

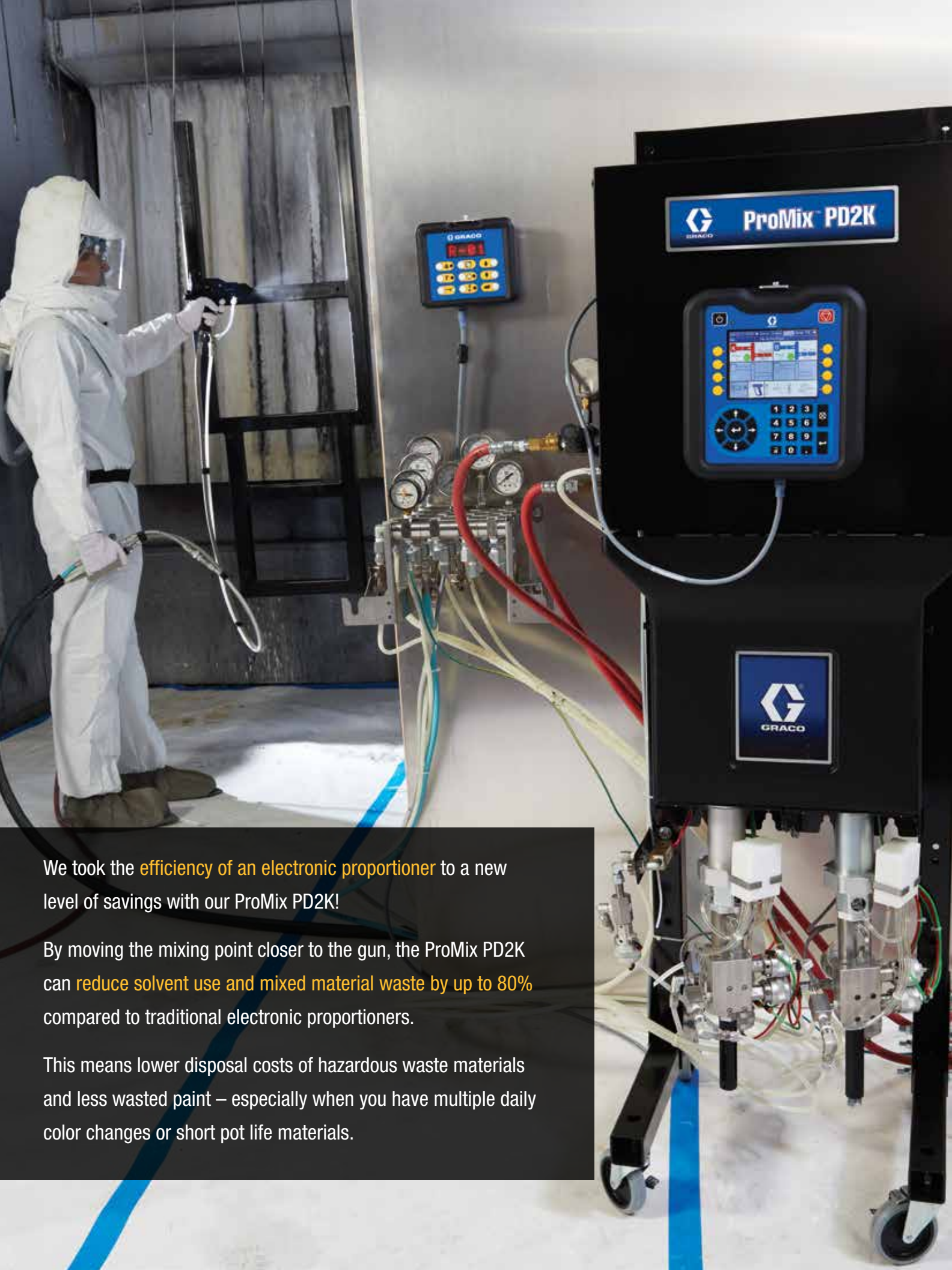


# ProMix<sup>®</sup> PD2K

Positive Displacement Proportioning System



PROVEN QUALITY. LEADING TECHNOLOGY.



We took the **efficiency of an electronic proportioner** to a new level of savings with our ProMix PD2K!

By moving the mixing point closer to the gun, the ProMix PD2K can **reduce solvent use and mixed material waste by up to 80%** compared to traditional electronic proportioners.

