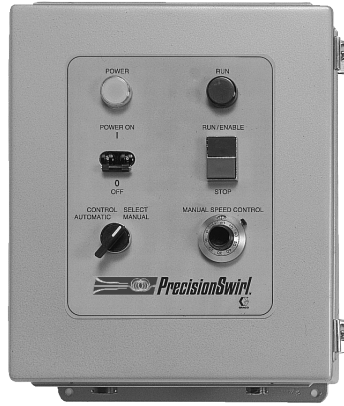![Graco logo](GRACO ®)

First choice when quality counts.™

PrecisionSwirl™
Swirl Applicator Module

PrecisionSwirl Control Panel

PrecisionSwirl Applicator

70 ft. (21.3 m) Cable Set

■ **Provides a circular loop "swirl" bead pattern**
■ **Swirl pattern has uniform bead profile and consistent edges**
■ **Increased tip standoff simplifies programming**
■ **Swirl pattern can be varied along the bead path**
■ **Application has no dynamic seals**

Swirl bead dispensing with Graco's PrecisionSwirl

CE

Typical Fluids Handled

• Heat cure epoxy
• PVC plastisol

Typical Applications

• Hem flange adhesive bonding
• Structural adhesive bonding
• PVC seam sealing
• After hem sealing
• Liquid mask sealing

Typical Fabrication Facilities

• Automotive car and truck body shop operations
• Automotive stamping feeder plants

Graco's PrecisionSwirl applicator resolves important quality issues for automotive hem flange enclosure panel applications. When merging the inner panel to the outer panel, the successful use of a flat swirl pattern vs. extruded or stream bead technology ensures consistent full metal coverage where it should be, reducing squeeze-out, repair or scrap.

When compared to air swirl methods, Graco's PrecisionSwirl really outperforms. Part quality improvements include: consistent edges and low bead height, a wider range of pattern widths, precise corners, excess material reduction, and taller stand off distances from tip to part. This adhesive coverage puts dispensing control into process equipment and out of fluid dynamics. The material is less likely to flow to the outside edge of the hem and excess material usage can be eliminated to help prevent contamination of process equipment.

PrecisionSwirl puts the dispensed material down in a string-like circular loop pattern where it spreads out in the coverage area. The RPM of the PrecisionSwirl applicator is controlled using the manual selected or analog command signal. The swirl pattern maintains its shape and stays in place when applied to the metal surface even when the part is in a vertical position.

Technical Specifications

Control Panel

Input power . . . . . . 85-132 and 170-250 VAC, 1ph 50/60 Hz, 48 watts

Output power . . . . proprietary PWM voltage to the motor

Analog input (speed adjustment) 0-10 VDC, or 0-5 VDC

Auto control relay contact rating . . . . 24 VAC, 3 amps

Weight . . . . 23.5 lbs. (10.7 kg)

Size . . . . 14 x 12 x 6 in. (356 x 305 x 152 mm)

Swirl Applicator

Input power . . . . proprietary PWM voltage to the motor

Motor type . . . . variable rpm brushless DC

Motor brake . . . . standard, selectable on-off

Motor Speed Control
   Manual . . . . single speed set point
   Automatic . . . . .0-10 volt adjustable

Maximum motor speed . . . . 20,000 rpm

Maximum operating pressure . . . 3500 psi (240 MPa, 240 bar)

Maximum operating temperature . . . . 140°F, (60°C)

Fluid inlet . . . . 3/4 in. 37° JIC(f)

Wetted parts . . . . stainless steel, nickel alloy, brazing alloy, epoxy adhesive, E.P.D.M.

Weight . . . . 1.62 lbs. (0.74 kg)

Temperature Conditioned Snuff Back Gun

Fluid inlet . . . . 1/2 NPT(f)

Fluid outlet . . . . 3/4 in. 37° JIC(m)

Temperature conditioning inlet . . . . 1/4 NPT(f)

Temperature conditioning outlets . . . . (4) 1/8 NPT(f)

Max. operating pressure . . . . 3500 psi (24.1 MPa, 241 bar)

Wetted parts . . . . carbon steel, aluminum, SST, Viton®

Weight . . . . 4.4 lbs. (1.99 kg)

Maximum operating temperature . . . . 60°C (140°F)

Air cylinder operation . . . . air to open, air to close with fail-safe spring to close

Actuation method . . . . 4-way solenoid valve

Instruction manuals
   PrecisionSwirl 310-554
   Temperature Conditioned Gun 310-539

Hytrel® and Viton® are registered trademarks of DuPont.

