Fluid Metering Systems

Closed Loop Solutions • Accessories

PROVEN QUALITY. LEADING TECHNOLOGY.

Buyer's Guide and Specifications

• Sealant and Adhesive Solutions for Industrial and Automotive Applications
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### 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 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
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)

Fluid filtration required ......................................................... 30 mesh (50 μm) minimum

Viscosity range of fluids* ........................................... 50 to 500000 cps with G3000 spur gear flowmeter
30 to 10000000 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
3 cc with HG6000 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

<table>
<thead>
<tr>
<th>Cartridge Regulator</th>
<th>Mastic Regulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulator Manual</td>
<td>308647</td>
</tr>
<tr>
<td>Weight - No flowmeter</td>
<td>25.5 lbs (11.6 kg)</td>
</tr>
<tr>
<td>Weight - W/G3000 spur gear flowmeter</td>
<td>30 lbs (13.6 kg)</td>
</tr>
<tr>
<td>Weight - HG6000 Helical flowmeter</td>
<td>40 lbs (18 kg)</td>
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<tr>
<td>Fluid Port Outlet</td>
<td>HG6000 Helical flowmeter 3/4 in NPT(f)</td>
</tr>
<tr>
<td></td>
<td>G3000 spur gear flowmeter 1/4 in NPT (f)</td>
</tr>
</tbody>
</table>

Fluid Specifications

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

• 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)

70 dBA

Model Selection Chart

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

* 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Option</th>
<th>Option Description</th>
<th>Selected Option</th>
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</thead>
<tbody>
<tr>
<td>LT-A</td>
<td>PrecisionFlo LT</td>
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<td>A</td>
<td>Control Unit</td>
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<td>2</td>
<td>Advanced Control Unit</td>
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<tr>
<td></td>
<td></td>
<td>3</td>
<td>Robot Integrated Unit</td>
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<tr>
<td>B</td>
<td>Operations Cable</td>
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<td>High Flex 20 ft (64 cm)</td>
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<td></td>
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<td>2</td>
<td>High Flex 60 ft (152 cm)</td>
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<td></td>
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<td>High Flex 125 ft (318 cm)</td>
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<td>Medium Flex 60 ft (152 cm)</td>
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<td>6</td>
<td>Medium Flex 125 ft (318 cm)</td>
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<td>Low Flex 20 ft (64 cm)</td>
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<td>Low Flex 60 ft (152 cm)</td>
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<td>Low Flex 125 ft (318 cm)</td>
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<td>Fluid Plate (Regulator/Flowmeter)</td>
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<td>Cartridge/G3000HR</td>
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<td>Cartridge/Helical</td>
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<td>Cartridge/High Resolution Helical</td>
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<td></td>
<td>6</td>
<td>Mastic/None</td>
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<td></td>
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<td>7</td>
<td>Mastic/Helical</td>
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<td>Mastic/High Resolution Helical</td>
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<td>Heated Mastic/None</td>
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</tr>
</tbody>
</table>

Configured product:

PELO LT-A- □ □ □ □
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
115942 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

234967
## Recommended Spare Parts, continued

### Fluid Plate Parts and Accessories

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>246642</td>
<td>Mastic regulator, 3/4 in, air operated, for ambient fluid plates with transducer ports</td>
</tr>
<tr>
<td>246643</td>
<td>Mastic regulator, 3/4 in, air operated, for heated fluid plates with transducer ports</td>
</tr>
<tr>
<td>244734</td>
<td>Cartridge regulator with transducer ports for fluid plates</td>
</tr>
<tr>
<td>238748</td>
<td>Repair kit, cartridge regulator</td>
</tr>
<tr>
<td>238747</td>
<td>Fluid diaphragm repair kit, cartridge regulator</td>
</tr>
<tr>
<td>233131</td>
<td>Fluid section repair kit, mastic fluid regulator</td>
</tr>
<tr>
<td>246190</td>
<td>Flowmeter, HG6000 ambient helical with sensor</td>
</tr>
<tr>
<td>234134</td>
<td>Flowmeter, HG6000 ambient helical, without sensor</td>
</tr>
<tr>
<td>246652</td>
<td>Flowmeter, HG6000HR high resolution helical, with sensor</td>
</tr>
<tr>
<td>246650</td>
<td>Flowmeter, HG6000HR high resolution helical, without sensor</td>
</tr>
<tr>
<td>246340</td>
<td>Flowmeter, HG6000HG heated helical, with sensor</td>
</tr>
<tr>
<td>246191</td>
<td>Flowmeter, HG6000HR heated helical, without sensor</td>
</tr>
<tr>
<td>246786</td>
<td>Sensor, HG6000 helical flowmeter, all models</td>
</tr>
<tr>
<td>239716</td>
<td>Flowmeter assembly, G3000 spur gear flowmeter and sensor</td>
</tr>
<tr>
<td>239719</td>
<td>Flowmeter, G3000 spur gear flowmeter, does not include sensor</td>
</tr>
<tr>
<td>244292</td>
<td>Flowmeter assembly, G3000HR high resolution spur gear flowmeter and sensor</td>
</tr>
<tr>
<td>244291</td>
<td>Flowmeter, G3000HR high resolution spur gear flowmeter, does not include sensor</td>
</tr>
<tr>
<td>239717</td>
<td>Sensor, G3000 and G3000HR spur gear flowmeter</td>
</tr>
<tr>
<td>198082</td>
<td>Pressure sensor, outlet for ambient regulators</td>
</tr>
<tr>
<td>117764</td>
<td>Pressure sensor, outlet for heated regulators</td>
</tr>
<tr>
<td>198579</td>
<td>Kit, cable, for adding HG6000 helical flowmeter</td>
</tr>
<tr>
<td>198578</td>
<td>Kit, cable, for adding G3000 spur gear flowmeter</td>
</tr>
<tr>
<td>15D877</td>
<td>Mass flowmeter, non-intrusive</td>
</tr>
<tr>
<td>246596</td>
<td>Kit, HG6000 helical gear set repair (standard and heated)</td>
</tr>
<tr>
<td>246949</td>
<td>Kit, HG6000HR helical gear set repair (high resolution)</td>
</tr>
</tbody>
</table>

### Fluid Plates

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>234168</td>
<td>Fluid Plate, Ambient Cartridge Regulator with no flowmeter</td>
</tr>
<tr>
<td>234165</td>
<td>Fluid Plate, Ambient Cartridge Regulator with a G3000 spur gear flowmeter</td>
</tr>
<tr>
<td>234166</td>
<td>Fluid Plate, Ambient Cartridge Regulator with a G3000HR high resolution spur gear flowmeter</td>
</tr>
<tr>
<td>234167</td>
<td>Fluid Plate, Ambient Cartridge Regulator with HG6000 helical flowmeter</td>
</tr>
<tr>
<td>234195</td>
<td>Fluid Plate, Ambient Cartridge Regulator with HG6000HR high resolution helical flowmeter</td>
</tr>
<tr>
<td>234170</td>
<td>Fluid Plate, Ambient Mastic Regulator with no flowmeter</td>
</tr>
<tr>
<td>234169</td>
<td>Fluid Plate, Ambient Mastic Regulator with HG6000 helical flowmeter</td>
</tr>
<tr>
<td>234196</td>
<td>Fluid Plate, Ambient Mastic Regulator with HG6000HR high resolution helical flowmeter</td>
</tr>
<tr>
<td>234193</td>
<td>Fluid Plate, Heated Mastic Regulator with no flowmeter</td>
</tr>
<tr>
<td>234194</td>
<td>Fluid Plate, Heated Mastic Regulator with HG6000 helical flowmeter</td>
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</tbody>
</table>