This means lower disposal costs of hazardous waste materials and less wasted paint – especially when you have multiple daily color changes or short pot life materials.

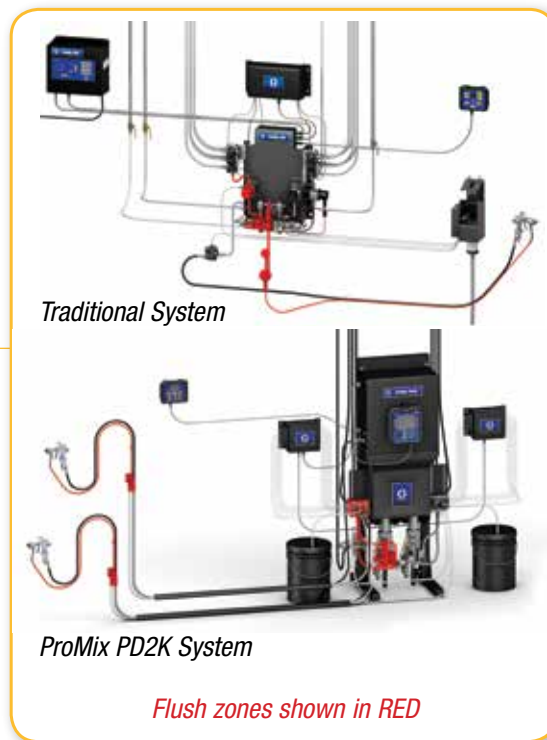
# Reduce Solvent and Material Waste by up to 80%

The ProMix PD2K saves you time and money by not only making your job easier, but by reducing material waste. It's efficient, convenient and gives you a smooth, consistent spray for your most challenging applications.

## Savings Comparison

See the savings stack up when you compare the ProMix PD2K to traditional systems.

- Up to 80% reduction in flushing waste over the most efficient traditional proportioning systems
- Limited mixed material in system - great for short pot life materials
- Faster color changes and less material to flush mean less waste and less downtime



### Daily Paint Usage\*



### Daily Solvent Usage\*



\*Savings based on 7 color changes per day and hose length of 50 ft x 1/4 in diameter

# Increase Efficiency and Performance



Graco's unique ProMix PD2K dosing piston pumps *Stall Under Pressure* and use *100% Positive Displacement Technology* so you always get accurate mix ratios and consistent performance – every time you spray!

## PD2K Expansion Pumps

PD2K has the ability to add additional dosing pumps so that you can maximize your savings.

Applications include:

### Dedicated Colors Reduce Waste

- Dedicate up to three colors with their own pumps to achieve the most waste reduction possible.

