

# SaniForce™ Equipment Catalog

Solutions for Sanitary Applications



unleash the  
**POWER**

motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX

Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48

Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)

[www.motralec.com](http://www.motralec.com)

PROVEN QUALITY. LEADING TECHNOLOGY

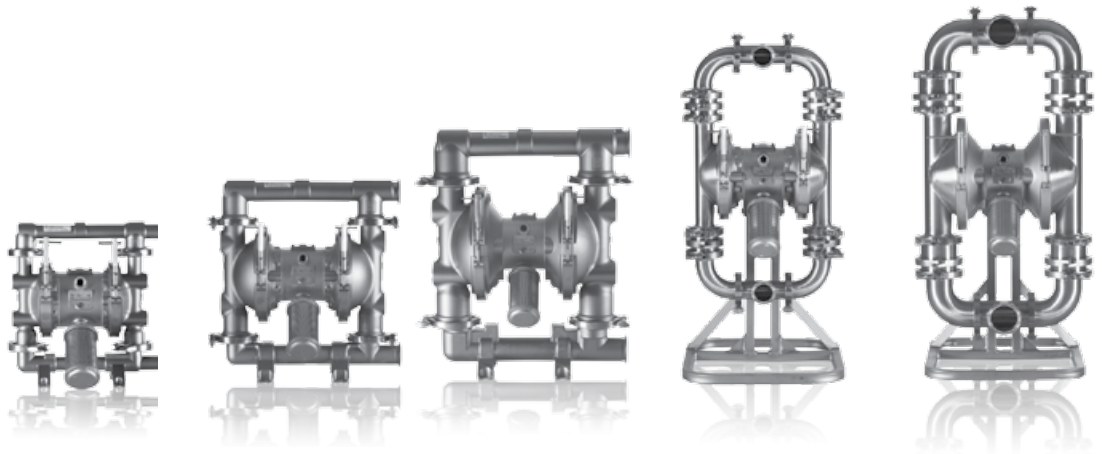
**Contents**

SaniForce Pump Selection Chart .....2  
SaniForce Drum and Bin Unloader Selection Chart .....4  
SaniForce 1040, 1590 & 2150 .....6  
SaniForce 1590 & 3150 High Sanitation Pumps .....10  
SaniForce 1590 & 3150 3A Certified Pumps.....13  
SaniForce Meat and Poultry Pumps.....15  
SaniForce Piston Pumps .....17  
SaniForce Drum Unloaders.....20  
SaniForce Bin Evacuation Systems (BES) .....22  
Hydra-Clean® Pressure Washers.....25  
Overmolded Diaphragms .....28

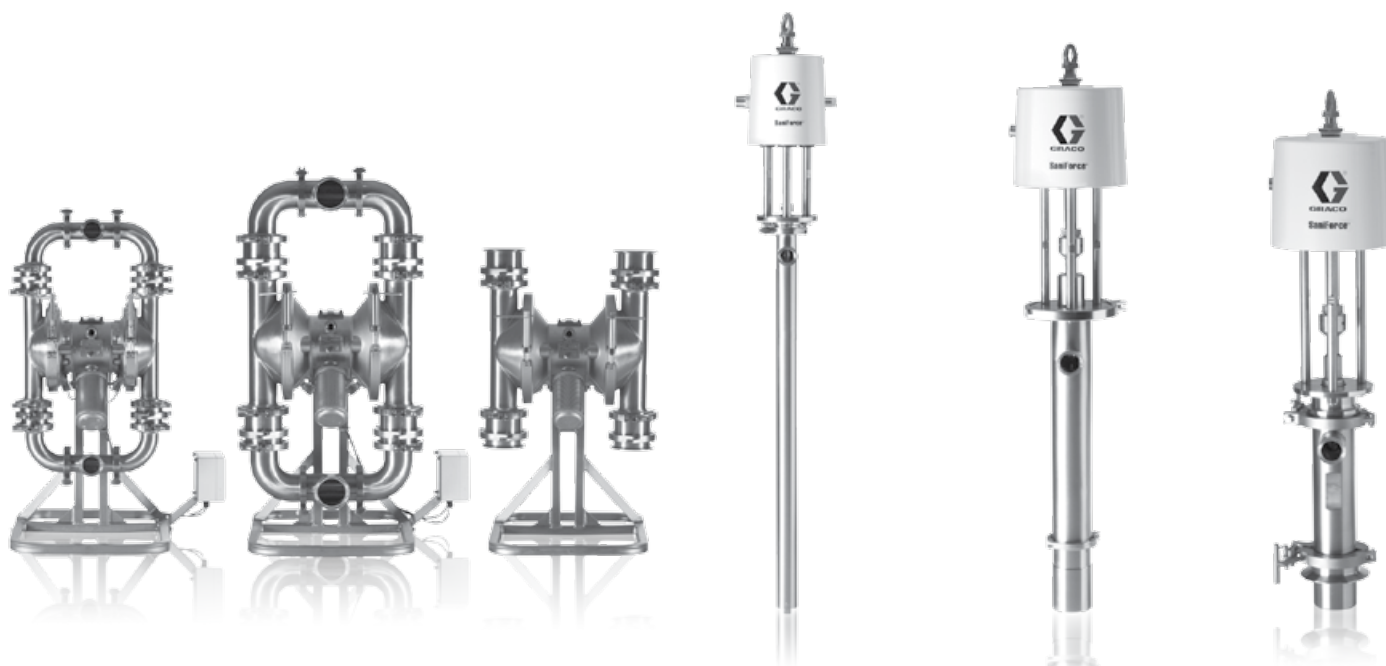
# SaniForce™ Pumps

## Selection Chart

	1040	1590	2150	1590 HS	3150 HS
<b>Max Flow Rate</b>	40 gpm (151 lpm)	90 gpm (341 lpm)	150 gpm (568 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)
<b>Max Fluid Pressure</b>	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
<b>Check Style</b>	Ball	Ball	Ball	Ball	Ball and Flapper
<b>Suction Lift (Wet)</b>	29 ft (8.84 m)	29 ft (8.84 m)	29 ft (8.84 m)	28 ft (8.5 m)	Ball = 18 ft (5.5 m) Flapper = 10 ft (3 m)
<b>Max Pumpable Solids</b>	1/8 in (3.2 mm)	3/16 in (4.8 mm)	1/4 in (6.3 mm)	5/8 in (15.9 mm)	Ball = 1 in (25.4 mm) Flapper = 2.5 in (63.5 mm)
<b>Viscosity Range</b>	Up to 10,000 cps	Up to 15,000 cps	Up to 20,000 cps	Up to 25,000 cps	Up to 20,000 cps
<b>Flyer</b>	<a href="#">320462</a>	<a href="#">320462</a>	<a href="#">320462</a>	<a href="#">338499</a>	<a href="#">338499</a>
<b>Instruction Manual</b>	<a href="#">311879</a>	<a href="#">311879</a>	<a href="#">311879</a>	<a href="#">310622</a>	<a href="#">310622</a>



1590 3A	3150 3A	Meat/Poultry	SaniForce 6:1 Piston Pump	SaniForce 5:1 Piston Pump	SaniForce 12:1 Piston Pump
90 gpm (340 lpm)	150 gpm (568 lpm)	150 gpm (568 lpm)	4 gpm (15 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)
120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)
Ball	Ball	Flapper	Double ball or Priming piston	Double ball or Priming piston	Priming piston
28 ft (8.5 m)	18 ft (5.5 m)	10 ft (3 m)	N/A	N/A	N/A
5/8 in (15.9 mm)	1 in (25.4 mm)	2.5 in (6.3 cm)	1/8 in (3.2 mm)	1/4 in (6.4 mm)	1/4 in (6.4 mm)
Up to 15,000 cps	Up to 20,000 cps	Up to 25,000 cps	Siphon: Up to 5,000 cps Immersion: Up to 100,000 cps	Siphon: Up to 5,000 cps Immersion: Up to 100,000 cps	Siphon: Up to 5,000 cps Immersion: Up to 100,000 cps
<a href="#">338499</a>	<a href="#">338499</a>	<a href="#">338067</a>	<a href="#">338591</a>	<a href="#">338591</a>	<a href="#">338591</a>
<a href="#">310622</a>	<a href="#">310622</a>	<a href="#">310622</a>	<a href="#">3A0733</a>	<a href="#">3A0734</a>	<a href="#">3A0735</a>

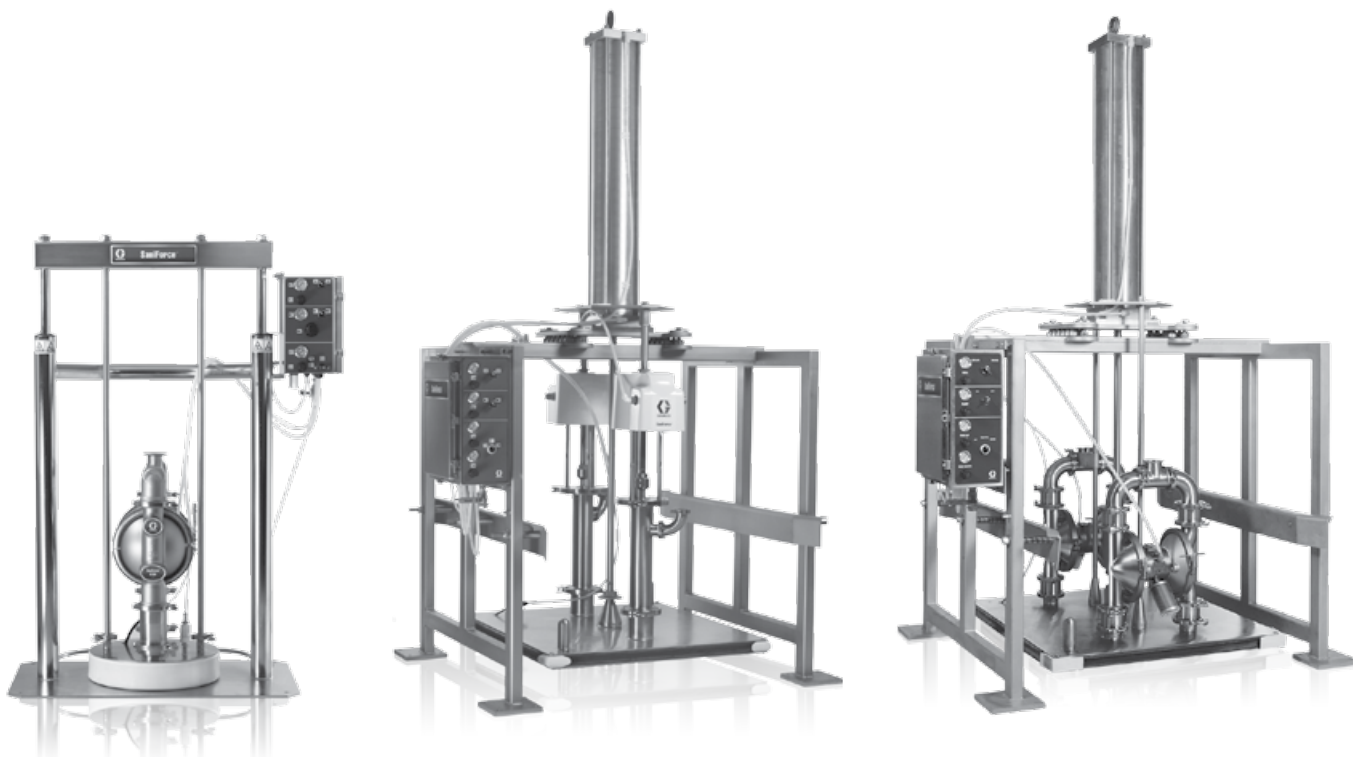


# SaniForce Drum and Bin Unloaders Selection Chart

	<b>SaniForce 6:1 Drum Unloader</b>	<b>SaniForce 5:1 Drum Unloader</b>	<b>SaniForce 12:1 Drum Unloader</b>	<b>SaniForce 3150 HS Drum Unloader</b>
<b>Max Flow Rate</b>	4.0 gpm (15 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)	60 gpm (234 lpm) to 100 gpm (390 lpm)
<b>Max Fluid Pressure</b>	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)	120 psi (8 bar, 0.8 MPa)
<b>Pump Style</b>	Double ball or priming piston	Double ball or priming piston	Priming piston	Ball and flapper
<b>Controls</b>	Manual	Manual	Manual	Manual
<b>Viscosity Range</b>				25,000-100,000 cps
Double Ball:	25,000-60,000 cps	25,000-60,000 cps		
Priming Piston:	60,000-500,000 cps	60,000-500,000 cps	60,000-500,000 cps	
<b>Flyer</b>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>
<b>Instruction Manual</b>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>



