STX Series

STAINLESS STEEL TRUCK-MOUNTED SLIDING VANE PUMPS
PRODUCT BROCHURE

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Blackmer®

Where Innovation Flows

Blackmer® Stainless Steel STX Series Truck-Mounted Sliding Vane Pumps are the optimal solution for the fast and quiet fluid transfer applications on trucks and tankers.

Blackmer® STX Series

Stainless Steel Truck-Mounted Sliding Vane Pumps

Blackmer STX Pumps have two distinct series:

STX(2/1220/3) for solvents, chemicals, sulfates, vegetable oils, urea and acids.

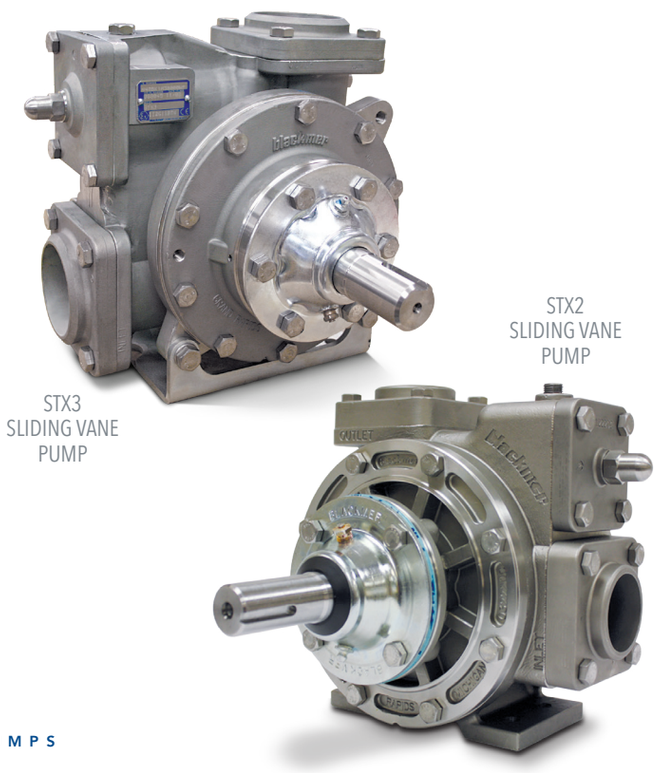
STX-DEF(2/1220/3 & SX1-DEF) specifically cleaned for fluid transfer of Diesel Exhaust Fluid (DEF), also known as AdBlue.

These two distinct STX Pump Series are the same except for the following differences, STX-DEF Series Pumps:

- Require special pump cleaning procedures
- Meet or exceed all industry specifications for DEF Aqueous Urea Solutions (AUS32)
- Offer a 1" model, the SX1-DEF, perfect for dispenser or tote filling

All STX Series Sliding Vane Pumps (except for SX1-DEF) are available in three models with 2" & 3" port sizes, differential pressure of 125 psi (8.6 bat) and flow rates of 7 to 250 gpm (27 - 946 L/m). Included in the series are 2-inch sized high speed models (STX1220 and STX1220-DEF) that achieve a maximum speed of 1,200 rpm. All STX Series Sliding Vane Truck Pumps (except for SX1-DEF) feature a double-ended shaft for clockwise or counter-clockwise rotation and an adjustable relief valve. Constructed from 316 stainless steel, the STX Pumps are equipped with the following: external ball bearings, non-metallic Duravanes, PTFE elastomers, and Blackmer chemical mechanical seals. Additionally the STX3 models feature a versatile mounting bracket.

With the sliding vane design, Blackmer STX Series Pumps are self-priming and capable of extended dry run, better product recovery and line-stripping. These multifaceted capabilities allow the STX Series Sliding Vane Pumps to stand apart from other truck-mounted pump technologies with an ideal combination of high performance, safety, reliability and low maintenance.



