



SaniForce®

A Complete Sanitary Pump Line



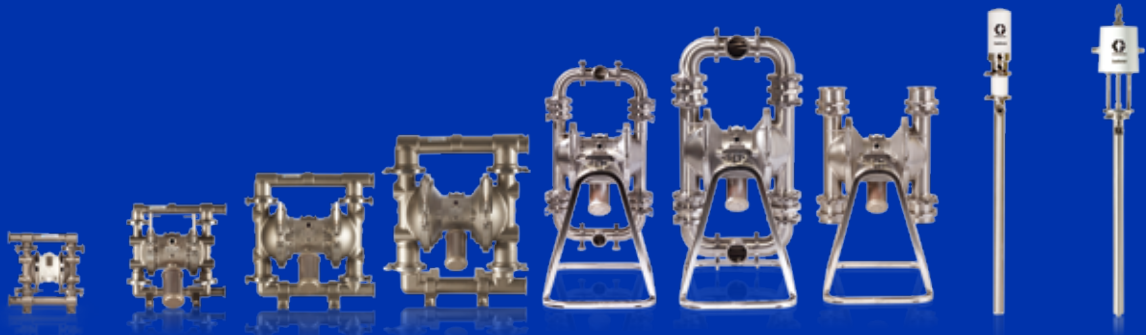
unleash the
POWER

PROVEN QUALITY. LEADING TECHNOLOGY.

The new SaniForce line **saves you time and money** by pumping the most difficult materials – quickly and safely!

SaniForce Pumps:

- Air-operated double diaphragm pumps
- Piston transfer pumps
- Drum and bin unloaders
- High pressure cleaning equipment



Model*	515	1040	1590	2150	1590 HS & 3-A	3150 HS & 3-A	Meat/ Poultry	2:1	6:1
Max Flow Rate	16 gpm (61 lpm)	40 gpm (151 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)	150 gpm (568 lpm)	1.5 gpm (5.7 lpm)	4 gpm (15 lpm)
Max Fluid Pressure	100 psi (7 bar, 0.7 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)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	250 psi (17 bar, 1.7 MPa)	600 psi (41 bar, 4.1 MPa)
Pump Style	Ball	Ball	Ball	Ball	Ball	Ball or Flapper	Flapper	Double ball	Double ball or Priming piston
Suction Lift (Wet)	25 ft (7.6 m)	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)	10 ft (3 m)	N/A	N/A
Max Pumpable Solids	3/32 in (2.38 mm)	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)	2.5 in (63.5 mm)	1/8 in (3.2 mm)	1/8 in (3.2 mm)
Viscosity Range	Up to 10,000 cps	Up to 10,000 cps	Up to 15,000 cps	Up to 20,000 cps	Up to 15,000 cps	Up to 20,000 cps	Up to 20,000 cps	Up to 50,000 cps	Up to 100,000 cps
Flyer	320462	320462	320462	320462	338499	338499	338067	338591	338591
Manual	3A1973	311879	311879	311879	310622	310622	310622	3A2977	3A0733

