



# Electrostatic Waterborne Solutions

Proven Reliability and Ease of Use for Spraying Waterborne Material



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Proven reliability and ease of use for spraying waterborne material

# Superior transfer efficiency, reduced manufacturing costs and positive environmental impact

Graco offers three solutions for spraying waterborne coatings with electrostatic applicators.



## HydroShield Waterborne Systems

Operator friendly isolation systems allow flexibility and control of the spraying process.

## WB100 and WB3000 Isolation Systems

Durable low and high pressure isolation cabinets contain five gallons (19 L) of charged material.



## Pro Xp WBx Electrostatic Guns

High performing guns externally charge material — no additional equipment required.

# HydroShield®

Waterborne Systems

Reliable components and system control make HydroShield an operator friendly solution. Improve transfer efficiency and safety, while easily spraying waterborne material with Pro Xp WB manual electrostatic air spray and air-assist guns.



## Refill without shutting system down

Higher productivity is achieved by not needing to shut down the system to refill. The internal isolation pump automatically refills when the gun trigger is released.

## Unique operator control

The controller interface allows the operator to set system parameters and spray settings for precise process control.

## Market proven components

Comprised of Pro Xp WB guns, controller interface and other parts used in the marketplace for years, HydroShield brings together Graco durability into one system.

## Built-in safety

In addition to safety grounding components to protect the operator, the automatic refill feature reduces the need to open the isolation cabinet. Reduced operator interaction means a safer workplace.

## System configuration flexibility

HydroShield is available in a variety of configurations.

- Low pressure systems spray with Pro Xp WB air spray guns.
- High pressure systems include a Merkur pump and a Pro Xp WB AA gun for air assisted airless spraying.
- Options for gun hoses and gun flush box ready systems are also available.
- System configurations with color change valves and flushing sequence capability.

# Ease of painting without operator interaction with the supply system

## Low Pressure Feed System

Feed with a low pressure paint supply, including Triton, pressure pot or circulation system

## Controller Interface

Operate easily with system functions in one location and simple screens

## Light Tower

Indicates the fluid level in the internal pump. Settings may be customized but standard is:

**Green:** 50% full or more

**Yellow:** Below 50% full, but more than 10% full

**Red:** Below 10% full



## Isolation Cabinet

Constructed with durable materials and components for extended life

## Isolation Valve

Designed to allow the system to fill without concern of electrostatic breakdown

## Cleansing Solution

Ensures the isolation valve is cleaned of residual waterborne material

## Ground Rod

Protects the operator when opening the cabinet

## Isolation Pump

Contains 1150cc (39 oz) of material which refills for continuous spraying



## Air Assist Systems

Merkur 15:1 or 30:1 pump inside the cabinet boosts fluid pressure to the high pressure gun

## Service Components

Easy access and few parts make downtime minimal and maintenance simple

## Gun Flush Box Ready

Configurations are available to connect and control gun flush box operation



## Air Spray Systems

Low pressure configurations deliver a high finish quality with the Pro Xp WB gun

## Color Change Valves

Valves for color change and flush sequences mount on the side of the cabinet (see pg 7)

## Pro Xp Waterborne Gun

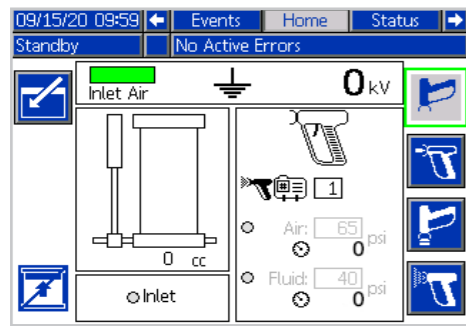
When the trigger is released the system is activated to fill (see page 11 for more information on waterborne guns)



