PMO CONSULTING

Blackmer®

Expert Solutions for Critical Applications

BRAND Portfolio

Where Innovation Flows

SLIDING VANE PUMPS

CENTRIFUGAL PUMPS

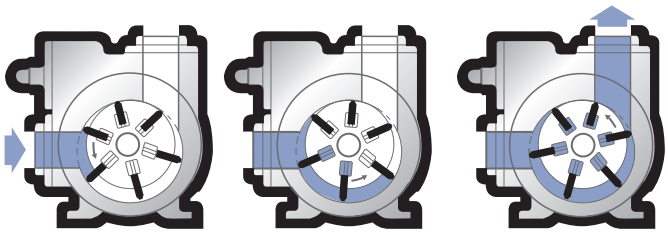
RECIPROCATING GAS COMPRESSORS

PSG® a DOVER company

blackmer.com

Vane Technology: How It Works

Sliding vane pumps have a number of vanes that are free to slide into or out of slots in the pump rotor. When the pump driver turns the rotor, centrifugal force, rods, and/or pressurized fluid causes the vanes to move outward in their slots and bear against the inner bore of the pump casing forming pumping chambers. As the rotor revolves, fluid flows into the area between the vanes (pumping chambers) when they pass the suction port.



This fluid is transported around the pump casing until the discharge port is reached. At this point the fluid is squeezed out into the discharge piping. Each revolution of a sliding vane pump displaces a constant volume of fluid. Variance in pressure has minimal effect. Energy-wasting turbulence and slippage are minimized and high volumetric efficiency is maintained.

Key Design Benefits

Sliding vane pumps are designed with unique "self-adjusting" vanes that allow them to maintain near-original volumetric performance during the life of the pump — meaning these pumps are not subject to efficiency-robbing slip that occurs from wear in gear and lobe pumps. In addition, vane pumps are designed around the bearings and seals, so they offer longer life and greater product loss prevention than other technologies.

Therefore, by virtue of their design, vane pumps are ideal for handling expensive, fine chemicals and fragrances where other pumps may experience seal difficulty. Vane pump features generally include:

SLIDING VANES: Nonmetallic composite vanes that automatically adjust clearances to allow the pump to sustain consistent volumetric performance while also offering exceptional suction and dry priming capabilities.

CAVITATION/NOISE SUPPRESSION LINER: This unique feature, patented by Blackmer, a global leader in vane pump technology, minimizes the effects of cavitation on the pump and piping system while at the same time reducing noise levels up to 15 dbA.

In recent years, advances in traditional vane technology have resulted in even greater performance capabilities, longer service life and a wider range of process applications.

TECHNOLOGY: SLIDING VANE

Truck & Transport Sliding Vane Pumps

The recognized leader in the global truck and transport industry, Blackmer sliding vane pumps are widely used to load, transport and unload a wide range of clean liquids and petroleum products. Their sliding vane design provides sustained performance and trouble-free operation. Adjustable relief valves protect pumps from excessive pressure. Cast iron, ductile iron and stainless steel models are available with special elastomers for fuels and biofuels compatibility.

