BVAA

Issue 29

VALVEuser® MAGAZINE

By Royal Appointment: Severn & Alco Win Queen's awards

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2014

Plus:

This issue distributed at PowerGen Europe

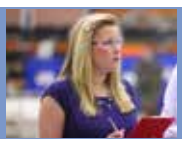
- Power Industry Focus Inside

British Valve & Actuator Association

Mogas tackle counterfeiters

Princess Royal visits Bray

YPS turns 40



Kent Introl win RoSPA award

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

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FOR ENTERPRISE:
INTERNATIONAL TRADE
2014

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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.

Royal Recognition

Welcome to the latest issue of BVAA's Valve User magazine!

by BVAA Director, Rob Bartlett

In this issue we are delighted to announce not one, but TWO Queen's Awards winners among the BVAA Membership!

Recognition, if it were needed, of the tremendous contribution made to Enterprise and International Trade by British valve manufacturers, but an especially proud moment for the recent award winners Alco Valves Group and Severn Glocon Group! The members and staff of the BVAA offer our hearty congratulations.

We *'bang on'* in this journal about the levels of experience, technology and quality that customers can expect from BVAA member companies, and this Royal Recognition underlines what readers of the magazine can see for themselves in every issue.

But it doesn't stop there. Also in this issue we feature articles on valve company tours by the Princess Royal - opening the new Bray facility in Inchinnan, Scotland, and also the Chancellor of the Exchequer George Osbourne visiting Advanced Actuators in Silsden Yorkshire.

Then there are articles on significant milestones for other members, new product launches, appointments, expansions, etc.

Exports represent a huge proportion of British valve industry production, so we've also introduced a new feature where industry leaders from outside the UK contribute to Valve User too.

Currently there are mainly politically-motivated proposals by certain parties to re-introduce 'Made in Britain' labelling to products manufactured in Britain, but in what some might say is an irreversibly globalized market place, pinning down what that means precisely might prove tricky.

What we can say however is that there is so much innovation, product development, expertise and know-how in the British Valve industry that we do, genuinely, lead the world.

Look for the *'Member of BVAA'* logo on your valve industry supplier's literature.

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Did you know?
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Cover: Alco Valves Group's award winning team pose outside their Brighouse HQ

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Members Price: £240.00 | **Non Members Price:** £360.00

Control Valves - Wednesday 18th June
Members Price: £240.00 | **Non Members Price:** £360.00

Safety Valves - Thursday 19th June
Members Price: £240.00 | **Non Members Price:** £360.00

Safety Integrity Levels (SILs) - Friday 20th June
Members Price: £240.00 | **Non Members Price:** £360.00

Valve Metallurgy for the non-Metallurgist - Monday 23rd June
Members Price: £395.00 | **Non Members Price:** £450.00

Combating Corrosion - Tuesday 24th June
Members Price: £395.00 | **Non Members Price:** £450.00

Casting Processes - Wednesday 25th June
Members Price: £395.00 | **Non Members Price:** £450.00

Diaphragm Valve MasterClass - Thursday 26th June
Members Price: £240.00 | **Non Members Price:** £360.00

PED/ATEX Directives - Friday 27th June
Members Price: £240.00 | **Non Members Price:** £360.00

For full details on each course, visit **www.bvaa.org.uk/training_courses.asp**

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BVAA News

By Chris Warnett

View from
the other side

Introducing innovative technology to the valve and actuator user industries

This article, the first of our '*View from the other side*' feature columns from our colleagues in the USA, is provided by Chris Warnett.

Chris, a UK expatriate, is the President of CPLloyd Consulting Inc. Rochester NY, providing marketing and applications expertise for the valve and automation industry. Chris has over 38 years of engineering, sales and marketing experience in valves and automation.

Reach him at chris@cplloydconsulting.com Tel 001 585 298 6239.

In deeply conservative industries the introduction of new products or technology is subject to a particular circular logic. Users only want to buy new products that have had significant field experience, but significant field experience cannot be obtained until users buy and install the new product.

This catch 22 however can be overcome by careful marketing communication of the procedures used to validate the technology and the advantages to be gained by its deployment.

This is a common problem with new ideas and a serious obstacle for new product introduction.

The perspective of the manufacturer often differs significantly from that of the user.

Manufacturers are more oriented towards the product. Ideas often come from engineering design and development teams with varying levels of input from sales teams. In theory field sales teams should be the customer interface for product developments and improvements. But manufacturers are motivated to produce unique, profitable products that can strengthen their market position for enhanced sales and profit.

Their innovations, coming internally, may sometimes be viewed through the lens of self-interest, rather

than founded on real end user utility. A novel design may be so seductive to a design engineer that the lack of a problem to which it could be applied, may be overlooked.

Even practical and needed solutions may be tested and verified against criteria that have little to do with real life applications. A technology may work well in laboratory tests but, when exposed to real world conditions not anticipated in the lab, may fail miserably.

- The end users perspective is far more pragmatic towards new technology.
- Do the benefits justify a change from a proven technology in terms of cost?
- Do the benefits justify a change from a proven technology in terms of plant reliability?
- Can the above be verified?

The power industry is a good example of sensible conservatism at work. This attitude is probably rooted in the history of the industry. The beginnings of power plant design can be found in marine propulsion. When steam power replaced sail, the wellbeing of a vessel, its crew and passengers depended on the reliability of the mechanical steam propulsion system. The cautious approach to marine reliability migrated over to the electric power generating industry. The result is that even today new technologies are often viewed with caution.

In recent years we have seen a remarkable change in our daily lives due to technology, a lot of these changes are driven by electronics and software. Consumer technology change has a frantic pace. However in the valve and actuator industries the change is far more moderated, yet many companies are delivering new and innovative products.

How are they able to convince end users to have the confidence to try these new ideas?

It may seem a simplistic statement, but the manufacturer needs to have a clear understanding of the user benefits that the new product delivers. Only then can a clear message be communicated to the relevant marketplace.

Deciding on a clear message then molds the message form and delivery channel.

For example a new design of valve that withstands erosive media could deliver significant benefits to severe service applications in several user industries. Or a new design of precision actuator could improve fine control of liquid metering in a process. Exactly how these hypothetical products are presented to the market will dictate the response and their subsequent success.

Some basic steps in marketing communication for innovations such as those would be:-

First identify the target markets for the new technology and how the product will benefit the user.

Then create the marketing message that conveys the essence of the new product and what it can mean to the users.

The support material to communicate this message could include descriptive literature, videos, technical articles, application examples, testimonials, internal test data and any other tool that adds to the credibility of the product.

The options to deliver these items have expanded and are now relatively instantaneous, inexpensive and global. As well as traditional print media (which still has a strong role to play) there is a whole spectrum of electronic media, including online magazines, user forums, YouTube and webinars. Not forgetting more traditional communications methods such as trade shows and product presentations.

A well-crafted marketing communication program can deliver the message to the customer such that the product, its application and the custormer's benefits are well understood.

However, this may all come full circle when the customer says *'show me where I can see this new technology in operation*.'

Building the critical mass of credibility for a product with new technology may take time. But some steps can help significantly.

In the development phase, manufacturers can work with an end user for placement of beta test units. This can have many benefits. The end users feels that their input has a bearing on the design or development of the product and a sense of ownership is engendered.

When the test unit is in field operation it is generating a track record for the product, if well monitored this can be used as credible field experience. The more beta units in target industries the better.

As an incremental step, certain technologies can be tested in existing products, this is a simple way to gain field credibility. For example a new seat material or design could be tested in existing valve body. Or a new torque sensor for an actuator could be tested in an already proven production actuator.

In both these examples, good documentation and site references would support the field experience and provide marketing tools to describe the application of the technology.

In certain regions of the world some customers like to try a new technology. A project manager could enhance their reputation if their project sees a significant benefit. But in my experience these instances are rare.

The more common scenario requires a coordinated professional approach to communicating the advantages of new technology and products, even for companies with a solid brand name recognition.

UKCCSRC welcomes Government boost to advancing Carbon Capture and Storage


Image from Wikipedia Author:PortHenry Jennifer Witts

The UK Department of Energy and Climate Change (DECC) announced in February the award of a Front End Engineering Design (FEED) study for the Peterhead Carbon Capture and Storage (CCS) project on a natural gas power plant in Aberdeenshire, Scotland.

This news comes just two months after the FEED study contract for the White Rose commercial-scale CCS electricity project at Drax power station in North Yorkshire was announced.

Welcoming this announcement, Professor Jon Gibbins, Director of the UK Carbon Capture and Storage Research Centre (UKCCSRC) said, *'CCS is imperative for the UK to reach our emission reduction targets and these FEED study projects will capitalise on the growing research knowledge base in the UK. The UKCCSRC welcomes this news and looks forward to working with these projects both on technical issues and in supplying the highly-skilled scientists and engineers needed to take forward CCS commercialisation.'*

With around £100M being committed to these studies by the Government, the UK remains a leader on the commercialisation of CCS, capitalising on its strong research and development base and geological capacity for storing carbon dioxide (CO2).

The Peterhead CCS project will use a post-combustion capture system to extract CO2 from an existing gas turbine unit, and facilities to compress it for pipeline transport, 100km offshore, to secure geological storage in the depleted Goldeneye field beneath the North Sea. The project involves Shell and SSE.

'Peterhead will show the world the value of natural gas with CCS for effective low-emission electricity production,' said Professor Gibbins.

CCS for natural gas power plants is expected to be a critical technology to reduce the cost of achieving a UK emission reduction target of 80% by 2050. The UK is among a small number of countries currently paying attention to the increasing problem of CO2 emissions from natural gas use and could become a leader in this field.

The FEED studies will span around two years. The UKCCSRC will work with the projects to coordinate links with academic CCS research in order to maximise the wider benefits of the experience gained.

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Amec, Bechtel & BP Benefit from BVAA *'Desktop Exhibitions'*

Delegates at the event hosted at Bechtel are updated on the latest products.

BVAA led delegations of valve and actuator companies from its membership in *'valve and actuator desktop exhibitions'* at Amec, Bechtel and BP in April. The exhibitions, which give engineers, purchasers and others a chance to keep up to date with the latest valve and actuator products on the market, are growing in popularity among contractors and operators in London and Aberdeen alike.

Feedback from the event's attendees has been great, with engineers declaring how informative it was to talk with valve and actuator experts. On leaving the Bechtel event, one delegate commented:

'I've been in this industry for over 30 years and today I learned of a product I never knew existed!'

This encapsulates the ethos of what BVAA can offer those who specify valves and actuators, which Graham Clarke, of Amec, confirms:

Technical experts from (l to r) Goodwin, Denholm Valve Care and Weir updated interested Amec employees

'It is important to us to keep staff up-to-date on the latest technological and mechanical innovations. BVAA managed the event very professionally, we are very thankful to Rob and his team'.

If you are interested in hosting a Desktop Exhibition, please contact either Rob or Jimmy at BVAA on 01295 221270.

British valve firm in second Queen's Award win

Valve engineering specialist Severn Glocon Group has been awarded a Queen's Award for Enterprise, International Trade for the second time in four years.

The award recognises the British manufacturer's three year trajectory of continuous growth in overseas sales. Between 2010 and 2012 international trade increased by 120 per cent and now represents 68 per cent of total Group turnover.

Growth was accelerated by strategic acquisitions of UK firms specialising in subsea and butterfly valves within the three year timeframe. This diversification enhances the scope of the Group's British engineering and manufacturing capabilities for the global oil and gas industry.

New developments in Australia, China, Brazil, India and Iraq played an important role in the award win. Australia has seen significant growth, with the Group earning *'top three cryogenic valve manufacturer'* status and securing several landmark LNG contracts. Established markets such as the Middle East also played a major role in overall international sales uplift.

The Group has continued to invest in its facilities and infrastructure. Noteworthy advancements include the relocation of established plant division Severn Unival to purpose-built £2.5m premises in Brighouse, significant expansion of manufacturing facilities in India and installation of sophisticated high-capacity cryogenic testing at Gloucester.

> *'truly world-class valve products'*

A Regional Growth Fund grant facilitated the opening of a dedicated Valve Innovation Centre at the Brighouse site. This represents one facet of an enhanced focus on research and development which helps the Group compete more effectively with larger US conglomerates. Switching banks enabled the Group to benefit from Government lending schemes and make new bonding facilities which provide innovative, flexible funding for international trading.

'The past three years have been the most dynamic in our 53 year history,' says CEO Maurice Critchley. *'Many different strands of activity have come together, driving significant growth and success. I am proud to be at the helm of a progressive British engineering and manufacturing firm that delivers truly world-class valve products and technical advisory services.'*

Severn Glocon Group CEO, Maurice Critchley

Severn Glocon Group employs 429 people in the UK and 800 worldwide. It first won a Queen's Award for Enterprise, International Trade in 2011. More information is available at www.severnglocon.com.

The Queen's Awards for Enterprise celebrate outstanding achievement by UK businesses in the categories of Innovation, International Trade and Sustainable Development. They are awarded annually by HM The Queen on the advice of the Prime Minister. He is assisted by an advisory committee that includes representatives of government, industry and commerce and trade unions.

SEVERN GLOCON GROUP PLC

Severn Glocon Group
Tel: 0845 223 2040
www.severnglocon.com

By BVAA's Technical Consultant, Peter Churm

TECHNICAL HOT SPOT

Hot Spot – ATEX Stakeholder Report March 2014

Heads up advance information regarding the proposed possible inclusion of offshore oil and gas production equipment in the ATEX, Pressure Equipment and Machinery Directives

In the latest ATEX Stakeholder Report issued by BIS Department for Business Innovation and Skills Andrew Lunnon – Senior Policy Advisor, Pressure Equipment, Simple Pressure Vessels and ATEX, Product Regulation Team announced the following:

'Equipment used in the offshore oil and gas industry

The Commission is studying options for the inclusion of offshore oil and gas production equipment in the ATEX, Pressure Equipment and Machinery Directives. The work is being led by the Commission desk officer for Machinery – the ATEX WG will be kept informed of developments. The Commission had launched an 18 month study to consider the options and impacts of the inclusion of offshore equipment in future revisions of the three Directives. A formal mandate for standards for offshore equipment will be sent to CEN in March.'

Alco Valves Wins Queen's Award for International Trade

Alco Valves Group, the West Yorkshire based valve manufacturer, is proud to announce it has been awarded the Queens Award for Enterprise. The Group has received the award in the International Trade category for 2014 which recognises outstanding export performance and demonstrates the sustainable growth achieved over the past three years.

Alco Valves Group, with its head office based in Brighouse UK, is the largest privately owned valve manufacturing business in the surrounding area and one of the biggest in the UK with well over 100 employees. The Group has been in business for over 35 years and comprises five operating companies; Alco Valves, Alco Process Valves, Alco Hi-Tek, Alco Sub-Tek and Alco Components. Through these five companies Alco is able to provide an extensive range of high performance isolation valves, double block and bleed valves (DBB's), a large range of manifold valves for varied applications including topside, subsea, critical service, severe service, low temperature, high and super high pressures as well as low, medium and high pressure instrumentation valves and pipeline interface solutions.

> *'UK SME with lots of Global appeal'*

The Group operates sales offices, manufacturing plants, technical support offices and warehouses in five UK locations and via its overseas locations in Houston Texas USA, Toronto and Calgary in Canada, the Middle East and Singapore in South East Asia.

In addition to its own facilities and locations this British manufacturer has a comprehensive and wide distribution network of partners and agents around the world. Alco's products have become synonymous with quality and reliability and as such the Group has become a trusted partner for many in the oil, gas and subsea industries throughout the World.

Stuart Lomax, Alco Group's Managing Director & Chairman said:-

'*On behalf of all at Alco Valves Group, we are very proud to win such a highly prestigious award; it is a real honour and well-deserved recognition of our team's abilities and ongoing efforts.*

Team effort: Alco staff outside their Brighouse Facility

We thank all of the participators in Alco's growth, past and present, for their contributions in making Alco Group the success story it is today. Deep gratitude is extended to our diverse range of customers working in so many industries and countries around the World and appreciation and thanks also go to our dedicated and loyal suppliers.

We look forward to building on this achievement and continuing to provide customers with the best-in-class products they demand though our World-wide service network.'

If you would like to know more about Alco Group or perhaps even seek a career with us visit our website for more details.

West Special Fasteners join BVAA

West Special Fasteners, the Derbyshire based manufacturers of stainless steel and nickel alloy special fasteners, has joined the British Valve and Actuator Association (BVAA). The company, which was established in 1999, has grown into one of the most respected hot forgers and producers of high integrity fasteners in the United Kingdom. The move to join BVAA is a result of the commitment to serve the valve industry and build relationships in this thriving sector.

The facilities at the Derbyshire plant combine the latest in induction hot forging machinery with CNC precision, and automatic and manual lathes. While West Special Fasteners' employees are skilled and have experience at the highest levels, many of our accomplished machinists have joined the company from other fastener companies and have brought with them years of experience.

Members of West Special Fasteners Sales and Quality teams pose with the BVAA plaque

Products that can be manufactured in-house include Hexagon Head Bolts, Socket Head Capscrews, Studs, Hexagon Nuts, Socket Countersunk Screws, Cup Square Bolts, Socket Setscrews and other speicalised fasteners. All are manufactured under West Special Fasteners Quality Management System, which is approved to ISO 9001:2008 by Lloyds Register Quality Assurance Limited.

Typical material include Hastelloy, Titanimum, Inconel Alloy 600, 601, 625, 718, Incoloy Alloy 800HT, 825, Monel Alloy 400, K500, Duplex UNS S31803, Super Duplex S32760 SA & FLT, Zeron 100, S32550, S32750, Aluminium Bronze, Stainless Steels Astm A193 B8M, B8 B8C, Class 1 or Class 2, A4, A4-80, A2, 316L, 304L, 904L 301.

The team at West Special Fasteners look forward to building relationships within the BVAA community and welcome all enquiries from member and non-member companies.

AUMA celebrates
50 years of electric actuation

AUMA's Managing Directors Matthias Dinse and Henrik Newerla commemorate the company's 50 years supplying modular electric actuators.

The electric actuator manufacturer, AUMA, celebrates its 50th anniversary year in 2014. Founded by Werner Riester and Rudolf Dinse in 1964 in Ostfildern, near Stuttgart, Germany, the company has grown from two to 2,300 employees with global representation including AUMA Actuators Ltd in the UK and worldwide manufacturing facilities covering 60,000 square metres. AUMA launched its first range of electric actuators in 1965 and the family-owned, private company has developed to become today's AUMA Riester GmbH & Co. KG.

Over 180,000 actuators are currently produced per annum by AUMA, each tailored to meet individual customer's needs. Reliability is at the heart of the AUMA brand: this is considered of crucial importance to process plant operators. Customer endorsements over the last 50 years confirm this central ethos - references include installations where the company's devices have worked reliably for the last 25 years.

A modular design provides an adaptable actuation solution - this differentiates AUMA's offer and has helped to retain the company's position as a leading manufacturer in the field of valve control. A strong reputation for innovation is backed by advancements in actuation that include AUMA's pioneering introduction of integral, programmable actuator controls in the 1970s. The first fieldbus interfaces were successfully incorporated into AUMA's devices in the early 1990s and predictive maintenance requirements have been met by the company's latest state-of-the-art technology.

AUMA's Commercial Managing Director, Matthias Dinse, comments on the success of the company:

'Industrial valves in a wide range of different sizes and designs require control in process plants all around the world, in all climatic environments. Whenever and wherever valves need electric automation, our objective is to provide the appropriate actuation technology - from a sewage treatment plant in Central America, to a water pipeline in Arabia or an oil drilling platform in the North Atlantic. To achieve this, our sales organisation is actively supporting projects on all levels, in national and international markets, from planning through to commissioning.'

The path for globalisation was established during the first decade of AUMA's trading history. AUMA Benelux was formed in Leiden, Netherlands in 1974 - this opened up new markets and was the first of twenty international subsidiaries to be founded by the company. With an additional 50 representative offices, AUMA is represented extensively around the world, ensuring comprehensive global support and after sales service for its product portfolio.

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Chancellor gives *'vote of confidence'* to Yorkshire actuator manufacturer

Mr Osbourne was impressed with Advanced Actuators use of a local supply chain

Advanced Actuators was heralded as an example of the national recovery in manufacturing following a visit by the Chancellor George Osborne in February.

Visiting the Yorkshire-based hydraulic actuator engineering firm which designs and manufactures actuators for valve control to the oil, gas and power industries across the globe, the Chancellor was *'hugely impressed'* with the Silsden-based business and its investment in apprentices and the future generations of engineers.

'What's great about this company is that it uses other local companies to make parts for things which are exported around the world and it's impressive the way they bring on the apprentices in their workforce,' said Mr Osborne.

