

Velan showcases its leader

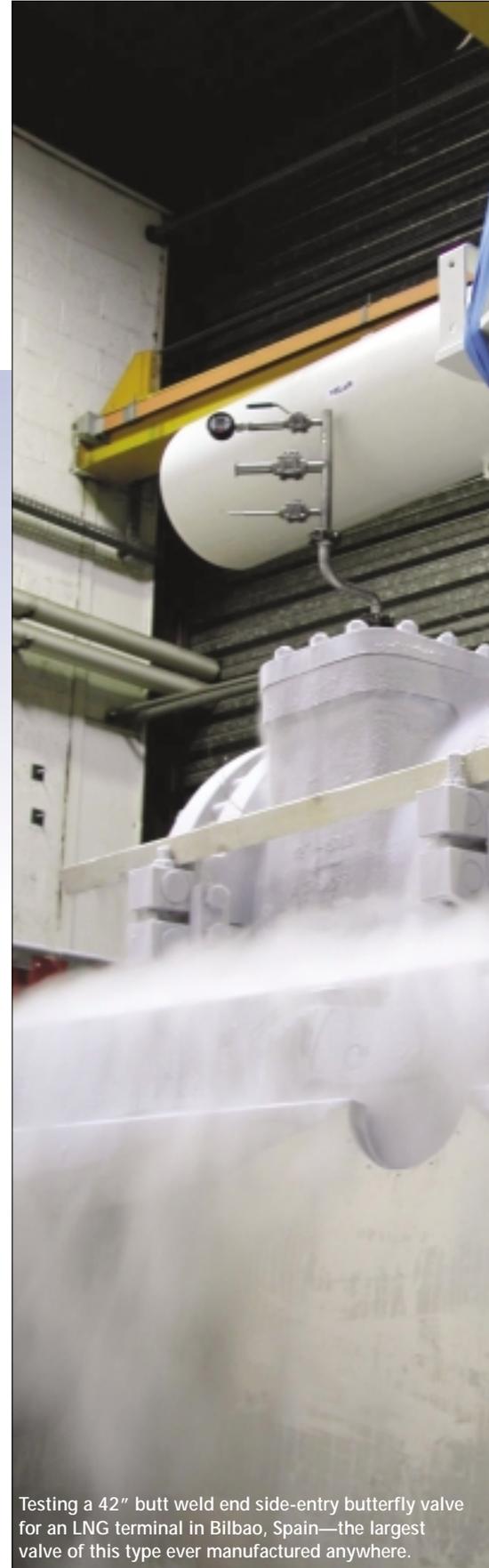
By David Sear and Caroline Linssen

The Velan name enjoys huge respect in the valve business. With "AK" continuing as the CEO of the valve company he founded more than half a century ago, two of his sons now have leading management roles: Tom Velan is President whilst his brother Ivan is Chairman of the Board as well as Executive Vice-President of North American Sales. While "AK" is glad to see his sons (and grandsons!) follow in his footsteps, his vision still permeates every aspect of the company. He inspires people to solve problems and take on new challenges, and to this very day, the Velan company spirit is still not to look for problems but for solutions. That is the vision that has made the company what it is: one of the world's largest manufacturers of both commodity and specialty valves. We visited Velan's headquarters in Montreal, Canada, to learn more about this unique company.

Readers of Valve World should be familiar with the story of Velan—a name synonymous with quality industrial valves. Fifty-three years after he started his own enterprise, Czech-born Mr. A.K. Velan can look back with satisfaction on a highly successful career. His international valve company, Velan Inc., is one of the leading independent valve manufacturers in the world. A very experienced team of managers, including thirteen Vice-Presidents with an average of twenty years with the company, help to manage over 1,400 employees in thirteen plants located in North America, Europe and Asia. "AK" started the company with a patented steam trap, a product that is still manufactured in Velan's UK subsidiary. Mr. A.K. Velan: "It gives me a lot of satisfaction that fifty years later there is still no better trap on the market for high pressure applications in power plants and we continue to sell in this market. We also refurbish "Piping Kings"—complete units comprising a steam trap and two valves—that were supplied more than thirty years ago."