Blackmer® STX Series | Design Features

Double-Ended Drive Shaft

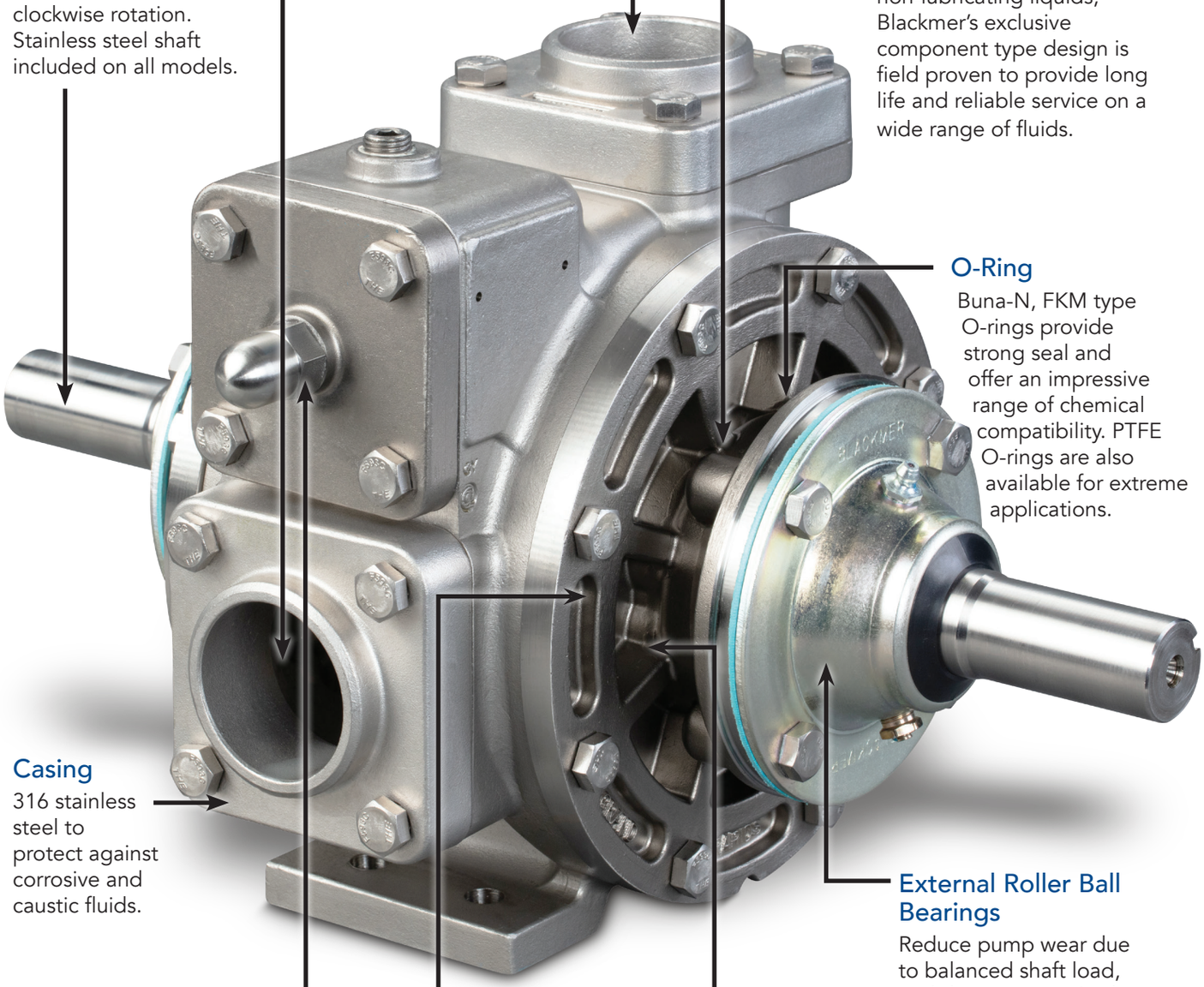
Allows the pumps to be mounted in multiple ways to enhance mounting flexibility, and allow for clockwise or counter-clockwise rotation. Stainless steel shaft included on all models.

90° Porting

NPT threaded connection comes standard. Optional welded or victaulic connections are available.

Internal Blackmer Mechanical Seals

Specially developed for non-lubricating liquids, Blackmer's exclusive component type design is field proven to provide long life and reliable service on a wide range of fluids.