# Spray settings in one location on simple screens making it easy to operate

## Home Screen

Information about the system status and operation modes

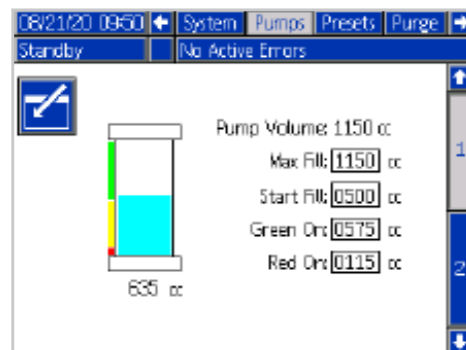


**System status** indicates pump fill level, inlet air, ground status and kV output.

**Do not fill mode** reduces material waste.

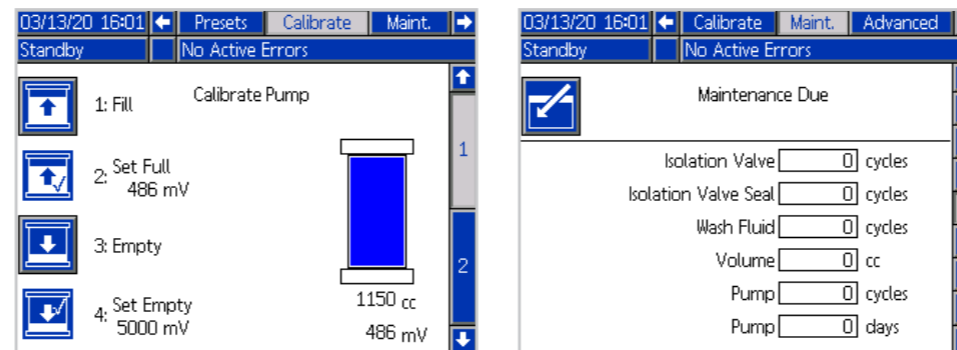
## Pump Fill Screen

Customize maximum volume and level of pump depletion before refill based on production needs. Light tower indicator can also be customized.



## Maintenance Screens

Keep your system running smoothly with calibration capability and maintenance schedules

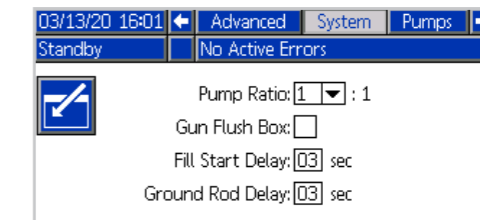


## Operation modes show:

- standby
- prime
- purge
- spray

## Delay Settings Screen

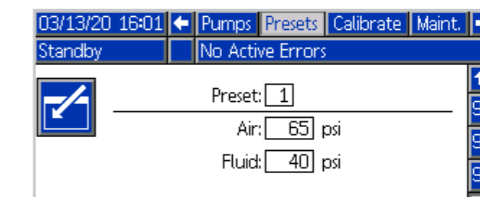
Customize fill delay and ground rod delay for painter spray techniques



**Preset status** indicates preset setting and actual air and fluid pressure

## Preset Screen

Configure as many as 99 presets for different gun air and fluid pressure needs



# Color change and flushing capability maximizes productivity and minimizes material waste



HydroShield Systems with color change valves allow for ease of managing multiple colors and precisely control flushing. Available as a low pressure or high pressure system.

HydroShield Color Change Systems are equipped with 6 valves, 3 valves for colors and 3 valves for flush sequences, including flush material, air push and a dump valve.

- Color change sequence are completed through the controller interface with either manual or preset purge operations
- Dump valve allows for minimal waste by recovering material in the isolation pump.
- Flushing sequences with flush material and air chop for complete rinse of the system.
- Color change valves can be added for manufacturing flexibility

## Home Screen

Visually indicates flush sequence action including changing pump colors for material contents