Performance Chart for PrecisionSwirl

Speed Adjustments, Manual and Automatic

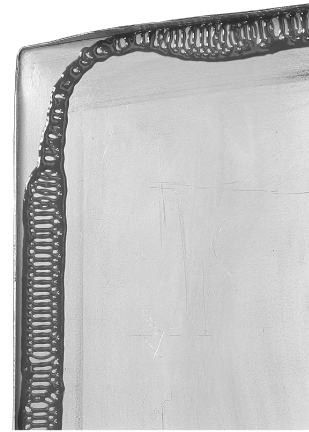| Volts	0	2v	4v	6v	8v	10v
Volts		1v	2v	3v	4v	5v
Dial Indicator	2	4	6	8	10

SPEED ADJUSTMENT
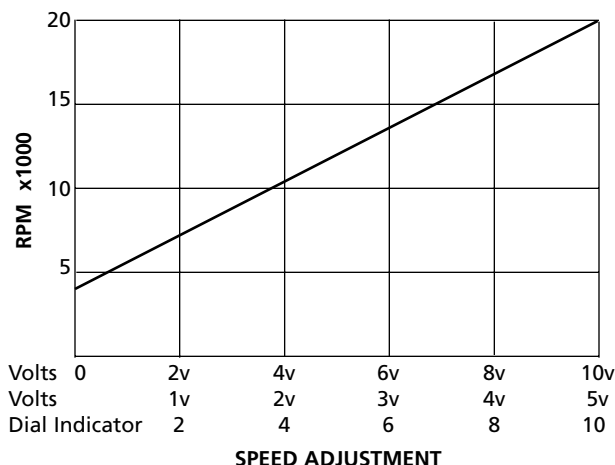
Application Photos

Select various bead profiles in the corner and on the straightaways with PrecisionSwirl.

Consistent width

Swirl pattern narrowing in the corner

Width and thickness of swirl are controlled with flow rate or analog signal.
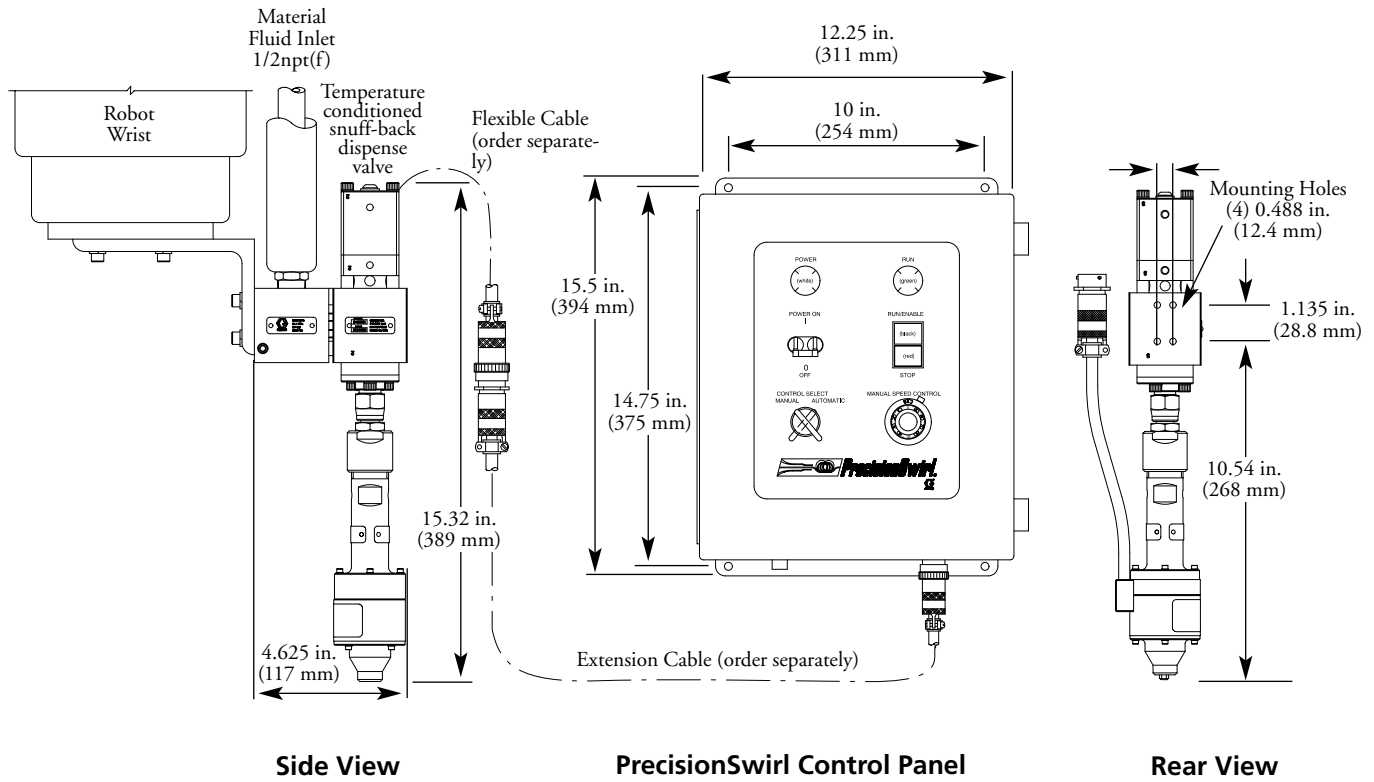
Swirl Patterns