### Applicators and Repair Kits

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>918533</td>
<td>Dispense Valve, Extrusion, Ambient, Ball Seat</td>
</tr>
<tr>
<td>918535</td>
<td>Dispense Valve, Extrusion, Ambient, Snuff Back</td>
</tr>
<tr>
<td>918537</td>
<td>Dispense Valve, High Viscosity</td>
</tr>
<tr>
<td>918539</td>
<td>Dispense Valve, Extrusion, High Flow, High Viscosity</td>
</tr>
<tr>
<td>918623</td>
<td>Compact Dispense Valve, Extrusion</td>
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<tr>
<td>918625</td>
<td>Compact Dispense Valve, Spray</td>
</tr>
<tr>
<td>233670</td>
<td>AutoPlus SAE valve</td>
</tr>
<tr>
<td>244930</td>
<td>Manifold, Fluid Inlet, AutoPlus SAE valve</td>
</tr>
<tr>
<td>243482</td>
<td>1K Ultra-Lite valve, 45° outlet for orbiter</td>
</tr>
<tr>
<td>243666</td>
<td>1K Ultra-Lite valve</td>
</tr>
<tr>
<td>965766</td>
<td>1K Ultra-Lite valve, machine mount, SST wetted parts</td>
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<tr>
<td>965786</td>
<td>1K Ultra-Lite valve, machine mount, Aluminum wetted parts</td>
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<tr>
<td>244535</td>
<td>EnDure Valve replacement, no manifold</td>
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<tr>
<td>244910</td>
<td>EnDure Valve with ambient or temperature conditioning manifold</td>
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<tr>
<td>244961</td>
<td>EnDure Valve with 120 volt electric heat (200°F/93.3°C)</td>
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<td>244962</td>
<td>EnDure Valve with 230 volt electric heat (200°F/93.3°C)</td>
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<td>239807</td>
<td>Needle assembly, AutoPlus SAE valve</td>
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<tr>
<td>233671</td>
<td>Seat, AutoPlus SAE valve</td>
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<td>189970</td>
<td>Gasket, AutoPlus SAE valve, seat</td>
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<td>192443</td>
<td>Gasket, AutoPlus SAE valve, inlet</td>
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<tr>
<td>114134</td>
<td>Gasket, AutoPlus SAE valve, inlet air</td>
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<tr>
<td>570267</td>
<td>Fluid Section Seal kit, 1K Ultra-Lite valve</td>
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<tr>
<td>570268</td>
<td>Rebuild kit, 1K Ultra-Lite valve</td>
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<tr>
<td>15E012</td>
<td>Standard seal kit, EnDure valve</td>
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<tr>
<td>15E011</td>
<td>High temperature seal kit, EnDure valve</td>
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<tr>
<td>104661</td>
<td>Quick exhaust valve, 1/8 in npt(f)</td>
</tr>
<tr>
<td>244021</td>
<td>Cable kit, 8 pin connector and 10 ft cable for 240 VAC valves</td>
</tr>
</tbody>
</table>
GRACO | SEALANT AND ADHESIVE EQUIPMENT ■ FLUID METERING SYSTEMS

PrecisionFlo LT
High Performance Metering System

Recommended Accessories for PrecisionSwirl

**Orbital Applicator Module Kit (wide pattern)**
- Part No.: 241658
- Item: Orbital Applicator Module Kit (wide pattern)
- Includes: Swirl orbiter (243403), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

**Orbital Applicator Module (narrow pattern)**
- Part No.: 234029
- Item: Orbital Applicator Module (narrow pattern)
- Includes: Swirl orbiter (243402), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

**Swirl Dispense Tips**

<table>
<thead>
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<th>Part No.</th>
<th>Size</th>
<th>Part No.</th>
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<td>0.043</td>
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<td>918604</td>
<td>0.021</td>
<td>918614</td>
<td>0.047</td>
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<td>0.023</td>
<td>241813</td>
<td>0.051</td>
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<td>918606</td>
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<td>918607</td>
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<td>241816</td>
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<td>918608</td>
<td>0.030</td>
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</table>

**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**

- Tool-Mounted Dispensers
  - With narrow pattern coupler (0.012 in [0.3 mm])
  - Part No.: 243402
- Tool-Mounted Dispensers
  - With wide pattern coupler (0.028 in [0.7 mm])
  - Part No.: 234029

**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
High Performance Metering System

Recommended Accessories

Extruding Applications

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>198316</td>
<td>Nozzle nut, 1/8 in npt for AutoPlus SAE valve</td>
</tr>
<tr>
<td>198391</td>
<td>Tip nut, AutoPlus SAE valve, fan or stream</td>
</tr>
<tr>
<td>161505</td>
<td>Dispense nozzle, steel, 1/8 in npt(m), 0.094 in (2.39 mm), 1.5 in (36.5 mm) long</td>
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<tr>
<td>164799</td>
<td>Dispense nozzle, steel, 1/8 in npt(m), 0.055 in (1.4 mm), 1.72 in (43.7 mm) long</td>
</tr>
<tr>
<td>C17009</td>
<td>Dispense nozzle, steel, 1/8 in npt(m), 0.125 in (3.18 mm), 0.8125 in (20.64 mm) long</td>
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<tr>
<td>C01025</td>
<td>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</td>
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<tr>
<td>182xxx</td>
<td>Airless 182xxx fan tips for AutoPlus SAE valve; refer to manual form number 308813</td>
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<tr>
<td>270025</td>
<td>Streaming tip, 0.025 (0.64 mm) orifice</td>
</tr>
<tr>
<td>270027</td>
<td>Streaming tip, 0.027 (0.69 mm) orifice</td>
</tr>
<tr>
<td>270029</td>
<td>Streaming tip, 0.029 (0.74 mm) orifice</td>
</tr>
<tr>
<td>270035</td>
<td>Streaming tip, 0.035 (0.89 mm) orifice</td>
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<td>270037</td>
<td>Streaming tip, 0.037 (0.94 mm) orifice</td>
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<td>270039</td>
<td>Streaming tip, 0.039 (0.99 mm) orifice</td>
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<td>270041</td>
<td>Streaming tip, 0.041 (1.04 mm) orifice</td>
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<td>270043</td>
<td>Streaming tip, 0.043 (1.09 mm) orifice</td>
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<td>270059</td>
<td>Streaming tip, 0.059 (1.50 mm) orifice</td>
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<tr>
<td>C08224</td>
<td>Shower tip, 6 orifices, 0.021 in (0.53 mm) orifice size</td>
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## PrecisionFlo LT
### High Performance Metering System

