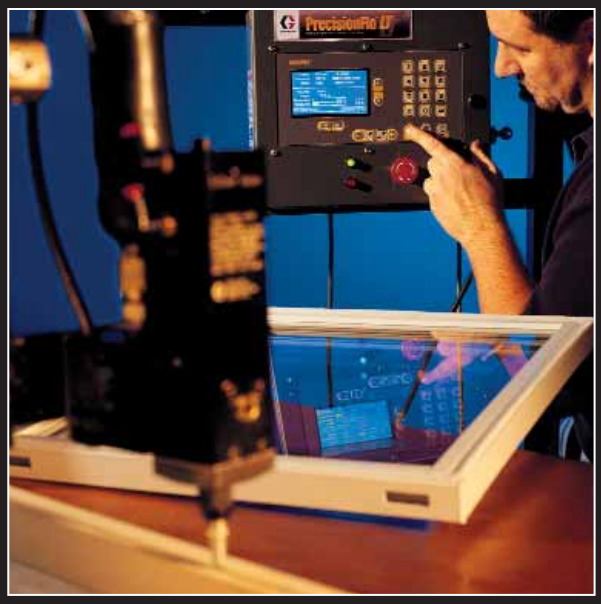
Fluid Metering Systems

Closed Loop Solutions • Accessories



Buyer's Guide and Specifications

- Sealant and Adhesive Solutions for Industrial and Automotive Applications

PROVEN QUALITY. LEADING TECHNOLOGY.

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Fluid Metering Systems

FLUID METERING SYSTEMS

GRACO TRADEMARKS AND PRODUCTS

The following is a list of Graco names and trademarks mentioned in this catalog:

- AutoPlus™ Valves
- EasyKey™
- EnDure™ Dispense Valve
- Gear Meters
- PrecisionFlo™
- PrecisionMix®
- PrecisionSwirl™
- Ultra-Lite™ Flow Gun
- UniDrum™ Bulk Supply System
- Viscon®

PrecisionFlo LT

High Performance Metering System

PrecisionFlo LT is an electronically-controlled fluid metering system that provides precise real-time, closed-loop metering and dispensing of ambient and hot melt sealants and adhesives for automotive and industrial applications.

Features and Benefits

- Consistent bead dispensing
- Maintain better control of your process
- Modular design for easy integration into new or existing plants
- Reduce maintenance, downtime and manufacturing costs
- Increase productivity and improve quality
- Simple to use, reliable and affordable

Key Applications

- Bead dispensing
- Gasketing
- Seam sealing
- Hem flange
- Sound deadening
- Body panel reinforcement
- Bonding
- Profile wrapping
- Cable filling

Key Materials

- Polyvinyl Chlorides (PVC)
- Epoxy
- Liquid applied sound deadeners
- Silicones
- Adhesives
- Polyurethanes

PrecisionFlo LT control with color touch screen interface

PrecisionFlo linear servo meter

PrecisionFlo LT

High Performance Metering System

Technical Specifications

Minimum flow rates*	38 cc/minute with G3000HR high resolution spur gear flowmeter
	75 cc/minute with G3000 spur gear flowmeter
	25 cc/minute with HG6000HR high resolution helical flowmeter
	50 cc/minute with HG6000 helical flowmeter (ambient/heated)
Maximum flow rates*	1900 cc/minute with G3000HR high resolution spur gear flowmeter
	3800 cc/minute with G3000 spur gear flowmeter
	3750 cc/minute with HG6000HR high resolution helical flowmeter
	7500 cc/minute with HG6000 helical flowmeter (ambient/heated)
Maximum fluid working pressure	
feed pressure to fluid plate	5000 psi (345 bar, 34.5 MPa)
at regulator outlet	4500 psi (310 bar, 31 MPa)
at regulator outlet with electric heat components	3500 psi (241 bar, 24 MPa)
Minimum fluid working pressure	
at regulator outlet	100 psi (7.0 bar, 0.7 MPa)
Air supply pressure range	60-120 psi
	(4.1- 8.3 bar, 0.4 - 0.8 MPa)
	filtration required
Fluid filtration required	30 mesh (500 micron) minimum
Viscosity range of fluids*	50 to 50000 cps with G3000 spur gear flowmeter
	30 to 1000000 cps with HG6000 helical flowmeter
Minimum dispensed shot size*	1.2 cc with G3000HR high resolution spur gear flowmeter
	2.4 cc with G3000 spur gear flowmeter
	6 cc with HG6000 helical flowmeter
	3 cc with HG6000HR high resolution helical flowmeter
V/P output	1 to 5 VDC provide 0 to 100 psi (68 MPa, 6.8 bar)
Wetted parts meters and fluid panels	303, 304, 321, 17- 4 stainless steel; tungsten carbide,
	PTFE, steel, fluoroelastomer
Power requirements	Full Load Amps - 1, Fused Amps - 2
Power supply voltage range	
120 VAC nominal	93 - 264 VAC, 50-60 Hz., single phase
Operating temperature range	
Controller	40° - 122° F (4° - 50° C)
Fluid panel	40° - 400° F (4° - 204° C)
Operating humidity range	0 - 90% non-condensing

*Flow rates and viscosities are general estimates. Flow rates drop as viscosity increases. Fluids are expected to shear under pressure. New applications or fluids should always be tested to determine proper line sizes and equipment selections.

See your Graco Authorized distributor for other capabilities.

PrecisionFlo LT
High Performance Metering System

Regulator Plates

	Cartridge Regulator	Mastic Regulator
Regulator Manual	308647	307517
Weight - No flowmeter	25.5 lbs (11.6 kg)	33 lbs (15 kg)
Weight - W/G3000 spur gear flowmeter	30 lbs (13.6 kg)	N/A
Weight - HG6000 Helical flowmeter	40 lbs (18 kg)	48 lbs (22 kg)
Fluid Port Inlet	HG6000 Helical flowmeter 3/4 in NPT(f) G3000 spur gear flowmeter 1/4 in NPT (f)	3/4 in npt(f)
Fluid Port Outlet	1/2 in npt(f)	3/4 in npt(f)
Maximum Inlet Pressure		
With G3000/G3000HR flowmeter	4000 psi (28 MPa, 276 bar)	
With Helical (HG6000/HG6000HR) flowmeter	5000 psi (41 MPa, 414 bar)	
Without flowmeter	6000 psi (34.4 MPa, 344 bar)	
Maximum Working Pressure*	4500 psi (31 MPa, 310 bar)	Ambient 4500 psi (31 MPa, 310 bar) Heated 3500 psi (24 MPa, 241 bar)
Air Supply	1/4 in npt(f)	1/4 in npt(f)
Maximum Air Pressure	100 psi (0.7 MPa, 7.0 bar)	100 psi (0.7 MPa, 7.0 bar)
Minimum Air Pressure	60 psi (0.4 MPa, 4.1 bar)	60 psi (0.4 MPa, 4.1 bar)
Range Operating Temperature	Ambient 40° - 120°F (4°C - 50°C)	Heated 40° - 400°F (4°C - 204°C) Ambient 40° - 120°F (4° - 60°C)
Minimum Flow Rate - G3000 spur gear flowmeter	50 cc/min	N/A
Minimum Flow Rate - HG6000 Helical flowmeter	100 cc/min	100 cc/min

Air outlets, open and close to dispense valve ..... 5/32 in or 4 mm tube fittings

Electric Power Requirements ..... 24 VDC, from PrecisionFlo LT control

Height ..... 8 in (203 mm) (varies with model)

Fluid Specifications ..... For use when dispensing fluids that meet at least one of the following conditions for non-flammability:

- The fluid has a flash point above 140°F (60°C) and a maximum organic solvent concentration of 20% by weight, per ASTM Standard D93.
- The fluid does not sustain burning when tested per ASTM Standard D4206 Sustained Burn Test.

Ambient Air Temperature Range ..... 40° to 120°F (5° to 50°C)

Noise Data – Continuous operator (full current) ..... 70 dBA

Dispensing device exhaust (with muffler, peakhold) ..... 84 dBA

Model Selection Chart

Model	Power	Number of Programmable Style(s)	Data Management (Job/Fault logs)
Standard	On/Off Rocker Switch	1 programmable style	1000/100 downloadable
Advanced	Rotary Disconnect	16 programmable styles	1000/100 downloadable, 8/8 displayed
Automation Integrated	N/A*	16 programmable styles	1000/100 downloadable

* This model offers the same features as the Advanced Model, but does not have an electrical enclosure, rotary disconnect or EasyKey interface. It is protocol ready as ModBus RTU slave with RS 232.

PrecisionFlo LT
High Performance Metering System

Ordering Information

Code	Code Description	Option	Description	Selected Option
LT-A			PrecisionFlo LT	
A	Control Unit			
		1	Standard Control Unit	☐
		2	Advanced Control Unit	☐
		3	Robot Integrated Unit	☐
B	Operations Cable			
		1	High Flex 20 ft (64 cm)	☐
		2	High Flex 60 ft (152 cm)	☐
		3	High Flex 125 ft (318 cm)	☐
		4	Medium Flex 20 ft (64 cm)	☐
		5	Medium Flex 60 ft (152 cm)	☐
		6	Medium Flex 125 ft (318 cm)	☐
		7	Low Flex 20 ft (64 cm)	☐
		8	Low Flex 60 ft (152 cm)	☐
		9	Low Flex 125 ft (318 cm)	☐
		N	None	☐
C	Fluid Plate (Regulator/Flowmeter)			
		1	Cartridge/None	☐
		2	Cartridge/G3000	☐
		3	Cartridge/G3000HR	☐
		4	Cartridge/Helical	☐
		5	Cartridge/High Resolution Helical	☐
		6	Mastic/None	☐
		7	Mastic/Helical	☐
		8	Mastic/High Resolution Helical	☐
		9	Heated Mastic/None	☐
		10	Heated Mastic/Heated Helical	☐
D	Language			
		1	English	☐
		2	French	☐
		3	German	☐
		4	Italian	☐
		5	Japanese	☐
		6	Korean	☐
		7	Portuguese	☐
		8	Spanish	☐

Configured product:

PFLO LT–A- ___ - ___ - ___ - ___
A B C D

PrecisionFlo LT
High Performance Metering System

Recommended Spare Parts

Accessories

234282 Advanced control manual set in binder

234283 Standard control manual set in binder

117782 Power Supply

246496 Board, Circuit Assembly, High Temp. Press Sensor

246517 Board, Circuit Assembly, Ambient Press Sensor

115216 Fuses

117764 Sensor, Pressure, Assembly, High Temp.

246786 Sensor, Pulse, Helical

239717 Sensor, Flow, Ambient

198082 Sensor, Pressure, Ambient

118342 Kit, Accessory, Communications Cable

195942 V/P

Control Parts and Accessories

253619 PFLO LT Control Board Assembly, Adv.

253620 PFLO LT Control Board Assembly, Std.

117688 Kit, Accessory, Interface, & Board, Adv.

117788 Kit, Accessory, Interface & Board, Std.

117790 Power Supply, 5V Inverter

117818 Key, Replacement

116728 Key, Set-Up

118329 Ethernet Kit

117762 LED, Red

117763 LED, Green

117689 E-Stop

116320 Power Switch Rocker

116653 Rotary Disconnect

253611 Chip Set, CNTRL & Display, Adv.

253614 Chip Set, CNTRL & Display, Std.

234625 6 Relay Control Box – This is a separate control box that connects the PrecisionFlo LT I/O cable to a 120V robot I/O cable.

234626 9 Relay Control Box – This is a separate control box that connects the PrecisionFlo LT I/O cable to a 120V robot I/O cable. Includes all connections of 234625 and in addition connections for Minimum volume dispensed, E-stop switch and Fault present.

234627 DeviceNet Control Box – This is a separate control box that connects the PrecisionFlo LT I/O cable to a DeviceNet robot I/O cable.

234976 PrecisionFlo LT/Plus Combo Box – This is a separate control box that connects the PrecisionFlo LT I/O cable to an existing PrecisionFlo Plus I/O cable. It should be used when upgrading an existing PrecisionFlo Plus controller to a PrecisionFlo LT.

Operation Cables

198731 Cable, High Flex Operation, 20 ft (6.1 m)

198296 Cable, High Flex Operation, 60 ft (18.3 m)

198732 Cable, High Flex Operation, 125 ft (38.1 m)

117751 Cable, Standard Flex Operation, 20 ft (6.1 m)

117752 Cable, Standard Flex Operation, 60 ft (18.3 m)

117753 Cable, Standard Flex Operation, 125 ft (38.1 m)

117747 Cable, Low Flex Operation, 20 ft (6.1 m)

117748 Cable, Low Flex Operation, 60 ft (18.3 m)

117749 Cable, Low Flex Operation, 125 ft (38.1 m)

234191 Cable, Heated Pressure Sensor

117774 Cable, robot analog, 40 ft (12.2 m)

120182 Cable, robot analog, 100 ft (30.5 m)

118342 Interface cable kit, PrecisionFlo LT to personal computer

Filters and Accessories

C59725 Dual filter bank with gauges, ball and drain valves, 30 mesh element, 5000 psi, (345 bar, 34.5 MPa)1 in

C59547 Single filter kit, gauges, ball and drain valves, 30 mesh element

C58997 Fluid filter, polyethylene support, no element from above kits

515222 30 mesh filter screen, for C58997 filter

157630 Spring, filter

521477 Fluid shutoff valve, 1 in npt(f), 5,000 psi (345 bar, 34.5 MPa) CS, fluoroelastomer

210657 Ball valve, high pressure, 1 in npt(m), 5000 psi, (345 bar, 34.5 MPa) CS, fluoroelastomer

210658 Ball valve, high pressure, 3/8 in npt(m), 5000 psi, (345 bar, 34.5 MPa) CS, fluoroelastomer

210659 Ball valve, high pressure, 3/8 in x 1 in npt(m), 5000 psi, (345 bar, 34.5 MPa) CS, fluoroelastomer

234967 Dual air filter assembly, 5/.3 micron filter to be used for inlet air to fluid plate

PrecisionFlo LT
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Recommended Spare Parts, continued

Fluid Plate Parts and Accessories

246642 Mastic regulator, 3/4 in, air operated, for ambient fluid plates with transducer ports

246643 Mastic regulator, 3/4 in, air operated, for heated fluid plates with transducer ports

244734 Cartridge regulator with transducer ports for fluid plates

238748 Repair kit, cartridge regulator

238747 Fluid diaphragm repair kit, cartridge regulator

233131 Fluid section repair kit, mastic fluid regulator

246190 Flowmeter, HG6000 ambient helical with sensor

234134 Flowmeter, HG6000 ambient helical, without sensor

246652 Flowmeter, HG6000HR high resolution helical, with sensor

246650 Flowmeter, HG6000HR high resolution helical, without sensor

246340 Flowmeter, HG6000HG heated helical, with sensor

246191 Flowmeter, HG6000HR heated helical, without sensor

246786 Sensor, HG6000 helical flowmeter, all models

239716 Flowmeter assembly, G3000 spur gear flowmeter and sensor

239719 Flowmeter, G3000 spur gear flowmeter, does not include sensor

244292 Flowmeter assembly, G3000HR high resolution spur gear flowmeter and sensor

244291 Flowmeter, G3000HR high resolution spur gear flowmeter, does not include sensor

239717 Sensor, G3000 and G3000HR spur gear flowmeter

198082 Pressure sensor, outlet for ambient regulators

117764 Pressure sensor, outlet for heated regulators

198579 Kit, cable, for adding HG6000 helical flowmeter

198578 Kit, cable, for adding G3000 spur gear flowmeter

15D877 Mass flowmeter, non-intrusive

246596 Kit, HG6000 helical gear set repair (standard and heated)

246949 Kit, HG6000HR helical gear set repair (high resolution)

Fluid Plates

234168 Fluid Plate, Ambient Cartridge Regulator with no flowmeter

234165 Fluid Plate, Ambient Cartridge Regulator with a G3000 spur gear flowmeter

234166 Fluid Plate, Ambient Cartridge Regulator with a G3000HR high resolution spur gear flowmeter

234167 Fluid Plate, Ambient Cartridge Regulator with HG6000 helical flowmeter

234195 Fluid Plate, Ambient Cartridge Regulator with HG6000HR high resolution helical flowmeter

234170 Fluid Plate, Ambient Mastic Regulator with no flowmeter

234169 Fluid Plate, Ambient Mastic Regulator with HG6000 helical flowmeter

234196 Fluid Plate, Ambient Mastic Regulator with HG6000HR high resolution helical flowmeter

234193 Fluid Plate, Heated Mastic Regulator with no flowmeter

234194 Fluid Plate, Heated Mastic Regulator with HG6000 helical flowmeter

Applicators and Repair Kits

918533 Dispense Valve, Extrusion, Ambient, Ball Seat

918535 Dispense Valve, Extrusion, Ambient, Snuff Back

918537 Dispense Valve, High Viscosity

918539 Dispense Valve, Extrusion, High Flow, High Viscosity

918623 Compact Dispense Valve, Extrusion

918625 Compact Dispense Valve, Spray

233670 AutoPlus SAE valve

244930 Manifold, Fluid Inlet, AutoPlus SAE valve

243482 1K Ultra-Lite valve, 45° outlet for orbiter

243666 1K Ultra-Lite valve

965766 1K Ultra-Lite valve, machine mount, SST wetted parts

965786 1K Ultra-Lite valve, machine mount, Aluminum wetted parts

244535 EnDure Valve replacement, no manifold

244910 EnDure Valve with ambient or temperature conditioning manifold

244961 EnDure Valve with 120 volt electric heat (200°F/93.3°C)

244962 EnDure Valve with 230 volt electric heat (200°F/93.3°C)

239807 Needle assembly, AutoPlus SAE valve

233671 Seat, AutoPlus SAE valve

189970 Gasket, AutoPlus SAE valve, seat

192443 Gasket, AutoPlus SAE valve, inlet

114134 Gasket, AutoPlus SAE valve, inlet air

570267 Fluid Section Seal kit, 1K Ultra-Lite valve

570268 Rebuild kit, 1K Ultra-Lite valve

15E012 Standard seal kit, EnDure valve

15E011 High temperature seal kit, EnDure valve

104661 Quick exhaust valve, 1/8 in npt(f)

244021 Cable kit, 8 pin connector and 10 ft cable for 240 VAC valves

PrecisionFlo LT
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Recommended Accessories for PrecisionSwirl

241658 **Orbital Applicator Module Kit (wide pattern)**
Swirl orbiter (243403), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

234029 **Orbital Applicator Module (narrow pattern)**
Swirl orbiter (243402), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

Swirl Dispense Tips

Part No.	Size	Part No.	Size
918610	0.012	**918609**	0.033
918601	0.015	**918611**	0.035
918602	0.017	**918612**	0.039
918603	0.019	**918613**	0.043
918604	0.021	**918614**	0.047
918605	0.023	**241813**	0.051
918606	0.025	**241814**	0.055
918607	0.027	**241816**	0.070
918608	0.030		

Dispense Valves

For 1K Ultra-Lite straight connection, order:
243666 1K Ultra-Lite Dispense Valve, straight

For 1K Ultra-Lite 45 deg connection, order:
243482 1K Ultra-Lite Dispense Valve, 45 deg

For Endure straight connection, order:
244910 Endure (ambient or water conditioned)
197504 Straight flange adapter, EnDure

For Endure 45 deg connection, order:
244910 Endure (ambient or water conditioned)
198323 Alternative orbiter nut
197842 45 deg nosepiece
198324 Nosepiece to orbiter fitting

Swirl Dispenser

243402 Tool-Mounted Dispensers
With narrow pattern coupler (0.012 in [0.3 mm])

243403 Tool-Mounted Dispensers
With wide pattern coupler (0.028 in [0.7 mm])

Motor Extension Cable
233123 15 ft (4.6 m)
233124 9 ft (2.7 m)
233125 6 ft (1.8 m)
Connects PrecisionSwirl orbital applicator to motor cable.

Motor Cable

617870 **Motor Cable, 55 ft (16.8 m)**
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

198730 **Motor Cable, 110 ft (33.6 m)**
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

Controller

918616 **PrecisionSwirl Control Assembly**
Bare model only. Order appropriate cables to connect to dispenser.

617829 **Robot Interface Cable, 40 ft (12.2 m)**
Connects PrecisionSwirl control panel to robot control panel. Accepts a 0-10 volt signal to adjust RPM.

Swirl Dispenser Accessories

196039 **Small Profile Retainer**
Replaces standard nozzle guard. Allows easier access to tight locations.

196160 **Teach Adapter**
Replaces nozzle guard during robot path teaching.

15D259 **Swirl Control Cable Support**
Add to the orbiter assembly if extreme stresses are being applied to the motor control cable.

Repair Kits

241479 **Swirl Motor Assembly**
Order bearing and coupler separately.

918620 **Swirl Tube Repair Kit**
Includes coupler assembly, O-ring, tube assembly and bellows.

241569 **Tool Kit**
Includes various tools required for servicing the Swirl applicator and tube bearing.

241466 **Tube Bearing Wide Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

243256 **Tube Bearing Narrow Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

246292 **Tube Support Bearing Repair Kit**
With wide-pattern coupler. Includes 241466, O-ring, seal, and tube assembly.

246293 **Tube Support Bearing Repair Kit**
With narrow-pattern coupler. Includes 243256, O-ring, seal, and tube assembly.