### One Machine Does MORE

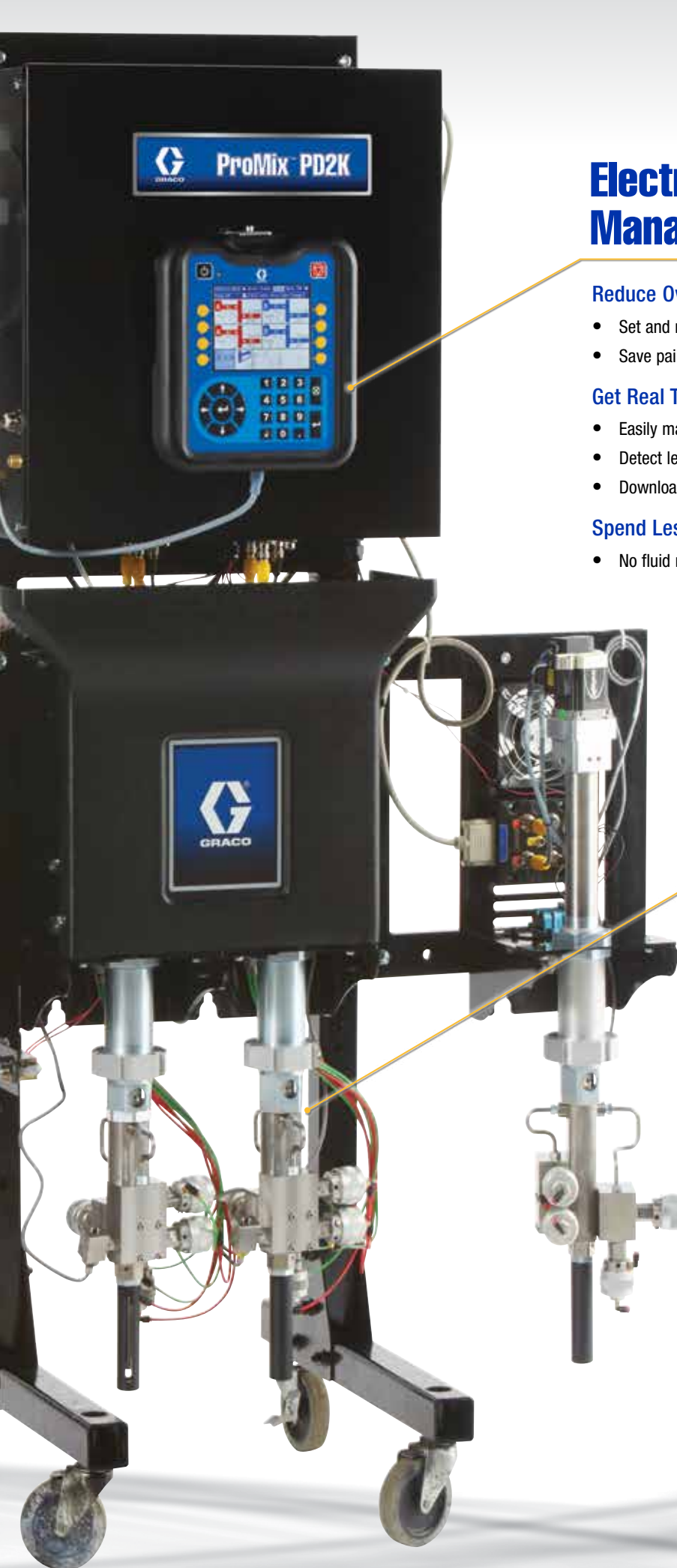
- Use one pair of dosing pumps for epoxy primers and another pair for urethane top coats. One machine will do both.

### Save Time on Color Changes

- In automatic systems, stage the next color while one is being sprayed to reduce color change time.



“*The ProMix PD2K is easy to set up and maintain. It handles various inbound pressures and viscosities without touchy fine-tuning, and pumps can be rebuilt in less than 20 minutes.*”



## Electronic Fluid Management Display

### Reduce Overspray and Paint Waste

- Set and maintain optimal spray pressures
- Save paint by keeping spray guns running at peak efficiency

### Get Real Time Data

- Easily manage ratios, colors, alarms, pressure and flow rates
- Detect leaks and send alerts when maintenance is due
- Download reports onto a flash drive with the convenient USB Port

### Spend Less Time on Maintenance

- No fluid regulators to flush or maintain

## Dosing Piston Pumps

### Accurate

- Stalls under pressure for consistent, on-ratio results (within 1% accuracy)

### Versatile

- Proportion both epoxy and urethane with ONE system
- Manage up to 30 colors and 4 catalysts with 2 or 4 dosing pumps
- Pumps can be dedicated to colors or color families
- Change color in one pump while another pump is proportioning

### Easy to Maintain

- Field serviceable in less than 20 minutes  
No costly factory rebuilds like gear pumps

# Manual Systems - ProMix PD2K

PD2K mixes material 6 feet (2 m) away from the spray gun.

This new feature saves you time and material when you make a color change or flush your system. There are now two options for mixing; “At the Belt” and “At the Wall”

## Mix at Belt for Painting in Large Areas

### Convenient

- Wear on your belt or hold in your hand

### Efficient

- 80% reduction in flushing waste
- Faster color changes



# Consistent Spray

PD2K has electronic fluid pressure regulation, which means you can set and manage your spray pressure right on the PD2K interface.

- Set upper and lower pressure adjustment limits to keep consistent quality across all of your painters
- Reduce your down time because there are no mechanical regulators to flush or maintain

# Flexible Installation

## Mix Remotely (Mix at Wall) for Painting Smaller Parts



### Convenient

- Use in either manual or automatic applications
- Consolidates all colors to one mix and color change block

### Compact

- Fits in small areas
- Ideal for automatic spray robots and reciprocators
- Great for finishing small parts

### Add a gun flush box to change colors with ease

- Automated flushing system for manual spray guns
- Eliminates manual gun triggering for more accurate flushing and filling, and less waste



# Complete Your System!

## AirPro® Air Spray Guns

Ergonomically-designed for easy handling, AirPro spray guns have a soft, controlled, adjustable spray pattern with less overspray. Whether you have a custom shop or a high volume manufacturing facility, you'll get superior finishes every time you spray.