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Type</th>
<th>Material</th>
<th>ID inches (mm)</th>
<th>Length (ft) feet (m)</th>
<th>Coupling</th>
<th>Pressure psi (MPa, bar)</th>
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<tr>
<td>109150</td>
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<td>Buna-N</td>
<td>0.25 (6)</td>
<td>6 (1.8)</td>
<td>1/4M</td>
<td>5000 (34.5, 345)</td>
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<td>H52506</td>
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<td>Nylon</td>
<td>0.25 (6)</td>
<td>6 (1.8)</td>
<td>1/4F</td>
<td>5600 (38.6, 386)</td>
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<tr>
<td>685612</td>
<td>Dispense</td>
<td>PTFE</td>
<td>0.25 (6)</td>
<td>6 (1.8)</td>
<td>1/4M SS</td>
<td>4000 (27.6, 276)</td>
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<tr>
<td>H52510</td>
<td>Dispense</td>
<td>Nylon</td>
<td>0.25 (6)</td>
<td>10 (3)</td>
<td>1/4F (npt)</td>
<td>5600 (38.6, 386)</td>
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<td>109151</td>
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<td>Buna-N</td>
<td>0.25 (6)</td>
<td>12 (3.7)</td>
<td>1/4M</td>
<td>5000 (34.5, 345)</td>
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<td>685614</td>
<td>Dispense</td>
<td>PTFE</td>
<td>0.25 (6)</td>
<td>15 (4.6)</td>
<td>1/4M SS</td>
<td>4000 (27.6, 276)</td>
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<td>Nylon</td>
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<td>1/2M SS</td>
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<td>1/2M SS</td>
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<tr>
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<td>3/4M</td>
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<td>10 (3)</td>
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<td>1-1/4M</td>
<td>5000 (34.5, 345)</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Type</th>
<th>Material</th>
<th>ID inches (mm)</th>
<th>Length feet (m)</th>
<th>Coupling</th>
<th>Pressure psi (MPa, bar)</th>
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<td>6 (1.8)</td>
<td>7/8-14 JICF SS</td>
<td>3000 (20.7, 207)</td>
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<td>PTFE</td>
<td>0.50 (13)</td>
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<tr>
<td>115903</td>
<td>Dispense or Feed</td>
<td>PTFE</td>
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<td>1 1/16-12 JICF SS</td>
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<td>0.62 (16)</td>
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<td>3000 (20.7, 207)</td>
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</table>
## 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 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

Typical Applications
• Automotive body shop applications
• Automotive paint shop applications
• Industrial bead dispense applications
• Industrial and automotive applications that use PrecisionSwirl

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 ................................................................. 309374
- Cartridge Regulator .......................................................... 308647
- Mastic Regulator .............................................................. 307517
- Electric Regulator ............................................................. 309382
- AutoPlus Valve ................................................................. 308813
- EnDure Valve ................................................................. 309376
- 1K Ultra-Lite Valve .......................................................... 308876
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)

Fluid Filtration Required  
- 30 mesh (500 micron) minimum

*Viscosity Range of Fluids  
- 5000 to 500000 cps with G3000 meter
- 10000 to 5000000 cps with Helical meter
- 2000 to 50000000 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

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

*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.
## Technical Data – Dispense Valves

<table>
<thead>
<tr>
<th></th>
<th>AutoPlus Valve</th>
<th>Endure Valve</th>
<th>1K Valve</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ambient Part Numbers</strong></td>
<td>233670 Valve</td>
<td>244910</td>
<td>243462</td>
</tr>
<tr>
<td></td>
<td>244930 Manifold</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature Conditioned Part Numbers</strong></td>
<td>233670 Valve</td>
<td>244910***</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Electric Heat [240 V] Part Numbers</strong></td>
<td>N/A</td>
<td>244962</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Instruction Form</strong></td>
<td>308813</td>
<td>309376</td>
<td>308876</td>
</tr>
<tr>
<td><strong>Wetted Materials</strong></td>
<td>Stainless steel, Carbide, UHMW Polyethylene, Delrin® PEEK, Chemically resistant fluoroelastomer, PTFE</td>
<td>Stainless steel, Carbide, Aluminum, Parker Polymer, Ethylene Propylene, Delrin®, PTFE, fluoroelastomer</td>
<td>Stainless steel, Carbide, Parker Polymer, Ethylene Propylene, Delrin®, PTFE</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>35 oz* (1.0 kg)</td>
<td>71 oz* (2.0 kg)</td>
<td>32 oz* (0.9 kg)</td>
</tr>
<tr>
<td><strong>Fluid Port Inlet</strong></td>
<td>3/8 in npt(f) on manifold</td>
<td>1/2 in npt(f)</td>
<td>1/2 in npt(f)</td>
</tr>
<tr>
<td><strong>Fluid Port Outlet</strong></td>
<td>7/8–14 with tip nut</td>
<td>5/8–18 and nut with 1/8 npt(f)</td>
<td>3/4–16 JIC 45° npt(f)</td>
</tr>
<tr>
<td><strong>Maximum Inlet Pressure</strong></td>
<td>5000 psi (34 MPa, 340 bar)</td>
<td>5000 psi (34 MPa, 340 bar)</td>
<td>4000 psi (28 MPa, 276 bar)</td>
</tr>
<tr>
<td><strong>Maximum Working Pressure</strong></td>
<td>4000 psi (28 MPa, 276 bar)</td>
<td>3500 psi (24 MPa, 241 bar)</td>
<td>2000 psi downstream (14 MPa, 138 bar)</td>
</tr>
<tr>
<td><strong>Air to open</strong></td>
<td>1/8 in npt(f)</td>
<td>1/8 in npt(f)</td>
<td>1/8 in npt(f)</td>
</tr>
<tr>
<td><strong>Air to close</strong></td>
<td>N/A</td>
<td>1/8 in npt(f)</td>
<td>1/8 in npt(f)</td>
</tr>
<tr>
<td><strong>Spring to close</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Maximum Air Pressure</strong></td>
<td>120 psi (0.8 MPa, 8.2 bar)</td>
<td>120 psi (0.8 MPa, 8.2 bar)</td>
<td>120 psi (0.8 MPa, 8.2 bar)</td>
</tr>
<tr>
<td><strong>Minimum Air Pressure</strong></td>
<td>60 psi (0.4 MPa, 4.1 bar)</td>
<td>60 psi (0.4 MPa, 4.1 bar)</td>
<td>60 psi (fluid pressure/30) (0.4 MPa, 4.1 bar)</td>
</tr>
<tr>
<td><strong>Maximum Operating Temperature</strong></td>
<td>140° F (60°C)</td>
<td>200°F (121°C)</td>
<td>200°F (121°C)</td>
</tr>
<tr>
<td><strong>Sensor Properties (Electric Heat)</strong></td>
<td>N/A</td>
<td>100 Ω Platinum RTD, 108 Ω @ 70°F (21°C) pins 3 and 4</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Heater Properties (Electric Heat)</strong></td>
<td>N/A</td>
<td>200 Watts, 288 Ω +/- 29 Ω pins 1 and 2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*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.