15B619 **Bellows Seals**
Qty: 1 – fluoroelastomer

246290 **Bellows Seal Kit**
Qty: 12 – fluoroelastomer

PrecisionFlo LT
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Recommended Accessories

Extruding Applications

198316 Nozzle nut, 1/8 in npt for AutoPlus SAE valve

198391 Tip nut, AutoPlus SAE valve, fan or stream

161505 Dispense nozzle, steel, 1/8 in npt(m), 0.094 in (2.39 mm), 1.5 in (36.5 mm) long

164799 Dispense nozzle, steel, 1/8 in npt(m), 0.055 in (1.4 mm), 1.72 in (43.7 mm) long

C17009 Dispense nozzle, steel, 1/8 in npt(m), 0.125 in (3.18 mm), 0.8125 in (20.64mm) long

C01025 Flat nozzle, steel, 1/8 in npt, 0.09 in x 0.37 in (2.38 mm x 9.40 mm) ribbon hardened tip, 1.93 in (49.21 mm) long

182xxx Airless 182xxx fan tips for AutoPlus SAE valve; refer to manual form number 308813

270025 Streaming tip, 0.025 (0.64 mm) orifice

270027 Streaming tip, 0.027 (0.69 mm) orifice

270029 Streaming tip, 0.029 (0.74 mm) orifice

270035 Streaming tip, 0.035 (0.89 mm) orifice

270037 Streaming tip, 0.037 (0.94 mm) orifice

270039 Streaming tip, 0.039 (0.99 mm) orifice

270041 Streaming tip, 0.041 (1.04 mm) orifice

270043 Streaming tip, 0.043 (1.09 mm) orifice

270059 Streaming tip, 0.059 (1.50 mm) orifice

C08224 Shower tip, 6 orifices, 0.021 in (0.53 mm) orifice size

PrecisionFlo LT
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Dispense Hose and Feed Hose

Dispense Hose (from fluid plate to valve) and Feed Hose (from pump to fluid plate) Selection

Part Number	Type	Material	ID inches (mm)	Length (ft) feet (m)	Coupling	Pressure psi (MPa, bar)
109150	Dispense	Buna-N	0.25 (6)	6 (1.8)	1/4M	5000 (34.5, 345)
H52506	Dispense	Nylon	0.25 (6)	6 (1.8)	1/4F	5600 (38.6, 386)
685612	Dispense	PTFE	0.25 (6)	6 (1.8)	1/4M SS	4000 (27.6, 276)
H52510	Dispense	Nylon	0.25 (6)	10 (3)	1/4F (npt)	5600 (38.6, 386)
109151	Dispense	Buna-N	0.25 (6)	12 (3.7)	1/4M	5000 (34.5, 345)
685614	Dispense	PTFE	0.25 (6)	15 (4.6)	1/4M SS	4000 (27.6, 276)
H43803	Dispense	Nylon	0.375 (10)	3 (0.9)	3/8F (npt)	4500 (31, 310)
109163	Dispense	Buna-N	0.375 (10)	6 (1.8)	3/8M	4000 (27.6, 276)
H43806	Dispense	Nylon	0.375 (10)	6 (1.8)	3/8F (npt)	4500 (31, 310)
H53806	Dispense	Nylon	0.375 (10)	6 (1.8)	3/8M	5600 (38.6, 386)
H53810	Dispense	Nylon	0.375 (10)	10 (3)	3/8F (npt)	5600 (38.6, 386)
109165	Dispense	Buna-N	0.375 (10)	15 (4.6)	1/4M	4000 (27.6, 276)
685602	Dispense	PTFE	0.375 (10)	15 (4.6)	3/8M SS	4000 (27.6, 276)
626720	Dispense or Feed	Buna-N*	0.50 (13)	5 (1.5)	1/2M	5000 (34.5, 345)
215445	Dispense or Feed	Buna-N	0.50 (13)	5 (1.5)	1/2M	5250 (36.2, 362)
626723	Dispense or Feed	Buna-N*	0.50 (13)	6 (1.8)	1/2M	5000 (34.5, 345)
116760	Dispense or Feed	Neoprene	0.50 (13)	6 (1.8)	7/8F	4000 (27.6, 276)
626721	Dispense or Feed	Buna-N*	0.50 (13)	10 (3)	1/2M	5000 (34.5, 345)
215441	Dispense or Feed	Buna-N	0.50 (13)	10 (3)	1/2M	5250 (36.2, 362)
116761	Dispense or Feed	Neoprene	0.50 (13)	10 (3)	7/8F	4000 (27.6, 276)
H55010	Dispense or Feed	Nylon	0.50 (13)	10 (3)	1/2M	5600 (38.6, 386)
C12380	Dispense or Feed	Buna-N	0.50 (13)	15 (4.6)	1/2M	6015 (41.5, 415)
511381	Dispense or Feed	PTFE	0.50 (13)	15 (4.6)	1/2M SS	5000 (34.5, 345)
626722	Dispense or Feed	Buna-N*	0.50 (13)	25 (7.6)	1/2M	5000 (34.5, 345)
215443	Dispense or Feed	Buna-N	0.50 (13)	25 (7.6)	1/2M	5250 (36.2, 362)
H45025	Dispense or Feed	Nylon	0.50 (13)	25 (7.6)	1/2M	4500 (31, 310)
H55025	Dispense or Feed	Nylon	0.50 (13)	25 (7.6)	1/2M	5000 (34.5, 345)
215444	Dispense or Feed	Buna-N	0.50 (13)	50 (15.2)	1/2M	5250 (36.2, 362)
H55050	Dispense or Feed	Nylon	0.50 (13)	50 (15.2)	1/2M	5600 (38.6, 386)
215241	Feed	Buna-N	0.75 (19)	6 (1.8)	3/4M	5000 (34.5, 345)
685605	Feed	PTFE	0.75 (19)	6 (1.8)	3/4M SS	4000 (27.6, 276)
215238	Feed	Buna-N	0.75 (19)	10 (3)	3/4M	5000 (34.5, 345)
626724	Feed	Buna-N*	0.75 (19)	10 (3)	3/4M	5000 (34.5, 345)
685606	Feed	PTFE	0.75 (19)	10 (3)	3/4M SS	4000 (27.6, 276)
215239	Feed	Buna-N	0.75 (19)	15 (4.6)	3/4M	5000 (34.5, 345)
626725	Feed	Buna-N*	0.75 (19)	15 (4.6)	3/4M	5000 (34.5, 345)
685607	Feed	PTFE	0.75 (19)	15 (4.6)	3/4M SS	4000 (27.6, 276)
215240	Feed	Buna-N	0.75 (19)	25 (7.6)	3/4M	5000 (34.5, 345)
626726	Feed	Buna-N*	0.75 (19)	25 (7.6)	3/4M	5000 (34.5, 345)
511387	Feed	PTFE	0.75 (19)	25 (7.6)	3/4M SS	4000 (27.6, 276)
C12217	Feed	Neoprene	1.00 (25)	15 (4.6)	1 npt SS	5000 (34.5, 345)
C12218	Feed	Neoprene	1.00 (25)	20 (6.1)	1 npt SS	5000 (34.5, 345)
521973	Feed	Buna-N	1.25 (32)	10 (3)	1-1/4M	5000 (34.5, 345)
51B352	Feed	Buna-N	1.25 (32)	15 (4.6)	1-1/4M	5000 (34.5, 345)

*Dried hose capped with desiccant

PrecisionFlo LT
High Performance Metering System

240 Volt Electric Heat Hose Selection

Heating element - fiberglass insulated, 230/240 VAC, 50 watts per hose foot

Part Number	Type	Material	ID inches (mm)	Length feet (m)	Coupling	Pressure psi (MPa, bar)
115875	Dispense or Feed	PTFE	0.50 (13)	6 (1.8)	7/8-14 JICF SS	3000 (20.7, 207)
115876	Dispense or Feed	PTFE	0.50 (13)	10 (3)	7/8-14 JICF SS	3000 (20.7, 207)
115903	Dispense or Feed	PTFE	0.62 (16)	6 (1.8)	1 1/16-12 JICF SS	3000 (20.7, 207)
115880	Dispense or Feed	PTFE	0.62 (16)	10 (3)	1 1/16-12 JICF SS	3000 (20.7, 207)
115885	Feed	PTFE	0.87 (22)	10 (3)	1 5/16-12 JICF SS	3000 (20.7, 207)
115887	Feed	PTFE	0.87 (22)	20 (6.1)	1 5/16-12 JICF SS	3000 (20.7, 207)
117821	Feed	PTFE	1.13 (29)	10 (3)	1 5/8-12 JICF SS	3000 (20.7, 207)
117882	Feed	PTFE	1.13 (29)	15 (4.6)	1 5/8-12 JICF SS	3000 (20.7, 207)

PrecisionFlo LT
High Performance Metering System

Temperature Conditioning Equipment

Automotive Temperature Control Units

118404 HO3000 heat only 480/60 GND (standalone)*

118406 SC2000 heat/cool 480/60 GND (standalone)*

Industrial Temperature Control Unit

118405 HO1800 heat only 120/60 GND (standalone)*

Heat Transfer Options

233731 1 in (25 mm) x 20 ft (6.1 m) 5000 psi (345 bar, 34.5 MPa) water jacketed hose assembly featuring aluminum blocks and one 4-pass plastic manifold

117349 2-in (50 mm) diameter x 30 in (762 mm) length heat exchanger assembly

15D509 3-in (75 mm) diameter x 36 in (914 mm) length heat exchanger assembly

RTD & Extension Cable

198457 RTD 1/8 x 13/16 x1/8 in MPT Picofast connector

198458 RTD cable x A18

198490 70 ft (21.3 m) extension cable with 3-prong mini round connector

120407 RTD sensor

Fluid Plate Water Jacketed Insulated Covers

118407 Water jacketed insulated cover for 1/2 in (13 mm) cartridge regulator

118408 Water jacketed insulated cover for 3/4 in (19 mm) mastic regulator

118410 Water jacketed insulated cover for G3000 flowmeter

118411 Water jacketed insulated cover for Graco helical gear meter

Dispense Hose Covers

118440 5.5-in (140 mm) diameter x 24 in (610 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

118441 5.5-in (140 mm) diameter x 36 in (914 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

118442 5.5-in (140 mm) diameter x 48 in (1219 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

118443 5.5-in (140 mm) diameter x 60 in (1524 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

116770 5.5-in (140 mm) diameter x 72 in (1829 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

116769 5.5-in (140 mm) diameter x 120 in (3048 mm) length water jacketed blue Velcro closure cover with 4 clear tubes

Insulation Only Covers for Electrical Heat Option

118409 Insulation only cover for 3/4 in (19 mm) electrically heated mastic regulator

118412 Insulation only cover for electrically heated helical gear meter

Graco Viscon High Output Fluid Heating Systems

245867 Fluid Heater, Viscon HP, 120 VAC, 2300 watts, 19.2 amps

245869 Fluid Heater, Viscon HP, 240 VAC, 4000 watts, 16.7 amps

246276 Fluid Heater, Viscon HP, 380 VAC, 4000 watts, 10.5 amps

245870 Fluid Heater, Viscon HP, 480 VAC, 4000 watts, 8.3 amps

192585 Mounting Bracket, US version

183982 Mounting Bracket, European version

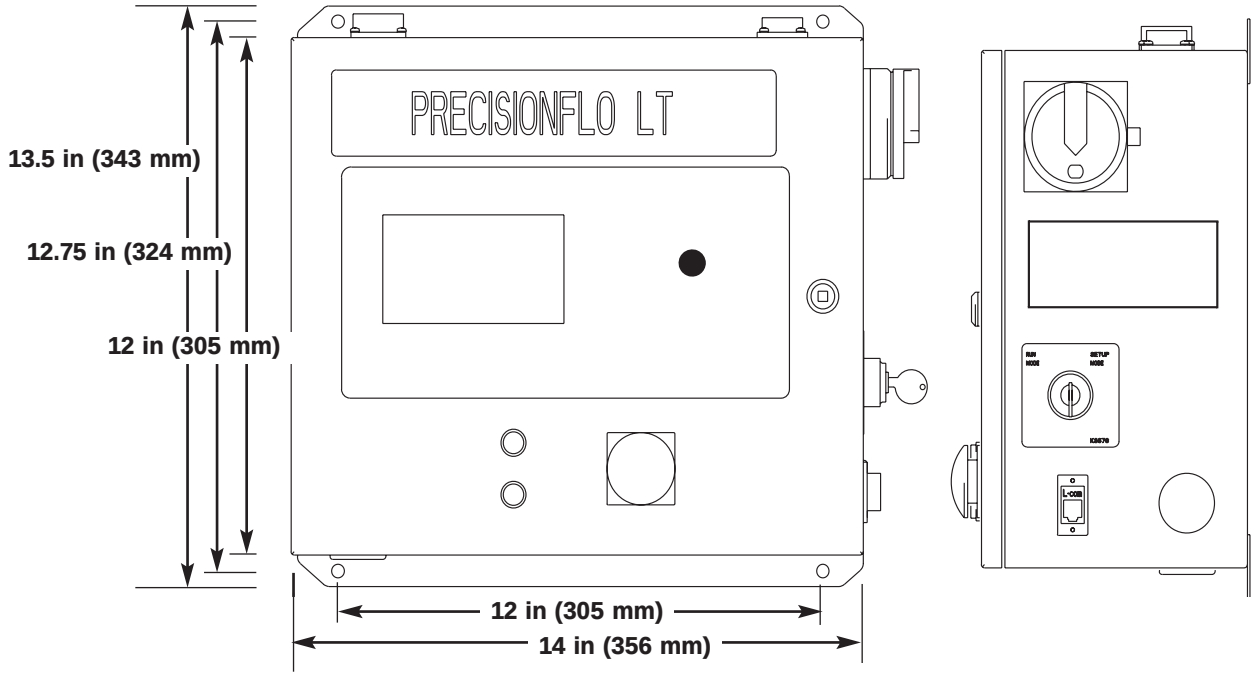
245866 Heated Hose Kit (Tank, Pump, Tubes)

Note: * All TCU's include 50 ft (15.2 m) of water hose, hose clamps, tube fittings, 4-pass water manifold, 1 pint of water conditioner, and instruction manual

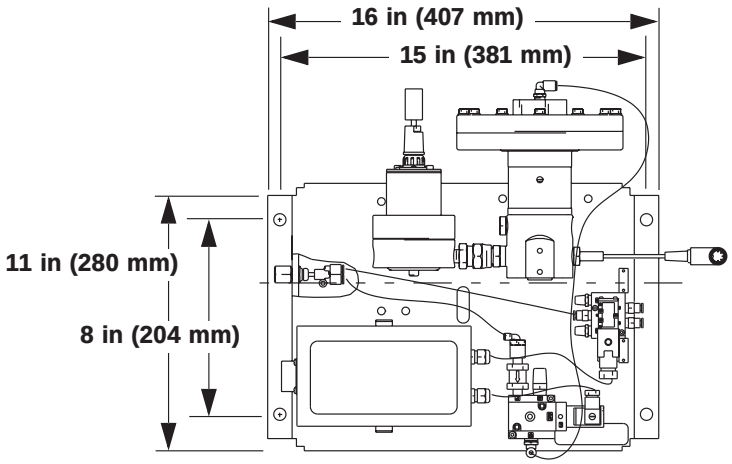
PrecisionFlo LT

High Performance Metering System

Controller Dimensions



Metering Dimensions



PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

PrecisionFlo XL provides real time, closed-loop bead control for a wide variety of sealants and adhesives. Choice of two user interfaces: Color touch screen or EasyKey Interface.

Features and Benefits

- Supports a variety of application methods: spray, stream, PrecisionSwirl
- Integrated flowmeters provide real-time feed back to adjust dispense pressure
- Fast response times ensure accurate delivery of material for less rework
- Pneumatic and electric metering modules available for different levels of control
- Choice of user interfaces available give the user the level of sophistication needed for a particular operation
- Controls ambient, temperature-conditioned, and heated applications so almost any fluid can be controlled

PrecisionFlo XL control with color touch screen interface

Typical Applications

- Automotive body shop applications
- Automotive paint shop applications
- Industrial bead dispense applications
- Industrial and automotive applications that use PrecisionSwirl

PrecisionFlo Metering Fluid Plate

Typical Fluids Handled

- Polyvinyl chloride (PVC)
- Epoxy
- Liquid-applied sound deadeners
- Silicones

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Technical Specifications

For technical specifications for all PrecisionFlo XL components, please refer to the appropriate service manual.

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Technical Data

*Minimum Flow Rates	50 cc/minute with G3000 meter 100 cc/minute with helical flowmeter 100 cc/minute with coriolis meter
*Maximum Flow Rates	2000 cc/minute with G3000 meter 7500 cc/minute with Helical meter 9999 cc/minute with coriolis meter
Maximum Fluid Working Pressure	
Feed Pressure to Fluid Panel	5000 psi (34.5 MPa, 345 bar)
With Electric Heated Hoses	3000 psi (21 MPa, 210 bar)
At Regulator Outlet	3500 psi (24.0 MPa, 241 bar)
Minimum Fluid Working Pressure	
At Regulator Outlet	500 psi (3.5 MPa, 34.5 bar)
Minimum Back Pressure	
Between Regulator Outlet and Dispense Nozzle	500 psi (3.5 MPa, 34.5 bar)
Air Supply Pressure Range	60–120 psi (414–828 kPa, 4.1–8.3 bar) Filtration required
Fluid Filtration Required	30 mesh (500 micron) minimum
*Viscosity Range of Fluids	5000 to 50000 cps with G3000 meter 10000 to 500000 cps with Helical meter 2000 to 500000 cps with coriolis meter
*Minimum Dispensed Shot Size	6 cc with G3000 meter 7 cc with Helical meter 100 cc with coriolis meter
Wetted Parts	
Meters and Fluid Panels	303, 304, 17–4 stainless steel; tungsten carbide (with nickel binder), PTFE, Plated carbon steel, Polymite
Power Supply Voltage Range	
120 VAC nominal	85–164 VAC, 50–60 Hz, single phase
220 VAC nominal	200–240 VAC, 50–60 Hz, single phase
440 VAC nominal	400–480 VAC, 50–60 Hz, single phase
Operating Temperature Range	
Controller	40 –122 F (4 –50 C)
Fluid Panel	40 –185 F (4 –85 C)
Operating Humidity Range	0–90% non-condensing

* Flow rates and viscosities are general estimates. Flow rates drop as viscosity increases. Fluids are expected to shear under pressure. New applications or fluids should always be tested to determine proper line sizes and equipment selections.

See your Graco Authorized distributor for other capabilities.
Polymite™ is a registered trademark for Parker Seals.

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Technical Data – Regulator Plates

	Cartridge Regulator	Mastic Regulator	Electric Regulator
Regulator Manual	308647	307517	309382
Weight – No flowmeter	25.5 lbs (11.6 kg)	33 lbs (15kg)	32.25 lbs (14.6 kg)
Weight – W/G3000	30 lbs (13.6 kg)	NA	38.25 lbs (17.4 kg)
Weight – W/HG6000	40 lbs (18 kg)	48 lbs (22 kg)	47.25 lbs (21.5 kg)
Fluid Port Inlet	1/2 in npt(f)	3/4 in npt(f)	1/2 in npt(f)
Fluid Port Outlet	1/2 in npt(f)	3/4 in npt(f)	3/8 in npt(f)
Maximum Inlet Pressure	5000 psi (34 MPa, 340 bar)	5000 psi (34 MPa, 345 bar)	5000 psi (34 MPa, 345 bar)
Maximum Working Pressure	5000 psi (34 MPa, 340 bar)	5000 psi (34 MPa, 345 bar)	5000 psi (34 MPa, 345 bar)
Air Supply	1/4 in npt(f)	1/4 in npt(f)	1/4 in npt(f)
Maximum Air Pressure	120 psi (0.8 MPa, 8.2 bar)	120 psi (0.8 MPa, 8.2 bar)	120 psi (0.8 MPa, 8.2 bar)
Minimum Air Pressure	60 psi (0.4 MPa, 4.1 bar)	60 psi (0.4 MPa, 4.1 bar)	60 psi (0.4 MPa, 4.1 bar)
Maximum Operating Temperature	185°F (85°C)	185°F (85°C)	176°F (80°C)z
Minimum Flow Rate G3000	50 cc/min	N/A	50 cc/min
Minimum Flow Rate HG6000	100 cc/min	100 cc/min	100 cc/min
Minimum Flow Rate Coriolis	100 cc/min	100 cc/min	100 cc/min

*Maximum system pressure depends on dispense valve.

Sound Pressure Levels

Measured at 1 meter from unit

Input Fluid Pressures

1500 psi (10.5 MPa, 105 bar) . . . . . 79.0 dB(A)

4000 psi (28 MPa, 276 bar) . . . . . 86.6 dB(A)

Tested in accordance with ISO 9614-2

Input Fluid Pressures

1500 psi (10.5 MPa, 105 bar) . . . . . 75.7 dB(A)

4000 psi (28 MPa, 276 bar) . . . . . 86.3 dB(A)

Sound levels were taken using a streaming valve, which results in the highest sound levels of the various dispense techniques offered.