<b>SaniForce 2150 Drum Unloader</b>	<b>SaniForce BES</b>	<b>SaniForce 3150 BES</b>
60 gpm (234 lpm) to 100 gpm (390 lpm)	28 gpm (106 lpm) to 54 gpm (204 lpm)	120 gpm (468 lpm) to 300 gpm (1,135 lpm)
120 psi (8 bar, 0.8 MPa)	400 psi (27.5 bar, 2.7 MPa) to 1000 psi (70 bar, 7 MPa)	120 psi (8 bar, 0.8 MPa)
Ball	Double ball or priming piston	Ball and flapper
Manual	Manual and Electronic	Manual and Electronic
25,000-100,000 cps	25,000-500,000 cps	25,000-100,000 cps
<a href="#">338590</a>	<a href="#">338589</a>	<a href="#">338589</a>
<a href="#">3A0591</a>	<a href="#">311163</a>	<a href="#">311163</a>



# SaniForce 1040, 1590 & 2150

## Air-Operated Diaphragm Pumps

### Ordering Information

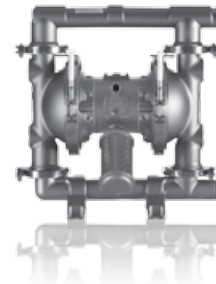
#### SaniForce 1040

Part Number	Size	Seats	O-rings	Balls	Diaphragms
FD1111	1.5 in	SST	PTFE	PTFE	PTFE
FD1122	1.5 in	SST	PTFE	Santoprene	Santoprene
FD1211	1.5 in	SST	EPDM	PTFE	PTFE
FD1222	1.5 in	SST	EPDM	Santoprene	Santoprene
FD1113	1.5 in	SST	PTFE	PTFE	Overmolded PTFE
FD1213	1.5 in	SST	EPDM	PTFE	Overmolded PTFE
FD1132	1.5 in	SST	PTFE	Weighted Polychloroprene	Santoprene
FD1232	1.5 in	SST	EPDM	Weighted Polychloroprene	Santoprene



#### SaniForce 1590

Part Number	Size	Seats	O-rings	Balls	Diaphragms
FD2111	2 in	SST	PTFE	PTFE	PTFE
FD2122	2 in	SST	PTFE	Santoprene	Santoprene
FD2211	2 in	SST	EPDM	PTFE	PTFE
FD2222	2 in	SST	EPDM	Santoprene	Santoprene
FD2113	2 in	SST	PTFE	PTFE	Overmolded PTFE
FD2213	2 in	SST	EPDM	PTFE	Overmolded PTFE
FD2132	2 in	SST	PTFE	Weighted Polychloroprene	Santoprene
FD2232	2 in	SST	EPDM	Weighted Polychloroprene	Santoprene



#### SaniForce 2150

Part Number	Size	Seats	O-rings	Balls	Diaphragms
FD3111	2.5 in	SST	PTFE	PTFE	PTFE
FD3122	2.5 in	SST	PTFE	Santoprene	Santoprene
FD3211	2.5 in	SST	EPDM	PTFE	PTFE
FD3222	2.5 in	SST	EPDM	Santoprene	Santoprene
FD3113	2.5 in	SST	PTFE	PTFE	Overmolded PTFE
FD3213	2.5 in	SST	EPDM	PTFE	Overmolded PTFE
FD3132	2.5 in	SST	PTFE	Weighted Polychloroprene	Santoprene
FD3232	2.5 in	SST	EPDM	Weighted Polychloroprene	Santoprene



## Ordering Information

### Fluid Repair Kits

Kits	O-rings	Balls	Diaphragms
<b>1040 Fluid Repair Kits</b>			
FK1111	PTFE	PTFE	PTFE
FK1122	PTFE	Santoprene	Santoprene
FK1211	EPDM	PTFE	PTFE
FK1222	EPDM	Santoprene	Santoprene
FK1113	PTFE	PTFE	Overmolded PTFE
FK1213	EPDM	PTFE	Overmolded PTFE
FK1132	PTFE	Weighted CR	Santoprene
FK1232	EPDM	Weighted CR	Santoprene
<b>1590 Fluid Repair Kits</b>			
FK2111	PTFE	PTFE	PTFE
FK2122	PTFE	Santoprene	Santoprene
FK2211	EPDM	PTFE	PTFE
FK2222	EPDM	Santoprene	Santoprene

Kits	O-rings	Balls	Diaphragms
<b>1590 Fluid Repair Kits (cont.)</b>			
FK2113	PTFE	PTFE	Overmolded PTFE
FK2213	EPDM	PTFE	Overmolded PTFE
FK2132	PTFE	Weighted CR	Santoprene
FK2232	EPDM	Weighted CR	Santoprene
<b>2150 Fluid Repair Kits</b>			
FK3111	PTFE	PTFE	PTFE
FK3122	PTFE	Santoprene	Santoprene
FK3211	EPDM	PTFE	PTFE
FK3222	EPDM	Santoprene	Santoprene
FK3113	PTFE	PTFE	Overmolded PTFE
FK3213	EPDM	PTFE	Overmolded PTFE
FK3132	PTFE	Weighted CR	Santoprene
FK3232	EPDM	Weighted CR	Santoprene

## Technical Specifications

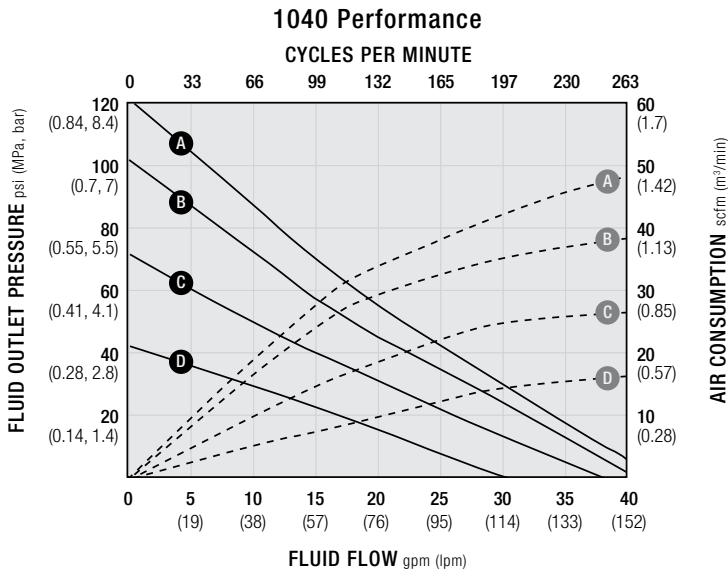
	1040 FDA	1590 FDA	2150 FDA
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
Air pressure operating range	20-120 psi (1.4-8 bar, 0.14-0.8 MPa)	20-120 psi (1.4-8 bar, 0.14-0.8 MPa)	20-120 psi (1.4-8 bar, 0.14-0.8 MPa)
Maximum air consumption	50 scfm	130 scfm	175 scfm
Air consumption	18 scfm at 70 psi/20 gpm	42 scfm at 70 psi/50 gpm	70 scfm at 70 psi/80 gpm
Maximum free-flow delivery	40 gpm (151 lpm)	90 gpm (341 lpm)	150 gpm (568 lpm)
Gallons (liters) per cycle	0.16 (0.57)*	0.5 (1.9)*	0.97 (3.67)*
Maximum suction lift	29 ft (8.83 m) wet, 16 ft (4.87 m) dry	29 ft (8.83 m) wet, 14 ft (4.27 m) dry	29 ft (8.83 m) wet, 16 ft (4.87 m) dry
Maximum size pumpable solids	1/8 in (3.2 mm)	3/16 in (4.8 mm)	1/4 in (6.3 mm)
Air inlet size	0.5 in npt(f)	0.5 in npt(f)	0.5 in npt(f)
Fluid inlet/outlet size	1.5 in sanitary flange	2 in sanitary flange	2.5 in sanitary flange
Weight - All models	55 lb (24.9 kg)	89 lb (40 kg)	147 lb (66.7 kg)
Flyer	<a href="#">320462</a>	<a href="#">320462</a>	<a href="#">320462</a>
Instruction manual	<a href="#">311879</a>	<a href="#">311879</a>	<a href="#">311879</a>

Maximum fluid operating temperature is based on the following maximum diaphragm, ball, and seat temperature ratings			
Stainless steel	250°F (121.1°C)	250°F (121.1°C)	250°F (121.1°C)
PTFE	220°F (104.4°C)	220°F (104.4°C)	220°F (104.4°C)
Santoprene	180°F (82.2°C)	180°F (82.2°C)	180°F (82.2°C)
EPDM	275°F (135°C)	275°F (135°C)	275°F (135°C)
Polychloroprene	200°F (93.3°C)	200°F (93.3°C)	200°F (93.3°C)

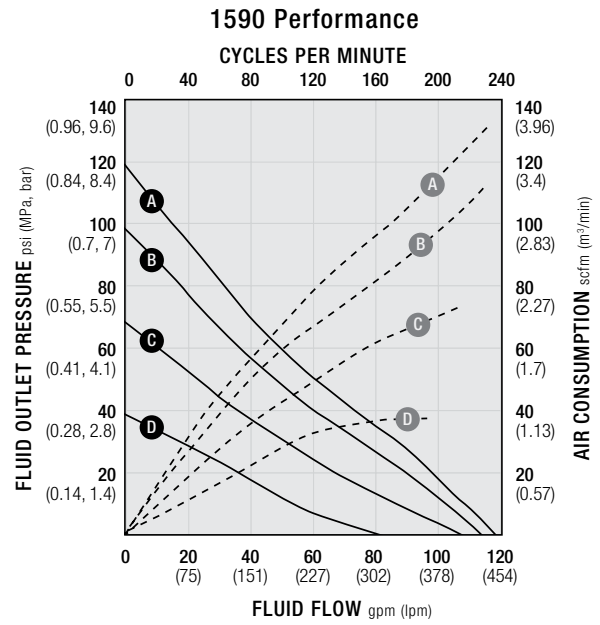
\*Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type

# SaniForce 1040, 1590 & 2150

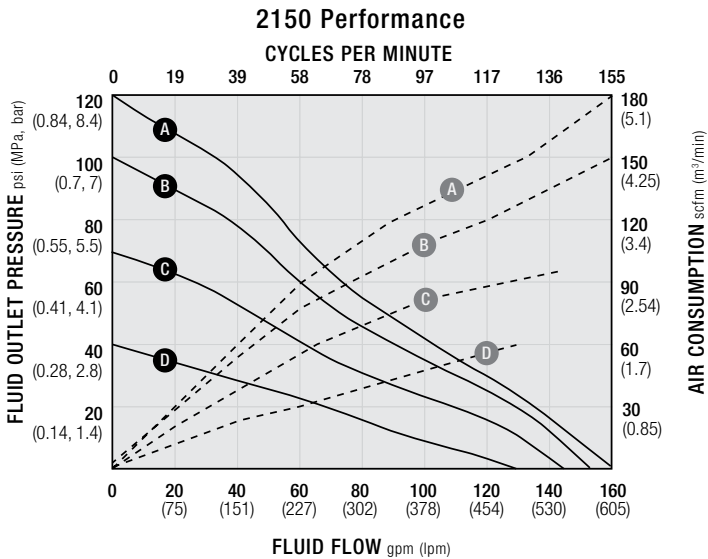
## Performance Charts



AIR PRESSURE	LEGEND
A = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
B = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
C = at 70 psi (4.8 bar, 0.5 MPa)	
D = at 40 psi (2.8 bar, 0.3 MPa)	



