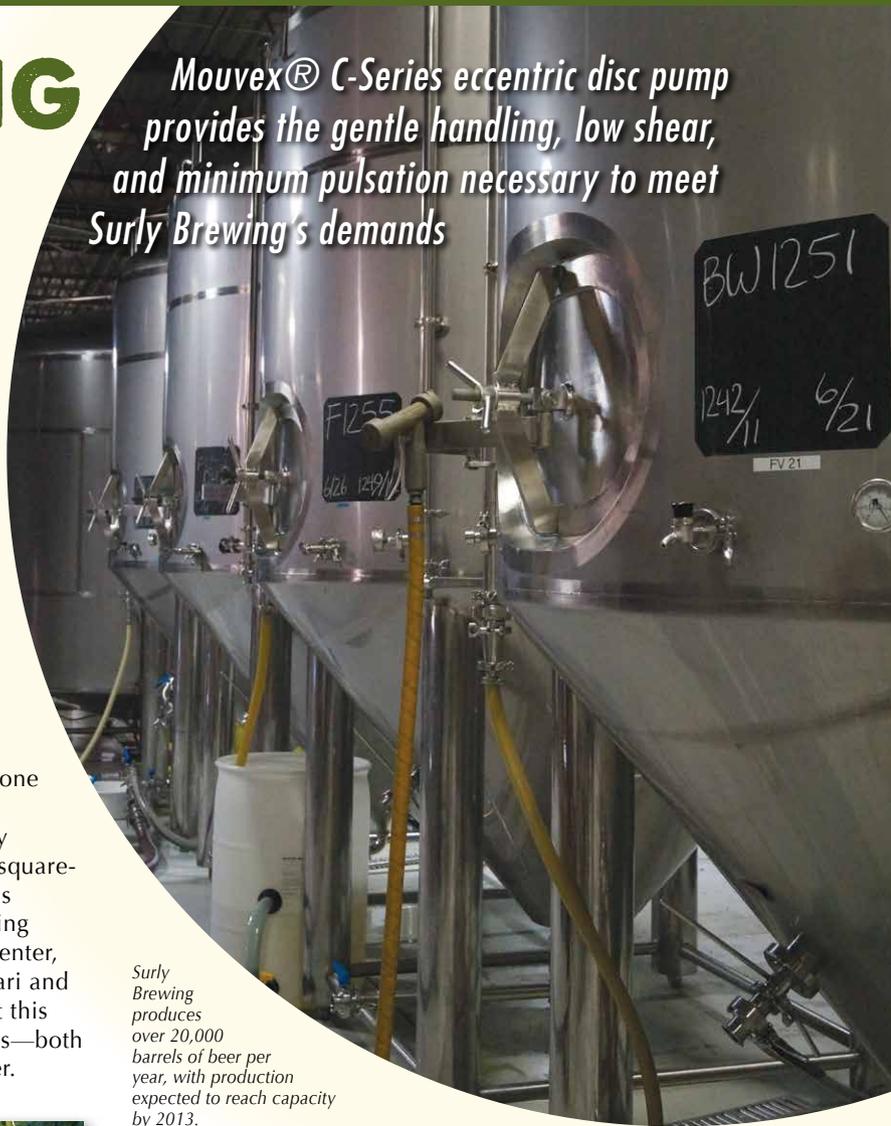


BRIGHTENING A SURLY BREWER'S DAY

Mouvex® C-Series eccentric disc pump provides the gentle handling, low shear, and minimum pulsation necessary to meet Surly Brewing's demands



Surly Brewing produces over 20,000 barrels of beer per year, with production expected to reach capacity by 2013.

By David Kirk, Mouvex

After a chance meeting at a craft brewers' convention, Omar Ansari began bouncing ideas off former middle school classmate Todd Haug. The result was edgy, Minnesota-based craft brewery Surly Brewing. However, their attempt to bring the residents of the Twin Cities good beer challenged everyone from local distributors to the Minnesota government.