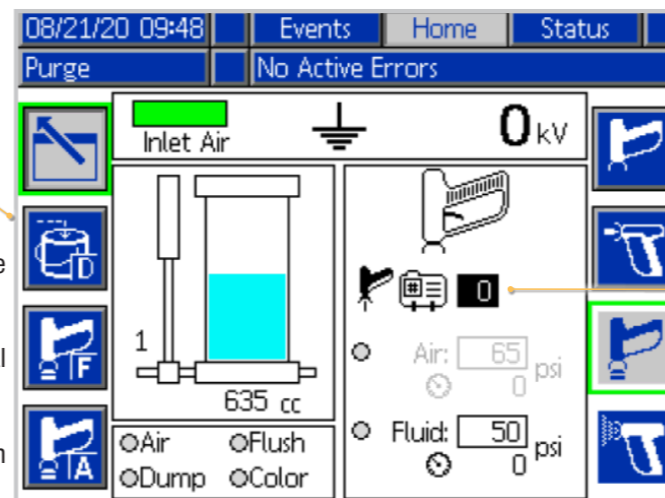
## Manual Purge

Operation by cycling between buttons for

Dump Valve

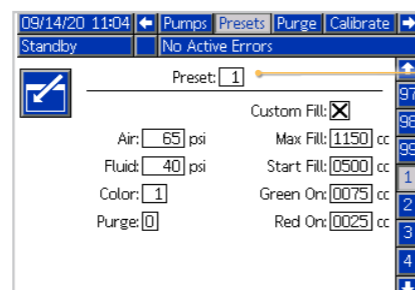
Flush Material

Air Push



## Purge Sequences

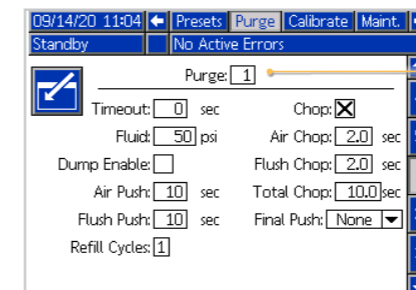
Can be set up and activated with presets



## 99 Spray Presets

Optimize spraying and flushing with customizable settings for

- Air and fluid pressure to the gun
- Color valve designation for the material
- Purge Profile for optimal flushing sequence
- Custom fill level of the internal isolation pump, including light tower indication



## Purge Profiles

Allow for 5 unique presets which designate

- Flush fluid pressure and time
- Number of cycles the internal isolation pump is refilled
- Ability to activate material dump from the isolation pump
- Sequence and time setup of flush chop with air and flush material

# Technical Specifications

## Air Spray

Maximum Fluid Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Maximum Fluid Inlet Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Maximum Air Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Minimum System Inlet Air Pressure.....	70 psi (0.48 MPa, 4.8 bar)
Maximum System Inlet Air Pressure.....	100 psi (0.7 MPa, 7.0 bar)
Isolation System Air Inlet Fitting .....	1/2 npt(m)
Isolation System Fluid Inlet Fitting.....	1/4 npsm(m)
Maximum Fluid Hose Length.....	100 ft. (30.5 m)
Maximum Fluid Operating Temperature.....	120°F (48°C)
External Power Requirements .....	100-240VAC, 50-60Hz
Weight.....	250 lb (113 kg)
Approvals .....	FM US, FMC, CE
Manual .....	<a href="#">3A7312</a>

## Air Assist

Maximum Fluid Working Pressure	
Merkur 15:1 System .....	1500 psi (10.4 MPa, 100 bar)
Merkur 30:1 System .....	3000 psi (20.7 MPa, 200 bar)
Maximum Fluid Inlet Pressure.....	100 psi (0.7 MPa, 7.0 bar)
Maximum Air Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Minimum System Inlet Air Pressure.....	70 psi (0.48 MPa, 4.8 bar)
Maximum System Inlet Air Pressure.....	100 psi (0.7 MPa, 7.0 bar)
Isolation System Air Inlet Fitting .....	1/2 npt(m)
Isolation System Fluid Inlet Fitting.....	1/4 npsm(m)
Maximum Fluid Operating Temperature.....	120°F (48°C)
External Power Requirements .....	100-240VAC, 50-60Hz
Weight.....	300 lb (136kg)
Approvals .....	FM US, FMC, CE
Manual .....	<a href="#">3A7370</a>

# Ordering Information

Part Number	Gun Included	Color Change and Flush Valves**	Gun Flush Box Equipped*	25 ft air and fluid hose	50 ft air and fluid hose
WMBL00	No				
WMBL01	No		X		
WMBL02	No	X			
WMBL03	No	X	X		
WMBL20	Air Spray			X	
WMBL40	Air Spray				X
WMBL41	Air Spray		X		X
WMBL42	Air Spray	X			X
WMBL43	Air Spray	X	X		X
WMBL60	Mold Release			X	
WMBL80	Mold Release				X

