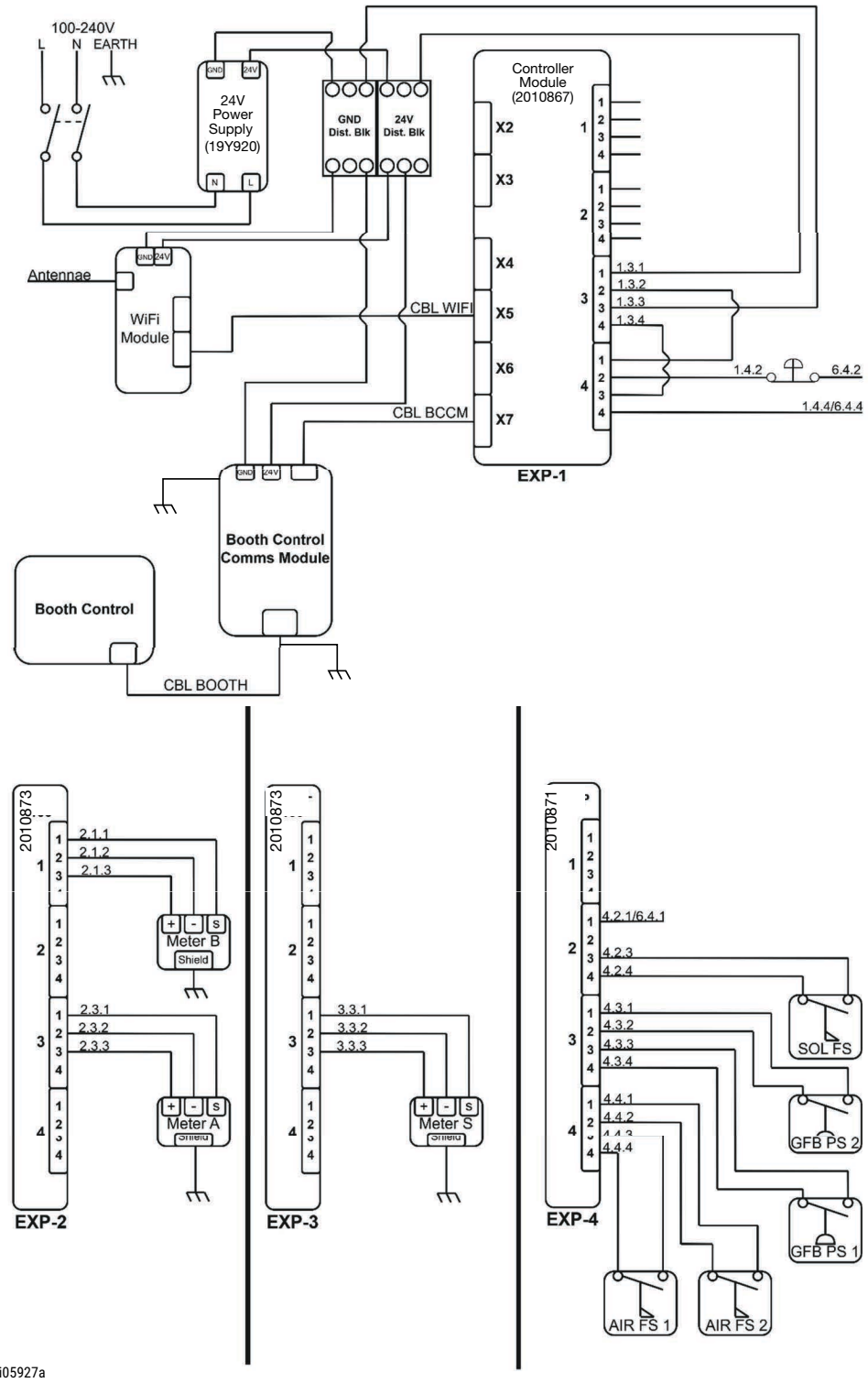
