

Innovative Fluid Solutions

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Centrifugal, screw, positive displacement, gear—if there's a need, there's a pump. Used in every industry, pumps need to be able to handle everything from clear liquids to abrasive slurries. According to the Hydraulic Institute, pumps use approximately 20 percent of the world's energy, so efficiency ranks high on the priority list. The variety of demands on pumps requires innovative, custom solutions.

“Virtually every pump we manufacture is a custom product designed to meet the exacting requirements of a specific customer application,” says Margaret Gan, ITT Corporation, Industrial Process Business. “By working across industries like chemical processing and general manufacturing, we have a large store of pump expertise and process knowledge.”

The first to introduce the iron water well pump in 1849, ITT Goulds Pumps has a few years of experience providing unique solutions for manufacturers. In 1997, Goulds Pumps was acquired by ITT Corporation, forming the largest pump company in the world.

ITT PumpSmart Control Solutions is one unique solution that pump manufacturers have introduced. Able to match pump output to the current process demand, PumpSmart variable speed systems can reduce overall energy consumption and protect against high operating pressures.

“PumpSmart controls and optimization logic help customers in a wide range of industries to prevent failures, improve pump reliability, dramatically reduce energy costs, and maximize the flow economy of process systems,” Gan says.

Up to 50 percent of a pump's energy usage is wasted as heat, noise, and vibration—increasing wear, failure rates, and unplanned system downtime. PumpSmart is able to eliminate much of this waste with its industrial duty drive and embedded control intelligence software, which protects from operating loads that can lead to failures by controlling pump speed and warning operators when operating loads approach pump capacity.

“PumpSmart variable frequency drive solutions offer automatic pump control by integrating the pump controller in the drive,” Gan says. “No external controller is required, making PumpSmart a simple and cost-effective solution for applications that benefit from variable speed pumping.”

Green Tech

Reducing energy consumption and waste also has important environmental benefits, a mainstay of Thompson Pump research and development.

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“There have been numerous pump innovations and improvements in recent years, including improvements to create higher efficiencies and better fuel consumption rates,” says Kirsten Petersen Stroud, marketing manager with Thompson Pump. “And, of course, we spend a lot of time on our green technology.”

Eliminating the need to fill the pump hosing with water to obtain the initial prime startup, Thompson Pump’s Enviroprime system was developed for applications where a project site can’t be contaminated by pumped fluids. A recent eco-friendly innovation is the Oil-less Vacuum Technology Priming System, which allows for dry running.

School In Session

New technology in the pump industry won’t be beneficial if manufacturers don’t know what it does or how to best utilize new solutions. Thompson Pump’s Pumpology School was designed to provide support for pump users.

According to Stroud, “Pumpology School offers hand-on demonstrations and classroom training from industry experts. Our Pumpology School is designed to educate attendees in the practice of Pumpology—enabling them to better identify pump applications, learn troubleshooting and service practices, and provide greater support for pump users.”

Offered complementary, twice a year, Thompson’s Pumpology School focuses on keeping professionals apprised of the latest developments in pumping technology.

“There have been numerous pump innovations and improvements in recent years, including improvements to create higher efficiencies and better fuel consumption rates,” Gan says. “We are committed to leading-edge research and development, with many new products in the pipeline.”

Reinventing The Wheel

With pump manufacturers working across a variety of industries, from pharmaceuticals to water treatment plants, there are a number of considerations when planning a new pumping system. Each pump has a specific purpose, with a specific best efficiency point rate of flow and total head, and optimum operating temperature and liquid viscosity.

“The challenges are in learning from what we’re doing,” says Greg LaMontagne, sales manager with Randolph Austin. “Customers have challenged us to have a better product. We’ve been constantly trying to improve on not just the way the pump head works, but the overall function of the package—the pump, the motor, the drive—the whole nine yards.”

A provider of custom and standard pumping solutions, Randolph Austin considers the controls, motors, and housing when revamping its pumps to better fit the markets they go into. To better control the design, process, and quality of its pumping components, Randolph Austin is approximately 90 percent integrated.

“We do our own machining and our own design and our own assembly of the pump

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head components,” LaMontagne says. “That’s always been the way we’ve done things.”

With the industrial sector continuing to expand, the demand for custom and efficient pumping systems is growing. Pump manufacturers are meeting that demand with evolving research and development programs, environmental-friendly innovation, and more efficient technologies.

Says LaMontagne, “We’re reinventing the wheel all the time.”

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