

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:

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

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_{bead} x Length_{bead} = 0.049 in² (πr²) x 57 in (1448mm) = 2.77 in³ = 0.01 gpm (231 in³ = 1 gal)

$$\Delta P = \frac{(0.0273) (0.01) (2000) (25)}{(.375)^4} = \frac{13.65}{.0198} = 689 \text{ PSI}$$

- 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

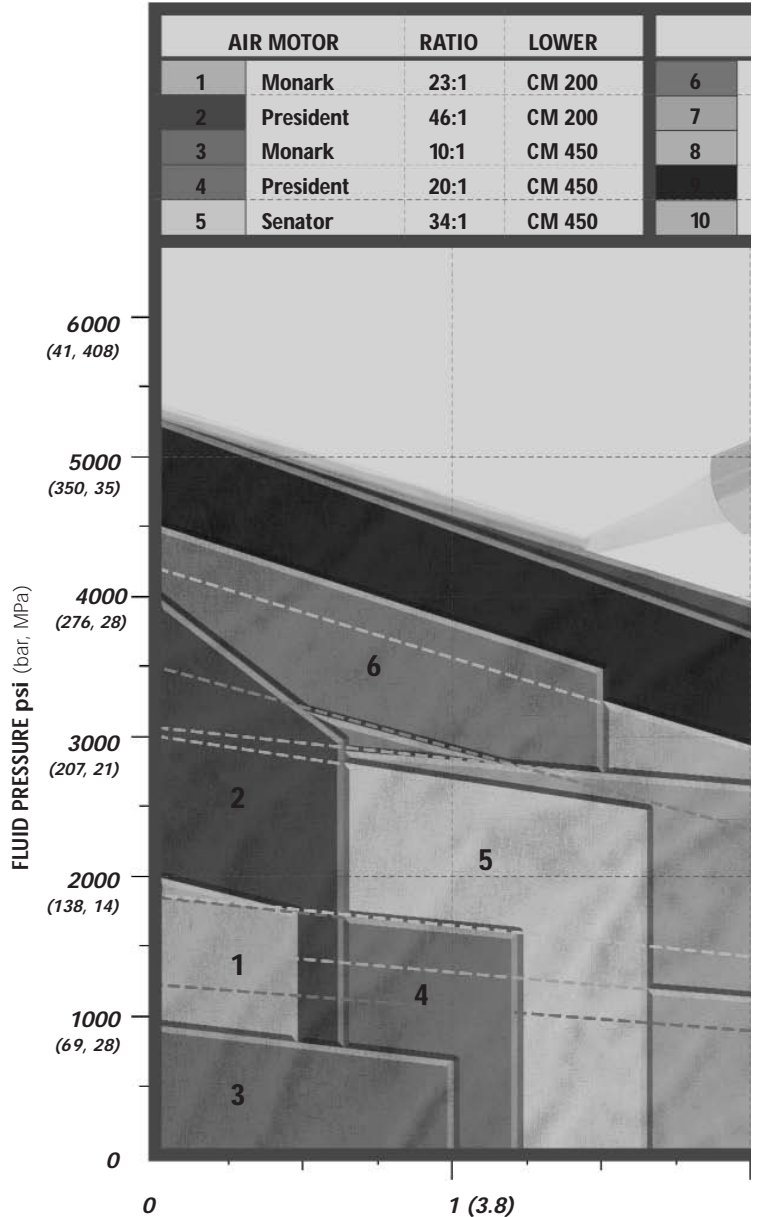
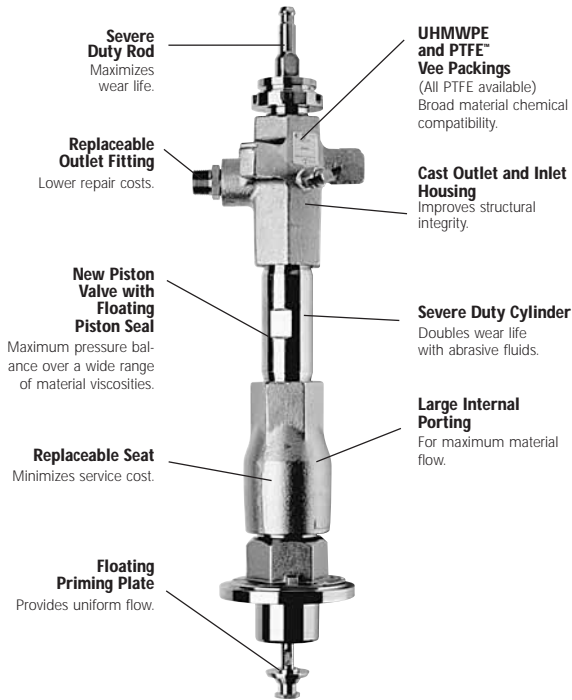
To select the proper pump for agiven sealant or adhesive material, you must know:

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

1

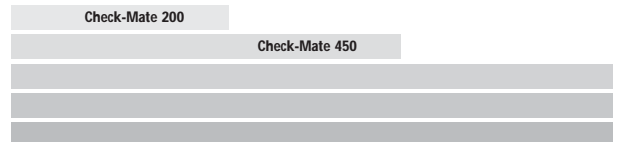
After obtaining the above information, use the pump selection chart to find the recommended pump. The chart on the right gives the air motor name, pressure ratio and lower type.

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 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

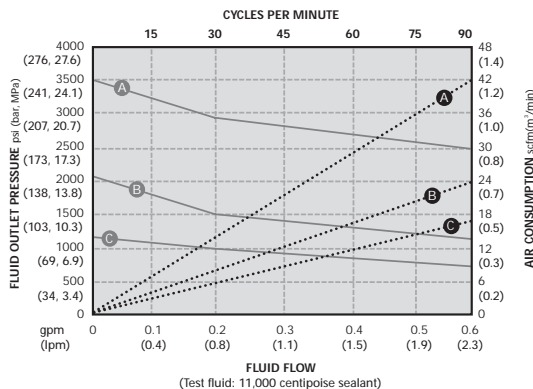
Stainless steel 308200

Ram mounted pumps 308026

Cart mounted pumps 308087

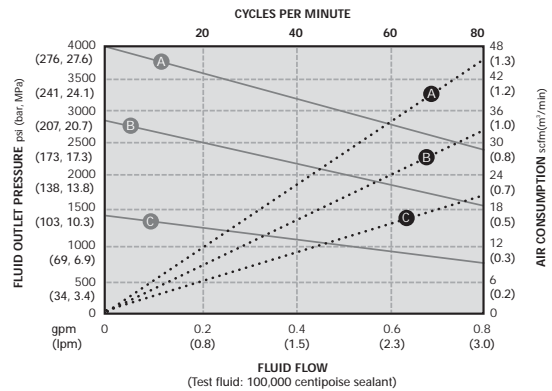


Performance Chart: 23:1 Monark



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

| | |
|--------|---|
| 238272 | Air Regulator Kit 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 | 5 gal (20 l) Inductor Wiper Plate |
| 243775 | Tapered Needle Kit Provides a tapered needle option for the Ultra-Lite 6000 gun to improve fluid control. |
| 237557 | Bare Cart Mounts a 5 gal (20 l) ram on a cart. |

Repair Kits

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

Air Motor Service Kits

| | |
|--------|----------------------|
| 206728 | For Monark |
| 207385 | For President |



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 |

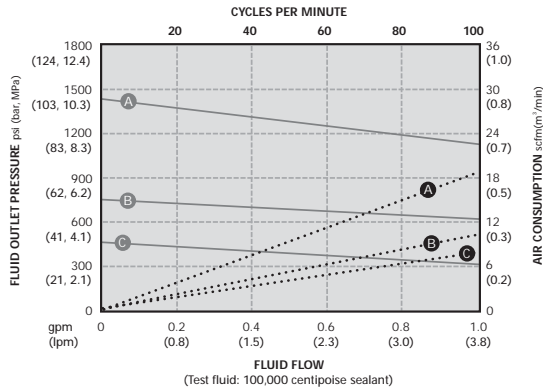
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Check-Mate 450

Priming Piston Transfer Pumps

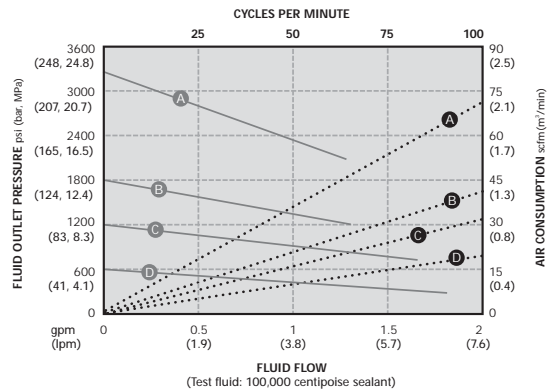
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Performance Chart for 10:1 Monark Pump



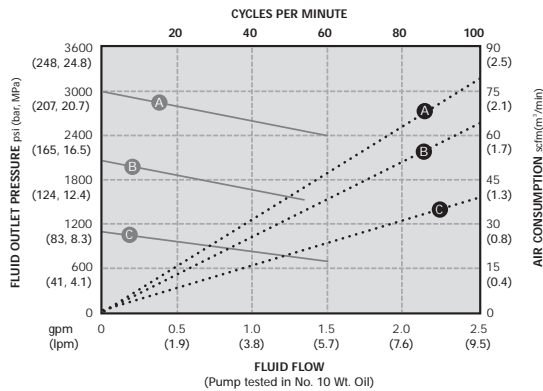
| AIR PRESSURES | LEGEND |
|-------------------------------------|----------------------|
| (A) = @ 180 psi (12.4 bar, 1.2 MPa) | Air Consumption..... |
| (B) = @ 100 psi (7 bar, 0.7 MPa) | Fluid Flow..... |
| (C) = @ 70 psi (4.8 bar, 0.5 MPa) | |

Performance Chart for 20:1 President Pump



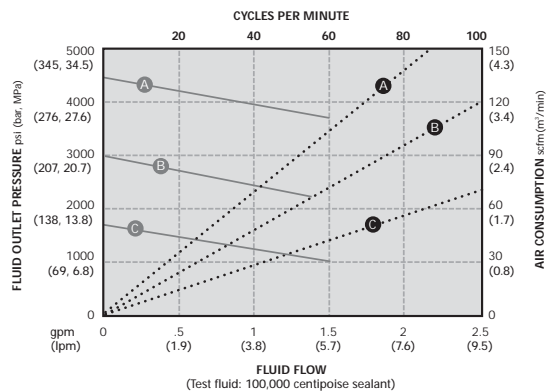
| AIR PRESSURES | LEGEND |
|------------------------------------|----------------------|
| (A) = @ 180 psi (12 bar, 1.2 MPa) | Air Consumption..... |
| (B) = @ 100 psi (7.0 bar, 0.7 MPa) | Fluid Flow..... |
| (C) = @ 70 psi (4.8 bar, 0.5 MPa) | |
| (D) = @ 40 psi (2.8 bar, 0.3 MPa) | |

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

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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 Lowers

- 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

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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

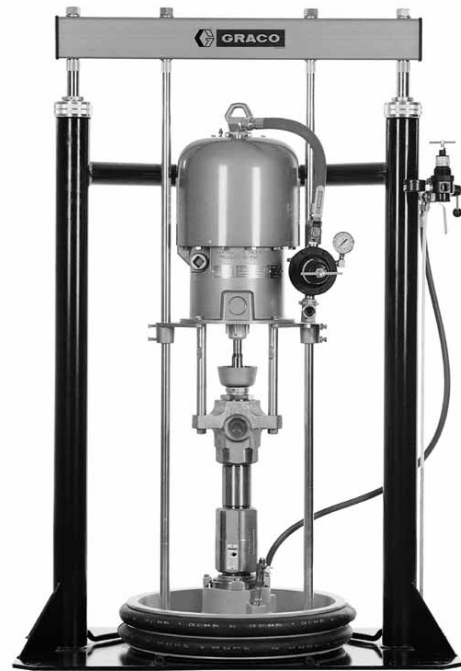
- Severe Duty rod and cylinder for increased durability; Graco's Severe Duty is a stainless steel, hard chrome cylinder and rod which prolongs the life of the pump and packings
- Available in Carbon Steel and Stainless Steel models
- 55 gal (200 l) or 5 gal (20 l) ram systems available
- 19:1 Senator, 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

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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 in³ (192 cm³)

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 in² (8 cm²)

Weight 160 lbs (73 kg)

Displacement pump weight 81 lbs (37 kg)

Instruction manual

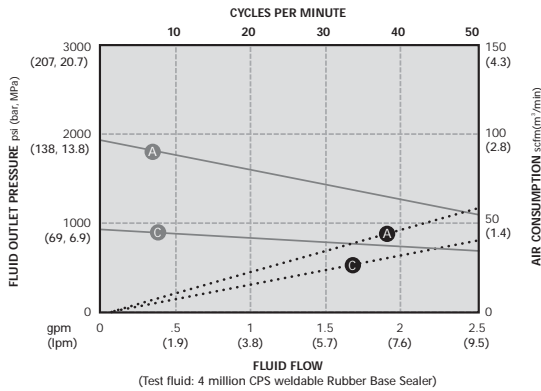
| | |
|---|--------|
| Carbon steel | 308351 |
| Stainless steel | 308352 |
| 3 in (7.6 cm), 55 gal (200 l) ram modules | 308027 |
| Ram mounted, 5 gal (20 l), 30 l (8 gal) pumps | 310526 |
| 6.5 in (16.5 cm), ram modules, 55 gal (200 l) | 310524 |

* Not included in Stainless Steel Pump.

