

VELAN VALVES

**A World Leading Valve
Product Range**



- low emissions
- easy maintenance
- long, reliable service

A World Leader in Valve Design, Engineering Solutions & Manufacturing



A large Torqseal Triple-Offset Butterfly valve used for crude oil service in Dalian Seaport (China).

Velan is one of the world's largest manufacturers of industrial steel valves, recognized as a leader in quality and innovation. Founded by A.K. Velan in 1950, our company leveraged advanced engineering capabilities and innovation-driven focus to continuously expand our offering of industrial valves.

Today, Velan gate, globe, check, ball, butterfly, knife gate and engineered severe service valves are installed throughout the world, handling diverse applications in the pulp and paper, power, chemical, petrochemical, oil and gas, cryogenics, mining, and marine industries.

Engineered Solutions

Velan's Engineering Department has vast experience and sophisticated software and testing tools that enable the

company to find solutions to any customer challenge.

Whether it is for valves to handle liquid Helium at -458°F (-272°C) in the world's largest particle accelerator at CERN, Geneva, four-way switch coker ball valves to handle one of the refining industry's toughest services, or valves for main steam isolation service in an operating nuclear power plant, Velan has been selected by most of the world's leading engineering construction firms and industrial end users. A long-standing commitment to quality has kept Velan at the forefront of industry standards.

Velan holds all major industry certifications, including ASME Section III, ISO 9001:2000, PED and API 6D. Many prominent companies have established partnerships or global supply agreements with Velan.

A Global Manufacturing Leader

With 1,165,500 sq. ft. (108,300 m²) of production space in thirteen specialized manufacturing plants, including six in Canada and U.S.A., four in Europe and three in Asia, Velan is a truly global manufacturing leader.

Velan uses the latest automation technology; including over 175 CNC machines and many special purpose transfer machines, enhanced with proprietary production techniques. A wide variety of equipment provides us with the ability to efficiently handle highly customized orders, as well as large production runs.

Velan employs almost 1,500 people, 75% of which are located in North America. International production centers are complemented by a global sales and distribution network, offering personal customer service and quick access to stock worldwide. Because customer requirements for immediate deliveries have escalated in the last few years, Velan has opened three quick-ship warehouses in North America to supplement the inventories of our stocking distributors.

Total Quality Commitment

Velan has always remained totally committed to offering products and service that not only meet, but exceed customer expectations. All Velan valves are designed and manufactured with an emphasis on low emissions, safety, simple maintenance, ease of operation, and above all, long and reliable service life. In fact, when a leading Houston repair shop recently did an analysis on the reliability and reparability of commodity valves, Velan finished first. Whether we are manufacturing commodity valves or specialty valves, our objective is to deliver excellent long term value to our customers.

VELAN AT A GLANCE:

History

- Founded in 1950

Sales

- \$280 million (all valves)

People

- 1,500 employees

Production Facilities

- 1,165,000 sq.ft. (108,300m²)
- 6 plants in North America
- 4 plants in Europe
- 3 plants in Asia

Focus

- Entirely focused on industrial valves (not part of a group)

Product Line

- gate, globe, check, ball and butterfly valves
- steam traps

Quality

- All major approvals, including:
- ISO 9001:2000 (since 1991)
- ASME N stamp for nuclear quality (since 1970)

Engineering Capabilities

- Extensive Engineering and R&D capabilities (100 people):
- cycle test facilities
- stress analysis capabilities

Production Capabilities

- Leader in automated production:
- 175+ CNC machines
- multi-station transfer machines

Approval and Acceptance

- Approved by all major companies in the markets served

Value

- Industry-leading performance and total cost of ownership

Serving the World's Leading Industrial Companies

Performance Under Pressure

All over the world, Velan valves are used by the world's leading industrial companies to help keep their operating facilities running smoothly. In fact, Velan valves have a long history of proving themselves in many of the industrial world's toughest applications.