O-Ring

Buna-N, FKM type O-rings provide strong seal and offer an impressive range of chemical compatibility. PTFE O-rings are also available for extreme applications.

Casing

316 stainless steel to protect against corrosive and caustic fluids.

External Roller Ball Bearings

Reduce pump wear due to balanced shaft load, and decrease required maintenance due to greased bearing housing external from working fluid.

Adjustable Relief Valve

This spring actuated adjustable relief valve is designed to protect the pump from excessive pressure. Air operated relief valve options available.

Closed Rotor

Special closed rotor design has minimal clearance to improve inlet performance allowing for line stripping, priming evacuated piping systems and vertical lift of fluid to the pump inlet.

Vanes

Vanes provide exceptional sealing which maintains performance over the operating life of the pump. Blackmer non-metallic Duravanes are self-adjusting and easily replaceable.

BLACKMER® SX1-DEF

SX1-DEF | DEF Dispenser Sliding Vane Pumps

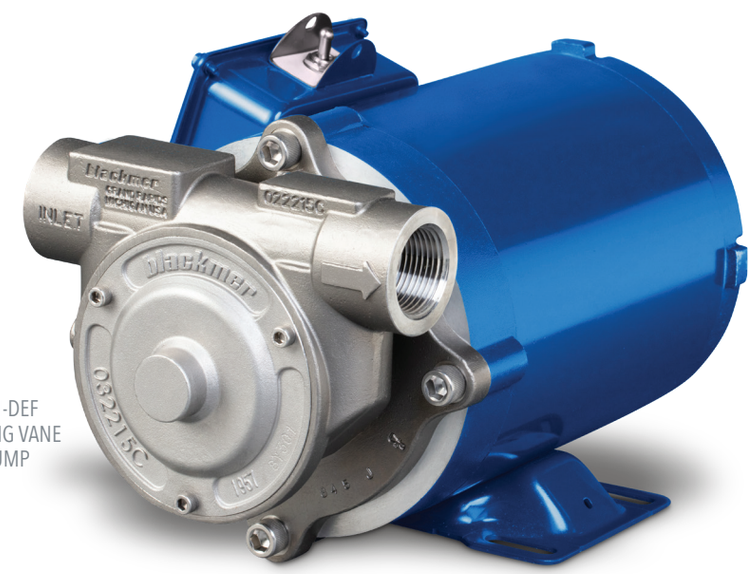
The Blackmer® SX1-DEF Sliding Vane Pump is a superior solution in dispenser and tote filling applications. When compared to low-cost, short-service "throwaway" pumps, which utilize inadequate designs and are often constructed of cheap plastic materials, SX1-DEF Sliding Vane Pumps stand apart due to their rugged design, reliability, durability and overall performance.

The 1-inch sized, 180° inline ported, SX1-DEF Sliding Vane Pumps achieve flow rates of 2 to 10 gpm (8 to 38 L/min), differential pressure of 25 psi (1.7 bar) and offers a top speed of 1,750. SX1-DEF is constructed from 304 & 316 stainless steel and includes an integral relief valve with stainless steel spring. With their C-face mounting, these pumps work well for dispenser and tote filling DEF applications. The SX1-DEF also meets and exceeds all industry specifications for DEF Aqueous Urea Solutions (AUS32). What further differentiates the SX1-DEF model from competitive models is a choice of 12-volt and 110-volt motor options. The 110-volt version is available with a 50- and 60-Hz dual-rated motor.

Features

The SX1-DEF pumps offer the following operational features and benefits when dispensing DEF from various sized totes:

- Maximum flow rate: 10 gpm (37.9 L/min)
- Maximum differential pressure: 25 psi (1.7 bar)
- Motor speed: 1,750 rpm
- All 316 stainless-steel construction, including pump shaft
- Duravanes non-metallic vanes
- EPDM O-rings
- Commercial mechanical seal
- 180° porting with optional 1" NPT or 1" BSPP tapped ports
- Optional foot-mounted, 0.5-horsepower TENV, C-face close-coupled 12-volt or 110-volt motor
- Integral relief valve with stainless-steel spring
- Meets ISO 22241-3 certification for material compatibility