---

<table>
<thead>
<tr>
<th>Code A: Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PrecisionFlo XL Module</td>
</tr>
<tr>
<td>2 A Electrical Enclosure Only - Basic or Temp. controlled</td>
</tr>
<tr>
<td>B Electrical Enclosure Only - With swirl or linear motor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code B: Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Back Plane Only</td>
</tr>
<tr>
<td>1 Rotary Switch Power Disconnect</td>
</tr>
<tr>
<td>2 Knife Switch Power Disconnect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code C: Cables</th>
</tr>
</thead>
<tbody>
<tr>
<td>N No Cables Included</td>
</tr>
<tr>
<td>1 All Cables Included</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code D: User Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>N None</td>
</tr>
<tr>
<td>1 Standard Easy Key</td>
</tr>
<tr>
<td>2 Advanced TouchScreen</td>
</tr>
<tr>
<td>3 Remote mounted advanced TouchScreen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code E: Primary Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 110–120 VAC</td>
</tr>
<tr>
<td>2 220–240 VAC</td>
</tr>
<tr>
<td>3 400–480 VAC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code F: Robot I/O Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 24 VDC</td>
</tr>
<tr>
<td>2 120 VAC</td>
</tr>
<tr>
<td>3 DeviceNet</td>
</tr>
<tr>
<td>4 InterBus</td>
</tr>
<tr>
<td>5 Profinet</td>
</tr>
<tr>
<td>6 ControlNet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code G: Temperature Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N None</td>
</tr>
<tr>
<td>1 Temp. conditioned (50 Hz) heat and cool</td>
</tr>
<tr>
<td>2 Temp. conditioned (50 Hz) heat only</td>
</tr>
<tr>
<td>3 Temp. conditioned (60 Hz) heat and cool</td>
</tr>
<tr>
<td>4 Temp. conditioned (60 Hz) heat only</td>
</tr>
<tr>
<td>5 Electrically heated (50/60 Hz)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code H: Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 English</td>
</tr>
<tr>
<td>2 French</td>
</tr>
<tr>
<td>3 German</td>
</tr>
<tr>
<td>4 Italian</td>
</tr>
<tr>
<td>5 Japanese</td>
</tr>
<tr>
<td>6 Korean</td>
</tr>
<tr>
<td>7 Portuguese</td>
</tr>
<tr>
<td>8 Spanish</td>
</tr>
</tbody>
</table>
# PrecisionFlo XL
**Sealant & Adhesive Dispensing Systems**

**Code J: Fluid Regulator**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | **Pneumatic Regulator**  
   - 1 Low viscosity, 1/2 in (12.7 mm) cartridge regulator  
   - 2 Medium/high viscosity, 3/4 in (19 mm) mastic regulator  |
| 2    | **PrecisionFlo Electric Regulator**  
   - 3 Low viscosity  
   - 4 Medium/high viscosity  
   - 5 Medium/high viscosity - integrated regulator |

**Code K: Flowmeter**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Spur Gear (G3000)  
   - HG6000HR if J1 (cartridge) selected  
   - HG6000 if J2 (mastic) selected  |
| 2    | Helical Gear  
   - HG6000HR if J1 (cartridge) selected  
   - HG6000 if J2 (mastic) selected  |
| 3    | Coriolis, mass flow |

**Code L: Supply Hose**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | 10 ft (3 m), 1 in (25.4 mm) Ambient  
   - 1a 10 ft (3 m), 1 in (25.4 mm) Electric heat  |
| 2    | 20 ft (6 m), 1 in (25.4 mm) Ambient  
   - 2a 20 ft (6 m), 1 in (25.4 mm) Electric heat  
   - 2b 20 ft (6 m), 1 in (25.4 mm) Temp. conditioned  |
| 3    | 10 ft (3 m), 1 in (25.4 mm) Amb.  
   - 3a 10 ft (3 m), 1 in (25.4 mm) Electric heat  |
| 4    | 5/8 in (16 mm) Ambient  
   - 4a 5/8 in (16 mm) Electric heat  |

**Code M: Dispense Hose**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | 6 ft (1.8 m), 1/2 in (12.7 mm) ID Ambient  
   - 1a 6 ft (1.8 m), 1/2 in (12.7 mm) ID Electric heat  |
| 2    | 6 ft (1.8 m), 5/8 in (16 mm) ID Ambient  
   - 2a 6 ft (1.8 m), 5/8 in (16 mm) ID Electric heat  
   - 2b 6 ft (1.8 m), 5/8 in (16 mm) ID Temp. conditioned  |
| 3    | 10 ft (3 m), 1/2 in (12.7 mm) ID Ambient  
   - 3a 10 ft (3 m), 1/2 in (12.7 mm) ID Electric heat  |
| 4    | 10 ft (3 m), 5/8 in (16 mm) ID Electric heat  
   - 4a 10 ft (3 m), 5/8 in (16 mm) ID Temp. conditioned  |

**Code N: Dispense Valve/Applicator**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | AutoPlus  
   - 1a AutoPlus, Ambient or Temp. conditioned  
   - 1b AutoPlus, Electric heat  |
| 2    | EnDure, Electric heat  
   - 2a EnDure, Ambient or Temp. conditioned  
   - 2b EnDure, Electric heat  |
| 3    | 1K Ultra-Lite (45° outlet)  
   - 3a 1K Ultra-Lite (45° outlet) |

**Code P: PrecisionSwirl**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Narrow pattern  
   - 1a Narrow pattern  
   - 1b Narrow pattern  |
| 2    | Wide Pattern  
   - 2a Wide Pattern  
   - 2b Wide Pattern |

**Code R: PrecisionSwirl Extension Cable**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | 6 ft (1.8 m)  
   - 1a 6 ft (1.8 m)  
   - 1b 6 ft (1.8 m)  |
| 2    | 9 ft (2.7 m)  
   - 2a 9 ft (2.7 m)  
   - 2b 9 ft (2.7 m)  |
| 3    | 15 ft (4.6 m)  
   - 3a 15 ft (4.6 m)  
   - 3b 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
  - □ 1a Endure, Ambient or Temperature conditioned
  - □ 1b 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)

---

![Diagram of the PrecisionFlo XL system](image-url)
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: ____________________________

Bill To:

Ship To:

Attn:

For Graco Use
S/R# ____________________________
System # __________________________

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

Configured Product:
PFLOXL- F __________


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.
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.
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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 140°F (60ºC). Operating range 60°F to 140°F (15.6ºC to 60ºC).
4. The Electric Heat system will control 4 zones up to 175°F (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 HG6000 or HG6000HR 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 1,000 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 45° 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 or if the PrecisionSwirl is not being purchased or is pedestal mounted.

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 (SO)
198050  Board, DeviceNet
198051  Board, Profibus
198052  Board, Interbus
198053  Board, ControlNet
233675  Card, PC104 (TouchScreen)
244993  Board, Display (EasyKey)
233738  Card, Compact Flash (TouchScreen)
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.