'It's a real vote of confidence in British manufacturing and the West Yorkshire economy. Orders growing out of Britain through businesses like this demonstrates our country playing its part in the global economy. I find it hugely refreshing to see this happening,' he said.

The Chancellor was also shown the depth of innovation taking place within Advanced from actuators that have

Chris Woodhead (second right) talks the Chancellor George Osborne and Keighley MP Kris Hopkins through one of the firm's Actuator projects

an output torque of over 1.2million Newton meters to linear actuators that develop 2500kg of thrust from a total power consumption of 50 watts.

Chris Woodhead, Managing Director of Advanced Actuators, which had a £3million turnover in 2013 and has just won a £300,000 contract in China, said growth is accelerating faster than ever in the company's 44 year history.

'It's been fantastic to have Mr Osborne here and show him what we're doing with youth employment, other local firms and global exports but what is key to us as a business is more resources overseas. Over 50% of our business is through export but we have to support the product with engineers and facilities in the countries we're working with and it can cost up to £60k per country. That's where the Government needs to focus its attention.'

Advanced Actuators employs 29 people and is a leading supplier of actuators, control solutions and hydraulic components. Since 1969 it has supplied a range of diverse markets, including oil & gas, power generation, nuclear, marine, and industrial marketplaces throughout the world.

HRH the Princess Royal Officially Opens Bray's European Headquarters

Bray Controls (UK) Ltd, manufacturer of valves for the global flow control market, welcomed HRH The Princess Royal in February to officially open the recently completed £2.2 million expansion at its European headquarters in Inchinnan, Scotland.

HRH the Princes Royal and Bray's Paul Tanner

During her tour of the new facility, the Princess met the 70-plus workforce, which is fundamental to the success of Bray Controls, including staff who have been with the company since it opened in Scotland in 1990 and new apprentices learning their trade at the Inchinnan plant. Craig Brown, Chairman and CEO of Bray International Inc, flew in from the Corporate Headquarters in Houston, Texas, especially for the Royal occasion.

George Crooks, Managing Director of Bray Controls in Europe, who accompanied the Princess during her visit, said: *'We are honoured that The Princess Royal has officially opened our expanded facility, and met the people who have helped make it all possible. We boast a very loyal team of highly experienced employees, some of whom have stayed on past retirement age, and continue to offer their key skills - along with a management team all appointed through internal promotion. We are very proud of them all.'*

'At Inchinnan, we have created a larger, more modern working environment for our team that befits a European headquarters, with improved customer communications, increased inventory holdings and test capabilities. This comes at a time when our business is enjoying rapid growth, as we introduce new products and expand into new territories. The visit by The Princess Royal represents recognition of these achievements for our entire workforce.'

The Princess met members of the 70-plus workforce at the Inchinnan site

The Princess Royal was shown demonstrations on the Test Rig, which guarantees customers *'packaged solutions'* that are fully factory set and tested ready for installation, and the most recent plant investment, the Vertical Lifting Module, which saves time and space and affords complete stock management.

'very loyal team'

A division of the family owned Texas-based Bray International Inc, the Inchinnan facility has increased from 27,000 sq ft to 37,000 sq ft, with the potential for a further 10,000 sq ft to be added to the site in the future. Employees in France, Germany, Holland, Poland, Russia and Dubai, all report into the Scottish-based European headquarters.

Success can be attributed to a strategy of targeting specific growing economies and expanding into new markets in the Middle East and Africa. The introduction of new products to an already fully integrated and comprehensive catalogue of valves, actuators and accessories, has also helped place Bray Controls at the forefront of the global butterfly valve and flow control market.

Bray®

Bray Controls
Tel: 0141 812 5199
www.bray.com

SMC launches a new chapter in innovation

SMC, the world's leading provider of pneumatics, has unveiled its 2014 Innovations Catalogue listing the very latest in cutting-edge automation solutions.

Recognised for the last three years by leading business magazine Forbes as one of the world's most innovative companies, SMC's continuous focus on innovation sees the company launch around 40 new products to the European market every year, with 11,000 basic products and more than 620,000 variations.

> *'Innovation and product development has been at the heart of our business since our foundation'*

Innovative design is coupled with outstanding customer support delivered by a team of 1,400 dedicated R&D engineers worldwide.

SMC's Product Promotions Manager Pete Humphreys said: *'Innovation and product development has been at the heart of our business since our foundation more than 50 years ago. We recognise that only by investing in R&D can we fulfil our commitment to work in partnership with our customers to improve their processes, cut their energy waste bills and ultimately increase their profitability.*

'Our Innovations Catalogue last year was so well received we have updated it in five European languages, so that our customers can find details of all our key product launches over the last 12 months.'

The Innovations Catalogue is available in French, German, Italian, Spanish and English, providing machine builders and designers with over 100 pages of product solutions for many advanced automation applications.

The products featured include the new SY all-purpose flexible and cost effective solenoid valve, the LFE electromagnetic digital flow switch with a unique 3-colour / 2-screen display for constant visualisation of the switch condition, or the powerful LEJ electric actuator, designed to manage large loads with precision. All products within SMC's Innovations Catalogue have a QR code, so that product information is easy to access whilst on the move, from smartphones and tablets.

The Innovations Catalogue is available in French, German, Italian, Spanish and English

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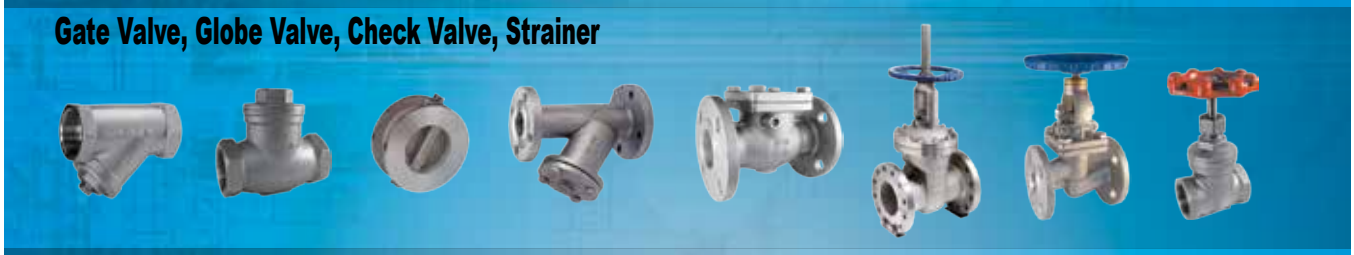

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SIPOS awarded

prestigious Polish power contract

Illustration of the Kozienice 11 Turnkey Power Plant, Kozienice, Poland (2013)

SIPOS Aktorik has won a contract to supply around 1,000 electric actuators to the Kozienice 11 coal-fired power plant which will extend Poland's power generation capability and provide a dependable electricity supply for the country's expanding economy. Working with consortium partner Polimex-Mostostal S.A., Mitsubishi Hitachi Power System Europe GmbH (MHPSE) signed a contract with Polish energy supplier ENEA Wytwarzanie for plant construction.

SIPOS Aktorik will supply around 1,000 electric actuators to Kozienice 11

The Kozienice 11 plant is planned to commence commercial operation in 2017: the unit will operate within an existing power plant complex. Designed to be highly economical with fuel and reduce CO2 emissions, the plant will have a 1,075 gross megawatt output.

The landmark project, which has been hailed one of the most modern power stations of its kind, underscores SIPOS' reputation as a preferred supplier of actuation technology to the power sector. Factors key to SIPOS securing the contract were the company's advanced actuation technology that includes variable speed capability and local support by AUMA Polska for all service requirements including installation, maintenance and revisions.

SIPOS AKTORIK

SIPOS Aktorik
Tel: 01275 871141
www.sipos.de

Who are '*They*'?

Whenever you have a conversation about standards, you will inevitably hear '*They*' mentioned...

- '*They* wrote this standard...'
- '*They* tested and decided...'
- '*They* met recently and discussed...'

But just who are '*They*'?

It's us! BVAA Members have thousands of years of collective experience of standardisation, and we regularly participate in over 50 technical and standards committees around the world. For every standard being developed, you can be sure there is a BVAA group monitoring and contributing to the work.

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www.bvaa.org.uk

Albion setting the standard with stainless steel fittings

Albion's fittings conform to current ISO 4144 Standard

Albion Valves, supplier of specialist products for the process, water and HVAC industries, is one of the first companies to introduce a range of stainless steel fittings which conform to current ISO 4144 Standard, which specifies the pressure, temperature ratings and dimensions of this product group.

Albion supports the industry Standard and the focus it brings to quality in this sector, which has suffered in recent years as a result of not having clearly defined quality controls. Historically, there has been a huge diversity on quality and pricing for this product sector, often resulting in products being specified that were either unfit for purpose, over-spec'd, non compliant or over priced for particular applications.

'quality, performance and price'

Albion's new range features a wide variety of different fittings available in sizes from 1/8″ - 4″ all of which meet the new Standard's criteria, offering customers an extensive choice, as well as the optimum balance of quality, performance and price.

David Keys, Albion Managing Director commented:

'It is imperative for our business that we stock a high performance range of products that are safe, reliable and excellent quality. We aim to provide our customers with complete confidence and peace of mind, by supplying products that both increase productivity and minimize waste and errors.

As such we welcome the ISO Standard and will be encouraging our distributors to benefit from the enhanced quality controls in this sector.'

Albion currently stocks around 5000 lines of industrial products, suitable for applications predominantly within the process, water and HVAC industries.

Albion
Tel: 01226 729900
www.albionvalvesuk.com

Rotork increases its valve instrumentation product range

The YT-3300 smart positioner is one of the products now available from Rotork Instruments

Market leading actuator manufacturer and flow control company Rotork plc has expanded its range of instrumentation products with the acquisition of Young Tech Co. Ltd. (YTC).

YTC is a Korean-based, ISO9001 certified manufacturer of positioners and accessories mainly associated with pneumatic valve actuation. YTC products, including electro-pneumatic, pneumatic and smart positioners, solenoid valves and I to P converters, are widely recognised in worldwide flow control markets and industries. International hazardous area certifications include ATEX, IECEx, CSA and FM.

'enhanced range'

The acquisition of YTC, which will become part of the Rotork Instruments Division, is in line with Rotork's strategy of extending its offering of flow control and pressure control products. The acquisition further enhances Rotork's position in the Asia-Pacific market, whilst increasing YTC's presence in Europe and the Americas.

Commenting on the acquisition, Rotork Chief Executive Peter France said:

'YTC is an excellent addition to our Instruments Division. It is a highly respected manufacturer of instrumentation products which are complementary to Rotork's existing portfolio of products. This acquisition will enhance our range of instrumentation products and further enlarge our addressable market.'

rotork®

Rotork UK
Tel: +44 1225 733200
www.rotork.com

Gaskets don't leak – bolted joint assemblies do!

When maintenance engineers encounter leaking process equipment, the simple gasket or seal all too often takes the blame. In the majority of cases however, traditional installation practices produce errors which lessen the reliability of the bolt and seal combination on the joint concerned.

Sealing success

A 24-inch valve at a nuclear power plant was rendered totally leak free for the first time in seven years, following the application of a technology driven approach to achieving joint integrity.

Engineers at the plant called in James Walker after attending a presentation on assuring joint integrity using RotaBolt® tension control systems. Their problem was a giant steam valve that had always leaked on start up.

Test pressure for the valve is 130bar, with start-up at 160bar under increasing temperature. Working pressure is 60bar at 260°C. In order to achieve a perfect seal, James Walker recommended the use of 20 off 3-inch OD by 580mm long RotaBolt 2 studs, and a complete redesign of the valve's flange joint.

The new joint design incorporated a Metaflex® CW/IR spiral wound gasket, plus a silver plated C-ring and a modified housing arrangement. All design modifications were checked and approved for the plant operator by an external consultancy. The upgraded steam valve was then installed during the plant's main shutdown.

On start-up the steam valve was completely leak free, and it has remained leak free ever since — thanks to a totally integrated approach to assuring bolt integrity.

Reducing Total Cost of Ownership

Bolted joint integrity is one of the cornerstones of the James Walker Total Cost of Ownership (TCO) Reduction Programme through which the company is helping its customers to reduce maintenance costs and improve plant safety and performance.

'We are focusing our efforts on the critical joints and flanges related to valves,' explains global marketing and business development manager – valves, John Bowers. *'The vast majority of maintenance problems are created by incorrect installation, incorrect product specification or cost-cutting measures. Our service identifies the correct products and specifications that should be used and we will also often undertake training of engineering teams, providing fitting instructions and maintenance schedules where necessary to ensure the issue is resolved.*

On start-up the steam valve was completely leak free, and it has remained leak free ever since

In other cases we may re-design or re-engineer a flange, housing or seal to eliminate the cause of the maintenance issue. We can offer this sort of service because we have both total control over the design and manufacture of our products and materials as well as dedicated design and applications engineering teams with an in-depth knowledge of the valve industry and applications we service.'

Valve management solutions

The same philosophy of establishing and curing the root cause of a problem rather than simply treating the symptoms or applying a patch, extends to our work with fugitive emissions from valves. Experience from the field and from comprehensive in-house testing as well as joint testing with external test houses and OEMs

has provided an understanding of the critical elements - over and above the use of suitable quality components – that need to be put into place to optimise the emissions performance and reduce the cost of ownership of all valve types.

Looking at the root of each emissions problem includes detailed examination of elements including housing configuration, stem surface condition and material before specifying the ideal sealing product. Detailed fitting guides also play an important role in helping optimise valve performance – correct fitting of stem sealing product ensuring trouble-free valve operation with minimal fugitive emissions.

John Bowers concludes; *'Through the testing programmes we use to develop our materials and products, we discovered that engineering practices in the field were often the limiting factors in the performance of products, so now, in order to extract the optimum performance from our products we are offering customers a comprehensive application and design engineering service that addresses these additional factors. The result of such a comprehensive, joined-up approach is unsurprisingly, improved plant performance in terms of emissions and safety through elimination of leakage plus reduced maintenance costs through a combination of extended product life and removal of the need for unscheduled maintenance between outages. Within the power industry this whole package of benefits adds up to the ultimate goal of increasing availability to generate.'*

James Walker carried out a detailed examination of elements including housing configuration, stem surface condition

Biffi provides customised electric actuator for Ichthys gas project

Biffi Italia, part of Pentair Actuation & Controls platform, has successfully shipped four EGR 50K electric actuators for installation on the Ichthys gas project, the largest oil and gas development in Australia's Northern Territory.

Working closely with engineering company McDermott, Biffi specifically customised the actuators to operate 42 inch class 1500 quarter turn ball valves. In response to McDermott's requirements, the actuators were designed to offer a rapid operating time of 42 seconds for its emergency closing function. The EGR 50K showcases superior engineering capability and is the largest of its kind ever built by Biffi. High torque values of 500,000 Nm ensure the suitability of the EGR 50K for the automation of critical beachhead mainline ball valves. The actuators have been supplied for installation at the head of the pipeline that connects the rig in the gas and condensate field with one located near the coast of Australia.

The EGR 50K consists of four main parts, including a spool piece with a coupling supported by bronze bearings, a four-stage epicyclic gear reducer that combines high reduction with high efficiency, and a powerful electric motor specifically designed for the challenging requirement of combining high speed with high torque. The actuator also comprises a manual override to operate the actuators in case of loss of electric power, with a control system featuring diagnostic and monitoring functions and an end-of-travel position control. The control system was required to be fully sealed against the humid, highly saliferous environment, and to function reliably under solar radiation temperatures of up to 75°C. Furthermore, the high level micro-processor based diagnostics continuously monitor motor temperature, motor current and output torque.

> *'extensive technical experience'*

A specific feature of the EGR 50K is its remarkable reliability and high efficiency. This is achieved by using precisely machined and high strength internal gears within a complete enclosure, including bearings contained in an oil bath.

The adoption of the EGR 50K highlights Biffi's capability in offering unique solutions to its customers. *'Our EGR 50K is the largest electric actuator we have ever produced and combines high reliability and efficiency,'* comments Alberto Ghiadoni, Electric Engineering Manager at Biffi Italia. *'We used our extensive technical experience in the oil & gas industry to engineer a solution that met the very specific needs of this project. As the offshore oil & gas extraction and process industry expands to maintain pace with global energy demands, we are committed to developing new solutions that benefit customers and meet challenging project requirements.'*

EGR 50K: remarkable reliability and high efficiency

The Ichthys project is a joint venture between INPEX and Total, which is expected to produce 8.4 million tonnes of liquefied natural gas (LNG) and 1.6 million tonnes of liquefied petroleum gas (LPG) per annum. Gas from the Ichthys Field, in the Browse Basin approximately 125 miles offshore Western Australia, will undergo preliminary processing offshore to remove water and extract condensate. The gas will then be exported to onshore processing facilities in Darwin via a 552-mile subsea pipeline. Scheduled for completion in 2016, the large-scale LNG project is set to deliver significant social and economic benefits to Australia.

Pentair

Pentair Valves & Controls
Tel: 01858 467 281
web: valves.pentair.com/valves/brands/biffi/

Air actuated stainless steel ball valves combine quality with economy

Thorite has launched a new range of economy stainless steel, pneumatically actuated ball valves from leading Italian manufacturer Bonomi, each designed to offer rugged performance in a wide number of general-use industrial process applications.

Thorite has selected these Bonomi ball valves to provide customers with quality units at super-competitive prices.

The new ball valves are available with 2 and 3 piece, direct-mount stainless steel valve bodies, with single or double acting aluminium actuators and can be specified in port sizes from ¼″ to 4″ BSP. All valves are supplied complete with the quality, tried and tested Bonomi aluminium air actuators which also have position sensing ports for signal outputs and Namur valve interfaces.

Bonomi
Tel: 024 7635 4535
www.bonomi.co.uk

Flowserve Limitorque Master Station III Improves Actuator Control and Communications

Flowserve Corporation, a leading provider of flow control products and services for the global infrastructure markets, recentley announced the launch of the Flowserve Limitorque Master Station III, a digital network solution that provides complete control, monitoring and diagnostics for up to 250 Flowserve Limitorque valve actuators.

The Master Station III's new modular, hot-swappable, redundant design builds on the proven technology of the Master Station II and significantly reduces commissioning and configuration time. If the active module fails, the advanced design of the Master Station III initiates the standby module to immediately take over the network for seamless control. When a module needs to be replaced or repaired, it can be removed and a new module can be installed without taking the device offline, reducing costly downtime.

'Our customers are increasingly turning to digital communication and networking solutions to quickly diagnose small issues before they become costly failures,' said Eric van Gemeren, vice president Research and Development, Flowserve. *'Flowserve Master Station III provides customers with the information they need to improve plant performance.'*

The Master Station III significantly reduces commissioning and configuration time

Another capability of the Master Station III is the slave register polling schedule that can be configured in order to optimize overall network communication performance and enable end users to download status and diagnostic information of critical valve actuators more frequently. A built-in network time protocol (NTP) provides time synchronization with the host controller, resulting in harmonized date and time stamped diagnostic logging. When an alarm is triggered, an e-mail notification is automatically sent to facility operators.

The Master Station III can serve as an interface device between the host and the valve actuator network, or it can stand on its own. It features a simple touch-panel Human Machine Interface (HMI) supporting five languages: English, Spanish, German, French and Italian; and an external monitor and mouse can be connected through VGA and USB ports.

The new digital network controller is compatible with Flowserve Limitorque MX, QX, and L120 field units and can be used for power, petrochemical, oil and gas, water and wastewater applications.

New MD at BiS Valves Looks to Build on 'Solid Foundation'

After 23 years at BiS Valves, David Kelly, MD and majority shareholder, has decided it is the right time to hand over the day to day leadership of the business.

Nick Frost, previously Technical Director, has been gradually taking over the role for the past year and now formally assumes the title of Managing Director.

David says, *'The company as a whole has done tremendously well over the past few years and Nick has been instrumental in our success. He possesses the energy, acumen and vision to meet the challenges in taking BiS forward and I feel I am leaving the company in safe hands.*

BiS is proud of the good reputation it has won over the years and Nick and I share the same goal of providing quality goods, at fair prices.'

Nick Frost (left) and David Kelly

'innovative engineering'

David now moves to the role of Chairman and will retain an active interest in the future of the business.

Nick commented, *'Now in my tenth year, I have been proud to be a part of the development and growth of BiS Valves.*

Our focus remains on innovative engineering solutions and support and providing value to our customers in all that we do, particularly in terms of the key metrics of quality, cost and delivery.

With an expanding range of valves, a skilled, experienced team and an extensive network of global partners we look forward to growing our business by delivering an exceptional level of customer service, combined with the products that the market demands.

I relish the challenge of taking the business forward based on the core values and solid foundations that David has built.'

BiS Valves
Tel: . +44 (0)1202 896322
www.bisvalves.co.uk

BiS VALVES

MASTERclass

Manual or Auto Drain Airsets – does it matter?

