

SGL Series

SPECIALTY LIQUEFIED GAS TRANSFER PUMPS | PRODUCT BROCHURE



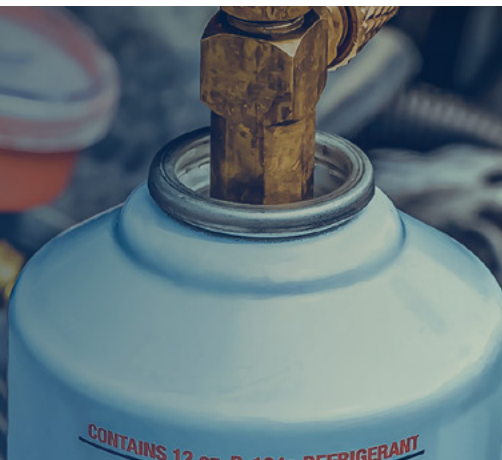
Blackmer

Where Innovation Flows



Blackmer® SGL Sliding Vane Pumps are designed to transfer or recirculate refrigerants, blowing agents and other specialty liquefied gasses. Available in six sizes with a wide variety of seal materials for maximum leakage control, SGL Series Pumps offer capacities of 5 to 270 gpm (19 to 1,022 L/min) and feature shock-resistant ductile iron construction and external bearings, providing reduced wear and lower maintenance.

DUCTILE-IRON PUMPS FOR REFRIGERANTS AND OTHER LIQUEFIED GAS SERVICE



Blackmer® SGL Series | Specialty Liquefied Gas Transfer Pumps

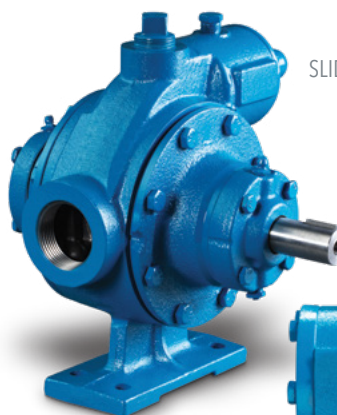
SGL Series Sliding Vane Pumps are recognized for providing reliable and highly efficient performance in a range of conditions, from low temperatures to high-vapor-pressure applications. However, a standout feature of the SGL Series Vane Pump is its ability to be easily maintained and rebuilt.

Equipped with easily replaceable wear components, such as a cavitation suppression liner, non-metallic Duravanes and end discs, the pumping chamber can be restored to like-new condition with minimal effort. This ensures longevity and a substantial return on investment for your SGL Vane Pump.

Available with patented double mechanical seals (SGLWD3 & SGLWD4), SGL Series 3- and 4-inch models provide peace-of-mind protection against unforeseen leakage of volatile liquids.

These models also feature an exclusive patented Blackmer Plan 52 (unpressurized) and Plan 53 (pressurized) cartridge-type, double-seal design that is field proven to offer leak-free, reliable service.

SGL Series 1.25- and 1.5-inch models are motor speed pumps with a max speed of 1,750 rpm and feature 180° porting orientation with NPT tapped ports. The 2-, 3- and 4-inch models top out at 640 rpm and feature 90° porting orientation with flanged ports.



SGL1.5
SLIDING VANE
PUMP



SGL2
SLIDING VANE
PUMP

Applications

- Butadiene
- Butene
- Dimethyl Ether
- Ethyl Chloride
- NGL (Natural Gas Liquids)
- Refrigerants - MF/TA/TMS/TF - 400 & 500 Series Blends
- Sulfur Dioxide

Seals – Single Seal or Dual Seal (Plan 52 or Plan 53)

Blackmer patented double mechanical seals prevent fugitive emissions and monitor seal wear performance. Dual seal options are available for SGL 3- (SGL(W)D3) and 4-inch (SGL(W)D4) pumps. Both Plan 52 and Plan 53 seal options are available.