Our valves have provided long, trouble-free service life in such tough applications as hydro-crackers, cokers, LNG terminals, nuclear aircraft carriers and submarines, digester capping, green liquor, iron pellets, boiler blowdown, fly ash, ethylene, jet fuel, slurries and countless other applications where there is no substitute for experience and proven performance.

PRIMARY INDUSTRIES SERVED:

- Fossil, Nuclear & Cogeneration Power
- Oil & Gas
- Refining & Petrochemicals
- Chemicals & Pharmaceutical
- Pulp & Paper
- LNG & Cryogenics
- Marine
- Mining
- Water & Wastewater
- General Construction



MONTREAL, CANADA - *Velan Inc.*



MARRIETTA, GA, USA - *Veleast*



LISBON, PORTUGAL



MONTREAL, CANADA



BENICIA, CA, USA - *Velcal*



MILAN, ITALY - *Velan SRL*



MONTREAL, CANADA



WILLICH, GERMANY - *Velan GmbH*



WILLISTON, VT, USA, - *Velan Valve Corp.*

GLOBAL NETWORK:

- 13 Manufacturing Plants
- 4 Stocking Distribution Centers
- 26 Sales Offices
- Over 200 Distributors in over 500 locations
- Over 70 Service Shops



GRANBY, CANADA



LYON, FRANCE - *Velan SAS*



ANSAN CITY, SOUTH KOREA - *Velan Ltd*



TORONTO, CANADA - *Velan-Proquip*



LEICESTER, UK - *Velan Valves Ltd*



ANSAN CITY, SOUTH KOREA - *Velan Ltd*



ANSAN CITY, SOUTH KOREA - *Velan Ltd*



TAICHUNG, TAIWAN *Velan-Valvac*

Global Service with Local Presence

With well over 1,000,000 sq.ft. of production space spread across eight countries, Velan is a true global manufacturing leader. But our global presence goes far beyond our manufacturing facilities. Velan's wide range of valves are sold through an extensive network of leading distribution companies.

Velan valves are available from over 200 distributors in 50 countries, guaranteeing that one of our Velan representatives is always nearby and ready to help. Our distributors are further supported by Velan's three North American and two European distribution centers. Velan's large inventories and premier sales network have helped us become a leader in supplying MRO contracts to many of the world's largest industrial companies.

An Extensive Product Line for All Your Industrial Valve Needs

A One-Stop Valve Shop

Velan offers one of the most comprehensive valve product lines available from any manufacturer. From the most common application, to the most severe, Velan has a solution. We produce gate, globe, check, ball, butterfly, engineered severe service valves and steam traps in sizes up to 72" (1800 mm) and for services to ASME Class 4500.

Our products incorporate many unique design features for low fugitive emissions, simple in-line maintenance and long service life.

Built to Order

Our valves are available with a near endless selection of steel body materials, trims, options and accessories. From options like bypasses and equalizers to special trims for HF acid or NACE service, Velan can provide valves built to your needs—often directly from our sales network's extensive stock.

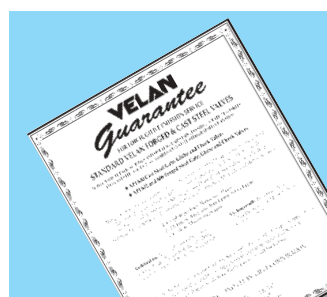
All Velan valves are available with actuation packages according to customer needs. This includes electric, hydraulic and pneumatic actuation with a complete range of controls and sensors.

Customer Support

Velan's Engineering team has a long history of working with customers to solve their valve application problems. Our team of application engineers offer professional advice and expertise enabling them to select the best valve for any environment.