Part Number	Pump Included	Air Assist Gun included	Color Change and Flush Valves**	Gun Flush Box Equipped*	25 ft air and fluid hose	50 ft air and fluid hose
WMBH00	Merkur 30:1					
WMBH01	Merkur 30:1			X		
WMBH02	Merkur 30:1		X			
WMBH03	Merkur 30:1		X	X		
WMBH04	Merkur 15:1					
WMBH05	Merkur 15:1			X		
WMBH06	Merkur 15:1		X			
WMBH07	Merkur 15:1		X	X		
WMBH20	Merkur 30:1	X			X	
WMBH40	Merkur 30:1	X				X
WMBH41	Merkur 30:1	X		X		X
WMBH42	Merkur 30:1	X	X			X
WMBH43	Merkur 30:1	X	X	X		X
WMBH44	Merkur 15:1	X				X
WMBH45	Merkur 15:1	X		X		X
WMBH47	Merkur 15:1	X	X	X		X

\*Gun flush box must be purchased separately

\*\*Systems include 6 fluid valves (3 color and 3 flush). Additional valves may be added.

Part Number	Grounded Air Hose with stainless steel braid ground path (Red)
235070	25 foot (7.6 m)
235071	36 foot (11 m)
235072	50 foot (15 m)
235073	75 foot (23 m)
235074	100 foot (30.5 m)

Part Number	Air Assist WB Fluid Hose	Part Number	Air Spray WB Fluid Hose
25R012	25 foot (7.6 m)	25R002	25 foot (7.6 m)
25R013	36 foot (11 m)	25R003	36 foot (11 m)
25R014	50 foot (15 m)	25R004	50 foot (15 m)
25R015	75 foot (23 m)	25R005	75 foot (23 m)
25R016	100 foot (30.5 m)	25R006	100 foot (30.5 m)

Part Number	Description
25R200	HydroShield Cleansing Solution, 1 gallon bottle
26B400	Triton 1:1 Supply pump and Mount kit
26D031	1 Color Change Valve Kit
26D032	2 Color Change Valve Kit



# WB100™ & WB3000™ Isolation Systems

The dependable way to isolate waterborne coatings. Ideal for electrostatic spray booths.

## Standard Voltage Display

Easily monitor voltage for overall performance

## WB100 with Triton™ 1:1 Pump

Use for low pressure spraying with waterborne electrostatic air spray gun

## Material Supply Container

Easily remove and refill 5 gallon (19 liter) container

## Portable Cabinet

Move to various applications

## WB3000 with a Merkur® ES 30:1 Air-Assist Pump

Use for high pressure spraying with waterborne electrostatic air-assist gun



## Pro Xp WB Electrostatic Gun

Standard and smart models provide excellent material savings, outstanding ergonomics and superior finish quality.



# Ordering Information

Part Number	Description
<b>WB100</b>	
24N580	Waterborne isolation enclosure with standard electrostatic air spray gun L60T18, grounded air hose 235070 and waterborne fluid hose 24M732.
24P629	Waterborne isolation enclosure with smart electrostatic air spray gun L60M18, grounded air hose 235070 and waterborne fluid hose 24M732.
24P734	Waterborne isolation enclosure with mold release smart electrostatic gun L60M19, grounded air hose 235070 and waterborne fluid hose 24M732.
<b>WB3000</b>	
24N551	Waterborne isolation enclosure with standard electrostatic air-assist gun H60T18, grounded air hose 235070 and waterborne fluid hose 24M508.
24P632	Waterborne isolation enclosure with smart electrostatic air spray gun H60M18, grounded air hose 235070 and waterborne fluid hose 24M508.

