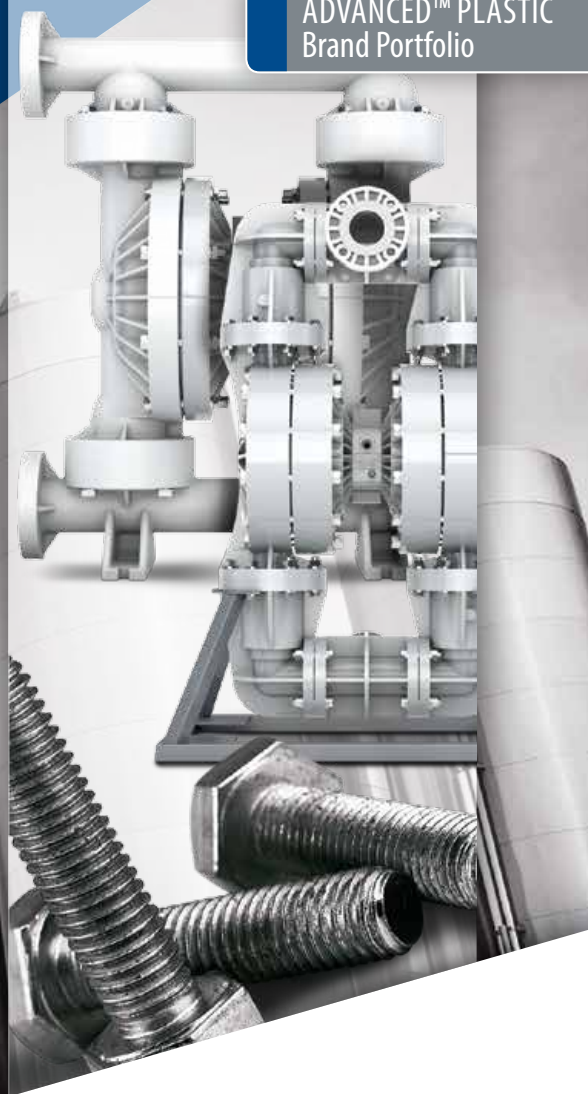


WILDEN®

Expert
Solutions
for Critical
Applications

ADVANCED™ PLASTIC
Brand Portfolio



Where Innovation Flows

wildenpump.com

ADVANCED™ BOLTED PLASTIC PUMPS

airpumping.co.uk

of 1979
Unit 16, Upminster Trading Park, Warley St, Upminster, Essex, RM14 3PJ, ENGLAND


a **DOVER** company



Wilden: The Power Behind Fluid Transfer

As the global leader in air-operated double-diaphragm (AODD) pumps, Wilden has been exceeding customer expectations since 1955 thanks to a deep commitment to the pursuit of excellence, customer satisfaction, research and development and market knowledge.

Wilden and our elite distributor network are devoted to servicing your needs with world-class products, delivery and best-in-class expertise to ensure you have access to the latest pump technologies and fluid transfer services available for your industries, applications and processes.

Put us to the test and contact your local distributor today at: wildendistributor.com

MARKETS SERVED

ENERGY

Wilden is leading the way in energy efficiency in storage terminals, biofuels and solar cell manufacturing. Wilden pumps play a vital role as transfer points from one mode of transportation to another and as safe, secure storage locations until product transfer is needed. Wilden is also committed to helping build a clean-energy economy through the use of biofuels.

Typical Applications Handled:

- Raw crude oil
- Biodiesel
- Solar cell manufacturing
- Gasoline
- Chemicals
- Gases
- Diesel fuel
- Caustics
- Crude oil
- Petroleum
- Refined petroleum products
- Ethanol
- Solvents
- Lube oils

PROCESS

Wilden is a recognized leader in the process industries. You can find Wilden pumps in many of the top chemical, food and beverage and pharmaceutical plants around the world.

Typical Applications Handled:

- Acids
- Pulp and paper
- Soap and detergents
- Cosmetics
- Solvents
- Low-solvent coating
- Paints, inks and coatings
- Solvent-less coating
- General chemicals
- Caustics
- Alcohols

WATER/WASTEWATER

Wilden plays a critical role in handling and transferring fluids used in municipal and industrial water and wastewater plants.

Typical Applications Handled:

- Wastewater systems
- Distribution
- Water treatment supply
- Collection and disposal
- Rehabilitation systems
- Metal fabrication
- Potable water systems



Installation Versatility

Self Priming

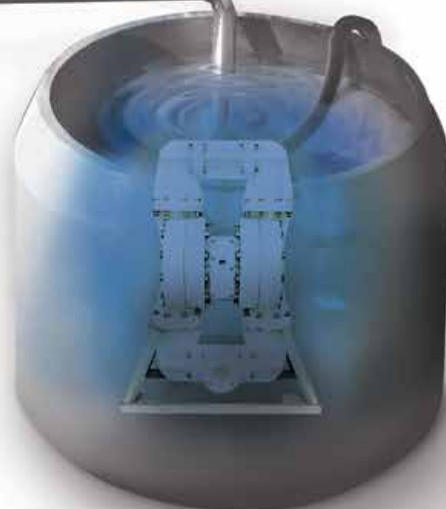
- Portable
- High vacuum
- Run-dry capable
- No heat generation

Positive Suction Head

- Preferred installation for high-viscosity applications
- Superior product containment
- Inlet pressure should be limited to 0.7 bar (10 psig) to maximize parts life

Submerged

- Air-operated pumps (non electrical)
- Single-point exhaust options available for submersible applications
- Multiple material options available for process fluid compatibility





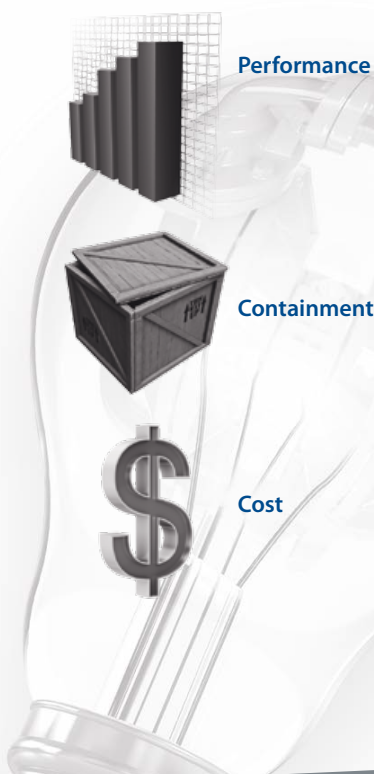
Advanced™ Solutions: Bolted Pumps

As the global leader in AODD bolted pumps, Wilden has the largest material offering in the industry. The Advanced™ bolted plastic pumps offered by Wilden are specifically designed for maximum performance, efficiency and containment. The bolted configuration ensures total product containment while the liquid path reduces internal friction to maximize output and efficiency. Multiple elastomer options are available to meet and exceed your abrasion, temperature and chemical compatibility challenges.

Advanced bolted plastic pumps are offered in polypropylene, PVDF and PFA. A variety of connection options and specialized air distribution systems are also available for your specific application needs.