*Actual performance may vary by application

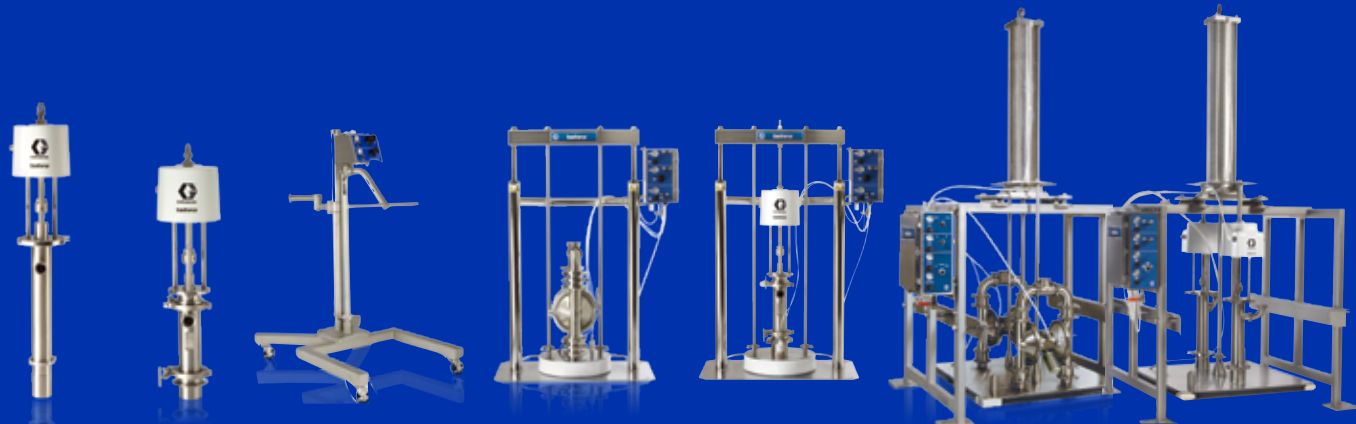
Graco's Complete Line of Sanitary Pumps



Transfer a **broad range of viscosities** from fruit juices and pizza sauce to caramel and peanut butter.

SaniForce Pumps and Unloaders:

- Move material faster
- Increase efficiency
- Improve processes
- Pump high viscosity materials



5:1	12:1	Elevator	Diaphragm Drum Unloaders	Piston Drum Unloaders	Diaphragm Bin Evacuation	Piston Bin Evacuation
14 gpm (53 lpm)	8.5 gpm (32 lpm)	14 gpm (53 lpm)	Up to 150 gpm (568 lpm)	Up to 14 gpm (53 lpm)	Up to 300 gpm (1,135 lpm)	Up to 56 gpm (212 lpm)
400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)	400 psi (28 bar, 2.8 MPa)	120 psi (8 bar, 0.8 MPa)	1200 psi (83 bar, 8.3 MPa)	120 psi (8 bar, 0.8 MPa)	1200 psi (83 bar, 8.3 MPa)
Double ball or Priming piston	Priming piston	Double ball	Ball or Flapper	Double ball or Priming piston	Ball or Flapper	Double ball or Priming piston
N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/4 in (6.4 mm)	1/4 in (6.4 mm)	1/4 in (6.4 mm)	Ball = 1 in (25.4 mm) Flapper = 2.5 in (63.5 mm)	1/8 in to 1/4 in (3.2 to 6.4 mm)	Ball = 1 in (25.4 mm) Flapper = 2.5 in (63.5 mm)	1/4 in (6.4 mm)
Up to 100,000 cps	Up to 1,000,000 cps**	Up to 50,000 cps	Up to 100,000 cps	Up to 1,000,000 cps with priming piston	Up to 100,000 cps	Up to 1,000,000 cps with priming piston
338591	338591	345058	338590	338590	338589	338589
3A0734	3A0735	333406	3A0591	3A0591	311163	311163

**When mounted on drum unloader or bin evacuation system

SaniForce Piston Pumps

Save money by increasing efficiency

Graco's powerful line of piston pumps move extremely difficult materials when others cannot. They have pressure ratios up to 12:1 and are ideal for low to medium viscosity materials.

The air motors improve serviceability, increase efficiency and offer a lower cost of ownership. The quick knockdown lowers are made with corrosion resistant stainless steel for long-lasting durability.