Solenoid valve with strainer and cyclic timer

Manual drain filter regulators fitted to actuator assemblies

Producing and maintaining dry compressed air is a complex task and dependent on many variables. The practical upshot of wet air or entrained slugs of water is early failure of components through corrosion and/or hydraulic damage.

Filter regulators are commonly used to provide local pressure regulation and air filtration prior to the positioners and pilot valves that control pneumatic actuators. The action of the air movement through the filter bowl allows the water vapour to condense in the bowl but if the level of condensate is allowed to rise and fill the bowl, the water will get re-entrained in the downstream air. Efficient draining of the condensate is therefore very important for reliable valve and plant operation.

The method of releasing accumulated condensate from pneumatic filters and filter regulators probably isn't the major consideration for most when deciding on an airset specification for an actuated valve, but understanding the choices available is essential to ensure that plant operations are not compromised.

Manual Drain

This is the simplest common drain system and can be in the form of a screwed plug, sprung button, needle or ball valve at the bottom of the bowl that requires an operator to regularly release the condensate and depending on the plant (and their safety regs or lack of), this can be into a catch tank, surface drain or just on to the floor to evaporate back into the atmosphere.

The timing of the draining can be matched to the plant operation by the operator such that when the system is not under pressure, the condensate evacuates solely under the effect of gravity and therefore plant air pressure (energy) is not wasted to atmosphere for the period of the valve being open. If the system is under pressure, the water will be forced out adding a constant load to the supply air pressure until the valve shuts, potentially wasting a large volume of air. There are also several operator health & safety issues with this if the drain port is not piped to a remote location.

To save time, operators sometimes leave drain valves just cracked for constant bleeding (wasting huge volumes of air) but risk them closing over time due to the build-up of limescale or debris. This could have very serious consequences for plant reliability, safety and production.

Capture of the condensate can allow the operator to monitor the air system health either visually or through chemical analysis which can assist planned maintenance schemes or quickly highlight immediate remedial action being necessary.

For areas where the bowl can fill quickly and need emptying often during the working day, an automatic drain may prove more efficient although this insight would be useful to identify and remedy the cause of the water build up in the first place.

Automatic Drain

This method employs a sprung valve and float to open on rising water level or removal of inlet pressure. At first glance this would seem the obvious choice for all installations as it removes the need for operator intervention but for low pressure systems the valve can leak and waste air as they commonly need around 1Bar constant pressure to seal so in this case a filter supplying 10psi would be better with a manual drain. The float mechanism will often be manufactured in plastic which will limit the maximum inlet pressure of the filter regulator to 16Bar or less depending on the make and model.

Autodrain filter reg

Removing the need for an operator saves time costs but also prevents the possibility of assessing operation as the float mechanism could fail closed leading to increasing condensate retention until something more expensive breaks downstream such as a smart positioner. A more common fault would be for the valve to fail open and thus be constantly venting air to atmosphere, significantly increasing the air plant operating costs. For this reason we would recommend that all autodrain filters and filter regs are regularly inspected and tested for correct operation.

Timed Drain

Where there is a need for non-operator controlled condensate draining but the system pressure is very low and an autodrain can't be employed, the simplest and most cost effective way of achieving this is with a manual drain bowl coupled via a strainer to a small solenoid valve operated by a cyclic timer. This method is often seen on air reservoirs and with a very short On time, minimal wastage of air occurs while the water is released at regular intervals 24/7.

Autodrain and bowl disassembled

Which to Choose?

The age and scale of the plant, air quality at proposed point of use, maintenance regimes in place, system health, operator time, climatic conditions and consequences of failure are all prime considerations in selecting and specifying these products to achieve optimum reliability and lowest cost of operation for the systems to which they are fitted.

The lower cost manual drain version depends on regular and expensive user involvement throughout operations but also offers the opportunity for rapid identification of issues in air quality and components to maximise plant efficiency. The more expensive autodrain version is great for remote installations but is not *'fit and forget'* as it will still need periodic inspection and maintenance. It is not suited to low (<1Bar) or high (>16Bar) pressure systems.

The manual drain with timer controlled solenoid can be an excellent compromise where electrical supplies are permitted and can be combined with a ball valve for manual checking of the condensate or maintenance bypass of the solenoid valve. It does waste small amounts of air on each operation and will need regular inspection and maintenance.

Filter regs are often seen as non-critical commodity type products and as such their importance to plant operation is frequently not fully appreciated. As in any system, the weakest link will give the most problems and the specification of a quality airset with the correct drain method to suit the maintenance scheme of the plant could offer considerable long term savings.

Perfect Solution:

Allvalves Online's partnership with Sun Yeh reaping benefits for customers

Allvalves Online, the sole UK distributor for Sun Yeh, has successfully fulfilled first orders of the highly rated Actuators. Sun Yeh, which was founded in 1986, has a long history of providing reliable, certified electric actuators to a wide range of industries.

Allvalves Online began distributing Sun Yeh products in 2013 and has already been able to translate the functionality of Sun Yeh products and Allvalves knowledge of the UK market into significant benefits for its customers. Adam Chapman, of Allvalves Online comments:

'We have been delighted to work with Sun Yeh to design a bespoke actuation system for a major OEM. The customer has been delighted with the three position 180 degree actuator specified.'

These orders have followed the recent arrival of Sun Yeh products to Allvalves Online's stock holdings in the UK and Germany. The in-demand products are now available through the same flexible ordering systems and quick lead-times as the rest of the Allvalves range.

Sun Yeh produces a range of linear actuators and high torque output range of rotary products. They also offer the S Series, a mechanical spring return actuator. The actuators aluminium and soon to be released stainless steel housings make them ideal for industrial applications. However it is the flexibility of their products which has seen them win orders for over 25 years.

Allvalves are able to assemble and test before same day shipping

Allvalves Online has successfully fulfilled its first orders of Sun Yeh Actuators

The products operate a torque range of 35nm – 4,500nm. Unlike some competitors they can be equipped with an adjustable speed board. This allows the operator to control the speed of opening and closing times, for example taking a standard working time of 15 seconds through to 200+ seconds.

Allvalves Online Ltd hopes to announce via its new website next month the arrival of stainless steel housings for the OM series of electric actuators; a very rare offering in the actuator market. We are also launching a range of options for corrosive applications where we can offer IP68 electric actuators with an epoxy coating, for example.

Sun Yeh actuators are CSA approved and ISO certified, presenting the customer with piece of mind that they will operate as specified. Their partnership with Allvalves Online means they are available to the UK market, with optimum flexibility and short lead-times.

Adam Chapman commented:

'We are working hard to re-establish the Sun Yeh brand not only here in the UK and Ireland but also through Europe via our German office. It is a name that the industry knows and one that it trusts. '

ALLVALVES ONLINE

Allvalves Online
Tel: +44-1386 553190
www.all-valves.co.uk/store

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Flowserve UK Valve Plant Awarded 'N' Stamp Approval

Flowserve, a leading provider of flow control products and services for the global infrastructure markets, has announced that its UK ball valve manufacturing operation has been awarded ASME III 'N' stamp approval.

The certification covers all ASME III valve classifications for the nuclear power industry including Class 1, which allows Flowserve Flow Control UK through its manufacturing facility in Burgess Hill, West Sussex to supply Worcester Controls ball valves to the most critical service applications on the nuclear island. Section III of the ASME Boiler and Pressure Vessel Code is built around quality standards that enhance safety throughout a nuclear site and is the most widely used nuclear pressure vessel code around the world.

Flowserve Flow Control UK is the only UK manufacturer of ball valves to be awarded the ASME III *'N'* stamp. It has also been approved as a Material Organization for the supply of ferrous and non-ferrous materials.

'opportunity'

Flowserve Corporation also has nuclear-accredited facilities in North America which manufacture high-specification critical-application valves, including gate, globe and check valves used to control the primary and secondary loops in the nuclear power plant, main steam isolation valves (MSIVs), main feed water isolation valves (MFIVs) and motor-operated valves.

'The significance of these approvals for Flowserve,' commented Jeff Drees, President, Flowserve Flow Control Operations, *'lies in the nuclear resurgence taking place in the UK and many industrialized nations around the globe. For example, the UK government announced in 2013 its policy to proceed with a nuclear 'new build' program, comprised of 11 new reactors proposed over the next 15 years. Having this level of certification will give us the opportunity to bid for some of this business.'*

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By BVAA's Technical Consultant, Peter Churm

TECHNICAL HOT SPOT

Hot Spot prEN 19

Information regarding the enquiry draft prEN 19, *"Industrial valves — Marking of metallic valves"*

Following some unavoidable delays the above mentioned enquiry draft needs to be submitted to CEN-CENELEC Management Centre (CCMC) to start the CEN enquiry by 6th April 2014.

As a 9-months tolerance has already been granted, there will be no more tolerances to delay the submission of the draft to CCMC.

The CEN enquiry is scheduled to start on 22nd June 2014. We would kindly ask you to submit any comments you might have to BVAA for onward submission to BSI by the end of May 2014.

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MASTERclass

Pressure Surge Management Master Class: The role of VSAs

Water hammer is a very real problem for pump stations. As a result, pressure surge control is of prime importance for the valve control industry. In this report from actuator manufacturer SIPOS Aktorik and one of its specialist partners, Pipestone Equipment, the concept of Variable Speed Actuation (VSA) is detailed, and an explanation given as to how this advanced actuation initiative contributes to an automation solution that addresses this issue.

Dr Matthias Rebhan, General Manager SIPOS Aktorik (left) and David Buchwald, President of Pipestone Equipment

The Problem

In the same way that a lift would jolt and jar to a halt if it wasn't gently eased into stopping, water flow needs to be *'caressed'* to avoid the sudden halting of the flowing medium when kinetic energy is turned into pressure and pressure peaks associated with water hammer are created.

Pressure surges are often caused by valves closing quickly with excessive pressure variation in front of, and after, the valve. Pressure peaks, due to simultaneous closing of several valves within closed systems, can also be experienced. Another trigger for a surge may be the quick start of a powerful pump.

Pumps can also fail due to power shortages, and pipeline breaks can generate pressure surges which cause further damage to the entire system.

Actuators are historically selected to open or close within a specified time, which defines the output speed. Typical water industry pump control ball valves have very high flow capacities (Cv) and, when combined within a waterline, have non-linear flow capacity curves

Variable Speed Actuation technology addresses water hammer

A VSA actuator bridges the gap between theory and reality for control of pressure surges

whereby relatively small opening percentages (i.e. 10%) result in capacities of greater than 50% and full flow rates can be achieved at openings in the one third range. Constant speed actuation therefore only provides flow rate control over approximately the first third of the operating time. Additionally, the control provided is non-linear and is determined by the valve, not the actuator's, characteristics.

Ball valves have a rugged, simple design and a high volume throughput which minimises headloss during pumping operation and saves energy cost. When a high capacity ball valve is combined with a waterline and pump station, the flow capacity of the waterline quickly becomes a limiting factor. Effective valve control is therefore essential for maximising the benefits of ball control valves, while minimising transients within the system.

The Solution

Transient overpressures and low pressures, also called water hammer, can be reduced by combining a pump with additional start-up control and a ball valve with a Variable Speed Actuator. Pressure relief valves and/or bladder surge vessels can also be used to aid pressure surge reduction and system attenuation.

With variable speed functionality directly integrated into the firmware, VSAs have been proven to minimise, or completely avoid, water hammer using intelligent control of pump or pressure compensation valves.

Free selection of output speed is the basis of VSA actuator technology. This is achieved using an integrated frequency converter for control: intelligent software within the actuator not only controls the motor but also provides a customised stroke-positioning time function.

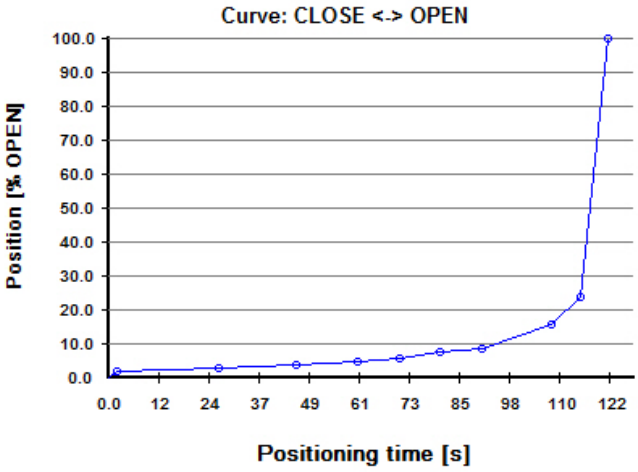


Illustration of a stroke-positioning time function for the VSA actuator.

Ideal pump station start-up and shut-down sequences would accelerate and decelerate water within the pipeline at a constant linear rate. Due to the complex inter-relationship between pump curve, ball valve Cv curve and pipeline configuration, achieving linear flow rate changes has traditionally been difficult to achieve. However, if the rotational speed of the valve shaft during the opening and closing sequences could be varied, linearisation becomes possible. With this ability, computations could be made to determine valve shaft rotational speed at various points during operation and a valve could be programmed to essentially be a linear control device for that specific installation site. This theory applies to any type of valve or gate, any water source and any type of fluid control system.

Bridging the gap between theory and reality is the VSA device. By defining up to ten value pairs the required parameters may be set directly within the actuator according to the system characteristics.

Once programmed, the VSA will operate the valve as required to achieve optimised and linearised flow rate changes. Separate operation curves for opening or closing the valve can be specified. The software presents the entered values on a chart enabling quick verification of figures. For the operator, the result is a practical linear relation of run time and throughput.

Conclusion

Rapid high pressure build-up of water in pump station pipelines results in shock waves. In worst case scenarios, pipelines can rupture and break: vacuum can also be created that causes pipes to collapse or implode.

The impact of water hammer is therefore, not to be underestimated and actuation advancements such as the VSA are pioneering solutions that address this very real problem.

The skills of automation and fluid-dynamic experts, such as Pipestone Equipment, play an important role in the implementation of VSA technology. As business partners to SIPOS Aktorik, they complement the actuator developer's engineering and technical knowledge with automation expertise and practical installation knowledge.

SIPOS Aktorik specialises in electric actuators for applications including the water and power industries.

The company's actuation solutions aid engineers in meeting individual scheme's requirements ranging from standard open / close and modulating functionality, frequently specified by the power industry, to water hammer prevention. Pioneering Variable Speed Actuation applications include adoption in a practical end product suitable for installation on valves and gates: the actuators act as a tool which supports engineers' responses to hydraulic analysis results by implementing optimum stroke-time curves.

Pump station installations using SIPOS actuators

ASCO Numatics tackles process automation skills shortage

Strategic project management whitepaper launched

ASCO Numatics has launched a new whitepaper that describes how OEM's and end users can tackle their resource and skills shortages in the process automation area: *'Outsource to thrive: how strategic project management in 2014 can assist on the path to growth.'* The paper offers valuable insights for the engineering industry, including effective strategies to meet economic imperatives while retaining essential levels of engineering expertise and quality.

'The skills shortage represents one of the greatest challenges to growth across Europe,' says John Weet, Marketing Manager for the ASCO and Numatics range of fluid automation products. *'The engineering industry is at the heart of the impending crisis – and is already fighting to retain margins in the face of increasing regulatory and financial pressures.'*

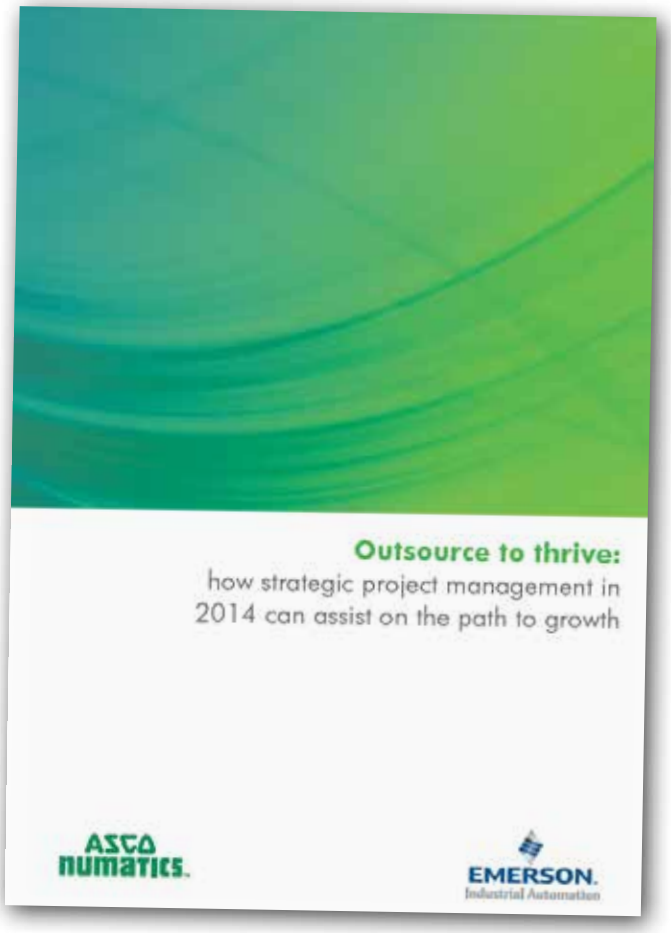
The whitepaper explores potential solutions to this widespread problem – including assessing the pros and cons of reducing spend on components, and the merits of outsourcing.

'When it comes to specifying components, cheap substitutions can only be relied upon to be a false economy,' warns John. *'Fortunately, outsourcing or part-outsourcing to trusted suppliers can bring peace of mind alongside compelling time and cost efficiencies – not to mention freeing up precious internal resource. Pre-assembled parts enable businesses to focus skilled staff on project delivery and meeting deadlines.'*

ASCO Numatics provides engineered solutions to its customers, to meet the increasing demand for complete valve control and fluid automation systems.

By allowing customers to specify complex valve controls and fluid automation systems – including a combination of one or more products and third party equipment fully assembled, certified and ready for use – ASCO Numatics is able to provide a faster, easier and cheaper approach to many in-house system builds.

The paper can be downloaded from www.asconumatics.eu



The whitepaper explores potential solutions to this widespread problem of skills shortage

ASCO numatics

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The Biogas Revolution

Bedfordshire based Zoedale Plc has been involved in a number of Anaerobic Digestion projects and supplied ATEX approved Electric Actuators, Pneumatic Actuators, Ball Valves, Butterfly Valves and Solenoid Valves from stock. This is how the AD process works:

In the UK 15 Million tonnes of food is wasted every year with 7 Million tonnes of this coming from households. Our throw away culture and two for one offers from the big supermarkets is partly to blame but what can be done to reduce the environmental impact of this? Many UK Councils have introduced a food waste bin for recycling. Some of it will be composted but a large proportion will be turned to Energy in Anaerobic Digestion plants like the one opposite. By using food waste as a source of power this material is diverted from landfill sites. When food rots down in landfill it gives off Methane, a powerful greenhouse gas 25 times more potent than Carbon Dioxide. By capturing the Methane in Anaerobic Digestion plants and using it for energy, our need for burning fossil fuels is reduced, saving even more carbon. So it's a very *"Green"* process!

The Anaerobic Digestion process is part of a biological waste treatment method used commonly in waste treatment plants around the globe. The only difference is that instead of releasing the gases in to the atmosphere, they are collected and utilised as fuel.

In the biogas production system, food wastes, animal manure, liquid and solid organic wastes are fed into a digester where an anaerobic process using bacteria ferments the waste and produces Biogas. What's left in the digester is collected as sludge that can later be returned back to the ground as a fertiliser. After the digestion process any liquid in the waste treatment plant will be rendered sufficiently harmless to the environment and safe to be discharged into the rivers.