Plan 52

Seals utilize unpressurized buffer fluid to collect primary seal leakage and monitor seal wear. Ideal applications include:

- Relatively Clean Fluids
- Light Hydrocarbons
- NGLs, Condensates

Plan 53

Seals utilize pressurized barrier fluid to prevent pump fluid from leaking into the outside atmosphere, providing a true zero-leakage requirement. Ideal applications include:

- Abrasives, Contaminants
- Polymerizing, Crystallizing

Any dual seal requires a complete seal system that must be monitored for proper operation. These seals are only one part of a highly-engineered system; however, if properly applied and maintained, these seals will significantly reduce the potential for fugitive emissions and costly downtime.

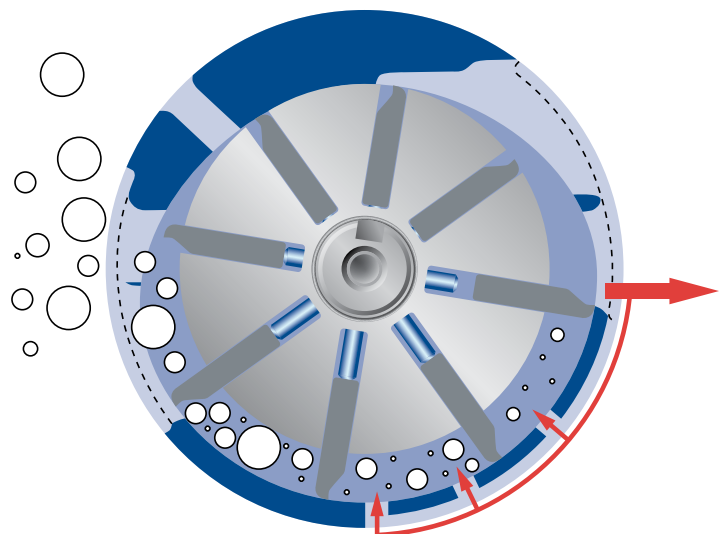


Cavitation Suppression Liners Reduce Harmful Effects

All Blackmer SGL Series Pumps feature Cavitation Suppression Liners designed to mitigate cavitation by reducing the amount of cavitation in the pump. Reducing the cavitation level reduces vibration, noise and wear.

The sudden collapse of vapor bubbles inside the pump is known as cavitation. By allowing a controlled amount of fluid at discharge pressure to bleed back toward the pump's suction, the vapor bubbles are collapsed over a long period of time. The net result is less noise, vibration and wear.

Cavitation can be devastating for pump components and can even lead to system failure. To learn how Blackmer SGL Sliding Vane Pumps incorporate a revolutionary Cavitation Suppression Liner that mitigates and even eliminates the harmful effects of pump cavitation, visit blackmer.com/cavitation.



BLACKMER® SGL SERIES SLIDING VANE PUMPS

End Discs

Replaceable end discs allow easy rebuilding of the pump to like-new condition without changing the pressure-containing components.

External Roller Ball Bearings

Low-friction grease-lubricated ball bearings are completely isolated from the pumpage by mechanical seals for trouble-free service and long life.

Casing

Like all pressure parts in SGL Series, the casing is constructed from ductile iron to provide greater thermal and mechanical shock resistance.

Threaded Lock Collars

The two-piece threaded lock collars precisely position the rotor and shaft, allowing the pump to operate under high inlet pressures. In addition, this positive lock thrust control helps prevent premature wear to internal components because it features no metal-to-metal contact.

Mechanical Seals

Specially developed for non-lubricating liquids, the Blackmer exclusive component-type design is field proven to provide long life and reliable service on a wide range of liquefied gas applications. Optional patented double mechanical seals (Plan 52 or Plan 53) that prevent fugitive emissions and monitor seal wear performance are available in SGL Series 3- and 4-inch models.

