

Velan has had a rich history of innovation, since its founding by A.K. Velan in 1950. Celebrating its 70th anniversary, the Montreal, Canada-based firm is no stranger to turbulence in the industry. As a world leader in the design and production of cast and forged severe service valves across all major industrial applications, Velan has maintained stability and persevered in the face of uncertainty to weather many storms.



By Sarah Bradley & Catarina Muia

Three 36" Class 300 two-way severe service metal-seated ball valves installed at a refinery in Egypt.

Velan: Celebrating 70 years of innovative expertise

Over our 70-year history, we've lived through many changes in the marketplace. "One constant has been customers with applications where technology, design and performance are critical to the process. We have developed many products designed for these critical services: from the U.S. Navy, CERN (the European Organization for Nuclear Research), the ITER project in France - the world's largest experimental fusion reactor - and many tough processes in oil & gas extraction, refining and petrochemicals, mining, and more" said Tom

Velan, Chairman of the Board. "We have been and will continue to be in cutting-edge technology areas while still serving the MRO replacement market."

The company's longevity has been attributed to its commitment to technology and innovation while also recognizing the varied needs of its customers worldwide. Combined with the streamlined processes necessary to meet or exceed customers' needs on time, Velan has positioned itself as a world leader in industrial valves.



Velocity 2020: Velan's transformation agenda

In 2018, Velan reorganized into strategic business units, allowing the company to reinforce its market positioning, better serve its customers and drive growth. This is in line with their corporate strategy Velocity 2020 (V20), to pursue additional efficiencies, decrease costs, upgrade systems, improve on-time delivery and maintain their reputation for high-quality products. "The V20 plan is nearing completion. We are very committed to this process. It is the cornerstone of the future of Velan," revealed Tom.

Yves Leduc, Chief Executive Officer of Velan, in addition to his role in developing the worldwide corporate strategy, has been overseeing the design and deployment of the

global transformation V20-plan, as well as promoting an innovation agenda to Velan's customers.

"Everything about V20 revolves around the end-user experience. We always had a terrific brand name, great products, superior technology and know-how. However, as the industry and business shifted, the company's structure and systems had lost agility and efficiency, and it became increasingly difficult to deliver our value proposition to our customers effectively. So, we had to change our business model to better leverage our assets and strengths," said Yves. "The plan aims to substantially increase our market effectiveness through more focused business units, improve cycle times and customer service, and eliminate structural costs through plant consolidation and expansion of our state-of-the-art Indian facility."

Streamlining with strategic business units

As the market began massively changing with a collapse in oil prices, the advent of Asian competition for commodity valves, and customers' increased demand for speed, access to the market and agility in response, Velan decided to implement a restructuring plan to significantly improve the way they did business that pivoted on five key strategic levers.

The first lever was a reorganization along five global business segments. Two were already operating as such, namely Velan's France operations focused on nuclear valves and highly specialized applications, and Velan ABV in Italy focused on upstream oil and gas. The three other business segments resulted from reorganizing our North American operations into MRO and Aftermarket, Severe Service, and Project Manufacturing business units.

The MRO and Aftermarket business unit, managed by Rob Velan, focuses on leveraging the installed base through Velan's channel of global distributors. The Severe Service business unit, overseen by Duke Tran, focuses on highly engineered valves and solutions for severe industrial applications [see sidebar]. Project Manufacturing maintains all project-based manufacturing, relying on fast turnaround for quoting, with a supply chain able to deliver under short lead times and respond to customers' specific designs in RFQs.

Long-term personal relationships

Velan continues to embrace the innovative and entrepreneurial spirit that has been the cornerstone of the company's management

from the beginning while improving and updating the systems in place. "The internal restructuring is helping to better align with customers' needs. We value building long-term personal relationships with our distributors, customers and end-users, but to complement that, we are bringing a data approach to better serve customers," said Shane Velan, Vice President, Transformation and Information Technology.

