Issue 16

VALVE user® MAGAZINE

ANNUAL REVIEW IN CENTRE SECTION!

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British Valve & Actuator Association

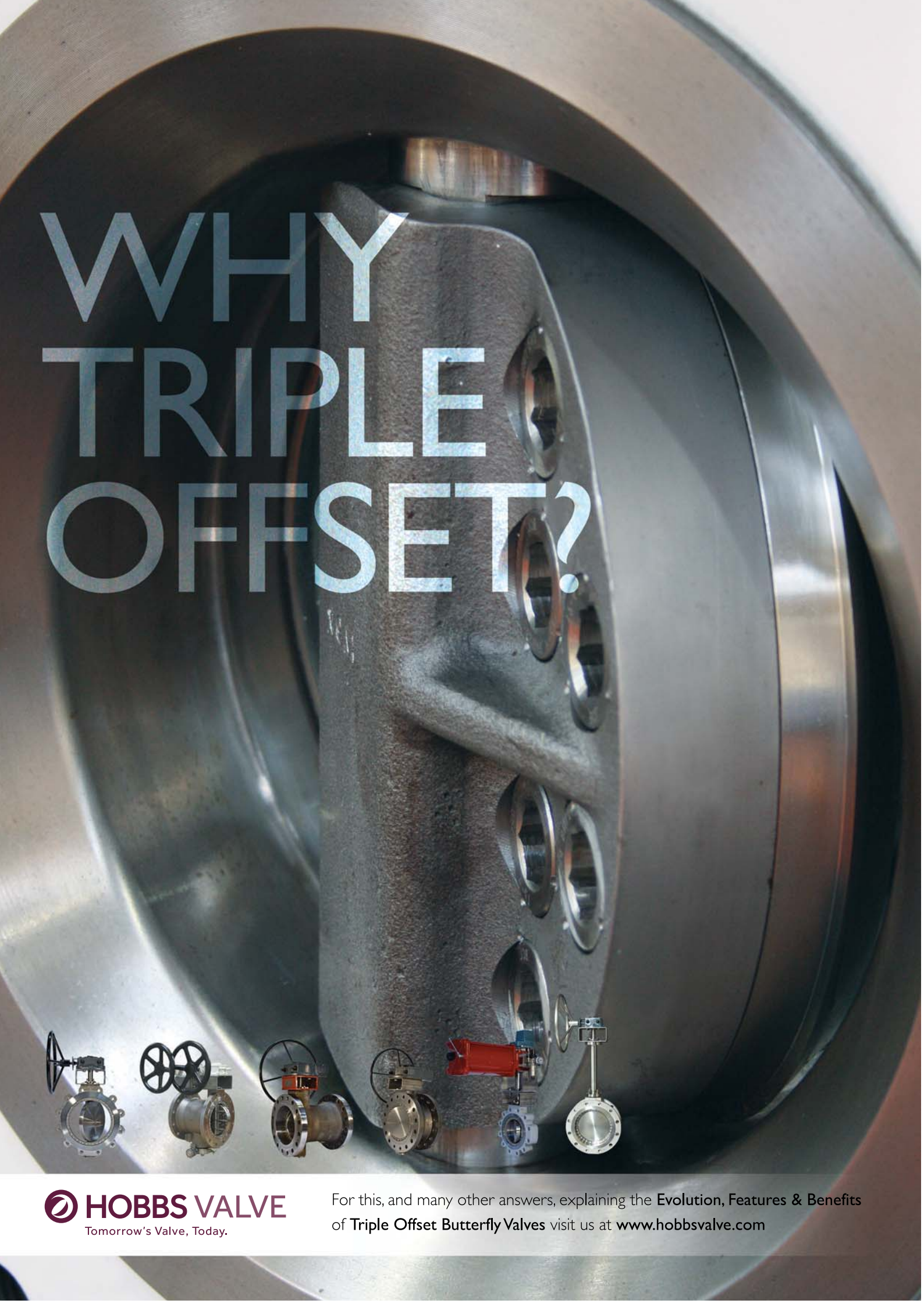
Tyco: Valve 2025

Flowserve Go Nuclear!

Rotork Valvekits Invest

Paladon 'Cool'

- New Product Announcements
- Application Stories
- Company Profiles
- Industry News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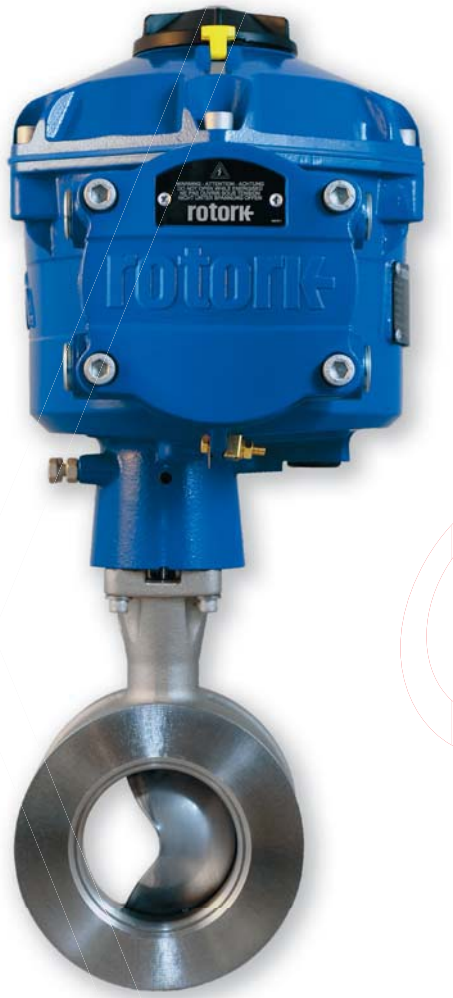

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VALVEuser MAGAZINE

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VALVEuser® is a controlled circulation magazine, free of charge to genuine users of valves, actuators and related products and at the discretion of BVAA Ltd.

Cover: Koso Kent Introl 20 inch super duplex series 1200 globe valves.

Did you know?

As well as a printed copy, VALVEuser magazine is also available as an email attachment, and as a download from BVAA's website, www.bvaa.org.uk

Phew!

What a year it's been for BVAA! The last twelve months have just whistled by. We started the year wondering if the recession might affect us. Twelve months later - having had a very successful year - we find others talking of a 'double dip' recession, presenting the same concerns all over again! Thankfully, like most of the British valve industry, we were so busy last year we had little time to worry about it. Most of our major 2010 projects have now been concluded, such as the User Manual (see below) and participation in the new Valve World exhibition, and we can now concentrate on the year to come.

by BVAA Director, Rob Bartlett

This issue of Valve User includes our Annual Review and is consequently being distributed to a much wider readership. We hope new readers will find 'VU' interesting and informative and sign up for copies on a permanent basis. Enjoy!

STOP PRESS! New User Manual Webpage

We are delighted to announce that the 6th Edition of BVAA's world famous Valve & Actuator Users' Manual now has its very own webpage. The industry 'bible' for nearly 50 years, this latest, much longer edition has been extensively re-written and updated to full colour. For more information see:

www.bvaa.org.uk/usermanual

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More New Members!

It has been a record year for new members. This month's new recruits include:-

Adrian Ducker of YPS Valves Ltd receives his BVAA Member plaque from Rob Bartlett

Ian Elliott of Actuation Projects & Services (Exeeco Ltd)

Jason Glover of Valve Center

Nick Davies of ARI Armaturen (UK) Ltd

AB Elektronik

has recently undergone a name change and now operates under the name TT Electronics Limited

TT Electronics Limited
Tel: 01223 875596
Website:
www.ttelectronics.com

Mad Hatters

How far can you go wearing a BVAA hat?

And the Winner is...

Congratulations to Mike Williams (Asco) for correctly identifying that Paul Rowbotham of Comid was photographed in front of the World Trade Centre building in Bahrain. £50 goes to Zoë's Place Hospice, Liverpool.

BVAA Hats are free to anyone who would like to send us a photo of themselves wearing one, somewhere in the world. Contact Karen@bvaa.org.uk

News

AGM Dinner Dance

On 26th November, over 120 BVAA members and guests enjoyed another fantastic Dinner Dance at Oulton Hall, dancing the night away to The Bootleg Beatles (full report in the Annual Review section of this issue). Our congratulations to Tracey Hart who won the highly amusing 'coin toss' competition. First prize of £125 was matched with an equal amount generously donated to Claire House Hospice, Merseyside.

Time check? No, it's the annual BVAA Coin Toss Competition

BVAA at Valve World

Malcolm Scott, Rob Bartlett and Bill Whiteley share a joke at Valve World

Immediately after the AGM, BVAA staff travelled to Dusseldorf to attend the first Valve World exhibition to be held at the show's new home in Germany. Despite the blizzards, the show attracted over 10,000 visitors over the three days. A key feature of the first evening was a British Reception, co-hosted by Valve World and BVAA. Guests of honour included the Consulate General Malcolm Scott and Dusseldorf Messe's MD, Joachim Schäfer.

As well as providing a meeting place for members and promoting their products and services, BVAA staff distributed hundreds of DVDs and Valve User magazines, and several hundred new Valve User readers were recruited. Further information appears in the Annual Review.

The BVAA stand at Valve World 2010

Marketing at Emerson

On 11th November, BVAA's Marketing Committee met at Emerson Process Management's Stockport facility. The BVAA marketing function is now well established and much of the meeting involved reporting on the association's many initiatives, and also discussing how to manage the significant workload and resources involved.

BVAA's Marketing Committee

Valve 2025: A Look Ahead!

Director Rob Bartlett presents David Dunbar with a BVAA umbrella at Valve World

David Dunbar, President, Valves & Controls at Tyco Flow Control delivered one of the keynote speeches this year at Valve World. BVAA's Rob Bartlett asked David about his paper.

RB: 'David, what inspired you to write this paper?'

DD: *'Well Rob, when I tell people I'm in the valve business, they tend to assume because it is a mature industry that it is not dynamic and I wanted to dispel the notion that it is sleepy and dull.'*

RB: 'I know that feeling! How do you believe they should react?'

DD: *'I think they should see us as the dynamic, forward-thinking industry we are! Our products are involved somewhere in almost every aspect of daily life and the industry plays a vital role in global advancement.'*

RB: 'How would it be if we were not around?'

DD: *'Frankly, without us, the world wouldn't have its most important infrastructures, or access to our most important resources. Our innovations may not evolve at the rate of computer processing, but they have contributed to the globalization of business and to the world's ability to access and manage everything... from gold to beer!'*

RB: 'Tell me more about Tyco Flow Control.'

DD: *'Today, we are the largest valve company in the world. But as the industry remains highly fragmented, we have over 5,000 competitors! However, if you look at our customers, many are household names, recognizable on just about every continent.'*

RB: 'How are Tyco managing such a diverse customer base?'

DD: *'We are a global leader in process isolation, pressure management valves, nuclear safety valves and slurry process valves. Our HQ is in Switzerland, but we have over 8,000 employees globally. Recently, we reorganized Valves & Controls to align with the vertical industries our customers operate in, rather than around geography. The goal is to build a new, more global organization that does the business our customers want us to. Our key vertical business units are now Process, Oil & Gas, and Power & Mining. We have three product groups, Pressure Management, Triple Off-Set Valves and Actuation & Controls. This allows us to better partner with our customers to offer enhanced end-to-end solutions.'*

RB: 'How do you feel this connects with "Valve 2025"?'

DD: *'Tyco is a good illustration both of what is happening now in our industry, and what we can expect in the next 15 years. Let's look at what is shaping our industry now. The globalization of customers in the past decade has been rapid in all industries. They are now expecting consistent levels of service and support around the world. At Tyco, the companies that make up valves and controls are coming together to provide this consistency as a single, global entity.*

RB: 'I imagine this impacts on service too?'

DD: *'Global customers require local services… globally! It's necessary as they supplement customers' lack of internal skilled resource with external providers. We operate in 45 countries in 300 locations and have been partnering and supporting our global customers wherever and whenever they need us. Customers are*

increasingly linking maintenance of their installed equipment to quality improvement strategies and the use of maintenance as a competitive strategy. Moving from the idea that equipment components are liabilities that break down and cause problems to considering them as assets to be managed competitively is new thinking.

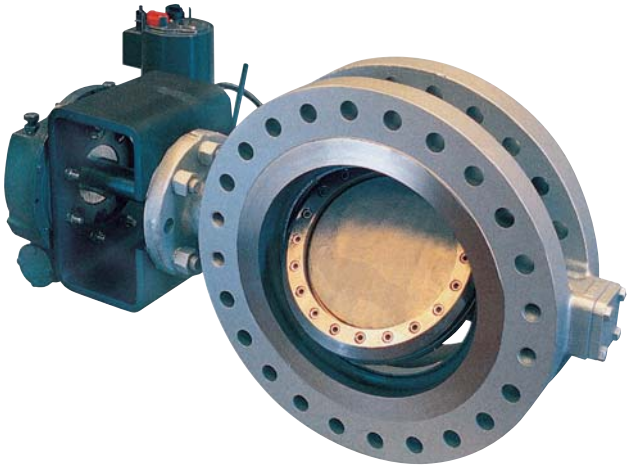
RB: 'And this connects to the "2025" vision also?'

DD: *'Yes. For example, since the early 1900s pressure relief technology has continued to evolve providing for improved safety, great application flexibility and range, lower cost of ownership and improved operating parameters for greater system throughput. However, the evolution of PRV technology has been gradual and acceptance of new technology relatively slow when compared to technology advances in other markets. Over an 85 year period PRVs have evolved from basic, weight loaded, moment arm designs, to full nozzle API 526 spring valves, balanced bellows valves, to early pilot operated valves and into today's non-flow, modulating pilot operated valves.'*

Anderson Greenwood series 400 modulating pilot operated pressure relief valve

RB: 'Do you find new designs are embraced immediately by customers?'

DD: *'Sometimes it's a slow process. We estimate that as many as 40% of applications in the process industry would benefit from the features and benefits of our latest PRV technology; however it has about 18-20% market share today. And this technology continues to evolve. PRVs will continue to be fully self-actuated, but also integrated into safety control systems for monitoring for a relieving cycle, seat leakage and other maintenance needs. The valves will also be integrated into the safety control system such that the valves will be able to be actuated by electronic or hydraulic signal as part of the overall safety system. In addition, manufacturers will continue to adapt materials that allow for lighter, longer performing and more economical use of the valves. Additionally, due to the safety function of these valves, they require that a complete history of the sizing criteria, maintenance records and other information be maintained indefinitely. In the near future this information will be "stored" and/or "tied" to the valve through electronic tagging or identification.'*



Vanessa series 30,000 triple offset rotary process valve

RB: 'Do you have other examples?'

DD: *'Take the evolution of the triple offset valve. Unlike some consumer products, like cell phones that progressed from the giant 'bricks' of the 1980s to the smart phones of today, the changes aren't highly visible. Nevertheless, these are significant advancements for the customer. In the late 1960s the first TOVs were introduced and were seen by end users and EPCs as a simple extension of the already existing range of High Performance Butterfly Valves. By the end of the 1980s important changes were introduced. One TOV manufacturer, Vanessa, introduced a new concept for process isolation applications, namely "Metal Seated Zero Leakage".'*

RB: 'How was this greeted by customers?'

DD: *'It presented an interesting problem, because no specifications existed that called for the TOV's capabilities. Until then, all standards for metal seated valves allowed for leakage when tested at*

ambient temperature. This of course made it difficult for end users and EPCs to specify the product, but oil and gas and process industries began to use them nonetheless. Usage expanded in 2000, when Shell became the first end user to accept TOVs as a true process valve. This created a new category in process that was obviously different than conventional double offset HPBVs, and from balls and gates.'

Sempell type 140 boiler startup control valve

RB: 'So valve development was ahead of the game?'

DD: *'Indeed. And customers are valuing TOVs beyond their zero leakage performance. They have proven to be an excellent replacement for ball valves in certain applications. They function effectively in extreme temperatures and pressures. They weigh less, save space, and they cost less to support, transport and maintain, which means lower costs overall for customers.'*

RB: 'Any more like that in the pipeline?'

DD: *'We expect the temperature and pressure that power plants are operating under in 2025 to be essentially double that of 1975. We have to produce valves that can withstand those conditions. Tyco Sempell has been hard at work creating products that incorporate critical design features and materials to do just that. These are the kind of products that customers will need in the extreme conditions they are dealing with.'*

RB: 'Does standardisation have a role to play in this?'

DD: *'Codes and standards have a long and honourable history and they too have transitioned to meet the globalized demands of end-users and manufacturers. Looking ahead, we know markets are changing quickly and emerging markets will bring new demands. The advancement of materials, the development of some processes and related technology is outpacing standards development, which may limit the application of harmonized standards. For our industry to benefit from such standards we must see improved adoption rates. For example, as a valve manufacturer we are still being required by many of our end-users to meet local codes and standards in addition to the newer harmonized ones.*

RB: 'So how would you sum up?'

DD: *'The valve industry has a lot to be proud of. At Tyco, we serve local communities around the globe. We partner with customers to help improve their operation efficiency, minimize risk and protect what's most vital: people, assets and the environment. When we're protecting the things most vital to our society, we can't help but feel proud of what we do. Some serious challenges lie ahead but our industry has survived and thrived under such conditions for more than 4000 years. I am confident that we'll prosper in the next 15!*

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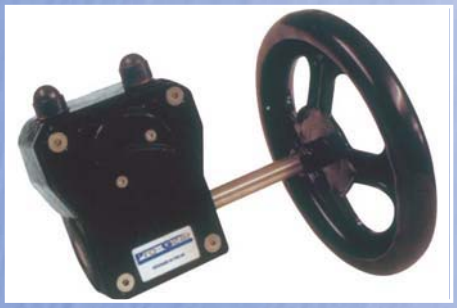

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BVAA

Truflo Marine attends the 'Launch of Duncan'

In Autumn 2010, representatives from Truflo Marine Limited were most honoured to attend the launch of Duncan, the sixth-of-class Type 45 Anti-Air Warfare Destroyer. The Type 45 Destroyer is arguably the most advanced warship in the world and represents a quantum leap in surface warship design and capability reflecting ground breaking innovation and foresight.

The launch event, which took place at the BAE Surface Ships' Govan Shipyard in Glasgow included displays by the Royal Navy, Glasgow Science Centre and Royal Marines Band. The team who attended from Truflo thoroughly enjoyed the event particularly the opportunity to witness the associated traditions.

It was with a sense of pride that Truflo attended the launch event given that they have been supplying valves to BAE Systems for over 30 years and were privileged and honoured to be nominated as the single source supplier for all of the valves on the T45 project. A demanding project, this involved supplying and project managing approximately 3,600 valves per ship in a six ship build programme.

No less than eighteen sub suppliers were project managed by Truflo to ensure that the build programme ran smoothly. A fundamental part of Truflo's service has been to provide BAE with full integrated logistical support covering the production of manuals and spares information.

Truflo Marine is equally proud of its connections with BAE Systems Submarine Solutions; over the last 30 years valves have been supplied for the Upholder, Vanguard, Trafalgar, Swiftsure and currently the formidable Astute Class Submarines.

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'Launch of Duncan' - the latest 'Type 45 Destroyer'

Crane Valves Save Energy for Domino's Pizza

A range of traditional and commissioning valves have been installed in the plant rooms of Dominos Pizza.

The newly refurbished Dominos Pizza HQ at Milton Keynes.

Commissioning valve units, strainers and associated products from Crane Fluid Systems (http://www.cranefs.com) have been installed at the commissary recently built for Domino's Pizza Group, the leading pizza delivery company in the UK and Ireland, at West Ashland, Milton Keynes.

The state of the art facility will provide for the planned future growth of Domino's global business. Over 500 of its stores will rely on the new commissary for the fresh dough and other ingredients they need to produce consistently high quality pizzas.