SaniForce 2:1 Piston Pump

- Can handle up to 50,000 cps
- Flow rates up to 1.5 gpm (5.7 lpm) at 60 cpm
- Pumps available in standard and long lengths

SaniForce 6:1 Piston Pump

- Can handle up to 100,000 cps
- Flow rates up to 4 gpm (15 lpm) at 60 cpm
- Pumps available in stubby, drum and bin lengths

SaniForce 5:1 Piston Pump

- Can handle up to 100,000 cps
- Flow rates up to 14 gpm (53 lpm) at 60 cpm
- Pumps available in stubby and drum lengths

SaniForce 12:1 Piston Pump

- Can handle up to 1,000,000 cps on a drum unloader or bin evacuation system
- Flow rates up to 8.5 gpm (32 lpm) at 60 cpm

Common Applications

Fluid transfer and supply of low to medium viscosity fluids
Food-related applications
Cosmetic applications

Common Materials

Fruit juice concentrates
Cream candy fillings
Ice cream variegates
Cosmetics



Advanced air motor technology

Quick knockdown lowers

Available in double ball or priming piston designs



FDA-Compliant Shroud

- Removable, wash down safe, FDA-compliant shroud lets you easily access the air valve



All SaniForce Piston Pumps have Quick Knockdown Lower for Fast and Easy Cleaning!

SaniForce 515, 1040, 1590 & 2150

When other pumps fail, Graco pumps excel!

Graco's SaniForce 515, 1040, 1590 and 2150 air-operated diaphragm pumps not only have **flow rates up to 25% greater** than many competitive pumps with PTFE diaphragms, but have one of the **best, most durable, lube-free air valves** in the industry.

Ideal for applications requiring high flow rates and portability, Graco's dependable diaphragm pumps offer a wide range of food-grade elastomers including Santoprene, PTFE, and overmolded PTFE/EPDM.

Pump Finish

- Cast 316 SST
- Sanitary shot-blasted wetted sections

Bolt-through and overmolded diaphragm options available

Fluid contact areas are all FDA-compliant and meet CFR Title 21



2150

- 2.5 in (63.5 mm) tri-clamp connections
- 2 in (50.8 mm) manifold ID
- Flow rates up to 150 gpm (568 lpm)



1590

- 2.0 in (50 mm) tri-clamp connections
- 1.5 in (38.1 mm) manifold ID
- Flow rates up to 90 gpm (340 lpm)



1040

- 1.5 in (38 mm) tri-clamp connections
- 1 in (25.4 mm) manifold ID
- Flow rates of 40 gpm (151 lpm)



515

- 1.0 in (25.4 mm) tri-clamp connections
- 0.96 in (24.3 mm) manifold ID
- Flow rates of 16 gpm (61 lpm)

Common Applications

- Evacuation of food to mixing kettles
- High volume evacuation of liquid concentrates from holding vessels
- Repackaging of fluids from original containers to smaller receptacles
- Feed filling/packaging stations

Common Materials

- Concentrated fruit juices
- Sauces, pastes and starches
- Wine
- Jams and jellies
- Edible Oils

Improve Your Process and Reduce Downtime

Graco Air Valves are durable, reliable and easy to repair!

- Increase durability and reduce repair time with fewer moving parts
- Three-way pilot valve for non-stick operation
- Externally serviceable for quick, inexpensive repairs



Tri-clamp inlet and outlet connections

Stop Harboring Bacteria!

Graco overmolded the fluid side diaphragm plate with PTFE on the fluid side and EPDM on the air side on our **PTFE/EPDM diaphragms**. This improves wear, durability and cleanability –making SaniForce diaphragm pumps one of the **easiest to clean in the market**.

- Improve wear and diaphragm life with no exposed diaphragm plate on the fluid side
- Longer diaphragm life in moderately abrasive applications that still require PTFE
- Available on the SaniForce 515, 1040, 1590, 2150 and SaniForce 1590 HS and 3150 HS



SaniForce 1590 and 3150 High Sanitation

Easy to clean, quick knockdown design

Graco's SaniForce High Sanitation (HS) FDA-compliant pumps are ideal for applications that require an electropolished 32 Ra finish and benefit from the convenience of a quick knockdown design.



