

# Single Component

Pumps and Packages • Applicators • Accessories



Buyer's Guide and  
Specifications

- Sealant and Adhesive Solutions for Industrial and Automotive Applications

PROVEN QUALITY. LEADING TECHNOLOGY.

# Catalog Reference Guide

Graco® products can be found in the following catalogs:

Title	Form Number
Accessories	303119
Finishing Equipment	303252
Process Equipment	300435
Protective Coatings Equipment	303253
Sanitary Equipment	300299

## Graco Trademarks and Products

Graco catalogs are designed to provide you with a selection of equipment for use in our primary industries and applications. Below is a listing of our most commonly used trademarks and product names. Find the product you are interested in, then refer to the appropriate catalog(s). See each catalog's table of contents for more detailed information. For Technical Data Reference and Compatibility Charts, see form number 321123.

Name	Catalog(s)	Name	Catalog(s)
510 Gun	Protective Coatings	LSR™	Accessories
950 Series Sealant Gun	Sealants and Adhesives	MMV™ (Micro Metering Valve)	Sealants and Adhesives
8900 Proportioner	Sealants and Adhesives	Monark®	Finishing, Process, Protective Coatings, Sealants and Adhesives, Sanitary
1:1 Extruder	Sealants and Adhesives		
2K Mix Manifold	Sealants and Adhesives	PlasmaCoat™ Rods	Finishing, Protective Coatings
2K Monitor	Finishing, Protective Coatings, Sealants and Adhesives	Plural Component Mix Gun	Protective Coatings
AA Plus™ Gun	Finishing, Protective Coatings	PrecisionDose™	Sealants and Adhesives
AL Plus™ Gun	Finishing	PrecisionFlo™	Sealants and Adhesives
Alpha™ Gun	Finishing	PrecisionMix®	Finishing
Alpha™ Plus Gun	Finishing, Protective Coatings	PrecisionSwirl™	Sealants and Adhesives
AMV™ (Automotive Metering Valve)	Sealants and Adhesives	PrecisionView™ AMR	Finishing
AutoPlus™ Valves	Sealants and Adhesives	Premier®	Finishing, Protective Coatings, Sealants and Adhesives
Bin Evacuation System (BES)	Sanitary	President®	Finishing, Process, Protective Coatings
Batch Dispense System™	Finishing		
Bulldog®	Finishing, Protective Coatings, Sealants and Adhesives	Pressure Pots	Accessories, Finishing
	Sanitary	ProBatch™	Finishing
Check-Mate®	Sealants and Adhesives	ProDispense™	Finishing
Color Change System™	Finishing	ProMix™	Finishing
CycleFlo™	Process	PRO™ Xs Electrostatic Guns	Finishing
DDV™ (Diaphragm Dispense Valve)	Sealants and Adhesives	Regulus®	Finishing
Delta Spray®	Finishing	Senator®	Finishing, Sanitary, Protective Coatings
Duo-Flo®	Sealants and Adhesives		
Dura-Flo™	Finishing, Protective Coatings, Sealants and Adhesives	Silver Plus™	Finishing, Protective Coatings
	Sealants and Adhesives	Standard 2:1	Finishing, Process, Sealants and Adhesives
DynaMite™ Dispense Valve	Sealants and Adhesives		
EnDure™ Dispense Valve	Sealants and Adhesives	SuperCat®	Protective Coatings
Falcon™	Finishing	Therm-O-Flow®	Sealants and Adhesives
Fast-Flo®	Process	Triton®	Finishing
Foam Cat®	Protective Coatings	Triumph®	Finishing
Gear Meters	Finishing and Sealants and Adhesives	Tuff-Stack™	Accessories, Protective Coatings
	Adhesives	Twistork®	Accessories
The Glutton®	Finishing	Ultra-Lite™ Flow Gun	Sealants and Adhesives
High-Flo®	Finishing	UniDrum™ Bulk Supply	
Husky™	Finishing, Process, Sealants and Adhesives	System	Sealants and Adhesives
	Adhesives	ValueMix®	Finishing
Hydra-Cat®	Finishing, Protective Coatings, Sealants and Adhesives	Viscon®	Accessories, Finishing, Protective Coatings
	Sealants and Adhesives		
Hydra-Clean®	Protective Coatings	Viscount®	Finishing, Protective Coatings
Hydra-Mate™	Sealants and Adhesives	Xtreme®	Finishing, Protective Coatings
Imperial™	Finishing	Xtreme Seal Packings	Finishing, Protective Coatings
Informer®	Finishing		
King™	Finishing, Protective Coatings		
LSA™	Accessories		

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# Introduction

1

There are a number of basic pump styles which are used for transferring sealant and adhesive material. The following pages detail Graco's selections for sealant and adhesive transfer.

What we concentrate on in this document are ram-fed pumps. Ram-fed pumps are used for medium to high viscosity material. The ram provides force to a follower plate, which in turn drives the material to the pump opening. There are two basic styles of ram pumps: priming piston pumps and 2-ball pumps. In general, this is how they are applied:

<b>Pump Style</b>	<b>Priming Piston</b>	<b>2-Ball</b>
<b>Graco brand</b>	<b>Check-Mate</b>	<b>Dura-Flo</b>
Choose for...	<ul style="list-style-type: none"> <li>Adhesives and Sealants which do not flow well on their own (i.e. are not self-leveling) (approx. 50,000 cps or greater)</li> <li>Filled adhesives and sealants which are abrasive to pump components</li> </ul>	<ul style="list-style-type: none"> <li>Low to medium viscosity adhesives and sealants</li> <li>High flow applications, such as PVC sealer in automotive plants</li> <li>Spray applications, e.g. in the HVAC industry</li> <li>Waterborne and petroleum solvent sound deadener and very abrasive coatings and sealants for industrial and automation applications</li> </ul>

Other pumps, such as diaphragm pumps, are also used for moving lower viscosity sealants and adhesives. A representative sample from our family of transfer pumps is included in this catalog. If you don't see a transfer pump which meets your needs, please see the Graco Process Equipment Catalog, form number 300435.

# Pressure Drop Calculation

In order to correctly size a pump, you should know the desired dispense rate and the viscosity of the material you are working with. The following example shows how to apply this information:



$$\text{Pressure drop or } \Delta P = \frac{.0273 Q V L}{D^4}$$

**WHERE:**

- P = Pressure drop in psi (bar, MPa)
- V = Viscosity in poise (PS)
- D = Diameter in inches (mm)
- Q = Flow rate in gpm (lpm)
- L = Length in ft (m)

**For Flow Rate Pressure Drop**

Bead Size Diameter in. (mm)	Gallons (Ls) per 1000 Lineal Ft.	Feet (Meters) per Lineal Gallon
1/16 (1.7)	0.16 (0.1)	6000 (1829)
3/32 (2.4)	0.36 (0.3)	2700 (823)
1/8 (3.2)	0.64 (0.5)	1500 (457)
3/16 (5)	1.44 (1.2)	675 (206)
1/4 (6.3)	2.55 (2.1)	375 (114)
5/16 (8.3)	3.98 (3.3)	240 (73)
3/8 (9.5)	5.74 (4.8)	165 (50)
1/2 (12.7)	10.20 (8.5)	95 (29)
5/8 (15.8)	15.92 (13.3)	50 (15)
3/4 (19)	22.95 (19.1)	35 (11)
1 (25.4)	40.80 (34)	19 (6)

**OTHER ΔP CONSIDERATIONS:**

- 0.094 diameter nozzle = 300 psi (21 bar, 2.1 MPa)
- Gun drop ΔP
  - Ultra-Lite 6000 = 400 psi (28 bar, 2.8 MPa)
  - Ultra-Lite 4000 = 400 psi (28 bar, 2.8 MPa)
- Mastic Regulator ΔP = 400 psi (28 bar, 2.8 MPa)
- Straight Swivel 1/2 in (12.7 mm) = 200 psi (14 bar, 1.4 MPa)
- Z Swivel 1/2 in (12.7 mm) = 200 psi (14 bar, 1.4 MPa)
- Filters = 100-400 psi (7-28 bar, 0.7-2.8 MPa)

**Example**

Material is 2000 poise (200,000 cps) non-thixotropic acrylic latex sealant. Includes 5 gallon (4.2 l) pail, one manual gun, 25 ft x 3/8 in (7.6 m x 9.5 mm) I.D. hose, 1/4 in (6.3 mm) bead. The part is 6 in (152 mm) in diameter. Need to do 3 parts per minute. Need swivel at the gun.

- 6 in (152 mm) diameter to circumference - πD or 3.14 x 6 in (152 mm) = 18.84 in (479 mm) (total) per part
- 18.84 in (479 mm) x 3 (3 parts) = 57 in (1448 mm) of bead per minute
- Flow rate (gpm/lpm) = Area<sub>bead</sub> x Length<sub>bead</sub> = 0.049 in<sup>2</sup> (πr<sup>2</sup>) x 57 in (1448mm) = 2.77 in<sup>3</sup> = 0.01 gpm (231 in<sup>3</sup> = 1 gal)

$$\Delta P = \frac{(0.0273) (0.01) (2000) (25)}{(3.75)^4 \cdot 0.0198} = \frac{13.65}{.0198} = 689 \text{ PSI}$$

- Nozzle ΔP = 300
- Ultra-Lite 6000 Flow Gun ΔP = 400
- Fittings & Swivel ΔP = 400

$$\Delta P_{\text{Total}} = \Delta P_{\text{Nozzle}} + \Delta P_{\text{Gun}} + \Delta P_{\text{Swivel}} + \Delta P_{\text{Hose}} = (300 + 400 + 400 + 689) = 1789 \text{ psi (123.4 bar, 12.34 MPa)}$$

From the chart, we selected a 46:1 President with a 3 in (76.2 mm) single post ram. Since the material is an acrylic, use SST wetted parts or part no. 231169. A 46:1 pump at 90 psi (6.2 bar, 0.6 MPa) of air will produce 4140 psi (285 bar, 28.5 MPa) [46 x 90 psi (6.2 bar, 0.6 MPa)] of pressure. Calculated pressure loss is only 1789 psi (123 bar, 12.3 MPa), so this selection will be fine for the application.

# Checkmate Pump Selection Chart

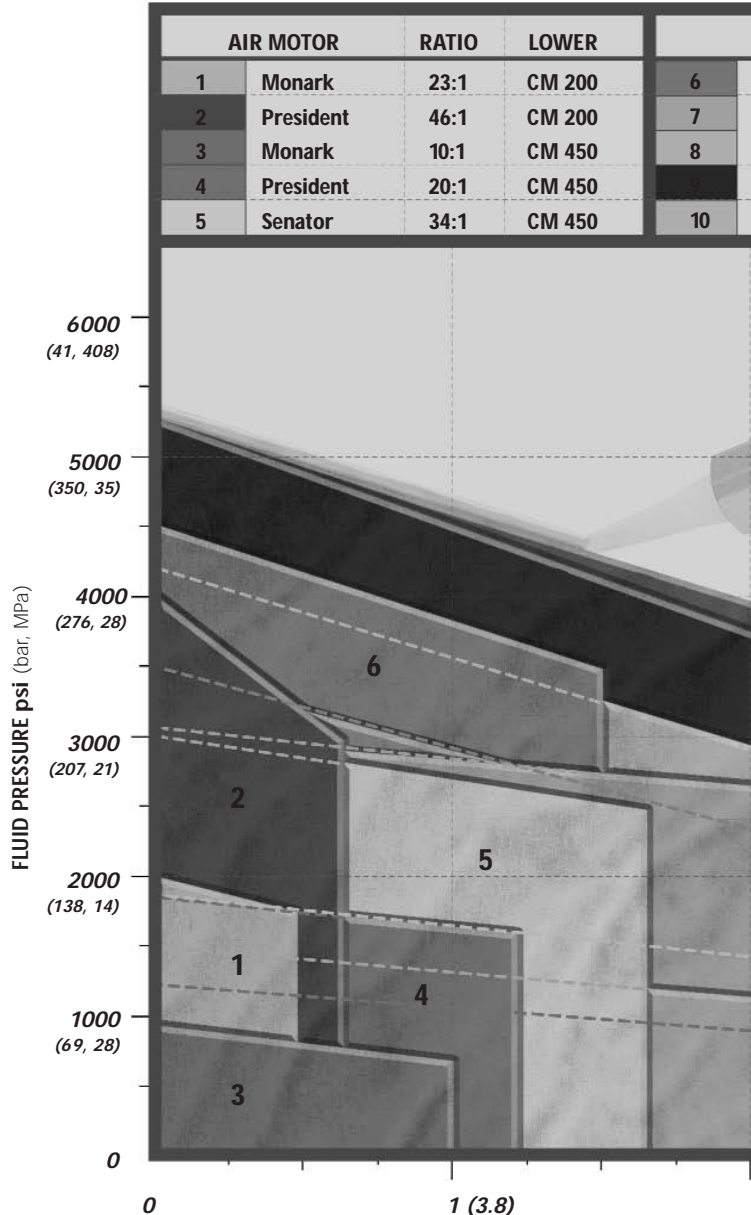
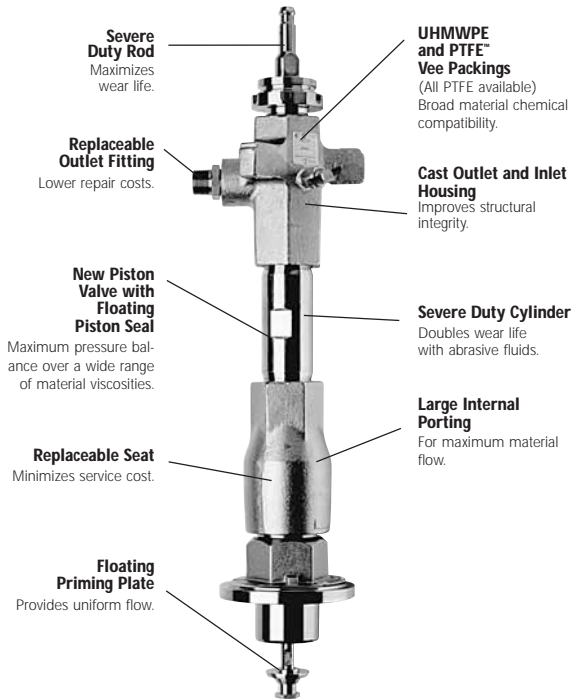
To select the proper pump for agiven sealant or adhesive material, you must know:

- 1) Material viscosity (cps)
- 2) Material type (urethane, epoxy, acrylic, silicone, etc.)
- 3) Flow rate

1

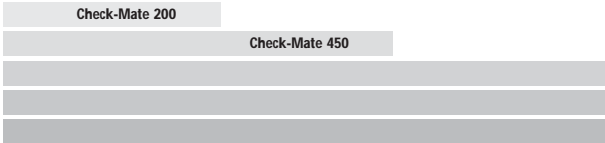
After obtaining the above information, use the pump selection chart to find the recommended pump. The chart on the right gives the air motor name, pressure ratio and lower type.

## Check-Mate Features



Use this chart as a guide only. Contact your local Graco representative for further details.

Registered trademarks mentioned herein are the property of their respective owners.

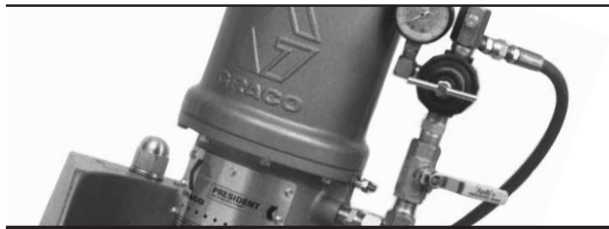


AIR MOTOR	RATIO	LOWER	AIR MOTOR	RATIO	LOWER	
Bulldog	55:1	CM 450	11	Premier	80:1	CM 1000
Senator	19:1	CM 800	12	Bulldog	12:1	CM 2100
Bulldog	31:1	CM 800	13	King	24:1	CM 2100
King	65:1	CM 800	14	Premier	39:1	CM 2100
King	50:1	CM 1000				



- ..... Specialty Resins
- ..... Autobody Sealer
- ..... 300,000 Centipoise
- ..... Grease
- ..... Silicones
- ..... 200,000 Centipoise
- ..... Polysulfides (or greater)
- ..... 50,000 Centipoise
- ..... Lithographic Inks
- ..... Automotive Epoxy
- ..... 20,000 Centipoise
- ..... Acrylic Caulks
- ..... 5,000 Centipoise

Check-Mate 800
Check-Mate 1000
Check-Mate 2100



# Check-Mate 200

## Priming Piston Fluid Pumps

**1**

Check-Mate 200 pumps provide fluid flow to 0.75 gpm (2.84 lpm) and operating pressures to 4600 psi (320 bar, 32 MPa).

### Features and Benefits

- Severe Duty rod and cylinder for increased durability; Graco's Severe Duty is a stainless steel, hard chrome cylinder and rod which prolongs the life of the pump and packings
- SST models for waterborne compatibility
- Large internal porting for maximum flow
- Floating piston seal and priming plate improve balance and performance

### Typical Applications

- Dispensing of silicone, latex or acrylic sealants
- Feed pumps for 2-component epoxy or urethane materials
- Dispensing of greases and other lubricants

### Typical Fluids Handled

- Sealants
- Adhesives
- Inks
- Mastics
- Lubricants



231117  
23:1 Monark



# Check-Mate 200

## Priming Piston Fluid Pumps

### Technical Specifications

23:1 Monark

Maximum fluid outlet pressure . . . 4140 psi (285 bar, 28.5 MPa)

Maximum fluid flow @ 60 cpm . . . . . 0.5 gpm (1.9 lpm)

Maximum air inlet pressure . . . . . 180 psi (12.5 bar, 1.25 MPa)

Fluid outlet size . . . . . 1/2 npt(m)

Air inlet size (bare pump) . . . . . 3/8 npt(f)

Rod and cylinder . . . . . Severe Duty (chrome over SST)

Packings

Throat . . . . . UHMWPE/PTFE

Piston (CS) . . . . . UHMWPE

Piston (SST) . . . . . PTFE

Overall length (bare pump) . . . . . 45 in (115 cm)

Weight (pump only) . . . . . 43 lbs (19.5 kg)

Instruction manual

Carbon steel . . . . . 308080

Stainless steel . . . . . 308200

Ram mounted pumps . . . . . 308026

Cart mounted pumps . . . . . 308087

46:1 President

Maximum fluid outlet pressure . . . 4600 psi (320 bar, 32.0 MPa)

Maximum fluid flow @ 60 cpm . . . . . 0.6 gpm (2.3 lpm)

Maximum air inlet pressure . . . . . 108 psi (7.5 bar, 0.75 MPa)

Fluid outlet size . . . . . 1/2 npt(m)

Air inlet size (bare pump) . . . . . 1/2 npt(f)

Rod and cylinder . . . . . Severe Duty (chrome over SST)

Packings

Throat . . . . . UHMWPE/PTFE

Piston (CS) . . . . . UHMWPE

Piston (SST) . . . . . PTFE

Overall length (bare pump) . . . . . 47-1/2 in (121 cm)

Weight (pump only) . . . . . 48 lbs (21.8 kg)

Instruction manual

Carbon steel . . . . . 308080

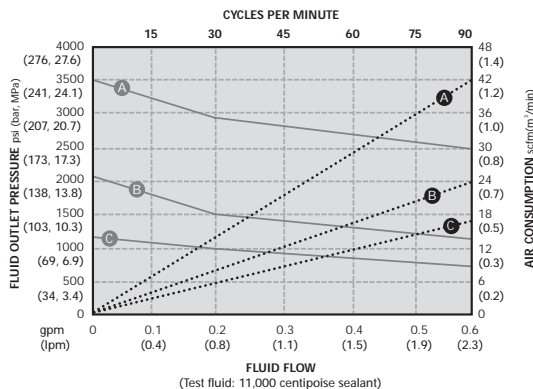
Stainless steel . . . . . 308200

Ram mounted pumps . . . . . 308026

Cart mounted pumps . . . . . 308087

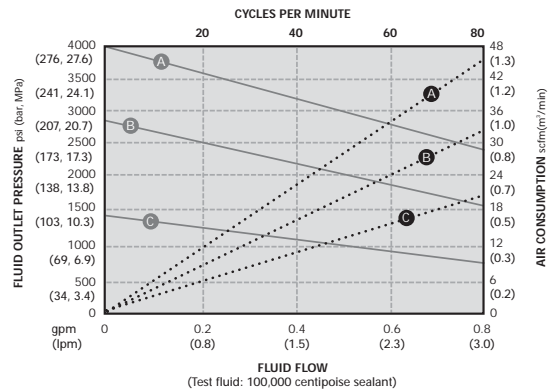


Performance Chart: 23:1 Monark



AIR PRESSURES	LEGEND
(A) = @ 180 psi (12.4 bar, 1.2 MPa)	Air Consumption . . . . .
(B) = @ 100 psi (7 bar, 0.7 MPa)	Fluid Flow . . . . .
(C) = @ 70 psi (4.8 bar, 0.5 MPa)	

Performance Chart: 46:1 President



AIR PRESSURES	LEGEND
(A) = @ 100 psi (7 bar, 0.7 MPa)	Air Consumption . . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow . . . . .
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

# Check-Mate 200 Ram Packages

## Priming Piston Fluid Pumps

1

### Ordering Information

#### Cart-Mounted, Single-Post Inductor, Elevator Packages for 5 Gallon (20 l) Pails

- 231135** 23:1 Monark pump with carbon steel lower, 5 gal (20 l) inductor assembly, air regulator, cart, 3/8 npt(mbe) x 25 ft (7.6 m) nylon-lined hose (H53825), an NBR seal 5 gal (20 l) carbon steel follower plate (222812), and Ultra-Lite 6000 (235628).
- 231134** Same as 231135, but without hose or gun.
- 231171** 23:1 Monark pump with stainless steel lower, 5 gal (20 l) inductor assembly, air regulator, cart, 3/8 npt(mbe) x 15 ft (4.6 m) PTFE hose (222934), a PTFE seal 5 gal (20 l) stainless steel follower plate (222909), and Ultra-Lite 6000 (235628).  
Note: Not assembled at factory.
- 231170** Same as 231171, but without hose or gun.  
Note: Not assembled at factory.
- 231137** 46:1 President pump with carbon steel lower, 5 gal (20 l) inductor assembly, air regulator, cart, 3/8 npt(mbe) x 25 ft (7.6 m) nylon-lined hose (H53825), an NBR seal 5 gal (20 l) carbon steel follower plate (222812), and Ultra-Lite 6000 (235628).
- 231136** Same as 231137, but without hose or gun.
- 231173** 46:1 President pump with stainless steel lower, 5 gal (20 l) inductor assembly, air regulator, cart, 3/8 npt(mbe) x 15 ft (4.6 m) PTFE hose (222934), a PTFE seal 5 gal (20 l) stainless steel follower plate (222909), and Ultra-Lite 6000 (235628).  
Note: Not assembled at factory.
- 231172** Same as 231173, but without hose or gun.  
Note: Not assembled at factory.

#### Stationary, 3-in Dual Post RAM Packages for 55 Gallon (200 l) Pails

- 234121** 23:1 Monark pump with carbon steel lower, 55 gal (200 l) 3-in dual post ram, air regulator, and a 55 gal (200 l) aluminum follower plate with hose wipers (235929).
- 247155** Same as 234121 with a stainless steel lower and a 55 gal (200 l) PTFE coated follower plate with hose wipers (C56135).
- 234120** 46:1 President pump with carbon steel lower, 55 gal (200 L) 3-in dual post ram, air regulator and plate.
- 247156** Same as 234120 with a stainless steel lower and a 55 gal (200 l) PTFE coated follower plate with hose wipers (C56135).

#### Stationary, Single-Post Ram Packages for 5 Gallon (20 l) Pails

- 231117** 23:1 Monark pump with carbon steel lower, 5 gal (20 l) single-post ram assembly with air regulator and an NBR seal 5 gal (20 l) carbon steel follower plate (222812).
- 231168** Same as 231117 but with 23:1 Monark pump with stainless steel lower and a PTFE seal 5 gal (20 l) stainless steel follower plate (222909).
- 234953** 23:1 Monark pump with carbon steel lower, 5 gal (20 l) single post ram assembly with air regulator and ram plate with THE coated seals (235516).
- 231118** 46:1 President pump with carbon steel lower, 5 gal (20 l) single-post ram assembly with air regulator and an NBR seal 5 gal (20 l) carbon steel follower plate (222812).
- 231169** Same as 231118 but with 46:1 President with stainless steel lower and a PTFE seal 5 gal (20 l) stainless steel follower plate (222909).
- 232105** Same as 231118 but including a cart.
- 233030** 46:1 President single-post ram assembly; no ram plate.
- 234954** 46:1 President pump with carbon steel lower, 5 gal (20 l) single-post ram assembly with air regulator and ram plate with THE coated seals (235316).

# Check-Mate 200

## Priming Piston Fluid Pumps

### Bare Pump Modules

222782	23:1 Monark, Carbon Steel Lower
222839	23:1 Monark, Stainless Steel Lower
237205	46:1 President, Carbon Steel Lower, threaded displacement rod
222907	46:1 President, Stainless Steel Lower
222783	46:1 President, Carbon Steel Lower, used on 231135 and 231137 only

### Check-Mate 200 Displacement Pump

237202	Carbon Steel Lower with threaded displacement rod
222814	Stainless Steel Lower
222771	Carbon Steel Lower, used on 222783

### Accessories

222781	<b>Single-Post, 5 gal (20 l) Pail Ram</b> Includes pail ram and extender kit (223889). Use with Wiper Plate (222812 or 222909).
224137	<b>Pneumatic Inductor Elevator Cart</b> Uses air pressure to raise pump from 5 gal (20 l) pail. Use with wiper plate (222812 or 222909). Cart accessory kit (224376) required.
224376	<b>5 gal (20 l) Inductor Lift/Blow Off Kit</b> Mounts a Check-Mate 200 pump on pneumatic elevator cart (224137).
222812	<b>5 gal (20 l) Wiper Plate (CS)</b>
222909	<b>5 gal (20 l) Wiper Plate (SST)</b> For use with pail ram or pneumatic cart.
223689	<b>Plastic Shields, 5 gal (20 l) size</b> 10 per pack. Protects plate and simplifies clean-up.
207279	<b>55 gal (200 l) Ram</b> For 23:1 Monark and 46:1 President. Requires mounting kit (224829).
224829	<b>Mounting Kit, Pump to Ram Plate</b> To mount 23:1 Monark and 46:1 President pumps on a 55 gal (200 l) ram.
223881	<b>Air Hose Kit</b> Provides air hose and air line fittings to connect 23:1 Monark and 46:1 President on 55 gal (200 l) ram.

238272	<b>Air Regulator Kit</b> For 55 gal (200 l) ram or with 5 gal (20 l) Inductor Lift/Blow Off Kit. Required to mount in 23:1 Monark or 46:1 President on 55 gal (200 l) ram.
C50260	<b>5 gal (20 l) Inductor Wiper Plate</b>
243775	<b>Tapered Needle Kit</b> Provides a tapered needle option for the Ultra-Lite 6000 gun to improve fluid control.
237557	<b>Bare Cart</b> Mounts a 5 gal (20 l) ram on a cart.

### Repair Kits

222784	<b>Seal Repair Kit</b>
222972	<b>Seal Repair Kit (for SST lowers)</b> Includes all pump seals and O-rings, except throat packings.
222785	<b>Throat Packing Repair Kit</b> UHMWPE/PTFE. Includes V-packings and glands.
222798	<b>Intake Seat Repair Kit (for CS)</b>
222908	<b>Intake Seat Repair Kit (for SST)</b>
222786	<b>Throat Packing Conversion Kit</b> To convert pump throat to all-PTFE packings. V-packing and glands.

### Air Motor Service Kits

206728	<b>For Monark</b>
207385	<b>For President</b>



# Check-Mate 450

## Priming Piston Transfer Pumps

1

Check-Mate 450 provides flow rates to 1.7 gpm (6.44 lpm) and operating pressures to 5000 psi (345 bar, 34.5 MPa).

### Features & Benefits

- Severe Duty rod and cylinder for increased durability; Graco's Severe Duty is a stainless steel, hard chrome cylinder and rod which prolongs the life of the pump and packings
- Large internal porting for maximum flow
- Floating piston seal and priming plate improve balance and performance
- Maintains balance over a wide viscosity range
- Minimal bead distortion for critical dispensing of expensive materials

### Typical Applications

- Dispensing of silicone, latex or acrylic sealants
- Feed pumps for 2-component epoxy or urethane materials
- Dispensing of greases and other lubricants

### Typical Fluids Handled

- Sealants
- Adhesives
- Mastics
- Lubricants



# Check-Mate 450

## Priming Piston Transfer Pumps



### Technical Specifications

Maximum fluid output pressure	
10:1 Monark .....	1800 psi (125 bar, 12.5 MPa)
20:1 President .....	3600 psi (317 bar, 31.7 MPa)
34:1 Senator .....	4100 psi (283 bar, 28.3 MPa)
55:1 Bulldog .....	5000 psi (345 bar, 34.5 MPa)
Maximum fluid flow @ 60 cpm	
10:1 Monark .....	1.0 gpm (3.8 lpm)
20:1 President .....	1.2 gpm (4.5 lpm)
34:1 Senator .....	1.7 gpm (6.5 lpm)
55:1 Bulldog .....	1.7 gpm (6.5 lpm)
Maximum air input pressure	
10:1 Monark, President 20:1 .....	180 psi (12.6 bar, 1.26 MPa)
34:1 Senator .....	120 psi (8.3 bar, 0.83 MPa)
55:1 Bulldog .....	90 psi (6.2 bar, 0.62 MPa)
Fluid outlet size	
10:1 Monark, 20:1 President, 34:1 Senator, 55:1 Bulldog .....	3/4 npt(m)
237208 55:1 Bulldog, 237779 55:1 Quiet Bulldog, 237492 34:1 Senator, 237780 34:1 Quiet Senator .....	3/4 npt(m)
Air inlet size (bare pump)	
10:1 Monark .....	3/8 npt(f)
20:1 President .....	1/2 npt(f)
34:1 Senator, 55:1 Bulldog .....	3/4 npsm(f)
Packings	
Throat .....	UHMWPE/PTFE
Piston .....	UHMWPE
Rod and cylinder .....	Severe Duty (chrome over stainless steel)
Other wetted parts .....	.CS; Delrin®; 304, 316 and 17-4 PH SST; ductile iron; zinc and nickel plating
Overall length (bare pump)	
10:1 Monark .....	46.25 in (119 cm)
20:1 President .....	49.25 in (125 cm)
20:1 President Compact .....	44 in (112 cm)
34:1 Senator .....	55 in (140 cm)
34:1 Senator Compact .....	52 in (133 cm)
55:1 Bulldog .....	55 in (140 cm)
55:1 Bulldog Compact .....	52 in (133 cm)
Weight (pump only)	
10:1 Monark .....	45 lbs (21.0 kg)
20:1 President .....	50 lbs (22.7 kg)
34:1 Senator .....	100 lbs (45.5 kg)
55:1 Bulldog .....	100 lbs (45.5 kg)
Instruction manual	
Carbon steel .....	308017
Cart mounted pump .....	308087
Ram mounted pump 5 gal (20 l) .....	308026
Ram mounted pump 55 gal (200 l) .....	308027

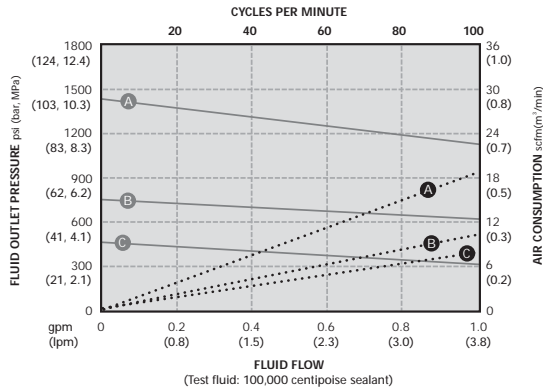
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# Check-Mate 450

## Priming Piston Transfer Pumps

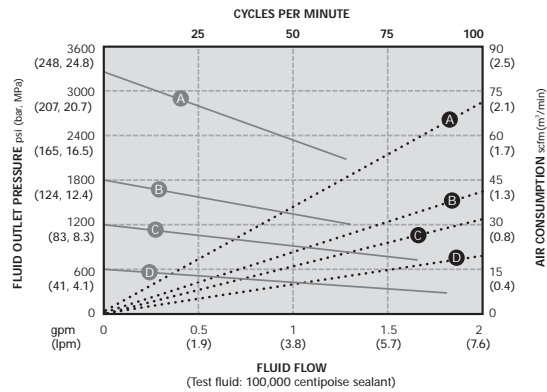
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Performance Chart for 10:1 Monark Pump



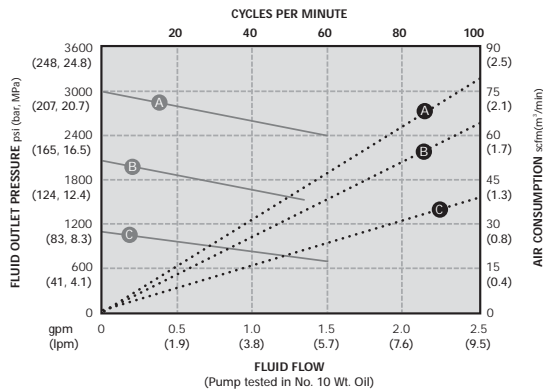
AIR PRESSURES	LEGEND
(A) = @ 180 psi (12.4 bar, 1.2 MPa)	Air Consumption.....
(B) = @ 100 psi (7 bar, 0.7 MPa)	Fluid Flow _____
(C) = @ 70 psi (4.8 bar, 0.5 MPa)	

Performance Chart for 20:1 President Pump



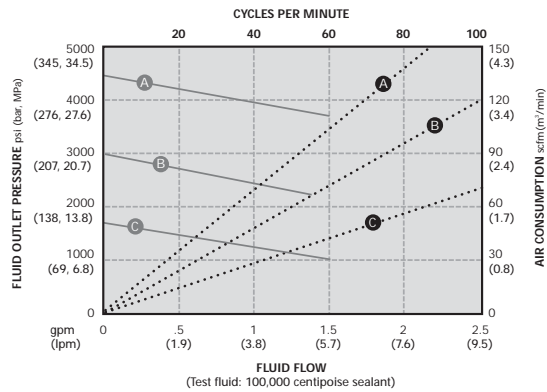
AIR PRESSURES	LEGEND
(A) = @ 180 psi (12 bar, 1.2 MPa)	Air Consumption.....
(B) = @ 100 psi (7.0 bar, 0.7 MPa)	Fluid Flow _____
(C) = @ 70 psi (4.8 bar, 0.5 MPa)	
(D) = @ 40 psi (2.8 bar, 0.3 MPa)	

Performance Chart for 34:1 Senator Pump



AIR PRESSURES	LEGEND
(A) = @ 100 psi (7.0 bar, 0.7 MPa)	Air Consumption.....
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

Performance Chart for 55:1 Bulldog Pump



AIR PRESSURES	LEGEND
(A) = @ 90 psi (6.2 bar, 0.6 MPa)	Air Consumption.....
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

# Check-Mate 450

## Priming Piston Transfer Pumps

### Ordering Information

3 in (7.6cm) Dual-Post Ram Packages for 55 Gallon (200 l) Drums

- 970022** Tandem 55:1 Bulldog Ram Pumps with Pneumatic Crossover, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), outlet check valves and supply hoses with shutoff valves.
- 970023** Tandem 55:1 Bulldog Ram Pumps with Electric Crossover, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), drum empty light kit, outlet check valves and supply hoses with shutoff valves.
- 970024** Single 55:1 Bulldog Ram Pump with Pneumatic Low-Level Shutoff, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929) follower plate, outlet check valve and supply hose with shutoff valve.
- 223816** 10:1 Monark pump with air regulator, 55 gal (200 l) dual-post ram with air-regulator, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), and drum clamps.  
Note: Not assembled at factory.
- 223817** 20:1 President pump with air regulator, 55 gal (200 l) dual-post ram with air regulator, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), and drum clamps.
- 223818** 34:1 Senator pump with air regulator, 55 gal (200 l) dual-post ram with air regulator, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), and drum clamps.
- 223819** 55:1 Bulldog pump with air regulator, 55 gal (200 l) dual-post ram with air regulator, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), and drum clamps.
- 224661** Same as 223818 with quiet air motor.  
Note: Not assembled at factory.
- 224662** Same as 223819 with quiet air motor.  
Note: Not assembled at factory.
- C57940** 55:1 Bulldog pump with air regulator, 55 gal (200 l) dual-post ram, a 55 gal (200 l) aluminum follower plate with EPDM hose wipers (238929), drum clamps and bleed handle, and riser tube.
- 233090** Same as 223818 with a 15 ft PTE hose (511381) and an Ultra-Lite 6000 gun (235628)
- 234122** Same as 223868 except including 6.5 dual post 55 gal (20 l) ram.