From these simple beginnings, Velan has grown to offer a comprehensive range of gate, globe, check, ball and butterfly valves, without losing sight of their quality commitment to

customers and their focus on industrial valves. Velan valves are designed for safe and easy operation, easy maintenance and reparability, and above all long service life. Today Velan has a wide product line, although it is interesting to note that most of the products were designed in-house to the same exacting standards instead of through acquisitions. Over the past twenty years, Velan has developed a comprehensive range of quarter turn valve products, including patented Memory Seal Ball Valves, Securaseal Metal-Seated Ball Valves, Torqseal Triple-Offset Butterfly Valves, Coker and Capping Valves, Power Ball Valves and an API 6A high pressure oilfield ball valve. The latest addition, API 6D pipeline valves, is being made available via a joint venture in Italy. Mr. A.K. Velan: "We design and develop our valves in-house and are constantly working on improving them, making them better-suited for different services. My main interest has always been in bringing to the market products with design features that set us apart from the competition." Hardly surprising, then, that Velan valves are often seen as the valves of choice in industries such as power generation, chemical and petrochemical, oil and gas, pulp and paper, mining, cryogenic and ship-building



Testing a 42" butt weld end side-entry butterfly valve for an LNG terminal in Bilbao, Spain—the largest valve of this type ever manufactured anywhere.

Leadership in engineered valves



Diverse products

"We are one of very few valve companies in the world to be a leading manufacturer of commodity as well as very special severe service valves," says new President Mr. Tom Velan. "Most of our development work has been focused on engineered valves for special applications but we have maintained an important market share in commodity valves because we have been able to maintain consistent quality and reliable performance. We also have a very



A 12" Torqseal Triple-Offset Butterfly Valve is cycled prior to start-up at a refinery in Montreal, Canada.

good international network of independent stocking distributors who provide excellent customer service." Last year, for instance, in spite of heavy competition in the commodity market, Velan won two important MRO-contracts in the US oil industry and another one in the pulp and paper industry.

Further discussing the evolving needs of the valve market, Mr. Tom Velan notes that there is increased demand for immediate product availability. Velan therefore recently established two quick-ship distribution centres in the US, "VelCal" in California and "VelEast" in Atlanta. "VelNorth" will open soon next to the Velan plant in Williston, US. "This is very much a customer-driven initiative," says Mr. Tom Velan. "Our distributors carry a lot of inventory but they can't cover all the variety that users need. Our distribution centres bring our inventory closer to the market and local distributors can get valves delivered within hours of their order." Velan supports its comprehensive

distributor network with a large company inventory of finished valves in excess of USD 35 million.

Mr. Daniel Velan, a member of the third generation and Advertising and Sales Promotion Manager, picks up on Velan's abilities in the field of speciality valves. "Our wide product range equips us with valve solutions that can handle a very broad range of industrial applications. Our challenge today is to adapt these products to meet each customer's unique re-



A double block and bleed set-up, incorporating 12" ASME Class 300 Stainless Steel Torqseal Triple-Offset Butterfly Valves on hydrogen service at 500 psi/480°C.

quirements." Giving an example, he notes Velan's strong presence in valves for delayed coker service. Velan is the world leader in this difficult service with an installed base of more than 130 4-way switch valves and over 900 isolation valves in more than 100 delayed coker units worldwide. These special metal-seated ball valves in sizes up to 30" have a unique design with bellows to maintain the seat loading and steam injection ports to prevent coke

build-up. The valves are supplied complete with operators and logic control panels for safe operation.

