



PROVANE[®]

MOTOR SPEED VANE PUMP



Optimum Pump Performance for Process Applications

- Designed specifically for reliable continuous duty operation
- Sets the industry standard in positive displacement pumps for low and medium viscosity process applications

Engineered for Long-Life Durability, Reliability and Performance

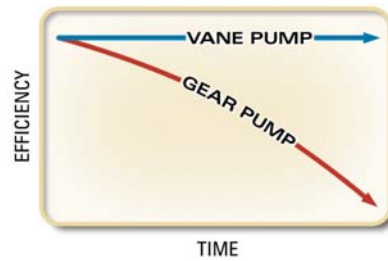
- **Patent pending rotor and shaft design** – heavy duty, low shaft stiffness ratio combined with superior hydrodynamic bearing – design delivers the best PV ratios of any pump in its class. The result:
 - Extended bearing life
 - Improved efficiency and energy consumption
 - Better volumetric performance
 - Enhanced service life
- **Self-adjusting vane technology** – ensures the pump maintains the highest level of performance and efficiency over time, better than any other pump technology.
- **Superior self priming, low shear fluid transfer at standard motor operating speeds:**
 - Operating Speeds: 1200, 1800, 3600 rpm
 - Ten (10) Flow Rates: Capacities 1 to 100 gpm
 - Five (5) Sizes: ranging from 3/4" to 2"
 - Low net positive suction head required (NPSHr) – exceptional suction/lift capability makes pump ideal for top-of-tank applications
- **Patented Cavitation/Noise Suppression technology**
 - Quiet operation
 - Controls cavitation to reduce wear effects
 - Longer service life
- **Motor Speed Design** – offers compact profile and upfront equipment, installation and energy costs savings:
 - No gear reducer
 - Smaller footprint of the complete pumping unit
 - Offers easy mounting in virtually any configuration
- **Available in Ductile Iron and Stainless Steel**

Construction

ProVane® pumps are specifically engineered for low and medium viscosity process applications where reliable, continuous duty operation with no preventative maintenance is desired. ProVane® pumps are ideal for handling shear-sensitive liquids at high speeds with no product degradation.