Crane's isolation and commissioning valves will play a vital role in managing energy use within the £20 million building. Boasting a compact, space saving design and fast commissioning, they require fewer on-site joints and thus offer considerable installed cost savings.

The valves have been installed by mechanical and electrical contractor Walter Miles. Lee Sutton, director at Walter Miles, says: *"Installation of plant and equipment had to be carefully planned so as to allow unrestricted access for maintenance personnel in future. However, the need for such access should be limited as all Crane products are tested before leaving the factory, which makes them highly reliable."*

A major part in the professional team was played by Domino's mechanical and electrical consultant on the project, Couch Perry & Wilkes LLP, who were instrumental in all aspects of the services design and installation from conception through to completion.

Designed by Q2 Architects to the highest environmental standards, the new building's exterior emulates the sleek form of the adjacent MK stadium. It covers an area of some 7,400m^2 (80,000ft^2) and incorporates production facilities as well as a distribution warehouse.

"The new commissary will make a real difference to our operation," states Domino's Pizza Group food service director Gareth Franks. *"Along with our other two similar facilities in Penrith, Cumbria, and Naas in Ireland it will give us the capacity to achieve our plan of having at least 1,000 stores throughout the UK by 2017."*

Principal contractor the Buckingham Group managed the £20m project on behalf of Domino's Pizza Group. Buckingham director Mike Kempley comments: *"We are delighted to have secured such a prestigious project on the basis of the cost effectiveness and quality of our service."*

CRANE FLUID SYSTEMS

Crane Fluid Systems
Tel: 01473 2777300
Website: www.cranefs.com

AUMA Establishes New Subsidiaries

AUMA, the manufacturer and supplier of modular electric actuators, has established new subsidiaries in the Middle East (Bahrain) and Brazil. With 19 subsidiary operations, the new AUMA divisions increase the company's international workforce to over 1,900 people.

Both the Middle East and South America have previously been supported by local AUMA representatives. Growth in demand for the company's modular actuation technology in each region has led to investment in the new facilities.

Teams of five headed by a Managing Director have been appointed for the new operations: AUMA's comprehensive service will be provided at both sites including sales, training and support.

AUMA confirms a strong established user base in both regions for its actuators across the power, water and oil and gas industries.

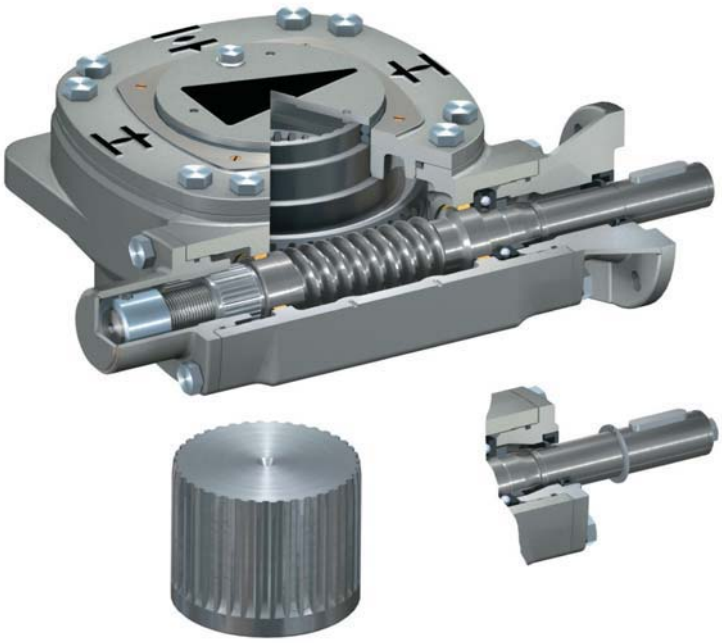
AUMA Spearheads Block Stop Solution

AUMA has developed new block stop technology for its worm gearboxes. The actuator manufacturer invests heavily in ongoing R&D: as part of this process, an engineering initiative has been taken to aid actuator installation.

The company's proven end-stop nut design avoids loads which may cause the gearbox housing to break. With this solution, end stops are loaded only with input torques and not with a multiple output torque. As a result, even in the event of an end-stop breakage, the gearbox remains operable.

AUMA's new block stop design considerably enhances the end stop process. Blockages in the end stops, caused for example when the nut is operated with excessive torque in the event of limit switching failure, are now impossible. By applying safety wedge discs, a design initiative patented by AUMA, the required torque to unseat the end stop nut is just 60% of the torque previously applied to approach the end stop.

A technical paper to support this design initiative entitled 'Worm gearboxes for valve automation' is available from AUMA.



New AUMA design enhances end stop process for actuation

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Bifold's innovative Solenoid Valve Housing

Bifold Design a Free to Rotate Solenoid Housing for Easy Cable Layout and Ease of Wiring

A new highly distinctive design concept now allows Bifold's Solenoid Valve Housing to Freely Rotate 360°, enabling easy cable layout and ease of connection wiring. The solenoid internals rotate with the housing to prevent cables being pulled out of the terminal block, to accommodate equipment building benefits.

Within these benefits, this new valve technology can be mounted in any orientation to simplify and ease installation along with a spacious enclosure for ease of wiring, which in turn saves space and installation time.

This range of products include solenoid valves for dry or moist air, gas and fluid control medias and with 316L stainless steel bodies, making this valve assembly the most universal type on the market. The solenoid design incorporates an armature plate coil holder mechanism which ensures the valve will operate in damp conditions

Bifold Free to Rotate Solenoid Housing

and reducing the risk of corrosion to internal components. Other solenoid valve designs incorporate a solenoid core tube design that will only operate in dry air conditions, whereas in realistic terms, it is a known fact that air isn't completely dry.

As part of the commissioning and maintenance benefits with the FP Series solenoids, there is no time penalty for heat dissipation before removing the solenoid cover, or the requirement for special high temperature cables. Simple maintenance incorporates removable transient suppression diode, coil and solenoid without the need to remove the solenoid valve from the tubing.

With an operating temperature range of -60°C to + 95°C and worldwide approvals Ex d, Ex ia & Ex emb, this product range is available with the widest range of override options including (Auto reset, Spring return manual override, Stayput manual override, Manual reset, Tamperproof manual latch and Latch energised).

Within the safety and environmental benefits, all our FP solenoid valve assemblies have SIL 3 third party certification to IEC 61508. FMEA, extensive qualification testing, coupled with 100% computerised diagnostic test procedures ensure each valve assembly is proven along with confirmed safety factors.

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Website: www.bifold.co.uk

Stored Energy and Corrosion – An Accident Waiting to Happen?

Control Valve Solutions' (CVS) Managing Director, Mick Beavers, is an advocate of full life valve management and was alarmed by some of the findings of a recent study by the Health & Safety Executive (HSE) and various offshore surveys conducted by CVS Ltd.

The HSE's Offshore Division (OSD) who undertook an External Corrosion Management Inspection Project from July 2007 to March 2010 concluded that there is significant room for improvement in ensuring all operators follow best practice guidelines in maintenance management systems for non-safety and safety critical equipment. Mick Beavers is all too aware of the fact that if the structural integrity of a corroded valve actuator casing is compromised then the actuator could release the stored energy and cause a major incident or accident.

The HSE project covered 30 inspections of the physical condition of specific plant and equipment including valves, and assessed whether maintenance was an effective part of the management system controls for external corrosion. The state of plant varied significantly between good and poor but the general consensus is to continue to improve upon the measurable acceptance criteria for external corrosion published by the Energy Institute in June 2008.

Whilst the HSE's report primarily focussed on the general fabric of the installations like walkways and stairways, Mick Beavers believes the corrosion of valves and actuators is extremely significant because of the potential force within an actuator that could result in a serious accident or even fatality if the corrosion causes the bolts or casing to fail.

Further dangers with the release of the actuator force lie with the process, if the actuator is not keeping the valve shut or open there are many dangerous scenarios and potentially serious consequences.

Bolts, flanges and valves
Bad practice

Good practice

Mick Beavers agrees with Steve Walker, Head of HSE's Offshore Division who recently commented on the report: *"offshore installations that progressively deteriorate and corrode, with hazardous walkways and poorly supported pipes or other infrastructure are not only putting workers at risk of serious injury, but in the event of a major incident can exacerbate the consequences. The report shows that the industry still has a way to go in this, and given the ageing nature of our offshore platforms this is not an issue that can be ignored."*

A combination of factors is pinpointed in the report that will make for a safer, more secure and a sustainable working environment. The CVS Valve Manager already assists operators in carrying out much more effective planned maintenance based on the real time data collected. Any early signs of actuator casing being corroded would be flagged up with the CVS Valve Manager and the appropriate action taken. The platform operator ultimately decides whether to go for a replacement or a complete overhaul but CVS Valve Manager allows people to make an objective decision on plant based on real time data analysis so that lifelong valve management can be an integral part of a planned maintenance programme.

In the HSE report overview there was an emphasis on planned and not just risk-based maintenance, independent audits, improving and adhering to standards as well as better employee communications. All the findings will form part of some good practice guidance for the industry that will be spearheaded by Oil & Gas UK and the Energy Institute Corrosion Management Working Group.

Mick Beavers added *"This report warns about the potential impact of corroded plant so everyone involved in the oil and gas field needs to work together to achieve the right balance between basic repairs with the need to carry out comprehensive maintenance programmes."* He continued: *"I can understand that the industry may feel that service repair companies will be quick to call for the overhaul or replacement of equipment but I don't believe this to be the case. I am passionate about stored energy and corrosion and really want to make a big difference to what I believe is a serious situation."*

With HSE inspections set to continue into 2011 CVS will be working hand in hand with its clients to follow good practice industry guidelines and promote CVS Valve Manager in maintaining safety critical equipment and preventing accidents.

With all this said however, Mick Beavers believes manufacturers have a big part to play in safety awareness of actuators. New warning signs may be considered explaining the dangers of hidden or stored energy. Training should also be made available on a regular basis and promoted to end users about the potential risks.

Perhaps then platform staff like the one taking the picture below, will think twice about standing on a badly corroded actuator with forces capable of causing severe damage to them and their work environment in the event of it failing.

To view the full HSE Report visit:
www.hse.gov.uk/offshore/corrosion-report.pdf

Mick Beavers of Control Valve Solutions

Control Valve Solutions Ltd
Tel: 01224 583116 / 0151 531 1501
Website: www.controlvalvesolutions.co.uk

Flowserve increase Nuclear Manufacturing Capabilities

Springville Facility Certification Increases Flowserve's Nuclear Manufacturing Capabilities

Flowserve Corporation recently announced it had received the American Society of Mechanical Engineers (ASME) N and NPT nuclear approvals to construct Class 1, 2 and 3 valves at Flowserve Springville operations, where the Flowserve Valtek family of control valves are manufactured. The ASME approvals certify that Flowserve Valtek valves meet or exceed quality assurance standards for the design and construction of nuclear control valves and parts.

"Flowserve has made ongoing manufacturing investments that allow us to continue to meet the needs of the global nuclear power industry," said Tom Pajonas, president, Flowserve Flow Control Division. *"Nuclear plants around the world rely on Valtek control valves and actuators to provide safe and reliable operation in their critical applications."*

The Flowserve Springville facility has reinstated its N stamp, which was first received from ASME in 1973. Today, Valtek valves are installed at a number of nuclear power generation facilities around the world. Flowserve Springville successfully completed its ASME audit in September 2010 and received its certificates Oct. 29.

Flowserve Flow Control (UK) Ltd
Tel: 01444 314400
Website: www.flowserve.com

AUMA Helps Power Station Protect Operators

An oil fired power station approached AUMA actuators to provide protection for operators of a public access footbridge.

Spanning an inlet channel for tankers, the bridge is manually controlled by a hand wheel. Operation is through a worm gearbox / drive shaft to a spur gear and wheel.

The station wanted to pre-empt instances where a combination of factors, such as high winds, could contribute to the gate being pushed to an open position.

Although not previously involved with the installation, an AUMA Sales Technician was pleased to carry out an inspection. After a site visit, an AUMA LMS anti-backdrive device was recommended to remove risk of un-controlled operations. The power station has confirmed that the solution successfully met their requirements.

Photographs show the AUMA LMS anti-backdrive device installed to protect against accidental error

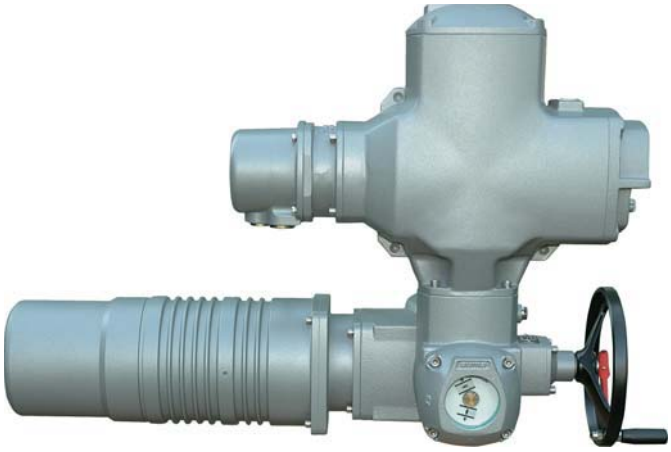
Single phase solution from AUMA

AUMA has announced the development of single phase motors for explosion proof, multi-turn actuators. Supporting the AUMA SA Ex actuator range with output torques up to 1,000 Nm, the enhanced technology offers high enclosure protection IP 67 and IP 68.

Following AUMA's modular design ethos, the new motor initiative enhances AUMA's offer of tailor made actuation solutions without compromising functionality.

The actuator manufacturer and global supplier reports that the United States has been identified as having particular need for the new technology.

The latest AUMA product design initiative benefits from extensive input from oil and gas industry end users.



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Flowserve Announces Valve Orders

Flowserve Announces Multimillion-Dollar Valve Orders from China Nuclear Power Engineering Co. and China Nuclear Energy Industry Corp.

Flowserve Corporation has recently announced two multimillion-dollar orders from China Nuclear Power Engineering Co. Ltd. (CNPE) and China Nuclear Energy Industry Corp. (CNEIC) for main steam isolation valves (MSIVs).

The Flowserve Edward MSIVs are planned to be used at the CPR-1000 design Fuqing Units 3 and 4, and Tianwan Units 5 and 6. All four units are currently under construction and scheduled to be operational in 2016 and 2017, respectively. Flowserve booked the orders in the third quarter of 2010.

"These orders further strengthen our long-standing relationship with the Chinese nuclear power industry and with our customers, CNPE and CNEIC," said Tom Pajonas, president, Flowserve Flow Control Division. *"We are pleased to be able to supply the products that help power the future of nuclear energy in China."*

"Flowserve remains a leader in the nuclear industry, thanks to our experience, expertise and global presence," added Pajonas. *"We are excited to be partnering with CNPE and CNEIC to help meet China's growing energy demands."*

Valves included in the order will be manufactured at the Flowserve facility in Raleigh, N.C.

The Flowserve Edward Main Steam Isolation Valve (MSIV) integrates valve and actuator in one design.

FLOWSERVE®
Flow Control

Flowserve Flow Control
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Website: www.flowserve.com

Explosion Proof Limit Switch Box

Kinetrol's XLS box

Kinetrol have recognised the increasing demand for limit switch boxes to provide a remote indication on the status of valves operating in extremely hazardous areas. To meet this demand, Kinetrol has introduced a competitive flame proof XLS box which is certificated for ATEX Category 2 (Zone 1), North American Class I Division 1 (FM) and IEC Ex use.

The robust, yet light, aluminium housing is epoxy coated, sealed to IP65/NEMA 4X standard and will direct-mount to Kinetrol actuators - or fit to any other make with a VDI/VDE 3845 (NAMUR) accessory mounting arrangement.

Options include:

- Clear Cone position monitor
- Up to 4 switches/sensors (various types/voltages are available)
- 2 or 4 cable entries
- Analogue angle feedback (4-20 mA)
- AS Interface communications
- Up to 17 terminals
- Positioner (4-20 mA modulating and 3-Stop)

KINETROL

Kinetrol Ltd
Tel: +44 (0)1252 733838
Website: www.kinetrol.com

SFC Celebrates Twenty-Five Years

The founders of Smith Flow Control (from L to R) Mike Smith, Malcolm Brown and Mike Danzieri.

Smith Flow Control (SFC) celebrates twenty-five years of operation this month, providing engineered safety systems for hazardous valve operations in the Oil & Gas and chemical processing industries since 1985.

Since its inception SFC has had a great deal of influence in the implementation of safety guidelines for valve operation in the Oil & Gas industry. SFC is responsible for introducing the coded-card linear-key concept, developing a range modular key-operated interlocks that regulate operating procedures on host process equipment. Typical applications include every form of valve (including motorised and instrument valves), switches, vessel closures, access guards, pressure and temperature sensing systems and rail/road/sea tanker loading systems. SFC's solutions in hazardous processes reduce the scope for operator error and ensure safe continuous plant operation.

Most offshore installations in the North Sea have been equipped with SFC systems as well as the majority of related onshore processing facilities throughout Europe. By 1990, SFC became the generic term for key interlock safety systems in the international Oil & Gas industry and its client base now includes most of the major operating companies in all five continents.

Today SFC continues to be managed by its founders, who remain committed to providing quality assured safety products that protect lives and prevent accidents by eliminating human error. Mike Smith, Founder and Vice-Chairman of SFC said *"In principle Smith Flow Control has stayed the same; our guiding principles, our people and in essence, our products. Our greatest success story has been our influence in the Oil & Gas markets, promoting the principles of interlocking for pig launchers and receivers."*

Smith Flow Control Specifically developed a coded-card key interlock system to ensure the total isolation of pig trap vessels. These key interlocks mechanically prove their 'closed and isolated' status that enables venting and draining of pig trap vessels before the opening of closures for loading or unloading operations. These principles have been adopted by UK pipeline regulators, Operating Companies and integrated into international standards such as API (American Petrochemical Institute) and ASME (American Society of Mechanical Engineers).

Mike commented: *"We are very proud of what we have achieved over the years and the contributions we have made to the safety of workers in the Oil & Gas and related industries. For 25 years Smith Flow Control has never failed to provide a viable technical solution to a client's safety operating problem."*

Smith Flow Control
Tel: 01376 517901
Website: www.smithflowcontrol.com

New Sales Manager appointment at BEL Valves Ltd

Nigel Pegram, BEL Valves new Sales Manager

BEL Valves is committed to building strong and mutually beneficial relationships with its customers and in recognition of this objective has recently appointed Nigel Pegram as Sales Manager.

Nigel brings extensive experience gained in a variety of capital equipment manufacturing businesses and prior to joining BEL Valves was Managing Director of Sabre Valves.

Nigel's role includes the ongoing development of Sales Support and the Aftermarket Services that BEL Valves provides, as well as assisting in achieving the company's objective of providing exceptional service at all stages of the business relationship with its customers.

BEL Valves
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Website: www.belvalves.co.uk

ACTUATED SOLUTIONS LTD
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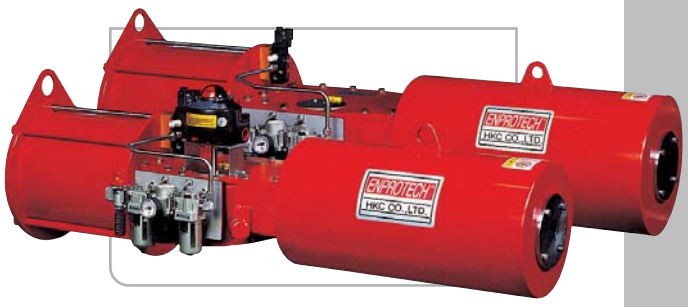
Actuated Solutions is the UK's leading independent supplier of valve automation products. With an in depth knowledge of our products, our customers' requirements and our commitment to quality we provide a level of technical support missing from many of today's leading suppliers.

