



## CASE STUDY: 009

- ▼ CUSTOMER: PABST BREWING COMPANY
- ▼ FULTON REP: HEAT & POWER PRODUCTS, INC.
- ▼ MARKET: BREWING & DISTILLATION
- ▼ APPLICATION: PROCESS STEAM
- ▼ EQUIPMENT: VSRT-30 (30HP)

## ELITE NEW BOILER REIGNITES AN AMERICAN BREWING TRADITION

TRANSFORMATIVE VSRT-30 BOILER  
AT HEART OF NEW PABST CRAFT  
BREWING OPERATION



*Part of a 21-acre former Pabst complex, Milwaukee's first German Methodist Church, built in 1874, now houses Pabst's new brewery, taproom and restaurant, called Pabst Milwaukee Brewery.*

In April 2017, Pabst Brewing Company opened a brewery, taproom and restaurant on the site of its former home in downtown Milwaukee: the first German Methodist Church, built in 1874.

In doing so, they reignited a tradition of excellence that began for the company 173 years ago—one that required great attention to detail every step of the way.

At the outset, this included careful selection of the equipment needed to heat water used to steep the grains. It required the purchase of a good boiler needed to make a good brew.

## WHY FULTON'S VSRT?

John Kimes, Senior Staff Brewer, and Jerry Lalla, Project Manager, were the people at Pabst responsible for purchasing boiler equipment, and they had three major needs:

- ▶ Fitting very tight space constraints (9'6" by 6'4") due to historic preservation work being done.
- ▶ Providing necessary steam output ranges based on varying loads.
- ▶ Operating at low pressure to forego the requirement of a high-pressure boiler license.

*"Fulton really stepped up to bring us some out-of-the-box thinking with a solution that has really provided excellent steam for us."*

Because of the complexity of these boiler requirements plus the need to purchase ancillary equipment, Pabst relied on their sales representative, Steve Marks at Heat & Power Products, to assist with the system design.

The solution was Fulton's revolutionary new Vertical Spiral Rib Tubeless (VSRT) Steam Boiler, a 30-HP model, showcased at the 2017 Craft Brewers Conference.

*"Everybody at Heat & Power Products and Fulton really brought their A-game and helped us come up with this solution."*

"Just when we were hitting dead-end roads with other manufacturers in trying to find a unit that would provide the capacity and footprint we need, Fulton really stepped up to bring us some out-of-the-box thinking with a solution that has really provided excellent steam for us," said John.

"This was not a solution we picked off the shelf. It resulted from hours of phone calls with Heat & Power and our general contractors."

"Everybody at Heat & Power Products and Fulton really brought their A-game and helped us come up with this solution."



▲ Fulton's VSRT-30 boiler shown on skid with ancillary equipment shipped custom-wrapped in iconic PBR can graphic as part of special promotion.

## INSTALLATION EASE

The VSRT—having one of industry's smallest footprints—was installed as part of a custom-engineered design that came fully piped and wired. The system included two ancillary steam components: a VT-30 feed water tank and a F-30 blowdown tank. The boiler itself was also custom wrapped by Fulton in the iconic logo of Pabst Brewing's signature brew.

Said John, "Because you guys had this skid-mounted system that was compact enough to fit through the doorway to get into the boiler room and maintain the legal distances needed—that's what drove our decision. Especially if we had to do any major repairs or replacements, without having to tear the building down. This boiler gives us the ability to do that service work."

*"... this skid-mounted system that was compact enough to fit through the doorway ... that's what drove our decision."*

The installation of the boiler itself was “seamless.” Between getting the piping installed and the boiler set, only two people were required to move the VSRT on a pallet jack.

“We were able to put it in place quickly and easily. No problems, whatsoever,” said John.

*The installation of the boiler was "seamless."  
... only two people were required ... "We were able to put  
it in place quickly and easily. No problems, whatsoever."*

## GREAT VERSATILITY, EFFICIENCY, STEAM QUALITY

Once installed, the VSRT creates the steam heat that is fundamental to brewing quality beer (specifically, several new craft beers based on Pabst's archived recipes).

