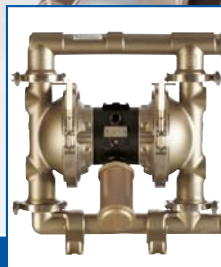




# SaniForce™

Air-Operated Double Diaphragm Pumps  
for Sanitary Applications



## High quality, low cost

- Portable, easy-to-clean, quick knockdown design
- Four models with maximum flow rates up to 567.8 l/min. (150 gpm)
- All fluid contact materials are **FDA-Compliant** and meet CFR Title 21
- Featuring Graco's durable, lube-free, non-sticking air valve
- Bolt-through and overmolded diaphragm options available
- Available with aluminium, polypropylene or stainless steel center section (air motor)
- 316 SST fluid section (all models)

PROVEN QUALITY. LEADING TECHNOLOGY.

# Ordering Information

## SANIFORCE 515, 38.1 MM (1.5 IN) SANITARY CLAMP CONNECTION

| Part Number | Center Section | Seats/ O-rings | Balls      | Diaphragms      |
|-------------|----------------|----------------|------------|-----------------|
| FD5111      | PP             | SST/PTFE       | PTFE       | PTFE            |
| FD5113      | PP             | SST/PTFE       | PTFE       | Overmolded PTFE |
| FD5122      | PP             | SST/PTFE       | Santoprene | Santoprene      |
| FD5611      | PP             | SST/EPDM       | PTFE       | PTFE            |
| FD5613      | PP             | SST/EPDM       | PTFE       | Overmolded PTFE |
| FD5622      | PP             | SST/EPDM       | Santoprene | Santoprene      |

## SANIFORCE 1040, 38.1 MM (1.5 IN) SANITARY CLAMP CONNECTION

| Part Number | Center Section | Seats/ O-rings | Balls                         | Diaphragms      |
|-------------|----------------|----------------|-------------------------------|-----------------|
| FD1111      | SST            | SST/PTFE       | PTFE                          | PTFE            |
| FD1122      | SST            | SST/PTFE       | Santoprene                    | Santoprene      |
| FD1211      | SST            | SST/EPDM       | PTFE                          | PTFE            |
| FD1222      | SST            | SST/EPDM       | Santoprene                    | Santoprene      |
| FD1113      | SST            | SST/PTFE       | PTFE                          | Overmolded PTFE |
| FD1213      | SST            | SST/EPDM       | PTFE                          | Overmolded PTFE |
| FD1132      | SST            | SST/PTFE       | Polychloroprene               | Santoprene      |
| FD1232      | SST            | SST/EPDM       | Polychloroprene               | Santoprene      |
| FD1233      | SST            | SST/PTFE       | Polychloroprene with SST core | Overmolded PTFE |
| FA1111      | ALU            | SST/PTFE       | PTFE                          | PTFE            |
| FA1122      | ALU            | SST/PTFE       | Santoprene                    | Santoprene      |
| FA1132      | ALU            | 3SST/PTFE      | Polychloroprene, SST core     | Santoprene      |
| FA1222      | ALU            | SST/EPDM       | Santoprene                    | Santoprene      |

## SANIFORCE 1590, 50.8 MM (2.0 IN) SANITARY CLAMP CONNECTION

| Part Number | Center Section | Seats/ O-rings | Balls                         | Diaphragms      |
|-------------|----------------|----------------|-------------------------------|-----------------|
| FD2111      | SST            | SST/PTFE       | PTFE                          | PTFE            |
| FD2122      | SST            | SST/PTFE       | Santoprene                    | Santoprene      |
| FD2211      | SST            | SST/EPDM       | PTFE                          | PTFE            |
| FD2222      | SST            | SST/EPDM       | Santoprene                    | Santoprene      |
| FD2113      | SST            | SST/PTFE       | PTFE                          | Overmolded PTFE |
| FD2213      | SST            | SST/EPDM       | PTFE                          | Overmolded PTFE |
| FD2132      | SST            | SST/PTFE       | Polychloroprene               | Santoprene      |
| FD2232      | SST            | SST/EPDM       | Polychloroprene               | Santoprene      |
| FD2133      | SST            | SST/PTFE       | Polychloroprene with SST core | Overmolded PTFE |
| FA2113      | ALU            | SST/PTFE       | PTFE                          | PTFE Overmolded |
| FA2122      | ALU            | SST/PTFE       | Santoprene                    | Santoprene      |
| FA2132      | ALU            | SST/PTFE       | Polychloroprene, SST core     | Santoprene      |
| FA2213      | ALU            | SST/EPDM       | PTFE                          | PTFE Overmolded |
| FA2222      | ALU            | SST/EPDM       | Santoprene                    | Santoprene      |