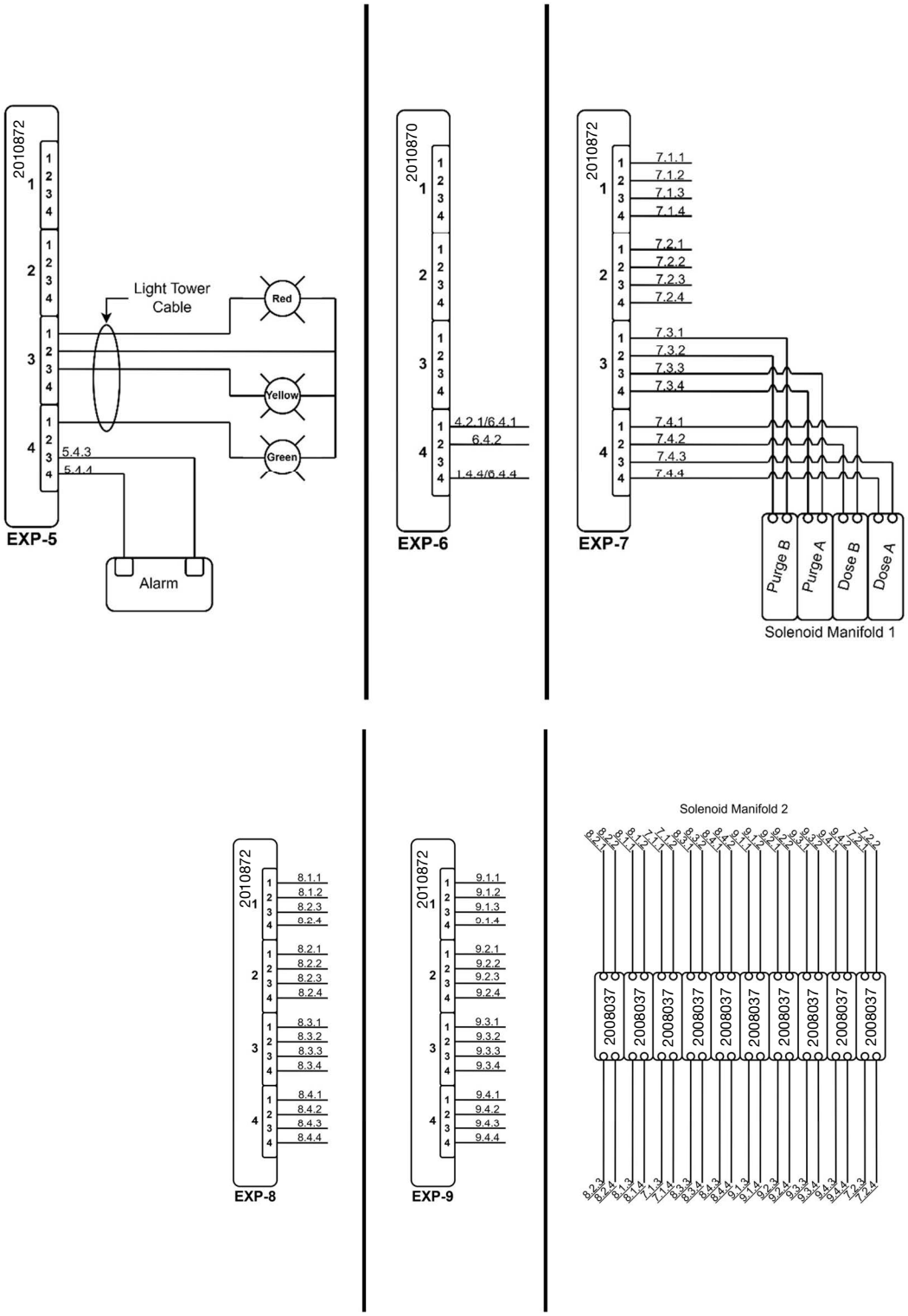


