Haydon kerk Motion Solutions

PITTMAN

Success Story

Automated Fluid Control

An Interview with
Alex Rørbæk,
R&D Manager
at Frese

The pressure's on! Precise hot water temperature control for on-demand water heating system finds success with Haydon Kerk's 37000 series actuator

What factors contributed to your decision to use linear actuators in your water valves?

There are two traditional ways to get hot water from your tap at home. One is by using a hot water tank (which is not very efficient) and the other is by instantly warming up your domestic water through on-demand heating.

To meet the technical demand related to this second option, despite the fact that there were existing mechanical solutions, we were tasked with developing a fast-actuated domestic hot water valve based on Frese's already-existing valve design.

We needed to have a fast, accurate, and reliable actuator to move our valves. These three attributes were the critical design criteria considered to reach the precise hot water temperature control required by the end-users.

How did you first come across Haydon Kerk actuators?

We started our design process by investigating existing valve actuators on the market. Then we had contact with an end-customer who had made a prototype using one of Haydon Kerk's actuators. We were impressed with the package/performance and contacted Haydon Kerk Pittman (HKP) to check if our preliminary requirements could be met. HKP's response was swift and positive, resulting in a first sample arriving a few days after our initial conversation. We immediately started testing it and quickly realized its robustness, speed, and accuracy offered significant additional potential over the units we had already developed.

Why did you decide to use Haydon Kerk actuators? What were your main selection criteria?

First it was important for us to be sure that we were working with a well-established and reputable supplier. We spoke with customers and other market players and received only positive feedback about Haydon Kerk. This gave us confidence to proceed with our selection as we were not inclined to select an "exotic" supplier with potential underlying risks.

In addition, the power-to-size ratio of HKP's 37000 series actuator was one of the best on the market, and HKP's response time to our solicitations to get the right price at the right volume level was rapid. These factors finalized our decision for good.

As we progressed our testing with the Haydon Kerk actuator in various environments, we were able to exceed our expectations for performance.

The ease with which HKP cooperated with us to customize their actuator and integrate it smoothly to our valve was also key to the project success. For example the stroke length as well as the end-cap covering the actuator body were both modified to meet the application requirements.

Did you encounter any technical challenges during the development phase and production launch of the fast actuators?

We did not encounter any particular challenges in developing the fast actuator valve; it went pretty smoothly and was well-supported. We had great test results with an excellent resolution allowing self-locking at power-off.

We prepared guidelines to assist our customers with how to drive these actuator valves as Frese would typically not supply the electronics.

In parallel, we also developed an improved performance ("IP") version of the actuator valve that has a slightly lower resolution and no tendency to jam at all, even under a wide range of ambient temperatures.

Based on your experience from a process perspective, would you make any improvements to actuators used in your next design project?

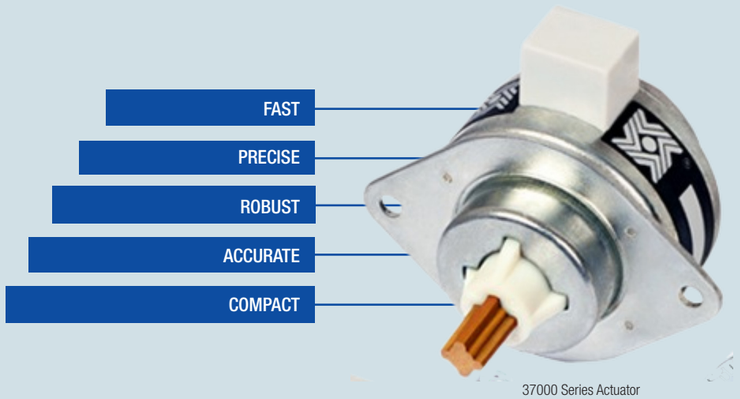
We have already run a new project with the development of the more robust "IP" version, using additional equipment and engineering resources than what we originally had 6 years ago. We have come a long way but had the opportunity to go through the entire process again and it went well. HKP answered positively to the customization requirements and were able to supply us with first prototypes in a reasonable time frame. As a result, even if this new version is slightly different than the original one, it still allows our users to control a few deciliters of water over more than 1,000 liters of flow with rapid reaction times using micro-stepping.

As a result of this development, one of our largest customers will now double the quantity of fast valves they use with the release of their new solution for hot-tapped water appliances.

We have also started a new project using a specially designed valve that will reduce the commissioning of our valve without compromising its resolution. We hope to use a new actuator type from HKP, which will reinforce our market position and our partnership with HKP.

Is there any other point you'd like to make about your experience with HKP?

I appreciate the fact that HKP was quick to respond and assist when we had field issues. We were in trouble and not sure of the solution. There was genuine willingness from HKP to assist with identifying the problem and work with us to find the cause and best solution. We did cycle through a lot of options and actuator variants, which were sometimes rather exotic designs, but these were necessary steps to the process. For that, we thank HKP very much.



37000 Series Actuator
by Haydon Kerk

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- Alex Rørbæk,
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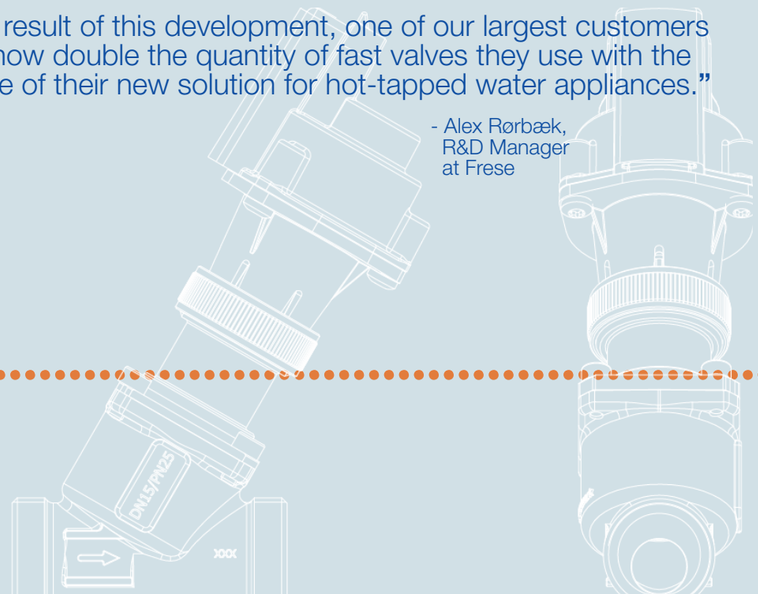

Frese aims to work in close cooperation with suppliers, partners, and customers to provide innovative fluid control and component solutions for target markets around the world.

www.frese.eu

The Frese Group was first established in 1944 and is still family owned. The company develops and manufactures dynamic valve technology and other innovative flow control solutions for HVAC systems as well as Marine, Industry and District Energy market segments all over the world. The Frese Group also operates its own Metal & Steel Foundry, specializing in customized sand-casting solutions for the most demanding applications. Frese takes responsibility for future climate efforts and the green transition and does so with a solid focus on energy optimization and sustainability.

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