	PRODUCT LINE	VALVE TYPE													SIZE RANGE					
		angle	ball, metal-seated	ball, resilient-seated	butterfly	check, piston	check, swing	check, wafer	control	gate	globe (stop)	knife	needle	parallel slide	y-pattern (inclined)	steam trap	1/2 - 2"	2 - 4"	4 - 24"	> 24"
GATE, GLOBE & CHECK	Pressure seal & bolted bonnet valves																			
	API 600 cast steel valves																			
	API 603 stainless steel valves																			
	API 602 small forged valves																			
	Y-pattern valves																			
	Stainless steel knife gate valves																			
	Wafer check valves																			
QUARTER TURN	Bellows seal valves																			
	Memoryseal ball valves																			
	API 6D trunnion-mounted valves																			
	Securaseal metal-seated ball valves																			
	Power ball valves																			
	Engineered severe service valves																			
	General purpose ball valves																			
OTHER	Torqseal triple-offset butterfly valves																			
	Velflex cryogenic butterfly valves																			
	Nuclear valves																			
	Cryogenic valves																			
	Adareg control valves																			
	Universal bimetallic steam traps																			

Delivering Value Through Performance



Right off the shelf, Velan valves are backed by the most stringent fugitive emissions guarantees in the industry.

Low Total Cost of Ownership

Take into account all the factors involved in owning a valve—including installation, service and maintenance—and the total cost of ownership of a valve can

be several times the initial purchase price.

Velan valves are designed and manufactured with this in mind. Our valves will save you money, by lowering maintenance costs, increasing service life, lowering fugitive emissions and increasing the chance that a valve can be repaired rather than replaced. Take into account all the factors involved in owning a valve and you'll find that Velan valves offer value unparalleled in the industry.

The performance of our valves has been proven over and over again in thousands of qualification tests, independent studies, and most importantly,

in working field conditions. Customers throughout the world have made Velan their preferred choice, based on our track record.

Apart from the industry-leading performance of our valves, Velan offers supplier-integrated engineering, value-added services and all the other advantages you would expect from dealing with a world-class organization. Any way you look at it, Velan offers exceptional value.

PRESSURE SEAL & BOLTED BONNET VALVES



Forged pressure seal and large bolted bonnet gate, globe and check valves for high pressure and high temperature service

Sizes: 2–24" (50–600 mm)
ASME Classes: 150–4500

- one-piece forged bodies for superior strength and quality
- live-loaded bonnet take up bolts
- graphite pressure seal gasket
- gate (flexible wedge and parallel slide), globe (angle, needle and stop), check (piston, swing and tilting disc) and power reformer zvalve types
- optional cast product offering
- optional center cavity overpressure protection
- available in carbon, stainless, alloy (including F91) and nickel alloy steels
- available with bellows seal
- available for catalytic reforming, NACE (sour gas) and nuclear services

Product Catalog: VEL-PS



www.velan.com/ps

CAST STEEL VALVES

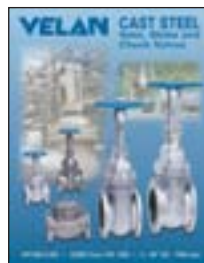


API 600 cast steel gate, globe and check valves for a broad range of applications

Sizes: 2–60" (50–1500 mm)
ASME Classes: 150–1500

- world's largest manufacturer of cast steel gate, globe and check valves
- bubble-tight shut-off of gate valves up to 12"
- gate, globe (needle and stop) and check (swing) valve types
- available in cast carbon, stainless, alloy and nickel alloy steels
- available with bellows seal
- available for block and bleed, cryogenic, HF acid, NACE (sour gas) and nuclear services

Product Catalog: VEL-CSV



www.velan.com/cs

STAINLESS STEEL VALVES



API 603 stainless steel gate, globe and swing check valves

Sizes: ¼–24" (15–600 mm)
ASME Classes: 150–300, 800

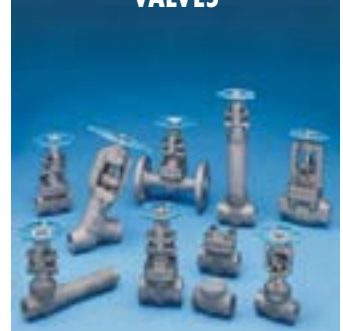
- gate, globe (stop and needle) and check (swing) valve types
- available in cast stainless steels
- available for cryogenic and NACE (sour gas) services