FIG. 42 ProMix V Hazardous Location Electrical Schematic for all PVMBM



TI04225

FIG. 43 ProMix V Electrical Schematic

Pneumatic Schematic

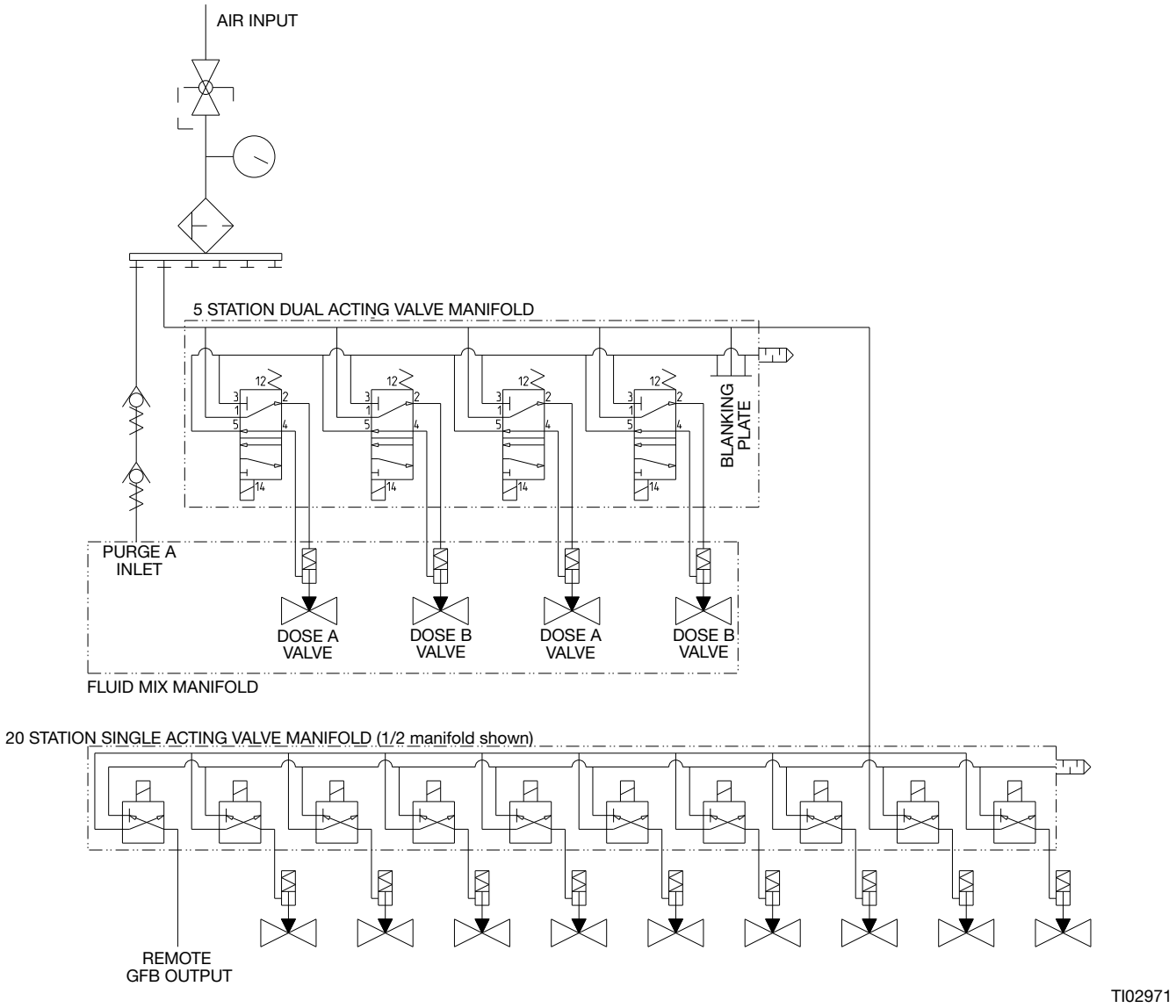


FIG. 44 Pneumatic Schematic