Duravanes

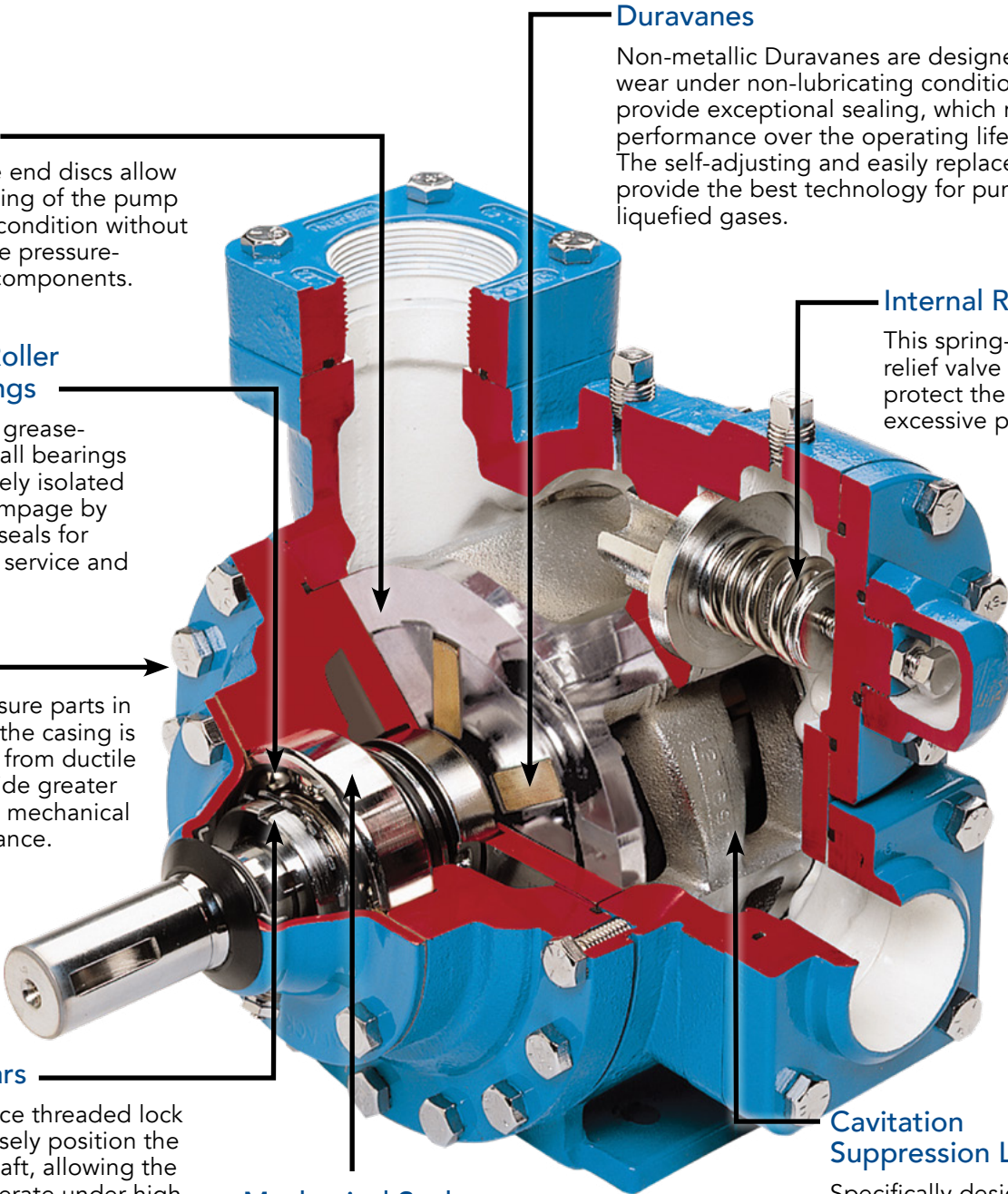
Non-metallic Duravanes are designed to resist wear under non-lubricating conditions. They provide exceptional sealing, which maintains performance over the operating life of the pump. The self-adjusting and easily replaceable vanes provide the best technology for pumping thin liquefied gases.

Internal Relief Valve

This spring-actuated relief valve is designed to protect the pump from excessive pressure.

