



ORION[®]

Bellows Pumps
Leak Free Design



Newest Graco Technology in Piston Pumps

Less

Service

- Eliminates throat seal lubrication
- No packing adjustment
- No throat seal repair

More

Flexibility

- Handles moisture and shear-sensitive materials
- Powerful suction capability
- Easy-to-flush

Lower

Installed Cost

- Eliminates the need for an additional fluid regulator
- Recirculation inlet and two fluid outlets standard
- Flexible material port orientation



ORION[®]

Bare Pump, Wall or Cart Mount.

Typical Applications

WOOD

- Spray machines
- Automatic applications
- Door manufacturing
- Kitchen cabinetry and furniture
- General woodworking

METAL

- Hardener transfer
- Farm equipment
- Truck and bus manufacturing
- Automotive components
- General metal (desks, cabinetry, metal components)

PLASTIC

- Automatic applications
- Automotive components
- Electronic devices (household, communication)

Typical Fluids Applied

- Waterborne and solventborne coatings
- Isocyanates
- UV coatings
- High-solid paints
- Structural paints
- Polyester
- Acid-curing coatings



Part No. 234093
Kit Part No. 246300

Orion Pump Design: Leak Free

**Extremely
Reliable
Pump for
Shear-and
Moisture-
Sensitive
Materials**

Less Service

- 1 Bellows Sealed Pump**
Eliminates throat seal leakage and lubrication
- 3 New Style Packings**
 - Minimized U-Cup seal ring surface
 - Long-life, easy-to-clean
 - Supportive profiled sleeve
 - Offers stability for the seal ring and helps keep it clean

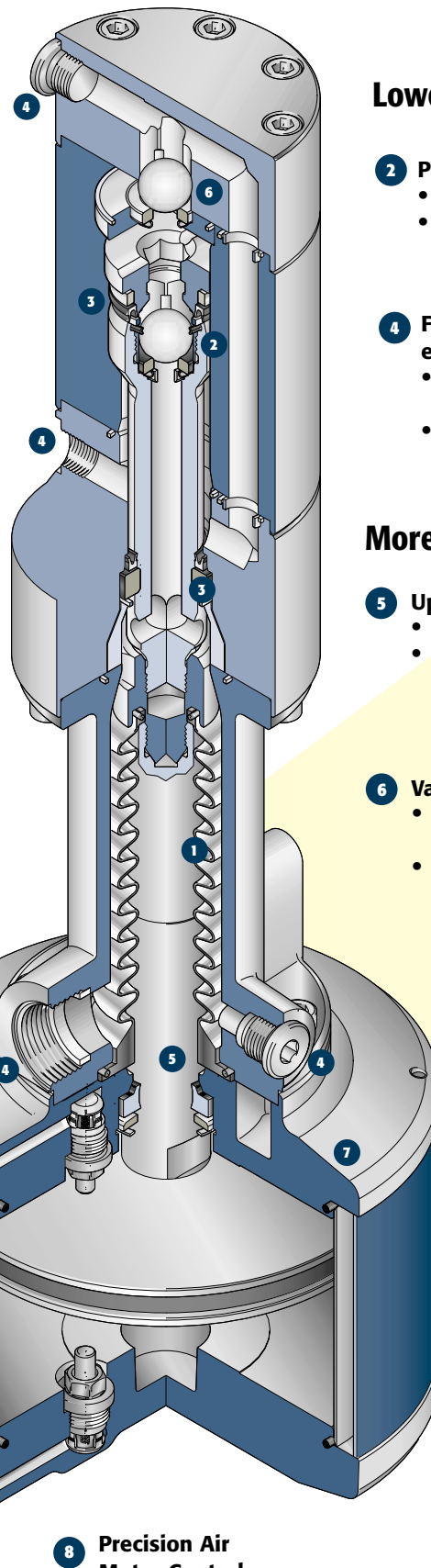
Lower Installed Cost

- 2 Pump Lower Design**
 - Virtually no pulsation
 - No fluid regulator needed
- 4 For many work environments**
 - Variable inlet/outlet port orientation
 - Recirculation inlet

More Flexibility

- 5 Upside-down design**
 - High suction capability
 - Easy to clean and rinse
- 6 Valve Design**
 - Lower flow velocity for sensitive materials
 - Powerful suction