HQ Electric Actuators

The HQ range of electric actuators features torque figures from 40 to 10,000Nm with a variety of control options including fail-safe battery backup actuators. The HQ is now widely used throughout the UK by some of the industries leading manufacturers and utility companies. HQ electric actuators are also available with ATEX Eexd certification.

ET Series Scotch Yoke Actuators

ET heavy duty scotch yoke actuators are ATEX, PED and CE certified. Available with torque figures up to 25,000Nm, the range can be supplied with jack screw or hydraulic manual override systems. Combined with our APL valve position monitors, we are now able to supply pneumatic actuators complete with controls for larger Oil and Gas applications.



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Our range features torque figures up to 4380Nm and includes 90°, 180° and 3-position fail mid actuators which are available in anodised aluminium. In addition to the aluminium design we have a ductile iron version for aggressive atmospheres / offshore locations. All designs conform to Namur and ISO 5211 standards.

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Emerson's Fisher® Control-Disk™ Improves Efficiency

Emerson's Fisher® Control-Disk™ valves improve throughput and reduce variability at INEOS Chlor plant

Enhanced butterfly valves help plant in Runcorn, United Kingdom, avoid six unplanned shutdowns and save an estimated 450,000 Euros

INEOS Chlor, a major European producer of chlor-alkali and chlorine derivatives, reduced process variability by 5 per cent at its plant in Runcorn, United Kingdom, by replacing traditional butterfly valves with Fisher® Control-Disk™ valves from Emerson Process Management. The reduced variability enabled the plant to increase throughput, avoid several unplanned shutdowns that could have cost as much as 450,000 Euros, and achieve a 96 per cent Overall Equipment Effectiveness rating for the unit where the valves were installed.

"For a plant this size, even a modest reduction in variability can have a significant payback," said Barry Makepeace, INEOS Chlor control & instrumentation engineer. *"The Control-Disk valve applications not only saved us money, but also enabled us to optimise process control without sacrificing flow capacity or needing to re-pipe."*

The Runcorn plant had previously used traditional butterfly valves to control the temperature and flow of cooling water to the primary condensers. Tight control is essential because if the condensers' temperature is too low, there will be residual chlorine in the system, which has to be removed. If the temperature is too high, there is an increased risk of a safety trip or plant shutdown. Each trip and subsequent unplanned shutdown can cost INEOS Chlor up to 75,000 Euros.

Unfortunately, the traditional valves had a small control range and a large deadband, which reduced their ability to respond to temperature changes. In the previous 12 months, the plant had experienced 23 trips leading to a significant loss of production.

Working with Emerson valve experts, INEOS Chlor replaced four traditional butterfly valves with the new Fisher Control-Disk design. Its effective control range (between 15 per cent and 70 per cent of travel) approaches that of a segmented ball valve. Tighter, more reliable valve control enabled plant operators to optimise temperature set points and avoid at least six unplanned shutdowns.

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Hardide Captures Chemical Process with ATEX Certified Digital Camera

Hardide Coatings, global developer of patented metal coatings, is using a new anti-hazard digital camera from CorDEX Instruments to capture chemical processes that have never been recorded before.

Hardide had struggled to find a camera robust enough to use in its high risk chemical tank areas, but was keen to be able to capture the process for product control and testing as well as training purposes.

Oxfordshire based Hardide is the developer of advanced Tungsten Carbide based metal coatings that increase the life of critical metal parts operating in abrasive, erosive, corrosive and chemically aggressive environments. The coatings are used globally in a diverse range of severe service applications for customers from oil industry multi-nationals such as Weatherford International, FMC Technologies and Expro Group to small, innovative engineering companies.

The Centurion XP Dual is now being successfully used by Hardide to photograph materials being treated in a highly aggressive acid etch tank which is corrosive and would destroy a normal camera. It is also being used at the stripping tank, where explosive hydrogen gas is produced. The Centurion XP Dual can store hundreds of images which can be transferred via a high speed USB.

Mr Guse added: *"There is an extremely corrosive atmosphere in parts of our treatment processes as well as the potential for splashes. The CorDEX Centurion digital camera survived this and produced crystal clear images, which is great for our records and to inform customers about the treatment of their components. The macro-lens attachments and strobe flash were also useful for close up shots."*

The CorDEX Instruments camera in use by Hardide Coatings.

Steve Guse, Operations Manager at Hardide Coatings.

The Centurion XP Dual is custom designed and ATEX certified for use in Zone 1 IIC T4 (explosive areas and vapour atmospheres). Encased in aluminium with an ultra-bright display protected by armoured glass, the XP Dual is custom designed for the harshest environments and can be used offshore without 'hot permits'.

Yorkshire headquartered CorDEX Instruments recently opened a base in Aberdeen and is building a reputation in the energy sector for its unique product range. It plans to launch more bespoke products during 2011 for use in hazardous areas.

Steve Guse, Operations Manager at Hardide Coatings said: *"We regularly use digital cameras to record processes for our clients and for internal use, but there are some parts of the factory that up until now have been 'no go' areas. A normal digital camera could create an electrical spark that would have disastrous effects in areas where we have chemical baths and stripping tanks. Not only did the Centurion XP Dual allow us for the first time to record images in these restricted areas, the design with large buttons and backlit display was ideal for use with the protective suits that our engineers have to wear."*

Marcus Halliday, General Manager said: *"Taking photographs in hazardous areas is challenging for many organisations and the Centurion XP Dual was invented in direct response to feedback from industry. We are delighted that Hardide Coatings has chosen the Centurion XP Dual to help inform its customers of the processes it uses. The design is as simple to use as every-day digital models, but is built to withstand the most challenging work environments."*

Hardide Coatings
Tel: 01869 353830
Website: www.hardide.com

Paladon Systems Release the PST Controller

Automatic partial stroke testing for hydraulically actuated valves

PST Controller for partial valve stroking

Paladon Systems is pleased to announce the release of their PST Controller. Designed for either quarter-turn or linear hydraulically actuated valve systems, the PST Controller allows operators to automatically partial stroke test their valves on a regular basis. With a comprehensive test data logging capability, operators can now automatically prove compliance with any mandatory testing requirements, and implement cost effective preventative maintenance programs.

Supporting HART, Foundation Fieldbus and Profibus communications, the PST Controller can be retrofitted to any existing hydraulically actuated valve, or supplied as part of a new valve actuation system.

"We are seeing a significant increase in the Oil & Gas industry for mandatory partial stroke testing of valves used in critical applications such as emergency shutdown and emergency isolation; and for operators to be able to prove to auditors that this testing is being undertaken," explains Senior Sales Engineer Richard Hobbs. *"Pneumatic smart partial valve stroke test systems have been around for several years, but what makes the PST Controller unique is that it can be used in hydraulically actuated valves systems. Leveraging the innovative technology developed for the TVC Positioner, we are pleased to be able offer our customers yet another solution to their current valve automation headaches and challenges."*

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Hardide CVD Coating as Hard Chrome Plating Replacement

Paper presented at Valve World 2010 Dusseldorf Exhibition Centre, Halls 3-4, Nov 30 – Dec 2 1010

Dr Yuri Zhuk, technical director of Hardide Coatings presented a paper at Valve World 2010 on Wednesday 1 December on the development of Hardide-A CVD coating as a replacement to hard chrome plating for the flow control industry.

Hard chromium electroplating has long been a trusted industry solution used to extend the life of valves that control the flow of abrasive, erosive and corrosive fluids and gases. However, it is an environmentally unfriendly process that is subject to increasing legislative restrictions in Europe and the United States, which are reducing the availability and increasing the cost of hard chrome.

Hardide-A has been developed and proven as an attractive replacement for hard chrome plating. It matches the standard thickness and hardness of hard chrome and outperforms the material in several key properties including enhanced protection against corrosion, wear and chemically aggressive media. The replacement process is easy as no dimensional changes or drawing re-design is necessary. It is applied by CVD (chemical vapour deposition) which enables the coating of internal surfaces and complex shapes where other coatings such as HVOF, D-gun and PVD cannot be used. No grinding or other expensive finishing operations are required due to the smooth and uniform 'as coated' surface. It is easily applied to a wide range of metals including various grades of stainless steel, tool and alloy steels, nickel, cobalt and copper-based alloys, titanium and stellite.

Dr Zhuk commented: *"Hardide-A is a technically comparable and better performing alternative to hard chrome plating. It is a clean and innovative technology that can offer a commercial solution to valve manufacturers and end users. Valve World 2010 is the ideal platform to present the technology to flow control technologists and decision makers from around the world."*

Hardide Coatings

Hardide Coatings
Tel: 01869 353830
Website: www.hardide.com
www.valveworldexpo.com

James Walker offers large-section RGD capability

The latest Norsok tests carried out on James Walker's New Generation FR68/90 fluoroelastomer have returned a perfect '0000' rating for a 10.00mm section at 100ºC.

FR68/90 offers a significant advance in RGD resistance against the best current materials

A perfect '0000' rating showing no damage at either 8.40 or 10.00mm section following Norsok M0710 RGD testing

No compromise

The material was launched in August this year with a clear performance advantage over the best options currently available, the pre-launch test programme at that time having established '0000' ratings at 8.40mm at 100ºC and 5.33mm section at an elevated temperature of 150 ºC.

This exceptional RGD performance is not achieved at the expense of other material characteristics however. FR68/90 retains flexibility for ease of fitting and offers excellent seal stress retention characteristics with compression set figures of just 8% after 24 hours @ +175°C and 10% after 24 hours @ +200°C. This is in addition to superb Amine and H2S resistance plus an operational temperature capability of -30ºC to +200ºC.

New capabilities

The testing was carried out at the purpose-built RGD testing facility within the James Walker Technology Centre - one of the most advanced and expanding facilities for RGD testing currently available.

The results revealed a top rating of zero defects in all four samples following rapid gas decompression testing at 100ºC (212ºF) using a pressure of 150bar (15MPa) and a decompression rate of 35bar/minute (3.5MP/minute). This is well in excess of the 20bar/minute industry standard demanded by the Norsok M-710 test regime.

The combined performance parameters of FR68/90 open up new opportunities for extending the use of elastomeric materials to larger sections than previously possible with no loss of RGD resistance. This holds the possibility to eliminate the need for complex and costly re-engineering of components to accept solutions such as spring energised PTFE seals which are physically larger, more sensitive to surface finish and more difficult to install.

Testing continues

Since the launch of FR68/90 James Walker has continued an intensive testing programme - both for RGD performance at increasing temperatures and larger sections as well as for chemical resistance - to map out the full performance envelope of the material's advanced polymer architecture. In addition, the material is now also undergoing field trials in the sort of applications and environments for which it was designed.

Application specific

Although this New Generation material significantly extends the performance envelope of fluoroelastomer (FKM) materials, FR68/90 will by no means replace the existing market-leading elastomers in the James Walker range such as Elast-O-Lion® 101 and FR58/90, which will remain the best available technology for many current oil and gas industry applications.

Full product details plus a PDF brochure are available on the James Walker website.

James Walker

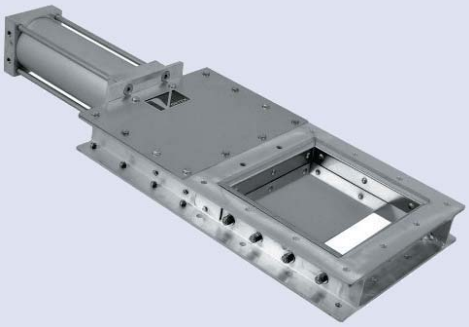
James Walker
Tel: 01900 823555
Website: www.jameswalker.biz

Vortex Valves and IPL
Your Partners in Process

International Procurement Limited (IPL) is pleased to announce the agreement to become the UK agents for Vortex Valves.

Vortex 2 way

Vortex Oraface gate



Vortex Roller Gate

The Vortex valve range includes Slide gates, Roller gates, Diverters, Iris valves and metering controls, and can be used on Powder and dusts, granules, pellets and abrasives

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Misapplied or design deficient valves add unexpected costs and inefficiencies in process. Vortex understands the value of your process and with their knowledge of dry particle characteristics and material conveying systems is unsurpassed. Vortex delivers intelligent, cost effective valve solutions for all dry bulk materials. All the Vortex products can be seen on the website www.vortexvalveseurope.com

IPL see this partnership as a huge opportunity in adding another quality product line to that of the Valvtechnologies Zero Leakage 4 year guarantee range of critical and severe service valves, the extensive range of Velan Steam traps, and being an A1 distributor for the SMC pneumatic range. IPL carry large stocks of Valvtechnologies, Velan Steam traps, SMC products, Rotork Valvekits and gearboxes, utility valves and pneumatic actuators in their facility at Stockton on Tees. IPL are committed to providing the customer with the best solution, at a competitive price, right first time, delivered on time.

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Company Profile

K Controls

Since 1995 K Controls has specialised in the design and manufacture of networking, monitoring and control equipment for valves, actuators and dampers.

A K44 "Checktite" three piece swing check valve.

K Controls is celebrating 30 years in business. The company was established in 1981 by associate valve distributor Ivco Process Valves (IPV) following the acquisition of the industrial control valve business of Drayton Controls.

K Controls manufactured the products in West London and all sales and marketing activities were carried out by IPV. This continued until 1987 when Ivco Process Valves was acquired by the BSS Group PLC. Since that time K Controls has continued to operate as a private independent business that ceased the manufacture of control valves in 1995 and now specialises in the design and manufacture of networking, monitoring and control equipment for valves, actuators and dampers.

The two long serving Directors are Brian Prince (formerly Technical Director of Worcester Controls, now part of Flowserve) and David Yates (formerly Managing Director of Ivco Process Valves; a UK national valve distributor that was started by George Yates in 1966).

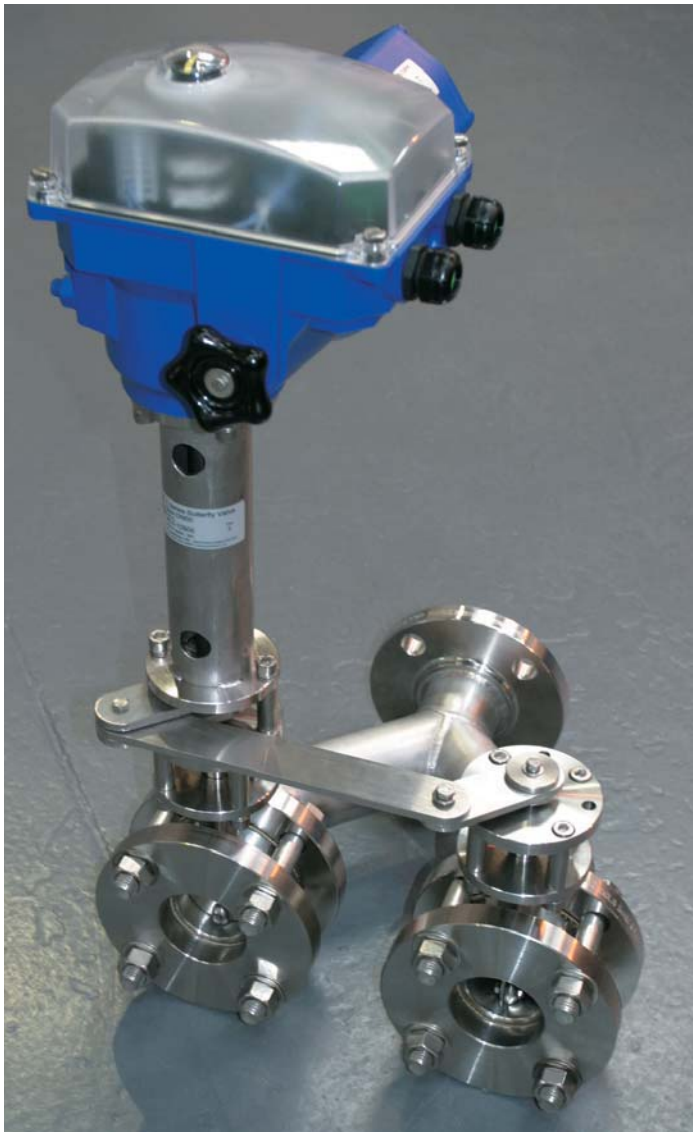
The first 007 Switchbox (the project number was "008" but "007" was thought to be more memorable!) was developed specifically for use with the Norbro 37 Series actuator. However at that time there we not many well engineered "switchboxes" on the market and this, together with the introduction of standardised dimensions for actuator top works, gave K Controls the opportunity to market the product for use on a wide range of quarter turn actuators from other manufacturers.

The process of application engineering and incremental innovation since 1995 has resulted in an extensive range of products that includes:

- Switchboxes with corrosion resistant enclosures
- ATEX and IECEx certified products for use with hazardous gasses and combustible dusts
- Switchboxes with high (+300 deg C) temperature capability for fire and smoke dampers
- Switchboxes with low (-50 deg C) temperature capability for Arctic service
- Switchboxes IP68 for submersion
- Versions with integral solenoid for parallel wiring or connection via remote I/O systems
- Integrated fieldbus compatible versions for AS-interface® or DeviceNet™
- Fieldbus compatible versions for PROFIBUS® PA or FOUNDATION™ FIELDBUS via valve couplers
- Position transmitters for 4-20mA, HART®, PROFIBUS® PA or FOUNDATION™ FIELDBUS
- Linear or rotary solutions
- Wireless solutions

The demand for automation in process plants continues to grow, the cost of labour is high and clients are continuously improving product quality and process efficiency. Equipment used in hazardous areas must meet increasingly exacting safety standards and be produced consistently using procedures laid down in ISO 9000 and industry specific quality plans. Customers expect products to be customised to their requirements and available on ever shorter lead times.

K Controls has been ideally placed to adapt to these trends. It has a good knowledge of the valve and actuator industry and also keeps close to the latest developments in front



Electrically actuated Z Series butterfly valves in a diverter configuration.

end control and associated interfacing equipment including "fieldbus" and "functional safety systems". It has a mixture of mechanical and electronic expertise and understands how to protect equipment for use in hazardous areas.

The company has developed robust communication, administration, production and quality systems which enable it to react quickly and appropriately to customer demand. An integral part of the company's vision is a commitment to provide a first class working environment in which individual development flourishes and personal aspirations are realised. A world class team clearly focused on providing world class service to customers is essential for K Controls future success.

The company has ISO 9001:2008 approval and a Baseefa Ltd ATEX and IECEx Quality Notification for the manufacture of certified Exe, Exd and Exi equipment for use in potentially explosive areas. Where appropriate individual products are ATEX and IECEx certified and CE marked. The company are planning to obtain US and Canadian approvals for its products during 2011. Following successful third-party evaluation, K Controls can also offer products for both Low and High Demand scenario applications at SIL2 or SIL3 of IEC 61508.

K Controls has also developed two valves for specialised applications: The K44 "Checktite" three piece swing check valve has been designed to complement three piece ball valves and is used on chemical, petrochemical and pharmaceutical process lines as well as gas, oil and water applications. The Z Series stainless steel butterfly valve is for high temperature automotive exhaust gas applications and is frequently used to regulate the back pressure of exhaust gases during engine testing.

Main markets are chemical, pharmaceutical, food and beverage, oil and gas, sub-sea, automotive test, fire protection and nuclear. In 2010 50% of the company's output was exported.

In summary, the ability to offer sound advice together with safe and reliable products enables valve and actuator suppliers to trust part of their business to K Controls that often lies beyond their core competencies. Service is enhanced via rapid response times to enquiries and an ability to quickly adapt products to meet client's specific needs.

K Controls Ltd
Tel: 01895 449601
Website: www.k-controls.co.uk

Economical High Temperature Control Valves

Leeds Valve have established an area where their low cost high temperature valves meet a distinct market need.

There are certain applications where the fully rated shut off capability associated with metal seated high performance valves is not required.