Product Catalog: VEL-API 603



www.velan.com/ss

API 602 SMALL FORGED VALVES

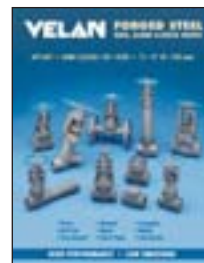


Comprehensive range of small forged gate, globe, check, angle and bellows seal valves with unique design features

Sizes: ¼–4" (8–100 mm)
ASME Classes: 150–4500

- bolted and welded bonnet body styles
- gate, globe (angle, needle and stop) and check (ball, piston and swing) check valve types
- available in forged carbon, stainless, alloy (including F91) and nickel alloy steels
- available with bellows seal
- available for chlorine, continuous blowdown, cryogenic, HF acid, NACE (sour gas) and nuclear services

Product Catalog: VEL-SFV



www.velan.com/sf

Y-PATTERN VALVES



Forged, one piece high pressure inclined y-pattern valves

Sizes: ½–4" (15–100 mm)
ASME Classes: 1690–4500

- one-piece forging with integral body-bonnet design
- fully guided, non-spinning, stellite disc
- non-rotating stem
- in-line repairable
- globe (needle and stop) and check (piston) valve types
- available in forged carbon, stainless, alloy (including F91) and nickel alloy steels
- available with bellows seal
- available for nuclear and NACE (sour gas) services

Product Catalog: VEL-BG



www.velan.com/bg

STAINLESS STEEL KNIFE GATE VALVES

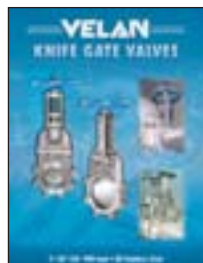


Standard and bolted bonnet all stainless steel knife gate valves

Sizes: 2–36" (50–900 mm)
Pressure: up to 150 psig (10.3 bar)

- all stainless steel design
- 0-14ph packing standard
- Locking device on standard knife gate valve
- environmentally friendly bidirectional bolted bonnet and standard body styles
- resilient and metal seats
- optional v-port gates
- available in cast stainless steels
- available for NACE (sour gas) service

Product Catalog: VEL-KGV



www.velan.com/kg

PROQUIP[®] WAFER CHECK VALVES



Retainerless wafer check valves for a broad range of applications

Sizes: 2–72" (50–3600 mm)
ASME Classes: 150–2500
API Classes: 2000–10000

- lightweight, retainerless design
- wafer, lug, flanged and hub end body styles
- available in carbon, stainless, alloy and nickel alloy steels
- available for cryogenic and NACE (sour gas) services

Product Catalog: VEL-PROQ-CV



www.velan.com/wc

BELLOWS SEAL VALVES



The original hermetically-sealed bellows seal valves for absolute zero-leakage service

Sizes: ¼–12" (15–300 mm)
ASME Classes: 150–1500

- multi-ply SS, inconel and hastelloy bellows for long service life
- gate, globe (angle, needle and stop) and control valves
- available in carbon, stainless, alloy and nickel alloy steels
- available for lethal, NACE (sour gas), nuclear and vacuum service

Product Catalog: VEL-BS



www.velan.com/bs



Resilient-seated ball valves with value added technical features for superior performance

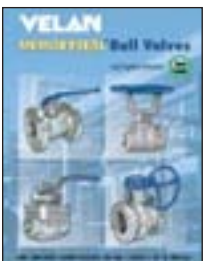
Sizes: ¼–24" (8–600 mm)