- 7 Simple Air Motor Design**
Minimal number of parts reduces repair time



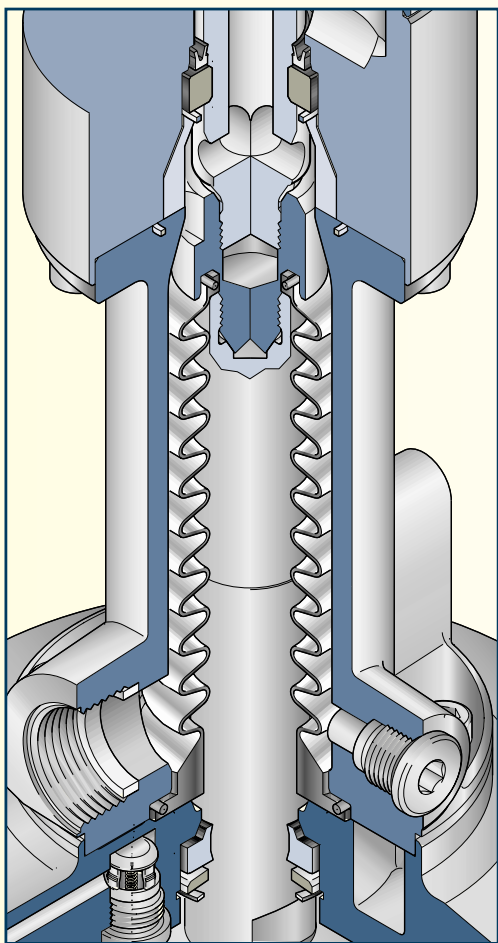
- 9 Quiet Air Motor and Muffler**
Extremely low sound level operation

- 8 Precision Air Motor Control**
Excellent control at low input pressure for fine-finish applications

What Makes The Difference

Unique Upside-Down Design

- Powerful suction capabilities
 - Easy-to-prime pump
- Large, equal-size valve balls; not spring-loaded
 - Virtually no pulsation; easy-to-flush



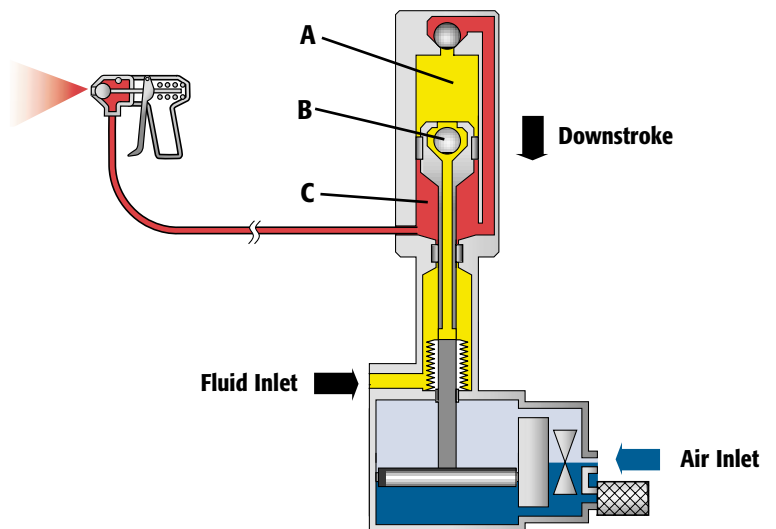
Bellows Sealed

- No throat packing
 - Superior handling of abrasive, shear/moisture-sensitive materials
- No lubrication
 - Less service, less cost

Simple Design

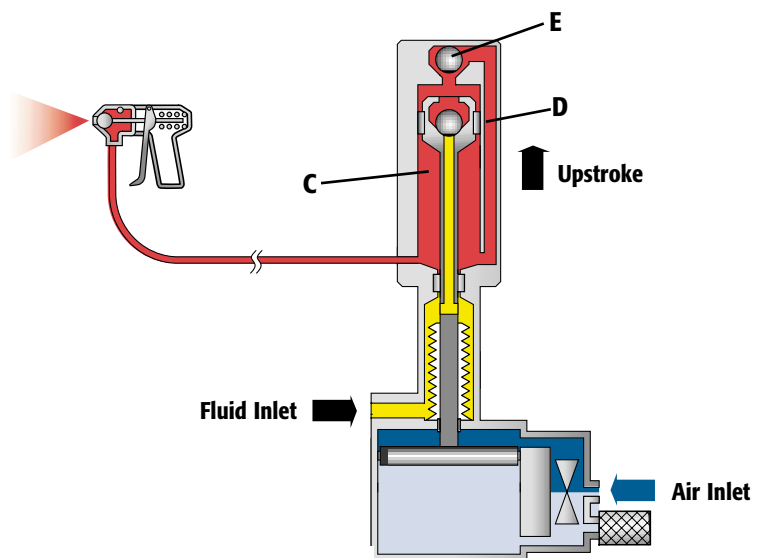
Downstroke

Fluid is sucked into the upper hydraulic cylinder section (A) through the suction valve (B). While the fluid volume of the cylinder section (C) exits the pump pressurized.



Upstroke

Half of the fluid volume is forced through connection (D) into the cylinder section (C) through the check valve (E). The other half of the fluid volume is pressed to the gun.