Typically, the Biogas produced in a plant will produce:

- Methane 60% - 70%
- Carbon Dioxide 30% - 40%
- Trace amounts of Hydrogen Sulphide

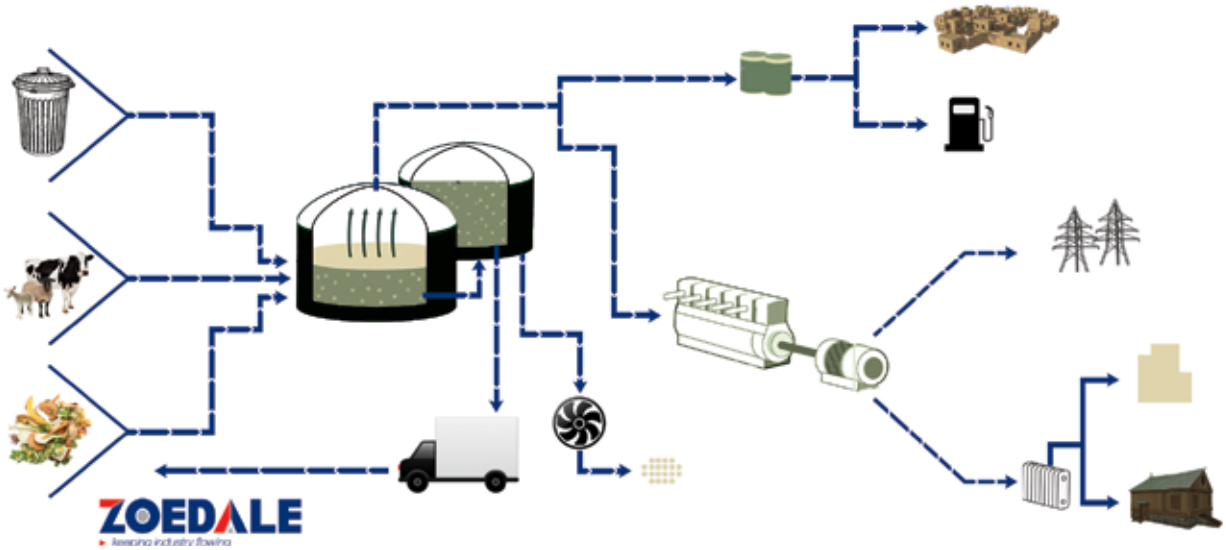
This mixture of gas is further processed so that the Carbon Dioxide and Hydrogen sulphide gases are removed. The result is a gas consisting of mostly Methane. This is very similar to the Natural Gas we get form Oil and Gas fields.

By using compressors in a bottling plant the gas can be stored under high pressures in cylinders. Much of the biogas can be used for fuel in vehicles, electrical power generators and for other heating purposes.

With natural Oil and Gas reserves running low and the UK's reluctance to take advantage of Shale Gas this method of fuel production is becoming very important in terms of Energy Security.

The Biogas Lifecycle

Bedfordshire based Zoedale Plc has been involved in a number of Anaerobic Digestion & Biogas projects and supplied ATEX approved Electric Actuators, Pneumatic Actuators, Ball Valves, Butterfly Valves and Solenoid Valves from stock. The inforgraphic below is a look at the Lifecycle of a Biogas Power Plant:



- Waste food from households and cooking fats are fed in to the plant
- Grass, corn and other organic matter is added which acts as food for the micro organisms
- Animal wastes such as slurry, manure and dung are also added. It's far from glamorous!
- The fermenter is heated up to 40 °C and the mixture is decomposed by the micro organisms within. This process happens with no light or oxygen.
- Once the mixture has been fermented it is transported to storage tanks
- This residue can be used as a high quality agricultural fertiliser both wet or dry
- The Biogas generated is stored and burned to generate electricity and heat
- Some Gas is sold as fuel for use in service stations or industry
- Electricity is then sold and returned to the Power Grid
- Any heat generated is used to warm buildings or to dry harvested crops / timber

These Biogas plants are a great way to make money from waste and are very popular with Farmers and local councils.

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Local MP impressed with Lancashire based Pneumatic Controls engineering company

Strong strategy: Andy Nash, Sales Director; Graham Jones MP; Jamie Dummer, Managing Director

Graham Jones MP has taken the opportunity to visit Pneumatrol Limited, the Lancashire-based specialist manufacturer of pneumatic control products for use within both hazardous and safe area environments. He was *'very impressed'* with its business strategy for growth and its investment in apprentices.

'I am pleased to see that Pneumatrol is growing into International markets, like China and Germany. This brings confidence to British engineering. It is great to see that Pneumatrol has a clear and strong strategy in business development,' said Mr. Jones.

Being in the pneumatic valves market for over 50 years, Pneumatrol is well known for its industry-leading products – its comprehensive range of solenoid valves come with an extensive range of approvals. Hazardous area solenoids are available with ATEX Category 1, 2 and 3 approvals, and further international hazardous area approvals include IEC, FM, UL, GOST-R and NEPSI.

'continuous improvement'

As part of its human resources strategy, Pneumatrol is committed to offering engineering apprenticeships to school leavers from the local community. Working with Training 2000, each year Pneumatrol will appoint one apprentice. This 4-year apprenticeship scheme is composed of one year full time education and 3 years of mixed onsite training and college study. The scheme has been in place for more than 20 years and it proves to be a great success – currently there are 7 trained engineers who have come through this apprenticeship scheme, out of which three are first line managers. George Brankin, current apprentice has won three awards in different disciplines during 2013.

Jamie Dummer, Managing Director of Pneumatrol, commented: *'It is a great pleasure to have Mr. Jones here and to be able to show him our business strategy, our commitment to continuous improvement and our investment in training. The government has emphasised the importance of manufacturing in rebalancing the UK economy. We're proud that we continue to challenge our operations to drive accelerated sales growth.'*

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Albion encourages customers to be energy wise

Energy efficiency is high on the green agenda, and with the UK's leading energy companies' recent price rises, there is now more of an incentive than ever to be energy efficient and identify where savings can be made.

In the building services industry, Albion Valves UK Ltd is encouraging contractors and heating engineers to go back to basics to help avoid spiralling energy costs. Something as simple as a well-balanced commercial heating system can help address energy wastage.

Public buildings such as schools, hospitals and offices, as well as apartment blocks and hotels have complex heating and cooling systems, and therefore can be prone to big energy inefficiencies and ultimately money down the drain.

In a poorly balanced system, problems such as irregular temperature control and inconsistent water circulation can occur, consequently driving up operating costs, creating maintenance issues and wasting energy.

Benefits of a balanced system include; efficient operation of the system, constant desired room temperature and responsible use of resource, as well as lower maintenance costs and less carbon emissions. A well-balanced system ensures energy is distributed to where it is needed, as opposed to some areas becoming overly hot and others too cool.

Commissioning trusted valves is a first step to a well-balanced system, and with the growing use of dynamic balancing valves, this can be achieved without the need for complex commissioning processes. The cost of commissioning is generally a small fraction of the total system design cost, but delivers significant savings.

Les Littlewood, Albion Sales Director commented:

'A well-balanced system starts with good design. The designer calculates the mass of water required at each terminal unit, whether heating or cooling. Balancing valves create additional resistance in each branch to direct water in the required proportion to each terminal unit.

Initial design considerations will take into account: the size of space to be conditioned, space usage, occupancy, construction materials and their thermal properties, heat losses and gains and general climatic conditions associated with the building.'

Achieving optimum flow rate is essential, too high a flow rate may cause noise, energy wastage via

The right valve is generally a small fraction of the total system design cost, but delivers significant savings

Albion Valves currently stock around 5000 lines of industrial products

overflow, pumping costs and potentially poor comfort as a result of overheating, whilst too low a flow rate may not dislodge entrapped air.

Flow velocities will generally be in the range 0.75 to 1.15m/s for pipe sizes 1/2″ to 2″ and 0.75 to 3m/s for size DN65 to DN300 with pipe pressure drop per meter length generally calculated at 140 to 280 kPa.

Modern, energy efficient heating systems often operate using thermostatically controlled radiator valves TRVs, which are self-regulating and control the water that enters a radiator and ultimately maintains a desired room temperature. TRVs include manual, thermostatic and lockshield valves, with a variety of orientation options.

'10-30% energy savings are achievable'

Manual radiator valves are common in traditional heating systems and are operated like a tap, whereas lockshield valves are designed to control water flowing out of the radiator and offer a facility to balance radiators across an entire property or heating system.

Where older radiator systems have been replaced or refurbished with TRVs, 10-30% energy savings are achievable, with the higher savings in commercial applications realized with the appropriate design and inclusion of Differential Pressure Control Valves (DPCV).

DPCV and TRV operating together also offer many practical benefits, such as reduced noise, temperature stability with control and improved comfort so reducing issues for both tenants and end users.

Albion Valves currently stock around 5000 lines of industrial products, suitable for applications predominantly within the process, water and HVAC industries, all available from its distributor network.

Albion
Tel: 01226 729900
www.albionvalvesuk.com

By BVAA's Technical Consultant, Peter Churm

TECHNICAL HOT SPOT

Hot Spot ISO 17292

A revision to **ISO 17292** – ***"Metal ball valves for petroleum, petrochemical and allied industries"*** is being submitted for DIS enquiry. The enquiry opens on 8 May 2014, and closes on 8 October 2014.

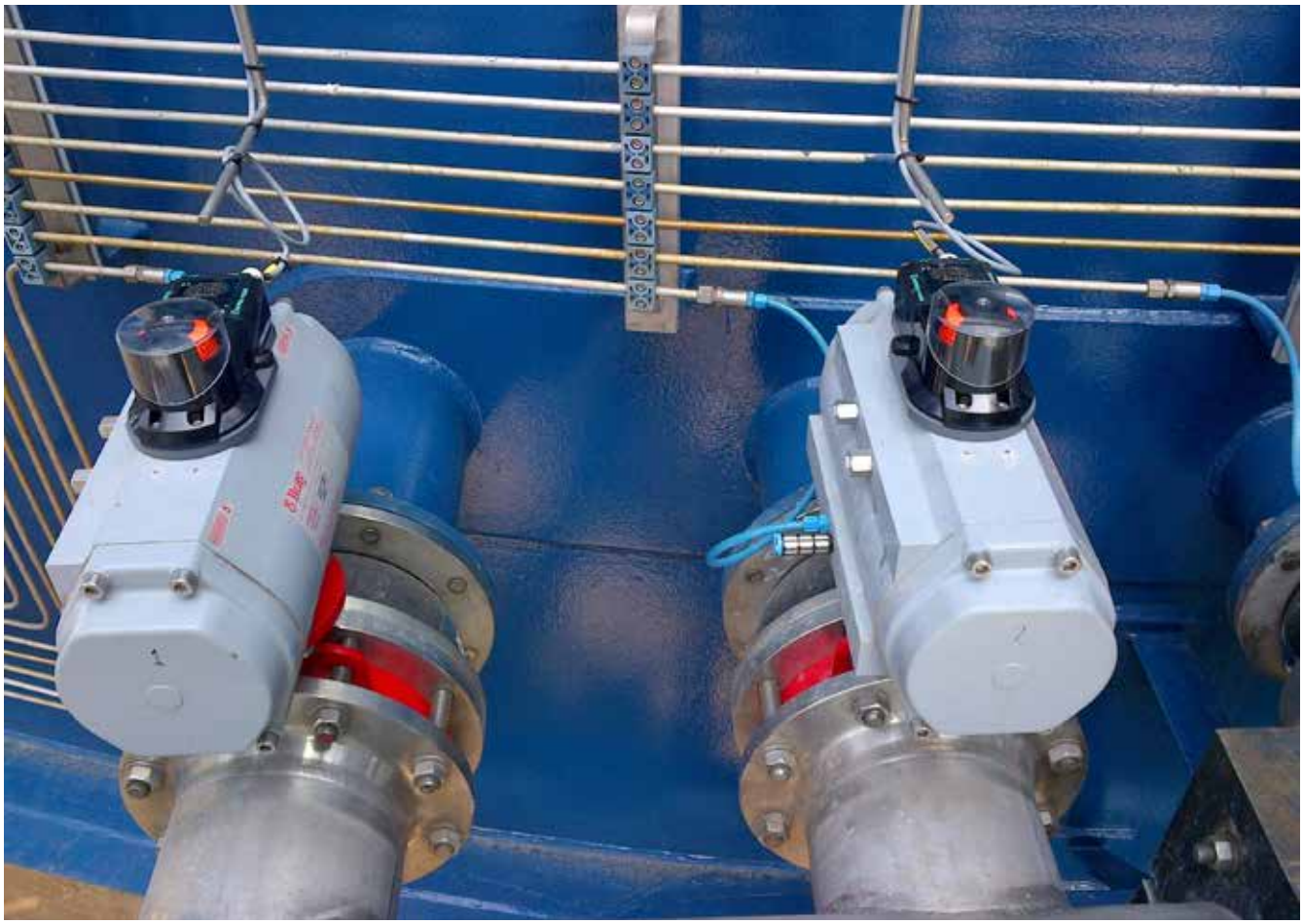
A copy of the standard showing the proposed revisions is issued for comment.

Summary of proposed changes include:

- Scope increased to include DN 600, NPS 24
- Class 800 no longer restricted to reduce bore only,
- Seat materials to include modified PTFE and reinforced modified PTFE
- Table 1 - Minimum seat pressure/temperature rating contains significant changes to the previous edition.
- Revised selected bore diameters in Table 2.
- Clarification that the strength of the stem above the packing shall be stronger than the internal portion at the maximum rated temperature;
- Added provision for purchaser to request manufacturer to provide method for preventing excessive pressure when fluid is trapped in centre cavity between seats;
- Expanded required information on identification tag to include separate trim and seat/seal materials. In addition, material for identification plate limited to stainless steel or nickel alloys
- Added requirement that thread sealant used on plugs for tapped auxiliary connections be capable of the fully pressure-temperature rating of the valve;

Any comments should be directed to BVAA for onward submission to ISO by end of August 2014.

A Sensor Worth Its Salt



Two F31K2 dual inductive sensors mounted on pneumatic valve actuators at Frisia Zout in Harlingen, the Netherlands.

F31K2 valve position sensor enhances process reliability

Salt is everywhere at Frisia Zout. *'Zout'* is Dutch for salt and since that is precisely what Frisia produces, it is hardly surprising that the company's tanks and pipes are filled with it. However, salt is also in the air, as the company's plant in the Dutch city of Harlingen is located only a few meters away from the sea.

Salt causes exposed metal parts to corrode. Together with condensed water, this poses a significant problem for the switch boxes that control the company's outdoor valves. All too often, they have to be replaced due to corroded contacts and electrical parts, which is why Frisia Zout was eager to try out Pepperl+Fuchs' new F31K2 dual inductive sensor for valve position feedback. The results seen during the six-month test phase were excellent and the company now plans to replace all of its switch boxes with the F31K2 sensors.

Corrosive conditions

3,000 meters below Harlingen lies the salt formation where Frisia Zout sources its raw material. Water is forced into the mineral formation at high pressure and salt-saturated brine is pumped up into the plant's huge tanks. Here, soda and lime react with the brine, separating the impurities from the brine resulting in lime-like residual matter, which itself is a useful by-product used in the construction industry and in fertilizers.

'We fitted two valve position sensors to the supply pipes about six months ago and two more to the drain pipes shortly afterwards,' recalls Rudolf Bergsma, the head of the plant's electrotechnical division. He had previously read about the new F31K2 in a Pepperl+Fuchs newsletter and immediately recognized the opportunity to solve a recurring problem that he was facing with the switch boxes mounted on the plant's pneumatic valve actuators. These switch boxes are housed in aluminum boxes and use contacts that move mechanically. However, they are not ideal for use in the climate of the North Sea which, combined with the boxes' susceptibility to internal condensation, means that they constantly corrode inside and must be replaced frequently.

Box within a box

'A lot of our equipment is made of polyester or stainless steel to ensure that it can withstand salt-induced corrosion,' says Rudolf Bergsma. *'When I saw the F31K2 sensor's plastic cover and read about its double-housing design, I realised that this could be just what we were looking for.'*

'The sensor has a number of advantages which impressed us immediately,' says Jos De Jong from Bray Controls, a company that enjoys a long-standing working relationship with both Pepperl+Fuchs and Frisia Zout. *'It is compact and gives a very clear indication of the valve's position. With the inductive sensors, there is no need for mechanical contacts – what is not there cannot corrode! For additional protection, the switches are fully encapsulated in a box within a box. At a very reasonable price, the sensor looked like the perfect solution to me.'*

Touch-free position detection

Traditional switch boxes are based on mechanical feedback systems that depend on rotary or lifting movements, e.g., conventional actuating switching elements that work via switching cams. In contrast, the F31K2 valve position sensor separates mechanical movement and position feedback by using two inductive elements. As soon as a metallic surface (target) enters the inductive sensor's magnetic field, it is detected by the evaluation electronics and the output is triggered. Simple metal targets are sufficient for valve actuators, whose positions can be detected touch-free with the inductive sensors. Since no physical contact is necessary, the sensor can be hermetically sealed from the actuator.

'The electronic solution combines a high degree of switching measurement accuracy and precisely defined hysteresis with intrinsic ruggedness,' states Pepperl+Fuchs sales engineer Wim Kamman. *'To ensure that the sensor can connect seamlessly with existing control systems, options featuring all common connection types and interfaces are available. The beacon is visible from a long distance and gives on-site operators reliable information at a glance.'*

Open solutions

The F31K2 sensor is part of Pepperl+Fuchs' open solutions concept for valve position feedback, which is based on simple designs that can be used in a wide variety of applications. The concept's basic elements are an actuator (puck) containing the targets and a dual sensor. These can be installed without mounting brackets thanks to both the mechanical standardization of drives pursuant to VDI/VDE 3845 and NAMUR mounting holes. The dual sensor is directly attached to the drive housing, and the puck merely needs to be pushed onto the drive shaft and fixed in place according to the valve's current position.

The F31K2 is easy to mount directly on the pneumatic actuator

Other members of the position feedback sensors family manufactured by Pepperl+Fuchs are the F25, F31, and F31K Series. The F25 Series models are well suited to manually operated valves and are used in limited spaces. Their circular sensor surface with two active zones offset by 90° enable the sensor and target element to be combined to form an extremely compact single unit suitable for being mounted to terminal switch boxes.

Connection options

The two inductive sensor elements in the F31 Series are arranged on top of each other. Along with the different-sized pucks available, this arrangement allows the same sensor design to be adapted for various shaft diameters and heights. The sensors cover all drive sizes up to those with drive shaft diameters of 90 mm with just two puck sizes, making brackets or mounting sets unnecessary. To date, no other valve position feedback sensor on the market offers such a product feature.

In addition to all AC and DC output stages, NAMUR and AS-Interface options are supported. Versions suitable for use in both safe and hazardous areas are available, and it goes without saying that these have obtained the corresponding approval. The product range is rounded off with cable and plug accessories for all commonly used industrial plug connections. Moreover, to keep the number of wires to a minimum, the F31 devices enable the solenoid valve control cable to be routed through the sensor. F31K models can also be linked using terminal compartment connection technology.

Additionally for the F31K2, the LEDs are integrated into the encapsulated sensor module. Because the housing cover is made of a robust, translucent plastic, sealed LED windows are not necessary for the pilot lights that indicate the power supply, sensor, and valve conditions. The housing materials provide high UV protection and are resistant to extreme temperatures and corrosion. Thanks to the large terminal compartment and pluggable terminal block, cables that are rigid or have large diameters do not pose any problems in environments where mounting work could prove difficult.

'The sensors have worked perfectly – we haven't had any problems with them at all,' concludes Rudolf Bergsma. *'The on-site operators are extremely satisfied with them, not least because of the high visibility of the signals given off by the beacon. I am certain that, over time, we shall replace all of our switch boxes with F31K2 sensors.'*

YPS Valves Celebrates 40th Anniversary

YPS Valves Ltd, one of Europe's leading designers and manufacturers of valves for the hydrocarbon processing, chemical, nuclear and off shore industries worldwide, is celebrating its 40th anniversary in 2014.

YPS's headquarters in Leeds

Rachald Wormald and Adrian Ducker

The privately owned company based in Leeds actually began trading as a partnership as far back as 1972, before becoming YPS Valves Ltd in 1974.

Originally a valve merchant, buying and selling valves, the company now offers a full range of complementary services, including manufacturing, modifying, stocking and testing.

YPS also produces its own range of high quality gate, globe and check valves under the Langley brand, which can be tailored to suit end user applications and specifications, ranging from high alloy valves with specialist features for critical service, to manufactured to industry standard valves requirements. The expertise of an in-house design team ensures that the product range is continually evolving.

Adrian Ducker, Chairman of YPS Valves Ltd, says the firm's longevity is due to an ability to adapt to changes in market conditions.

'The industry has changed massively since the mid seventies. Health and safety requirements are now far more stringent, as are technical specifications.

'Many of our clients, particularly in the off shore industry, are operating at temperatures and pressures that are higher than ever before, which means our range of valves needs to be constantly evolving.

'It is our ability to adapt our product range and embrace new materials and technologies that has kept us at the forefront of the industry,' he says.

YPS employs over 40 staff and has offices in Poland and China, as well as its Head Office in Leeds.

Building For The Next 40 Years

YPS has submitted a planning application for a 2,000 sq ft extension to its existing workshop at its Leeds headquarters, to create the space necessary for its expanding range of plant and machinery, whilst also increasing its fitting and testing areas.

The firm has recently placed an order for a new CNC machine, to add to the four already in place, which will increase the size of valve they are able to produce. Meanwhile, they are also awaiting delivery of a new oxygen clean ultra sonic degreasing machine.