Your Needs



Our Solutions

Advanced Pumps

- Higher flow rates
- Variable flow and pressure
- Shear sensitive
- Intrinsically safe
- Dry-run capable
- Portable and submersible
- Large solids passage
- High suction lift

Superior Containment

- Leak-free operation
- Superior torque retention
- Unique valve seat design
- Superior finish on sealing surfaces
- Multiple liquid connections available

Enhanced Efficiencies

- Anti-freezing ADS
- Greater flow per SCFM input
- Low cost of ownership
- Ease of operation and maintenance

The Results

Success

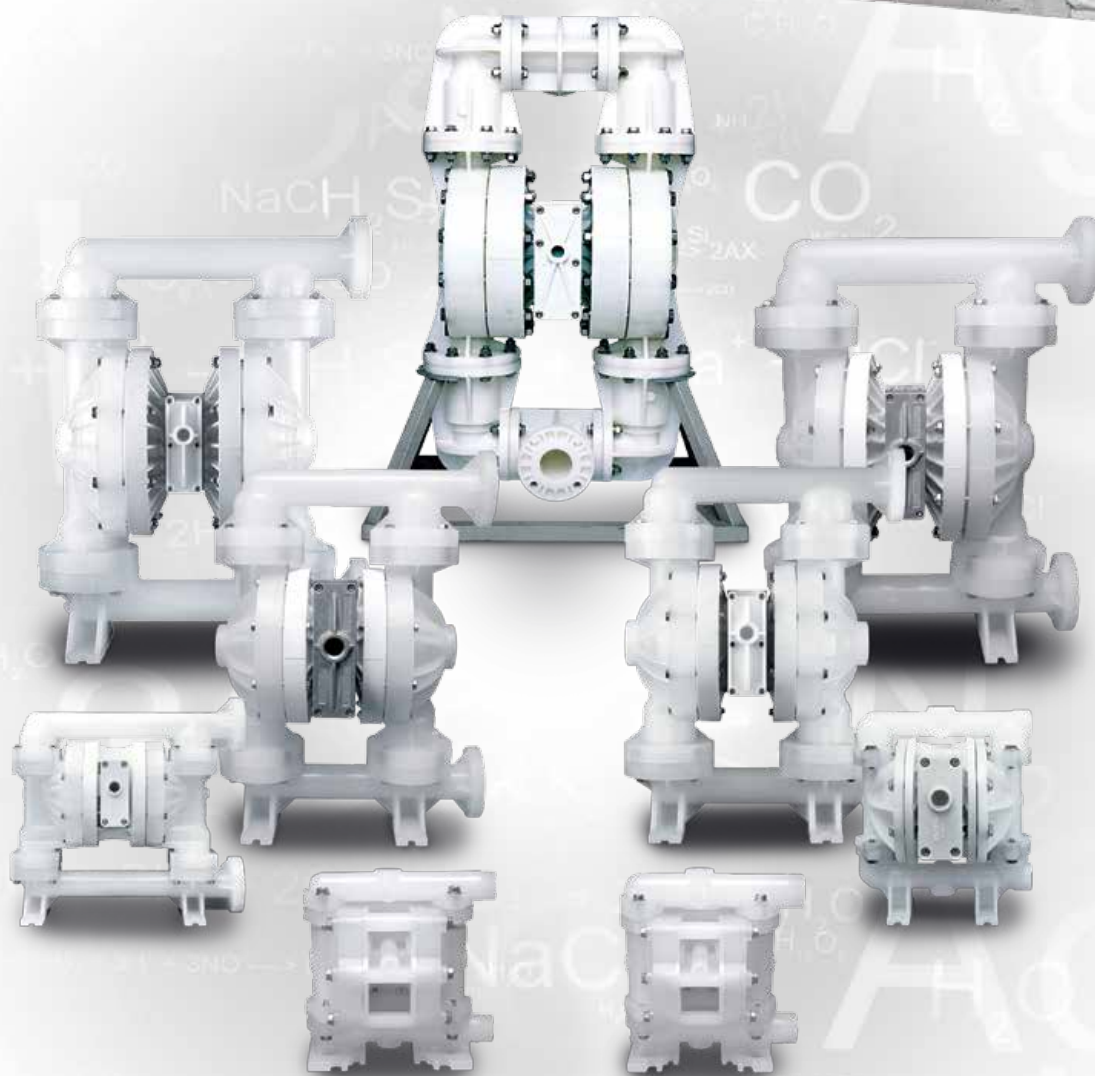
- Higher yields
- Increased pump output
- Increased On/Off reliability
- Reduced turbulence
- Reduced internal friction

Containment Ensured

- Leak-free pump operation
- Viscous and non-viscous product transfer
- Largest chemical compatibilities
- Transfer with confidence

Cost Efficient

- Optimized applications
- Reduced air consumption
- Reduced kilowatt usage
- Longest Mean Time Between Repair (MTBR)
- Lower operational costs and downtime
- Saves you money



Tech Data

- Sizes: 6 mm (1/4") through 76 mm (3")
- Materials: Polypropylene and PVDF
- Material temperatures: Up to 107°C (225°F)
- Elastomers: Buna-N, Neoprene, EPDM, Viton, Wil-Flex, Saniflex, Polyurethane, PTFE, Geolast
- ADS: Pro-Flo® SHIFT, Pro-Flo X™, Pro-Flo®, Accu-Flo™

Performance Data

- Max flow rates: 1024 lpm (271 gpm)
- Max suction lift: 9.8 m (32.0') Wet, 6.6 m (21.6') Dry
- Max disp. per stroke: 5.8 L (1.52 gal)
- Max discharge pressure: 8.6 bar (125 psig)
- Max size solids: 12.7 mm (1/2")



STATE-OF-THE-ART

Air Distribution Systems

The innovative, yet simple, Pro-Flo® SHIFT Air Distribution System (ADS) is the new standard for AODD pumps, featuring an "air control spool" that automatically optimizes air consumption and eliminates the overfilling that can lead to overcharging of the air chamber, all while causing no corresponding reduction in flow rate. The results are a reduction in air consumption and operational costs while maximum operational efficiency and volumetric consistency are maintained.



Market Position:

- Cost efficient: 50% less expensive than an electronically-actuated ADS
- Faster return on investment
- Robust design for harsh operating conditions
- Metered air consumption for less product waste
- Creates the highest performance ratio
- Superior flow rate
- Superior anti-freezing
- Single-point exhaust option
- Lube-free operation
- Reduced maintenance costs
- On/Off reliability
- Environmental sensitivity

Features:

- Simple and durable pump design
- Simple components
- Faster, easier setup time
- Plug-N-Play operation
- No electricity needed
- Precise flow rate at start-up
- Non-stalling unbalanced spool