## Pro Xp™ Electrostatic Spray Guns

Now with greater spraying flexibility for your ever changing production needs, our



Pro Xp electrostatic spray guns are smaller and lighter, offer excellent finish quality and are designed to maximize your profits.

## G15 Air Assist Spray Guns

Designed to maximize efficiency, our G15 spray guns give you great finishes and long lasting reliable performance.

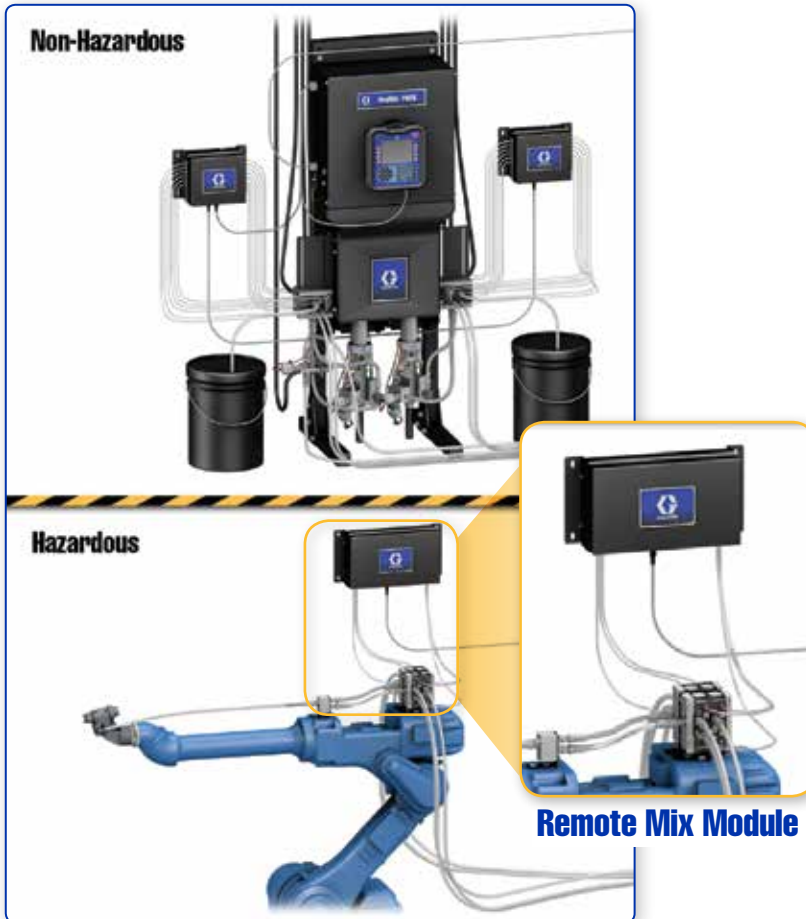
Paired with our AAF tip line, you get less overspray and increased transfer efficiency.



For more information about Graco spray guns, visit [www.graco.com/Finishing](http://www.graco.com/Finishing).

# Automatic Systems - ProMix PD2K and PD1K

Locate the main unit of the ProMix PD2K outside the hazardous area for easier maintenance access



## ProMix PD2K Automation

PD2K Automatic delivers precise flow control to spray the perfect amount when you need it. Step changes are faster and more accurate with the dosing pumps - beaker calibrations are not needed. And the remote mixing module allows you to mix near the gun to minimize flushing waste.