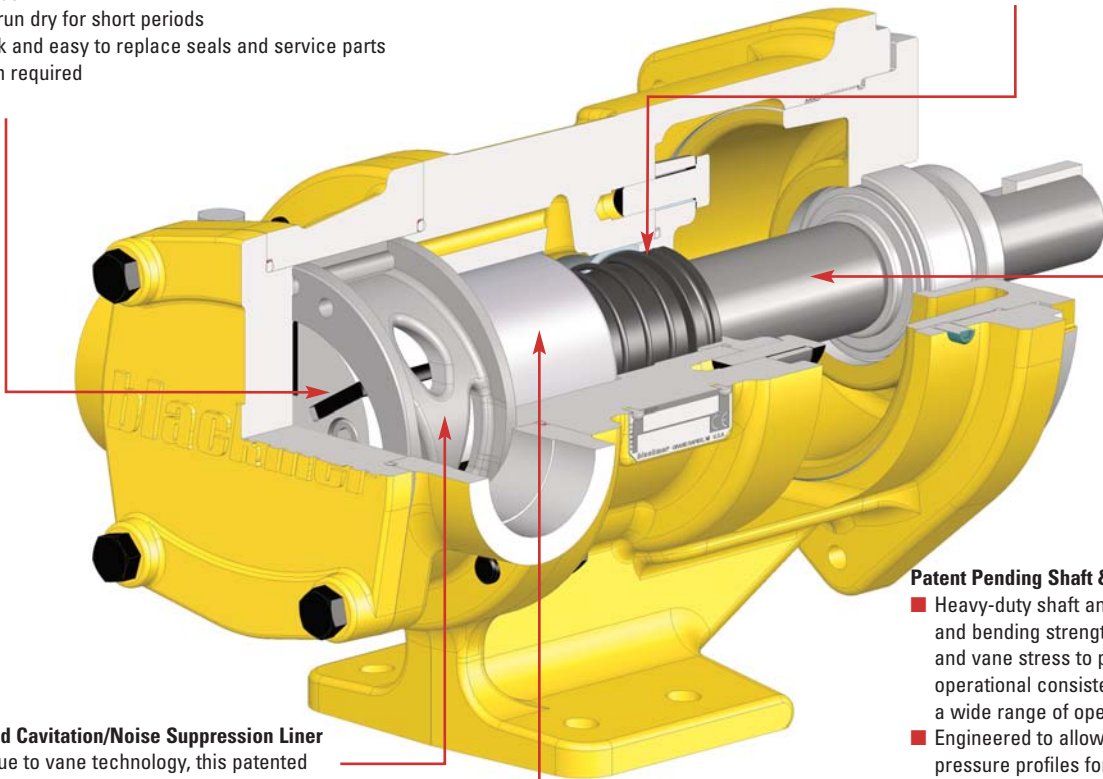
Self-Adjusting Composite Vanes

- Long-lasting, nonmetallic composite vanes automatically adjust clearances and sustain the highest levels of flow performance, efficiency and reliability over other PD pump technologies
- Eliminate slip, capacity loss, and downtime for clearance adjustments due to worn metal parts common with other pump types
- Offer exceptional suction and dry priming capability
- Ideal for handling shear-sensitive liquids at higher speeds
- Can run dry for short periods
- Quick and easy to replace seals and service parts when required



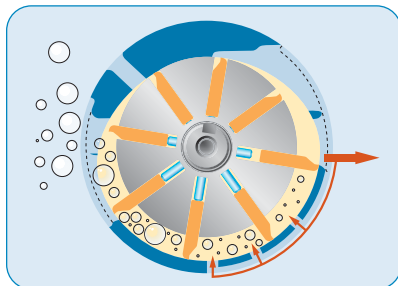
Seal Flexibility

- Commercially available sealing options to meet specific application requirements:
 - Mechanical Seals
 - Cartridge
 - Elastomeric Bellows
 - Component
- One mechanical seal improves uptime reliability



Patented Cavitation/Noise Suppression Liner

- Unique to vane technology, this patented innovation offers multiple benefits:
 - Controls cavitation to minimize the wear effects, maintenance and costs associated with challenging installations
 - Reduces noise levels up to 15 dbA
 - Replaceable liner - protects the pump casing and extends service life



Hydrodynamic Journal Bearing

- Allows for higher operating speeds and pressures on low viscosity fluids than are possible with other PD pumps
- Capable of low flow, high head application on low viscosity where centrifugal pumps can't run.
- Provides for superior bearing life – the pump shaft rides on a fluid boundary during load conditions to eliminate shaft-to-bearing contact. Since there is no metal-to-metal contact, there is no bearing wear during this hydrodynamic condition
- Exceptional efficiency at low flow rate applications
- Significantly reduces friction, excessive heat build-up and energy loss
- Results in higher mechanical efficiency and energy savings
- No degradation of performance over time

Patent Pending Shaft & Rotor Configuration

- Heavy-duty shaft and rotor offers high fatigue and bending strength and minimizes shaft and vane stress to provide unparalleled operational consistency and reliability under a wide range of operating conditions
- Engineered to allow for specific velocity and pressure profiles for best in class reliability, performance and efficiency

Compact Profile

- Smaller footprint of a complete pump unit
- Mounting Flexibility
 - Vertical
 - Horizontal
 - Top if tank where suction lift is required
 - Virtually any direction
 - Simple and easy installation with only four (4) bolts required

Motor Speed - No Gear Reducer

- Eliminates additional equipment cost
- Improves uptime reliability
- Eliminates installation costs and maintenance issues
- Results in additional energy savings
- Requires less space



blackOPS®: Blackmer Optimum Pump Solutions – blackOPS® is a selection software program created specifically for Blackmer's positive displacement pumps and System One® centrifugal pumps. The program allows you to print (or save) your pump selection data and pump curves in a PDF format. For additional information on blackOPS®, log onto www.blackmer.com.