Module Connections

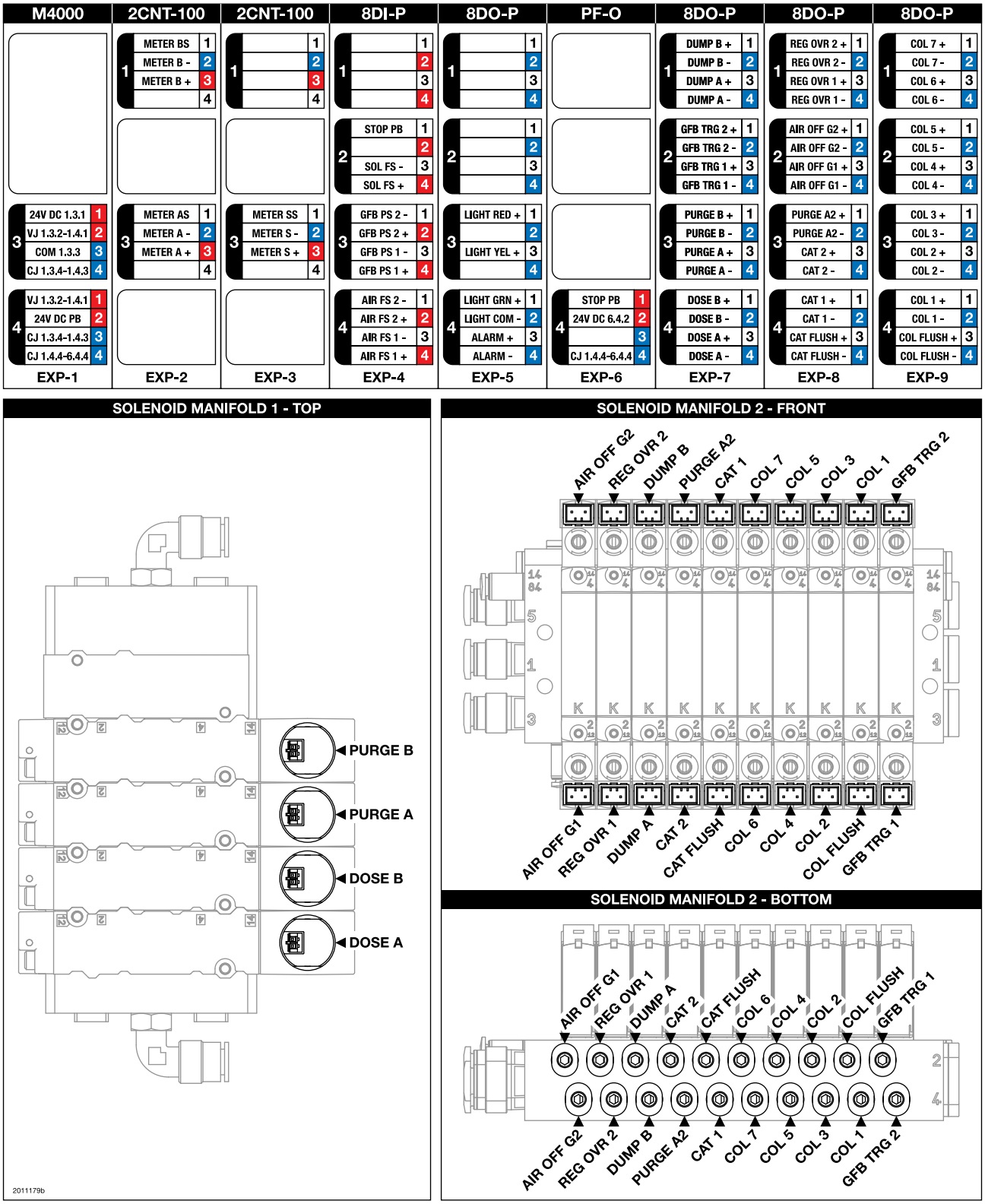
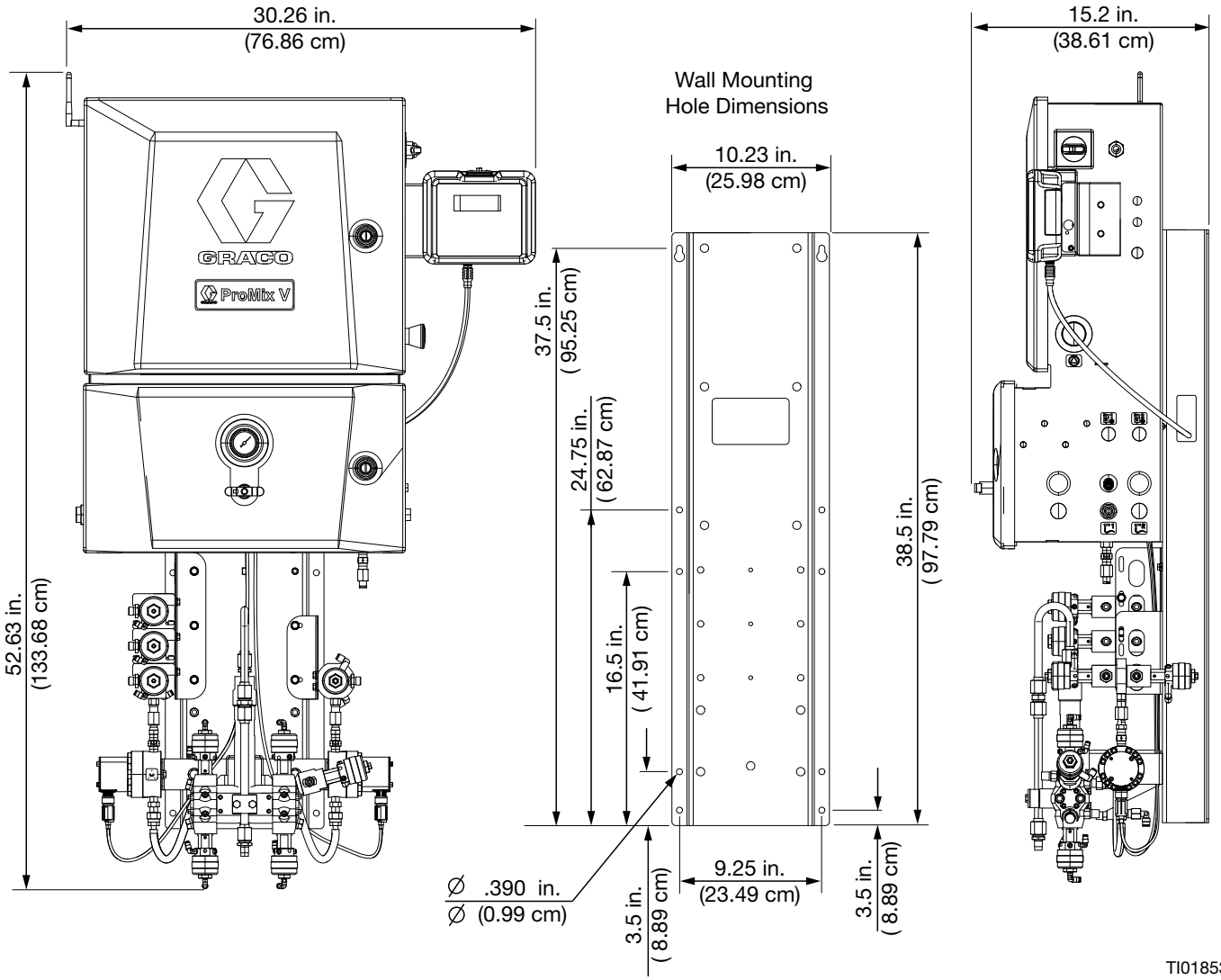