With industry-leading 86% operating efficiency, and 6:1 turndown to meet a wide range of varying steam loads, the Fulton VSRT efficiently delivers the highest-quality saturated steam (rated at greater than 99.75% dry) to three different tanks/kettles used in Pabst's beer brewing process:

- ▶ Hot liquor tank – Heats water to very specific “strike” temperatures before transfer to the mash kettle.
- ▶ Mash kettle – Mashes (soaks) grains in hot water to convert their starches into fermentable sugars, creating a liquid mix called “wort.” The mash kettle is heated to a series of different “step” temperatures to facilitate starch conversion.
- ▶ Boil kettle – Further boils and refines wort such that, with the addition of hops and other flavorings, it can then be fermented.

The VSRT is also used as part of Pabst's steam sanitation cycle. Pabst uses 180° F water from their liquor tanks to sanitize their kegs.

*“... other companies that we looked at that met our  
footprint limitations would not have been able to keep up  
with running multiple steam applications at the same time.”*

- ▼ Heated by the VSRT, these kettles are used to mash (soak) various grains in hot water to break down their starch into sugars that are then fermented and matured to create beer.



## LITTLE BIG BOILER

The VSRT-30 is an impressive 40% smaller than the current, industry equivalent 30-HP boiler, as shown above. The design is small enough to fit through a standard doorway.

The VSRT-30 embodies the newest and most cutting-edge design in steam boiler technology by providing the industry's smallest footprint with a revolutionary ultra-compact vertical design.

Said John, “The VSRT is used for heating our hot liquor tank, heating our mash kettle, and heating our boil kettle, all at the same time.” Just being able to keep up the steam to run all three of those was important.”

“Some of the other companies that we looked at that met our footprint limitations would not have been able to keep up with running multiple steam applications at the same time.”

## CONCLUDING REMARKS

In the highly competitive craft beer industry, consistent, high-quality steam is a critically important factor in delivering a consistent, high-quality product.

*"... [the VSRT] has provided us with extremely reliable, extremely good, clean steam."*

"Steam quality, especially when we are in our boil, needs to be solid and consistent. If that varies, then we'll get inconsistent boils as we're making the beer," said John.

"And for our packaging, we rely on the steam to do the full sanitization that we need for shelf life on our kegs.

"This ensures we can hit our best-buy dates. It directly correlates to the quality of the steam that we have feeding our brewery.

"This unit [the VSRT] has provided us with extremely reliable, extremely good, clean steam."



▲ *Notable craft beers served in Pabst's taproom that are made with Fulton VSRT-30 steam are Pabst Andeker, Nor'Eastie Boys IPA, Forst Keller Beer, and Sticky Fingers Honey Wheat.*

## FULTON STEAM SOLUTIONS, INC.

Fulton Steam Solutions is an American company headquartered in Pulaski, NY. Backed by over 65 years of research, innovation and experience, Fulton designs and manufactures heat transfer equipment for a wide range of commercial and industrial applications.

## RELEVANT LINKS:

Pabst Brewing Company  
[www.pabstmkebrewery.com](http://www.pabstmkebrewery.com)

Heat & Power Products, Inc.  
[www.heatandpowerproducts.com](http://www.heatandpowerproducts.com)

Fulton products for brewing and distillation:  
[www.fulton.com/brewing](http://www.fulton.com/brewing)

Find your local sales representative online at:

[www.fulton.com/sales](http://www.fulton.com/sales)



/FULTON-COMPANIES



/FULTONBOILER



@FULTONBOILER



Fulton Steam Solutions  
972 Centerville Road  
Pulaski, NY 13126  
(315) 298-5121



Find your solution at:  
[www.fulton.com](http://www.fulton.com)

CS-009\_PABST\_2017-1026