YPS Valves before and during the machining process

The giant tank is capable of degreasing valves up to 16″ 900 globe valves, making them suitable for oxygen service and other applications, which enhances the capability of supplying valves to the market which are free of contamination.

Rachel Wormald, YPS Valves Group Managing Director said: *'The new extension, coupled with on going investment in the latest machinery, is a strong statement of our intent to maintain our market leading position and makes us ideally placed to take advantage of new opportunities as they arise.'*

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By BVAA's Technical Consultant, Peter Churm

TECHNICAL HOT SPOT

Hot Spot ATEX directive 2014/.../EU

European Parliament approve the text of the new NLF-aligned ATEX Directive 2014/.../EU

The European Parliament approved the text of the revised Directive on 5 February 2014 and formal agreement by the Council is expected at the next available meeting. Publication in the Official Journal will follow, probably in April/May at which time the complete new directive number will be allocated.

Main differences:

- Most importantly for manufacturers there are no changes to the Essential Health and Safety Requirements in Annex II and no significant changes to Annexes III to IX with regard to Conformity Assessment Procedures
- Products must have only one Declaration of Conformity referring to all applicable directives. Separate declarations are not now permitted. The format for the Declaration of Conformity differs in some detail to the current version
- Any product compliant with 94/9/EC will be compliant with the new directive
- The term 'manufacturer' extended to include more than one party involved in the production and sale of a product.
- Responsibilities of Authorised Representatives, Importers and Distributers outlined with the need for the Importer to be identified on the product and instructions.
- Provision for Trade Agents included as publicly accepting responsibility as the manufacturer but not taking part in the manufacturing process
- The use of a Trademark as opposed to the name of the manufacturer is now acceptable but must also include the postal address
- Acceptance criteria for Notified Bodies increased to ensure technical competence
- A transitional arrangement allows a two year overlap between the two directives

J+J's J3 Smart Red Box

Has Plug & Play Function Conversion Kits

In a modern *'just in time'* world, it is a common demand on suppliers to hold stock of every item with every option available. In the electric valve actuator sector, this is normally unrealistic as there are many possible external power supply options, failsafe options and modulating options, which for most manufacturers would require a huge value of stock to cover all the possible combinations. Consequently requirements for failsafe or modulating actuators, or failsafe modulating electric valve actuators are quoted on factory lead times.

Uniquely, J+J don't have this problem. The feature rich J3 Smart Red Box can have its standard on-off functionality converted to either failsafe, modulating, or failsafe modulating, by the addition of a simple to install, user friendly plug and play function conversion kit. These kits are held in stock by J+J so that the delivery time is usually within 24 hours.

BSR and DPS kits are installed providing failsafe modulating functionality

For electric failsafe functionality, J+J's BSR (Battery *'Spring Return'*) plug and play kit adds an industrial rechargeable battery and control PCB which contains a trickle charging system to maintain the battery at full strength. During normal operation the external power is used to trickle charge the battery, on external power failure the battery power is used to send the actuator to the pre-determined failsafe position, which can be set to fail closed, or fail open.

J+J's DPS (Digital Positioning System) plug and play kit contains a positioner PCB for modulating function, and a replacement cover with the extra DIN plug for the control signal. When the user friendly DPS kit has been installed, its self-calibrating capability automatically sets the zero and span according to the valve being controlled (typically 90 or 180 degree rotation), and the unit is ready for service. 0-10V or 4-20mA control signals can be applied, and an output signal is provided.

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Complete Assembly and Testing Service from Allvalves Online

Allvalves Online, the Worcester based distributor of valves, actuators and associated products, has been growing its reputation through providing a complete service to the valve purchaser. The fast-growing company has added assembly and testing facility to its wide range of services.

'Customers are often attracted to Allvalves Online because of our flexibility, short lead-times and competitive pricing' says Adam Chapman *'However they are pleasantly surprised to learn of the complete service we offer.'*

Allvalves Online stock manual valves, electric actuators, pneumatic actuators and stainless steel mounting kits among other related products from brands such as Genebre, Adler, Hidroten and Sun Yeh. They have the flexibility to provide fully assembled packages and supply many industries such as Water Treatment, HVAC, Chemical, Food/Drink and General Industrial.

Same Day Delivery

Allvalves are able to offer same day or next day delivery on many valve and actuator packages. The company has been set up to be responsive to its customers' needs. Therefore is the products are in stock they can be assembled, tested and shipped in a day.

Adam Chapman comments:

'A customer called us in desperate need of 4" butterfly valves with stainless steel mounting kits and electric actuators because of a breakdown on site of another brand of actuator. We were able to deliver a fully tested package that day at a price that would be associated with far longer lead times. They saved hundreds of pounds by not losing operation time.'

Testing in operation at Allvalves Online's Worcestershire facility

Allvalves Online has the facilities to assemble packages at its Worcestershire site

The lead-times Allvalves Online offer are aided by their in-house testing facilities. All products, packages and systems are tested for functionality through electrical and/or pneumatic testing as appropriate. All testing and assembly is carried out in line with ISO2008 standards as the company works towards accreditation this year.

'We feel that we can offer the full valve automation solution for our customers through stock that we hold here and the facilities we have on site' concluded Adam Chapman.

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Parker extends its highly compact SMB servo motor range, giving extra torque and flexibility

Parker Hannifin, the global leader in motion and control technologies, has introduced a new model to its highly-dynamic, compact SMB Series brushless servo motor range. The SMB170 not only extends the torque capability of the series to 60Nm, but also offers a high degree of flexibility to food processing, packaging, material forming and handling machinery OEMs thanks to an extensive range of motor frame configurations and options.

The SMB series has been designed to combine cutting-edge technology with extremely high performance. Utilising innovative *'Salient Pole'* technology featuring Neodymium-Iron-Boron magnets uniquely encapsulated to the motor shaft, SMB motors can achieve very high acceleration and withstand high overloads without any risk of demagnetisation or detachment of the magnets. Additionally, the motor's dimensions are considerably reduced offering significant advantages in terms of specific torque and dynamic performance. Compared to traditional-technology brushless servo motors, the specific torque is approximately 30% higher and rotor inertias are extremely low making it especially suited to highly dynamic applications.

The addition of the SMB170 means the widely regarded SMB series of high quality servo motors is now available in sizes from 60 mm to 170 mm, nominal torque range from 0.35 to 60 Nm and nominal speeds up to 7500 rpm. The new SMB170 is available in two lengths (306 mm / 409 mm) which are rated at 35 Nm and 60 Nm respectively. Both are equipped with a front holding brake that provides better performance and improves thermal dissipation.

The SMB170 not only extends the torque capability of the series to 60Nm, but also offers a high degree of flexibility

SMB170 features the same feedback types and options as the rest of the SMB range, from a robust resolver interface to multiple high precision digital position feedback options. The product can also be ordered as a single cable servo motor featuring the new HIPERFACE DSL® feedback system - a completely digital and interference - free absolute position feedback system for servo motors and drives. This integrates the encoder communication into the motor power connection cable eliminating the need for a separate feedback connection cable between drive and motor.

SMB series is designed to provide optimum performance when matched to Parker SLVD-N and TPD-M series servo drives, thus providing highly dynamic and efficient control. Furthermore the motors are also available as SMH series dedicated for use with Parker's Compax3 servo drive platform.

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IN OUR COMPANY, SAFETY IS EVERYONE'S BUSINESS

Each KKI employee is actively involved in protecting and improving our cherished safety record.

Initiatives such as walk-rounds, suggestion schemes and specialised training mean that our safety culture is visible and effective at all times.

Our whole-company approach has recently culminated in OHSAS 18001 and a RoSPA silver award and we thank each member of staff for their contribution.

RoSPA 2014 SILVER Award

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KOSO

Safety first

KKI attains OHSAS18001 and the coveted RoSPA silver award

All in: a key aspect of KKI's system is gaining the engagement of all employees

Health and safety has always been an integral part of Kent Introl's philosophy, and the company's robust approach has recently been independently recognised, via the attainment of both OHSAS 18001 and the RoSPA silver award.

KKI employees accommodate a number of key hazards in their daily working lives: moving heavy components, slinging and lifting, forklift truck movements, pressure testing, and machining activities.

Even though the company was starting from an excellent position, since attaining OHSAS 18001, many lessons have been learnt and new approaches taken, resulting in further reduction of incidents, greater employee engagement and improved customer satisfaction and awareness.

Securing the standard

In 2011 the management team made the decision to embark on the journey towards achieving OHSAS 18001 as part of the continuous improvement plan being implemented through the Kent Introl Business System (KBS). The OHSAS 18001 system would be implemented alongside Lean Manufacturing, Kaisen, 5S, Visual Management, Process Flow and Waste Elimination objectives as part of a company-wide continuous improvement programme.

The decision gave employees, customers and suppliers a clear message about the company's intention to focus on maintaining and, if possible, improving health and safety.

The first step was for LRQA to conduct a gap analysis and produce an action plan. The EEF were also employed to conduct a legal compliance audit. From here, new procedures were devised where required, and rolled out to managers and employees to ensure full awareness of the implementation of the new management system. In due course, this paved the way for a successful Stage 2 Audit, and the award of the standard.

A collaborative approach

One of the key objectives in gaining the standard was the continuing engagement of all employees. A number of new initiatives have since been introduced to support this aim:

- All employees have successfully completed the IOSH Working Safely course and new employees are required to do the same. As a result, the number of employees actively requesting to undertake training for roles such as fire marshal, first aider and risk assessor has increased, as employees actively participate in safety culture.
- The introduction of monthly *'Health and Safety walk-rounds'* for managers, factory personnel and the HSE team on a *'you and me - not us and them'* basis. This exercise has been fully embraced by all participants, who welcome the opportunity to discuss working practices and the work area.
- The inclusion of factory-floor employees in the risk assessment process and attendance at the HSE meeting.

Keeping on track: regular reviews and audits of the system will take place

- The introduction of a *'Hazard, Incident, Near Miss, Observation and Suggestion form'* to allow employees report hazards and to suggest improvements. Every employee has a pocket book containing reporting cards which they can fill out and place in drop boxes, which are checked daily by the HSE team. This channel has proved invaluable to the ongoing improvement process.

KKI's HSE team continues to work with the audit team to review risk assessments and procedures and to continue developing the system. The first surveillance visit was conducted by LRQA in February 2014 and no new non-conformances were identified.

Sharing knowledge

The HSE regularly publishes *'Safety Moments'* and *'HSE Tool-box Talks'* and produces posters relating to topical issues. To ensure lessons are learned from serious accidents occurring elsewhere in the industry, KKI uses the *'Safety Moment'* bulletins for display on internal notice boards and for use in meetings and team briefs, as well as Tool-box Talks, hand-outs and posters linked to hazards which have been identified through employee input.

Valuable benefits

Attaining the OHSAS 18001 accreditation paved the way for KKI receiving the prestigious RoSPA silver award, which will be presented at RoSPA's annual awards event in Birmingham in May.

KKI is regularly audited by existing customers and has received universally positive feedback since the implementation of the new systems.

But the most important benefit of all is the fact that, even though rates were well below the industry average to begin with, the occurrence and frequency of accidents has halved since the standard was achieved.

Genuine Valves vs Inferior Counterfeits

As companies focus on cutting expenses and reward purchase savings, an unfortunate reality is that it has created a situation ripe for exploitation by unscrupulous and greedy individuals who deal in counterfeit equipment. Counterfeiting is not just driven by the obvious *'cheaper prices'* but often is an attractive play for criminals on long lead-time items and/or components deemed *'just a valve'*. As with any aspect of supply and demand, the opportunity for a counterfeiter increases as the need for the item increases.

MOGAS Industries recently received two valves alleged to be counterfeit. A thorough inspection and autopsy was conducted to determine their authenticity and conformance to genuine MOGAS design and manufacturing standards.

Reality Check for Fake Purchases

Following up after losing bids to some suspicious entities, MOGAS discovered that the plants' supposedly MOGAS valves were being bought for a much lower price from suppliers outside the authorized rep network. A site visit to the plant allowed an opportunity for information to be gathered on one such *'MOGAS'* valve. While its name plate showed the valve was an iRSVP-UF 1-in Class 3100 A105, MOGAS records linked its serial number to an iRSVP-UM 1.5-in Class 1500 F22. With concern for plant and personnel safety, MOGAS exchanged it for a new valve and shipped the suspect valve to Houston to be examined part by part. The results were surprising.

Is it genuine or counterfeit?

Sarah Wuensch, Service Auditor and Product Analyst at MOGAS, discusses the exterior surface markings of a recently discovered counterfeit 'MOGAS valve' with Louis Mogas, Chairman and founder of MOGAS Industries.

Visually, the valve exterior had all the surface markings of being a genuine MOGAS valve: logo, forging number, patent, serial and heat numbers, and data plate. However once disassembled, a different story unfolded: welding and manufacturing flaws, absence of coatings, and inferior material grades made the valve substandard in function, strength and reliability. Here are some of the findings:

- The counterfeit valve was constructed with many pressure containing elements that are not per industry code and will never hold up under the design standards of a Class 3100 valve. This presents a serious safety concern from jetting superheated steam to atmosphere if the valve fails while the unit is online and live steam is present.

'I was with one company that makes valves in process industries. And they said, look, we were having some valves coming in that were broken, and we had to repair them under warranty. And we looked them up, and they had our serial number on them. And then we noticed that there was more than one with that same serial number. They were counterfeit products being made overseas with the same serial number as a U.S. company, the same packaging. These were being sold into our market and around the world as if they were made by the U.S. competitor.' **Mitt Romney (said during his U.S. presidential debate addressing concerns on intellectual property and counterfeit products.)**

- The results from a PMI (positive material identification) inspection revealed that several internal components were made from an inferior metal, and would either melt near the maximum service temperature of this valve, or rust. Failure of these parts would result in a forced plant outage.
- Part numbering and material certifications were incorrect per the bill of materials, and on some parts their numbers did not exist at all. Accurate parts numbering ensures the material is traceable and reliable per standards.
- Improper ball and seat lapping/mating and poor seat design will introduce leaks.

Sarah Wuensch, Service Auditor and Product Analyst at MOGAS, summarized her inspection in one sentence: *'This valve had zero chance of ever sealing.'* These valves were misrepresented to be authorized MOGAS valves when, in fact, they were not.

Bad Purchases have Bad Consequences

Fraudulent valves can be a copied or reverse engineered design, mislabeled used or damaged valves, or even a hybrid of several designs by different manufacturers fabricated into one valve. Any of these can be disastrous to a severe service application.

Counterfeit valves may represent an impactful hazard if installed into critical areas of harsh applications. The consequences of using counterfeit valves include: industrial down time, damaged equipment, a negative impact on the environment and damaging the original manufacturer's good name. But most importantly, they put customers and their employees at great risk to injury.

Ensuring Valve Quality and Authenticity

Until international enforcement and long-term anti-counterfeiting solutions can be fully implemented, OEMs around the globe will spend enormous amounts of time and funds to be compliant with industry codes and provide their customers with the proper valve for the required results. There is a constant effort to keep fraudulent valves from getting into the supply chain with ongoing quality inspections, genuine documentation and third-party audits.

The only way to prevent buying a counterfeit MOGAS valve is by dealing with an authorised representative of MOGAS. With sales and service centers in China, Australia, Canada, South America, Africa, The Middle East and Europe, as well as representatives and technicians in more than 40 countries, MOGAS is known for partnering with its customers to meet the ever-increasing challenges of severe-service applications.

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EasiDrive Portable Valve Actuators are Perfect for the Power Industry

EasiDrive: safe, quick valve operation, no matter how many turns are required to fully open or close a valve.

Smith Flow Control's EasiDrive portable valve actuator is an affordable tool that takes all the hard work out of operating valves in power plants. One user can easily operate multiple high-torque or high-turn valves with a single EasiDrive unit, meaning that risk of injury and fatigue is greatly reduced.

EasiDrive is lightweight and portable and can be powered by air, electricity or battery; it also costs significantly less than permanent actuation. All valve movement is fully controlled by the device, which provides complete protection from the *'kick'* typically associated with other torque devices through its reaction device. This means safe, quick valve operation, no matter how many turns are required to fully open or close a valve. It is also a *'continuous drive'* system, which protects the valves from wear and tear, unlike impact wrenches that can cause permanent damage.

EasiDrive is a highly practical tool which enables key personnel to operate valves quickly, safely and easily.

Neste Oil chooses Metso's automation and valve technology

The process unit under construction at Neste Oil's refinery in Porvoo, Finland, transforms gasoline fractions into more valuable and higher-quality gasoline components. Automation's role is to ensure accurate control and safety in the demanding process.

Neste Oil and Metso have agreed on the delivery of automation and valve technology for the refinery unit under construction at Neste Oil's Porvoo refinery. Metso's technology helps the company with its targets to increase the output of high-octane gasoline and to improve flexibility in production. Construction started in 2013, and the unit is due to come on stream in spring 2015.

'Reliable implementation of the demanding controls and ensuring process safety are the most important requirements for automation. In this project, we will realise these with the help of Metso's automation system and valves, as well as with the HiMax safety system,' says Jani Halijoki, Project Engineer, Neste Oil.

> *'Reliable implementation'*

Metso's delivery includes a Metso DNA automation system, a safety system, and links to Neste Oil's existing systems, as well as automated on-off and emergency shutdown (ESD) valves. Also, project engineering, installation, commissioning and training will be provided by Metso.

Neste Oil and Metso have a long track record of developing demanding special applications in cooperation to match the needs of refineries. Metso's technologies are used at Neste Oil's plants in Finland, Rotterdam and Singapore.

Technical information

Automation has a significant impact on the efficiency and functionality of the isomerization unit. The Metso DNA automation and information system covers monitoring, process controls of the continuous and batch processes and links to external systems. Additionally, the Metso DNA system features a seamlessly integrated, SIL3 approved safety system.

Metso DNA is a scalable system that can be used both in small PLC-type applications as well as in plant-wide applications. Metso's system is based on over 20 years' experience in supplying automation systems to oil refineries and the petrochemical industry.

The majority of the automated on-off and ESD valves included in Metso's delivery is for the batch process. Most of them are Neles X series valves equipped with Neles SwitchGuard valve controllers. The latter are very suitable for the batch process, as valve opening and closing times can be adjusted in each valve separately. With the controllers, there is also less need for instrumentation. In addition, they enable remote condition monitoring.

Neste Oil Corporation is a refining and marketing company concentrating on low-emission, high-quality traffic fuels. The company produces a comprehensive range of major petroleum products and is the world's leading supplier of renewable diesel. Neste Oil had net sales of EUR 17.5 billion in 2013, and it employs around 5,000 people.

Metso's automation solutions are designed to maximize the profitability of our customers' businesses. Automation helps process industry customers generate more output from less input, such as materials and energy, while improving environmental compliance, optimizing yields and maximizing uptime. Our extensive range of flow control and process automation solutions and services is supported by a worldwide network of automation experts.

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Valvestock supplies key components for new Sembmarine North Sea accommodation platform

Valvestock, Pipe Center's specialist valve and actuator business, has supplied high specification components for installation in a new 140-person accommodation module being built by Sembmarine SLP for a major oil company.

The module, shortly to be deployed in the North Sea off Scotland, includes living accommodation, canteens, a gym, hospital facilities and a helicopter landing pad. The completed structure is due to be transported from Lowestoft by sea in May.

Working closely with key manufacturing supplier Conbraco with regard to its Apollo valve range, Valvestock has supplied all manual butterfly valves, ball valves, double-block and bleed, gate valves and globe valves required for the seawater cooling system, potable water, instrument air, plant air and fire-water circuits.

'technical and practical support'

It also provided pressure regulating valves for use on the facility's calorifier and fire-water main.

Marcus Sampson, general manager of Valvestock, said: *'Given the nature the project, the technical and safety requirements were obviously very detailed and comprehensive. This spanned all aspects, from valve specification and sourcing, through to testing, preparation and painting.'*

He added: *'Our new testing and workshop facilities at Fareham provided all the technical and practical support needed to meet the customer's requirements. Our knowledge and practical experience in the field are second-to-none in the UK, and probably the world.'*

The service provided by Valvestock included quotation, consolidation of the complete valve package, documentation compliance, and consultation on materials selection and suitability for the application. It also provided specialist support during commissioning.

The company acted as the single point of contact, co-ordinating the supply of components from other Wolseley UK companies, such as Pipe Center, Plumb Center and Drain Center.

A major part of the order consisted of industrial valves, including Apollo stainless steel ball valves, aluminium-bronze ball valves, high Performance butterfly valves, aluminium-bronze gate and globe valves, stainless steel and aluminium bronze double block and bleed valves, and stainless steel and aluminium bronze pressure regulating valves.

Valvestock acted as the single point of contact, co-ordinating the supply of components

It was one of the first major orders of Apollo valves following the recent appointment of Pipe Center as a UK distributor for US industrial valve manufacturer Conbraco.