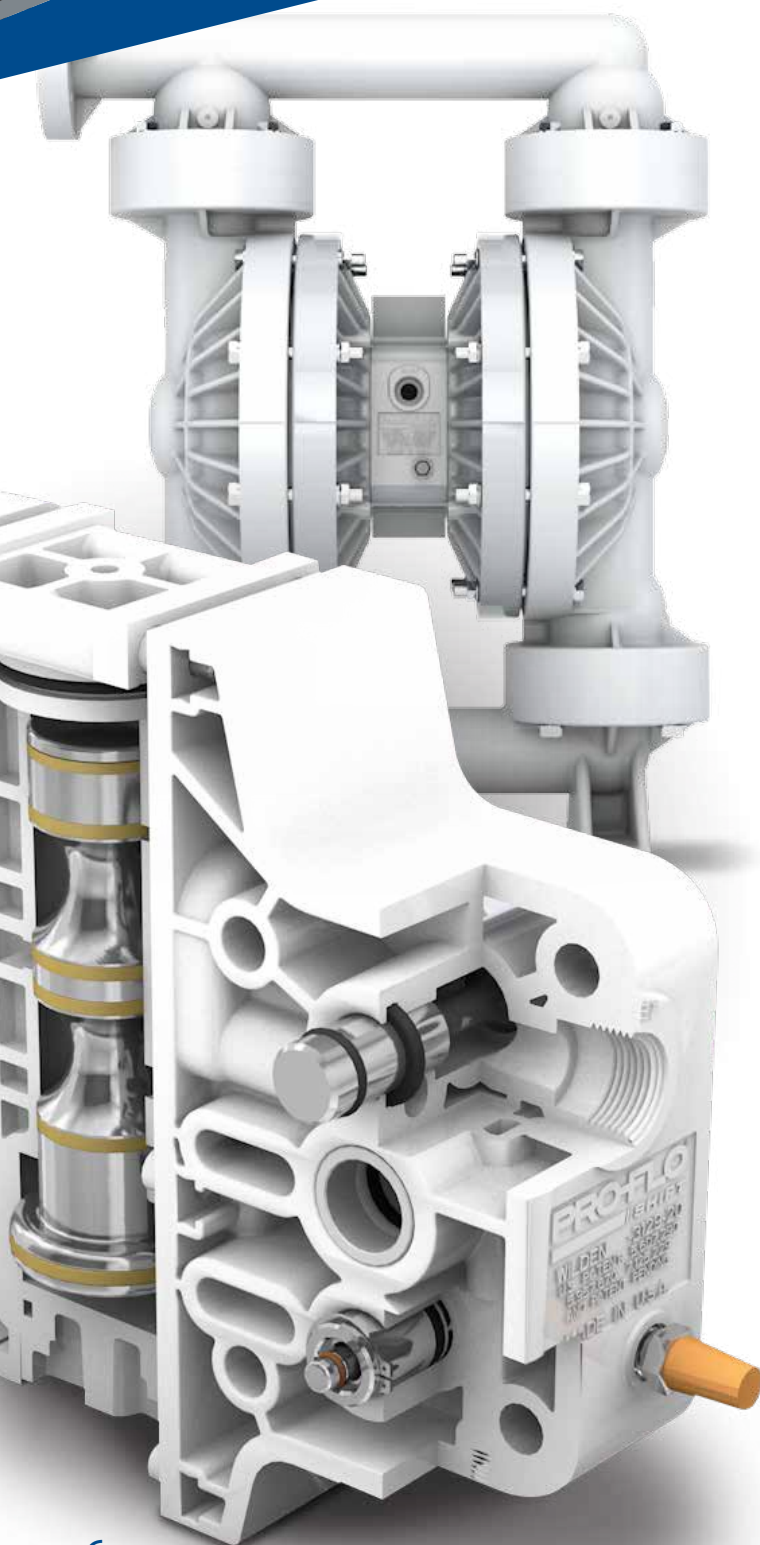
- Reduced energy consumption
- Lower carbon footprint
- ATEX-compatible for use in explosive atmospheres

Application Traits:

- Greater yield per SCFM of air used
- Wider application range
- Repeatable, predictable performance
- Less product waste
- Max. Mean Time Between Repair (MTBR)
- Increased application range/compatibility
- Minimum training required
- No special skill set needed for maintenance or operation

Availability:

- 38 mm (1-1/2")
- 51 mm (2")
- 76 mm (3")



SHIFTING PERFORMANCE TO A WHOLE NEW LEVEL.



Market Position:

- Variable control (discharge flow rates and air consumption)
- Superior flow rate
- Superior anti-freezing
- Single-point exhaust option
- Lube-free operation
- On/Off reliability
- ATEX models available

Features:

- Efficiency Management System (EMS™)
- Metal and plastic material options
- Non-stalling unbalanced spool
- Simple and durable design

Application Traits:

- Maximize performance and efficiency
- Process applications
- Max. Mean Time Between Repair (MTBR)

Availability:

- 38 mm (1-1/2")
- 51 mm (2")



Market Position:

- Anti-freezing
- On/Off reliability
- Longest-lasting wear parts
- Lube-free operation

Features:

- Plastic center block
- Non-stalling unbalanced spool
- Simple and durable design

Application Traits:

- Maximum reliability
- Process applications
- Max. Mean Time Between Repair (MTBR)

Availability:

- 6 mm (1/4"), 13 mm (1/2"), 25 mm (1"), 38 mm (1-1/2"), 51 mm (2"), 76 mm (3")



Market Position:

- Direct electrical interface
- Superior On/Off reliability
- Reduced systems costs
- Lube-free operation

Features:

- Externally controlled
- Various voltage options
- Nema 4, Nema 7 or ATEX
- Simple installation

Application Traits:

- System automation
- 4-20 mA pH Adjusting
- Batching applications
- OEM accounts

Availability:

- 13 mm (1/2"), 25 mm (1")



Progressive Diaphragm Technology

Thermoplastic Elastomer (TPE)

- Thermoplastic elastomers (TPE) are known for their superior abrasion-resistance and durability. Due to their wide temperature range capabilities and superior flex life, Wilden TPE diaphragms are an excellent option for general purpose applications.
- Wilden TPE elastomer options available include: Polyurethane, Wil-Flex™ (Santoprene®), Saniflex™ (Hytrel®) and Geolast® (Nitrile Buna-N).
- Also, diaphragm versions of Wil-Flex and Saniflex are available that comply with FDA 21 CFR 177 standards.

Polytetrafluoroethylene (PTFE) Elastomers

- Because it is one of the most chemically inert compounds available, PTFE can be used with an extremely wide range of fluids, including highly aggressive fluids. Its properties provide excellent flex life and moderate abrasion resistance. In addition, PTFE complies with FDA 21 CFR 177 and USP Class VI standards for food, beverage and pharmaceutical applications. Because PTFE is non-elastic, a backup diaphragm of a different material must be used to provide flexibility and memory. Material options for backup diaphragms are Neoprene, Saniflex, EPDM and high-temperature Buna-N.



Elastomer Temperature Limits:

Rubber	Neoprene	-18° to 93°C [0° to 200°F]
	Buna-N	-12° to 82°C [10° to 180°F]
	EPDM	-51° to 138°C [-60° to 280°F]
	Viton®	-40 to 177°C [-40 to 350°F]
Thermoplastic (TPE)	Polyurethane	-12° to 66°C [10° to 150°F]
	Wil-Flex	-40° to 107°C [-40° to 225°F]
	Saniflex	-29° to 104°C [-20° to 220°F]
	Geolast	-40° to 82°C [-40° to 180°F]
PTFE	PTFE	4° to 104°C [40° to 220°F]

Teflon®, Hytrel® and Viton® are registered trademarks of DuPont Company
Geolast® and Santoprene™ are trademarks of ExxonMobil

CAUTION: Maximum temperature limits are based upon mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperatures. Please verify the chemical resistance limitations of elastomers and all other pump components prior to pump installation. The Wilden online Chemical Guide and a Wilden distributor should be consulted for specifics in elastomer selection.