### Integration with Plant Automation

- Controls color change, mixing and flushing, and flow control

### Flow Control

- Manages material flow rate to maintain consistent paint application
- Reduces material use by applying the right amount for each part feature

### PD1K

- Single component flow control and color change for up to 4 independent spray guns

### Remote Mix Module

- Saves space and weight for mounting on robots and reciprocators

## Communications and Integration

### Integrate to PLC

- ProMix PD2K interfaces with wide array of PLC/Robotic controllers through gateways

### Gateways

- Choose between ethernet IP, DeviceNet, ProfiBus, Profinet and Modbus TCP for network automation
- Reduces installation time with quick plug-and-play set up

### Advanced Web Interface

- Set up and monitor your ProMix PD2K system and get reports accessible through corporate intranet
- Perform quick and easy system configuration and recipe set up
- Manages operations more efficiently by networking multiple ProMix 2K systems (includes the Informer, ProControl 1KE, ProMix 2KS and ProMix PD2K) to a single PC



Advanced Web Interface screen shot



# Return on Investment

## Example of Savings

### Flush Savings with ProMix PD2K

Compared to Traditional Electronic Proportioners

Cost per Color Change

	Traditional	ProMix PD2K
Paint Cost at example price of \$60/gal	0.18 gal x \$60.00 = <b>\$10.80</b>	0.04 gal x \$60.00 = <b>\$2.40</b>
Solvent Cost at example price of \$6/gal	1.03 gal x \$6.00 = <b>\$6.18</b>	0.15 gal x \$6.00 = <b>\$0.90</b>
Disposal Cost at example price of \$7/gal	1.21 gal x \$7.00 = <b>\$8.47</b>	0.19 gal x \$7.00 = <b>\$1.33</b>
Total Material Cost	<b>\$25.45</b>	<b>\$4.63</b>
Total Flush Cost per Day (Total Material Cost x 7 color changes/day)	<b>\$178.15</b>	<b>\$32.41</b>
Total Flush Cost per Year (250 working days)	<b>\$44,537</b>	<b>\$8,102</b>

Flush SAVINGS/year\*

**\$36,435**

### Transfer Efficiency Savings with ProMix PD2K

SAVE up to 10% in transfer efficiency with PD2K electronic fluid management

	Traditional	ProMix PD2K
Paint Cost per day (based on 20 gal/day paint use at \$60/gal)	\$1200	\$1200 - 10% = \$1080
Paint Cost per year (250 working days)	<b>\$300,000</b>	<b>\$270,000</b>

Transfer Efficiency SAVINGS/year\*

**\$30,000**

\*Savings based on 7 color changes per day and hose length of 50 ft x 1/4 in diameter

## Technical Specifications

Flow rate	20 to 800 cc/min
Maximum fluid working pressure	
MC1000/AC1000 Air Spray Systems	300 psi (21 bar, 2.1 MPa)
MC2000/AC2000 Air-Assist Systems	1500 psi (105 bar, 10.5 MPa)
Maximum working air pressure	100 psi (7 bar, 0.7 MPa)
Air supply	85 to 100 psi (6 to 7 bar, 0.6 to 0.7 MPa)
Air filter inlet size	3/8 npt(f)
Air filtration	
Air logic (Graco supplied)	minimum of 5 micron clean/dry
Air for atomizing (user supplied)	minimum of 30 micron clean/dry
Mix ratio range	
Mix module	0.1:1 to 50:1, ± 1%
Fluids handled	
One or two component: solvent and waterborne paints; polyurethanes; epoxies; acid catalyzed varnishes; moisture sensitive isocyanates	
Viscosity range of fluid	.20 to 5000 centipoise
Fluid filtration (user supplied)	100 mesh minimum
Fluid outlet size	1/4 npt(m)

External power supply requirements	
90 to 250 Vac, 50/60 Hz. 7 amps maximum draw, 15 amp maximum circuit breaker required, 8 to 14 AWG power supply wire gauge	
Operating temperature range	36 to 122°F (2 to 50°C)
Storage temperature range	-4 to 158°F (-20 to 70°C)
Weight (approx.)	.300 lb (136 kg)
Sound data	below 75 dBA
Wetted parts	
17-4 PH, 300 series SST, tungsten carbide with nickle binder, PTFE, PPS, perfluoroelastomer, UHMWPE	
Manuals	
Installation	332457
Operation	332562
Repair parts	3A2800
Pumps	332339
Mix manifold	3A2801
Color change valves	332454
Color change kits	332455
3rd and 4th Pump expansion kits	332456