Big challenges

With a vast amount of knowledge at its fingertips, Velan does not shy back from challenges. The largest valve made to date in a Velan plant was a class 150 valve with a 60" diameter. Right now they're working on an order for a project in the Middle East including over thirty 48" valves as well as a massive, 64" valve (class 300). Mr. A.K. Velan: "This latter valve presents an interesting challenge for a number of reasons. Firstly it necessitates a new design and new patterns also have to be made. Also,

small particles, pushed through a large autoclave under steam pressure and then injected with hydrochloric acid. For this severe process, highly sophisticated valves in materials such as titanium, super duplex and Alloy 20 are needed. Mr. Rana Bose, Executive Vice - President Engineering and Quality Assurance: "This is 'severe service' to the extreme. In the early stages our engineering department worked closely with project engineers for Rio Tuba to make sure that the designs and choice of materials, especially coating, was the best possible to meet their service needs. As a result of such projects and similar other projects, we are now building valves using super duplex, Inconels and several high grades of ti-

power plants in the world. This includes US Navy and NATO nuclear submarines and aircraft carriers. We supplied high pressure valves up to 24" made from forgings to offer the best possible safety to the industry." Noting that Velan recently furnished an order comprising thousands of valves for a nuclear power station in Taiwan (including valves with "smart stems"), Mr. Tom Velan adds that the company is already engineering the next generation of nuclear valves. Intended to secure the station in the event of coolant loss, these valves are designed to open or close under extreme failure conditions.

Velan is also very familiar with the demands of the cryogenic business, first supplying valves



The 30" (750 mm) coker ball valve shown above is installed in hydrocarbon mixed phase service (450°C/110 psi) in a severe cyclical application where the valve is cooled (steam/water quench) from 450°C to ambient temperature within two hours. The quenching occurs every 18 hours. At least twenty-two of these valves (30") are installed in dead-end service where a positive seal is critical. The service also involves coke fines and partially polymerized hydrocarbons that harden the valve cavities. Over 1,500 similar large ball valves up to 36" (900 mm) have been installed in coker and other petroleum processes in many countries around the world.

the sheer weight - estimated at around 66,000 pounds - means we have to use cranes in tandem to ensure safe lifting. But this is the type of challenge we thrive on, and our ability to make this one valve was a major factor in winning the total order."

One of the more spectacular uses to which Velan specialty valves are put is exemplified by a large order of 150 severe service metal-seated ball valves for the Rio Tuba Nickel HPP Project in the Philippines. This new plant will process low-grade nickel oxide ore under extreme circumstances, using the High Pressure Acid Leaching. In this plant, the ore is cut into



Velan's R&D team tests a metal-seated ball valve designed to meet a refinery's unique requirements.

tanium, as well as being fully licensor approved for alkylation service (HF Acid). "The engine for Velan's severe service product offering is an Engineering and R&D Department employing 85 people. The group employs advanced software applications, including Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD) and 3D Solid Modelling. These design capabilities are backed up with extensive R&D test facilities including high-pressure steam boilers and superheaters, flow loops, and cryogenic test stands. Indeed, a tour of Velan's manufacturing facilities in Montreal shows just how much the company has invested in advanced manufacturing technology and automation wherever possible.

Going to extremes

Velan is no newcomer to critical valves, having been active in the demanding nuclear industry from day one. Mr. A.K. Velan: "In the seventies nuclear was a booming business in the US. Velan was well positioned as we were the first valve company to get an 'N' stamp. We supplied to virtually every nuclear power plant in the US and in close to two-thirds of all the



A loop isolation and blowdown test with hot pressurized water on a Velan 8" (200 mm) ASME Class 900 regular port isolation valve. Velan has been in the forefront of qualification testing for valves to address issues raised in the US Nuclear Regulatory Commission's Generic Letter 89-10.



Velan S.r.l. President Robert Bartolena stands in front of a 56" trunnion-mounted ball valve at the recently established factory near Milan, Italy.

for LNG service back in 1978. The company continued to develop its range of cryogenic valves and it is currently the only valve brand covering the whole range of cryogenic service from -160°C for LNG service in LNG trains, carriers and receiving terminals, to -252°C in aerospace, to -270°C in research labs and particle accelerators. At the opposite side of the thermometer, Mr A.K. Velan comments that Velan is supplying parallel side gate valves made of F91 material for use at 590°C . "Each market requires its own approach and Velan is happy to deal with all those different specifications," he notes.

