



## Innovative High-Efficiency Chiller Puts an End to High Energy Costs

**Badger Meter sees their department energy costs dip by an average of 70 percent after installation of a new and advanced chiller with floating-head technology.**

### CUSTOMER

Badger Meter is a leading provider of innovative flow metering and control solutions for smart water management, buildings, and industrial processes.

### CHALLENGE

The company's current chiller utilized inefficient fixed head technology, leading this environmentally-focused company searching for a better solution.

### SOLUTION

After several consultations with Sterling on a new type of chiller technology with superior energy efficiency potential, the company agreed to participate in a beta test installation.

### RESULTS

After installation of the new HE Chiller that uses floating-head technology, the company saw energy savings that will exceed \$20,000 per year, well over the original \$12,000 estimated savings.

*Badger Meter puts a high value on forward thinking and innovation throughout the company. So, when assessing their options for a new chiller that was both reliable and energy-efficient, their team wanted something new and different. What they got exceeded even their own lofty expectations.*

When you have an outdated piece of equipment on the manufacturing floor, your entire operation is impacted every day. In some cases, that translates into higher energy costs. When Badger Meter determined their existing chiller system in Milwaukee, WI used too much energy, they consulted with several vendors but found Sterling stood out in their approach to finding a cooling solution.

“The Sterling team came into the room with a different concept than the other vendors we talked to,” says Brian Rogers, Facilities Manager. “The concept was that this thing should be running 24/7, 365 days a year, and it should be running as efficiently as possible. As simple as that concept is, it’s not what everybody else brought to the table. Other vendors had more affordable chillers or custom products to fit our space, but nothing that was very energy-efficient or exceptionally forward-thinking.”

What the Sterling team presented was a unique industrial chiller that:

- Leveraged highly efficient next-generation floating-head technology
- Took advantage of lower ambient temperatures to reduce energy usage
- Accounted for load fluctuations in real-time
- Featured a highly reliable redundant, modular design that could virtually eliminate downtime
- Could expand an operation and scale up to 600 tons of cooling capacity

## ENGINEERING A BETTER COOLING SOLUTION

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“We liked the fact that the Sterling team started from ground zero and weren’t afraid to go beyond some of the more conventional concepts for chillers,” says Rogers. “It was evident that they felt they had a product that could cool our operation much more energy efficiently at the same or a lower cost with better results. It wasn’t just the same old thing. They used an intelligent approach to design that achieved something different with this type of equipment at every stage. From the fans, to the dry cooler, to compressors, it was clearly a better solution.”

At the core of this new chiller is floating-head technology. Although this technology has been around for a while, the Sterling team determined that new advancements in electronics, valves, and motors would make it a viable solution for industrial chillers. For example, newer electronic expansion valves (EEVs) allow for pressure and temperature readings to be sent to a controller that can instantly adjust the valve based on operating conditions. EEVs are a key component that enables condensing temps to “float” based on the ambient cooling water or air temperature, as well as load.

Leveraging ambient temperatures can yield substantial savings, especially during the cooler fall, winter, and spring seasons. As well as lower overnight temperatures. This innovative approach is in stark contrast to conventional fixed-head chillers that keep condensing temperatures at a fixed point, regardless of cooler ambient temperature or varying loads. This runs the compressors at full capacity, utilizing a hot gas bypass valve to control actual capacity needs. The way these chillers work has been compared to driving your car at full throttle and controlling your speed with the brake. This cooling approach can cause some pretty serious issues for any manufacturing operation:

- Higher energy costs
- Increased maintenance costs (due to higher stress on mechanical components)
- Shorter equipment lifespan



*To learn more about the technology that makes these savings possible, reference the '3 Steps to Achieving High-Efficiency Chiller Performance'*

## BENEFITS THAT MAKE A DIFFERENCE

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“The new Sterling chillers are doing exactly what we want them to do,” says Rogers. “Best of all, we’re realizing savings that are much greater than we originally thought we would get. I’m looking at five months of data and a spreadsheet with 33,000 data points on our energy use, and it’s incredible the amount of money we are saving.”