Narrow Pattern   **Wide Pattern**

SEALANT ADHESIVE EQUIPMENT

PrecisionSwirl Dimension Drawing

Material
Fluid Inlet
1/2npt(f)

Temperature
conditioned
snuff-back
dispense
valve

Robot
Wrist

Flexible Cable
(order separate-
ly)

12.25 in.
(311 mm)

10 in.
(254 mm)

15.5 in.
(394 mm)

14.75 in.
(375 mm)

15.32 in.
(389 mm)

POWER
(white)

RUN
(green)

POWER ON

RUN/ENABLE

0
OFF

STOP

CONTROL SELECT
MANUAL   AUTOMATIC

MANUAL SPEED CONTROL

PrecisionSwirl

Mounting Holes
(4) 0.488 in.
(12.4 mm)

1.135 in.
(28.8 mm)

10.54 in.
(268 mm)

4.625 in.
(117 mm)

Extension Cable (order separately)

Side View   **PrecisionSwirl Control Panel**   **Rear View**

Ordering Information for PrecisionFlo/PrecisionSwirl Packages

For Automatic High Viscosity Applications

Temperature Conditioned Models *(select one)*:
970-223 PrecisionFlo Plus, touch screen controller
970-045 PrecisionFlo, panel-mount controller
    Includes: filter, regulator, PrecisionFlo module, controller, temperature conditioner with fluid hoses, and temperature conditioned automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Ambient Models *(select one)*:
970-224 PrecisionFlo Plus, touch screen controller
970-046 PrecisionFlo, panel-mount controller
    Includes: filter, regulator, PrecisionFlo module, controller, fluid hoses, and automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Heated Models *(select one)*:
970-225 PrecisionFlo Plus, touch screen controller
970-047 PrecisionFlo, panel-mount controller
    Includes: filter, 4-zone control panel, heated regulator, PrecisionFlo module, controller, heated fluid hoses, and heated automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables and tip.

For Automatic Low Viscosity Applications

Temperature Conditioned Models *(select one)*:
970-239 PrecisionFlo Plus, touch screen controller
970-095 PrecisionFlo, panel-mount controller
    Includes: filter, regulator, PrecisionFlo module, controller, temperature conditioner with fluid hoses, temperature conditioned automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Ambient Models: *(select one)*:
970-229 PrecisionFlo Plus, touch screen controller
970-096 PrecisionFlo, panel-mount controller
    Includes: filter, regulator, PrecisionFlo module, controller, fluid hoses, automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Heated Models: *(select one)*:
970-225 PrecisionFlo Plus, touch screen controller
970-097 PrecisionFlo, panel-mount controller
    Includes: filter, heated regulator, 4-zone control panel, PrecisionFlo module, controller, heated fluid hoses, heated automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