Cart-Mounted Single-Post Inductor, Elevator Packages for 5 Gallon (20 l) Pails

- 231144** Includes 10:1 Monark pump with an NBR seal 5 gal (20 l) carbon steel follower plate (222812) 5-gal (20 l) inductor plate, air regulator and cart.
- 231146** Includes 20:1 President pump with 5 gal (20 l) ram plate, inductor regulator, an NBR seal 5 gal (20 l) carbon steel follower plate (222812) and cart.
- 231145** Same as 231144 with hose (H53825) and Ultra-Lite 6000 (235628).
- 231147** Same as 231146 with hose (H53825) and Ultra-Lite 6000 (235628).
- C50256** Includes 20:1 President pump, cart, PTFE hose, 3 ft (10.9 m) extension wand, a 5 gal (20 l) carbon steel follower plate with NBR Seals (C50260), applicator nozzle and pistol grip gun (C27020).

Stationary, Single-Post Ram Packages for 5 Gallon (20 l) Pails

- 231113** 10:1 Monark pump, an NBR seal 5 gal (20 l) carbon steel follower plate (222812) and air regulator.
- 231111** 20:1 President pump, an NBR seal 5 gal (20 l) carbon steel follower plate (222812) and air regulator.
- 231112** 34:1 Senator pump, an NBR seal 5 gal (20 l) carbon steel follower plate (222812) and air regulator.
- 231115** 55:1 Bulldog pump, an NBR seal 5 gal (20 l) carbon steel follower plate (222812) and air regulator.
- 231167** Same as 231115 with quiet air motor.
- 231166** Same as 231112 with quiet air motor.
- 233028** 20:1 President pump on single-post ram; no ram plate.
- 233029** 55:1 Bulldog pump on single-post ram; no ram plate.
- 233091** Same as 231111 but includes 15 ft PTE hose (511381) and Ultra-Lite 6000 gun (235628)



# Check-Mate 450

## Priming Piston Transfer Pumps

1

3 in (7.6cm) Dual-Post Ram Packages for 5 Gallon (20 l) Drums or 30 l (8 gal) Pails

- 970249** 55:1 Quiet Bulldog with 30 l ram plate with polyethylene seals (241081) outlet hose and ball valve (241083 base unit)
- 241083** 55:1 Quiet Bulldog with 30 l ram plate with polyethylene seals (241081), outlet check valves.
- 918386** 55:1 Quiet Bulldog with 5 gal (20 l) plate with polyethylene seals (918409), with Check Valves.
- C57939** 55:1 Bulldog with 55 gal (200 l) 3 in dual post ram, and 5 gal (20 l) carbon steel follower plate with polyethylene seals (918409).

### Bare Pump Modules

- 222770** 10:1 Monark
- 222768** 20:1 President
- 237207** 20:1 President Compact (6.4 in. tie rods)
- 222769** 34:1 Senator
- 224660** 34:1 Senator with RIQ\*
- 237492** 34:1 Senator Compact (6.4 in. tie rods)
- 237780** 34:1 Senator Compact with RIQ (6.4 in. tie rods)
- 222778** 55:1 Bulldog
- 222813** 55:1 Bulldog with RIQ
- 237208** 55:1 Bulldog Compact (6.4 in. tie rods)
- 237779** 55:1 Bulldog Compact with RIQ (6.4 in. tie rods)
- 241570** 55:1 Bulldog\* with offset fluid outlet
- 242046** 55:1 Bulldog with riser tube
- 965322** Viscount Hydraulic pump with CM 450 lower

\*RIQ = reduced icing quiet

### Check-Mate 450 Lower

- 222790** CS Lower with UHMWPE and PTFE packings
- 235540** CS Lower with PTFE
- 237206** Compact CS Lower with UHMWPE and PTFE packings (for President Compact)
- 237450** Compact CS Lower with UHMWPE and PTFE packings (Senator and Bulldog Compact)

## Accessories

### Repair Kits

- 222773** **Seal Repair Kit**  
Includes all UHMWPE pump seals and O-rings, except throat packings.
- 222774** **Throat Packing Repair Kit**  
UHMWPE/PTFE. Includes V-packings and glands.
- 222793** **Intake Seat Repair Kit**  
Valve body and seals.
- 222775** **Throat Packing Conversion Kit**  
To convert pump throat to all-PTFE packings, V-packing and glands.
- 184302** **Alternative Leather Throat Packing**  
Requires 5 per pump.
- 237916** **Throat Packing Conversion Kit**  
Leather and UHMWPE packings.

### Air Motor Repair Kits

- 206728** **Monark**
- 207385** **President**
- 218122** **Senator**
- 206734** **Bulldog**
- 243421** **President Muffler Kit**  
For noise levels under 80 dBA.

### Mounting Accessories

- 222780** **Floor Stand**  
Includes ball valve and mounting kit (222776).
- 207279** **55 gal (200 l) Ram**  
Includes follower plate. Requires pump mounting kit.
- 222776** **Mounting Kit**  
Includes bolts, lugs and gasket for mounting pump to floor stand, ram or inductor.
- 222812** **5 gal (20 l) Carbon Steel Wiper Plate**
- 222909** **5 gal (20 l) Stainless Wiper Plate**
- 191991** **55 gal (200 l) Aluminum Plate**
- 237557** **Bare Cart**  
Mounts a 5 gal (20 l) ram on a cart.

### Plate Shields

- 10 per pack. Protects plate and simplifies clean-up.
- 223689** 5 gal (20 l)
- 222792** 55 gal (200 l)





# Check-Mate 800

## CS and SST Priming Piston Fluid Pumps

1

Check-Mate 800 pumps provide flow rates to 2.8 gpm (10.6 lpm) and operating pressures to 5850 psi (403 bar, 40.3 MPa).

### Features and Benefits

- Severe Duty rod and cylinder for increased durability; Graco's Severe Duty is a stainless steel, hard chrome cylinder and rod which prolongs the life of the pump and packings
- Available in Carbon Steel and Stainless Steel models
- 55 gal (200 l) or 5 gal (20 l) ram systems available
- 19:1 Senator, 31:1 Bulldog, and 65:1 King fluid power ratios
- High flow and pressures increase production
- High output per cycle reduces wear for longer life and lower repair costs
- Floating piston seal and flow-through priming plate improves pump loading of high viscosity materials

### Typical Applications

- Feeding applicators, meters or proportioners directly from pails or drums
- Transferring sealants or adhesives to one or more operator dispensing stations
- Transferring viscous chemicals in the formulation of high viscosity materials
- Packaging drums, pails, caulking tubes or chubs

### Typical Fluids Handled

- Acrylics
- Butyl
- Epoxy
- Lubricants
- PVC Sealers
- Silicones
- Urethanes



236472  
65:1 King

# Check-Mate 800

## CS and SST Priming Piston Fluid Pumps

1

### Technical Specifications

Maximum fluid outlet pressure:

65:1 King Check-Mate .....	5850 psi (403 bar, 40.3 MPa)
31:1 Bulldog Check-Mate .....	3100 psi (214 bar, 21.4 MPa)
19:1 Senator Check-Mate .....	2280 psi (157 bar, 15.7 MPa)

Fluid flow at 60 cpm .....

2.8 gpm (10.6 lpm)
--------------------

Volume per cycle .....

11.7 in <sup>3</sup> (192 cm <sup>3</sup> )
---

Pump cycles per 1 gal (3.8 l) .....

21
----

Maximum operating temperature .....

150°F (66°C)
--------------

Maximum air inlet pressure:

65:1 King Check-Mate .....	90 psi (6.2 bar, 0.62 MPa)
31:1 Bulldog Check-Mate .....	100 psi (7 bar, 0.7 MPa)
19:1 Senator Check-Mate .....	120 psi (8.4 bar, 0.84 MPa)

Fluid outlet size .....

1 npt(f)
----------

Air inlet size .....

3/4 npsm(f)
-------------

Wetted parts .....

\*Carbon steel; chrome; zinc; and nickel-plating;  
304, 316, 440, and 17-4 PH grades of SST;  
alloy steel; ductile iron; PTFE; glass-filled PTFE; UHMWPE

Stroke length .....

4.75 in (120 mm)
------------------

Displacement pump effective area .....

1.24 in <sup>2</sup> (8 cm <sup>2</sup> )
---

Weight .....

160 lbs (73 kg)
-----------------

Displacement pump weight .....

81 lbs (37 kg)
----------------

Instruction manual

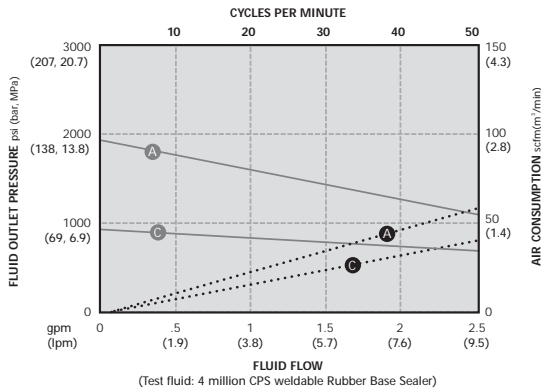
Carbon steel .....	308351
Stainless steel .....	308352
3 in (7.6 cm), 55 gal (200 l) ram modules .....	308027
Ram mounted, 5 gal (20 l), 30 l (8 gal) pumps .....	310526
6.5 in (16.5 cm), ram modules, 55 gal (200 l) .....	310524

\* Not included in Stainless Steel Pump.

# Check-Mate 800

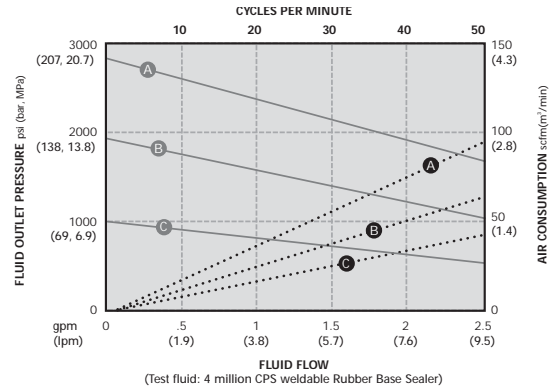
## CS and SST Priming Piston Fluid Pumps

**Performance Chart for  
19:1 Senator Check-Mate 800 Pump**



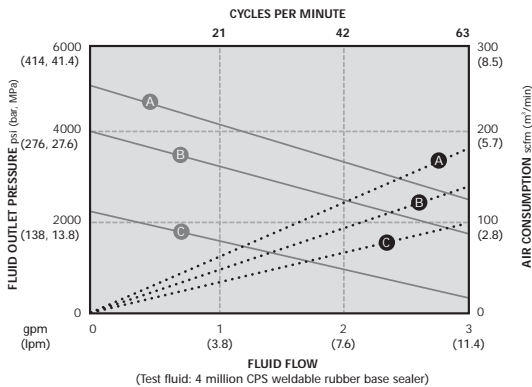
AIR PRESSURES	LEGEND
(A) = @ 120 psi (8.3 bar, 0.8 MPa)	Air Consumption . . . .
(B) = @ 100 psi (7 bar, 0.7 MPa)	Fluid Flow ————
(C) = @ 70 psi (4.8 bar, 0.5 MPa)	

**Performance Chart for  
31:1 Bulldog Check-Mate 800 Pump**



AIR PRESSURES	LEGEND
(A) = @ 100 psi (6.2 bar, 0.6 MPa)	Air Consumption . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ————
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

**Performance Chart for  
65:1 King Check-Mate 800 Pump**



AIR PRESSURES	LEGEND
(A) = @ 90 psi (6.2 bar, 0.6 MPa)	Air Consumption . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ————
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

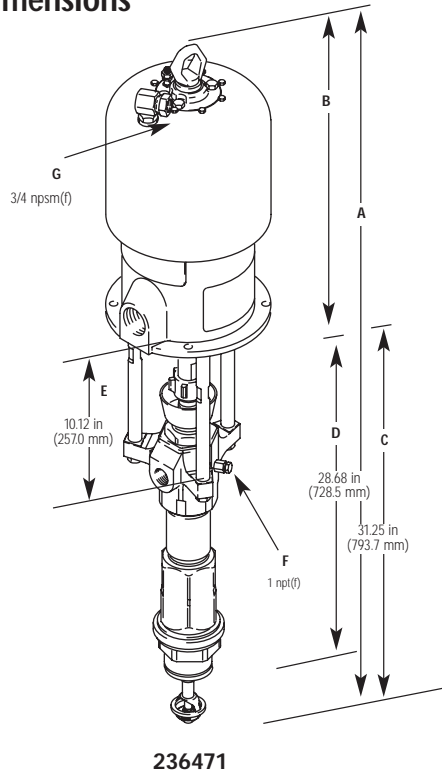


# Check-Mate 800

## CS and SST Priming Piston Fluid Pumps

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### Dimensions



Model	A	B
<b>236471</b> <b>65:1 King, CS</b>	54.20 in (1377 mm)	22.95 in (583 mm)
<b>237265</b> <b>65:1 King, RIQ, CS</b>	54.33 in (1383 mm)	23.21 in (590 mm)
<b>240945</b> <b>65:1 Quiet King, CS</b>	54.33 in (1383 mm)	23.21 in (590 mm)
<b>237261</b> <b>31:1 Bulldog, CS</b>	52.68 in (1338 mm)	21.42 in (544 mm)
<b>237274</b> <b>31:1 Bulldog, RIQ, CS</b>	54.65 in (1388 mm)	23.43 in (595 mm)
<b>237264</b> <b>19:1 Senator, CS</b>	52.80 in (1341 mm)	21.57 in (548 mm)

RIQ = Reduced Icing Quiet

# Check-Mate 800

## CS and SST Priming Piston Fluid Pumps

### Ordering Information

55 Gallon (200 l) with 6.5 in (16.5 cm) Dual-Post Ram

- 918313 65:1 King Ram Pump**  
55 gal (200 l) aluminum follower plate with PVC seals (241251), air controls, SST lower.
- 918314 65:1 Quiet King Ram Pump**  
55 gal (200 l) aluminum follower plate with EPDM seals (238929), air controls and SST lower.
- 918597 65:1 King Ram Pump**  
55 gal (200 l) aluminum follower plate with PVC seals (241251) air controls, CS lower.
- 970086 Tandem 65:1 King Ram Pumps (PVC) with Pneumatic Crossover**  
(2) 55 gal (200 l), 6.5 in (16.5 cm) dual-post rams; 55 gal (200 l) aluminum follower plate with PVC seals (241251), and pneumatic crossover control; outlet check valves and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970088 Single 65:1 King Ram Pump (PVC) with Pneumatic Low-Level Shutoff**  
55 gal (200 l), 6.5 in (16.5 cm) dual-post ram with low-level shutoff; 55 gal (200 l) aluminum follower plate with PVC seals (241251, outlet check valve, and (1) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hose with shutoff valve.
- 970204 Tandem 65:1 Quiet King Ram Pumps (EPDM) with Pneumatic Crossover**  
(2) 55 gal (200 l), 6.5 in (16.5 cm) dual-post rams; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), and pneumatic crossover control; outlet check valves, and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970205 Tandem 65:1 Quiet King Ram Pumps (EPDM) with Electric Crossover**  
(2) 55 gal (200 l), 6.5 in (16.5 cm) dual-post rams; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), and electric crossover control with drum empty light kit; outlet check valves and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970206 Single 65:1 Quiet King Ram Pumps (EPDM) with Pneumatic Low-Level Shutoff**  
(1) 55 gal (200 l), 6.5 in (16.5 cm) dual-post ram with low-level shutoff; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), outlet check valve and (1) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hose with shutoff valve.
- 687105 Single 65:1 King CS Pump**  
With outlet check valve, applicator hand. "Road Hog" package.

- 246967 Single 65:1 King CS Pump**  
(1) 55 gal (200 l), 6.5 in (16.5 cm) dual-post ram; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), drum clamps and air controls.
- 246966 Single 31:1 Bulldog CS Pump**  
(1) 55 gal (200 l), 6.5 in (16.5 cm) dual-post ram; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), outlet check valve and air controls.

55 Gallon (200 l) with 3 in (7.6 cm) Dual-Post Ram

- 236472 65:1 King Ram Pump**  
55 gal (200 l) aluminum follower plate with EPDM seals (238929), air controls, CS lower.
- C59521 65:1 King Ram Pump**  
55 gal (200 l) aluminum follower plate with EPDM seals (238929) CS lower, check valve kit on pump outlet, enhanced bleed handle and blow off.
- 918552 31:1 Bulldog Ram Pump**  
55 gal (200 l) aluminum follower plate with PVC seals (241251), air controls, CS lower.
- 686537 31:1 Bulldog Ram Pump**  
55 gal (200 l) aluminum follower plate with EPDM seals (238929), air controls, CS lower.
- 970019 Tandem 65:1 King Ram Pumps (EPDM) with Pneumatic Crossover**  
(2) 55 gal (200 l), 3 in (7.6 cm) dual- post rams; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), and pneumatic crossover control; outlet check valves and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 234979 31:1 SST Bulldog Ram Pump**  
55 gal (200 l) aluminum follower plate with EPDM seals, air controls, SST lower.
- 970020 Tandem 65:1 King Ram Pumps (EPDM) with Electric Crossover**  
(2) 55 gal (200 l), 3 in (7.6 cm) dual- post rams; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), and electric crossover control with drum empty light kit; outlet check valves and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970021 Single 65:1 King Ram Pump (EPDM) with Pneumatic Low-Level Shutoff**  
(1) 55 gal (200 l); 3 in (7.6 cm) dual- post ram with low-level shutoff; 55 gal (200 l) aluminum follower plate with EPDM seals (238929), outlet check valve and (1) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hose with shutoff valve.



# Check-Mate 800 Ram Packages

## CS and SST Priming Piston Fluid Pumps

1

### Ordering Information, continued

55 Gallon (200 l) with 3 in (7.6 cm) Dual-Post Ram

- 970074 Single 65:1 King Ram Pump/Hose/Gun**  
55 gal (200 l); 65:1 King 3 in (7.6 cm) dual-post ram pump with 1/2 in (12.7 mm) x 15 ft (4.6 m) fluid dispense hose; straight swivel, 55 gal (200 l) aluminum follower plate with EPDM seals (238929) and Ultra-Lite 6000 manual dispense gun with nozzle.
- 248785 Tandem 65:1 Pump Function Module**  
970019 with J-Box for pump function control.

55/5 Gallon (200/20 l) with 55 Gallon (200 l) 3 in (7.6 cm) Dual-Post Ram

- 970025 Tandem 65:1 King Ram Pumps with Pneumatic Crossover**  
(2) 55 gal (200 l) 3 in (7.6 cm) dual-post rams; 5 gal (20 l) aluminum follower plate with PVC seals (658391), and pneumatic crossover control; outlet check valves and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970026 Tandem 65:1 King Ram Pumps with Electric Crossover**  
(2) 55 gal (200 l), 3 in (7.6 cm) dual-post rams; 5 gal (20 l) aluminum follower plate with PVC seals (658391), and electric crossover control with drum empty light kit; outlet check valve, and (2) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hoses with shutoff valves.
- 970027 Single 65:1 King Ram Pumps with Pneumatic Low-Level Shutoff**  
55 gal (200 l), 3 in (7.6 cm) dual post ram with low-level shutoff; 5 gal (20 l) aluminum follower plate with PVC seals (658391); outlet check valve and (1) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hose with shutoff valve.

5 Gallon (20 l) with 3 in (7.6 cm) Dual-Post Ram

- 970018 65:1 King Ramp/Pump/Hose/Gun**  
5 gal (20 l); 65:1 King, 3 in (7.6 cm) dual-post ram pump on casters; 1/2 in (12.7 mm) x 15 ft (4.6 m) fluid dispense hose; straight swivel; 5 gal (20 l) aluminum plate with PVC seals (C58391), and Ultra-Lite 6000 manual dispense gun with nozzle.
- 970031 65:1 King Ram Pump**  
5 gal (20 l), 3 in (7.6 cm) dual- post ram; 5 gal (20 l) aluminum plate with PVC seals (C58391), outlet check valve and (1) 1-1/4 in (31.8 mm) x 10 ft (3 m) supply hose with shutoff valve.

- 918372 65:1 King Ram Pump**  
5 gal (20 l) aluminum plate with PVC seals (C58391), air control, CS lower, outlet check valve assembly.
- 253293 65:1 King Ram Pump**  
5 gal (20 l) aluminum plate with polyethylene seals, air control, CS lower (237702).
- 237263 31:1 Bulldog Ram Pump**  
5 gal (20 l) aluminum plate with polyethylene seals (237702), air control, CS lower.
- 918371 Single 31:1 Bulldog Ram Pump**  
5 gal (20 l) aluminum plate with PVC seals (C58391), plate, air control, CS lower.

5 Gallon (20 l) with 3 in (7.6 cm) Dual-Post Ram

- 234977 Quiet King 65:1 Ram Pump**  
5 gal (20 l) CS follower plate with PVC seals (C58391) PVC plate

8 Gallon (30 l) with Dual-Post Ram

- 241082 Quiet King 65:1 Ram Pump**  
Includes 8 gal (30 l) follower plate and air controls.
- 970247** Same as 241082 except includes 4 ft hose (238715), Ultra-Lite 6000 gun (235628) and casters.
- 970248** Same as 241082 except includes ball valve (118854) and 10 ft hose (521973).
- 234051 65:1 King (200 l) Ram Pump**  
3 in 55 gal (200 l) Dual-Post Ram with 8 gal (30 l) follower plate and air controls.
- 234117** Same as 234051 but includes 10 ft hose (521973), ball valve (118854) and low level shut off.

# Check-Mate 800

## CS and SST Priming Piston Fluid Pumps

### Ordering Information, continued

#### Bare Pump Modules

236471	<b>65:1 King</b> Carbon steel, Severe-Duty
686997	<b>Floor Stand Mounted 31:1 Bulldog</b> Ball valve, pump adapter, mounting kit, 236471 pump.
237265	<b>65:1 King</b> Carbon steel, Severe-Duty, RIQ*
240945	<b>65:1 Quiet King</b> Quiet air motor, carbon steel lower
236462	<b>65:1 King</b> Stainless steel, Severe-Duty
237261	<b>31:1 Bulldog</b> Carbon steel, Severe Duty
237274	<b>31:1 Quiet Bulldog</b> Carbon steel, Severe-Duty, RIQ*
234978	<b>31:1 Bulldog</b> Stainless steel, Severe-Duty
237264	<b>19:1 Senator</b> Carbon steel, Severe-Duty

\* RIQ = Reduced Icing Quiet

#### Displacement Pumps

236611	<b>Carbon Steel Module</b>
236612	<b>Stainless Steel Module</b>
198469	<b>Carbon Steel Lower</b> with Carbon Steel intake housing.

### Accessories

235417	<b>Conversion Kit</b> Includes tie rods and parts necessary to connect displacement pump to existing Bulldog air motor.
208804	<b>Air Motor Silencer for Bulldog and King</b> Encloses motor to reduce exhaust noise.
222780	<b>Floor Stand Base</b>
233087	<b>6.5 in (16.5 cm) Bare Dual-Post Ram Module</b>
918309	<b>Pump and Plate Mounting Kit</b> Includes tie rods and motor mounting for 55 gal ram mounting
222864	<b>Pump Repair Kit, Carbon Steel Pumps</b> UHMWPE/PTFE throat and intake packages.
237945	<b>Pump Repair Kit</b> PTFE throat and intake packages.
222866	<b>Pump Repair Kit, SST Pumps</b> PTFE throat and intake packages.
241901	<b>31:1 Bulldog</b> with elbow.
241519	<b>65:1 Quiet King</b> Quiet air motor, stainless steel lower.
198475	<b>65:1 Quiet King</b> Quiet air motor, carbon steel, Severe Duty, carbon steel intake housing.
198466	<b>Viscount II</b> Hydraulic powered motor, carbon steel intake housing.



# Check-Mate 1000

## Priming Piston Fluid Pumps

**1**

Check-Mate 1000 provides flow rates to 3.8 gpm (14.4 lpm) and operating pressures to 5850 psi (404 bar, 40.4 MPa).

### Features and Benefits

- Available in Severe Duty carbon steel and stainless steel models
- 55 gal (200 l) ram systems available in 50:1 King and 80:1 Premier fluid power ratios
- High flow and pressures increase production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve design decreases pump changeover time and minimizes icing
- Floating piston seal and flow-through priming plate improves pump loading of high viscosity materials

### Typical Applications

- Transferring sealants and adhesives to multiple operator dispensing stations
- Transferring viscous chemicals in the formulation of high viscosity materials
- Packaging drums, pails, caulking tubes or chubs
- Feeding high volume applicators, multiple meters or proportioners

### Typical Fluids Handled

- Acrylics
- Butyl
- Caulking Compounds
- Epoxy
- PVC Sealers
- Silicones
- Urethanes



686965  
50:1 King



# Check-Mate 1000

## Priming Piston Fluid Pumps

### Technical Specifications

Maximum fluid outlet pressure:	
50:1 King	4500 psi (311 bar, 31.1 MPa)
80:1 Premier	5850 psi (404 bar, 40.4 MPa)
Fluid flow at 60 cpm	3.8 gpm (14.4 lpm)
Volume per cycle	14.7 in <sup>3</sup> (240 cm <sup>3</sup> )
Pump cycles per 1 gal (3.8 ls)	16
Maximum operating temperature	150°F (66°C)
Maximum air inlet pressure:	
50:1 King	90 psi (6.2 bar, 0.62 MPa)
80:1 Premier	73 psi (5 bar, 0.5 MPa)
Fluid outlet size	1 npt(f)
Air inlet size	
50:1 King	3/4 npsm(f)
80:1 Premier	1 npt(f)
Wetted parts	
Carbon steel	Carbon steel; chrome; zinc; and nickel plating; 304, 316, 440, and 17-4 PH grades of SST; alloy steel; ductile iron; PTFE; glass-filled PTFE; UHMWPE
Stainless steel	Chrome; zinc and nickel plating; 304, 316, 440, 440C, PH 13-8 MO, and 17-4 PH grades of stainless steel; PTFE; glass-filled PTFE and UHMWPE
Stroke length	4.75 in (120 mm)
Displacement pump effective area	1.55 in <sup>2</sup> (10 cm <sup>2</sup> )
Weight	160 lbs (73 kg)
Displacement Pump weight	81 lbs (37 kg)
Instruction manuals	
Carbon steel	308355
Stainless steel	308356
Ram modules	310524



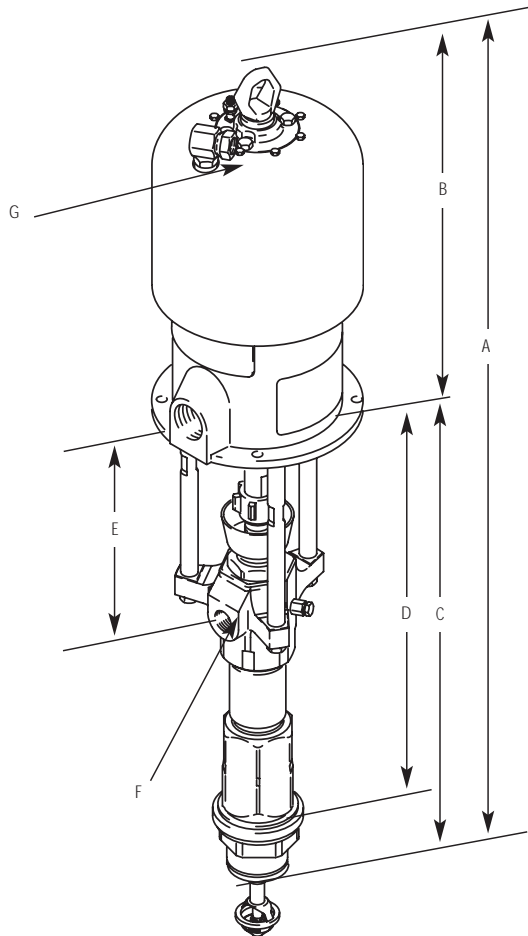
# Check-Mate 1000

## Priming Piston Fluid Pumps

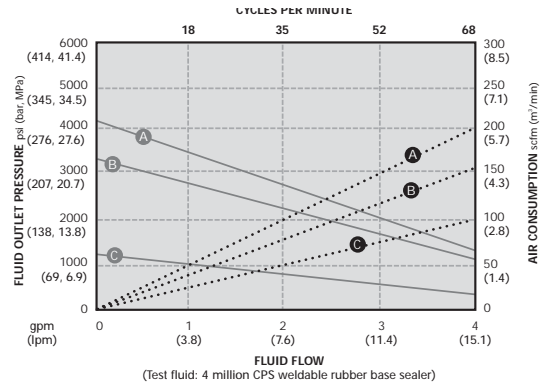
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#### Dimensions

Model	Motor	A	B	C	D	E	F	G
237707	King	54.20 in (1377 mm)	22.95 in (583 mm)	31.25 in (794 mm)	25.61 in (651 mm)	10.12 in (257 mm)	1 npt(f)	3/4 npsm(f)
237518	Premier	53.06 in (1349 mm)	16.88 in (429 mm)	36.18 in (919 mm)	30.75 in (781 mm)	15.26 in (387 mm)	1 npt(f)	1 npsm(f)

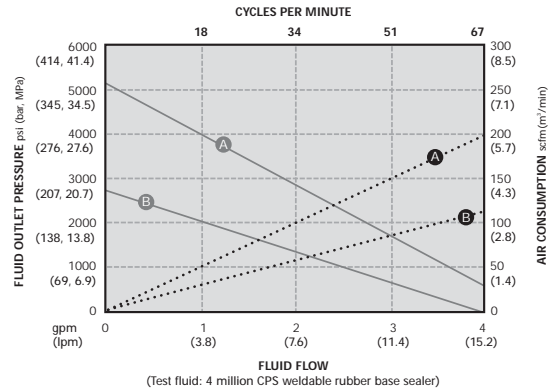


#### Performance Chart for 50:1 King Pump



AIR PRESSURES	LEGEND
(A) = @ 90 psi (6.2 bar, 0.6 MPa)	Air Consumption . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

#### Performance Chart for 80:1 Premier Pump



AIR PRESSURES	LEGEND
(A) = @ 73 psi (5 bar, 0.5MPa)	Air Consumption . . . .
(B) = @ 40 psi (2.8 bar, 0.3 MPa)	Fluid Flow _____

# Check-Mate 1000

## Priming Piston Fluid Pumps

### Ordering Information

55 gal (200 l) with 6.5 in (16.5 cm) Dual Post Ram

- 918315**    **50:1 King**  
55 gal (20 l) aluminum plate with EPDM seals (238929), air controls, CS lower.
- 918316**    **80:1 Premier**  
55 gal (20 l) aluminum plate with EPDM seals (238929), air controls, CS lower.
- 970187**    **Single 80:1 Premier**  
55 gal (20 l) aluminum plate with EPDM seals (238929), air controls, CS lower.
- 970185**    **Tandem 80:1 Premier**  
55 gal (20 l) aluminum plate with EPDM seals (238929), air controls, pneumatic crossover, CS lower.

55 gal (200 l) with 3 in (7.6 cm) Dual Post Ram

- 686965**    **50:1 King**  
55 gal (200 l) aluminum follower plate with EPDM seals (238929), air controls, CS lower.

5 gal (20 l) with 3 in (7.6 cm) Dual Post Ram

- 918378**    **50:1 King (EDPM wiper plate, air controls)**  
5 gal (20 l) aluminum plate with polyethylene seals, air control, CS lower (237702).
- 918379**    **50:1 King (PVC wiper plate, air controls)**  
5 gal (20 l) aluminum plate with PVC seals (C58391), air control, CS lower.
- 918380**    **50:1 King (EDPM wiper plate, air controls)**  
5 gal (20 l) aluminum plate with polyethylene seals, air control, SST lower (237702).

### Bare Pump Modules

- 237707**    **50:1 King Check-Mate Pump, Severe Duty, CS**
- 237708**    **50:1 King Check-Mate Pump, Severe Duty, SST**
- 237518**    **80:1 Premier Check-Mate Pump, Severe Duty, CS**
- 237520**    **80:1 Premier Check-Mate Pump, Severe Duty, SST**

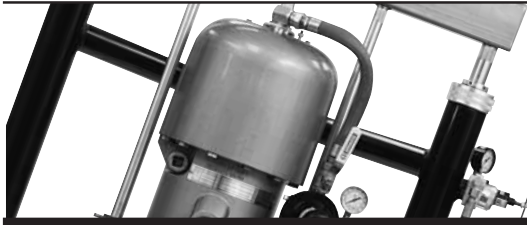
### Displacement Pumps

- 222954**    **Carbon Steel Model**
- 236613**    **Stainless Steel Model**

### Repair Kits

- 222869**    **Pump Repair Kit, CS Pumps**  
UHMWPE/PTFE throat and intake seals.
- 222871**    **Pump Repair Kit, SST Pumps**  
All PTFE throat and intake seals.