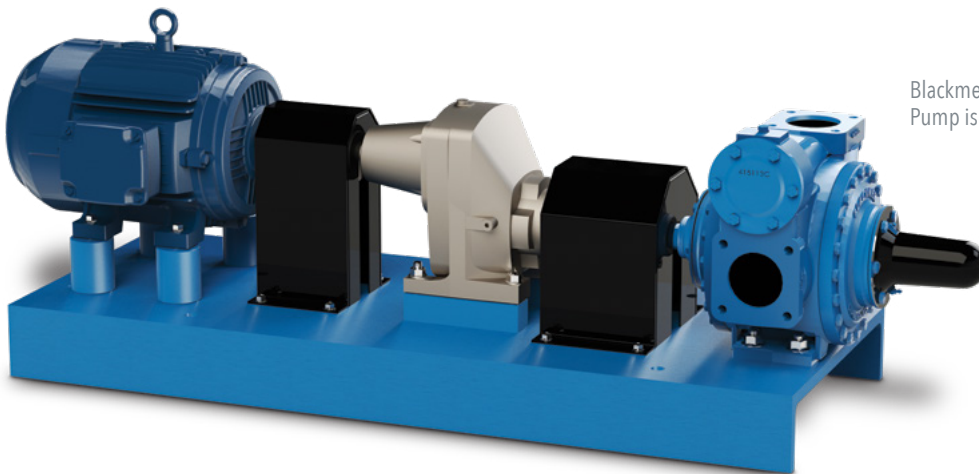
Cavitation Suppression Liner

Specifically designed to mitigate the negative effects of cavitation – such as excessive noise, vibrations and deterioration of the pump internals – the Cavitation Suppression Liner allows for the transfer of multi-phase liquids with high vapor pressures and zero NPSH. The liner can be easily replaced.



Integrated Unit Assembly

Blackmer Integrated Unit Assemblies are pre-engineered, pre-designed and pre-configured pumping solutions developed to save time and money while simplifying the ordering process. Ready for immediate drop-in installation, these out-of-the-box pump assemblies come fully connected and aligned on a baseplate with the motor, gearbox, pump (SGL 2-, 3- or 4-inch model) and coupling safety covers.

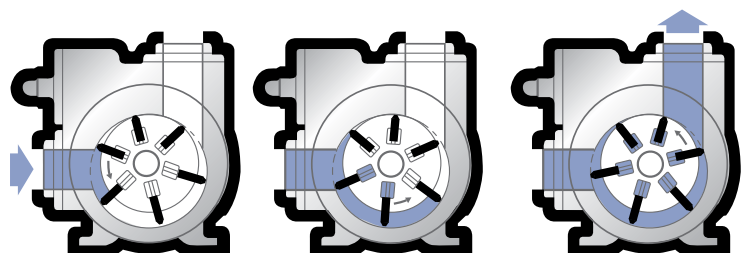


Blackmer SGL2 Sliding Vane Pump is part of this assembly.

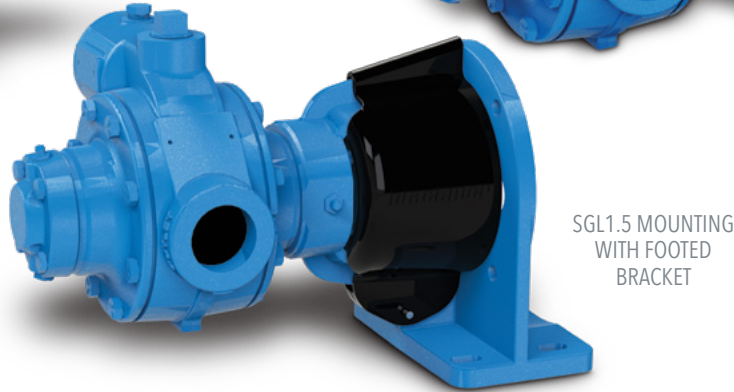
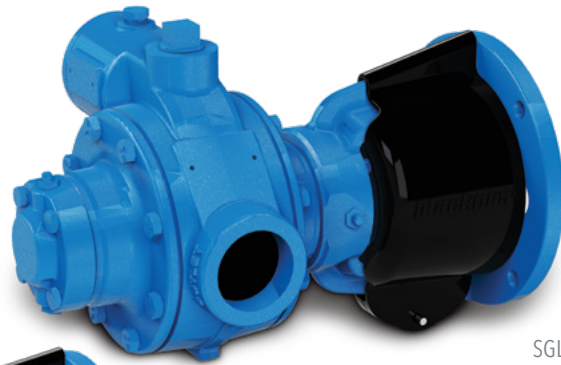
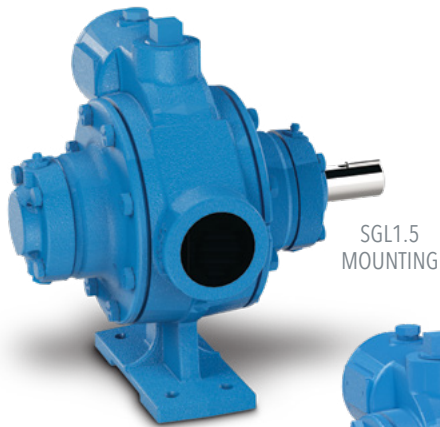
Self-Priming, Dry Run & Other Benefits of Blackmer Vane Pumps