One year of preparation went into the launch of Surly Brewing. Ansari converted his family business, a 5000-square-foot industrial facility, into a brewery. Other renovations included rebuilding the office area and installing a tasting room. Although Surly was ready, the city of Brooklyn Center, Minnesota, where breweries were illegal, was not. Ansari and other citizens persuaded the city to change the law, but this first legal victory was only a warm-up. Major challenges—both legal and technical—loomed for Ansari a few years later.



Surly Brewing is one of the fastest growing craft brewers in the Midwest, USA, with business increasing 32 percent from 2009 to 2010 alone.

OVERCOMING EARLY CHALLENGES

One of the first obstacles Surly Brewing had to overcome involved general installation issues. Specifically, Haug, now the head brewer at Surly, needed to take apart the stainless steel piping, which wasn't configured to meet Surly's needs. Once he welded the piping back together and assembled the brewhouse, he then had to figure out malfunctioning electrical panels—without the assistance of installation drawings. The second challenge involved finding their market. Ansari initially went out with hand-filled bottles to the local community, and after Haug tweaked his recipes, the Surly team was moving forward full steam within five months.

But one hurdle remained: legislators at the Capitol in St. Paul, who limited Surly's ability to scale up operations. The brewery had grown at such a fast rate (business was

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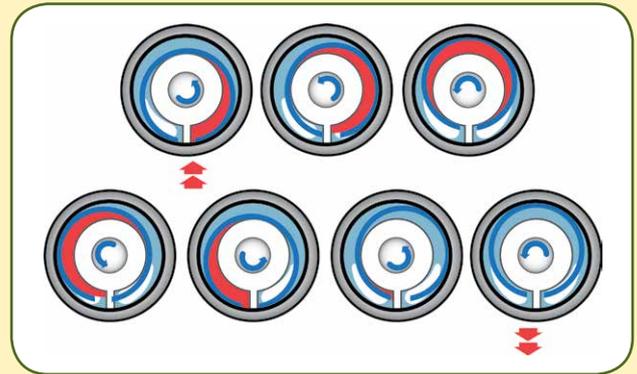
Furious, Surly Brewing's top-selling beer, will be available on tap when Surly opens its new brewpub in 2013.

up 32 percent from 2009 to 2010) that it was too big under Minnesota law to sell beer on its premises as a micro-brew. Surly was producing between 15,000 and 20,000 barrels a year—over four times what the law allowed to be classified as a small micro-brew. Overcoming an initial rejection at the Capitol, Ansari's lobby efforts—along with an extensive social media campaign by fans of Surly Brewing and other breweries—achieved the passing of the "Surly Bill" in 2011, allowing larger breweries to sell pints of their product onsite.

A COMPANY ON THE MOUV

However, while Omar Ansari was fighting battles outside Surly, Todd Haug was fighting battles inside. He had installed a new centrifuge in January 2012 but needed the correct pump to feed the centrifuge. Surly does not filter its beer and invests heavily in raw materials such as malt, which gives the beer body but also requires very delicate handling.

Eccentric disc pumps consist of a cylinder and pumping element mounted on an eccentric shaft. As the eccentric shaft is rotated, the pumping element forms chambers within the cylinder, which increase in size at the intake port, drawing fluid into the pumping chamber. The fluid is transported to the discharge port where the pumping chamber size is decreased. This action squeezes the fluid out into the discharge piping.



Mouvex Principle

Surly needs a pump that provides a steady push of beer into the machine. Diaphragm pumps aren't an option, as Haug needs something that does not introduce surges or pulsation of the product. "Centrifugal pumps could work but there's a lot of slip and impellers are flying through your beer no matter what's going on downstream. With that slip, your



pressure can go to zero and you get a pulsing effect,” Haug says.

The centrifuge manufacturer he purchased his unit from suggested a rotary lobe pump, as they are often recommended for Haug’s type of application. But Haug’s peers quickly discouraged that recommendation. “Everyone I talked to told me that rotary lobes would work but be prepared to spend thousands more rebuilding them on a regular basis,” he says.

C-SERIES ECCENTRIC DISC PUMP

Haug met with local distributor Jim Buerman from Edelman and Associates. After describing his needs, Buerman recommended a pump he had just started selling, but one that he was certain would meet Haug’s needs. “Todd wanted to purchase a pump with minimum pulsation and needed a pump that didn’t beat up the product,” says Buerman, who ultimately recommended the Mouvex® C-Series eccentric disc pump.