Subject to weather conditions, the platform was due to be towed from dock and deployed at its final destination off the coast of Scotland on 2nd May 2014.

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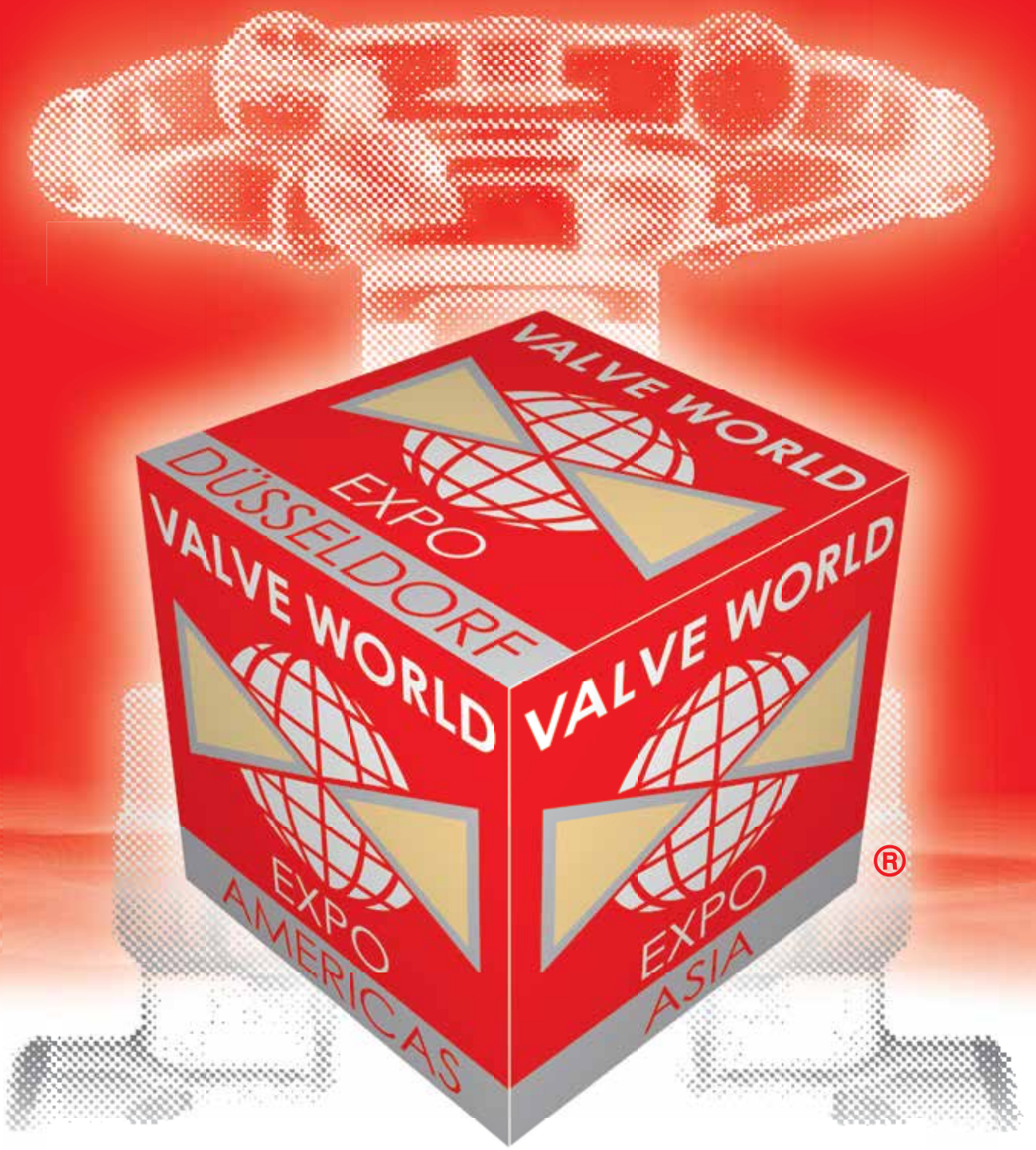

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Emerson introduces high flow capacity tank blanketing regulators

The Fisher® T200 Series is designed to meet the latest tank blanketing sizing guidelines and customer needs for greater flow capacity

Emerson Process Management has released the T200 Series small-size tank blanketing regulators. This new series of regulators consists of three models: the T205 pressure reducing tank blanketing regulator – non-balanced trim; the T205B pressure-reducing tank blanketing regulator – balanced trim; and the T208 pressure relief tank blanketing regulator.

Storage tanks fluctuate in pressure as content is pumped in or out and as the temperature increases or decreases. Tank blanketing regulators such as the T200 Series ensure proper vapour pressure in liquid storage tanks by adding blanketing gas or relieving tank vapour. This is important for safety, product quality and the environment.

'greater flow capacity'

The latest tank blanketing sizing guidelines (ISO 28300 and API 2000) take into account additional factors than mere pumping in and out and temperature changes. They include factors such as the latitude, average storage temperature, vapour pressure, and insulation. These changes in flow requirements may result in greater flow capacity, which is provided with the new T200 Series.

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TECHNICAL HOT SPOT

Hot Spot EN 12334 and EN 14341

The following European Standards are currently under revision within CEN/TC 69/WG 6:

EN 12334:2001, Industrial valves — Cast iron check valves;

EN 14341:2006, Industrial valves — Steel check valves.

As the content of both standards is similar, CEN/TC 69/WG 6 proposes to consolidate both standards into one standard.

CEN/TC 69/WG 6 proposes therefore to keep the standard number of EN 12334 and withdraw EN 14341.

Furthermore, any CEN/TC 69 members who are interested in participating actively in the development of the above mentioned standard, are kindly ask to inform the CEN/TC 69/WG 6 secretariat accordingly.

Seven new recruits at Koso Kent Introl

Peter Ford, James Palmer, John Abrahams, Mark Jepson, Chris Wilson, Steve White and Sara Crawshaw

Engineering company, Koso Kent Introl (KKI) has welcomed seven new recruits to join its growing teams across the company's three sites in Brighouse, West Yorkshire.

James Palmer joins as area sales manager, John Abrahams as design engineer, Mark Jepson as CNC operator, Sara Crawshaw as receptionist/administrator, Peter Ford as fitter, Steve White as workshop supervisor and Chris Wilson is the new workshop engineer.

David Limb, KKI's sales director said:

'We've started 2014 on another positive note with new faces and skills added to the KKI workforce. Maintaining a global team of experienced and skilled people is part of our ethos. We nurture, train and develop each individual and team to create the most hi-tech valves and to deliver the highest levels of service to our customers.'

The leading valve company offers world-class engineering and manufacturing excellence to its global oil and gas customers. KKI manufactures and exports standard service control valves, severe service control valves, high-technology surface choke valves and high-performance rotary valves to the oil and gas, petrochemical and power industries.

KKI continues to make significant investment in its people, technology and infrastructure. In the last two years, the engineering firm has opened an 18,000 square foot factory and a hi-tech £2 million machining centre in Brighouse, where it has been based since1967.

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Second SIPOS installation at Khoms Power Station

SIPOS Aktorik has secured a major order to supply 284 actuators, as pictured, to the Khoms Power Station in Libya

Following the successful installation of SIPOS 5 actuators as part of a modernisation programme at unit 4 of the Khoms Power Station in Libya in 2007, the company has received an order for an additional 284 valve control devices.

The latest contract has been placed by Babcock Power Systems for the supply of new actuators at the Khoms plant to units one and two. SIPOS' advanced actuators will replace Siemens legacy products which were installed in the 1970s. As part of the plant upgrade, Siemens will supply a new DCS control system.

GECOL, the owner of the station, is the state-owned power utility responsible for generation, transmission and distribution of electric power throughout Libya.

On-site support and service will be provided by SIPOS' local agent.

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Supply vessel takes on board the benefits of Schischek actuation

Nearly 200 Schischek InMax actuators have been supplied to the automation specialist company Pecol SRL for installation on an offshore oil industry supply vessel under construction in an Italian shipyard.

The InMax actuators were specified for air and fire control damper operation on the vessel after engineers from Rotork Schischek and Pecol demonstrated the advantages of a compact and robust electrical solution for this duty. Due to the exposed on-deck location of many of the actuators the IP66 AISI 316 stainless steel enclosure version was selected to withstand the corrosive effects of the marine environment.

Rotork Schischek manufactures electric actuators for quarter-turn and linear valve, and damper operation with a spring-return failsafe capability and with *'Ex'* or *'Red'* explosionproof or *'In'* non-explosionproof enclosure specifications.

The Max range is designed for quarter-turn operation at output torques between 5 and 150 Nm with a selectable stroke time of 3, 15, 30, 60 or 120 seconds. The selectable stroke time is one of a number of options that are built into the standard product, including the adaptable power supply and choice of on/off, three-position or modulating control. For position signalling and feedback a 4-20mA or 0-10V supply can be utilised, whilst two end of travel auxiliary position switches are optionally available. An integral heater automatically maintains reliable actuator operation at temperatures down to -40ºC, facilitating the installation of standard products in extreme environments. In its failsafe version the actuator is available with SIL2 safety integrity level approval.

The supply vessel order follows a similar marine industry order from Pecol involving ExMax explosionproof actuators, supplied for damper control on an Italian naval aircraft carrier.

Rotork Schischek InMax actuator with AISI 316 stainless steel enclosure as supplied on the supply vessel contract.

We can turn anything!

When it comes to quarter turn valves, we really have the perfect partnership. As exclusive UK partner for HKS actuators, we're confident at Hydrastore that we can engineer and deliver a solution, within extremely competitive timeframes, to actuate almost anything! Whether it be in the harshest conditions 2,300 metres sub-sea or, top-side.

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Exporting to Russia, Belarus and Kazakhstan

Customs Union – GOST and TR Certificates

Russia was entered to WTO as well as the Customs Union between Russia, Belarus and Kazakhstan. This has opened up opportunities for companies to do business in Russia.

The economical potential provided by these markets notwithstanding, there are still a lot of bureaucratic problems. Actually the questions of customs and product permission are subject to constant changes and require special preparation from the side of foreign manufacturers.

Background of certification

The GOST certification sets quality requirements for products which are to be sold in Russia and must be proven by certificates and mandatory marking of products. The GOST R or TR certificates are to be submitted by the exporters already before customs clearance and must be shown later in the shops in Russia. There is possible certification for one-delivery only and also for serial production, valid for 3 to 5 years.

Depending on the product area probably some additional approvals and permits might be required: state registration for baby products and hygiene items or medical devices, metrological certificates for measuring tools, EX certificates for machines in the explosion protected area as well as state approvals for commissioning of industrial facilities and components (RTN permits). In any case a product sample must be submitted to authorised Russian laboratories for laboratory testing. Please note, operation manuals and safety data sheets have to be obligatory translated into Russian.

Technical Regulations – Harmonisation of the National GOST Norms

During the last two years Technical Regulations were adopted which are valid for every country of the Customs Union; for the moment there are about 30 TRs (read under www.tsouz.ru). Old GOST certificates will be gradually replaced by new TR certificates Customs Union. This will allow delivering the products to all countries of this Customs Union with one certificate.

Significant changes

The most significant change is – a representative in the Customs Union has to be appointed in the certificate, who will be responsible for safety and quality of the products on the territory of Customs Union. It must be a 'Russian legal person' registered in the Customs Union. For the manufacturer from Europe without representative in Russia there is a problem with serial permits. The solution is companies which are acting as representative offices in Russia. The risk is a dependence of the manufacturers of these service companies which are theoretically owner of the certificates. So the manufacturers have to check the seriousness of these companies carefully.

Denomination of products

After successful certification the mandatory marking of products is required. Conformity of the goods has to be identified by the new EAC logo (Euro Asian Conformity). Requirements to the label as well as marking of goods are described in details in every Technical Regalement.

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Complete range of Soldo safe and hazardous area switchboxes now in stock at Valvekits

Rotork Valvekits, the Rotork flow control group's specialist valve mounting kit company, has completed its off-the-shelf offering Soldo switchboxes for quarter-turn actuators and valves by adding the safe area SP range to the hazardous area Soldo ranges that it already holds.

The addition of the safe area SP range completes Rotork Valvekits' stockholding of Soldo switchboxes.

The compact, economical and corrosion resistant Soldo SP range is designed for valve and damper applications requiring waterproof environmental protection to IP65 (NEMA4 & 4X) in a standard ambient operating temperature range of -15°C to +80°C. The switchbox body is manufactured from reinforced PPE (polyphenylene ether) with integral NAMUR (VDI/VDE3845) mounting legs, eliminating the requirement for separate brackets. All models feature a flat or optional 3D local position indicator, protected by a UV resistant polycarbonate cover. SP switchboxes are available with electro-mechanical, proximity and magnetic proximity switch options for general purpose and low current applications. Switch setting is easily and accurately achieved by tool-free adjustment of high resolution splined cams. A reinforced M20 x 1.5 cable entry is fitted as standard, with alternative options available.

The addition of the safe area SP range complements Rotork Valvekits' existing stockholding of Soldo switchboxes for hazardous area applications, encompassing the SK and SQ explosionproof ranges and intrinsically safe models from the SP range. SK and SQ switchboxes are internationally certified for installation in EExd Zone 1 and 2 hazardous areas by ATEX, IECEx, GOST (Russia) and CCOE (India).

This extension of the Soldo agreement completes the third Rotork Valvekits stockist/distributor agreement to have been announced in the last year. In 2013 the company was appointed as the UK distributor for the well established Centork range of pneumatic valve positioners and as the exclusive stockist and distributor for the industry-leading Pneumatrol Namur range of solenoid valves.

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www.valvekits.co.uk

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Valvekits

Fast-fit steam flow meter pinpoints energy savings at point of use

Spirax Sarco has launched its Target Fixed Area (TFA) steam flow meter for smaller, point-of-use applications to help operators accurately assess energy use, reduce consumption and optimise plant performance.

As a stand-alone unit, the TFA integrates a flow sensing device, temperature sensor and flow computer into a single compact unit reducing installation requirements and consequently maximising plant uptime and increasing productivity.

The compact design of the TFA means it can be easily installed almost anywhere in a steam system, even in confined spaces or within the proximity of a pipe bend, valves or other components. It only needs six pipe diameters of straight pipe upstream and three downstream to ensure the desired flow profile into the meter. This overcomes a major challenge in point of use metering, where there are limited straight pipe runs, so reducing installation costs and overall capital outlay.

With a turndown of up to 10:1, the TFA flow meter is suitable for saturated steam systems and will accurately monitor steam flow even at low velocities, without having to make expensive changes to pipe size. This is important because saturated steam systems are best operated at velocities below 35 m/s. Once the steam flow exceeds 35 m/s, saturated steam can cause erosion and other damage within the pipeline.

'…resists erosion and needs little recalibration'

The TFA resists erosion and needs little recalibration, due to its stainless steel target area with a large, smooth surface plated in hard chromium. Other types of meter, such as vortex and orifice plate, feature sharp internal edges that wear much more quickly in steam flows, impairing their accuracy and requiring frequent recalibration. The TFA is available in DN25, DN32, DN40 and DN50 sizes and is suitable for use in steam systems up to 32 bar g.

The TFA works by measuring how much force the steam flow creates on the meter's fixed area plate. The strain produced is measured and converted into a density-compensated mass flow rate that can be transmitted as a pulsed or 4-20 mA output.

This can feed into an Energy Management System or be displayed locally, enabling easy data collection for further interpretation by users.

The TFA meets the needs of steam users in industries looking to accurately monitor, manage and reduce overall energy use, such as food and drink; hospitals; light industrial manufacturing; universities and other public buildings.

The TFA integrates a flow sensing device, temperature sensor and flow computer

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Hardide Coatings secures major supply agreement with General Electric

Hardide Coatings, provider of advanced surface coating technology, is pleased to announce that it has entered into a Strategic Supply Agreement with the General Electric Company Inc. (GE).

Hardide will supply coating to a component currently used by GE, in a deal worth $1.3million over the two years to February 2016. There is potential to extend the agreement to five years.

Development and testing work is also well-advanced on additional components which, if successful, will be added to the agreement. This would result in further minimum annual volumes and significant increased value to the partnership.

Philip Kirkham, CEO of Hardide plc said: *'This is an exciting development that firmly embeds the Hardide coating technology in one of the world's most respected advanced engineering companies. An excellent working relationship has built up with GE over the last 18 months and we continue to work closely together on other projects including opportunities for the Hardide technology in various other divisions of GE which we hope to capitalise on.'*

Hardide Coatings develops, manufactures and applies nanotechnology tungsten carbide-based coatings to a wide range of engineering components. The company's patented technology is unique in combining a mix of abrasion, erosion and corrosion resistant properties in one coating. When applied to metal components in aggressive environments, the technology is proven to offer dramatic improvements in component life resulting in cost savings through reduced downtime and increased operational efficiency.

'advanced engineering'

Customers include leading companies operating in oil and gas exploration and production, valve and pump manufacturing, nuclear, advanced engineering and aerospace industries. The company is part of AIM listed Hardide plc.

Hardidie's patented technology is unique in combining a mix of abrasion, erosion and corrosion resistant properties in one coating

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Pressure Tech have extended their range of products to include Brass Pressure Regulators for use on critical life support and diving applications.

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MF - 301
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New steam resistant EPDM material expands PPE's EnDura range of elastomer sealing solutions

Precision Polymer Engineering (PPE), a leading provider of high-performance O-rings, T-seals, technical moldings and sealing solutions, has developed EnDura E90SR, a new EPDM elastomer material that provides outstanding high temperature steam resistance.

E90SR is a new EPDM elastomer material that provides outstanding high temperature steam resistance

EnDura E90SR is available as O-rings, T Seals and custom-molded geometries and is used in equipment such as pumps, valves, turbines, geothermal tools and drilling equipment.

Unlike traditional EPDM materials EnDura E90SR can withstand high temperatures (up to 550˚F) and high pressures, with excellent resistance to rapid gas decompression. These properties make the new material ideal for use in anaerobic high-temperature environments, such as those encountered in geothermal applications and enhanced oil recovery applications.

'significant advancement'

E90SR is the latest addition to PPE's EnDura range of high performance elastomers specifically developed for high pressure environments. The EnDura range now includes all major polymer chemistries including fluoroelastomers (FKM), hydrogenated nitrile (HNBR), Tetrafluoroethylene/propylene dipolymers (FEPM) and perfluoroelastomer (FFKM).

'EnDura E90SR is a significant advancement within the EnDura product line because the elastomer material exhibits resistance to high temperature steam far superior to standard EPDM materials, with the additional benefit of being resistant to rapid gas decompression,' said Steve Jagels, PPE global market manager – oil and gas. *'EnDura E90SR is designed to last longer than standard materials in high temperature steam, preventing critical equipment downtime and costly repairs.'*

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Smith Flow Control Launches into the Power Industry with the FlexiDrive II Remote Valve Operator

FlexiDrive II: improves the safety and functionality of valve operations in nuclear facilities by reducing the exposure of operating personnel to hazardous materials.

To improve the safety of workers in nuclear facilities, Smith Flow Control now offers the FlexiDrive II remote valve operating system. This device can easily be attached to any handwheel operated valve, including lever operated valves (quarter turns), in nuclear power plants, making them constantly accessible and safe, regardless of their location.

The FlexiDrive II includes a new fully integrated counter mechanism which displays valve position (open/closed), providing the operator with a clear indication of valve status from a safe vantage point. It is capable of operating valves as far as 30 metres away and accommodating 540 degrees of bends in the cable run.

'improve the safety of workers in nuclear facilities'

This remote operation capability improves the safety and functionality of valve operations in nuclear facilities by reducing the exposure of operating personnel to hazardous materials. According to the Nuclear Regulation Commission (NRC) 10 CFR part 20, nuclear facility personnel are limited to 5 REM or 5,000 millirem of radiation exposure per year for those who work with and around radioactive materials, with downtime required after this limit has been reached. With FlexiDrive II, mandatory downtimes, as a direct result of exposure to radiation are eradicated.

FlexiDrive II is a versatile product consisting of two stations joined by a unique patented linear drive cable, which can be passed around and through walls, bulkheads, floors and any other obstacles to reach the host valve.

FlexiDrive II is a unique device for remote valve operation which eliminates issues associated with valve access in potentially hazardous areas.

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MASTERclass

Keep the noise down

High noise can be a problem in even low and medium pressure steam applications.

When walking around processing facilities like oil refineries, one striking element is the loud noise generated within the processes and piping by the flow of fluids. The capability to avoid excessive noise is a common requirement in many oil and gas plants, especially those related to gas processing, LNG, GTL or industrial gas production. The usual limit for noise is 85 dBA, but sometimes the required limit for the whole project can be also lower, like 80 dBA. Natural gas compression and metering stations are other perfect examples of applications that require noise attenuation technology. High noise can result in several issues, like heavy vibration as well as occupational health, safety and environmental hazards.

