SPRING 2018 | **ISSUE 44**

BVAA

valveuser Magazine

Bonomi's New UK Actuation Centre

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Comment

By BVAA Director
Rob Bartlett

Lessons in Life!

Or alternatively - have faith!

The draughty and crumbling 300 year old farmhouse where I grew up owed its continued existence to a tie-rod – essentially a humongous nut, washer and bolt arrangement. You may have seen those 'X' shape pieces of metal on the exterior of twee country cottages? They actually prevent the walls from collapsing.

Our rod worked, and ever since I've had faith in the humble yet positive nut-and-bolt fixing. After much DIY experience, I've eventually developed a grudging trust in the taper anchor bolt variant too. So, when I got a new TV, I decided to wall mount it with anchor bolts in readiness for the England/Scotland 6 Nations game.*

With my usual habit of excessively-engineering solutions, I visited a national DIY chain store and invested heavily in a broad range of such rugged and reliable anchor bolts - some hefty M8 beasts. Plus a 14mm drill, spacers, and a bunch of other accoutrements.

Thing is, technology has moved on. Modern house walls suffer from the nasty practice of 'dot-and-dab' plaster-boarding. I soon discovered these heavy-duty anchor bolts were no longer suitable for these new circumstances. They simply wouldn't work properly, and could not bite sufficiently to settle my nerves.

Cue another trip, this time to a local ironmongers. While in the process of buying yet more anchor bolt variants, I casually consulted the hugely experienced shopkeeper. He handed me – and vouched for - some pathetic-looking plastic discs, which with my superior knowledge and experience I instantly dismissed as I knew they could not possibly work (but bought some just in case, as it was near closing time).

Having struggled on amid much hammer-drilling, frustration and an increasing lack of confidence, I finally read the discs' packaging. A claimed load weight of 113kg! Furthermore, I only had to drill through the plaster-board. I gave it a try. 4 holes in 1 minute. Another minute to tap them in and just seconds to activate the innovative locking mechanism. Job done!

Even after I doubled up on the fixings (just to satisfy my paranoia) the net cost of these was less than £10. The 'traditional' items I'd bought were many times that cost, and now sit languishing in storage.

The moral?
The more I thought about it, the more I realised the parallels to my world of valves. We have a customer-base who want robust and cost-effective solutions.

But who often cling to traditional products, even when they are not appropriate for modern applications.

Some, when they are offered the opportunity to test the market, shy away thinking they know better than the designers, or simply cannot encompass changing to something they don't know or haven't experienced before.

And yet all the time, simple and effective solutions are out there if they'd only open their minds and trust the experts.

At the BVAA we'd encourage all customers to regularly test the market through our zero-cost, on-site desktop exhibitions.

Contact rob@bvaa.org.uk for details.

**The TV took so long to mount, I missed the game. Did we win?*

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Valves Advanced Level | *Monday, 9th ~ 10th July*
PED/ATEX Directives | *Wednesday, 11th July*
Safety Integrity Levels (SILs) | *Thursday, 12th July*

Autumn | 2018

Introduction to Valves | *Monday, 1st October*
Introduction to Valve Actuators | *Tuesday, 2nd October*
Control Valves *(CPD Accredited)* | *Wednesday, 3rd October*
Safety Valves *(CPD Accredited)* | *Thursday, 4th October*
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BVAA

Annual General Meeting 2017

Annual General Meeting - Presentations & Speakers

BVAA's Annual General Meeting was held this year on November 17th at Rookery Hall, Cheshire.

With the new format of informative presentations now firmly established, members received updates on a small selection of hugely relevant topics.

First up was Adrian Bond from the Department for International Trade on the important topic of Export Controls and associated licenses. It has been some years since BVAA covered the subject in depth, so the update was timely, humorously delivered and very well received.

Unfortunately, our second presenter on GDPR cancelled at very short notice. Unfazed, Mark Homer, husband of BVAA's very own Barbra Homer, stepped in at zero notice and received a fantastic feedback score on his deeply fascinating presentation on *'The Service Technician of the Future.'* The scope for new technology in this field appears limitless, but the concept of 'vibrating clothing' to warn technicians that they are about to make a potential mistake in their practices does seem a little far-fetched, and yet is being utilised. It's a strange yet exciting brave new world!

Future Leaders Cohort 2

£809 raised for BBC's Children In Need

Evening entertainment Charity Casino

Rob Boycott - 'BVAA Champion'

The next session was the presentation by the BVAA Future Leaders, Cohort 2. Now fully-bedded in as a concept and a fully-fledged strand of BVAA activity in its own right, the 'FLP' continues to take a small band of talented individuals from the industry each year and develop them into leaders for the future. The journey the FLPs travel in one short year is amazing, as are the changes within them in that time. In his particular piece, FLP Eddie Sheard (KKI) noted that when his name was put forward, he was so anxious of the FLP, he considered quitting his job! Just a year later, there he stood, confidently explaining his misgivings like a professional, to the massed ranks of the BVAA. It demonstrated a transformational change indeed and was a testament to the power and effectiveness of the programme (Note: At the end of the programme in January, Eddie received an award from his fellow FLPs in recognition of his high achievement).

After lunch, the 'FLP' Personal Development Consultant, Dr Martin Haigh MBE, gave a presentation entitled *A Wise Investment*, which looked at the value of developing young people to businesses, as evidenced by the FLP.

Officers

At the AGM meeting itself, BVAA said farewell to outgoing Chairman David Millar (Heap & Partners), who also stepped down from the Board, and welcomed his replacement Mr Colin Findlay (Severn). Vice Chairs appointed for the year were Rhys Jones (BEL Valves) and Tim Guest (Zoedale).

Evening entertainment band 'Mixed Feelings'

Dinner Dance

In recognition of Mr Findlay's appointment, and his proud Scots heritage, Members were spectacularly piped into silence by the Wirral Pipe Band. In the traditional speeches, Colin presented David Millar with his specially commissioned BVAA cufflinks. There were further awards to association members for their contributions over the year, including a special 'BVAA Champion' Award to BVAA Business Development Consultant, Rob Boycott.

A Casino evening provided yet more distraction, as did the excellent cabaret band, Mixed Feelings. Members continued their generosity all evening with a record breaking donation of £809 to Children In Need. Our special thanks go to the sponsors Rotork, SmartAct, Kent Introl, The Great British Valve Group, Heap & Partners, and Emerson.

Photobooth sponsored by SmartAct

Valve Industry Shrugs off the Beast & Emma!

L-R: Martin Haigh, Nikunj Patel, Elizabeth Waterman, David Wild & Simon Weston

Regional Dinner, Holiday Inn, Brighouse

The Association enjoyed a hugely successful BVAA Regional Dinner **& Supplier Day** at the Holiday Inn, Brighouse on the 27th and 28th February 2018, despite the best efforts of the ***'Beast from the East'*** and ***'Storm Emma.'***

The threat of snow storms impacted a little on the anticipated attendance, but over 70 hardy delegates still made the traditional Tuesday Night Networking Dinner.

Highlight of the evening however was BVAA's special guest speaker, Simon Weston CBE. Critically injured in the Falklands War, Simon's recovery from horrific burns was a feature of many TV documentaries in the 80s and 90s. His address included a balanced mix of emotion and humour, but an overall message of resilience and perseverance – truly inspirational. At least one member mentioned to the Director how the talk had led him to completely reverse a major decision he'd made that day – quite an impact!

Simon also graciously presented our successful Future Leaders with their ILM Mentoring Awards, introduced by BVAA's Personal Development Consultant Dr Martin Haigh MBE.

Ninety-six 1-to-1s

During the **Supplier Day** element, BVAA facilitated **96 one-to-one meetings** between some of the industry's major OEMs and the association's supplier-members, meetings that most probably would not have occurred otherwise.

Regional Dinner - Future Leaders

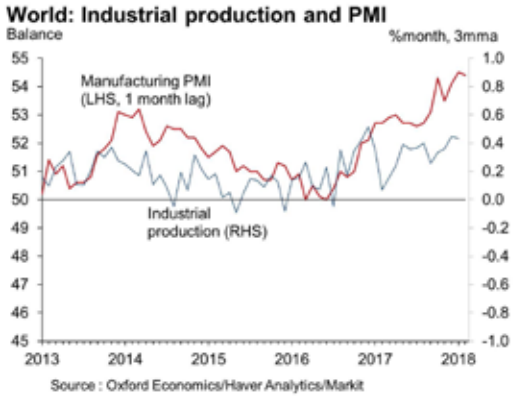
There were many more interactions as part of the adjoining desktop exhibition with 17 supplier members displaying their wares and services.

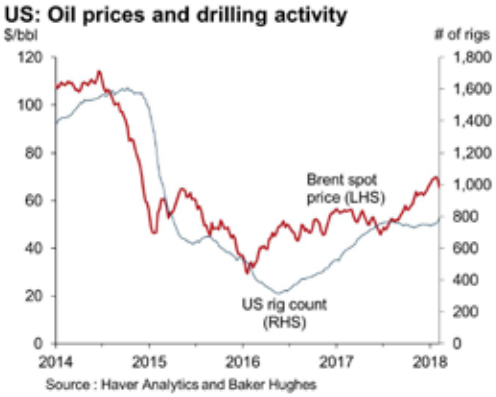
Essentially speed dates, the one-to-ones allowed suppliers and OEMs to check out each others' purchasing/supply opportunities in a series of swift, 15-minute meetings. OEM-host Andy Bradbury (Severn) commented, *'we picked up a couple of possible suppliers and touched base with old ones.'* A new member noted it was a *'very positive experience, and well worth the expense and time.'*

BVAA Director Rob Bartlett added, *'I was delighted that Simon Weston went down so well with members, but even more so with the positivity shown by members when it came to the Supplier Day concept. As an industry we cannot reasonably expect our customers to meet with us via our own Desktops, if we ourselves are not prepared to meet with our suppliers in a similar vein. There is a very definite "win/win" opportunity and everyone involved deserves praise for their fortitude, but I think Severn Glocon, Parker Hannifin, Weir, KT Hydraulics, Crane, Koso Kent Introl, Rotork and Alco Valves deserve special mention for their open-mindedness and we are especially grateful for their participation as hosts.'*

1-to-1 meetings, Suppliers Day

Global Valve & Actuator Market Outlook likely to Brighten Further





Since the publication of the inaugural **Global Valve & Actuator market report** in March 2017, we have become progressively more **optimistic** about **global growth**

Global GDP growth is estimated to have expanded 2.9%, slightly better than the 2.7% expected at the time of the report. Thus, the strong rebound in valve and actuator markets across most of the world in 2017 suggests that our bullish outlook may be upgraded further in the next report.

Strong global trade, recovery in commodity prices, weak US dollar and weaker than anticipated inflation along with improved credit conditions and tightening labor markets have been the key drivers behind this year's global upturn. In December, the global composite PMI continued to trend upwards, rising to its highest level of 2017. Evidence that the global economy ended 2017 on a high note suggests that the underlying momentum of the world economy is being maintained and that the omens for 2018 are positive. So, we have upgraded our global GDP growth forecast for 2018 slightly from 3.0% to 3.2%.

World industrial production expanded at 3.5% in 2017, and early evidence strongly suggests it will exceed that pace this year, with much of the strength emanating from the developed world.

The fact that this growth is more rapid than for overall GDP signals a sustained industrial upcycle. Even in the UK—where uncertainties around Brexit have put significant headwinds on industrial activity—the broader rebound in global trade has led to a much stronger industrial outlook this year.

Spare capacity is decreasing across the developed world, and this, combined with a solid investment rebound and robust demand is powering industrial activity, particularly in heavy manufacturing industries like base metals and mechanical engineering. Growth in consumer-facing sectors such as food & beverages—which tend to be less cyclical than heavy manufacturing—is expected to be resilient even amid a mild acceleration in inflation as tight labour markets begin to feed strong growth in incomes and spending power.

The breadth of the industrial upturn is particularly beneficial for the chemicals sector, whose products are used across the industrial spectrum. We expect well over 4% growth in production this year, let by a 6% increase in the US as large investments in new facilities there start coming onstream. The construction outlook is also robust, despite fears of supply side constraints in the US and reduced Chinese government support for the housing sector.

