

Velan: A Promising Future Nurtured on a Heritage of Excellence

Recognized as a world leading manufacturer of industrial valves, Velan earned its reputation by delivering what it promises; quality that lasts. Velan's commitment to its founding principles coupled with its dedication to progressive innovation has allowed it to create valves that meet the critical industrial needs of the most demanding applications.

Valve World Americas had the pleasure of speaking with James Mannebach, Chairman of the Board of Velan Inc., to discuss the company's recent history, the capabilities of its operations, and its devotion to providing its customers with unique advantages.

By Angelica Pajkovic

Dynamic History

Formed in the 1950s, founder A. K. Velan used his idea for a steam trap as the catalyst to build a company that would develop technologies to resolve critical pain points in the industrial sector. The company very quickly expanded and as the nuclear power industry emerged and thrived through the 1960s and 70s, Velan's product lines and technologies grew to address the industry's needs. Since then, Velan has continued to build an ever-growing portfolio of valves for the power, oil & gas, and process industries.

"As the founder's creation was quite novel, he was able to expedite the growth of the company and establish it as a go-to source for steel valve solutions," stated Mannebach. "Subsequently passed down from one generation to the next, Velan has been afforded a continuity seldom seen in the industrial industry; it has allowed us to carry on the legacy of A.K Velan and the principles he stood for. This, in turn, has provided the company with a distinct corporate identity, which has resulted in the success we see today."

At present, Velan is supported by 12 manufacturing plants strategically located in 9 countries around the world with R&D centers in Montreal (Canada), Lyon (France), Lucca (Italy), and Coimbatore (India), each of which is active in developing innovative technologies to help address difficult process challenges or improve performance and reliability.

Strong Then, Stronger Now

Innovation has been a key aspect of Velan's culture from its origins. With large project engineering capabilities, the use of high-precision machining and assembly processes, and a focus on

creating valves for critical applications, Velan is able to provide solutions for the most demanding industries.

"Our engineering and product development strength is a testament to our heritage," stated Mannebach. "A significant portion of that development is derived from our commitment to constant refinement and continuous improvement; a mantra passed down from Velan's founder. Rather than futilely searching for revolutionary breakthroughs, we develop true intimacy with our customers. Our engineers take the time to understand each valve, and the ways that it can be engineered, to effectively collaborate with the customer and devise a suitable solution."

Ensuring that it delivers high-quality and long-lasting products has always been at the forefront of Velan's approach to business. Its product offerings include gate, globe, check, ball, triple-offset, butterfly, and control valves; a portfolio that is amongst the largest available from any manufacturer. What is most impressive about the diversity of Velan's portfolio, however, is how it allows the company to provide solutions to a range of industries not typical of most valve manufacturers. The nuclear market, for example, is one in which quality and reliability are of top importance and where Velan is a trusted partner.

As the quality of each valve used in critical applications such as those in nuclear facilities, are very high, there is a formidable barrier manufacturers must navigate to enter. Velan has penetrated that barrier, positioning it to play a key role in additional markets such as LNG, Liquid Hydrogen (LH₂), Liquid Helium (LHe), and nuclear process applications.

"The uniqueness of what we offer, coupled with our prowess and technical development, gives us the ability to do things that other people simply cannot do," explained Mannebach. "We are a global leader in our markets and intend to stay that way."



Velan has an install-base of more than 2,500 cryogenic bellows seal control valves and 400 quench relief valves in the world's largest, fastest, and coldest accelerator of nuclear particles at CERN in Geneva, Switzerland.

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A cohort of students from Concordia University in Montreal, Canada visited Velan's R&D Center of Excellence for a plant tour and demonstration workshops. Pictured: Nicolas Lourdel, Director, Design – Engineering.

A Look at Nuclear Applications

Velan has become a market leader in power industry valves, with an installed base of thousands of valves in over 300 nuclear and over 4,000 thermal power plants. Many of these valves continue to operate after more than 50 years of uninterrupted service.

Attributing its success in this sector to nearly 75 years of evolutionary improvements, Velan constantly develops new technologies to anticipate the technical and regulatory requirements of the future generation of Nuclear Reactors such as: GENIII PWR reactors, GENIV sodium cooled Fast Breeder, and HTR reactors or GENV “TOKAMAK” fusion reactors.

Velan quality programs for commercial nuclear power plants have been surveyed by ASME and audited by EDF, TRACTEBEL, KHNP, AtkinsRealis, NUPIC, and nuclear utilities.

“With specialized manufacturing plants throughout the world, Velan is well positioned to supply high performance valves for virtually every nuclear power application.”

With the renewed global interest in nuclear energy in recent years, as a result of a push for greater electrification and carbon neutralization, the company has positioned itself to meet the needs of the additional demand from the power generation sectors.