Go to wildenchemicalguide.com for your Wilden Chemical Compatibility Guide.



Rubber Elastomers

- Wilden's rubber elastomers are specifically engineered to increase chemical resistance, durability and allow for greater temperature spans, making this a general purpose diaphragm well-suited for a wide range of applications.
- Wilden material options available include: Neoprene, Buna-N, EPDM and Viton®.



Ultra-Flex™ Diaphragm Technology

- The diaphragm's convolute shape and controlled fabric placement decreases tensile loading to minimize stress concentration. This design reduces internal stress resulting in extremely long diaphragm life.
- Material availability: Neoprene, Buna-N, EPDM, Viton.

Visit WildenDiaphragms.com for more information on Genuine Wilden Diaphragms and to download the Wilden Chemical Compatibility Guide.

Genuine **WILDEN**
Accept Nothing Less

Accessories

Wilden accessory products add value to your liquid process and expand the application range of Wilden pumps by augmenting the performance and/or utility of the pump. Our electronic controllers automate your Wilden pump for batching and other electronically controlled dispensing applications. We can also create laminar process flow by eliminating pump pulsation or control the liquid level within a system.



WILDEN Wil-Gard™ III

The Wil-Gard™ detects diaphragm failure at the source: the primary diaphragm, not at the air chamber or the air exhaust as other systems do.

- Sensors are located between the primary and back-up (containment) diaphragms
- When the sensors detect a conductive liquid, an audible alarm, LED and an internal latching relay are activated
- Increase containment, reduce fugitive emissions and reduce downtime with 24-hour pump surveillance
- Power requirement: 110V AC or 220V AC



WILDEN Pump Cycle Monitor

The PCMI counts pump cycles by sensing the presence of the air valve piston (Turbo-Flo) or air valve spool (Pro-Flo).

- The sensor, located at the air valve and cap, detects the presence of a magnet located at the end of the air valve piston/spool
- The PCMI registers a complete pump cycle when the piston/spool shifts away from the sensor and subsequently returns to the original position
- The PCMI unit has a reset switch located on the face of the PCMI module
- PCMI has the ability to be reset from a remote location



WILDEN Drum Pump Kit

The inherent features of the Wilden air-operated pump and Accu-Flo pump technology allow it to excel as a utilitarian drum pump. Variable speed and pressure capability and the ability to run dry, self prime and deadhead offers you flexibility at a low cost. The Wilden universal drum pump kit enables Wilden 1/4" and 1/2" pumps to adapt directly to drums for cost-effective, efficient liquid transfer.

- Universal kit for 6 mm (1/4") and 13 mm (1/2") pumps
- Fits 51 mm (2") NPT bungholes
- Tube length can be cut to length
- Variety of materials are available



WILDEN SD Equalizer®

The Surge Dampener (SD) Equalizer® was designed to remove pressure variation on the discharge end of the pump. It has a flow-through design manufactured with existing Wilden pump parts. The SD Equalizer automatically sets and maintains the correct air pressure required, optimizing its effectiveness.

Features and Benefits:

- Reduces pipe vibration and shaking
- Protects in-line equipment
- Reduces water hammer
- Absorbs acceleration head
- Lowers system maintenance cost
- Suction stabilizer
- Helps prevent leaking at pipe fittings and joints
- Extends and improves pump performance
- Avoids damaging pressure surges
- Wide range of material and elastomer options
- Common parts with Wilden pumps
- Self adjusts to system pressure

Available Sizes:

- 13 mm (1/2")
- 25 mm (1")
- 38 mm (1-1/2")
- 51 mm (2")
- 76 mm (3")

Materials of Construction:

Wetted Housing

- Aluminum
- 316 and 316L Stainless Steel
- Ductile Iron
- Polypropylene
- PVDF

Air Distribution System

- Aluminum
- 316 Stainless Steel
- PTFE-Coated Ductile Iron
- Polypropylene
- Glass-filled Polypropylene
- Mild Steel PTFE-Coated

ATEX Models Available

CERTIFIED
HYGIENIC ENGINEERING & DESIGN GROUP EUROPEAN
EHEDG



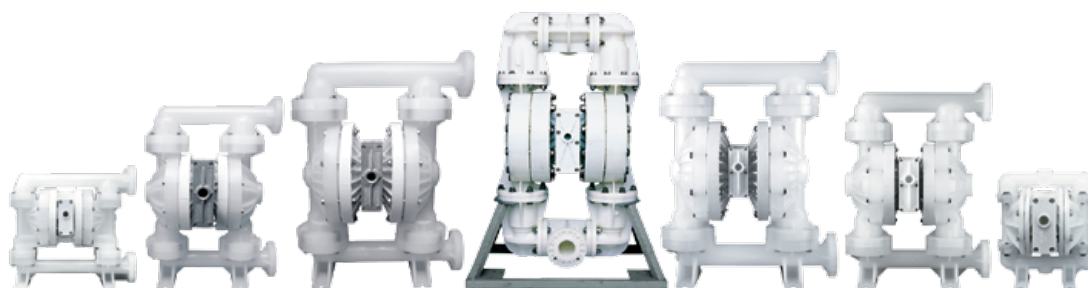
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SEPTEMBER 2005



PLASTIC TECHNICAL SPECS

SIZING CONSIDERATIONS

CONNECTION TYPE						
	MODELS	WETTED MATERIALS	LIQUID INLET	LIQUID DISCHARGE	BSPT/NPT	DIN/ANSI
PRO-FLO SHIFT	PS400	Polypropylene PVDF	38 mm (1-1/2")	38 mm (1-1/2")	-	•
	PS800	Polypropylene PVDF	51 mm (2")	51 mm (2")	-	•
	PS1500	Polypropylene PVDF	76 mm (3")	76 mm (3")	-	•
PRO-FLO X	PX400	Polypropylene PVDF	38 mm (1-1/2")	38 mm (1-1/2")	-	•
	PX800	Polypropylene PVDF	51 mm (2")	51 mm (2")	-	•
PRO-FLO	P25	Polypropylene PVDF	6 mm (1/4")	6 mm (1/4")	•	-
	P100	Polypropylene PVDF	13 mm (1/2")	13 mm (1/2")	•	-
	P200	Polypropylene PVDF PFA	25 mm (1")	25 mm (1")	-	•
	P400	Polypropylene PVDF	38 mm (1-1/2")	38 mm (1-1/2")	-	•
	P800	Polypropylene PVDF	51 mm (2")	51 mm (2")	-	•
	P1500	Polypropylene PVDF	76 mm (3")	76 mm (3")	-	•
ACCU-FLO	A100P	Polypropylene PVDF	13 mm (1/2")	13 mm (1/2")	-	•
	A200P	Polypropylene PVDF	25 mm (1")	25 mm (1")	-	•