The control of low pressure high temperature gases can be economically achieved using the Leeds Valve swing clear and

Standard Control Valve with Swing Clear Disc

Standard Control Valve with Integral Body Step

step seat design. The low breakout and re-seat torque allows the valve to be automated with small simple actuators and can be used with lever operators for trimming control.

Manufactured in cast high temperature materials the construction can utilise alloys which would not readily be fabricated. Shafts, bearings and gland packing are carefully selected to eliminate sticking and ensure the valves operate smoothly at the elevated temperatures.

One of the most popular materials used by Leeds Valve is "Heat Resistant Cast Iron", cast iron with the addition of a small percentage of nickel and chromium, allowing use up to 650°C.

Where there may be corrosion problems high grade stainless steels and specialist alloys like 37/18 Ni Cr can take the temperature up to 800°C.

Depending on temperature the swing clear and step seat valve can maintain ANSI / FCI 70-2 class I to class III leakage adequate for low pressure gas control. If the gases contain abrasive particles then disc, shaft and body can be hard faced.

Using these materials and designs Leeds Valve have been successfully supplying high temperature throttling valves for engine test rigs as back pressure control valves and they are now being used by some of the leading engine manufacturers in Europe.

Mainly wafer type, class 150# in sizes from 4" (including 5" & 9") to 16" these valves are one of Leeds Valve ongoing successes and demonstrate how, by designing butterfly valves for a specific service, Leeds Valve deliver the most cost effective and technically sound solution.

Leeds Valve
Tel: 0113 252 5051
Website: www.leeds-valve.com

Maher Hosts BAE Forum

As a long established supplier of BAE Systems Marine, Maher Ltd was proud to play host to BAE's most recent Submarine Supplier Forum. The forums are a key way in which BAE communicates with its supply chain and they cover a range of subjects from project updates and new requirements, to political decisions that are having an impact on the industry. BAE's investment and efforts to consolidate this network of suppliers mean that Maher and other members are able to react quickly and effectively to industry developments when required.

Visitors seeing a demonstration of the PDAs

October's event saw 42 representatives from a cross-section of the industry come to Maher for a presentation and tour of the facilities. This was followed by a range of presentations delivered by BAE at the Advanced Manufacturing Research Centre (AMRC) in Sheffield. The event was a great success and gave Maher the opportunity to showcase the high quality of facilities and procedures upon which it prides itself.

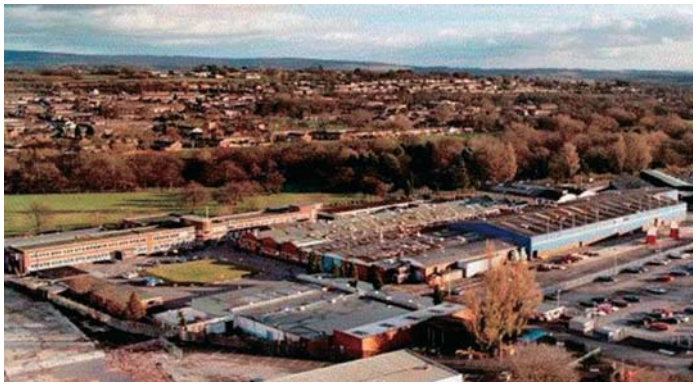
Maher
Tel: 0114 2909201
Website: www.maher.com

The Trusted Brands of CRANE

New from Xomox

CRANE ChemPharma Flow Solutions Global Headquarters, Cincinnati Site

With more than 40 locations around the world, CRANE ChemPharma Flow Solutions is one of the leading providers of highly engineered products for fluid handling applications worldwide. Providing industrial fluid control solutions for chemical, biotechnology and pharmaceutical industries, CRANE ChemPharma is made up on nine brands that have come together through company innovations and acquisitions [DEPA® ELRO® KROMBACH® PSI® RESISTOFLEX® RESISTOPURE® REVO® SAUNDERS® XOMOX®]. These nine brands form a comprehensive product portfolio consisting of sleeved plug valves, lined valves, high performance butterfly valves, aseptic and industrial diaphragm valves, actuation, lined pipe, fittings and hoses, and air operated diaphragm and peristaltic pumps.



CRANE ChemPharma Flow Solutions Cwmbran Site

CRANE ChemPharma Flow Solutions Lindau Site

Of these nine brands, two have a significant presence in the British market.

XOMOX®

With 55 years of experience in the valve industry, Xomox, originally established in 1956 as the Continental Manufacturing Company in Cincinnati, Ohio, is known for its quality products and services. At its inception, the company's principal product was its Tufline fluorocarbon-sleeved plug valve, a non-lubricated sleeved plug valve that used Teflon to ensure that the valve sealed tightly and operated reliably on a relatively maintenance-free basis. Acquired in 1980 by Emerson Electronics and later in 2001

by Crane Co., Xomox gained global recognition of its products and capabilities.

Now, as a part of CRANE ChemPharma Flow Solutions' product portfolio, Xomox has become one of the company's trusted fluid handling brands, offering the broadest range of materials, sizes, pressure classes, and temperature ratings for a number of different demanding fluid handling applications, including chemical, pharmaceutical and oil & gas. Xomox's highly engineered valves are manufactured according to ANSI, JIS and DIN standards in its complete line of quarter-turn sleeved plug valves, ball valves, high performance butterfly valves, and lined plug and ball valves. Major manufacturing facilities for the brand are located around the world in Lindau, Germany; Chihuahua, Mexico; Székesfehérvár, Hungary; Chennai, India and Cincinnati, OH in the United States. The newest product launch from Xomox is its XLB Global Lined Ball Valve featuring a metallic core, PFA lining and advanced sealing technology that come together to form a durable single-piece design that better resists corrosion.

Saunders®

Founded in 1933, following the 1928 invention of the original diaphragm valve by P.K. Saunders, Saunders has led the way in providing solutions in industries where resistance to corrosion, abrasion, contamination and trouble-free operation are imperative. Also acquired by Crane Co. in 2001, the addition of Saunders and Xomox significantly strengthened Crane's position in the rapidly consolidating global valve industry. Now known as one of the trusted brands of CRANE ChemPharma Flow Solutions, Saunders has major manufacturing facilities in Cwmbran, UK; Satara, India and Conroe, TX and Cincinnati, Ohio in the United States.

The Saunders product portfolio encompasses a complete line of manual and linear actuated diaphragm valves, both weir and straight through type, Aseptic diaphragm valves and blocks solutions, Non-return Check valves and ball valves. Its two signature products, however, are the Industrial Diaphragm Valve and its HC4 Diaphragm Valve. The Saunders HC4 brand is globally recognized in biopharm industries for its quality and innovation, as it introduced several firsts for the category of diaphragm valve technologies, including the first to bring a forged body to market. The Saunders Industrial Diaphragm Valve has evolved since its invention more than eighty years ago to handle more fluids, gases, solids and powder than alternative valve types, and it has been developed to satisfy most industrial applications. The most recent product introduced by Saunders is its Saunders XA diaphragm that offers a 25% improvement in elastic recovery, resulting in better sealing performance.

CRANE ChemPharma Flow Solutions

Crane ChemPharma Flow Solutions
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Website: www.cranechempharma.com

Improved fire protection at the Royal Mint

Rotork IQT Pro actuator

Extended scope contract secures improved fire protection at the Royal Mint

The Rotork Site Services contract to install an automated shutdown system on the gas main has secured improved safety and fire protection for the Royal Mint, at Llantrisant in South Wales.

The gas main serves the annealing and pickling plant at the site, where, following a fire, an investigation by Safety, Health and Environmental Services recommended improvements. These involved the installation of five new actuated butterfly valves on the gas main for emergency shutdown duty and the motorisation of one existing hand operated valve. The new system is designed to close down the gas main serving three buildings within two minutes.

Following an initial survey, Rotork's Site Service Department proposed a turnkey solution encompassing the design, procurement, installation and commissioning of all the elements required for the new system. This included the provision of IQT Pro intelligent electric actuators with integral partial valve stroking software, facilitating function testing of the system without any interruption to normal operations.

In addition to installing the new actuated butterfly valves and retrofitting the existing valve, Rotork has been responsible for many pipework modifications and the design and installation of a distributed control system with an uninterruptable power supply, comprising shut down panels for each of the three buildings and a shutdown panel for the entire system in the site's central security centre.

Rotork's successful completion of the contract has been achieved with the assistance of the Royal Mint's local sub-contractors including JRP Electrical and the Systems Group.

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Rotork valve automation at solar power plants includes retrofit upgrade

A control valve on the HTF pipework at La Dehesa, motorised with a retrofitted Rotork IQTF linear actuator to provide precise remote control of the HTF temperature.

With a generating capacity of 432 MW, Spain is now the world's largest generator of electricity from solar power plants. Spanish solar energy plants utilise parabolic trough technology combined with a thermal storage system using molten salt batteries to maximise their power generating capacity.

Rotork IQ intelligent electric valve actuators with Rotork Pakscan two-wire digital control systems are in widespread use throughout these plants, as is the case at the recently completed La Dehesa and La Florida installations in the state of Badajoz.

Rotork Iberia has worked closely with the plants' owner, Renovables SAMCA, to integrate an economical and efficient IQPro actuation and control system. The decision to use Rotork's Pakscan P3 control system was assisted by its extremely long range bus capabilities and cost savings.

Each Pakscan P3 master station can operate a bus loop of up to 20 kilometres in length with no deterioration in communication performance or the need for repeaters, making it ideal for the spacious environment of a solar power plant.

Rotork is now on site for a retrofit project on the plants' HTF (Heat Transfer Fluid) pipework. The HTF pipes carry the heat transfer oil between the parabolic mirrors, the steam plant and the power generation circuits. At each site Rotork is now installing 168 actuators and four Pakscan P3 master stations for the automation of 3 inch globe valves, to introduce remote control of the HTF temperature.

The application demands very high mechanical output resolution from the actuator in response to minimal signal changes from the controller. The linear stroke of each valve is 30mm and the requirement is to move a minimum of only 1% of this stroke, resulting in discrete movements of only 0.3mm. To achieve this, Rotork is supplying a linear version of the IQTF multi-turn actuator, which operates at a relatively low output speed to provide maximum resolution and accuracy.

The positional monitoring and control signal is provided by the Pakscan P3 system, using Modbus RTU protocol, over a two-wire, twisted pair bus loop. Automatic, inbuilt redundancy of the field network is an integral part of the Pakscan design, ensuring that control is maintained even in the event of equipment or cable failure.

In common with all Rotork IQPro actuators, data loggers within the IQTF units facilitate valve diagnostics by recording historical operating data and valve torque trends. Using Rotork's IQ-Insight software this data can be analysed on a PC to predict any potential operating issues, enabling maintenance to be planned in advance without interruption to normal plant operations.

The retrofit project is being carried out by Rotork Site Services, a dedicated organisation within the Rotork Group that supports all the actuator operations with a range of activities including retrofitting, maintenance, repair, extended scope projects and life of plant programmes.

rotork® Controls

Rotork Controls
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Exeeco awarded 'top marks'

Exeeco awarded 'top marks' for boiler control valve upgrade at Glasgow University

The new valve and actuator installation at the University of Glasgow

"The team at Exeeco served our requirements very well from initial enquiry through to completion. They attended to queries satisfactorily both in writing and site visits."

These comments from Hamish Alexander, Maintenance Engineer at the University of Glasgow, sums up the performance of Exeeco on the successful completion of an actuated valve and control panel upgrade in the University's boiler house.

Two boilers supply the University's main campus buildings with steam. The boilers maintain pressure overnight which is released through two automatic control valves opening on the outlet pipe work. The control valve actuators operate from a PLC signal that is present during pre-programmed times, determined by varying building occupation.

One of the actuated valves was not seating correctly, creating boiler inefficiencies due to increased and uncontrolled steam supply. Both the actuator and control panel were obsolete and spare parts were not available, so replacement was essential.

Hamish contacted valve actuation specialist Exeeco for the new installation, comprising a new valve, actuator and local control panel, which had to be designed and built to interface with the existing PLC control system, together with replacement power and control cabling between the panel and the actuator.

Exeeco provided the solution by sourcing a new valve and a Rotork actuator, designing and fabricating the valve/actuator adaptation and a new control panel after interpreting the existing schematic wiring diagrams and control philosophy. Critical to the design was the need for a very slow valve opening rate, which was achieved by a dual speed timer in the actuator, controlling alternate opening and delay periods. All the new equipment was installed and commissioned by fully qualified Exeeco engineers and the customer was supplied with a complete set of 'as built' Solid Edge CAD drawings, earning the company 'top marks' for its performance.

rotork Site Services

Exeeco – Actuation, Projects & Services
Tel: 0113 205 7237
Website: www.rotork.com

Saunders XA Improved Lead Time

CRANE ChemPharma Flow Solutions™ Proudly Announces Improved Lead Time for New SAUNDERS® XA Diaphragm

CRANE ChemPharma Flow Solutions™, Saunders® is pleased to announce a significantly improved lead time of four weeks for its newly launched Saunders® XA Diaphragm. A leading provider of highly engineered products for fluid handling applications worldwide, CRANE ChemPharma Flow Solutions developed this product under the Saunders brand as part of its Ultimate Diaphragm Line for its Industrial Diaphragm Valve (IDV) Collection.

"The ability to ship the Saunders XA Diaphragm to our customers within a four-week lead time represents an internal achievement that we are significantly proud of," said Massimo Amato, IDV Business Line Manager of CRANE ChemPharma Flow Solutions Saunders. *"A key objective for our company as a whole has been to improve this standard and we are continuously challenging ourselves to exceed expectations in this essential area of our business."*

The Saunders XA Diaphragm was developed in-house using a compound based on an ethylene propylene (EP) technology, a key factor in the product's ability to offer increased erosion resistance in both corrosive and abrasive applications, including fertilizer, metals, chemical and mining. Benefits include enhanced flex life, resulting in reduced down time and improved productivity, thereby equating to a lower cost of ownership; a 25% improvement in elastic recovery, resulting in better sealing performance and reduced emissions; and maximized rebound resilience.

CRANE ChemPharma Flow Solutions

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Metso's Service Network

Metso's global service network is continuously growing, as more and more customers get to know the service offering Metso has for valve maintenance. Metso serves customers in many industries, and therefore the range of services is extensive as well. The services are always tailored for each customer's needs.

Intelligent Valve Repairs

What makes an ordinary valve repair intelligent? With Metso services, the valve repairs are well planned, documented and carried out in the Metso Service Centre by professional and experienced Metso Service Technicians. The repair process and procedures are in accordance with quality, environmental and safety standards ISO9001, ISO14000 and ATEX. Metso Service Centres are well equipped for even challenging repairs and large scale turnarounds. The new Metso Service Centre in Seaham, County Durham is a great example of supporting these cases. And should there be a need for R&D, engineering or manufacturing, Metso Service Centers are backed up by the original equipment manufacturer of Neles, Jamesbury and Mapag product lines, bringing in to the picture the global Metso's Automation business line network and products ranging from valves to analyzers, consistency transmitters and automation systems.

Wide range of services to support maintenance and turnarounds

The key element in successful and economical valve maintenance is planning. Metso has created a set of services to support valve maintenance and turnaround planning. Metso offers support in Criticality Analysis and Intelligent Field Survey to help in defining the Maintenance Plan or scope for the turnaround. In Criticality Analysis the valves are divided into criticality categories according to their effect on production, quality, safety and environment.

A Criticality Analysis is made by combining maintenance and process knowledge. Metso's Valve HealthCheck helps to analyze the valve diagnostics. Many UK customers are already utilizing the Metso's Smart HealthCare service. With Smart HealthCare, the valve diagnostics are analyzed regularly by Metso Service Technician, and the condition of the valve is recorded and monitored to help reduce the risk of unplanned breakdowns. With good planning, the maintenance activities can be directly focused to the valves needing it the most and costs can be reduced, sometimes even dramatically.

Metso's spare part and inventory management services

Even with good planning, unexpected service needs may arise during a major turnaround, particularly valves with no previous service history or diagnostics available. One way to secure spare part availability for those needs is Metso's Valve Spare Container. Customized and pre-planned selection of spare parts will be held at the Metso Service Center for the turnaround, against a service fee. Any unused parts can be returned according to the contract details and charges are only made according to spare part consumption.

Besides good maintenance planning, managing of inventories and spare part purchases are vital issues when targeting to lower maintenance costs. Metso's Valve Management Solution takes care of both in a unique way. Part of the Valve Management Solution is a systematic standardization of the installed valve base in co-operation with the customer. With this solution Metso manages customer's valve inventories and valve maintenance systematically. Currently, there are many customer's relying on Metso's Valve Management Solution globally, and all of them have chosen to extend the agreement to longer period with increased scope having seen the positive impact on maintenance costs and particularly the positive impact on capital tied to the valve inventories.

The full range of Metso services are available from Metso Service Center at Seaham, County Durham!

Metso North East Service Centre has already been established for over 25 years. We are now proud to announce the opening of our brand new service facility at Seaham, County Durham. The service centre covers 37,147 square feet of workshop, storage and office space to further enhance our service and sales activities to UK customers.

The move enables Metso to further expand our service capabilities. The service center has the capacity and the latest technology needed to handle large scale shutdown turnarounds, general repairs, spare parts, training programs, Valve Management Solution, field support and diagnostic services. As in all Metso Service Centers, all repair and overhaul work is carried out according to Metso defined service procedures, and leaves our service center with certification and overhaul warranty, the same level as new manufactured valve packages. The Service Center follows the quality and environmental procedures according to ISO9001 and ISO14000 and the service personnel in the UK service center are ATEX certified.

Metso
Tel: 0191 5230120
Website: www.metsoautomation.com

Zoedale Product Launch Success

First orders Delivered following Valve World Product launch

Zoedale Plc has just taken delivery of their first orders for the new Bernard Controls STX Intelligent Explosion Proof Electric Actuators following the successful launch of the product at the Valve World exhibition and conference in Dusseldorf at the end of 2010.

The New design of Quarter-turn and Multi-turn Electric Actuators covers the requirement of both ATEX /IEC-Ex and CSA Class 1 approvals and is available in a comprehensive range of torques.

The SQX and STX range have been designed to address both customer and end user needs. Product expectations were gathered via a two year International User Forum hosted by the Bernard Controls Worldwide Network of Subsidiary companies and Agents from the UK and USA, to as far afield as China and the Middle East.

All the new product enhancements and features come with the assurance of product reliability from the Bernard Controls robust actuator design and provide increased mechanical efficiency for heavy duty actuation. These robust features however are delivered without any detriment to the accuracy of the information gathered from the absolute torque and position encoders and sensors, which provide direct drive output information and feedback from the main actuator drive.

At the heart of the SQX and STX Range is the Bernard Controls User friendly INTELLI+ intelligent and non-intrusive control system, which provides both product and valve information to the user. The INTELLI+ system ensures that the critical information required for the longterm efficency of both valve and actuator, is easily and quickly available via a number of feedback facilities, thus optimising the valve life and maintenance operations.

The New STX and SQX Explosion Proof Actuators also benefit from enhanced security protocol and thanks to the INTELLI+ technology package, provide the user with secure access to a whole host of additional product benefits, such as alarm monitoring, partial stocking, ESD and “battery free technology”. As well as providing a flexible safety system maintenance feature for field-bus and critical maintenance programmes.

More information is available from

Zoedale Plc
Tel: 01234 832832
Website: www.zoedale.co.uk

Solent & Pratt appoint new Business Manager Control and Automation

Ken Winpenny has been appointed to the role of Business Manager Control and Automation for Solent & Pratt, a business unit of Curtiss Wright Flow Control Company. Ken will manage the company's strategy to support customers with the best butterfly control solutions for their processes worldwide. With 20 years plus experience in engineered butterfly valves allied to his wealth of knowledge, particularly with respect of control applications, Ken's appointment will help to ensure that Solent & Pratt maintains its ongoing commitment of providing "real value in every valve".