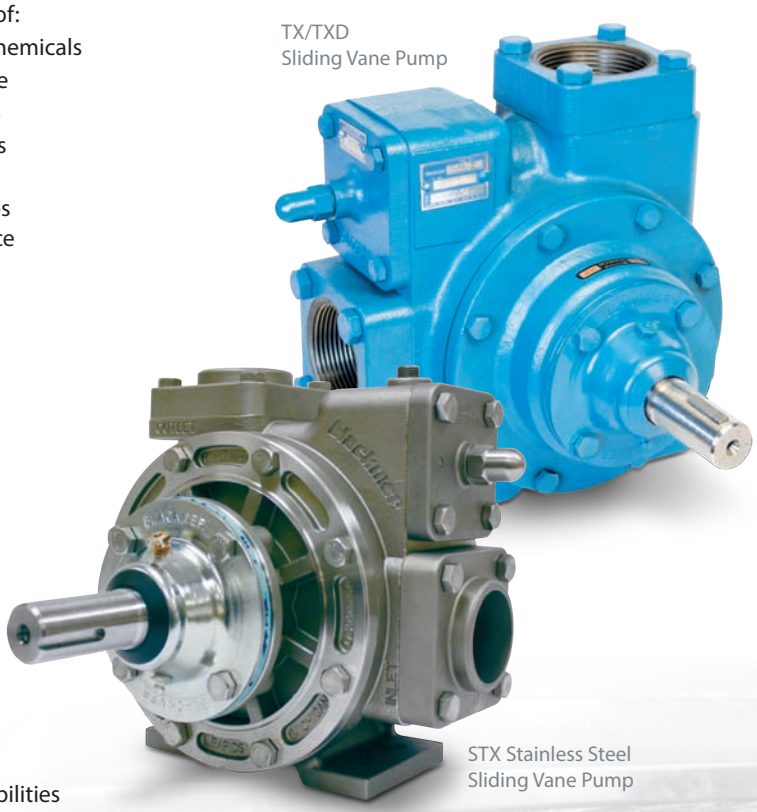
Applications

- Fuel oil delivery truck:
  - Fleet refueling
  - Lube oil
  - Aviation refuelers
- Transport of:
  - Petro Chemicals
  - Gasoline
  - Biofuels
  - Solvents

Features & Benefits

- Global industry leader in truck and transport pumps
- Sliding vane design provides sustained performance and trouble-free operation
- Adjustable relief valves protect pumps from excessive pressure
- Line stripping and dry-run capabilities
- Boost productivity
- Improve production yields
- Increased service life
- Improved uptime
- Reduced maintenance costs
- Higher pumping capacities at lower speeds
- Improved operations

TX/TXD
Sliding Vane Pump



STX Stainless Steel
Sliding Vane Pump

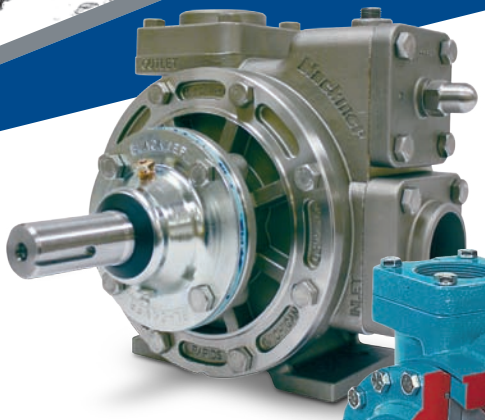
Technical Data

- Cast iron, ductile iron and stainless steel models available with special elastomers for fuels and biofuels compatibility
- Sizes: 38mm (1-1/2 in.) to 102mm (4 in.)
- Max. working pressure: 12.1 bar (175 psi)
- Max. rpm: 1,200 with PTO and hydraulic drive capabilities
- Max. temperature: 190° C (375° F)
- Max. viscosity: 10,500 cSt (50,000 SSU)

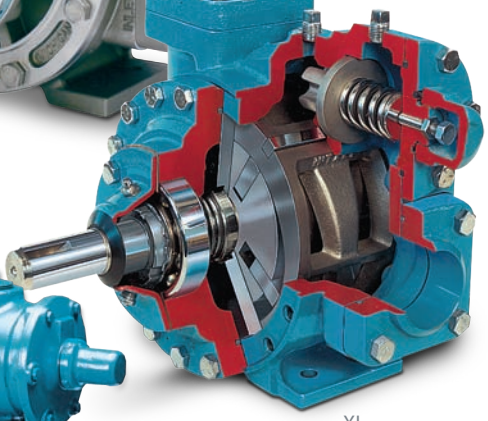
Performance Data

- Max. flow: 1,911 L/min (505 gpm)
- Max. differential pressure: 8.6 bar (125 psi)

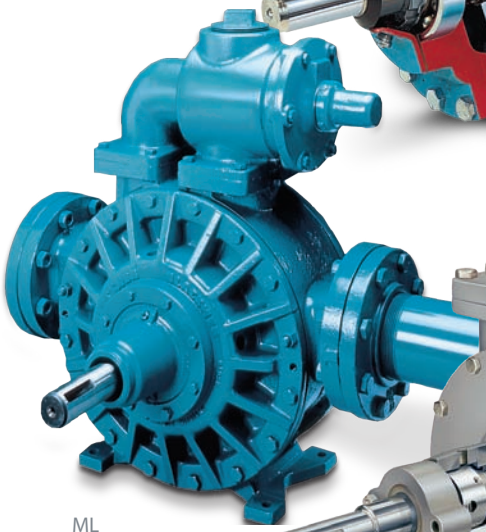
Certifications & Associations:



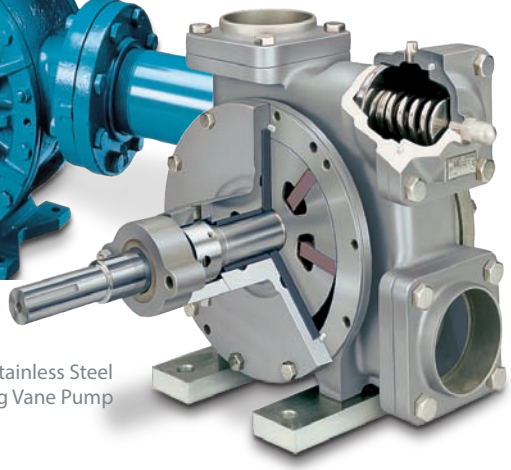
STX Stainless Steel
Sliding Vane Pump



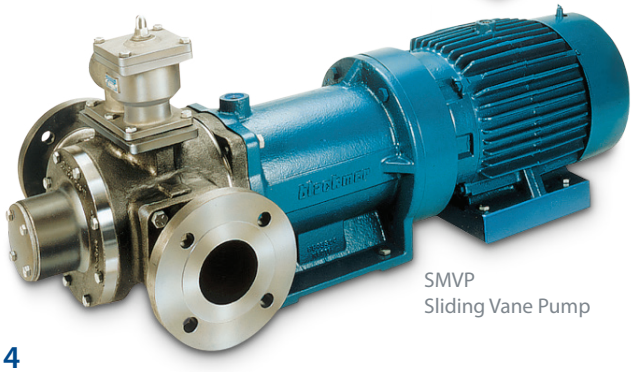
XL
Sliding Vane Pump



ML
Sliding Vane Pump



SNP Stainless Steel
Sliding Vane Pump



SMVP
Sliding Vane Pump

TECHNOLOGY: SLIDING VANE

Industrial & Process Sliding Vane Pumps

Many of the chemicals used in industrial process applications are difficult to handle, often toxic or corrosive in nature, difficult to seal and expensive to purchase. Blackmer's sliding vane pumps are available in compatible materials with shaft sealing and seal-less options that make them the products of choice for many process applications.

Applications

- Acids
- General chemicals
- CO_2
- Paints, inks and coatings
- Solvents
- Refrigerants
- Soaps and detergents
- Diesel Exhaust Fluid (DEF)

Features & Benefits

- Designed for specific process and transfer applications
- Highly efficient sliding vane technology
- Self-adjusting vanes sustain performance
- Self-priming, line stripping and dry-run capabilities
- Ideal for thin or non-lubricating, viscous, abrasive and shear-sensitive fluids
- Seal-less and mechanically sealed designs available
- Reduced energy consumption
- Reduced costs
- Sustained performance
- Consistent flow
- Handles thin or non-lubricating, viscous, abrasive and shear-sensitive fluids
- High volumetric efficiency

Technical Data

- Cast iron, ductile iron and stainless steel models available
- Sizes: 19mm (3/4 in.) to 254mm (10 in.)
- Max. working pressures: 17.2 bar (250 psi)
- Max. temperatures: 266° C (500° F)
- Viscosities to >21,000 cSt (100,000 SSU)
- Motor speed and gear reducer drives

Performance Data

- Max. flow: 8,404 L/min (2,220 gpm)
- Max. differential pressure: 13.8 bar (200 psi)

Certifications & Associations:

TECHNOLOGY: SLIDING VANE

LPG/Liquefied Gas Sliding Vane Pumps

Blackmer liquefied gas pumps are designed for maximum performance and reliability under the most severe service conditions. Engineered especially for hard-to-handle products such as LPG/propane, butane, NH_3, CO_2 and refrigerants.

Applications

- LPG/Propane
- Mobile and stationary installations
- Butane
- Cylinder filling
- NH_3
- CO_2
- Auto fueling

Features & Benefits

- Global leader in mobile and stationary pumps for liquefied gases
- Sliding vane design provides sustained performance and trouble-free operation
- Patented Cavitation Suppression Liners for enhanced service life and reduced noise
- Differential Bypass Valves especially designed to protect against excessive pressure damage
- UL listings for LPG (propane), butane, propane/butane mixes and NH_3 services