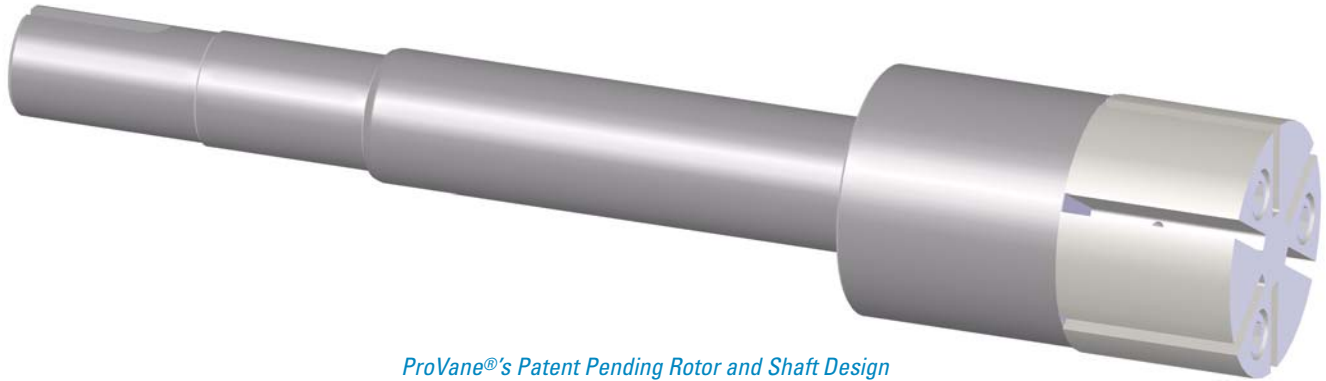
ProVane® Motor Speed Vane Pumps

Exceptionally Engineered Process Pump Innovation That Delivers Superior Performance & Value

Superior Bearing Life, Mechanical Efficiency and Energy Savings

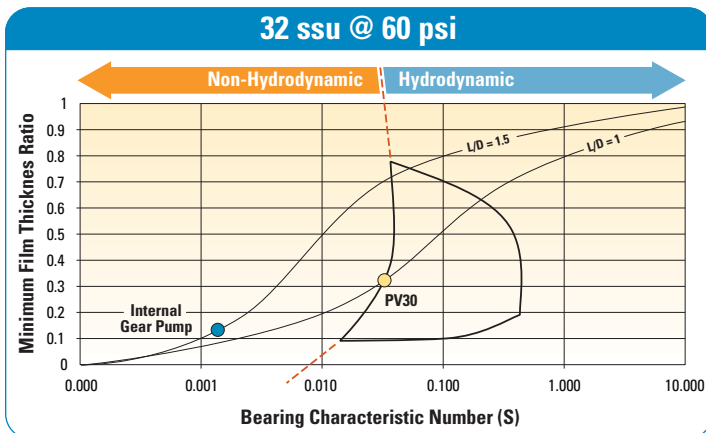
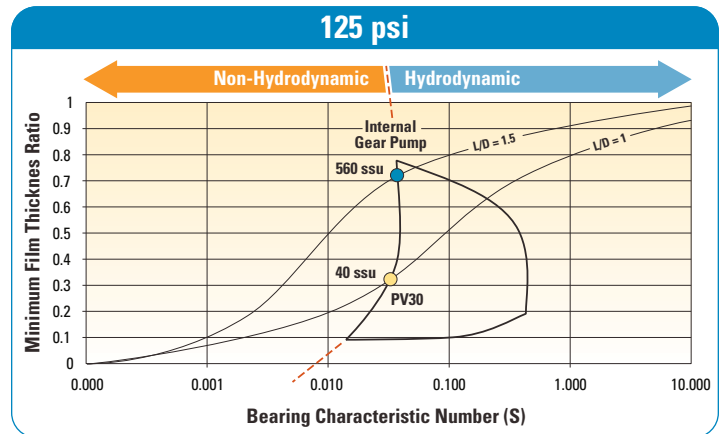
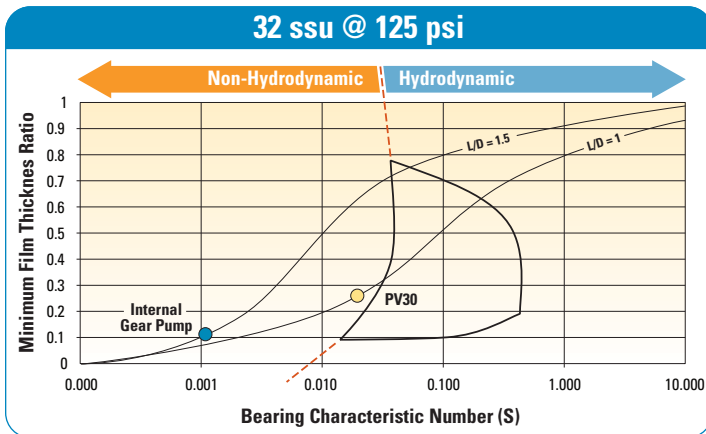
ProVane®'s patent pending rotor and shaft design delivers an efficient pressure/velocity profile on bearings and

vanes resulting in superior bearing life, flow performance and smart energy efficiency over competing gear pumps.