FIG. 45 ProMix V Electrical Schematic

Dimensions



TI01853

Technical Specifications

ProMix V, Package Meter Proportioner		
	US	**Metric**
Weight		
PVMNM01	120.00 lbs	54.40 kg
PVMNM02	122.12 lbs	55.39 kg
PVMNM03	122.24 lbs	55.44 kg
PVMNM04	125.80 lbs	57.06 kg
PVMNM05	126.50lbs	57.38 kg
PVMNM06	126.62 lbs	57.43 kg
PVMNM07	126.62 lbs	57.43 kg
PVMNM08	130.96 lbs	59.40 kg
PVMNM09	130.22 lbs	59.06 kg
PVMNM10	130.22 lbs	59.06 kg
PVMNM11	130.34 lbs	59.12 kg
PVMNM12	134.56 lbs	61.03 kg
PVMNM13	120.00 lbs	54.40 kg
PVMNM14	122.12 lbs	55.39 kg
PVMNM15	122.24 lbs	55.44 kg
PVMNM16	125.80 lbs	57.06 kg
PVMNM17	126.50 lbs	57.38 kg
PVMNM18	126.62 lbs	57.43 kg
PVMNM19	126.62 lbs	57.43 kg
PVMNM20	130.96 lbs	59.40 kg
PVMNM21	130.22 lbs	59.06 kg
PVMNM22	130.22 lbs	59.06 kg
PVMNM23	130.34 lbs	59.12 kg
PVMNM24	134.56 lbs	61.03 kg
PVMBM01	125.00 lbs	56.70 kg
PVMBM02	127.12 lbs	57.66 kg
PVMBM03	127.24 lbs	57.71 kg
PVMBM04	130.80 lbs	59.32 kg
PVMBM05	131.50 lbs	59.65 kg
PVMBM06	131.62 lbs	59.70 kg
PVMBM07	131.62 lbs	59.70 kg
PVMBM08	135.96 lbs	61.67 kg
PVMBM09	135.22 lbs	61.33 kg
PVMBM10	135.22 lbs	61.33 kg
PVMBM11	135.34 lbs	61.39 kg
PVMBM12	139.56 lbs	63.30 kg
PVMBM13	125.00 lbs	56.70 kg
PVMBM14	127.12 lbs	57.66 kg
PVMBM15	127.24 lbs	57.71 kg
PVMBM16	130.80 lbs	59.32 kg
PVMBM17	131.50 lbs	59.65 kg
PVMBM18	131.62 lbs	59.70 kg

ProMix V, Package Meter Proportioner		
	US	**Metric**
PVMBM19	131.62 lbs	59.70 kg
PVMBM20	131.96 lbs	61.67 kg
PVMBM21	135.22 lbs	61.33 kg
PVMBM22	135.22 lbs	61.33 kg
PVMBM23	135.34 lbs	61.39 kg
PVMBM24	139.56 lbs	63.30 kg
Maximum working fluid pressure	4000 psi	27.6 MPa, 275.8 bar
Maximum working air pressure	100	0.69 MPa, 6.89 bar
Air supply	85 to 100 psi	0.59-0.69 MPa, 5.86-6.89 bar
Air inlet size	3/8 npt(f)	
Air filtration for air logic (Graco-supplied)	5 micron (minimum) filtration required; clean and dry air	
Air filtration for atomizing air (user-supplied)	30 micron (minimum) filtration required; clean and dry air	
Mixing ratio range	1.0:1 to 50.0:1	
On-ratio accuracy	Up to ± 1%, user selectable	
Fluid inlet sizes	1/4 npt(f)	
Fluid outlet size (static mixer)	1/4 npt(f)	
External power supply requirements	100-240 VAC, 50/60 Hz, 1.34 amps maximum draw 15 amp maximum circuit breaker required 8 to 14 AWG power supply wire gauge	
Operating temperature range	41° to 122°F	5° to 50°C
Environmental conditions rating	Indoor use, pollution degree (2), installation category II	
Fluids handled	• solvent and waterborne paints	
	• polyurethanes	
	• epoxies	
	• acid catalyzed varnishes, for specific acid compatible ProMix V models(	
Fluid flow rate range		
G3000, G250, G3000A Meter	0.02 to 1.00 gal/min	75 to 3800 cc/min
G3000HR, G250HR Meter	0.01 to 0.50 gal/min	38 to 1900 cc/min
Coriolis Meter	0.005 to 1.00 gal/min	20 to 3800 cc/min
S3000 Solvent Meter (accessory)	0.01 to 0.53 gal/min	38 to 2000 cc/min
Noise level		
Sound pressure level	Below 70 dBA	
Sound power level	Below 85 dBA	
Materials of Construction		
Wetted materials on all models	303, 304, 316 SST; Tungsten carbide (with nickel binder); perfluoroelastomer; PTFE	
Wetted materials on acid models	316, 17-4 SST; PEEK perfluoroelastomer; PTFE	

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

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