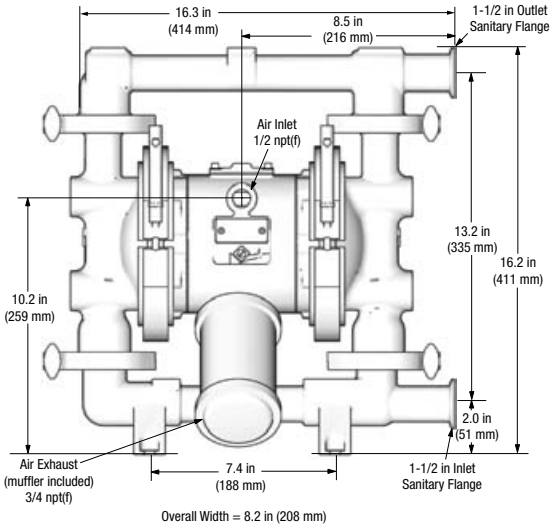
AIR PRESSURE	LEGEND
A = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
B = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
C = at 70 psi (4.8 bar, 0.5 MPa)	
D = at 40 psi (2.8 bar, 0.3 MPa)	



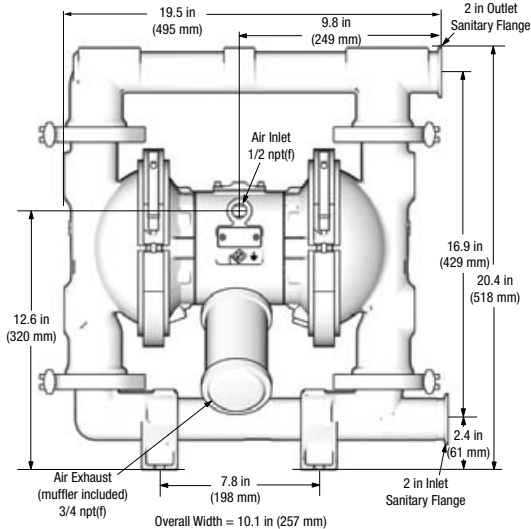
AIR PRESSURE	LEGEND
A = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
B = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
C = at 70 psi (4.8 bar, 0.5 MPa)	
D = at 40 psi (2.8 bar, 0.3 MPa)	

## Dimensions

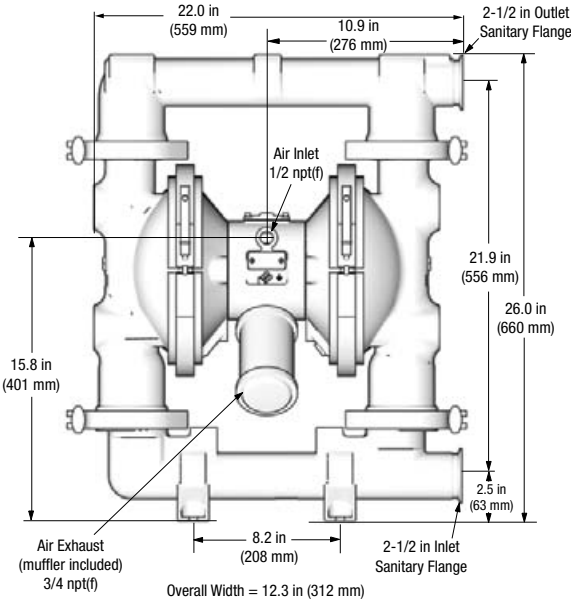
### SaniForce 1040



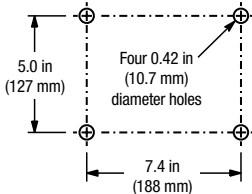
### SaniForce 1590



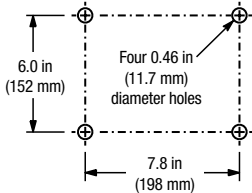
### SaniForce 2150



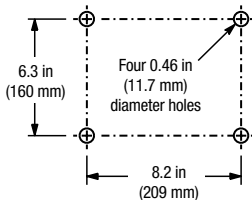
#### SaniForce 1040 Mounting Hole Pattern



#### SaniForce 1590 Mounting Hole Pattern



#### SaniForce 2150 Mounting Hole Pattern



# SaniForce 1590 & 3150 HS

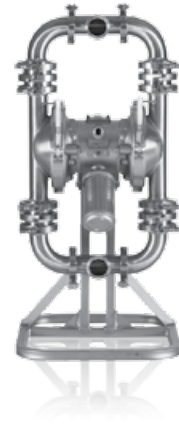
## High Sanitation Diaphragm Pumps

### Ordering Information

#### SaniForce 1590 HS Ball Pumps

Part Number	Type	Inlet	Ball	Diaphragm
SBBA00	Ball/EHEDG*	2 in x 2 in	PTFE	Overmolded EPDM
SBBA11	Ball	2 in x 2 in	PTFE	PTFE
SABA13	Ball	2 in x 2 in	PTFE	Overmolded PTFE Includes leak detector
SBBA13	Ball	2 in x 2 in	PTFE	Overmolded PTFE
SBBA22	Ball	2 in x 2 in	Santoprene	Santoprene

\*EHEDG certification pending



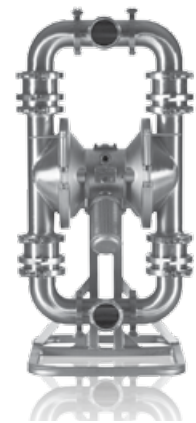
#### SaniForce 1590 Kits and Accessories

Part Number	Type	Part Number	Type
255058	Overmolded EPDM diaphragm kit	112421	Santoprene ball (quantity one)
255059	Santoprene diaphragm kit	112419	PTFE ball (quantity one)
255060	PTFE diaphragm kit	255122	Air valve repair kit 3A
		15D990	Leak detector

#### SaniForce 3150 HS Ball Pumps

Part Number	Type	Inlet/ Outlet Size	Diaphragm	Ball Material
SA13A1	Ball Check	1.5 in x 1.5 in	Overmolded PTFE/EPDM	PTFE
SA23A1	Ball Check	2 in x 2 in	Overmolded PTFE/EPDM	PTFE
SA3AA1	Ball Check/EHEDG*	3 in x 3 in	Overmolded EPDM	PTFE
SA33A1	Ball Check	3 in x 3 in	Overmolded PTFE/EPDM	PTFE
SA4AA1	Ball Check/EHEDG*	4 in x 4 in	Overmolded EPDM	PTFE
SA43A1	Ball Check	4 in x 4 in	Overmolded PTFE/EPDM	PTFE
SA53A1	Ball Check	3 in x 2 in	Overmolded PTFE/EPDM	PTFE
SA3361	Ball Check	3 in x 3 in	Overmolded PTFE/EPDM	Santoprene
SB2AA1	Ball Check	2 in x 2 in	Overmolded EPDM	PTFE
SB3AA1	Ball Check	3 in x 3 in	Overmolded EPDM	PTFE
SB2661	Ball Check	2 in x 2 in	Santoprene	Santoprene
SB3661	Ball Check	3 in x 3 in	Santoprene	Santoprene
SB2771	Ball Check	2 in x 2 in	Buna-N	Buna-N
SB3771	Ball Check	3 in x 3 in	Buna-N	Buna-N
SB2881	Ball Check	2 in x 2 in	Fluoroelastomer	Fluoroelastomer
SB3881	Ball Check	3 in x 3 in	Fluoroelastomer	Fluoroelastomer

\*EHEDG certification pending

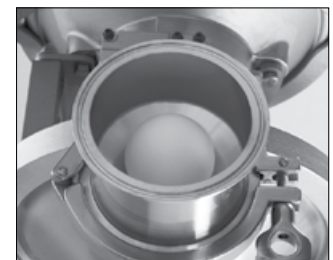


#### SaniForce 3150 HS Flapper Pumps

Part Number	Type	Inlet/ Outlet Size	Diaphragm Material
SF3AF1	Flapper	3 in x 3 in	Overmolded EPDM
SF4AF1	Flapper	4 in x 4 in	Overmolded EPDM
SF36F1	Flapper	3 in x 3 in	Santoprene
SF46F1	Flapper	4 in x 4 in	Santoprene
SF37F1	Flapper	3 in x 3 in	Buna-N
SF47F1	Flapper	4 in x 4 in	Buna-N
SF38F1	Flapper	3 in x 3 in	Fluoroelastomer
SF48F1	Flapper	4 in x 4 in	Fluoroelastomer



Flapper Check Valve



Ball Check Valve

## Ordering Information

### SaniForce 3150 HS Accessories

Part Number	Type
16E975	Conversion kit: Ball to flapper, includes four flapper assemblies
15H461	3A Conversion kit: Flapper to ball, includes four housing retainers (balls need to be ordered separately)
15E285	Conversion kit: Flapper to ball, includes four housing retainers (balls need to be ordered separately)
112359	PTFE ball (order quantity four)
112361	Santoprene ball (order quantity four)
253225	Santoprene diaphragm kit
15B492	Buna-N ball (order quantity four)
253223	Buna-N diaphragm kit
15B491	Fluoroelastomer ball (order quantity four)
253222	Fluoroelastomer diaphragm kit
253224	Overmolded EPDM diaphragm kit
253628	Overmolded PTFE diaphragm kit
15D990	Leak detector kit

## Technical Specifications

1590	
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery	90 gpm (340 lpm)
Maximum suction lift	28 ft (8.5 m) wet, 15 ft (4.57 m) dry
Maximum size pumpable solids	5/8 in (15.9 mm)
Air pressure operating range	20-120 psi (14-8 bar, 0.14-0.8 MPa)
Maximum air consumption	125 scfm
Air consumption at 70 psi air inlet pressure/60 gpm	50 scfm
Maximum pump speed	200 cpm
*Gallons (liters) per cycle	0.5 (1.96)
**Maximum noise level at 100 psi, full flow	90 dBa
**Sound power level	103 dBa
**Noise level at 70 psi and 50 cpm	85 dBa
Air inlet size	0.5 in npt(f)
Weight	97 lb (44 kg)
Flyer	<a href="#">338499</a>
Instruction manual	<a href="#">310622</a>

#### Maximum fluid operating temperature is based on the following maximum diaphragm, ball, and seat temperature ratings

PTFE	220°F (104.4°C)
Santoprene	180°F (82.2°C)
3A Approved EPDM	275°F (135°C)

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

\*\*Noise levels measured with the pump mounted on the stand. Sound power measured per ISO Standard 9614-1

3150	
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery*	150 gpm (568 lpm)
Maximum suction lift - ball	18 ft (5.4 m) wet, 9 ft (2.7 m) dry
Maximum suction lift - flapper	10 ft (3.0 m) wet, 5 ft (1.5 m) dry
Maximum size pumpable solids - ball	1 in (25.4 mm)
Maximum size pumpable solids - flapper	2.5 in (63.5 mm)
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Maximum air consumption	175 scfm
Air consumption at 70 psi air inlet pressure/60 gpm	50 scfm
Maximum pump speed	145 cpm
*Gallons (liter) per cycle	1.03 (3.90)
**Maximum noise level at 100 psi, full flow	90 dBa
**Sound power level	103 dBa
**Noise level at 70 psi and 50 cpm	85 dBa
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections
Air inlet size	0.5 in npt(f)
Weight	145 lb (65 kg)
Flyer	<a href="#">338499</a>
Instruction manual	<a href="#">310622</a>

#### Maximum diaphragm operating temperature

Santoprene	180°F (82.2°C)
Buna-N	180°F (82.2°C)
PTFE	220°F (104.4°C)
Fluoroelastomer	250°F (121°C)
EPDM	275°F (135°C)

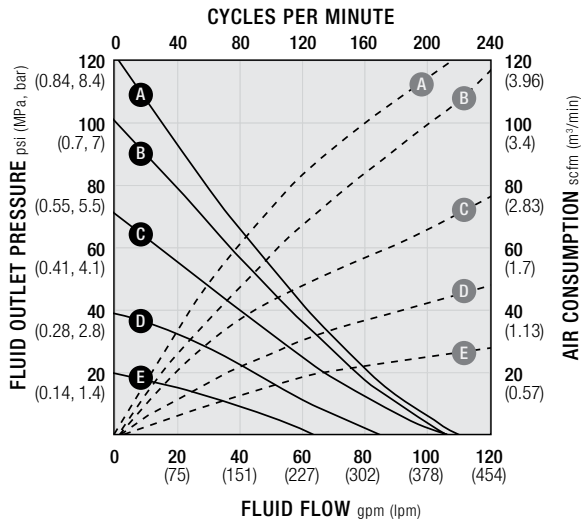
\* Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type

\*\*Noise levels measured with the pump mounted on the stand. Sound power measured per ISO Standard 9614-1