The oil and gas sector has also seen a reversal of fortune. Despite recent drops, oil prices are more than double their lows of 24 months ago which has sparked a renaissance in the US unconventional sector. After a market shakeout in 2016 that decimated activity, the number of rigs in operation has more than doubled in the US. The pickup in oil prices should be followed by an uplift in US oil investment, as rig counts tend to track the oil price with a lag of around 3-6 months. Indeed, we already see evidence of this as rig counts are up by almost 30% year-on-year in February 2018. On this basis, we are confident that US oil and gas investment will grow by more than 25% this year.

All of these developments point to a possible upgrade of this year's valve and actuator market growth outlook—particularly in the developed world where demand has picked up the most. Last year's expectation for 2.8% growth in the US for 2018 will be further supported by the fiscal stimulus package along with ongoing strength in global activity and the oil sector rebound. Even in Europe—which we boldly predicted would be the fastest-growing regions next year in terms of valve and actuator demand—industrial performance relative to our view in the previous report have exceeded expectations across all major countries, with Germany leading the way.

Jeremy Leonard and Noel Saraf are, respectively, Director of Global Industry Services and Senior Economist at Oxford Economics. The 2018 edition of the Global Valve and Actuator Market Outlook will be published at the end of March 2018.

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Mad Hatters

Bonomi Ups The Pace

This issue's sporting cap wearers are Dave Olney and Susan Sullivan of process valve and actuator specialist Bonomi, who recently competed in the Birmingham half marathon.

Their feat was part of an office-wide initiative aimed at increasing team building through fitness and whilst some other staff members were unfortunately forced to drop out due to injury, Dave and Susan gamely soldiered on, recording the respectable times of 2hrs 15 mins and 2hrs 16 mins respectively.

The duo only began running 18 months ago and by following a training plan they gradually extended the lengths of their runs, fitness and stamina. Says Internal Technical Manager Dave, *"there were times when it would have been easy to quit, but we kept the motivation going by constantly egging each other on."*

Cutting their teeth on the Birmingham 10K back in May, before joining some 10,000 other runners for the more demanding half marathon, the pair feel rightly proud of their achievement and have already signed up for the Birmingham 10K in May 2018.

Says Assistant Office Manager Susan: *"Getting over that finishing line makes all the aches, pains and blisters worth it. We hope to have more Bonomi runners joining us in our future races and of course our distributors and customers are more than welcome to join us too!"*

Hat Up!

If you've a charitable event planned, contact **rob@bvaa.org.uk.**

The BVAA will donate £50 to your charity if you submit a behatted photo for publication.

VMA President William Sandler Honoured for 40 Years of Service

Sandler Named *"Man for the Decades"* at VMA Annual Meeting

To commemorate a special anniversary, the board of directors of the Valve Manufacturers Association of America created a special award: "Man for the Decades." The recipient was none other than VMA President Bill Sandler, who received the award at a surprise ceremony in honor of Sandler's 40th anniversary working for VMA. The award was presented during VMA's Annual Meeting, Oct. 11-13, in Florida.

VMA 2016/17 Board Chairman Jim White of Curtiss-Wright presented the award to Sandler as an expression of VMA's gratitude for his four decades of tireless dedication to the association and its industry. Sandler is the longest-serving employee of VMA, and almost half of his time with the association has been as president.

White noted that throughout his tenure, Sandler *"has guided the VMA and its members through our always-changing valve industry and has continuously and honorably represented the organization, always working to provide VMA's members with the highest quality association services possible."*

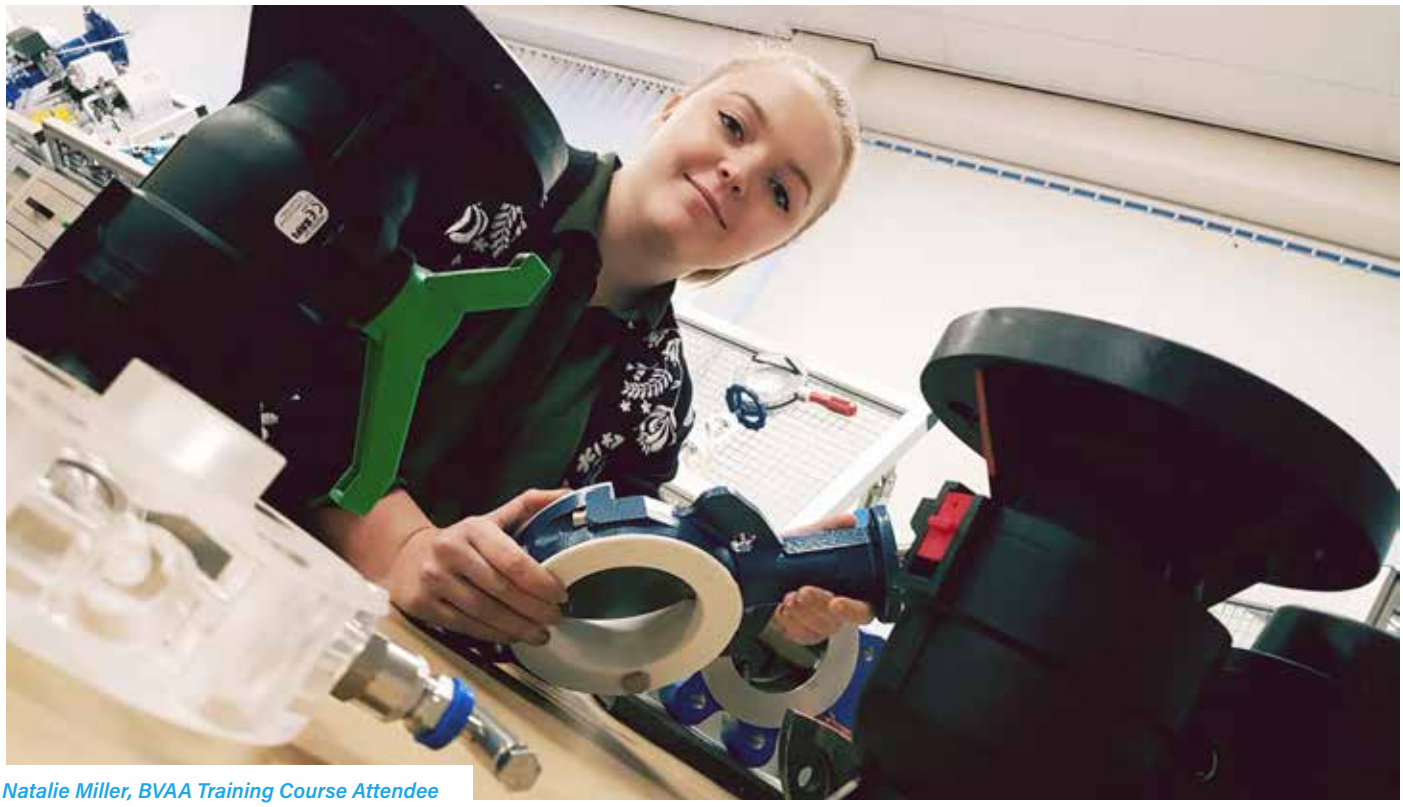
In addition to receiving an engraved crystal ice bucket, VMA staff presented Sandler with a special plaque commemorating an article that appeared in the Winter 2017 issue of VALVE Magazine about his long-time service to VMA. Sandler's wife Ellen also was recognized for her commitment to attending every annual meeting and for serving as a guiding force for the spouse events. Jim White organized the event and served as master of ceremonies at the presentation, which was held poolside at the Ritz-Carlton Amelia Island. Before the ceremony, White solicited numerous congratulatory messages from members and staff, who recorded their messages for a special video. The video was viewed throughout the evening at monitors placed around the pool.

"I am shocked and humbled to be honored in this way by the organization that has been so much a part of my life," Sandler said after the ceremony. *"But I'm also grateful to have had such a rewarding career in the valve industry, which is populated with an extraordinary group of people."* On a personal note, he added, *"Ellen and I have formed some deep relationships with members over the years and those friendships have meant as much to me as being recognized professionally."*

VMA President Bill Sandler was named "Man for the Decades." Here he poses with his awards and a 40th anniversary cake along with Ellen Sandler, who was also recognized.

PBM's Mark Nahorski (left) elected VMA Chairman

Is Training Trivial?



Natalie Miller, BVAA Training Course Attendee

Training days have always been one of the best ways to boost morale in the workplace, improve safety, develop employees, among many other benefits. *So why the hesitation?*

Budget, unfamiliarity, or uncertainty are key factors but I like to live by Mahatma Gandhi's famous quote *"Live as if you'll die tomorrow. Learn as if you'll live forever."*

My colleague and I joined the BVAA team within a few weeks of each other. Barbara, fitting the role of the brand-new Events Manager, having had oodles of experience in that area. Myself, taking up the role of Marketing Coordinator, with a background in customer service and graphic design.

Safe to say we knew nothing about valves or actuators, considering we are now part of the British Valve and Actuator Association. The voice of the valve and actuator industry.

So naturally our CEO enrolled us onto the 'Introduction to Valves' training course that the BVAA run in house, independently.

A one-day training course, where a leading professional expert, who *"wrote The Book"* about valves, enlightened us to the basics of valves, their components, usages (from a household tap to giant North Sea oil rigs) and their importance. Great for people like us, who are new to the industry. For more in-tune individuals, who have the introductory knowledge, the BVAA also host more in-depth courses, such as 'Valves – Advanced Level'.

In conclusion, I believe that training in general is not trivial. From my experience, I'd say that it was essential for employee development and contributing to business success. This training course is exactly as expressed on the tin. It's an introduction to the valve and actuator industry, with a warm environment, lots of physical examples framing the room, friendly and welcoming staff, ample of parking, and did I mention that lunch is included?

If I've sparked your curiosity, and you'd like to find out what other courses we have available, visit our website: www.bvaa.org.uk/training or call 01295 221 270.

*"**Live** as if you'll **die tomorrow.** **Learn** as if you'll live **forever.**"*
- Mahatma Ghandi

BVAA Courses Certified for CPD

Another benefit of enhancing your valve knowledge with the BVAA!

The CPD Certification Service recently assessed both our 'Introduction to Control Valves' and our 'Introduction to Safety Valves' courses.

They concluded that the content viz. learning value and structure conformed to their CPD guidelines and BVAA can now display the *'certified'* logo on all material relating to these resources.

BVAA's Karen Webb commented, *'Continuing Professional Development is a great way to track and document skills, knowledge and experience and we are delighted to have passed through this process so seamlessly. It is a testament to the quality and coverage of both courses, and we are now submitting further courses for assessment.'*

Details are included in BVAA's Member Directory profile on the website: www.cpduk.co.uk

See www.bvaa.org.uk/training for details of all BVAA courses (details also on page 5 in this issue).

BVAA New Members

Peter Park, General Manager at NeoNickel Kingswinford

Gareth Connor, UK Sales Manager at Langley Alloys

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BVAA's Technical Hot Spots

EN 15714-3:2009 Industrial valves - Actuators - Part 3: Pneumatic part-turn actuators for industrial valves - Basic requirements – Proposal to revise

What is it?:
This European Standard provides basic requirements for pneumatic part-turn valve actuators, both double acting and single acting, used for on-off and modulating control duties. It includes guidelines, recommendations and methods for enclosure and corrosion protection, control and testing. It does not apply to pneumatic actuators which are integral parts of control valves.

Why Is it Important?:
The proposed revision by Germany is to extend the existing connection sizes by the nominal sizes ¾" and 1" air connections. This is necessary to promote the development of larger solenoid valves or other sandwich attachments.

BS ISO 10631:2013 Metallic butterfly valves for general purposes – 5 Year Review

What is it?:
This International Standard specifies requirements for design, materials (e.g. steel, cast iron, ductile iron, copper alloy), pressure/temperature ratings and testing for butterfly valves having metallic bodies for use in general purpose flanged or butt welding piping systems.

