

CASE HISTORY**FOOD SERVICE: IN-PLANT CLEANING**

HYDRA-CELL® PUMPS DELIVER SIGNIFICANT ENERGY SAVINGS FOR IN-PLANT CLEANING APPLICATIONS

TECHNICAL PRODUCTS AND SERVICES

(Columbia, NJ), a company specializing in hydraulic applications and fluid handling products, was issued a challenge — build a centralized, high pressure in-plant cleaning system for a large, multinational customer in the food processing industry.

THE CHALLENGE

The goal of the project was to develop a drive and pump system capable of complying with the food processing industry's strict regulations for hygiene and continuous hot water pressure applications.

THE APPLICATION

In the food processing industry, a typical in-plant cleaning system operates continuously to maintain system pressure whether cleaning is occurring or not! During the food processing shifts, only 25% of the flow output of the system is required. That equates to 75% wasted energy. The only time 100% of the flow is required is during the complete plant cleaning and preparation phase. Not only is the plant wasting energy to maintain system pressure, it is also reducing the life of the supply pumps. The results are higher maintenance costs and increased downtime. Combine the wasted energy and added maintenance and repair costs and the result is a very costly, inefficient in-plant cleaning system.

THE SOLUTION

The answer came in the form two H25 Hydra-Cell® pumps capable of delivering 40 GPM at 1000 PSI.

Using Hydra-Cell pumps enables 100% turndown, which means that the pumps can maintain line pressure at zero flow. This is a significant improvement over the customer's previous system that reduced pump life by having them run constantly at full flow and pressure in a continuous by-pass loop. Another benefit of the Hydra-Cell pump is its ability to run dry without damage.



Since the customer's feed tank would occasionally run dry, this unique feature of the Hydra-Cell design helped eliminate expensive pump repairs.

THE RESULTS

Among the most significant improvements to the new system is the fact that the pumps can be operated at the torque required to maintain the "set condition" which, for this customer, is 850 PSI. With the previous system, the customer ran the pumps at full flow and pressure without nozzles in use. Now, when the individual cleaning stations are activated on and off, the drive signals the Hydra-Cell pumps to maintain torque, which relates to system pressure, speeding them up or slowing them down as necessary.

Best of all, and a key factor behind the re-design, the new system requires significantly less energy to power the motor. In fact, when zero flow is required and the

system is just maintaining system pressure, the energy consumption is roughly equivalent to the amount of energy used to power a 100-watt light bulb. This new and innovative system addressed the customer's corporate directive to decrease plant energy consumption and reduce repair and maintenance costs associated with the current in-plant cleaning pump system.

Since system installation, the results have been dramatic. The customer has greatly reduced costly system service and the plant no longer consumes the maximum amount of energy. The energy consumption is based on plant demand for flow rate. Currently, this multinational food processing facility is realizing a reduction in energy consumption of approximately 84%, or about \$24,000 annually in kWhr costs alone.

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Hydra-Cell[®]
Industrial Pumps



Wanner Engineering designs, manufactures and globally distributes industrial grade pumps that utilize a variety of methods and configurations to best meet the pumping needs of a wide range of industries and applications.

We offer a choice of seal-less positive-displacement pumps (Hydra-Cell), seal-less diaphragm metering pumps (Hydra-Cell Metering Solutions), peristaltic pumps (Vector) and non-metallic centrifugal pumps (Stan-Cor).

Our array of pumping technology enables Wanner Engineering to provide a solution that is perfectly suited to your pumping needs including viscosity, corrosion and abrasion resistance, footprint, drive-type, accuracy and discharge pressure.

For pumps without peers, don't just go with the flow. Insist on solutions from Wanner Engineering.

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