CURTISS WRIGHT Flow Control Company
Solent & Pratt

Solent & Pratt
Tel: 01308 422 256
Website: www.solentpratt.cwfc.com

British Energy Training Incorporates AUMA Actuation

AUMA trains staff at Dungeness B in actuation technology

A systematic approach to training at British Energy, part of EDF Energy, incorporates actuation education. Over 400 AUMA actuators are installed on the utility's sites including Hinkley B, Dungeness B and Hunterston B. The manufacturer of modular actuation solutions is supporting its actuation technology with tailored training programmes for British Energy.

AUMA actuators at British Energy's sites play an important role facilitating process control automation. As a result, the actuation technology is 'process critical' and training is focused on development of practical skills.

Designed specifically for British Energy's Electrical Maintain Technicians, the on-site training tool is interactive and supported by working product examples. Commenting, Rodger Smith, a British Energy Electrical Technical Training Instructor based at Dungeness B, said:

"Our technicians are practical people and AUMA's training, which is adapted to meet our needs, is engaging and informative. As a result, in contrast to traditional classroom learning, it is effective at ensuring staff retain information and enhance their skill levels."

AUMA, which has supplied modular actuation solutions to the power industry for over forty years, has specialist expertise supporting nuclear plants and their obsolescence initiatives. Included in AUMA's product range is a series of actuators specifically designed for use in nuclear power plants. Installations include the world's first Generation 3 reactor, Olkiluoto 3 in Finland.

A suite of eight training courses are delivered at AUMA UK near Bristol, or at a customer's site. An assessment is available and certificates are issued on satisfactory completion of the courses.

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Tyco Launches Series 300 Ultra-Seal Ball Valves

Tyco, the global leader in flow control, introduces the Series 300 range of Ultra-Seal ball valves. Designed and manufactured by Hindle Cockburns in Leeds, United Kingdom, the Series 300 range is the result of extensive research and development that delivers significant benefits to users who are looking for top-end performance in demanding environments. With a full range of seating options including soft, carbon graphite and metal, the Ultra-Seal Series 300 range is type approval tested by Shell GSI. The range is ideally suited for use in a wide variety of industries including petrochemical, chemical, oil and gas, LNG and marine.

The Ultra-Seal Series 300 is a range of two piece full bore, flanged, free-floating (seat supported) ball valves, incorporating mounting dimensions to BS EN 15081 and designed in accordance with ASME B16.34, BS EN ISO 17292 and ISO 14313/API 6D.

The incorporation of soft, carbon graphite and metal seats are the most significant of a range of enhancements to the well-known and respected Series 200 range. These three seating options allow engineers to select the most appropriate seat design, for temperatures as low as -196°C or as high as 450°C. Soft seat designs are fire tested to BS EN ISO 10497 standard.

Where abrasive and corrosive fluids are a major concern, a range of ball and seat coating materials are available. Coatings include tungsten carbide, which offers corrosion resistance especially for aqueous solutions, nickel alloy coating, suitable where abrasion and particle erosion may be a challenge, or chromium carbide coating, also suitable against sliding wear, up to 450°C.

The metal and carbon graphite seat designs incorporate spring materials for optimum seal performance and high integrity shaft seals give low emission performance, even under thermal cycling. Both the metal and carbon graphite seats have been tested to Shell MESC SPE 77/312 class A and meet leakage performance of BS EN ISO 15848-2 class A.

For maximum chemical compatibility with minimum coefficient of friction, the PTFE soft-seated design is recommended. The soft-seated design incorporates a floating ball design that provides tight shut-off in both directions to BS ISO 5208 rate A. Fugitive emissions are tested in all designs and approved to Shell MESC SPE 77/312 class A.

The design and low-temperature performance of the Ultra-Seal Series 300 has been validated in strict cryogenic testing conditions. Demand for valves that can safely and reliably operate in low or cryogenic environments has increased significantly in recent years. Tyco is poised to meet the challenge of tough operating environments with quality design and engineering, driving research and development into issues specific to extremely low temperature operation. This has led to breakthroughs such as the design of a modular extension bonnet to relocate stem seals to the ambient temperature zone, improved valve seat design and performance, cavity pressure relief and stringent leakage acceptance testing criteria.

tyco / Flow Control / Tyco Valves & Controls

Tyco Valves Flow Control
Tel: 01695 554800
Website: www.tycovalves-eu.com

Leeds Valve Help Jersey Go Green

Leeds Valve is assisting the Jersey Electricity Company (JEC) and the States of Jersey in a major £105 million Energy from Waste project that will provide clean, green energy to the Jersey Islanders.

The project will see the out-dated incinerator which gives off visible emissions being replaced with a new 10MW Energy from Waste incinerator which will produce electricity to run itself and power 10,000 homes.

Looking down into the existing sea water culvert

As part of the project, JEC were commissioned to provide cooling water from the existing systems of La Collette power station. Leeds Valve, which is a world leader in the manufacture and supply of butterfly valves for niche applications, supplied JEC with a number of isolation valves to be installed in the existing 45 year old sea water culvert system so that the new cooling water system can be tapped off it.

To reduce system downtime and allow for interchangability each of the non-standard 1.5m (5ft), 2.2 tonne butterfly valves were manufactured to the original dimensions. Leeds Valve Technical Director George Burns said: *"Our expertise in manufacturing non-standard butterfly valves for use in even the most challenging environments made Leeds Valve the ideal partner for JEC on this project. JEC needed valves to fit their existing 60" pipe work and the existing pits, so the valves had to be sized to exactly meet these dimensional constraints. Our great strength lies in our ability to supply competitively priced, custom-made butterfly valves that precisely meet requirements."*

The valves, which are thought to be the biggest on the island, are capable of shutting off a full-bore flow rate of 20,000m^3 hour.

Each valve has been manufactured to meet the exacting requirements of this application. They have double flanged bodies in ASTM A126 Class B material, protected by a fully

One of the 60" bore butterfly valves

vulcanised rubber lining, which is machined to give optimum interference for low torque and extended wear life. The valve internals are in high-grade sea water resistant aluminium bronze.

The system has now been pressure tested and commissioned and is to provide cooling water to the Energy from Waste plant for the next 25 years.

Leeds Valve
Tel: 0113 252 5051
Website: www.leeds-valve.com

Benefits of Rotork Actuation for Vital Refining Process

Test and development co-operation confirms the benefits of Rotork actuation for vital refining process

Expansion turbine installation equipped with a Rotork IQML actuator

Expansion turbine – also known as 'turbo expander' - technology performs a critical function in the upstream processing of natural gas. Expansion turbines are generally used in low temperature processes involving the extraction of hydrocarbon liquids from the natural gas.

Rotork's extensive experience with the equipment, with energy clients including major names in the oil and gas industries, has precipitated important development work involving the use of Rotork IQML modulating linear electric actuators to improve the efficiency of turbo expander performance. The Rotork actuators are used to operate the inlet guide vanes that direct the flow of air onto the turbo expanders' rotor blades, instead of pneumatic actuators that have been traditionally specified for this duty.

Rotork has worked closely with both manufacturer and end-user to verify that the performance of the IQML actuator meets the arduous and continuous operating requirements of this specialised duty, which is entirely dictated by the downstream demands of the refining process. Within the actuator, accurate positioning is ensured by fitting the Rotork Folomatic analogue position controller with appropriate deadband settings, whilst the actuator's torque/thrust values are custom-programmed to suit continuous reversal demands in output direction. Improved lubrication of the output screw has also been identified and implemented to ensure long-term trouble-free operation. In addition, the actuator's data logger has provided essential operating data for a detailed study enabling the manufacturer to identify the changing nature of the air flow at the various positions of the inlet guide vanes.

These developments have been further assisted by comprehensive testing at Rotork's research and development facilities at Bath in the UK, where millions of starts and stops in conditions replicating accurate site conditions have been successfully carried out in arduous bench testing programmes.

As a result of the test and development work, Rotork has modified existing installations by introducing IQML actuators at a number of major refinery sites including Qatargas and Rasgas. One of these installations is pictured.

Rotork actuators for metering pump sets

A metering pump set equipped with three Series 1000 actuators and four IQPro electric actuators from Rotork.

Rotork's activities with metering pump sets continue to grow as manufacturers incorporate Rotork electric valve actuators within standard products and packaged plants.

The metering pump is a positive displacement chemical dosing device with the ability to automatically vary its dosing capacity as process conditions dictate. The pump features a high level of repetitive accuracy and is capable of pumping a wide range of chemicals including corrosives or viscous liquids and slurries in hazardous environments including oil and gas installations, refineries and chemical processing plants. The pumping action is operated by a reciprocating piston which is either in direct contact with the process fluid or shielded from the fluid by a diaphragm.

Rotork multi-turn electric actuators precisely control the stroke of the pump, typically operating from a 4-20mA control signal. The 1000 Series actuator from Rotork Process Controls is well suited to this application, featuring a compact mechanical design, 100% continuous modulating performance with high repeatability and resolution, manual override and a simple set-up programme.

The Rotork IQPro electric actuator is also used for this application. In addition to accurate pump stroking capabilities, the IQPro offers the benefits of non-intrusive set up and commissioning, data logging and valve diagnostics utilising Rotork's popular IQ-Insight software.

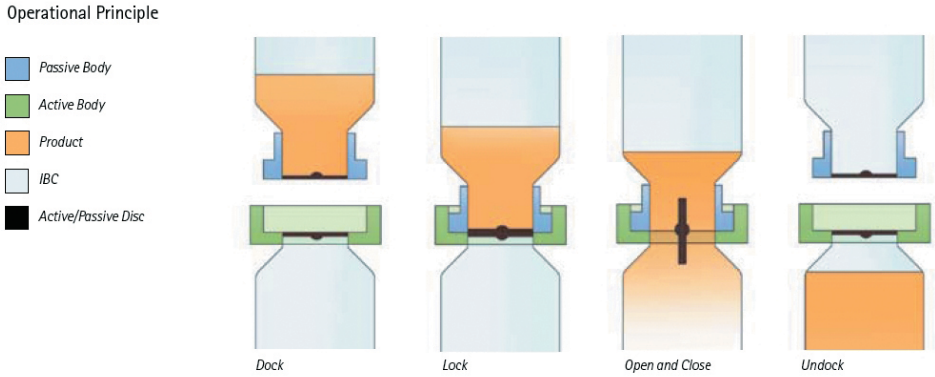
The compact dimensions of Rotork electric actuator designs are a further assistance to the products' adoption in metering pump applications, where the space available between the piston housings is often restricted.

rotork® Controls

Rotork Controls
Tel: +44 1225 733200
Website: www.rotork.com

Precision seals for high containment ChargePoint valves

As API potency levels continue to rise so too is the degree of co-operation between containment equipment maker and seal manufacturer. For split butterfly valve maker, ChargePoint Technology, precision engineered elastomer seals from Precision Polymer Engineering are critical to the valve's application and operation.



Demonstrating alternative views of the 'split butterfly ChargePoint valve'

Increasingly potent compounds used in pharmaceutical research and manufacture pose a health risk to workers. Reducing and, where possible, eliminating this risk is the role of containment systems. Containment involves isolating the product and process rather than the operator, thus avoiding the need for excessive levels of personal protection equipment. Other benefits of containment include prevention of cross contamination and dust hazard, reducing the need for manual cleaning and the creation of a more ergonomic and efficient working environment in line with FDA regulation and GMP (Good Manufacturing Practice) design. Containment solutions typically include isolators, extraction booths and split butterfly valves.

Split butterfly valve sealing

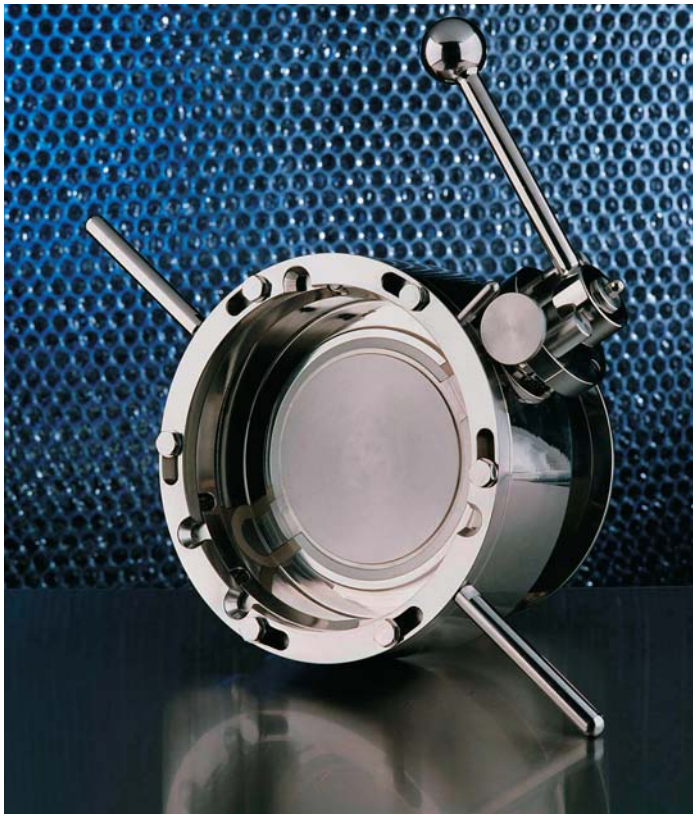
ChargePoint is a leading supplier of split butterfly valves to the pharmaceutical industry. Its valves are used for a variety of powder handling containment applications where operator exposure limits down to nanogram levels are required. The valve has two critical sealing elements: metal-to-metal and metal-to-elastomer.

The valve coupling comprises Active and Passive halves each with an external metal disc interface. When the two halves of the valve are docked together, the coupling becomes a single unit; and the metal discs come together to form a single disc. The quality of this metal disc seal is one of the key design features that contributes to the containment performance of a split valve. When docked the single metal disc is released and powder flows into the reactor vessel. The precision of the metal disc seal is such that it prevents product from entering the metal-to-metal disc interface. When the coupling is undocked after product transfer the two external facing discs are clean, and no product is released into the operating environment.

A metal-to-metal disc seal relies solely on the precision of the two disc faces to create an effective seal; there are no elastomer seals to compensate for any inaccuracies in the sealing faces. The advantage of this approach is its simplicity, minimisation of components and reduced risk of breech of containment due to damage and wear of elastomeric parts.

Elastomer seals are used, however, as a 'seat' within each half of the valve, providing a containment seal between the Active and Passive bodies when connected together, and also a seal for the Active and Passive metal discs in their respective halves of the valve. The tolerance of the elastomer seat component is an important design feature. An under tolerance seat will not allow an effective containment seal, while an over tolerance seat will prove difficult to operate due to friction between the seat and metal disc. This is particularly evident on larger valve sizes where the surface area of disc in contact with the seat is greater, therefore, friction is increased proportionally.

"Ease of manual operation is an important sales differentiator for the valve. Using a short lever arm for simple manual operation can only be considered when an elastomer seat is used that gives optimal, low-friction, performance.



This is to say; not too tight to manually operate, but not too loose so that there is no containment seal. The balance must be perfect," explains MD Chris Eccles.

"We have worked with specialist seals manufacturer, Precision Polymer Engineering (PPE) on perfecting the elastomer seat seal. The seals are precision moulded and machined to meet the high tolerances needed for smooth manual and automated operation of the valve. PPE's precision moulding allows for minimal wear on the seat due to friction, thus increasing the lifetime of the seat and reducing the risk of loss of containment or contamination of the product."

For the valve range 50mm - 300mm, PPE supplies three grades of seal: EPDM (ethylene propylene diene M-class rubber), V70SW FKM (fluoroelastomer), and Perlast G74S (perfluoroelastomer), each elastomer is compliant with the requirements of the Food and Drug Administration (FDA) regulatory standard 21CFR 177.2600 for 'rubber articles intended for repeated use' in food manufacture and United States Pharmacoepia - Class VI (USP Class VI). In addition to the seat seals, each valve uses a total of four elastomer seals.

Taking the Pressure

The valve manufacturer has also developed a design of split butterfly valve for use under vacuum or pressure conditions, typically rated up to 6Bar and full vacuum. The solution does not rely on a thick disc profile, which can impede powder flow, to achieve a pressure rating but utilises an o-ring seal between the Active and a Pressure Rated Plug. As a result, the valve can also be fitted with a Pressure Rated Passive unit and opened up enabling product transfer under pressure or full vacuum.

Improved Chemical Resistance Seals

The valves are routinely subject to a wide variety of chemicals and solvents during pharmaceutical production, followed by aggressive cleaning agents including high temperature steam. For clean-in-place (CIP) the valve uses a device that mimics the Passive body by docking into the Active to provide cleaning of the valve sealing faces and in some cases the container, vessel or IBC it is connected too. Once in place a water tight containment seal is ensured by an O-ring between the Active and CIP device.

For a new production campaign, the split butterfly valve is dismantled for thorough cleaning of the individual components. The use of minimal parts makes the task of assembly or dismantling for cleaning, much easier, thus reducing process downtime. The manufacturer encourages valve users to visually inspect the seals as part of a maintenance programme to ensure longevity of operation.

For many FKM and perfluoroelastomer (FFKM) seals it is the cleaning agents which take the greatest toll on their operational life, PPE has developed a customised FKM grade that improves the seal's resistance to high temperature steam, clean-in-place. The V70SW grade FKM fills the gap between EPDM and FFKM performance. EPDM lacks adequate chemical resistance to high temperature oils and solvents but it resistant to water. FFKMs, at the other end of the elastomer spectrum, are resistant to oil and solvents and steam, but cost-prohibitive for any applications. The FKM grade sits between EPDM and FFKM, combining excellent chemical resistance and mechanical properties with steam resistance and temperature stability up to 200˚C.

Chris Eccles welcomes the high level of collaboration with PPE in the on-going development. *"We see PPE as a technology partner where they understand our business and are able to respond quickly to short lead times. For example we've involved them in new product developments such as the DL 200mm, 250mm and 300mm valves for bulk materials where a much larger seat seal is needed."*

"By tapping into PPE's in-depth knowledge of elastomers, and precision manufacture, we are able stay one step ahead of the containment challenges - both technical and financial - facing our customers."

Precision Polymer Engineering
Tel: 01254 295400
Website: www.prepol.com
www.thechargepoint.com

Rotork's 'smart' electro-hydraulic actuator

Rotork's 'smart' electro-hydraulic actuator selected for Turkish pipeline valve upgrade

Rotork Skilmatic linear electro-hydraulic actuator

The 600 mile Kirkuk-Ceyhan pipeline in Turkey is Iraq's largest crude oil export line, capable of carrying over 1.5 b/d from northern Iraq to the port of Ceyhan on the Mediterranean coast. The pipeline is owned and operated by Turkey's state-owned crude oil and natural gas company, Botas Petroleum Pipeline Corporation.

Along the route of the pipeline there are a number of pressure control valves, operated by thirty year old electro-hydraulic actuators that were manufactured by the valvemaker. These actuators are now obsolete and spare parts are no longer available. In addition, each actuator is equipped with a large, separate control panel, situated adjacent to the valve. These control panels are also a cause of concern due to their age and lack of functionality.

Rotork's agent in Turkey, Omas Teknik Pazarlama Temsileilik, has been in lengthy and detailed discussions with Botas about upgrading these valves with Rotork Skilmatic electro-hydraulic actuators. In these discussions, Omas has worked closely with Rotork Fluid Systems in Italy and has also received assistance from the valvemaker.

Apart from the up-to-date technology and reliability offered by the new Rotork Skilmatic actuators, they also feature comprehensive integral controls which eliminate the requirement for separate control panels and provide a much neater, compact and self-contained installation. The innovative design comprises an integrated control module, a hydraulic manifold and a power unit consisting of a motor, hydraulic pump and reservoir. Protected by a waterproof, dustproof and explosionproof enclosure, the actuator's functionality benefits from Rotork's IQ intelligent electric actuation technology, providing configuration, diagnostics, fault indication and position indication by means of a digital visual display and non-intrusive two-way communication with a hand-held programming tool.