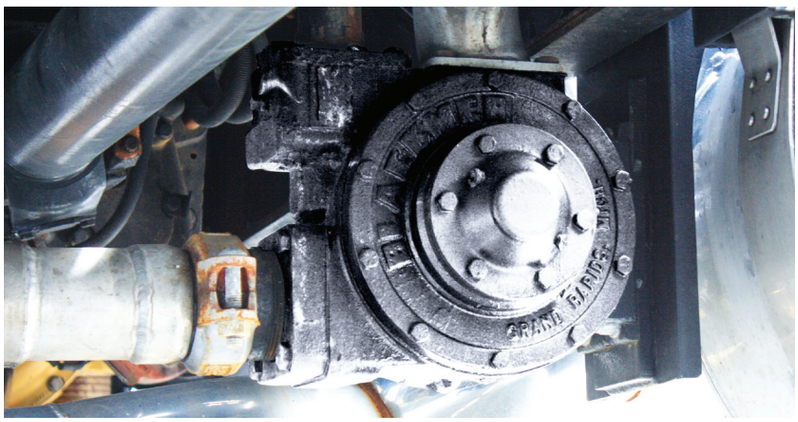


SX1-DEF SLIDING VANE PUMP

Blackmer® STX Series | Mounting, Installation and Accessories

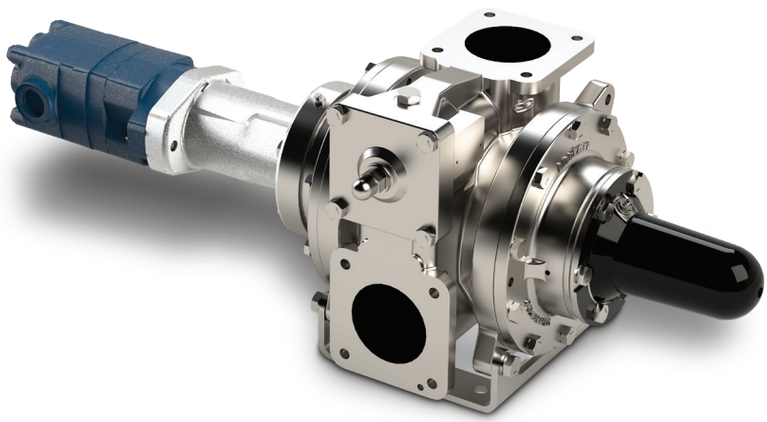
Truck Mounting

STX Series Sliding Vane Pumps can be bolted to the truck on a saddle hung below the frame with adequate support. Mounting the pump with the cylinder feet down, or with the intake port up is recommended for thorough draining.



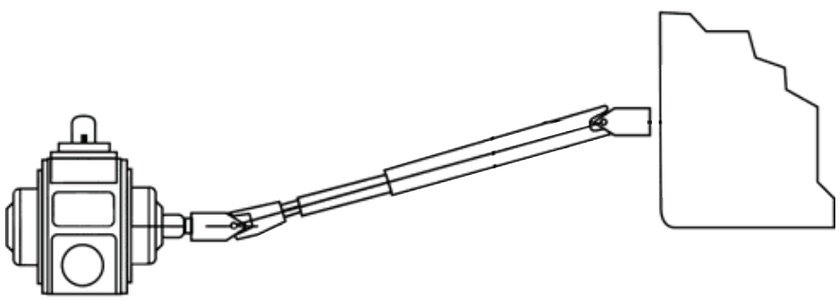
Hydraulic Drive

With use of a Blackmer hydraulic motor adapter, all STX Series Pumps can be driven hydraulically. The close-coupled hydraulic motor adapter provides for alignment of an SAE, 2 bolt flanged hydraulic motor with a straight keyed shaft. The coupling connection requires grease lubrication every three months at minimum. Blackmer does not provide hydraulic motors.



PTO Drive

A power take-off (PTO) through universal joints powers the pump. A properly lubricated splined slip joint must be used on the jackshaft to prevent end thrust on the pump shaft.