Essential utilities

Steam is a very common utility and widely used in several industries like power production plants where high pressure drops and vibration is a common concern. Steam is needed for various purposes in chemical and hydrocarbon processing: It can be used as a source of power, taking part in a reaction, like in steam reforming to produce hydrogen; or it can be used as stripping steam in columns and reactors, purging piping and equipment to keep them clean from fouling such as in delayed coking coke drum operations and steam cracking furnaces in ethylene production. Wherever steam is used, there is a likely need to control noise and large pressure drops. Industrial gases, namely hydrogen, nitrogen and oxygen, take part in many hydrocarbon processes as well. Special attention has to be taken in the sizing and selection of valves to ensure that the valves, especially in oxygen and hydrogen service, are clean, safe and reliable alongside keeping the noise levels down. Often special materials are also required, like Monel.

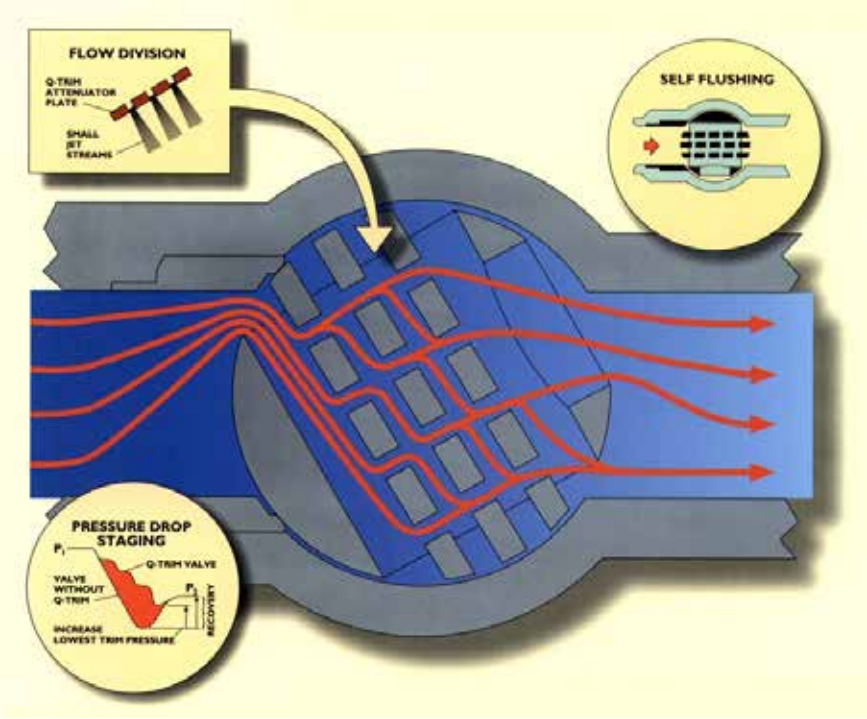


Figure 1. The principle of anticavitation and noise reduction (Neles Q-trim).

Compressors and surge

Compressor surge protection is one example of a severe application, where controlling noise and the resulting vibration plays a vital role in protecting the compressor from serious damage. Compressors are common equipment, from petrochemical ethylene gas compressors to large air separation plant compressors. Capacity instability is accompanied by a characteristic noise known as pumping or surge. The resulting violent gas pressure oscillation can cause severe and costly damage to the compressor in a few seconds. The anti surge valve must be able to pass approximately 100% capacity of a compressor, react quickly, often handle a high pressure drop, and reduce noise and vibration while keeping a tight shutoff to avoid energy losses in the system.

Answering noise demands

How does a valve manufacturer answer these extreme demands when noise needs to be controlled under various flow conditions and ever tightening noise level requirements? One will start by looking at the history and milestones of flow control noise abatement technology developments that are leading the way to modern technologies.

Rotary control valves have been used for decades in numerous

processing industries. In the late 1970s, rotary control ball valves were already in wide use. The same design of the first low noise anticavitation, patented Neles® Q-Ball introduced in 1979 still works on the same field proven principle of a multi stage trim of variable resistance depending on the valve opening. The difference between the noise level of a Q-trim ball and conventional ball can be up to 20 dBA. The Q-trim ball also has wider rangeability, and it is not sensitive to fluid impurities. The Q-trim ball became a common solution for many applications in steam, gas or liquid service. The next step towards higher pressure drops was taken in the mid 1980s when diffusers were introduced and sized so that their performance was optimised in conjunction with the control valve. The segmented ball control valve introduced in the 1980s added more possibilities in the way of extremely wide rangeability to flow control. Using Q-trim in segmented ball valves gives a control valve with low recovery.

The late 1980s saw an extension in the applicability limits of the control butterfly valve when the silencer disc (Neles S-DiscTM) was launched. The solution was again very simple. The non-symmetrical pressure distribution pattern on both sides of the disc has been made symmetrical with a partial flow obstacle (S-Disc) inside the valve body. This design helps to eliminate the dynamic torque, and because of the more turbulent flow pattern, it lowers the high recovery behaviour.

Decades of experience and development form an essential basis to take further development steps in control valve noise abatement. Controlling noise and understanding the fluid behavior in valves is based heavily on experimentation and supported by computational fluid dynamics.

The new Q2-trim is the second generation of Q-trim technology and is designed to reduce high aerodynamic noise to a tolerable level. The design itself follows the same principle as Q-trim and also utilises the same techniques of pressure staging, flow division, acoustic control and velocity control.

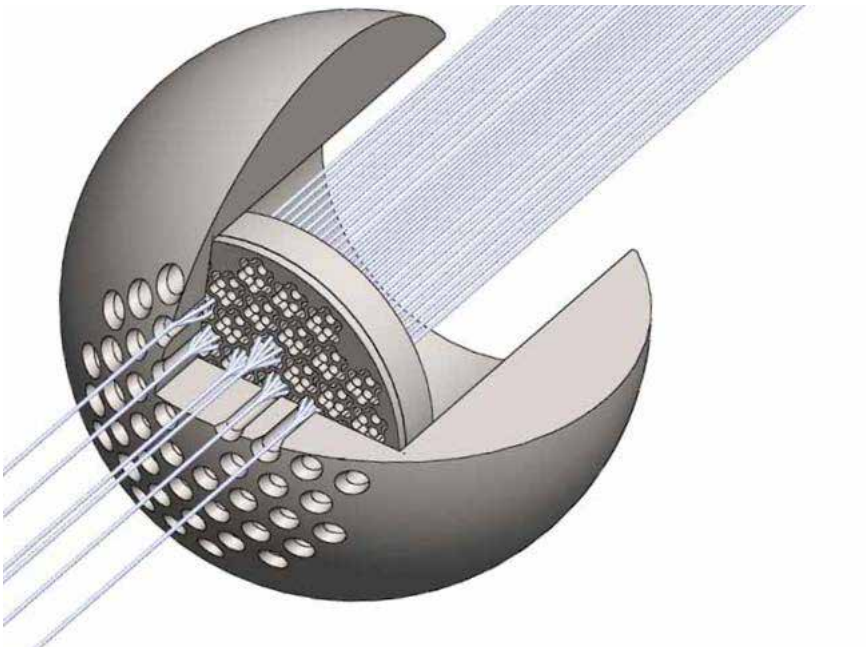


Figure 2. Enhanced noise attenuation with new Q2-trim.

The idea behind the new development was to create high noise attenuation trim, which takes into account the 30 years' history of the Q-trim and brings the noise attenuation to a new level of performance. The theory behind the design is based on the same physical phenomena that can be found with the Q-trim.

The science behind the development

What creates noise in the first place? The answer to this question is not straightforward. Although there are still unknown factors behind noise, theories have been built for them. The noise created by throttling gas or steam flow is called aerodynamic noise. There are various sources where the noise originates, for example, from the downstream turbulence of the valve, which can cause pressure fluctuations and pressure waves, high flow velocity and vibrations from shock waves. Once high noise has been generated inside a pipeline, it can propagate in several ways: inside the pipeline, along the pipe wall, along the pipe supports and into the surroundings.

Noise abatement can be done in several ways. The basic division of these is between *'source'* treatment, like valve and trim modification where excessive noise is prevented, and *'path'* treatment with dampening the noise generated by using silencers, insulation and heavier pipe schedule.

Source treatment is the preferred choice, whenever feasible, because it also ensures reliable process operation by preventing the high mechanical vibration levels always associated with noise. Source treatment of noise can be performed by at least four different methods: velocity control, acoustic control, location control and by using diffusers. The velocity inside a control valve trim can be controlled most effectively by using a multistage pressure drop and by increasing the valve trim outlet area such that the flow velocity and pressure at the valve outlet are at the minimum and the gas volume is at the maximum. The acoustic noise can be controlled in two ways: flow division into multiple streams and the modification of the acoustic field. Location control involves designing a valve trim in such a way that the location and the shape of the jet streams in, and especially leaving the trim, are such that the minimum amount of noise is produced. Dividing the pressure drop between a control valve and a downstream diffuser provides an effective way of further reducing the noise in cases where there is a constant, high pressure drop across the control valve and the flow is relatively constant. An attenuator plate can be used for noise attenuation in cases where the pressure drop is close to constant across the valve.

Short theory behind source treatment

Velocity control

$$I \sim \rho^2 \cdot \frac{v^6 \cdot D_j^2}{r^2}$$

where
- I = acoustic intensity
- ρ = density of jet
- v = velocity of jet
- Dj = diameter of jet
- r = distance from source

A very important implication in equation (63) is that the noise intensity is proportional to the velocity to the sixth power.

Controlling the maximum fluid velocity inside a control valve trim is a very effective way of controlling noise at subsonic flow velocities in the trim, as the acoustic intensity of a jet has been shown to be proportional to the sixth power of the flow velocity in a system with solid boundaries like a valve trim or a pipe. The relation between sound pressure level (SPL) and acoustic intensity is given.

Acoustic control

Acoustic control affects the noise level by means of acoustics. Two methods used in control valves are described here: flow division into multiple streams and the modification of the acoustic field. In theory, flow division into multiple streams is effective because the intensity of the noise generated by a single orifice decreases rapidly when the hole diameter is decreased. Thus, a number of small holes attenuates noise more effectively than one big hole. A rule of thumb is that each doubling of the number of holes reduces noise by 3 dB, as illustrated in Figure 3.

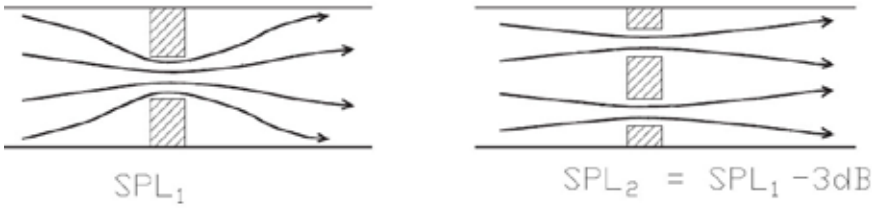


Figure 3. Effect of increasing the number of holes on noise level.

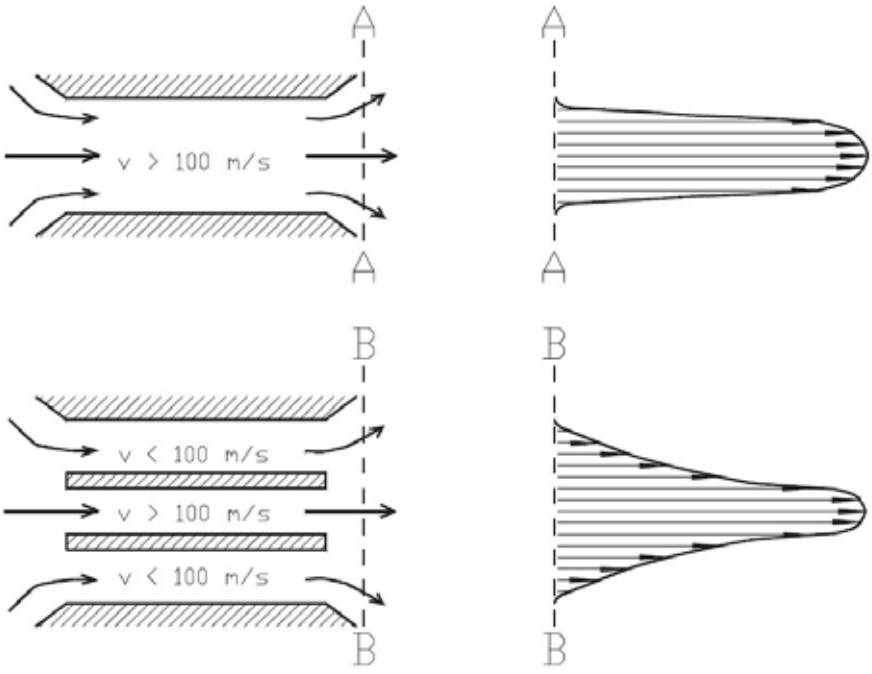
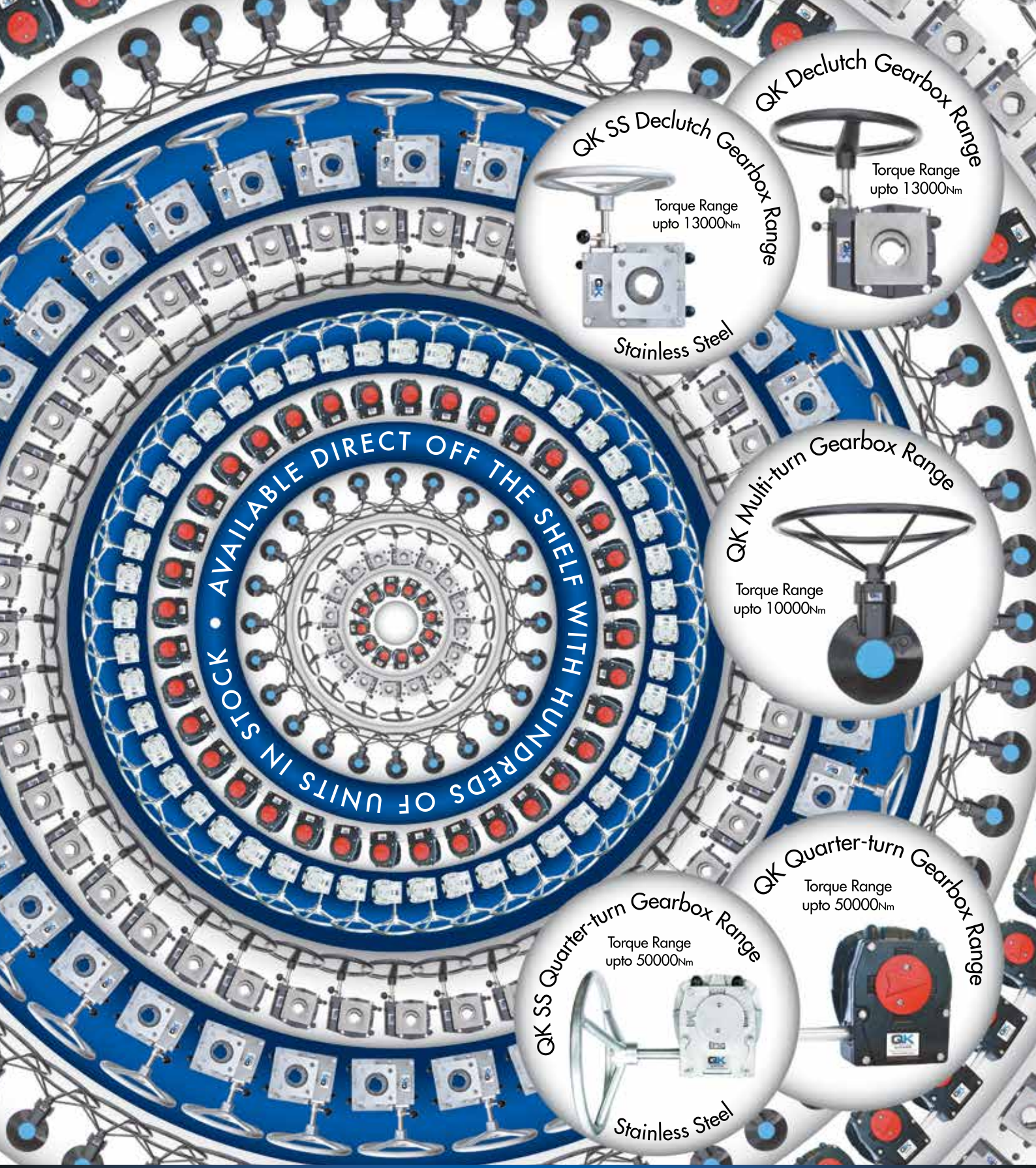


Figure 4. Jet velocity profile modification.

Location control

Location control involves designing a valve trim in such a way that the location and the shape of the jet streams in the valve trim, and especially leaving the valve trim, are such that the minimum noise is produced. The formation of turbulence in the mixing region between where the jet exits from an orifice and the gas flow at the outlet region as well as the attachment and interaction of shock waves (generated during throttling if the flow reaches sonic velocity in the valve) are major sources of noise that can be controlled to a certain extent by intelligent valve trim design.

One way to do this is to smooth the velocity profile of the jet by introducing a lower velocity gas stream alongside the jet, as shown in Figure 4. As mentioned earlier, the further development of enhanced noise reduction trim is based on applying the known technologies in experimental research. This method has proved to be successful in providing enhanced noise attenuation for gas and steam applications. It provides very low pressure difference over the last stage, effective flow division to reduce noise level in low and high pressure differentials, avoiding resonances and extra turbulence as well as taking into account the insertion loss related to separate static resistors.



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Not Just General Purpose Valves...

Beyond the conventional general purpose valve market where we've operated for years at Red Dragon, we regularly succeed in providing valves tailored to meet the demands of difficult applications. These specifications vary enormously and by working directly with our partner manufacturers we can combine options or produce custom solutions specifically to suit the application.

Natural gas trains for power generation or industrial furnaces can provide some very difficult solenoid valve specifications due to the need for safely operating at pressures up to 40Bar. We've met their requirements with solenoid operated or solenoid piloted pneumatic valves in sizes up to 12″ and maintained the necessary ATEX Exd or EXn and EN161 approvals.

Some of the more specialist solutions combine a solenoid pilot with a pneumatic piston actuation to achieve the sealing against the high pressure fluid without the penalty of large current consumption that would be needed otherwise. The engineer might then add that it's for a remote installation and there's no compressed air or for safety reasons the valve operation can't be dependent on a second source of energy. In these cases we offer solenoid coils up to 4000W and control systems to regulate the operation and current consumption as a star-delta starter on an induction motor would.

Red Dragon was asked for fast acting solenoid valves for submerged operations in water tanks which is an interesting combination from a safety point of view! There are IP68 rated solenoid

EN161 Exd solenoid valve for natural gas at 4Bar

coils with encapsulated flying lead connections for immersion up to a metre if the site operators will accept the risk of mixing electricity and conductive liquids. Any damage to the flexible cable could prove very hazardous indeed to operators. We avoided these issues by combining a compact pneumatic actuator with a solenoid valve body and produced a very cost effective unit not limited by the 1m IP68 limit.

Solenoid valves aren't suitable for every application though and an enclosed box filled with 120Bar water spray, mud and debris from drilling definitely wasn't but it was resolved using a class 2500 ball valve with rack & pinion pneumatic actuator within the enclosure and a pilot solenoid in a separate control panel.

Ammonia systems in power stations and fertiliser plants can be difficult due to the extreme corrosion issues of anhydrous

Pilot operated valve for submerged operation

ammonia with copper. Our copper-free solutions have proved ideal for this application and we've recently shipped a batch of 91 copper-free aluminium filter regulators in sizes from ¼″ to 1″ for exactly this duty.

Sometimes a requirement cannot be met by the clients suggested solution. By understanding the complete application parameters, at Red Dragon we identify a way of achieving the correct performance characteristics and deliver exactly what the client needs.

Emerson's latest digital valve controllers have logged more than 1 billion hours of reliable operation and diagnostic service

Innovative feedback technology and diagnostic capabilities of Fisher® FIELDVUE™ DVC6200 instruments help improve process performance worldwide

Emerson's FIELDVUE™ DVC6200 Series digital valve controller has racked up more than 1 billion hours of on-line use within the process and energy industries since its introduction in 2010.

Steve Hagen, FIELDVUE Product Manager, credited the instrument's linkage-less, non-contact feedback system as one reason behind the quick adoption by industry and the 1 billion operating hours. *'We've eliminated physical contact between the valve stem and the instrument, which means it can withstand the high levels of vibration and corrosion often found in process environments.'*

There are many examples of how this technology helps solve operating problems.