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Technical Data – Dispense Valves

	AutoPlus Valve	Endure Valve	1K Valve
Ambient Part Numbers	233670 Valve 244930 Manifold	244910	243482
Temperature Conditioned Part Numbers	233670 Valve 244930 Manifold**	244910***	N/A
Electric Heat (240 V) Part Numbers	N/A	244962	N/A
Instruction Form	308813	309376	308876
Wetted Materials	Stainless steel, Carbide, UHMW Polyethylene, Delrin® PEEK, Chemically resistant fluoroelastomer, PTFE	Stainless steel, Carbide, Aluminum, Parker Polymite, Ethylene Propylene, Delrin®, PTFE, fluoroelastomer	Stainless steel, Carbide, Parker Polymite , Ethylene Propylene, Delrin®, PTFE
Weight	35 oz* (1.0 kg)	71 oz* (2.0 kg)	32 oz* (0.9 kg)
Fluid Port Inlet	3/8 in npt(f) on manifold	1/2 in npt(f)	1/4 in npt(f)
Fluid Port Outlet	7/8–14 with tip nut	5/8–18 and nut with 1/8 npt(f)	3/4–16 JIC 45°
Maximum Inlet Pressure	5000 psi (34 MPa, 340 bar)	5000 psi (34 MPa, 340 bar)	4000 psi (28 MPa, 276 bar)
Maximum Working Pressure	4000 psi (28 MPa, 276 bar)	3500 psi (24 MPa, 241 bar)	2000 psi downstream (14 MPa, 138 bar)
Air to open	1/8 in npt(f)	1/8 in npt(f)	1/8 in npt(f)
Air to close	N/A	1/8 in npt(f)	1/8 in npt(f)
Spring to close	Yes	Yes	No
Maximum Air Pressure	120 psi (0.8 MPa, 8.2 bar)	120 psi (0.8 MPa, 8.2 bar)	120 psi (0.8 MPa, 8.2 bar)
Minimum Air Pressure	60 psi (0.4 MPa, 4.1 bar)	60 psi (0.4 MPa, 4.1 bar)	60 psi (fluid pressure/30) (0.4 MPa, 4.1 bar)
Maximum Operating Temperature	140° F (60°C)	200°F (121°C)	200°F (121°C)
Sensor Properties (Electric Heat)	N/A	100 Ω Platinum RTD, 108 Ω @ 70 F (21°C) pins 3 and 4	N/A
Heater Properties (Electric Heat)	N/A	200 Watts, 288 Ω +/– 29 Ω pins 1 and 2	N/A

*Weights with inlet manifolds

**233670 bare valve is used with the 244930 valve inlet manifold, which has one 1/4 npt water inlet, two 1/8 npt water outlets, and one 1/8 npt water port for an RTD sensor. The same valve and manifold are used for ambient or temperature conditioned applications. Valve and manifold are ordered separately.

***244910 valve with valve inlet manifold has one 1/4 npt water inlet, four 1/8 npt water outlets, and one 1/8 npt water port for an RTD sensor. Replacement valve only is 244535. The same valve and manifold are used for ambient or temperature conditioned applications.

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Model Identification

PrecisionFlo XL

Graco's PrecisionFlo XL is an electronically controlled fluid regulating package designed to meter and dispense adhesives and sealants. Your equipment was likely ordered as a configured package to fit your application. The configuration was picked from the categories in the tables, pages 23-29.

Model Number Identification

On your control unit, there is an ID plate with a model number on it. See pages 23-29 for explanations of each code letter and to define what equipment was ordered as part of the configured package from Graco. Where applicable, reference is given to other instruction forms in your package binder.

NOTE: The configurator form no. is 302489.

Code A: Configuration

☐	1	PrecisionFlo XL Module
☐	2	A Electrical Enclosure Only - Basic or Temp. controlled
		B Electrical Enclosure Only - With swirl or linear motor

Code B: Enclosure

☐	N	Back Plane Only
☐	1	Rotary Switch Power Disconnect
☐	2	Knife Switch Power Disconnect

Code C: Cables

☐	N	No Cables Included
☐	1	All Cables Included

Code D: User Interface

☐	N	None
☐	1	Standard Easy Key
☐	2	Advanced TouchScreen
☐	3	Remote mounted advanced TouchScreen

Code E: Primary Voltage

☐	1	110–120 VAC
☐	2	220–240 VAC
☐	3	400–480 VAC

Code F: Robot I/O Interface

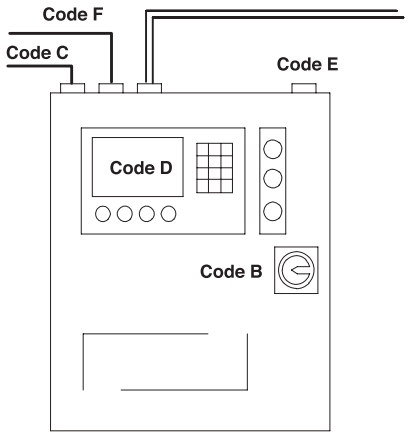
☐	1	24 VDC
☐	2	120 VAC
☐	3	DeviceNet
☐	4	InterBus
☐	5	ProfiBus
☐	6	ControlNet

Code G: Temperature Control

☐	N	None
☐	1	Temp. conditioned (50 Hz) heat and cool
☐	2	Temp. conditioned (50 Hz) heat only
☐	3	Temp. conditioned (60 Hz) heat and cool
☐	4	Temp. conditioned (60 Hz) heat only
☐	5	Electrically heated (50/60 Hz)

Code H: Language

☐	1	English
☐	2	French
☐	3	German
☐	4	Italian
☐	5	Japanese
☐	6	Korean
☐	7	Portuguese
☐	8	Spanish



PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Code J: Fluid Regulator

Pneumatic Regulator

- ☐ 1 Low viscosity, 1/2 in (12.7 mm) cartridge regulator
- ☐ 2 Medium/high viscosity, 3/4 in (19 mm) mastic regulator

PrecisionFlo Electric Regulator

- ☐ 3 Low viscosity
- ☐ 4 Medium/high viscosity
- ☐ 5 Medium/high viscosity – integrated regulator

Code K: Flowmeter

- ☐ N None
- ☐ 1 Spur Gear (G3000)
- ☐ 2 Helical Gear
  - – HG6000HR if J1 (cartridge) selected)
  - – HG6000 if J2 (mastic) selected)
- ☐ 3 Coriolis, mass flow

Code L: Supply Hose

- ☐ N None
- ☐ 1a 10 ft (3 m) 1 in (25.4 mm) Ambient
- ☐ 1b 10 ft (3 m) 1 in (25.4 mm) Electric heat
- ☐ 2a 20 ft (6 m) , 1 in (25.4 mm) Ambient
- ☐ 2b 20 ft (6 m) , 1 in (25.4 mm) Temp. conditioned
- ☐ 2c 20 ft (6 m) , 1 in (25.4 mm) Electric heat

Code M: Dispense Hose

- ☐ N None
- ☐ 1a 6 ft (1.8 m), 1/2 in (12.7 mm) ID Ambient
- ☐ 1b 6 ft (1.8 m), 1/2 in (12.7 mm) ID Temp. conditioned
- ☐ 1c 6 ft (1.8 m), 1/2 in (12.7 mm) ID Electric heat
- ☐ 2a 6 ft (1.8 m), 5/8 in (16 mm) ID Ambient
- ☐ 2b 6 ft (1.8 m), 5/8 in (16 mm) ID Temp. conditioned
- ☐ 2c 6 ft (1.8 m), 5/8 in (16 mm) ID Electric heat
- ☐ 3a 10 ft (3 m), 1/2 in (12.7 mm) ID Ambient
- ☐ 3b 10 ft (3 m), 1/2 in (12.7 mm) ID Temp. conditioned
- ☐ 3c 10 ft (3 m), 1/2 in (12.7 mm) ID Electric heat
- ☐ 4a 10 ft (3 m), 5/8 in (16 mm) ID Ambient
- ☐ 4b 10 ft (3 m), 5/8 in (16 mm) ID Temp. conditioned
- ☐ 4c 10 ft (3 m), 5/8 in (16 mm) ID Electric heat

Code N: Dispense Valve/Applicator

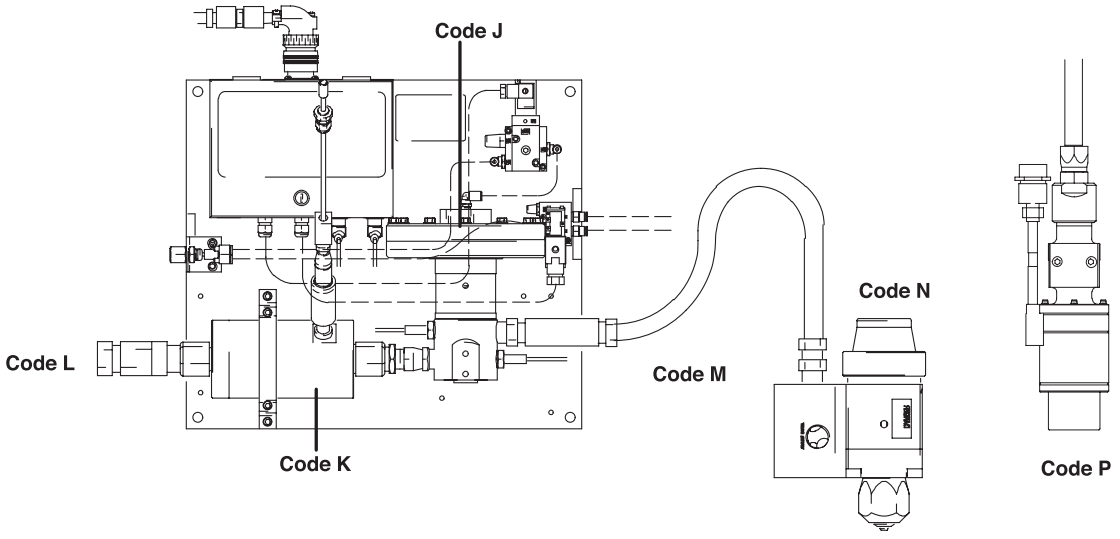
- ☐ N None
- ☐ 1 AutoPlus
- ☐ 2a EnDure, Ambient or Temp. conditioned
- ☐ 2b EnDure, Electric heat
- ☐ 3 1K Ultra-Lite (45° outlet)

Code P: PrecisionSwirl

- ☐ N None
- ☐ 1 Narrow pattern
- ☐ 2 Wide Pattern

Code R: PrecisionSwirl Extension Cable

- ☐ N None
- ☐ 1 6 ft (1.8 m)
- ☐ 2 9 ft (2.7 m)
- ☐ 3 15 ft (4.6 m)



PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Code S: Fluid Regulator

Pneumatic Regulator

- ☐ 1 Low viscosity, 1/2 in (12.7 mm) cartridge regulator
- ☐ 2 Medium/high viscosity, 3/4 in (19 mm) mastic regulator

Code T: Flowmeter

- ☐ N None
- ☐ 1 Spur Gear (G3000)
- ☐ 2 Helical Gear
  - (G6000HR if S1 (cartridge) selected
  - (G6000IF if S2 (mastic) selected
- ☐ 3 Coriolis, mass flow

Code V: Supply Hose

- ☐ N None
- ☐ 1a 10 ft (3 m), 1 in (25.4 mm) ID Ambient
- ☐ 1b 10 ft (3 m), 1 in (25.4 mm) ID Electric heat
- ☐ 2a 20 ft (6 m), 1 in (25.4 mm) ID Ambient
- ☐ 2b 20 ft (6 m), 1 in (25.4 mm) ID Temp. conditioned
- ☐ 2c 20 ft (6 m), 1 in (25.4 mm) ID Electric heat

Code W: Dispense Hose

- ☐ N None
- ☐ 1 6 ft (1.8 m), 1/2 in ID
- ☐ 2 6 ft (1.8 m), 5/8 in ID
- ☐ 3 10 ft (3 m), 1/2 in ID
- ☐ 4 10 ft (3 m), 5/8 in ID

Code X: Dispense Valve/Applicator

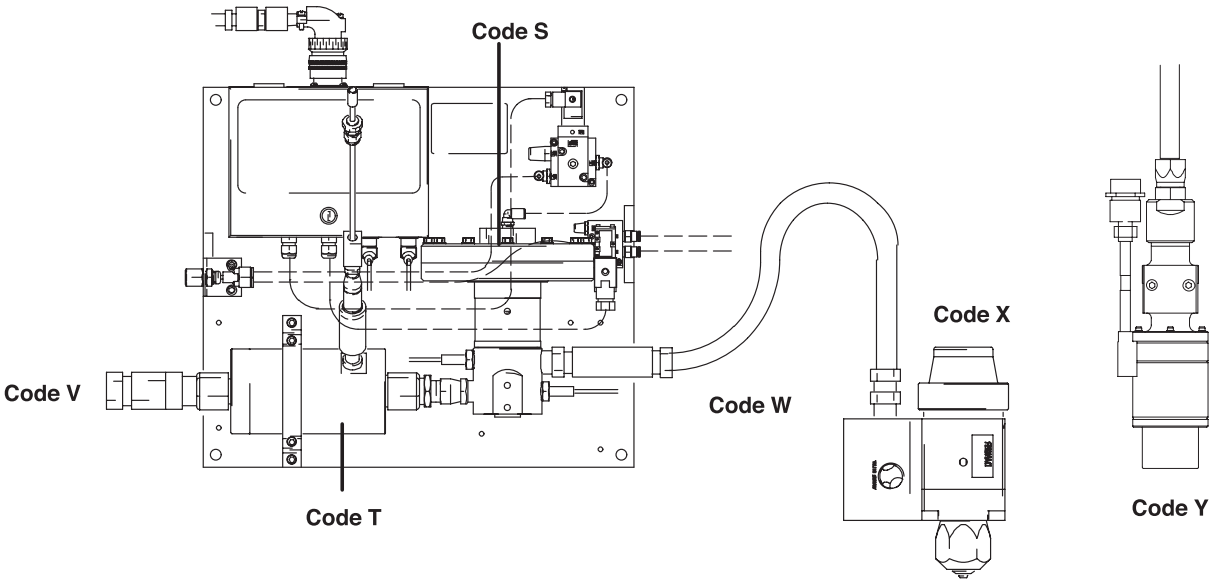
- ☐ N None
- ☐ 1 AutoPlus valve
- ☐ 2a EnDure, Ambient or Temperature conditioned
- ☐ 2b EnDure, Electric heat
- ☐ 3 1K Ultra-Lite

Code Y: PrecisionSwirl

- ☐ N None
- ☐ 1 Narrow Pattern
- ☐ 2 Wide Pattern

Code Z: PrecisionSwirl Extension Cable

- ☐ N None
- ☐ 1 6 ft (1.8 m)
- ☐ 2 9 ft (2.7 m)
- ☐ 3 15 ft (4.6 m)



PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Configured Product Order Form

Fax completed form and Purchase Order to Graco Customer Service:
Fax: (800) 334-6955 North America, (612) 623-6884 International

Date: _____

Account Number: _____

PO Number: _____

Ship To:
Attn:

Bill To:
Attn:

ORDER INFORMATION—Not intended for quoting purposes. Purchase Order must accompany order. No verbal orders accepted.

Configured Product:

PFLOXL–F– —

Code: A – B – C – D – E – F – G – H – J – K – L – M – N – P – R – S – T – V – W – X – Y – Z

Order Quantity: _____

Unit List Price: _____

Total US List Price: _____

Account Number: _____

P.O. Number: _____

Name: _____

Date: _____

Signature: _____

Note: Orders Cancelled prior to shipment are subject to a 25% restocking fee.
Configured products are not returnable.

Standard Delivery (accepted order to ship date) 4-6 weeks.

For Graco Use
S/R# _____
System # _____

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

PrecisionFlo XL

Simple, flexible and affordable. Graco's PrecisionFlo XL electronically controlled, continuous flow, fluid metering system provides precise and reliable, "real-time" closed–loop metering and dispensing of sealants and adhesives. The modular design of the PrecisionFlo XL facilitates easy integration into new or existing plants with automated workcells.

The PrecisionFlo XL offers a variety of fluid plate choices, all controlled by a common control package. The use of this configurator allows the PrecisionFlo XL to be ordered and configured to your specifications. Order a total solution (complete package) including a control unit, fluid plates, dispense valves and/or applicators and all the cables, sensors and hoses to measure and control the fluid application or simply a stand-alone control unit for a spare. Feed pumps and applicator tips are not part of this configured package and should be ordered separately.

Control Unit

Code A Configuration

Option 1 PrecisionFlo XL Module: Choose Option 1 when configuring a complete module that includes a control box and the fluid control equipment.

Option 2 Electrical Enclosure only: Choose Option 2 to order an electrical enclosure only. When choosing option 2, make the rest of the choices on the configurator as if you were ordering a complete module. The electrical enclosure will be configured to control the components that you select and be loaded with the proper options at the factory.

Code B Enclosure

Option N Back Plane Only: Choose Option N when the PrecisionFlo XL controls will be integrated into a user specified enclosure. The back plane will be factory tested and loaded with software. The back plane will include a pre-wired cable receptacle plate for testing. This plate can be used if applicable, or replaced by the user if required. The User Interface selected in Code D will be shipped separate for integration into the user-specified enclosure, along with the key switch for interface operation.

Option 1 Rotary Switch Disconnect: Choose Option 1 to order an electrical enclosure with a rotary power disconnect switch. The electrical enclosure is CE and ETL marked.

Option 2 Knife Switch Disconnect: Choose Option 2 to order an electrical enclosure with a knife switch power disconnect. The electrical enclosure is CE and ETL marked.

Code C Cables

Option N No cables included: Choose Option N to receive no cables. This option should be selected if non-standard length cables are required by the specific installation. Custom cables can also be assembled by others, according to schematics in manual 309364. Additional non-standard cable lengths are available and can be ordered separately as accessories.

Option 1 All cables included: Choose Option 1 to receive the cable set appropriate for the configured system. Pricing is flexible and dependent on other Code selections.

Operations: PrecisionFlo XL Enclosure to Fluid Plate, 60 ft (18.3 m).

Motor Power: PrecisionFlo XL Enclosure to Fluid Plate, 60 ft (18.3 m) (supplied when PrecisionFlo Linear Motor option is chosen in Code J).

PrecisionSwirl: PrecisionFlo XL Enclosure to PrecisionSwirl Orbiter, 55 ft (16.8 m), (supplied when the PrecisionSwirl option is chosen in Codes P or Y).

Analog Robot I/O: PrecisionFlo XL Enclosure to Robot Enclosure, 40 ft (12.2 m) (supplied when 24 VDC or 120 VAC interface option is chosen in Code F).

Digital Robot I/O: PrecisionFlo XL Enclosure to Robot Enclosure, 40 ft (12.2 m) (supplied when 24 VDC or 120 VAC interface option is chosen in Code F).

Code D User Interface

Option N None: To be linked to another: Choose Option N to receive a PrecisionFlo XL control enclosure with no display provided. This selection only applies when several (maximum 12) control enclosures will share a single touchscreen interface of a PrecisionFlo XL system ordered with "Remote Touchscreen" (Code D, Option 3). For example, for a system with 12 PrecisionFlo XL's sharing a single touchscreen interface, one (1) must be ordered with Code D, Option 3 and the remaining eleven (11) must be ordered with Code D, Option N.

Option 1 "Easy Key" User Interface: Choose Option 1 to receive the "Easy Key" user interface. The "Easy Key" user interface is a monochrome, backlit display with a membrane keypad. The display is capable of controlling all of the standard PrecisionFlo XL features.

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Option 2 "Touch Screen" User Interface: Choose Option 2 to receive the color "Touch Screen" user interface. The display has all of the same features as the "Easy Key" user interface but includes additional I/O monitoring and a real-time oscilloscope for valve timing adjustment. It also has additional production data and fault logging capabilities.

Option 3 Remote Mount "Touch Screen" User Interface: Choose Option 3 to receive the "Touch Screen" user interface in a remote mounted enclosure. This option is used with a Multi-App configuration and/or when the mounting area for the controller is limited.

Code E Primary Voltage

Option 1 100-120 VAC: Choose Option 1 when 100-120 VAC is available for control power. Acceptable power supply range is 85-164 VAC, 50 to 60 Hz, single phase. Do not choose this option if you are also selecting temperature conditioning or electric heat in Code G.

Option 2 200-240 VAC: Choose Option 2 when 200-240 VAC is available for control power. Acceptable power supply range is 200-240 VAC, 50 to 60 Hz, single phase. The enclosure will come with an internal transformer pre-wired for this primary voltage.

Option 3 400-480 VAC: Choose Option 3 when 400-480 VAC is available for control power. Acceptable power supply range is 400-480 VAC, 50 to 60 Hz, single phase. The enclosure will come with an internal transformer pre-wired for this primary voltage.

Code F Robot I/O Interface Options

Option 1 24 VDC: Choose Option 1 when the desired interface signal wiring is 24 VDC. The PrecisionFlo XL controller is factory–wired to supply interface power. This option includes the 24 VDC I/O communications card to be installed in the PrecisionFlo XL controller. This option also includes a Digital I/O Interface cable and an Analog cable to the robot enclosure if Code C, Option 1 was chosen.

Option 2 120 VAC: Choose Option 2 when the desired interface signal wiring is 120 VAC. The PrecisionFlo XL controller is factory–wired to supply interface power. This option includes the 120 VAC I/O communications card to be installed in the PrecisionFlo XL controller. This option also includes a Digital I/O Interface cable and an Analog cable to the robot enclosure if Code C, Option 1 was chosen.