This International Standard covers butterfly valves of the following nominal sizes, DN and NPS:
— DN 40; 50; 65; 80; 100; 125; 150; 200; 250; 300; 350; 400; 450; 500 (550); 600 (650); 700; 750; 800; 900; 1 000; 1 200; 1 400; 1 600; 1 800; 2 000; 2 200; 2 400.

This International Standard is applicable to butterfly valves of the following pressure designations, PN and Class:
— PN 2,5; PN 6; PN 10; PN 16; PN 25; PN 40;
— Class 125; 150; 300..

Why Is it Important?:
ISO 10631 was first published in 1994 and technically revised in 2013. BS EN 593:2018 which has an identical title will shortly be published. The scope of EN 593 has been amended to
a) Extend the dimensions to cover PN 2,5 to PN 160, Class 150 to Class 900 and DN 20 to DN 4 000;
b) Include single, double and triple eccentric designs.

BS EN 15389:2008 Industrial valves - Performance characteristics of thermoplastic valves when used as construction products - 5 Year Systematic Review

What is it?:
This European Standard specifies performance requirements and means for evaluation of conformity for valves of thermoplastic material, by reference to product standards, for use in building and civil engineering applications for the delivery of liquid and gaseous fluids. It also contains information required for the purposes of regulatory marking.

Why Is it Important?:
Thermoplastic valves in conformity with this European Standard should be considered suitable for drinking water applications. The standard is a harmonised standard to the Construction Products Directive. It was last revised in 2008. It is subject to the 5 year review.

ISO 28921-1:2013 Industrial valves — Isolating valves for low-temperature applications Part 1: Design, Manufacturing and Production Testing – 5 Year Review

What is it?:
This part of ISO 28921 specifies requirements for the design, dimensions, material, fabrication and production testing of isolating valves for low-temperature applications.

It applies to gate, globe, check, butterfly and ball valves and can be used for other valve types used in low temperature services.

This part of ISO 28921 covers isolation valves for use in cryogenic temperature service where the design low temperature service is −50 °C down to −196 °C.

It does not apply to valves for cryogenic services, designed in accordance with BS ISO 21011, used with cryogenic vessels.

Why Is it Important?:
ISO 28921-1 was published in 2013. Following a vote in CEN it has now been adopted in 2017 as an BS EN ISO without modification. The original ISO is subject to the 5 year review.

BS EN 13774:2013 Valves for gas distribution systems with maximum operating pressure less than or equal to 16 bar - Performance requirements - 5 Year Systematic Review

What is it?:
This European Standard deals with metal isolating valves used for gas distribution systems with maximum operating pressure up to 16 bar, and which operate with fuel gases of the first, the second and the third family, in accordance with EN 437. The types of isolating valves to be considered are: plug and ball valves, gate valves, globe valves and butterfly valves.

Why Is it Important?:
The standard was first published in 2003 and then extensively revised in 2013. It is subject to the 5 year review.

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Actuated Solutions Offers Widest Range of **APL Switchboxes** on Market

One of the **UK's** leading **valve automation** providers, **Actuated Solutions,** is announcing it now offers the **widest range** of genuine **APL switchboxes** on the market, and has even more **product developments** in the **pipeline.**

With six different APL switchboxes currently available - starting with the very competitive aluminium bodied APL2 and extending to the new high specification, ATEX approved APL7 Explosion Proof switchbox with integral solenoid valve - Actuated Solutions continues to offer the market a one-stop-shop for all valve automation projects; whatever the level of complexity.

Commonly used in the water, general process and oil and gas sectors, switchboxes are a cost-effective way to monitor the performance of actuated valves, to ensure they fully open and close as required. Should an actuator be incorrectly sized or, if over time, it starts to lose performance, or the valve torque increases, the switchbox offers an extra layer of safety by recognising when an actuator is struggling to open or close, before alerting the user via the control panel and preventing potentially major problems.

The APL switchbox is available with a wide range of options including stainless steel housing, explosion proof or intrinsically safe certification, along with many different switches and sensors. All switchboxes are designed and built to extremely high standards by leading Korean manufacturer, HKC, and are supplied with beacon indicators and stainless-steel Namur brackets as standard.

With the widest range available, new products in development and an extensive install base across the UK, Actuated Solutions' managing director, Paul Slaughter, believes the firm is in a strong position to offer both capability and continuity to businesses, whatever their current and future switchbox needs may be, but he also suggests a note of caution: *"We've noticed an increase in alternative entry-level switchbox products arriving in the UK from a variety of sources and, in many cases, they are labelled in a very similar way to the market leading APL product. This can be confusing, so we always advise customers to make sure they understand what they are buying because when you buy a genuine APL switchbox through Actuated Solutions, you're not just buying the switchbox, you're buying over 30 years' worth of experience in valve automation as well as expert advice and dedicated aftersales support.*

"Ultimately, if it doesn't say APL on the box, it isn't going to be an APL product inside."

To find out more about Actuated Solutions and the APL Switchbox range, please visit: http://www.actuated-solutions.co.uk/

Actuated Solutions Limited
VALVE AUTOMATION SPECIALISTS

Tel: 01243 827 469
Email: sales@actuated-solutions.co.uk
Web: www.actuated-solutions.co.uk

Electric-Actuated Subsea Regulator

Late last year we were **approached** by one of our **customers** who was struggling to find an **assembly solution** to their **deep sea application.**

They required full remote control of their subsea pressure regulator. Given the conditions at deep sea levels, it was essential that our solution was strong and capable of withstanding the corrosiveness of salt water and the high external pressures on the sea bed.

Our design team immediately got to work. The first task was to source an electric actuator that could remotely control our SS-690 subsea regulator at sea depths of up to 3,000m. Once sourced, we needed to adapt the regulator's adjusting mechanism to smoothly function with the actuator and transfer its rotary motion. The design concept required a bracket which would not only provide the housing for the coupling but also support the actuator and maintain the complete assembly in alignment.

The existing top works of the regulator was redesigned, enabling the remote control element of the customer's application – the regulator and actuator worked in perfect harmony. The final step of the challenge was to design the support bracket to keep the full assembly in alignment and provide the crucial link between the actuator and the regulator. This was achieved by careful and detailed analysis of the full assembly and precise in-house machining of the designed components.

At this point we had met the customer's brief, but we also wanted to prepare the assembly for the long-term; our products are built to a high specification which means they are built to last. Our design team wanted to ensure the assembly was also geared up for future servicing works. The new bracket enabled the independent removal of either the actuator or the regulator without disturbing the full assembly.

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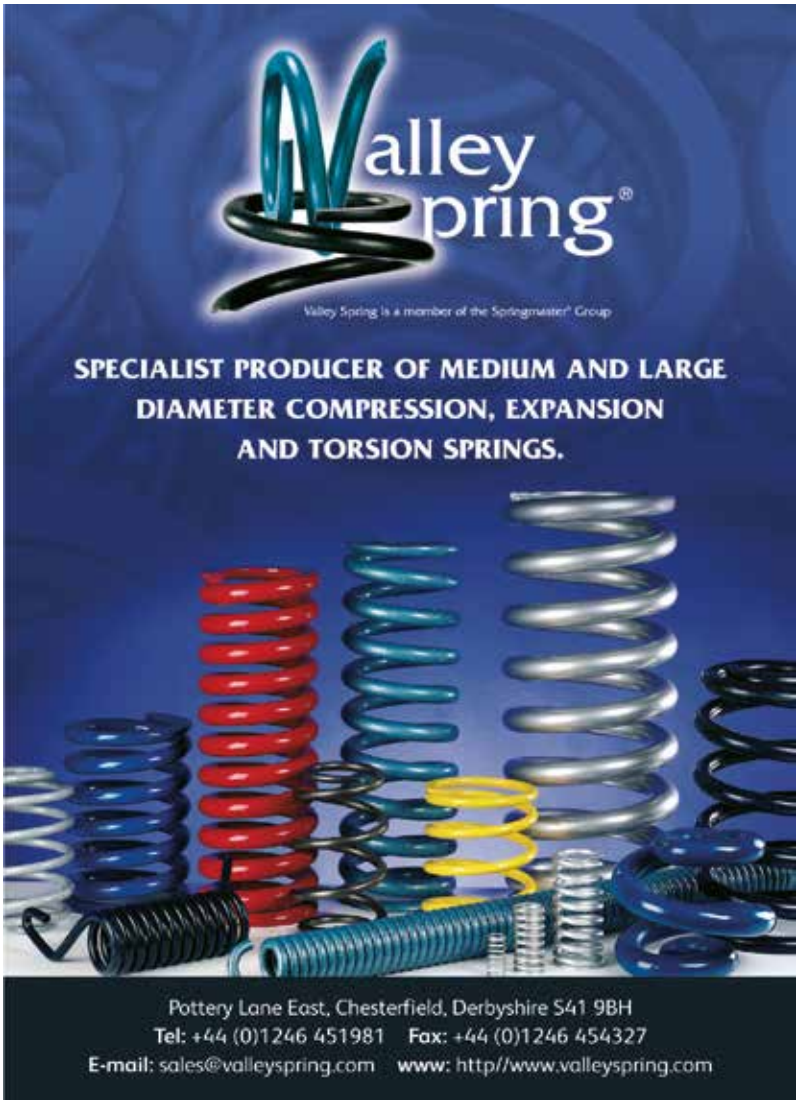
Cambrian take the Pain out of Valve Selection

Paul Matthews with Alun Hobbs



Cambrian Valves – part of the Great British Valve Group - has recently expanded in all aspects of its business.

The company has invested in an impressive new building in Baglan, Swansea. But they are also hiring new, highly skilled employees with a focus on full site service. The range of Cambrian services now on offer include the complete set of design, supply, fit and maintain.

Cambrian Valves was formed in the early 90's when a need was identified for a specialist distributor of bespoke and standard process valves, plus associated equipment.

With nearly 30 years' of trading and technical knowledge, Cambrian now supply and manage the assets of some of the UK's largest companies in the steel, water and power industries.

Over the years Cambrian have managed many projects that have been shipped worldwide. With their access to most major brands they can procure, assemble and test multi-valve packages in their well-equipped workshop.

They are ISO 9001:2008 registered, and in conjunction with their own QA procedures they guarantee their products and service.

Cambrian are able to attend site and lend their technical expertise to come up with a practical solution that suits their clients' needs. They are also able to identify obsolete process equipment and replace it with an up-to-date solution.

The company's impressive product portfolio includes ball, butterfly, triple offset valves, all types of electric, pneumatic and hydraulic actuators as well as gate, globe, control and check valves of all descriptions.

"... take the pain out of valve selection"

Cambrian take the pain out of valve selection and procurement by offering a 'One Stop Shop' for all valve requirements. Their speciality is multi-valve project packages, but can source for that difficult 'one off' application too.

THE GREAT BRITISH VALVE GROUP

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EnerMech Acquires MInteg

Left - Right
Standing - MInteg directors Patrick Gallagher, Colin R. Smith and John Bruce
Seated - EnerMech's CEO Doug Duguid and Integrated Maintenance and Integrity Director Stuart Smith

Engineering services group **EnerMech** has taken a majority stake in **Aberdeen-based maintenance, inspection** and **integrity specialist MInteg Ltd,** broadening international services as part of their growth strategy.

MInteg provides a range of specialist maintenance, integrity and inspection services to the oil and gas, renewables, utilities and other major process industries, and offers full IRATA certified rope access capability.

MInteg founder Colin Smith and highly experienced maintenance and integrity experts John Bruce and Patrick Gallagher – who recently joined MInteg from operator Apache North Sea – have relocated to EnerMech's Aberdeen headquarters and the business will continue to trade under the MInteg brand. MInteg currently have 45 staff and it is expected the workforce will double by the end of 2018.

The MInteg team brings with them a strong track-record in non-destructive testing, rope access services, integrity management, inspection services and rotating equipment maintenance, including gas turbines and compressors.

EnerMech said the investment, for an undisclosed sum, was part of an ongoing strategy to broaden its range of engineering services and to optimise support for late-life hydrocarbon assets by safely reducing costs and improving asset integrity.

Clients had indicated a requirement for integrity and inspection services and a broader maintenance capability and EnerMech had responded to that need.

