

YOU'RE SO VANE

PUMPS • STORAGE TERMINALS RELY A GREAT DEAL ON PUMPS; TOM STONE* RECOMMENDS THE USE OF SLIDING VANE DESIGNS FOR THEIR VERSATILITY AND COST-EFFECTIVENESS

ALL LIQUID COMMODITIES, be they refined petroleum products, chemicals or foodstuffs, will at some point pass through or be kept at a bulk liquids storage terminal. They may arrive at and depart from the terminal by oceangoing tanker, barge, rail tank car, pipeline or tank truck, in volumes that range from a few hundred to many thousands of gallons.

The job of the storage terminal in this supply chain is twofold: firstly to make sure that each parcel of cargo is in the right place at the right time; and secondly to do that in the most efficient, cost-effective, safe and reliable way.

Pumps play an important role in enabling the movement of bulk liquids between the terminal's storage tanks and transport vessels.

Over the years, different types of pump technology have been used in bulk liquids storage terminals, with centrifugal and gear-type pumps proving popular. But terminal operators should perhaps look at the option of positive displacement sliding vane pumps as the go-to choice for the transfer of a range of fluids with varying viscosities at different flow rates and pressures.

POWER OF THREE

There are three areas where sliding vane pumps can outperform centrifugal and gear-type pumps in liquids storage terminal applications.

Firstly, they offer greater energy efficiency. While terminal operators must meet the needs of their customers as regards product storage and transfer, they are also responsible for optimising energy consumption and costs at their facilities, helping create a healthy bottom line. Sliding vane pumps can assist in this area because their design and method of operation is one of the most energy-efficient among all pumping technologies.

Sliding vane pumps will help storage terminal operators gain a competitive business advantage because they offer a number of energy- and cost-saving features and benefits in liquids transfer applications, including:

- The ability to handle very thin liquids (gasoline, ammonia, LPG, etc) as well as those with viscosities of up to 50,000 cSt
- Flow rates of up to 2,000 gal/min (7,580 l/m), proportional to the pump's speed
- Easy maintenance and vane replacement that does not require the pump to be taken out of service
- High volumetric efficiency due to self-adjusting vanes that eliminate energy-robbing slip
- Excellent suction lift and line-stripping capabilities, critical for terminal facilities that must clear lines, vessels and storage tanks of residual product
- The ability to generate high pressure in low-flow applications
- Dry-run and self-priming capabilities
- Lower overall cost of ownership compared to centrifugal pumps

A second benefit of sliding vane pumps is their sheer versatility around the terminal. Terminal operators can construct skids that allow pumps to be moved around the facility to perform multiple liquids transfer operations. For example, the skids can be placed at railcars on a siding then repositioned between a tank truck and storage tank to facilitate that loading or unloading process.

This portability makes the liquids transfer process more nimble and versatile, which results in optimised transfer operations with a corresponding reduction in operating costs.

Finally, the design and operation of sliding vane pumps make them ideal for use in a variety of applications. While shining in loading or unloading storage tanks, or transferring



liquids from one storage tank to another, the operation of sliding vane pumps can also make them a first-choice technology for other common storage terminal activities. These include the blending, mixing and packaging of raw materials or end products, which can then be loaded onto transport vehicles for further shipment down the supply chain.

THE ROTARY STORY

Rotary vane pump technology was perfected by Robert Blackmer in 1899; the company that bears his name, based in Grand Rapids, Michigan, has taken that design forward to today's modern sliding vane pump designs. For almost 120 years, Blackmer® has been dedicated to providing the most efficient, safe and reliable pumping products for its customers in many of the world's most important industries.

Today, many of those customers in the liquids storage terminal market are striving to optimise the performance of their operations in terms of delivery and storage efficiency, energy use and cost-effectiveness. These are important goals and exactly the capabilities that sliding vane pumps have been designed to offer. Blackmer recognises the needs of its customers and has taken great pains to develop and produce sliding vane technologies that play a significant role in improved operations at storage terminals.

Blackmer has a range of sliding vane pump models that fit the various liquids handling needs of storage terminals. All incorporate the sliding vane principle of operation, which employs a number of vanes that are free to slide into and out of slots on the pump rotor. When the pump driver turns the rotor, the vanes move outward in their slots and bear against the pump's inner bore casing, creating pumping chambers that transfer a volumetrically consistent amount of liquid, essentially independent of pressure or viscosity.

According to TankTerminals.com, there are nearly 1,600 terminals in the United

○ THE VERSATILITY OF SLIDING VANE PUMPS MAKES THEM IDEAL FOR A WIDE RANGE OF TERMINAL APPLICATIONS

TALKING TRANSLOADING

Transloading – defined as the process of transferring a shipment from one mode of transport to another without intermediate storage – may be tangential to the traditional day-to-day operations at some liquids storage terminals, but there are instances where the increased use of transloading can have benefits for the terminal operator.

In essence, the main objective of transloading is to place commodities as close to the point of final processing, packaging, delivery and consumption as economically possible. It should be no surprise that moving products strictly by truck can be the most expensive form of shipping while also being the least efficient in terms of time required to complete the shipping process.

Creating a transloading operation can overcome those shortfalls by the incorporation of railcars or barges, which reduces the number of trucks or truck-miles needed. By extension, this lowers capital costs for the shipper since smaller truck fleets, lower fuel consumption, a leaner driver pool and fewer empty trips will all reduce expenses.

Another economic advantage of transloading is that the process allows for a quick response when inventories need to be replenished, allowing companies to accelerate turnover rates, resulting in reduced inventory costs.

As noted earlier, the portability, versatility and energy-saving efficiencies inherent in the design of sliding vane pumps can play a role in improving the economic sustainability of transloading operations at storage terminals.



States that are dedicated to the storage of various types of commodities and at various capacities. All of these facilities must meet the unique needs of their customers regarding reliability and efficiency, while also satisfying internal demands that they operate at the highest level of cost-effectiveness. As shown, terminal operators who choose to outfit their sites with sliding vane pumps can create many significant competitive

advantages, all of which will play a role in building improved customer relations and a more robust bottom line. HCB

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