Option 3 DeviceNet: Choose Option 3 when the I/O interface communications will be on a DeviceNet network. This option includes equipping the PrecisionFlo XL controller with a DeviceNet communications card. No cable is included with this option; the user must supply and install the DeviceNet network cable. The network communication is used for robot digital I/O signals and analog command signals only.

Option 4 Interbus: Choose Option 4 when the I/O interface communications will be on an Interbus network. This option includes equipping the PrecisionFlo XL controller with an Interbus communications card. No cable is included with this option; the user must supply and install the Interbus network cable. The network communication is used for robot digital I/O and analog command signals only.

Option 5 Profibus: Choose Option 5 when the I/O interface communications will be on a Profibus DP network. This option includes equipping the PrecisionFlo XL controller with a Profibus DP communications card. No cable is included with this option; the user must supply and install the ProfiBus DP network cable. The network communication is used for digital robot I/O and analog command signals only.

Option 6 ControlNet: Choose Option 6 when the I/O interface communications will be on a ControlNet network. This option includes equipping the PrecisionFlo XL controller with a ControlNet communications card. No cable is included with this option; the user must supply and install the ControlNet network cable. The network communication is used for robot digital I/O and analog command signals only.

Code G Temperature Control

Option N None – Ambient: Choose Option N when the sealant or adhesive is to be run at room temperature. No heating or cooling.

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Option 1 Temperature Conditioned – Heat and Cool (50 Hz): Choose Option 1 when the sealant or adhesive will require temperature conditioning with heating and cooling capabilities and the primary supply voltage will be 50 Hz. The temperature conditioning option includes a conditioning module integrated with the PrecisionFlo XL controls. The temperature functions including set point, alarm values and actual temperature will be viewed on and controlled from the PrecisionFlo XL user interface. The fluid components of the module will be temperature conditioned, including the Supply Hose, Fluid Plate, Dispense Hose and Dispense Valve. The standard Supply Hose is a 20 ft (6 m) coaxial hose within a hose design, while the other system components are temperature condition jacketed. If something other than the standard hoses are required, choose None for the hose option(s) in Codes L, M, V and W. The controls are CE and ETL marked.

Option 2 Temperature Conditioned – Heat Only (50 Hz): Choose Option 2 when the sealant or adhesive will require temperature conditioning with heating capabilities only, and the primary supply voltage will be 50 Hz. Same control features as Option 1. The controls are CE and ETL marked.

Option 3 Temperature Conditioned – Heat and Cool (60 Hz): Choose Option 3 when the sealant or adhesive will require temperature conditioning with heating and cooling capabilities and the primary supply voltage will be 60 Hz. Same control features as Option 1. The controls are CE and ETL marked.

Option 4 Temperature Conditioned – Heat Only (60 Hz): Choose Option 4 when the sealant or adhesive will require temperature conditioning with heating capabilities only, and the primary supply voltage will be 60 Hz. Same control features as Option 2. The controls are CE and ETL marked.

Option 5 Electrically Heated (50/60 Hz): Choose Option 5 when the sealant or adhesive will require electric heating capabilities only. The electric heat option includes an electrical heat enclosure integrated with the PrecisionFlo XL controls. The temperature functions including set point, alarm values and actual temperature will be viewed on and controlled from the PrecisionFlo XL user interface. The fluid components of the module will be heated electrically, including the Supply Hose, Fluid Plate, Dispense Hose and Dispense Valve. The supply hoses are heated with electrically–traced hose, while the fluid plate is heated with an infrared heater integrated into the fluid plate. The controls are CE and ETL marked. The electrically heated option is rated to a maximum working pressure of 3000 psi (20.7 MPa, 207 bar).

NOTES:

1. A Temperature Conditioning System may be ordered with a dual pneumatic Fluid Plate configuration. However, the Temperature Conditioning system will only be configured to control Fluid Plate #1 only. Fluid Plate #2 will be supplied in an ambient configuration.
2. If selecting Options 1-5, do not select Option 1 of Code E (110-120 VAC). Temperature Conditioning and electric heat require minimum 200 VAC.
3. The Temperature Conditioning system (Options 1-4) will condition and maintain all components (i.e. hoses, regulators, meters, etc.) up to 140ºF (60ºC). Operating range 60ºF to 140ºF (15.6ºC to 60ºC).
4. The Electric Heat system will control 4 zones up to 175ºF (79.4ºC).
5. A Heat/Cool Temperature Conditioning system is required to maintain temperature below ambient. A Heat Only Temperature Conditioning system should be selected only if the plant ambient temperature never exceeds the desired fluid temperature.

Code H Language

The language of the user interface is to be selected from the choices below. The language will be preset at the factory. The language is user selectable in the field.

Option E English

Option F French

Option G German

Option I Italian

Option J Japanese

Option K Korean

Option P Portuguese

Option S Spanish

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Fluid Plate & Dispense Valve #1

Code J Fluid Regulator

There are five different Fluid Regulator choices available for PrecisionFlo XL Fluid Plate #1.

PrecisionFlo XL Pneumatic Regulator

Option 1 Low Viscosity (1/2 in): Choose Option 1 to receive the Graco 1/2 in (13 mm) pneumatic cartridge style regulator, designed for lower viscosity sealants and adhesives. This regulator is also ideal for higher flow rates of lower viscosity water-based materials.

Option 2 Medium/High Viscosity (3/4 in): Choose Option 2 to receive the Graco 3/4 in (19 mm), pneumatic, mastic regulator. It's designed for higher viscosity sealants and adhesives.

PrecisionFlo XL Electric Regulator

Option 3 Low Viscosity: Choose Option 3 to receive the PrecisionFlo XL linear motor controlling a tapered needle and seat designed for low viscosity materials less than 100,000 cps.

Option 4 Medium/High Viscosity: Choose Option 4 to receive the PrecisionFlo XL linear motor controlling a tapered needle and seat designed for medium to high viscosity materials between 100,000 cps and 500,000 cps.

Option 5 Medium/High Viscosity-Integrated Regulator: Choose Option 5 to receive the PrecisionFlo XL linear motor controlling a tapered needle and seat designed for medium to high viscosity materials between 100,000 cps and 500,000 cps. Choose this option for high viscosity fluids, where the pressure required to feed material to the system would exceed 3500 psi (241 bar, 24.1 MPa) in a static state. This will allow the material to be supplied at a high pressure up to the inlet of the fluid plate, where it can be regulated down to 3500 psi (241 bar, 24.1 MPa) or less, before entering the PrecisionFlo fluid plate.

Code K Flowmeter

Option N None – Pressure regulation only: Choose Option N when the application requires closed–loop control on pressure only. No flowmeter will be included.

Option 1 Spur Gear (G3000): Choose Option 1 when the sealant or adhesive being controlled is able to run through a spur gear meter. This option will integrate the Graco G3000 flowmeter into the Fluid Plate. The G3000 is well–suited for flow rates of 10 cc/min to 2,500 cc/min and a minimum dispensed shot size of 2.4 cc with most sealants and adhesives from 50 cps to 50,000 cps (fillers are less than 3 mils).

Option 2 Helical Gear (HG6000 or HG6000HR): Choose Option 2 when the sealant or adhesive being controlled is able to run through a helical gear meter. This option will integrate the G6000 or G6000HR flowmeter into the Fluid Plate. This flowmeter is well suited for flows of 20 cc/min to 3,200 cc/min and a minimum dispensed shot size of 6.0 cc with most sealants and adhesives from 10,000 cps to 500,000 cps. HG6000 HR will automatically be selected if low viscosity (cartridge) regulator was selected. HG6000 will automatically be selected if medium/high viscosity (mastic) regulator was selected.

Option 3 Coriolis, Non-Intrusive Mass Flow: Choose Option 3 when the sealant or adhesive being controlled requires a non-intrusive flowmeter. The non-intrusive mass flowmeter is a straight tube design without any gears or moving parts. This flowmeter is well–suited to most abrasive or corrosive sealants and adhesives. In general, this meter is used for flows of 20 cc/min to 4,000 cc/min and a minimum dispensed shot size of 10.0 cc with sealants and adhesives from 1,000 cps to 500,000 cps.

Code L Supply Hose

Choose a supply hose from the choices below. Based on the temperature control selection in Code G, the hose will be Ambient, Temperature Conditioned coaxial or Electrically Heated. Electric heated hoses have a PTFE core and are rated at 3000 psi (207 bar, 20.7 MPa) maximum. The ambient and temperature conditioned hoses have a Neoprene core and are rated at 5000 psi (345 bar, 34.5 MPa) maximum.

Option N None: Choose Option N when the application requires a supply hose length or inner diameter other than one of the choices below.

Option 1 10 ft: This option provides a 10 ft (3 m), 1 in I.D. hose. This option is not available if Options 1-4 of Code G (Temperature Conditioning) are selected.

Option 2 20 ft: This option provides a 20 ft (6 m), 1 in I.D. hose.

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Code M Dispense Hose

Choose a dispense hose from the choices below. Based on the temperature control selection in Code G, the hose will be Ambient, Temperature Conditioned coaxial or Electrically Heated. The non-Electric Heat selections are a high pressure Neoprene hose that is highly flexible and abrasion resistant. Electric Heated hoses have a PTFE core and are rated at 3000 psi (206 bar, 20.6 MPa) maximum.

Option N None: Choose Option N when the application requires a dispense hose length or inner diameter other than one of the choices below.

Option 1 6 ft (1.8 m) x 1/2 in I.D.: This option provides a 6 ft (1.8 m) x 1/2 in I.D. hose.

Option 2 6 ft (1.8 m) x 5/8 in I.D.: This option provides a 6 ft (1.8 m) x 5/8 in I.D. hose.

Option 3 10 ft (3 m) x 1/2 in I.D.: This option provides a 10 ft (3 m) x 1/2 in I.D. hose.

Option 4 10 ft (3 m) x 5/8 in I.D.: This option provides a 10 ft (3 m) x 5/8 in I.D. hose.

Code N Dispense Valve / Applicator

Option N None: Choose Option N when the application requires a valve other than one of the choices from below, or to use an existing valve.

Option 1 Compact AutoPlus: Choose Option 1 when the application requires streaming or spraying. This option will equip the module with a compact manifold mount valve. The valve outlet accepts standard 270xxx series streaming tips or 182xxx series flat spray tips. The manifold will be temperature conditioned if that option is chosen in Code G. It cannot be electric heated.

Option 2 EnDure: Choose Option 2 when the application requires streaming, extruding or PrecisionSwirl. This option will equip the module with a larger valve capable of delivering higher flow rates with the more viscous sealants and adhesives. The valve is manifold mounted to provide quick and easy repair. The valve is designed to accept streaming tips, extrusion tips or Graco's PrecisionSwirl orbiter. The manifold will be heated or temperature conditioned based on the temperature control option chosen in Code G.

Option 3 1K Valve: This is a smaller, lower pressure version of Option 2. Choose Option 3 when the application requires PrecisionSwirl and a 45º outlet configuration. This option will equip the module with the 1K ambient dispense valve. The valve outlet is designed to connect directly to the PrecisionSwirl orbiter. The valve is available ambient only and can be used only when back pressure from the swirl tip will not exceed 2000 psi (138 bar, 13.8 MPa).

NOTE: All Applicator Tips must be ordered separately.

Code P PrecisionSwirl

Option N None: Choose this option if the PrecisionSwirl orbiter is not being purchased.

Option 1 Narrow Pattern: This option allows for smaller width patterns. Typical pattern ranges are from 3/16 in (4.7 m) to 1/2 in (12.7 m). Actual pattern widths depend on the fluid being dispensed and other application parameters.

Option 2 Wide Pattern: This option allows for larger width patterns. Typical pattern ranges are from 1/2 in (12.7 m) to 2-1/2 in (63.5 m). Actual pattern widths depend on the fluid being dispensed and other application parameters.

A 55 ft (16.8 m) PrecisionSwirl cable will be provided if Code C, Option 1 was selected. This cable provides power from the PrecisionFlo XL control panel to the orbiter. Alternative lengths are available as accessories.

The swirl orbiter is insulated if Temperature Conditioning or Electric Heat is chosen in Code G.

NOTE: PrecisionSwirl Tips must be ordered separately.

Code R PrecisionSwirl Extension Cable

When the PrecisionSwirl orbiter is used on a robot or an automated motion control system, it is highly recommended that an extension cable be used in addition to the PrecisionSwirl cable. The motion can cause wear on a cable and an extension cable can be quickly and easily replaced if a problem should occur. Choose the length of the extension cable based on the configuration of the robot/automation. A length should be selected that will extend from the PrecisionSwirl orbiter back to the rear of the robot/automation, where it will connect to the PrecisionSwirl cable.

Option N None: Choose this option if the PrecisionSwirl is not being purchased or is pedestal mounted.

Option 1 Extension Cable 6 ft (1.8 m): This option provides a 6 ft (1.8 m) extension cable.

Option 2 Extension Cable 9 ft (2.7 m): This option provides a 9 ft (2.7 m) extension cable.

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Option 3 Extension Cable 15 ft (4.6 m): This option provides a 15 ft (4.6 m) extension cable.

Fluid Plate & Dispense Valve #2

Code S Fluid Regulator

There are two different Fluid Regulator choices available for PrecisionFlo XL Fluid Plate #2.

PrecisionFlo XL Pneumatic Regulator

Option N None: Choose Option N if the PrecisionFlo XL package only requires one Fluid Plate and Fluid Plate #2 is not required. For Codes T through Z, select Option N for each.

Option 1 Low Viscosity (1/2 in): Choose Option 1 to receive the Graco 1/2 in (13 mm) pneumatic cartridge style regulator, designed for lower viscosity sealants and adhesives. This regulator is also ideal for higher flow rates of lower viscosity water-based materials.

Option 2 Medium/High Viscosity (3/4 in): Choose Option 2 to receive the Graco 3/4 in)19 mm) pneumatic mastic regulator, designed for higher viscosity sealants and adhesives.

Code T Flowmeter

Option N None – Pressure regulation only: Choose Option N when there is only one Fluid Plate and when the application requires closed loop control on pressure only. No flowmeter will be included. With a dual Fluid Plate configuration, both plates will only operate in pressure mode, unless both are equipped with flowmeters.

Option 1 Spur Gear (G3000): Choose Option 1 when the sealant or adhesive being controlled is able to run through a spur gear meter. This option will integrate the Graco G3000 flowmeter into the Fluid Plate. The G3000 is well suited for flow rates of 10 cc/min to 2,500 cc/min and a minimum dispensed shot size of 2.4 cc with most sealants and adhesives from 50 cps to 50,000 cps (fillers are less than 3 mils).

Option 2 Helical Gear (HG6000 or HG6000HR): Choose Option 2 when the sealant or adhesive being controlled is able to run through a helical gear meter. This option will integrate the G6000 or G6000HR flowmeter into the Fluid Plate. This flowmeter is well suited for flows of 20 cc/min to 3,200 cc/min and a minimum dispensed shot size of 6.0 cc with most sealants and adhesives from 10,000 cps to 500,000 cps. HG6000 HR will automatically be selected if low viscosity (cartridge) regulator was selected. HG6000 will automatically be selected if medium/high viscosity (mastic) regulator was selected.

Option 3 Coriolis, Non-Intrusive Mass Flow: Choose Option 3 when the sealant or adhesive being controlled requires a non-intrusive flowmeter. The non-intrusive mass flowmeter is a straight tube design without any gears or moving parts. This flowmeter is well suited to most abrasive or corrosive sealants and adhesives. In general, this meter is used for flows of 20 cc/min to 4,000 cc/min and a minimum dispensed shot size of 10.0 cc with sealants and adhesives from 1,000 cps to 500,000 cps.

Code V Supply Hose

Choose a supply hose from the choices below. Based on the temperature control selection in Code G, the hose will be Ambient, Temperature Conditioned coaxial or Electrically Heated. Electric heated hoses have a PTFE core and are rated at 3,000 psi maximum. The ambient and temperature conditioned hoses have a Neoprene core and are rated at 5,000 psi maximum.

Option N None: Choose Option N when there is only one Fluid Plate and when the application requires a supply hose length or inner diameter other than one of the choices below.

Option 1 10 ft: This option provides a 10 ft (3 m), 1 in I.D. hose. This option is not available if Options 1-4 of Code G (Temperature Conditioning) are selected.

Option 2 20 ft: This option provides a 20 ft (6 m), 1 in I.D. hose.

Code W Dispense Hose

Choose a dispense hose from the choices below. Based on the temperature control selection in Code G, the hose will be Ambient, Temperature Conditioned coaxial or Electrically Heated. The non-Electric Heat selections are a high pressure Neoprene hose that is highly flexible and abrasion resistant. Electric Heated hoses have a PTFE core and are rated at 3000 psi (207 bar, 20.7 MPa) maximum.

Option N None: Choose Option N when there is only one Fluid Plate and when the application requires a dispense hose length or inner diameter other than one of the choices below.

Option 1 6 ft (1.8 m) x 1/2 in I.D.: This option provides a 6 ft (1.8 m) x 1/2 in I.D. hose.

Option 2 6 ft (1.8 m) x 5/8 in I.D.: This option provides a 6 ft (1.8 m) x 5/8 in I.D. hose.

Option 3 10 ft (3 m) x 1/2 in I.D.: This option provides a 10 ft (3 m) x 1/2 in I.D. hose.

Option 4 10 ft (3 m) x 5/8 in I.D.: This option provides a 10 ft (3 m) x 5/8 in I.D. hose.

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Code X Dispense Valve / Applicator

Option N None: Choose Option N when there is only one Fluid Plate and when the application requires a valve other than one of the choices from below, or to use an existing valve.

Option 1 Compact AutoPlus: Choose Option 1 when the application requires streaming or spraying. This option will equip the module with a compact manifold mount valve. The valve outlet accepts standard 270xxx series streaming tips or 182xxx series flat spray tips. The manifold will be temperature conditioned if that option is chosen in Code G. It cannot be electric heated.

Option 2 EnDure: Choose Option 2 when the application requires streaming, extruding or PrecisionSwirl. This option will equip the module with a larger valve capable of delivering higher flow rates with the more viscous sealants and adhesives. The valve is manifold mounted to provide quick and easy repair. The valve is designed to accept streaming tips, extrusion tips or Graco's PrecisionSwirl orbiter. The manifold will be heated or temperature conditioned based on the temperature control option chosen in Code G.

Option 3 1K Valve: This is a smaller, lower pressure version of Option 2. Choose Option 3 when the application requires PrecisionSwirl and a 45º outlet configuration. This option will equip the module with the 1K ambient dispense valve. The valve outlet is designed to connect directly to the PrecisionSwirl orbiter. The valve is available ambient only and can be used only when back pressure from the swirl tip will not exceed 2000 psi (138 bar, 13.8 MPa).

NOTE: All Applicator Tips must be ordered separately.

Code Y PrecisionSwirl

Option N None: Choose this option when there is only one Fluid Plate and when the PrecisionSwirl orbiter is not being purchased.

Option 1 Narrow Pattern: This option allows for smaller width patterns. Typical pattern ranges are from 3/16 in (4.7 mm) to 1/2 in (12.7 mm). Actual pattern widths depend on the fluid being dispensed and other application parameters.

Option 2 Wide Pattern: This option allows for larger width patterns. Typical pattern ranges are from 1/2 in (12.7 mm) to 2 1/2 in (63.5 mm). Actual pattern widths depend on the fluid being dispensed and other application parameters.

A 55 ft (16.8 m) PrecisionSwirl cable will be provided if Code C, Option 1 was selected. This cable provides power from the PrecisionFlo XL control panel to the orbiter. Alternative lengths are available as accessories.

The swirl orbiter is insulated if Temperature Conditioning or Electric Heat is chosen in Code G.

NOTE: PrecisionSwirl Tips must be ordered separately.

Code Z PrecisionSwirl Extension Cable

When the PrecisionSwirl orbiter is used on a robot or an automated motion control system, it is highly recommended that an extension cable be used in addition to the PrecisionSwirl cable. The motion can cause wear on a cable and an extension cable can be quickly and easily replaced if a problem should occur. Choose the length of the extension cable based on the configuration of the robot/automation. A length should be selected that will extend from the PrecisionSwirl orbiter back to the rear of the robot/automation, where it will connect to the PrecisionSwirl cable.

Option N None: Choose this option when there is only one Fluid Plate or if the PrecisionSwirl is not being purchased or is pedestal mounted.

Option 1 Extension Cable 6 ft (1.8 m): This option provides a 6 ft (1.8 m) extension cable.

Option 2 Extension Cable 9 ft (2.7 m): This option provides a 9 ft (2.7 m) extension cable.

Option 3 Extension Cable 15 ft (4.6 m): This option provides a 15 ft (4.6 m) extension cable.