# Check-Mate 2100

## Priming Piston Fluid Pump

**1**

Check-Mate 2100 provides flow rates to 7.5 gpm (28.4 lpm) and operating pressures to 3900 psi (269 bar, 26.9 MPa).

### Features and Benefits

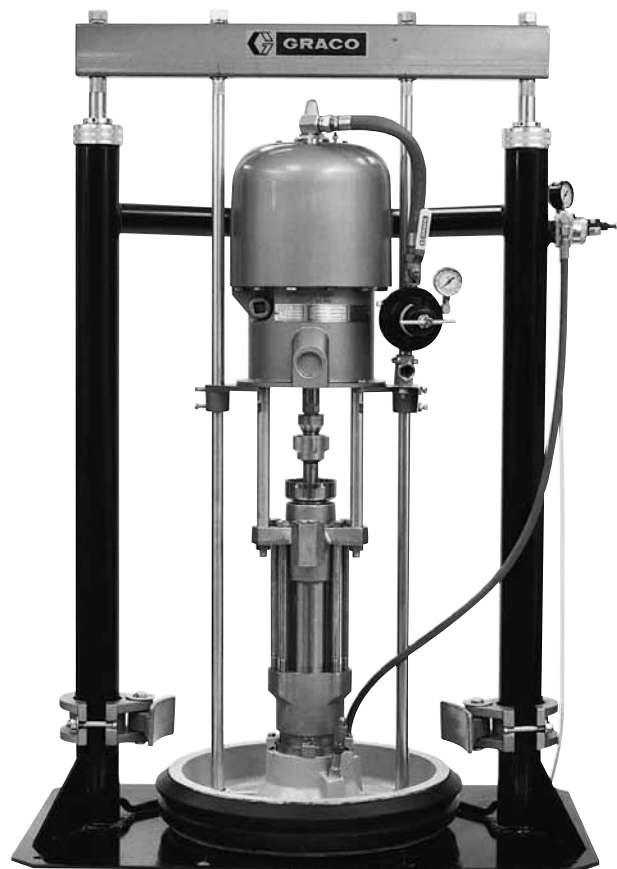
- Available in Severe Duty Carbon Steel and Stainless Steel models
- High flow and fluid pressures increase production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve design decreases changeover time and minimizes icing
- Floating piston seal and priming plate improve pump loading of high viscosity materials

### Typical Applications

- Transferring sealants or adhesives to multiple operator dispensing stations
- Transferring viscous chemicals
- Feeding high volume applicators, multiple meters or proportioners
- Transferring offset inks to printing presses

### Typical Fluids Handled

- Acrylics
- Butyl
- Caulking compounds
- Epoxy
- Lubricants
- PVC sealers
- Silicones
- Urethanes



235836  
24:1 King

# Check-Mate 2100

## Priming Piston Fluid Pumps

### Technical Specifications

Maximum air inlet pressure, Bulldog, Premier	100 psi (7 bar, 0.7 MPa)
Maximum air inlet pressure, King	90 psi (6.2 bar, 0.62 MPa)
Air inlet	3/4 npsm(f)
Fluid outlet	1-1/2 npt(m)
Packings	
Throat and intake	UHMWPE and PTFE
Piston	UHMWPE
Wetted parts	
CS lower	CS, zinc, nickel, SST, iron, Delrin®, PTFE, UHMWPE
SST lower	SST, Delrin, PTFE, UHMWPE
Maximum flow at 60 cpm	.75 gpm (28.4 lpm)
Air motor piston diameter	12.64 in (321mm)
Weight	
Premier CM 2100	.248 lbs (113 kg)
King CM 2100	.160 lbs (73 kg)
Bulldog CM 2100	.142 lbs (65 kg)
Check-Mate 2100 instruction manuals	
All CS models	308149
All SST models	308150
All 6.5 in (16.5 cm) ram modules	310524
All 3 in (7.6 cm) ram modules	308027

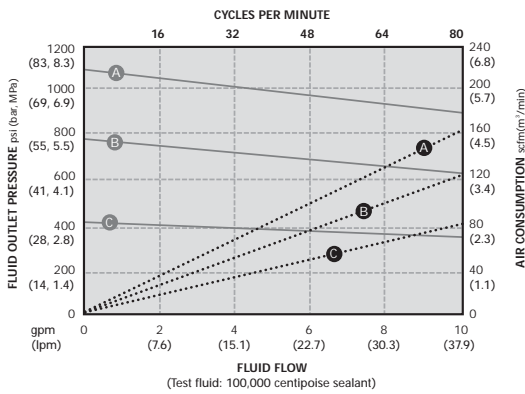
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# Check-Mate 2100 Priming Piston Fluid Pumps

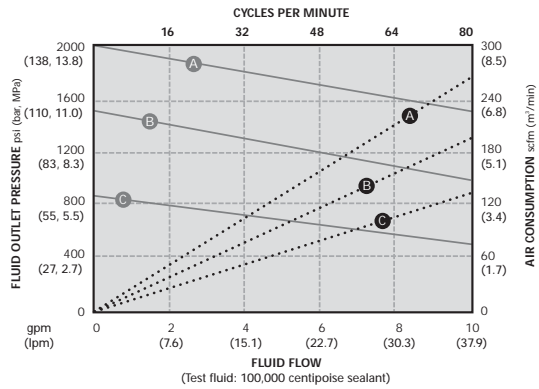
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Performance Chart for 12:1 Bulldog Pump



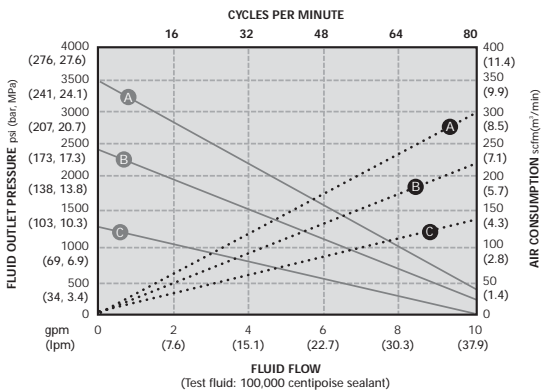
AIR PRESSURES	LEGEND
(A) = @ 100 psi (7.0 bar, 0.7 MPa)	Air Consumption . . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

Performance Chart for 24:1 King Pump



AIR PRESSURES	LEGEND
(A) = @ 90 psi (6.2 bar, 0.6 MPa)	Air Consumption . . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

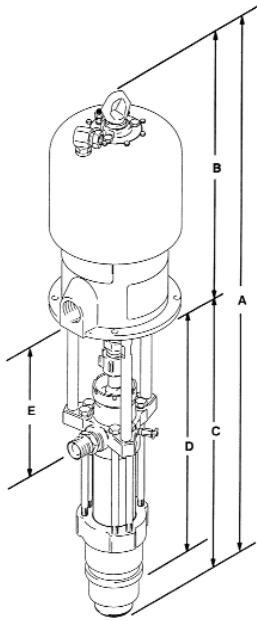
Performance Chart for 39:1 Premier



AIR PRESSURES	LEGEND
(A) = @ 100 psi (7 bar, 0.7 MPa)	Air Consumption . . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	

# Check-Mate 2100

## Priming Piston Fluid Pumps



### Dimensions - Bare Pumps

Model	Motor	A	B	C	D	E
222940	39:1 Premier	60.31 in (1531 mm)	16.89 in (429 mm)	43.41 in (1102 mm)	26.17 in (665 mm)	22.26 in (565 mm)
222835	24:1 King	54.18 in (1376 mm)	22.95 in (583 mm)	31.22 in (793 mm)	26.17 in (665 mm)	10.11 in (257 mm)
222828	12:1 Bulldog	53.11 in (1349 mm)	21.89 in (556 mm)	31.22 in (793 mm)	26.17 in (665 mm)	10.11 in (257 mm)
222905	24:1 King	54.55 in (1386 mm)	23.33 in (592 mm)	31.22 in (793 mm)	26.17 in (665 mm)	10.11 in (257 mm)
222902	Viscount Hydraulic, SST	55.72 in (1415 mm)	24.5 in (622 mm)	31.22 in (793 mm)	26.17 in (665 mm)	10.11 in (257 mm)

# Check-Mate 2100

## Priming Piston Fluid Pumps

1

### Ordering Information

#### Ram Pump Modules

- 918303 39:1 Pump and 6.5 in (16.5 cm) Ram Assembly**  
39:1 Premier CS pump, 6.5 in (16.5 cm) dual-post ram, ram and motor air control, 55 gal (200 l) follower plate and dual PVC seals (241251).
- 235836 King 24:1 and 3 in (7.6 cm) Ram Assembly**  
24:1 King CS pump, 3 in (7.6 cm) dual-post ram, ram and motor control, 55 gal (200 l) follower plate and dual EPDM seals (238929).
- 235835 Bulldog 12:1 and 3 in (7.6 cm) Ram Assembly**  
12:1 Bulldog CS pump; 3 in (7.6 cm) dual-post ram; ram and motor control; 55 gal (200 l) follower plate and dual EPDM seals (238929).
- 686892 Quiet Bulldog 12:1 and 3 in (7.6 cm) Ram Assembly**  
12:1 Quiet Bulldog CS pump; 3 in (7.6 cm) dual-post ram; ram and motor control; 55 gal (200 l) follower plate and dual EPDM seals (238929).

#### Bare Pump Modules

- 222828 12:1 Bulldog Check-Mate Pump, CS**
- 222829 12:1 Quiet Bulldog, CS**
- 222903 12:1 Quiet Bulldog Check-Mate Pump, SST/RIQ**
- 222835 24:1 King Check-Mate Pump, CS**
- 222901 24:1 Quiet King, CS**
- 222836 24:1 King Check-Mate Pump, SST**
- 222905 24:1 Quiet King Check-Mate Pump, SST/RIQ**
- 222940 39:1 Premier Check-Mate Pump, CS**
- 222902 Viscount II Hydraulic, CS**

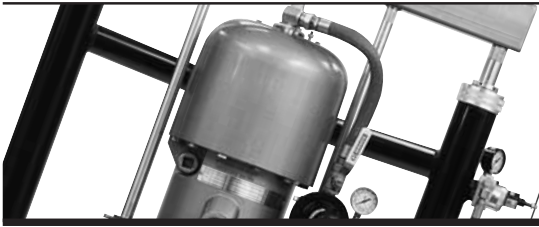
#### Displacement Pumps

- 222810 Carbon Steel**
- 222811 Stainless Steel**

#### Repair Kits

- 222860 Repair Kit, CS and SST Pumps**  
Includes: UHMWPE/PTFE throat and intake seals.
- 222974 Intake Valve Repair Kit, CS and SST Pumps**
- 222861 PTFE Packing Conversion Kit, CS and SST Pumps**
- 222862 Leather Packing Conversion Kit**





# Dura-Flo 600 Ram Pumps

5, 30, and 55 Gallon (19, 120 and 200 l) Supply Packages

1

Dura-Flo 600 pumps provide flow rates to 2.3 gpm (8.7 lpm) and operating pressures to 2500 psi (172 bar, 17.2 MPa).

## Features and Benefits

- Heavy-duty stainless steel pump, rod and cylinder for long life and durability
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing

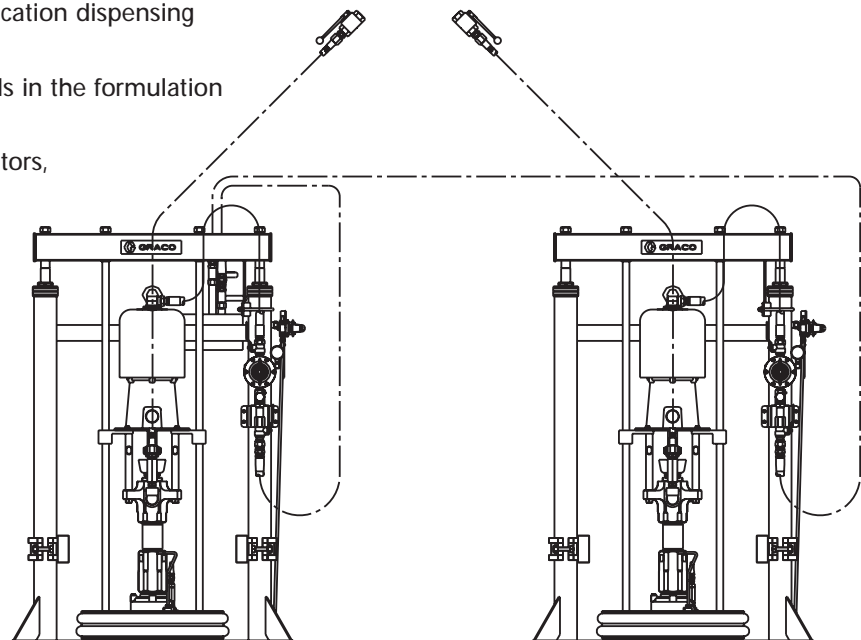
## Typical Fluids Handled

- PVC sealers
- Plastisol-based sealants
- Flowable epoxy
- Flowable inks
- Flowable lubricants

## Typical Applications

- Transferring to multiple application dispensing stations
- Transferring viscous chemicals in the formulation of sealants and adhesives
- Feeding high volume applicators, multiple meters or proportioners
- Packaging drums, pails, caulking tubes or chubs

970056  
Tandem Dura-Flo  
Ram Pump



# Dura-Flo 600 Ram Pumps

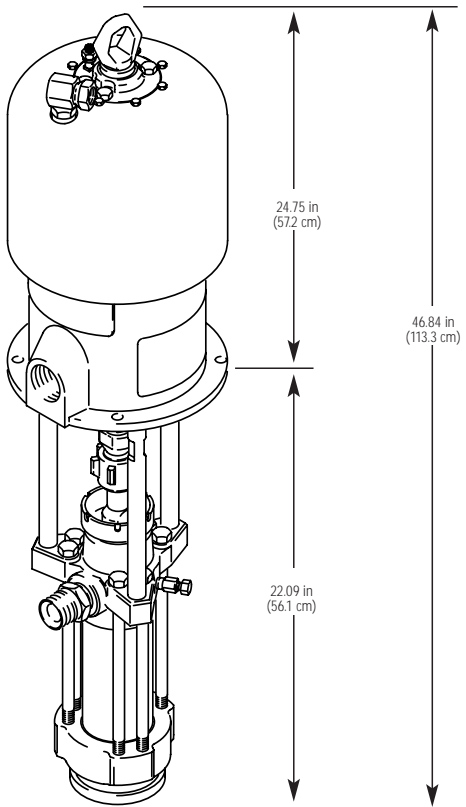
## 5, 30, and 55 Gallon (19, 120 and 200 l) Supply Packages

1

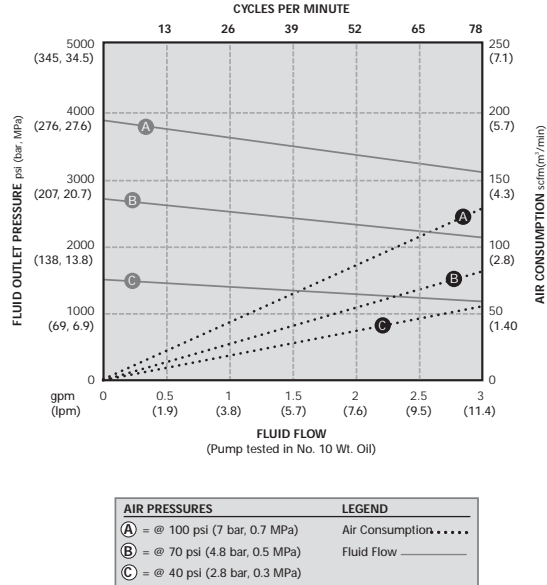
### Technical Specifications

Maximum fluid outlet pressure .....	2500 psi (172 bar, 17.2 MPa)
Fluid flow at 60 cpm .....	2.3 gpm (8.7 lpm)
Volume per cycle .....	4.89 oz. (144.7 cc)
Maximum air inlet pressure .....	100 psi (7 bar, 0.7 MPa)
Maximum operating temperature .....	180°F (82°C)
Fluid outlet size .....	3/4 npt(f)
Air inlet size .....	3/4 npsm(f)
Weight .....	135 lbs (61 kg)
Instruction manuals	
Senator air motor (217540) .....	307592
Bulldog air motor .....	307049
Dura-Flo lower, SST (236458) .....	308350

### Dimensions



### Performance Chart for 25:1 Senator Pump



# Dura-Flo 600 Ram Pumps

## 5, 30, and 55 Gallon (19, 120 and 200 l) Supply Packages

### Ordering Information

55 Gal (200 l) Ram Packages with 3 in (7.6 cm) Dual-Post Ram

- 970056 Tandem SST 25:1 Senator Ram Pumps, Pneumatic Crossover**  
 (2) 55 gal (200 l), 3 in (7.6 cm) dual-post rams; 55 gal (200 l) THE-coated follower plates and pneumatic crossover control; outlet check valves and (2) 10 ft (3 m) supply hoses with SST shutoff valves.
- 234980 Single SST 41:1 Bulldog Ram Pump**  
 55 gal (200 l), 3 in (7.6 cm) dual-post ram and 55 gal (200 l) THE-coated follower plates (C56135).

55 Gal. (200 l) Ram Packages

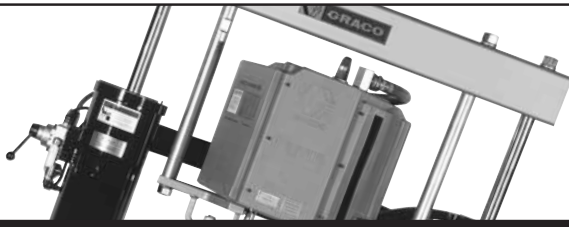
- 970071 Tandem SST 25:1 Senator Ram Pumps, Pneumatic Crossover**  
 (2) 55 gal (200 l); 3 in (7.6 cm) dual-post rams; 30 gal (120 l) CS follower plates and pneumatic crossover control; outlet check valves; and (2) 10 ft (3 m) supply hoses with SST shutoff valves.
- 970073 Single SST 25:1 Senator Ram Pump**  
 55 gal (200 l), 3 in (7.6 cm) dual-post ram with low-level shutoff; 30 gal (120 l) CS follower plate; outlet check valve and (1) 10 ft (3 m) supply hose with SST shutoff valve.
- 247149 SST 41:1 Bulldog Ram Pump,**  
 5 gal (20 l), 3 in dual-post ram and 5 gal (20 l) SST follower plate with PTFE wiper.
- C59530 SST 25:1 Senator Ram Pump**  
 55 gal (200 l), 3 in (7.6 cm) dual-post ram and 55 gal (200 l) PTFE coated follower plate (C56155).

### Pump Modules

- 686615 25:1 Senator Air Motor, SST**
- 237634 41:1 Bulldog Air Motor, SST**
- 236464 41:1 Bulldog Air Motor, SST**

### Dura-Flo 600 Displacement Pumps

- 236458 Stainless Steel for 41:1 Models**
- 241177 Stainless Steel for 686615**



# Dura-Flo 900 Ram Pumps

## 5 Gallon (20 l), 30 l and 55 Gallon (200 l) Supply Packages

1

Dura-Flo 900 pumps provide flow rates to 3.4 gpm (13 lpm) and operating pressures to 5000 psi (345 bar, 34.5 MPa).

### Features and Benefits

- Heavy-duty stainless steel pump rod and cylinder for long life and durability
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing

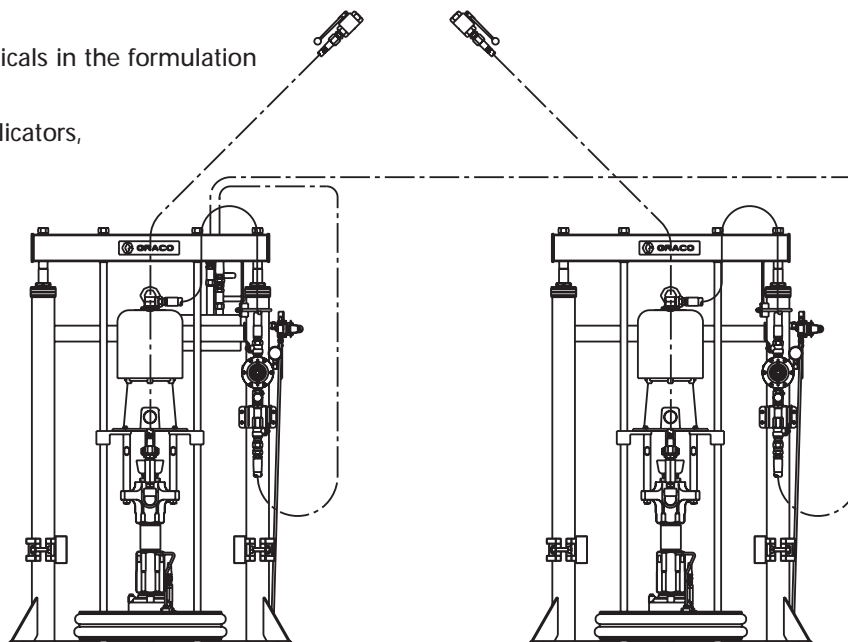
### Typical Fluids Handled

- PVC sealers
- Plastisol-based sealants
- Flowable epoxy
- Flowable inks
- Flowable lubricants

### Typical Applications

- Transferring to multiple application dispensing stations
- Transferring viscous chemicals in the formulation of sealants and adhesives
- Feeding high volume applicators, multiple meters or proportioners
- Packaging drums, pails, caulking tubes or chubs

970056  
Tandem Dura-Flo  
Ram Pump



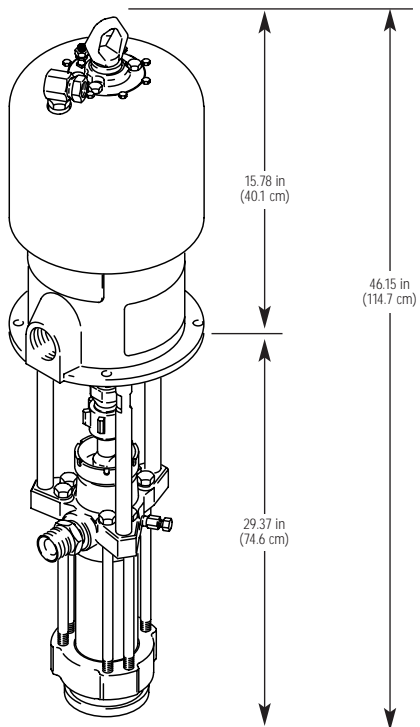
# Dura-Flo 900 Ram Pumps

## 5 Gallon (20 l), 30 l and 55 Gallon (200 l) Supply Packages

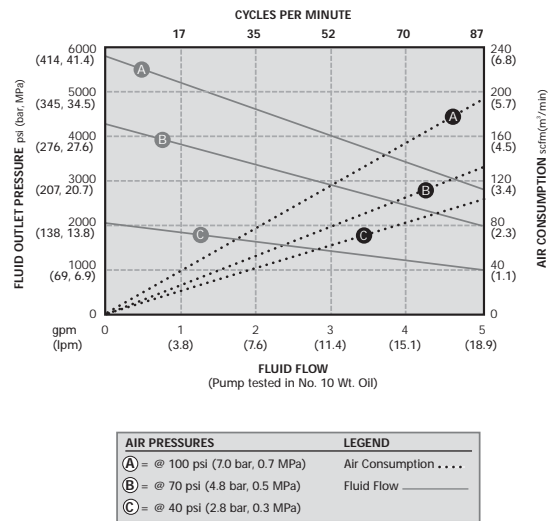
### Technical Specifications

Maximum fluid outlet pressure .....	5000 psi (345 bar, 34.5 MPa)
Fluid flow at 60 cpm .....	3.4 gpm (13 lpm)
Volume per cycle .....	7.25 oz. (0.21 cc)
Maximum air input pressure .....	90 psi (6.2 bar, 0.62 MPa)
Maximum operating temperature .....	180°F (82°C)
Fluid outlet size .....	1 npt(f)
Air inlet size .....	3/4 npsm(f)
Weight .....	240 lbs (109 kg)
Instruction manual	
SST models .....	308354

### Dimensions



### Performance Chart for 56:1 King Pump



# Dura-Flo 900 Ram Pumps

## 5 Gallon (20 l), 30 l and 55 Gallon (200) Supply Packages

1

### Ordering Information

55 Gal. (200 l) Ram Packages with 3 in (7.6 cm) Dual-Post Ram

- 970161 Tandem 56:1 King Ram Pumps, Pneumatic Crossover**  
(2) 55 gal (200 l) 3 in (7.6 cm) dual-post rams, 55 gal (200 l) follower plates, pneumatic crossover control, outlet check valves (859427), and (2) 10 ft (3 m) fluid dispense hoses with shutoff valves.
- 970164 Single 56:1 King Ram Pump, Pneumatic Low-Level Shutoff**  
55 gal (200 l) 3 in (7.6 cm) dual-post ram with low-level shutoff, 55 gal (200 l) follower plate, outlet check valve (259427) and (1) 10 ft (3 m) fluid dispense hose with shutoff.
- 970259 Tandem 56:1 Quiet King Ram Pump, Pneumatic Crossover**  
(2) 55 gal (200 l) 3 in (7.6 cm) dual-post ram with low-level shutoff; 55 gal (200 l) follower plate; outlet check valve; 10 ft (3 m) outlet hose and ball valve, manual depressurization and filter stand and EPDM wipers.
- 241203 Single 56:1 Quiet King**  
Left hand unit for 970259
- 241216 Single 56:1 Quiet King**  
Ring hand unit for 970259
- 241645 Single 56:1 Quiet Ram Pump**  
55 gal (200 l) 3 in (7.6 cm) dual-post ram, 55 gal (200 l) follower plate with EPDM seals and drum clamps.

55/5 Gal. (200/20 l) Ram Packages

- C59797 Single 56:1 King Ram Pump**  
55 gal (200 l), 3 in (7.6 cm) dual-post ram; 5 gal (20 l) follower plate.

### Ram Modules

- 241630 5 gal (20 l) Dura-Flo with 56:1 Quiet King motor**  
CE marked pump. 3 in (76 mm).
- C59777 5 gal (20 l) Dura-Flo with 56:1 Quiet King**  
Includes outlet valve.
- C59427 55 gal (200 l) Dura-Flo with 56:1 Quiet King**  
Includes outlet check valve.

### Pump Modules

- 237286 56:1 King, RIQ, SST Lowers**
- 237280 17:1 Senator**
- 237287 28:1 Bulldog**
- 245172 56:1 King, SST Lowers**
- 245173 56:1 Quiet King, SST Lowers**
- 248817 Viscount**  
With outlet check valve.

### Dura-Flo 900 Displacement Pump

- 236470 Stainless Steel Model**  
With leather and THE packings, and SST balls
- 236897 Stainless Steel Model**  
With THE packings and SST balls
- 248816 Stainless Steel Model**  
With PE and THE packings

### Booster Modules

- 970121 56:1 King Booster Module**  
Includes (2) 56:1 King Dura-Flo pumps (245172)
- 970122 56:1 King Booster Module**  
Includes (3) 56:1 King Dura-Flo pumps (245172)



# Dura-Flo 1200 Ram Pumps

55 Gallon (200 l) Supply Packages

1

Dura-Flo 1200 pumps provide flow rates to 4.8 gpm (18.2 lpm) and operating pressures to 5000 psi (345 bar, 34.5 MPa).

## Features and Benefits

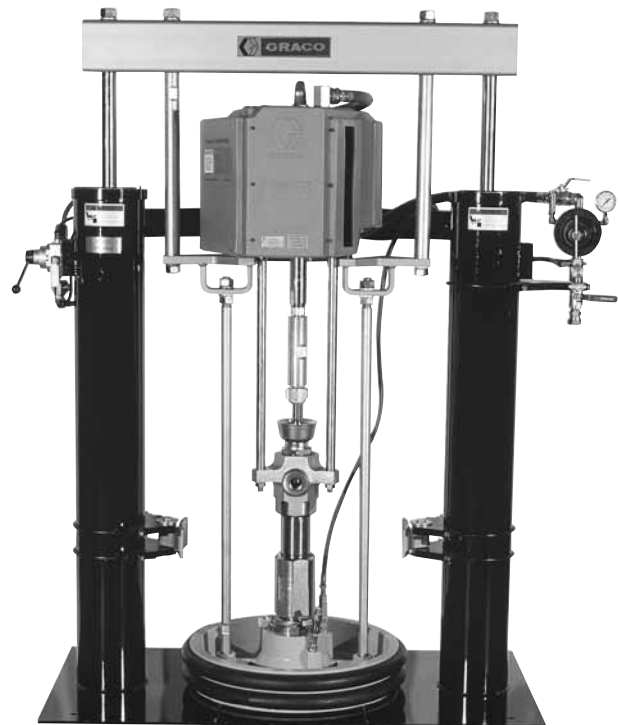
- Heavy-duty stainless steel pump, rod and cylinder for long life and durability
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing

## Typical Applications

- Transferring to multiple application dispensing stations
- Transferring viscous chemicals in the formulation of sealants and adhesives
- Feeding high volume applicators, multiple meters or proportioners
- Packaging drums, pails, caulking tubes or chubs

## Typical Fluids Handled

- PVC sealers
- Plastisol-based sealants
- Flowable epoxy
- Flowable inks
- Flowable lubricants



C59702  
Dura-Flo Ram Pump

# Dura-Flo 1200 Ram Pumps

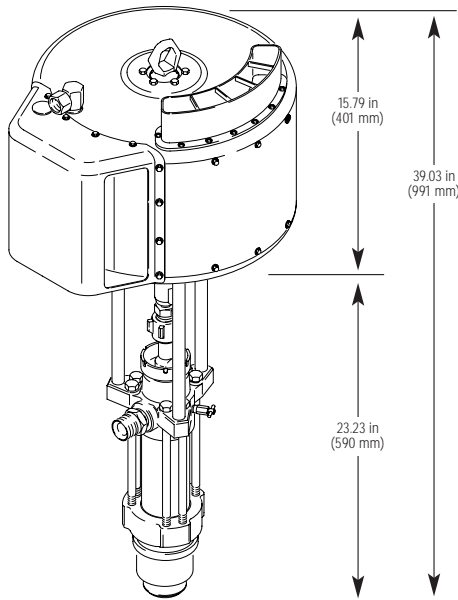
## 55 Gallon (200 L) Supply Packages

1

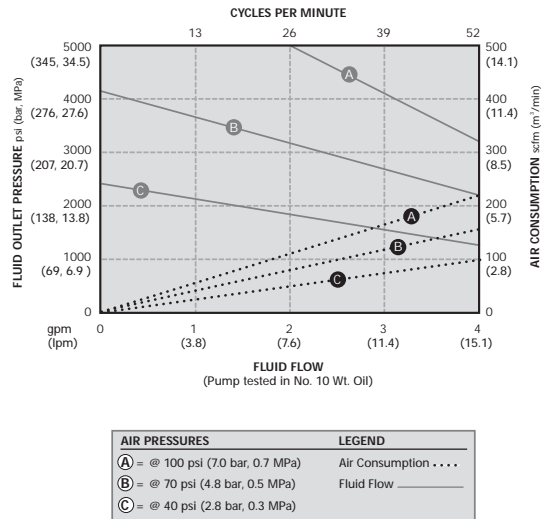
### Technical Specifications

Maximum fluid outlet pressure .....	5000 psi (345 bar, 34.5 MPa)
Fluid flow at 60 cpm .....	4.8 gpm (18.2 lpm)
Volume per cycle .....	10.24 oz (303 cc)
Maximum air input pressure .....	75 psi (5.2 bar, 0.52 MPa)
Fluid outlet size .....	1 npt(f)
Air inlet size .....	1 npsm(f)
Weight .....	195 lb (88.5 kg)
Instruction manual .....	308812

### Dimensions



### Performance Chart for 67:1 Premier Pump





# Dura-Flo 1200 Ram Pumps

## 55 Gallon (200 l) Supply Packages

### Ordering Information

55 Gal. (200 l) Ram Packages with 6.5 in (16.5 cm) Dual-Post Ram

**970067 Tandem 67:1 Premier Ram Pumps, Pneumatic Crossover**  
(2) 55 gal (200 l) 6.5 in (16.5 cm) dual-post rams, 55 gal (200 l) follower plates, pneumatic crossover control, outlet check valves and (2) 10 ft (3 m) fluid dispense hoses with shutoff valves.

#### Ram Modules

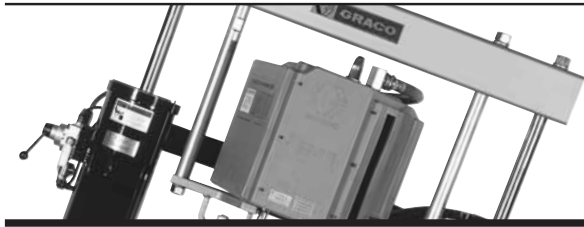
**C59702 67:1 Premier Single Ram Module**  
6.5 in (165 mm) dual-post ram and outlet check valve.

#### Pump Modules

**237517 13:1 Senator**  
**237516 21:1 Bulldog**  
**245174 67:1 Premier**  
**245171 67:1 Premier, left hand**  
**245175 67:1 Premier, right hand**

#### Dura-Flo 1200 Displacement Pump

**237514 Stainless Steel Model**  
PTFE/Leather packings.  
**237515 Stainless Steel Model**  
PE/Leather packings.  
**236490 Stainless Steel Model**  
PTFE packings.



# Dura-Flo 1800 Ram Pumps

55 Gallon (200 L) Supply Packages

1

Dura-Flo 1800 pumps provide flow rates to 6.9 gpm (26.1 lpm) and operating pressures to 4500 psi (310 bar, 31 MPa).