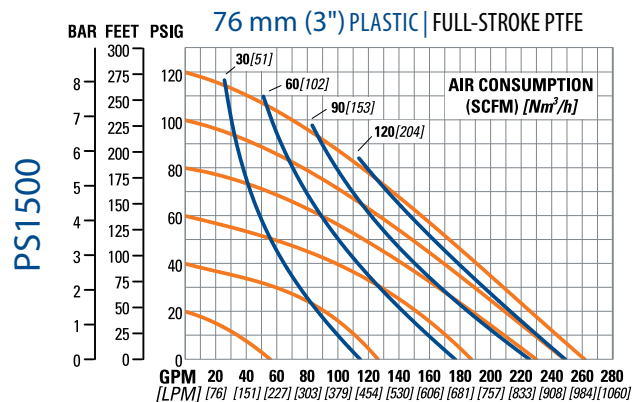
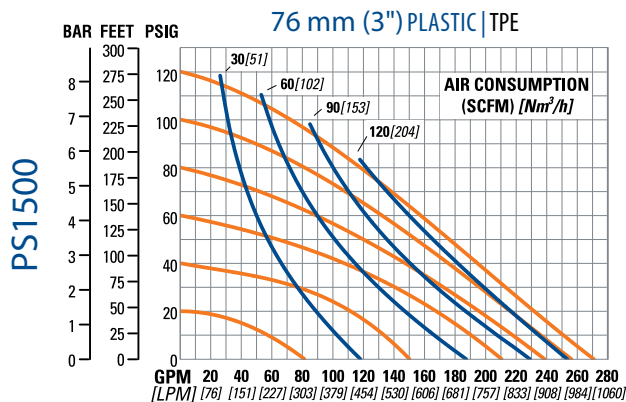
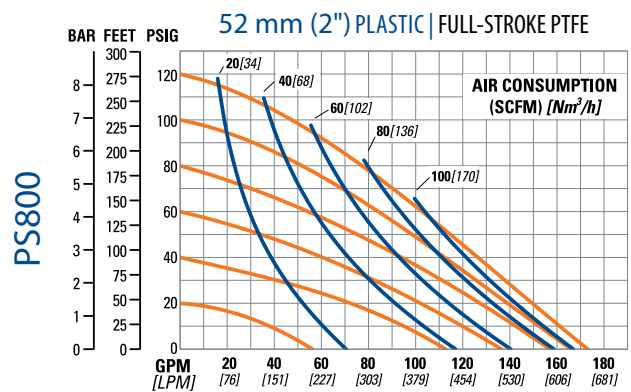
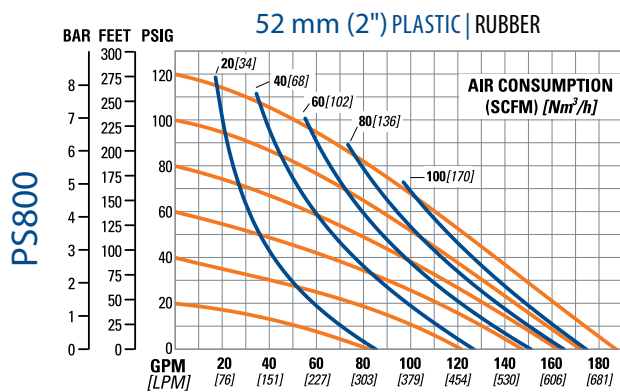
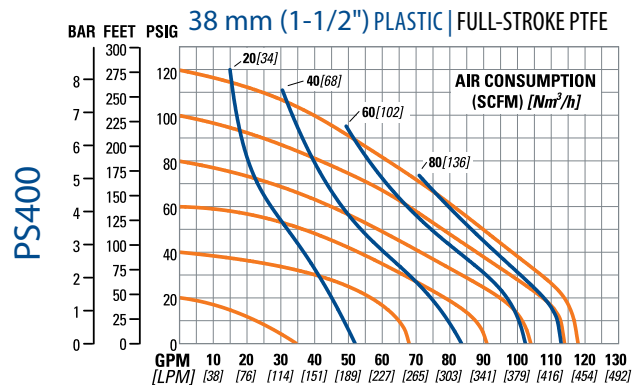
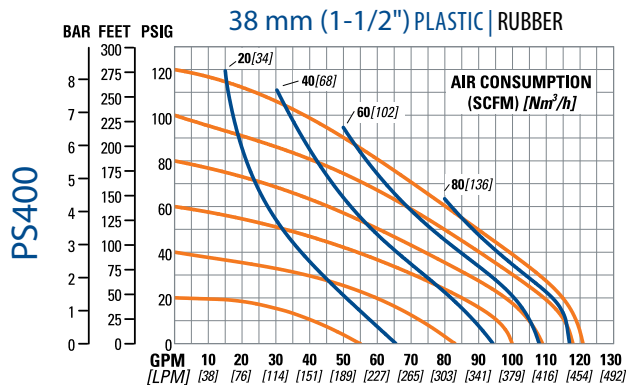
PERFORMANCE