ASME Classes: 150–600

WOG: 1000–2000

- Memoryseal in-tension flexible seat design
- E-20 low emission packing arrangement
- foolproof gasket technology
- fire tested (API 607, BS 6755 and API 6FA)
- end entry, one-piece, split body, top entry and unibody types
- available in carbon, stainless, alloy and nickel alloy steels
- available for block & bleed, chlorine, cryogenic, NACE (sour gas), nuclear, oxygen, throttling and vacuum services

Product Catalog: VEL-BV



www.velan.com/bv



API 6D & 6A trunnion-mounted ball valves for pipelines and offshore oil platforms

Sizes: 1–64" (25–1600 mm)

Pressure Classes:

6D: ASME 150–2500

6A: API 2000–15000

- bolted body, top entry and welded body types
- resilient or metal seats
- fire tested (API 607 rev. 4, BS 6755 - Part II and API 6FA)
- available in carbon, stainless, alloy and nickel alloy steels
- available for cryogenic, NACE (sour gas), subsea and underground services

Product Catalog: VEL-BV6D



www.velan.com/6d



Severe service metal-seated ball valves for high temperature, abrasive, and corrosive applications

Sizes: ½–24" (15–600 mm)

ASME Classes: 150–4500

Temp: up to 1500°F (816°C)

- shut-off to FCI 70-2 class 6
- advanced trim coating technology
- low emission stem seal
- cast and forged bodies
- available in carbon, stainless, alloy and nickel alloy steels
- available for block & bleed, NACE (sour gas), nuclear and oxygen service

Product Catalog: VEL-MS



www.velan.com/ms



Forged, one piece metal-seated ball valves for high temperature and high pressure applications

Sizes: ½–4" (15–100 mm)

ASME Classes: 900–4500

- forged, one-piece body
- HVOF coated, inconel ball and downstream seat
- blow-out proof stem
- tested to zero-leakage
- standard stem/packing live-loading
- integral ISO mounting pad for easy automation

Product Catalog: VEL-PBV



www.velan.com/pb

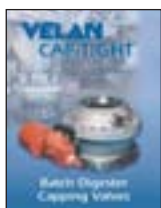
ENGINEERED SEVERE-SERVICE BALL VALVES



Custom-engineered metal-seated ball valves for severe process applications, including:

- switch & isolation valves for delayed cokers
- batch digester capping valves
- flow-thru jacketed metal-seated ball valves for polymers and solvent transfer lines
- HPAL mining valves
- catalyst regeneration for FCCs

Product Catalogs:



VEL-BDC



VEL-CBV

www.velan.com/es

VALVAC GENERAL PURPOSE BALL VALVES

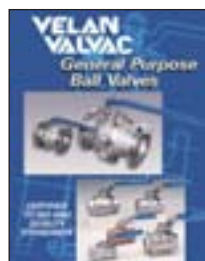


Resilient-seated ball valves for general use and commodity applications

Sizes: ¼–2" (8–50 mm)
WOG: 600–2000

- end entry, one-piece and three-piece body styles
- available in carbon and stainless steels and bronze

Product Catalog: VEL-GPBV



www.velan.com/gp

TORQSEAL TRIPLE-OFFSET BUTTERFLY VALVES



Triple-offset metal-seated butterfly valves

Sizes: 3–48" (80–1200 mm)
ASME Classes: 150–600
Temp: -50 to 1200°F (-46 to 649°C)

- zero-leakage to API 598 standard
- bi-directional shutoff
- fire tested to API 607 rev. 4
- available to DIN
- available in lug, wafer, ISO 5752 and ASME B16.10 body patterns
- available in carbon, stainless, alloy and nickel alloy steels
- available for cryogenic, NACE (sour gas) and nuclear service, vacuum service

Product Catalog: VEL-BF



www.velan.com/bf

VELFLEX CRYOGENIC BUTTERFLY VALVES



High performance cryogenic metal-seated butterfly valves

Sizes: 6–48" (150–1200 mm)
ASME Classes: 150–300
Temp: down to -420°F (-252°C)