## SANIFORCE 2150, 63.5 MM (2.5 IN) SANITARY CLAMP CONNECTION

| Part Number | Center Section | Seats/ O-rings | Balls                         | Diaphragms      |
|-------------|----------------|----------------|-------------------------------|-----------------|
| FD3111      | SST            | SST/PTFE       | PTFE                          | PTFE            |
| FD3122      | SST            | SST/PTFE       | Santoprene                    | Santoprene      |
| FD3211      | SST            | SST/EPDM       | PTFE                          | PTFE            |
| FD3222      | SST            | SST/EPDM       | Santoprene                    | Santoprene      |
| FD3113      | SST            | SST/PTFE       | PTFE                          | Overmolded PTFE |
| FD3213      | SST            | SST/EPDM       | PTFE                          | Overmolded PTFE |
| FD3132      | SST            | SST/PTFE       | Polychloroprene               | Santoprene      |
| FD3232      | SST            | SST/EPDM       | Polychloroprene               | Santoprene      |
| FD3133      | SST            | SST/PTFE       | Polychloroprene with SST core | Overmolded PTFE |
| FA3111      | ALU            | SST/PTFE       | PTFE                          | PTFE            |
| FA3122      | ALU            | SST/PTFE       | Santoprene                    | Santoprene      |
| FA3132      | ALU            | SST/PTFE       | Polychloroprene, SST core     | Santoprene      |
| FA3222      | ALU            | SST/EPDM       | Santoprene                    | Santoprene      |

# Technical Specifications

|  | SaniForce 515  | SaniForce 1040                            | SaniForce 1590                            | SaniForce 2150                            |
|--|--|---|---|---|
| Maximum fluid working pressure   | 7 bar (0.7 MPa, 100 psi)   | 8 bar (0.8 MPa, 120 psi)                  | 8 bar (0.8 MPa, 120 psi)                  | 8 bar (0.8 MPa, 120 psi)                  |
| Air pressure operating range   | 1.4-7 bar<br>(0.14-0.7 MPa, 20-100 psi)  | 1.4-8 bar<br>(0.14-0.8 MPa, 20-120 psi)   | 1.4-8 bar<br>(0.14-0.8 MPa, 20-120 psi)   | 1.4-8 bar<br>(0.14-0.8 MPa, 20-120 psi)   |
| Maximum air consumption  | 0.8 m <sup>3</sup> /min (28 scfm)  | 1.4 m <sup>3</sup> /min (50 scfm)         | 3.68 m <sup>3</sup> /min (130 scfm)       | 4.95 m <sup>3</sup> /min (175 scfm)       |
| Air consumption at 4.8 bar/76 l (70 psi/20 gpm)  | 0.51 m <sup>3</sup> /min (18 scfm)   | 0.51 m <sup>3</sup> /min (18 scfm)        | 1.19 m <sup>3</sup> /min (42 scfm)        | 1.98 m <sup>3</sup> /min (70 scfm)        |
| Maximum free-flow delivery   | 61 l/min. (16 gpm)   | 155 l/min. (41 gpm)                       | 379 l/min. (100 gpm)                      | 567.8 l/min. (150 gpm)                    |
| Liters (gallons) per cycle   | 0.15 (0.04) with standard diaphragms<br>0.11 (0.03) with overmolded diaphragms | 0.61 (0.16)*                              | 1.9 (0.5)*                                | 3.67 (0.97)*                              |
| Maximum suction lift   | 7.6 m (25 ft) wet,<br>4.6 m (15 ft) dry  | 8.84 m (29 ft) wet,<br>4.87 m (16 ft) dry | 8.84 m (29 ft) wet,<br>4.27 m (14 ft) dry | 8.84 m (29 ft) wet,<br>4.87 m (16 ft) dry |
| Maximum size pumpable solids   | 2.38 mm (3/32 in)  | 3.2 mm (1/8 in)                           | 4.8 mm (3/16 in)                          | 6.3 mm (1/4 in)                           |
| Air inlet size   | 1/4 npt(f)   | 0.5 in npt(f)                             | 0.5 in npt(f)                             | 0.5 in npt(f)                             |
| Fluid inlet/outlet size (sanitary flange)  | 38.1 mm (1.5 in)   | 38.1 mm (1.5 in)                          | 50.8 mm (2 in)                            | 63.5 mm (2.5 in)                          |
| Weight - All models  | 10.25 kg (22.6 lb)   | 24.9 kg (55 lb)                           | 40 kg (89 lb)                             | 66.7 kg (147 lb)                          |
| Instruction manual   | 3A1973   | 311879                                    | 311879                                    | 311879                                    |
| <b>Maximum fluid operating temperature is based on the following maximum diaphragm, ball, and seat temperature ratings</b> |  |   |   |   |
| Stainless steel  | 121.1°C (250°F)  | 121.1°C (250°F)                           | 121.1°C (250°F)                           | 121.1°C (250°F)                           |
| PTFE   | 104.4°C (220°F)  | 104.4°C (220°F)                           | 104.4°C (220°F)                           | 104.4°C (220°F)                           |
| Santoprene   | 82.2°C (180°F)   | 82.2°C (180°F)                            | 82.2°C (180°F)                            | 82.2°C (180°F)                            |
| EPDM   | 135°C (275°F)  | 135°C (275°F)                             | 135°C (275°F)                             | 135°C (275°F)                             |
| Polychloroprene  | 93.3°C (200°F)   | 93.3°C (200°F)                            | 93.3°C (200°F)                            | 93.3°C (200°F)                            |

\*Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type

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

Graco is certified ISO 9001.

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