Check-Mate 800

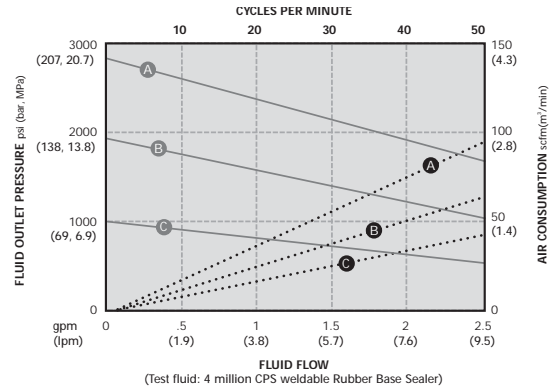
CS and SST Priming Piston Fluid Pumps

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



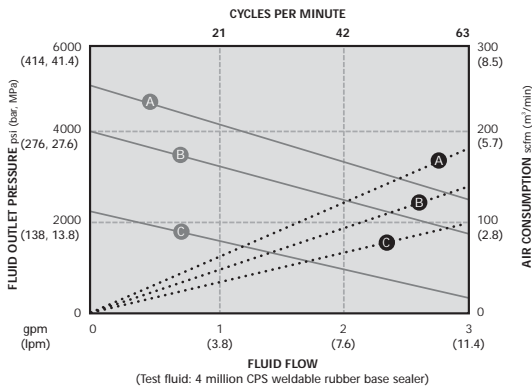
| AIR PRESSURES | LEGEND |
|------------------------------------|-------------------------|
| (A) = @ 120 psi (8.3 bar, 0.8 MPa) | Air Consumption |
| (B) = @ 100 psi (7 bar, 0.7 MPa) | Fluid Flow ——— |
| (C) = @ 70 psi (4.8 bar, 0.5 MPa) | |

**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) | |

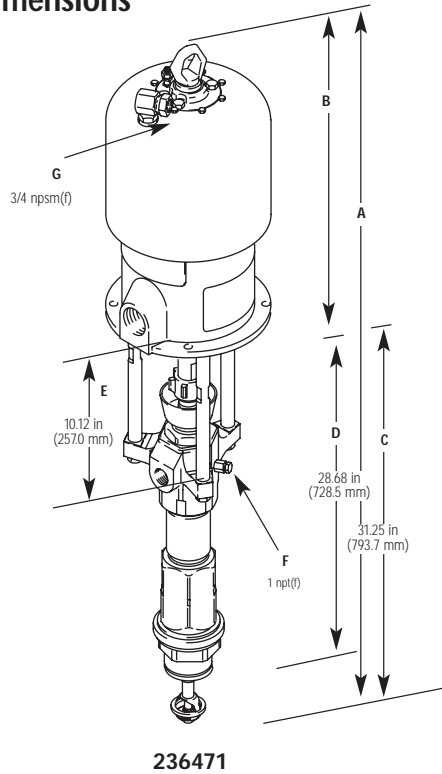


Check-Mate 800

CS and SST Priming Piston Fluid Pumps

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Dimensions



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

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

* RIQ = Reduced Icing Quiet

Displacement Pumps

| | |
|--------|--|
| 236611 | Carbon Steel Module |
| 236612 | Stainless Steel Module |
| 198469 | Carbon Steel Lower with Carbon Steel intake housing. |

Accessories

| | |
|--------|--|
| 235417 | Conversion Kit Includes tie rods and parts necessary to connect displacement pump to existing Bulldog air motor. |
| 208804 | Air Motor Silencer for Bulldog and King Encloses motor to reduce exhaust noise. |
| 222780 | Floor Stand Base |
| 233087 | 6.5 in (16.5 cm) Bare Dual-Post Ram Module |
| 918309 | Pump and Plate Mounting Kit Includes tie rods and motor mounting for 55 gal ram mounting |
| 222864 | Pump Repair Kit, Carbon Steel Pumps UHMWPE/PTFE throat and intake packages. |
| 237945 | Pump Repair Kit PTFE throat and intake packages. |
| 222866 | Pump Repair Kit, SST Pumps PTFE throat and intake packages. |
| 241901 | 31:1 Bulldog with elbow. |
| 241519 | 65:1 Quiet King Quiet air motor, stainless steel lower. |
| 198475 | 65:1 Quiet King Quiet air motor, carbon steel, Severe Duty, carbon steel intake housing. |
| 198466 | Viscount II 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 ³ (240 cm ³) |
| 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 ² (10 cm ²) |
| Weight | 160 lbs (73 kg) |
| Displacement Pump weight | 81 lbs (37 kg) |
| Instruction manuals | |
| Carbon steel | 308355 |
| Stainless steel | 308356 |
| Ram modules | 310524 |



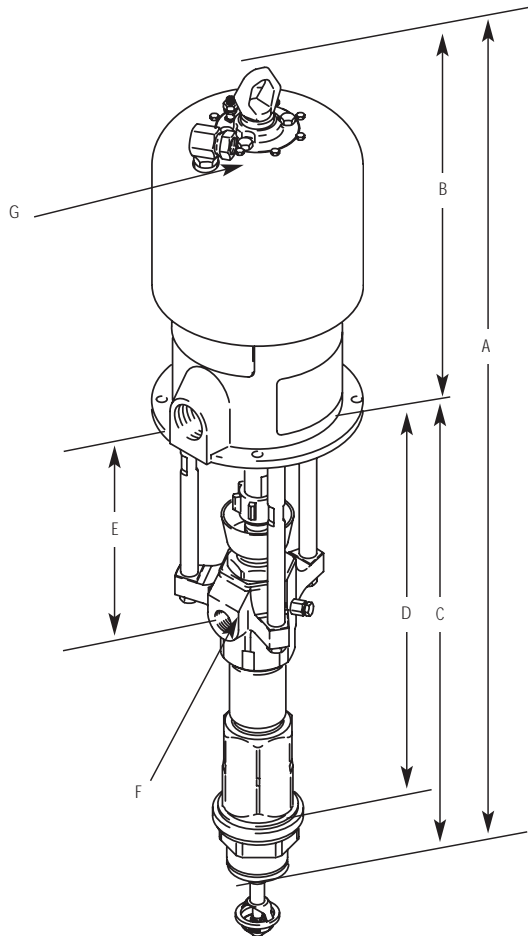
Check-Mate 1000

Priming Piston Fluid Pumps

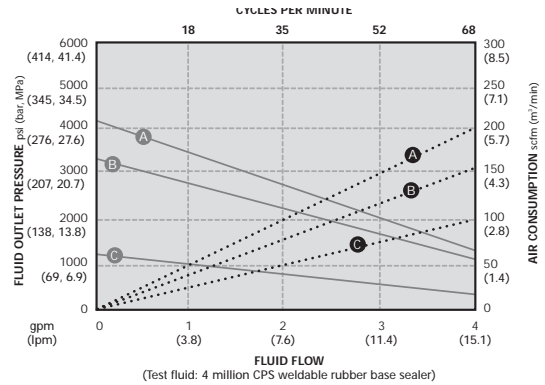
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Dimensions

| 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) |

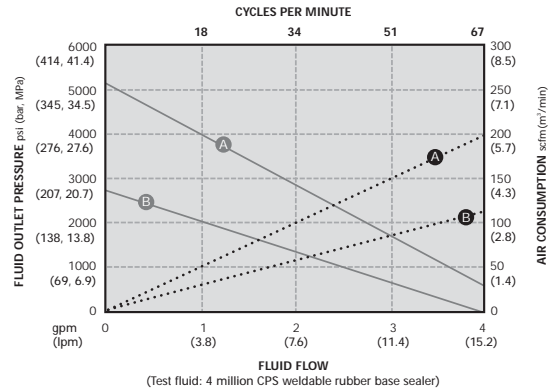


Performance Chart for 50:1 King Pump



| 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**

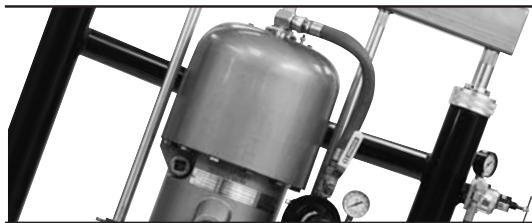
Displacement Pumps

- 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

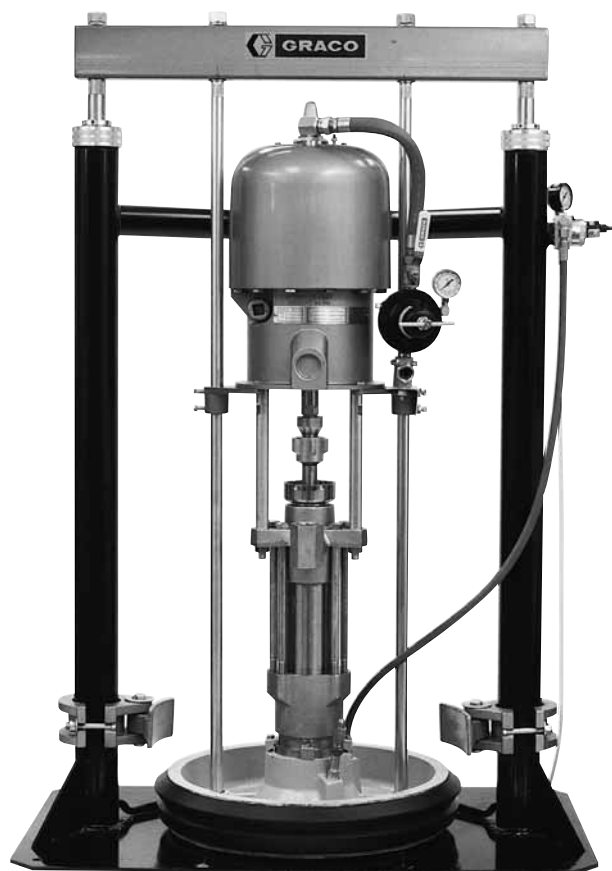
- Available in Severe Duty Carbon Steel and Stainless Steel models
- High flow and fluid pressures increase production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve design decreases changeover time and minimizes icing
- Floating piston seal and priming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

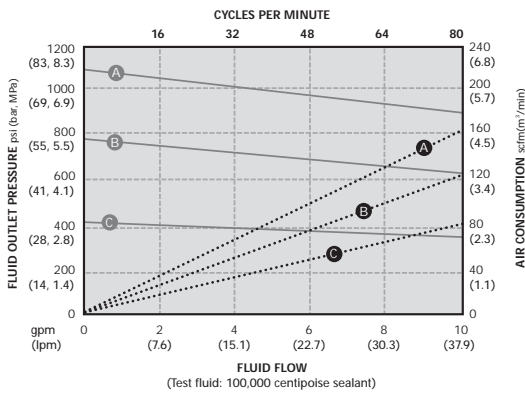
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Check-Mate 2100

Priming Piston Fluid Pumps

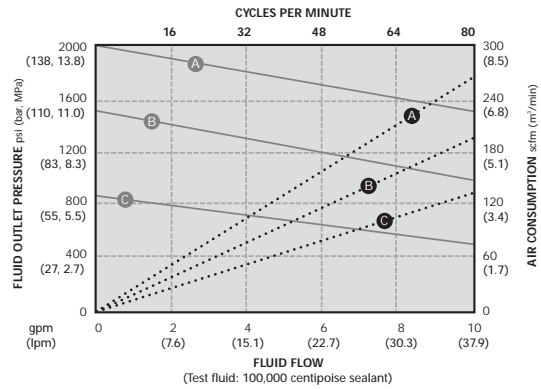
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Performance Chart for 12:1 Bulldog Pump



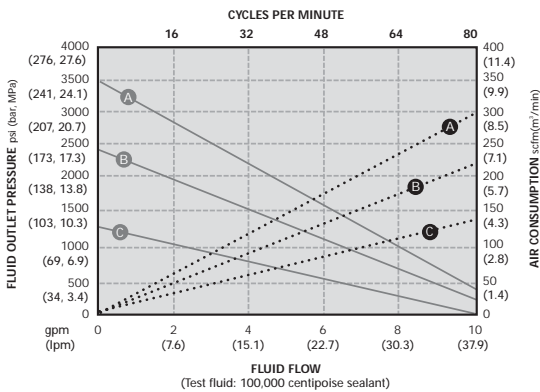
| AIR PRESSURES | LEGEND |
|------------------------------------|-------------------------|
| (A) = @ 100 psi (7.0 bar, 0.7 MPa) | Air Consumption |
| (B) = @ 70 psi (4.8 bar, 0.5 MPa) | Fluid Flow _____ |
| (C) = @ 40 psi (2.8 bar, 0.3 MPa) | |

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) | |

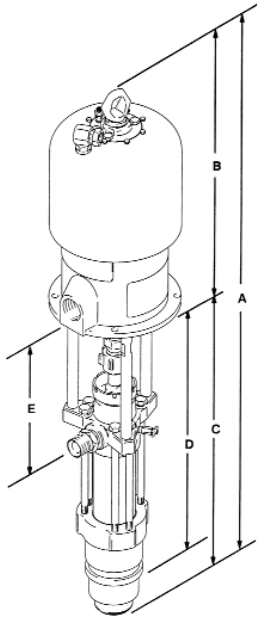
Performance Chart for 39:1 Premier



| 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

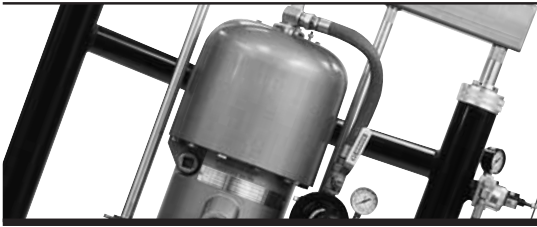
- 222828 12:1 Bulldog Check-Mate Pump, CS**
- 222829 12:1 Quiet Bulldog, CS**
- 222903 12:1 Quiet Bulldog Check-Mate Pump, SST/RIQ**
- 222835 24:1 King Check-Mate Pump, CS**
- 222901 24:1 Quiet King, CS**
- 222836 24:1 King Check-Mate Pump, SST**
- 222905 24:1 Quiet King Check-Mate Pump, SST/RIQ**
- 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