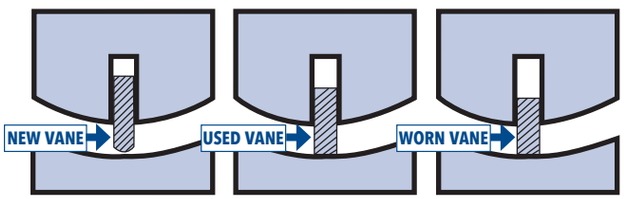
Blackmer® STX Series | Benefits of Sliding Vane Pumps

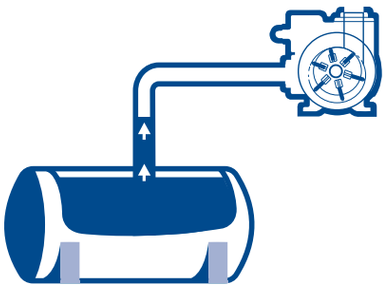
Self-Priming, Dry Run & Other Benefits of Blackmer Vane Pumps

The advent of sliding vane pumps has been a gamechanger in fluid-transfer applications. These positive displacement pumps are self-priming with extended dry-run capability and feature the best combined characteristics of energy efficiency, trouble-free operation and low maintenance.

Advantages of Sliding Vane Technology:

- Unique design self-adjusts for wear to maintain flow rates
- Design provides sustained performance and trouble-free operation
- Easy maintenance. Vanes can be replaced without removing the pump
- Line-stripping capabilities to completely empty tanks and piping of fluid
- Pumps are renewable and repairable
- Solids handling
- Thin to thick fluid viscosity flexibility, eliminates expensive heating systems
- Efficient, requiring less horsepower and electricity to power the pump
- Excellent at self-priming, eliminates expensive priming systems
- Extended dry-run capability, eliminates nuisance current monitoring systems
- High suction lift abilities that exceed 25 feet (7.6 meters)



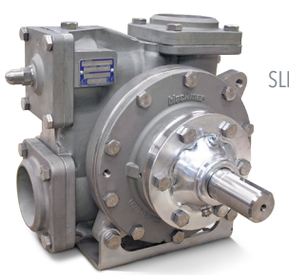


STX Series Specs | Maximum Operating Limits

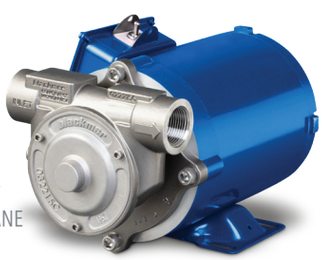
MAXIMUM OPERATING LIMITS

Pump Model	Nominal Flow Rate Range	Viscosity	Minimum Operating Temperature	Maximum Operating Temperature	Min./Max. Speed	Maximum Differential Pressure	Maximum Working Pressure
	gpm (L/min)	cP	°F (°C)	°F (°C)	RPM	psi (bar)	psi (bar)
SX1-DEF	2 - 10 (8 - 38)	0.2 - 7	-25 (-32)	240 (115)	1,450 - 1,750	25 (1.7)	50 (3.4)
STX2 STX2-DEF	16 - 60 (61 - 227)	0.2 - 990	-25 (-32)	240 (115)	150 - 800	125 (8.6)	175 (12.1)
STX1220 STX1220-DEF	45 - 92 (171 - 348)	0.2 - 22	-25 (-32)	240 (115)	700 - 1,200	125 (8.6)	175 (12.1)
STX3 STX3-DEF	85 - 250 (322 - 946)	0.2 - 4,250	-25 (-32)	240 (115)	300 - 800	-125 (8.6)	175 (12.1)

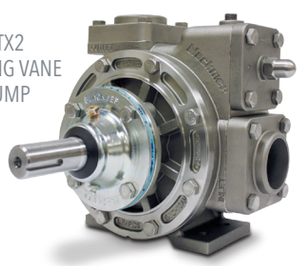
Note: Optional materials of construction may be required to meet specific application requirements – refer to Blackmer Material Specification Sheets.
For operating conditions that exceed those listed, consult factory.