- butt weld end or flanged types
- side-entry design offers easy in-line maintenance
- bi-directional shutoff
- zero-leakage to API 598
- metallic seal (Velflex technology)
- fire tested (API 607 rev. 4, API 6FA and BS 6755 - Part II)

Product Catalog: VEL-SAS-BF



www.velan.com/cb

NUCLEAR VALVES



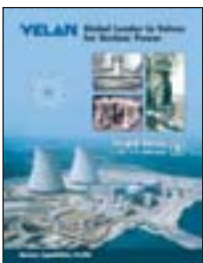
The most comprehensive range of nuclear valves available from any manufacturer, including gate, globe, check, ball and butterfly valves

Sizes: ¼–72" (8–3600 mm)

ASME Classes: 150–4500

- ASME N (ASME III, Class 1,2, 3) and NPT certificates of authorization (since 1970)
- QA Program fully compliant with NCA 4000, ASME NQA-1 and 10CFR 50
- next generation MOVs designed and qualified to the highest standards as a result of NRC GL 89-10
- gate, globe (angle, needle and stop), check (ball, piston and swing), ball (metal and resilient seated), butterfly (triple-offset), wafer check, bellows seal and main steam isolation valve types

Product Catalog: VEL-NCP



www.velan.com/nu

CRYOGENIC VALVES



The most comprehensive range of cryogenic valves available from any manufacturer, including gate, globe, check, ball, butterfly and control valves

Sizes: ¾–48" (10–1200 mm)

ASME Classes: 150–2500

Temp: down to -425°F (-254°C)

- all major approvals, including: N.K. Class, Lloyd's Register, Gaz de France, Air Liquide, CERN Geneva, CEA/CE NG
- gate, globe (needle and stop), check (ball, piston, swing and wafer), ball (split body and top entry), butterfly (high performance and triple-offset) and control valves
- wafer, lug, flanged and hub end body styles

Product Catalog: VEL-CRYO



www.velan.com/cr

ADAREG CONTROL VALVES



Severe service control valves for extreme temperature applications

Sizes: ¼–16" (8–400 mm)

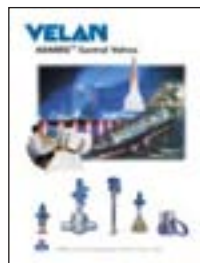
ASME Classes: 150–2500

Temp: -457 to 1,094°F (-272 to 590°C)

Cv: 0.0001 to 3600

- anti-cavitation, bellows seal, cage, cryogenic, globe and micro-flow control valve types
- optional in-line; safety relief, spray and vacuum jackets available
- available for cryogenic and supercryogenic services

Product Catalog: VEL-ADCV



www.velan.com/ad

UNIVERSAL BIMETALLIC STEAM TRAPS



An extensive range of bimetallic steam traps for steam and air lines

Sizes: ¼–3" (8–80 mm)

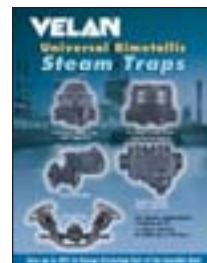
Temp: up to 1,100°F (593°C)

Pressure: up to 2,600 psi (179 bar)

Capacities: 160,000 lb/hr (72,727 kg/hr)