Botas has decided to trial the Rotork Skilmatic electro-hydraulic technology on one of the pipeline valves. The 30 inch Class 600 control valve was first disconnected from the pipeline, shipped to the Botas workshop at Ceyhan and measured up for new adaptation, which was manufactured by Rotork and delivered to the workshop with the new actuator. The actuator was fitted to the valve by engineers and technicians from Omas and then installed on the pipeline at the Mardin-Midyat P34 pump station, where staff from Omas also carried out the commissioning.

If the new installation lives up to the customer's expectations, Rotork Skilmatic electro-hydraulic actuators will be ordered to replace the obsolete actuators on twenty similar pipeline valves. In addition to supplying the new actuator, Rotork Fluid Systems has also provided training for Botas staff, whilst Omas has provided training and local support for the Botas operators at the pump station.

rotork® Fluid Systems

Rotork Fluid Sytems
Tel: 0113 2057223
Website: www.rotork.com

Power station upgrade introduces Rotork CVA

Rotork CVA electric control valve actuator on a fluid drive application

Gothenburg Energy is western Sweden's leading energy company, providing energy services, heating, cooling, natural gas, electricity and broadband. At one of its power stations the company has introduced the Rotork CVA electric control valve actuator on a fluid drive application, in order to update the equipment and reduce maintenance requirements.

Fluid drives, which are also known as hydraulic drives, are used to hydraulically change the speed of the driven load when the driving motor is operating at a constant speed. There are two methods of hydraulically varying the speed – a fluid coupling or a hydraulic pump and motor. The CVA application is on the power station feed water pump. A CVQ-1200 quarter-turn actuator has been installed to adjust the drive and provide varying output speeds from the single speed motor on the pump.

The CVA has replaced an obsolete electric actuator on the installation. The new actuator operates with a 24Vd.c. power source and 4-20mA control signal as standard, so Gothenburg Energy did not need to make any changes to the power and signal cabling when carrying out the upgrade.

rotork Site Services

Rotork Controls
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Rotork's latest valve actuation and control technologies

Site Services upgrade at Europoort terminal introduces Rotork's latest valve actuation and control technologies

New Rotork IQPro valve actuators installed at the Maatchap Europoort Terminal.

The Maatschap Europoort Terminal (MET), one of Rotterdam's busiest terminals, handles 18 million tonnes of crude oil each year. The oil is delivered, stored and blended in the tank farm before it is pumped through pipelines to refineries in Germany and Belgium.

The site, which is owned by a joint venture between Ruhr Oel GmbH and Mafina BV, has relied on Rotork for valve control since the 1970s, when 260 'A' Range Rotork BBC valve actuators were installed. These actuators have received regular overhauls, but after thirty five years spare parts were no longer available and the cabling was beginning to be less than totally reliable. MET therefore decided to update the terminal with modern valve control technology that would ensure efficient reliability and meet legislative and environmental standards for the foreseeable future.

The programme of updating the valves began in 2008 when Rotork BV in The Netherlands surveyed and reported on the existing actuator installations and cabling. As a result it was decided that upgrading all the valves with the latest Rotork IQPro intelligent electric actuators would be the best solution. The decision was also taken to upgrade the valve control system with Rotork Pakscan P3 two-wire digital control in order to maximise the reliability and economy of the new installations and take full advantage of the advanced monitoring, control and data logging capabilities inherent in Rotork's IQPro actuation technology. The replacement work has started in 2010, with Rotork's specialist Site Services engineers completing the installation of the first 110 of the new actuators. The entire project will be completed over a period of five years.

rotork Site Services

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Shuttle Ball Diplomacy!

New innovation from Pressure Tech takes the pressure off the chattering classes

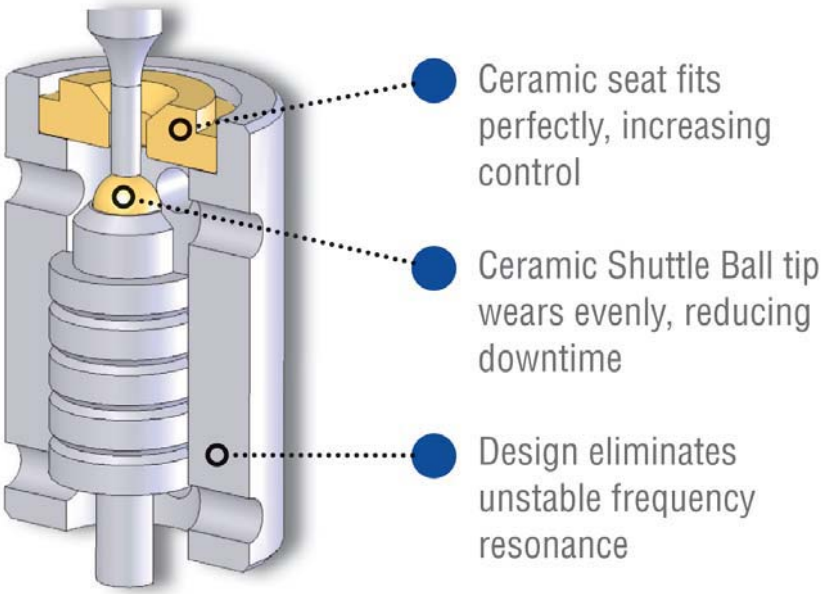
Pressure Tech Shuttle Ball

It may be annoying in the library. However, in water glycol and other hydraulic systems chattering - or unstable frequency resonance - can be seriously bad news. Now for the good news! The Shuttle Ball, a highly innovative new product from Pressure Tech, dramatically reduces the problem, as well as bringing a host of other significant benefits. Clients in the oil and gas industries can look forward to reduced downtime, lower costs, lighter maintenance and faster servicing.

So how do Pressure Tech do it?

In a nutshell, through the innovative thinking that's earning the Glossop-based regulator manufacturer a burgeoning reputation. The Shuttle Ball is but the latest example. It's a unique component that makes the already popular LF-690 hydraulic regulator massively more efficient than any other product on the market.

So why is the Shuttle Ball so effective? In any high pressure system, the regulator is critical. In turn, the fit between the valve and seat is critical to the effectiveness of the regulator. Yet uneven wear and chattering often cause a poor seal. This means leaks, more frequent maintenance and increased downtime.



Enter the Shuttle Ball. Crucially, it maintains a perfect seal, promoting even wear and solving the chattering problem that can prove so damaging. It all means greater control, less downtime, longer service life plus speedy service in-situ thanks to easy access to the seating area.

Lasts five times longer than competitors!

The secret of the Shuttle Ball is the revolutionary TX2000 ceramic material that both valve tip and seat are made from. It lasts a staggering five times longer than even tungsten carbide! With massively superior resistance to cavitation and erosion, it's guaranteed to outperform all metal and plastic-seated regulators. Stable control and positive shut-off on liquids under pressures from 10-1000 bar are further benefits. Altogether, you can expect the ultimate protection in harsh hydraulic system environments.

Of course, for all this extra performance you would expect to pay more. Not with Pressure-Tech! As ever, the LF-690 regulator with Shuttle Ball represents exceptional value for money, and is supported by flexible delivery.

PRESSURE TECH

Pressure Tech
Tel: 01457 899307
Website: www.pressure-tech.com

How do you keep up with valve industry developments?

We all have difficulty getting out sometimes.

Time is a precious resource after all. But if you're a significant user or buyer of valves and actuators, you really do need to keep up with new technology and product developments, and keep an eye out for new suppliers.

BVAA has the Answer!
We bring the exhibition to you!

For many years the BVAA has been organising 'desktop exhibitions' for major users, inside their own premises.

These zero cost, hassle-free events are managed by BVAA and are customised to suit your needs at your convenience.

Solve your supply chain issues over lunch

Designed for rapid set-up and breakdown, 'desktops' typically fit around your lunch period, to minimise downtime. We demonstrate the latest products, provide unrivalled industry advice, and have over 100 leading UK companies to choose from.

"We have had very positive feedback from exhibition attendees. We are already looking forward to doing it all over again"
- Dave Anderson, Score.

Previous hosts include:-
Ministry of Defence, Foster Wheeler, AMEC, MW Kellogg, Stone & Webster, Snamprogetti, British Energy, Score, Aker Kvaerner, KBR, Parsons...

BVAA®

British Valve & Actuator Association
9 Manor Park, Banbury, Oxfordshire OX16 3TB
Tel: 01295 221270 Fax: 01295 268965
Email enquiry@bvaa.org.uk
www.bvaa.org.uk/exhibitions.asp

Rotork delivers first orders for gearboxes built in India

Some of the Type AB gearboxes awaiting despatch from the Rotork Gears factory at Jigani.

The Oil and Natural Gas Corporation refinery is the destination for the first major order for manual valve gearboxes to be built at the Rotork Gears factory at Jigani in Bangalore.

A total of 389 Type AB quarter-turn gearboxes have been ordered by the Indian factory of valvemaker Virgo Engineers Ltd, for the operation of trunnion mounted ball valves in sizes between 2 and 8 inches.

Designed for a wide range of industrial environments, Rotork Gears AB gearboxes are constructed with rugged polyurethane coated, grease filled cast iron housings. High performance axial bearings withstand arduous operating duties at rated quarter-turn torque outputs of up to 32,000Nm. Standard environmental protection is watertight to IP67, with IP68 available for submerged or buried applications.

The Rotork factory at Jigani was opened earlier this year to provide additional manufacturing capacity for the Indian valve markets, complementing Rotork's existing plant at Chennai, which is also receiving investment for expansion.

rotork® Gears

Rotork Gears
Tel: 0113 2057276
Website:www.rotork.com

Rotork Valvekits service enhanced by new investment

One of Rotork Valvekits' new production machines.

Rotork Valvekits, manufacturer of a wide range of quality products and components associated with the valve and actuator package, has recently invested over £100,000 on new production machinery.

The new investment enables Rotork Valvekits to improve critical lead times, particularly in relation to mounting kits, extensions and spool kits.

Rotork Valvekits also supplies high quality switchboxes, solenoid valves, spring return handles, locking devices, pedestals, chainwheels and other valve accessories from stock, enabling the company to meet customer requirements on a regular basis.

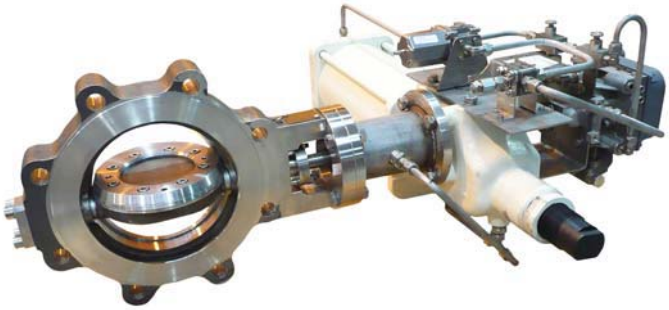
As an integral part of the global Rotork Group, Valvekits has an unrivalled reputation for innovative design and reliability, backed by worldwide manufacturing facilities with international service and support.

rotork® Valvekits

Rotork Valvekits
Tel: 0113 2057276
Website:www.rotork.com

50 Years of Value in Every Solent & Pratt Valve

Cottom Power Station, 138" Butterfly Valve



8" Wafer Lugged Butterfly Valve

A commitment to understanding our customers' most critical needs and pioneering highly engineered solutions that deliver profound, transformational value is the standard at Solent & Pratt, a business unit of Curtiss-Wright Flow Control Company. Along with its sister companies, Farris Engineering and Sprague Products, Solent & Pratt supplies triple offset and high performance butterfly valves, pressure relief valves, hydraulic pumps, gas boosters, portable testers and additional products for critical service environments. For Solent & Pratt, 2011 is a milestone year as it celebrates 50 years of butterfly valve manufacturing here in the UK.

Solent & Pratt's customers range from small independent companies to major oil and gas multinationals. All its customers have one need in common: a valve that delivers absolute reliability over its full lifetime. This is particularly true of valves in aggressive chemical environments and harsh operating conditions, such as offshore, or where reliability in service is crucial, such as on the large diameter valve for a UK power station.

This large diameter valve, one of six now successfully operating, exemplifies the commitment of the Solent & Pratt team to meet and exceed its customer's expectations. Valves of this size, some of the largest ever supplied to the UK power industry, present huge challenges in engineering design, material sourcing, logistics and assembly and testing. The Solent & Pratt team delivered all six valves within the customer's planned timeframe, avoiding delays which could have resulted in costs of £1M/day to the customer.

Founded in 1961, Solent & Pratt moved from its original location in Southampton to Bridport along the South coast. More recently, the company was relocated to a 43,000 square foot (4000m^2) state-of-the-art facility within the same town.

Solent & Pratt state-of-the-art facility

Today Solent & Pratt continues to invest capital in facilities, technology, equipment and people. The company consistently pushes the boundaries of butterfly valve design, focusing on not only providing simple solutions, but also on being able to offer the sizing, specification, assembly and testing of unique control and automation solutions. This includes the supply of single and twin disk double block and bleed butterfly valves, for additional safety in chemical and hydrocarbon production.

Solent & Pratt offers an extensive range of butterfly control and isolation valves, with particular emphasis on the manufacture of larger sizes, up to and including 138" (DN3450), valves with pressure ratings up to ANSI 2500lb, and manufactures valves in a wide array of corrosion resistant materials to suit a range of aggressive applications.

For half a century, Solent & Pratt has been trusted to provide valves of the highest quality and for the most severe service. Owned by Curtiss-Wright Flow Control Company since 2001, with its own legacy of innovation and engineering transformation dating back to the Wright brothers' first flight in 1903, Solent & Pratt is looking forward to celebrating its 50th anniversary as well as the next 50 years and beyond.

CURTISS WRIGHT Flow Control Company
Solent & Pratt

Solent & Pratt
Tel: 01308 422256
Website: www.solentpratt.cwfc.com.

Cameron Launches Enhanced Nozzle Check Valve

Cameron Launches Enhanced ENTECH™ DRV-BN Non-Slam Nozzle Check Valve

Cameron's re-designed ENTECH DRV-BN Nozzle Check Valve introduces a modularity that allows for customized solutions, in-field reconfiguration and a consistent spring force mechanism for quick and easy maintenance.

The DRV-BN is the newest large-bore addition to Cameron's extensive and high-quality valve portfolio. By combining a modular approach with an improved quality of casting, the DRV-BN supports customization to any specific service condition as well as on-site re-configuration should flow changes occur over time.

The single coil spring is an inexpensive and simple, yet highly effective, maintenance solution. The disc is shaft-supported for a perfect disc-to-seat alignment in all installation conditions. The design incorporates a weight-saving annular design which aids in response time to flow fluctuations and wear resistance.

The DRV-BN also represents a significant step forward in terms of the fluid dynamics related to ENTECH's high flow coefficients and top-class axial design. These features help the valve reduce operating costs.

As a complete offering, the ENTECH DRV-BN and the smaller bore DRV-Z represent a technically flexible and economically ideal solution for back flow prevention and protection of critical equipment. Both are ideal for applications where minimal pressure losses are essential, such as compressor stations and gas facilities, pump and wellhead injection plants, water distribution and treatment, tank storage and power plants.

Cameron's re-designed ENTECH DRV-BN Nozzle Check Valve

CAMERON

Cameron International
Tel: 0208 990 1800
Website: www.c-a-m.com

Tyco's Valve and Actuator for Subsea

Tyco Announces Integrated Valve and Actuator for Subsea Environment

Tyco Flow Control has announced an integrated slab gate valve and actuator for subsea application designed in unison for optimal performance. A Fasani slab gate valve and a Biffi hydraulic linear failsafe actuator were developed together, eliminating the need for adaptors.

Fasani conduit slab type gate valve

The subsea slab gate valve is the first range developed by Fasani and meets API 6A, annex F PR2 requirements and API 17D hyperbaric testing guidelines, guaranteeing the highest performance in deep-water applications. Designing the valve and actuator together allowed Tyco to integrate and maximise the capabilities of both, leading to a robust and compact package. The subsea solution has been designed with subsea trees, manifolds and injection systems in mind, although its function can be used in numerous applications.

For ultra-deep water applications, high external pressure and harsh conditions require robust, fail-safe engineering. The Fasani slab gate valve incorporates a carbon steel-forged body, floating seats and closed compensation system on the actuator. The valve is API pressure rated at 7,500 psi. The body to bonnet gasket includes four lip seals – double stem packing and two independent packing glands. The combination underwent strict hyperbaric testing to ensure the ultra deep water valves perform reliably over a number of decades. Tyco has its own hyperbaric chambers in France that can simulate pressure equal to a depth of 3000m. Leakage rates are continuously monitored at each stem barrier and body seal, ensuring a thorough assessment of performance at operating pressure.

"Designing this valve and actuator in tandem marks an important step in integrated design." comments David Sinsou, Global Marketing Manager, Subsea. *"We are enlarging our reliable solution portfolio for deepwater subsea."*

Tyco has created valve and actuator packages for more than 50 subsea projects across the North Sea, West Africa and the rest of the world, bringing extensive valve and control experience to ultra-deep water levels. Lifecycle testing guarantees that the product will outlive the lifespan for which it was intended.

tyco / Flow Control / Tyco Valves & Controls

Tyco Flow Control,
Tel: 01695 554 800
Website: www.tycoflowcontrol.com

Titanium Castings for Valves and Pumps

Titanium Grade 2 Swing Check Valve Body © Shipham Valves

Titanium Castings (UK) ltd, (TCUK) has developed new materials and techniques for manufacturing precision, high duty valve and pump castings for strategic manufacturing programmes. These enable short lead-times to be achieved for fully certified, production volumes, prototypes, one-offs or low volume castings, to specified procurement standards.

The company has also achieved a commendable delivery record for full-rate production of defense components, demonstrating its capacity and capability to manufacture significant volumes of commercial castings. Castings can be supplied to a maximum weight of 26kg, in lead times of 10 to 12 weeks, with a dimensional accuracy in the range of ISO 8062 CT4 - CT6 and a surface roughness average, Ra, in the range of 2.5 - 7.6 m (100 - 300 in). Weight savings of up to 25%, and machining savings of up to 45% can be achieved when compared to alternative manufacturing processes.

The manufacturing facilities are accredited to ISO 9000 and EN/AS 9100, with radiography and vacuum heat treatment facilities being certified by NADCAP.

Titanium Castings (UK) Ltd is a wholly owned subsidiary of Castings Technology International, but operates independently with its own Board of Directors. It is the only manufacturer of titanium castings in the UK and is located on the Advanced Manufacturing Park in South Yorkshire.

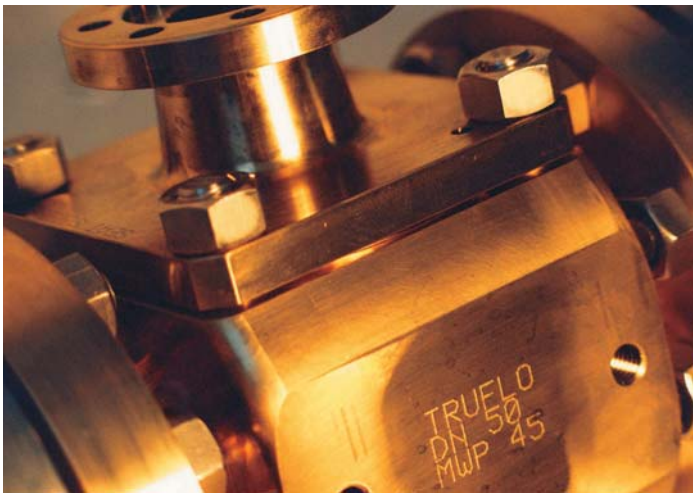
Titanium Castings UK Limited

Titanium Castings Ltd
Tel: +44 (0)114 2541144
Website: www.titanium-castings.com

Truflo Marine - Lean Efficiency Finalist

midlands Excellence *'Midlands Excellence Specialist Category Awards 2010/11'*

Truflo Marine Limited is delighted to announce that they have been selected as a finalist in the 'Lean Efficiency' category of the Midlands Excellence Specialist Category Awards.