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Parts

Control Boards

244355 Board, PrecisionSwirl (SW1 or SW2)

244670 Board, Motor Amplifier (AMP**)**

244667 Board, Robot I/O, 24 VDC (RIO)

244668 Board, Robot I/O, 120 VAC (RIO)

244665 Board, Expandable Control Board (ECB)

244666 Board, System I/O (SIO)

198050 Board, DeviceNet

198051 Board, Profibus

198052 Board, Interbus

198053 Board, ControlNet

233675 Card, PC104 (TouchScreen)

244993 Board, Display (EasyKey)

233738 Card, Compact Flash (Touch-Screen)

Control Board Covers

198251 Cover, PrecisionSwirl board

198248 Cover, motor amp board

198286 Cover, Robot I/O board, 24 VDC

198250 Cover, Robot I/O board, 120 VAC

198258 Cover, ECB board

198249 Cover, I/O board

198288 Cover, display board

116782 Stand-off, cover support

Miscellaneous Control Parts

116653 Switch, key

116728 Key, spare

115940 Relay

196975 Power supply, 24 VDC

244808 User interface, EasyKey, Complete

197408 User interface, TouchScreen

115388 Transformer

198529 Display only (no board)

233696 Kit, display software chip, display

233697 Kit, software chip, main board

197981 Beacon

198065 Keypad Membrane

Cables

198296 Cable, Operations, 60 ft (18.3 m)

617706 Cable, Motor Power, 60 ft (18.3 m**)**

617870 Cable, PrecisionSwirl, 55 ft (16.7 m)

198459 Cable, Robot Digital, 40 ft (12 m)

198460 Cable, Robot Analog, 40 ft (12 m)

233125 Cable, PrecisionSwirl Extension, 6 ft (1.8 m)

233124 Cable, PrecisionSwirl Extension, 9 ft (2.7 m)

233123 Cable, PrecisionSwirl Extension, 15 ft (4.6 m)

233657 Cable Kit. Use to connect PrecisionFlo XL control to a computer for job downloads and software updates.

Main Control Fuses

Part No.	With input voltage	Schematic fuse no.	Fuse designation	Amp rating	Qty.
116505	110–120 VAC	FU 2080	LPJ–8SP	8	1
116505	110–120 VAC	FU 2081	LPJ–8SP	8	1
116506	220–240 VAC	FU 2080	LPJ–5SP	5	1
116506	220–240 VAC	FU 2081	LPJ–5SP	5	1
116620	400–480 VAC	FU 2080	LPJ–3SP	3	1
116620	400–480 VAC	FU 2081	LPJ–3SP	3	1
116505	200–240 VAC	FU 216	LPJ–8SP	8	1
116505	400–480 VAC	FU 216	LPJ–8SP	8	1

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Standard Hoses

Part No.	Type	Size	Core Material	Working Pressure	Temp. Rating	Coupling Size	Coupling Material	Bend Radius
116760	Dispense*	.50 in ID x 6 ft	Neoprene	4000 psi	212 F	7/8–14 37 (f)	Steel	3.5 in
116762	Dispense*	.62 in ID x 6 ft	Neoprene	3625 psi	212 F	1-1/16–12 37 (f)	Steel	4.0 in
116761	Dispense*	.50 in ID x 10 ft	Neoprene	4000 psi	212 F	7/8–14 37 (f)	Steel	3.5 in
116763	Dispense*	.62 in ID x 10 ft	Neoprene	3625 psi	212 F	1-1/16–12 37 (f)	Steel	4.0 in
C12218	Feed	1.0 in ID x 20 ft	Neoprene	5000 psi	212 F	1 npt (m)	Steel	12 in
116749	Co-Axial Feed	1.0 in ID x 10 ft	Synthetic Rubber	5500 psi	212 F	1 npt (f)	Steel	12 in
116748	Co-Axial Feed	1.0 in ID x 20 ft	Synthetic Rubber	5000 psi	212 F	1 npt (f)	Steel	12 in

Fluid Module Components

Pneumatic Regulators

244734 Cartridge Regulator 308647

238748 Fluid Section Repair Cartridge

238747 Fluid Diaphragm Repair Kit

244740 Mastic Regulator 307517

233131 Fluid Section Repair Kit

Common Pneumatic Regulator Repair Parts

198082 Pressure Sensor

244669 Pressure Sensor Amplifier Board

551348 Solenoid Valve

195942 Regulator (V/P)

C50239 Hose Swivel 5000 psi 1/2 in npt(f) both ends

245896 Regulator Pre-charge Kit

Electric Servo Driven Metering Valve

244920 Electric Servo Driven Metering Valve, Low Flow

233681 Fluid Section Repair Kit

244920 Fluid Section Spare

244921 Electric Servo Driven Metering Valve, High Flow

233680 Fluid Section Repair Kit

244921 Fluid Section Spare

Flowmeters

246190 Helical Meter (HG6000) with sensor

246652 Helical Meter (HG6000HR) high resolution

246786 Sensor, pulse, helical

239716 G3000 Spur Gear Meter with sensor

244292 G3000HR high resolution Spur Gear Meter with sensor

239719 Meter Only

239717 Sensor

15D877 Coriolis non-intrusive flowmeter

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Dispensing Devices

Dispense Valves

Valve Model	AutoPlus	EnDure Valve	1K Valve
Valve Part No.	233670	244535	243482
Repair Kit Part No.	N/A	15E012	570268
Shaft/Needle Part No.	239807	15E014	626068
Seat Part No.	233671	N/A	N/A
Inlet Gasket Part No.	189970	N/A	N/A
Seat Gasket Part No.	192443	N/A	N/A

Accessories

Swirl Dispenser

243402 Tool-Mounted Dispensers
With narrow pattern coupler (0.012 in [0.3 mm])

243403 Tool-Mounted Dispensers
With wide pattern coupler (0.028 in [0.7 mm])

Swirl Dispenser Accessories

196039 **Small Profile Retainer**
Replaces standard nozzle guard. Allows easier access to tight locations.

196160 **Teach Adapter**
Replaces nozzle guard during robot path teaching.

15D259 **Swirl Control Cable Support**
Add to the orbiter assembly if extreme stresses are being applied to the motor control cable.

Repair Kits

241479 **Swirl Motor Assembly**
Order bearing and coupler separately.

918620 **Swirl Tube Repair Kit**
Includes coupler assembly, O-ring, tube assembly and bellows.

241569 **Tool Kit**
Includes various tools required for servicing the Swirl applicator and tube bearing.

241466 **Tube Bearing Wide Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

243256 **Tube Bearing Narrow Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

246292 **Tube Support Bearing Repair Kit**
With wide-pattern coupler. Includes 241466, O-ring, seal, and tube assembly.

246293 **Tube Support Bearing Repair Kit**
With narrow-pattern coupler. Includes 243256, O-ring, seal, and tube assembly.

15B619 **Bellows Seals**
Qty: 1 – fluoroelastomer

246290 **Bellows Seal Kit**
Qty: 12 – fluoroelastomer

617870 **Motor Cable, 55 ft (16.8 m)**
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

Swirl Dispense Tips

Part No.	Size	Part No.	Size
918610	0.012	**918609**	0.033
918601	0.015	**918611**	0.035
918602	0.017	**918612**	0.039
918603	0.019	**918613**	0.043
918604	0.021	**918614**	0.047
918605	0.023	**241813**	0.051
918606	0.025	**241814**	0.055
918607	0.027	**241816**	0.070
918608	0.030		

Dispense Valves

For 1K Ultra-Lite straight connection, order:
243666 1K Ultra-Lite Dispense Valve, straight

For 1K Ultra-Lite 45 deg connection, order:
243482 1K Ultra-Lite Dispense Valve, 45 deg

For Endure straight connection, order:
244910 Endure (ambient or water conditioned)
197504 Straight flange adapter, EnDure

For Endure 45 deg connection, order:
244910 Endure (ambient or water conditioned)
198323 Alternative orbiter nut
197842 45 deg nosepiece
198324 Nosepiece to orbiter fitting

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Filtering Accessories

C59725 Dual Filter Bank with inlet/outlet fluid gauges, isolation ball valves, drain valves, and 30 mesh elements. 1-1/4 in npt(f) inlet and 1-1/4 in npt(f) outlet with 1 in npt(f) bushing.

C59547 Single Filter Kit with inlet/outlet fluid gauges, isolation ball valves, drain valve and 30 mesh element. 1 in npt(f) inlet and outlet.

234967 Dual air filter assembly 5/.3 micron filter to be used for inlet air to fluid plate.

Accessory Cables in Non-Standard Lengths

198730 Swirl cable from box 110 ft (33.5 m)

198731 OP cable from box to fluid plate 20 ft (6.1 m)

198732 OP cable from box to fluid plate 125 ft (38 m)

198733 RDR cable, digital from robot control 20 ft (6.1 m)

198734 RDR cable, digital from robot control 125 ft (38 m)

198735 RAR cable, analog from robot control 20 ft (6.1 m)

198736 RAR cable, analog from robot control 125 ft (38 m)

198737 Motor cable from box to fluid plate 20 ft (6.1 m)

198738 Motor cable from box to fluid plate 125 ft (38 m)

PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Temperature Control

Temperature-Conditioned Package

The water-circulation, temperature-conditioning equipment is manufactured and supplied specifically for the PrecisionFlo XL

Combinations and Capabilities

- The temperature-conditioning control comes fully integrated with the PrecisionFlo XL control unit.
- Either Heat Only or Heating and Cooling is available.
- A single 240 VAC or 480 VAC only power drop controls both panels.
- The temperature-conditioning control panel is self-contained, but all of the temperature control functions are accessed through the PrecisionFlo XL user interface, including temperature set point, alarms, and PID values.
- The unit includes 1 zone of heat control.
- To activate temperature control remotely, remove Remote Temp. Activate jumper and use your own switch.

  Remote Temp. Activate: RDR–B3, Wire 8730, Connector J5–19, normally jumpered to 704 RIO J1-3

Temperature-Conditioning Components

198457	RTD Sensor
198458	RTD Sensor Cable, 6 ft (1.8 m) Whip
198490	RTD Main Cable, 70 ft (21.3 m)

Temperature-Conditioning Jackets

116770	Jacket for 6 ft (1.8 m) dispense hoses (1/2 in and 5/8 in ID)
116769	Jacket for 10 ft (3 m) dispense hoses (1/2 in and 5/8 in ID)
233639	Jacket for G3000 flowmeter
233659	Jacket for HG6000 flowmeter
198667	Jacket for electric regulator head
198447	Jacket for 1/2 in (13 mm) pneumatic regulator
198448	Jacket for 3/4 in (19 mm) pneumatic regulator
198749	Insulation only jacket for orbiter

Fuses for Temperature-Conditioning Control

Part No.	With input voltage	Schematic fuse no.	Fuse designation	Amp rating	Qty.
116219	400-480 VAC	100 FU1	LPJ–15SP	15	2
116505	220–240 VAC	100 FU2	LPJ–182SP	8	2
116217	400-480 VAC	100 FU2	LPJ–15SP	15	1
116222	All	108 FU	LPJ–12SP	12	1

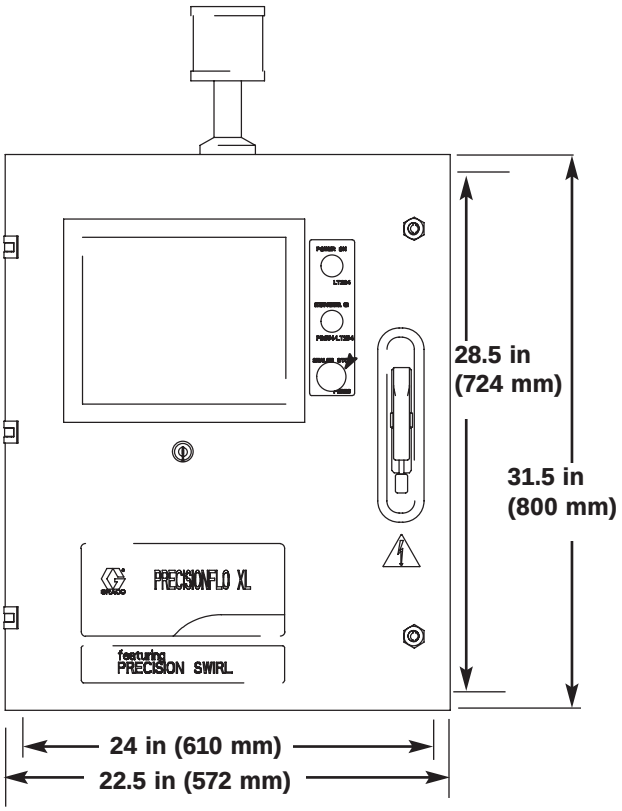
Co-Axial Water Jacketed Feed Hoses

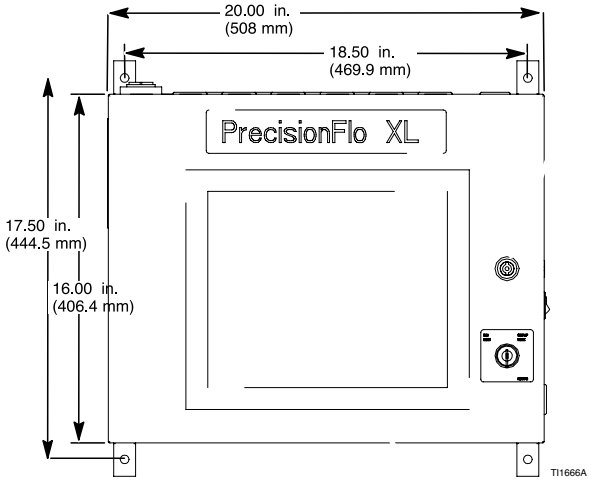
Part No.	Size	Core Material	Working Pressure	Temp. Rating	Coupling Size	Coupling Material	Bend Radius
116749	1.0 in ID x 10 ft (25.4 mm) ID x (6.1 m)	Synthetic Rubber	5000 psi (34.5 MPa, 345 bar)	212°F (100°C)	1 npt (f)	Steel	12 in (305 mm)
116748	1.0 in ID x 20 ft (25.4 mm) ID x (6.1 m)	Synthetic Rubber	5000 psi (34.5 MPa, 345 bar)	212°F (100°C)	1 npt (f)	Steel	12 in (305 mm)

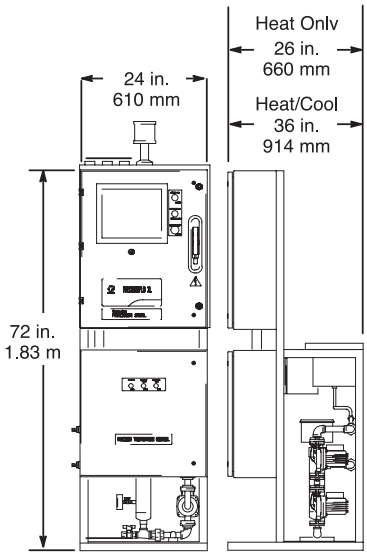
PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

PrecisionFlo XL Control Unit Dimensions



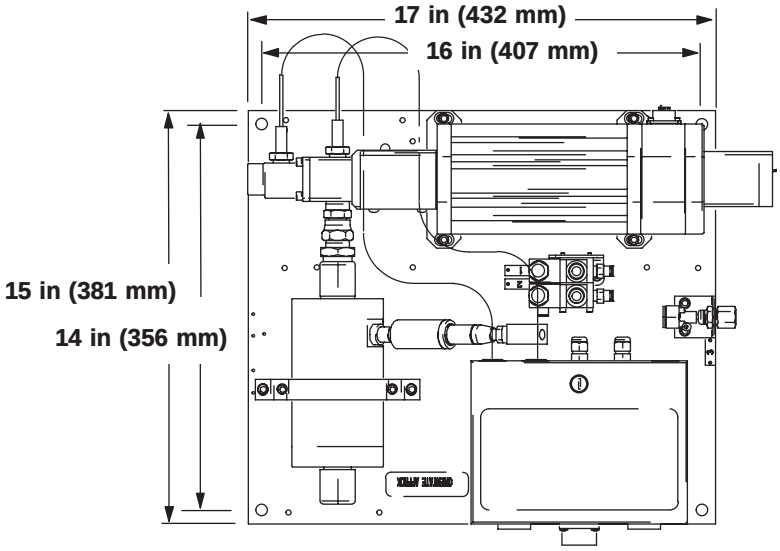


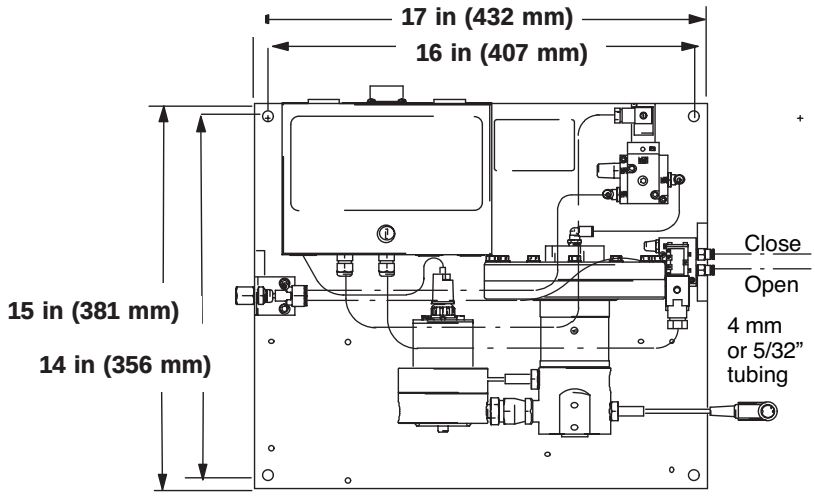


PrecisionFlo XL

Sealant & Adhesive Dispensing Systems

Fluid Metering Assembly Dimensions





PrecisionSwirl

Orbital Applicator Module

Features and Benefits

- Provides a circular loop “swirl” bead pattern
- Swirl pattern has uniform bead profile and consistent edges
- Increased tip standoff simplifies robot programming
- Swirl pattern can be varied along the bead path
- Swirl orbital applicator has no dynamic seals
- Dispenses open or closed, wide or narrow pattern
- Defined edge control
- Tool-mounted and gun-mounted options available
- Add to PrecisionFlo XL to build a complete fluid handling system

Typical Applications

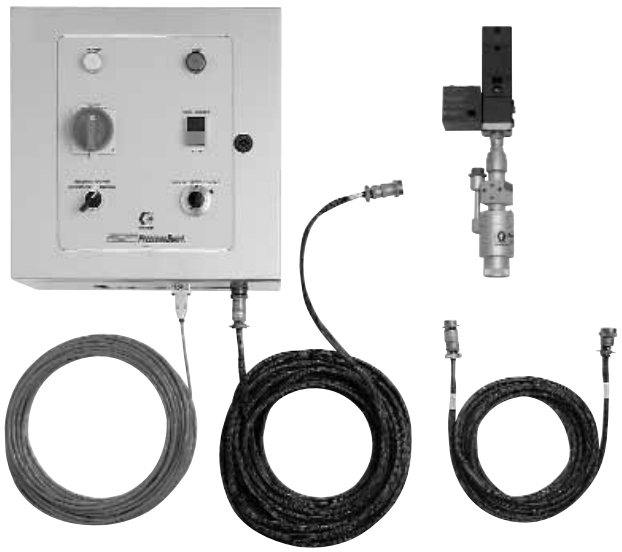
- Hem flange adhesive bonding
- Structural adhesive bonding
- Body panel reinforcement
- PVC seam sealing
- After hem sealing
- Liquid mask sealing
- Underbody sound-deadeners

Typical Fluids Handled

- Heat cure epoxy
- PVC plastisol
- Expandable sealers
- Liquid-applied sound deadeners (LASD)

PrecisionSwirl Control Panel

PrecisionSwirl Applicator



21.3 m (69.88 ft) Cable Set (241658, 234029)

1K Ultra-Lite dispense valve*

EnDure dispense valve*

* Dispense valves not included. See ordering information on page 41.

PrecisionSwirl
Orbital Applicator Module

Technical Specifications

Control Panel

Input power . . . . . 85-264 VAC, 50/60 Hz, 1 phase
Output power . . . . . proprietary PWM voltage to the motor, less than 24V
Automatic control analog input (speed adjustment) . . . . . 0-10 Vdc or 0-5 Vdc
Auto control relay contact rating . . . . . 3 amps at 30 VDC
Weight . . . . . 23.58 lbs (10.7 kg)

Swirl Orbital Applicator

Input power . . . . . proprietary PWM voltage to the motor, less than 24V
Motor torque . . . . . 1.5 oz.-inches
Maximum motor speed . . . . . 24,000 rpm
Maximum operating pressure . . . . . 3500 psi (241 bar, 24.1 MPa)
Fluid inlet . . . . . 3/4-16 37° JIC female swivel
Nozzle attachment . . . . . #10-32 proprietary connection
Wetted parts . . . . . stainless steel, nickel alloy, brazing alloy, epoxy, EPDM rubber
Noise level . . . . . sound pressure level – 67 dBa
Weight . . . . . 1.5 lbs (0.7 kg)

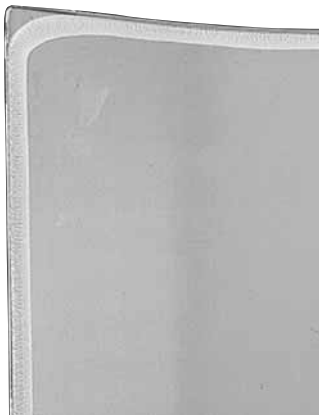
Temperature Conditioned Dispense Valve

Maximum fluid working pressure . . . . . 3500 psi (241 bar, 24.1 MPa)
Maximum working dry air pressure . . . . . 144 psi (10 bar, 1 MPa)
Material inlet (to conditioning manifold) . . . . . 1/2 npt
Air inlet . . . . . 1/8 npt(m)
Conditioning fluid inlet/outlet . . . . . (2 ports) 1/4 npt
(4 ports) 1/8 npt
Wetted parts . . . . . stainless steel, aluminum, UHMWPE, fluoroelastomer,
black oxide coated CS, Hytrel elastomer
Maximum temperature rating . . . . . .140°F (60°C)
Weight . . . . . 4.4 lbs (2 kg) approx.
Instruction manuals
PrecisionSwirl 310554
Temperature Conditioned Dispense Valve 310539

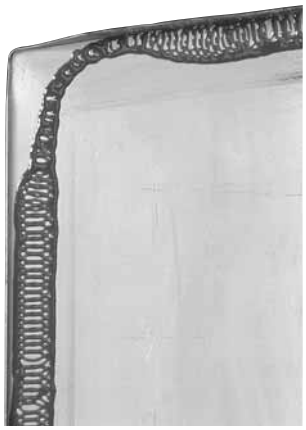
PrecisionSwirl
Orbital Applicator Module

PrecisionSwirl Applications

Select various bead profiles in the corner and on the straightaways with PrecisionSwirl. Here are just a few of the many applications that can be accomplished with PrecisionSwirl.