1590 HS

- 2.0 in (50.8 mm) tri-clamp connections
- 1.9 in (48.3 mm) manifold ID
- Maximum flow rates up to 90 gpm (340 lpm)



3150 HS

- Up to 4.0 in (101.6 mm) tri-clamp connections
- 2.9 in (73.7 mm) manifold ID
- Maximum flow rates up to 150 gpm (568 lpm)



3A certifications are available on a variety of SaniForce 1590 and 3150 models.

32 Ra formed/welded stainless steel with sanitary finish

Maximum flow rates range from 90-150 gpm (340-568 lpm)

Patented, durable, lube-free air valve

Interchangeable flapper and ball check

Common Applications	Evacuation of food to mixing kettles
	Transferring from original containers to mixing tanks
	High volume evacuation of liquid concentrates from holding vessels
	Repackaging of fluids from original containers to smaller receptacles

Common Materials	Fruit filling
	Spaghetti sauce
	Muffin and cake batter
	Edible oils
	Lotions
Cultured dairy products	

SANITARY

Designed for Easy Cleaning

EPDM Overmolded Diaphragms

- Approved for 3A applications
- Easy cleaning with smooth, flat surfaces
- No exposed diaphragm plates to help prevent contaminant collection



Meat and Poultry Pump

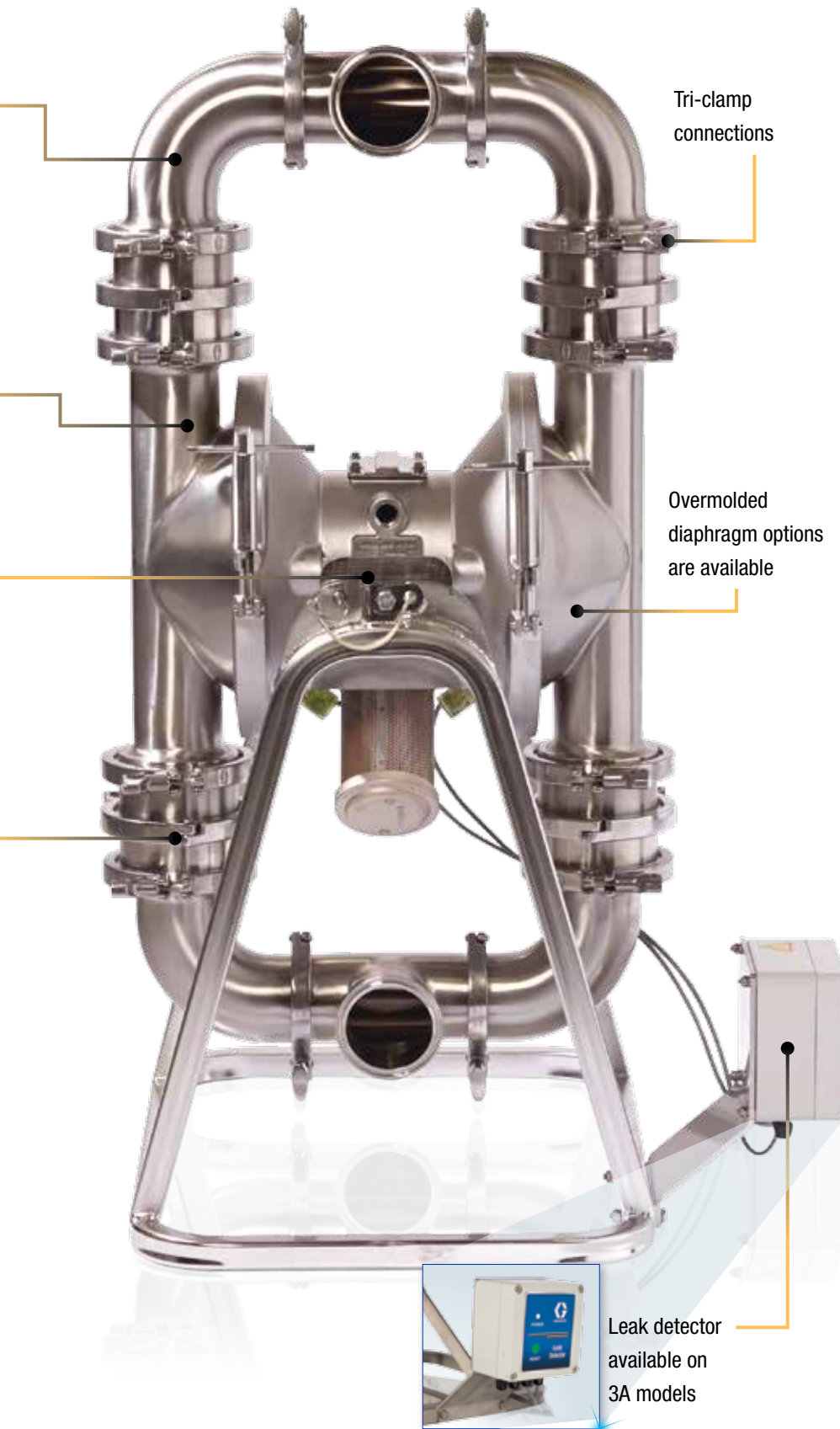
The SaniForce Meat and Poultry Flapper pump handles solids up to 2.5 inches (6.3 cm) in diameter and features Graco's durable, non-sticking air valve.