- Pressurized Air
- Depressurized Air
- Suction Side
- Pressure Side

Orion Cost of Ownership: Savings

LABOUR SAVINGS*

Lubricant service

Labour rate per hour (typical) _____
 Hours per month _____

Annual savings _____

Packing removal service

Labour rate per hour _____
 Time for repair _____

Annual savings _____

Total annual labour savings _____

Example

30.00 €
 0.25 hours
 90.00 €

Individual calculation

x

 x12
 =
 A

30.00 €
 1 hour
 30.00 €

x

 =
 B

120.00 € A+B=

MATERIAL SAVINGS*

Lubricant usage

Lubricant price per 0.15 liter _____
 Amount used per month _____

Annual savings _____

Packing usage

Price per packing kit _____
 Kits used per year _____

Annual savings _____

Total annual material savings _____

Example

5.00 €
 0.15 liter
 60.00 €

Individual calculation

x


 x12
 =
 C

100.00 €
 1
 100.00 €

x

 =
 D

160.00 € C+D=

 **Up to 50% less service*** = **2-year savings estimate* 560 €**

* An Orion pump compared to a traditional piston pump design under normal operating conditions⁽¹⁾, not including additional material disposal costs.

(1) Wetted parts wear-factor depends on operating conditions (cycle/duration/fluid). Includes standard filled materials (no chemical abnormal or aggressive fluids).

ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is among the leading group 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 first-class customer service. Working closely with qualified distributors, Graco offers systems, products and technology which set quality standards 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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Graco Inc. is certified ISO 9001.



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ORION® Product Information

Ordering Information

1. Select appropriate pump model based on pressure and flow requirements.
Refer to pump performance charts on proceeding page for more information.
2. When ordering a bare pump, select npt or BSPP thread design.
3. When ordering a package, order gun/siphon hose kit separately.
4. Order part number.

Orion Pump Models

Orion 15:1 2.7 gpm (10.2 lpm) 170 cc/cycle

Part Number	234084	245935	234087	234091
Description	Bare Pump	Bare Pump	Wall Mount	Cart Mount
Thread Design	npt	BSPP	npt	npt
Air Inlet Thread	1/4 npt(m)	3/8 BSPP(m)	1/4 npt(f)	1/4 npt(f)
Air Regulator	-	-	116513	116513
Air Regulator Gauge	-	-	110436	110436
Fluid Outlet	3/8 npt(m)	3/8 BSPP(f)	1/4-18 npsm(m)	1/4-18 npsm(m)
Fluid Filter	-	-	223160	223160
Fluid Inlet	3/4 npt(m)	1 BSPP(f)	3/4 npt(m)	3/4 npt(m)

Orion 28:1 1.6 gpm (6.0 lpm) 100 cc/cycle

Part Number	234085	245934	234089	234093
Description	Bare Pump	Bare Pump	Wall Mount	Cart Mount
Thread Design	npt	BSPP	npt	npt
Air Inlet Thread	1/4 npt(m)	3/8 BSPP(m)	1/4 npt(f)	1/4 npt(f)
Air Regulator	-	-	116513	116513
Air Regulator Gauge	-	-	110436	110436
Fluid Outlet	3/8 npt(m)	3/8 BSPP(f)	1/4-18 npsm(m)	1/4-18 npsm(m)
Fluid Filter	-	-	223160	223160
Fluid Inlet	3/4 npt(m)	1 BSPP(f)	3/4 npt(m)	3/4 npt(m)

Repair Kits

Pump part number includes motor and lower displacement pump

Information	Orion 15:1	Orion 28:1
Pump Part No.	245935/234084	245934/234085
Air Motor Kits		
Air valve repair kit	233836	233836
Air motor seal repair kit	234041	234041
Air piston rod	234042	234042
Bellows seal kit	234043	234043
Lower Pump Kits		
Pump packing kit (UHMWPE/Teflon/SST)	234046	234047
Intake and piston ball and seat kit	234044	234045
Seal repair kit	234048	234049
Displacement rod, SST	15B013	15B015