EnerMech chief executive officer, Doug Duguid, said, *"MInteg is a highly complementary business to our existing service lines and their skillset broadens out the capability of the integrated services we can offer to the energy, utilities and infrastructure sectors.*

"Customers have indicated they would welcome an inspection and integrity offering as well as a wider maintenance offering which encompasses rotating machinery and the MInteg management team are one of the most experienced in the industry in this regard. With a focus on minimising costs for our clients while creating more cohesive and co-operative business models, this acquisition is consistent with our ambition to be recognised as the prominent provider of integrated services."

'The MInteg team brings with them a strong track-record in non-destructive testing, rope access services, integrity management, inspection services and rotating equipment maintenance, including gas turbines and compressors.'

Mr Duguid said MInteg was a *"highly scalable business"* and whilst the initial focus would be on the UK market, EnerMech would support its global ambitions by rolling out its services to existing clients in Africa, Australia and the US.

This is the second acquisition EnerMech has made in 2017 and follows on from the purchase in January of EPS Group which provides electrical and instrumentation services in Australia and the US.

EnerMech now has 3000 employees operating from 40 bases located throughout the UK, Europe, Africa, Asia, Australia, the Middle East and Caspian and the US. The company's 2016 turnover was £263 million which it expects to increase to £360 million in 2017 and show global profits of around £42 million.

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Safety For Your Plants

The **safety** and **reliability** of **technical processes** are of vital importance for companies in the **process industries**

Bulk materials and powders in sectors such as the chemical, pharmaceutical and food industries and others can be very dangerous. One spark – and the dust explodes. It is no surprise, then, that the topic of safety when handling bulk materials is at the top of the list of many companies. Festo has a wide product range and the necessary expertise for applications in which safety integrity level (SIL) or explosion protection is required.

Worldwide explosion protection

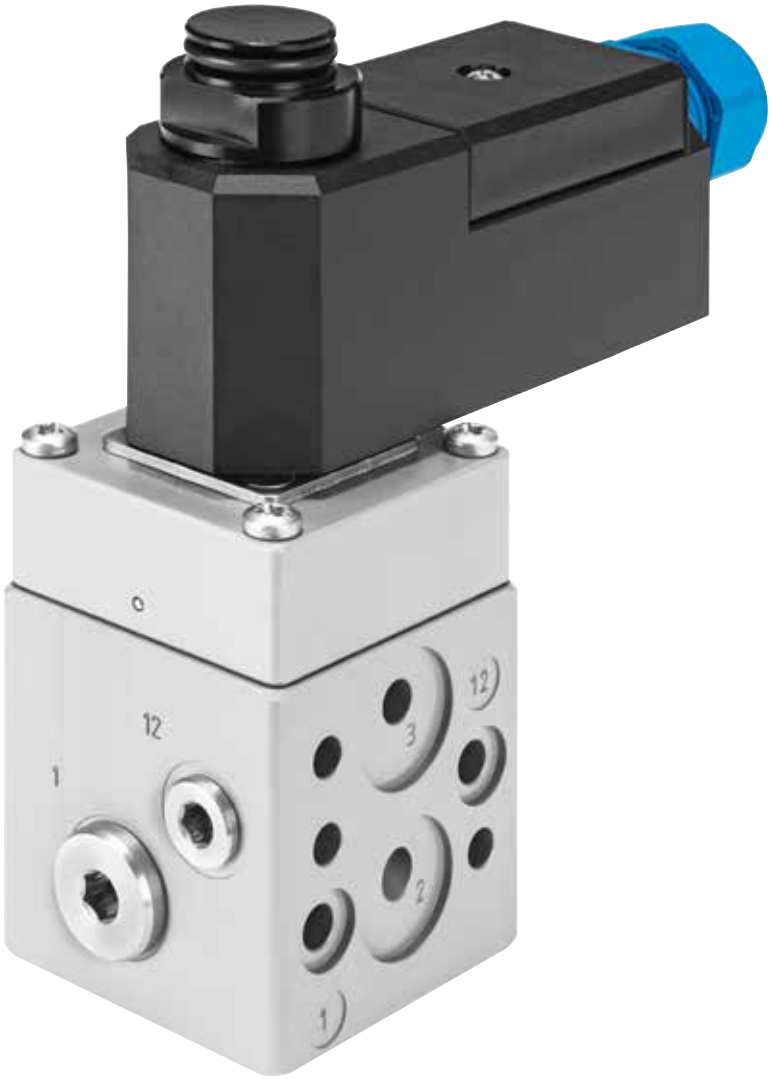
Festo offers comprehensive solutions for explosion protection according to the Explosion Protection Directives for Zones 1 and 21, as well as 2 and 22. Products from Festo such as linear and quarter turn actuators, cylinders, sensor boxes, pilot valves, valve terminals, remote I/O and accessories control and regulate the entire pneumatic and electrical control chain in potentially explosive areas. They have a wide application in handling powders and bulk materials.

Regulations, certifications and standards for explosion protection are available both internationally and regionally so that the required safety can be guaranteed. For all the above-mentioned products, Festo has the necessary international approvals according to ATEX, IEC Ex, Inmetro, TR CU, Nepsi and Kosha.

The right partner for functional safety

The safety integrity level (SIL) and the EC Machinery Directive are used, for example, to minimise risks in process-engineering systems. Safety functions reduce risks that could cause injury and damage to people, the environment and property. The safety integrity level (SIL) describes the extent to which risk is reduced to an acceptable level.

The possible spectrum of risks to be assumed for safety-related systems has four levels. Festo offers products and solutions for both low-demand applications, for example in refineries and high-demand applications in the food and pharmaceutical industries. This starts with the right selection of products for process valve automation like actuators and sensor boxes, continues with the necessary control concepts and pneumatic circuits in redundant control blocks in 1oo2, 2oo2 and 2oo3 designs and ends with separate control of the electrical components through safety PLCs.



Festo offers numerous products for safety-related systems, for example the pilot valve VOFC.

Documentation and verification made easy

Planners, machine builders and operators of processing systems must document the required risk minimisation in potentially hazardous system sections. Certified products make it much easier to verify the risk minimisation and provide safety during machine construction.

Festo products help achieve this as the certifications and manufacturer's declarations are available on the Festo Support Portal: www.festo.com/supportportal.

After entering the product type or parts number, you can access the available documents directly.

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LB Bentley Announce Enhanced Website

New Year - New Look with the launch of LB Bentley Ltd's upgraded website

LB Bentley Ltd were delighted to announce the launch of their new look website in January 2018, which contains updated information and downloads. As part of the Severn Glocon Group, LB Bentley specialise in the design and manufacture of small bore subsea valves and actuators, and medium and high-pressure filters and desiccant dryers. Being a global leader in delivering their range of products they pride theirselves in offering creative and innovative engineered solutions.

The website has been developed in-line with the Severn Glocon strong brand. It reflects the most up to date information and images, giving their customers an opportunity to see their full product range, innovative solutions, current news items, career opportunities and product downloads. Their customers are able to contact them through the website, reaching the relevant department who can deal with their enquiry quickly.

Take a look for yourself at www.lb-bentley.com

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Challenge of Monitoring Shut Down Valve Condition on Existing and Ageing Assets

Shut down valves perform a vital safety role on many process plants, both onshore and offshore.

They are designed and positioned such that, in the event of a potential problem, they operate to ensure the process is stopped in a way that prevents a hazardous event occurring. They are the 'Final Element' in any Safety Instrumented System.

In recent years and following on from incident analysis work done in this area, regulatory authorities such as the Health and Safety Executive in the UK, have taken a much greater interest in how plant operators are ensuring their shut down valves are in good health and thus complying with their legislative requirements. This has put pressure on plant operators to invest in various monitoring and diagnostic techniques (such as Partial Stroke Testing) that enable insight into the health of a shut down valve to be obtained.

For the operator that is installing a new piece of plant, designing and installing systems that enable meaningful monitoring and testing of shut down valves is relatively simple. The infrastructure to support the instrumentation requirements that performs tests and gathers information (cabling, power, Control Room software) can be specified early and included in the project design. However, for the operator of existing plant, the necessary infrastructure is often not available. Fitting the type of equipment typically used on new projects, such as smart positioners, intelligent solenoids, or sophisticated on-line valve monitoring systems, would involve considerable expenditure on new cabling, I/O and potentially control system upgrades. When the economic implications of the necessary infrastructure changes are analysed, it is often seen that the expense would be considerable and not possible to justify within the operational budget for the plant.

So what options are available to the operators of existing plants? Imtex Controls, a leading independent manufacturer of valve monitoring and communication solutions based in the UK has a solution. Imtex has developed a version of their highly versatile Valvescan VSD Valve Controller to provide a simple to retrofit, cost effective means of obtaining the type of information available on shut down valves installed on new projects without the need to modify existing plant infrastructure.

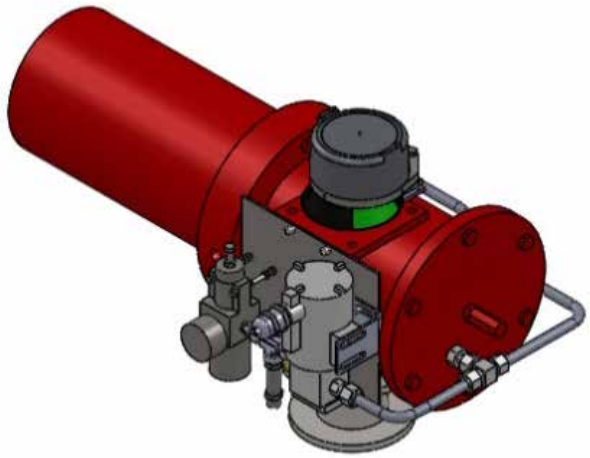
To fit the VSD Controller, the operator simply replaces the limit switch box that is typically installed on a shut down valve and 'back-wires' the solenoid that operates the valve actuator into the terminals within the VSD enclosure. Field wiring for the solenoid and limit switches are now terminated in the VSD enclosure. The VSD Controller is supplied with a wireless interface, typically Bluetooth or WirelessHART, and fitted with a specially designed power module that uses the power to the solenoid valve to power the diagnostic system within the unit.

The VSD Controller thus enables the operator to obtain two valuable pieces of functionality:

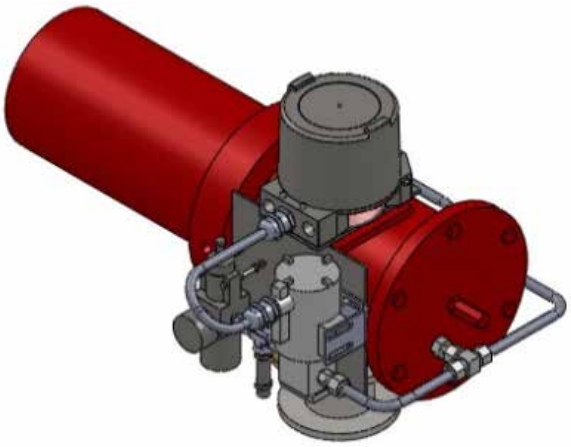
1. Data Capture during Valve Operation in the event of a Shut Down demand
   When the power to the solenoid on the actuator is removed as part of Shut Down Trip from the Plant Safety System, the VSD Controller power module maintains power to the diagnostic circuits in the unit so that the valve stroke signature can be recorded to the internal memory. Once the system is restored after the Shut Down Trip, the recorded data can be downloaded via the wireless communication system on the Controller and taken back for analysis and archiving in VSD Controller's diagnostic analysis software package, typically installed on a Control Room based PC.

2. On-line Valve Testing (such as Partial Stroke Testing)
   If desired, the operator can also run a scheduled on-line test regime using the described VSD Controller. Tests such as Partial Stroke Testing, Full Stroke Testing and Solenoid Valve Testing can be initiated either by a local control station connected into the DI/DO interfaces available in the VSD Controller or by the wireless communication system on the unit. Test results are stored within the VSD Controller memory and can then be downloaded wirelessly and taken back for analysis and archiving in the diagnostic analysis software package.