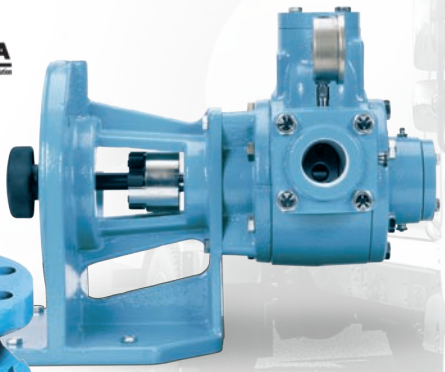
Technical Data

- Ductile iron construction for thermal shock resistance
- Sizes: 25mm (1 in.) to 102mm (4 in.)
- Max. working pressure: 29.3 bar (425 psi)
- Motor speed (direct coupled), gear reducer, belt, PTO, hydraulic drive capabilities

Performance Data

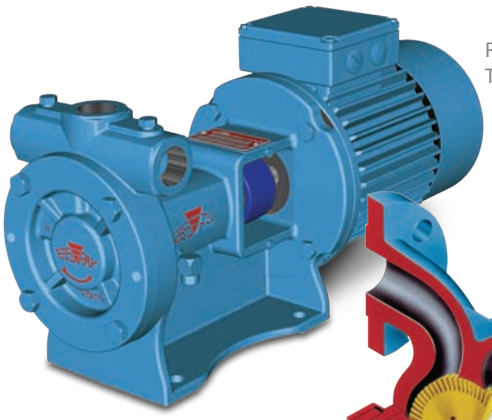
- Max. flows: 1,325 L/min (350 gpm)
- Max. differential pressure: 13.8 bar (200 psi)
- Differential Bypass Valves provide full-flow pressure control to 946 L/min @ 8.3 bar (250 gpm @ 120 psi)

Certifications & Associations:

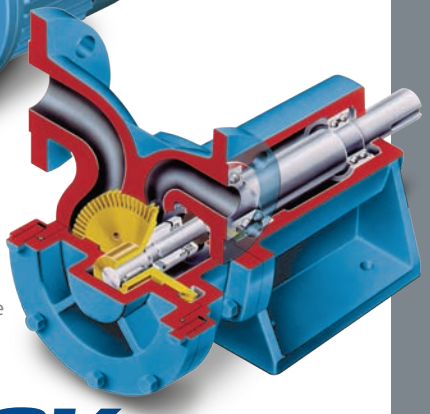


TLGLF LPG/Liquified Gas Sliding Vane Pump

LGL150 Series High Differential Pressure Sliding Vane Pump



RC25 Regenerative Turbine Pump



R10 Regenerative Turbine Pump

Ebsray®

TECHNOLOGY: REGENERATIVE TURBINE

LPG/Autogas Regenerative Turbine Pumps

Blackmer's Ebsray regenerative turbine pumps are recognized as the No. 1 choice globally in LPG and Autogas-handling applications. Known for efficiency, reliability and performance, Ebsray regenerative turbine pump technologies are offered in the North and South American Autogas markets.

Applications

- LPG/Propane
- Auto fueling
- Butane

Features & Benefits

- Single-stage impeller
- Quiet, vibration-free operation
- Low, easy maintenance
- Longest standard warranty
- UL listings for LPG/Autogas

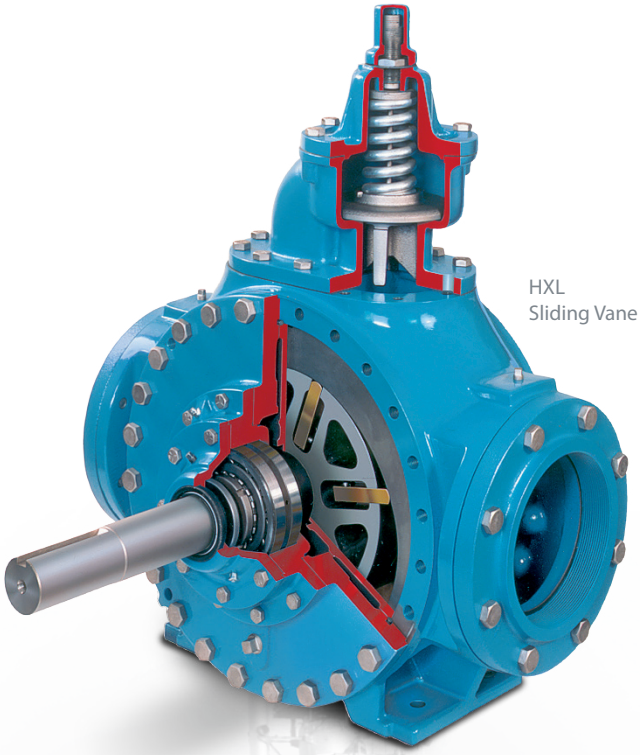
Technical Data

- Ductile iron to
- Bronze, ductile iron impeller
- Motor speed to 3,600 rpm

Performance Data

- Max. flows: 200 L/min (52 gpm)
- Max. pressure: 11 bar (160 psi)
- Viscosities to 50 cSt
- Temperatures to -40°C to 100°C (-40°F to 212°F)

