

STEAM
 GENERATORS

A 'full steam ahead' brewery charts new growth using Clayton steam generators

Boulevard Brewing Company achieves its dreams with the help of Clayton's advantages.



Advanced
 Steam Boiler
 Technology
 that Is Safe,
 Efficient
 and Reliable

Throughout the brewery, without steam you can't do anything," said Dali Grabar, director of engineering for Boulevard Brewing Company in Kansas City, Missouri.

Boulevard has been "full steam ahead" since its founding in 1988 by John McDonald, a young carpenter with a vision "to make big beers, a variety of beers, beers with color and flavor and aroma and body, beers for real beer lovers." It's a passion that began four years earlier with a trip to Europe, when by chance he wandered into a bar specializing in Belgian beers that were remarkably varied in style, compared to the homogenous varieties dominating America at the time.

It took a year and every penny he'd saved to retrofit his live-work space and find the right equipment. The first commercially

available brew was a keg of Boulevard Pale Ale, which John carted in the back of his pickup truck to a local restaurant. The next big leap was investing in a small, used bottling line. His business plan called for someday brewing as much as 6,000 barrels per year – aiming high! But by the third year sales passed 7,000 barrels and by 2004, Boulevard was turning out over 100,000 barrels annually and still growing.

Time for a steam upgrade

With growth came the need for a bigger building, new equipment, and more steam. Boulevard had come a long way using another brand's 125 BHP boiler, but by 2006 it was time for an upgrade. On his early travels in Europe to learn the brewer's craft, John found many breweries using steam generators made by Clayton

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**DALI GRABAR,
DIRECTOR OF ENGINEERING,
BOULEVARD BREWING COMPANY**

Industries, Inc. So when he delegated the task of selecting the new equipment to a plant engineer, he directed him to include Clayton on the list when asking for bids from boiler manufacturers.

"We lost the bid," said Mark Begert, senior sales engineer for Clayton Industries. "We don't win every round – and understandably there's a feeling of safety in the familiar. They went with another brand's conventional 400 BHP steam boiler...but it gave them headaches."

He continued, "A conventional boiler is like a tea pot, but bigger. It heats large volumes of water in a tank all at once, takes one to two hours to start making steam, and then when temperature drops it spends energy to re-heat. It doesn't react quickly to the fluctuating steam demand that is part of the batch brewing process. Not only is it inefficient in terms of floor space, time, and energy costs, but a conventional boiler can also have a steam explosion – a risk to both workers and property."

Boulevard's expansion led to more adventure with the soon-popular Smokestack Series – an ongoing brewer's challenge to innovate



Dali Grabar, Boulevard Brewing Company's director of engineering, with the Clayton 500 BHP Steam Generator

toward bigger, bolder beers. They continued to grow.

Expansion draws interest from Belgian giant

By 2014, news of Boulevard's success drew the attention of a Belgian icon of John's -- Duvel Moortgat, whose way with hops first stirred John's hopes to brew. It was a proud moment when the legendary company's fourth generation son and president, Michel Moortgat, invited

Boulevard to join the Duvel Moortgat family.

Brewing more beer meant another expansion, and a need for more steam. Given the problems with the last boiler, this time the plant engineer took a tip from Duvel, who had exceptional experience with Clayton's line of steam generators.

"We won round two – and once customers understand the Clayton advantages, they keep coming back," Mark said.

He explained: "Boulevard chose our SEG504-1, a 500 BHP design that has one third the footprint of their previous 400 BHP boiler. It's almost the opposite of the teapot idea. Clayton's steam generators are a once-through, forced water flow design that combines a steel helical coil heat exchanger, a positive displacement feedwater pump and a mechanical steam separator to produce steam on demand. It takes very little time to heat just the water you're going to use – typically 15 minutes maximum, so it's a rapid start up, and



Clayton 500 BHP Steam Generator and feedwater skid



Boulevard Brewing Company's Wheat carrier line

far more fuel efficient, too. And it's safe – there's no chance of a steam explosion."

Dali worked with an outside brewery equipment manufacturer on Boulevard's first expansion, which earned him an invitation to join the company the following year. During the second expansion he was on the team that brought the new Clayton online.

"My old boss decided we would give Clayton a shot. From purchase order to installation took 16 weeks. Once we installed it; it came on, no issues," said Dali. "It's a good team, Clayton. They didn't just make the sale and move on. They're responsive. 'You're our priority,' they told us, and we were. That really matters."

That promise was tested. "After startup we developed a strange issue," Dali said. "That's when we got a call from Mr. John Clayton – the owner of the company! He worked with us to diagnose the problem, we implemented his changes and now everything works perfectly. We loved the customer service, of course," he said. "It was fantastic!"

Steam touches every part of the brewing process

Dali described the uses of steam in the brewing process: "Before beer becomes beer, the base product of grain and water are mixed together in the brewhouse. You need hot water, so steam helps create that. After the malt is crushed, it has to be washed with warm water, which is a mix of hot and cold water, the hot water made with steam. The mash tank where these are combined has jackets on the outside that are heated by steam. You're always heating or boiling with steam. To clean the pipes after brewing is completed, you use a mixture of caustic acid and water that is run through a heat exchanger system – again, the heat is created by steam."

Dali added, "Early on, when we began to put our new equipment through the paces we used only 30% of its capacity. Now we're utilizing 50% to 70%. Long term we'll add another 500 BHP Clayton and get rid of the old 400 BHP that gave us headaches."



Mark Begert, Clayton senior sales engineer (left), with Dali Grabar at Boulevard's new Clayton steam generator

Boulevard Brewing Company seems destined for continued growth. Constantly innovating, Boulevard now brews new lines of craft cocktails and "spiked and sparkling" seltzers, both made with fruit and other premium ingredients that require special handling, and steam is an essential player. Dali noted, "If you're using fruit you have to flash-pasteurize it, which requires the heat treatment."

"Steam touches every part of the process," he said. 🍺



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800.423.4585

sales@claytonindustries.com

17477 Hurley Street

City of Industry, CA 91744

www.claytonindustries.com