As vital as energy savings were to the Badger Meter team, reliability is THE top priority for the company. Their decision to embrace new chiller technology was also empowered by the product’s redundant design allowing for other chiller modules to instantly compensate if another module should go down. Their experience with the Sterling’s service and support team was also a deciding factor.

“I don’t care how much I’m saving if I have to call service all the time,” says Rogers. “Plus, when I did have a question or issue, the Sterling service guys came in the door with answers and the right problem-solving attitude. It was refreshing.”

*“It’s crazy, these are some of the lowest energy usage numbers I’ve seen. Energy is a big part of the cost of producing a part. Having this kind of chiller technology helps us to ensure our products are profitable for us.”*

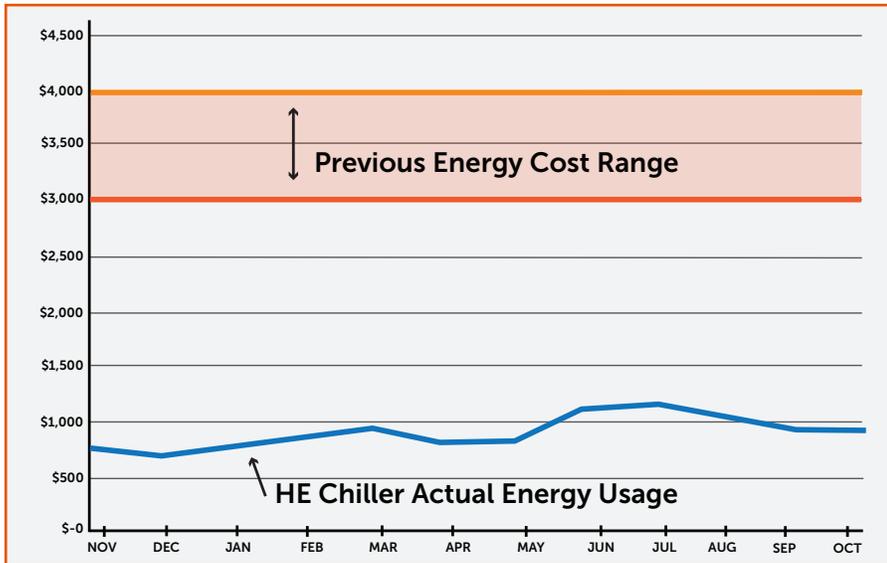
*-Brian Rogers, Facilities Manager*

## RESULTS THAT GO BEYOND

Original estimates for the groundbreaking Sterling floating-head chiller system were in the \$12,000 range for annual energy savings. However, after a few months of beta testing, the data showed that the company could realize savings of nearly \$2,000 a month bringing the annual savings much closer to \$20,000, possibly more depending on ambient temperatures and load. This equates to an annual energy savings of 70 percent per year.

“It’s crazy,” says Rogers. “These are some of the lowest energy usage numbers I’ve seen. Energy is a big part of the cost of producing a part. Having this kind of chiller technology helps us to ensure our products are profitable for us.”

### Energy Cost Comparison



### Benefits by the Numbers

**Estimated energy savings of \$20,000 for 2019**

**Average savings of \$1,983 per month**

**Experiencing up to 70% energy cost savings**

## CAN YOUR COMPANY ALSO SAVE UP TO 70% ON ENERGY COSTS?

We can help you determine how much your company may be able to save on energy costs using the latest proven advancements in industrial chiller technology.

For more information, visit [www.sterlco.com](http://www.sterlco.com). Learn more details about the latest in innovative chiller technology in this [new white paper](#).

To arrange a free onsite consultation, you can reach us by email at [marketing@acscorporate.com](mailto:marketing@acscorporate.com).



### ABOUT STERLING

Sterling is the frontrunner in temperature control units for plastics and industrial applications. For more than 100 years, Sterling and the Sterlco® brands have been synonymous with dependable temperature control for applications in plastics, food and beverage, pharmaceutical, and many other industries.

Sterling has grown to be a market leader across a broad range auxiliary equipment for the plastics industry, leading the way in chillers and process cooling, material handling, and granulators.

For more information, visit [www.sterlco.com](http://www.sterlco.com) or call 262-641-8600.