

Haskel's 70-year legacy of safety and quality

For 70 years Haskel has led the high-pressure industry with two traits: safety and quality. Pump Engineer spoke with Haskel's top experts in engineering, quality control, and sales & product management to get the scoop on what it takes to remain at the top of the field of air and hydraulic driven pumps and gas boosters for high-pressure applications.

By Sarah Schroer, Editor, Pump Engineer



Haskel recently hit a huge milestone as it celebrated its 70th Anniversary. First formed in 1946 as the vision of three entrepreneurs, Haskel began as an engineering company but evolved into a global leader in manufacturing pumps and gas boosters used for high-pressure liquid and gas transfer and pressurization.

The company pioneered the first dry running Hydraulically-Driven Gas Booster in 1954, a technology developed for NASA for use in pumping helium that blanketed fuel tanks when refueling rockets. At the time, the company was mainly an engineering firm, but it soon expanded into a product-based company, first expanding their portfolio by adding air-driven pumps.

Stephen Learney, the Director of Product Management,

adds that the design of the products from 70 years ago are almost unchanged today. "That is a true testament to the skill and knowledge of the original founders of Haskel, but also to the quality of the design," states Learney. "We are founded on engineering excellence and have also sustained our business through 70 years by focusing on customer service."

"It's been a consistently successful business for 70 years. In that time, we've built up a loyal customer base, have constantly run a profitable business and always kept our employees in work. I don't think too many companies out there can live up to those all those claims put together. Currently, we are on a real drive to increase the overall value of the business so we can sustain ourselves for

another 70 years,” adds Learney. “We are working on building up our intellectual property portfolio.”

George Volk, Haskel’s Director of Global Business Development, expands on Haskel’s early history. He said: “In our early days, we were building test systems using another company’s pump. Haskel decided the pumps weren’t good enough and that we could design a better pump. That’s what launched the product lines that eventually grew from a hydraulically-driven gas booster, to air-driven pumps, to air-driven gas boosters. Haskel continued designing packages for specific systems used in the industry for safe operation, such as systems for hose, component, and leak testing.”

Volk shares that Haskel went international in the 1960s and never looked back. “For a company of our size, we are extremely well-known,” he says. “I cannot tell you how many times I have met people while traveling that know the Haskel name. For example, last March I was in Japan waiting to board a plane and I began chatting with the person in front of me that happened to be a bolt manufacturer. When I mentioned who I worked for, he told me that they use Haskel pumps to test the tensile strength of their bolts. Hitting this 70-year milestone demonstrates the loyalty of our customers and the fact that they respect our ability to provide them with safe, reliable, and economical technical solutions.”

Brand new H-Drive product

Efforts to enhance the company’s offering by increasing flow-rates led Haskel back to re-innovate their hydraulic-driven gas booster line. To tell us all about Haskel’s innovative new products, we spoke with Steve Quigley, the Chief Mechanical Engineer, who has final sign off on the opening design for new products. Quigley explains that Haskel is releasing the H-Drive Booster, the new generation hydraulic-driven gas booster that appeals to the hydrogen industry, specifically for fueling fuel cell vehicles and forklifts. It will have overlapping applications with inert gasses like Helium, Nitrogen, Argon, and CO₂, and will be used for other fueling gasses such as CNG. The new H-Drive line-up will offer up to 50% more flow capacity than Haskel’s previous products.

Learney adds that Haskel decided to develop a new hydraulic-driven gas booster product after carrying out market research and realizing the growth opportunity in the hydrogen refueling market. He said: “We took a step back and decided to invest in external market research. That’s when we realized the product’s potential if we were to invest in R&D to improve it to state-of-the-art standards. Our team put together a completely new design following all the modern principles of automotive design to minimize components, optimize power, and optimize performance,” says Learney.

Learney shares that the release of the H-drive line was first announced at this year’s Hannover Messe in Germany,

where Haskel received interest from all over the world, including China, Taiwan, Korea, Denmark, France, Germany, the UK, the USA, South America, and Canada. “We received more inquiries for that product during that exhibition than any other exhibition we have attended with a single product — it was quite dramatic,” he adds.

New relief valve

Haskel also introduced a new pressure relief valve as part of its BuTech line. Learney reveals how Haskel made the decision to launch its new relief valve family consisting of three high-pressure ratings. “We have made relief valves for many, many years,” shares Learney. “Last year we did some market research and found that a significant number of our customers mentioned a particular performance weakness of our major competitors and our existing offering. It made us look at our design and we then created an innovative design that overcame that particular weakness.”

The new line of relief valves has a high flow capacity for use in applications for high volume relief. The new line has several capabilities that Haskel’s previous relief valves did not, including easy reset and reuse. Volk explains why a pump user might be interested in a relief valve. He said: “They are real safety protection devices. It’s critical to have relief valves in a system to protect from over-pressurization. The valves are also PED-certified for European standards and USA standards of safe use and applications.”

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Quality products

Nick Saba, Director of Global Quality, spoke with Pump Engineer about the importance of quality at Haskel. “We are recognized as a very quality-minded company,” he says. “This is our claim to fame in the industry. Quality is the first thing our customers think of in regards to Haskel products. However, safety of our products and the safety of the people that use our products is equally important. In reality, safety and quality go hand-in-hand, as in our industry safety is directly related to quality. Everything we do has safety and quality as top priorities in design and production.”

