



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

Department energy costs dip by an average of 70 percent after installation of a new and advanced chiller with floating-head technology.

CUSTOMER

An innovative manufacturer specializing in water flow and management equipment with in house injection molding machines.

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 AEC 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.

A Wisconsin based manufacturer with internal injection molding 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When you have an outdated piece of equipment on the manufacturing floor, your entire operation is impacted every day.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 the company determined their existing chiller system used too much energy, they consulted with several vendors but found AEC stood out in their approach to finding a cooling solution.

“The AEC team came into the room with a different concept than the other vendors we talked to,” says 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 AEC 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

“We liked the fact that the AEC team started from ground zero and weren’t afraid to go beyond some of the more conventional concepts for chillers.” “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 AEC 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

“The new AEC chillers are doing exactly what we want them to do,” says Facilities Manager. “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 company, 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 AEC’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 Facilities Manager. “Plus, when I did have a question or issue, the AEC 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.”

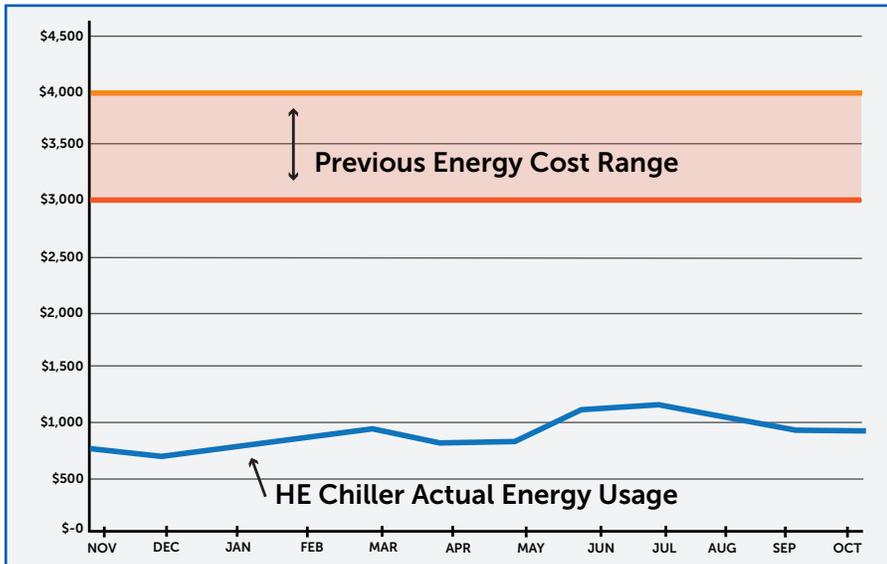
-Facilities Manager

RESULTS THAT GO BEYOND

Original estimates for the groundbreaking AEC 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.

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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.aecinertnet.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.



ABOUT AEC

For over 60 years, AEC has been the market leader in auxiliary equipment for the plastics industry, providing leading solutions in material handling, process cooling, and size reduction. AEC’s expertise in process cooling solutions, serves not only the plastics industry, but also food processing, pharmaceutical, metal working, printing, and a wide number of other markets. Our robust product line of temperature control units, chillers, pump tanks, and cooling towers, ensures your factory has the right solution.

For more information, visit www.aecinertnet.com or call 262-641-8600