' The Valvescan VSD Valve Controller from Imtex Controls provides an elegant solution for monitoring the condition of Shut Down Vavles...'



Before: Actuator with limit switch box



After: Actuator with VSD controller

The Valvescan VSD Valve Controller from Imtex Controls provides an elegant solution for monitoring the condition of Shut Down Valves on existing plant that enables operators to meet the demands made of them by regulatory authorities without putting significant pressure on operational budgets.

For further details please contact Imtex Controls Ltd:
www.imtex-controls.com

VSD leaflet - imtex-controls.com/wp-content/uploads/2017/10/vsd-exd-leaflet-2p-1116.pdf

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Valve Corrosion - Why is this So Important when **Considering** The Choice of **Valve Packings**?

Corrosion is a huge problem in many industries around the world especially the oil and gas industry. Due to the use of dissimilar metals in valves, these can react when in contact with moisture but this can be exacerbated with seawater and subsequently they leak and fail due to Galvanic Corrosion. These valve leakages and failures come at a significant cost.

Usually the main reason for corrosion in a valve is when the metal has broken down or has been damaged through chemical reactions.

The corrosion we are familiar with is that which affects steel; the presence of oxygen in the air, with a bit of added moisture, is enough for something that is made from steel to begin the corrosion process, most of the time this is accelerated by other environmental factors.

Some locations are more prone by corrosion than others. This maybe because they are closer to the sea. But a harsh environment is not a requirement for Valves to start corroding, the most common type of corrosion in is in fact galvanic.

You cannot run from galvanic corrosion! But you can control or eliminate it by using the right material.

So, what is Galvanic Corrosion?

It's when two different metals are electrically coupled in the presence of an electrolyte (i.e., an electrically conductive fluid such as salt water), an electrical voltage or potential is developed between the two metals. This voltage will drive electrical current and will cause accelerated corrosion of one of the metals. The metal that exhibits accelerated corrosion is called the anode while the other is the cathode. The cathode is said to be more "noble" than the anode.

Packing selection

There are many seal suppliers who supply to the valve industry. Packings are made all around the world, but not all packings are the same.

There are packings that meet a commercial requirement and some that meet regulatory specification like ISO, API, TA Luft. The main difference is what they contain within the material. The cheaper the seals the more impurities are likely to be in the material and therefore they have a greater risk of galvanic corrosion and possibly premature failure.

In the compression packing industry, galvanic corrosion is commonly encountered when a valve is packed with a carbon and/or graphite packing set. Without corrosion inhibitors, the stem becomes an anode and may become corroded.

Things to consider with valves:

- Fugitive Emmissions; ISO 15848, API 1622-4
- Hydraulic Testing
- Chemical Compatibility
- Fire Test API 589 - API 607
- Mechanical Behaviour
- Other Directives ATEX - FDA
- **Corrosion; Elevated Temperature, Ambient Temperature**

TESTING for galvanic corrosion

Here at Latty we spend many hours testing valve packing for corrosion to ERD 2198A.

The corrosion can be controlled or eliminated by two main methods:
Active inhibitor (or sacrificial)

- Extensively used packing manufacturers
- In general zinc is used due to cost
- Zinc is more anodic than any of the steel variations. The corrosion attacks the zinc instead of the steel
- The active systems are sacrificial in nature, since the zinc is gradually consumed over a period. The steel of the stem and box will continue to remain protected if an adequate amount of zinc remains available to function as the sacrificial anode.

Passive inhibitor (Protective Coating):

- Inhibitor used by Latty,
- Passive inhibitor systems provide corrosion protection by building a film-type protective coating over the stem
- Once this film is formed, the electrical contact between the two dissimilar materials are broken and the corrosion reaction stops.

This inhibitor Guarantees an unlimited protection.

In Summary: Please give the same consideration to packing as you do to your valve material.

Tel: 01777 708 836
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New Pinch Valves From Festo Optimise Processes

The durable, energy efficient, easy to service, and flexible VZQA pinch valve

Festo's VZQA pinch valve gives reliable shut off

Festo's new pinch valves give **reliable shut off** and **smooth media flow** for **optimised processes**

Festo, the leading supplier of automation technology, has launched a new pneumatic pinch valve – the VZQA – which provides reliable control and shut off in food and drink production processes. The valves are durable, energy efficient, easy to service, and flexible, thanks to their simple construction, and as a result provide a cost-effective alternative to conventional valves such as diaphragm and ball valves.

Festo's VZQA pinch valves are a clean and technically straightforward solution for use with a wide range of media such as liquid, fibrous, particulates or granular substances. They provide smooth media flow and as such they are ideal for optimising filling and metering systems as well as for use with suction and compressed gas controls. In all applications, their compact design saves valuable installation space, which enables engineers to enhance the design of their process.

There are two versions of the pinch valve available: a normally open (N/O) version for media pressures from 0 – 4 bar and a unique, normally closed (N/C) version for media pressures from 0 – 6 bar. By increasing or decreasing the pilot pressure, the valve's sealing cartridge opens or shuts off the flow, as appropriate to the version, without any additional actuators and with no risk of blockage.

The VZQA pinch valve can be actuated with low operating pressures. Depending on the medium and media pressure, an operating pressure of just 0.3 – 1 bar is sufficient in filling and metering applications to tightly shut off the media flow.

The high-performance valves are extremely easy to service which enables food processing managers to save downtime and associated costs. The pinch valve's sealing cartridge can be changed in just a few minutes in four simple steps and without special tools, and they can be cleaned easily in situ thanks to their full media passage flow and very little dead space. The sealing cartridge is available in EPDM, NBR, EPDM-FPA and silicone to suit a wide range of demanding applications and media.

Made from aluminium or stainless steel, the pinch valves prove themselves in even the most challenging environments and the internal parts offer the same durability against aggressive media. Thanks to a patented sealing cartridge, the valves can withstand the very high demands in continuous daily operation, whether abrasive, corrosive, highly viscous or neutral media is used.

"The free flow design of the VZQA pinch valves minimises flow resistance, reliably preventing them from becoming blocked or clogged and since they are operated directly via the pilot air signal, they are extremely cost effective," says Steve Sands, product manager at Festo.

"The new valves are available with different connections, housing materials and sealing components for a wide variety of configuration options to suit individual application requirements."

For more information on the VZQA pinch valves, please visit:
www.festo.co.uk/vzqa

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Webtec Announces **New Distribution Partners** to Expand Focus on **China**

Webtec with the Weihei HHH Mech & Elec Cooperation Group teams following the signing the of distribution agreement.

From left to right - Kern Zhang, President of Loneking signing the agreement with Martin Cuthbert, Webtec's Managing Director

Webtec's Managing Director announced **new distribution agreements** at a technical conference in **China**

While presenting at a technical conference in China, Webtec's Managing Director, Martin Cuthbert and Huimin Zhang, Market Development Director, used the opportunity to announce two new distribution agreements in-line with the company's strategy to expand its current business in Asia.

The first of the new signings is Weihei HHH Mech & Elec Cooperation Group. Based in Shandong, the company specialises in power transmission and electric hydraulic control and provides research and design, testing and technical training services to its customers.

The second distribution partner announced is LoneKing, who are located in Shanghai. Again, the company was chosen for its expertise in the design, manufacture and service of hydraulic systems.

China offers exciting opportunities for Webtec and building a strong base for distribution to support Webtec's own team will enable the company to focus on core markets and expanding sales in this region.

Both of the new distributors were selected for their synergistic business models to Webtec and established business in the construction, agricultural, forestry, industrial and metallurgical markets.

Commenting on the new distribution agreements Huimin Zhang, Market Development Director, Webtec HK, commented, *"We are very pleased to have signed distributor agreements with both Weihei HHH and LoneKing as we see a very good match between their hydraulic system design expertise and the hydraulic measurement and controls products and custom solutions that Webtec offers. These partnerships will allow Webtec to help improve the productivity of off-road mobile machinery for manufacturers throughout China."*

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Langley Alloys Invest £1.5M in Stock

Langley Alloys have invested an extra **£1.5M** in **additional stock** at our **UK site,** meaning that we now hold a more **complete range** of **nickel alloys** to serve the **valve and actuator market.**

We are now able to offer a comprehensive stockholding of Alloys 625, 725, 825 and 925, complementing Alloy K-500 which has been a mainstay of our range for many years along with Alloy 718 (API). A full set of product datasheets are available, summarising the key properties of each alloy.

This investment is the latest stage of development at Langley Alloys. Other recent investments have included £250k for new Kasto saws, operating carbide blades necessary for processing such higher-strength nickel alloys, together with additional racking plus several new colleagues in both the Sales and Operations team. Whilst we have supplied a number of these alloys selectively to existing customers, the investment in additional stock now means that we have a more comprehensive range of sizes. This allows us to respond competitively to enquiries, including those for Alloy 725 and 925, which are much less commonly stocked and therefore harder to source.

Nickel alloys can offer enhanced corrosion resistance, toughness, strength at high and low temperatures, and useful magnetic, thermal and electronic properties compared with other metals. Due to their higher nickel content compared with stainless steels, they can be appreciably more expensive, but find uses in challenging applications from gas turbines to chemical plants and oil & gas industry components. Taken together with our outstanding range of super duplex stainless steels - including Ferralium® 255-SD50 - and our recently announced partnership with Sandvik as their preferred distribution partner of duplex stainless steels (Sanmac™ 2205 / SAF2507), this investment provides Langley Alloys with the wide-range of alloys in stock needed to support manufacturers of valve stems, seats and trim and actuator cylinders for application in the oil and gas market and chemical processing industries.

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Through our partnerships in the offshore oil and gas industry, Parker is helping its customers achieve a safer environment, while increasing productivity and profitability. This reflects Parker's commitment to solving the world's greatest engineering challenges.

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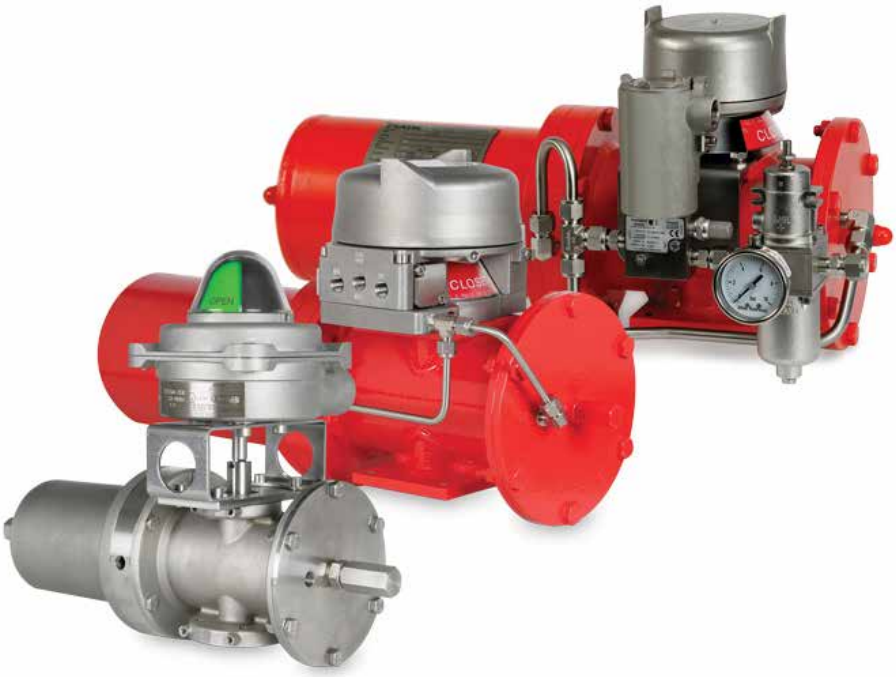
Trends in Pneumatic Spring Return Valve Actuator Selection



The demands for safety, efficiency and environmental responsibility from the oil, gas and energy industries have significantly impacted the selection of pneumatic valve actuator for quarter turn failsafe valves (ball, butterfly and plug) and dampers.

Actuator sizing depends on the various valve torque values, minimum supply pressure and actuator-valve safety margins / factors considered to cover the service life of a valve.