# Ordering Information

## Build Your System in 4 Easy Steps!

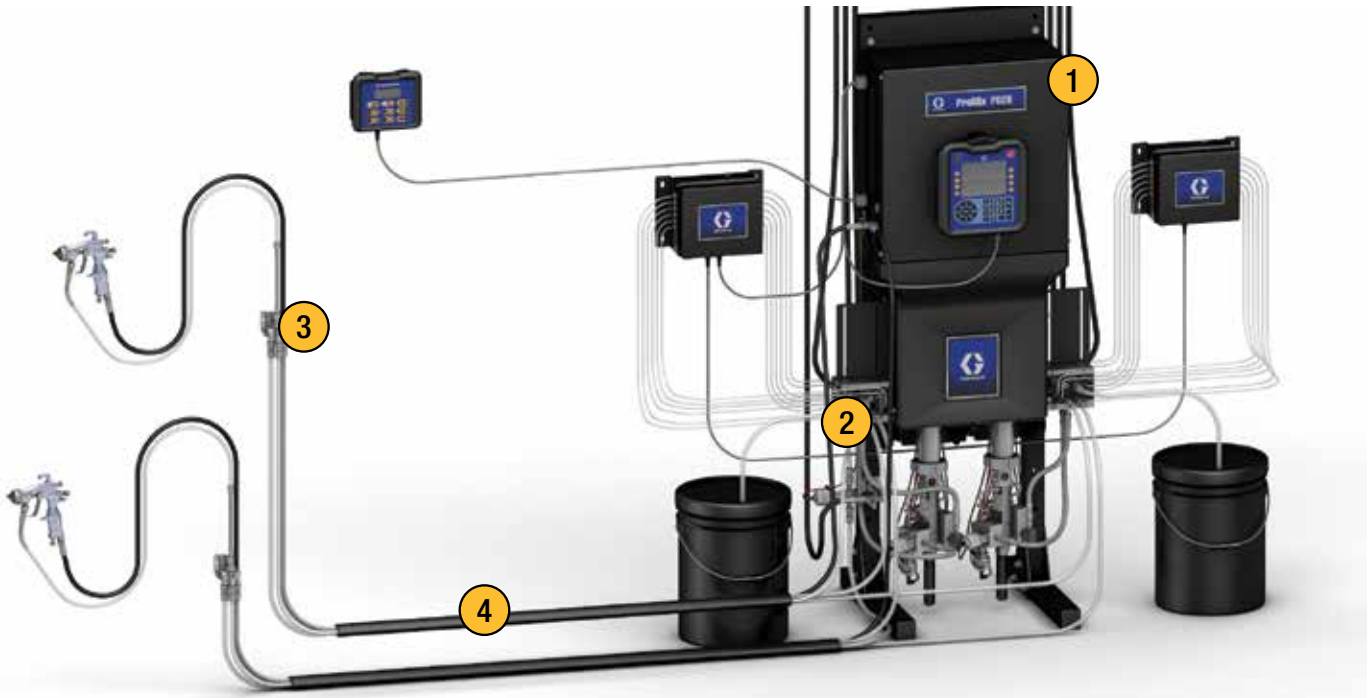
### Manual Systems\*

- 1 Select air spray or air-assist and any additional pumps
- 2 Select pump color change
- 3 Select remote mixing or mix at belt
- 4 Select hose bundles if you select mix at belt

### Automatic Systems

- 1 Select air spray or air-assist and any additional pumps
- 2 Select pump color change
- 3 Select remote mixing

\*Manual systems using remote mixing must order an additional solvent flow switch kit



## 1 Select a ProMix PD2K Main Proportioning Unit

Main PD2K Unit Part No.	Manual	Automatic	Air Spray up to 300 psi (21 bar)	Air-Assist up to 1500 psi (104 bar)	70 cc Resin Pump	35 cc Catalyst Pump	Advanced Display Module with USB	Solvent Valve	Communications
MC1000	•		•		•	•	•	•	
MC2000	•			•	•	•	•	•	
AC1000		PD2K	•		•	•	•		Modbus TCP
AC2000		PD2K		•	•	•	•		Modbus TCP
AC0500		PD1K	Control module only				•		Modbus TCP
MC3000*	•		•		•	•	•	•	
MC4000*	•			•	•	•	•	•	

\*Acid applications only

### PD2K Expansion Pumps

24R968	Air Spray, 70 cc
24R970	Air Spray, 35 cc
24R969	Air-Assist, 70 cc
24R971	Air-Assist, 35 cc