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)

Main Control Fuses

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<th>Part No.</th>
<th>With input voltage</th>
<th>Schematic fuse no.</th>
<th>Fuse designation</th>
<th>Amp rating</th>
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<td>LPJ-8SP</td>
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<td>400–480 VAC</td>
<td>FU 2080</td>
<td>LPJ-3SP</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>116620</td>
<td>400–480 VAC</td>
<td>FU 2081</td>
<td>LPJ-3SP</td>
<td>3</td>
<td>1</td>
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<tr>
<td>116505</td>
<td>200–240 VAC</td>
<td>FU 216</td>
<td>LPJ-8SP</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>116505</td>
<td>400–480 VAC</td>
<td>FU 216</td>
<td>LPJ-8SP</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
PrecisionFlo XL
Sealant & Adhesive Dispensing Systems

Standard Hoses

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

Fluid Module Components

Pneumatic Regulators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>244734</td>
<td>Cartridge Regulator 308647</td>
</tr>
<tr>
<td>238748</td>
<td>Fluid Section Repair Cartridge</td>
</tr>
<tr>
<td>238747</td>
<td>Fluid Diaphragm Repair Kit</td>
</tr>
<tr>
<td>244740</td>
<td>Mastic Regulator 307517</td>
</tr>
<tr>
<td>233131</td>
<td>Fluid Section Repair Kit</td>
</tr>
</tbody>
</table>

Common Pneumatic Regulator Repair Parts

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>198082</td>
<td>Pressure Sensor</td>
</tr>
<tr>
<td>244669</td>
<td>Pressure Sensor Amplifier Board</td>
</tr>
<tr>
<td>551348</td>
<td>Solenoid Valve</td>
</tr>
<tr>
<td>195942</td>
<td>Regulator (V/P)</td>
</tr>
<tr>
<td>C50239</td>
<td>Hose Swivel 5000 psi 1/2 in npt(f) both ends</td>
</tr>
<tr>
<td>245896</td>
<td>Regulator Pre-charge Kit</td>
</tr>
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</table>

Electric Servo Driven Metering Valve

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>244920</td>
<td>Electric Servo Driven Metering Valve, Low Flow</td>
</tr>
<tr>
<td>233681</td>
<td>Fluid Section Repair Kit</td>
</tr>
<tr>
<td>244920</td>
<td>Fluid Section Spare</td>
</tr>
<tr>
<td>244921</td>
<td>Electric Servo Driven Metering Valve, High Flow</td>
</tr>
<tr>
<td>233680</td>
<td>Fluid Section Repair Kit</td>
</tr>
<tr>
<td>244921</td>
<td>Fluid Section Spare</td>
</tr>
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</table>

Flowmeters

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>246190</td>
<td>Helical Meter (HG6000) with sensor</td>
</tr>
<tr>
<td>246652</td>
<td>Helical Meter (HG6000HR) high resolution</td>
</tr>
<tr>
<td>246786</td>
<td>Sensor, pulse, helical</td>
</tr>
<tr>
<td>239716</td>
<td>G3000 Spur Gear Meter with sensor</td>
</tr>
<tr>
<td>244292</td>
<td>G3000HR high resolution Spur Gear Meter with sensor</td>
</tr>
<tr>
<td>239719</td>
<td>Meter Only</td>
</tr>
<tr>
<td>239717</td>
<td>Sensor</td>
</tr>
<tr>
<td>15D877</td>
<td>Coriolis non-intrusive flowmeter</td>
</tr>
</tbody>
</table>
PrecisionFlo XL
Sealant & Adhesive Dispensing Systems

Dispensing Devices
Dispense Valves

<table>
<thead>
<tr>
<th>Valve Model</th>
<th>AutoPlus</th>
<th>EnDure Valve</th>
<th>1K Valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve Part No.</td>
<td>233670</td>
<td>244535</td>
<td>243482</td>
</tr>
<tr>
<td>Repair Kit Part No.</td>
<td>N/A</td>
<td>19E002</td>
<td>570268</td>
</tr>
<tr>
<td>Shaft/Needle Part No.</td>
<td>239807</td>
<td>15E004</td>
<td>626068</td>
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<tr>
<td>Seat Part No.</td>
<td>233671</td>
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<td>N/A</td>
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<tr>
<td>Inlet Gasket Part No.</td>
<td>189970</td>
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</tr>
<tr>
<td>Seat Gasket Part No.</td>
<td>192443</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

Swirl Dispense Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Size</th>
<th>Part No.</th>
<th>Size</th>
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<tbody>
<tr>
<td>918610</td>
<td>0.012</td>
<td>918609</td>
<td>0.033</td>
</tr>
<tr>
<td>918601</td>
<td>0.015</td>
<td>918611</td>
<td>0.035</td>
</tr>
<tr>
<td>918602</td>
<td>0.017</td>
<td>918612</td>
<td>0.039</td>
</tr>
<tr>
<td>918603</td>
<td>0.019</td>
<td>918613</td>
<td>0.043</td>
</tr>
<tr>
<td>918604</td>
<td>0.021</td>
<td>918614</td>
<td>0.047</td>
</tr>
<tr>
<td>918605</td>
<td>0.023</td>
<td>241813</td>
<td>0.051</td>
</tr>
<tr>
<td>918606</td>
<td>0.025</td>
<td>241814</td>
<td>0.055</td>
</tr>
<tr>
<td>918607</td>
<td>0.027</td>
<td>241816</td>
<td>0.070</td>
</tr>
<tr>
<td>918608</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Voltage</th>
<th>Schematic fuse no.</th>
<th>Schematic fuse designation</th>
<th>Amp rating</th>
<th>Qty.</th>
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<tbody>
<tr>
<td>116219</td>
<td>400-480 VAC</td>
<td>100 FU1</td>
<td>LPJ–15SP</td>
<td>15</td>
<td>2</td>
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<tr>
<td>116505</td>
<td>220–240 VAC</td>
<td>100 FU2</td>
<td>LPJ–182SP</td>
<td>8</td>
<td>2</td>
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<tr>
<td>116217</td>
<td>400-480 VAC</td>
<td>100 FU2</td>
<td>LPJ–15SP</td>
<td>15</td>
<td>1</td>
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<tr>
<td>116222</td>
<td>All</td>
<td>108 FU</td>
<td>LPJ–12SP</td>
<td>12</td>
<td>1</td>
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Co-Axial Water Jacketed Feed Hoses

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Size</th>
<th>Core Material</th>
<th>Working Pressure</th>
<th>Temp. Rating</th>
<th>Coupling Size</th>
<th>Coupling Material</th>
<th>Bend Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>116749</td>
<td>1.0 in ID x 10 ft (25.4 mm) ID x (6.1 m)</td>
<td>Synthetic Rubber</td>
<td>5000 psi (34.5 MPa, 345 bar)</td>
<td>212°F (100°C)</td>
<td>1 npt (f)</td>
<td>Steel</td>
<td>12 in (305 mm)</td>
</tr>
<tr>
<td>116748</td>
<td>1.0 in ID x 20 ft (25.4 mm) ID x (6.1 m)</td>
<td>Synthetic Rubber</td>
<td>5000 psi (34.5 MPa, 345 bar)</td>
<td>212°F (100°C)</td>
<td>1 npt (f)</td>
<td>Steel</td>
<td>12 in (305 mm)</td>
</tr>
</tbody>
</table>
PrecisionFlo XL
Sealant & Adhesive Dispensing Systems

PrecisionFlo XL Control Unit Dimensions

20.00 in. (508 mm)
18.50 in. (469.9 mm)
17.50 in. (444.5 mm)
16.00 in. (406.4 mm)
22.5 in (572 mm)
24 in (610 mm)
28.5 in (724 mm)
31.5 in (800 mm)
72 in. 1.83 m
24 in. 610 mm
Heat Only
26 in. 660 mm
Heat/Cool
36 in. 914 mm
PrecisionFlo XL
Sealant & Adhesive Dispensing Systems

Fluid Metering Assembly Dimensions

17 in (432 mm)  16 in (407 mm)
15 in (381 mm)  14 in (356 mm)

4 mm or 5/32" tubing
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)

* 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 24 V
- **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 24 V
- **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.