“The CANDU’s recent investment of CAD 8 billion into the renewal and extension of nuclear energy, is another potentially exciting event for us,” continued Mannebach. “It is a prime example of a market in which we will have a great presence, as our developmental know-how in these areas exceeds that of other valve companies.”

Unique Advantages

In addition to its unparalleled success in nuclear applications, Velan has paved the way in delayed coking. Velan supplied the first fully automated switch valve in the 1980s and has since supplied 35 countries with four-way switch, isolation, ring and hydrodrill valves, and logic control panels.

“We are always devising products with the intent of satisfying unique applications,” stated Mannebach. “The technologies we designed for ebullated bed reactors, based on our long-standing success in delayed coking applications, for example, have been of significant importance to the continual and safe operation of these reactors.”

Velan’s valve design for isolating high-pressure catalyst and hydrogen in ebullated bed is one of the only two approved by all major licensors in the world.

Velan also supplies advanced technologies for slurry transport, a high-pressure, high-velocity mining application with erosive and possibly corrosive media. One of their projects includes Collahuasi copper mine in Chile, one of the toughest mines in the world where Securaseal® metal-seated ball valves have been in service for over 25 years.

Velan also supplies cryogenic valves for applications in chemical processing, LNG, hydrogen, aerospace, and big science.

We are focused on continuous improvement, and that means holding ourselves accountable. As our valves are often used in critical applications, we have an intimate understanding of the cost of failure, and we endeavor to ensure that we can provide an absolute assurance of quality.

One aspect that truly distinguishes Velan from its competitors is its ability to provide its customers with several unique assurances. In addition to placing a high priority on exceeding quality standards, the company takes pride in its unwillingness to be satisfied.

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and we endeavor to ensure that we can provide an absolute assurance of quality. This mindset is integrated into each step of the process; from product quote to fulfillment.”

Velan attributes its ability to deliver high-performing products that meet stringent performance demands, particularly in critical applications, to its dedication to enhancing engineering expertise. Velan conducts rigorous fugitive emissions and efficacy tests at the plant level, including cryogenic, elevated temperature diagnostic, line-break, seismic qualification, and more. The company’s Metallurgical and Welding Center of Excellence enhances manufacturing proficiency in brazing, welding, metallurgy, heat treatment, and thermal spray. Collaborating with Polytechnique University in Montreal, Canada, Velan also has a dedicated coatings research division.

Continual Growth

With the goal of pairing its products with other complementary assets, Velan recently explored the possibility of expanding its offerings through a merger with another manufacturer.

“We were excited about the adjacencies of our respective products and their compatibility,” stated Mannebach. “Becoming a part of a bigger company while maintaining our brand identity was appealing as the merger did not remove the legacy of our heritage. It was an opportunity to further expand market penetration, and increase relevance with our respective customer bases,” continued Mannebach. “As our application and our products are complimentary, we believed that the merger of the two companies would be a great way to advance in the industry and move forward.”

Because the merger did not come to fruition, the two companies continue to operate as they were prior to February 2023, as two distinct identities.

“Ultimately the transaction was denied approval by the French authorities because of the criticality of our valves and our application knowledge for geo-political and sovereign concerns. It did not have anything to do with the potential merger party or us, but the world’s reality is the world’s reality. While we were disappointed by the termination of the potential partnership, Velan will continue to advance and increase its significance in the years to come. By applying our product and application knowledge to other highly demanding industries, such as ebullated bed and mining, we will continue to grow.”

Looking forward

When asked what is next, most companies in the oil & gas industry tend to discuss the environmental impact of their work, and what they are doing to improve or mitigate that impact. Velan is no different; it is focused on the environment as it moves forward with its research.

“A main goal of the company is to support our customer with safe and reliable valves for their existing and emergent needs. The energy transition that is underway creates many challenges as well as opportunities, and we are excited about playing a role.”

With such a widespread global footprint, another area in which Velan intends to further strengthen its capabilities is its integrated operations. “It is important to recognize the different competencies of each of our international colleagues and to make sure they have the tools to develop those skills and knowhow, for the benefit of our customers,” explained Mannebach. “A tight integration of our capabilities around the world is imperative if Velan is going to remain the relevant player that it is.”

“Overall, I believe our founder would be proud of what we have accomplished, but we are not done. He was never a guy satisfied, and that is probably his lasting impact on this company; we are never satisfied. There will always be a desire to drive further and faster,” he concluded.



The Velan Welding and Metallurgical Center of Excellence in Montreal, Canada provides in-house manufacturing expertise in complex processes such as brazing, welding, metallurgy, heat treatment and thermal spray. Pictured: Ehsan Ahi, Manager, Welding & Metallurgy – Method & Tooling.

The views and opinions expressed in this article are those of the profiled company and may not reflect the position of Valve World Americas.