Common Applications

Meat and poultry processing

Pet food manufacturers



Tri-clamp connections

Overmolded diaphragm options are available

Leak detector available on 3A models

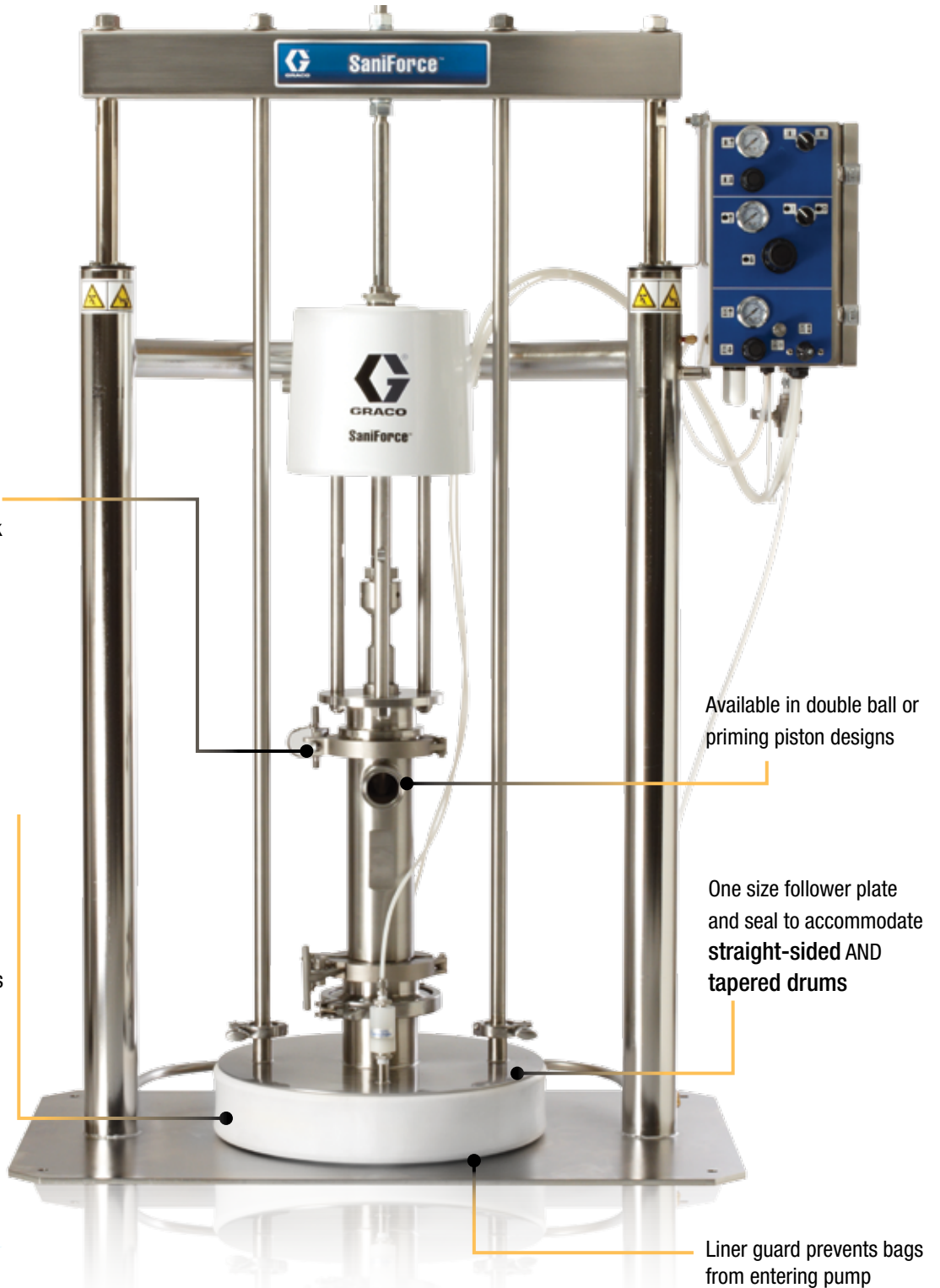


SaniForce Drum Unloaders

Need to transfer 1,000,000 cps* materials? No problem!

Graco's SaniForce drum unloaders can evacuate medium to high viscosity products from their original 55-gallon (208 l) containers, without diluting the material.

*Only applies to priming piston drum unloaders



Sanitary flange clamps for quick disassembly

Available in double ball or priming piston designs

One size follower plate and seal to accommodate straight-sided AND tapered drums

Liner guard prevents bags from entering pump

Wiper Seal Features

- FDA-compliant inflatable ram plate seal