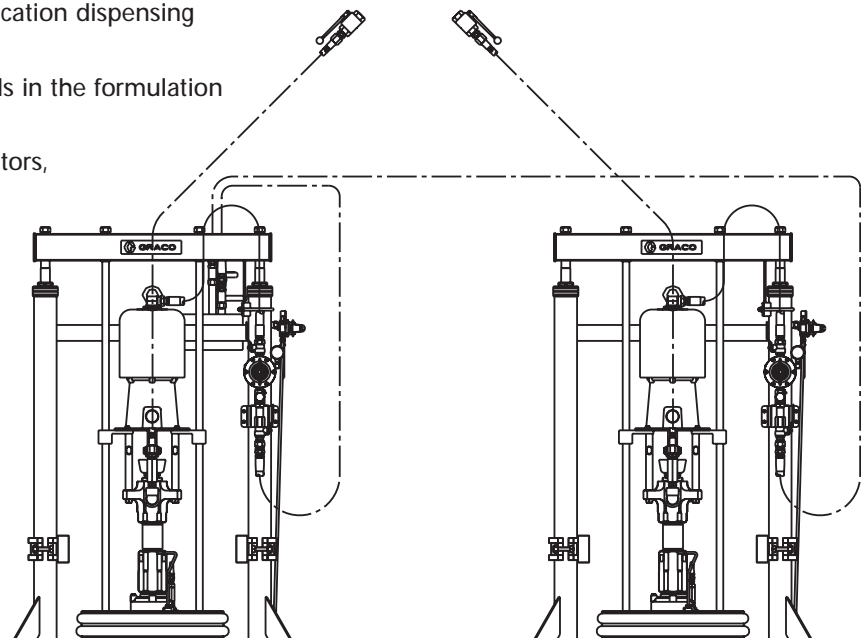
Typical Fluids Handled

- 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

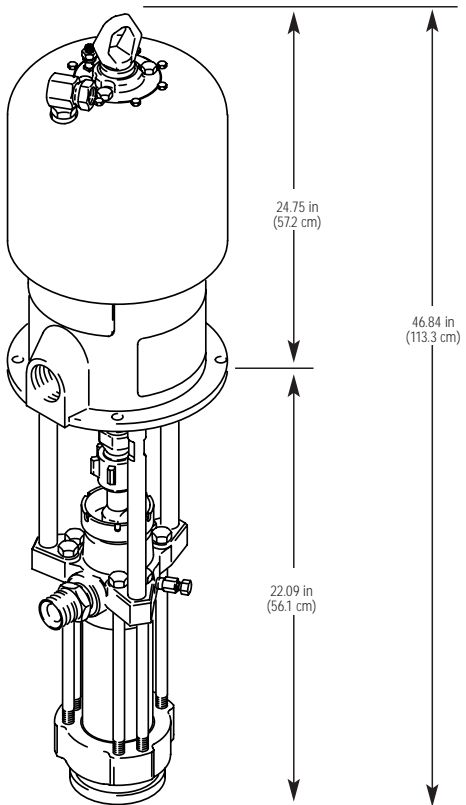
5, 30, and 55 Gallon (19, 120 and 200 l) Supply Packages

1

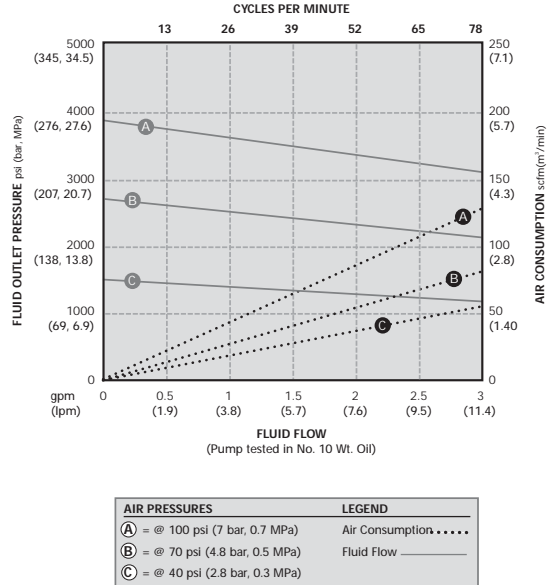
Technical Specifications

| | |
|-------------------------------------|------------------------------|
| 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

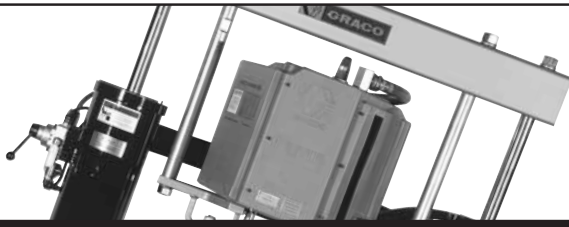
- 970071 Tandem SST 25:1 Senator Ram Pumps, Pneumatic Crossover**
 (2) 55 gal (200 l); 3 in (7.6 cm) dual-post rams; 30 gal (120 l) CS follower plates and pneumatic crossover control; outlet check valves; and (2) 10 ft (3 m) supply hoses with SST shutoff valves.
- 970073 Single SST 25:1 Senator Ram Pump**
 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

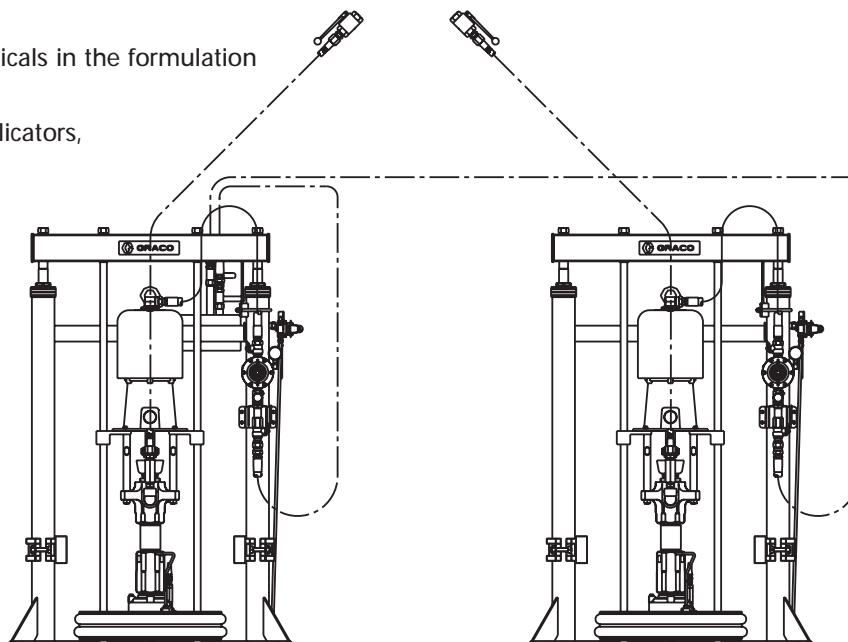
Typical Fluids Handled

- 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



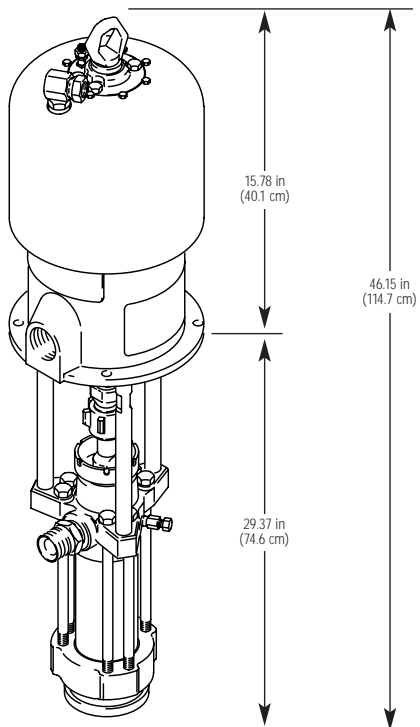
Dura-Flo 900 Ram Pumps

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

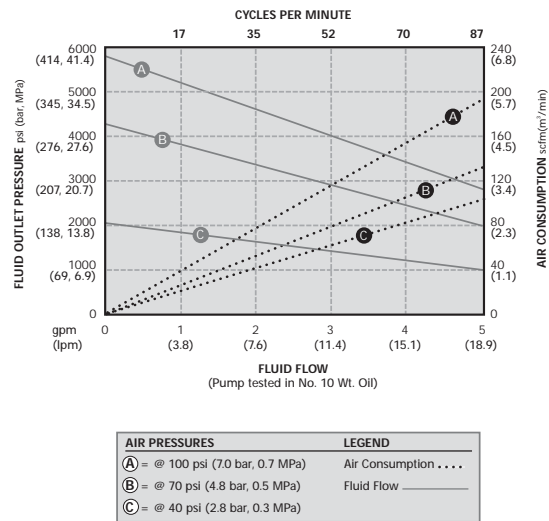
Technical Specifications

| | |
|-------------------------------------|------------------------------|
| 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

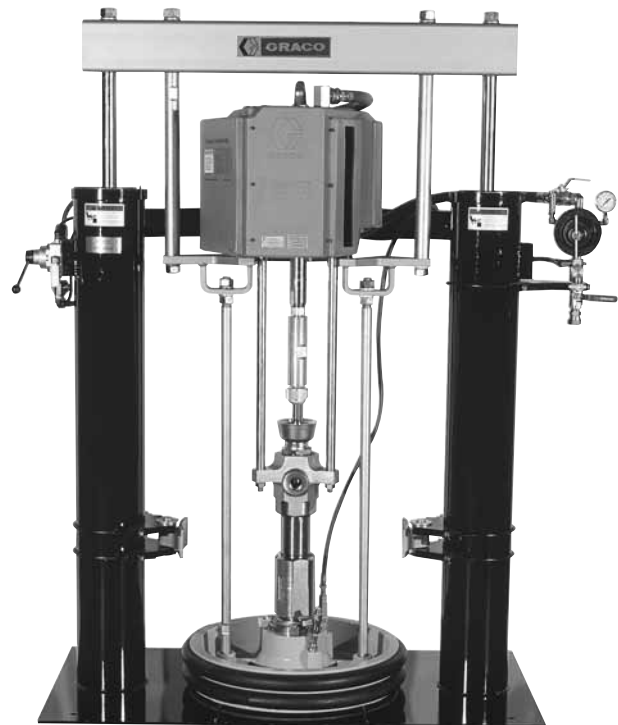
- Heavy-duty stainless steel pump, rod and cylinder for long life and durability
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing

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

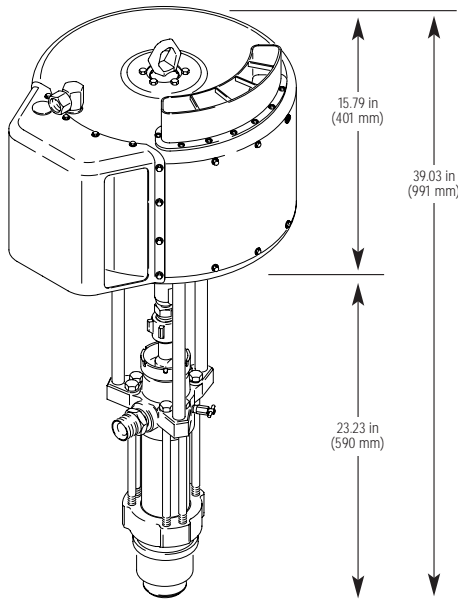
55 Gallon (200 L) Supply Packages

1

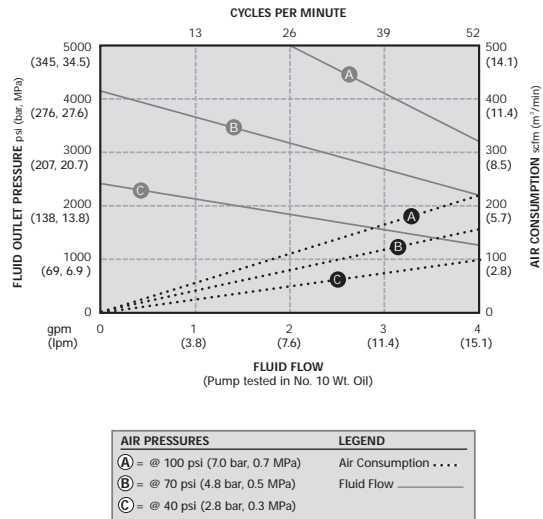
Technical Specifications

| | |
|-------------------------------|------------------------------|
| 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.