## Features and Benefits

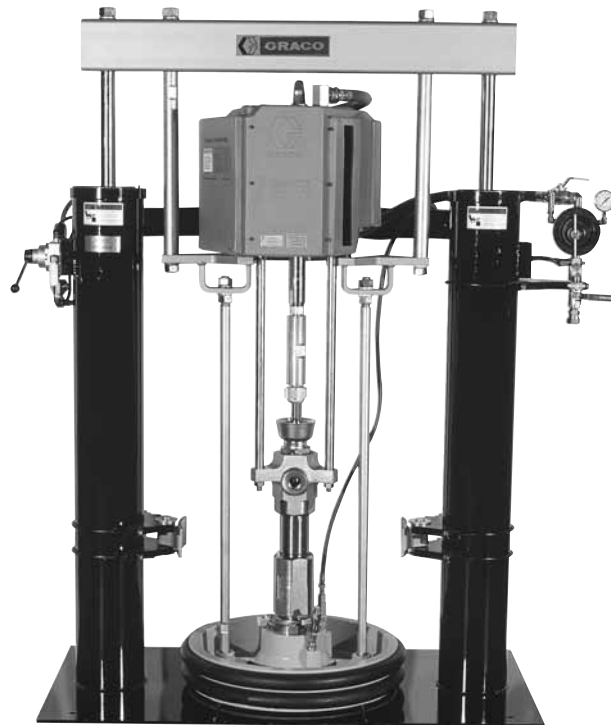
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing
- Stainless steel and carbon steel versions available

## Typical Applications

- Transferring to multiple application dispensing stations
- Transferring viscous chemicals in the formulation of sealants and adhesives
- Feeding high volume applicators, multiple meters or proportioners
- Packaging drums, pails, caulking tubes or chubs

## Typical Fluids Handled

- PVC sealers
- Plastisol-based sealants
- Flowable epoxy
- Flowable inks
- Flowable lubricants
- Liquid applied sound deadener



918481  
Dura-Flo Ram Pump

# Dura-Flo 1800 Ram Pumps

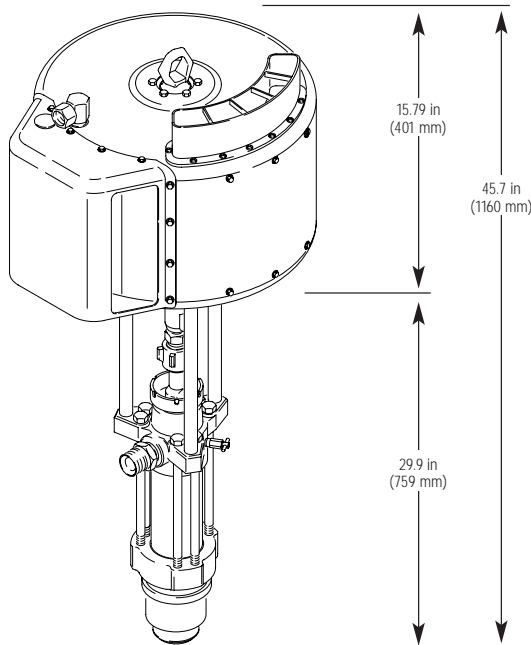
## 55 Gallon (200 L) Supply Packages

### Technical Specifications

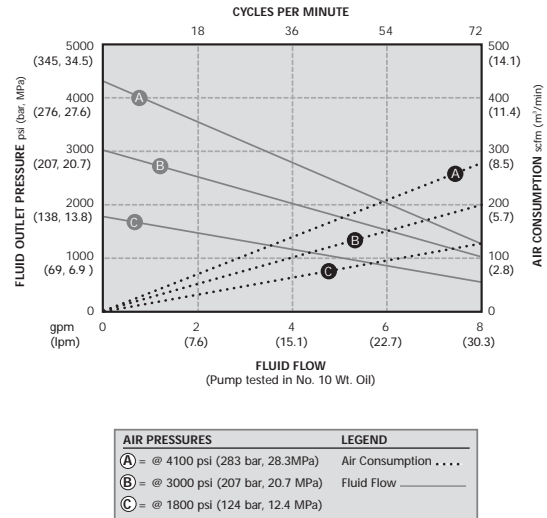
Maximum fluid outlet pressure .....	4500 psi (310 bar, 31 MPa)
Fluid flow at 60 cpm .....	6.9 gpm (26.1 lpm)
Volume per cycle .....	14.7 oz (434.6 cc)
Maximum air input pressure .....	100 psi (7 bar, 0.7 MPa)
Fluid outlet size .....	1-1/2 npt(m)
Air inlet size .....	3/4 npsm(f)
Weight .....	240 lb (109 kg)
Instruction manual	
CS models .....	308147
SST models .....	308148



### Dimensions



### Performance Chart for 45:1 Premier Pump



# Dura-Flo 1800 Ram Pumps

## 55 Gallon (200 L) Supply Packages



### Ordering Information

55 Gal. (200 l) Ram Packages with  
6.5 in (16.5 cm) Dual-Post

**970196 Tandem 45:1 Premier Ram Pumps, Pneumatic Crossover**  
(2) 55 gal (200 l) 6.5 in (16.5 cm) dual-post rams, 55 gal (200 l) follower plates, pneumatic crossover control, outlet check valves, (2) 10 ft (3 m) fluid dispense hoses with shutoff valves, and (2) SST Extended Life Lowers (246987).

#### Ram Module

**918481 Single 45:1 Premier Ram Pump**  
6.5 in (165 mm) dual-post ram and outlet check valves, and SST Extended Life Lower (246987).

#### Booster Module

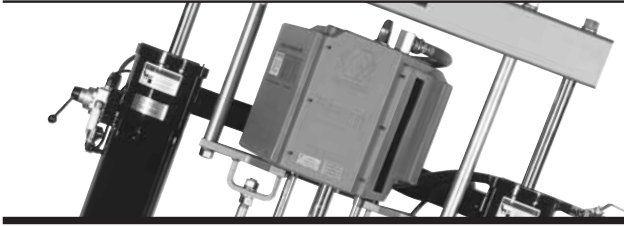
**234675 45:1 Premier Booster Module**  
Includes: (2) 45:1 Premier with Extended Life Lowers (246987).

#### Pump Module

- 241490 45:1 Premier with CS Lower**
- C59792 45:1 Premier with SST Lower (C59703)**
- 233070 45:1 Premier with SST Lower (222805)**
- 234824 45:1 Premier with SST Extended Life Lower (246987)**
- 234667 45:1 Premier with SST Extended Life Lower (246987)**  
For use with 234675 Booster Module

#### Dura-Flo 1800 Displacement Pump

- 222796 Carbon Steel Model**
- C59703 Stainless Steel Model with carbide balls**
- 222805 Stainless Steel Model with SST balls**  
PE/PTFE packings
- 241956 Stainless Steel Model with carbide balls and ceramic rod**  
PE/PTFE packings
- 246925 Stainless Steel Model with carbide balls**  
PE/leather packings
- 246987 Stainless Steel Extended Life Model**  
Designed for LASD applications



# Dura-Flo 2400 Ram Pumps

55 Gallon (200 L) Supply Packages

1

Dura-Flo 2400 pumps provide flow rates to 9.2 gpm (34.8 lpm) and operating pressures to 3400 psi (230 bar, 23 MPa).

## Features and Benefits

- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing
- Stainless steel and carbon steel models available

## Typical Applications

- Transferring to multiple application dispensing stations
- Transferring viscous chemicals in the formulation of sealants and adhesives
- Feeding high volume applicators, multiple meters or proportioners
- Packaging drums, pails, caulking tubes or chubs

## Typical Fluids Handled

- PVC sealers
- Plastisol-based sealants
- Flowable epoxy
- Flowable inks
- Flowable lubricants



918481  
Dura-Flo Ram Pump

# Dura-Flo 2400 Ram Pumps

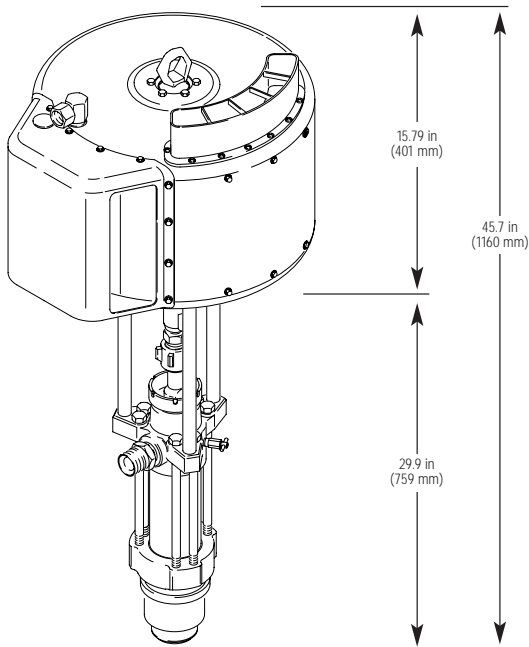
## 55 Gallon (200 L) Supply Packages

1

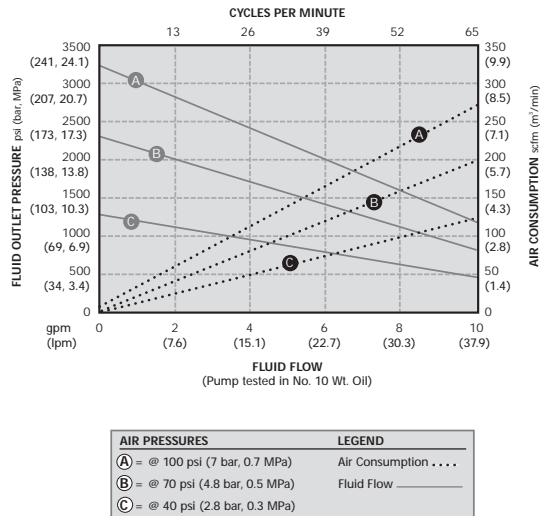
### Technical Specifications (34:1 Premier models)

Maximum fluid outlet pressure .....	3400 psi (230 bar, 23 MPa)
Fluid flow at 60 cpm .....	9.2 gpm (34.8 lpm)
Volume per cycle .....	19.6 oz (579 cc)
Maximum air input pressure .....	100 psi (7 bar, 0.7 MPa)
Fluid outlet size .....	1-1/2 npt(m)
Air inlet size .....	3/4 npsm(f)
Weight .....	240 lb (109 kg)
Instruction manuals	
Carbon steel .....	308151
Stainless steel .....	308152

### Dimensions



### Performance Chart for 34:1 Premier Pump



# Dura-Flo 2400 Ram Pumps

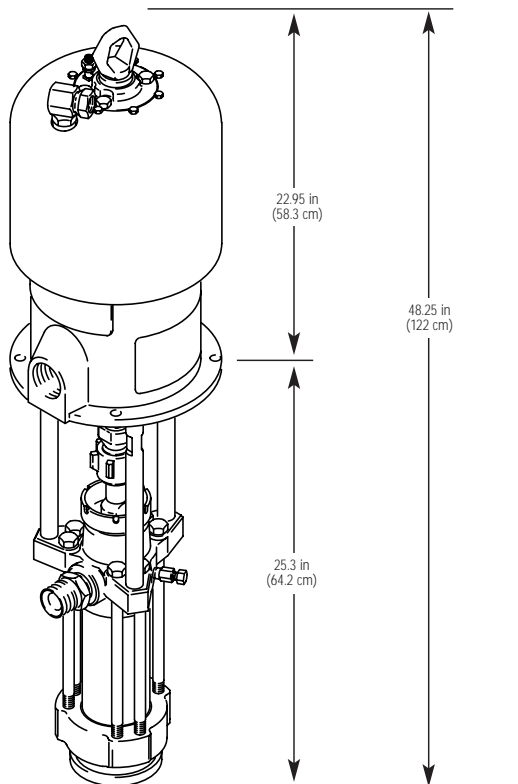
## 55 Gallon (200 L) Supply Packages

### Technical Specifications (20:1 King models)

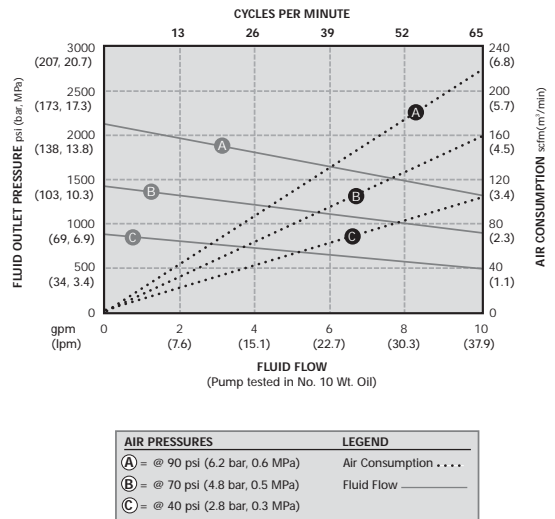
Maximum fluid outlet pressure .....	1800 psi (126 bar, 12.6 MPa)
Fluid flow at 60 cpm .....	7.7 gpm (29.1 lpm)
Volume per cycle .....	19.7 oz (582.5 cc)
Maximum air input pressure .....	90 psi (6 bar, 0.6 MPa)
Fluid outlet size .....	1-1/2 npt(m)
Air inlet size .....	3/4 npsm(f)
Weight .....	152 lb (69 kg)
Instruction manuals	
Carbon steel .....	308151
Stainless steel .....	308152



### Dimensions



### Performance Chart for 20:1 King Pump



# Dura-Flo 2400 Ram Pumps

## 55 Gallon (200 L) Supply Packages

1

### Ordering Information

#### 55 gal (200 l) Ram Packages

- 970159 Tandem 20:1 King Ram Pumps, Pneumatic Crossover**  
(2) 55 gal (200 l) 3 in (7.6 cm) dual- post rams; 55 gal (200 l) follower plates and pneumatic crossover control; outlet check valves and (2) 10 ft (3 m) supply hoses with shutoff valves.
- 970260 Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover (LH: 241460, RH: 241461)**  
(2) 55 gal (200 l) 6.5 in (16.5 cm) dual post rams, 55 gal (200 l) follower plates, pneumatic crossover control, outlet check valves, (2) 10 ft (3 m) supply hoses with shutoff valves, and depressurization.
- 970199 Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover**  
55 gal (200 l) 6.5 in (16.5 cm) dual post ram, (2) 55 gal (200 l) follower plates, pneumatic crossover control, outlet check valves and (2) 34:1 Premier CS pumps with SST check balls (241506)
- 970250 Single 20:1 King Package**  
10 ft (3 m) outlet hose and ball valve and 3 in (7.6 cm) dual post ram. CE marked.

#### Ram Module

- C59769 Single 55 Gallon (200 l) 20:1 King Quiet Ram Pump**  
Outlet check valves and 3 in (7.6 cm) dual-post ram.
- 918469 Single 55 Gallon (200 l) 34:1 Premier Ram Pump**  
Outlet check valves and 6.5 in (16.5 cm) dual-post ram.
- 241084 Single 7.9 Gallon (30 l) 20:1 King**  
3 in (7.6 cm) dual post ram.

#### Pump Module

- 222832 20:1 King, Carbon Steel**
- 222833 20:1 King, Quiet Air Motor, Carbon Steel**
- 241506 34:1 Premier, Carbon Steel**

#### Dura-Flo 2400 Displacement Pump

- 222801 Carbon Steel Module SST check balls**
- 15F298 Extended Life Pump, SST**
- 241645 SST Module with PE and Tuff Stack**





# Ram Pump Accessories

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## Air Controls and Lubrication

- |   |  |
|---|--|
| <p><b>104266 Air Regulator</b><br/>For President and Monark pumps 1/2 npt(fbe).</p> <p><b>106149 Air Line Filter</b><br/>1/2 npt(f) for President and Monark pumps.</p> <p><b>106150 Air Line Filter</b><br/>3/4 npt(f) for Senator, Bulldog and King pumps.</p> <p><b>107142 Air Valve</b><br/>Relieves trapped air pressure at pump inlet. For President and Monark pumps. 1/2 npt(m) inlet x 1/2 npt(f) outlet.</p> <p><b>107141 Air Valve</b><br/>Relieves trapped air pressure at pump inlet. For Senator, Bulldog and King pumps. 3/4 npt(m) inlet x 3/4 npt(fbe) outlet.</p> <p><b>110146 Air Filter</b><br/>1 oz. (28.4 ml) bowl. 1/4 npt.</p> <p><b>110148 Air Lubricator</b><br/>1 oz. (28.4 ml) bowl. 1/4 npt</p> <p><b>200033 Neoprene Core Air Hose</b><br/>1/4 npt x 6 ft (182.9 cm).</p> <p><b>205712 Air Pressure Regulator Kit</b><br/>For Senator and Bulldog pumps. Includes air regulator and gauge, air valve and manifold with swivel inlet. 3/4 npt(fbe).</p> <p><b>206197 Air Regulator</b><br/>For President and Monark pumps. 1/2 npt(fbe).</p> <p><b>207651 Air Regulator Kit</b><br/>For King air motors.</p> | <p><b>210657 Fluid Drain Valve</b><br/>Relieve fluid pressure in hose and valve, 1/4 npt(m).</p> <p><b>210658 Fluid Drain Valve</b><br/>Relieve fluid pressure in hose and valve, 3/8 npt(m).</p> <p><b>210659 Fluid Drain Valve</b><br/>Relieve fluid pressure in hose and valve, 1/4 npt x 3/8 npt(m).</p> <p><b>214848 Air Line Lubricator</b><br/>1/2 npt(fbe).</p> <p><b>214849 Air Line Lubricator</b><br/>3/4 npt(fbe).</p> <p><b>223815 Air Pressure Regulator Kit</b><br/>For Monark and President pumps. Includes air regulator and gauge, air valve and manifold with swivel inlet. 3/4 npt(fbe).</p> <p><b>223894 Pump Tube Repair Kit</b></p> <p><b>224040 Pump Runaway Valve</b><br/>3/4 npt(f) both ends.</p> <p><b>918306 2-Regulator</b><br/>For Premier air motors. Max. working pressure range: 0 to 125 psi (0 to 8.8 bar, 0 to 0.88 MPa).</p> <p><b>C32438 2-Regulator</b><br/>For King, Bulldog and Senator air motors. Max. working pressure range: 0 to 125 psi (0 to 8.8 bar, 0 to 0.88 MPa).</p> |
|---|--|

# Ram Pump Accessories

1

## Miscellaneous Fluid Accessories

- C59518** Pump Outlet Check Valve Kit  
Includes: elbow, check valve and union.
- 222780** Floor stand for all pumps  
Includes 222776 mounting kit.
- C59547** High Pressure Filter  
Includes: 6000 psi filter, filter element size 30 mesh (515222) and (2) pressure gauges.

## Ball Valves

Part No.	Fitting Ends	psi (bar, MPa)	Seals and Seats
C07063	3/4 npt(f)	4500 (305, 30.5)	Delrin Ball Seal, Viton Spindle Seal
C07048	1/2 npt(f)	5800 (395, 39.5)	Acetal Ball Seal, Viton Spindle Seal

## Check Valves

Part No.	Fitting Ends	psi (bar, MPa)	Body Material
C07070	1 npt(f)	5000 (340, 34.0)	Carbon Steel

## Rams and Ram Plates

### 5 gal (20 l) Rams

- 237788** Bare Single-Post Ram
- 237561** **Single-Post Ram**  
With support for Bulldog and Senator pumps.
- 237636** **Single-Post Ram**  
With support for short versions of Monark and President pumps.
- 206450** **Single-Post Ram**  
With support for high pressure pumps.
- 222781** **Single-Post Ram**  
With support for CM 200 and CM 450 pumps.
- 241086** **Dual-Post Ram**  
With air control assembly.
- 918405** **Dual-Post Ram**  
Without air controls.

### 55 gal (200 l) Rams

- 207279** 3 in (7.6 cm) DP Ram, EPDM Wipers
- 196078** 3 in (7.6 cm) DP Ram, Neoprene T-Wipers
- 233087** 6.5 in (16.5 cm) DP Ram  
Order ram plate and air controls separately.
- 253017** 3 in (7.6 cm) DP Ram, PTFE Coated Plate

### Ram Plates

- 222812** CS, 5 gal (20 l) Ram Plate  
With Buna-N wipers.
- 222909** SST, 5 gal (20 l) Ram Plate  
With PTFE-coated wipers.
- 235516** CS, 5 gal (20 l) Ram Plate  
With PTFE-coated wipers.
- 918409** CS, 5 gal (20 l) Ram Plate  
With Buna-N wipers used for Dura-Flo 900 and Bulldog 55:1 packages.
- C58391** CS, 5 gal (20 l) Ram Plate  
With PVC hose wipers used with CM 800 and CM 1000.
- 241081** 30 l (7.9 gal) CS Ram Plate  
With Buna-N wipers.
- 191991** Bare 55 gal (200 l) CS Ram Plate
- 918305** Bare 55 gal (200 l) CS Ram Plate with Fittings
- 241251** 55 gal (200 l) Ram Plate with PVC Wipers
- 238929** 55 gal (200 l) Ram Plate with EPDM Wipers
- C56135** 55 gal (200 l) Ram Plate, PTFE Coated

# Ram Pump Accessories

## Wipers and Wiper Kits for Ram Plates

### 5 gal (20 l) Plates

- 184420 Flat-Style Wiper, Buna-N
- 184421 Polyethylene Lower Wiper
- 184552 PTFE-Coated Nitrile, Flat Wiper
- 184551 Polyethylene Back-Up for 184420, 184552
- C03064 PVC Hose Wiper Kit

### 30 L (7.9 gal) Plates

- 194146 Flat-Style Wiper, Buna-N
- 194147 Polyethylene Lower Wiper

### 55 Gal (200 l) Plates

- C03059 Includes Hose Wipers and Bands
- 918312 Includes EDPM Hose Wipers and Bands
- C03228 Includes Buna-N (Neoprene) Hose Wipers and Bands
- 236726 Neoprene T-Wiper Kit for Ambient Plates
- 165601 White Neoprene Bandless Wiper

## Ram Accessories

- 918439 Ram Repair Kit for 5 Gal (20 l) Dual-Post Ram
- 918430 Low-Level Kit for 5 Gal (20 l) Dual-Post Ram  
Includes beacon light.
- 918414 Mobile Platform Kit
- C31197 Hose Support Kit for 5 Gal (20 l) Dual-Post Ram
- 224137 Pneumatic Elevator Cart
- 918478 Pneumatic Low-level Shut-Off Kit for 3 in (7.6 cm) Dual-Post Ram  
Includes limit switch, valves and mounting brackets for 55 gal (200 l) 3 in (7.6 cm) dual-post ram.
- 947518 Low Level Warning Kit  
Includes limit switches and air horn for 3 in (7.6 cm) dual-post ram.

- 206537 **Drum Clamp Kit**  
For 3 in (7.6 cm) dual-post ram.
- 918468 **Dual Ram Changeover Control**  
For 3 in (7.6 cm) dual-post ram includes limit switches and controls.
- 918393 **Dual Ram Changeover Control**  
For 6.5 in (16.5 cm) dual-post rams. All pneumatic controls.
- C32463 **Drum-Centering (Saddle) Clamp for 6.5 in (16.5 cm) Dual-Post Ram**
- 918395 **Heavy-Duty Drum Hold-Down Clamp**  
Attaches to 6.5 in (16.5 cm) dual-post ram.
- 918397 **"Clam Shell" Drum Holder**  
Reinforces fiber drums attached to 6.5 in (16.5 cm) dual-post ram.
- 918461 **Hose Support Kit**  
Includes large spring and bracket. Attaches to crossbar of 6.5 in (16.5 cm) dual-post ram.
- 918396 **Low Level Shut-Off Kit**  
Shuts off air motor when drum is empty. Attaches to 6.5 in (16.5 cm) dual-post ram.
- 243785 **Air Control Kit for 6.5 in (16.5 cm) Dual-Post Ram.**
- 223689 **Plastic Shields, 5 Gal (20 l) Size**  
10 per pack. Protects plate and simplifies clean-up.
- 222792 **Plastic Shields, 55 Gal (200 l) Size**  
10 per pack.
- 222776 **Mounting Kit**  
Used to mount CM 450 through CM 2100 to floor stand, ram or inductor.
- 224829 **Mounting Kit for CM 200**  
Used to mount CM 200 to floor stand, ram or inductor.



# UniDrum 1200

## 300 Gallon (1200 l) Tote Containers

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UniDrum 1200 packages supply sealants from bulk containers.

### Features and Benefits

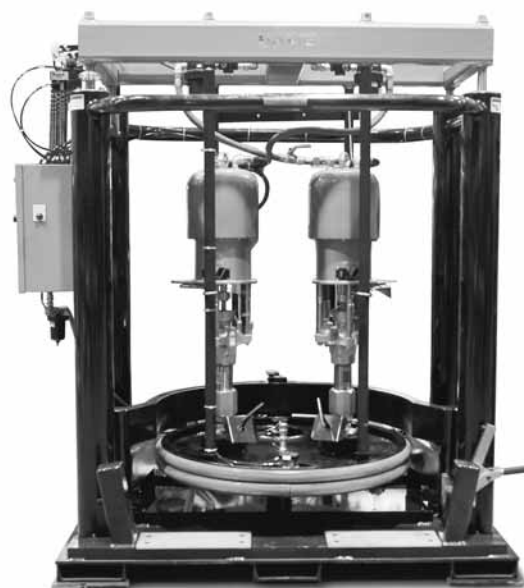
- Minimizes drum change-over time
- Reduces ram pump and tote container floor space requirement
- Reduces material waste with a flat bottom surface follower plate
- Provides fast tote changes and guarantees drum alignment
- Extended pump life construction to handle highly abrasive materials such as liquid applied sound deadener

### Ram Plate Features and Benefits

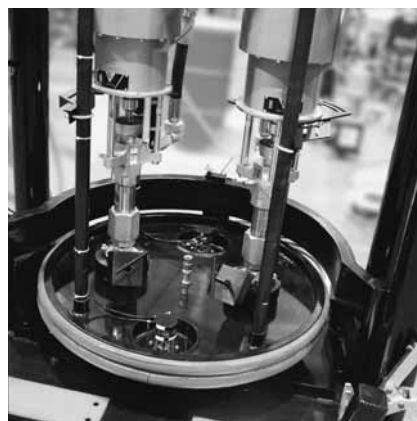
- **Neoprene rubber wiper rings:** Durable wiper is assembled to the ram plate by 3/4 in (19.1 mm) banding strap that keeps the wiper firmly and securely attached to the plate.
- **Strategically located vent valves:** Allow the ram plate to exit the drum in a smooth and trouble-free operation while remaining clean and maintenance-free.
- **Shock-absorbing exhaust restrictors:** Maintain smooth exit of the ram plate.
- **Specially designed pump mounting collar:** Designed to anchor the pump to the ram plate to assure trouble-free operation of the pumps and the plate. Also allows for quick pump change-out during routine maintenance.
- **Manual bleed valves:** Located near the pump inlet to assist in quick priming of the pumps.
- **Vent valve reservoir:** Allows compatible solution or water for water-based materials, to cover the vent valve and prevent drying of materials.

### Typical Application

- Feed system for high-volume sealant applications



C59784  
20:1 King



# UniDrum 1200

## 300 Gallon (1200 l) Tote Containers

### Technical Specifications

Cycles per gallon:

20:1 King/Dura-Flo 2400	6.5
56:1 King/Dura-Flo 900	18.0
65:1 King/Check-Mate 800	21
34:1 Premier/Dura-Flo 2400	6.5
45:1 Premier/Dura-Flo 1800	8.7
67:1 Premier/Dura-Flo 1200	12.5

Maximum operating temperature . . . . . 150° F (65.5° C)

Maximum air inlet pressure, Premier . . . . . 100 psi (7.0 bar, 0.70 MPa)

Maximum air inlet pressure, King . . . . . 90 psi (6.2 bar, 0.62 MPa)

Fluid outlet size:

Standard UniDrum . . . . . 1-1/4 npt(f)

Air inlet size . . . . . 3/4 npt(f)

Physical dimensions of ram assemblies

Ram down . . . . . 76 in W x 51 in D x 85 in H (193 cm W x 130 cm D x 215 cm H)

Ram up . . . . . 76 in W x 51 in D x 141 in H (193 cm W x 130 cm D x 358 cm H)

Ram stroke . . . . . 56 in (143 cm)

Weight . . . . . 3900 lbs (1769 kg)

Pump Assembly Specifications

Air motor

King . . . . . 207647 (manual 306968)

Premier\* . . . . . 222800 (manual 308213)

Stroke length . . . . . 4.75 in (120 mm)

Instruction manual . . . . . 309169

\*Requires C58-472 Shroud Kit

**20:1 King**

Maximum fluid outlet pressure: 1800 psi (126 bar, 12.6 MPa)

Maximum fluid flow @ 50 cpm: 7.7 gpm (29.1 lpm)

Single Units: C59784 LH Unit; C59785 RH Unit

**56:1 King**

Maximum fluid outlet pressure: 5000 psi (345 bar, 34.5 MPa)

Maximum fluid flow @ 60 cpm: 3.4 gpm (13 lpm)

Single Units: C58607 LH Unit; C58608 RH Unit

**34:1 Premier**

Maximum fluid outlet pressure: 3400 psi (235 bar, 23.5 MPa)

Maximum fluid flow @ 60 cpm: 9.2 gpm (34 lpm)

**45:1 Premier**

Maximum fluid outlet pressure: 4500 psi (310 bar, 31.0 MPa)

Maximum fluid flow @ 60 cpm: 6.9 gpm (26 lpm)

**45:1 Premier with Carbide Lower**

Maximum fluid outlet pressure: 4500 psi (310 bar, 31.0 MPa)

Maximum fluid flow @ 60 cpm: 6.9 gpm (26 lpm)

Single Units: C59793 LH Unit; C59794 RH Unit

**67:1 Premier**

Maximum fluid outlet pressure: 4690 psi (323 bar, 32.3 MPa)

Maximum fluid flow @ 60 cpm: 4.6 gpm (17.2 lpm)

Single Units: C58338 LH Unit; C58601 RH Unit



# UniDrum 1200

## 300 Gallon (1200 l) Tote Containers

1

### Ordering Information

970152	<b>Tandem 20:1 King Ram Pumps, Pneumatic Crossover</b> Includes: (2) 300 gal (1200 l) UniDrums (RH: C59785, LH: C59784) with pneumatic crossover control, mastic regulator, manifold and ball valve on inlet.	249152	<b>Single 34:1 Premier Left Hand Extended Life Pumps with 120V PLC Interface and Enhanced Depressurization</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 120V PLC interface connection.
970157	<b>Tandem 20:1 King Ram Pumps, Pneumatic Crossover and Enhanced Depressurization</b> Includes: (2) 4-post UniDrum rams, (RH: C59785, LH: C59784), 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves, 10 ft (3 m) fluid dispense hoses with shutoff valves and automatic depressurization.	249153	<b>Single 34:1 Premier Right Hand Extended Life Pumps with 120V PLC Interface</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 120V PLC interface connection.
970153	<b>Tandem 56:1 King Ram Pumps, Pneumatic Crossover</b> Includes: (2) 4-post UniDrum rams, (RH: C58608, LH: C58607), 300 gal (1200 l) follower plates, pneumatic crossover control, mastic regulator, manifold and ball valve on inlet.	249341	<b>Single 34:1 Premier Left Hand Extended Life Pumps with 24V PLC Interface</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 24V PLC interface connection.
970158	<b>Tandem 56:1 King Ram Pumps, Pneumatic Crossover and Enhanced Depressurization</b> Includes: (2) 4-post UniDrum rams, 300 gal (1200 l) follower plates (RH: C58608, LH: C58607), pneumatic crossover control, outlet check valves with 10 ft (3 m) fluid dispense hoses and automatic depressurization.	249342	<b>Single 34:1 Premier Right Hand Extended Life Pumps with 24V PLC interface</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 24V PLC interface connection.
970123	<b>Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization</b> Includes: (2) 4-post UniDrum rams (RH: C58462, LH: C58461), 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves, 10 ft (3 m) fluid dispense hoses with shutoff valves and automatic depressurization.	234971	<b>Tandem 34:1 Premier Extended Life Pumps, Pneumatic Crossover, and Enhanced Depressurization</b> Includes: (2) 4-post UniDrum rams, (RH: 234975, LH: 234974), 300 gal (1200 l) plate, enhanced depressurization, "Y" manifold, and pneumatic crossover control.
970151	<b>Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover</b> Includes: (2) 4-post UniDrum rams (RH: C58462, LH: C58461), 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves and 10 ft (3 m) fluid dispense hoses with shutoff valves.	232730	<b>Single 45:1 Premier Right Hand Pumps with 120V PLC Interface and Enhanced Depressurization</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface.
970156	<b>Tandem 34:1 Tandem Premier Ram Pumps, Pneumatic Crossover with Tungsten Carbide Check Balls</b> Includes (2) 4-post UniDrum rams (RH: C59808, LH: C59807).	232729	<b>Single 45:1 Premier Left Hand Pumps with 120V PLC Interface and Enhanced Depressurization</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface.
		232839	<b>Single 45:1 Premier Left Hand Pumps with 120V PLC Interface, Enhanced Depressurization, and Ceramic Piston Rod</b> Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface.