Saba shares that quality at Haskel starts at the beginning, from concept, to design, through to engineering, ordering and inspecting parts, and on to manufacturing and final testing. In fact, pumps produced at Haskel are tested with computer automated testing equipment to ensure their reliability and long-term performance in the field and under the harshest Period after conditions. “Every single pump or valve that we manufacture is tested using both internal specifications and customer specifications,” shares Saba. “Once we are happy with its performance, the product is shipped. We have very stringent specifications for our vendors and suppliers, and we expect the highest level of quality from them as we do from our manufacturing associates.”

Safety

Safety is an integral part of the Haskel business. There are four aspects to Haskel products and safety: First, the culture of safety within; second, the safe nature of Haskel products; third, the use of Haskel products by other companies to ensure sure their products are safe; and fourth, the application of Haskel products to safety related equipment such as fire-suppression and emergency shut-offs.

Safety is number one for Haskel. The entire manufacturing process is designed around safety. Learney expands that Haskel employees are trained adequately to work safely. “We focus on empowerment of our staff to make sure our message about safety isn’t simply a management issue but involves the individual.” Haskel works closely with organizations such as Cal-OHSA, California’s Division of Occupation Safety and Health, established to protect and improve the health and safety of working men and women, and also with the Health and Safety Executive in the UK, a government body that handles safety in high energy products. Haskel works with them to provide core training and modules.

Volk explains how a culture of safety is hugely important in their facilities. He cites that many who have toured Haskel facilities will then duplicate Haskel safety protections that are in place, adopting practices, such as machine guarding.



The safety of each of Haskel's products is integral to the design. The company's pneumatically operated products are intrinsically safe, meaning they can be used in explosive environments, unlike electrically driven products, which require special features to ensure safety. Also, Haskel's robust designs ensure years of continued safe operation in extremely high-pressure and/or critical applications. Volk explains how safety works into their gas booster product line, which is essential for dealing with gases. "You are dealing with stored pressure, which is a real risk, so it's important to protect yourself from over-pressurization," says Volk. "The pressure continues to accumulate and can be like a bomb. There aren't many companies that deal with high-pressures at the high levels we do. Safety is a massive concern with these types of products. It's one of the reasons we are successful. Customers trust our products, and they trust our expertise."

Haskel products are used by other companies to test both the safety and endurance of their products and processes. Quigley explains: "Haskel's products are used to proof test other manufacturer's products to their maximum allowable operating pressure (MAOP). If a manufacturer is producing a device, such as a hose, that has to meet a certain pressure rating of 5000 psi, we can test it to MAOP, proof, and failure if required. Haskel has a database of thousands of pressure test systems to draw from. If we haven't created it yet, we most likely have similar details to assist our customer base in specifying safe test equipment."

Some companies use Haskel products to activate emergency safety devices, such as valves in nuclear facilities and valves at oil & gas wellheads. Learney explains how Haskel pumps are used inside misting systems, such as those on board ocean liners. "When smoke is sensed, it triggers the switch that releases the energy inside a Haskel pump which forces out the water at a very high pressure through a mister. Also, a lot of our pumps are used in systems inside companies that make use in hoses for aerospace or vehicles," says Learney. "And they use our pumps to pressurize those hoses to make sure they meet the standards of that particular industry."

Stand out company

There are approximately 20 industry market segments where Haskel products are used, from oil & gas, aviation-aerospace-defence, machine tool & machine building, fire & safety, plastics, fluid power, and gas handling, including hydrogen refueling. "There are numerous competitors out there," said Learney, "but almost every single one of those competitors originated from Haskel."

Volk shares his view on the market: "The oil and gas industry, which has been one of our biggest markets, grew disproportionately to our other market segments. We've been able to offset today's lower gas prices by growth in other market segments, such as aviation-aerospace-defence and specialty gas. In particular, the extraction of essential oils from botanical sources, along with the hydrogen fueling market, have huge growth potential. Haskel is already active in these markets, designing innovative products to meet these new demands for customers worldwide."

Volk adds: "The loyalty of our customers is the result of the fact that we provide a quality solution that is reliable. Essentially, our customer loyalty is the result of our technical expertise, quality, and reliability."

These days Haskel is also going through a business simplification, which means it will be better able to focus and be more responsive. "As a company gets older, it's typical for things to become more complex and more difficult to control," explains Learney. "So, we have a drive going on to cut out some of that complexity so we can be more responsive to our customers' needs."

Haskel makes the most of its global resources when it comes to research and development (R&D). The company has engineers all over the world. "When people come together from different backgrounds and different regions of the world, each one will have a slightly different perspective and approach to the way they work," shares Learney. "When it comes to R&D, this helps ignite powerful creativity. The impact is phenomenal when an international group of talented people work together."

Haskel is creating high quality, superbly designed solutions for customers in the 21st century, just as it did 70 years ago. The enterprising spirit that drove Haskel's founders is thriving today in a global company with clear ambitions, strong direction, and successful sales.