# SaniForce 1590 & 3150 HS

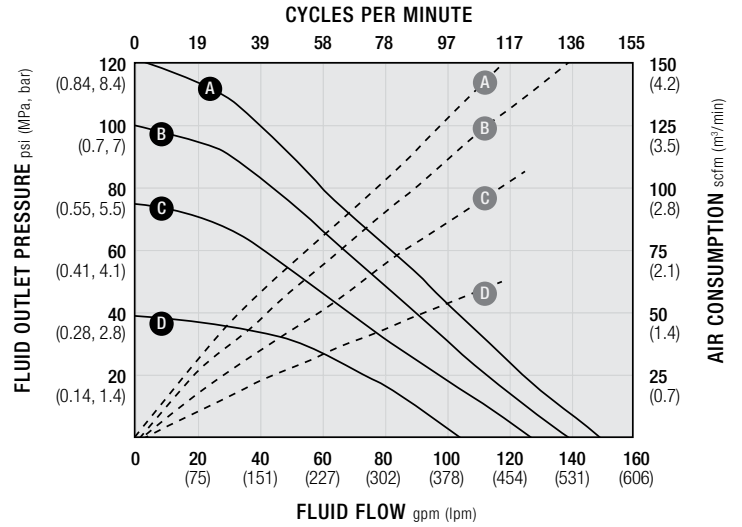
## Performance Charts

### 1590 High Sanitation Performance



AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	
(E) = at 20 psi (1.4 bar, 0.14 MPa)	

### 3150 High Sanitation Performance

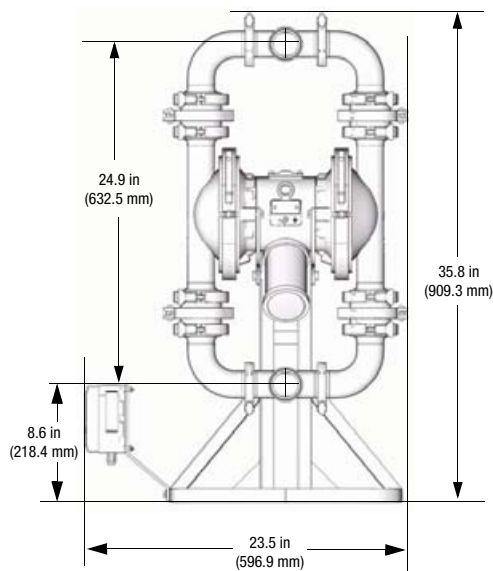


AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

## Dimensions

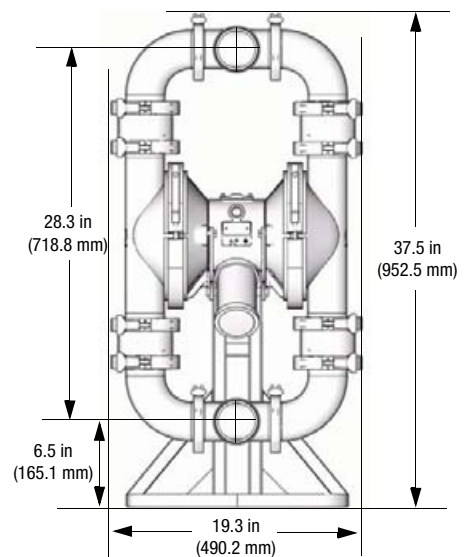
### SaniForce 1590 HS

#### Ball Check Valve Pump



### SaniForce 3150 HS

#### Ball Check Valve Pump



# SaniForce 1590 & 3150 3A 3A Certified Diaphragm Pumps

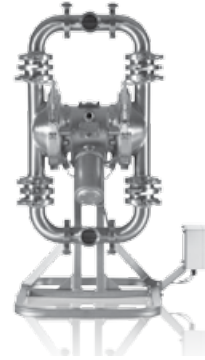


## Ordering Information

### SaniForce 1590 3A Pumps

Part Number	Type	Inlet	Diaphragm	Ball
SABAAA	3A Approved/ EHEDGE*	2 in x 2 in	Overmolded EPDM	PTFE

\*EHEDG certification pending

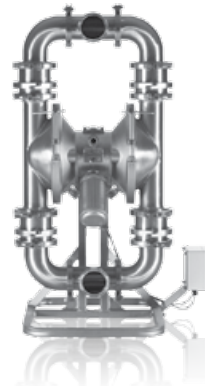


### SaniForce 3150 3A Pumps

#### 3A Pump with Leak Detector

Part Number	Type	Inlet/Outlet Size	Diaphragm	Ball
SA1AAA	3A Approved	1.5 in x 1.5 in	Overmolded EPDM	PTFE
SA2AAA	3A Approved	2 in x 2 in	Overmolded EPDM	PTFE
SA3AAA	3A Approved/ EHEDGE*	3 in x 3 in	Overmolded EPDM	PTFE
SA4AAA	3A Approved/ EHEDGE*	4 in x 4 in	Overmolded EPDM	PTFE
SA5AAA	3A Approved	3 in x 2 in	Overmolded EPDM	PTFE

\*EHEDG certification pending



## Technical Specifications

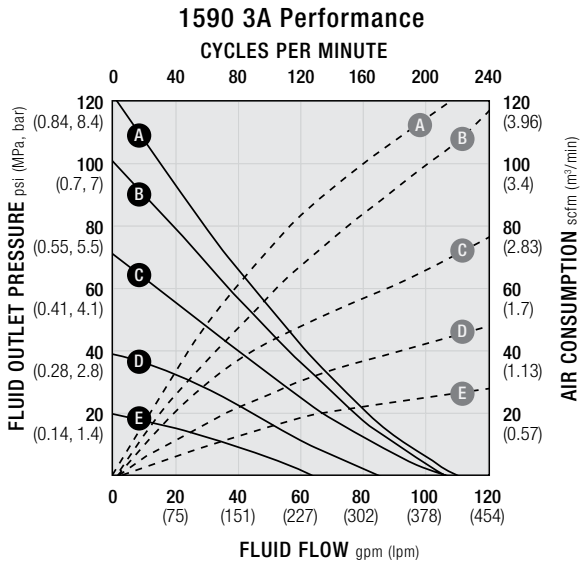
	1590 3A Certified	3150 3A Certified
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery**	90 gpm (340 lpm)	150 gpm (568 lpm)
Maximum suction lift - ball	28 ft (8.5 m) wet, 15 ft (4.5 m) dry	18 ft (5.5 m) wet, 9 ft (2.7 m) dry
Maximum suction lift - flapper	N/A	10 ft (3.0 m) wet, 5 ft (1.5 m) dry
Maximum size pumpable solids - ball	5/8 in (15.8 mm)	1 in (25.4 mm)
Maximum size pumpable solids - flapper	N/A	2.5 in (63.5 mm)
Typical sound level at 70 psi air (4.9 bar) air @ 50 cpm	85 dBA	85 dBA
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Air inlet size	0.5 in npt(f)	0.5 in npt(f)
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections	Tri-clamp connections
Weight	97 lb (44 kg)	145 lb (65 kg)
Flyer	<a href="#">338499</a>	<a href="#">338499</a>
Instruction manual	<a href="#">310622</a>	<a href="#">310622</a>

Maximum diaphragm operating temperature		
Santoprene	180°F (82.2°C)	180°F (82.2°C)
Buna-N	N/A	180°F (82.2°C)
PTFE	220°F (104.4°C)	220°F (104.4°C)
Fluoroelastomer	N/A	250°F (121°C)
EPDM	275°F (135°C)	275°F (135°C)

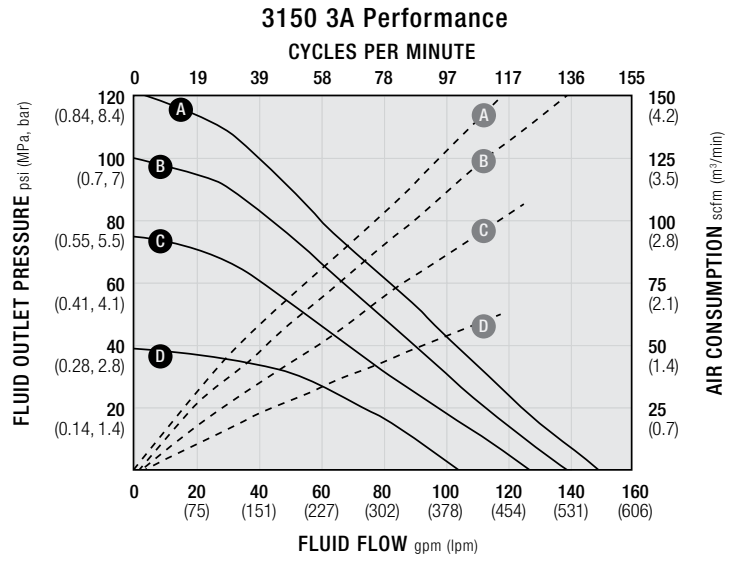
\*\* Flow rates are with muffler and do not vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.

# SaniForce 1590 & 3150 3A

## Performance Charts



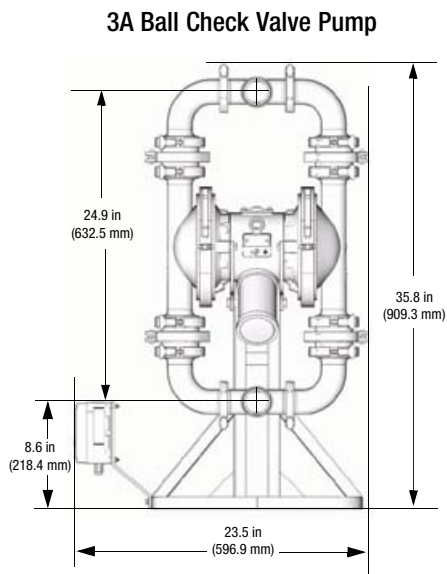
AIR PRESSURE	LEGEND
A = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - -
B = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - -
C = at 70 psi (4.8 bar, 0.5 MPa)	
D = at 40 psi (2.8 bar, 0.3 MPa)	
E = at 20 psi (1.4 bar, 0.14 MPa)	



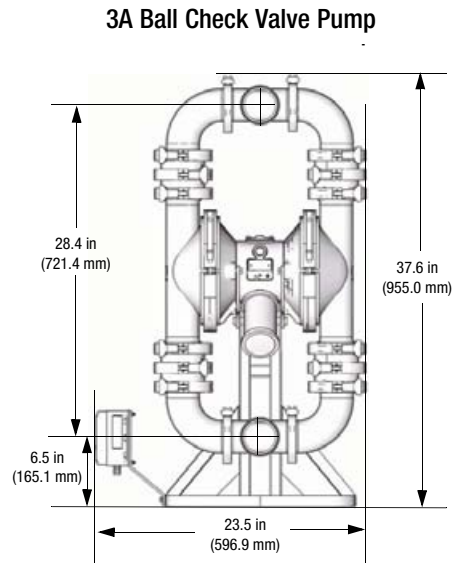
AIR PRESSURE	LEGEND
A = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - -
B = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - -
C = at 70 psi (4.8 bar, 0.5 MPa)	
D = at 40 psi (2.8 bar, 0.3 MPa)	

## Dimensions

### SaniForce 1590 3A

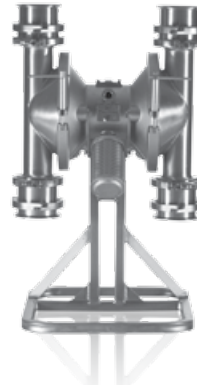


### SaniForce 3150 3A



### Ordering Information

Part Number	Type	Inlet/Outlet Size	Diaphragm
SFP6F1	Flapper	3 in x 3 in	Santoprene
SFP7F1	Flapper	3 in x 3 in	Buna-N
SFP8F1	Flapper	3 in x 3 in	Fluoroelastomer
SFPAF1	Flapper	3 in x 3 in	Overmolded EPDM



Flapper Check Valve

### Accessories

Part Number	Description
253225	Santoprene diaphragm kit
253223	Buna-N diaphragm kit
253222	Fluoroelastomer diaphragm kit
253224	Overmolded EPDM diaphragm kit
15D990	Leak detector kit