To illustrate how widely ranged the specifications can be that Velan has to cover: one of the



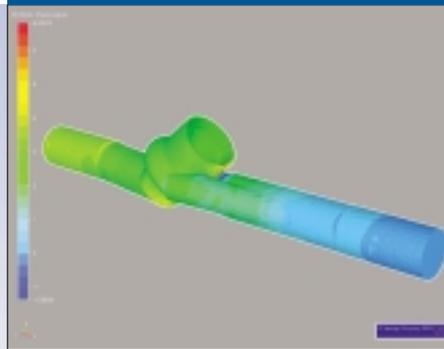
Diagnostic testing of a large gate valve at elevated temperature. This valve, destined for service in a nuclear power plant, is fitted with preinstalled thrust and torque sensors, signal conditioners and cabling (smart stems).



A 12" (300 mm) ASME Class 600 titanium autoclave discharge isolation valve used in nickel mining. Similar Velan Securaseal Metal-Seated Ball Valves are used for many of the mining industry's most erosive and corrosive applications around the world.

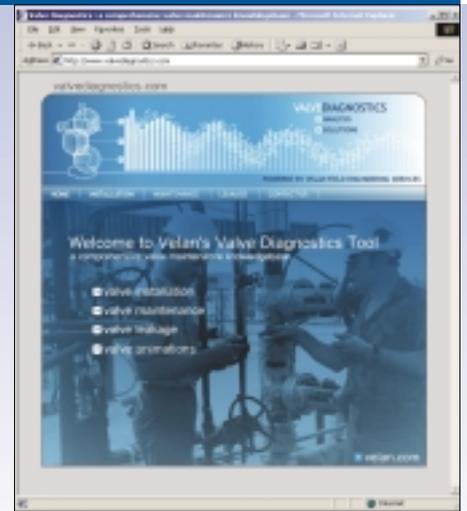
FACTS & FIGURES

Name:	Velan Inc.
Products:	Commodity and specialty valves: ball, gate, globe, check, knife-gate, butterfly, cryogenic, etc.
Production facilities:	5 plants in Canada, 2 plants in Korea, 1 in the USA, France, Portugal, Taiwan, UK, Italy
Distribution:	Primarily stocking distributors (world-wide); direct to major projects; quick-ship distribution centres in the US
Employees:	1400+
Turnover:	USD 250 million
Markets:	Chemical and Petrochemical Oil and Gas Thermal, Nuclear & Cogeneration Power Pulp and Paper US Navy and Nato Fleets Mining



Velan employed Computational Fluid Dynamics (CFD) to solve a customer's unique problem that called for improved flow characteristics in a 4" (100 mm) globe valve.

extreme Velan valves under design right now is an 18" gate valve that can be closed in under two seconds. It will be supplied with a complete, skid-mounted package and fitted with an accumulator, tank filters and booster pumps to comply with the customer's specifications. From the most basic to the most critical valve, Velan's ultimate goal is to provide valves that live up to the toughest performance standards. One of the interesting issues that Velan's field engineers report back about is the longevity and reliability of the Velan product range. There are many examples of Velan valves which, installed more than thirty-five years ago, are still in service today. In fact, when a leading Houston repair shop did an analysis on the reliability and reparability of commodity valves, the Velan management team were pleasantly surprised to learn that their valves came out at the top. This is music to the ears of anyone who is aware of the importance of long-term cost of ownership. Mr. Tom Velan: "Life cycle costing is a very important factor for our clients as there are many cheap, poor



Velan's Field Engineering Services Department has launched a website to help maintenance personnel troubleshoot valve problems. Based on the company's detailed service issue database, valvediagnostics.com allows users to diagnose their problems and find a recommended remedy.

quality valves on the market. But most of our clients want reliability, superior emissions performance and low maintenance costs. That's why they are prepared to buy the performance and reliability a Velan valve offers. Whether we are manufacturing commodity valves or sophisticated specialty valves, our objective is to deliver excellent long term value to our customers." ■