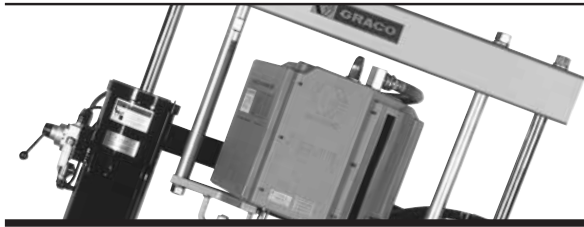
Pump Modules

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

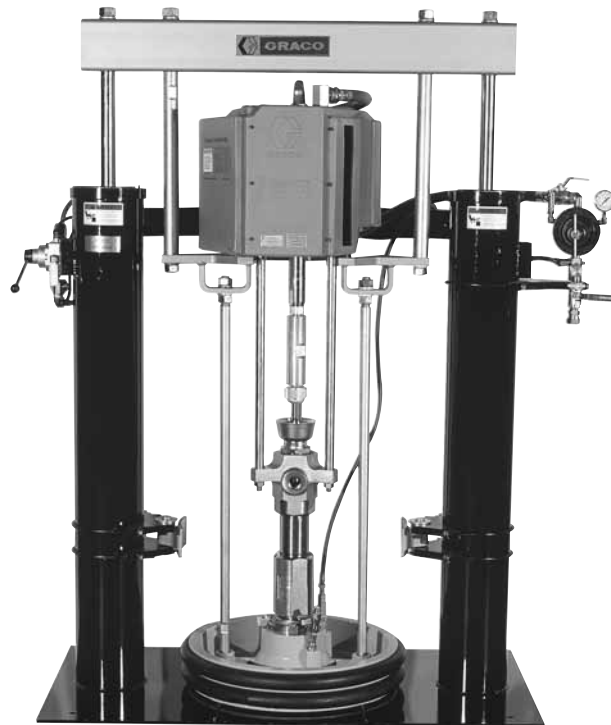
- High flow and fluid pressures for increased production
- High output per cycle reduces wear for longer life and lower repair costs
- Exclusive air valve and shroud design decreases pump changeover time and minimizes icing
- Stainless steel and carbon steel versions available

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

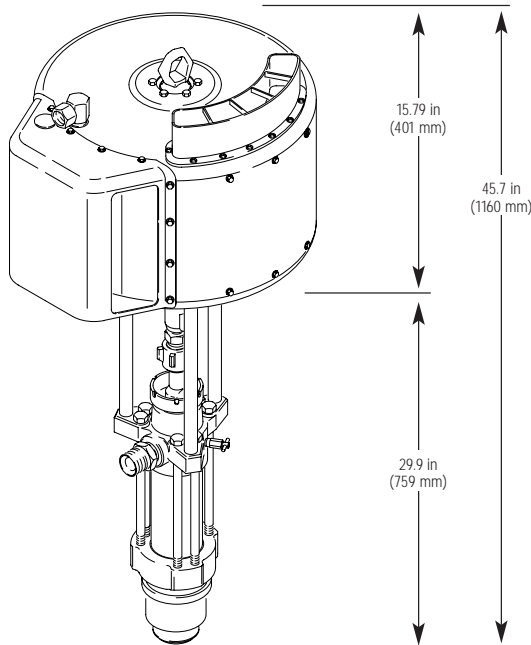
55 Gallon (200 L) Supply Packages

Technical Specifications

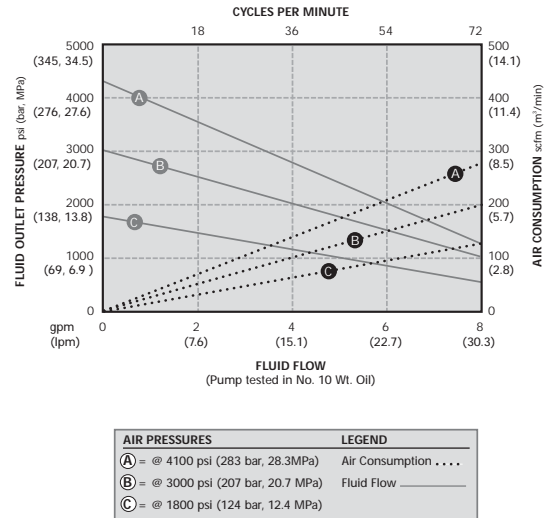
| | |
|-------------------------------------|----------------------------|
| Maximum fluid outlet pressure | 4500 psi (310 bar, 31 MPa) |
| Fluid flow at 60 cpm | 6.9 gpm (26.1 lpm) |
| Volume per cycle | 14.7 oz (434.6 cc) |
| Maximum air input pressure | 100 psi (7 bar, 0.7 MPa) |
| Fluid outlet size | 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

1

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

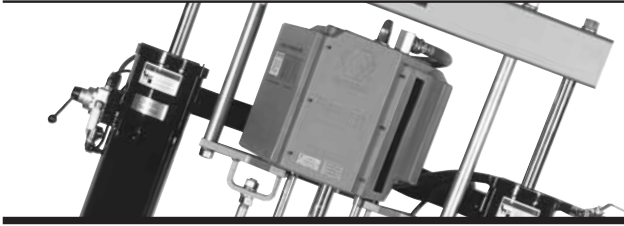
234675 45:1 Premier Booster Module
Includes: (2) 45:1 Premier with Extended Life Lowers (246987).

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

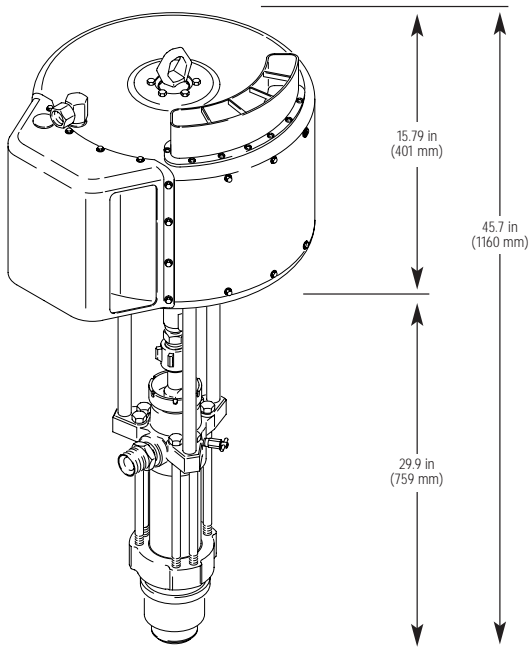
55 Gallon (200 L) Supply Packages

1

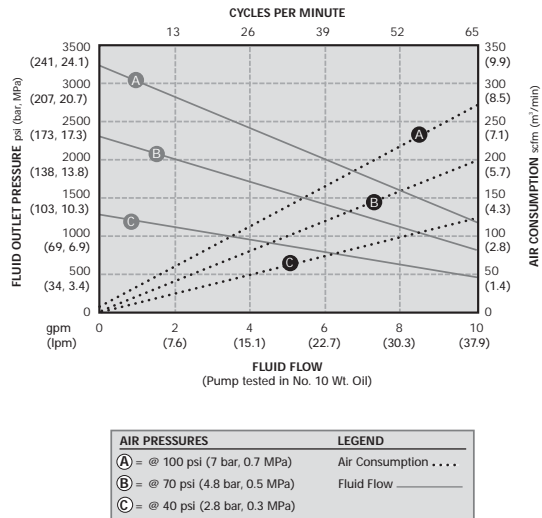
Technical Specifications (34:1 Premier models)

| | |
|-------------------------------------|----------------------------|
| 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

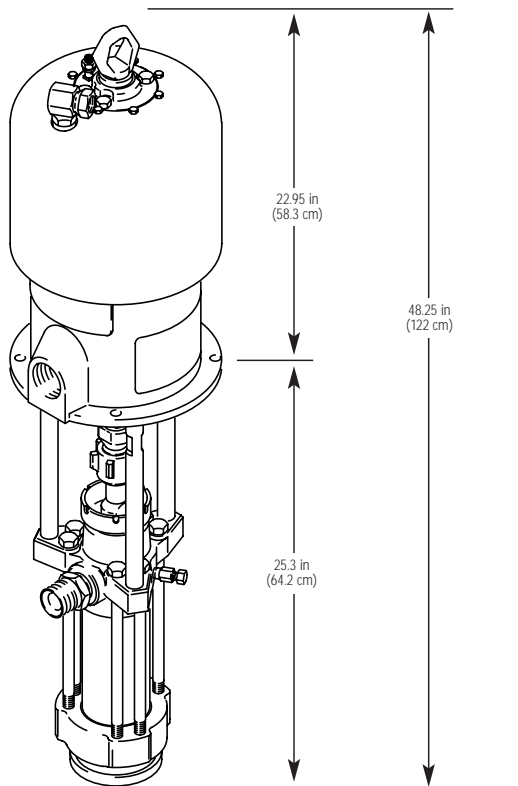
55 Gallon (200 L) Supply Packages

Technical Specifications (20:1 King models)

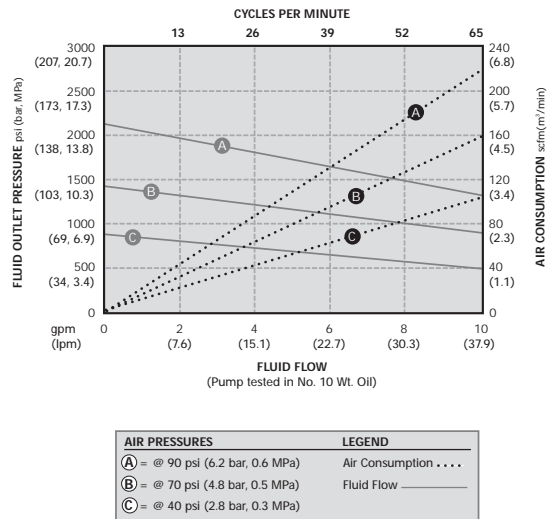
| | |
|-------------------------------------|------------------------------|
| Maximum fluid outlet pressure | 1800 psi (126 bar, 12.6 MPa) |
| Fluid flow at 60 cpm | 7.7 gpm (29.1 lpm) |
| Volume per cycle | 19.7 oz (582.5 cc) |
| Maximum air input pressure | 90 psi (6 bar, 0.6 MPa) |
| Fluid outlet 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

1

Air Controls and Lubrication

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

1

UniDrum 1200 packages supply sealants from bulk containers.

Features and Benefits

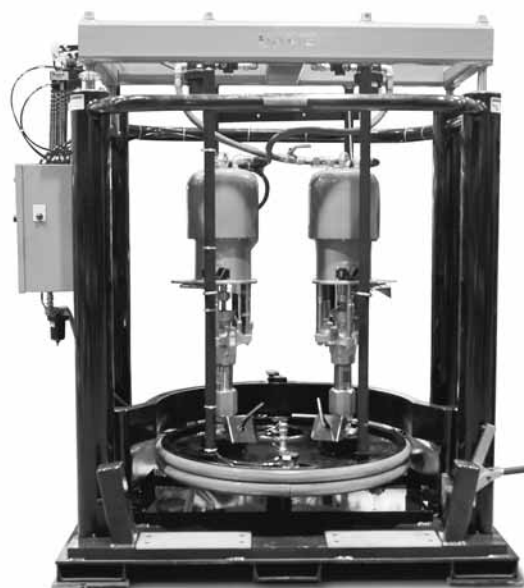
- Minimizes drum change-over time
- Reduces ram pump and tote container floor space requirement
- Reduces material waste with a flat bottom surface follower plate
- Provides fast tote changes and guarantees drum alignment
- Extended pump life construction to handle highly abrasive materials such as liquid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