Midlands Excellence are the regions recognised performance experts and being involved in this awards process allows Truflo Marine the opportunity to gain an 'independent' seal of approval of how 'Lean' operations are benefiting the company in areas such as:-

- Driving out waste – eliminating the bad habits which impede progress
- Reducing costs and delivering better service margins.
- Improving effectiveness & efficiency of value-adding processes.

The process of attaining the place in the final began with the preparation of a 1,000 word written submission; from this Truflo Marine were selected as a finalist. The next step involved a thirty minute presentation to a panel of four judges from companies around the midlands, one being the winner of last year's award. The presentation provided opportunity to expand on the written submission and for the panel to further evaluate Truflo's 'Lean Efficiency' practices.

The next step is to wait! Truflo Marine is one of six 'Lean Efficiency' finalists and the winner will be announced at the prestigious Midlands Excellence Awards Ceremony which will be held at the ICC in Birmingham on Thursday 3rd February.

Truflo Marine

Truflo Marine
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Website: www.truflomarine.com

Truflo Marine invest in CFD

Rob Watson, Technical Director of Truflo Marine

Critical naval valve designer, manufacturer & supplier Truflo Marine Limited have recently invested in CFD (Computational Fluid Dynamics) to further enhance their design capability; this tool will be used in conjunction with 3D CAD Technology.

CFD technology is one of the branches of fluid mechanics that uses numerical methods and algorithms to solve and analyze problems that involve fluid flows. Computers are used to perform the millions of calculations required to simulate the interaction of liquids and gases with surfaces defined by boundary conditions. CFD will prove invaluable to Truflo Marine in assessing the behaviour of fluids when passing through their valves.

Rob Watson, Technical Director is confident that the system will assist in optimising Truflo's Valves *"CFD Software will allow us to provide additional design information to system specifiers which will in turn have a positive effect on the validation process; this process was also enhanced last year with the introduction of flow testing equipment to our site. In addition, further projects in conjunction with CF Design, the software's supplier are currently being evaluated."*

Truflo Marine

Truflo Marine Ltd.
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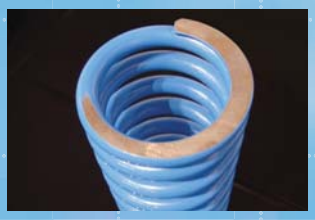
Website: www.truflomarine.com

Virtually every plane in the sky relies on MSP components for Safety Critical applications



Quality

- BS 9001
- AS 9100
- NADCAP
- In-house Load Test facility with 100% and CPC inspection and testing regimes.
- Robust management systems coupled with a state-of-the-art ERP system to constantly improve our already enviable OTIF reputation.

Springs & Wireforms

- Virtually every spring type and wire form, from 0.1 to 20mm wire diameter.
- Materials include beryllium copper, tungsten, stainless steel, phosphor bronze, titanium, copper, brass, nickel alloys, carbon steel and polymers.
- From hand crafted to the latest automatic CNC spring-coilers and wire-formers.
- Over 500 collective years of experience and state of the art spring design CAD software at your disposal.

Presswork & Assemblies

- Vast range of equipment and blanking capacity up to 125 tons.
- Same wide range of ferrous, non-ferrous and synthetic materials as our springs.
- All of our tooling is manufactured and maintained in-house via our extensive tool room including EDM capability to give you excellent quality and repeatability.
- In-house vibro peening, chemical etching and inkjet marking.

Applications

- Microscopic gold plated contact springs, gate valve actuation compression springs, Belleville washers, seal springs and gaskets. You name it, we cover all aspects of spring and presswork for the valve and actuation industry.
- Aggressive and demanding safety critical environments.
- Our products are in use in outer space, the deepest oceans and everywhere in between.
- Batch sizes range from one to millions.

Confidence

With almost 50 years trading history and over 500 years of combined spring & presswork experience, there is very little we don't know about spring making and press working. We have been partnering Aerospace, Oil & Gas and Medical industries for many years, often with safety critical applications.

Contact our sales office to find out why a growing number of Valve and Actuation companies are choosing MSP.

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Where have all the good valves gone?

The use of mechanical valves in SIL loops is still being handicapped by a crippling shortage of good, reliable failure rate data. This paper aims to explain what a SIL assessment consists of; how a SIL assessment is attempted and the problems that have to be faced.

P R Smith/R Stillman

IEC 61508 has now been a in existence since around 1998-2000 and has just been revised after a five year consultation period. Part 1 was approved for publication at first edition as long ago as December 1998; the first edition of Part 2 (which is the subject of this paper) was originally published a little later at the end of May 2000.

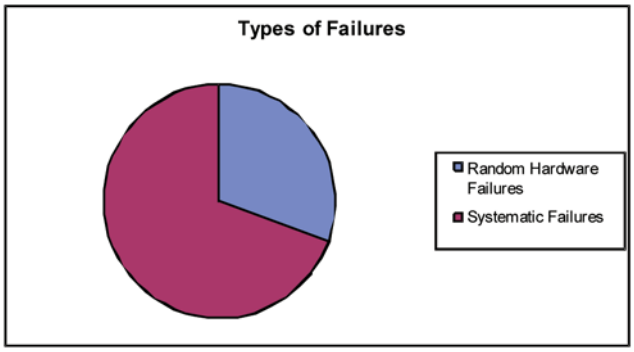
Despite the increasing age of IEC 61508 it appears that there is still some way to go before manufacturers of components and especially valves are able to present the end user with good reliable data to be used in loop SIL calculations. Most people are probably aware that the standard covers Functional Safety, is particularly applicable to electrical and electronic systems and uses a risk based approach. It is considered 'good' practice, by our friends in the legal field. If, like Buncefield, a process plant is unfortunate enough to suffer a serious accident then litigation may well follow against persons and Companies who see fail to give IEC61508 due consideration. It is not and cannot be perfect but I, like many others, believe that it is a very good attempt to provide a consistent design methodology for safety systems. So, let us criticise it only if we are able and our intention is to improve it.

The requirements of Part 2 are not 'rocket science' and do not take a great deal of understanding for any engineer with a reasonable grounding in mathematics and in particular probability theory and statistics. It is quite reasonable to expect that anyone who is designing or integrating equipment on which lives might depend should be competent to deal with the issues that the standard raises.

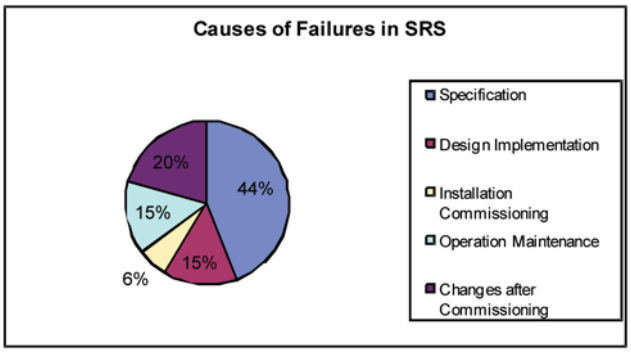
My objective here is to discuss the hardware assessment process from the perspective of the individual loop component and in particular the mechanical valve, be it butterfly ball, globe, solenoid or any that I might have missed. Note that we can neglect the crucial issue of software assessment (IEC 61508-3) which is necessary for device intended for safety loop application and that involves the use of software in some way. The issues involved merit a separate article so it must of necessity be left for the future or others.

Before we proceed, let's consider some basics. Ignoring software, there are two major failure types:

- Random
- Systematic



The pie chart shows the relative preponderance of each, around two thirds of failures being due to 'systematic' failure.



The second pie chart, above, shows the causes of systematic failure in safety related systems and their relative proportions.

Furthermore, random failures are distributed across a safety loop in the following proportions:

Sensor	35%
Logic Solver	15%
Final Actuator	**50%**

Valve manufacturers should consider the last item in bold!

This article will briefly cover the assessment of random failures but later in the text. At this point we must mention the requirement for safety component suppliers to have a Functional Safety Management system. This requirement is thoroughly covered in IEC61508-1 and use to be pre-fixed by the word 'should'. Please note that the latest version of the standard has the word 'shall'! So, if your company is supplying any component for safety use, and we are specifically considering valves here, then your company must implement a Functional Safety Management system compliant with the requirements of IEC61508-1:2010. To ignore this requirement is to expose you company to potential litigation!

Supplier Understanding

Section 6.0 of the Health & Safety at Work Act is quite clear:

The duties placed on designers, manufacturers, importers and suppliers of articles for use at work are to:

a. Ensure components are designed and constructed

to be safe and without risks to health when being set, used, cleaned or maintained by a person at work

b. Arrange for testing and examination to ensure safe design and construction

c. Provide persons supplied with articles with adequate information about:

i. Safe use of the component;

ii. Any conditions necessary to ensure safety during setting, using, cleaning, maintaining, dismantling or disposing of the component;

d. Provide users, already supplied, with new information as it becomes available.

There is an additional duty on designers and manufacturers to arrange for research to discover and hence eliminate or minimize risks. The Health & Safety at Work Act also places heavy responsibility on software engineers to ensure the integrity of their designs.

It is understood that the HSE has applied section 6 of the Health & Safety at Work Act in at least one case concerning components intended for use in safety systems and consequently the onus is upon instrumentation manufacturers to comply with IEC 61508 be they simple sensor, smart instrument suppliers or indeed – Valve manufacturers/suppliers.

Sub-Component SIL

Considerable discussion has considered the issue of individual component SIL. Many engineers believe that an individual loop component cannot have a Safety Integrity Level. This is correct, however the allocation of a Hardware safety integrity limit to an individual loop component is fundamental to IEC 61508 part 2. This allocation is the basis for further safety use of the loop component and is dependent on the availability of a sufficient dossier of evidence to meet the requirements of a specific SIL. The higher the SIL claimed the more supporting evidence will be required.

If the conclusion is SIL 2 then that component may ONLY be used to support single architecture safety functions upto SIL 2. In practice this means it may be used in safety loops required to provide a risk reduction equal to SIL2 (or lower). A separate assessment will determine whether the loop in its entirety achieves SIL2 but each loop sub-component MUST be capable of supporting a safety function upto SIL 2.

IEC 61508 Part 2 requires the provision of certain information, at least:

- The fault tolerance that may be assumed for the loop component
- The safe failure fraction of all potential failures
- The predicted undetected dangerous failure rate – theoretical
- The predicted safe failure rate – theoretical
- The relationship of failure rate to environmental conditions such as temperature, vibration, emc, humidity etc.
- The recommended highest Hardware safety integrity limit
- Restrictions in use report including measures and techniques for the avoidance of systematic failures.

Objectives

Many companies still do not understand that they must supply this information. This leaves the loop designer with a problem because somehow it is necessary to comply with the standard and provide evidence that the proposed safety loop has been assessed and the predicted risk reduction is reliable.

It is the object of this paper to consider the problems facing the loop designer with particular reference to the process valve which is often used as the final actuator.

Before we do this let us take a quick look at the two hardware assessments that must be made (not forgetting that if the subject contained software then it would be necessary make a further assessment against the requirements of IEC 61508 part 3):

a. Qualitative

b. Quantitative

Each one of these two assessments produces a Hardware safety integrity limit but it is the lowest estimate of the two that must apply! I.e. if assessment a. concludes a capability of SIL1 and estimate b. a Hardware safety integrity limit of SIL3 then the applicable capability is limited to SIL1.

IEC 61508 SIL Assessment requirements.

Quantitative Assessment – Random Hardware failures

Part 6 of IEC 61508 provides the methodology required to calculate the Probability of Failure to Danger (PFD) that is required to enable a quantitative SIL to be assessed. The IEC 61508 calculation uses fail to danger rates combined with a mean down time assessment to derive a figure for the PFDsys (Average Probability of Failure on demand of a safety function for the E/E/PES safety related system).

A dangerous failure rate and a safe failure rate must be estimated for each sub-system involved in the safety loop. The calculations of Part 6 actually require the typical failure

rate, (✠1/MTBF) of a device to be resolved into four components:

λ_{SD} - Detected safe failure rate (per hour)
λ_{SU} - Undetected safe failure rate (per hour)
λ_{DD} - Detected Dangerous failure rate (per hour)
λ_{DU} - Undetected dangerous failure rate (per hour)
λ_{DU} - Undetected dangerous failure rate (per hour)

Using the guidance provided in Part 6 a Probability of Failure on Demand figure may be calculated and consequently a Safety Integrity Level.

Qualitative Assessment – Safe Failure Fraction

The standard requires each component in the loop (called a sub-system) to be assessed against the IEC 61508 requirements for Safety Integrity (IEC 61508 Part 2, para 7.4.3).

Each loop component means the field sensor and its installation, all interfacing equipment, any logic modules and all field output devices including final process valves, actuators, positioners, solenoid valves and whatever else may be required to implement the safety function.

The requirement is to determine that each component is suitable for its intended function and this includes the application of existing standards such as EMC. Forgive me if I neglect these and focus on the requirements of the standard itself, suffice it to say that any such complementary standard must be considered and complied with.

The standard identifies two parameters, 'Hardware Fault Tolerance' and 'Safe Failure Fraction'. Two tables within the standard (part 2, para 7.4.3.1.4) are applicable.

For Hardware Fault Tolerance, two cases are considered:

Type A – Effectively simple devices which may or may not include software.

Type B – Effectively complex devices which often do include software.

Simply, we are required to decide whether we have intimate understanding of the device concerned:

Failure Modes of all constituent components?

Behaviour under fault conditions?

Extensive, Reliable Field failure data in support of claimed failure rates?

If the decisions are 'No' then the device would be 'type B'.

If 'Yes' then the device would be 'type A'.

These tables limit the Hardware safety integrity limit that can be claimed for any 'safety function' based on its architecture alone and irrespective of how good the quantitative assessment of SIL may be.

Safe Failure Fraction	Hardware fault tolerance		
	0	1	2
<60%	SIL1	SIL2	SIL3
60% - <90%	SIL2	SIL3	SIL4
90% - <99%	SIL3	SIL4	SIL4
>=99%	SIL3	SIL4	SIL4

Simplified Representation of IEC 61508 Type A (IEC 61508-2 Table 2)

Safe Failure Fraction	Hardware fault tolerance		
	0	1	2
<60%	Not allowed	SIL1	SIL2
60% - <90%	SIL1	SIL2	SIL3
90% - <99%	SIL2	SIL3	SIL4
>=99%	SIL3	SIL4	SIL4

Simplified Representation of IEC 61508 Type B (IEC 61508-2 Table 3)

Note: A Hardware Fault tolerance of 'N' means that 'N+1' faults could cause a loss of the safety function.

The 'safe failure fraction' of a sub-system is defined as the ratio of the average rate of safe failures plus dangerous detected failures of the sub-system to the total average failure rate of the sub-system.

Mathematically:

$$\frac{\lambda_{SD} + \lambda_{SU} + \lambda_{DD}}{\lambda_{SD} + \lambda_{SU} + \lambda_{DD} + \lambda_{DU}}$$

If an assessment has to be made in the absence of manufacturers support then it must be worst case, based on good engineering judgment and with a documented rationale supporting the conclusion. It might be permissible to claim a valve as a type A device and claim FT=0, SFF<60% in which case the best claim is SIL1! To claim a better SIL, as was explained above, we need more evidence.

Remember that this is just part of the assessment and it has to be done for 'each' loop sub-system! Fortunately the design of safety electronics has progressed so far that you will not have a problem obtaining the correct data from such suppliers. Regrettably this is not the case for mechanical components and consequently the assessment of valves is difficult and will remain difficult until good quality failure data for particular valve components is determined. This is a task for both the valve manufacturer AND the valve user for the valve user has an implicit responsibility to collect failure data for any safety loop component that he uses. This means implementing a good maintenance regime and establishing records.

SIL Assessment of a valve

Competency

Before proceeding further you will need to assess your own competency to proceed with the assessment. If you are not experienced in the requirements for functional safety as regards process valves then you should not proceed but obtain the services of a suitably qualified colleague. If you consider yourself to be capable then it will be necessary to begin your safety loop documentation with a brief resumé of your own competence and capability to carry out the assessment.

Qualitative
Fault Tolerance

Few instruments are redundant by design hence it is a safe assumption that a Fault Tolerance of '0' applies (Ref IEC 61508-2 Tables 2 and 3).

Safe Failure Fraction

Refer to section 2.2 of this paper for a definition. It is not possible to estimate SFF without some knowledge of the device and its potential failure mechanisms.

Quantitative
IEC 61508 Certified Equipment.

In the case of sub-systems which have been independently assessed by a reputable certification body then certification should state type, λ_{DU}, λ_{DD}, and Safe Failure Fraction from which λ_{SU} and λ_{SD} may be inferred.

Non IEC 61508 Certified Equipment

Generally, manufacturers of non-certified components are not publishing the required data for assessing SIL. However, obtaining a written statement to this effect is an essential part of this assessment by an individual working to achieve a 'good' practice solution to the problem of compliance. If the manufacturer will provide a measure of data then you have a starting point, if not then the approach using 'generic' data is necessary in the absence of acceptable certified components.

Data

There are few publications that contain useful information for the assessment of mechanical SIL, where it can be found it is always a good idea to compare more than one such data set if possible. However, as explained it is difficult to find mechanical failure rate data and where it can be found it is rarely specific to process valves in general let alone a specific type of valve. Also, such data is derived from various sources and must consequently be used with care, it is quite possible for failure rates to be derived from, the military who do collect good maintenance data. Unfortunately it is clear that such data will be obtained from components that bear little comparison with a process valve.

So where do we go from here? Good question!

We need the manufacturers of mechanical valves to carry out some level of testing of their products in order to determine product specific failure rates. We need them to document:

- What failure rates are dominant?
- How long do different components last in normal use?

We also need access to a wider set of data, that potentially available from the end user. The end user has access to the very best data for his own site – IF he will collect the data.

Such operational failure data may be used to corroborate that determined by the manufacturers and the two sets of data will enable a reliable, realistic estimate of valve failure rates. Until that time in the future the Realistic valve SIL will be limited.

It is important that the data used reflects random failures for that is the data required for SIL calculations. Random failures are failures that cannot be predicted so for instance the failure of a valve stem which has failed in normal use or the good quality valve body casting which developed a crack or porosity sufficient for a leakage of the process fluid to occur.

Many failures of valves are due to 'systematic' failure, e.g. the valve has been used with a process fluid which is incompatible with the materials used in the valve or the valve mechanism has stuck due to wear of a valve stem. These are examples of systematic failure and wear out mechanism. To avoid these problems the manufacturer must publish his 'restrictions in use report' to ensure that, in the first case, the valve is not used with incompatible fluids and in the second case that the end user understands when to replace the valve BEFORE wear out mechanisms take effect.

PFD Calculation

Note that PFD's are applicable only where the demand rate is low in relation to the proof test interval. Where the demand rate is higher then these formulas will be increasingly in error in the dangerous direction, ie the PFD will be under estimated. IEC 61508 Part 6 Para B.3.2. provides formula applicable to the High demand or continuous mode.

IEC 61508 Part 6 provides the procedure and equations required. Our application will be in an architecture of '1oo1' to trip, i.e. only one valve will be used and this needs to close when the safety trip is initiated.