When sizing pneumatic actuators for fail-safe valves, torque safety factors can vary depending on project specifications. Valve torques can also vary from break to open and running end to close positions.

End users normally determine the valve safety factor during the design stage and valve manufacturers therefore, do not need to add extra contingencies. Generally, these safety margins are determined with the goal that the valve should operate smoothly throughout its service life, irrespective of the process condition.

Increasingly, the safety factor applied when coupled with the specified minimum sizing and normal supply pressure range for actuation selection, can result in selected actuator torques exceeding the maximum acceptable stem torque (MAST) specified by the valve manufacturer.

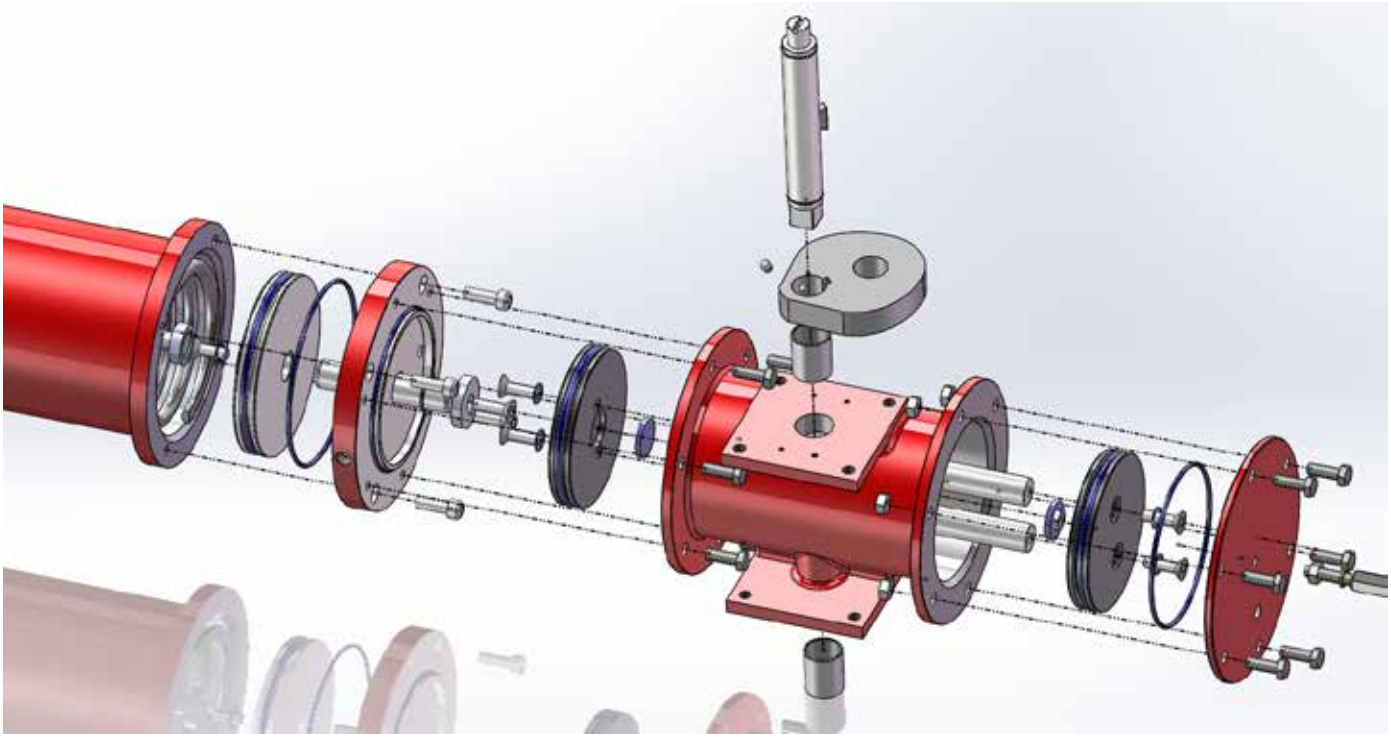
For example, in the oil and gas industry, three different application categories for safety margin are commonly designed for the on/off actuator valves:

1. General Duty like Process On/Off valves – the valve will have an actuator with a torque output of at least 1.3 times the operational torque requirement of the valve (+ 130% or x 1.3 safety)
2. Process Duty like Shut Down and Blow Down valves will have an actuator with a torque output of at least 1.5 times the operational torque requirement of the valve (+150% or x 1.5 times)
3. Safety Duty like Emergency Shut Down valves – the valve will have an actuator with a torque output of at least 2 times the operational torque requirement of the valve (200% or x 2 safety). Although, some operators go up to +250% or x 2.5 safety or higher!

Many valve producers are able to offer higher tensile strength stem materials for large ball and plug valves, which are used in many shut down applications in order to raise the MAST values.

However, this is not true for smaller ball valves (up to 50mm bore) when it can be challenging to source the stem material to take care of 200% or 250% safety factor requirements because of the limitations in the physical size or valve design.

In many applications where space limitation and structural load are on the of the most significant concerns i.e. offshore drilling platforms, FPSOs etc. many customers will use triple offset and / or high performance butterfly valves instead of ball and plug valves. However, in larger bore sizes, the smaller dimensions of these valves when compared with ball and plug valves results in stem sizes that are generally smaller and weaker.



The most commonly used actuators for automating on/off 90° valves utilise either the well proven rack and pinion or scotch yoke mechanisms.

- The rack and pinion type gives constant torque output throughout the stroke and is used for smaller sized valves.

- The scotch yoke type is effective for larger valves where a higher torque requirement is needed at the beginning of the stroke.

In the energy related industries, the scotch-yoke system is often preferred. However, due to the inherent design and torque curve characteristics of the design, it is not always the best choice when using spring return versions for fail safe applications where there are valve MAST issues to consider. For the spring direction of any pneumatic actuator, the spring size has to be large enough to ensure the end of the spring torque closes the valve with the specified safety margin built in.

With a conventional scotch-yoke actuator, the air side is not independent of the spring side. This means that during the air stroke, the actuator air cylinder not only has to be a large enough diameter to produce sufficient torque with the specified safety margin to break the valve from its seat, but it also has to overcome the spring force which increases as it moves from 0° (spring extended) position to 90° (spring compressed) position!

The result is a dimensionally large scotch-yoke actuator, producing extremely high break torques resulting in the maximum torque output from the actuator reaching or even exceeding the valve MAST value.

To overcome this problem when valve MAST issues occur, many customers are adopting an actuator design which utilises a unique cam mechanism working in conjunction with a self contained spring module.

This design offers two primary benefits;

1. The mathematically derived cam profile maintains a constant Moment Arm throughout the actuator stroke. This ensures a constant torque output is achieved for the full 90° travel of the actuator.

2. The self contained spring module operates independently from the cam mechanism during the air stroke. This is achieved using a secondary air piston sized solely to compress the spring. Thus, unlike many other spring return actuators where the torque is significantly reduced compared to its double acting version, the cam actuator has the same constant torque output for both double acting and spring return versions.

When using scotch-yoke actuators, it is common practice to include a pressure regulator in conjunction with a relief valve into the pneumatic circuit control system when faced with valve MAST issues. However, it is the inherent design of the cam principle actuator itself which enables plant operators to install automated valves that meet their design considerations reducing the risk of valve stem damage.

An added benefit exists in that the cam actuator is physically smaller than the comparable spring return scotch yoke actuator, allowing for space savings to be achieved across the plant and in turn less infrastructure and cost.

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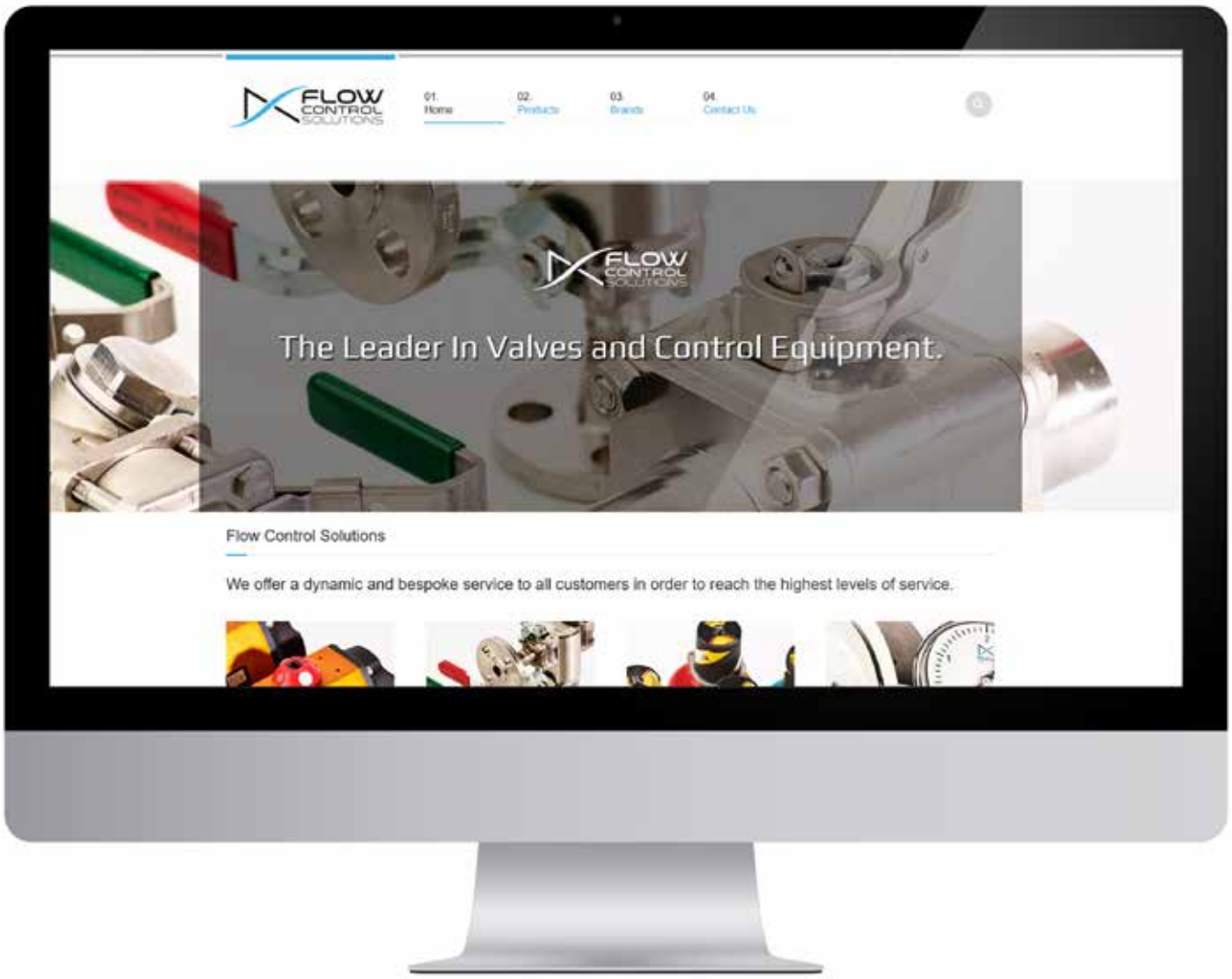
This is certainly the case with Flow Control Solutions Ltd (FCS) who are first choice to supply Flowserve's 'Worcester Controls' Cartridge Ball Valve range, and the 22 Series Double Block and Bleed product.

This top-line portfolio was recently further enhanced with the additional award of Flowserve preferred supply channel status for the 5 Series Ball Valves range, flanged and drilled to PN16/40 (to BS 5351).

FCS Operations Director Mike Walshe Flow noted, *'Flow Control Solutions was formed in 2004, and specialises in the supply of process valves, actuators and controls. Since then, we have developed excellent supply partnerships within the Pharmaceutical, Nuclear, Power Generation, Food and Drink, Chemical and Petrochemical markets. The superb relationships that FCS enjoys in meeting the needs of the major companies in these sectors has undoubtedly helped us become the preferred supply channel for these leading niche products too, and we have worked closely with Flowserve to ensure these are available from stock at our operation in Cheshire.'*



"We have worked closely with Flowserve to ensure niche products are available ex Stock."