Ram Plate Features and Benefits

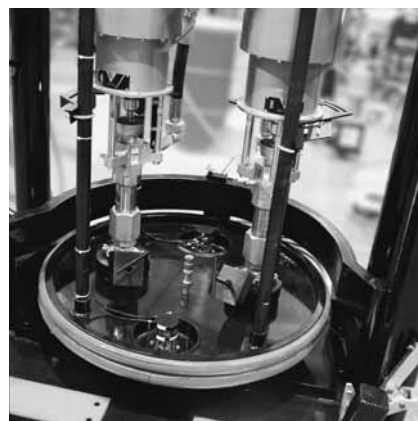
- **Neoprene rubber wiper rings:** Durable wiper is assembled to the ram plate by 3/4 in (19.1 mm) banding strap that keeps the wiper firmly and securely attached to the plate.
- **Strategically located vent valves:** Allow the ram plate to exit the drum in a smooth and trouble-free operation while remaining 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 | Tandem 20:1 King Ram Pumps, Pneumatic Crossover Includes: (2) 300 gal (1200 l) UniDrums (RH: C59785, LH: C59784) with pneumatic crossover control, mastic regulator, manifold and ball valve on inlet. | 249152 | Single 34:1 Premier Left Hand Extended Life Pumps with 120V PLC Interface and Enhanced Depressurization Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 120V PLC interface connection. |
| 970157 | Tandem 20:1 King Ram Pumps, Pneumatic Crossover and Enhanced Depressurization 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 | Single 34:1 Premier Right Hand Extended Life Pumps with 120V PLC Interface Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 120V PLC interface connection. |
| 970153 | Tandem 56:1 King Ram Pumps, Pneumatic Crossover 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 | Single 34:1 Premier Left Hand Extended Life Pumps with 24V PLC Interface Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 24V PLC interface connection. |
| 970158 | Tandem 56:1 King Ram Pumps, Pneumatic Crossover and Enhanced Depressurization 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 | Single 34:1 Premier Right Hand Extended Life Pumps with 24V PLC interface Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) follower plate, enhanced depressurization, "Y" manifold, and 24V PLC interface connection. |
| 970123 | Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization 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 | Tandem 34:1 Premier Extended Life Pumps, Pneumatic Crossover, and Enhanced Depressurization Includes: (2) 4-post UniDrum rams, (RH: 234975, LH: 234974), 300 gal (1200 l) plate, enhanced depressurization, "Y" manifold, and pneumatic crossover control. |
| 970151 | Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover 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 | Single 45:1 Premier Right Hand Pumps with 120V PLC Interface and Enhanced Depressurization Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface. |
| 970156 | Tandem 34:1 Tandem Premier Ram Pumps, Pneumatic Crossover with Tungsten Carbide Check Balls Includes (2) 4-post UniDrum rams (RH: C59808, LH: C59807). | 232729 | Single 45:1 Premier Left Hand Pumps with 120V PLC Interface and Enhanced Depressurization Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface. |
| | | 232839 | Single 45:1 Premier Left Hand Pumps with 120V PLC Interface, Enhanced Depressurization, and Ceramic Piston Rod 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>Single 34:1 Premier Left Hand Extended Life Pumps with 24V PLC Interface, Enhanced Depressurization, and SST Fittings Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization, SST fittings and valves, and 24V PLC interface.</p> | 249340 | <p>Single 45:1 Premier Right Hand Extended Life Pump with Enhanced Depressurization, and 24V PLC Ready Interface Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 24V PLC ready interface, enhanced depressurization.</p> |
| 234973 | <p>Single 34:1 Premier Right Hand Extended Life Pumps with 24V PLC Interface, Enhanced Depressurization, and SST Fittings Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization, SST fittings and valves, and 24V PLC interface.</p> | 970188 | <p>Tandem 34:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization with Tungsten Carbide Check Balls 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>Single 45:1 Premier Right Hand Pumps with 120V PLC Interface, Enhanced Depressurization, and Ceramic Piston Rod Includes: (1) 4-post UniDrum ram, 300 gal (1200 l) plate, enhanced depressurization and 120V PLC interface.</p> | 970140 | <p>Tandem 45:1 Premier Tungsten Carbide Ram Pumps, Pneumatic Crossover and Enhanced Depressurization 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>Tandem 45:1 Premier Extended Life Pumps with Enhanced Depressurization Includes: (2) 4-post UniDrums (RH: 246984, LH: 246983), 300 gal (1200 l) ram plate, enhanced depressurization, no pneumatic crossover controls.</p> | 970141 | <p>Tandem 45:1 Premier Tungsten Carbide Ram Pumps, Pneumatic Crossover 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>Tandem 45:1 Premier Extended Life Pumps with Pneumatic Crossover, Enhanced Depressurization, and Timer Includes: (2) 4-post UniDrums (RH: 246984, LH: 246983), 300 gal (1200 l) ram plate, enhanced depressurization, and pneumatic crossover controls.</p> | 970065 | <p>Tandem 67:1 Premier Ram Pumps, Pneumatic Crossover 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>Single 45:1 Premier Left Hand Extended Life Pumps with Enhanced Depressurization, and 120V PLC Ready Interface Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 120V PLC ready interface, enhanced depressurization.</p> | 970154 | <p>Tandem 67:1 Premier Ram Pumps, Pneumatic Crossover and Enhanced Depressurization 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>Single 45:1 Premier Right Hand Extended Life Pumps with Enhanced Depressurization, and 120V PLC Ready Interface Includes: (1) 4-post UniDrum, 300 gal (1200 l) follower plate, 120V PLC ready interface, enhanced depressurization.</p> | | |
| 249339 | <p>Single 45:1 Premier Left Hand Extended Life Pump with Enhanced Depressurization, and 24V PLC Ready Interface 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

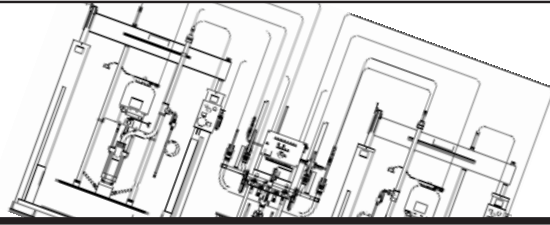
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Pumps

| | |
|--------|--|
| 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 | Dura-Flo 2400, Extended Life For use with highly abrasive materials such as liquid applied sound deadeners |
| 246987 | Dura-Flo 1800, Extended Life 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

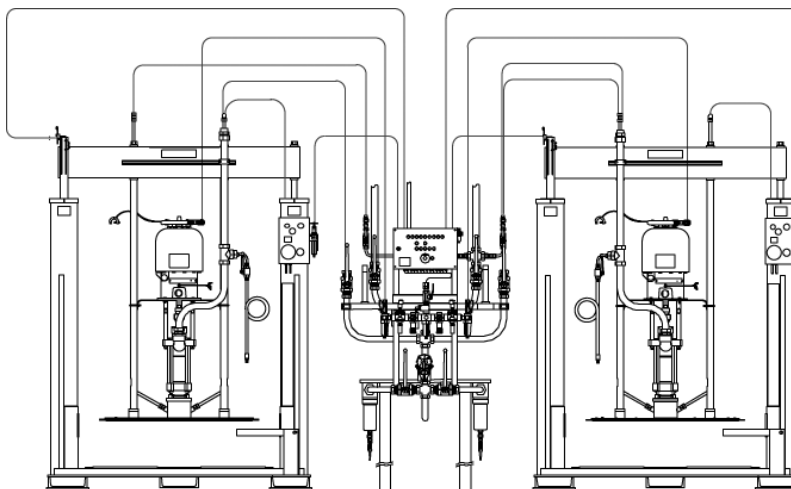
Typical Fluids Handled

- 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>970252 Tandem 20:1 King Ram Pumps, Pneumatic Crossover and Manual Depressurization 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>970254 Tandem 34:1 Premier Ram Pumps with Pneumatic Crossover and Manual Depressurization 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>970253 Tandem 10:1 King Ram Pumps with Pneumatic Crossover and Manual Depressurization and Roller Conveyor 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>C58581 Manual Depressurization Module Includes: electrical and pneumatic controls for depressurization, return valves and hoses.</p> | <p>241596 Filter Module for UniDrum 1000 CE marked. Filter station with manual depressurization.</p> |
| <p>970126 Filter Bank, 5000 psi (345 bar, 34.5 MPa) 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>516715 Replacement Filter For part number 970126.</p> |
| <p>233085 Follower Plate Kit 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>515221 Replacement Filter For part number 241596.</p> |
| | <p>C57693 Replacement Filter 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

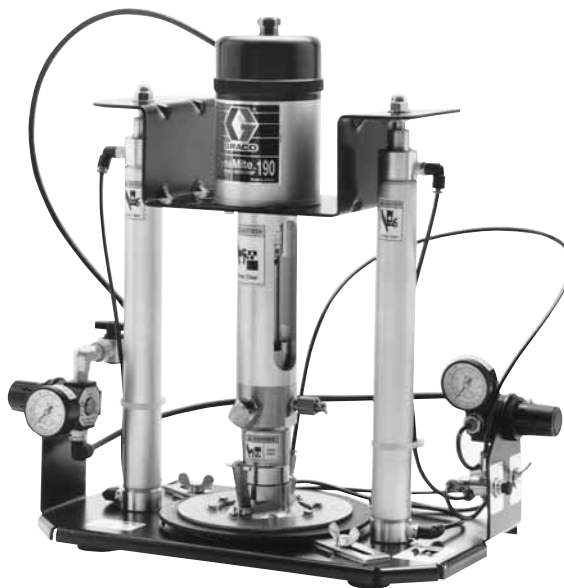
- Extrudes viscous material from their original, 1 qt (0.95 l) or 1 gal (3.79 l) source
- Compact and lightweight
- Highly precise fluid delivery
- Built tough for rugged conditions

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

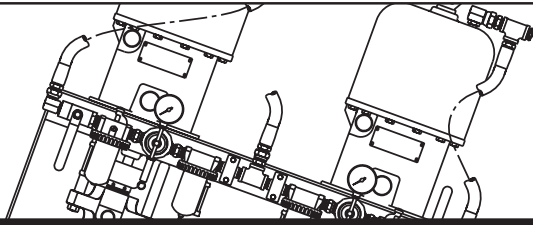
| | |
|--------|--|
| 235871 | DynaMite 190 Pump unit without wiper plate. Order wiper plate separately. |
| 224923 | Wiper Plate 1 qt (1 kg), rubber For DynaMite 190 Pump Unit. |
| 224908 | Wiper Plate 1 gal (3 kg), rubber For DynaMite 190 Pump Unit |

Accessories

| | |
|--------|---|
| 235877 | DynaMite 190 Dispense Valve Pistol grip style. |
| 235871 | DynaMite 190 Dispense Valve Without handle for fixture mounting |

For information on dispense valves, see section 2.

| | |
|--|------------------|
| Wiper Plate Poly Shields (sets of 10) | |
| 223948 | For 1 gal (3 kg) |



Booster Modules

1

Features and Benefits

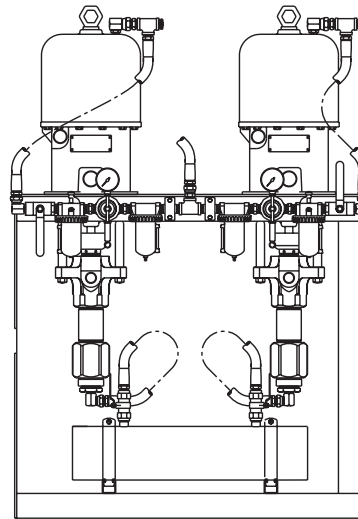
- Increases fluid pressure from bulk-feed systems for consistent performance
- Choice of pressure/flow output
- Redundant pump for back-up or to feed dual lines

Typical Applications

- Automotive paint shops

Typical Fluids Handled

- PVC sealers
- Sound deadeners



970121

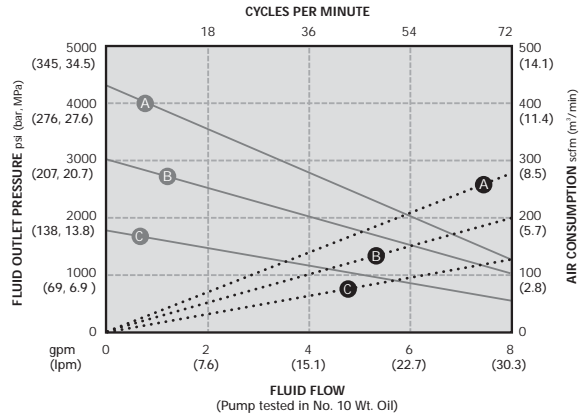
Booster Modules

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.

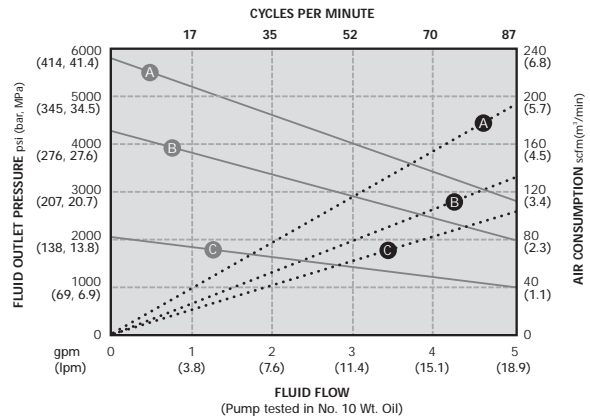
Performance Charts

45:1 Premier



| AIR PRESSURES | LEGEND |
|--------------------------------------|-------------------------|
| (A) = @ 4100 psi (283 bar, 28.3 MPa) | 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

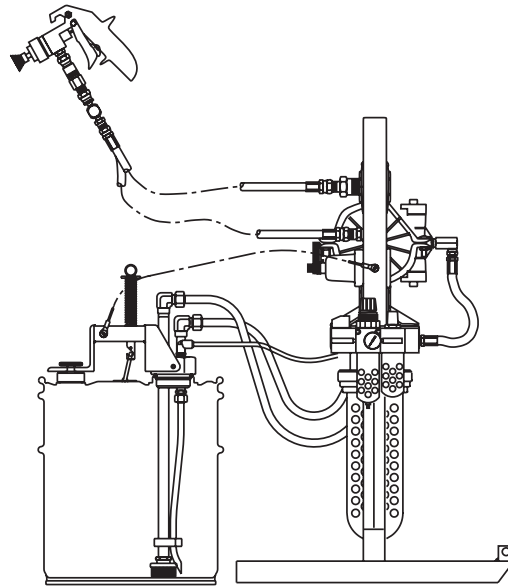
- Brush-applicator or gun-apply kits available
- Protects primers from moisture and premature curing
- Circulates primer to prevent settling

Typical Applications

- Windshield urethane primer

Typical Fluids Handled

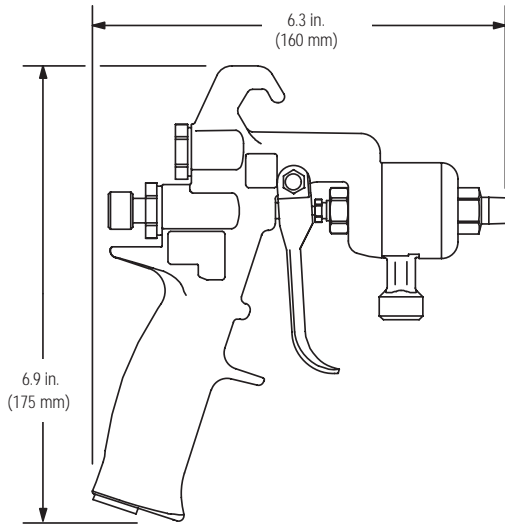
- Moisture-cure black primer for windshields