# Technical Specifications

## WB100

Maximum Fluid Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Maximum Air Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Minimum Air Pressure at Gun Inlet.....	45 psi (0.32 MPa, 3.2 bar)
Maximum System Inlet Air Pressure.....	100 psi (0.7 MPa, 7.0 bar)
WB System Air Consumption.....	15–20 scfm (425–565 l/min)
Short Circuit Current Output.....	125 microamperes
Voltage Output .....	0.35 J with fluid hose 24M733 installed with Pro Xp WB gun 60 kV
Isolation Enclosure Air Inlet Fitting.....	1/4 npt
Triton Pump .....	Manual 309303
WB100 Manual .....	<a href="#">3A2496</a>

## WB3000

Maximum Fluid Working Pressure .....	3000 psi (21 MPa, 210 bar)
Maximum Air Working Pressure .....	100 psi (0.7 MPa, 7.0 bar)
Minimum Air Pressure at Gun Inlet.....	45 psi (0.32 MPa, 3.2 bar)
Maximum System Inlet Air Pressure.....	100 psi (0.7 MPa, 7.0 bar)
WB System Air Consumption.....	7.5–14 scfm (220–400 l/min)
Short Circuit Current Output.....	125 microamperes
Voltage Output .....	0.35 J with fluid hose 24M733 installed with Pro Xp WB gun 60 kV
Isolation Enclosure Air Inlet Fitting.....	1/4 npt
Merkur Pump.....	Manual 3A0732
WB3000 Manual .....	<a href="#">3A2497</a>

Reliably isolate and spray waterborne coatings at 100 or 3000 psi

# Pro Xp Waterborne (WB) Guns

Electrostatically spray waterborne materials with isolation systems

High transfer efficiency for low or high pressure applications



## Internal Power Supply

Improve operator mobility with no heavy cords to slow down spraying

## Light Trigger Pull

Reduces muscle strain and operator fatigue

## Alternator Speed Indicator

Changes color with electrostatic performance

## Control Knobs

Access and adjust easily

## Atomizing Air Control

Adjust from full to minimal to fit spraying needs

## Ergonomic Handle

Fits nicely in your hand for comfortable spraying

## Smart Controls

Available for all waterborne models

- kV, current and hertz
- Easy, low kV setting
- Digital diagnostic mode for troubleshooting

## Pro Xp WB models for HydroShield and WB isolation systems

### Air Spray Gun

- For low pressure spraying
- Delivers high quality finish
  - Sprays with various aircaps and nozzles



### Air-Assist Gun

- For high pressure spraying
- Delivers a fine finish
  - Sprays with AEF or AEM tip



### Mold Release Gun

- For low pressure spraying with an air assist spray tip
- Delivers fine atomized particles needed for mold release applications
  - Sprays with an AEM or AEF spray tip



# Ordering Information

## Pro Xp WB Air Spray Ordering Information

Part Number	Item	Description
L60T18	Pro Xp60 WB	Standard electrostatic air spray gun for waterborne coatings.
L60M18	Pro Xp60 WB	Smart electrostatic air spray gun for waterborne coatings.
L60M19	Pro Xp60 MR	Smart electrostatic air spray gun for waterborne mold release coating applications. Requires an AEM or AEF spray tip for operation.



## Aircap Selection Chart

Part Number (color)	Pattern Shape	Length in (cm)	Recommended Fluid Viscosity cp at 70°F (21°C)	Recommended Production Rates
24N477 (black)	Round end	15-17 (381-432)	Light to medium (20-70 cp)	Up to 15 oz/min (450 cc/min)
24W279 (green)	Round end	15-17 (381-432)	Light to medium (20-70 cp)	Up to 15 oz/min (450 cc/min)
24N438 (black)	Round end	15-17 (381-432)	Light to medium (20-70 cp)	Up to 15 oz/min (450 cc/min)
24N376 (black), 24N276 (blue) 24N277 (red), 24N278 (green)	Tapered end	17-19 (432- 483)	Light to medium (20-70 cp)	Up to 15 oz/min (450 cc/min)
24N274 (black)	Tapered end	12-14 (305-356)	Light to medium (20-70 cp)	Up to 15 oz/min (450 cc/min)

- Distance to target: 10 in (254 mm)
- Inlet air pressure: 50 psi (3.4 bar, 34 kPa)
- Fan air: adjusted for maximum width
- Fluid flow rate: 10 oz/min (300 cc/min)