In China, at one of the world's largest integrated chemical facilities, instrument engineers were faced with pipeline vibration that was destroying a steam service valve's instrumentation. Since it was not feasible to change the process conditions or piping, the valve positioner had to be replaced about every three months.

To solve this problem, a DVC6200f was installed to take advantage of the unit's resistance to high levels of vibration as well as its FOUNDATION fieldbus communications capability. The digital valve controller performed accurately and reliably, saving the facility $40,000 per year in the cost of replacement instruments plus that of lost production and labour.

DVC6200 digital valve controllers are highly suited to a wide variety of industries and applications, earning high praise from companies that employ its technology to improve plant availability. At an ammonium nitrate facility in Australia, liquid ammonia valves face high-cycle service conditions and a surrounding ammonia-rich atmosphere. Both factors combine to create one of the most severe environments to be found in any processing plant, which could lead to valve failures and lost production.

'high praise'

Emerson engineers recommended the DVC6200 because its linkage-less, non-contact feedback technology can withstand these harsh conditions. The mine's instrument technician installed the instrument on critical ammonia service valves, commenting that the digital valve controller not only proved easy to program and set-up but also that its on-line monitoring

Fieldvue instruments can withstand high levels of vibrations

capabilities allowed operators to safely avoid manual checks and valve repairs in areas filled with ammonia vapours.

Additional user benefits include the availability of equipment alerts that notify of pending issues, automated configuration, calibration and tuning, and access to advanced levels of valve assembly diagnostics. With the Performance Diagnostic capability of the DVC6200 digital valve controller, questions about valve performance can be answered without pulling the valve from the line.

At a nuclear power plant in the U.S., DVC6200 digital valve controllers were installed to avoid failure of critical control valves in the plant's feedwater system. An unplanned shutdown in a plant of this station's size could cost up to $1 million per day in lost revenue.

The digital valve controllers at the plant provide real-time information about valve position and condition, including variables such as valve packing friction. In one instance, this data alerted plant operators to a loss of packing in a feedwater regulator, avoiding a plant trip.

Maintenance technicians decided to inject sealant into the valve's packing box to keep the valve in service until the plant's next scheduled outage, almost 18 months away, explaining that delaying any repair would not have been possible without the FIELDVUE instrument. They reported that the DVC6200's accurate friction monitoring and measurement kept the system stable while packing friction dropped from 227kg to zero during the sealant injection. The instrument's fast response kept up with the changing friction load in spite of the valve's heavy chatter, keeping the valve online and avoiding a costly shutdown.

In addition to the power industry, there are others such as pulp and paper, and offshore oil production that typically prefer to isolate valve-mounted instruments from harsh environments. With the DVC6205, only the valve position feedback is mounted on the control valve, while the remainder of the digital valve controller can be mounted over 90 metres away in a less severe or more accessible environment. With no linkage to wear, loosen, corrode or vibrate, the feedback unit can withstand a plant's operating extremes.

'real-time information'

As shown by the DVC6200 Series 1 billion operating hours, FIELDVUE digital valve controllers prove highly suited to challenging process requirements, including verification of safety shutdown systems, withstanding exposure to corrosive atmospheres, and meeting rigorous topside safety standards. The DVC6200 series is offered with CSA, IECEx, ATEX and FM hazardous area approvals as well as other certifications/approvals, such as Lloyd's Register for industrial, marine and offshore use.

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Severn Glocon selects Metso positioners for NGL valve project

Control valve specialist Severn Glocon is using Metso's intelligent positioners to help meet demanding anti-surge valve requirements for an NGL project.

The two firms worked collaboratively to overcome technical challenges, such as ensuring the valves opened in less than one second following receipt of signal. Customization of Metso's Neles ND9000® positioners enhanced reliability and repeatability of performance, enabling valves to meet rigorous in-factory testing and calibration requirements.

Escalating operational demands in the NGL sector are driving more sophisticated approaches to valve calibration. Accessories such as smart positioners need to be fine-tuned for optimum performance. This requires dedicated expertise and intelligent engineering.

The anti-surge application is crucial for successful and safe compressor operation. A surge can occur when process flow momentarily reverses due to pressure instability. This can damage equipment, potentially creating a hazardous situation and resulting in costly plant downtime. To avoid this, a highly-engineered anti-surge control valve is installed between the discharge of the compressor and the inlet. When a potential surge is detected, the valve opens quickly to transfer pressure.

'Our positioners include a so-called hunting detection feature that identifies the valve assembly's movements and stabilizes it from major movements in the process. This feature came on too strongly at first, so we changed the firmware that set it off. In the frequency response test, the valve assembly needed to react strongly and quickly to changes in the process, and our positioner performed well,' says Niklas Lindfors, Manager, Valve Control product center.

Severn Glocon is part of the Severn Glocon Group, which employs 800 people worldwide and won a Queen's Award for Enterprise in International Trade in 2011 and 2014. Further information is available via www.severnglocon.co.uk

Metso's Neles ND9000® positioner

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J+J's J3 Smart Red Box Adds Unique Status LED

Indicator saves time and money by diagnosing the problem, often without the need for a site visit or inspection

Many suppliers of electric valve actuators receive calls from stressed site operators or engineers faced with an electric actuator that is not responding to the control signals being sent to it, they need phone support to try to help them identify the problem and get their system operational again. In many of these cases, they would like someone to visit site. Suppliers will know that in the vast majority of these visits, the issue is not with the actuator but with the valve, the installation, the control signals or mal-operation of the actuator. The symptom is that the actuator is not working, but the cause is often valve or operation related.

The difficulty for the supplier is to identify the cause of the mal-operation of the actuator. Often the user or operator doesn't have access to the information needed, subsequently the result is that the user sends the actuator back, or an urgent site visit is arranged.

The J3, a very smart red box.

The feature rich J3 Series of Smart Red Box electric valve actuators manufactured by J+J have a highly visible LED indicator that gives users continuous actuator status feedback and solves the questions of *'is the problem the valve or the actuator?'* the J3's LED is solidly lit if the actuator is fully operational and ready to respond to remote command signals. If the LED is flashing, the actuator will not respond to command signals, and the sequence of the flashes indicates the likely cause.

The two most common causes are (1) the actuator has been put in manual mode, so as a safety feature, will not respond to remote commands, or (2) the valve is jammed, so the actuator's electronic torque limiter has activated.

So, in most cases a simple question of *'what is the LED doing?'* can instantly solve the problem in a brief phone call, saving the supplier and the user time, and money. The J3 is a very Smart Red Box.

Rotork provides a simplified flood defence solution

There are many good reasons for introducing a level of automation to manually operated river sluice gates. Sluice gates are vitally important for defending against flooding during periods of persistent rainfall, when swift and reliable operation can prevent serious disruption and damage to property. Alternatively, during periods of drought, sluice gates play an important role in maintaining the river level.

The automation of a sluice gate is a relatively simple operation in itself. However there are many factors including the location of the gates and the availability of power which can turn the exercise into a multi-disciplined task demanding a range of mechanical, electrical, civil engineering and project management skills.

This was the situation facing Canford School, a co-educational boarding school set in 250 acres of ground on the banks of the River Stour in Dorset, when an upgrade was needed to the operation of three river sluice gates. Installed many years ago, the gates enable the upstream area of the river to be accessed, mainly for school sports use in year-round rowing activities. The two-metre square gates were equipped with open mesh gearboxes and handwheels, together with counterbalancing weights attached to each gate by a lifting chain and open pulley.

Manual operation of the gates took a long time and required a great deal of effort, as well as presenting a potential trapping risk to the operator. In recent times, changing weather patterns had also increased the risk of flooding to school property. Automation was therefore essential not only because of the flooding threat but also from a health and safety viewpoint.

Following a consultation with the Environment Agency, Canford School selected Rotork's dedicated Site Services Division to perform the project on the sluice gates. Rotork's proposal encompassed all aspects of the task in an extended scope contract, enabling them to organise the total supply of the work together with project management services. A major benefit of this approach for the customer is the simplified contractual route that the extended scope contract enables, by minimising the number of separate sub-contractors that need to be employed.

Central to the upgrade was the installation of three Rotork IQ electric valve actuators and a local control centre. However, being in a wooded environment some 60 metres distant from the nearest power supply, considerable extra work was also required, as summarised below.

Final inspection in progress following completion of the automation upgrade of Canford Sluice

- A full survey of the existing sluice gates and hinterland. Measuring existing equipment for design and fabrication of adaptation for the actuators and protective shielding for the open pulleys and chains.
- The supply and installation of an isolation and distribution board to an existing power supply in a building 60 metres from the river.

View of Canford Sluice, illustrating the remote location which typifies many of these installations

- A cable detection survey and excavation of the cable route. Supply and installation of power cabling with a total length of 110 metres in ducting above and below ground between the power supply, the local control kiosk and the actuators. Installation of a concrete pad and a GRP kiosk for the local electrical control panel.
- The design, fabrication and installation of the actuator control panel, providing local isolation and push button open and close operation for each gate.
- The supply of lifting equipment to remove the existing open mesh gearboxes and pedestals, one at a time to facilitate manual operation of two gates at all times.
- The design, fabrication and installation of three new actuator mounting pedestals and six pulley guards.
- Installation of Rotork Gears IB9 sealed gearboxes with machined drive nuts to suit existing spindles and cover tubes to protect the spindles and prevent potential entanglement. Installation of three Rotork IQ35 electric actuators. Setting the actuator open and close limits and commissioning of the completed installation.

Following the completion of the work the time and effort required to operate the sluice gates has been dramatically reduced, enabling the school to manage the river level and flow with increased efficiency and in complete safety. In the future there may be scope to further upgrade the operation by installing river level sensors, the signals from which would operate the actuators fully automatically.

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AUMA Support App Advances Data Downloads

A new AUMA Support App enables rapid download of actuator documentation. Designed to make life easier for on-site engineers, a Data Matrix code on each actuator can be scanned using a smartphone to obtain support materials.

Adopted in industrial valve automation applications, AUMA actuators are individually tailored to meet the specific requirement of each installation. As a result, documentation including wiring diagrams, technical data sheets and inspection certificates is unique for every device.

Designed for convenience in the field, the AUMA App is used to scan the order number on the actuator's

name plate to download required documents. Material will continue to be available via the company's website www.auma.com

The free AUMA Support App is available for download and runs on Apple iPhone, iPad, and iPod touch for version IOS6.1 or higher.

A new smartphone App from AUMA gives easy download access to actuator documents, the QR code directly links to the AUMA Support App in the Apple Store

Spirax Sarco delivers energy-saving steam project for 340m new-build hospital

Spirax Sarco has delivered a project to provide the steam for heating, hot water, humidification and laundry services at a brand new, €340 million, acute hospital for the Enniskillen Trust in Northern Ireland. Spirax Sarco also provided the controls to manage the steam feeding the hospital's Combined Heat and Power (CHP) plant.

The company carried out the work after being appointed by Mercury Engineering, which was contracted to provide building services for the new facility. *'Spirax Sarco was our preferred supplier because they offer good experience and high quality,'* says Gerry O'Donnell, Contract Manager with Mercury Engineering. *'They did the steam system design and project management, as well as supplying the equipment, so Spirax Sarco was a one-stop shop for us.'*

The hospital runs two biomass boilers, which run at 8bar g and 30bar g to drive the hospital's CHP generation plant. There are also two oil-fired steam boilers running at 8bar g to generate steam for low-temperature hot water for heating, domestic hot water for hand washing, bathing and cleaning, laundry services and humidification.

The New South West Acute Hospital was officially opened by Queen Elizabeth II in June 2012

As well as providing all the peripheral equipment to support the CHP engine, Spirax Sarco designed, fitted and commissioned a total of 11 plant rooms throughout the 315-bed facility, as well as 27 air handling units, boiler controls, heat exchangers and all the associated equipment to establish an efficient energy distribution system that can be controlled from the hospital's leading-edge Energy Centre.

'delivered on time'

'It was all carried out to a tight schedule to meet the official opening date in June 2012 and Spirax Sarco delivered on time,' says Mr O'Donnell. *'Everything has been working fine since then. They are professional guys who know what they are doing.'*

The New South West Acute Hospital was officially opened by Queen Elizabeth II in June 2012, but Spirax Sarco's involvement did not end there. Multinational service giant Interserve is currently contracted to maintain the hospital, and has recently agreed a service and spares contract with Spirax Sarco to cover steam services across the 650-acre site.

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New universal sealing disc for sliding gate valves

At the heart of a Schubert & Salzer Control Systems' sliding gate valve lie two slotted discs sliding against each other, and forming a seal. One sealing disc is permanently fixed in the valve body and the other is movable. The selection of the ideal material pairing for these sealing discs depends on many factors. In addition to the friction coefficient, which has a direct effect on the level of the force needed to actuate the valve, there are other aspects such as leakage rate, chemical resistance, suitability for high differential pressures, edge stability as well as operation in cavitation, which are all critical parameters in the choice of material or coating for the sealing discs. Moreover, the desired service life and replacement costs have to be considered.

The conventional materials for the movable sealing disc based on carbon or stainless steel with a hard alloy based on cobalt and chromium (Stellite®) are now supplemented by a diamond-like coating known as SFC (slide friction coating).

One sealing disc is permanently fixed in the valve body and the other is movable

'…forms an enveloping hard layer around the base material and protects it from chemical and mechanical attacks by the medium or by contaminants'

The SFC is applied to a stainless steel sealing disc and brings together the stability of the stainless steel base body, the very low coefficient of friction of the carbon and the extreme robustness of the diamond-like coating layer. Thus, movable sealing discs coated with SFC can withstand high differential pressures while, at the same time, the actuation forces for moving the sealing discs remain extremely low. This makes it possible to have smaller, and hence much more cost-effective valve actuators. Insensitivity to pressure shocks, operation near the closing point with improved edge stability and the relatively low leakage rate round off the advantages of this sliding disc coating.

The SFC coating not only improves the frictional properties of the base body but also forms an enveloping hard layer around the base material and protects it from chemical and mechanical attacks by the medium or by contaminants. Sliding gate valves with an SFC-coated sealing disc are ideal not just for shutting off and controlling high differential pressures at low actuation forces but they also present an easy solution for dealing with carrier fluids, saturated steam, acids and caustic solutions. Furthermore, a sealing disc with an SFC coating can be used for media temperatures from – 60 °C to + 300 °C.

By BVAA's Technical Consultant, Peter Churm

TECHNICAL HOT SPOT

Hot Spot Draft BS EN 16722

Draft BS EN 16722 Industrial valves - End-to-end and centre-to-end dimensions for valves with screwed ends has been issued for Public Comment.

This draft standard is based on European discussions in which the UK has taken an active part. Your comments on this draft are welcome and will assist in the preparation of the consequent British Standard

This European Standard specifies the end-to-end and centre-to-end dimensions for valves with screwed ends with connecting dimensions in compliance with EN ISO 228-1 or EN 10226-1, used in PN and Class designated piping systems.

The range of PN is:

PN 10; PN 16; PN 25; PN 40; PN 63; PN 100; PN 160; PN 250; PN 320; PN 400.

The range of Class is:

Class 150, Class 300, Class 600, Class 900, Class 1 500, Class 2 500.

The range of nominal size is:

DN 4; DN 6; DN 8; DN 10; DN 15; DN 20; DN 25; DN 32; DN 40; DN 50; DN 65; DN 80; DN 100.

Please indicate whether you consider the UK should submit a negative (with reasons) or positive vote on this draft

Comments should be forwarded to BVAA by 15 August for onward submission to BSI.

Pneumatrol gains NEPSI approvals

Adding to its already extensive range of approvals, Pneumatrol has recently gained NEPSI approvals for its hazardous area solenoids - Intrinsically Safe (EExia) and Flameproof (EExd).

NEPSI is short for National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation in China. It performs explosion protection certification in accordance with corresponding standards and issues Explosion Protection Certificate of Conformity on government's authorisation. NEPSI approval is widely accepted and an increasing number of companies are now adopting a policy of using NEPSI approved products in China. With the addition of these approvals, Pneumatrol is now in a very good position for trading in China and other areas of Asia where NEPSI is recognised and required.

Over the years, Pneumatrol has developed its core product range of hazardous area solenoids (EExnA, EExm, EExme, EExd and EExia) which are available with various international approvals – ATEX, FM, CSA, UL and GOST-R.

Intrinsically safe (EExia) solenoids are available in different construction variants – terminal box, in-line connector, flying lead, plug and socket, or stainless steel terminal box. Flameproof and encapsulated (EExd) solenoids come with stainless steel terminal box construction.

'quality first'

Liz Smith, Quality Manager of Pneumatrol and a qualified Six Sigma Black Belt, commented, *'Pneumatrol always puts quality first. The management team strongly believe that the ethos of "no-compromise-on-quality" will lead the company to new heights. We work to ensure that our products are compliant with the latest international approvals, which forms an important part of our business strategy to significantly grow export markets.'*

Pneumatrol's core product range of hazardous area solenoids is available with various international approvals including ATEX, FM, CSA, UL and GOST-R.

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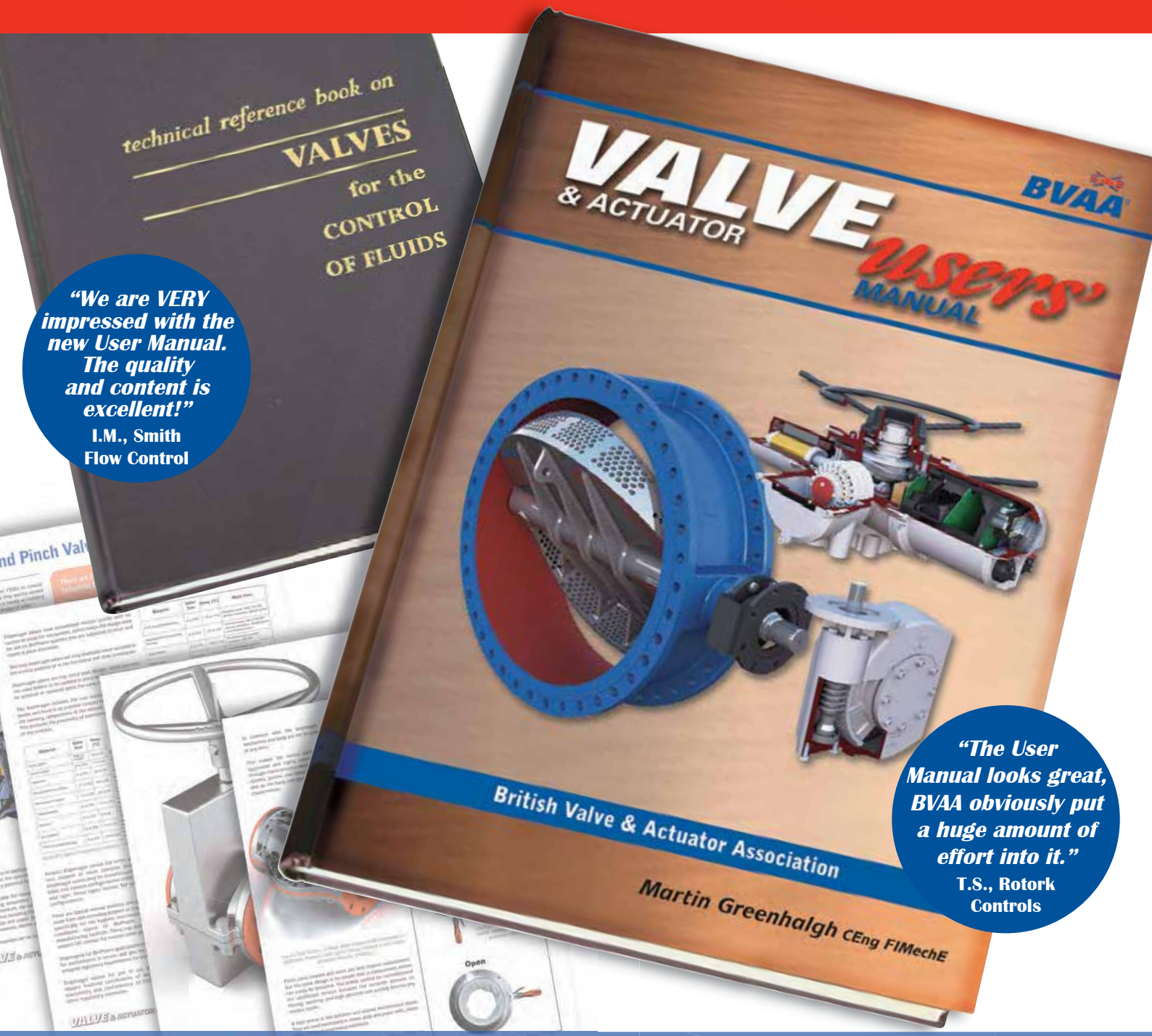

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