Accessories

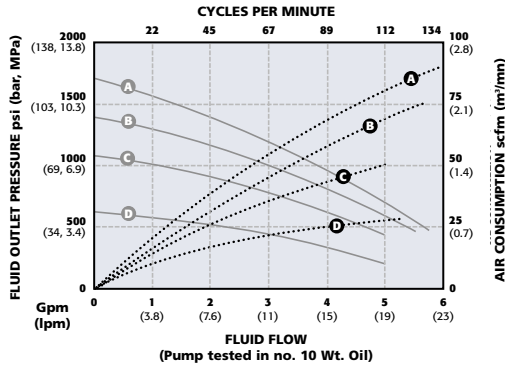
- 15B526 Siphon Hose Kit**
With strainer and inlet fitting. Fits up to 8 gal (30 l) container with 28 mm adapter
- 15B527 Siphon Hose Kit**
With strainer and inlet fitting. Fits up to 55 gal (200 l) container with 28 mm adapter
- 15B528 5 Liter (1.3 Gal) Stainless Steel Cup Kit**
Complete with 22 mm adapter
- 246300 AA Gun Suction Kit**
With Alpha™ Plus gun, hoses, siphon hose and second air regulator. Includes GG4xxx tip of choice
- 246301 Airless Gun Suction Kit**
With Silver Plus® gun, hoses and siphon hose. Includes 163xxx tip of choice
- 243340 Pail Cover with Agitator**
Use to agitate material in a 5 gal (19 l) pail
- 222121 Fluid Regulator, Stainless Steel**
Maximum working pressure: 1500 psi (103 bar, 10.3 MPa). Regulator range: 150 to 1200 psi (10 to 82 bar, 1 to 8.2 MPa)

Accessories (continued)

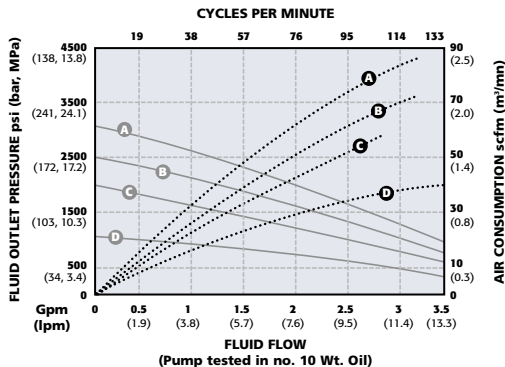
- 223160 Pump Outlet Fluid Filter, Stainless Steel**
60 mesh (250 micron), 5000 psi (350 bar), 35 MPa, 3/8 npt(f) inlet, 1/4 npsm(m) outlet
- 238435 Replacement Filter Screen Element**
3-pack elements, 30 mesh, SST
- 238437 Replacement Filter Screen Element**
3-pack elements, 60 mesh, SST
- 15B525 Pump Inlet Adapter, Stainless Steel**
1 BSPP(m) x 3/4 npt(m)
- 234083 Pump Outlet Adapter, Stainless Steel**
3/8 BSPP(m) x 3/8 npt(m)
- 245718 Pump Air Inlet Adapter**
1/4 npt(m) x 15.5 mm diameter
- 245682 Pump Air Inlet Adapter**
3/8 BSPP(m) x 15.5 mm diameter

Performance Charts

ORION 15:1



ORION 28:1



AIR PRESSURES

- A - @ 7.9 bar (0.79 MPa, 115 psi)
- B - @ 6.2 bar (0.62 MPa, 90 psi)
- C - @ 4.8 bar (0.48 MPa, 70 psi)
- D - @ 2.8 bar (0.28 MPa, 40 psi)

LÉGENDE

- Air Consumption
- Fluid Flow _____

Technical Specifications

Pump ratio	Orion 15:1	Orion 28:1
Air Motor Diameter	6.3 in (160 mm)	6.3 in (160 mm)
Maximum fluid outlet pressure	1740 psi (120 bar, 12.0 MPa)	3248 psi (224 bar, 22.4 MPa)
Maximum air input pressure	116 psi (8 bar, 0.8 MPa)	116 psi (8 bar, 0.8 MPa)
Volume per cycle	5.6 oz (170 cc)	3.4 oz (100 cc)
Recommended cycle rates		
Continuous use, full/part load	14/18 cpm	14/18 cpm
Intermittent use, full/part load	30/45 cpm	30/45 cpm
Air consumption @ 100 psi (7 bar, 0.7 MPa) @ 20 cpm	16 scfm (0.45 m ³ /min)	16 scfm (0.45 m ³ /min)
Sound level @ 58 psi (4 bar, 0.4 MPa) @ 45 cpm	82 dBA	82 dBA
Air inlet, pump	1/4 npt(m) or 3/8 BSPP(m)	1/4 npt(m) or 3/8 BSPP(m)
Fluid inlet, pump	3/4 npt(m) or 1 BSPP(f)	3/4 npt(m) or 1 BSPP(f)
Fluid outlet, pump	3/8 npt(m) or 3/8 BSPP(f)	3/8 npt(m) or 3/8 BSPP(f)
Air inlet, package	1/4 npt(f)	1/4 npt(f)
Fluid outlet, package	1/4 -18 npsm(m)	1/4-18 npsm(m)
Weight, bare pump	66 lbs (30 kg)	58 lbs (26.4 kg)
Instruction manual	309512	309512