The second lever in Velan's strategy is the consolidation of the valve manufacturing facilities in Quebec, from three to two plants. The consolidation will be completed over the next few months. Current production has been gradually integrated into Velan's other facilities, which are focused on the production of specific valve lines to improve delivery and supply chain efficiency.

To increase agility, the consolidated Montreal plant will focus on quarter-turn valve production including coker and metal-seated ball valves, mainly in support of the Severe Service business unit. The Granby, Quebec facility will be the company's multi-turn centre of excellence. Williston, Vermont will be the centre for nuclear and Navy orders in North America, as well as specialized multi-turn manufacturing to support US customers. The new concentrations will allow the plants to be more efficient and reduce cycle times with increased focus and streamlining of processes.

More competitive

The third lever is an integral part of the first two and aims to improve manufacturing responsiveness and cycle times significantly. The company will do so by relying more on outsourced non-strategic pre-machining of castings and forgings, keeping strategic machining in-house, and forming lean production cells. This is a move made easier by the decision to specialize the three remaining North American plants.

The fourth strategic lever will be transferring the remaining commodity valve production to their state-of-the-art facility in India and other Asian manufacturing plants. The Coimbatore, India facility will become the centre for forged gate, globe and check valves, including lower complexity project manufacturing. This will reduce Velan's plant footprint, allowing the company to be more competitive and better serve the Middle East and South-east Asia market in ways that were not previously feasible.

The fifth strategic lever is the continued modernization of Velan's systems and processes. To improve on-time delivery

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performance, the company has, for example, invested in robust Valve Project Management (VPM) systems, and configured pricing and costing systems.

Quick reaction times

“The high-performing project management process and systems are heavily automated and customer-focused,” said Shane. “Configure Price Quote software allows us to be more efficient in responding to difficult RFQs. Then we can automatically track up to 50 milestones per order line from entering an order through to engineering, quality deliverables, procurement, machining, testing and shipment, for thousands of orders. We now have incredible visibility deep into our operations to react quickly to delays and to keep our customers informed.”



Bruno Carbonaro, President of Velan Inc

By implementing these new tools, the company can be an active player and experience more success in the project business. “If you want to be in the project business, you need to deliver exactly what you quote,” states Bruno Carbonaro, newly-appointed President of Velan. “You need to quote the correct price to the market, the right lead times, and you must implement all the necessary tools to give customers the confidence that you will deliver the product on time, at the quality and cost that you have quoted them.”

Key milestones

As the Director of Project Management, Pierre Sabbagh is leading the company toward becoming a world-class project management organization to oversee customer orders, from quote to delivery. “Currently, for our custom valve orders, we begin with the creation of a schedule that follows a standard work breakdown structure (WBS).



Velan India’s automated testing for small forged valves leverages the same production technology deployed within North American plants.

Depending on the project management level the order requires, we identify the key milestones that must be met by specified dates. To deliver a valve that requires new designs and other things of that nature, you must ensure that engineering drawings are completed, materials are received from suppliers, and the fabrication is completed by a certain date. The system schedules the flow of events to ensure that we complete the project on time. With this schedule enabled in our system, we can track our progress against it and react quickly when an order is deviating from its baseline plan.”

Great capacity for innovation

The 14 months since the implementation of the Project Management Process, have been a positive change for Velan and its customers. “We have significantly improved our on-time delivery service. Customers recognize that we are reliable as an organization and are confident that when we commit to a date, we follow through.” Pierre has also noticed that the company-customer relationship has changed, “There is a sense of partnership now. When we see a delay, we know in advance. We are in a position to communicate any delays, which allows the customer to develop their recovery plans then, and this makes a huge difference.” “The new system allows the project teams to prioritize efficiently, resulting in less waste, reduced costs, and the team has become more effective. Fundamentally, we are more

aligned as an organization,” Pierre added. “With the VPM system, project status updates are available in real-time, improving efficiency and Velan’s ability to respond quickly to order status updates,” Bruno stated. “Meanwhile, our market-focused business segments and operational improvements help position us for more successful new product introduction. The company has a great capacity for innovation, and we are working on connecting this to a more agile production system that can bring new products to market more quickly.”

