

## WIND POWER LUBRICATION PUMPS

#### motralec

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Maximum reliability in any climate

Gearbox-drive with flow in one direction, regardless of shaft rotation

 Motor drive or hydraulic drive options Experience Shows • Innovation Flows



Spur Gear External Gear Pump

Internal Gear Pump

# **OUR EXPERIENCE SHOWS IN...**

# Service to the Global Wind Power Industry

- Viking Pump has an installed base numbering in the thousands when it comes to troublefree pumps designed for wind power lubrication.
- High reliability in even the most demanding climate conditions.
- Lubrication pumps designed with 20+ year economic life to meet or exceed that of its wind turbine.
- Lower life cycle costs minimize investment.
- Unsurpassed durability and performance standards in a positive displacement pump.
- Direct drive or custom drive configuration capabilities to match application needs.



## **Problem-Solving Innovation**

Viking has developed breakthrough products by leveraging the spectrum of options that come with owning vertically integrated foundries, machining, assembly and R & D labs with documented quality manufacturing processes. Our customer relationships are true partnerships. We have accomplished more together than we could on our own.

#### Spectrum of options include:

- Many pump technologies to meet the application needs
- Broad capacity range
- Pressures to >35 BAR (500 PSI)
- Temperature ranges from -84°C to 370°C (-120°F to 700°F)
- Sealing solutions to prevent leakage
- Porting flexibility

#### Viking<sup>®</sup> Provides Proven, Reliable Wind Power Lubrication Pump.

A prominent wind turbine manufacturer needed a direct drive lube pump designed to lubricate the turbine when driven either direction, and with special porting requirements. Existing smaller turbine design required two lube oil pumps: one directly driven off the gearbox with one direction flow and a second electric driven pump to lube when the turbine back milled. Viking used a catalog pump as basis element for the lube pump. Then a reversing head and a helical gear direct drive arrangement was designed to provide one-directional flow inside a custom housing with a face ported inlet and NPT outlet.

#### **Customer Benefit:**

Pump design matched to the application provides increased

reliability and simplified installation. Reduced maintenance requirements/costs achieved per unit through elimination of one pump and one electric motor.

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## Leader in Positive Displacement Pumping Solutions.

#### **Innovation and Experience**

Viking Pump has been a pump industry leader and innovator since its founding in 1911. We continue to build on our ever growing experience delivering innovative new pumping solutions, including custom designs, to thousands of customers who use Viking pumps in some of the world's toughest applications.

#### **Broad Performance Range**

Capacity: 0.5 to 360 M<sup>3</sup>/Hr (0.1 to 1,600 GPM) Pressure: 0 to 172 Bar (0 to 2,500 PSI) Temperature: -84°C to 370°C (-120°F to 700°F) Viscosity: 0.5 to 1,000,000 cSt (28 to 4,500,000 SSU)

#### **Ultimate in Sealing Solutions**

Viking's offering of packing, component mechanical seals, cartridge seals and sealless Mag Drive technology provides the best choices for sealing flexibility needed to provide your application a customized sealing solution every time - saving you money, time and unplanned downtime.

# Material Options Matched to Application

Viking's dedicated iron and alloys foundries provide pump construction materials from cast iron to Alloy C. Application-specific materials of construction extend a pump's life significantly, while reducing maintenance and unplanned downtime, enabling increased production and a better bottom line.

#### **Liquid Integrity Protection**

Viking has developed multiple positive displacement pump principles to protect shear-sensitive liquids, and low-shear options to prevent damage to fibers, polymers and solids. Full-jacketing options provide precise temperature control throughout the pump. The Viking Mag Drive<sup>®</sup> and other seal options prevent fluid contact with air, assuring liquid integrity.

#### Local Applications and Engineering Support

Over 245 Authorized Viking Pump Distributors in 68 countries provide local application support and service. They are backed by Viking Application Engineers and Viking Region Managers strategically located around the world.

#### **Quality Manufacturing**

Viking uses ISO9001-2008, Six-Sigma, and Lean/Kaizen in its worldwide manufacturing and assembly processes to remove waste, reduce development costs, and deliver superior products. Dedicated Viking foundries and manufacturing facilities utilize state-ofthe-art CNC equipment to assure unmatched quality is built into every pump.

#### **Custom Designed Solutions**

Viking has provided custom designed pumps to end-users and OEMs since its first pump in 1911, when Viking invented the gear-withina-gear pumping principle to remove water from a rock quarry. Today, enabled by Viking's engineering staff, extensive applications experience and in-house foundries, more than 20% of Viking's sales are new designs or pump designs derived from one of our 40,000 active configurations. Whether you are an enduser or an OEM, Viking can provide custom designed pumping solutions to meet your specific needs.



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