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
233124 9 ft (2.7 m) Extension Cable
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.

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

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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Size</th>
<th>Part No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>918610</td>
<td>0.012</td>
<td>918609</td>
<td>0.033</td>
</tr>
<tr>
<td>918601</td>
<td>0.015</td>
<td>918611</td>
<td>0.035</td>
</tr>
<tr>
<td>918602</td>
<td>0.017</td>
<td>918612</td>
<td>0.039</td>
</tr>
<tr>
<td>918603</td>
<td>0.019</td>
<td>918613</td>
<td>0.043</td>
</tr>
<tr>
<td>918604</td>
<td>0.021</td>
<td>918614</td>
<td>0.047</td>
</tr>
<tr>
<td>918605</td>
<td>0.023</td>
<td>241813</td>
<td>0.051</td>
</tr>
<tr>
<td>918606</td>
<td>0.025</td>
<td>241814</td>
<td>0.055</td>
</tr>
<tr>
<td>918607</td>
<td>0.027</td>
<td>241816</td>
<td>0.070</td>
</tr>
<tr>
<td>918608</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

197504 Straight flange adapter, EnDure

For Endure 45 deg connection, order:

244910 Endure

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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>233123</td>
<td>15 ft (4.6 m)</td>
</tr>
<tr>
<td>233124</td>
<td>9 ft (2.7 m)</td>
</tr>
<tr>
<td>233125</td>
<td>6 ft (1.8 m)</td>
</tr>
</tbody>
</table>

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 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 in³/min. (0 to 2.29 m³/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)
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
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 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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Width</th>
<th>Orifice Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>234513</td>
<td>2 in (51 mm)</td>
<td>0.025 (0.64)</td>
</tr>
<tr>
<td>234514</td>
<td>2 in (51 mm)</td>
<td>0.029 (0.74)</td>
</tr>
<tr>
<td>234515</td>
<td>2 in (51 mm)</td>
<td>0.035 (0.89)</td>
</tr>
<tr>
<td>234516</td>
<td>2 in (51 mm)</td>
<td>0.041 (1.04)</td>
</tr>
<tr>
<td>234517</td>
<td>3 in (76 mm)</td>
<td>0.025 (0.64)</td>
</tr>
<tr>
<td>234518</td>
<td>3 in (76 mm)</td>
<td>0.029 (0.74)</td>
</tr>
<tr>
<td>234519</td>
<td>3 in (76 mm)</td>
<td>0.035 (0.89)</td>
</tr>
<tr>
<td>234520</td>
<td>3 in (76 mm)</td>
<td>0.041 (1.04)</td>
</tr>
<tr>
<td>234521</td>
<td>4 in (102 mm)</td>
<td>0.025 (0.64)</td>
</tr>
<tr>
<td>234522</td>
<td>4 in (102 mm)</td>
<td>0.029 (0.74)</td>
</tr>
<tr>
<td>234523</td>
<td>4 in (102 mm)</td>
<td>0.035 (0.89)</td>
</tr>
<tr>
<td>234524</td>
<td>4 in (102 mm)</td>
<td>0.041 (1.04)</td>
</tr>
</tbody>
</table>

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
Regulators

Technical Data

Stainless Steel, Waterbase-Compatible, High Pressure Fluid Regulators

<table>
<thead>
<tr>
<th>Models:</th>
<th>Models:</th>
<th>Models:</th>
<th>Model:</th>
</tr>
</thead>
<tbody>
<tr>
<td>238890, 238889</td>
<td>238892, 238891</td>
<td>238894, 248090, 238893</td>
<td>244734</td>
</tr>
<tr>
<td>Type</td>
<td>Type</td>
<td>Type</td>
<td>Type</td>
</tr>
<tr>
<td>238890: spring-operated with fluid pressure gauge 238889: spring-operated with EZ Flush plug</td>
<td>238892: spring-operated with fluid pressure gauge 238891: spring-operated with EZ Flush plug</td>
<td>238894 and 248090: air-operated with fluid gauge 238893: air-operated with EZ Flush plug</td>
<td>Air-operated with pressure sensor ports</td>
</tr>
<tr>
<td>Maximum fluid inlet pressure</td>
<td>Maximum fluid inlet pressure</td>
<td>Maximum fluid inlet pressure</td>
<td>Maximum fluid inlet pressure</td>
</tr>
<tr>
<td>6000 psi (41 MPa, 414 bar)</td>
<td>6000 psi (41 MPa, 414 bar)</td>
<td>6000 psi (41 MPa, 414 bar)</td>
<td>6000 psi (41 MPa, 414 bar)</td>
</tr>
<tr>
<td>Regulated fluid outlet pressure range</td>
<td>Regulated fluid outlet pressure range</td>
<td>Regulated fluid outlet pressure range</td>
<td>Regulated fluid outlet pressure range</td>
</tr>
<tr>
<td>500–3000 psi (3.4–21 MPa, 34–207 bar)</td>
<td>3000–5000 psi (21–34 MPa, 207–345 bar)</td>
<td>500–4000 psi (3.4–28 MPa, 34–276 bar)</td>
<td>500–4000 psi (3.4–28 MPa, 34–276 bar)</td>
</tr>
<tr>
<td>Maximum inbound air pressure</td>
<td>Maximum inbound air pressure</td>
<td>Maximum inbound air pressure</td>
<td>Maximum inbound air pressure</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>100 psi (0.7 MPa, 7 bar)</td>
<td>100 psi (0.7 MPa, 7 bar)</td>
</tr>
<tr>
<td>Maximum operating temperature</td>
<td>Maximum operating temperature</td>
<td>Maximum operating temperature</td>
<td>Maximum operating temperature</td>
</tr>
<tr>
<td>120° F (50° C)</td>
<td>120° F (50° C)</td>
<td>120° F (50° C)</td>
<td>120° F (50° C)</td>
</tr>
<tr>
<td>Wetted Parts</td>
<td>Wetted Parts</td>
<td>Wetted Parts</td>
<td>Wetted Parts</td>
</tr>
<tr>
<td>Inlet/outlet</td>
<td>Inlet/outlet</td>
<td>Inlet/outlet</td>
<td>Inlet/outlet</td>
</tr>
<tr>
<td>3/8 npt (f)</td>
<td>3/8 npt (f)</td>
<td>3/8 npt (f)</td>
<td>3/8 npt (f)</td>
</tr>
<tr>
<td>Fluid pressure gauge</td>
<td>Fluid pressure gauge</td>
<td>Fluid pressure gauge</td>
<td>Fluid pressure gauge</td>
</tr>
<tr>
<td>(models 238890, 238892, and 238894)</td>
<td>(0-5000 psi (0-34 MPa, 0-345 bar)</td>
<td>(0-5000 psi (0-34 MPa, 0-345 bar)</td>
<td>-</td>
</tr>
<tr>
<td>Maximum flow in 65 cp material</td>
<td>Maximum flow in 65 cp material</td>
<td>Maximum flow in 65 cp material</td>
<td>Maximum flow in 65 cp material</td>
</tr>
<tr>
<td>2 gpm (7.6 lpm)</td>
<td>2 gpm (7.6 lpm)</td>
<td>2 gpm (7.6 lpm)</td>
<td>2 gpm (7.6 lpm)</td>
</tr>
<tr>
<td>Maximum fluid viscosity</td>
<td>Maximum fluid viscosity</td>
<td>Maximum fluid viscosity</td>
<td>Maximum fluid viscosity</td>
</tr>
<tr>
<td>Up to 15,000 cp</td>
<td>Up to 15,000 cp</td>
<td>Up to 15,000 cp</td>
<td>Up to 15,000 cp</td>
</tr>
<tr>
<td>Weight</td>
<td>Weight</td>
<td>Weight</td>
<td>Weight</td>
</tr>
<tr>
<td>7.0 lbs (3.2 kg)</td>
<td>7.0 lbs (3.2 kg)</td>
<td>11.7 lbs (5.3 kg)</td>
<td>11.7 lbs (5.3 kg)</td>
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<tr>
<td>Adjustment tool</td>
<td>Adjustment tool</td>
<td>Adjustment tool</td>
<td>Adjustment tool</td>
</tr>
<tr>
<td>6 mm hex wrench</td>
<td>6 mm hex wrench</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>308647</td>
<td>308647</td>
<td>308647</td>
<td>308647</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>AIR PRESSURE REGULATED psi</th>
<th>FLUID OUTLET PRESSURE psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>49</td>
<td>14</td>
</tr>
<tr>
<td>70</td>
<td>21</td>
</tr>
<tr>
<td>90</td>
<td>28</td>
</tr>
</tbody>
</table>
## Regulators