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 |

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Primer Modules

Bulk Supply and Manual Brush

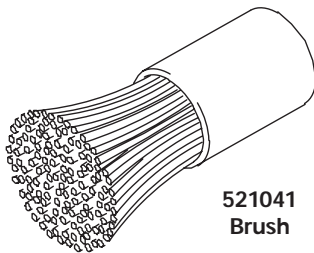
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Ordering Information

- 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

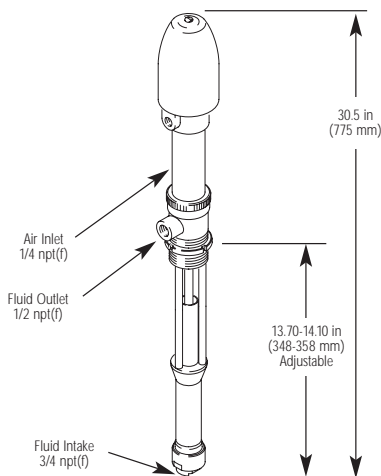
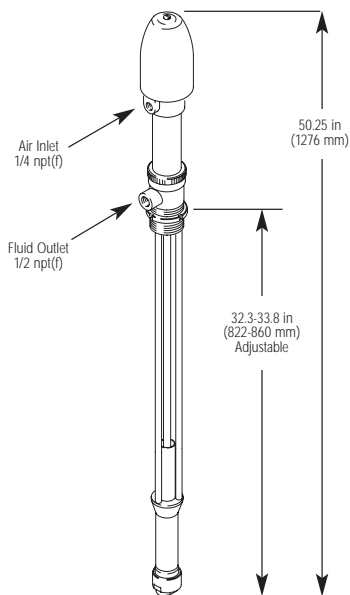
2:1 Standard Air-Operated Piston Transfer Pump

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Technical Specifications

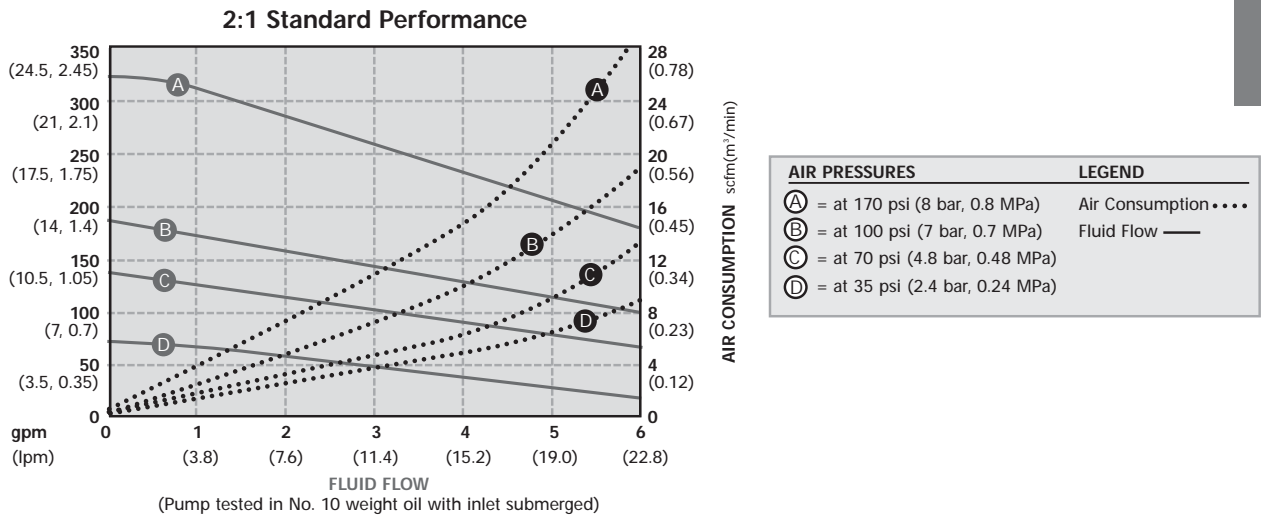
| | |
|--------------------------------------|-------------------------------|
| Maximum fluid outlet pressure | .360 psi (25 bar, 2.5 MPa) |
| Maximum pump speed | .100 cpm |
| Pump cycles per gallon (3.8 l) | .40 |
| Maximum air input pressure | .180 psi (12.6 bar, 1.26 MPa) |
| Maximum operating temperature | .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

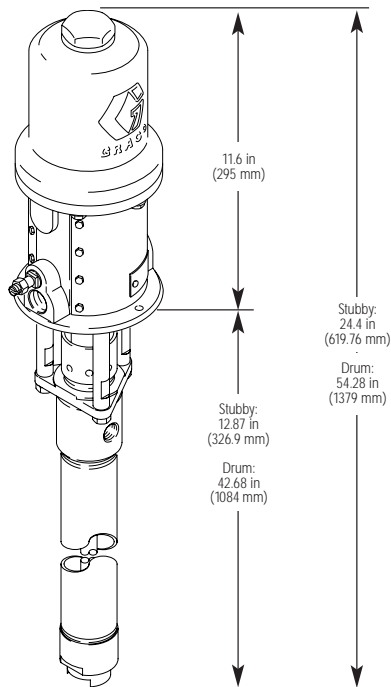
Air-Operated Piston 5:1, 10:1, and 15:1 Pumps



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

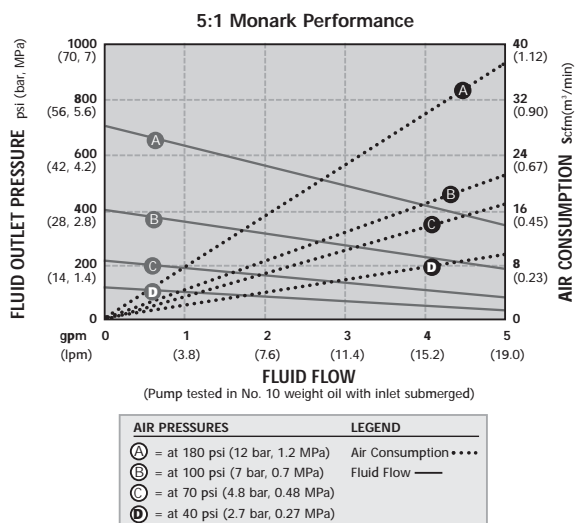
| SIZE AND MATERIALS OF CONSTRUCTION | | |
|------------------------------------|--------------|----------|
| Part Number | Construction | Packing |
| 218956 | Drum/CS | T |
| 224343 | Stubby/SST | UHMWPE/T |
| 224345 | Stubby/SST | UHMWPE/N |
| 224350 | Drum/SST | UHMWPE/T |
| 247147 | Stubby/SST |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

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

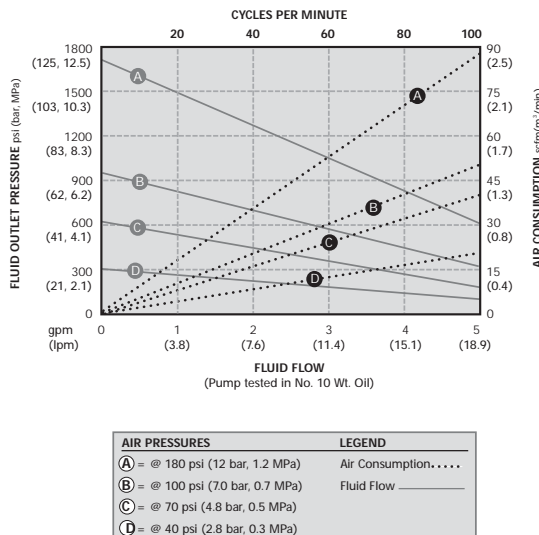
President Options

- 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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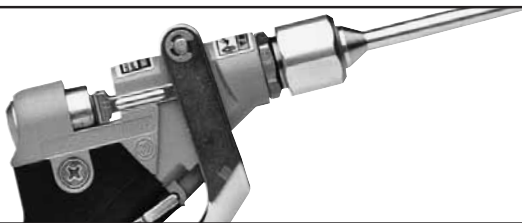
APPLICATORS, MANUAL

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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

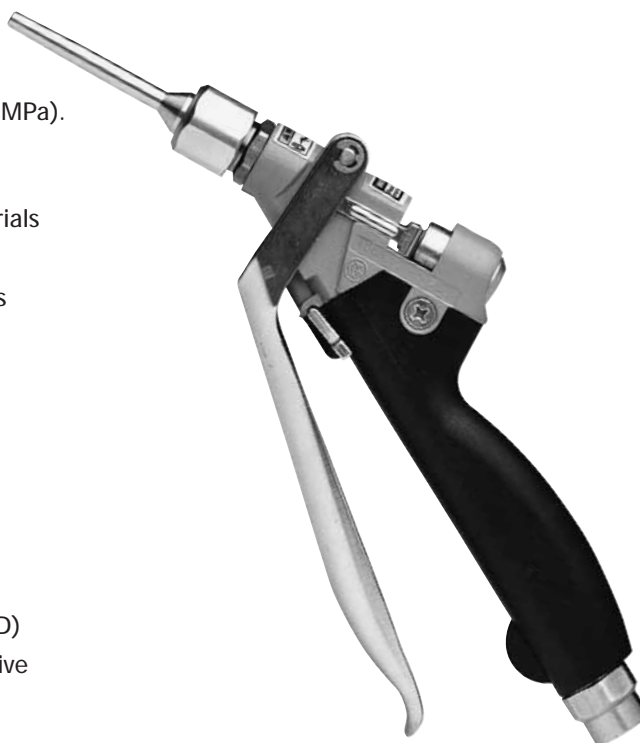
- Precise control of low-to-medium viscosity materials
- Designed for light trigger pull and easy handling
- Changeable tips for a variety of dispensing needs

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

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

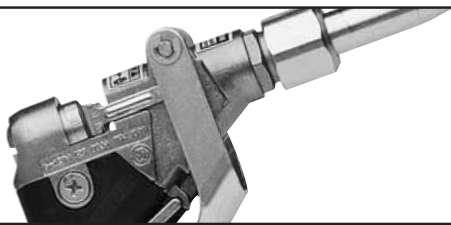
Kits

- 970167 Pistol Grip Manual Extrude Kit**
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

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

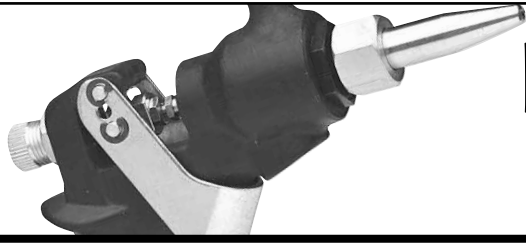
- 235628 Ultra-Lite 6000**
Pistol grip flow gun, carbide ball and seat.
- 243775 Ultra-Lite 6000**
Tapered needle and seat for controllable flow.

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 161506 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 |

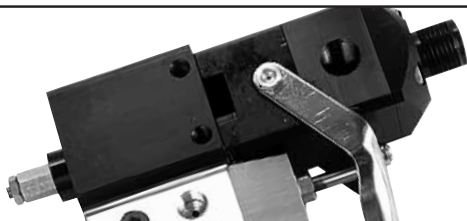


Ordering Information and Technical Specifications – Pistol Grip Guns

| 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

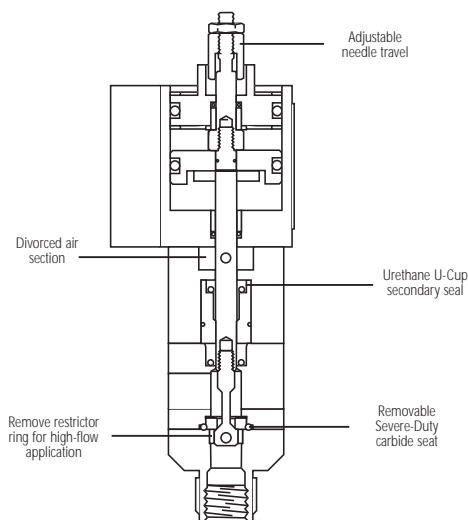
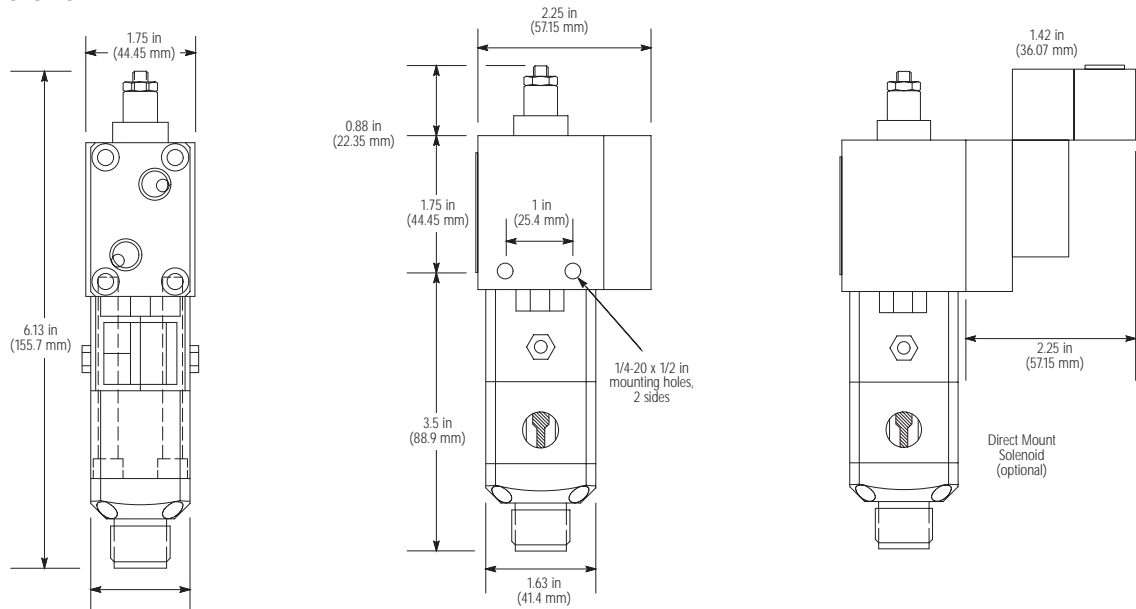