### Technical Specifications

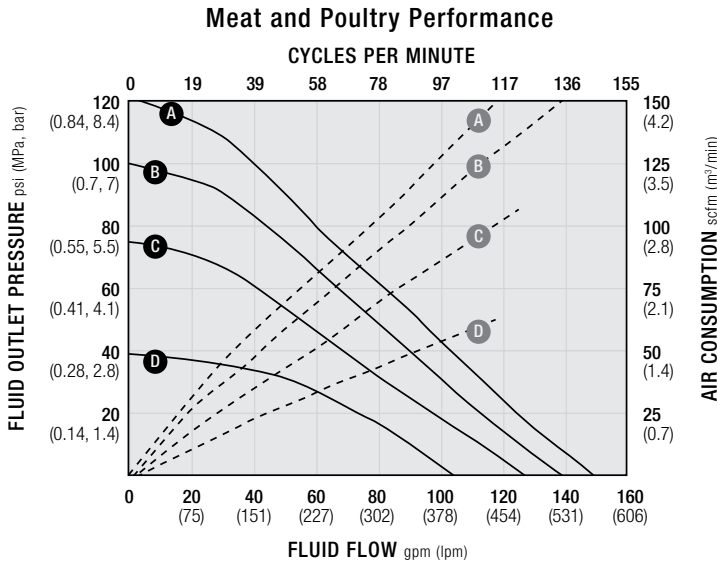
Meat and Poultry	
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery*	150 gpm (568 lpm)
Maximum suction lift	10 ft (3.0 m) wet
Maximum size pumpable solids	2.5 in (63.5 mm)
Typical sound level at 70 psi air (4.9 bar) air @ 50 cpm	85 dBa
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Air inlet size	0.5 in npt(f)
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections
Weight	145 lb (65 kg)
Flyer	<a href="#">338067</a>
Instruction manual	<a href="#">310622</a>

Maximum diaphragm operating temperature	
Santoprene	180°F (82.2°C)
Buna-N	180°F (82.2°C)
Fluoroelastomer	250°F (121°C)
EPDM	275°F (135°C)

\* Flow rates are with muffler and do not vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.

# SaniForce Meat and Poultry Pumps

## Performance Charts

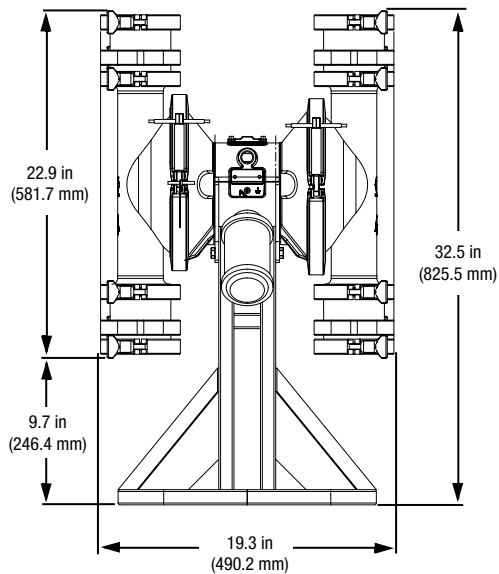


AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow - - - - -
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

## Dimensions

### SaniForce 3150 Meat and Poultry Flapper

#### Flapper Check Valve Pumps



# SaniForce Piston Pumps

## 6:1, 5:1 and 12:1

### Ordering Information

#### 6:1 Piston Pump

Part Number	Pump Type	Pump Length	Pump Inlet Type	Packings	Weight lb (kg)
24E840	Double Ball	Drum Length	1.44 in (3.6 cm) Slotted	Buna, Nylon, Nitrile, & Polychloroprene	36.9 (16.7)
24G740	Double Ball	Drum Length (Ram Package)	6 in (15.2 cm) Clamp	Buna, Nylon, Nitrile, & Polychloroprene	38 (17)
24E839	Double Ball	Drum Length	1.44 in (3.6 cm) Slotted	PTFE	36.9 (16.7)
24E838	Double Ball	Stubby	2.5 in (6.3 cm) Clamp	Buna, UHMWPE & Polychloroprene	28.9 (13.1)
24E837	Double Ball	Stubby	2.5 in (6.3 cm) Clamp	PTFE	36.9 (16.7)
24E836	Priming Piston	Stubby	2.3 in (5.8 cm) Priming Piston	Buna, Nylon, Nitrile & Polychloroprene	33.8 (16.8)
24G739	Priming Piston	Stubby (Ram Package)	6 in (15.2 cm) Clamp	Buna, Nylon, Nitrile & Polychloroprene	35 (16)
24F942	Double Ball	Bin Length 48.5 in (123 cm)	1.44 in (3.6 cm) Slotted	Buna, Nylon, Nitrile, & Polychloroprene	39.7 (18)

#### 5:1 Piston Pump

Part Number	Pump Type	Pump Length	Pump Inlet Type	Packings	Weight lb (kg)
24F195	Double Ball	Drum Length (Bung Mount)	4 in (10.2 cm) Slotted	Buna, PTFE, UHMWPE & FKM	119 (54.1)
24E833	Double Ball	Stubby	4 in (10.2 cm) Slotted	Buna, PTFE, UHMWPE & FKM	91.3 (41.4)
24G742	Double Ball	Drum Length (Ram Package)	6 in (15.2 cm) Clamp	Buna, PTFE, UHMWPE & FKM	95 (43)
24E831	Priming Piston	Drum Length	4 in (10.2 cm) Priming Piston	Buna, PTFE, UHMWPE, Polychloroprene, Nylon & FKM	95.3 (43.2)
24G741	Priming Piston	Drum Length (Ram Package)	6 in (15.2 cm) Clamp	Buna, PTFE, UHMWPE, Polychloroprene, Nylon & FKM	99 (45)
24F196	Double Ball	Stubby	90 degree elbow 2.5 in (6.3 cm) Clamp	Buna, FKM, PTFE & UHMWPE	93.1 (42.2)
24F197	Double Ball	Stubby (BES Mount)	4 in (10.2 cm) Clamp	Buna, PTFE, Silicone, FKM & UHMWPE	90.6 (41.1)

#### 12:1 Piston Pump

Part Number	Pump Type	Pump Length	Pump Inlet Type	Packings	Weight lb (kg)
24F625	Priming Piston	Stubby (Ram Package)	6 in (15.2 cm) Clamp	Acetal, PTFE, Nitrile and UHMWPE	122 (55)
24F626*	Priming Piston	Stubby (Ram Package)	6 in (15.2 cm) Clamp	Acetal, PTFE, Nitrile and UHMWPE	122 (55)

\*For use with viscous sticky material

### Technical Specifications

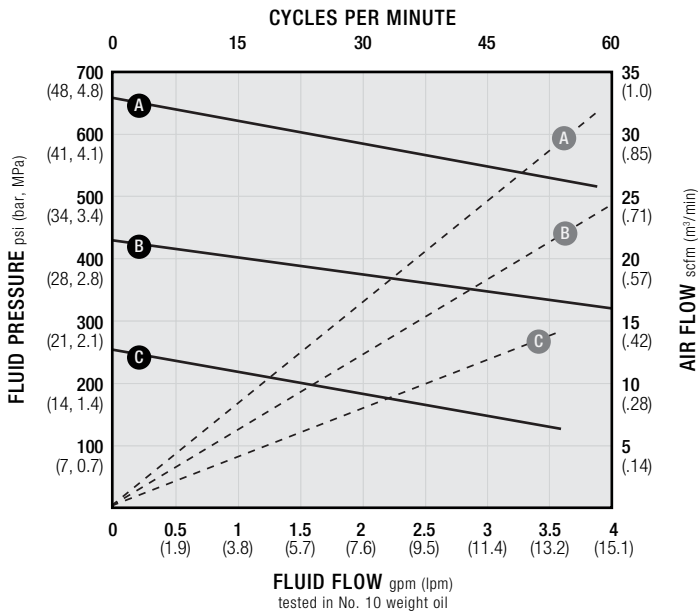
	SaniForce 6:1 Piston Pump	SaniForce 5:1 Piston Pump	SaniForce 12:1 Piston Pump
Fluid to air pressure ratio	6:1	5:1	12:1
Maximum fluid pressure	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)
Maximum fluid flow at 60 cpm	4.0 gpm (15.1 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)
Air consumption at 60 cpm	29 cfm at 100 psi	69 cfm at 80 psi	116 cfm at 100 psi
Volume per cycle	0.067 gal (0.25 l)	0.23 gal (0.87 l)	0.14 gal (0.54 l)
Maximum operating temperature (fluid)	250°F (121°C)	140°F (60°C)	160°F (71°C)
Maximum operating temperature (air motor)	120°F (49°C)	120°F (49°C)	120°F (49°C)
Maximum size pumpable solids	0.13 in (0.32 cm)	0.25 in (0.64 cm)	0.25 in (0.64 cm)
Maximum air input pressure	100 psi (7 bar, 0.7 MPa)	80 psi (5.5 bar, 0.6 MPa)	100 psi (7 bar, 0.7 MPa)
Air inlet size	1/2 npsm(f)	1/2 npsm(f)	1/2 npsm(f)
Fluid outlet size	1-1/2 in (3.8 cm) Tri-Clamp	2 in (5.1 cm) Tri-Clamp	2 in (5.1 cm) Tri-Clamp
Fluid inlet	1-1/2 in (3.8 cm) Tri-Clamp*	2.5 in (6.3 cm) Tri-Clamp (24F196 only)	6 in (15.2 cm) Tri-Clamp
Flyer	<a href="#">338591</a>	<a href="#">338591</a>	<a href="#">338591</a>
Instruction manual	<a href="#">3A0733</a>	<a href="#">3A0734</a>	<a href="#">3A0735</a>

\*Select sizes

# SaniForce Piston Pumps

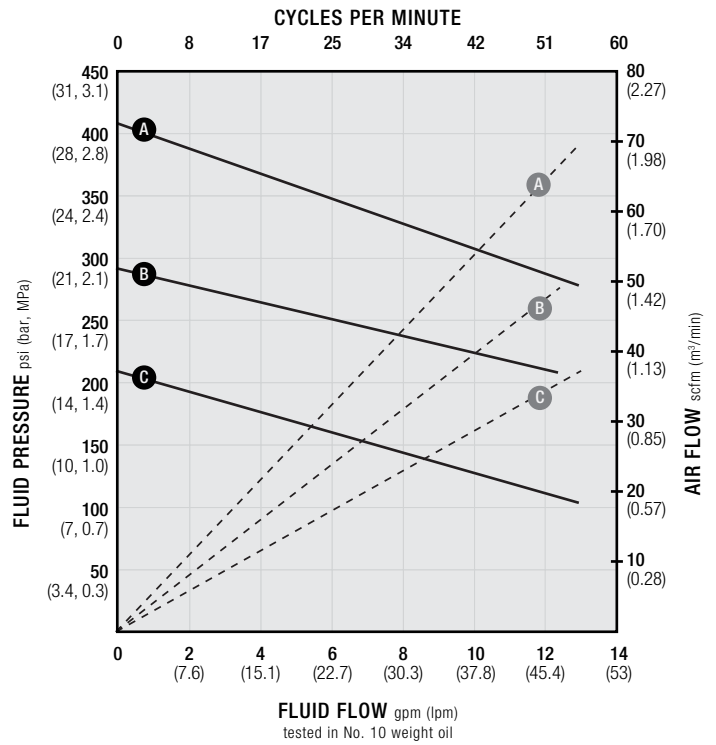
## Performance Charts

### 6:1 Piston Pump Performance



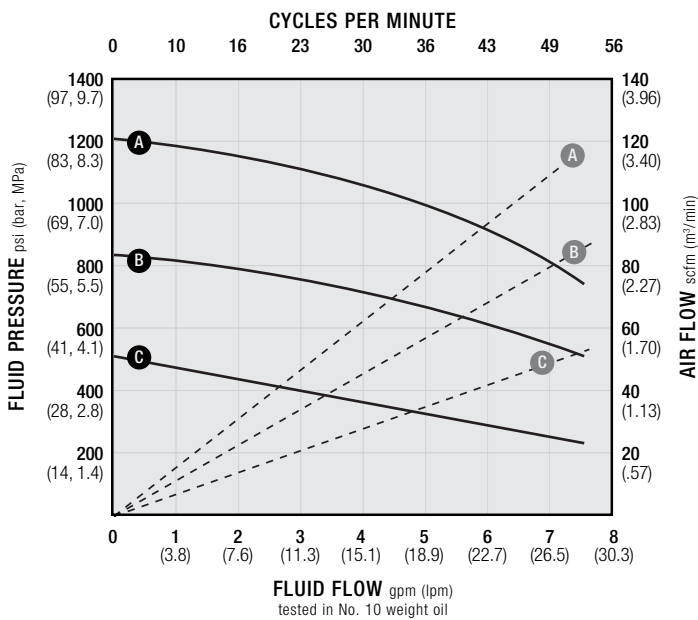
AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow - - - - -
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