### Technical Data

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

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Regulated fluid pressure range</th>
<th>Maximum fluid inlet pressure</th>
<th>Maximum fluid temperature</th>
<th>Pressure drop at 400 psi inlet pressure and 1.5 gpm</th>
<th>Wetted Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>961635, C58318, 244740</td>
<td>ambient, air-operated</td>
<td>250 – 4500 psi (1.7 – 31.0 Mpa, 17 – 310 bar)</td>
<td>5000 psi (34.4 MPa, 344 bar)</td>
<td>140° F (60° C)</td>
<td>140° F (60° C)</td>
<td>zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE</td>
</tr>
<tr>
<td>243700, 918447</td>
<td>ambient, air-operated</td>
<td>250 – 3500 psi (1.7 – 24.1 Mpa, 17 – 241 bar)</td>
<td>5000 psi (34.4 MPa, 344 bar)</td>
<td>140° F (60° C)</td>
<td>140° F (60° C)</td>
<td>zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE</td>
</tr>
<tr>
<td>246642, 246687</td>
<td>ambient, temperature conditioned/heated, air-operated</td>
<td>100 – 4500 psi (0.7 – 31.0 Mpa, 7 – 310 bar)</td>
<td>5000 psi (34.4 MPa, 344 bar)</td>
<td>140° F (60° C)</td>
<td>140° F (60° C)</td>
<td>zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE</td>
</tr>
<tr>
<td>246643, 246688</td>
<td>ambient, high range</td>
<td>100 – 3500 psi (0.7 – 24.1 Mpa, 7 – 241 bar)</td>
<td>5000 psi (34.4 MPa, 344 bar)</td>
<td>140° F (60° C)</td>
<td>140° F (60° C)</td>
<td>zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE</td>
</tr>
<tr>
<td>903958</td>
<td>ambient, spring-operated high range</td>
<td>High range (standard): 1000 to 4500 psi (70 to 310 bar) with low range spring kit: 400 to 1000 psi (28 to 70 bar)</td>
<td>5000 psi (34.4 MPa, 344 bar)</td>
<td>140° F (60° C)</td>
<td>140° F (60° C)</td>
<td>zinc-plated carbon steel, brass, stainless steel, fluoroelastomer, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE</td>
</tr>
</tbody>
</table>

**Inlet (one)**: 3/4 npt (f) at side

**Outlet**: 3/4 npt (f) at side and bottom

**Weight**: 17.75 lbs (7.9 kg)

**Instruction Manual**: 307517
Regulators

Technical Data

**Mechanically Adjustable Fluid Regulators, Low and Medium Pressure**

<table>
<thead>
<tr>
<th></th>
<th>Model: 234273</th>
<th>Model: 234263</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet/Outlet</td>
<td>3/8 npt(f)</td>
<td>3/8 npt(f)</td>
</tr>
<tr>
<td>Gauge Port</td>
<td>1/8 BSPP</td>
<td>1/8 BSPP</td>
</tr>
<tr>
<td>Max Inbound Fluid</td>
<td>580/40/4</td>
<td>580/40/4</td>
</tr>
<tr>
<td>Regulated Pressure</td>
<td>14.5-145/1-10/0.1-1</td>
<td>14.5-290/1-20/0.1-2</td>
</tr>
<tr>
<td>Max Delivery</td>
<td>7/27</td>
<td>7/27</td>
</tr>
<tr>
<td>Wetted Parts</td>
<td>SST, fluoroelastomer, Carbide Valve</td>
<td>SST, fluoroelastomer, Carbide Valve</td>
</tr>
<tr>
<td>Instruction Manual</td>
<td>309474</td>
<td>309474</td>
</tr>
</tbody>
</table>

**Pneumatically Adjustable Fluid Regulators, Low and Medium Pressure**

<table>
<thead>
<tr>
<th></th>
<th>Model: 234272</th>
<th>Model: 234256</th>
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</thead>
<tbody>
<tr>
<td>Inlet/Outlet</td>
<td>3/8 npt(f)</td>
<td>3/8 npt(f)</td>
</tr>
<tr>
<td>Gauge Port</td>
<td>1/8 BSPP</td>
<td>1/8 BSPP</td>
</tr>
<tr>
<td>Max Inbound Fluid</td>
<td>580/40/4</td>
<td>580/40/4</td>
</tr>
<tr>
<td>Regulated Pressure</td>
<td>5.8-145/0.4-10/0.04-1</td>
<td>5.8-145/0.4-10/0.04-1</td>
</tr>
<tr>
<td>Max Delivery</td>
<td>7/27</td>
<td>7/27</td>
</tr>
<tr>
<td>Wetted Parts</td>
<td>SST, fluoroelastomer, Carbide Valve</td>
<td>SST, fluoroelastomer, PEEK Valve</td>
</tr>
<tr>
<td>Instruction Manual</td>
<td>309474</td>
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</tr>
</tbody>
</table>
## Regulators

### Technical Data

#### Mechanically Adjustable Fluid Regulators, High Pressure

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

#### Pneumatically Adjustable Fluid Regulators, High Pressure

<table>
<thead>
<tr>
<th>Model</th>
<th>Inlet/Outlet</th>
<th>Gauge Port</th>
<th>Max Inbound Fluid</th>
<th>Regulated Pressure</th>
<th>Max Delivery</th>
<th>Wetted Parts</th>
<th>Instruction Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: 234266</td>
<td>3/4 npt(f)</td>
<td>1/4 BSPP</td>
<td>5221/360/36</td>
<td>72-870/5-60/0.5-6</td>
<td>11/42</td>
<td>SST, fluoroelastomer, Carbide Valve Acetal</td>
<td>309475</td>
</tr>
<tr>
<td>Model: 234270</td>
<td>3/4 npt(f)</td>
<td>-</td>
<td>5221/360/36</td>
<td>280-2175/20-150/0.2-15</td>
<td>11/42</td>
<td>SST, fluoroelastomer, Carbide Valve Acetal</td>
<td>309475</td>
</tr>
<tr>
<td>Model: 234259</td>
<td>3/4 npt(f)</td>
<td>-</td>
<td>5221/360/36</td>
<td>580-3625/40-250/4-25</td>
<td>11/42</td>
<td>SST, fluoroelastomer, Carbide Valve Acetal</td>
<td>309475</td>
</tr>
<tr>
<td>Model: 234271</td>
<td>3/4 npt(f)</td>
<td>1/4 BSPP</td>
<td>5221/360/36</td>
<td>580-4640/40-320/0.4-32</td>
<td>12/45</td>
<td>SST, fluoroelastomer, Carbide Valve Acetal</td>
<td>309475</td>
</tr>
</tbody>
</table>
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 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
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 200°F (95°C) 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 200°F (95°C)
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 200°F (95°C)
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 400°F (204°C)
Same as 244961 with higher temperature seal kit.