Consistent width



Swirl pattern narrowing in the corner

Width and thickness of swirl are controlled with flow rate, analog signal, or application speed.

SWIRL PATTERNS

Narrow Pattern **Wide Pattern**

PrecisionSwirl
Orbital Applicator Module

Ordering Information

START ORDER

617829 Robot Interface Cable Assembly
40 ft (12.2 m)

918616 PrecisionSwirl Control Assembly

617870 Motor Cable
55 ft (16.8 m)
Can be used alone or in conjunction with Cable Extension.

::: **OR** :::

198730 Motor Cable
110 ft (33.6 m)
Can be used alone or in conjunction with Cable Extension.

233125 6 ft (1.8 m) Extension Cable

::: **OR** :::

233124 9 ft (2.7 m) Extension Cable

::: **OR** :::

233125 15 ft (4.6 m) Extension Cable

243402 PrecisionSwirl Orbital Dispenser
.12 coupler offset for smaller bead widths.
Typical for hem flange, after hem, etc.

::: **OR** :::

243403 PrecisionSwirl Orbital Dispenser
.28 coupler offset for larger bead widths.
Typical for seam sealing applications.

Dispense Nozzle

918610 - 0.012 in	918609 - 0.033 in
918601 - 0.015 in	918611 - 0.035 in
918602 - 0.017 in	918612 - 0.039 in
918603 - 0.019 in	918613 - 0.043 in
918604 - 0.021 in	918614 - 0.047 in
918605 - 0.023 in	241813 - 0.051 in
918606 - 0.025 in	241814 - 0.055 in
918607 - 0.027 in	241816 - 0.070 in
918608 - 0.030 in	

Accessories
15D259 – Swirl Control Cable support
196039 – Small Profile Retainer
196169 – Teach Adapter

243482 – 1K Ultra-Lite
Dispense Valve with 45 deg connection

::: **OR** :::

243666 – 1K Ultra-Lite
Dispense Valve Straight connection

::: **OR** :::

For Endure 45 deg connection, order:
244910 – Endure Valve
197504 - Straight flange adapter, EnDure

::: **OR** :::

For Endure 45 deg connection, order:
244910 – Endure Valve
197842 - 45 deg nosepiece
198323 - Alternative orbiter nut
198324 - Nosepiece to orbiter fitting

FINISH ORDER

PrecisionSwirl
Orbital Applicator Module

Ordering Information

241658 **Orbital Applicator Module Kit (wide pattern)**
Swirl orbiter (243403), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

234029 **Orbital Applicator Module (narrow pattern)**
Swirl orbiter (243402), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

Accessories

Swirl Dispense Tips

Part No.	Size	Part No.	Size
918610	0.012	**918609**	0.033
918601	0.015	**918611**	0.035
918602	0.017	**918612**	0.039
918603	0.019	**918613**	0.043
918604	0.021	**918614**	0.047
918605	0.023	**241813**	0.051
918606	0.025	**241814**	0.055
918607	0.027	**241816**	0.070
918608	0.030		

Dispense Valves

For 1K Ultra-Lite straight connection, order:
243666 1K Ultra-Lite Dispense Valve, straight

For 1K Ultra-Lite 45 deg connection, order:
243482 1K Ultra-Lite Dispense Valve, 45 deg

For Endure straight connection, order:
244910 Endure (ambient or water conditioned)
197504 Straight flange adapter, EnDure

For Endure 45 deg connection, order:
244910 Endure (ambient or water conditioned)
198323 Alternative orbiter nut
197842 45 deg nosepiece
198324 Nosepiece to orbiter fitting

Swirl Dispenser

243402 Tool-Mounted Dispensers
With narrow pattern coupler (0.012 in [0.3 mm])

243403 Tool-Mounted Dispensers
With wide pattern coupler (0.028 in [0.7 mm])

Motor Extension Cable

233123 15 ft (4.6 m)
233124 9 ft (2.7 m)
233125 6 ft (1.8 m)
Connects PrecisionSwirl orbital applicator to motor cable.

Motor Cable

617870 **Motor Cable, 55 ft (16.8 m)**
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

198730 **Motor Cable, 110 ft (33.6 m)**
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

Controller

918616 **PrecisionSwirl Control Assembly**
Bare model only. Order appropriate cables to connect to dispenser.

617829 **Robot Interface Cable, 40 ft (12.2 m)**
Connects PrecisionSwirl control panel to robot control panel. Accepts a 0-10 volt signal to adjust RPM.

Swirl Dispenser Accessories

196039 **Small Profile Retainer**
Replaces standard nozzle guard. Allows easier access to tight locations.

196160 **Teach Adapter**
Replaces nozzle guard during robot path teaching.

15D259 **Swirl Control Cable Support**
Add to the orbiter assembly if extreme stresses are being applied to the motor control cable.

Repair Kits

241479 **Swirl Motor Assembly**
Order bearing and coupler separately.

918620 **Swirl Tube Repair Kit**
Includes coupler assembly, O-ring, tube assembly and bellows.

241569 **Tool Kit**
Includes various tools required for servicing the Swirl applicator and tube bearing.

241466 **Tube Bearing Wide Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

243256 **Tube Bearing Narrow Pattern Coupler Assembly**
Tool kit (241569) required for replacement.

246292 **Tube Support Bearing Repair Kit**
With wide-pattern coupler. Includes 241466, O-ring, seal, and tube assembly.

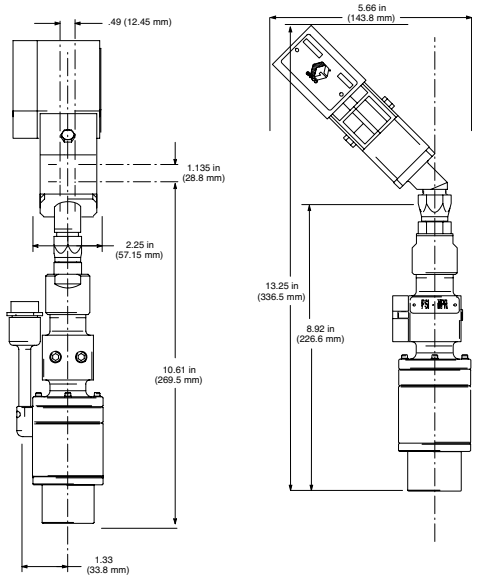
246293 **Tube Support Bearing Repair Kit**
With narrow-pattern coupler. Includes 243256, O-ring, seal, and tube assembly.

15B619 **Bellows Seal**
Qty: 1 – fluoroelastomer

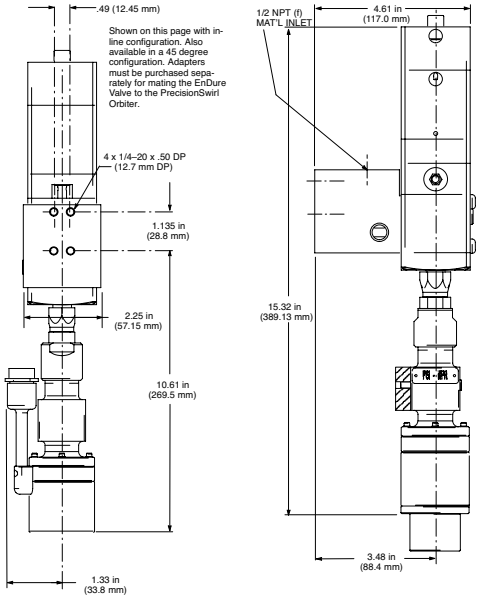
246290 **Bellows Seal Kit**
Qty: 12 – fluoroelastomer

PrecisionSwirl
Orbital Applicator Module

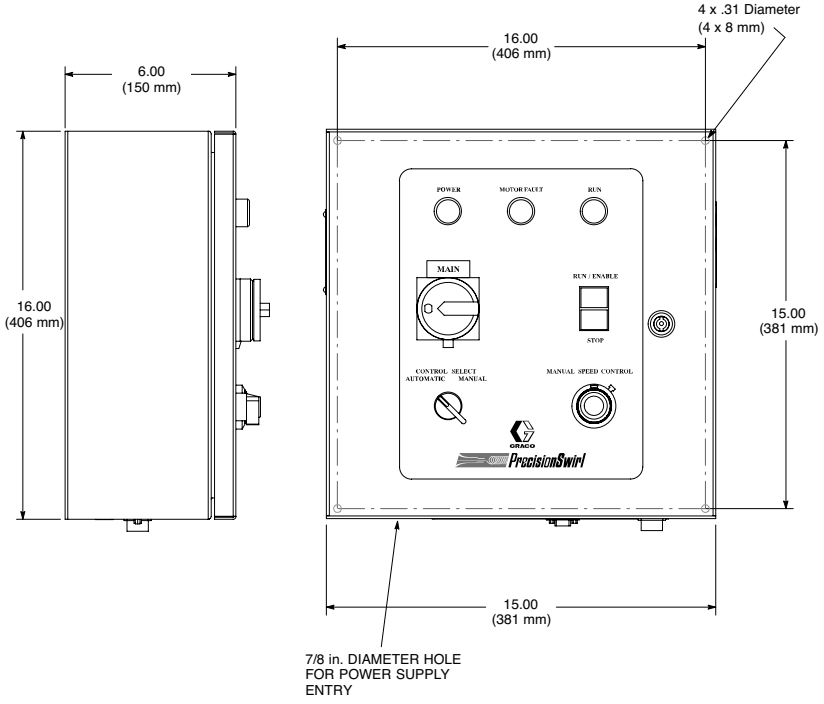
PrecisionSwirl Dimension Drawing



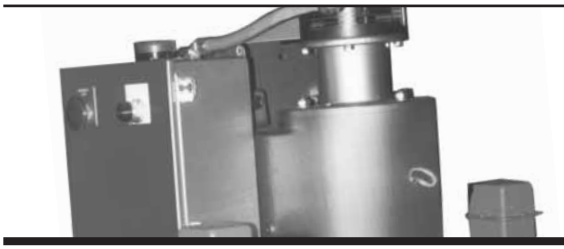
243482 Ambient Snuff-Back Dispense Valve (45 deg)
243403 Orbital Dispenser



244910 EnDure Dispense Valve
243403 Orbital Dispenser
197504 Straight Flange Adapter, EnDure



918816
PrecisionSwirl Control Assembly



Gear Meter

Continuous Bead Control

Gear meters are used to control bead dispense where application control is most critical.

Features and Benefits

Continuous bead flow means faster production cycle times since you eliminate the need to reload material typically required by shot meter systems. Fewer components (such as inlet and outlet valves and linear position sensors) result in less system maintenance.

No speed ramp-up or ramp-down required to initiate or to stop dispensing. The unit's motor control may be interfaced to a robot controller to provide superior bead quality at varying dispense rates. Outlet pressure transducer indicates sufficient supply and outlet overpressure prevents production losses and quality problems.

System controls can be specified to be as simple as a relay panel or customized to incorporate any programmable logic controller.

Typical Applications

- Automotive glass bonding
- Headliner assembly

Typical Fluids Handled

- Urethane windshield sealants
- Structural epoxies

Gear Meter
Continuous Bead Control

Technical Specifications

Control Unit

Height . . . . . 64 in (1626 mm)
Width . . . . . 38 in (965 mm)
Depth . . . . . 12 in (305 mm)
Weight . . . . . 450 lbs (204 kg)
Electrical requirements . . . . . 480 volt, 1 phase, 15 FLA

Mechanical Gear Meter

Height . . . . . 59 in (1500 mm)
Width . . . . . 26 in (660 mm)
Depth . . . . . 23 in (585 mm)
Weight . . . . . 550 lbs (250 kg)
Air pressure required . . . . . 0 to 2 scfm at 60 psi (4.1 bar; 0.41 MPa)
Flow rate range . . . . . 0 to 90 in^3/min. (0 to 2.29 m^3/min.)
Material viscosity range . . . . . 100,000 to 5,000,000 cps
Max. fluid inlet pressure . . . . . 5000 psi (345 bar; 34.5 MPa)
Fluid inlet port . . . . . 1-1/2 npt(f)

Outputs Available (120 VAC)

- Sealer Ready
- Sealer in Cycle
- Sealer Maintenance Required

Inputs Available (120 VAC)

- Robot Dispense
- 0-10 VDC Analog Signal

Package Ordering Information

Servo Gear Meters

Includes: Servo gear meter module, main control panel, high pressure SST braid fluid dispense hose, and 3/4 npt automatic dispense valve. Supply pumps not included.

970175 Bottom Inlet/Outlet

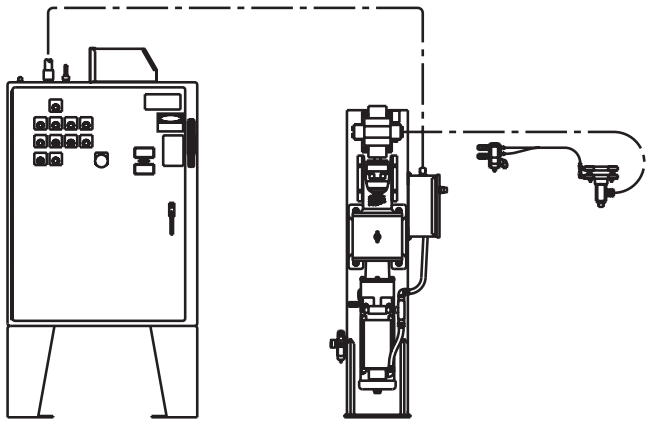
970176 Top Inlet/Outlet

970177 Horizontal Inlet/Outlet

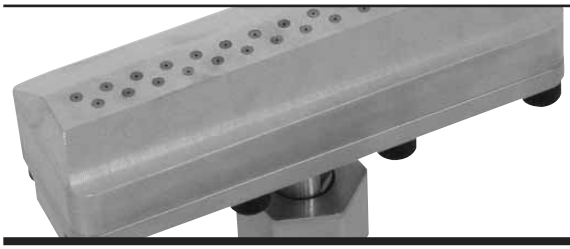
970194 **Horizontal Mount – Heated Components**
Includes: 4-zone temperature control panel, heated fluid hose, automatic dispense valve with nozzle.

Accessories

C57519 **Urethane Dispense Nozzle**
Triangle-shaped, 1/2 in (1.27 cm) base x 1/2 in (1.27 cm) height, 3 in (7.62 cm) length, 1/4 npt (f)



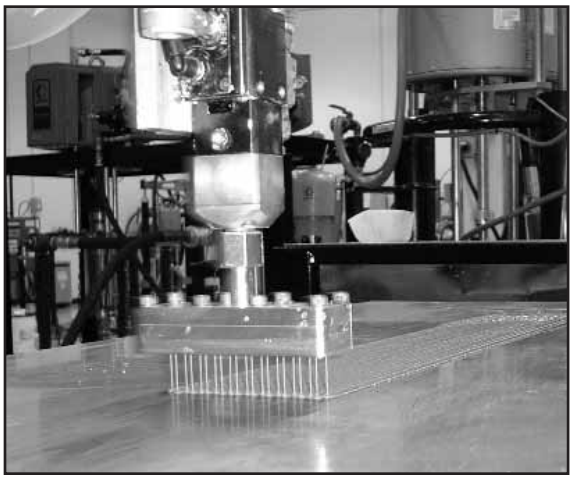
970176 shown



MOLSA

Liquid Applied Sound Deadening Equipment

Achieve lower costs and less re-work by eliminating mastic pads using Graco's proven Liquid Applied Sound Deadening (LASD) solution.



Features and Benefits

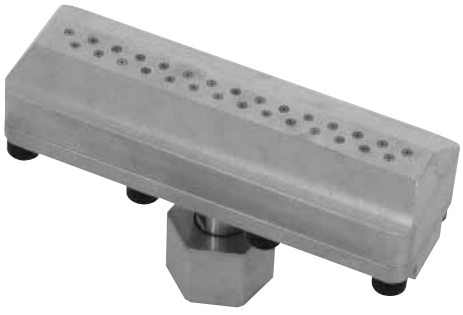
- Multi-Orifice Linear Stream Applicator (MOLSA) gives you faster cycle rates, more accurate dispensing and longer production life compared to competitive offerings
- Save time, money and material with patented real-time, closed loop flow control
- Highly durable components reduce downtime and maintenance costs in high-speed operations

Key Applications

- Water-based NVH materials
- PVC-based NVH materials
- Anywhere a thick film build is required

Key Materials

- Water and PVC-based NVH materials



MOLSA Head

MOLSA
Liquid Applied Sound Deadening Equipment

Technical Specifications

Film thickness . . . . . 0.060 in (1.5 mm) – 0.160 in (4 mm)
Application speeds . . . . . 200 – 1,000 mm/second
Pattern widths . . . . . 2 – 8 inches (50.8 – 203.2 mm) in a single pass
Flow rates . . . . . 1,400 cc/min (0.37 gpm) – 19,500 cc/min (5.15 gpm)
Stand-off distance . . . . . 1 – 4 in (25.4 – 101.6 mm) up to to 6 in (152.4 mm) maximum
Position . . . . . MOLSA normally 90 deg to surface, + 15 deg
Cleaning . . . . . When not in use, wipe and submerge MOLSA in 1/8 in (6.35 mm) water
Instruction manual 310639

Ordering Information

Part Number	Width	Orifice Diameter Inches (mm)
234513	2 in (51 mm)	0.025 (0.64)
234514	2 in (51 mm)	0.029 (0.74)
234515	2 in (51 mm)	0.035 (0.89)
234516	2 in (51 mm)	0.041 (1.04)
234517	3 in (76 mm)	0.025 (0.64)
234518	3 in (76 mm)	0.029 (0.74)
234519	3 in (76 mm)	0.035 (0.89)
234520	3 in (76 mm)	0.041 (1.04)
234521	4 in (102 mm)	0.025 (0.64)
234522	4 in (102 mm)	0.029 (0.74)
234523	4 in (102 mm)	0.035 (0.89)
234524	4 in (102 mm)	0.041 (1.04)

PrecisionFlo XL

Consult configured product form number 300572

MOLSA
Liquid Applied Sound Deadening Equipment

LASD Supply Systems

246985 . . . . . 300 gal (1135 l), tandem 45:1 Unidrum with enhanced depressurization
246983 . . . . . 300 gal (1135 l), single 45:1 Unidrum, left hand
246984 . . . . . 300 gal (1135 l), single 45:1 Unidrum, right hand
248306 . . . . . 300 gal (1135 l), single 45:1 Unidrum for robotic PLC, left hand
248307 . . . . . 300 gal (1135 l), single 45:1 Unidrum for robotic PLC, right hand
249154 . . . . . 300 gal (1135 l), single 34:1 Unidrum, left hand
249155 . . . . . 300 gal (1135 l), single 34:1 Unidrum, right hand
249152 . . . . . 300 gal (1135 l), single 34:1 Unidrum for robotic PLC, left hand
249153 . . . . . 300 gal (1135 l), single 34:1 Unidrum for robotic PLC, right hand
249339 . . . . . 300 gal (1135 l), single 45:1 Unidrum for robotic PLC, 24 VDC, left hand
249340 . . . . . 300 gal (1135 l), single 45:1 Unidrum for robotic PLC, 24 VDC, right hand
249341 . . . . . 300 gal (1135 l), single 34:1 Unidrum for robotic PLC, 24 VDC, left hand
249342 . . . . . 300 gal (1135 l), single 34:1 Unidrum for robotic PLC, 24 VDC, right hand

Accessories

246929 . . . . . LASD Outlet Check Valve
15E089 . . . . . In-Line Filter/Strainer
248301 . . . . . LASD Fluid Plate
248090 . . . . . Cartridge Regulator, LASD Fluid Plate
238747 . . . . . Cartridge Regulator Replacement Kit (LASD)
15D877 . . . . . Coriolis Flowmeter
234533 . . . . . Cleaning Station

Regulators

Features and Benefits

- The air pilot regulator can be mounted directly onto the diaphragm actuator or remotely, as most convenient to the operation
- Controls the pressure to dispensing devices or protects the components from excessive pressure which may be developed by the supply pumps
- Accepts up to 5000 psi (345 bar; 34.5 MPa) upstream pressure and will regulate from 500 to 3500 psi (34 to 241 bar; 3.4 to 24.1 MPa) downstream pressure
- Provides simple on-off robotic interface with constant flow rate
- Ambient and heated models available

Typical Applications

- Body Shop - Structural Adhesive Bonding, Body Sealing
- Stamping Plant – Anti-Flutter (extrude or mastic drop), Hem Flange Bonding
- Paint Shop – Seam sealing – Underbody, Interior, Exterior, Underbody Deadener Spray, Anti-Chip Spray
- Industrial

Application Methods

- Extrude
- Stream
- Spray
- Shower
- Swirl

Typical Fluids Handled

- Silicone
- PVC
- Epoxy

961635
Ambient Mastic Regulator

918447
Heated Mastic Regulator

Regulators

Technical Data

Stainless Steel, Waterbase-Compatible, High Pressure Fluid Regulators

	Models: 238890, 238889	Models: 238892, 238891	Models: 238894, 248090, 238893	Model: 244734
Type	238890: spring-operated with fluid pressure gauge 238889: spring-operated with EZ Flush plug	238892: spring-operated with fluid pressure gauge 238891: spring-operated with EZ Flush plug	238894 and 248090: air-operated with fluid gauge 238893: air-operated with EZ Flush plug	Air-operated with pressure sensor ports
Maximum fluid inlet pressure	6000 psi (41 MPa, 414 bar)	6000 psi (41 MPa, 414 bar)	6000 psi (41 MPa, 414 bar)	6000 psi (41 MPa, 414 bar)
Regulated fluid outlet pressure range	500–3000 psi (3.4–21 MPa, 34–207 bar)	3000–5000 psi (21–34 MPa, 207–345 bar)	500–4000 psi (3.4–28 MPa, 34–276 bar)	500–4000 psi (3.4–28 MPa, 34–276 bar)
Maximum inbound air pressure	-	-	100 psi (0.7 MPa, 7 bar)	100 psi (0.7 MPa, 7 bar)
Maximum operating temperature	120° F (50° C)	120° F (50° C)	120° F (50° C)	120° F (50° C)
Wetted Parts	238889 – 304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE 248090 - ceramic	304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE	304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE	304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE
Inlet/outlet	3/8 npt (f)	3/8 npt (f)	3/8 npt (f) 1/2 npt (f) for 248090	3/8 npt (f)
Fluid pressure gauge (models 238890, 238892, and 238894)	0–3000 psi (0-21 MPa, 0-207 bar)	0–5000 psi (0-34 MPa, 0-345 bar)	0–5000 psi (0-34 MPa, 0-345 bar)	-
Maximum flow in 65 cp material	2 gpm (7.6 lpm)	2 gpm (7.6 lpm)	2 gpm (7.6 lpm)	2 gpm (7.6 lpm)
Maximum fluid viscosity	Up to 15,000 cp	Up to 15,000 cp	Up to 15,000 cp	Up to 15,000 cp
Weight	7.0 lbs (3.2 kg)	7.0 lbs (3.2 kg)	11.7 lbs (5.3 kg)	11.7 lbs (5.3 kg)
Adjustment tool	6 mm hex wrench	6 mm hex wrench	-	-
Instruction Manual	308647	308647	308647	308647

Air Requirements for Air-Operated Regulators (Models 238893, 238894 and 248090)

The following table shows the approximate air pressure needed to regulate the air-operated regulator to a given fluid outlet pressure.