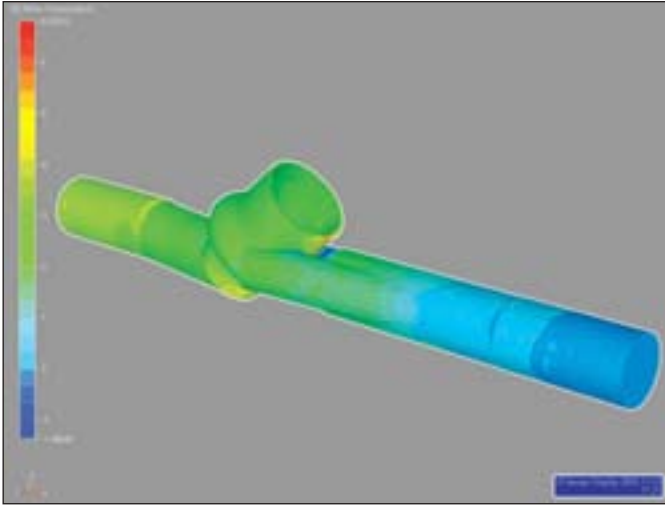
- available in 'Piping King' arrangement
- cage unit design for easy inline repair
- float bimetallic, hermetically-sealed, piston-operated, space-heating and thermodynamic types
- optional blowdown valve, temperature controller, thermometer and vacuum breaker available

Product Catalog: VEL-ST



www.velan.com/st

Engineered Solutions



Velan used Computational Fluid Dynamics to improve the flow characteristics of this 4" (100 mm) globe valve.

Engineering Capabilities

Velan has brought together a team of over 50 professional engineers, with extensive experience in critical applications, who form the core of our Engineering Design Group. Using advanced software applications, including Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD) and 3D Solid-Modeling, Velan's engineers design superior quality valves that meet the most demanding performance requirements. Our R&D facilities, equipped with steam boilers and superheaters, flow loops and cryogenic test stands, enable us to run comprehensive testing programs.

Velan has a longstanding history of partnering with major Architect/ Engineers and end users to develop innovative solutions for their valving needs.

Field Engineering Services

Velan Field Engineering Services offers customers with in-line service and maintenance on all our valve products. Our team of engineers/technicians is on call 24 hours a day, and is equipped with the most sophisticated tools available on the market and over 50 years of valve servicing

FIELD ENGINEERING SERVICES INCLUDE:

- Stress Analysis and Finite Element Analysis
- System Upgrades
- Flow Analysis
- Root - Cause Failure Analysis
- Weak Link Analysis
- Application Engineering
- Custom Testing and Test Data Analysis (NDT, X-Ray, UT, etc.)
- Commissioning
- Troubleshooting
- Certified Genuine Spare Parts
- Valve Repair, Refurbishment and Upgrading

experience to nuclear and thermal power stations, fossil fuel plants, navy fleets, petrochemicals and other industries. Furthermore, Velan has a network of over 70 authorized service shops all over the world, to help meet your maintenance and service requirements whatever your location.

Automation Capabilities

Velan and our distribution channel have many OEM actuators to meet the most demanding on/off and control applications in a pulp and paper mill. Velan interviews and audits our distributors before appointing them as authorized actuator mounting shops. Recently Velan has launched a formal program authorizing selected shops as quarter turn actuation houses. In addition, Velan carries out extensive qualification of actuators.

Velan offers a wide range of products to meet each customer application, from multi-turn electric actuators on rising stem



Velan can supply turn-key automated packages with integral control actuation for two wire and closed loop systems (Profibus, Modbus, Fieldbus, etc.).

valves to scotch-yoke or double opposed piston actuators on rotary valves.

Our philosophy is to offer what the customer wants and make sure the complete package is of the highest quality.

AUTOMATION CAPABILITIES INCLUDE:

- Electric, Hydraulic and Pneumatic Actuation
- Preinstallation of switches, positioners, thrust and torque sensors, signal conditioners
- Integral control actuation and two wire control
- O.E.M. actuators through Velan stocking distribution or actuators of the customer's choice
- Overrides, limit stops and most accessories standard

**Fossil, Nuclear
& Cogeneration
Power**



Oil & Gas



Marine

**Refining &
Petrochemicals**



Mining

**Chemicals &
Pharmaceutical**



**Water &
Wastewater**

Pulp & Paper



**General
Construction**

**LNG &
Cryogenics**



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