# UniDrum 1200

## 300 Gallon (1200 l) Tote Containers

- |        |   |        |   |
|--------|---|--------|---|
| 234972 | <p><b>Single 34:1 Premier Left Hand Extended Life Pumps with 24V PLC Interface, Enhanced Depressurization, and SST Fittings</b><br/>Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization, SST fittings and valves, and 24V PLC interface.</p>  | 249340 | <p><b>Single 45:1 Premier Right Hand Extended Life Pump with Enhanced Depressurization, and 24V PLC Ready Interface</b><br/>Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 24V PLC ready interface, enhanced depressurization.</p>  |
| 234973 | <p><b>Single 34:1 Premier Right Hand Extended Life Pumps with 24V PLC Interface, Enhanced Depressurization, and SST Fittings</b><br/>Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization, SST fittings and valves, and 24V PLC interface.</p> | 970188 | <p><b>Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization with Tungsten Carbide Check Balls</b><br/>Includes: (2) 4-post UniDrum rams (RH: C59808, LH: C59807), 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves and 10 ft (3 m) fluid dispense hose with shutoff valves and enhanced depressurization.</p>                        |
| 232840 | <p><b>Single 45:1 Premier Right Hand Pumps with 120V PLC Interface, Enhanced Depressurization, and Ceramic Piston Rod</b><br/>Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface.</p>                                 | 970140 | <p><b>Tandem 45:1 Premier Tungsten Carbide Ram Pumps, Pneumatic Crossover and Enhanced Depressurization</b><br/>Includes: (2) pump lowers with carbide balls and seats, (RH C59794, LH: C59793), 4-post UniDrum rams, 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves, 10 ft (3 m) fluid dispense hoses with shutoff valves and enhanced depressurization.</p> |
| 246986 | <p><b>Tandem 45:1 Premier Extended Life Pumps with Enhanced Depressurization</b><br/>Includes: (2) 4-post UniDrums (RH: 246984, LH: 246983), 300 gal (1200 l) ram plate, enhanced depressurization, no pneumatic crossover controls.</p>                                      | 970141 | <p><b>Tandem 45:1 Premier Tungsten Carbide Ram Pumps, Pneumatic Crossover</b><br/>Includes: (2) pump lowers with carbide balls and seats, (RH C59794, LH: C59793), 4-post UniDrum rams, 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves and 10 ft (3 m) fluid dispense hoses with shutoff valves.</p>  |
| 246985 | <p><b>Tandem 45:1 Premier Extended Life Pumps with Pneumatic Crossover, Enhanced Depressurization, and Timer</b><br/>Includes: (2) 4-post UniDrums (RH: 246984, LH: 246983), 300 gal (1200 l) ram plate, enhanced depressurization, and pneumatic crossover controls.</p>     | 970065 | <p><b>Tandem 67:1 Premier Ram Pumps, Pneumatic Crossover</b><br/>Includes: (2) 4-post UniDrum rams, 300 gal (1200 l) follower plates, pneumatic crossover control and outlet check valves with 10 ft (3 m) fluid dispense hoses with shutoff valves.</p>  |
| 248306 | <p><b>Single 45:1 Premier Left Hand Extended Life Pumps with Enhanced Depressurization, and 120V PLC Ready Interface</b><br/>Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 120V PLC ready interface, enhanced depressurization.</p>                          | 970154 | <p><b>Tandem 67:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization</b><br/>Includes: (2) 4-post UniDrum rams, 300 gal (1200 l) follower plates, pneumatic crossover control, outlet check valves, 10 ft (3 m) fluid dispense hoses with shutoff valves and enhanced depressurization.</p>   |
| 248307 | <p><b>Single 45:1 Premier Right Hand Extended Life Pumps with Enhanced Depressurization, and 120V PLC Ready Interface</b><br/>Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 120V PLC ready interface, enhanced depressurization.</p>                         |        |   |
| 249339 | <p><b>Single 45:1 Premier Left Hand Extended Life Pump with Enhanced Depressurization, and 24V PLC Ready Interface</b><br/>Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 24V PLC ready interface, enhanced depressurization.</p>                             |        |   |



# UniDrum 1200

## 300 Gallon (1200 l) Tote Containers

1

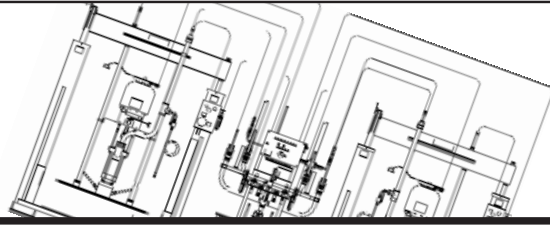
### Pumps

249157	34:1 Premier, LH, Extended Life
249158	34:1 Premier, RH, Extended Life
233463	34:1 Premier, LH, Tungsten Carbide Check Balls
C59806	34:1 Premier, RH, Tungsten Carbide Check Balls
233460	34:1 Premier, LH, Stainless Steel Check Balls
233461	34:1 Premier, RH, Stainless Steel Check Balls
246989	45:1 Premier, LH, Extended Life
246990	45:1 Premier, RH, Extended Life
246923	45:1 Premier, LH, Tungsten Carbide Check Balls
246924	45:1 Premier, RH, Tungsten Carbide Check Balls
241957	45:1 Premier, LH, Ceramic Rod and Check Balls
243689	45:1 Premier, RH, Ceramic Rod and Check Balls

### Lowers

15F298	<b>Dura-Flo 2400, Extended Life</b> For use with highly abrasive materials such as liquid applied sound deadeners
246987	<b>Dura-Flo 1800, Extended Life</b> For use with highly abrasive materials such as liquid applied sound deadeners
C59798	Dura-Flo 2400, Tungsten Carbide Check Balls
222801	Dura-Flo 2400, SST Carbide Check Balls
246925	Dura-Flo 1800, Tungsten Carbide Check Balls
237514	Dura-Flo 1200, SST, PTFE and Leather Packings, SST Balls
222796	Dura-Flo 1800, CS, PTFE and Leather Packings
241956	Dura-Flo 1800, SST, Ceramic Rod, Carbide Balls





# UniDrum 1000

## 1000 Liter Tote Containers

**1**

UniDrum 1000 are designed to work with 1000 liter bulk supply containers.

### Features and Benefits

- Tandem station - each ram with 2 cylinder, 1 limit switch, 1 pump and 1 flat follower plate
- Pneumatic crossover in a cabinet
- Double filter station
- Automatic switch-off if low pressure is detected (pipe leakage)
- Manual depressurization at the pump and the filter

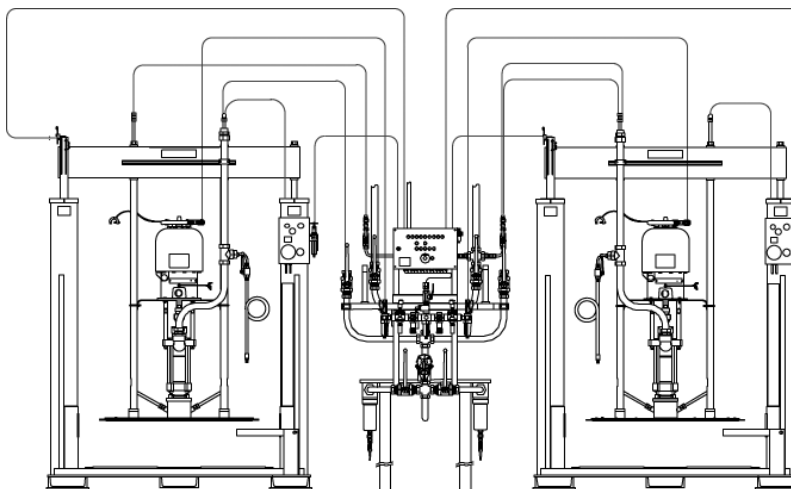
### Typical Fluids Handled

- Medium viscous materials, typically PVC

### Typical Application

- For systems where underbody material is sprayed and sealing beads are applied to a car body

970252  
Tandem 20:1 King UniDrum 1000



# UniDrum 1000

## 1000 Liter Tote Containers

1

### Technical Specifications

Part No.	Pump Model	Displacement Pump Model	Ratio	Maximum Fluid Working Pressure	Maximum Pump Air Input Pressure
970252	Quiet King 1000 liter size	Dura-Flo 2400	20:1	1800 psi (122 bar, 12.2 MPa)	90 psi (6.1 bar, 0.6 MPa)
970253	Quiet King 1000 liter size	Severe Duty Displacement Pump	10:1	900 psi (61 bar, 6 MPa)	90 psi (6.1 bar, 0.6 MPa)
970254	Premier 1000 liter size	Dura-Flo 2400	34:1	3400 psi (231 bar, 23 MPa)	100 psi (7 bar, 0.7 MPa)
241608 (left outlet) 241607 (right outlet)	Quiet King 1000 liter size	Dura-Flo 2400	20:1	1800 psi (122 bar, 12.2 MPa)	90 psi (6.1 bar, 0.6 MPa)
241606 (center outlet)	Quiet King 1000 liter size	Severe Duty Displacement Pump	10:1	900 psi (61 bar, 6 MPa)	90 psi (6.1 bar, 0.6 MPa)
241598 (left outlet) 241498 (right outlet)	Premier 1000 liter size	Dura-Flo 2400	34:1	3400 psi (231 bar, 23 MPa)	100 psi (7 bar, 0.7 MPa)

# UniDrum 1000

## 1000 Liter Tote Containers

### Ordering Information

- |  |   |
|--|---|
| <p><b>970252</b>    <b>Tandem 20:1 King Ram Pumps, Pneumatic Crossover and Manual Depressurization</b><br/>Includes: (2) dual-post rams, 1000 l follower plates, pneumatic crossover control, manual depressurization, outlet check valves, dual filter bank and fluid control valving. CE marked. Single units: 241498 LH unit, 241598 RH unit.</p>   | <p><b>970254</b>    <b>Tandem 34:1 Premier Ram Pumps with Pneumatic Crossover and Manual Depressurization</b><br/>Includes: (2) dual-post rams, 1000 l follower plates, pneumatic crossover control, manual depressurization, outlet check valves, dual filter bank and fluid control valving. CE marked. Single unit 241606 (center outlet).</p> |
| <p><b>970253</b>    <b>Tandem 10:1 King Ram Pumps with Pneumatic Crossover and Manual Depressurization and Roller Conveyor</b><br/>Includes: (2) dual-post rams, 1000 l follower plates, pneumatic crossover control, manual depressurization, outlet check valves, dual filter bank, fluid control valving and roller conveyor for end loading. CE marked. Single units: 241608 LH, 241607 RH unit.</p> |   |



### Accessories for UniDrum 1200 and UniDrum 1000 Supply Units

- |  |   |
|--|---|
| <p><b>C58581</b>    <b>Manual Depressurization Module</b><br/>Includes: electrical and pneumatic controls for depressurization, return valves and hoses.</p>   | <p><b>241596</b>    <b>Filter Module for UniDrum 1000</b><br/>CE marked. Filter station with manual depressurization.</p> |
| <p><b>970126</b>    <b>Filter Bank, 5000 psi (345 bar, 34.5 MPa)</b><br/>Includes: (2) HP filter assemblies for by-pass with frame and stand assembly; inlet and outlet pressure gauges and isolation shut-off valves.</p> | <p><b>516715</b>    <b>Replacement Filter</b><br/>For part number 970126.</p>   |
| <p><b>233085</b>    <b>Follower Plate Kit</b><br/>Conversion Kit to upgrade existing 300 gallon (1135 l) UniDrum 1200 follower plate. Includes plate assembly with wipers, vent valves and junction box components.</p>    | <p><b>515221</b>    <b>Replacement Filter</b><br/>For part number 241596.</p>   |
|  | <p><b>C57693</b>    <b>Replacement Filter</b><br/>For part number 970125.</p>   |



# DynaMite 190

## Single Component Mini Extruders

**1**

DynaMite 190 is ideal for dispensing viscous materials from small containers.

### Features and Benefits

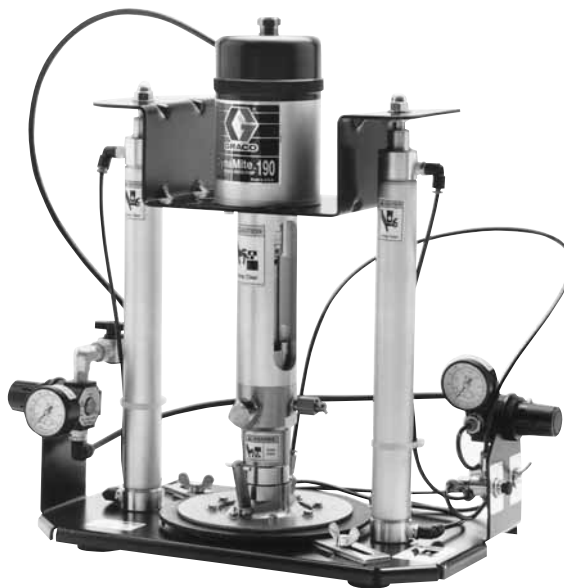
- Extrudes viscous material from their original, 1 qt (0.95 l) or 1 gal (3.79 l) source
- Compact and lightweight
- Highly precise fluid delivery
- Built tough for rugged conditions

### Typical Applications

- Dispensing viscous fluids and pastes
- Manual or automatic valve applications
- Small manufacturing workcells
- Industrial workbench applications

### Typical Fluids Handled

- Adhesives
- Potting compounds
- Encapsulants
- Sealants
- Greases
- Inks
- Colorants



DynaMite 190  
235871 with 224908  
Wiper Plate

# DynaMite 190

## Single Component Mini Extruders



### Technical Specifications

Maximum fluid outlet pressure	850 psi (58.4 bar, 5.8 MPa)
Maximum fluid flow	.20 oz/min. (0.59 lpm)
Fluid viscosity range	10,000 to 600,000 cps
Volume per stroke	0.17 oz (5.0 cc)
Pump cycles per 1 gal (3.8 l)	376.5
Maximum recommended pump speed	
Intermittent duty	60 cpm
Continuous duty	40 cpm
Maximum operating temperature	140°F (60°C)
Maximum air inlet range	25 to 100 psi (1.8 to 7 bar, 0.18 to 0.7 MPa)
Fluid inlet size	1 gal (3.8 ls) or 1 qt (0.95 l) cans
Fluid outlet size	1/4 npt(f)
Air inlet size	1/4 npt(f)
Wetted materials	304 and 17-4 pH SST, PTFE, Viton®, acetal
Weight	16.1 lbs (7.2 kg)
Width	14.0 in (356 mm)
Depth	8.25 in (210 mm)
Maximum height	26.5 in (673 mm) with ram cylinder extended
Instruction manual	308302

### Ordering Information

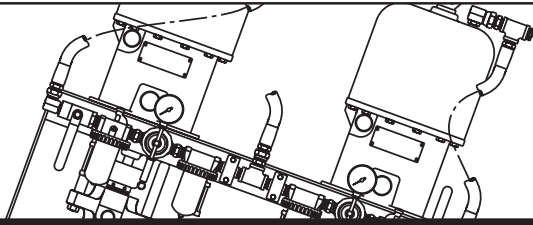
235871	<b>DynaMite 190</b> Pump unit without wiper plate. Order wiper plate separately.
224923	<b>Wiper Plate 1 qt (1 kg), rubber</b> For DynaMite 190 Pump Unit.
224908	<b>Wiper Plate 1 gal (3 kg), rubber</b> For DynaMite 190 Pump Unit

### Accessories

235877	<b>DynaMite 190 Dispense Valve</b> Pistol grip style.
235871	<b>DynaMite 190 Dispense Valve</b> Without handle for fixture mounting

For information on dispense valves, see section 2.

<b>Wiper Plate Poly Shields (sets of 10)</b>	
223948	For 1 gal (3 kg)



# Booster Modules

**1**

## Features and Benefits

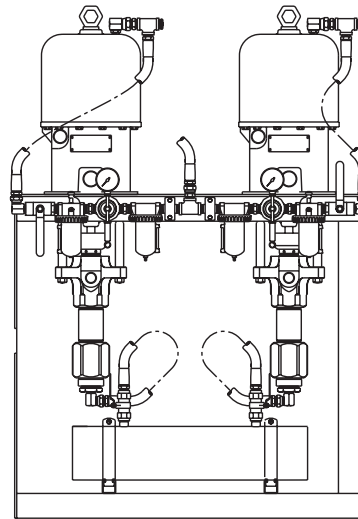
- Increases fluid pressure from bulk-feed systems for consistent performance
- Choice of pressure/flow output
- Redundant pump for back-up or to feed dual lines

## Typical Applications

- Automotive paint shops

## Typical Fluids Handled

- PVC sealers
- Sound deadeners



970121

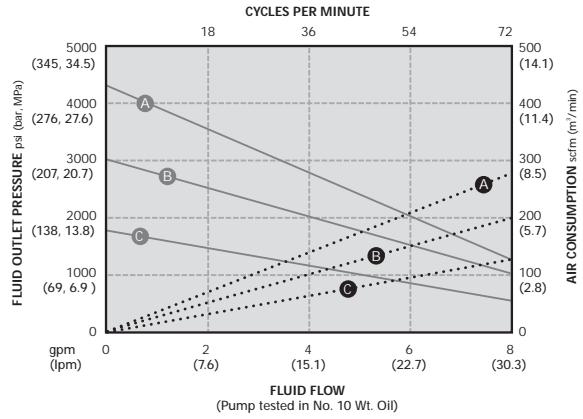
# Booster Modules

## Ordering Information

- 970122 Booster with 45:1 Premier Pump, SST**  
Includes Triple pumps, air motor controls and ball valve on inlet.
- 970121 Booster with 56:1 King Pump, SST**  
Dual pump system includes air motor controls.

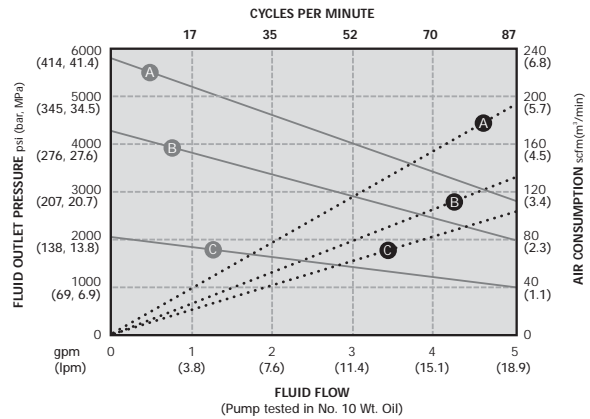
## Performance Charts

### 45:1 Premier



AIR PRESSURES	LEGEND
(A) = @ 4100 psi (283 bar, 28.3MPa)	Air Consumption . . . .
(B) = @ 3000 psi (207 bar, 20.7 MPa)	Fluid Flow _____
(C) = @ 1800 psi (124 bar, 12.4 MPa)	

### 56:1 King



AIR PRESSURES	LEGEND
(A) = @ 100 psi (7.0 bar, 0.7 MPa)	Air Consumption . . . .
(B) = @ 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow _____
(C) = @ 40 psi (2.8 bar, 0.3 MPa)	



# Primer Modules

## Bulk Supply and Manual Brush

1

### Features and Benefits

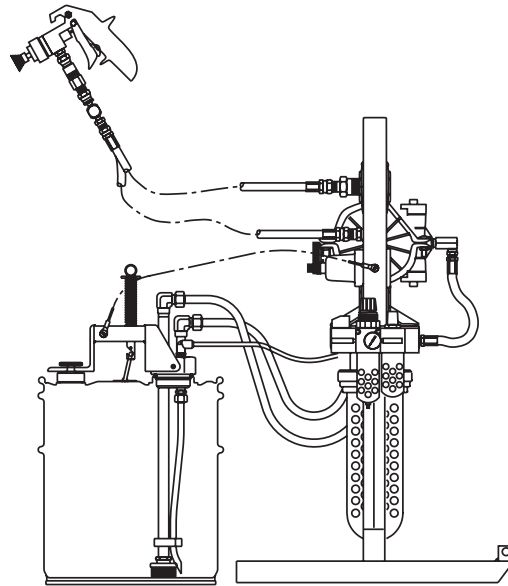
- Brush-applicator or gun-apply kits available
- Protects primers from moisture and premature curing
- Circulates primer to prevent settling

### Typical Applications

- Windshield urethane primer

### Typical Fluids Handled

- Moisture-cure black primer for windshields

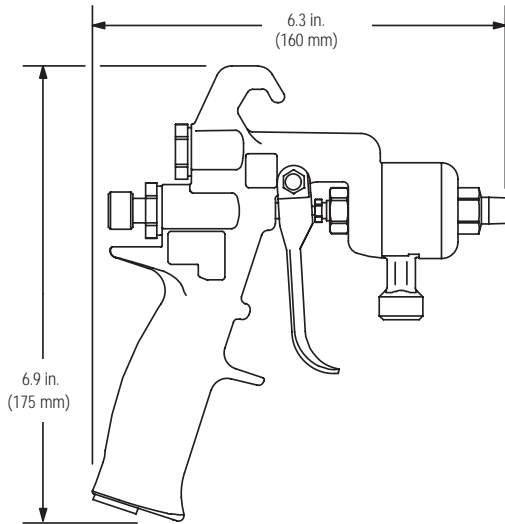


970246 shown  
Primer Module



# Primer Modules

## Bulk Supply and Manual Brush



### Primer Gun 241778

Maximum Working Fluid Pressure	100 psi (7 bar, 0.7 MPa)
Fluid Operating Temperature Range	32°F to 140°F (0°C to 60°C)
Weight	17.1 oz. (485 g)
Fluid Inlet	1/4-18 npsm (R1/4-19) compound thread
Wetted Parts	316 and 17-4 PH Stainless Steel, Polyetheretherketone (PEEK), Ultra High Molecular Weight Polyethylene

1

# Primer Modules

## Bulk Supply and Manual Brush

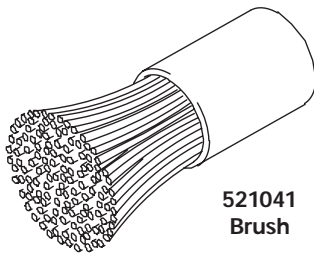
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### Ordering Information

**970246 Manual APS 100 Dispense Package**  
Includes: 5 gal (20 l) pail cover with siphon and return tubes, desiccant air dryer, diaphragm pump, pump/filter mounting stand, 25 ft (7.5 m) dual hose kit for dispense and return and pistol grip manual flow gun with brush nozzle.

### Accessories

**241778 Primer Gun Assembly for 970180 and 970246**  
**521041 Brush for 970180 and 970246**  
**518891 Filter**  
**239663 Swivel, Fluid, 1/4-npsm (f) x 1/4-npt (m)**



**521041  
Brush**



# 2:1 Standard

## Air-Operated Piston Transfer Pump

**1**

### Features and Benefits

- Air-powered for high reliability and low cost
- Delivery up to 2.5 gpm (9.46 lpm)
- Divorced-style drum for leak-free operation
- Mountings available for wall mount configuration

### Typical Applications

- Foam chemical supply
- Spray gun supply
- Dispensing valve supply
- Cleaning chemical supply
- Fluid transfer

### Typical Fluids Handled

- Solvents
- Adhesives
- Resins
- Catalysts
- Chemicals



2:1 Standard  
226040  
Drum length, bung mounted

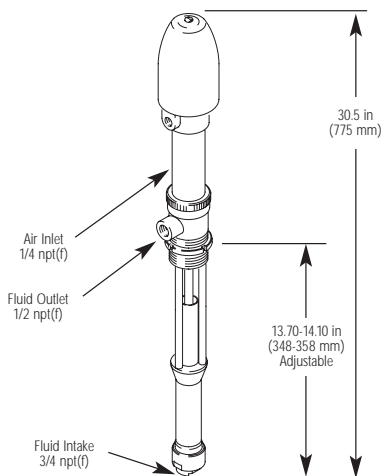
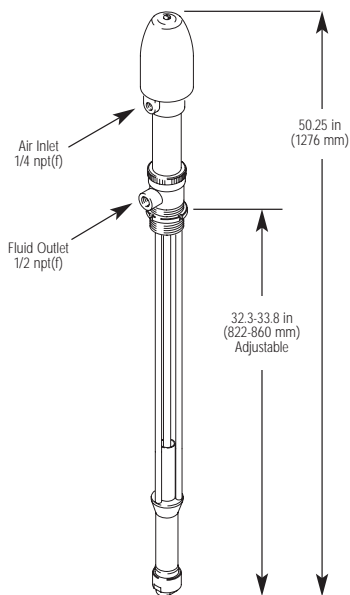
# 2:1 Standard Air-Operated Piston Transfer Pump

1

## Technical Specifications

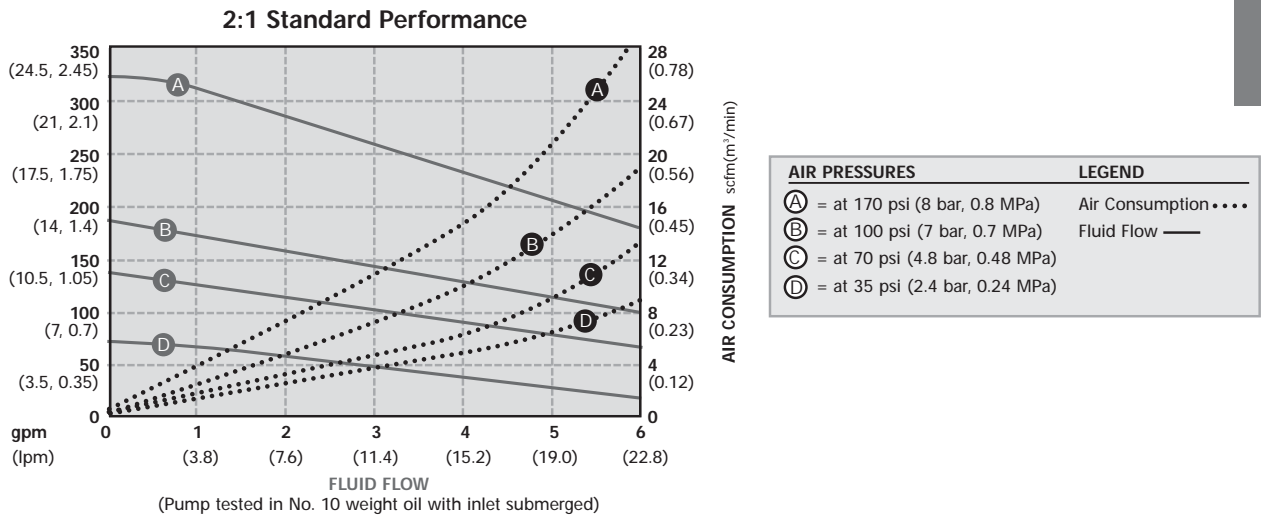
Maximum fluid outlet pressure .....	.360 psi (25 bar, 2.5 MPa)
Maximum pump speed .....	.100 cpm
Pump cycles per gallon (3.8 l) .....	.40
Maximum air input pressure .....	.180 psi (12.6 bar, 1.26 MPa)
Maximum operating temperature .....	.280°F (138°C)
Typical sound level .....	.60 dBA
Fluid outlet .....	.1/2 npt
Air inlet size .....	.1/4 npt
Weight .....	.11.5 lbs (5.22 kg)
Instruction Manual .....	.307026

## Dimensions



# 2:1 Standard Air-Operated Piston Transfer Pump

## Dimensions



**How to use this chart:**

- Step 1:** Locate the required fluid flow rate along bottom axis of chart.
- Step 2:** Follow vertical line to the intersection with the solid curve (A, B, C or D – based on your air inlet pressure).
- Step 3:** Follow to left axis to read fluid outlet pressure.
- Step 4:** From Step 2, follow vertical line up or down to the intersection with the dotted line (A, B or C or D– based on your air inlet pressure) then follow to right axis to read air consumption.

SIZE AND MATERIALS OF CONSTRUCTION		
Part Number	Construction	Packing
223954	Stubby/SST	T/PE
226040	Drum/SST	T

N = Neoprene                      SST = 304 Stainless Steel  
 L = Leather                        CS = Carbon Steel  
 T = PTFE                            PE = Polyethylene

**Example**

To obtain 3 gpm (11.4 lpm) at approximately 150 psi (10.3 bar, 1.0 MPa) you will need 100 psi (7 bar, 0.7 MPa) of air pressure. The air consumption will be approximately 7 scfm.

# Transfer Pumps

## 1

### Air-Operated Piston 5:1, 10:1, and 15:1 Pumps

#### Features and Benefits

- Handles applications ranging from cleaning to corrosive fluid transfer
- Air-powered for high reliability and low cost
- Delivery up to 2.5 gpm (9.46 lpm) at up to 900 psi (62 bar, 6.2 MPa)
- Stainless steel or carbon steel models to suit every production application

#### Typical Applications

- Fluid transfer and supply for application equipment
- Paint circulating
- Cleaning chemical supply

#### Typical Fluids Handled

- Solventborne paints (CS models)
- Waterborne paints (SST models)
- Texture coatings
- Cleaning fluids
- Adhesives and sealants



5:1 Monark  
218956

# Transfer Pumps

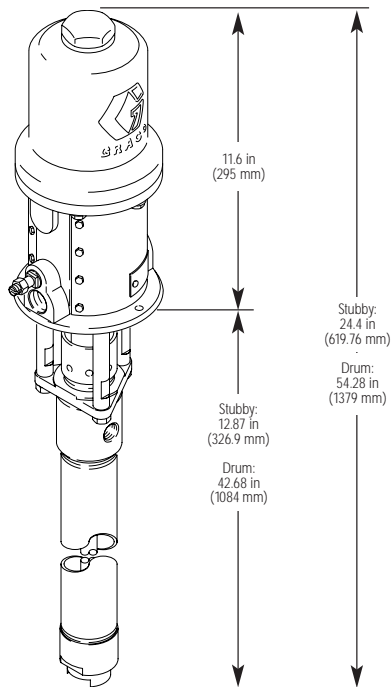
## Air-Operated Piston 5:1, 10:1, and 15:1 Pumps



### Technical Specifications

Maximum fluid working pressure	
5:1 Monark	600 psi (41 bar, 4.1 MPa)
10:1 President	1800 psi (124 bar, 12.4 MPa)
Maximum pump speed	66 cpm
Pump cycles per gal (3.8 l)	28
Maximum air input pressure	
5:1 Monark	120 psi (8.4 bar, 0.84 MPa)
10:1 President	180 psi (12.4 bar, 1.24 MPa)
Maximum operating temperature	180°F (82°C)
Typical sound level	65 dBa
Air inlet	3/8 in (3.18 mm)
Fluid outlet	3/4 in (19.05 mm) Drum 1/2 in (12.7 mm) Stubby
Weight	30 lbs (13.61 kg) Drum 20 lbs (9.07 kg) Stubby
Instruction Manuals	307044 Drum 308117 Stubby

### Dimensions



# 5:1 Monark

## Air-Operated Piston Transfer Pump

1

### Performance Chart

**How to use this chart:**

- Step 1:** Locate the required fluid flow rate along bottom axis of chart, below.
- Step 2:** Follow vertical line to the intersection with the solid curve (A, B, C or D – based on your air inlet pressure).
- Step 3:** Follow to left axis to read fluid outlet pressure.
- Step 4:** From Step 2, follow vertical line up or down to the intersection with the dotted line (A, B or C or D – based on your air inlet pressure) then follow to right axis to read air consumption.

**Example**

To obtain 2 gpm (7.5 lpm) at approximately 325 psi (22.4 bar, 2.2 MPa) you will need 100 psi (7 bar, 0.7 MPa) of air pressure. The air consumption will be approximately 8 scfm.

### Ordering Information

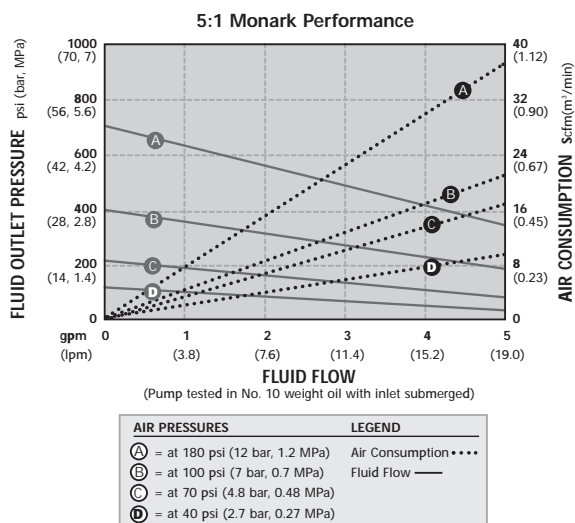
SIZE AND MATERIALS OF CONSTRUCTION		
Part Number	Construction	Packing
218956	Drum/CS	T
224343	Stubby/SST	UHMWPE/T
224345	Stubby/SST	UHMWPE/N
224350	Drum/SST	UHMWPE/T
247147	Stubby/SST	T

N = Neoprene      SST = 304 Stainless Steel  
 L = Leather        CS = Carbon Steel  
 T = PTFE            PE = Polyethylene

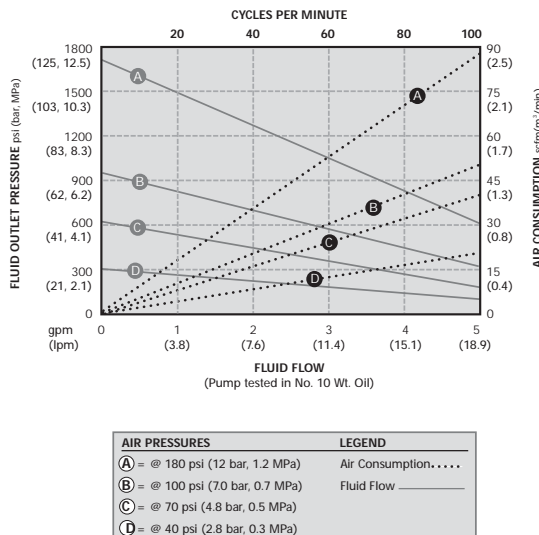
### President Options

- 247146**    10:1 President, Stubby, SST, PTFE
- 287886**    15:1 President, Stubby, PTFE

### Performance Chart for 5:1 Monark



### Performance Chart for President 10:1





# Lower Viscosity Adhesive Packages

1

## Features and Benefits

- Xtreme pump packages combine superior performance and ease of service to reduce downtime and maintenance costs
- Husky double diaphragm pump packages offer Graco's patented lube free air valve and rugged construction for fewer breakdowns
- Graco's pressure pot packages offer a PTFE coated interior for easy clean up
- Glutton pump packages incorporate bellow seals to protect the rod and piston, preventing material from curing on wetted surfaces, extending packing life
- Delta XT spray gun provides superior pattern control and easy maintenance
- Extrude adhesive with the Ultra-Lite 6000 that offers an easy pull trigger and ergonomic handle



33:1 Xtreme Pump  
Medium Viscosity Package  
253004

## Typical Applications

- Furniture
- Panel coating
- Product assembly

## Typical Fluids Handled

- White glues
- Yellow glues
- Contact cement
- Urethanes

# Lower Viscosity Adhesive Packages

1

## Ordering Information

### Medium Viscosity Packages

Part Number	Pump Type	Ratio	Material	Application
253004	Xtreme Pump	33:1	CS	Extrusion (Bead)
253005	Xtreme Pump	41:1	CS	Extrusion (Bead)

All medium viscosity packages include: Cart (244530), 25 ft high pressure nylon hose (215226), and Ultra-Lite 6000 applicator (235628).

### Low Viscosity Packages

Part Number	Pump Type	Siphon Size	Material	Application
253216	Husky 515	55 gal	acetal	Spray
253217	Husky 515	5 gal	acetal	Spray
253364	Monark 5:1	55 gal (bung)	SST	Spray

All low viscosity packages include: 2 air regulators (116513), 25 ft coupled fluid/air spray hose (233498), and a Delta XT air assist spray gun (234788).

### Very Low Viscosity Packages

Part Number	Pump Type	Size	Material	Application
253006	Pressure Pot	2 gal	SST	Spray
253007	Pressure Pot	5 gal	SST	Spray

All low viscosity packages include: 2 air regulators (116513), 25 ft coupled fluid/air spray hose (233498), and a Delta XT air assist spray gun (234788).

### Urethane Packages

Ideal for moisture sensitive transfer.

Part Number	Pump Type	Ratio	Material	Application
253009	Glutton	4:1	CS	Transfer
253010	Glutton	12:1	CS	Transfer

All urethane packages include two Moisture-Lok hoses, 6 ft (947086) and 10 ft (947087).



Delta XT  
253004



Pressure Pot  
253006



Ultra-Lite 6000  
253628

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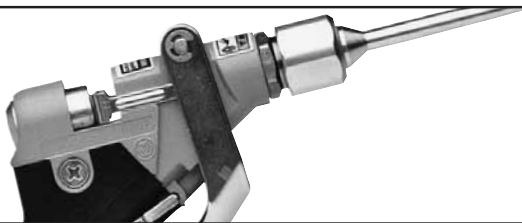
### APPLICATORS, MANUAL

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# Ultra-Lite 4000 and 4000 SD

## 150° Severe-Duty Pistol Grip Flow Guns

# 2

Ultra-Lite 4000 guns feature ergonomic design and operating pressure to 4000 psi (276 bar; 27.6 MPa).