AIR PRESSURE REGULATED			FLUID OUTLET PRESSURE		
psi	MPa	bar	psi	MPa	bar
28	0.19	1.9	1000	7	69
49	0.34	3.4	2000	14	138
70	0.48	4.8	3000	21	207
90	0.62	6.2	4000	28	276

Regulators

Technical Data

Air- and Spring-Operated, High Pressure Mastic Fluid Regulators

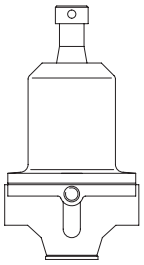
	Models: 961635, C58318, 244740	**Models: 243700, 918447**	**Models: 246642, 246687**	**Models: 246643, 246688**	**Model: 903958**
Type	ambient, air-operated	918447: temperature conditioned/heated, air-operated	ambient, air-operated	temperature conditioned/heated, air-operated	ambient, spring-operated high range
Regulated fluid pressure range	250 – 4500 psi (1.7 – 31.0 Mpa, 17 – 310 bar)	250 – 3500 psi (1.7 – 24.1 Mpa, 17 – 241 bar)	100 – 4500 psi (0.7 – 31.0 Mpa, 7 – 310 bar)	100 – 3500 psi (0.7 – 24.1 Mpa, 7 – 241 bar)	High range (standard): 1000 to 4500 psi (70 to 310 bar) with low range spring kit: 400 to 1000 psi (28 to 70 bar)
Maximum fluid inlet pressure	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)
Maximum fluid temperature	140° F (60° C)	400° F (202° C)	140° F (60° C)	400° F (202° C)	140° F (60° C)
Pressure drop (at 400 psi inlet pressure and 1.5 gpm)	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID
Wetted parts	961635, 244740 – zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE	zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide	zinc-plated carbon steel, brass, stainless steel, Buna-N, urethane tungsten carbide	zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide	zinc-plated carbon steel, brass, stainless steel, Buna-N, urethane tungsten carbide
Inlet (one)	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side
Outlet	3/4 npt (f) at side and bottom	3/4 npt (f) at side and bottom	3/4 npt (f) at side only	3/4 npt (f) at side only	3/4 npt (f) at side and bottom
Weight	17.75 lbs (7.9 kg)	17.75 lbs (7.9 kg)	17.75 lbs (7.9 kg)	17.75 lbs (7.9 kg)	13.5 lbs (6.1)
Instruction Manual	307517	307517	307517	307517	307517

Regulators

Technical Data

Mechanically Adjustable Fluid Regulators, Low and Medium Pressure

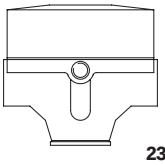
	Model: 234273	**Model: 234263**
Inlet/Outlet	3/8 npt(f) 3/8 npt(f)	3/8 npt(f) 3/8 npt(f)
Gauge Port	1/8 BSPP	1/8 BSPP
Max Inbound Fluid psi/bar/MPa	580/40/4	580/40/4
Regulated Pressure psi/bar/MPa	14.5-145/1-10/0.1-1	14.5-290/1-20/0.1-2
Max Delivery gpm/lpm	7/27	7/27
Wetted Parts	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, Carbide Valve
Instruction Manual	309474	309474



234273
234263

Pneumatically Adjustable Fluid Regulators, Low and Medium Pressure

	Model: 234272	**Model: 234256**
Inlet/Outlet	3/8 npt(f) 3/8 npt(f)	3/8 npt(f) 3/8 npt(f)
Gauge Port	1/8 BSPP	1/8 BSPP
Max Inbound Fluid psi/bar/MPa	580/40/4	580/40/4
Regulated Pressure psi/bar/MPa	5.8-145/0.4-10/0.04-1	5.8-145/0.4-10/0.04-1
Max Delivery gpm/lpm	7/27	7/27
Wetted Parts	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, PEEK Valve
Instruction Manual	309474	309474



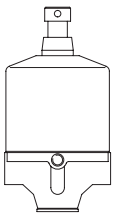
234272
234256

Regulators

Technical Data

Mechanically Adjustable Fluid Regulators, High Pressure

	Model: 234267	Model: 234260	Model: 234264	Model: 234265
Inlet/Outlet	3/8 npt(f) 3/8 npt(f)	3/8 npt(f) 3/8 npt(f)	3/8 npt(f) 3/8 npt(f)	3/8 npt(f) 3/8 npt(f)
Gauge Port	1/8 BSPP	-	-	-
Max Inbound Fluid psi/bar/MPa	1015/70/7	2611/180/18	5221/360/36	5221/360/36
Regulated Pressure psi/bar/MPa	145-725/10-50/1-5	580-1450/40-100/4-10	1305-2901/90-200/9-20	1305-3916/90-270/9-27
Max Delivery gpm/lpm	10/38	8/30	8/30	9/34
Wetted Parts	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, Carbide Valve
Instruction Manual	309474	309475	309475	309475



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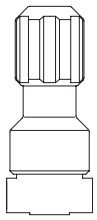
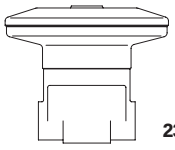


234260
234264
234265

Pneumatically Adjustable Fluid Regulators, High Pressure

	Model: 234266	Model: 234270	Model: 234259	Model: 234271
Inlet/Outlet	3/4 npt(f) 3/4 npt(f)	3/4 npt(f) 3/4 npt(f)	3/4 npt(f) 3/4 npt(f)	3/4 npt(f) 3/4 npt(f)
Gauge Port	1/4 BSPP	1/4 BSPP	-	1/4 BSPP
Max Inbound Fluid psi/bar/MPa	5221/360/36	5221/360/36	5221/360/36	5221/360/36
Regulated Pressure psi/bar/MPa	72-870/5-60/.05-6	280-2175/20-150/0.2-15	580-3625/40-250/4-25	580-4640/40-320/0.4-32
Max Delivery gpm/lpm	11/42	11/42	11/42	12/45
Wetted Parts	SST, fluoroelastomer, Carbide Valve Acetal	SST, fluoroelastomer, Carbide Valve Acetal	SST, fluoroelastomer, Carbide Valve	SST, fluoroelastomer, Carbide Valve Acetal
Instruction Manual	309475	309475	309475	309475



234266

234259

Regulators

Ordering Information

Air-Operated Ambient Carbon Steel and Stainless Steel Regulators

238894 3/8 npt(f) Ported Regulator with Stainless Steel Body
Regulated pressure 500 to 4000 psi (34 to 276 bar; 3.4 to 27.6 MPa). Includes fluid regulator gauge.

238893 Same as 238894 with EZ Flush Plug (238896) instead of fluid gauge.

244734 Same as 238893 with 1/2 npt(f) inlet and outlet. Includes ports for pressure sensors.

961635 3/4 npt(f) Ported Regulator with Carbon Steel Body
Regulated pressure 500 to 4500 psi (34 to 310 bar; 3.4 to 31 MPa). Includes fluid pressure gauge (102814).

C58318 Same as 961635 with stainless steel body.

244740 3/4 npt(f) regulator with SST body and parts for pressure sensors.

Air-Operated Heated Carbon Steel Regulators

918447 120 VAC Heated Regulator
Includes: 300W heater and 6-pin round plug. 3/4 npt(f) ports.

243700 240 VAC Heated Regulator
Includes: 400W heater and 8-pin square connector.

Spring-Operated Carbon Steel Regulator

903958 3/4 in npt(f) Regulator with Carbon Steel Body
Regulated pressure 1000 to 4500 psi (69 to 310 bar; 7 to 31 MPa).

Accessories and Repair Kits

238747 Fluid Diaphragm Repair Kit for 238893, 238894 and 244734

238748 Cartridge Repair Kit for 238893, 238894 and 244704

918448 Repair Kit for Ambient Mastic Regulators 961635 and 903958

233131 Repair Kit for Heated Mastic Regulators 243700 and 918447

113654 Fluid Pressure Gauge
Maximum pressure 5000 psi (345 bar; 34.5 MPa); 1/4 in npt(m); requires bushing 100615.

521079 Low-Range Conversion Spring
Replaces spring in 903958 to allow regulated pressure from 400 to 1000 psi (28 to 69 bar; 2.8 to 7 MPa).

915587 Spring to Air Conversion Kit
Converts 903958 from spring to air-operated regulator.

C06234 Bleed Valve
Adjustable air regulator bleed for improved fluid pressure accuracy.

C59588 Mounting Bracket for 961635, 918447, 243700, 903958 and C58318. Requires (2) 100133 lock washers, (2) 100307 3/8 in nuts and C20458 U-Bolt.

EnDure Valves

Automatic Dispense Valves

EnDure Valves offer high reliability for high pressure, high flow sealant and adhesive dispensing applications

Features and Benefits

- Dual Seal design means that two seals need to fail before leakage occurs
- Primary seal is harder than typical snuff-back valve for use with abrasive materials
- Snuff-back style for non-drip performance and less rework
- Air operated with spring-assisted closing means no leakage if air supply is lost
- Manifold mounted for easy repositioning after service

Typical Applications

- Structural bonding
- Anti-Flutter mastics
- Glass bonding
- Interior/Exterior seam sealing
- Window manufacturing

Typical Fluids Handled

- PVC
- Epoxy
- Silicone
- Anti-Flutter Mastic

244910
EnDure Automatic Dispense Valve

EnDure Valves
Automatic Dispense Valves

Technical Data

Maximum working fluid pressure . . . . . 3500 psi (241 bar; 24.1 MPa)

Maximum static fluid pressure . . . . . 5000 psi (345 bar; 34.5 MPa)

Maximum working dry air pressure . . . . . 120 psi (8.3 bar; 0.83 MPa)

Maximum working temperature: standard seals in models 244535, 244910, 244961, 244962 . . . . . 200˚F (95˚C)

High-temp. seals in models 244907, 244908, 244909, 244937, 244951, 245184 . . . . . 400˚F (204˚C)

Material inlet on inlet manifold: . . . . . 1/2 npt(f)

Air inlets (open and closed) . . . . . 1/8 npt

Weight (automatic dispense valve plus manifold) . . . . . 4 lbs (1.8kg)

Instruction manual 309376

Ordering Information

EnDure Valve complete with mounting manifold

244910 **Ambient or Temperature Conditioned Applications**

Used for temperatures to 200ºF (95ºC) in ambient applications or where water-circulated temperature conditioning is used. Outlet connection is either 5/8-18 male thread or retainer nut with 1/8 npt (f).

244961 **120V Electric Heat Model, temperatures to 200ºF (95ºC)**

Used for heat-only applications. Manifold includes a 150W heater and a 120V, 6 pin round connection. Outlet connection is either 5/8-18 male thread or retainer nut with 1/8 npt (f).

244962 **240V Electric Heat Model, temperatures to 200ºF (95ºC)**

Used in heat-only applications. Manifold includes a 200W heater and a 240V, 8 pin square connector. Outlet connection is either 5/8-18 male thread or retainer nut with 1/8 npt (f).

244908 **120V Electric Heat Model, temperatures to 400ºF (204ºC)**

Same as 244961 with higher temperature seal kit.

244909 **240V Electric Heat Model, temperatures to 400ºF (204ºC)**

Same as 244962 with higher temperature seal kit.

245184 **120V Electric Heat Model with 1/2 npt (m) outlet**

Same as 244908 with different outlet connection.

244951 **240V Electric Heat Model with 1/2 npt (m) outlet**

Same as 244909 with different outlet connection.

EnDure base valves and manifolds

244535 Base valve for models 244910, 244961, and 244962

244907 Base valve for models 244908 and 244909

244937 Base valve for models 244951 and 245184

198235 Mounting manifold for ambient/temperature conditioned valve

198236 Electrical manifold for electrically heated models (Note: additional hardware needed for connection. See manual 309376)

197843 Mounting block for electrically heated models

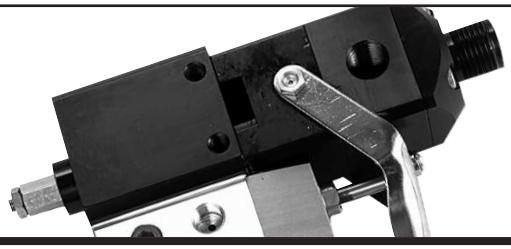
Adapters and Repair Kits

197504 Alternate nosepiece for valve outlet, to fit inlet swivel of PrecisionSwirl orbiter. To mount the orbiter also requires the following parts: 197842 (45º nosepiece), 198323 (orbiter nut), and 198324 (fitting between nosepiece and orbiter.

617585 Streaming adapter: to allow outlet nut to retain 270xxx stream tips or 182xxx fan tips.

15E012 Repair kit: includes standard duty seals, needle, and seat.

15E011 Repair kit for high temperature (400ºF [204ºC]) valves: includes high temperature seals, needles, and seat.



1K Ultra-Lite

Precision Dispense Valve for Quality Bead Dispensing

1K Ultra-Lite valves are top-of-the-line, lightweight valves designed for long service

Features and Benefits

- Lightweight and compact
- Lubricated packings for longer seal life
- Severe-Duty needle and seat
- Eliminates snake-head and material drip
- Adjustable forward travel to reduce material surge
- Manual and automatic versions available
- Pistol grip version provides pilot on/off signal to control pump

Typical Applications

- Railcar sealing
- Truck trailer sealing
- Marine container sealing
- Product assembly for wood windows and doors
- Automatic bead laying with robot or XY table

Typical Fluids Handled

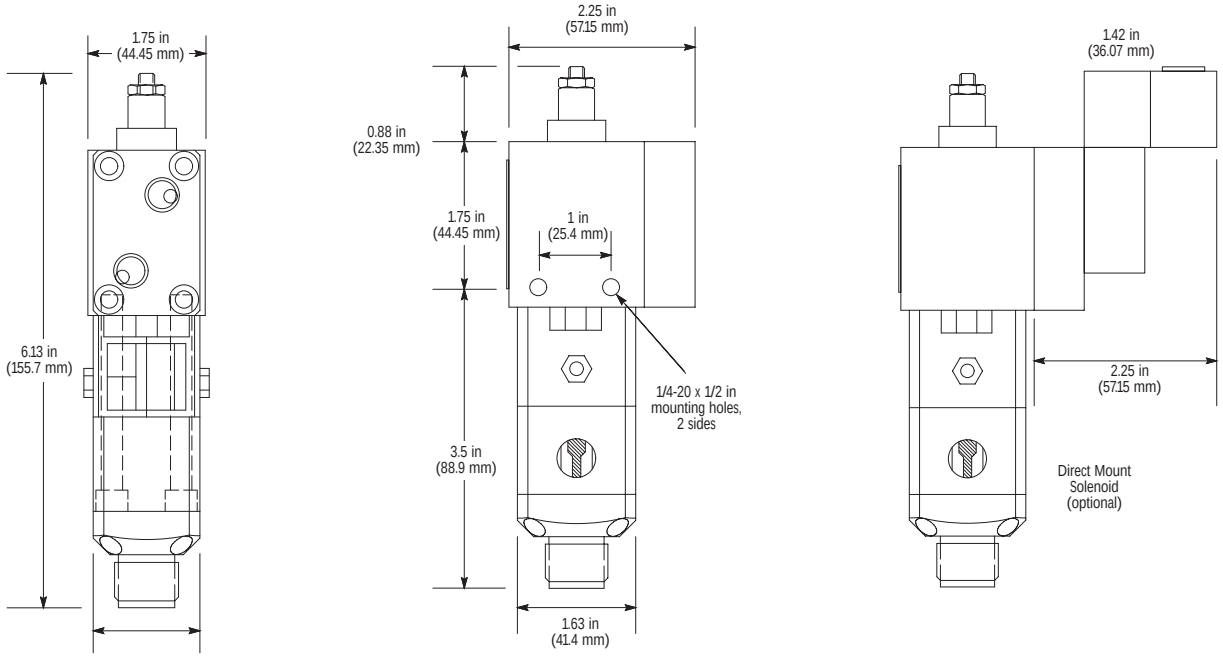
- Epoxies
- Silicones
- Polysulfides
- Urethanes
- Butyl

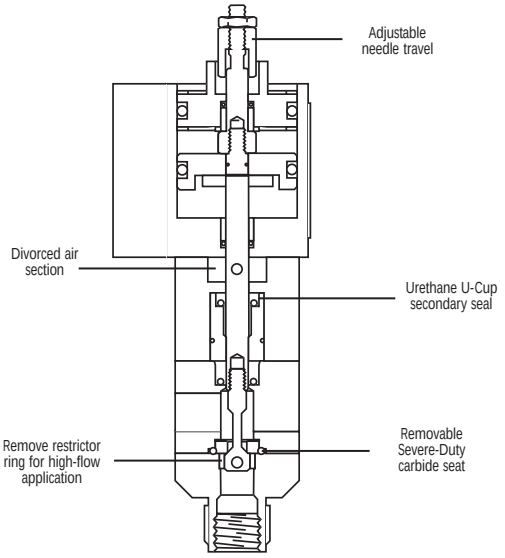
Machine Mount
965766 SST
965786 Aluminum

1K Ultra-Lite

Precision Dispense Valve for Quality Bead Dispensing

Dimensions





Technical Specifications

Maximum fluid outlet pressure . . . 4000 psi (276 bar; 28 MPa)

Fluid viscosity range . . . . . 20 to 1 million cps

Maximum cylinder air pressure . . . .120 psi (8.4 bar; 0.84 MPa)

Fluid inlet size . . . . . 1/4 npt(f)

Fluid outlet size . . . . . 1/4 npt(f) and 3/4-16 unf(m)

Air inlet size . . . . . 1/8 npt(f)

Shaft sealing fluid section . . . . . dual seal isolation chambers with Zirk fittings

Air cylinder . . . . . divorced

Wetted materials

Aluminum . . . . . Aluminum, 303 SST, 17-4 ph SST, C2 carbide, hard chrome, ethylene propylene, Parker Polymite™, PTFE

SST 303 SST, 17-4 ph SST, C2 carbide, hard chrome, ethylene propylene, Parker Polymite™, DuPont PTFE

Weight

Aluminum . . . . . 1.43 lbs (0.65 kg)

SST . . . . . 2.07 lbs (0.94 kg)

Handle kit . . . . . 0.77 lbs (0.35 kg)

Instruction manual 308876

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1K Ultra-Lite

Precision Dispense Valve for Quality Bead Dispensing

Hand-held Information

965767 **Hand-held with Internal Air Switch**
Aluminum Wetted Parts

965768 **Hand-held valve with Electric Switch for Remote Operation**
Aluminum wetted parts

Machine Mount Information

965766 **Machine Mount 1K Ultra-Lite Dispense Valve**
SST wetted parts

965786 **Machine Mount 1K Ultra-Lite Dispense Valve**
Aluminum wetted parts

243482 **Machine Mount 1K Ultra-Lite Dispense Valve**
SST wetted parts, includes 45º outlet for use with PrecisionSwirl orbiter

243666 **Machine Mount 1K Ultra-Lite Straight Connection for PrecisionFlo Applications (Non-Swirl)**
SST wetted parts, non-adjusting fluid needle

Air Signal Accessories

104661 **Quick Exhaust Valve**
1/8 npt(f) inlet and outlet, 1/4 npt(f) exhaust. Used to speed up opening or closing action of the 1K Ultra-Lite

104632 **Pump Pilot Valve**
1/2 npt(f) line ports, 1/8 npt(f) pilot port. 3-way air piloted air valve to turn air powered proportioning pump on with hand gun signal

4-Way Solenoids and Solenoid Accessories

551348 **24 Volt dc Solenoid**
Remote mount, 1/8 npt(f) ports

551350 **24 Volt dc Din Plug**
With screw terminals for above solenoids

Plastic Tube Fittings to Connect Air Signals

Tube OD	1/8 npt(m) Straight	1/8 npt(m) 90° Swivel
1/8 in	**598329**	
5/32 in	**104172**	**598140**
1/4 in		**597151**

Tube OD	1/4 npt(m) Straight	1/4 npt(m) 90° Swivel
5.32 in	**598252**	**598327**
5/32 in	**104165**	**598156**

Plastic Tubing for Air Signal Lines

513063 1/8 O.D. Nylon
514607 5/32 O.D. Nylon
513231 1/4 O.D. Nylon

Kits

949631 **Conversion Kit**
Pneumatic 4-way valve with housing, handle, and trigger and other parts necessary to convert 965766 automatic valve to a hand-held valve

949632 **Conversion Kit**
Electric switch style handle kit to convert 965766 to a hand-held valve

570267 **Seal Kit**
Polymite main packing (standard)

570268 **Rebuild Kit (includes 570267 Seal Kit)**
Polymite main packing (standard)

570299 **Seal Kit**
PTFE main packing (optional)

570300 **Rebuild Kit (includes 570299 Seal Kit)**
PTFE main packing (optional)

AutoPlus™ Valves

For Sealant Streaming, Spray and Extrusion Applications

Less maintenance and more system uptime! With its longer life needle and seat construction, the AutoPlus is specifically designed for demanding sealant and adhesive applications.