### 5:1 Piston Pump Performance



AIR PRESSURE	LEGEND
(A) = at 80 psi (5.5 bar, 0.5 MPa)	Air Consumption - - - - -
(B) = at 60 psi (4.1 bar, 0.4 MPa)	Fluid Flow - - - - -
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

### 12:1 Piston Pump Performance

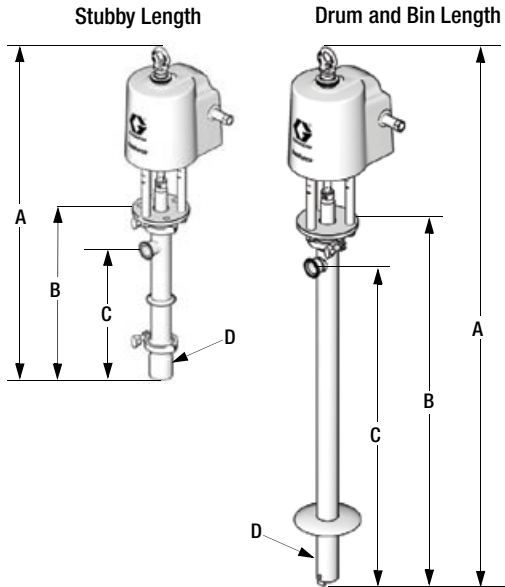


AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow - - - - -
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

# SaniForce Piston Pumps

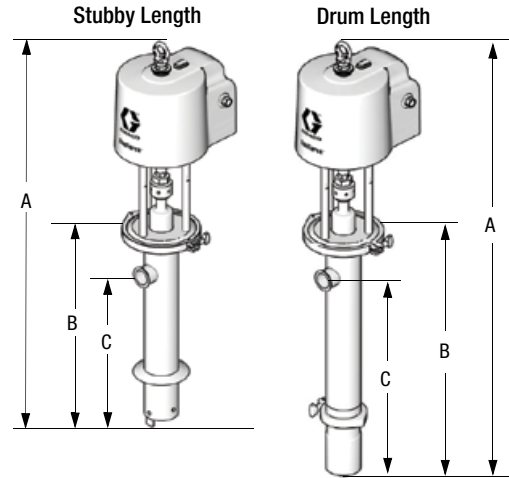
## Dimensions

### SaniForce 6:1



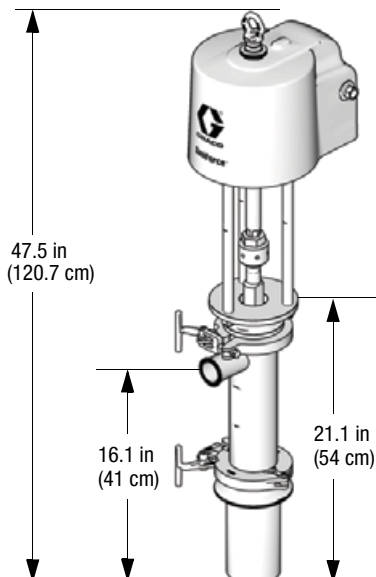
Model	Pump Style	A in (cm)	B in (cm)	C in (cm)	D (OD) in (cm)
24E836	Stubby	39.2 (99.5)	19.5 (50)	15.1 (38)	2.1 (5.4)
24E837					
24E838					
24G739					
24G740	Drum Length	60.5 (153.7)	41 (104)	36.4 (92)	2.1 (5.4)
24E839					
24E840					
24F942	Bin Length	73 (185.4)	53.5 (135.9)	48.9 (124.2)	2.1 (5.4)

### SaniForce 5:1



Model	Pump Style	A in (cm)	B in (cm)	C in (cm)
24G742	Double Ball, Stubby	51.5 (131)	25.9 (66)	20.4 (52)
24E833				
24F196	Double Ball, Stubby with inlet	56.3 (143)	30.7 (78)	25.2 (64)
24F197	Double Ball, Bin Length	50.4 (128)	24.8 (63)	19.3 (49)
24G741	Priming Piston, Drum Length	57.0 (145)	31.3 (80)	25.9 (66)
24E831	Priming Piston, Drum Length			
24F195	Double Ball, Drum Length	67.9 (172)	42.3 (107)	36.8 (93)

### SaniForce 12:1

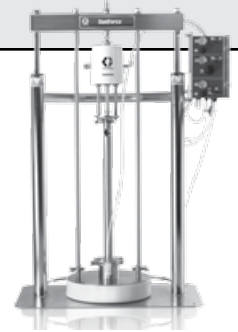


# SaniForce Drum Unloaders Pump Packages

## Ordering Information

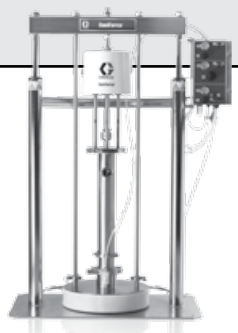
### SaniForce 6:1 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D776	24G739	Priming Piston	SST	16G240	16G242	Exposed	353 (160)
24D780	24G739	Priming Piston	CS*	16G240	16G242	Exposed	372 (169)
24D782	24G739	Priming Piston	SST	16G240	16G242	Enclosed SST	367 (166)
24D788	24G740	Double Ball	SST	16G240	16G242	Exposed	356 (161)
24D792	24G740	Double Ball	CS*	16G240	16G242	Exposed	375 (170)
24D794	24G740	Double Ball	SST	16G240	16G242	Enclosed SST	370 (168)



### SaniForce 5:1 Drum Unloader

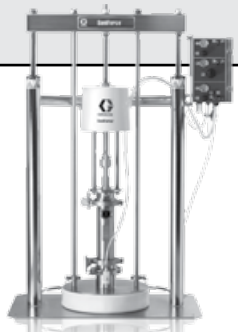
Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D708	24G741	Priming Piston	SST	16G240	16G242	Exposed	413 (187)
24D712	24G741	Priming Piston	CS*	16G240	16G242	Exposed	433 (196)
24D714	24G741	Priming Piston	SST	16G240	16G242	Enclosed SST	428 (194)
24D720	24G742	Double Ball	SST	16G240	16G242	Exposed	417 (189)
24D724	24G742	Double Ball	CS*	16G240	16G242	Exposed	437 (198)
24D726	24G742	Double Ball	SST	16G240	16G242	Enclosed SST	432 (196)



### SaniForce 12:1 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D647	24F625	Priming Piston	SST	16G240	16G242	Exposed	440 (200)
24D651	24F625	Priming Piston	CS*	16G240	16G242	Exposed	459 (208)
24D653	24F625	Priming Piston	SST	16G240	16G242	Enclosed SST	454 (206)
24F188**	24F626	Priming Piston	SST	16G240	16G242	Exposed	440 (200)
24F189**	24F626	Priming Piston	CS*	16G240	16G242	Exposed	459 (208)
24F190**	24F626	Priming Piston	SST	16G240	16G242	Enclosed SST	454 (206)

\*CS = Painted carbon steel. \*\*For use with viscous material.



## Technical Specifications

Drum Unloaders	6:1 Double Ball Pump	6:1 Priming Piston	5:1 Double Ball Pump	5:1 Priming Piston	12:1 Priming Piston	3150 High Sanitation	2150 High Sanitation
Max fluid pressure	600 psi (41 bar, 4.1 MPa)	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)	120 psi (8.3 bar, 0.83 MPa)	120 psi (8.3 bar, 0.83 MPa)
Max Flow at 60 cpm	4.0 gpm (15.1 lpm)	4.0 gpm (15.1 lpm)	14 gpm (53 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)	60 gpm (227 lpm)	60 gpm (227 lpm)
Max Flow at 100 cpm	—	—	—	—	—	100 gpm (378 lpm)	100 gpm (378 lpm)
Viscosity range of packings	25,000-100,000 cps	60,000-500,000 cps	25,000-100,000 cps	60,000-500,000 cps	60,000-500,000 cps	25,000-100,000 cps	25,000-100,000 cps
Max inlet air pressure	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	80 psi (5.5 bar, 0.6 MPa)	80 psi (5.5 bar, 0.6 MPa)	100 psi (7 bar, 0.7 MPa)	120 psi (8.3 bar, 0.8 MPa)	120 psi (8.3 bar, 0.8 MPa)
Air inlet size (enclosed, exposed controls)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)
Evacuation efficiency	99%	99%	99%	99%	99%	99%	99%
Flyer	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>	<a href="#">338590</a>
Instruction manual	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>	<a href="#">3A0591</a>

\* Flow rates based on full displacement of lower and S.G. = 1

## Ordering Information

### SaniForce 3150 HS Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)	Diaphragm Material	Ball Material
24D922	24C124	Ball	SST	16G241	16G242	Exposed	428 (194)	Overmolded EPDM, 3A	PTFE
24D926	24C124	Ball	CS*	16G241	16G242	Exposed	443 (201)	Overmolded EPDM, 3A	PTFE
24D928	24C124	Ball	SST	16G241	16G242	Enclosed SST	442 (200)	Overmolded EPDM, 3A	PTFE
24D932	248273	Ball	CS*	16G241	16G242	Exposed	443 (201)	Santoprene	Santoprene
24D936	248273	Ball	SST	16G241	16G242	Enclosed SST	442 (200)	Santoprene	Santoprene
24D940	248273	Ball	SST	16G241	16G242	Exposed	428 (194)	Santoprene	Santoprene
24D944	248274	Flapper	SST	16G241	16G242	Exposed	428 (194)	Santoprene	–
24D948	248274	Flapper	CS*	16G241	16G242	Exposed	443 (201)	Santoprene	–
24D952	248274	Flapper	SST	16G241	16G242	Enclosed SST	442 (200)	Santoprene	–

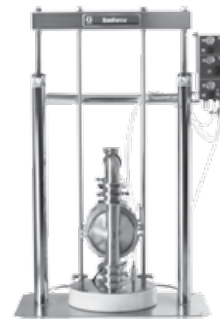
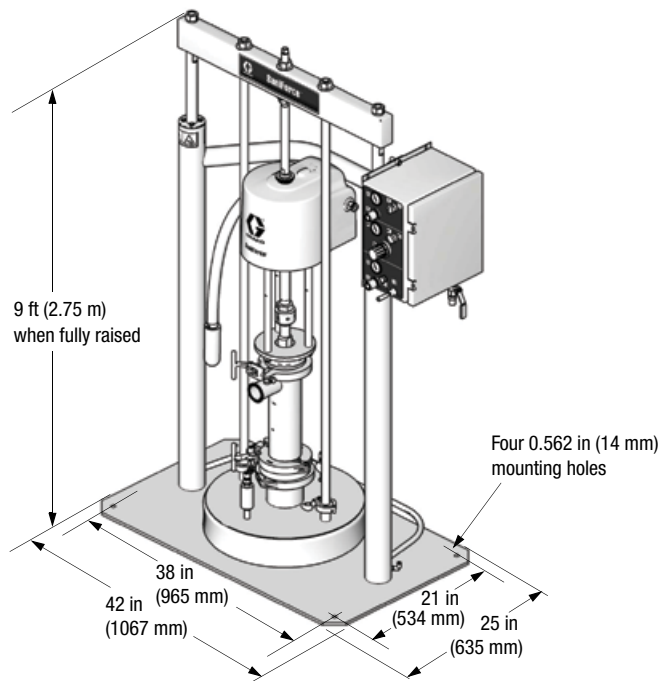
### SaniForce 2150 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)	Diaphragm Material	Ball Material
24G542	24G743	Ball	SST	16G241	16G242	Exposed	450 (204)	Overmolded PTFE	PTFE
24F191	24G743	Ball	CS*	16G241	16G242	Exposed	464 (210)	Overmolded PTFE	PTFE
24G543	24G743	Ball	SST	16G241	16G242	Enclosed SST	464 (210)	Overmolded PTFE	PTFE
24F192	24G744	Ball	SST	16G241	16G242	Exposed	450 (204)	Santoprene	Weighted polychloroprene
24F193	24G744	Ball	CS*	16G241	16G242	Exposed	464 (210)	Santoprene	Weighted polychloroprene
24F194	24G744	Ball	SST	16G241	16G242	Enclosed SST	464 (210)	Santoprene	Weighted polychloroprene

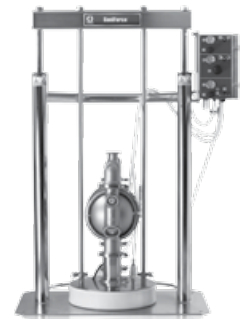
\*CS = Painted carbon steel.