MAX. SUCTION LIFT

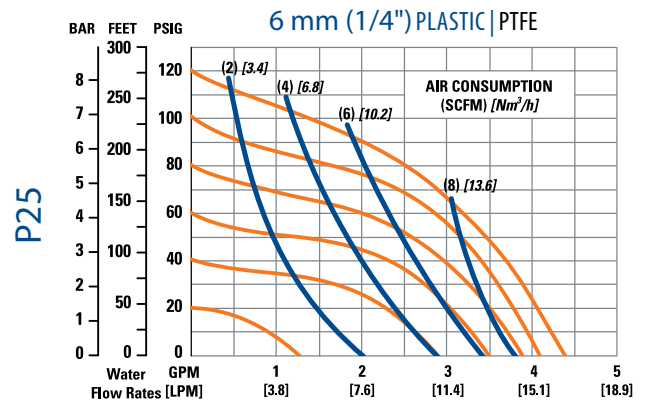
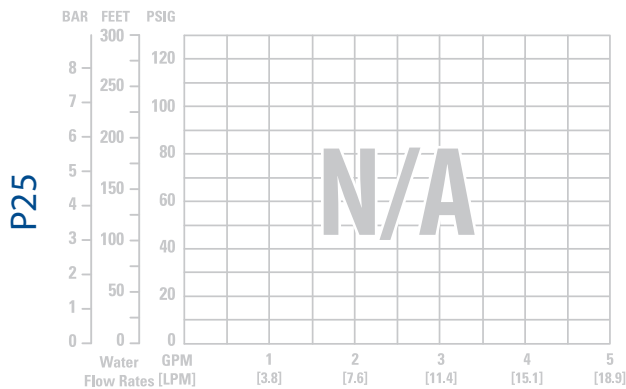
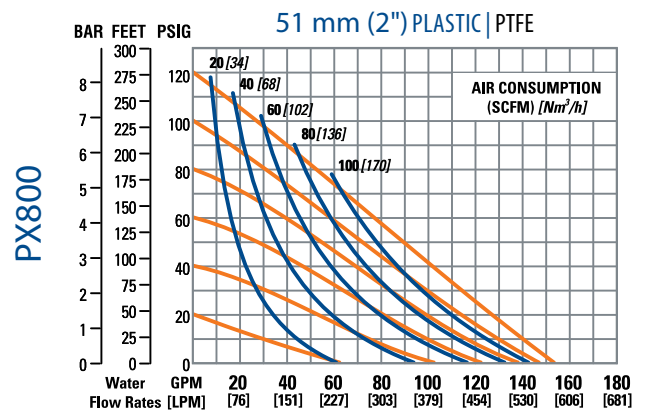
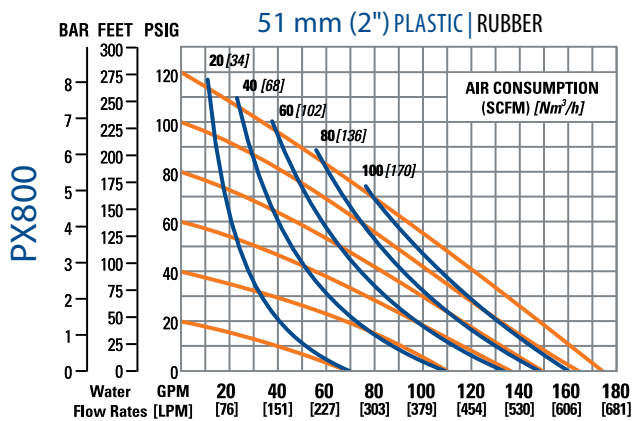
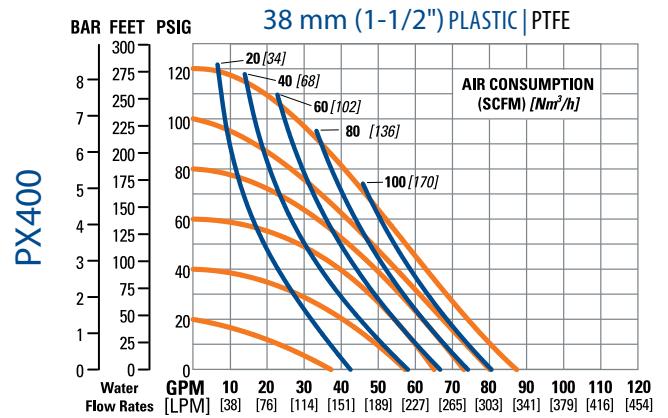
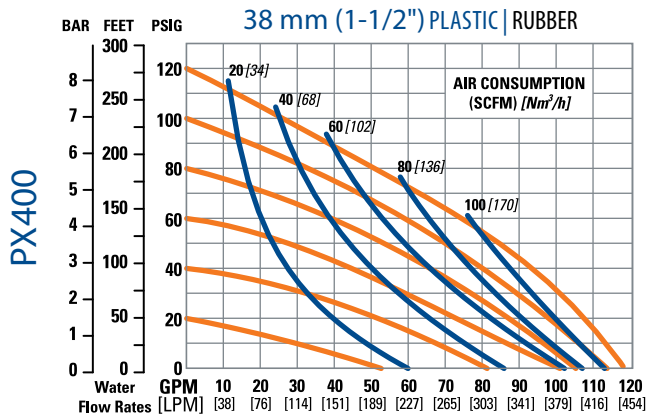
MAX. DISCHARGE PRESSURE	MAX. SOLIDS PASSAGE	RUBBER/TPE		PTFE		MAX. FLOW		
		DRY	WET	DRY	WET	RUBBER/TPE	PTFE	
8.6 bar (125 psig)	6.4 mm (1/4")	5.4 m (17.6')	9.0 m (29.5')	5.6 m (18.4')	9.0 m (29.5')	458 lpm (121 gpm)	447 lpm (118 gpm)	PRO-FLO SHIFT
8.6 bar (125 psig)	6.4 mm (1/4")	5.9 m (19.3')	8.3 m (27.2')	5.7 m (18.7')	8.3 m (27.2')	709 lpm (187 gpm)	654 lpm (173 gpm)	
6.9 bar (100 psig) 8.6 bar (125 psig)	12.7 mm (1/2")	5.3 m (17.5')	8.6 m (28.4')	5.8 m (19.1')	8.6 m (28.4')	1024 lpm (271 gpm)	999 lpm (262 gpm)	
8.6 bar (125 psig)	6.4 mm (1/4")	5.5 m (18.2')	9.3 m (30.6')	3.6 m (11.9')	7.6 m (25.0')	450 lpm (119 gpm)	329 lpm (87 gpm)	PRO-FLO X
8.6 bar (125 psig)	6.4 mm (1/4")	6.1 m (19.9')	9.0 m (29.5')	4.5 m (14.8')	7.2 m (23.8')	693 lpm (183 gpm)	579 lpm (153 gpm)	
8.6 bar (125 psig)	0.7 mm (1/32")	-	-	1.9 m (6.2')	9.3 m (30.6')	-	16.7 lpm (4.4 gpm)	PRO-FLO
8.6 bar (125 psig)	1.6 mm (1/16")	5.2 m (17.0')	8.7 m (28.4')	4.5 m (14.7')	9.3 m (30.6')	58.7 lpm (15.5 gpm)	57.0 lpm (15.0 gpm)	
8.6 bar (125 psig)	4.8 mm (3/16")	3.6 m (11.9')	9.8 m (32.0')	2.4 m (7.9')	9.4 m (31.0')	220 lpm (58 gpm)	174 lpm (46 gpm)	
8.6 bar (125 psig)	6.4 mm (1/4")	5.5 m (18.2')	9.3 m (30.6')	3.3 m (10.8')	9.7 m (31.8')	454 lpm (120 gpm)	318 lpm (84 gpm)	
8.6 bar (125 psig)	6.4 mm (1/4")	6.2 m (20.4')	8.7 m (28.4')	4.2 m (13.6')	8.7 m (28.4')	624 lpm (165 gpm)	504 lpm (133 gpm)	
6.9 bar (100 psig) 8.6 bar (125 psig)	12.7 mm (1/2")	-	-	3.6 m (12.0')	8.6 m (28.0')	-	784 lpm (207 gpm)	
8.6 bar (125 psig)	1.6 mm (1/16")	6.6 m (21.5')	9.0 m (29.5')	5.7 m (18.7')	9.3 m (30.6')	42.4 lpm (11.2 gpm)	38.2 lpm (10.1 gpm)	ACCU-FLO
8.6 bar (125 psig)	4.8 mm (3/16")	4.8 m (15.9')	9.3 m (30.6')	4.8 m (15.9')	9.3 m (30.6')	170 lpm (45 gpm)	170 lpm (45 gpm)	