Blackmer positive displacement pumps have revolutionized the pumping industry with their unique sliding vane technology. This revolutionary rotary vane design allows the pumps to self-adjust for wear to help maintain flow rates. This sliding vane pump design creates excellent self-priming and dry-run capabilities while also providing sustained performance and trouble-free operation.

- Maintain consistent flow rates throughout the life of the pump due to unique sliding vane pump design that self-adjusts for wear
- Excellent at self-priming; eliminates expensive priming systems
- Extended dry-run capability; eliminates nuisance current monitoring systems
- Sliding vane design provides sustained performance and trouble-free operation
- Easy maintenance: vanes, liners and discs can easily be replaced without removing the pump from the piping system
- High suction lift abilities that exceed 25 feet (7.6 meters)
- Low maintenance and low life-cycle costs; pumps are renewable and repairable
- Highly efficient; sliding vane pumps require less horsepower than other pumps, meaning spending less on motors initially and less on electricity to power the pump



Blackmer® SGL Series | Sliding Vane Pumps



FLUID CONNECTIONS

PUMP MODEL	STANDARD	OPTIONAL
SGLR1.25, SGL1.25,	1¼" NPT Tapped Ports	—
SGL1.5	1½" NPT Tapped Ports	—
SGLD2	Two 2" NPT Flanges Ductile Iron: ASTM A536	Two 2" Weld Flanges Steel: ASTM A216 WCB
SGLD3	Two 3" NPT Flanges Ductile Iron: ASTM A536	Two 3" Weld Flanges Steel: ASTM A216 WCB
SGLD4	4" x 3" Weld Flanges Steel: ASTM A216 WCB	4" x 4" Weld Flanges Steel: ASTM A216 WCB

MAINTENANCE KITS

MODEL(S)	DESCRIPTION	PART NUMBER
SGRL1.25	Kit - Rebuild	898832
SGL1.25	Kit - Rebuild	898833
SGRL1.25, SGL1.25, SGL1.5	Kit - Maintenance	898733
SGL1.5	Kit - Rebuild	898834
SGLD2	Kit - Maintenance	898935
SGLD2	Kit - Rebuild	899035
SGLD3	Kit - Maintenance	898936
SGLD3	Kit - Rebuild	899036
SGLD4	Kit - Maintenance	898937
SGLD4	Kit - Rebuild	899037