### Features and Benefits

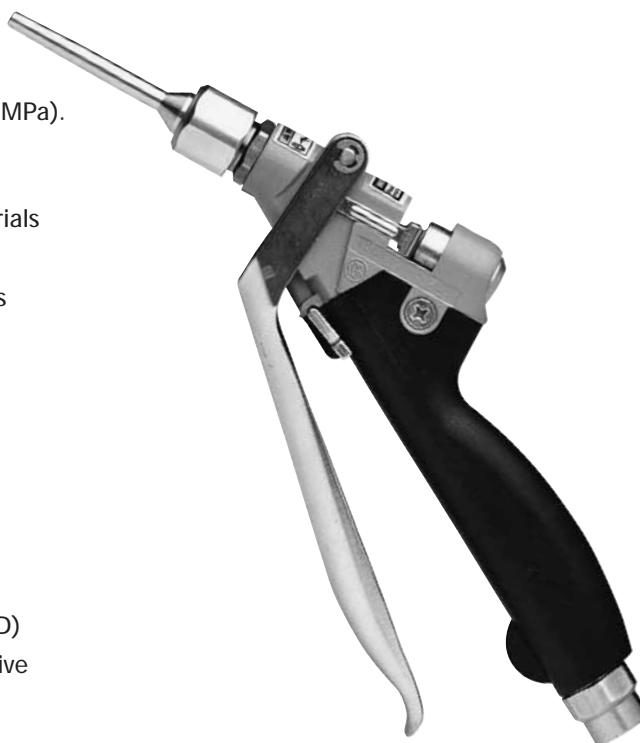
- Precise control of low-to-medium viscosity materials
- Designed for light trigger pull and easy handling
- Changeable tips for a variety of dispensing needs

### Typical Application

- Industrial and automotive single component sealant dispensing

### Typical Fluids Handled

- Low abrasive fluids
- PVC sealer
- Waterborne adhesives (with abrasive fillers for SD)
- Silicone and solvent-borne materials (with abrasive fillers for SD)



235627  
Ultra-Lite 4000 with  
C00047 nozzle (not included)

# Ultra-Lite 4000 and 4000 SD Severe-Duty Pistol Grip Flow Guns

## Technical Specifications

Maximum fluid outlet pressure	4000 psi (276 bar; 27.6 MPa)
Flow rate @ 1000 psi (70 bar; 7.0 MPa)	332 gpm*
Maximum trigger force	
@ 0 psi (0 bar; 0 MPa)	1.5 lbs (0.68 kg)
@ 1000 psi (70 bar; 7.0 MPa)	4 lbs (1.8 kg)
Fluid outlet size	Flange or 1/4 npt(f)
Fluid inlet size	1/4 npt(f)
Weight	15.5 oz (439 gm)
Dimensions	8.05 in x 1.2 in x 5.9 in (20.5 cm x 3.0 cm x 15.0 cm)
Pressure tube	Stainless steel
Pressure tube I.D.	0.187 in (47.5 mm)
Valve seat diameter	0.200 in (50.8 mm)
Needle seat type	Titanium nitride SST, 6.5° tapered
Needle seat type (SD)	Titanium nitride SST, 7.5° tapered
Head/handle angle	150°
Wetted materials	Aluminum, SST, polyurethane, Viton®
Instruction manual	308253

\* This flow rate was achieved using PVC sealer dispensed through a 0.030 in diameter orifice nozzle. Actual flow rates will vary depending on material type, fluid pressure and nozzle size.

## Ordering Information

### Ultra-Lite 4000 Flow Guns

<b>235627</b>	<b>Ultra-Lite 4000</b> Pistol grip flow gun
<b>237607</b>	<b>Ultra-Lite 4000 SD</b> Severe-Duty pistol grip flow gun
<b>237649</b>	<b>Ultra-Lite 4000 SD with Swivel</b> Severe-Duty pistol grip flow gun. Inlet thread: 37° SAE; Inlet in-line swivel: 1/2-20 UNF (m) mounted on gun inlet.

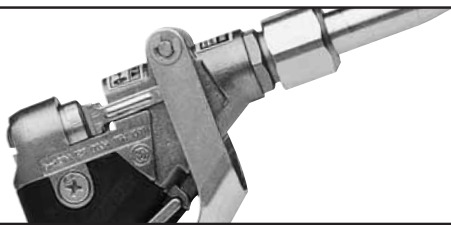
### Kits

<b>970167</b>	<b>Pistol Grip Manual Extrude Kit</b> Includes: 3/4 npt ball valve, 3/8 npt mastic regulator, 3/8 in (9.5 mm) x 25 ft (7.6 m) dispense hose, 1/4 in (6.4 mm) x 6 ft (1.8 m) whip hose, Z-swivel and Ultra-Lite 4000 SD pistol grip flow gun.
---------------	---

### Repair Kits

<b>235875</b>	<b>Ultra-Lite PTFE Packing</b> For use with fluids which are not compatible with polyurethane or Viton® packings. Contains PTFE seals and O-rings.
<b>235869</b>	<b>20° Taper Needle (for low abrasives)</b> For higher flow with controlled opening. Includes seat, 20° tapered needle, O-ring for seat and needle seal.
<b>235658</b>	<b>Ultra-Lite 4000 Repair Kit</b> Includes: seat, 6.5° tapered needle, O-ring for seat, seal for needle and hex nut.
<b>237596</b>	<b>Ultra-Lite 4000 SD Repair Kit</b> Includes: seat, 7.5° tapered carbide needle, O-ring for seat, seal for needle, hex nut.

Viton® is a registered trademark of DuPont



# Ultra-Lite 6000

## 150° Pistol Grip Flow Gun

2

Ultra-Lite 6000 is an operator-friendly gun for dispensing high viscosity material at operating pressures to 6000 psi (414 bar; 41.4 MPa).

### Features and Benefits

- Precise control of highly viscous material
- 150° head/handle angle is more comfortable for operator
- Changeable tips for a variety of dispensing needs
- Lightweight with convenient trigger pull

### Typical Applications

- Automotive or industrial sealant and adhesive applications
- High flow rate requirements
- Abrasive fluid requirements

### Typical Fluids Handled

- Rubber-based sealers
- Waterborne adhesives
- Silicone and solvent-borne materials



235628

Ultra-Lite 6000 with  
C00009 nozzle (not included)

# Ultra-Lite 6000 Pistol Grip Flow Gun

## Technical Specifications

Maximum fluid outlet pressure	6000 psi (414 bar; 41.4 MPa)
Fluid inlet size	1/2 npt(f)
Fluid outlet size	Flange or 1/4 npt(f)
Pressure tube	Stainless steel
Pressure tube I.D.	0.332 in (8.1 mm)
Valve seat diameter	0.187 in (4.7 mm)
Needle seat type	Carbide ball
Head/handle angle	150°
Weight	22 oz (620 gm)
Dimensions	8.05 in x 1.2 in x 5.9 in (20.5 cm x 3 cm x 15 cm)
Wetted materials	SST, polyurethane, Viton®
Instruction manual	308253

Viton® is a registered trademark of Du Pont



## Ordering Information

### Ultra-Lite 6000 Flow Guns

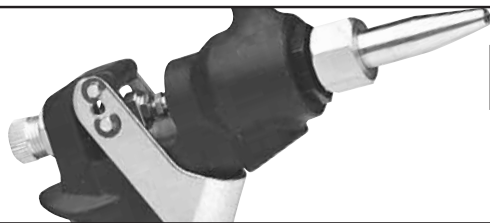
- 235628 Ultra-Lite 6000**  
Pistol grip flow gun, carbide ball and seat.
- 243775 Ultra-Lite 6000**  
Tapered needle and seat for controllable flow.

### Ultra-Lite 6000 Kits

- 970077 Manual Dispense Kit**  
Designed for use on pipe manifold system for multiple dispensing locations. Maximum working pressure: 5000 psi (345 bar; 34.5 MPa). Includes: 3/4 npt ball valve, 3/4 npt mastic regulator, 1/2 in (12.7 mm) x 10 ft (3 m) and 3/8 in (9.5 mm) x 5 ft (1.5 m) dispense hose, straight swivel, Ultra-Lite 6000 manual flow gun and 4 mm (0.158 in) nozzle.
- C59619 Ultra-Lite Dispense Kit**  
Includes Ultra-Lite 6000, straight swivel, 15 ft x 0.51 in (4.5 m x 1.2 cm) neoprene high pressure hose and 1-1/4 in x 1/2 in fitting.

### Repair Kits

- 235829 Ultra-Lite 6000 Repair Kit**  
Repair kit for 235628. Includes carbide seat, and urethane seal.
- 237596 Ultra-Lite 6000 Repair Kit**  
Repair kit for 243775. Includes needle, seat and urethane seal.
- 235875 Ultra-Lite PTFE Packing**  
For use with fluids which are not compatible with polyurethane or Viton® packings. Contains PTFE seals and O-rings.



# Pistol and Palm Grip Dispense Guns

## Pistol Grip Flow Guns

**2**

Graco manufactures a number of pistol grip flow guns to meet the needs of a variety of end-users.

### Features and Benefits

- Dispenses on demand
- Lightweight, rugged design
- Numerous design selections for internal cut-off
- 120° head/handle or 90° head/handle angle

### Typical Applications

- Automotive and industrial adhesives and sealants
- Low-to-high flow rate requirements
- In-line handle requirements

### Typical Fluids Handled

- Rubber-based fluids
- Caulks
- Sealants
- Adhesives



C27020 Pistol Grip  
with C00007  
nozzle (not included)



204355 Palm Grip  
Includes 161505 nozzle  
and 165506 adapter



# Pistol Grip Dispense Guns

## Pistol Grip Flow Guns

### Technical Specifications – In-line Guns

	240199 - In-line gun	204355 - In-line gun
Maximum working pressure	3400 psi (235 bar; 23.5 MPa)	3000 psi (210 bar; 21.0 MPa)
Needle Seat Type	Carbide ball	Carbide ball
Fluid flow at 2000 psi (138 bar; 13.8 MPa)	158 oz/min (4.5 lpm)	176 oz/min (4.8 lpm)
Valve seat diameter	0.125 in (3.2 mm)	0.187 in (4.75 mm)
Trigger force at 2000 psi (138 bar; 13.8 MPa)		
Breakaway	2.2 lbs (1.0 kg)	-
Sustaining	3.2 lbs (1.45 kg)	-
Fluid outlet size	flange and 1/4 npt(f)	flange and 1/8 npt(f) or 3/8 in npsm (f)
Fluid inlet size	1/4 npt(f)	3/8 npt (f)
Weight	11.6 oz (328 gm)	2 lbs. (900 gm)
Dimensions	5.9 in x 2.6 in (15.0 cm x 6.6 cm)	9.25 in x 5.25 in (23.5 cm x 13.3 cm)
Wetted parts	Carbide, aluminum, SST, polyethylene, Viton®	Carbide, aluminum
Key feature	Lowest trigger pull and weight in its class	Rugged, lightweight design

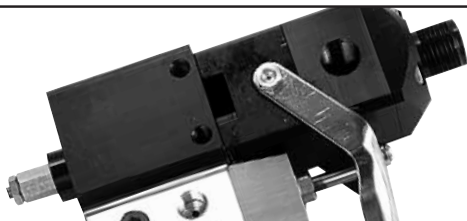


### Ordering Information and Technical Specifications – Pistol Grip Guns

Part No.	Description	Inlet npt(f)	Outlet npt (m)	Working Pressure	Manual
C27020	Hardened Ball and Seat Repair Kit: C27028	0.5 in	.25 in or flange	2500 psi (172 bar; 17.2 MPa)	309739
C27031	2-Stage Trigger for lighter pull Repair Kit: C27028	0.5 in	.25 in or flange	2500 psi (172 bar; 17.2 MPa)	309739
C27067	Advanced Piston Design/ Controlled Flow Repair Kit: C27070	0.5 in	.25 in or flange	2500 psi (172 bar; 17.2 MPa)	309739
207945	Carbon Steel Housing Repair Kit: 210532	0.5 in	.25 in or flange	6000 psi (414 bar; 41 MPa)	307004
915507	90° Head/Handle Angle	0.25 in flange	flange only	5000 psi (345 bar; 34 MPa)	308987
C27078	Tip Seal	0.5 in	.093	2500 psi (172 bar; 17.2 MPa)	309739

#### In-Line Palm Grip Repair Kits

- 240206 Ultra-Lite Repair Kit (for ball end gun)**  
For use with Ultra-Lite In-Line Flow Gun with ball end needle (240199). Includes carbide seat, ball needle, o-ring, seal.
- 207160 Flow Gun Repair Kit**  
For use with 204355. Includes packings, gaskets, valve stem and valve seat.



# 1K Ultra-Lite

## Precision Dispense Valve for Quality Bead Dispensing

2

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



965767  
Internal Air Switch



965768  
Electric Switch

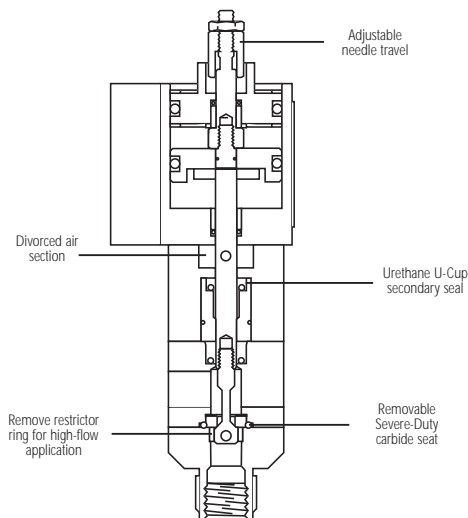
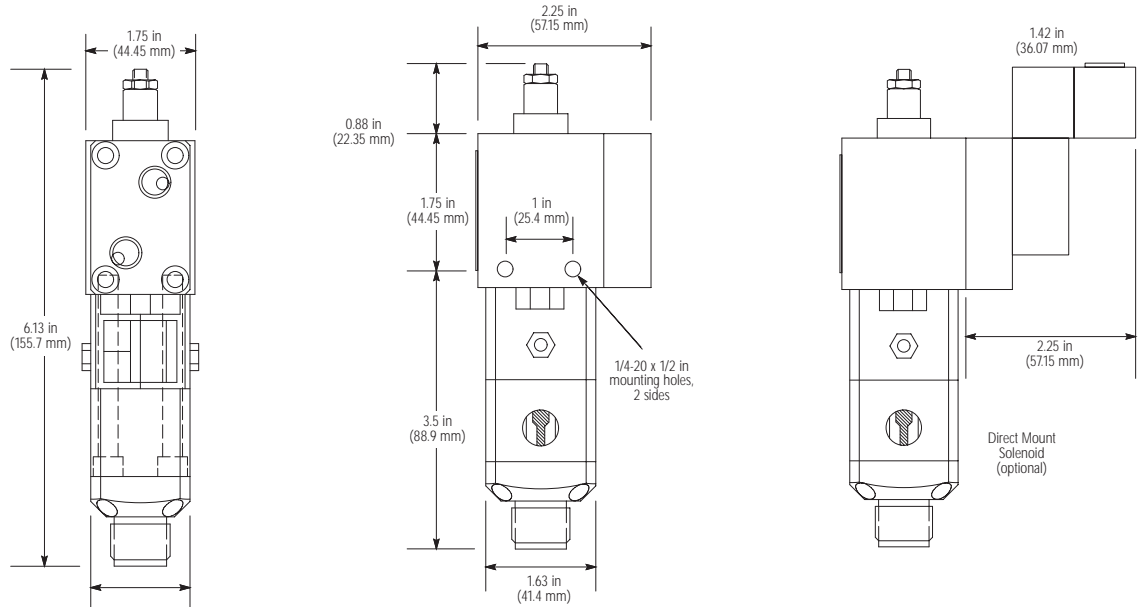


Machine Mount  
965766 SST  
965786 Aluminum

# 1K Ultra-Lite

## Precision Dispense Valve for Quality Bead Dispensing

### Dimensions



### Technical Specifications

- Maximum fluid outlet pressure . . . .4000 psi (276 bar; 28 MPa)
- Fluid viscosity range . . . . . 20 to 1 million cps
- Maximum cylinder air pressure . . . .120 psi (8.4 bar; 0.84 MPa)
- Fluid inlet size . . . . . 1/4 npt(f)
- Fluid outlet size . . . . . 1/4 npt(f) and 3/4-16 unf(m)
- Air inlet size . . . . . 1/8 npt(f)
- Shaft sealing fluid section . . . . . dual seal isolation chambers with Zirk fittings
- Air cylinder . . . . . divorced
- Wetted materials
  - Aluminum . . . . . Aluminum, 303 SST, 17-4 ph SST, C2 carbide, hard chrome, ethylene propylene, Parker Polymite™, PTFE
  - SST 303 SST, 17-4 ph SST, C2 carbide, hard chrome, ethylene propylene, Parker Polymite™, Du Pont 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 45° 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
- 626144** Manifold  
To direct mount solenoid to 1K Ultra-Lite Valve.
  - 551317** 24 Volt dc Solenoid  
For use with 626144 Manifold
  - 551348** 24 Volt dc Solenoid  
Remote mount, 1/8 npt(f) ports
  - 551350** 24 Volt dc Din Plug  
With screw terminals for above solenoids

### Plastic Tube Fittings to Connect Air Signals

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

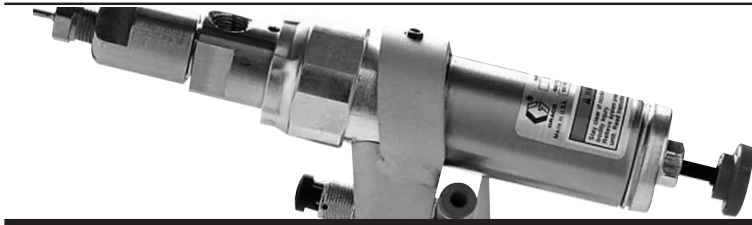
Tube OD	1/4 npt(m) Straight	1/4 npt(m) 90° Swivel
5.32 in	598252	598327
5/32 in	104165	598156

### Plastic Tubing for Air Signal Lines

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

### Kits

- 949631** Conversion Kit  
Pneumatic 4-way valve with housing, handle, and trigger and other parts necessary to convert 965766 automatic valve to a hand-held valve
- 949632** Conversion Kit  
Electric switch style handle kit to convert 965766 to a hand-held valve
- 570267** Seal Kit  
Polymite main packing (standard)
- 570268** Rebuild Kit (includes 570267 Seal Kit)  
Polymite main packing (standard)
- 570299** Seal Kit  
PTFE main packing (optional)
- 570300** Rebuild Kit (includes 570299 Seal Kit)  
PTFE main packing (optional)



# DynaMite

## Manual Dispense Valve

DynaMite valves are used with DynaMite 190 for small-scale assembly operations.

### Features and Benefits

- Precise bead/dot diameter and positioning for improved quality and less rework in manual or automated applications
- Wetted parts are made of SST, PTFE, and acetal to provide wide fluid compatibility
- Valve can be converted from manual trigger (pistol grip) actuation to fixtured automated actuation

### Typical Applications

- Crack sealing and joint filling
- Assembly of small parts

### Typical Fluids Handled

- Colorants
- Potting compounds
- Greases
- Encapsulants
- Inks
- Adhesives
- Sealants



**235877**  
**DynaMite Pistol Grip, Manual**  
 (needle not included)

2

# DynaMite

## Manual Dispense Valve

### Technical Specifications

Fluid inlet size	1/8 npt(f)
Fluid outlet size	1/8 npt(f)
Air inlet size	
Bare unit	1/8 npt(f)
For pistol grip	10-32 unc(f)
Both include 5/32 in (4 mm) diameter tube fitting	
Maximum air inlet pressure range	40 to 100 psi (2.8 to 7 bar; 0.28 to 0.7 MPa)
Maximum fluid inlet pressure	900 psi (62 bar; 6.2 MPa)
Wetted parts	302 and 17-4 passivated SST, PTFE, acetal
Maximum length, w/o dispense needle	6.75 in (171.5 mm)
Weight	
Bare unit	13 oz (37 g)
With pistol grip	18 oz (51 g)
Instruction manual	308266



### Ordering Information

- 235877 DynaMite Pistol Grip Manual Dispense Valve
  
- 224906 DynaMite Dispense Valve Automatic



# 950 Series

## Sealant Guns

950 series sealant guns replace caulk guns in high-volume operations.

### Features and Benefits

- All metal rugged construction
- Knob is permanently captured onto the gun body
- Pistol grip or palm grip
- Air-powered or manual-operated

### Typical Applications

- Dispensing sealants from 2.5, 6 and 12 oz. (73.9, 177.4 and 354.8 ml) cartridges

### Typical Fluids Handled

- Silicones
- Acrylics



Palm Grip with 6 oz. Cartridge



Pistol Grip with 6 oz. (177.4 ml) Cartridge

2

# 950 Series Sealant Gun

## Technical Specifications

Maximum fluid outlet pressure .....	100 psi (7 bar; 0.7 MPa)
Fluid outlet size .....	1/4 npt(f)
Wetted parts .....	Polyethylene

## 2

## Ordering Information

- C04074** 2.5 oz. (73.9 ml) Palm Grip Gun
- C04076** 2.5 oz. (73.9 ml) Pistol Grip Gun
- C04087** 6 oz. (177.4 ml) Palm Grip Gun
- C04090** 6 oz. (177.4 ml) Pistol Grip Gun
- C04068** 12 oz. (354.8 ml) Pistol Grip Gun

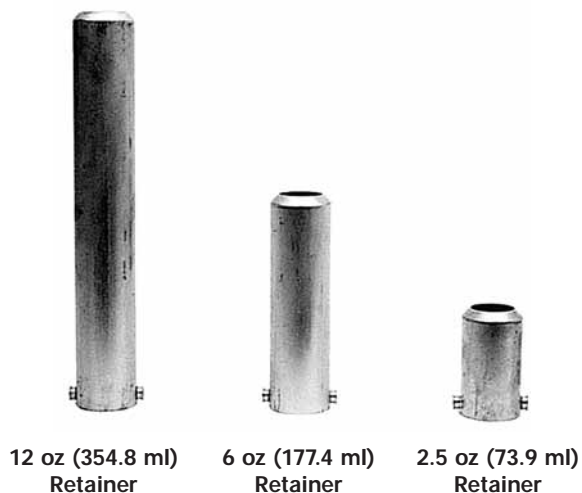
### Manual-Operated Sealant Gun Kits

- C05213 Gun Kit**  
For 2.5 oz. (73.9 ml) and 6 oz. (177.4 ml) cartridges.
- C05212 Gun Kit**  
For 2.5 oz., 6 oz. or 12 oz. (73.9, 177.4 and 354.8 ml) cartridges.

## Accessories

### Hansen Brand Inlet Connectors

- C04038** 0.125 in ID x 5 ft. (1.52 m) air hose with male Q.D. inlet
- C04026** 0.125 in ID x 10 ft. (3.04 m) air hose with male Q.D. inlet
- C04079** Trigger Assembly







# Power Caulk

Model 12020-M

## Features and Benefits

- Trigger-actuated, fast shut-off prevents dripping
- For use with plastic or fiber cartridges
- Converts for use with aluminum cartridges

## Typical Application

- Dispensing sealants from 10 oz. (295.7 ml) and 29 oz. (857.6 ml) cartridges

## Typical Fluids Handled

- Silicones
- Acrylics
- Urethanes



C27098  
Model 12020-M

2

# Power Caulk

## Model 12020-M

### Technical Specifications

Maximum air operating pressure	80 psi (5.5 bar; 0.55 MPa)
Size	1/10th gal (378.5 ml)
Cartridge	10 oz. (0.29 l)
Construction	Aluminum
Air inlet size	1/4 npt(m)
Air hose	10 ft. (3 m) long



### Ordering Information

C27098 Model 12020-M  
1/10th gal (378.5 ml) Power Caulk Gun

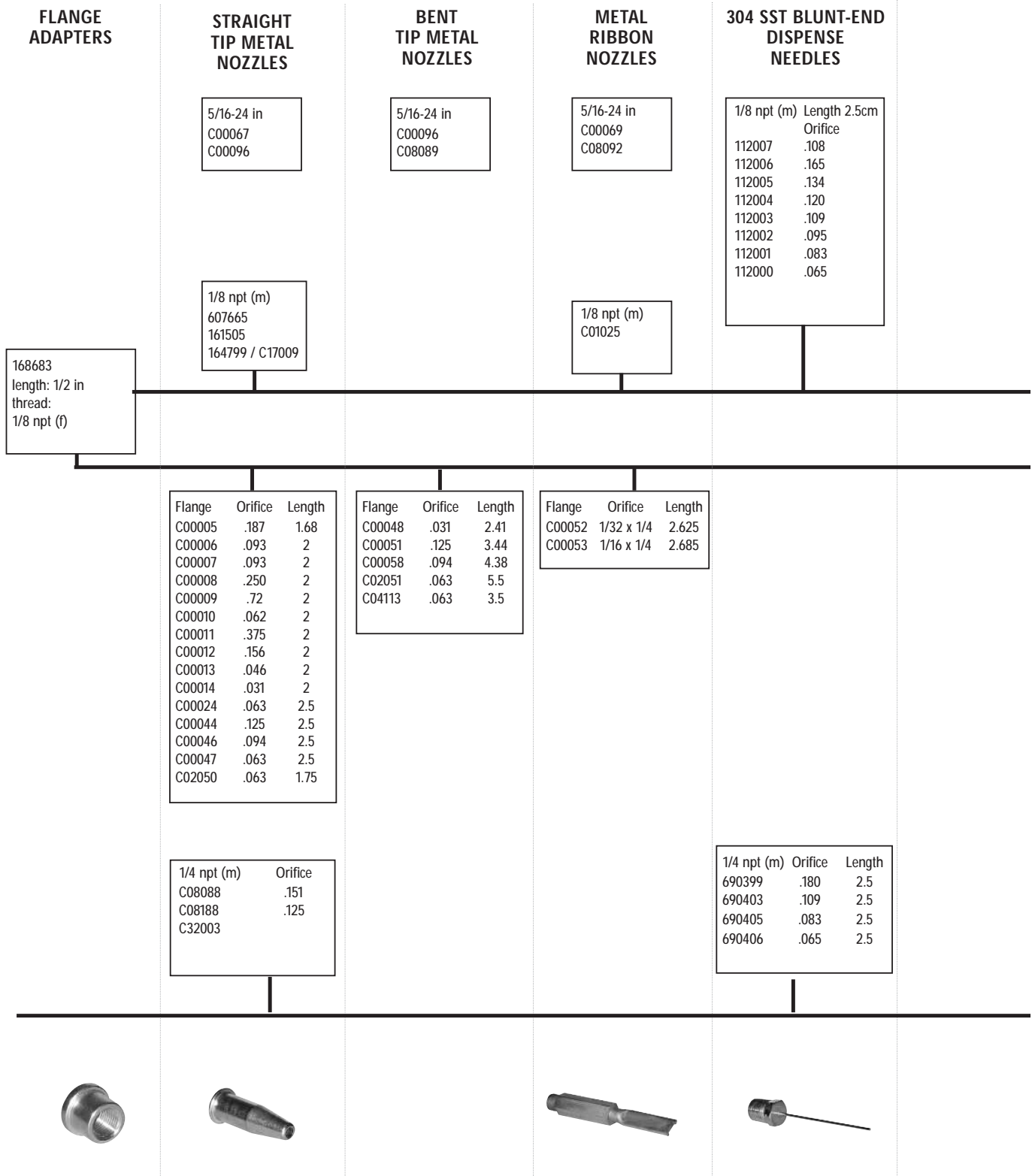
Repair Kits  
C27100 For model 12020-M Seal Kit

Note: Handles or barrels are not available individually as repair items.

# Notes

## Tip and Needle Selection Chart

2



**BRUSH HOLDER EXTENSIONS**

Adapter Nipple  
C20477  
1/8 npt

**BRUSHES**

1/8 npt (f)  
C00031  
C00033  
C00079  
521041

**PLASTIC NOZZLES**

**LUER LOCK HUB/BLUNT-END DISPENSE NEEDLES**

304 SST needle:  
chrome plated brass hub

**LUER LOCK HUB/BLUNT-END DISPENSE NEEDLES**

SST needle: chrome plated brass hub

Flange x 3/8-24 (m)  
C00042  
C00043  
C00036  
C00049  
C00050

3/8-24 (f)  
C00028  
C00029  
C00030  
C00052  
C00053  
C05008  
C05009

1/4 npt (m)  
C04128  
C04132  
C04135  
C04137  
C04140  
C51172

Luer Lock Adapter  
1/8 npt (m)  
109599

112025  
112024  
112023  
112022  
112021  
112020  
112019  
112018  
112017  
112016  
112015  
112014  
112013  
112012  
112010

Luer Lock Adapter  
1/4 npt (m)  
690270

Luer Lock Adapter  
1/8 npt (m)

Orifice	Length
690396	.016 1.5

(Polyurethane tapered tip)

Luer Lock Adapter  
1/4 npt (m)  
690398



# Accessories

## Silicone Sealant Applicator

**948065** Includes 1/4 turn shut-off valve, 4.5 ft. wand, joint-ball tip (0.125" diameter outlet), and 3/4 in nps (m) swivel inlet

## Straight-Tip Metal Nozzles

Used for general purpose bead or drop dispensing applications with manual or automatic flow guns. Flange nozzles fit Ultra-Lite and Pyles flow guns with standard nuts provided unless an adapter is noted in the following table. Note: not recommended for use with hot melt guns except where noted.

2

Part Number	Inlet Size	Length	Orifice	Adapter needed or other note
C00005	flange	1.656 in (42.06 mm)	0.187 in (4.75 mm)	
C00006	flange	2 in (50.08 mm)	0.125 in (3.17 mm)	
C00007	flange	2 in	0.093 in (2.3 mm)	
C00008	flange	2 in	0.25 in (6.3 mm)	
C00009	flange	2 in	0.172 in (4.3 mm)	
C00010	flange	2 in	0.062 in (1.5 mm)	
C00011	flange	2 in	0.375 in (9.5 mm)	
C00012	flange	2 in	0.156 in (3.9 mm)	
C00013	flange	2 in	0.046 in (1.1 mm)	
C00014	flange	2.5 in (63 mm)	0.031 in (0.7 mm)	
C00024	flange	2.5 in	0.062 in (1.5 mm)	
C00044	flange	2.5 in	0.062 in (1.5 mm)	
C00046	flange	2.5 in	0.093 in (2.3 mm)	
C00047	flange	2.5 in	0.125 in (3.17 mm)	
C00080	flange	3.5 in (88 mm)	0.125 in (3.17 mm)	
C02050	flange	5.5 in (140 mm)	0.062 in (1.5 mm)	
C00067	5/16-24 (m)	1.72 in (43 mm)	0.064 in (1.62 mm)	
C00096	5/16-24 (m)	1.97 in (50 mm)	0.113 in (2.8 mm)	
C08182	1/4 npt (m)	1.73 in (43.94 mm)	0.079 in (2 mm)	OK with hot melt gun
C08176	1/4 npt (m)	1.73 in (43.94 mm)	0.098 in (2.5 mm)	OK with hot melt gun
C08088	1/4 npt (m)	3 in (76 mm)	0.157 in (4 mm)	OK with hot melt gun
C08188	1/4 npt (m)	2 in (50 mm)	0.125 in (3.17 mm)	OK with hot melt gun
C32003	1/4 npt (m)	3 in (76 mm)	0.125 in (3.17 mm)	OK with hot melt gun
607665	1/8 npt (m)	2 in (50 mm)	0.125 in (3.17 mm)	168683 OK with hot melt gun
161505	1/8 npt (m)	2 in (50 mm)	0.09 in (2.28 mm)	168683
164799	1/8 npt (m)	2.125 in (52.97 mm)	0.055 in (1.39 mm)	168683 OK with hot melt gun
C17009	1/8 npt (m)	1.121 in (28.47 mm)	0.125 in (3.17 mm)	168683 OK with hot melt gun

# Accessories

## Bent-tip nozzles

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

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



## Ribbon nozzles

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

Part Number	Inlet size	Length	Orifice	Tip Angle	Adapter or comment
C01025	1/8 npt (m)	2.44 in (62 mm)	0.093 x 0.38 in 2.36 x 9.65 mm	straight	168683 Can be used with hot melt guns
C08092	5/16-24 (m)	2.62 in (66.55 mm)	0.06 x 0.22 in 0.15 x 5.59 mm	straight	C00060

# Accessories

2

## Stainless Steel Blunt-End Dispense Needles

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

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

## Straight-Tip Disposable Plastic Nozzles

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

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

## Brush Extensions

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

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



# Accessories

## Luer Lok Hub/Blunt-End Dispense Needles

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

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

Part Number	Outer Diameter (inches)	Inner diameter (inches)
112009	0.018	0.010
112010	0.022	0.012
112012	0.028	0.016
112013	0.032	0.020
112014	0.036	0.023
112015	0.043	0.027
112016	0.050	0.033
112017	0.059	0.041
112018	0.065	0.047
112019	0.072	0.054
112020	0.083	0.063
112021	0.095	0.071
112022	0.109	0.085
112023	0.120	0.094
112024	0.134	0.106
112025	0.165	0.135

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

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



# Accessories

## Brushes

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

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

## Swivels

- C20838 Straight Swivel**  
Zinc-plated steel, Viton packings. Maximum working pressure: 3000psi (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.