PERFORMANCE CURVES

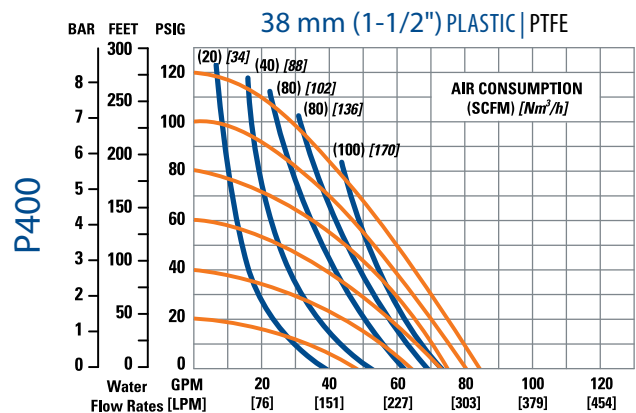
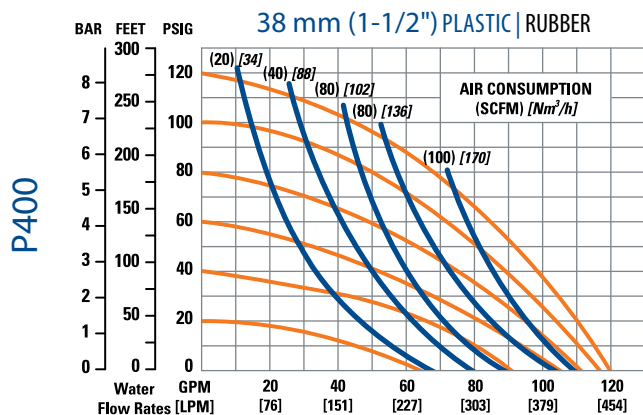
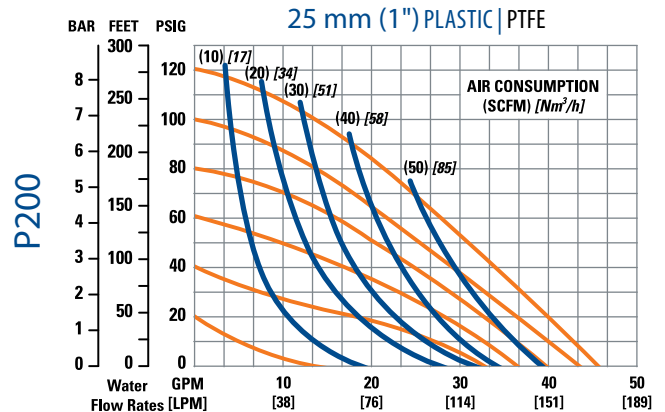
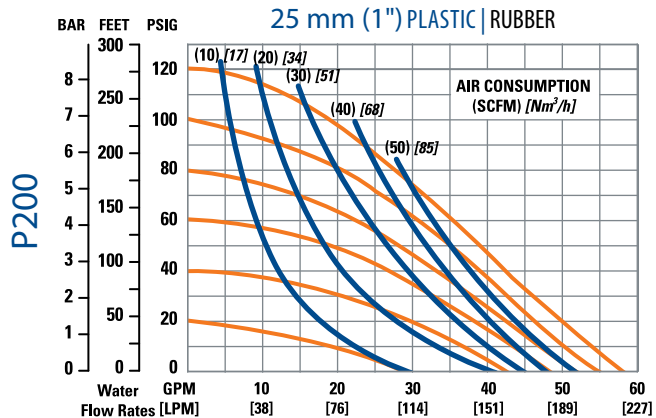
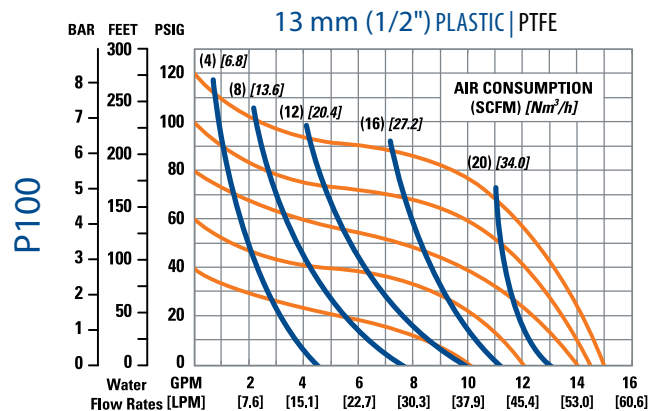
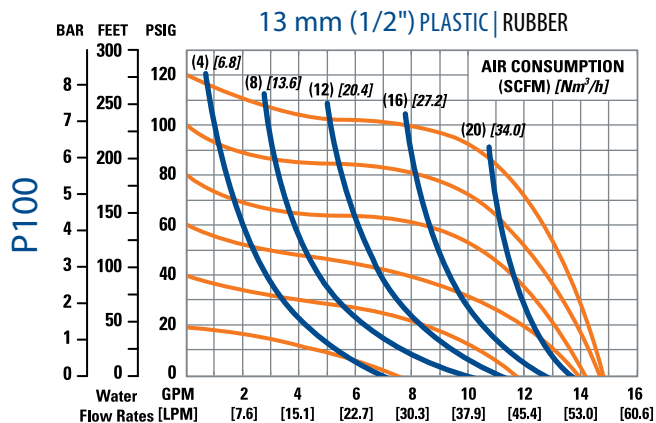