Part 6 para B.2.2.1 gives an equation (applicable to 'low demand mode' only) for a '1oo1' architecture, the average probability of failure on demand is:

$$PFD_G = (\lambda_{DU} + \lambda_{DD}).t_{CE} \qquad (1)$$

Where:

Key to terms:

T_1 = Proof Test Interval
MTTR = Mean Time to Repair

DC = Diagnostic Coverage
λ = Total Failure Rate per hour
SFF = Safe Failure Fraction
Channel equivalent mean down time,

$$t_{CE} = \lambda_{DU}/\lambda_D[(T_1/2)+MTTR] + (\lambda_{DD}/\lambda_D)MTTR \quad (2)$$

$$\lambda_{DU} = \lambda/2.(1 - DC); \lambda_{DD} = \lambda/2.DC \quad (3)$$

In the case of a mechanical device such as a ball valve and in the absence of any external diagnostics, Diagnostic Coverage (DC) = 0

So,

$$\lambda_{DU} = \lambda/2; \lambda_{DD} = 0 \quad (4)$$

It may be inferred that, consequently,

$$\lambda_{SU} + \lambda_{SD} = \lambda/2 \quad (5)$$

However, we have referenced some basic failure mode data and this gave us the following:

1. Blocking 5%
2. External Leak 15%
3. Passing (internally) 60%
4. Sticking 20%

For the case where the valve needs to shut then 1 and 2 are safe failures whilst 4 may be stuck closed or stuck open so we must assume 10% for each.

Hence dangerous failures would be 3 and part of 4.

Now according to Annex C of IEC 61508-6:

$$SFF = \frac{\lambda_{SD} + \lambda_{SU} + \lambda_{DD}}{\lambda_{SD} + \lambda_{SU} + \lambda_{DD} + \lambda_{DU}} \quad (6)$$

As $\lambda_{DD} = 0$ and $\lambda_{SD} + \lambda_{SU} = \lambda_S$ then we may simplify the equation to

$$\frac{\lambda_S}{\lambda_{Total}} \quad (7)$$

and hence, **For a trip closed application** we may estimate that $\lambda_S = 0.3 \times \lambda_{Total}$

and by implication,

$$\lambda_{DU} = (1 - 0.3) \times \lambda_{Total} \quad (8)$$

So SFF = 30% for the close on trip application.

From the IEC61508-2 Table 2 above the SIL of the ball valve is limited to SIL1.

Similarly we may attempt a PFD calculation:

A typical 'generic' failure rate source puts the ball valve failure rate at between 0.2 and 10 failures per million hours, or one every 11 years.

PFD = $\lambda_D \times T/2$, where T is the proof test interval – usually 1 year.
So, PFD = 0.7 x 10e-6 x 8760/2 = 0.03

This equates to a SIL of 1 and agrees with the qualitative assessment.

Conclusion

A simplified estimate of SIL for a typical ball valve indicates that SIL1 is a reasonable, realistic estimate with the information that is most readily available.

Without better failure rate data valves are always going to be a limiting loop factor. The estimate made may be optimistic or pessimistic for a particular make of valve. How can the end user be sure that his safety loop is safe?

Better failure rate data must be made available to enable the loop user to make realistic, reasonable SIL estimates for the components actually used. This means that individual suppliers must carry out test work to determine component failure rates for THEIR valve.

Valve associations might profitably provide a data bank for their members test results.

End users MUST start collecting failure data for safety components to ensure that calculated loop SILs can be confirmed.

Proven in use data, if collected correctly, is the best data for use in SIL calculations.

Note that this paper is intended to provide guidance only and is necessarily brief. None of the figures quoted here by example should be referenced without corroboration.

Finally, many thanks to all my colleagues both internal and external who have been patient enough to read and comment on the draft copies of this document.

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Flowserve to Expand Manufacturing Capabilities

Flowserve Corporation, a leading provider of flow-control products and services, has recently announced plans to expand its manufacturing facility in Raleigh, N.C., to increase capacity and improve operational efficiency.

The latest nuclear plant designs incorporate larger valves, weighing as much as 67,000 pounds (30,390 kilograms) and standing more than 20 feet (6.1 meters) tall. Flowserve will add approximately 16,000 square feet of manufacturing space to the existing Raleigh facility, to allow for the installation of new machine tools to more efficiently manufacture large valve components, as well as increase space for inspection, assembly and test.

"Nuclear power-plant activity, including life extensions for existing nuclear plants, is driving significant demand for Flowserve flow-control solutions," said Tom Pajonas, president, Flowserve Flow Control Division. *"This expansion will help Flowserve meet current and future demand from our nuclear customers around the world."*

Last year Flowserve added a 5,000-square-foot storage area to the facility, which allowed more efficient use of the existing manufacturing space.

"This expansion will add much-needed space and state-of-the-art equipment, to create a more robust facility that helps us deliver critical solutions and service to our flow-control customers," said John Chappell, general manager, Raleigh Operations. *"The investment further enhances Flowserve's leadership in the nuclear industry."*

The Flowserve Raleigh facility is ASME N-stamp certified for production of nuclear valves. The facility supports nuclear customers around the globe, as well as customers in the oil and gas, petrochemical, water, chemical and other industries.

Groundbreaking is scheduled to take place in December 2010, with a planned completion date in the fall of 2011.

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Popular valve range from Zoedale Plc goes 316 Stainless!

With the solenoid valve market place constantly involving into areas that have previously been no go areas for standard process solenoid valves, the research and development team at Sirai have been constantly pushing their traditional solenoid valve technology forward providing better faster and more economic solenoid valves to an ever more demanding market. It is one of these advancements that the engineers at Zoedale Plc are pleased to announce.

The popular Sirai L182 and L282 Brass Bodied Normally Closed and Normally Open Pilot Assisted Solenoid Valve range has been extended and is now available in AISI 316L Stainless Steel.

The New Stainless Steel range builds on the reputation of quality that Sirai have earned over decades of manufacturing valves for many diverse markets from blood analysis to its award winning Espresso coffee machine steam valves and pressure switch ranges.

The standard Brass valve range and now the Stainless Steel ranges incorporate the proven technology used in the production of the original Brass valve with many technical enhancements developed as a result of the expansion and the steady growth of the specialist product arm of the business.

The complete L182/L282 range now provides a complete offering to market place with seal materials in NBR, FKM and EPDM (with WRAS/KTW approval).

Coils are available in Class F and Class H with certification for UL and CSA. Low power coil options with reduced pressure ratings are available on request along with flying leads and manual override control devices.

The coils are also available (with DIN 60529 connectors) conforming to either IP65 or IP67 and the complete range is available from 12vDC to 230/50Hz with all standard intermediate voltages.

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Remote Canadian destination for Rotork pipeline valve actuators

The remote area of north eastern British Columbia in Canada, where ambient seasonal temperatures can fluctuate between +30˚C and -40˚C, is the destination for a major order for Rotork GO range gas-over-oil pipeline valve actuators.

The application is a new Class 300 sour gas (0.1% H2S) gathering system and pipeline owned by the Murphy Oil Company Ltd. Known as the Tupper West Gathering System, the project follows Murphy Oil's acquisition of the Tupper Field leases in 2007. Twenty Rotork GO actuators have been ordered, three for barrel isolation and seventeen for pipeline ESD (emergency shutdown) duties.

An engineer at the C E Franklin workshop tests the hydraulic manual override on one of the Rotork gas-over-oil actuators (model number GO-085S-180H/D1) bound for the Tupper West Gathering System.

The Rotork actuator design was selected due to the remote geographic location and challenging environment of the application, demanding both long term reliability and low maintenance.

Rotork GO actuators are designed to use pipeline gas as the power source and are available with control configurations to suit virtually any operational requirement. Low or high pressure control logic options, speed control in both directions and hydraulic manual override are amongst the standard features. With torque outputs up to 600,000 Nm (5,000,000 lbf-in), Rotork GO actuators are certified to IP66M/67M, ATEX 94/9/EC and in accordance with PED 93/27/EC. For this project the actuator electrical components are CSA Class 1, Division 1 approved. A separate sweet fuel gas line provides the power source for the actuators.

The order has been supplied by Rotork Fluid Systems' agent in Alberta, C E Franklin. Franklin has also fitted the actuators to16 inch ASME Class 300 ball valves in its workshop facilities at Edmonton. The Tupper West Gathering System project, which is being engineered by Equinox Engineering of Calgary, is a major installation for Rotork GO actuators in Canada. The project is also utilising Rotork pneumatic actuators at manned compressor station valve sites.

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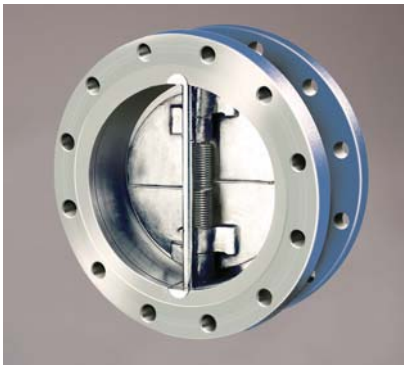
CRANE Energy/IVL Partnership

CRANE Energy Flow Solutions'® Partners with International Valves Ltd. to Provide Duo-Chek® Branded Valves
Crane's Duo-Chek® Branded Valves

CRANE Energy Flow Solutions®, a leading provider of highly engineered products for fluid handling applications worldwide, recently announced that International Valves Ltd. (IVL) is appointed as the stockist for Crane's Duo-Chek® brand of check valves. IVL is a leading supplier and stockist of valves to the oil, gas and petrochemical industries. The arrangement is part of a key Crane initiative to support the European MRO market.

"Identifying proficient European stockists with which to partner has been a strategic objective for Crane and we are proud to offer our Duo-Chek line of products through IVL," said Michael Fegan, CRANE Energy Flow Solutions. *"IVL's reputation of quality service and support was an important factor in our decision process and we are confident that our end-users will too benefit from the relationship that we have formed."*



Duo-Chek products are in stock at IVL and product specifications include 2"-24" in size, 150lb to 2500lb in pressure class, wafer style and lug style, raised-face and ring-jointed end configurations and LCC material with various overlay and internal trim options, all of which are retainerless in design. Additionally, a referral agreement is in place that will forward MRO business directly from Crane's Belfast facility to IVL.

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Zoedale introduce Next Generation Electric Actuators

The New Generation ER Premier + Plus Electric Actuator

The new "PLUS" Actuator

Cut away showing the Multi-base options

Battery Fail safe Facility

Positioner Facility

Zoedale Plc is pleased to announce the introduction into the UK market place of the "Next Generation" Valpes Electric Actuators. The "Premier" and "Plus" Electric Actuators build on the established market leading ER and EK ranges that have been the bedrock of the Valpes success story across Europe.

The "Premier" unit is designed as the replacement for the traditional EK unit and is the "first step" in valve actuation providing four models delivering torques from 20Nm to 100Nm.

The "Premiers" compact design features with IP65 rated housing providing a strong base actuator unit for S4- 30% duty on-off actuation. The "Premier" unit is supplied with standard equipment including 2 feedback switches, torque limiter device, visual indicator, mechanical end stops and declutch manual override facility.

The "Premier" unit also retains the traditional multi-voltage facility in two models:-

High voltage:- 90v to 240-50/60Hz and 90-350vDC.
Low voltage:- 24v AC/DC.

The Advanced "ER Plus" Electric Actuator builds on the massive success of the second generation ER Multi-volt unit.

The base ER Plus unit still retains all the features of the original ER model (2 feedback switches, torque limiter system, and declutch manual override) and is now available in six models covering output torques from 10Nm to 100Nm. In addition to all the standard ER components the "Plus" package boasts the latest in PCB technology and an integration facility via an RS485 interface for fault diagnosis and field-bus interfacing along with an extended supply voltage tolerance band.

Two base Voltage models with the revised and enhanced voltage sensing technology are available for all six torque levels.

The High Voltage "Plus" unit accepts input voltages from 90v to 240v-50/60Hz and 90v to 350vDC. The Low Voltage "Plus" unit accepts input voltages from 15v to 30v-50/60Hz and 12v to 48vDC.

An upgrade to the Plus Actuator housing material ensures a stronger housing which following the most strenuous independent testing is now supplied covering the High Flammability class requirements of UL 94 V0. The housing upgrade also provides the benefits of uplifting the ingress protection of the actuator from IP65 to IP66. The introduction of a self regulating anti-condensation heater gives extra protection to the impressive state of the art control boards and to the S4 50% duty rated motor.

Optional Extras for the Plus Actuator Include:-

- Battery Fail-safe system (Normally Open or Closed).
- Positioning facility, providing reversible 0-10v, 0-20mA and 4-20mA control.
- Travel movement options of 180° to 270° rotation.
- Feedback Potentiometers and additional travel limit switches.
- A Third position stop facility for mid position valve control.

The "Plus" unit is compliant with both the European CE, RoHs and REACH standards.

Zoedale Plc
Tel: 01234 832832
Website: www.zoedale.co.uk

Smith Flow Control Appoints New Country Manager for the Netherlands

NEW Appointments

Sander van den Bos has been appointed Country Manager at Smith Flow Control (SFC) in Holland, replacing Martin van den Heuval who spent 35 years with SFC.

Sander has more than 14 years experience in international business-to-business and will manage the Dutch satellite office, SFC Netherlands, which is responsible for the sales and technical support of Benelux, Germany, Austria and the Czech Republic. This is not the first time Sander has worked for Smith Flow Control, having worked there previously for three years during the 1990s.

Sander commented on his new appointment, *"It is a pleasure to return to SFC. My goal is to build a fresh, modern image of Smith Flow Control in the Netherlands. In addition, I also hope to expand SFC's business into Central and Eastern Europe, and increase current sales in Germany and German speaking countries."*

Sander has a bachelor's degree in Mechanical Engineering and Economics. He is married with two sons, aged 5 and 8 years old.

Smith Flow Control's Key Interlocks for PIG Launchers and Receivers

Interlocks safeguard against improper process execution

The process of loading and unloading pipeline inspection gauge (PIG) launchers and receivers can have catastrophic consequences if performed incorrectly. A specific sequence of valves must be operated, pressurising and depressurising the PIG chamber in the same order every time, to avoid damage to equipment and injury to personnel. To protect this process, Smith Flow Control offers its full line of key interlocks.

Smith Flow Control's interlocks are single or dual-keyed mechanical locking devices used to control the sequence in which process equipment may be operated. Using a 'key transfer' principal, operational control over safety-critical processes can be ensured. The use of interlocks is recommended by a number of internationally recognised standards for specific process applications, causing wide acceptance by many of the world's oil, gas and chemical majors. SFC's products are used on some of the longest pipelines in the world.

SFC interlocks are constructed of stainless steel and lubricated for life. Each interlock is quickly installed on any standard sized valve or associated equipment with no modifications required. SFC also offers customised solutions to customers with specialised requirements.

SMITH Flow Control Ltd

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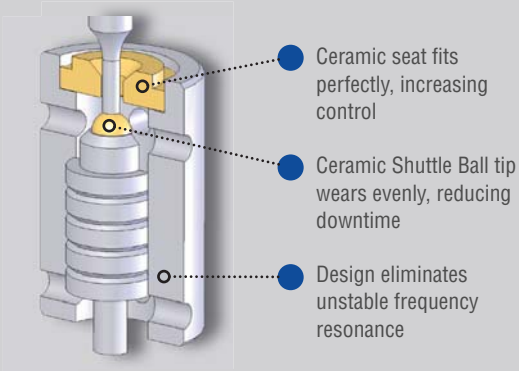
British Valve & Actuator Association

PRESSURE TECH

Champion of the regulator market.

The new LF-690 hydraulic regulator now has the option of seats and main valve tip in a new ceramic material, which lasts 5 times longer than Tungsten Carbide under extreme hydraulic tests, and is guaranteed to outperform other plastic and metal seated regulators in the market.



Material lasts at least 5 times longer than tungsten at a similar price - lower cost of ownership. Positive shut-off from 10bar to 1000bar.

The TX 2000 ceramic material provides stable control and positive shut off on liquids from 10bar to 1000bar, but its real advantage is in the resistance against cavitation and erosion of this critical section of the regulator, which ultimately leads to reduced down time and improved control from the regulator. The new material has been combined with other design features to allow outlet control pressures of 830bar with medium pressure connections machined directly in the body of the regulator.

To discuss why our new LF-690 provides reliable control on water glycol and all other hydraulic applications, call Pressure Tech on +44(0)1457 899307

www.pressure-tech.com

Designed and built in the UK

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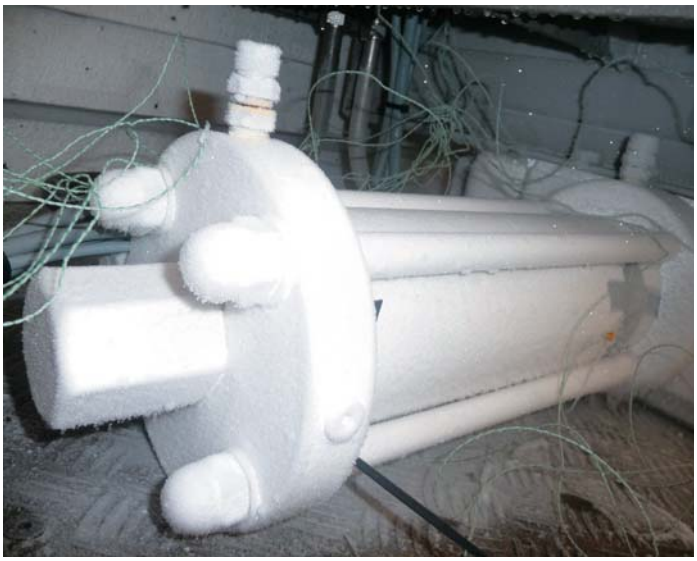
Paladon Systems Lloyds Certification for Cool Actuators!

Self-contained electro-hydraulic valve actuator packages for Gazprom's exceed 60°C requirement.



Actuator hydraulic cylinder at -65°C.

Environmental chamber after completion of -65°C testing.

Following extensive testing, Paladon Systems is pleased to announce that they have passed Gazprom's extreme low temperature requirement, and have subsequently received the first order for the supply of twenty systems for Gazprom's 1,100Km Bovanenkovo - Ukhta pipeline.

The systems being provided are quarter-turn double-acting scotch-yoke actuators using self-contained electro-hydraulic control systems for the supply hydraulic power, and to provide local and remote on/off valve control.

Self-contained electro-hydraulic valve actuator system.

"Considering the complex control system requirements, it was a significant technical challenge to design the systems to ensure reliable operation at -60°C. Low temperature steel was required for the actuators, as well as an innovative approach to protecting the hydraulic and electrical control system components from the extreme cold" said Product Manager, Mike Northwood.

After extensive testing, and despite temperatures falling to below -100°C at times within the environmental testing chamber, the system's performance exceeded all expectations, and has just been Lloyds certified for use down to -65°C.

"This is another exciting world's first for Paladon. Following extensive testing at -60°C and below, we were pleased to see our system functioning at these extreme temperatures without any problems at all; and to note that we can now supply actuators and controls into the coldest environments on Earth. We look forward to working closely with Gazprom until the successful completion of the 1,100km pipeline" said Engineering Design Manager, James Cox.

paladon
TOTAL VALVE CONTROL

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These courses are a **MUST** for those involved in the engineering industry who need to know more about valves and actuators. BVAA valve courses are delivered by our lecturers who have tremendous knowledge and experience of the industry. The sessions always result in comments of the highest praise.

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Safety Integrity Levels (SILs)
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Wednesday, 18th May 2011
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Intermediate Seals
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- Intro to Valves – Monday 9th May 2011
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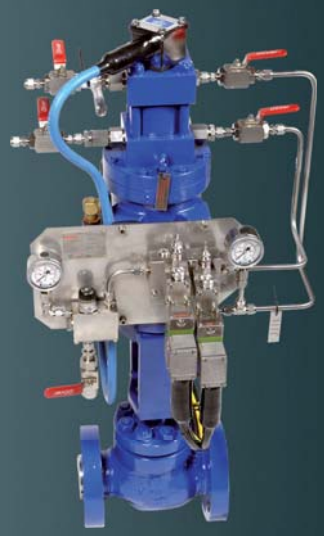

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If you limit your choices only to what seems possible or reasonable, you disconnect yourself from what you truly want, and all that is left is a compromise.
Robert Fritz

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