## Nozzles Selection Chart

### Color Coded Fluid Nozzle for Standard Materials

Part Number	Color	Orifice Size - mm (inch)
24N619	Black	0.55 (0.022)
24N613	Black	0.75 (0.029)
25N895	Green	1.0 (0.042)
25N896	Gray	1.2 (0.047)
24N616	Black	1.5 (0.055)
25N897	Brown	1.8 (0.070)
24N618	Black	2.0 (0.080)

### Precision high wear nozzles (PHW) for Abrasive Materials

hardened SST seat and damage resistant SST tip; for standard coatings, abrasives, and metallics

Part Number	Color	Orifice Size - mm (inch)
25N831	Green	1.0 (0.042)
25N832	Gray	1.2 (0.047)
25N833	Black	1.5 (0.055)
25N834	Brown	1.8 (0.070)

For a complete list of parts and accessories, refer to the Pro Xp Waterborne Manual 3A2496.

# Technical Specifications

	Pro Xp60	Pro Xp60 AA
Maximum Voltage Output.....	60 kV	60 kV
Maximum Working Fluid Pressure.....	100 psi (7 bar, 0.7 MPa)	3000 psi (210 bar, 21 MPa)
Maximum Working Air Pressure .....	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)
Gun Weight (without hose)* .....	21 oz (600 g)	23 oz (660 g)
Gun Length.....	9.5 in (24 cm)	9.7 in (24.5 cm)
Recommended paint resistivity range .....	≤ 1 MΩ/cm	≤ 1 MΩ/cm
Fluid Inlet.....	3/8 npsm(m)	1/4-18 npsm(m)
Air Inlet.....	1/4 npsm(m) left handed thread	1/4 npsm(m) left handed thread
Instruction Manual .....	3A2496	3A2497

\*Standard gun model. For other models reference the instruction manual.

## Pro Xp WB Air-Assist Ordering Information

Part Number	Item	Description
H60T18	Pro Xp60 AA WB	Standard electrostatic air-assist gun for waterborne coatings.
H60M18	Pro Xp60 AA WB	Smart electrostatic air-assist gun for waterborne coatings.



## AEF Fine Finish Pre-Orifice Spray Tips

Recommended for high finish quality applications at low and medium pressures. AEF tips have a pre-orifice that assists in atomizing sheer thinning materials. Order desired tip, Part No. AEFxxx, where xxx = 3-digit number from the matrix below.

Orifice Size inch (mm)	Fluid Output fl oz/min (l/min)		Maximum Pattern Width at 12 inches (305 mm) inches (mm)					
	at 600 psi (41 bar, 4.1 MPa)	at 1000 psi (70 bar, 7.0 MPa)	6-8 (150-200)	8-10 (200-250)	10-12 (250-300)	12-14 (300-350)	14-16 (350-400)	16-18 (400-450)
0.008 (0.203)	8.5 (0.25)	11.0 (0.32)				608		
0.010 (0.254)	9.5 (0.28)	12.5 (0.37)	310	410	510	610	710	810
0.012 (0.305)	12.0 (0.35)	16.0 (0.47)	312	412	512	612	712	812
0.014 (0.356)	16.0 (0.47)	21.0 (0.62)	314	414	514	614	714	814
0.016 (0.406)	20.0 (0.59)	26.5 (0.78)	-	416	516	616	716	-

\* Tips are tested in water.

Fluid output (Q) at other pressures (P) can be calculated by this formula:  $Q = (0.041) (QT) \sqrt{P}$  where QT = fluid output (fl oz/min) at 600 psi from the above table for the selected orifice size.

## AEM Spray Tips

Recommended for high finish quality applications at low and medium pressures.

Order desired tip, Part No. AEMxxx, where xxx = 3-digit number from the matrix below.