## Automatic Dispense Valve Selection Guide

Valve Style	Part Number	Working Pressure	Fluid Inlet	Fluid Outlet	Air to Open	Air to Close (6)	Description	Replaces	Service Manual
EnDure (1)	244910 (2)	3500 psi 238 bar	1/2" npt (f)	5/8-18 (m) retainer nut with 1/8 npt (f)	1/8" npt (f)	1/8" npt (f)*	Ambient or water-circulated temperature conditioning. 200°F (95°C) max. operating temperature	918512, C27340	309376
	244961 (2)	3500 psi 238 bar	1/2" npt (f)	5/8-18 (m) retainer nut with 1/8 npt (f)	1/8" npt (f)	1/8" npt (f)*	120 volt electrically heated, 6 pin round connection. 200°F (95°C) max. operating temperature	194485 (Precision Flo systems)	
	244962 (2)	3500 psi 238 bar	1/2" npt (f)	5/8-18 (m) retainer nut with 1/8 npt (f)	1/8" npt (f)	1/8" npt (f)*	240 volt electrically heated, 8 pin square connection. 200°F (95°C) max. operating temperature	243694, 243696 hot melt valves where operating temperature is less than 200°F	
	244908 (3)	3500 psi 238 bar	1/2" npt (f)	5/8-18 (m) retainer nut with 1/8 npt (f)	1/8" npt (f)	1/8" npt (f)*	120 volt electrically heated, 6 pin round connection. 400°F (204°C) max. operating temperature	C34068, 918483 hot melt valves	
	244909 (3)	3500 psi 238 bar	1/2" npt (f)	5/8-18 (m) retainer nut with 1/8 npt (f)	1/8" npt (f)	1/8" npt (f)*	240 volt electrically heated, 8 pin square connection. 400°F (204°C) max. operating temperature	243694, 243696 hot melt valves where operating temperature is between 200° and 400°F	
	245184 (4)	3500 psi 238 bar	1/2" npt (f)	1/2 npt (m)	1/8" npt (f)	1/8" npt (f)*	120 volt electrically heated, 6 pin round connection. 400°F (204°C) max. operating temperature	C34079 hot melt valves	
	244951 (4)	3500 psi 238 bar	1/2" npt (f)	1/2 npt (m)	1/8" npt (f)	1/8" npt (f)*	240 volt electrically heated, 8 pin square connection. 400°F (204°C) max. operating temperature	243695 hot melt valve	
	233670	4000 psi 276 bar	3/8" npt (f) on manifold	7/8-14 with tip nut	1/8" npt (f)	spring	Compact valve designed for streaming or spray applications. Ambient or temperature conditioned. 140°F (60°C) max. operating temperature	918623	308813
	965766	4000 psi 276 bar (5)	1/4" npt (f)	1/4" npt (f) or 3/4 - 16 flange	1/8" npt (f)	1/8" npt (f)	Snuff-back valve with SST body. Adjustable-opening needle for Precision Dispense	n/a	308876
	965786	4000 psi 276 bar (5)	1/4" npt (f)	1/4" npt (f) or 3/4 - 16 flange	1/8" npt (f)	1/8" npt (f)	Snuff-back valve with aluminum body. Adjustable-opening needle for precision dispense	n/a	
243482	4000 psi 276 bar (5)	1/4" npt (f)	1/4" npt (f) or 3/4 - 16 flange	1/8" npt (f)	1/8" npt (f)	Stainless steel wetted parts. 45° outlet, for use with Precision Swift orbiter. Non-adjusting needle.	n/a		
243666	4000 psi 276 bar (5)	1/4" npt (f)	1/4" npt (f) or 3/4 - 16 flange	1/8" npt (f)	1/8" npt (f)	Precision Flo control valve, machine mount applications. Non-adjusting needle.	n/a		



## Automatic Dispense Valve Selection Guide

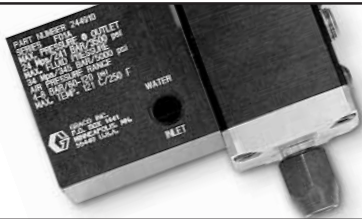
Valve Style	Part Number	Working Pressure	Fluid Inlet	Fluid Outlet	Air to Open	Air to Close (b)	Description	Replaces	Service Manual
High Pressure Dispense	918533*	4000 psi 276 bar	1/4" npt (f)	1/4"	1/8" npt (f)	1/8" npt (f)	Ball seat valve with multiple mounting options	n/a	310549
	918535*	4000 psi 276 bar	1/4" npt (f)	1/4" - 16 (m)	1/8" npt (f)	1/8" npt (f)	Snuff-back valve. Includes C04137 nozzle. Multiple mounting options	n/a	310549
	918537*	5000 psi 345 bar	1/2" npt (f)	1/2"	1/4" npt (f)	1/4" npt (f)	Ball seat valve. Mounts to 3/4" square bar.	n/a	310550
	918539*	5000 psi 345 bar	3/4" npt (f)	3/4"	1/4" npt (f)	1/4" npt (f)	Ball seat valve. Mounts to 1" square bar	n/a	310551
	918623*	3700 psi 255 bar	1/4" npt (f)	1/4"	1/8" npt (f)	1/8" npt (f)	Ball seat valve. Light weight (< 1 lb.). 275°F (135°C) maximum operating temperature.	n/a	310557
	918625*	3700 psi 255 bar	1/4" npt (f)	7/8 - 14	7/8" npt (f)	1/8" npt (f)	Ball seat valve. Accepts spray nozzle assembly and tip. 275°F (135°C) maximum operating temperature.	n/a	310557
	918512	3500 psi 241bar	1/2" npt (f)	1/8" or 3/4 - 16 (m)	1/8" npt (f)	1/8" npt (f)*	Snuff-back valve for ambient applications. Adaptable for streaming	n/a	310538
	918483	3500 psi 241bar	1/2" npt (f)	5/8" - 18 thread	1/8" npt (f)	1/8" npt (f)*	Snuff-back valve for warm melt and hot melt applications. 400°F (204°C) maximum operating temperatures. 120 VAC	n/a	310538
	C34068	3500 psi 241bar	1/2" npt (f)	1/8" or 3/4 - 16 (m)	1/8" npt (f)	1/8" npt (f)*	Ball-seat valve for hot melt applications. 400°F (204°C) maximum operating temperature. 120 VAC	with 6-pin round connector n/a	310538
	C34079	3500 psi 241bar	1/2" npt (f)	1/2 npt (m)	1/8" npt (f)	1/8" npt (f)*	Ball-seat valve for hot melt applications. 400°F (204°C) maximum operating temperature. 120 VAC with 6-pin round connector	n/a	310538
	243694	3500 psi 241bar	1/2" npt (f)	1/8" or 3/4 - 16 (m)	1/8" npt (f)	1/8" npt (f)*	Ball-seat valve for hot melt applications. 400°F (204°C) maximum operating temperature. 240 VAC with 8-pin square connector	n/a	310538
	243695	3500 psi 241bar	1/2" npt (f)	1/2 npt (m)	1/8" npt (f)	1/8" npt (f)*	Ball-seat valve for hot melt applications. 400°F (204°C) maximum operating temperature. 240 VAC with 8-pin square connector.	n/a	310538

## Automatic Dispense Valve Selection Guide

Valve Style	Part Number	Working Pressure	Fluid Inlet	Fluid Outlet	Air to Open	Air to Close (6)	Description	Replaces	Service Manual
Standard Duty	205435	3000 psi 210 bar	3/8" npt (m)	3/8" npt (m)	1/4" npsm (m)	spring Stainless steel	tip seal gun, includes tip and needle.	n/a	306715
	207440	3000 psi 210 bar	3/8" npt (m)	3/8" npt (m)	1/4" npsm (m)	spring	205435 with carbide ball and seat	n/a	306715
	205612	3000 psi 210 bar	3/8" npt (m)	3/8" npt (m)	1/4" npsm (m)	spring	205435 without tip and needle	n/a	306715
12000 Series	C27130	2400 psi 165 bar	1/4"	1/4" orifice	1/8" npt (f)	1/8" npt (f)	Snuff-back valve with EPDM seals	n/a	n/a
	C27134	2400 psi 165 bar	1/4"	1/4" orifice	1/8" npt (f)	1/8" npt (f)	Snuff-back valve with Viton seals	n/a	n/a
	C27151	2400 psi 165 bar	1/4"	1/4" or flange	1/8" npt (f)	spring	Base seal valve	n/a	n/a
	C27340	2400 psi 165 bar	1/4"	1/4" or flange	1/8" npt (f)	1/8" npt (f)	Larger inlet	n/a	n/a
	C27142	2400 psi 165 bar	1/4"	.093 in orifice	1/8" npt (f)	spring	Tip seal gun, includes nozzle	n/a	n/a

**Notes:**

- (1) EnDure and AutoPlus valves are used with mounting manifold, which includes all fluid and electrical connections. Mounting manifold for AutoPlus valve is 244930. EnDure valves are shipped with mounting manifold. See Graco instruction manual 309376 for details.
- (2) Base valve (fluid and air section) for these models is 244535
- (3) Base valve for these models is 244907
- (4) Base valve for these models is 244937
- (5) Maximum outlet pressure for Ultra-Lite valves is 2000 psi. Using above these pressures could cause premature needle/seat failure. See Graco manual 308876.
- (6) Valves marked with \* in this column have redundant spring closure. If air supply is lost valve will close.



# EnDure Valves

## Automatic Dispense Valves

2

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

### Features and Benefits

- Dual Seal design means that 2 seals need to fail before leakage occurs
- Primary seal is harder than typical snuff-back valve for use with abrasive materials
- Snuff-back style for non-drip performance and less rework
- Air operated with spring-assisted closing means no leakage if air supply is lost
- Manifold mounted for easy repositioning after service

### Typical Applications

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

### Typical Fluids Handled

- PVC
- Epoxy
- Silicone
- Anti-Flutter Mastic



244910  
EnDure Automatic  
Dispense Valve

# EnDure Valves

## Automatic Dispense Valves

### Technical Data

Maximum working fluid pressure	3500 psi (241 bar; 24.1 MPa)
Maximum static fluid pressure	5000 psi (345 bar; 34.5 MPa)
Maximum working dry air pressure	120 psi (8.3 bar; 0.83 MPa)
Maximum working temperature: standard seals in models 244535, 244910, 244961, 244962	200°F (95°C)
high-temp. seals in models 244907, 244908, 244909, 244937, 244951, 245184	400°F (204°C)
Material inlet on inlet manifold:	1/2 npt(f)
Air inlets (open and closed)	1/8 npt
Weight (automatic dispense valve plus manifold)	.4 lb (1.8kg)

### 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.
- 245195** Repair kit: includes standard duty seals, needle, and seat.
- 245196** Repair kit for high temperature (400°F) valves: includes high temperature seals, needles, and seat.





# AutoPlus™ Valves

For Sealant Streaming, Spray and Extrusion Applications

2

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



288554  
AutoPlus  
Dispense Valve



# AutoPlus Valves

## For Sealant Streaming, Spray and Extrusion Applications

### Technical Specifications

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

### Ordering Information

#### Airless Spray Gun

288554 AutoPlus Gun

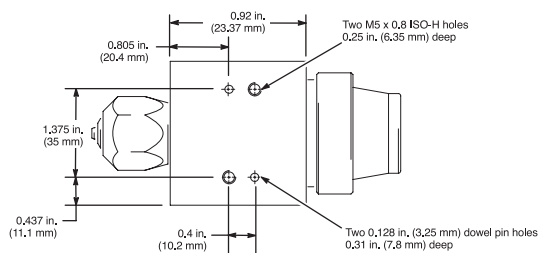
#### Manifolds (required for gun installation)

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

#### Accessories and Repair Kits

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

### Dimensions



### Sealer Application Tip Selection

For Model 233670 with Tip Nut 198391

#### Spray Tips

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

#### Streaming Tips

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

#### Shower Tips

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



# Automatic Dispense Valves

## 2

### Features and Benefits

- Automatic valves use ball needle/seat design or snuff-back design
- Available in a variety of sizes and pressure ranges to fit your application requirements
- Double acting valves provide fast cycling and positive shut-off
- Spring-close valves will shut if air pressure is lost
- Snuff-back valves prevent dripping by pulling material back into tip

### Typical Applications

- Structural bonding
- Anti-flutter mastic
- Glass bonding
- Interior/exterior seam sealing
- Underbody/rocker spray coating
- Robot or pedestal mount

### Typical Fluids Handled

- Epoxy
- PVC
- Urethane
- Sealants
- Structural adhesives



918539  
Automatic Dispense Valve

# Automatic Dispense Valves

## Ordering Information | Technical Specifications

### 918533 - Ambient Extrusion Valve, 1/4 npt(f)

**Typical Application: Extruding sealer; anti-flutter mastic**

The round body design of this valve allows multiple mounting options for robotic and automated applications. This valve accepts a yoke style bracket or 3/8 in (10 mm) diameter rod. 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 wide variety of threaded extrusion nozzles.

- Maximum working pressure . . . . 4000 psi (276 bar; 27.6 MPa)
  - Material inlet . . . . . 1/4 npt(f)
  - Air inlet . . . . . 1/8 npt
  - Wetted parts . . . . . SST, aluminum, Viton®
  - Repair kit . . . . . 918534
  - Instruction manual . . . . . 310549
- Viton® is a registered trademark of Du Pont.



918533

### 918535 - Ambient Snuff Back Extrusion Valve

**Typical Application: Extruding sealer; anti-flutter mastic**

The round body design of this valve allows multiple mounting options for robotic and automated applications. This valve accepts a yoke style bracket or 3/8 in (10 mm) diameter rod. 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 wide variety of threaded extrusion nozzles.

- Maximum working pressure . . . . 4000 psi (276 bar; 27.6 MPa)
- Maximum air inlet pressure . . . . 150 psi (10.4 bar; 1.04 MPa)
- Fluid inlet size . . . . . 1/4 npt(f)
- Fluid outlet size . . . . . 3/4-16 (m)
- Air cylinder ports . . . . . (2) 1/8 npt(f)
- Weight . . . . . 1.5 lbs (0.68 kg)
- Temperature . . . . . 140°F (60°C)
- Dimensions . . . . . 5.19 in x 2.2 in (132 mm x 56 mm)
- Depth . . . . . Round
- Wetted parts . . . . . CS, aluminum, polymite, Viton
- Mounting . . . . . (3) #10-24 holes (1) 3/8 in (9.5 mm) diameter rod
- Instruction Manual . . . . . 310549



918535



# Automatic Dispense Valves

## Ordering Information | Technical Specifications

### 918537 - Automatic Dispense Valve, 1/2 npt(f)

**Typical Application:** Dispense valve for automatic depressurization

The body of this fluid valve is slotted to mount to a 3/4 in (19 mm) square bar using two 1/4 in (6.4 mm) socket head screws. The valve's large porting design allows high flow rate of viscous materials such as PVC sealers and heat cure epoxy.

Maximum working pressure . . . . .	5000 psi (345 bar; 34.5 MPa)
Material inlet . . . . .	1/2 npt(f)
Air inlet . . . . .	1/4 npt
Wetted parts . . . . .	.SST, aluminum, Viton
Repair kit . . . . .	918538
Instruction manual . . . . .	310550



918537

### 918539 - Automatic Dispense Valve, 3/4 npt(f)

**Typical Application:** Applying urethane sealant to glass

The body of this fluid valve is slotted to mount to a 1 in (25 mm) square bar using two 5/16 in (7.9 mm) socket head screws. The valve's large porting design allows high flow rates of high viscosity materials such as urethane sealant.

Maximum working pressure . . . . .	5000 psi (345 bar; 34.5 MPa)
Material inlet . . . . .	3/4 npt(f)
Air inlet . . . . .	1/4 npt
Wetted parts . . . . .	stainless steel, aluminum, Viton
Repair kit . . . . .	918540
Instruction manual . . . . .	310551



918539

### 918623 - Automatic Extrusion Valve, 1/4 npt(f) outlet

**Typical Application:** Extruding sealer; anti-flutter mastic

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 wide variety of threaded extrusion nozzles.

Maximum working pressure . . . . .	3700 psi (255 bar; 25.5 MPa)
Maximum air inlet pressure . . . . .	150 psi (10.3 bar; 1.03 MPa)
Maximum operating temperature . . . . .	275°F (135°C)
Fluid inlet size . . . . .	1/4 npt(f)
Fluid outlet size . . . . .	1/4 npt(f)
Air inlet size (2 ports) . . . . .	1/8 npt(f)
Weight . . . . .	0.92 lbs (0.42 kg)
Wetted parts . . . . .	Aluminum, carbon steel, tungsten carbide, chrome plate, Viton rubber, thermoplastic polyester
Repair kit . . . . .	918624
Instruction manual . . . . .	310557



918623

# Automatic Dispense Valves

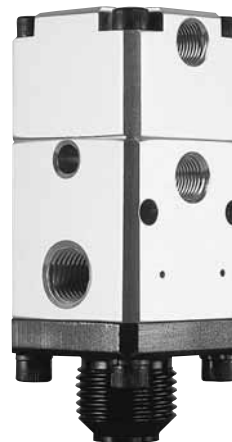
## Ordering Information | Technical Specifications

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

**Typical Application:**  
**Streaming or spraying coating materials**

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

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



918625

**918512**  
**Ambient Snuff Back Extrude/Streaming Valve**

**Typical Application: Streaming adhesives**

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

- Maximum working pressure . . . . . 3000 psi (207 bar; 20.7 MPa)
- Maximum air inlet pressure . . . . . 150 psi (10.4 bar; 1.04 MPa)
- Fluid inlet size . . . . . 1/2 npt(f)
- Fluid outlet size . . . . . 1/8 npt(f) and 3/4-16 (m)
- Air cylinder ports . . . . . (2) 1/8 npt(f)
- Weight . . . . . 4 lbs (1.8 kg)
- Temperature . . . . . 140°F (60°C)
- Fail-safe spring . . . . . Yes
- Dimensions . . . . . 6.3 in x 1.75 in x 2 in  
 (160 mm x 44 mm x 51 mm)
- Wetted parts . . . . . SST, aluminum, UHMWPE, Viton®, Brass, Hytrel
- Mounting . . . . . (2) 1/4-20 holes
- Instruction Manual . . . . . 31054



918512

# Automatic Dispense Valves

## Ordering Information | Technical Specifications

918483

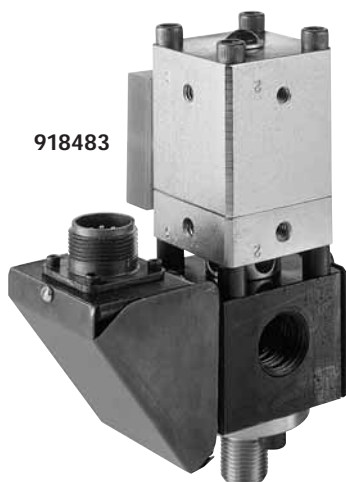
### Heated Snuff Back Extrude/Stream Dispense Valve

**Typical Application: Extruding and streaming heated adhesives**

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

2

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, Viton®, Brass
Mounting	(2) 1/4-20 holes
Sensor	100 ohm, RTD
Heater	150 watt, 120 volt
Instruction Manual	310538



918483

# Automatic Dispense Valves

## Ordering Information | Technical Specifications

### Standard-Duty Dispense Valves

Maximum working pressure: 3000 psi (210 bar; 21.0 MPa).  
 Orifice tip: 1/8 in (3.1 mm). Other tips available from 1/16 to 1/3 in (1.5 to 8.4 mm). Fluid inlet: 3/8 npt(m). Optional fluid inlet (plugged): 1/4 npt(f). Air inlet: 1/4 npsm(m). Fluid outlet: 3/8 npt(m). Includes 0.125 in (3.1 mm) tip and needle.  
 Instruction Manual: 306715.

- 205435** Air controlled. 400 Series SST wetted parts. For use with non-abrasive material.
- 207440** Same as 205435 except with Tungsten carbide ball and valve. For use with abrasive material.
- 205612** Same as 205435 less tip and needle.

### Packings

- 181524** UHMWPE packings for 205435 and 205612
- 164116** Leather packings for 205435 or 205612  
 Choose either (2) 181524 and (1) 164116 (standard) or (3) 164116
- 181520** UHMWPE packings for 207440
- 166250** Leather packings for 207440  
 Choose either (2) 181523 and (1) 166258 or (3) 116258  
 Needle/Seat Sets for 205435 and 205612

### Needle/Seat Options

Size	Seat	Needle
0.062 in	164746	181525
0.125 in	164747	181525
0.187 in	164748	181526
0.250 in	164749	181526
0.312 in	164750	181526

### Ordering Information

#### 12000 Series Base Seal Dispensing Valves

Maximum working pressure : 2400 psi  
 Inlet: 1/4 npt except where noted  
 Outlet: See table

#### Nozzle not included

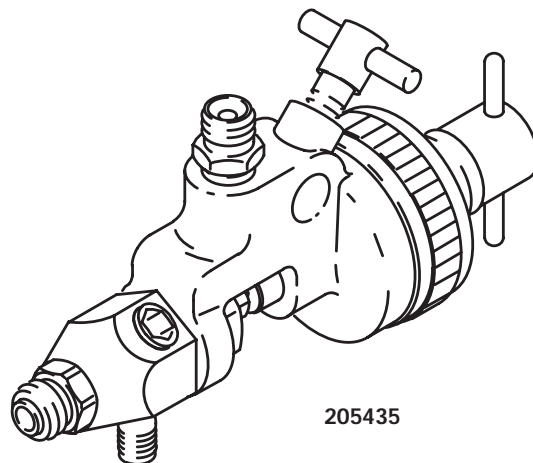
- C27151** Single, Air-Actuated Valve
- C27146** Seal Repair Kit
- C27340** Double, Air-Operated Valve  
 Material inlet: 1/2 in (12.6 mm)
- C27342** Seal Repair Kit

#### Nozzle included

- C27142** Single, Air-Actuated Valve  
 Orifice nozzle: 0.093 in
- C27146** Seal Repair Kit

#### Nozzle Mounted Gun for Automation

- C27130** Double, Air-Operated Valve  
 Orifice nozzle: 0.25 in EP seals, snuff back
- C27131** Seal Repair Kit
- C27134** Same as C27-130 except with Viton seals.
- C27133** Seal Repair Kit



# Accessories

## For Automatic Valves

### Accessories

**C20023 Mounting Bolt**  
7/16-20 x 3/4 long

**Nozzles** See Manual Applicator Accessory Section

**513468 Foot Switch**  
Four way air valve, foot-actuated, safety-guarded.  
Air inlet: 1/4 npt(f).  
Normally open outlet: 1/4 npt(f).  
Normally closed outlet: 1/4 npt(f).

**104658 Quick Exhaust Valve**  
Optimizes no drip shut-off. Inlet 10-32 unf. Outlet 10-32 un(m).

#### Solenoids Kits

These kits are used to allow double-acting automatic valves to be opened using a remote signal, e.g., from a robot or X-Y table.

**C58942 120 VAC**  
Includes air tubes, fittings and muffler.

**C59038 24 VAC Solenoid Kit**

**243703 240 VAC Solenoid Kit**

2





# DDV

## Diaphragm Dispense Valve

### Features and Benefits

- Reverse-acting design provides no-drip shut-off
- Diaphragm rear seal allows for completely leak-free operation
- Compact size makes the unit adaptable for installation in even the most confined areas, or ganging of multiple valves

### Typical Applications

- Apply moisture cure materials precisely
- Electrical potting applications
- Product assembly
- Encapsulation

### Typical Fluids Handled

- Adhesives
- Potting compounds
- Encapsulants
- Sealants
- Plastics
- Lubricants
- Greases



692022  
Diaphragm Dispense Valve

# 2

# DDV

## Diaphragm Dispense Valve

### Technical Specifications

Max. fluid inlet pressure . . . . . 1000 psi (7 MPa, 70 bar)  
 Max. air inlet pressure . . . . . 120 psi (0.8 MPa, 8 bar)  
 Min. air inlet pressure . . . . . 60 psi (0.4 MPa, 4 bar)  
 Fluid inlet . . . . . 1/4 npt(f)  
 Air inlets (requires 4 way air valve) . . . . . (2) 10-32 un(f)  
 Dimensions . . . . . 3.11 in L x 1.38 in W x 1.38 in D  
 (80 mm L x 35 mm W x 35 mm D)  
 Weight . . . . . 14 oz (0.4 kg)  
 Mounting . . . . . (2) 0.27 in (7 mm) diameter thru holes  
 Wetted parts . . . . . 300 Series SST, 18-8 SST, PTFE



### Ordering Information

692022 Diaphragm Dispense Valve

### Accessories

- 104658 **Quick Exhaust Valve**  
 Optimizes no-drip shut-off feature.  
 Inlet: 10-32 un(f). Outlet: 10-32 un(m).
- 513468 **Foot Switch**  
 Four way air valve, foot-actuated, safety-guarded.  
 Air inlet: 1/4 npt(f).  
 Normally open outlet: 1/4 npt(f).  
 Normally closed outlet: 1/4 npt(f).



# AMV

## Automatic Metering Valve

AMV provides accurate dispensing on a repetitive basis. Shot size range is 0.2 - 4.0 cc.

### Features and Benefits

- Air-operated, single-acting metered shot valve
- Dispenses up to 60 shots per minute or more
- Change shot size quickly and easily
- Special snuffer action prevents dripping
- Numerous models to select from

### Typical Applications

- Dispensing of adhesives and other fluids where a precise amount needs to be deposited

### Typical Fluids Handled

- Urethanes
- Epoxies
- Silicones



C02-026 shown  
Nozzle (C08064)  
not included

2

# AMV

## Automatic Metering Valve

2

### Technical Specifications

Maximum operating	
fluid pressure	3200 psi (220 bar; 22.0 MPa)
Minimum operating	
fluid pressure	50 psi (3.4 bar; 0.34 MPa)
Material inlet	1/4 npt(f)
Air supply inlet	1/8 npt(f)
Material outlet	
Most models	1/8 npt(f)
Model 482-E and 482-DA	1/4 npt(f)
Mounting hold	7/16 - 20 unf-2B
Minimum air supply pressure	50 psi (3.4 bar; 0.34 MPa)
Shot size	0.2 cc to 4 cc per shot
Manual number	310543

### Ordering Information

- C02021 AMV Model 482-B**  
7/8-18 nef externally threaded material inlet  
boss and 7/16-20 unf mounting hole
- C02022 AMV Model 482-C**  
7/16-20 unf mounting hole only
- C02025 AMV Model 482-E**  
Model 482-C with 1/4 npt(f) fluid outlet
- C02026 AMV Model 482-HA**  
Model 482-C with trigger-actuated  
pistol grip handle
- C02027 AMV Model 482-MS**  
Model 482-B with seal fluid reservoir  
and 7/16-20 mounting bolt for moisture  
sensitive fluids
- C02078 AMV Model 482-DA**  
Model 482-C with double-acting (air-open,  
air-close) air cylinder and 1/4 npt(f) outlet

### Repair Kits

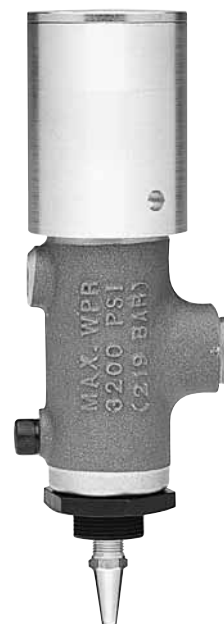
- C02023 Seal Repair Kit for all models except C02078**
- C02080 Seal Repair Kit for C02078**

### 3 Piece Matched Needle Sets

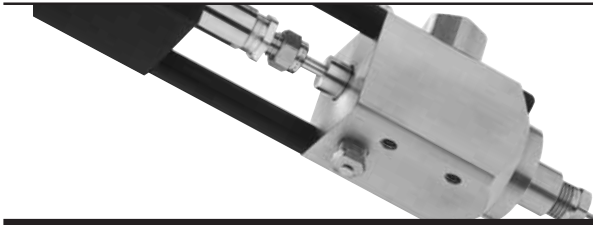
- C02036** Fits C02021, C02022, C02025, C02026,  
C02027, C02078



**C02-022**  
**Model 482-C**  
Nozzle not included



**C02078**  
**Model 482-DA**  
Nozzle not included



# MMV

## Micro Metering Valve

MMV is used for accurate shot metering during small parts assembly and encapsulation.

### Features and Benefits

- Positive displacement design provides high accuracy and repeatability, regardless of viscosity and fluid inlet pressure variations
- Threaded stroke limiter on the back of the air cylinder makes shot size easily adjustable
- Simple, all-pneumatic operation
- Minimal retained volume in dispense chamber assures fluid inventory exchange

### Typical Applications

- Apply beads and drops for assembly applications
- Electrical potting and encapsulation

### Typical Fluids Handled

- Adhesives
- Potting compounds
- Encapsulants
- Sealants
- Plastisols
- Lubricants



2

# MMV

## Micro Metering Valve

### Technical Specifications

Max. fluid inlet pressure	100 psi (7 bar; 0.7 MPa)
Max. air inlet pressure	100 psi (7 bar; 0.7 MPa)
Fluid inlet	3/8 npt(f)
Fluid outlet	1/4 npt(f)
Air inlets (requires 4 way air valve)	(2) 1/8 npt(f)
Dimensions	9.25 in L x 1.75 in W x 2.9 in D (235 mm L x 44.5 mm W x 73.7 mm D)
Weight	2.9 lbs (1.32 kg)
Mounting	(2) 1/4-20 UNC threaded, 5 in (12.5 mm) deep

2

### Ordering Information

<b>692-125</b>	<b>MMV 125</b> Shot range: 0.025-0.201 cc
<b>692-250</b>	<b>MMV 250</b> Shot range: 0.100-0.804 cc
<b>692-500</b>	<b>MMV 500</b> Shot range: 0.400-3.21 cc



# PrecisionSwirl

## Orbital Applicator Module

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

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

PrecisionSwirl  
Control Panel



PrecisionSwirl  
Applicator



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

2



1K Ultra-Lite  
dispense valve\*



EnDure dispense valve\*

\* Dispense valves not included. See ordering information on page 121.

# PrecisionSwirl

## Orbital Applicator Module

### Technical Specifications

#### Control Panel

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

2

#### Swirl Orbital Applicator

Input power	proprietary PWM voltage to the motor, less than 24V
Motor torque	1.5 oz.-inches
Maximum motor speed	24,000 rpm
Maximum operating pressure	3500 psi (241 bar; 24.1 MPa)
Fluid inlet	3/4-16 37° JIC female swivel
Nozzle attachment	#10-32 proprietary connection
Wetted parts	stainless steel, nickel alloy, brazing alloy, epoxy, EPDM rubber
Noise level	sound pressure level – 67 dBA
Weight	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 (4 ports) 1/8 npt	(2 ports) 1/4 npt
Wetted parts	stainless steel, aluminum, UHMWPE, Viton®, black oxide coated CS, Hytrel elastomer
Maximum temperature rating	60°C (140°F)
Weight	2 kg (4.4 lbs) approximately
Instruction manuals	
PrecisionSwirl	310554
Temperature Conditioned Dispense Valve	310539

Viton® is a registered trademark of DuPont.



# PrecisionSwirl Orbital Applicator Module

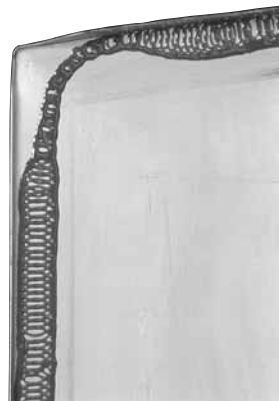
## PrecisionSwirl Applications

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

Note: these are just a few of the many applications that can be accomplished with PrecisionSwirl.



Consistent width



Swirl pattern narrowing in the corner

2

### SWIRL PATTERNS



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



Narrow Pattern

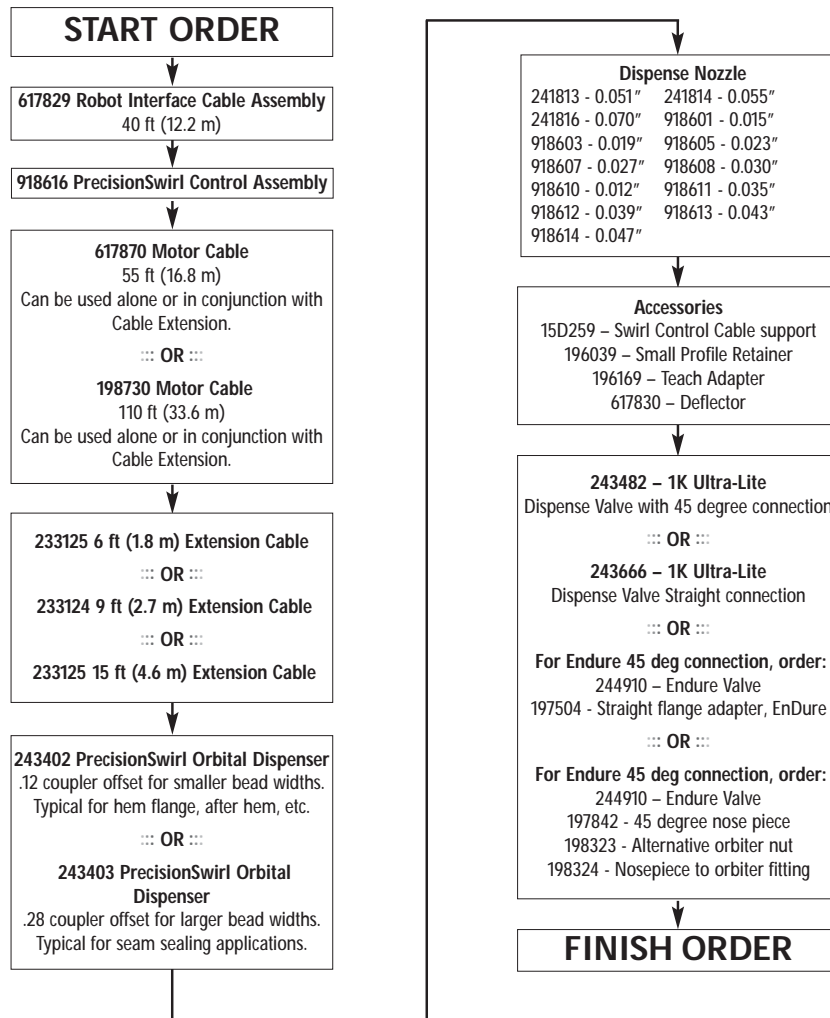


Wide Pattern

# PrecisionSwirl Orbital Applicator Module

## Ordering Information

2



# PrecisionSwirl Orbital Applicator Module

## Ordering Information

- 241658 Orbital Applicator Module Kit (wide pattern)**  
Swirl orbiter (243403), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)
- 234029 Orbital Applicator Module (narrow pattern)**  
Swirl orbiter (243402), motor cable (617870), extension motor cable (233123), control panel (918616) and Robot Interface Cable Assembly (617829)

## Accessories

### Swirl Dispense Tips

Part No.	Size	Part No.	Size
918610	0.012	918611	0.035
918601	0.015	918612	0.039
918603	0.019	918613	0.043
918605	0.023	918614	0.047
918607	0.027	241813	0.051
918608	0.031	241814	0.055
		241816	0.070

### Dispense Valves

- 243666** 1K Ultra-Lite Dispense Valve, straight  
For 1K Ultra-Lite straight connection
- 243482** 1K Ultra-Lite Dispense Valve, 45 deg  
For 1K Ultra-Lite 45 deg connection
- 244910** Endure (ambient or water conditioned)  
For Endure straight connection
- 197504** Straight flange adapter, EnDure  
For Endure straight connection

For Endure 45 deg connection, order:

- 244910** Endure (ambient or water conditioned)
- 198323** Alternative orbiter nut
- 197842** 45 deg nose piece
- 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 narrow pattern coupler (0.028 in [0.7 mm])

### Motor Extension Cable

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

### Motor Cable

- 617870 Motor Cable, 55 ft (16.8 m)**  
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.
- 198730 Motor Cable, 110 ft (33.6 m)**  
Connects PrecisionSwirl control panel to extension cable or directly to orbital applicator.

### Controller

- 918616 PrecisionSwirl Control Assembly**  
Bare model only. Order appropriate cables to connect to dispenser.
- 617829 Robot Interface Cable, 40 ft (12.2 m)**  
Connects PrecisionSwirl control panel to robot control panel. Accepts a 0-10 volt signal to adjust RPM.

### Swirl Dispenser Accessories

- 617830 Deflector**
- 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.