- Faster change-out of empty containers
- Up to 99% evacuation rates



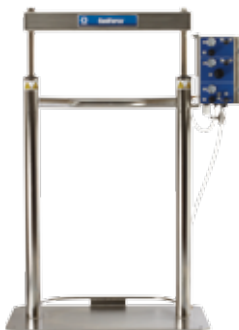
Configure your own SaniForce Drum Unloading System

It's easy as 1-2-3.

Choose the Ram Frame Material + Control Type + Piston or Diaphragm Pump to build your own SaniForce Drum Unloading System.

1

Ram Frame Material



Stainless Steel

OR



Painted Carbon Steel

2

Controls Type



Enclosed Controls
(Available with SST frame only)

OR

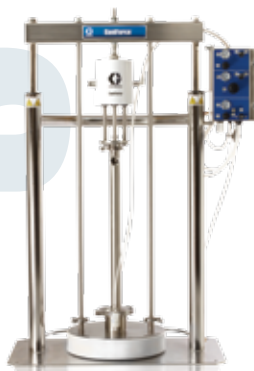


Exposed Controls

3

SaniForce Piston Pump

OR SaniForce Diaphragm Pump



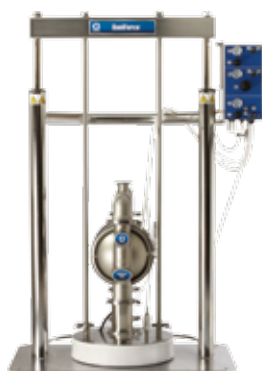
SaniForce 6:1



SaniForce 5:1



SaniForce 12:1



SaniForce 2150



SaniForce 3150 HS

All pumps feature an on-demand workflow capability and can also be taken apart quickly for applications that require frequent sanitation.

