

Member Profile

Swanson Flo-Systems and BioFuels Automation



“When it’s your business model to drive by all other process facilities and concentrate on ethanol, you’re able to dig deeper and become more involved with the business successes of your customers.”

Proud of their consistent determination to adapt to a growth industry’s every need, the professionals behind Swanson Flo-Systems and its spin-off company BioFuels Automation believe they represent solutions suppliers unequaled in today’s ethanol market.

Swanson Flo-Systems began humbly in Hopkins, Minnesota in 1961 as the Thomas B. Swanson Company selling Worcester ball valves to process industries in the upper Midwest. At that moment in history there were only a few paper mills, 3M Company, and General Mills in that slim category. After years of paying close attention to its customers’ needs, consistent, steady growth was the result.

When Tom Swanson, Sr. was ready to retire in the early 1990s, Tom Howe, an executive from the agricultural fertilizer industry, bought the company. Shortly thereafter, legislators in St. Paul crafted the country’s first oxygenate mandate and ethanol production incentive package, setting off what the company sees as the most significant single-industry growth story in the history of the industrial process era. Howe’s close attention to and in-depth understanding of the agricultural economy positioned his company to excel.

By 1994 Swanson Flo-Systems had assembled an entire package of products for the burgeoning dry grind ethanol industry. This collection of products ranges from a complete valve package, a whole plant measurement instrumentation offering, as well as engineered process control systems.

“Back then, during the lean years, we understood the economic cycles of the cooperative-based business model and the fluid process industry,” Howe said. “This allowed us to manage risk and stay the course when some groups struggled with finances and the banks were not participating fully.”

Howe’s vision was well rewarded as he continued to acquire fellow companies and product lines.

“But, it’s really all about the people in our organization that turn the crank,” he added. “I believe in challenging and empowering my employees to search out logical growth opportunities where we can bring real value.”

One key player within the company is Hans Alwin who was acting as Swanson Flo-System’s Project Manager across all territories and industries.



“Eventually,” Alwin explained, “the projects I was working on were 99 percent ethanol related. The more we understood about the technical applications within the process model, the more I kept imagining an even more dedicated business unit to bring additional services. We never doubted the rampant growth within the industry. Much of my time was spent convincing manufacturers we represent to increase production volume and factory capacity to keep up.”

In 2005, Howe and Alwin launched BioFuels Automation to be the renewable fuel industry’s only dedicated automation and consultation organization.

“It’s been almost liberating to have the opportunity to focus on serving a single industry’s needs,” Alwin said. “When it’s your business model to drive by all other process facilities and concentrate on ethanol, you’re able to dig deeper and become more involved with the business successes of your customers.”

This approach has been a highly successful one, seeing the company through employee growth from 18 people in 1991 to 73 professionals today. Along the way they launched Swanson Process Services to provide factory authorized warranty repair services, calibration services, and training. The shop operation at the Plymouth, Minnesota-based corporate facility currently assembles, tests, serializes, and ships 900 actuated isolation valves each month with a staff of 15.

“Our primary mission from the production group involves never holding up a project due to a delay we can control,” Howe said. “We’ve taken it upon ourselves to impact global supply chain management in the category of product we handle to help ethanol producers get running. We are literally driving the pace of casting foundries all over the world. Without our role in forecasting, ethanol plant builders would never stay on schedule.”

Early last year General Manager Sid Sondag came aboard to lead the BioFuels Automation team and roll out new services. BioFuels Automation University hosts a Performance Plus Ethanol Maintenance Training course each quarter.

“We’ve identified a critical void that interferes with maximizing process profitability that is almost completely avoidable,” Sondag said. “The rural geography and sheer numbers of available technicians required combine to create a major challenge for general managers at the producer level. There are so many plants coming on line and so few candidates to fill technical positions, we felt it was paramount to do our part to consistently train all who would attend. The Performance Plus course has proven to be a great success thus far, and we are always considering ways to expand availability for the industry.”

Other initiatives within the BioFuels Automation group include process optimization solutions that serve to increase revenue for its customers. Many of the ideas and solutions they bring forth are proven techniques other process industries have incorporated to increase process efficiency. Since the product package ranges from the main host control system through a broad range of field devices, they are able to turnkey comprehensive solutions.

For example, they consult with users regarding Advanced Process Control software and simulation solutions that layer over the existing control system host to squeeze out energy and alcohol conversion efficiency. Another key offering involves working with production management personnel to analyze the low hanging fruit in terms of process bottlenecks. In response, they create skid-based problem solvers to address the need. BioFuels Automation has patents pending on process skids that solve common problems around the Clean-in-Place (CIP) disinfection equipment, the Fermentation

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Nutrient Injection equipment, and the Bulk Handling Logistics and Analysis equipment.

The company notes that the Causti-Clean CIP skid removes all human error from the task of fermentation disinfection while improving the quality of the cleaning cycle. This leads to lower sodium hydroxide usage and a marked increase in beer conversion, leading to increased ethanol yield. The Nutrient Injection solution packages methods for delivering ammonia- or urea-based

nitrogen to the fermenters with a consistent, effective, automated approach. The Bulk Handling Logistics and Analysis product, which is just hitting the market, addresses the feedstock inputs and load out management for all commodities on campus.

"With the advent of cellulosic and biomass-based ethanol production, managing and analyzing these inputs and outputs becomes extremely critical to the bottom line," Alwin said.

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“Our organization specializes in ethanol and biodiesel project execution,” Sondag said, identifying BioFuels Automation’s key value proposition in this way:

“The most costly moment in the life of a renewable energy project is the last month of construction when subsystems are tested and brought up to processing capacity. We have experienced this exciting phase over one hundred times in the last 15 years. Understanding and anticipating all the possible challenges during this phase of a project can absolutely determine whether the project will be considered a success or not. There are very many projects around the country right now whose start-up is delayed or side tracked due to situations that weren’t anticipated and therefore not planned for. Our group has invaluable and unique experience to assist in avoiding these costly delays. Usually premium dollars are spent to correct an error and then the financial pain is compounded by loss of process revenue.”

The Swanson Flo-Systems and BioFuels Automation professionals see a major trend in the biomass initiatives currently underway. Both as an energy replacement for natural gas fired facilities as well as biomass-to-ethanol conversion technologies. They have worked on several gasification projects in this category already.

“It’s such a logical shift in renewable fuels processing,” Howe commented. “The challenges with corn supply and demand would be all but eliminated, and the availability of excellent biomass resources in regions of the country that can’t grow corn combines to reveal a bright future with this technology. It’s our mission to stay in tune with the best approach alternative fuel trends so we can continue to provide value to this critical industry. The current tenuous global fuel supply balance will continue to be an evolution of the best available technologies. The only fact we understand is that demand for fuel will increase dramatically for

at least another decade. Our planet will need all the fuel from any source to keep up. We’re very proud of our affiliation with the American Coalition for Ethanol.”

For more information:

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