STX3 SLIDING VANE PUMP

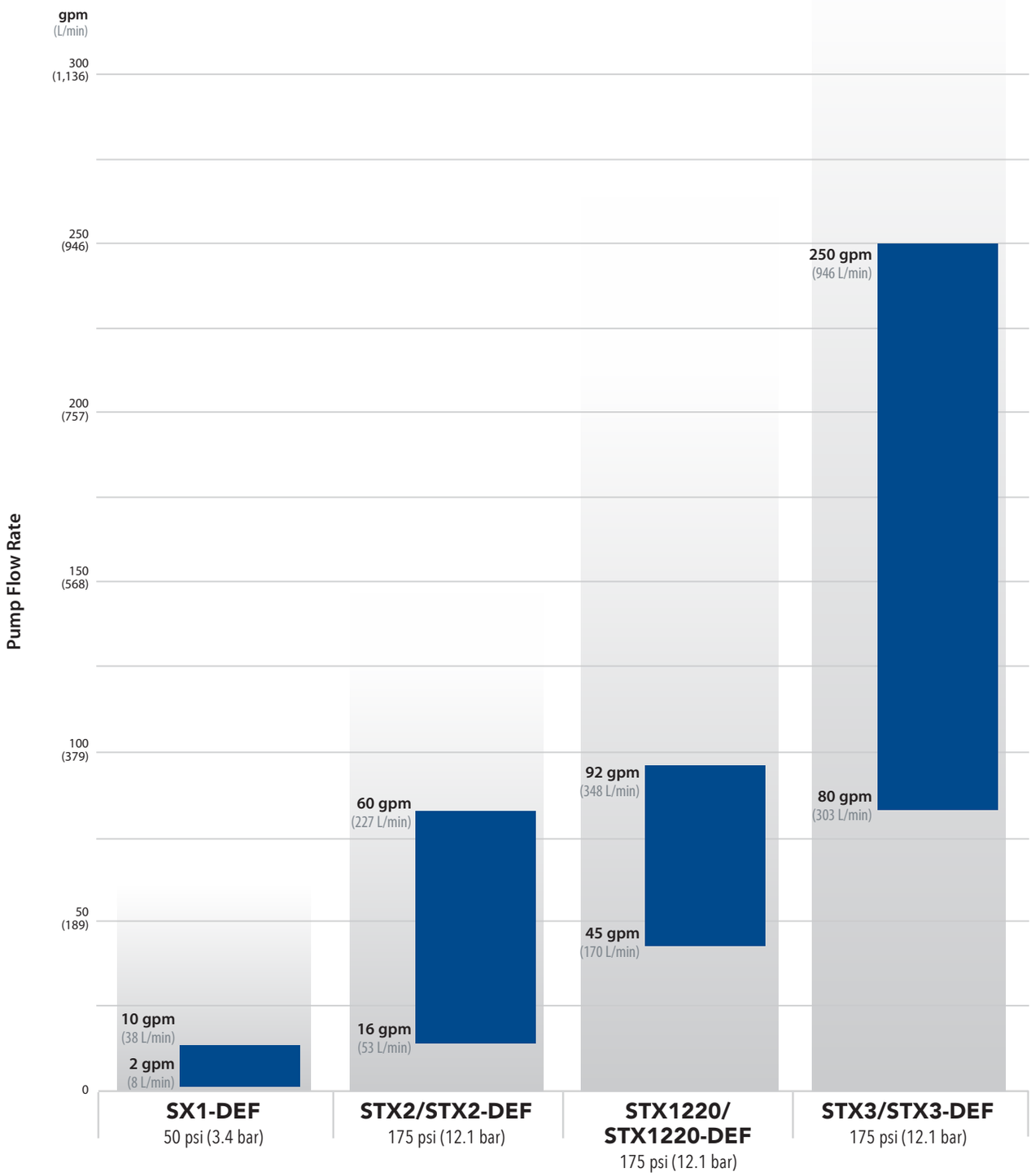


SX1-DEF SLIDING VANE PUMP



STX2 SLIDING VANE PUMP

Nominal Flow Rate Range



Maximum Differential Pressure–STX/STX-DEF 125 psi (8.6 bar)
Maximum Differential Pressure–SX1-DEF 25 psi (1.7 bar)
(Internal relief valve setting)

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