“ The 70th anniversary coincides with the year we will have significantly redefined our business, readying it for the next decade.

Transforming the future

“The common denominator across all of that is the focus of the end-user while leveraging the strengths of Velan that we have always had, namely the brand power, product quality and engineering depth,” said Yves. Today, Velan is more modernized in its ways of managing the business than it was just a few years ago. This has been an ongoing transformation to alter its plant footprint, re-structure the businesses and plant organizations through consolidation and concentration of products, transfer of commodity products to more cost-effective manufacturing, reducing lead times by reducing non-strategic

machining and the continued modernization of all systems.

“As we enter an incredibly volatile and uncertain economy caused by COVID-19, we are thankful for the progress made in the last year, as the company is in many ways already transformed. The combination of all these actions has made the company lighter and more agile, much more resilient to great shocks. Still, above all, customers are already getting the benefits of a vastly improved business model designed for meeting their needs faster and better,” said Yves. “The 70th anniversary coincides with the year we will have significantly redefined our business, readying it for the next decade. Velan is an enduring company because of our capacity to change and adapt, and all of our employees should be proud of that,” summarized Yves. “We have a strong global presence of manufacturing facilities and an excellent product reputation in terms of performance, quality and depth of engineering capabilities. We have a great brand that is the result of 70 years of hard work by many dedicated and experienced people around the world,” concluded Tom.



Weighing 36,000 lbs, Velan's first ever 34" Class 1500 forged pressure seal parallel slide valve, part of an order for two 24" and two 34" valves for main steam isolation in an olefins plant in Southern Texas. Although the designs were new and posed many technical challenges, the valve was delivered on-time under tight deadlines, thanks to VPM governance.

Expanding severe service capabilities



Duke Tran, witnessing the fire testing of five Velan valves including ball and triple-offset valves, resulting in a 100% pass rate.

Velan continues to grow its capabilities for severe service industrial applications that are highly abrasive, corrosive, or with high temperatures and high pressures. These products can require highly-tailored designs where quality is of the utmost importance.

'Logic' Control Panels

Velan supplies critical service valves to customers in the coke industry, including coker and isolation valves. Each valve must be operated correctly, in the proper sequence. “This is where the idea of the ‘Logic’ Control Panel came from,” said Duke Tran, General Manager, Severe Service Business Unit. “We created an entirely electronic control

panel that links every critical valve within the coke unit.”

To create a sequence, the operator selects the order in which valves perform. The system features various safety mechanisms, which prevent the operator from operating the incorrect valve sequence. “Typically, any major accidents that occur in coke units are caused by human error and by having the control panel, it cuts down that possibility.”

VEL-8

Velan has developed VEL-8, a coating technology applied between the ball and seat of a valve, specifically designed for improved service life in severe HPAL conditions. “Designing a valve is only half the story. For metal-seated ball valves, the coating that makes the valve work well,” Tran admits. “It is important to remember that each service requires a different coating to be used. We are a valve manufacturing company, but we need to do everything we can to make our product the best for our customers. This attitude separates us from other companies. For this reason, Velan has heavily invested in developing better coatings for end-users.”

Ebullated bed valves

In 2019, Velan was awarded the license to manufacture severe service ball valves for

both world-leading ebullated bed processes. “Typically, a stainless steel or graphite gasket is used between the valve and the piping, but in this case process conditions call for gold-plating.” Velan has also developed a patent-pending technology using 3D-printed sleeves. “The extreme process temperatures can cause a thermal shock that would split the valve’s body. Velan’s technology provides a thermal barrier to defend against the risk.”



A severe service ball valve for ebullated bed process.