While Haug was intrigued by the pump’s capabilities, he needed proof. After all, he had never heard of a pump that could do everything Buerman



The Mouvex® C-Series eccentric disc pump helps Surly Brewing maintain consistency and quality by protecting yeast, proteins and malts against shearing.

described, and even his brewing friends around the country weren’t familiar with the pump from a craft beer standpoint. Buerman lent Haug the eccentric disc pump on a 120-day trial basis. He wanted to give Haug plenty of time to determine if this was the right pump for his needs.

After thirty days, Haug bought the pump. Two of the most important reasons behind the purchasing decision were the low shear and elimination of pulsation offered by the eccentric disc pump.

FROM SURLY TO HAPPY

Surly Brewing transfers delicate products

and needs a pump that is gentle to maintain consistency and quality. With the Mouvex eccentric disc pump, Surly is protecting its yeast, proteins and malts against shearing. "Everything moves real slow so you don't have everything spinning so fast that you're shearing proteins or anything, and it really seems to keep the centrifuge in-feed very happy," says Haug.

Low pulsation is a critical need as well. If the pump has pulsation, the centrifuge will shut off or it will prevent the centrifuge from operating efficiently. Another key advantage of the eccentric disc pump is its strong suction that enables it to extract all of the yeast from the tanks. This leads to less waste and increases yields by up to several barrels per batch.

"Now we're seeing consistent yield increases with the eccentric disc pump," says Haug. "Some of that is related directly to us being able to pump what's at the bottom the tank." He notes that centrifugal pumps, in this process, would lose prime and spin if the product wasn't flowing into the inlet side.

CLEAN AND SAFE

The eccentric disc pump is also helping Surly Brewing evacuate the tanks. The bottom of the tanks have sediments and it's very time-intensive for the staff to evacuate and clean them. Using the eccentric disc pump, Surly Brewing can divert the waste into a collection tank. Instead of just sending yeast down the drain, Surly Brewing is able to contain and eliminate the yeast with heat.

"The eccentric disc pump evacuates the tank in a safe, controlled manner because it's all under pressure. It allows us to get into a holding tank so we can do that. There are not a lot of pumps that will do that," Haug says.

Haug also likes the sealless design of the eccentric disc pump. The elimination of a seal protects the eccentric disc pump against air being introduced into the system, thereby oxidizing the beer. Rotary lobe pumps, by comparison, can be costly in terms of the time and money spent on maintenance due to seal failure. The eccentric disc pump is also mobile, which gives Surly Brewing the flexibility to move the unit as production shifts throughout the facility rather than being confined to one spot.

A BRIGHT FUTURE

The future is bright for Surly Brewing as it prepares to build its new production



Head brewer Todd Haug (pictured) prefers the Mouvex® C-Series eccentric disc pump over commonly used rotary lobe pumps because it provides the minimum pulsation and gentle handling required for Surly's beer.

facility in 2013. The growing craft brewer is expected to reach capacity at its Brooklyn Center facility around the

time their planned brewpub comes on-line. Surly Brewing will produce 20,000 barrels this year with its maximum of 30,000 barrels expected to be reached the following year.

But Surly Brewing is no stranger to overcoming obstacles. Since its inception in 2005, Surly Brewing has fought to overcome general start-up challenges, local and state governments, a tough economy, as well as a general public that wasn't quite ready for an edgy brew possibly ahead of its time.

Todd Haug acknowledges the important role Mouvex eccentric disc pumps will play in Surly Brewing's future growth as he expects to install more C-Series units at his new facility, and not just to feed the centrifuge.

"A lot of canning lines need consistent pumping in between the tanks and fills because they're high speed lines, and a disc pump would be perfect for that application. I would absolutely entertain more Mouvex eccentric disc pumps at the new plant," says Haug. "We don't need downtime. This pump just works and does what it's supposed to."

That type of consistency will brighten anyone's day—even the surliest brewer. ■