Mike continued, *'Stock holding is a key factor for any distributor, but here at FCS we consider it of paramount importance. Stock is so pivotal to what we do and having strong partnership agreements helps us to ensure we profile the correct range, in suitable quantities to ensure our client base is always satisfied. Recent stock increases mean that we can now perform optimally in that regard.'*

Building on Success after Success

These latest developments come after a massively busy year for the company. There was an important re-branding of the company, complete with a new company logo. A new web site was also designed and launched, plus all the preparation work required for the increased stock holding. FCS also brought new products to market and added key people to the company's sales and distribution team.

But it doesn't stop there! New initiatives for the 2018/19 period include innovative purchasing methods, yet more new products and services, and the additional people necessary to make it happen including developing further FCS's technical capabilities.

Rob Meli Sales Director concluded, *'Our core business remains strong and all the signs indicate excellent growth for 2018/19. We are extremely proud of how FCS has developed and of our regular recognition as Flowserve's "distributor of the year."'*

FLOW CONTROL

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Emerson Completes Acquisition of Prosys Inc.

Deal adds **new software capabilities** to improve **plant performance** and brings **new technologies** to **Emerson's Operational Certainty™** initiative

Emerson announced earlier this year, that it has acquired ProSys Inc., a global supplier of software and services that increase production and safety for the chemical, oil and gas, pulp and paper, and refining industries. By building intuitive processes for plant operators, these solutions make everything from everyday operations to responding during abnormal situations easier.

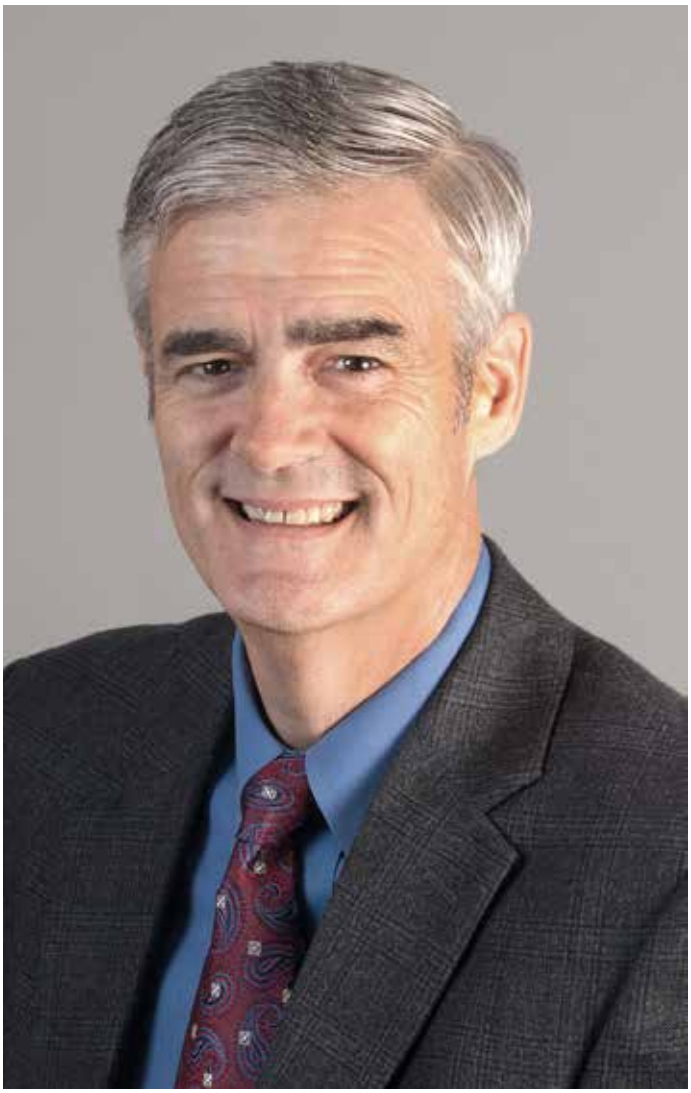
"Adding ProSys' differentiated technologies and expertise allows us to help our customers improve plant performance, safety and profitability by optimising their human and automation resources," said Mike Train, executive president, Emerson Automation Solutions. *"With ProSys, we can provide innovative control and operator performance capabilities to make control room operators far more effective."*

ProSys' portfolio includes solutions that help operators manage alarms critical to plant production and safety, and efficiently handle changing plant states. In addition, ProSys provides modern, high-performance and intuitive graphics for better operator communications.

"With ProSys, we can provide innovative control and operator performance capabilities to make control room operators far more effective."

ProSys complements Emerson's May 2017 acquisition of MYNAH Technologies, which provides dynamic simulation and operator training software. Together, these technologies embed expertise to help operators navigate plant systems safely and efficiently, and prepare customers to accommodate the changing state and age of the industrial workforce.

"*Our specialisation in software and services that increase operator performance builds on Emerson's market leadership in automation control systems,"* said Dustin Beebe, president and CEO at ProSys. *"By working together as one, we can provide even more operational and financial value to customers."* Beebe will join Emerson Automation Solutions as vice president, control and operator performance.



Mike Train, executive president, Emerson Automation Solutions

The ProSys software portfolio supports Emerson's Operational Certainty™ programme designed to help industrial companies achieve Top Quartile performance in areas of safety, reliability, and production.

Terms of the acquisition were not disclosed. For more information about ProSys Inc., visit www.prosys.com.

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Having Trouble Finding Valves For Refrigeration?

Seetru Limited offer a range of market solutions

The Seetru range of Safety Valves for refrigeration are designed to meet the needs of the refrigeration industry, offering safety valve technology for compressor manufacturers, industrial refrigeration, commercial refrigeration, ice making systems and air conditioning.

The valves are compact and designed with bonded sealing technology and the highest possible sealing performance to comply with most stringent environmental standards. Each valve is leak tested to better than 10-5 mbar litres/sec on Helium. This is equivalent to a leakage rate of less than 1oz in ten years. Suitable for operating temperature in the range -30 °C to +200 °C. View our range of Safety valves for refrigerant applications:
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Seetru Change-Over Valves - Used if a plant shutdown is impossible or undesirable, change-over valves allow for switching between parallel safety valves without interrupting operation. Maintenance work can then be carried out on each safety valve in turn. Available with a wide range of elastomers as standard, other seals are available on request. Flanged inlet connections are also available on request. For more info please contact Seetru.

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- G33 Reflex - Heavy Duty Reflex Gauge
- G35 Seemag - Magnetic Gauge.

We are able to supply our Refrigeration gauges with brass, mild steel or stainless steel end units with either P.T.F.E. or elastomer seals to suit the refrigerant.

Seetru liquid level gauges are primarily of two types, sight gauges and magnetic float by-pass gauges. Many of the gauges are direct reading though most have optional electronic remote reading systems and computer interfaces.

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Acquisition adds **Valves Value** for **EnerMech**

Left - Right
David Drysdale - Pipelines, Industrial and Process Services Director, EnerMech
Phil Bentley – Technical Director, EnerMech
Roy Wood – Managing Director, Denholm Valvecare Ltd

EnerMech is expanding its **valves division** with the **acquisition** of the **UK valves** business of **Denholm Valvecare (DV).**

The global integrated engineering services group has acquired the UK trade and assets of the valves division of family-owned Denholm Oilfield Services for an undisclosed sum.

EnerMech expects its UK valves business to generate around £7m revenue in 2018 following the deal, which will see all DV valves equipment, inventory and an estimated 25 staff transfer to the Aberdeen-headquartered business.

EnerMech chief executive officer, Doug Duguid, said: *"The opportunity arose to acquire a well-established valves business which will upscale our existing UK valves business and offer economies of scale.*

"Denholm Valvecare has a lengthy track record of success and enjoys many positive relationships in the industry. This deal adds value to existing clients of both businesses while giving us a strong platform to grow the service in the years ahead."

The acquisition will also bolster EnerMech's UK valves management team with the addition of a number of senior DV staff who are well-respected in the valves services sector.

EnerMech supplies a wide range of relief, isolation, control and general valves to the onshore and offshore energy industry and wider industrial services sector. A fully integrated valves service includes the procurement, specification, inspection, testing and quality control which minimises shut down and installation schedules without comprising on safety or quality.

> *"The opportunity arose to acquire a well-established valves business which will upscale our existing UK valves business and offer economies of scale."*

The deal follows on from EnerMech's acquisition last year of maintenance, inspection and integrity specialist Minteg Ltd and the purchase of Australian and US-based EPS Group which provides electrical and instrumentation services to major infrastructure and power projects.

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J+J Automation Launch New Website

Valve actuator specialists, **J+J Automation** has launched its **new website (jjautomation.com)** in the **US**, which has enabled the company to **enhance exports,** and within **four months** has already seen a rise in inquiries and sales for various industries.

Since the new website has gone live it has experienced an 8% rise in exports to over 70 countries, bringing the rate up to 40% of all sales throughout the year.

Most notably, the new website has enabled the company to expand its visibility across the US, with 32% of all exports now originating from the country.

In line with the new website J+J has also released a new actuator model that it claims is the most flexible actuator range on the market, a major advantage being that a single actuator auto-senses any supply voltage between 24V and 240V, AC or DC.

The company is also planning a website that will cater to the Chinese market later in 2018. Dave Chapman, director of J+J Automation said, *"We're pleased to be able to export our products around the world, especially in America where the user-friendly features of our actuators seem a perfect fit for their requirements.*

"J+J actuators are now a global brand with an annual production in excess of 50,000 actuators and we look forward to expanding our reach across the globe."

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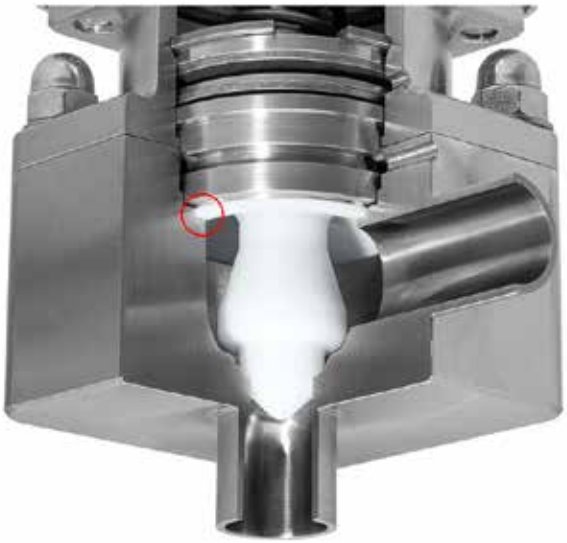
Standard version with stainless steel regulating cone



Detail of a 3A version, whose media wetted section is completely free of elastomers. Hermetic seal between the medium and the actuator via the PD diaphragm (see marks).

GEMÜ has invested in a new valve design for hygienic and aseptic control valve applications for small volume dosing in the pharmaceutical, biotechnology and food/beverage industries.