Common Applications	Unload medium to high viscosity products, up to 1,000,000 cps*, from 55-gallon containers without diluting the material
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*Only applies to priming piston drum unloaders

Common Materials	Tomato paste	Cosmetics
	Peanut butter	Jams and jellies
	Icing and frosting	Caramel
	Toothpaste	Corn syrup

SaniForce Bin Evacuation Systems (BES)

The **most sanitary way** to unload materials without introducing airborne bacteria!

Save time and money in your facility by unloading materials efficiently from 300-gallon (1135.6 l) “bag-in-bin” containers – eliminating manual scooping or bin dumping.

Complete bin unloading saves money and provides better process control while removing the need for costly booster pumps.



**SaniForce 3150 BES
with Diaphragm Pumps**



**SaniForce BES
with Piston Pumps**

Common Applications

Evacuate viscous products from their original 300-gallon containers without dilution

Common Materials

Tomato paste	Cosmetics
Peanut butter	Jams and jellies
Icing and frosting	Caramel
Toothpaste	Corn syrup

Unload a Tote Without Diluting or Heating the Product!

Keep your product clean,
move it quickly and boost your
bottom line with a SaniForce
bin evacuation system.

Available with
pneumatic or
electronic controls

Up to 99% evacuation rates

Inflatable wiper creates
a tight seal preventing
contaminants from
entering the container



Unique floating ram plate eliminates
the need for exact positioning of bins
under the ram plate

SaniForce Elevators

Stop unloading containers manually.

The SaniForce Elevator is ideal for small to medium sized companies who currently unload less than two containers per hour by either scooping or dumping. Flow rates range from 1.5 to 14 gpm (5.7 to 53 lpm), depending on which SaniForce piston pump is used.

Can be used with SaniForce 2:1, 5:1, & 6:1 ball check piston pumps

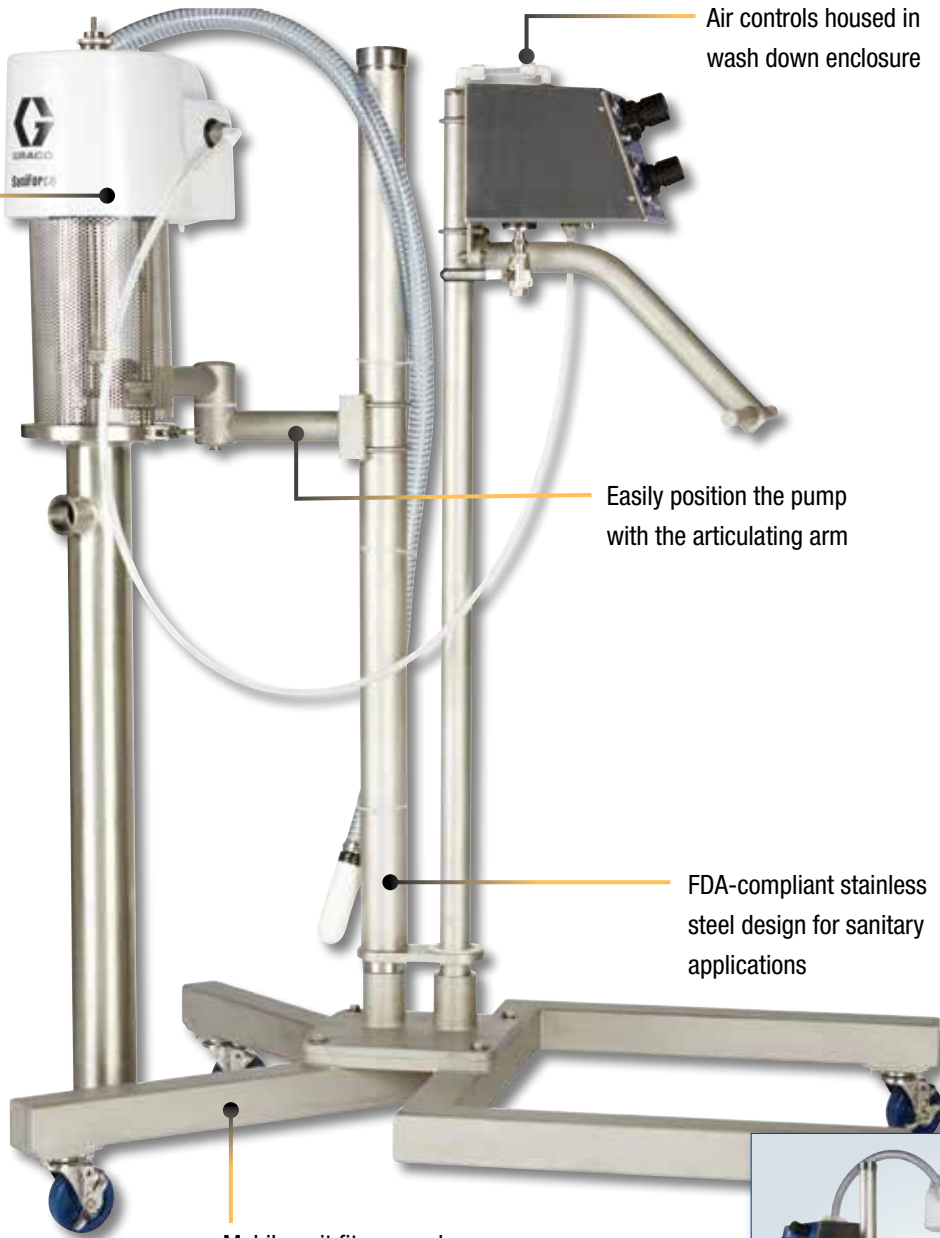
Air controls housed in wash down enclosure