PERFORMANCE CURVES

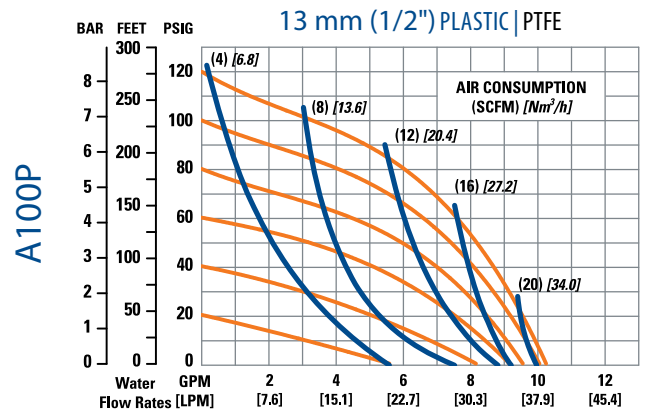
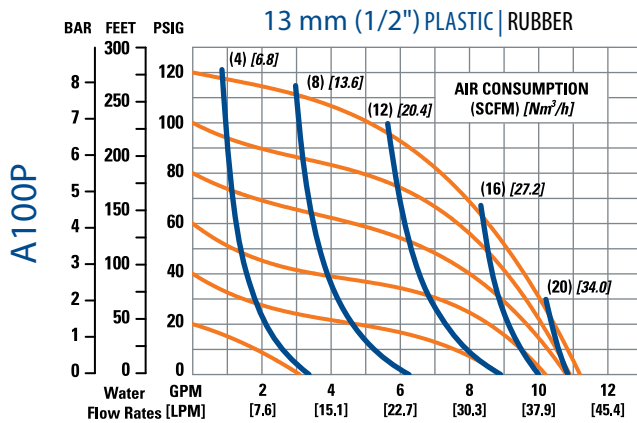
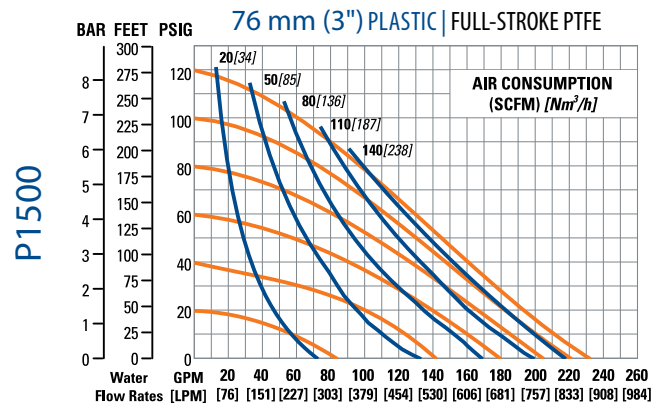
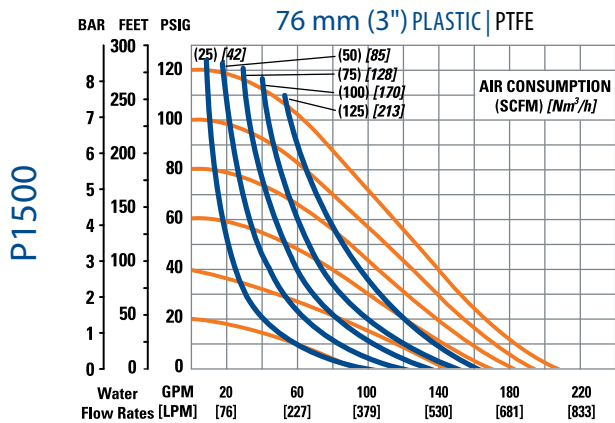
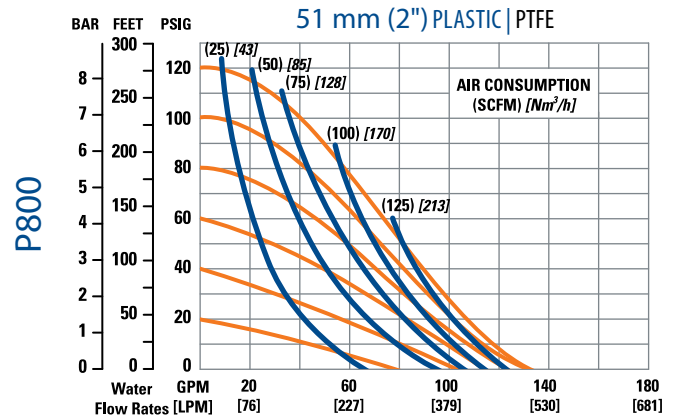
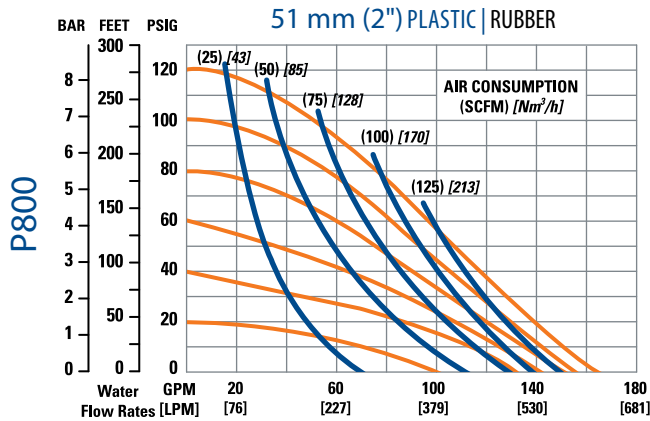




PERFORMANCE CURVES

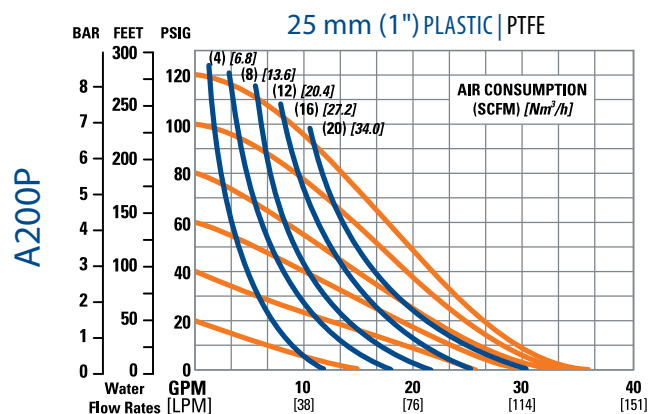
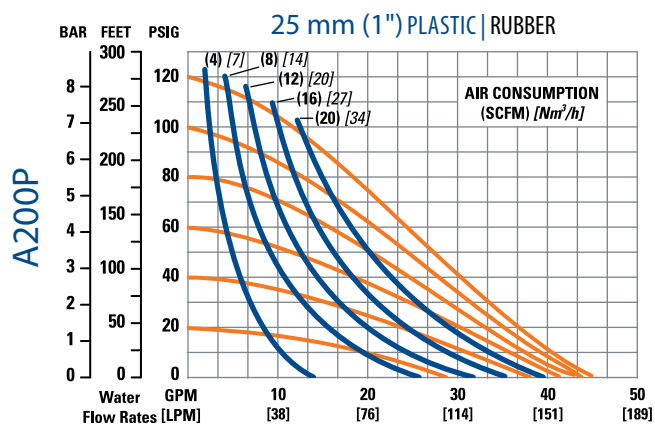


PERFORMANCE CURVES





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Things to Think About

When Selecting an Air-Operated Double-Diaphragm (AODD) Pump

Application

- What application will the pump be used in?
- What are you pumping?
- Do you need lube-free operation?
- Does the pump need to be submersible?
- What cleaning fluids would be used to clean the pump?
- What are your performance parameters (flow rates, air consumption, viscosities, suction lift)?
- Do you need a pulsation dampener?

Air Distribution System (ADS)

- What ADS best suits your application needs?
- How reliable is the ADS?
- How efficient is the ADS?
- Do you need On/Off reliability?
- Is the pump ADS ATEX-approved?
- Does the ADS have anti-freezing technology?
- Does the ADS have integrated variable performance controls?

Installation

- Before installation, please read the caution section of the pump manual.
- What are your piping considerations (valves, elbows, pipe friction losses, etc.)?
- Do you have sufficient air pressure and air volume for the pump?
- What is the MTBR (Mean Time Between Repair) of the AODDP?
- What are your installation parameters (self priming, positive suction head, high vacuum, heat generation, dry run capable, submersible, large solids passage, variable flow and pressure, shear sensitive)?
- Ease of maintenance: is the pump easy to clean, assemble/disassemble?

Wetted Materials

- What media will you be pumping?
- What is the chemical compatibility of the elastomer?
- What are the temperature limits of the wetted material and elastomer?
- How abrasive is the media being pumped?
- Do diaphragm configurations affect flow?

Distributors

- Is your distributor local?
- Can the distributor fully support your fluid transfer needs?
- Are they a full-stocking, full-service distributor?
- How good is delivery? Is it less than 3 weeks?
- Is the distributor formally educated in specifying and maintaining your system?
- How are the services and repair capabilities of the distributor?
- Does the distributor do local training for your staff?
- How responsive is the distributor to your needs?

Resources

- wildenpump.com
- Locating your Authorized Wilden Distributor: wildendistributor.com
- Engineering, Operations and Maintenance Manuals: wildenpump.com > Support > Manuals (EOMs)
- Cavitation and Friction Guide & Safety Supplement: wildenpump.com > Support > Literature
- Electronic Chemical Resistance Guide: wildenpump.com > Support > Chemical Guide
- Troubleshooting: wildenpump.com in the Support section (Troubleshooting)

WILDEN TECHNICAL SUPPORT: Hours of operation: 8:00 am – 5:00 pm (PST)
Ph. +1 (909) 422-1730 • E-mail: techsupport@wildenpump.com

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