ProVane®'s Patent Pending Rotor and Shaft Design

The Hydrodynamic Journal Bearing Advantages of ProVane®



- Fluid boundary forming principle eliminates shaft to bearing contact. The shaft hydroplanes above the bearing surface on a cushion of liquid. In this hydrodynamic condition there is no metal-to-metal contact or wear and bearing life can be indefinite.
- Engineered to achieve hydrodynamic mode (full film operation – the point offering the lowest bearing friction and least wear) faster than any other pump in its class – particularly with low viscosity liquids – to preserve bearing life.
- Maintains optimum bearing characteristics even under a wide range of operating conditions.
- Reduced shaft/bearing contact minimizes friction and results in higher mechanical efficiency and smart energy cost savings.

Flexibility of Application –

There's a ProVane® Model for Every Application

Three Models:

- Ductile Iron for general chemical, petroleum and additive blending, coatings and colorant applications

- Stainless Steel for high purity chemicals, acids, and caustics

Maximum Operating Speeds:

- 1,800 rpm – PV(S) 10, 15, 20, 30, 40, 50, 80, 100

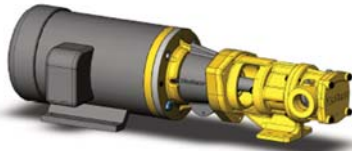
- 3,600 rpm – PV(S) 6, 8

Four (4) Port Sizes: 3/4" to 2"

Ten (10) Flow Rates: 1 to 100 gpm

C-Face Adaptor

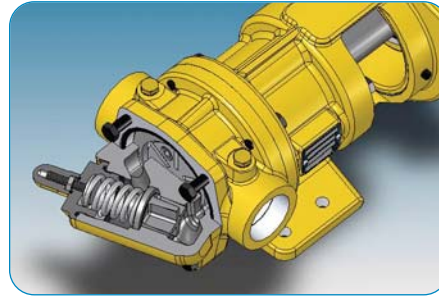
- Provides for mounting flexibility
- Eases mounting and unit assembly efforts
- Simplifies integration into system or equipment
- Provides for automatic mechanical motor alignment without special tools or excessive labor



ProVane® Motor Speed Vane Pumps

Options to Optimize Your Pump Performance

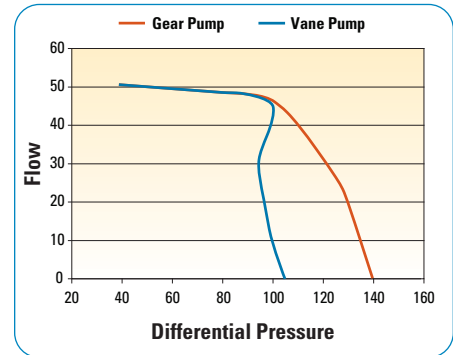
Relief Valve Peace-of-Mind Protection



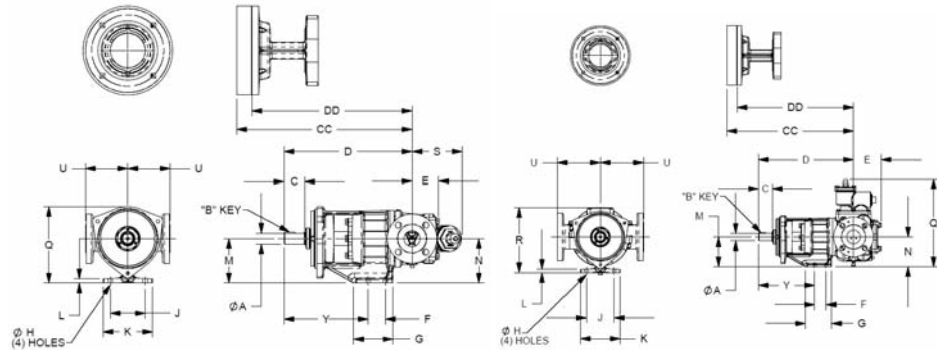
The ProVane® relief valve is designed to protect your pump in a high pressure build-up situation. Ideal for variable flow and pressure conditions, the optional relief valve offers:

- Superior ability over other PD pumps to hold pressure under variable flow/pressure conditions

- Maintains motor horsepower requirement to help control energy consumption
- Highly engineered to provide better control over set points and operating conditions
- Lowers heat generation