## Dimensions

### SaniForce Drum Unloader



SaniForce 3150 HS Drum Unloader



SaniForce 2150 Drum Unloader

# SaniForce Bin Evacuation Systems Pump Packages

## Ordering Information

### SaniForce BES

BES Part Number	Max. Working Fluid Pressure per pump (psi (bar, MPa))	Pump Part No.	Pump Quantity	Pump Description	Control Type	BIN Manuf
BESA4C	400 (28, 2.8)	24G742	2	SaniForce 5:1	Manual	Pallecon
BESA7A	400 (28, 2.8)	24G742	2	SaniForce 5:1	Electronic	Plywood
BESA7C	400 (28, 2.8)	24G742	2	SaniForce 5:1	Manual	Plywood
BESA7F	400 (28, 2.8)	24G742	2	SaniForce 5:1	Electronic	Plywood
BESB7B	400 (28, 2.8)	24G742	4	SaniForce 5:1	Electronic	Plywood
BESB7D	400 (28, 2.8)	24G742	4	SaniForce 5:1	Manual	Plywood
BESE1A	1200 (83, 8.3)	24F625	2	SaniForce 12:1	Electronic	Arena
BESE1C	1200 (83, 8.3)	24F625	2	SaniForce 12:1	Manual	Arena
BESE5C	1200 (83, 8.3)	24F625	2	SaniForce 12:1	Manual	Pallecon
BESF6B	1200 (83, 8.3)	24F625	4	SaniForce 12:1	Electronic	Arena
BESF6D	1200 (83, 8.3)	24F625	4	SaniForce 12:1	Manual	Arena
BESF9B	1200 (83, 8.3)	24F625	4	SaniForce 12:1	Electronic	TNT
BESF9D	1200 (83, 8.3)	24F625	4	SaniForce 12:1	Manual	TNT



Note: Systems can be special ordered for bin types other than plywood, arena and pallecon. Contact your sales rep for additional information.

## Technical Specifications

### SaniForce BES

Part No	BESAxx	BESBxx	BESExx	BESFxx
Max. working fluid pressure	400 psi (28 bar, 2.8 MPa)		1200 psi (83 bar, 8.3 MPa)	1200 psi (83 bar, 8.3 MPa)
Compressed air requirement	80-100 psi (5.5-7 bar, 0.55-0.7 MPa)		80-100 psi (5.5-7 bar, 0.55-0.7 MPa)	80-100 psi (5.5-7 bar, 0.55-0.7 MPa)
Pneumatic control panel specifications				
Max. inlet air pressure	80 psi (5.5 bar, 0.55 MPa)		100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)
Air inlet size	3/4 in npt(f)		3/4 in npt(f)	3/4 in npt(f)
Air inlet pump	1/2 in npt(f)		1/2 in npt(f)	1/2 in npt(f)
Fluid displacement (each pump)	0.23 gal/cycle (0.87 l/cycle)		0.14 gal/cycle (0.52 l/cycle)	0.14 gal/cycle (0.52 l/cycle)
Max. flow @ 60 cpm*	28 gpm (106 lpm)	56 gpm (212 lpm)	17 gpm (64 lpm)	34 gpm (128 lpm)
Pressure ratio	5:1		12:1	12:1
Air consumption (each pump) at 40 psi (2.8 bar, 0.28 MPa)	~2.95 scfm per gpm		~7.5 scfm per gpm	~7.5 scfm per gpm
Pump outlet	2 in tri-clamp		2 in tri-clamp	2 in tri-clamp
Communication	RS232 Serial		RS232 Serial	RS232 Serial
Electrical requirements	110 VAC (60 Hz), 15A		110 VAC (60 Hz), 15A	110 VAC (60 Hz), 15A
Overall dimensions in (m)	69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)		69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)	69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)
Evacuation efficiency	2 pumps: 98%   4 pumps: 99%		N/A	N/A
Flyer	<a href="#">338589</a>		<a href="#">338589</a>	<a href="#">338589</a>
Instruction manual	<a href="#">311163</a>		<a href="#">311163</a>	<a href="#">311163</a>

\* Flow rates based on full displacement of lower and S.G. = 1

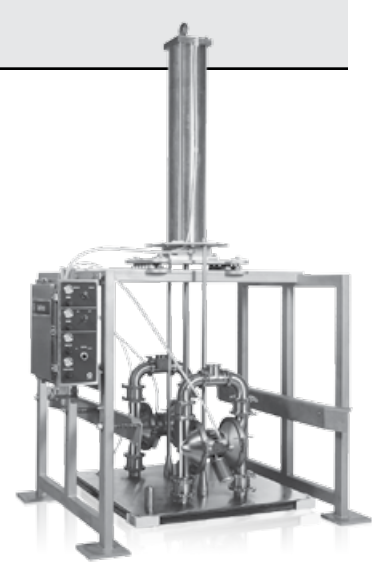
Note: Graco's BES packages are available for a variety of manufacturers' bins and custom systems can be built upon request. Contact Graco at 1-800-543-0339 for more information.

## Ordering Information

### SaniForce 3150 BES

Part Number	Type	Bin Manuf.	Control Type	Outlet Size	Diaphragm/Ball Material**
BES3P3	Ball	Plywood	Manual	3 in (76 mm)	Santoprene/ PTFE
BES3P1	Ball	Plywood	Electronic	3 in (76 mm)	Santoprene/ PTFE
BES4P3	Flapper	Plywood	Manual	3 in (76 mm)	Santoprene/ N/A
BES8B3	Ball	Pallecon	Manual	3 in (76 mm)	Overmolded EPDM, 3A
BES3A1	Ball	Arena	Electronic	3 in (76 mm)	Santoprene/ PTFE
BES4A1	Flapper	Arena	Electronic	3 in (76 mm)	Santoprene/ N/A

Note: Contact marketing for ordering information on non-plywood bins.  
 \*\*3A Approved EPDM diaphragm is available for heavy duty applications.



## Technical Specifications

### SaniForce 3150 BES

Part No	BES3xx	BES4xx
Max. working fluid pressure	120 psi (8.4 bar, 0.84 MPa)	
Compressed air requirement	80-120 psi (5.5-8.4 bar, 0.55-0.84 MPa)	
Pneumatic control panel specifications		
Max. inlet air pressure	120 psi (8.4 bar, 0.84 MPa)	
Air inlet size	3/4 in npt(f)	
Air inlet pump	1/2 in npt(f)	
Fluid displacement (each pump)	1.03 gal/cycle (3.89 l/cycle)	
Max. flow @ 145 cpm*	300 gpm (1,135 lpm)	
Pressure ratio	1:1	
Air consumption (each pump) at 70 psi (0.48 MPa, 4.8 bar)	~0.8 scfm per gpm	
Pump outlet	3 in tri-clamp	
Max. suction lift	18 ft (5.5 m) wet	10 ft (3.0 m) wet
Max. diaphragm operating temperature (Santoprene, 3A Approved EPDM)	180°F (82.2°C), 275°F (135°C)	
Typical sound level at 70 psi (4.9 bar) air @ 50 cpm	85 dBa	
Weight	3,000 lb (1,360 kg)	
Flyer	<a href="#">338589</a>	
Instruction manual	<a href="#">311163</a>	

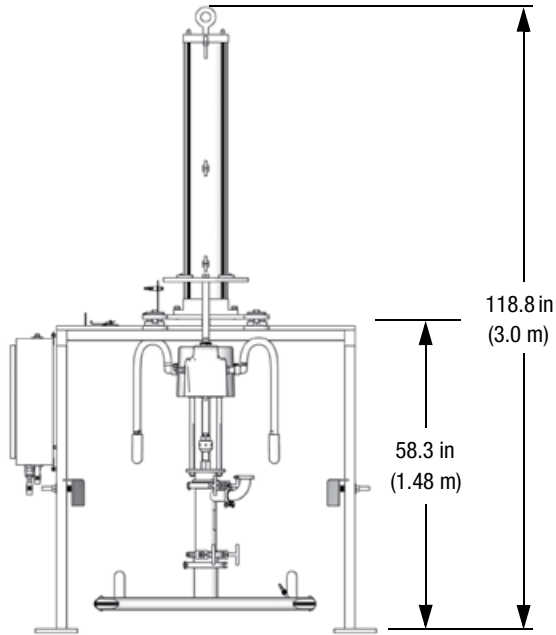
\* Flow rates are with muffler and slightly vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.