Machine Mount
965766 SST
965786 Aluminum

1K Ultra-Lite

Precision Dispense Valve for Quality Bead Dispensing

Dimensions



Technical Specifications

- Maximum fluid outlet pressure4000 psi (276 bar; 28 MPa)
- Fluid viscosity range 20 to 1 million cps
- Maximum cylinder air pressure120 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 |

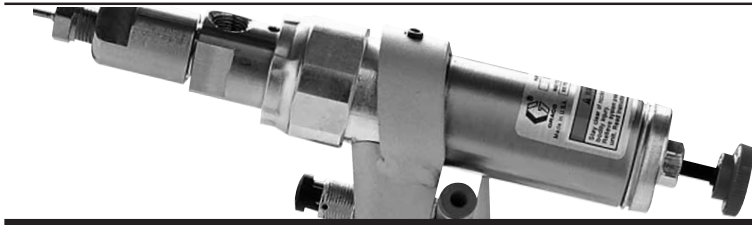
| Tube OD | 1/4 npt(m) Straight | 1/4 npt(m) 90° Swivel |
|---------|------------------------|--------------------------|
| 5.32 in | 598252 | 598327 |
| 5/32 in | 104165 | 598156 |

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

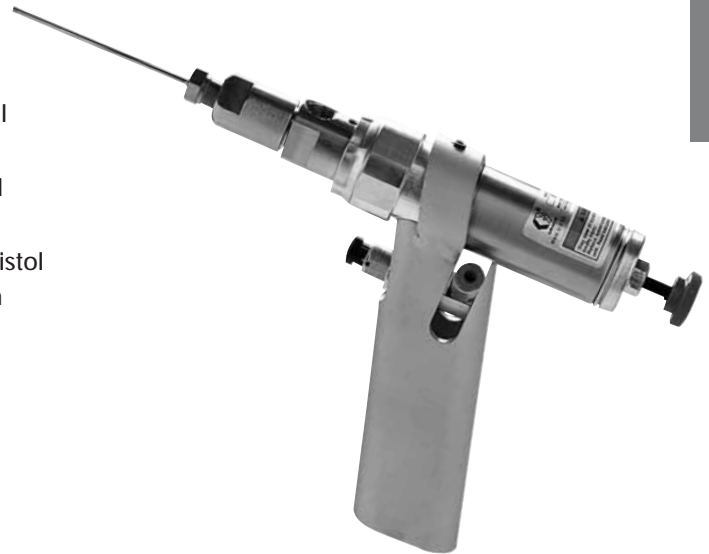
- Precise bead/dot diameter and positioning for improved quality and less rework in manual or automated applications
- Wetted parts are made of SST, PTFE, and acetal to provide wide fluid compatibility
- Valve can be converted from manual trigger (pistol grip) actuation to fixtured automated actuation

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

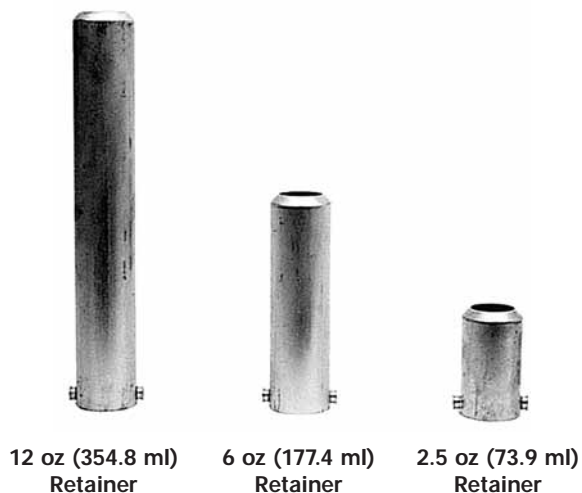
Manual-Operated Sealant Gun Kits

- 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



2

C27098
Model 12020-M

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

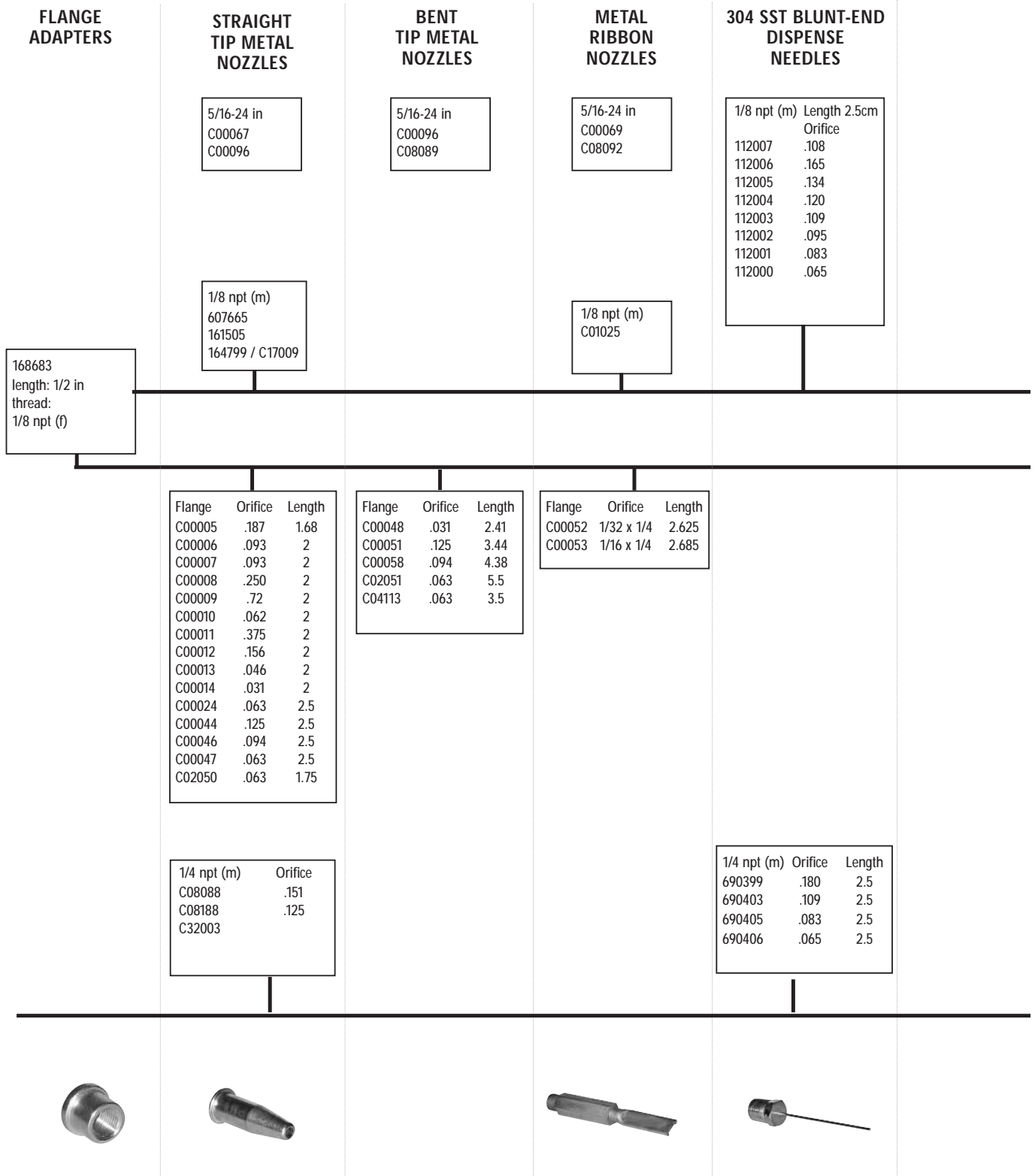
C27100 For model 12020-M Seal Kit

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

Notes

Tip and Needle Selection Chart

2



BRUSH HOLDER EXTENSIONS

BRUSHES

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

Adapter Nipple
C20477
1/8 npt

1/8 npt (f)
C00031
C00033
C00079
521041

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

Luer Lock Adapter
1/8 npt (m)

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

| Orifice | Length |
|---------|----------|
| 690396 | .016 1.5 |

(Polyurethane tapered tip)

Luer Lock Adapter
1/4 npt (m)
690270

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.



| 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

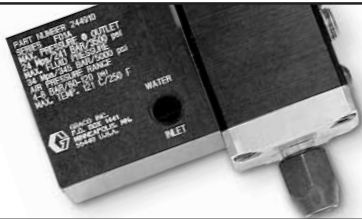
| Valve Style | Part Number | Working Pressure | Fluid Inlet | Fluid Outlet | Air to Open | Air to Close (b) | Description | Replaces | Service Manual |
|------------------------|-------------|---------------------|--------------|-------------------------|--------------|------------------|--|-----------------------------------|----------------|
| 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

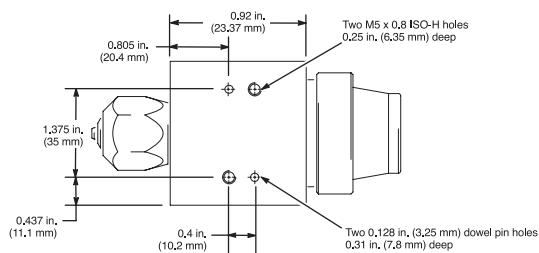
Manifolds (required for gun installation)

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

2

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

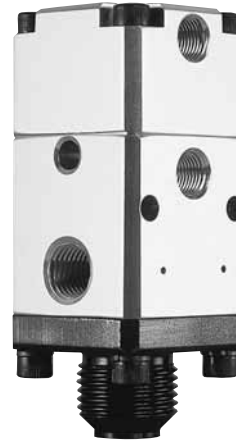
Ordering Information | Technical Specifications

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

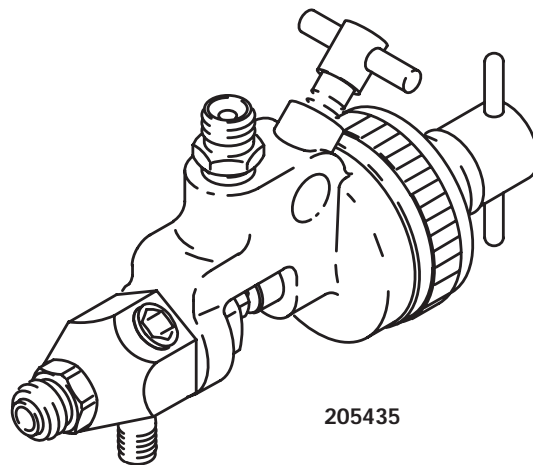
- C27151** Single, Air-Actuated Valve
- C27146** Seal Repair Kit
- C27340** Double, Air-Operated Valve
 Material inlet: 1/2 in (12.6 mm)
- C27342** Seal Repair Kit

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

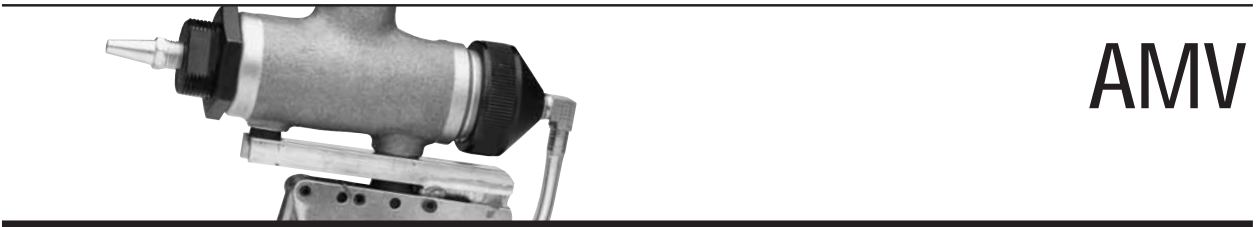


Ordering Information

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

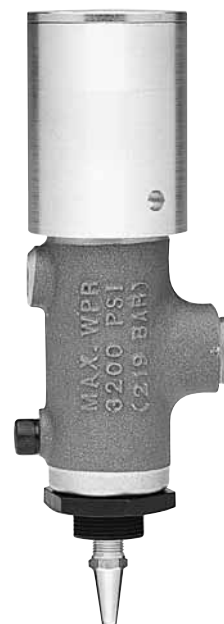
- C02023 Seal Repair Kit for all models except C02078**
- C02080 Seal Repair Kit for C02078**

3 Piece Matched Needle Sets

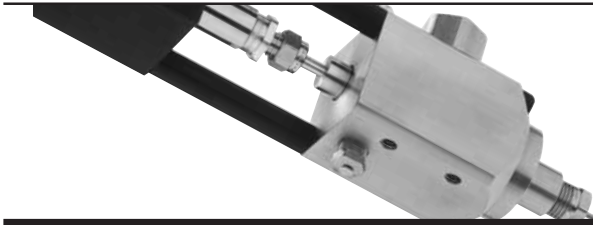
- C02036** Fits C02021, C02022, C02025, C02026,
C02027, C02078