Orifice Size inch (mm)	Fluid Output fl oz/min (l/min)		Maximum Pattern Width at 12 inches (305 mm) inches (mm)							
	at 600 psi (41 bar, 4.1 MPa)	at 1000 psi (70 bar, 7.0 MPa)	2-4 (50-100)	4-6 (100-150)	6-8 (150-200)	8-10 (200-250)	10-12 (250-300)	12-14 (300-350)	14-16 (350-400)	16-18 (400-450)
0.007 (0.178)	4.0 (0.1)	5.2 (0.15)	107	207	307	-	-	-	-	-
0.009 (0.229)	7.0 (0.2)	9.1 (0.27)	-	209	309	409	509	609	-	-
0.011 (0.279)	10.0 (0.3)	13.0 (0.4)	-	211	311	411	511	611	711	-
0.013 (0.330)	13.0 (0.4)	16.9 (0.5)	-	213	313	413	513	613	713	813
0.015 (0.381)	17.0 (0.5)	22.0 (0.7)	-	215	315	415	515	615	715	815
0.017 (0.432)	22.0 (0.7)	28.5 (0.85)	-	217	317	417	517	617	717	-
0.019 (0.483)	28.0 (0.8)	36.3 (1.09)	-	-	319	419	519	619	719	-
0.021 (0.533)	35.0 (1.0)	45.4 (1.36)	-	-	-	421	521	621	721	821
0.023 (0.584)	40.0 (1.2)	51.9 (1.56)	-	-	-	423	523	623	723	823
0.025 (0.635)	50.0 (1.5)	64.8 (1.94)	-	-	-	425	525	625	725	825
0.029 (0.736)	68.0 (1.9)	88.2 (2.65)	-	-	-	-	-	-	-	829
0.031 (0.787)	78.0 (2.2)	101.1 (3.03)	-	-	-	431	-	631	-	831
0.033 (0.838)	88.0 (2.5)	114.1 (3.42)	-	-	-	-	-	-	-	833
0.037 (0.939)	108.0 (3.1)	140.0 (4.20)	-	-	-	-	-	-	737	-
0.039 (0.990)	118.0 (3.4)	153.0 (4.59)	-	-	-	-	539	-	-	-

\* Tips are tested in water.

Fluid output (Q) at other pressures (P) can be calculated by this formula:  $Q = (0.041) (QT) \sqrt{P}$  where QT = fluid output (fl oz/min) at 600 psi from the above table for the selected orifice size.

# Pro Xp WBx External Charge Waterborne Air Spray Gun

Reduce material and environmental costs without extra equipment. Waterborne material stays grounded and is charged at tip of the gun with a probe, delivering a consistent, high quality finish.

## Two Probe Options for Different Needs

- Long probe provides the best transfer efficiency and wrap
- Short probe provides electrostatic charging in tight spaces

## Increased Operator Comfort

- Lightweight, compact design with ergonomic handle makes all-day spraying comfortable

## Optimized for Waterborne Paints

- Superior finish quality
- Designed so air caps stay clean longer

## Improved Operator Control

- Smart gun eliminates guesswork
- Control knobs make spraying adjustments easy



**180°**

**No Tool Probe Removal**  
Turn 180° to remove

**External Charging Probes**  
Designed for quick release and easy cleaning

## Ordering Information

### Pro Xp 40 kV WBx Gun Models

Part Number	Description
L40M28	Smart 40 kV air spray gun
L40T28	Standard 40 kV spray gun

### Probe Kit Ordering Information

Part Number	Description
25E639	Long probe kit includes 2 probes
25E664	Short probe kit includes 2 probes

## Technical Specifications

Maximum Voltage Output.....	40 kV
Maximum Working Fluid Pressure.....	100 psi (7 bar, 0.7 MPa)
Maximum Working Air Pressure.....	100 psi (7 bar, 0.7 MPa)
Gun Weight (without hose)* .....	19.8 oz (560 g)
Gun Length.....	8.7 in (22 cm)
Recommended paint resistivity range .....	≤ 1 MΩ/cm
Fluid Inlet.....	3/8 npsm(m)
Air Inlet.....	1/4 npsm(m) left handed thread
Instruction Manual .....	<b>3A4795</b>

For a complete list of parts and accessories, refer to the Pro Xp WBx Waterborne Manual **3A4795**

\*Standard gun model. For other models reference the instruction manual.

# Have Questions...

## Contact Us

**Call 877-84GRACO  
(1-877-844-7226)**

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