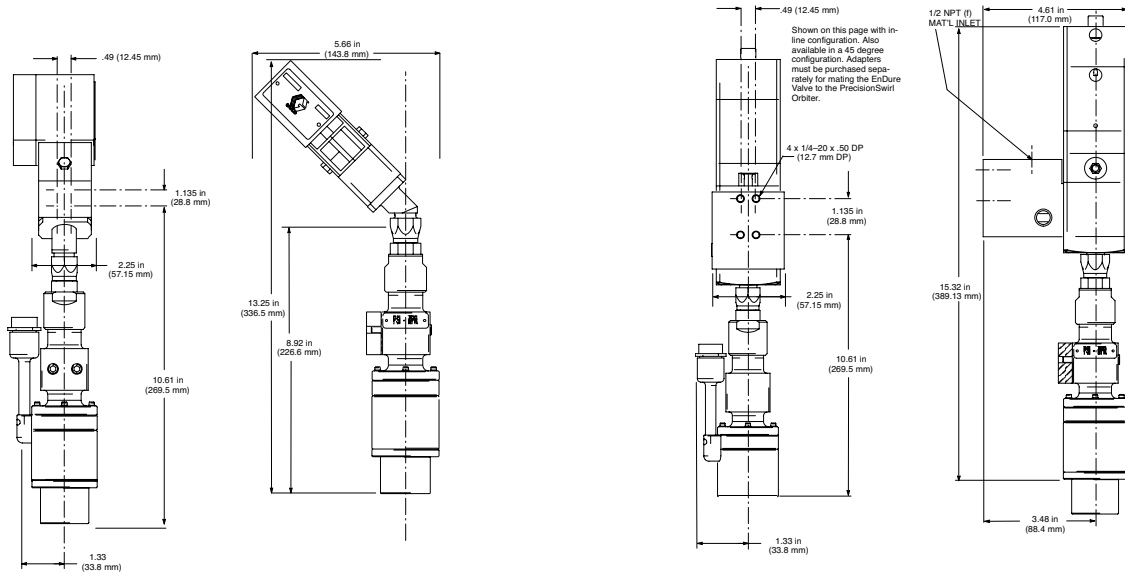
### Repair Kits

- 241479 Swirl Motor Assembly**  
Order bearing and coupler separately
- 918620 Swirl Tube**
- 241569 Tool Kit**  
Includes various tools required for servicing the Swirl applicator and tube bearing.
- 241466 Tube Bearing Coupler Assembly**  
Wide pattern tool kit (241569) required for replacement.
- 243256 Tube Bearing Coupler Assembly**  
Narrow pattern tool kit (243256) 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 – Viton
- 246290 Bellows Seal Kit**  
Qty: 12 – Viton

# PrecisionSwirl Orbital Applicator Module

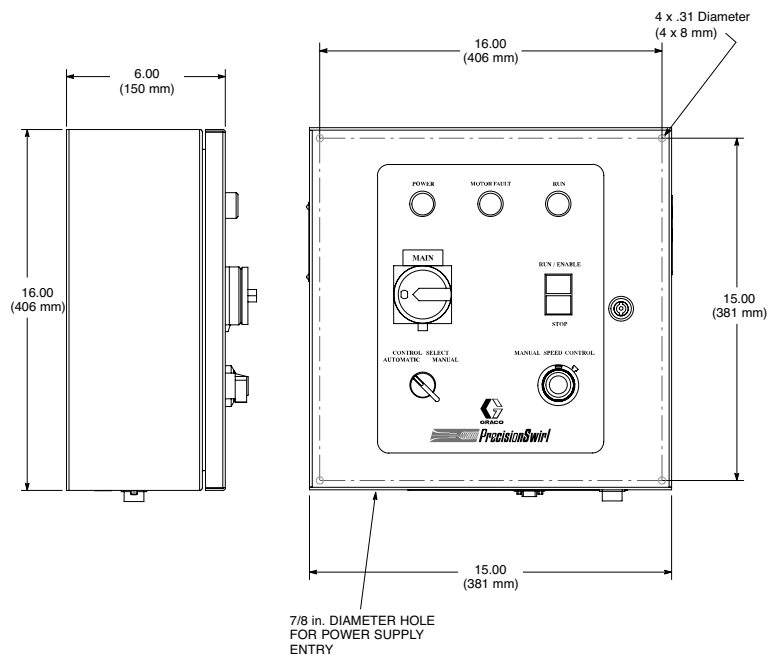
## PrecisionSwirl Dimension Drawing

2



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

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



918616  
PrecisionSwirl Control Assembly

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# Table of Contents

## Accessories, Single Component

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<b>SECTION 3: ACCESSORIES, SINGLE COMPONENT</b>	<b>123-136</b>
Regulators .....	124-129
Compensators .....	130-131
Hoses .....	132-136



# Regulators

## Features and Benefits

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

## Typical Applications

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

## Application Methods

- Extrude
- Stream
- Spray
- Shower
- Swirl

## Typical Fluids Handled

- Silicone
- PVC
- Epoxy



**961635**  
Ambient Mastic  
Regulator



**918447**  
Heated Mastic  
Regulator

# Regulators

## Technical Data

### Stainless Steel, Waterbase-Compatible, High Pressure Fluid Regulators

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

3

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

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

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

# Regulators

## Technical Data

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

	<b>Models: 961635, C58318, 244740</b>	<b>Models: 243700, C07220, 918447</b>	<b>Models: 246642, 246687</b>	<b>Models: 246643, 246688</b>	<b>Model: 903958</b>
Type	ambient, air-operated	246700 & 918447: temperature conditioned/heated, air-operated C07220: ambient, air-operated	ambient, air-operated	temperature conditioned/heated, air-operated	ambient, spring-operated high range
Regulated fluid pressure range	250 – 4500 psi (1.7 – 31.0 Mpa, 17 – 310 bar)	250 – 3500 psi (1.7 – 24.1 Mpa, 17 – 241 bar)	100 – 4500 psi (0.7 – 31.0 Mpa, 7 – 310 bar)	100 – 3500 psi (0.7 – 24.1 Mpa, 7 – 241 bar)	High range (standard): 1000 to 4500 psi (70 to 310 bar) with low range spring kit: 400 to 1000 psi (28 to 70bar)
Maximum fluid inlet pressure	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)	5000 psi (34.4 MPa, 344 bar)
Maximum fluid temperature	140° F (60° C)	400° F (202° C)	140° F (60° C)	400° F (202° C)	140° F (60° C)
Pressure drop (at 400 psi inlet pressure and 1.5 gpm)	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID	Viscosity of 25,000 CPS, 10 PSID Viscosity of 80,000 CPS, 10 PSID
Wetted parts	961635, 244740 – zinc-plated carbon steel, brass, stainless steel, Viton, tungsten carbide C58318: 303, 304, 316 stainless steel, tungsten carbide, UHMWPE, ethylene propylene, PTFE	zinc-plated carbon steel, brass, stainless steel, Viton, tungsten carbide	zinc-plated carbon steel, brass, stainless steel, Buna-N, urethane tungsten carbide	zinc-plated carbon steel, brass, stainless steel, Viton, tungsten carbide	zinc-plated carbon steel, brass, stainless steel, Buna-N, urethane tungsten carbide
Inlet (one)	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side	3/4 npt (f) at side
Outlet	3/4 npt (f) at side and bottom	3/4 npt (f) at side and bottom	3/4 npt (f) at side only	3/4 npt (f) at side only	3/4 npt (f) at side and bottom
Weight	17.75 lb (7.9 kg)	17.75 lb (7.9 kg)	17.75 lb (7.9 kg)	17.75 lb (7.9 kg)	13.5 lb (6.1)
Instruction Manual	307517	307517	307517	307517	307517

3

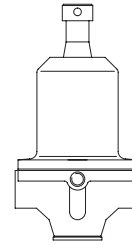


# Regulators

## Technical Data

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

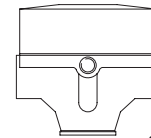
	Model: 234273		Model: 234263	
Inlet/Outlet	3/8 npt(f)	3/8 npt(f)	3/8 npt(f)	3/8 npt(f)
Gauge Port	1/8 BSPP		1/8 BSPP	
Max Inbound Fluid	580/40/4		580/40/4	
Regulated Pressure	14.5-145/1-10/0.1-1		14.5-290/1-20/0.1-2	
Max Delivery	7/27		7/27	
Wetted Parts	SST, Viton, Carbide Valve		SST, Viton, Carbide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



234273  
234263

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

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



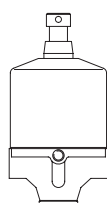
234272  
234256

# Regulators

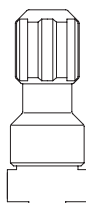
## Technical Data

### Mechanically Adjustable Fluid Regulators, High Pressure

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



234267

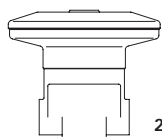


234260  
234264  
234265

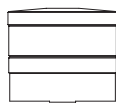
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### Pneumatically Adjustable Fluid Regulators, High Pressure

	Model: 234266		Model: 234270		Model: 234259		Model: 234271	
Inlet/Outlet	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)
Gauge Port	1/4 BSPP		1/4 BSPP		-	1/4 BSPP		-
Max Inbound Fluid psi/bar/MPa	5221/360/36		5221/360/36		5221/360/36		5221/360/36	
Regulated Pressure psi/bar/MPa	72-870/5-60/0.5-6		280-2175/20-150/0.2-15		580-3625/40-250/4-25		580-4640/40-320/0.4-32	
Max Delivery gpm/lpm	11/42		11/42		11/42		12/45	
Wetted Parts	SST, Viton, Carbide Valve Acetal		SST, Viton, Carbide Valve Acetal		SST, Viton, Carbide Valve		SST, Viton, Carbide Valve Acetal	
Instruction Manual	309475		309475		309475		309475	



234266



234259

# Regulators

## Ordering Information

### Air-Operated Ambient Carbon Steel and Stainless Steel Regulators

- 238894** 3/8 npt(f) Ported Regulator with Stainless Steel Body  
Regulated pressure 500 to 4000 psi (34 to 276 bar;  
3.4 to 27.6 MPa). Includes fluid regulator gauge.
- 238893** Same as 238894 with EZ Flush Plug (238896) instead  
of fluid gauge.
- 244734** Same as 238893 with 1/2 npt(f) inlet and outlet.  
Includes ports for pressure sensors.
- 961635** 3/4 npt(f) Ported Regulator with Carbon Steel Body  
Regulated pressure 500 to 4500 psi (34 to 310 bar;  
3.4 to 31 MPa). Includes fluid pressure gauge  
(102814).
- C58318** Same as 961635 with stainless steel body.
- 244740** 3/4 npt(f) regulator with SST body and parts for pres-  
sure 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 wash-  
ers, (2) 100307 3/8 in. nuts and C20458 U-Bolt.



# Compensators

## Heated and Ambient

Pressure compensating valves are designed to operate in conjunction with the displacement pump to eliminate material flow variances caused by piston pump changeover and unbalanced lowers.

### Features and Benefits

- **Bead Control** - Graco pressure compensating valves provide consistent bead control even during stall-out conditions, which helps eliminate the initial surge of material at the point of dispense.
- **Viscosity Flexibility** - Graco pressure compensating valves are available in two pressure ratio ranges (23:1 and 51:1), satisfying a wide range of medium-to-high viscosity material applications.
- **Rugged Reliability** - Key wear points are hard chrome coated for maximum useful life. A good choice for abrasive materials.
- **Ambient and heated models available.**

### Typical Applications

- Automated Bead Dispense

### Typical Fluids Handled

- Silicone
- Butyl Mastics
- Urethanes



243206

# Compensators

## Heated and Ambient

### Technical Specifications

Mounting	73 in. (1850 mm)
Fluid inlet	1 npt(f)
Maximum fluid inlet pressure	5000 psi (340 bar; 34.0 MPa)
Maximum recommended pressure drop	300 psi (21 bar; 2.1 MPa)
Fluid outlet	1 npt(f)
Air inlets	1/4 npt(f)
Maximum air inlet pressure	100 psi (7 bar; 0.7 MPa)
Fluid Repair Kit	.233082
Instruction Manual	.309133

### Ordering Information

All models include mounting brackets and regulators  
Ambient Pressure Compensating Valve

<b>243655</b>	23:1 Ambient
<b>243654</b>	51:1 Ambient

#### Heated Pressure Compensating Valve

Includes 400W Heater and 6-pin electrical connector

<b>243658</b>	23:1 Heated 120V
<b>243206</b>	51:1 Heated 120V

Includes 400W Heater and 8-pin electrical connector

<b>243656</b>	23:1 Heated 240V
<b>243657</b>	51:1 Heated 240V

### Accessories

- 233082** Repair kit for all compensating valves ordered after March, 2000
- 243464** Upgrade kit for 19:1 compensating valves ordered before March, 2000
- 115982** 3 oz. (0.09 liter) grease cartridge
- 551189** Grease gun (for flushing grease out of the packing area)
- 244021** **Connector Accessory Kit**  
Mates Graco compensator to non-Graco heat control.  
Note: Control-end connector is provided by and wired by customer.

## Ram Pump Accessories – Hoses

Part Number	Pressure psi (MPa, bar)	Material	ID inches (mm)	Length feet (m)	Coupling
<b>Buna-N</b>					
115042	2000 (13.8, 138)	Buna-N	1 (25)	6 (1.8)	1M
218986	2000 (13.8, 138)	Buna-N	1 (25)	50 (15.2)	1M
158743	2000 (13.8, 138)	Buna-N	0.5 (13)	6 (1.8)	3/8M
205753	2250 (15.5, 155)	Buna-N	0.375 (10)	40 (12.2)	3/8M
207831	2250 (15.5, 155)	Buna-N	0.375 (10)	50 (15.2)	3/8M
109105	2250 (15.5, 155)	Buna-N	0.75 (19)	6 (1.8)	3/4M
111010	2250 (15.5, 155)	Buna-N	0.75 (19)	10 (3)	3/4M
237865	2250 (15.5, 155)	Buna-N	0.75 (19)	75 (22.9)	1/2M
237866	2250 (15.5, 155)	Buna-N	0.75 (19)	50 (15.2)	1/2M
237867	2250 (15.5, 155)	Buna-N	0.75 (19)	65 (19.8)	1/2M
237863	2750 (19, 190)	Buna-N	0.625 (16)	75 (22.9)	1/2M
109063	3000 (20.7, 207)	Buna-N	0.5 (13)	10 (3)	1/2M
110069	3000 (20.7, 207)	Buna-N	0.5 (13)	15 (4.6)	1/2M
194995	3000 (20.7, 207)	Buna-N	0.5 (13)	26 (7.9)	1/2M
220590	3000 (20.7, 207)	Buna-N	0.5 (13)	10 (3)	1/2M
220591	3000 (20.7, 207)	Buna-N	0.5 (13)	6 (1.8)	1/2M
220592	3000 (20.7, 207)	Buna-N	0.5 (13)	16 (4.9)	1/2M
220593	3000 (20.7, 207)	Buna-N	0.5 (13)	20 (6.1)	1/2M
220594	3000 (20.7, 207)	Buna-N	0.5 (13)	25 (7.6)	1/2M
220595	3000 (20.7, 207)	Buna-N	0.5 (13)	20 (6.1)	3/8M
220602	3000 (20.7, 207)	Buna-N	0.5 (13)	50 (15.2)	1/2M
220608	3000 (20.7, 207)	Buna-N	0.5 (13)	25 (7.6)	1/2M
221092	3000 (20.7, 207)	Buna-N	0.5 (13)	40 (12.2)	1/2M
221093	3000 (20.7, 207)	Buna-N	0.5 (13)	50 (15.2)	1/2M
237861	3000 (20.7, 207)	Buna-N	0.5 (13)	75 (22.9)	1/2M
237862	3000 (20.7, 207)	Buna-N	0.5 (13)	65 (19.8)	1/2M
218689	3100 (21.4, 214)	Buna-N	0.75 (19)	50 (15.2)	3/4M
214962	3500 (24.1, 241)	Buna-N	0.5 (13)	15 (4.6)	1/2M
214964	3500 (24.1, 241)	Buna-N	0.5 (13)	50 (15.2)	1/2M
109163	4000 (27.6, 276)	Buna-N	0.375 (10)	6 (1.8)	3/8M
109165	4000 (27.6, 276)	Buna-N	0.375 (10)	15 (4.6)	1/4M
109167	4000 (27.6, 276)	Buna-N	0.375 (10)	25 (7.6)	1/4M
109169	4000 (27.6, 276)	Buna-N	0.375 (10)	40 (12.2)	3/8M
109170	4000 (27.6, 276)	Buna-N	0.375 (10)	50 (15.2)	3/8M
C12383	5000 (34.5, 345)	Buna-N	1 (25)	10 (3)	1 M
51B352	5000 (34.5, 345)	Buna-N	1.25 (32)	15 (4.6)	1 1/4M
521973	5000 (34.5, 345)	Buna-N	1.25 (32)	10 (3)	1 1/4M
109150	5000 (34.5, 345)	Buna-N	0.25 (6)	6 (1.8)	1/4M
109151	5000 (34.5, 345)	Buna-N	0.25 (6)	12 (3.7)	1/4M
109152	5000 (34.5, 345)	Buna-N	0.25 (6)	15 (4.6)	1/4M
109153	5000 (34.5, 345)	Buna-N	0.25 (6)	20 (6.1)	3/8M
109154	5000 (34.5, 345)	Buna-N	0.25 (6)	25 (7.6)	1/4M
109156	5000 (34.5, 345)	Buna-N	0.25 (6)	35 (10.7)	3/8M
109157	5000 (34.5, 345)	Buna-N	0.25 (6)	40 (12.2)	3/8M

# Ram Pump Accessories – Hoses

Part Number	Pressure psi (MPa, bar)	Material	ID inches (mm)	Length feet (m)	Coupling
109158	5000 (34.5, 345)	Buna-N	0.25 (6)	50 (15.2)	3/8M
626720	5000 (34.5, 345)	Buna-N	0.5 (13)	5 (1.5)	1/2M
626721	5000 (34.5, 345)	Buna-N	0.5 (13)	10 (3)	1/2M
626722	5000 (34.5, 345)	Buna-N	0.5 (13)	25 (7.6)	1/2M
626723	5000 (34.5, 345)	Buna-N	0.5 (13)	6 (1.8)	1/2M
215238	5000 (34.5, 345)	Buna-N	0.75 (19)	10 (3)	3/4M
215239	5000 (34.5, 345)	Buna-N	0.75 (19)	15 (4.6)	3/4M
215240	5000 (34.5, 345)	Buna-N	0.75 (19)	25 (7.6)	3/4M
215241	5000 (34.5, 345)	Buna-N	0.75 (19)	6 (1.8)	3/4M
626724	5000 (34.5, 345)	Buna-N	0.75 (19)	10 (3)	3/4M
626725	5000 (34.5, 345)	Buna-N	0.75 (19)	15 (4.6)	3/4M
626726	5000 (34.5, 345)	Buna-N	0.75 (19)	25 (7.6)	3/4M
287887	5000 (34.5, 345)	Buna-N	1 (25)	10 (3)	1 npt
287888	5000 (34.5, 345)	Buna-N	1 (25)	15 (4.6)	1 npt
287889	5000 (34.5, 345)	Buna-N	1 (25)	20 (6.1)	1 npt
287890	5000 (34.5, 345)	Buna-N	1 (25)	25 (7.6)	1 npt
215441	5250 (36.2, 362)	Buna-N	0.5 (13)	10 (3)	1/2M
215443	5250 (36.2, 362)	Buna-N	0.5 (13)	25 (7.6)	1/2M
215444	5250 (36.2, 362)	Buna-N	0.5 (13)	50 (15.2)	1/2M
215445	5250 (36.2, 362)	Buna-N	0.5 (13)	5 (1.5)	1/2M
C12380	6015 (41.5, 415)	Buna-N	0.5 (13)	15 (4.6)	1/2M
<b>Neoprene</b>					
116762	3625 (25, 250)	Neoprene	.625 (16)	6 (1.8)	1 1/16F
116763	3625 (25, 250)	Neoprene	.625 (16)	10 (3)	1 1/16F
116760	4000 (27.6, 276)	Neoprene	0.5 (13)	6 (1.8)	7/8F
116761	4000 (27.6, 276)	Neoprene	0.5 (13)	10 (3)	7/8F
C12217	5000 (34.5, 345)	Neoprene	1 (25)	15 (4.6)	1 npt SS
C12218	5000 (34.5, 345)	Neoprene	1 (25)	20 (6.1)	1 npt SS
<b>Nylon</b>					
214697	3300 (22.8, 228)	Nylon	0.1875 (5)	50 (15.2)	1/4F
214698	3300 (22.8, 228)	Nylon	0.1875 (5)	25 (7.6)	1/4F
214699	3300 (22.8, 228)	Nylon	0.1875 (5)	6 (1.8)	1/4F
214981	3300 (22.8, 228)	Nylon	0.1875 (5)	15 (4.6)	1/4F
241812	3500 (24.1, 241)	Nylon	0.1875 (5)	25 (7.6)	1/4F
238712	4100 (28.3, 283)	Nylon	0.1875 (5)	24.6 (7.5)	1/4F
239107	4100 (28.3, 283)	Nylon	0.25 (6)	24.5 (7.5)	1/4F SS
239110	4100 (28.3, 283)	Nylon	0.25 (6)	32.8 (10)	1/4F SS
239111	4100 (28.3, 283)	Nylon	0.25 (6)	49.2 (15)	1/4F SS
H42503	4500 (31, 310)	Nylon	0.25 (6)	3 (0.9)	1/4F
H42506	4500 (31, 310)	Nylon	0.25 (6)	6 (1.8)	1/4F
H42510	4500 (31, 310)	Nylon	0.25 (6)	10 (3)	1/4F
H42525	4500 (31, 310)	Nylon	0.25 (6)	25 (7.6)	1/4F
H42550	4500 (31, 310)	Nylon	0.25 (6)	50 (15.2)	1/4F
H4251X	4500 (31, 310)	Nylon	0.25 (6)	100 (30.4)	1/4F
H43803	4500 (31, 310)	Nylon	0.375 (10)	3 (0.9)	3/8F

## Ram Pump Accessories – Hoses

Part Number	Pressure psi (MPa, bar)	Material	ID inches (mm)	Length feet (m)	Coupling
H43806	4500 (31, 310)	Nylon	0.375 (10)	6 (1.8)	3/8F
H43810	4500 (31, 310)	Nylon	0.375 (10)	10 (3)	3/8F
H43825	4500 (31, 310)	Nylon	0.375 (10)	25 (7.6)	3/8F
H43850	4500 (31, 310)	Nylon	0.375 (10)	50 (15.2)	3/8F
H4381X	4500 (31, 310)	Nylon	0.375 (10)	100 (30.4)	3/8F
H45010	4500 (31, 310)	Nylon	0.5 (13)	10 (3)	1/2F
H45025	4500 (31, 310)	Nylon	0.5 (13)	25 (7.6)	1/2F
H45050	4500 (31, 310)	Nylon	0.5 (13)	50 (15.2)	1/2F
H4501X	4500 (31, 310)	Nylon	0.5 (13)	100 (30.4)	1/2F
H52503	5600 (38.6, 386)	Nylon	0.25 (6)	3 (0.9)	1/4F
H52506	5600 (38.6, 386)	Nylon	0.25 (6)	6 (1.8)	1/4F
H52510	5600 (38.6, 386)	Nylon	0.25 (6)	10 (3)	1/4F
H52525	5600 (38.6, 386)	Nylon	0.25 (6)	25 (7.6)	1/4F
H52550	5600 (38.6, 386)	Nylon	0.25 (6)	50 (15.2)	1/4F
H5251X	5600 (38.6, 386)	Nylon	0.25 (6)	100 (30.4)	1/4F
H53803	5600 (38.6, 386)	Nylon	0.375 (10)	3 (0.9)	3/8F
H53806	5600 (38.6, 386)	Nylon	0.375 (10)	6 (1.8)	3/8F
H53810	5600 (38.6, 386)	Nylon	0.375 (10)	10 (3)	3/8F
H53825	5600 (38.6, 386)	Nylon	0.375 (10)	25 (7.6)	3/8F
H53850	5600 (38.6, 386)	Nylon	0.375 (10)	50 (15.2)	3/8F
H5381X	5600 (38.6, 386)	Nylon	0.375 (10)	100 (30.4)	3/8F
H55003	5600 (38.6, 386)	Nylon	0.5 (13)	3 (0.9)	1/2F
H55010	5600 (38.6, 386)	Nylon	0.5 (13)	10 (3)	1/2F
H55025	5600 (38.6, 386)	Nylon	0.5 (13)	25 (7.6)	1/2F
H55050	5600 (38.6, 386)	Nylon	0.5 (13)	50 (15.2)	1/2F
H5501X	5600 (38.6, 386)	Nylon	0.5 (13)	100 (30.4)	1/2F
H72503	7250 (50, 500)	Nylon	0.25 (6)	3 (0.9)	1/4F
H72506	7250 (50, 500)	Nylon	0.25 (6)	6 (1.8)	1/4F
H72510	7250 (50, 500)	Nylon	0.25 (6)	10 (3)	1/4F
H72525	7250 (50, 500)	Nylon	0.25 (6)	25 (7.6)	1/4F
H72550	7250 (50, 500)	Nylon	0.25 (6)	50 (15.2)	1/4F
H7251X	7250 (50, 500)	Nylon	0.25 (6)	100 (30.4)	1/4F
H73803	7250 (50, 500)	Nylon	0.375 (10)	3 (0.9)	3/8F
H73806	7250 (50, 500)	Nylon	0.375 (10)	6 (1.8)	3/8F
H73810	7250 (50, 500)	Nylon	0.375 (10)	10 (3)	3/8F
H73825	7250 (50, 500)	Nylon	0.375 (10)	25 (7.6)	3/8F
H73850	7250 (50, 500)	Nylon	0.375 (10)	50 (15.2)	3/8F
H7381X	7250 (50, 500)	Nylon	0.375 (10)	100 (30.4)	3/8F
H75010	7250 (50, 500)	Nylon	0.5 (13)	10 (3)	1/2F
H75025	7250 (50, 500)	Nylon	0.5 (13)	25 (7.6)	1/2F
H75050	7250 (50, 500)	Nylon	0.5 (13)	50 (15.2)	1/2F
H7501X	7250 (50, 500)	Nylon	0.5 (13)	100 (30.4)	1/2F



# Ram Pump Accessories – Hoses

Part Number	Pressure psi (MPa, bar)	Material	ID inches (mm)	Length feet (m)	Coupling
<b>Moisture-Lok</b>					
947096	1500 (10.3, 103)	Polyolefin	1 (25 (6)	1.8 (25)	1 M
947091	1500 (10.3, 103)	Polyolefin	0.75 (19)	6 (1.8)	3/4M
947092	1500 (10.3, 103)	Polyolefin	0.75 (19)	10 (3)	3/4M
947093	1500 (10.3, 103)	Polyolefin	0.75 (19)	15 ( 4.6)	3/4M
947094	1500 (10.3, 103)	Polyolefin	0.75 (19)	25 (7.6)	3/4M
947086	2000 (13.8, 138)	Polyolefin	0.5 (13)	6 (1.8)	1/2M
947087	2000 (13.8, 138)	Polyolefin	0.5 (13)	10 (3)	1/2M
947089	2000 (13.8, 138)	Polyolefin	0.5 (13)	25 (7.6)	1/2M
947081	2250 (15.5, 155)	Polyolefin	0.375 (10)	6 (1.8)	3/8M
947082	2250 (15.5, 155)	Polyolefin	0.375 (10)	10 (3)	3/8M
947083	2250 (15.5, 155)	Polyolefin	0.375 (10)	15 (4.6)	3/8M
947084	2250 (15.5, 155)	Polyolefin	0.375 (10)	25 (7.6)	3/8M
947085	2250 (15.5, 155)	Polyolefin	0.375 (10)	50 (15.2)	3/8M
947076	2750 (19, 190)	Polyolefin	0.25 (6)	6 (1.8)	1/4F
947077	2750 (19, 190)	Polyolefin	0.25 (6)	10 (3)	1/4F
947078	2750 (19, 190)	Polyolefin	0.25 (6)	15 (4.6)	1/4F
947079	2750 (19, 190)	Polyolefin	0.25 (6)	25 (7.6)	1/4F
947080	2750 (19, 190)	Polyolefin	0.25 (6)	50 (15.2)	1/4F
<b>PTFE</b>					
C12288	1500 (10.3, 103)	PTFE	0.5 (13)	10 (3)	1/2M (npt)
C50262	2500 (17.2, 172)	PTFE	.375 (10)	25 (7.6)	3/8M (npt)
552041	3000 (20.7, 207)	PTFE	.188 (5)	5 (1.5)	1/8M (npt)
552042	3000(20.7, 207)	PTFE	.188 (5)	10 (3)	1/8M (npt)
552043	3000(20.7, 207)	PTFE	.188 (5)	15 (4.6)	1/8M (npt)
552045	3000(20.7, 207)	PTFE	.188 (5)	25 (7.6)	1/8M (npt)
204938	3000(20.7, 207)	PTFE	0.25 (6)	25 (7.6)	1/4F
205349	3000(20.7, 207)	PTFE	0.25 (6)	15 (4.6)	1/4F
206024	3000(20.7, 207)	PTFE	0.25 (6)	50 (15.2)	1/4F
C12423	3000(20.7, 207)	PTFE	1 (25)	15 (4.6)	1 5/16F JIC SS
685612	4000 (27.6, 276)	PTFE	0.25 (6)	6 (1.8)	1/4M SS
685614	4000 (27.6, 276)	PTFE	0.25 (6)	15 (4.6)	1/4M SS
222934	4000 (27.6, 276)	PTFE	0.3125 (8)	15 (4.6)	1/2F SS
685602	4000 (27.6, 276)	PTFE	0.375 (10)	15 (4.6)	3/8M SS
685603	4000 (27.6, 276)	PTFE	0.375 (10)	25 (7.6)	3/8M SS
511387	4000 (27.6, 276)	PTFE	0.75 (19)	25 (7.6)	3/4M SS
685605	4000 (27.6, 276)	PTFE	0.75 (19)	6 (1.8)	3/4M SS
685606	4000 (27.6, 276)	PTFE	0.75 (19)	10 (3)	3/4M SS
685607	4000 (27.6, 276)	PTFE	0.75 (19)	15 (4.6)	3/4M SS
685608	4000 (27.6, 276)	PTFE	0.75 (19)	25 (7.6)	3/4M SS
C12410	5000 (34.5, 345)	PTFE	1 (25)	10 (3)	1 1/16F UNF JIC 37°
C12433	5000 (34.5, 345)	PTFE	1.25 (32)	10 (3)	1 5/8F UNF JIC 37°

# Ram Pump Accessories – Hoses

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Part Number	Pressure psi (MPa, bar)	Material	ID inches (mm)	Length feet (m)	Coupling
552013*	5000 (34.5, 345)	PTFE	.375 (10)	5 (1.5)	9/16F JIC SS
552014*	5000 (34.5, 345)	PTFE	.375 (10)	10 (3)	9/16F JIC SS
552015*	5000 (34.5, 345)	PTFE	.375 (10)	15 (4.6)	9/16F JIC SS
552016*	5000 (34.5, 345)	PTFE	.375 (10)	20 (6.1)	9/16F JIC SS
552017*	5000 (34.5, 345)	PTFE	.375 (10)	25 (7.6)	9/16F JIC SS
552018*	5000 (34.5, 345)	PTFE	0.5 (13)	5 (1.5)	3/4F JIC SS
552019*	5000 (34.5, 345)	PTFE	0.5 (13)	10 (3)	3/4F JIC SS
552020*	5000 (34.5, 345)	PTFE	0.5 (13)	15 (4.6)	3/4F JIC SS
552021*	5000 (34.5, 345)	PTFE	0.5 (13)	20 (6.1)	3/4F JIC SS
552022*	5000 (34.5, 345)	PTFE	0.5 (13)	25 (7.6)	3/4F JIC SS
552023*	5000 (34.5, 345)	PTFE	0.675 (17)	5 (1.5)	7/8F JIC SS
552025*	5000 (34.5, 345)	PTFE	0.675 (17)	15 (4.6)	7/8F JIC SS
552026*	5000 (34.5, 345)	PTFE	0.675 (17)	20 (6.1)	7/8F JIC SS
552027*	5000 (34.5, 345)	PTFE	0.675 (17)	25 (7.6)	7/8F JIC SS
552028*	5000 (34.5, 345)	PTFE	0.75 (19)	5 (1.5)	1 1/16F JIC SS
552029*	5000 (34.5, 345)	PTFE	0.75 (19)	10 (3)	1 1/16F JIC SS
552030*	5000 (34.5, 345)	PTFE	0.75 (19)	15 (4.6)	1 1/16F JIC SS
552031*	5000 (34.5, 345)	PTFE	0.75 (19)	20 (6.1)	1 1/16F JIC SS
552032*	5000 (34.5, 345)	PTFE	0.75 (19)	25 (7.6)	1 1/16F JIC SS
222935*	5000 (34.5, 345)	PTFE	0.3125 (8)	15 (4.6)	1/2M x 1/2F SS
511381*	5000 (34.5, 345)	PTFE	0.5 (13)	15 (4.6)	1/2M SS
552272*	5000 (34.5, 345)	PTFE	0.75 (19)	1.5 (0.5)	3/4M CS 90°
552033*	5000 (34.5, 345)	PTFE	1 (25)	5 (1.5)	1 5/16F JIC SS
552034*	5000 (34.5, 345)	PTFE	1 (25)	10 (3)	1 5/16F JIC SS
552035*	5000 (34.5, 345)	PTFE	1 (25)	15 (4.6)	1 5/16F JIC SS
552036*	5000 (34.5, 345)	PTFE	1 (25)	20 (6.1)	1 5/16F JIC SS
552037*	5000 (34.5, 345)	PTFE	1 (25)	25 (7.6)	1 5/16F JIC SS <sub>c12</sub>

\*Call for availability.

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This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

## Equipment Misuse

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

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

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

## ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

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

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology 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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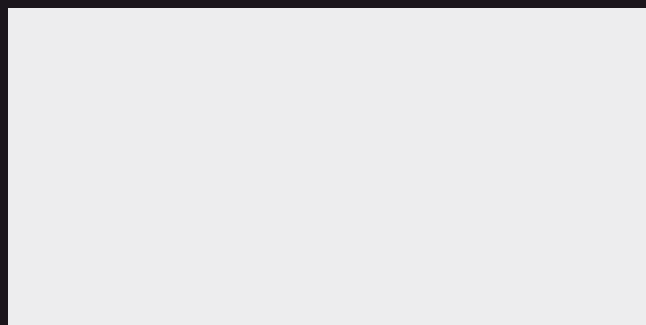
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Call today for product information or to request a demonstration.

**1.877.84GRACO** (1-877-844-7226) or visit us at [www.graco.com](http://www.graco.com).

All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Graco Inc. is registered to I.S. EN ISO 9001



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