Dimensions



Sizes 6-50

Sizes 80-100

Pump Model	A	B	C	D	E	F	G	H	J	K	L	M	N	Q	R	S	U	Y	CC	DD	Port	Weight
PV6B, PV8B	in. 3/8	—	13/16	5-1/2	1-1/4	—	2-1/8	1/4	2	3	3/8	3	3	4-13/16	—	3-1/8	1-3/4	3-1/2	—	8-1/8	3/4" NPT	8 lbs
PV6B, PV8B	mm 9.5	—	20.6	139.7	31.8	—	54.0	6.4	50.8	76.2	9.5	76.2	76.2	122.2	—	79.4	44.5	88.9	—	206.4	3/4" NPT	3.6 kg
PVS6A, PVS8A	in. 3/8	—	13/16	5-1/2	1-1/4	—	2-1/8	1/4	2	3	3/8	3	3	4-13/16	—	3-1/8	1-3/4	3-1/2	—	8-1/8	3/4" NPT	10 lbs
PVS6A, PVS8A	mm 9.5	—	20.6	139.7	31.8	—	54.0	6.4	50.8	76.2	9.5	76.2	76.2	122.2	—	79.4	44.5	88.9	—	206.4	3/4" NPT	4.5 kg
PV10B, PV15B	in. 7/8	3/16	2	10-1/4	2-1/16	—	3-13/16	7/16	3	4	7/16	4	4	6-1/2	—	4.1875	2-1/2	7-5/8	13-13/16	12-13/16	1" NPT	29 lbs
PV10B, PV15B	mm 22.2	—	50.8	260.4	52.4	—	96.8	11.1	76.2	101.6	11.1	88.9	88.9	165.1	—	106.4	63.5	193.7	350.8	325.4	1" NPT	13.2 kg
PVS10A, PVS15A	in. 7/8	3/16	2	10-1/4	2-1/16	—	3-13/16	7/16	3	4	7/16	4	4	6-1/2	—	4.1875	2-1/2	7-5/8	13-13/16	12-13/16	1" NPT	33 lbs
PVS10A, PVS15A	mm 22.2	—	50.8	260.4	52.4	—	96.8	11.1	76.2	101.6	11.1	88.9	88.9	165.1	—	106.4	63.5	193.7	350.8	325.4	1" NPT	15.0 kg
PV20B, PV30B	in. 1-1/8	1/4	2-1/16	12-1/2	2-5/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	7-3/4	—	4-5/8	3-3/8	8-7/16	17-1/4	15-3/4	1-1/2" NPT	60 lbs
PV20B, PV30B	mm 28.6	—	52.4	317.5	58.7	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	196.9	—	117.5	85.7	214.3	438.2	400.1	1-1/2" NPT	27.3 kg
PVS20A, PVS30A	in. 1-1/8	1/4	2-1/16	12-1/2	2-5/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	7-3/4	—	4-5/8	3-3/8	8-7/16	17-1/4	15-3/4	1-1/2" NPT	65 lbs
PVS20A, PVS30A	mm 28.6	—	52.4	317.5	58.7	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	196.9	—	117.5	85.7	214.3	438.2	400.1	1-1/2" NPT	29.5 kg
PV40B, PV50B	in. 1-1/8	1/4	2-1/16	12-7/8	2-11/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	7-3/4	—	5-1/16	3-3/8	8-7/16	17-5/8	16-1/8	1-1/2" NPT	62 lbs
PV40B, PV50B	mm 28.6	—	52.4	327.0	68.3	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	196.9	—	128.6	85.7	214.3	447.7	409.6	1-1/2" NPT	28.2 kg
PVS40A, PVS50A	in. 1-1/8	1/4	2-1/16	12-7/8	2-11/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	7-3/4	—	5-1/16	4-1/4	8-7/16	17-5/8	16-1/8	1-1/2" ANSI	68 lbs
PVS40A, PVS50A	mm 28.6	—	52.4	327.0	68.3	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	196.9	—	128.6	108.0	214.3	447.7	409.6	1-1/2" ANSI	30.9 kg
PV80B, PV100B	in. 1-1/8	1/4	2-1/16	14-5/16	4-3/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	13-1/4	8-3/16	—	3-7/8	8-7/16	19-1/16	17-9/16	2" NPT	76 lbs
PV80B, PV100B	mm 28.6	—	52.4	363.5	106.4	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	336.6	208.0	—	98.4	214.3	484.2	446.1	2" NPT	34.5 kg
PVS80A, PVS100A	in. 1-1/8	1/4	2-1/16	14-5/16	4-3/16	1-3/4	3-15/16	7/16	4	5	7/16	5	5	13-1/4	8-3/16	—	5-7/16	8-7/16	19-1/16	17-9/16	2" ANSI	89 lbs
PVS80A, PVS100A	mm 28.6	—	52.4	363.5	106.4	44.5	100.0	11.1	88.9	127.0	11.1	114.3	114.3	336.6	208.0	—	138.1	214.3	484.2	446.1	2" ANSI	40.5 kg

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