FloEFD^{Pro} Helps Watts Industries Netherlands Reduce Design Time

MECHANICAL ANALYSIS
Engineering Fluid Dynamics

Design Challenge

Contamination of drinking water could prove disastrous. Watts Industries Netherlands B.V. manufactures and markets backflow prevention devices and automatic control valves for domestic, commercial and industrial uses of water. These control valves and protection devices typically have to satisfy up to 15 separate hydraulic functional requirements such as minimizing pressure loss, providing high-pressure relief, avoiding cavitations and “water hammer” etc.

In the past, Watts’ research and development process consisted of creating physical prototypes for all design options. The process took 1 to 2 weeks for creating a new model and building a real-life prototype made out of brass. Testing the new model on the test rig took an additional 1 to 2 weeks thus resulting in a turnaround time of about 2 to 3 weeks for each new idea tested. But with an ever expanding catalogue of products to build and test, Watts realized that they no longer had the luxury of time.

Solution and Benefits

Within the first 10 months of using FloEFD, Watts was able to build and test 1 to 2 virtual prototypes a day. They now use FloEFD 24 hours a day. This is a significant improvement especially as they now develop such a wide range of products instead of just one or two products. “Testing, which used to take 2 weeks, now takes only one day; therefore, our production schedule has shortened dramatically” said Mr. Aarntzen.

In addition, the team of experts at Watts has gained new insight into their designs. “Our team has more than 40 man-years of empirical experience on fluid flow phenomena. We knew that certain behaviors were present in our models but we didn’t know their impact until we saw the results generated by FloEFD” mentioned Mr. Aarntzen. “FloEFD has definitely allowed us to further investigate both the good and the bad aspects of our designs. As a result, we have been able to further improve our products.”

Customer Testimonial

“ For the past year we have found exactly the same results from FloEFD and our test rig. That’s important because maybe in a few years, after we’ve built an extensive library of results, then we won’t need to build and test physical prototypes anymore. ”

René Aarntzen, R&D, Engineering Manager, Watts Industries Netherlands

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