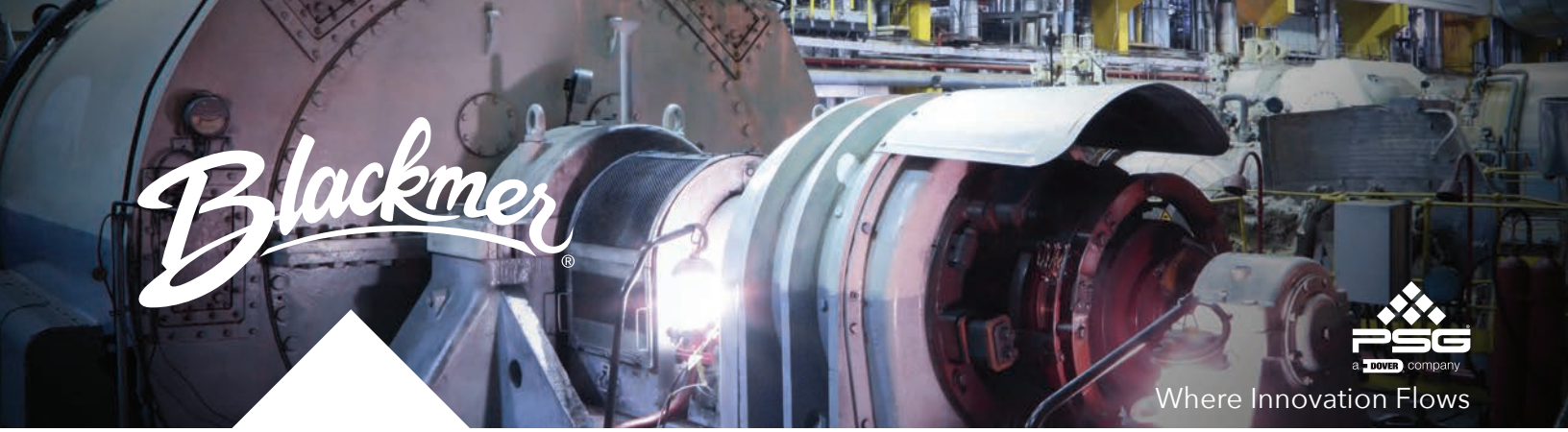


Oil/Water Separator Feed

APPLICATION DOCUMENT

The heart of the huge power plants that reliably provide electricity to residences and businesses located everywhere from small rural communities to large population centers are the turbine generators that actually produce the electricity. These highly engineered machines must be monitored and maintained constantly so that they will not break down and compromise the power supply.

MLX

Part of the process of maintaining them is washing them down for cleaning. The residue from this cleaning process is a mixture of water and oil, which must be disposed of properly and safely. The key to optimizing the collection and disposal of the waste liquid is ensuring that the water and oil do not become emulsified, or overly mixed, as they are fed through the oil/water separator, while also preventing excess air from entering the process. This requires a pump technology that can produce low-shear operation that will not excessively agitate the liquids that are being handled.

Positive displacement (PD) sliding vane pumps meet the needs of oil/water separator feed because their method of operation – vanes slide out of the pump rotor as it turns to create "pockets" where a consistent amount of liquid gathers before being discharged – is inherently low-shear. Sliding vane pumps are also able to fashion the suction lift necessary to remove the waste liquids from the turbine's washdown basin and have the capacity to produce high-volume flow rates.

The standout performer from Blackmer in oil/water separator feed operations is the ML Series Sliding Vane Pump. The ML Series Pumps, which are part of the Heavy Duty Line, are 4-inch pumps with ductile-iron construction and are designed for handling all types of liquids, from light non-lubricating to viscous abrasive slurries and waste oils. The MLX model features external grease-lubricated spherical roller bearings that are isolated from the pumpage and can be fitted with a wide variety of internal mechanical seals. Options include hardened or wear-resistant internal components. The MLX Sliding Vane Pump produces flow rates from 35 to 590 gpm (132 to 2,233 L/min), can handle viscosities from 0.2 to 21,000 cP, has a differential pressure of 200 psi (13.8 bar) and can handle operating temperatures from -25°F to 240°F (-32°C to 115°C).

Oil/Water Separator Feed

MLX

BLACKMER SOLUTIONS

- ML Series Sliding Vane Pumps
  - MLX

COMPETITION

- **Gear Pumps**

Are not capable of producing the low-shear operation and suction lift that is necessary to delicately remove the oil/water mixture from the washdown basins. Also gear pumps are not as easy to maintain and rebuild because they have more wear parts (gears, head, casing, etc.), with that component wear accelerated when handling abrasive particulates.

- **Peristaltic (Hose) Pumps**

Can produce very low-shear operation and meet suction-lift requirements, but their hoses will wear out quickly, which can lead to failures that will knock the pump out of service and compromise its overall longevity.

- **Sliding Shoe Pump**

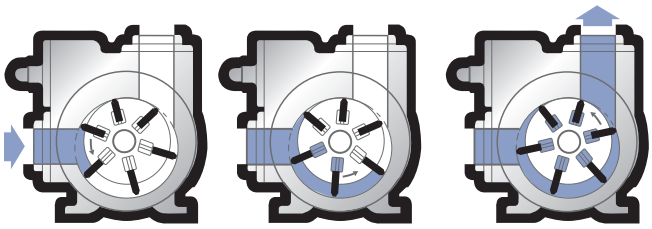
Provides good suction-lift performance and low-shear operation, but has a limited flow/pressure operational window and can't maintain volumetric consistency as the ball checks wear down. Also, has more moving parts than sliding vane pumps, which makes it harder to service and return to like-new operation.

GLOSSARY

Shear – the relative motion between adjacent layers of a moving liquid or liquids. By extension, "shear rate" is defined as the rate of relative motion between adjacent layers of a moving liquid; excessive shear can compromise the structural integrity of the liquid being handled.

Turbine Generator – a machine that converts mechanical energy – usually from wind, water, steam or fossil fuels – into electrical energy.

HOW BLACKMER SLIDING VANE ACTION WORKS



For more information on these additional solutions, visit us at blackmer.com.

Where Innovation Flows

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