Certifications & Associations:



HXL
Sliding Vane Pump

TECHNOLOGY: SLIDING VANE

Refined Fuels Sliding Vane Pumps

Blackmer's sliding vane technology is ideal for the transfer of refined fuels/hydrocarbons and biofuels. Not only are these pumps energy efficient, they feature self-priming, line stripping and dry-run capabilities.

Applications

- Kerosene/home heating oil
- Jet fuels
- Lube oils
- Biofuels
- Diesel
- Asphalt/bitumen
- Gasoline

Features & Benefits

- Designed for refined fuels/hydrocarbons and biofuels
- Highly efficient sliding vane technology
- Self-adjusting vanes sustain performance
- Self-priming, line stripping and dry-run capabilities

Technical Data

- Cast iron and ductile iron models available
- Sizes: 19mm (3/4 in.) to 254mm (10 in.)
- Max. working pressure: 17.2 bar (250 psi)
- Max. temperature: 266° C (500° F)
- Viscosities to >21,000 cSt (100,000 SSU)
- Motor speed and gear reducer drives

Performance Data

- Max. flow: 8,404 L/min (2,220 gpm)
- Max. differential pressure: 13.8 bar (200 psi)

Certifications & Associations:

TECHNOLOGY: CENTRIFUGAL

System One® Series Centrifugal Process Pumps

System One heavy-duty centrifugal pumps are designed for high volume, severe duty applications. The pumps offer the widest window of operation off the BEP (Best Efficiency Point) of any conventional centrifugal pump, and are designed specifically for operation in severe process industry applications.

System One®: LD17 Centrifugal Pump

Applications

- Chemicals
- Mining de-watering
- Water/wastewater
- Liquid terminals

Features & Benefits

- Designed specifically to operate in severe process industry applications
- Heavy-duty solid shaft with lowest shaft ratio (L^3/D^4) in the industry
- Oversized bearings offer greater load capacity and extend bearing life
- Widest window of operation off the BEP of any conventional centrifugal process pump
- Increased mechanical seal life
- Extended bearing life
- Increased productivity
- Maximum reliability

Technical Data

- Ductile iron, 316 stainless steel, CD4MCu, A-20 and Hastelloy® materials available
- Metric and ASME (ANSI) models available
- Max. temperature: 400° C (750° F)
- Micrometer adjustment nuts simplify and ensure precise impeller setting
- D-Flange (IEC) or C-Frame (NEMA) motor adaptors available

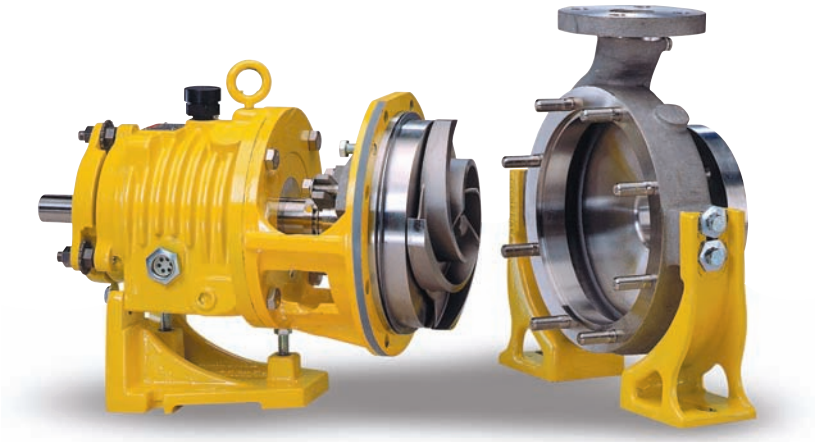
Performance Data

- Max. flow: >1,022 m^3/h (4,500 gpm)

Certifications & Associations:

MIL-S-901D Gr. A & MIL-STD-167 Type 1

ANSI B73.1M
Complies with ANSI B73.1M specifications



System One®: Frame A Centrifugal Pump