Features and Benefits

- Durable stainless steel construction handles the toughest materials
- Lightweight, versatile and compact rounded gun design
- Capable of handling high production speeds
- Fewer parts means an overall lower cost of repair
- Wide range tip line for a variety of applications
- Capable of handling multiple nozzle sizes for any application

288554
AutoPlus
Dispense Valve

Typical Applications

- Streaming
- Spraying
- Extrusion

Typical Fluids

- Polyvinyl Chloride (PVC)
- Epoxies
- Silicone
- Urethane

AutoPlus Valves

For Sealant Streaming, Spray and Extrusion Applications

Technical Specifications

Maximum fluid pressure . . . . . 4000 psi (276 bar, 27.6 MPa)
Maximum working air pressure . . . . . 100 psi (7 bar, 0.7 MPa)
Maximum cylinder air pressure . . . . . 100 psi (7 bar, 0.7 MPa)
Min. air cylinder actuating pressure . . 70 psi (4.9 bar, 0.5 MPa)
Maximum working fluid temperature . . . . . 140˚F (60˚C)
Triggering speed . . . . . 50-70 msec (fully open or close)
Wetted parts . . . . . stainless steel, carbide, UHMPWPE, acetal, PEEK, PTFE
Gun weight . . . . . 1.2 lb (545 g)
Dimensions . . . . . 5.2 in L x 3.0 in H x 2.0 in W
135 mm L x 76 mm H x 51 mm W
Instruction manual 311053

Ordering Information

Airless Spray Gun

288554 AutoPlus Gun

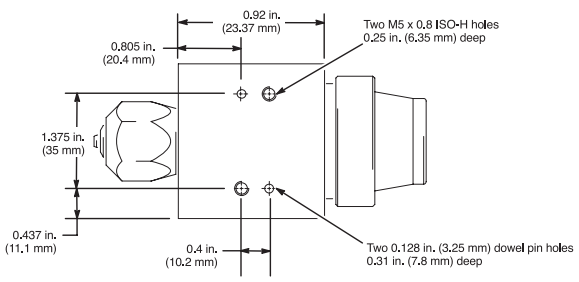
Manifolds (required for gun installation)

241161 Standard 1/4 in npsm inlets
244930 High flow ambient manifold

Accessories and Repair Kits

198316 Accessory nut which allows AutoPlus valve to accept extrusion tips
239896 Fluid seal repair kit
288171 Air seal repair kit
253886 Fluid needle assembly
233671 Valve seat
210500 In-line fluid filter
288553 Upgrade kit

Dimensions



Spray Tips

Part No.	Part No.	Orifice Size inches (mm)
182421	8-10 in (200-250 mm)	0.021 in (0.533 mm)
182521	10-12 in (250-300 mm)	
182621	12-14 in (300-350 mm)	
182721	14-16 in (350-400 mm)	
182821	16-18 in (400-450 mm)	
182423	8-10 in (200-250 mm)	0.023 in (0.584 mm)
182523	10-12 in (250-300 mm)	
182623	12-14 in (300-350 mm)	
182723	14-16 in (350-400 mm)	
182823	16-18 in (400-450 mm)	
182425	8-10 in (200-250 mm)	0.025 in (0.635 mm)
182525	10-12 in (250-300 mm)	
182625	12-14 in (300-350 mm)	
182725	14-16 in (350-400 mm)	
182825	16-18 in (400-450 mm)	
182427	8-10 in (200-250 mm)	0.027 in (0.686 mm)
182627	12-14 in (300-350 mm)	
182429	8-10 in (200-250 mm)	0.029 in (0.737 mm)
182629	10-12 in (250-300 mm)	
182829	12-14 in (300-350 mm)	
182431	8-10 in (200-250 mm)	0.031 in (0.787 mm)
182631	10-12 in (250-300 mm)	
182831	12-14 in (300-350 mm)	
182435	8-10 in (200-250 mm)	0.035 in (0.889 mm)
182535	10-12 in (250-300 mm)	
182635	12-14 in (300-350 mm)	
182439	8-10 in (200-250 mm)	0.039 in (0.991 mm)
182539	10-12 in (250-300 mm)	
182639	12-14 in (300-350 mm)	
182443	8-10 in (200-250 mm)	0.043 in (1.041 mm)
182543	10-12 in (250-300 mm)	
182643	12-14 in (300-350 mm)	
182943	18-20 in (450-500 mm)	
182947	18-20 in (450-500 mm)	0.047 in (1.194 mm)

Streaming Tips

Part No.	Orifice Size inches (mm)
270025	0.025 (0.635)
270027	0.027 (0.686)
270029	0.029 (0.736)
270031	0.031 (0.787)
270035	0.035 (0.889)
270037	0.037 (0.940)
270039	0.039 (0.991)
270041	0.041 (1.041)
270043	0.043 (1.092)
270059	0.059 (1.500)

Shower Tips

Part No.	Orifice Size inches (mm)	No. of Orifices
C08224	0.021 (0.533)	6

Automatic Dispense Valves

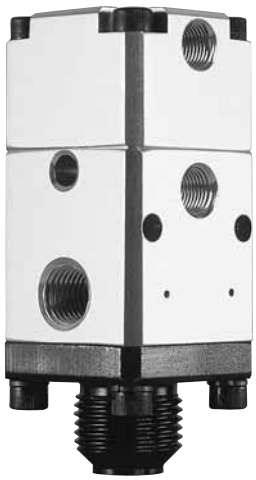
Ordering Information | Technical Specifications

918625 Automatic Spray Valve, 7/8-14 UNF-2A(m) outlet

Typical Application:
Streaming or spraying coating materials

The square body design of this valve allows multiple mounting options for robotic and automated applications. The one-piece body ensures repeatability in nozzle positioning when removing and reinstalling the dispense valve. The nozzle and seat are all metal construction for long life dispensing low abrasive materials. The valve accepts a 7/8-14 RAC spray nozzle assembly and tip.

Maximum working pressure . . . . 3700 psi (255 bar; 25.5 MPa)
Maximum air pressure . . . . . 150 psi (10.3 bar; 1.03 MPa)
Maximum operating temperature . . . . . 275˚F (135˚C)
Fluid inlet . . . . . 1/4 npt(f)
Fluid outlet . . . . . 7/8-14 UNF-2A(m)
Wetted parts Aluminum, carbon steel, tungsten carbide, chrome plate, fluoroelastomer, thermoplastic polyester
Repair kit 918626
Instruction manual 310557



918625

918512 Ambient Snuff Back Extrude/Streaming Valve

Typical Application: Streaming adhesives

This unique valve is designed for streaming most low-to-medium viscosity materials up to 350,000 cps. The square body valve is divorced design and easily mounts to a bracket for interfacing to robot wrists, pedestal mounts and automation fixtures. The cylinder is double acting and spring loaded for fail-safe closing requirements. The nozzle seal is elastomeric for easy maintenance and long life with low abrasive materials. Includes 1/8 npt(f) nozzle adapter. With the addition of a streaming tip adapter (617585) and tip, this valve is adaptable for streaming.

Maximum working pressure . . . . 3000 psi (207 bar; 20.7 MPa)
Maximum air inlet pressure . . . . . 150 psi (10.4 bar; 1.04 MPa)
Fluid inlet size . . . . . 1/2 npt(f)
Fluid outlet size . . . . . 1/8 npt(f) and 3/4-16 (m)
Air cylinder ports . . . . . (2) 1/8 npt(f)
Weight . . . . . 4 lbs (1.8 kg)
Temperature . . . . . 140°F (60°C)
Fail-safe spring . . . . . Yes
Dimensions . . . . . 6.3 in x 1.75 in x 2 in (160 mm x 44 mm x 51 mm)
Wetted parts . . . . . .SST, aluminum, UHMWPE, fluoroelastomer, Brass, Hytrel
Mounting . . . . . (2) 1/4-20 holes
Instruction Manual 310538

918512

Automatic Dispense Valves

Ordering Information | Technical Specifications

918483 Heated Snuff Back Extrude/Stream Dispense Valve

Typical Application: Extruding and streaming heated adhesives

This unique valve is designed for extruding most low-to-medium viscosity hot melt materials up to 350,000 cps. The square body valve is divorced design and easily mounts to a bracket for interfacing to robot wrists, pedestal mounts and automation fixtures. The cylinder is double acting and spring loaded for fail-safe closing requirements. The nozzle seal is elastomeric for easy maintenance and long life with low abrasive materials. Includes 1/8 npt(f) nozzle adapter. With the addition of a streaming tip adapter (617585) and tip (270xxx), this valve is adaptable for streaming.

Maximum working pressure	3500 psi (241 bar; 24.1 MPa)
Maximum air inlet pressure	150 psi (10.4 bar; 1.04 MPa)
Fluid inlet size	1/2 npt(f)
Fluid outlet size	1/8 npt(f) and 3/4-16 (m)
Air cylinder ports	(2) 1/8 npt(f)
Weight	4 lbs (1.8 kg)
Temperature	400°F (205°C)
Fail-safe spring	Yes
Dimensions	6.0 in x 4.5 in x 2.1 in (152 mm x 114 mm x 53 mm)
Wetted parts	SST, aluminum, PTFE, fluoroelastomer, Brass
Mounting	(2) 1/4-20 holes
Sensor	100 ohm, RTD
Heater	150 watt, 120 volt
Instruction Manual	310538

918483

Accessories

Bent-tip nozzles

For bead or drop dispensing where target area is more difficult to reach. Flange connections require no adapter. Other fittings require the adapter noted below. None of the nozzles in the following table should be used with hot melt guns.

Part Number	Inlet Size	Length	Orifice	Tip Angle	Adapter
C00048	flange nozzle	2.41 in (61.21 mm)	0.32 in (8.13 mm)	30º	
C00051	flange nozzle	3.44 in (87.38 mm)	0.125 in (3.17 mm)	30º	
C00058	flange nozzle	4.38 in (111.25 mm)	0.093 in (2.36 mm)	30º	
C02051	flange nozzle	5.25 in (133.35 mm)	0.062 in (1.57 mm)	15º	
C04113	flange nozzle	3.5 in (88.9 mm)	0.062 in (1.57 mm)	30º	
C08089	5/16-24 (m)	1.94 in (49.28 mm)	0.046 in (1.17 mm)	45º	

Ribbon nozzles

For dispensing ribbon beads with manual or automatic flow guns. Flange inlets require no adapter; otherwise use the adapter noted. Do not use with hot melt guns except where noted.

Part Number	Inlet size	Length	Orifice	Tip Angle	Adapter or comment
C00052	flange nozzle	2.68 in (68.1 mm)	0.006 x 0.25 in 0.15 x 6.35 mm	30º	
C01025	1/8 npt (m)	2.44 in (62 mm)	0.093 x 0.38 in 2.36 x 9.65 mm	straight	168683 Can be used with hot melt guns
C08092	5/16-24 (m)	2.62 in (66.55 mm)	0.06 x 0.22 in 0.15 x 5.59 mm	straight	

Accessories

Stainless Steel Blunt-End Dispense Needles

For precision bead or drop deposit. All are 2.35 in (59.69 mm) in length and are constructed of 304 stainless steel. Do not use with hot melt guns.

Part Number	Inlet Size	Inner Diameter (wire gauge)	Outer Diameter	Adapter
112007	1/8 npt (m)	0.150 in (3.81 mm) (7)	0.180 in (4.57 mm)	168683
112006	1/8 npt (m)	0.135 in (3.43 mm) (8)	0.165 in (4.19 mm)	168683
112005	1/8 npt (m)	0.106 in (2.69 mm) (10)	0.134 in (3.40 mm)	168683
112004	1/8 npt (m)	0.094 in (2.39 mm) (11)	0.120 in (3.05 mm)	168683
112003	1/8 npt (m)	0.085 in (2.16) mm (12)	0.109 in (2.77 mm)	168683
112002	1/8 npt (m)	0.071 in (1.80) mm (13)	0.095 in (2.41 mm)	168683
112001	1/8 npt (m)	0.063 in (1.60 mm) (14)	0.083 in (2.11 mm)	168683
112000	1/8 npt (m)	0.047 in (1.19 mm) (16)	0.065 in (1.65 mm)	168683
690399	1/4 npt (m)	0.150 in (3.81 mm) (7)	0.180 in (4.57 mm)	
690403	1/4 npt (m)	0.085 in (2.16 mm) (12)	0.109 in (2.77 mm)	
690405	1/4 npt (m)	0.063 in (1.60 mm) (14)	0.083 in (2.11 mm)	
690406	1/4 npt (m)	0.047 in (1.19 mm) (16)	0.065 in (1.65 mm)	

Straight-Tip Disposable Plastic Nozzles

For bead or drop dispensing of fast-curing material. These nozzles can be trimmed to different lengths to meet specific requirements. Do not use with hot melt guns. No adapter needed; all have 1/4 npt (m) inlet.

Part number	Length	Orifice
C04128	4 in (101.6 mm)	1/8 in (3.17 mm)
C04137	2.5 in (63.50 mm)	1/8 in (3.17 mm)
C04140	2.5 in (63.50 mm)	1/16 in (1.59 mm)
C04132	4 in (101.60 mm)	1/16 in (1.59 mm)
C04135	4 in (101.60 mm)	1/32 in (0.79 mm)
C51172	3 in (76.20 mm)	0.45 in (11.43 mm)

Brush Extensions

Flange inlet extensions extend the reach of brushes. All have 1/4 npt (m) (6.35 mm) orifice and 30º extension angle. To use with brushes with 1/8 npt (f) inlet, use pipe nipple C20477 between adapter and brush.

Part number	Length
C00042	4 in (101.6 mm)
C00043	6 in (152.4 mm)
C00036	10 in (254 mm)
C00050	5-13/15 in (147.64 mm)
C00049	10 in (254 mm)

Accessories

Luer Lok Hub/Blunt-End Dispense Needles

For dispensing drops of adhesive. Luer Lock hubs and needles are quick-disconnect and are used instead of threaded needles when fast-drying or fast-curing material is being dispensed.

The following tips are used with either 1/8 npt (m) adapter 109599 or 1/4 npt (m) adapter 690270, depending upon the valve outlet connection. Tips are 2 in (50.8 mm) long.

Part No.	Outer Diameter (in)	Inner Diameter (in)
112009	0.018	0.010
112010	0.022	0.012
112012	0.028	0.016
112013	0.032	0.020
112014	0.036	0.023
112015	0.043	0.027
112016	0.050	0.033
112017	0.059	0.041
112018	0.065	0.047
112019	0.072	0.054
112020	0.083	0.063
112021	0.095	0.071
112022	0.109	0.085
112023	0.120	0.094
112024	0.134	0.106
112025	0.165	0.135

The following tips are used with 1/4 npt (m) adapter 690398.

690396 0.016 ID x 1.5 in long. This tip has a polyethylene tapered tip.

Accessories

Brushes

For applying wet films of lower viscosity material using manual flow guns.
Do not use with hot melt guns.

Part number	Material	Inlet size	Length	Orifice	Dimensions	Adapter
C00028	Horse hair	3/8-24 (f)	1.5 in (38.1 mm)	0.125 in (3.17 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	brush extension
C00029	Horse hair	3/8-24 (f)	1.75 in (44.45 mm)	0.125 in (3.17 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	brush extension
C00030	Nylon bristle	3/8-24 (f)	1.75 in (44.45 mm)	0.125 in (3.17 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	brush extension
C00031	Crimped nylon	1/8 npt (f)	1.75 in (44.45 mm)	0.125 in (3.17 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	168683
C00033	Horse hair	1/8 npt (f)	1.75 in (44.45 mm)	0.188 in (4.78 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	168683
C00079	Crimped SST	3/8-24 (f)	1.5 in (38.1 mm)	0.125 in (3.17 mm)	3/4 x 7/8 in (19.05 x 22.23 mm)	brush extension
C02052	Nylon bristle	3/8-24 (f)	3.25 in (82.55 mm)	0.188 in (4.78 mm)	1-3/8 x 1-3/8 in (34.92 x 34.92 mm)	brush extension
C05008	Nylon bristle	3/8-24 (f)	1.75 in (44.45 mm)	0.125 in (3.17 mm)	1-1/2 x 1 in (28 x 24.5 mm)	brush extension
C05009	Horse hair	3/8-24 (f)	1.75 in (44.45 mm)	0.125 in (3.17 mm)	5/8 x 5/8 in (15.88 x 15.88 mm)	brush extension
521041	Horse hair	1/8 npt (f)	1.88 in (47.75 mm)	0.125 in (3.17 mm)	5/8 x 7/8 in (15.88 x 22.23 mm)	168683

Swivels

C20838 Straight Swivel
Zinc-plated steel, fluoroelastomer packings. Max. working pressure: 3000 psi (207 bar, 20.7MPa), 3/4 npt (f) x 3/4 npt (m).

207947 Straight Swivel
Zinc-plated steel, urethane packings. Maximum working pressure: 6000 psi (414 bar; 41.4 MPa). 1/2 npt(f) x 1/2 npt(m).

223341 Straight Swivel
Zinc-plated steel, PTFE packings. Maximum working pressure: 3600 psi (248 bar; 24.8 MPa). 1/4 npt(f) x 1/4 npt(m).

207948 Z-Swivel
Zinc-plated steel, urethane packings. Maximum working pressure: 6000 psi (414 bar; 41.4 MPa). 1/2 npt(f) x 1/2 npt(m).

202577 Z-Swivel
Zinc-plated steel, leather packings. Maximum working pressure: 8000 psi (552 bar; 55.2 MPa). 1/4 npt(f) x 1/4 npt(m).

223340 Z-Swivel
Zinc-plated steel, PTFE packings. Maximum working pressure: 8000 psi (552 bar, 55.2 MPa). 1/4 npt(f) x 1/4 npt(m).

Note: Z-Swivels are not intended for use with abrasive materials.

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General Misuse: Any misuse of Graco equipment or accessories, such as over-pressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture. Misuse of equipment can result in fluid injection, splashing in the eyes or on the skin, or other serious bodily injury, or fire, explosion or property damage. NEVER alter or modify any part of Graco equipment; doing so could cause the product to malfunction. CHECK all equipment regularly and repair or replace worn or damaged parts immediately. Always wear protective eye wear, gloves, clothing and respirator as recommended by fluid and solvent manufacturers.

System Pressure: Be sure that all equipment and accessories used are rated to withstand the applicable MAXIMUM WORKING PRESSURE. DO NOT exceed the maximum working pressure of any component or accessory used in a system.

Fluid and Solvent Compatibility: All chemicals used in a Graco sprayer must be compatible with wetted parts. Consult your chemical supplier to ensure compatibility. Do not use 1:1:1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment, which contains aluminum and/or zinc parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious bodily injury and/or substantial property damage.

fluid metering systems

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