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



Ordering Information

- 692-125 MMV 125**
Shot range: 0.025-0.201 cc
- 692-250 MMV 250**
Shot range: 0.100-0.804 cc
- 692-500 MMV 500**
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

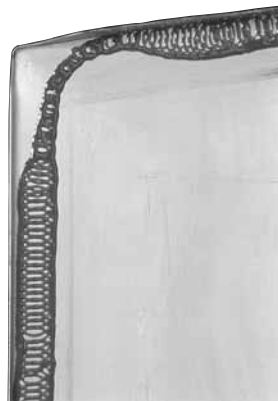
PrecisionSwirl Applications

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

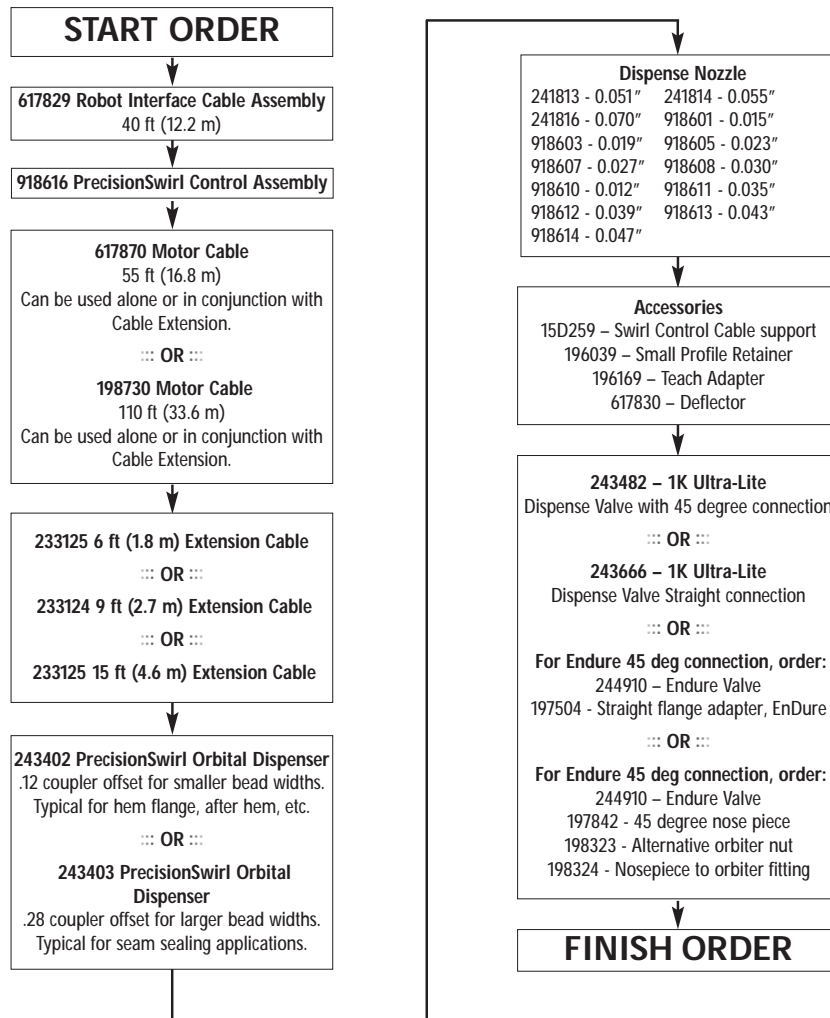


Wide Pattern

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.

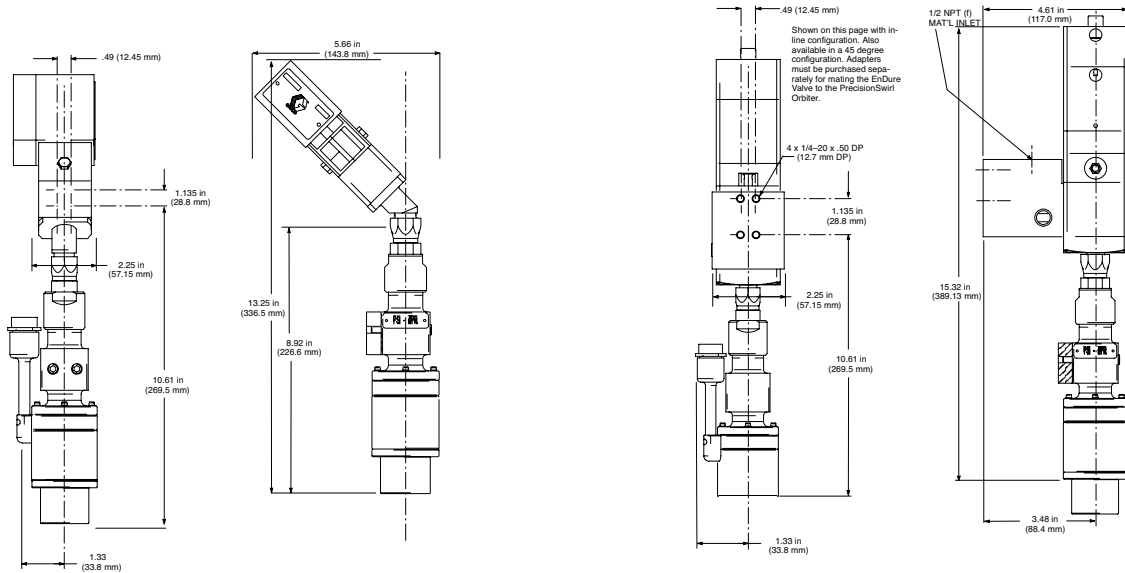
Repair Kits

- 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

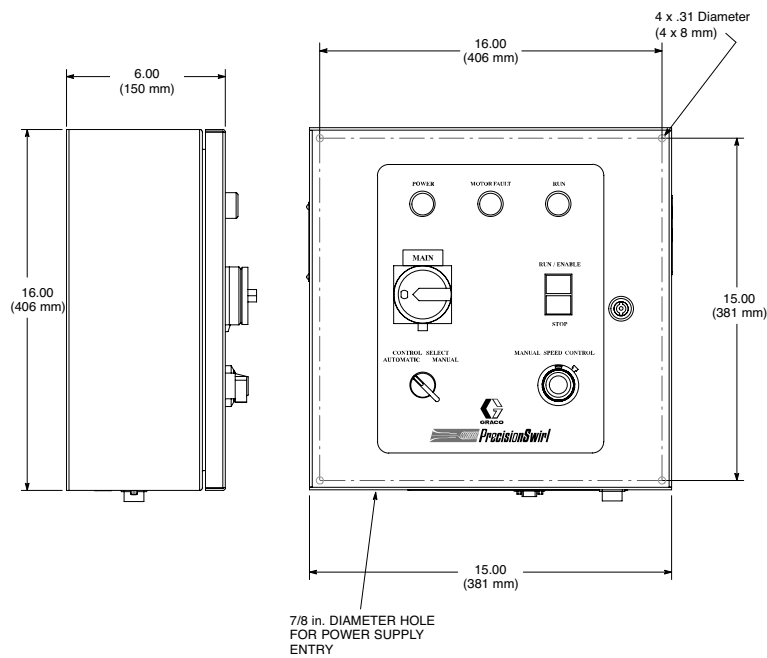
PrecisionSwirl Dimension Drawing

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

Table of Contents

Accessories, Single Component

| | |
|---|----------------|
| SECTION 3: ACCESSORIES, SINGLE COMPONENT | 123-136 |
| 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: 238890, 238889 | Models: 238892, 238891 | Models: 238894, 248090, 238893 | Model: 244734 |
|--|---|---|---|--|
| Type | 238890: spring-operated with fluid pressure gauge 238889: spring-operated with EZ Flush plug | 238892: spring-operated with fluid pressure gauge 238891: spring-operated with EZ Flush plug | 238894 and 248090: air-operated with fluid gauge 238893: air-operated with EZ Flush plug | Air-operated with pressure sensor ports |
| Maximum fluid inlet pressure | 6000 psi (41 MPa, 414 bar) | 6000 psi (41 MPa, 414 bar) | 6000 psi (41 MPa, 414 bar) | 6000 psi (41 MPa, 414 bar) |
| Regulated fluid outlet pressure range | 500–3000 psi (3.4–21 MPa, 34–207 bar) | 3000–5000 psi (21–34 MPa, 207–345 bar) | 500–4000 psi (3.4–28 MPa, 34–276 bar) | 500–4000 psi (3.4–28 MPa, 34–276 bar) |
| Maximum inbound air pressure | - | - | 100 psi (0.7 MPa, 7 bar) | 100 psi (0.7 MPa, 7 bar) |
| Maximum operating temperature | 120° F (50° C) | 120° F (50° C) | 120° F (50° C) | 120° F (50° C) |
| Wetted Parts | 238889 – 304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE 248090 - ceramic | 304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE | 304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE | 304, 316, 17-4 passivated stainless steel, nickel- and cobalt-bound tungsten carbide, PTFE |
| Inlet/outlet | 3/8 npt (f) | 3/8 npt (f) | 3/8 npt (f) 1/2 npt (f) for 248090 | 3/8 npt (f) |
| Fluid pressure gauge (models 238890, 238892, and 238894) | 0–3000 psi (0-21 MPa, 0-207 bar) | 0–5000 psi (0-34 MPa, 0-345 bar) | 0–5000 psi (0-34 MPa, 0-345 bar) | - |
| Maximum flow in 65 cp material | 2 gpm (7.6 lpm) | 2 gpm (7.6 lpm) | 2 gpm (7.6 lpm) | 2 gpm (7.6 lpm) |
| Maximum fluid viscosity | Up to 15,000 cp | Up to 15,000 cp | Up to 15,000 cp | Up to 15,000 cp |
| Weight | 7.0 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 |



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

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

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

Regulators

Technical Data

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

| | Models: 961635, C58318, 244740 | Models: 243700, C07220, 918447 | Models: 246642, 246687 | Models: 246643, 246688 | Model: 903958 |
|---|--|---|---|---|--|
| 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 |

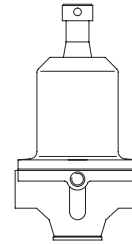
3

Regulators

Technical Data

Mechanically Adjustable Fluid Regulators, Low and Medium Pressure

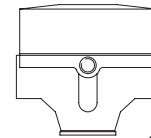
| | Model: 234273 | | Model: 234263 | |
|--------------------|------------------------------|------------|------------------------------|------------|
| Inlet/Outlet | 3/8 npt(f) | 3/8 npt(f) | 3/8 npt(f) | 3/8 npt(f) |
| Gauge Port | 1/8 BSPP | | 1/8 BSPP | |
| Max Inbound Fluid | 580/40/4 | | 580/40/4 | |
| 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 | |



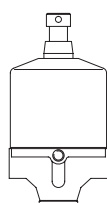
234272
234256

Regulators

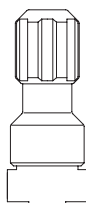
Technical Data

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

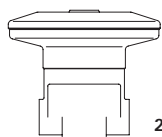


234260
234264
234265

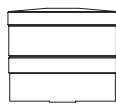
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Pneumatically Adjustable Fluid Regulators, High Pressure

| | 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 | 72-870/5-60/0.05-6 | | 280-2175/20-150/0.2-15 | | 580-3625/40-250/4-25 | | 580-4640/40-320/0.4-32 | |
| Max Delivery | | | | | | | | |
| gpm/lpm | 11/42 | | 11/42 | | 11/42 | | 12/45 | |
| Wetted Parts | SST, 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

| | |
|---------------|--------------|
| 243655 | 23:1 Ambient |
| 243654 | 51:1 Ambient |

Heated Pressure Compensating Valve

Includes 400W Heater and 6-pin electrical connector

| | |
|---------------|------------------|
| 243658 | 23:1 Heated 120V |
| 243206 | 51:1 Heated 120V |

Includes 400W Heater and 8-pin electrical connector

| | |
|---------------|------------------|
| 243656 | 23:1 Heated 240V |
| 243657 | 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

3

| Part Number | Pressure psi (MPa, bar) | Material | ID inches (mm) | Length feet (m) | Coupling |
|---------------|----------------------------|----------|-------------------|--------------------|----------|
| Buna-N | | | | | |
| 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 |
| Neoprene | | | | | |
| 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 |
| Nylon | | | | | |
| 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 |
|---------------------|----------------------------|------------|-------------------|--------------------|--------------------|
| Moisture-Lok | | | | | |
| 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 |
| PTFE | | | | | |
| 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) | 11/16F UNF JIC 37° |
| C12433 | 5000 (34.5, 345) | PTFE | 1.25 (32) | 10 (3) | 15/8F UNF JIC 37° |

Ram Pump Accessories – Hoses

| 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 _{c12} |

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*Call for availability.

The Graco Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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.

FOR GRACO CANADA CUSTOMERS

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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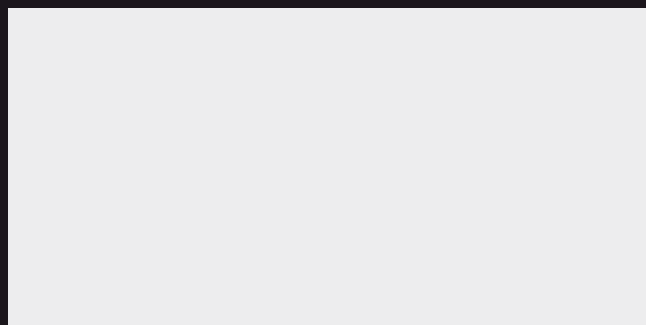
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