# SaniForce Bin Evacuation Systems

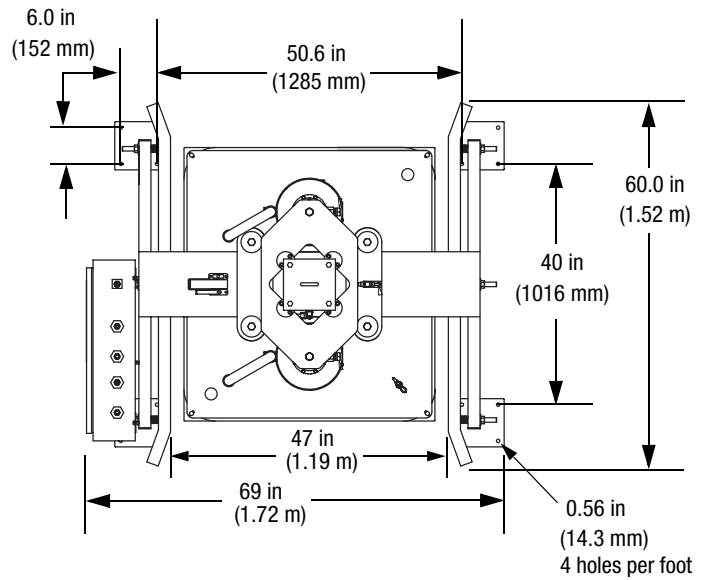
## Dimensions

### SaniForce BES

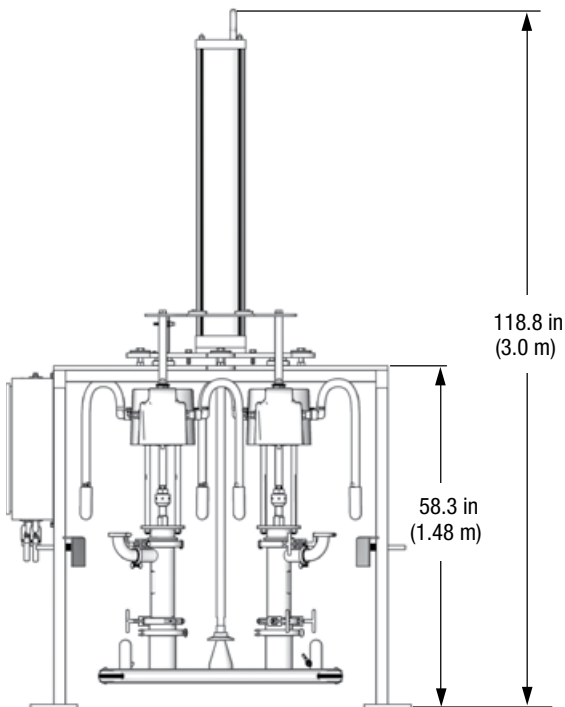
Front View



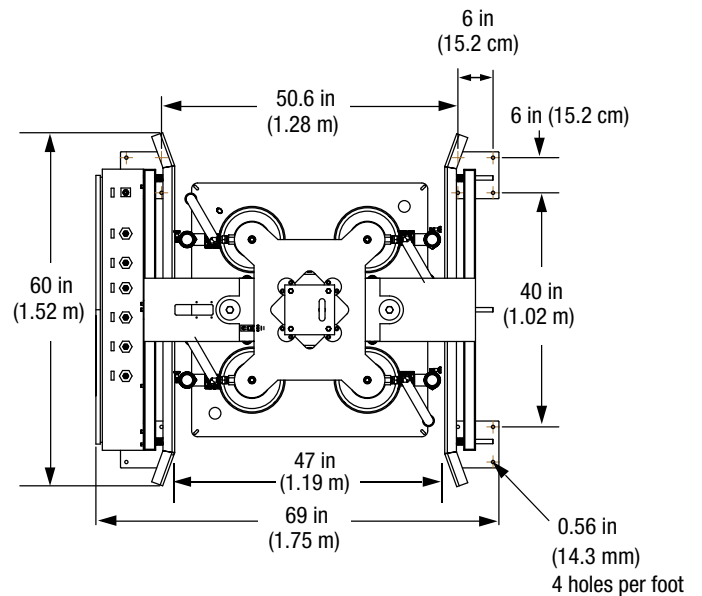
Top View



Front View



Top View



## Ordering Information

### Wall Mount Hydra-Clean Package

Package Order No.	247550	247552	247554	258665
Air Motor Part No.	N34DN0	N65DN0	N65DN0	N65DN0
Pump Lower Part No.	247599	241648	687055	24B923
Pump Construction	SST	SST	SST	SST
Standard Seal Repair Kit	247881	222880	See manual 311825	24C162
Standard Seal Construction	PTFE/ CF-PTFE	UHMWPE/ CF-PTFE	UHMWPE/ CF-PTFE	UHMWPE/ CF-PTFE
Optional Seal Repair Kits	207581	222875	222845	237713
Optional Seal Construction	PTFE	UHMWPE/PTFE	UHMWPE/PTFE	UHMWPE/PTFE
Flyer	<a href="#">338026</a>	<a href="#">338026</a>	<a href="#">338026</a>	<a href="#">338026</a>
Instruction Manual	<a href="#">312585</a>	<a href="#">312585</a>	<a href="#">312585</a>	<a href="#">312585</a>



### Cart Mount Hydra-Clean Package

Package Order No.	247549	247551	247553	258664
Air Motor Part No.	N34DN0	N65DN0	N65DN0	N65DN0
Pump Lower Part No.	247599	241648	687055	24B923
Pump Construction	SST	SST	SST	SST
Standard Seal Repair Kit	247881	222880	See manual 311825	24C162
Standard Seal Construction	PTFE/ CF-PTFE	UHMWPE/ CF-PTFE	UHMWPE/ CF-PTFE	UHMWPE/ CF-PTFE
Optional Seal Repair Kits	207581	222875	222845	237713
Optional Seal Construction	PTFE	UHMWPE/PTFE	UHMWPE/PTFE	UHMWPE/PTFE
Flyer	<a href="#">338026</a>	<a href="#">338026</a>	<a href="#">338026</a>	<a href="#">338026</a>
Instruction Manual	<a href="#">312585</a>	<a href="#">312585</a>	<a href="#">312585</a>	<a href="#">312585</a>



### Drum Mount Hydra-Clean Package

Package Order No.	206515
Air Motor Part No.	207352
Pump Lower Part No.	224344
Pump Construction	SST
Standard Seal Repair Kit	224402
Standard Seal Construction	UHMWPE/Polychloroprene
Optional Seal Construction	UHMWPE/PTFE
Instruction Manual	<a href="#">306817</a>



# Hydra-Clean Pressure Washers

## Accessories

Part Number	Description
Guns and Wands	
247879	Standard brass/SST gun/wand
15T283	Standard replacement brass/SST spray gun
15T282	Optional replacement SST spray gun
15T279	32 inch SST wand
15T280	10 inch SST wand
247880	Gun SST quick disconnect connections
247622	Gun and suction tube holder

Part Number	Description
Hoses	
214959	1 in x 6 ft inlet hose
247878	3/8 in x 50 ft outlet hose: 4500 psi
Other	
15T284	60 mesh inlet strainer with 1" npt(f) connection
191635	10 mesh inlet strainer with 1" npt(f) connection

## Stainless Steel Tips

Part Number	Tip Number	Orifice Size	Fan Width Angle at 40 psi (3 bar, 0.03 MPa)	Capacity at 1000 psi (68.9 bar, 6.89 MPa)
805534	40020	0.020 in (0.51 mm)	40°	1.00 gpm (3.78 lpm)
805538*	40030	0.030 in (0.76 mm)	40°	1.50 gpm (5.68 lpm)
805542	40035	0.035 in (0.89 mm)	40°	1.75 gpm (6.62 lpm)
805549*	25045	0.045 in (1.14 mm)	25°	2.25 gpm (8.52 lpm)
805561	25060	0.060 in (1.52 mm)	25°	3.00 gpm (11.36 lpm)
805562	40060	0.060 in (1.52 mm)	40°	3.00 gpm (11.36 lpm)
805566*	40065	0.065 in (1.65 mm)	40°	3.25 gpm (12.30 lpm)
805569	25070	0.070 in (1.78 mm)	25°	3.50 gpm (13.25 lpm)
805458	40075	0.075 in (1.91 mm)	40°	3.75 gpm (14.20 lpm)
805575*	00080	0.080 in (2.03 mm)	0°	4.00 gpm (15.14 lpm)
805587	00100	0.100 in (2.54 mm)	0°	5.00 gpm (18.93 lpm)

\*Tip included with pump packages  
Other orifice sizes and fan widths available from Graco, contact a sales representative for more information.

## Technical Specifications

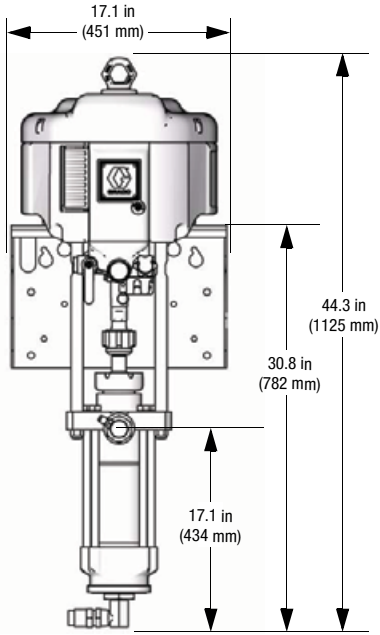
Part Number	Pump Package	Max. Working Pressure psi (bar, MPa)	Max. Air Input Pressure psi (bar, MPa)	Fluid Flow at 60 cpm gpm (lpm)	Vol. per Cycle oz (cc)	Air Inlet Size	Fluid Inlet Size	Fluid Outlet Size*	Flyer	Manual
247549	12:1 Cart Mount	1250 (86, 8.6)	100 (7, 0.7)	8.7 (33.0)	18.6 (550)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
247550	12:1 Wall Mount	1250 (86, 8.6)	100 (7, 0.7)	8.7 (33.0)	18.6 (550)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
247551	23:1 Cart Mount	2275 (157, 15.7)	100 (7, 0.7)	9.2 (34.7)	19.6 (580)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
247552	23:1 Wall Mount	2275 (157, 15.7)	100 (7, 0.7)	9.2 (34.7)	19.6 (580)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
247553	30:1 Cart Mount	3065 (211, 21.1)	100 (7, 0.7)	6.8 (25.9)	14.5 (430)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
247554	30:1 Wall Mount	3065 (211, 21.1)	100 (7, 0.7)	6.8 (25.9)	14.5 (430)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
258664	45:1 Cart Mount	4500 (310, 31.0)	100 (7, 0.7)	4.6 (17.4)	9.8 (290)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
258665	45:1 Wall Mount	4500 (310, 31.0)	100 (7, 0.7)	4.6 (17.4)	9.8 (290)	3/4 npt(f)	1 in	3/8 in	<a href="#">338026</a>	<a href="#">312585</a>
206515	10:1 Drum Mount	1800 (125, 12.5)	180 (12.5, 1.2)	3.0 (11.4)	6.4 (189)	1/2 npt(f)	1/2 in	3/4 in	—	<a href="#">306817</a>

\*Includes two outlet ports per unit. Part number 206515 has only one outlet port.

## Dimensions

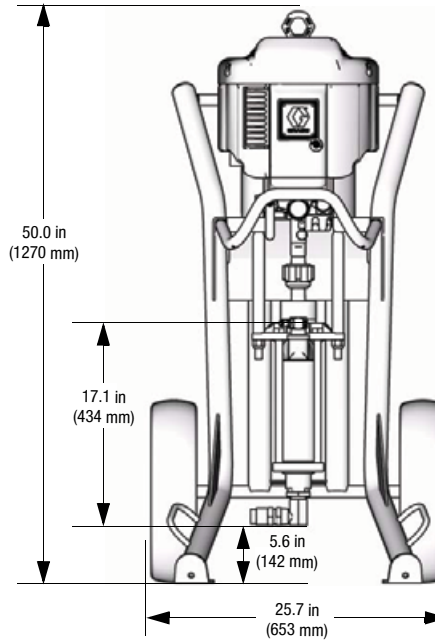
### Hydra-Clean

Wall Mount Package 247550



Refer to manual 312585 for additional package dimensions

Cart Mount Package 247549



# Overmolded Diaphragms Accessories

## Ordering Information

### PTFE/EDPM Heavy-Duty Overmolded Diaphragms

Pump Part No.	Pump Size	Inlet/Outlet Size	Air Motor	Fluid Section	Seats	Balls	O-Rings
FD1113	1 in	1.5 in	SST	SST	SST	PTFE	PTFE
FD1213	1 in	1.5 in	SST	SST	SST	PTFE	EPDM
FD2113	1.5 in	2 in	SST	SST	SST	PTFE	PTFE
FD2213	1.5 in	2 in	SST	SST	SST	PTFE	EPDM
FD3113	2 in	2.5 in	SST	SST	SST	PTFE	PTFE
FD3213	2 in	2.5 in	SST	SST	SST	PTFE	EPDM



### High Sanitation PTFE/EDPM Heavy-Duty Overmolded Diaphragms

Pump Part No.	Pump Size	Inlet/Outlet Size	Air Motor	Fluid Section	Seats	Balls
1590 High Sanitation Pump						
SABA13*	1.5 in	2 in	SST	SST	SST	PTFE
SBBA13	1.5 in	2 in	SST	SST	SST	PTFE
3150 High Sanitation Pump						
SA13A1	2 in	1.5 in	SST	SST	SST	PTFE
SA23A1	2 in	2 in	SST	SST	SST	PTFE
SA33A1	2 in	3 in	SST	SST	SST	PTFE
SA3361	2 in	3 in	SST	SST	SST	Santoprene
SA53A1	2 in	3 in x 2 in	SST	SST	SST	PTFE
SA43A1	2 in	4 in	SST	SST	SST	PTFE



\*Includes leak detector

### High Sanitation and Industrial Repair Kits\*

Part No.	Description
253626	For 1 inch pump size, diaphragm repair kit
253627	For 1.5 inch pump size, diaphragm repair kit
253628	For 2 inch pump size, diaphragm repair kit

\*To replace PTFE overmolded diaphragms

### High Sanitation and Industrial Upgrade Kits\*

Part No.	Description
289224	Upgrade kit for 1 inch pump
289225	Upgrade kit for 1.5 inch pump
289226	Upgrade kit for 2 inch pump

\*Includes new airside diaphragm plate for replacement of standard bolt-through diaphragm.

### SaniForce 1040, 1590 & 2150 Pump Repair Kits

Part No.	Description
FK1113	For 1 inch pump size, with PTFE o-rings
FK1213	For 1 inch pump size, with EPDM o-rings
FK2113	For 1.5 inch pump size, with PTFE o-rings
FK2213	For 1.5 inch pump size, with EPDM o-rings
FK3113	For 2 inch pump size, with PTFE o-rings
FK3213	For 2 inch pump size, with EPDM o-rings

## Technical Specifications

Overmolded Diaphragms	
Material/Construction on wetted side	FDA-Compliant PTFE
Material/Construction on air side	FDA-Compliant EPDM
Temperature range	14°F to 180°F (-10°C to 82°C)
Flex life	5x original Graco 2-piece PTFE diaphragm sets
Safety	Complies to FDA21CFR 177.1550 (PTFE) and FDA21CFR 177.2600 (EPDM)

# Graco Standard 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 Hazard

**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.

**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX

Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48

Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)

[www.motralec.com](http://www.motralec.com)