

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

By David Kirk



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

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

Introduction

"The anger fueled by the inability to find good beer." This is the rallying cry for edgy craft brewer Surly Brewing, the Brooklyn Center, MN, USA-based company that was the vision of one man who refused to accept the status quo, challenging everyone from local distributors and the Minnesota government – all in an attempt to help the residents of the Twin Cities find good beer.

Omar Ansari received his first homebrewing kit in 1994. His enthusiasm for making beer evolved over the next decade as he traveled the country sampling the best microbrews America had to offer. He enrolled at the American Brewers Guild in Vermont and concluded his beer apprenticeship at New Holland Brewing in Holland, MI, USA. However, it was a stop in San Diego, CA, USA – and a meeting with a former middle school classmate – that would change his life forever.

It had been 20 years since Todd Haug had seen his former classmate Ansari, but in 2004 at the Craft Brewers Conference, Ansari and Haug reconnected over their passion for creating a beer unique in the marketplace. Haug had been in the beer production business for 20 years at that point, having previously worked at St. Paul, MN, USA-based Summit Brewing as well as the Rock Bottom Brewery in Minneapolis, MN, USA. Ansari immediately stopped by Rock Bottom when the pair returned to Minnesota to bounce ideas off Haug.

"He started coming in to my old job, hanging out while I was brewing and talking about beer styles that we thought would work in the marketplace," recalled Haug. "It took me 3-4 months before I started to realize he had his stuff together to the point where I would consider helping him as a brewer."

One year of preparation went into the launch of Surly Brewing. Ansari converted his family business, a 5,000 square-foot industrial facility, into a brewery. Other renovations included rebuilding the office area and installing a tasting room. Although Surly was ready, Brooklyn Center was not. Ansari needed the city to legalize breweries. Eventually, the law was changed and this seemingly minor legal battle would serve as a nice warm-up for a major legal battle that loomed for Ansari a few years later.

Overcoming Early Challenges

One of the first obstacles Surly Brewing had to overcome involved general installation issues. Specifically, Haug 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 the electrical panels that didn't work correctly without the assistance of installation drawings.

The second challenge involved the market. Ansari initially went out with hand-filled bottles but the local community's response to the strong beer was lukewarm. Haug, now the Head Brewer at Surly, tweaked his recipes and within 3-5 months, the Surly train was moving forward full steam. But one hurdle remained and it involved Ansari fighting legislators at the Capitol in St. Paul.



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

Surly found out quickly that it would be limited by its inability to scale up operations. It had grown at such a fast rate (business was up 32% from 2009 to 2010) that it was too big under Minnesota law to sell beer on its premises. In order to sell micro-brews on-site but not distribute in liquor stores, breweries must stay under the production cap of 3,500 barrels a year. Surly at the time was producing between 15,000 and 20,000 barrels a year. Ansari enlisted the help of lobbyists and a public relations expert and challenged the law, but got a rude reception at the Capitol.

"Omar got beat up at the Capitol, but he kept pushing," Haug said. The factor that turned the tide in Surly's favor came from an unlikely source: social media. Fans of Surly Brewing and other breweries' fans started an extensive online campaign and contacted legislators. On May 25, 2011, the "Surly Bill" was passed, allowing larger breweries to sell pints in the brewery.

The irony of Surly's victory is that Brooklyn Center cannot issue Surly a liquor license because it's illegal. Other breweries have reaped the fruits of Surly's labor, and as a result, the brewing scene in the Twin Cities has exploded. Surly itself will be able to take advantage of the law change when it opens a state-of-the-art brewpub in 2013.

A Company On the Mouv

While Omar Ansari was fighting battles outside Surly, Todd Haug was fighting battles inside Surly. 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. Haug needed a pump that would provide a steady push of beer into the machine. Diaphragm pumps weren't an option, as he needed something that did 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 said.

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 said.

Haug met with local distributor Jim Buerman from Edelman & 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," said 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 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 30 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.

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," said Haug.

Low pulsation was 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



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



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

advantage of the eccentric disc pump is its strong suction that enables it to extract all of the yeast from the tanks. This has led to less waste and increased yields by up to several barrels per batch.

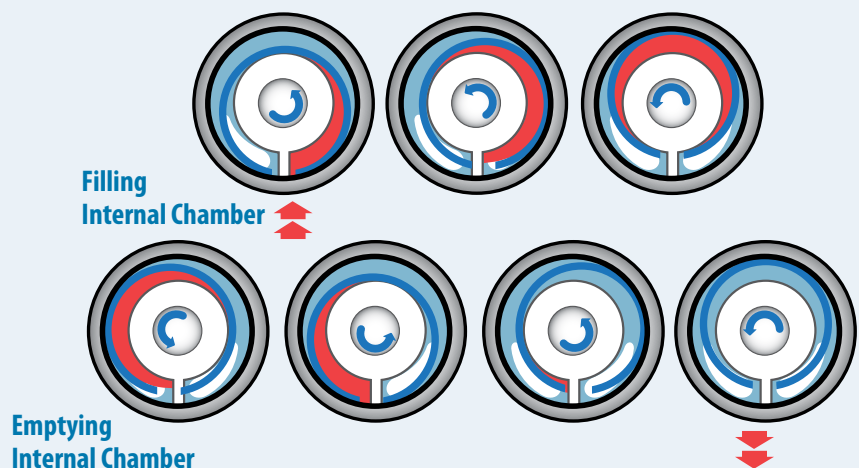
"Now we're seeing consistent yield increases with the eccentric disc pump," said Haug. "Some of that is related directly to us being able to pump what's at the bottom the tank." He notes that centrifugal pumps, in this process, would lose prime and spin if the product wasn't flowing into the inlet side.

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's not a lot of pumps that will do that, he said.

Mouvex Principle

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.



Haug also liked 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 facility in 2013. The growing craft brewer is expected to reach capacity at its Brooklyn Center facility around the time the new 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," said 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.

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