For Automatic Low Viscosity Applications

Temperature Conditioned Models *(select one)*:
970-240 PrecisionFlo Plus, touch screen controller
970-098 PrecisionFlo, panel-mount controller
    Includes: dual filter bank, PrecisionFlo module, controller, temperature conditioner with fluid hoses, temperature conditioned automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Ambient Models *(select one)*:
970-230 PrecisionFlo Plus, touch screen controller
970-099 PrecisionFlo, panel-mount controller
    Includes: dual filter bank, PrecisionFlo module, controller, fluid hoses, automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Heated Models *(select one)*:
970-235 PrecisionFlo Plus, touch screen controller
970-100 PrecisionFlo, panel-mount controller
    Includes: dual filter bank, 4-zone control panel, PrecisionFlo module, controller heated fluid hoses, heated automatic snuff back dispense valve with PrecisionSwirl applicator, panel, cables, and tip.

Note: A Robot Interface Kit is required for PrecisionFlo metering packages. See the Accessories section of this data sheet for information.

970-046 Shown
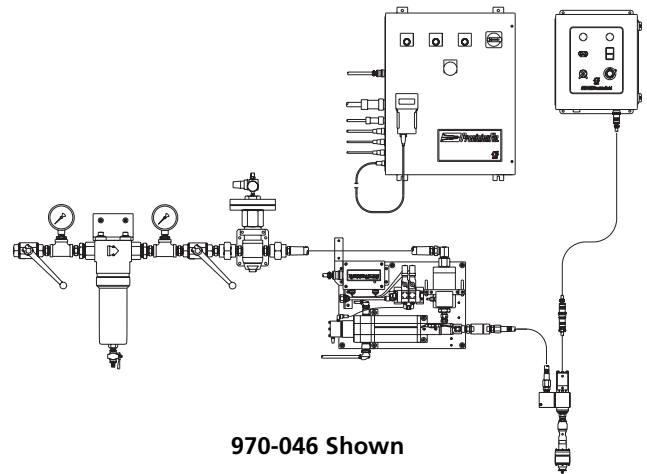
Accessories

Swirl Dispense Tips

Part No.	Size	Part No.	Size
918-601	0.015	**918-605**	0.023
918-602	0.017	**918-606**	0.025
918-603	0.019	**918-607**	0.027
918-604	0.021	**918-608**	0.030

Repair Kits

918-589 Swirl Motor Assembly Repair Kit

918-620 Swirl Tube Repair Kit

918-523 Temperature Conditioned Snuff Back Valve Repair Kit

918-524 Temperature Conditioned Manifold
For snuff back valve.

918-595 Tool Kit
Includes various tolls for servicing the Swirl applicator (918-330).

Recommended Spares

918-330 Swirl Applicator with 0.027 Swirl Tip

918-544 Temperature Conditioned Snuff Back Valve Assembly
Does not include manifold.

918-525 Temperature Conditioned Manifold
For snuff back valve.

617-760 Flexible Cable, 15 ft. (4.5 m)
Connects PrecisionSwirl dispensing module to extension cable.

617-870 Extension Cable, 55 ft. (16 m)
Connects PrecisionSwirl control panel to flexible cable.

617-829 Robot Interface Cable, 40 ft. (12.1 m)
Connects PrecisionSwirl control panel to robot control panel. Accepts a 0-10 volt signal to adjust RPM.

617-830 Deflector

PrecisionFlo Plus Solutions
Robot Interface Kits
A Robot Interface Kit is required for PrecisionFlo Plus metering packages. Select a 24 or 120 VAC kit.

918-634 120 VAC Robot Interface Kit
Includes kit for interfacing to a 120v robot control.

918-635 24 VAC Robot Interface Kit
Includes kit for interfacing to a 24v robot control.

970-244 Transformer Kit
Includes a 480 VAC transformer to power the 120 VAC PrecisonFlo Plus control panel.

PrecisionFlo Solutions

C58-854 120 VAC Robot Interface Kit
Includes stand alone enclosure for interfacing to a 120v robot control. Note: PrecisionFlo control includes 24 VDC robotic interface.

970-216 Handheld Interface Pendant
Includes handheld pendant and cable for remote interfacing to PrecisionFlo control panel.

970-215 Transformer Kit
Includes a 480 VAC transformer to power the 120 VAC PrecisionFlo control panel.