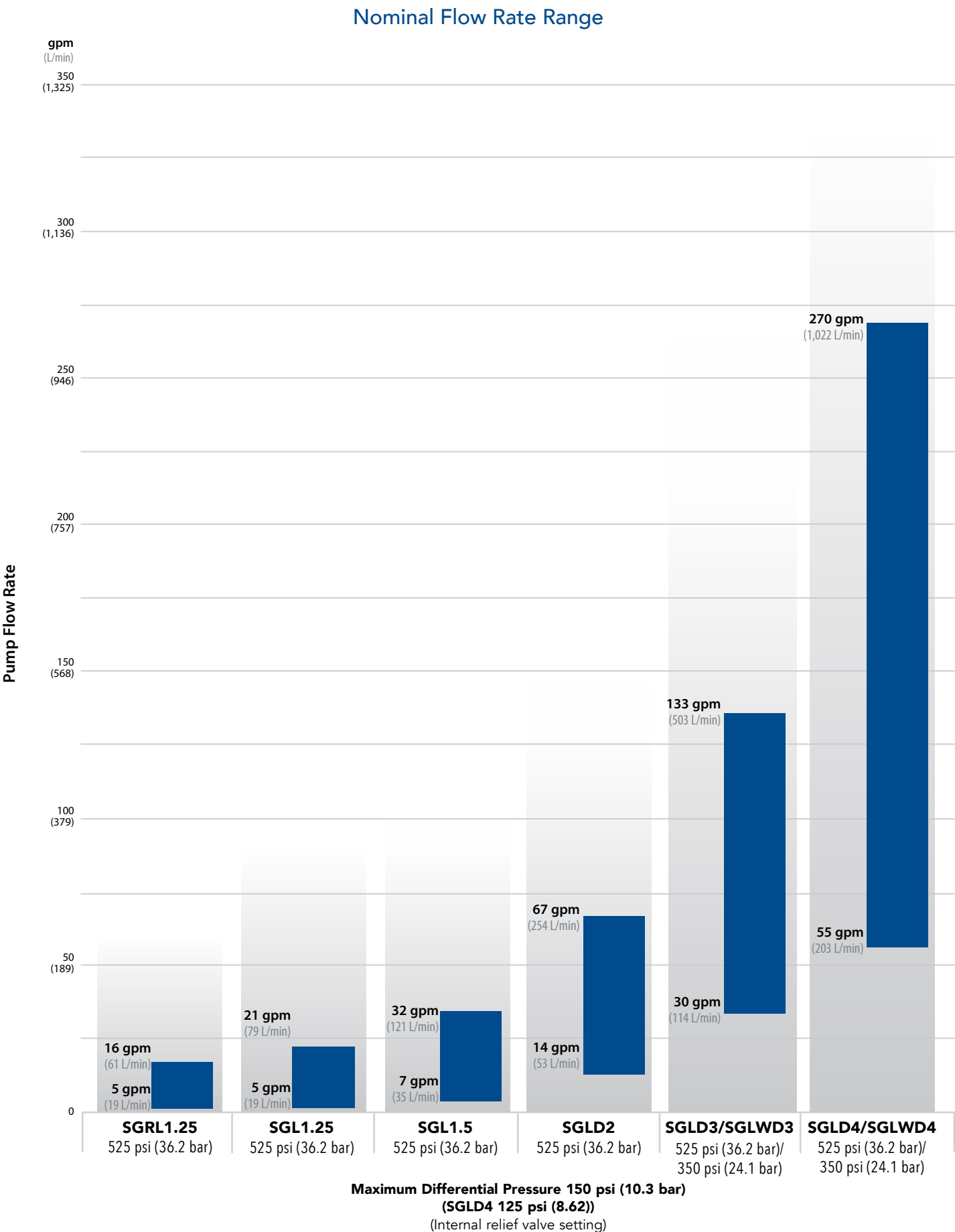
MAXIMUM OPERATING LIMITS

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)
SGRL1.25	5-16 (19-61)	0.2 - 4,250	-30 (-34)	240 (115)	850-1,750	150 (10.3)	525 (36.2)
SGL1.25	5-21 (19-79)	0.2 - 4,250	-30 (-34)	240 (115)	850-1,750	150 (10.3)	525 (36.2)
SGL1.5	7-32 (27-121)	0.2 - 4,250	-30 (-34)	240 (115)	850-1,750	150 (10.3)	525 (36.2)
SGLD2	14-67 (53-254)	0.2 - 4,250	-30 (-34)	240 (115)	350-640	150 (10.3)	525 (36.2)
SGLD3	30-133 (114-503)	0.2 - 4,250	-30 (-34)	240 (115)	350-640	150 (10.3)	525 (36.2)*
SGLD4	55-270 (203-1,022)	0.2 - 4,250	-30 (-34)	240 (115)	350-640	125 (8.62)	525 (36.2)*

* for SGL Duel Seal Models (SGLWD3 & SGLWD4) maximum working pressure is 350 psi (24.1 bar).

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.

Blackmer® SGL Series Sliding Vane Pumps | Performance





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