Easily position the pump with the articulating arm

FDA-compliant stainless steel design for sanitary applications

Mobile unit fits around a standard pallet

Stationary unit with base plate mounted to the floor



Hydra-Clean® Pressure Washers

Gas and electric can't be used? Choose the **air-driven** Hydra-Clean pressure washer for your cleaning solution.

Ideal for cleaning and sanitizing food, beverage and pharmaceutical processing facilities, Hydra-Clean pressure washers can be used with hot or cold water, detergents or strong chemical solutions.



Available in both wall-mount and cart-mount

Ideal for use with open-head drums

Stainless steel lower is compatible with a variety of chemicals

Supports multiple guns

Each package comes standard with five different spray tips

CLEANING

A Complete Line of Chemical Transfer Pumps for CIP

GRACO PUMPS

Graco pumps are a **dependable, easy-to-service** solution for CIP applications.



Husky™ 205 Polypropylene

- 1/4 in (6.3 mm) connection
- Max flow: 5 gpm (19 lpm)



Husky 205 PVDF

- 1/4 in (6.3 mm) connection
- Max flow: 5 gpm (19 lpm)



Husky 307 Polypropylene

- 3/8 in (9.4 mm) connection
- Max flow: 7 gpm (26 lpm)



Husky 515 Polypropylene

- 1/2 in (12.7 mm) connection
- Max flow: 15 gpm (57 lpm)



Husky 515 PVDF

- 1/2 in (12.7 mm) connection
- Max flow: 15 gpm (57 lpm)



Husky 716 SST

- 3/4 in (19.1 mm) connection
- Max flow: 16 gpm (61 lpm)



Husky 1050 Polypropylene

- 1 in (25.4 mm) connection
- Max flow: 50 gpm (189 lpm)



Husky 1050 PVDF

- 1 in (25.4 mm) connection
- Max flow: 50 gpm (189 lpm)



Husky 1050 SST

- 1 in (25.4 mm) connection
- Max flow: 50 gpm (189 lpm)

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.

Call today for product information or to request a demonstration.
877.84GRACO (1-877-844-7226) or visit us at www.graco.com.

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