### PD1K Expansion Pumps

24V257	Air Spray, 70 cc
24V258	Air-Assist, 70 cc

## 2 Select Pump Color Change

	2 Color / 3 Color Expansion	4 Color / 5 Color Expansion	6 Color / 7 Color Expansion	8 Color / 9 Color Expansion
Air Spray Non-Circulation	24R915	24R916	24R917	24R918
Air Spray Circulation	24R919	24R920	24R921	24R922
Air-Assist Non-Circulation	24R959	24R960	24R961	24R962
Air-Assist Circulation	24R963	24R964	24R965	24R966
Air-Assist Acid Catalyst	24T579	24T580	-	-



Air Spray  
Color Change Valve



Air-Assist  
Color Change Valve

### 3a Remote Mixing

#### Air Spray Color Change

Colors	1 Catalyst		2 Catalysts		4 Catalysts	
	Non-Circulation	Circulation	Non-Circulation	Circulation	Non-Circulation	Circulation
1	24V157	24V166				
2	24V158	24V167	24V331	24V336		
4	24V159	24V308	24V332	24V337	24V343	24V347
6	24V160	24V309	24V333	24V338	24V344	24V348
8	24V161	24V326	24V334	24V339	24V345	24V349
12	24V162	24V327	24V335	24V340	24V346	24V350
13-18*	24V163	24V328				
13-24*	24V164	24V329				
13-30*	24V165	24V330				

Manual systems using remote mixing must order an additional solvent flow switch kit (see accessories)

\*Expansion kits (use with 1, 2 or 4 catalyst kits)

#### Air-Assist Color Change

Colors	1 Catalyst		2 Catalysts		4 Catalysts	
	Non-Circulation	Circulation	Non-Circulation	Circulation	Non-Circulation	Circulation
1	24V359	24V369				
2	24V360	24V370	24V381	24V389		
4	24V361	24V371	24V382	24V390	24V396	24V402
6	24V362	24V372	24V383	24V391	24V397	24V403
8	24V363	24V373	24V384	24V392	24V398	24V404
12	24V364	24V374	24V385	24V393	24V399	24V405
13-18*	24V365	24V375				
13-24*	24V366	24V376				
13-30*	24V367	24V377				

Manual systems using remote mixing must order an additional solvent flow switch kit (see accessories)

\*Expansion kits (use with 1, 2 or 4 catalyst kits)

OR

### 3b Mix at Belt

#### Select Mix Module

one per Color

Module	Part No.
Air Spray Module	24R991
Air-Assist Module	24R992
Air-Assist Acid	24T273

#### Whip Hose

Hose between Static Mixer and gun

Whip Hose	Part No.
1/8 in Air Spray/Air-Assist Fluid - 6 ft	236135
1/8 in Air Spray/Air-Assist Fluid - 3 ft	236134
1/4 in Air Spray Fluid - 6 ft	24N305
1/4 in Air-Assist Fluid - 6 ft	H52506
1/4 in Air Spray/Air-Assist Fluid - 3 ft	H52503
5/16 in Air Whip Hose - for conventional air spray use	16F537

#### Quick Disconnect (if needed)

Quick Disconnect	Part No.
Air, Electrostatic	24S004
Fluid	24T873

### 4 Select One Hose Bundle per Color (Only for Mix at Belt)

Bundle includes: 1/4 in resin hose; 1/4 in catalyst hose; 1/4 in solvent hose; air hose

Hose Bundle	25 ft (7 m)	50 ft (15 m)
Air Spray	24T140	24T141
Air Spray Electrostatic	24T138	24T139
Air Assist	24T247	24T248
Air-Assist Electrostatic	24T245	24T246

Separate Hoses	25 ft (7 m)	50 ft (15 m)
Air Spray 3/8 inch Fluid Hose	24T763	24T764

## Accessories

Other Items	Part No.
Gun Air Shut Off Kit	15V823
Cable, 100 ft CAN, Booth Control	16V430
Solvent Meter Kit	16D329
Bracket, Belt	16W557
Gun Flush Box Kit	15V826
Solvent Flow Switch Kit	24T787*
Manual to Automatic Conversion Kit	24T803

\*Manual systems using remote mixing must order an additional solvent flow switch kit

Communication Kits	Part No.
Advanced Web Interface	15V337**
Modbus Gateway	24R910**
Ethernet I/P Gateway	15V331
DeviceNet Gateway	15V963
Profibus Gateway	15V964

\*\*Manual systems require Modbus Gateway to work with Advanced Web Interface



## ABOUT GRACO

### PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

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