244909 240V Electric Heat Model, temperatures to 400°F (204°C)
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 (45° 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 (400°F [204°C]) valves: includes high temperature seals, needles, and seat.
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, 303 SST, 17-4 ph SST, C2 carbide, hard chrome, ethylene propylene, Parker Polymite™, DuPont 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

Polymite® is a registered trademark of Parker. All other trademarks mentioned herein are the property of their respective owners.
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

<table>
<thead>
<tr>
<th>Tube OD</th>
<th>1/8 npt(m)</th>
<th>1/4 npt(m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Straight</td>
<td>90° Swivel</td>
</tr>
<tr>
<td>1/8 in</td>
<td>598329</td>
<td></td>
</tr>
<tr>
<td>5/32 in</td>
<td>104172</td>
<td>598140</td>
</tr>
<tr>
<td>1/4 in</td>
<td></td>
<td>597151</td>
</tr>
</tbody>
</table>

Plastic Tubing for Air Signal Lines

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>513063</td>
<td>1/8 O.D. Nylon</td>
<td>514607</td>
<td>513231</td>
</tr>
</tbody>
</table>

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)
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

**Typical Applications**
- Streaming
- Spraying
- Extrusion

**Typical Fluids**
- Polyvinyl Chloride (PVC)
- Epoxies
- Silicone
- Urethane
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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Orifice Size inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>182421</td>
<td>8-10 in  (200-250 mm)</td>
<td>0.021 in (0.533 mm)</td>
</tr>
<tr>
<td>182521</td>
<td>10-12 in (250-300 mm)</td>
<td>0.025 in (0.635 mm)</td>
</tr>
<tr>
<td>182621</td>
<td>12-14 in (300-350 mm)</td>
<td>0.031 in (0.787 mm)</td>
</tr>
<tr>
<td>182721</td>
<td>14-16 in (350-400 mm)</td>
<td>0.035 in (0.889 mm)</td>
</tr>
<tr>
<td>182821</td>
<td>16-18 in (400-450 mm)</td>
<td>0.039 in (0.991 mm)</td>
</tr>
<tr>
<td>183435</td>
<td>8-10 in  (200-250 mm)</td>
<td>0.031 in (0.787 mm)</td>
</tr>
<tr>
<td>182535</td>
<td>10-12 in (250-300 mm)</td>
<td>0.035 in (0.889 mm)</td>
</tr>
<tr>
<td>182635</td>
<td>12-14 in (300-350 mm)</td>
<td>0.039 in (0.991 mm)</td>
</tr>
<tr>
<td>182735</td>
<td>14-16 in (350-400 mm)</td>
<td>0.043 in (1.041 mm)</td>
</tr>
<tr>
<td>182835</td>
<td>16-18 in (400-450 mm)</td>
<td>0.047 in (1.194 mm)</td>
</tr>
</tbody>
</table>

Shower Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Orifice Size inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>270025</td>
<td>0.025 (0.635)</td>
</tr>
<tr>
<td>270027</td>
<td>0.027 (0.686)</td>
</tr>
<tr>
<td>270029</td>
<td>0.031 (0.787)</td>
</tr>
<tr>
<td>270031</td>
<td>0.035 (0.889)</td>
</tr>
<tr>
<td>270035</td>
<td>0.037 (0.940)</td>
</tr>
<tr>
<td>270039</td>
<td>0.039 (0.991)</td>
</tr>
<tr>
<td>270041</td>
<td>0.041 (1.041)</td>
</tr>
<tr>
<td>270043</td>
<td>0.043 (1.092)</td>
</tr>
<tr>
<td>270059</td>
<td>0.059 (1.500)</td>
</tr>
</tbody>
</table>

Streaming Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Orifice Size inches (mm)</th>
<th>No. of Orifices</th>
</tr>
</thead>
<tbody>
<tr>
<td>208224</td>
<td>0.021 (0.533)</td>
<td>6</td>
</tr>
</tbody>
</table>

Streaming Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Orifice Size inches (mm)</th>
<th>No. of Orifices</th>
</tr>
</thead>
<tbody>
<tr>
<td>208224</td>
<td>0.021 (0.533)</td>
<td>6</td>
</tr>
</tbody>
</table>

Wetted Parts

stainless steel, carbide, UHMPWPE, acetal, PEEK, PTFE

Dimensions

Two 0.039 in (0.99 mm) dowel pin holes
Two 0.210 in (5.3 mm) deep

Dimensions

Two 0.039 in (0.99 mm) dowel pin holes
Two 0.210 in (5.3 mm) deep
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, fluor elastomer, thermoplastic polyester
Repair kit ........................................... 918626
Instruction manual .......................... 310557

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, fluor elastomer, Brass, Hytrel
Mounting ........................................... (2) 1/4-20 holes
Instruction Manual .......................... 310538
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
## 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.

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

### 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.

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

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

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.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Length</th>
<th>Orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>C04128</td>
<td>4 in (101.6 mm)</td>
<td>1/8 in (3.17 mm)</td>
</tr>
<tr>
<td>C04137</td>
<td>2.5 in (63.50 mm)</td>
<td>1/8 in (3.17 mm)</td>
</tr>
<tr>
<td>C04140</td>
<td>2.5 in (63.50 mm)</td>
<td>1/16 in (1.59 mm)</td>
</tr>
<tr>
<td>C04132</td>
<td>4 in (101.60 mm)</td>
<td>1/16 in (1.59 mm)</td>
</tr>
<tr>
<td>C04135</td>
<td>4 in (101.60 mm)</td>
<td>1/32 in (0.79 mm)</td>
</tr>
<tr>
<td>C51172</td>
<td>3 in (76.20 mm)</td>
<td>0.45 in (11.43 mm)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Part number</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>C00042</td>
<td>4 in (101.6 mm)</td>
</tr>
<tr>
<td>C00043</td>
<td>6 in (152.4 mm)</td>
</tr>
<tr>
<td>C00036</td>
<td>10 in (254 mm)</td>
</tr>
<tr>
<td>C00050</td>
<td>5-13/15 in (147.64 mm)</td>
</tr>
<tr>
<td>C00049</td>
<td>10 in (254 mm)</td>
</tr>
</tbody>
</table>
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.

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

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.

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

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.

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

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