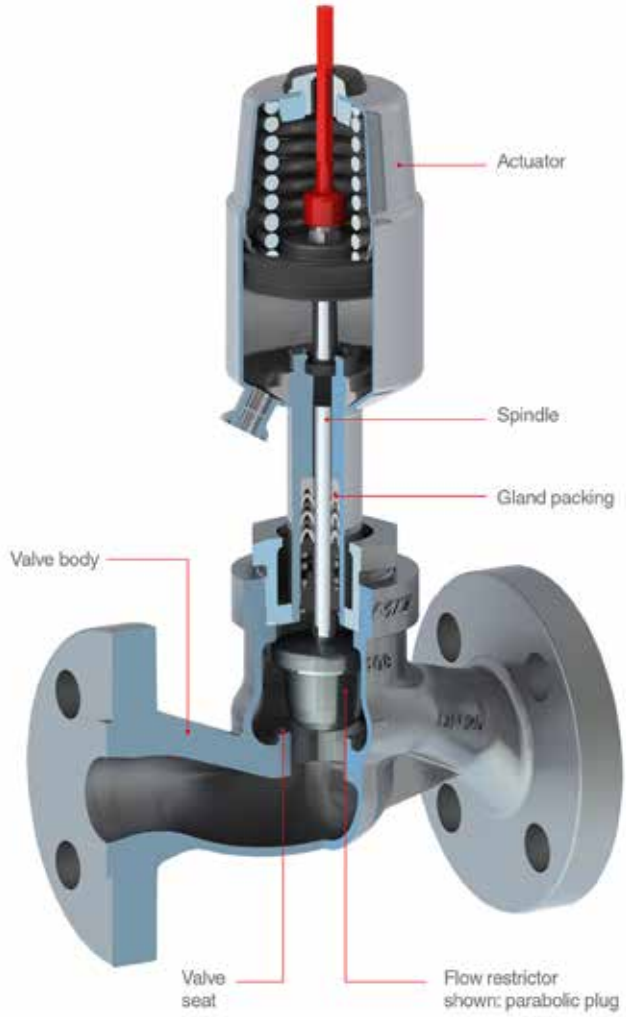
The requirements for aseptic/hygienic and operational safety in the pharmaceutical industry, the biotechnology industry and the foodstuff and beverage industries are becoming ever stricter as a result of increasing legal requirements such as the Food and Drug Administration (FDA) Regulation (EC) No. 1935/2004 or the Hazard Analysis and Critical Control Point (HACCP).

GEMÜ developed the PD (plug diaphragm) design as a way of meeting the legislator's requirements and catering to customer requirements associated. The design combines the advantages of proven diaphragm valve technology, which has always guaranteed hermetic separation of fluid from the operator, with excellent fluid control characteristics. With the PD design, a PTFE diaphragm has been developed that achieves the controllability of a globe valve and also fulfils the strictest purity requirements. When complying with specific control parameters, it is even possible to dispense with elastomers entirely.

To further improve the quality and purity of our own foodstuffs and medicines, in future all processes in the food and pharmaceutical industries will be controlled more effectively, while the purity and hygiene of the processes involved will be subject to stricter requirements. For example, aseptic valves are currently being deployed in sections of the pharmaceutical and foodstuff industries where no aseptic valves have previously been used. The improved cleaning and sterilization associated with this, as well as the smooth processing of the food ingredients / pharmaceutical active substances, result in our foodstuffs and medicines having both a longer shelf life and better quality.

When looking for a valve that is easy to clean and suitable for both CIP and SIP processes, a diaphragm valve is the first choice. Diaphragm valves can also be used for control applications, insofar as the desired flow rates are sufficient in a modified linear flow curve. However, diaphragm valves soon reach their limits when a fine batch is required or a large control range must be covered, as they do not offer any option for enabling a defined cross-sectional area. Although globe valves with flow restrictors are precise control valves, they are not aseptic. The effect of the valve spindle passing back and forth through seals means that medium is often transported into the gland packing area and no longer removed during system cleaning. This allows dirt particles to accumulate in this area and/or the multiplication of bacteria.

In order to avoid this, bellows made from PTFE or in stainless steel are often used as actuator seals. But with this design solution too, medium can be deposited between the bellows convolutions. Depending on the fineness and depth of the bellows, it is virtually impossible to clean the system adequately – particularly in sections of the bellows that do not see a great deal of flow. Cleaning problems can occur with bellows sealed valves, particularly with fibrous media or media containing pulp.



Globe valve structure

Low-flow zones on valves with bellows are difficult to clean and also increase the valve's dead space

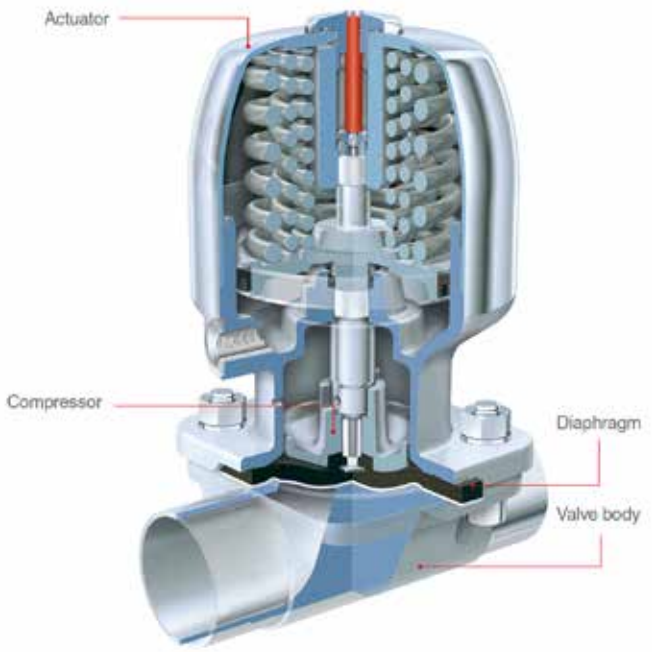
For the GEMÜ 567 BioStar® Aseptic Control Valve, a new solution approach was therefore adopted to achieve hermetic separation of the medium from the actuator, while simultaneously achieving excellent valve control characteristics. The separation of the area conveying the medium from the actuator was implemented through a newly developed PTFE diaphragm, while control is effected via a parabolic plug.

The basis for this was the GEMÜ PD (plug diaphragm) design. The benefits of the diaphragms and the angle valve body are associated with their cleanability and the cavity free geometry. This makes the valve a suitable control valve for aseptic areas and a very wide range of control applications. However, it can also be used in other sectors with strict demands on control accuracy and cleanability. As the GEMÜ 567 BioStar® control valve has been designed for use in aseptic applications, not only the elements which come into contact with the media, but also the valve body and actuator, are made of stainless steel or resistant high performance thermoplastics. The use of stainless steel also allows the outer surfaces to be cleaned using all standard cleaning agents.

In summary, the GEMÜ 567 BioStar® control valve offers the following benefits:

- Hermetic separation of the actuator from the medium flow
- Unique sealing concept via PD diaphragm (plug diaphragm)
- Diaphragm made of a PTFE second-generation material (TFMTM)
- Proven, reliable actuator design (GEMÜ 650 BioStar®)
- Linear and equal-percentage control characteristic options
- Regulating cone geometry can be adapted
- Suitable for CIP/SIP
- High-grade surface finish (standard 0.4 µm; optional 0.25 µm)
- No gland seal contamination
- Optional integration of a bypass function, e.g. for additional and higher flow rates

With the newly developed GEMÜ PD design, the GEMÜ 567 BioStar® Aseptic Control Valve allows small volumes to be regulated extremely accurately and under aseptic conditions from 80 l/h to 4,100 l/h for the pharmaceutical, biotechnology, food/beverage industries. Plant operators and plant designers can use this control valve to implement typical applications, such as dosing of gaseous and liquid media. The GEMÜ 567 BioStar® allows a very wide range of aseptic applications to be handled both generally or for filling processes, such as high-precision dosing and control of trace elements, additives, growth substances, flavourings or colourings, preparation of biocultures, pressure control for WFI systems, aseptic tanks and fermenters, conditioning solutions and pressure and flow controls. It can also be used in the manufacture of beverages, e.g. for the carbonation of beer, soft drinks and mineral water, as well as in the production of foodstuffs, such as in UHT systems, analyzers, inline mixing systems and high-gravity installations. In conclusion, it can be said that the GEMÜ 567 BioStar® control valve opens up countless opportunities and potential applications in the field of aseptic media control.



Diaphragm valve structure

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Using Valves or Actuators in SIL Applications

This edition of Valve User Magazine continues with the second article in the series about using valves or actuators in SIL applications. The articles are written by Paul Reeve who is the BVAA SILs course trainer and a member of the BVAA technical expert group (TEG) on SILs.

Don't forget, if you would like some in-depth training about SILs, specifically with valves and actuators in mind, consider attending the BVAA one-day SILs course coming up very soon in Banbury.

Here's a recap of the main points, terms and abbreviations from Part 1 (previous edition of VU Magazine):

- A ***'safety instrumented function' (SIF)*** is intended to provide a large amount of risk reduction in respect of a specific hazard
- The amount of risk reduction allocated to a SIF defines its ***'safety integrity level' (SIL)*** from SIL 1 (lowest requirement of risk reduction) to SIL 4 (highest requirement)
- The relevant standards are the ***BS EN 61508***-series (used by device manufacturers) and one of its derivatives ***BS EN 61511-1*** (for process industry ***'safety instrumented systems' - SIS***)
- A SIF is engineered from sensors (measuring pressure, flow, temperature, etc), logic solvers (such as PLCs, trip amplifiers, electrical relay logic, etc) and actuated final elements
- When it is required to act, the SIF must put the plant into a defined ***'safe state'***
- The safety instrumented system (SIS) that performs the SIF(s) should be detailed in a safety requirements specification and made available to those who are designing the SIS or bespoke parts of it (like actuated final elements)
- Each SIF (and its associated SIL) is determined prior to any detailed design of the physical safety system including its final elements
- The SIL is a measure of safety performance for the SIF in its specific application and is not a property of an individual device (like a valve or actuator)

Part 2: What properties need to be known about valves and actuators to enable their use in SIL applications?

Introduction to Part 2

Given the basic introduction in Part 1 of this series (see points above), the key task for manufacturers is to ascertain the functional safety properties of their device to determine whether it is suitable for use in a safety instrumented system (SIS) which performs safety functions at a required SIL (1 to 4).

Figure 1 shows that designing a SIS and verifying its SIL(s) is normally done by the system designer (typically a systems integrator or engineering company) – the middle box in the diagram. The organisation should already know the required safety function(s) and associated SIL(s) in order to design the system properly (from the information flowing "top down" in the diagram).

During system realisation, the designer must select suitable devices based on the manufacturers' product specifications (from the information flowing "bottom up" in the diagram). For this article we shall assume that this is the case and that the valves/actuators are either mass-produced items or based on a standard product.

It is important to realise that in the model shown in Figure 1, the valve/actuator manufacturers often don't know the safety application (i.e., the SIF and its SIL, shown in the centre box in Figure 1) that their products are going into.

Without this knowledge the manufacturer cannot say whether a SIL (1 to 4) can be achieved. However, the manufacturer can and should state the functional safety properties for their device; some properties will place a limit on the achievable SIL regardless of what other devices are used; some properties may limit the SIL depending on the other devices used.

Many manufacturers summarise this as a "SIL capability" (1 to 4). This S should probably be understood as a provisional indicator of what SIL might be achievable (like a best-case scenario with caveats).

The important thing to remember is that BS EN 61508 does not assign a SIL to a single element in the system, it applies to the overall SIF which is engineered from the sensor, logic and final element subsystems containing their respective elements (which can also be used in a voting arrangement to achieve a higher SIL).

For the purpose of this article we shall mainly concern ourselves with final element devices.

How can the system and its elements fail?

The functional safety properties for a device are concerned with how the product can fail to perform its specified function(s). Functional failures can occur for many different reasons, but broadly speaking, they can be divided into two main categories:

1. Failures that occur due to degradation mechanisms in the constituent components that take effect over time. Experience shows that for a very large number of a given component, observing the occurrence of these apparently random failures over an extended time indicates a reasonably constant 'failure rate' which can be measured using statistical methods. With knowledge of the failure data for all the components in a product, it is possible by analysis to determine the failure modes and rates of the assembled product. These types of failures are known as *random hardware failures* or *probabilistic failures.*
2. Failures that occur due to poor design or process (including documentation errors). Examples of these are design faults not identified by verification (e.g., testing), intolerance to the installed environment, programming mistakes, manufacturing defects, specification errors, calibration errors, human error, etc. Unlike random hardware failures, these failure types do not occur in a probabilistic manner and so cannot

be analysed using statistical methods. (In fact, these failure types can also be introduced at any stage in the product's life including operation, not just during design and manufacture). Rather than being a random effect, these failures will affect every unit in the same way (because the causes and effects are systematic) and so they are referred to as ***systematic failures.***

Because the two failure categories above are fundamentally different, they need to be addressed and parameterised differently. The rest of this article focuses briefly on each one and the associated functional safety properties that need to be determined before the product can be qualified for use in a safety instrumented system.

Random hardware failures

These failures can be quantified using an appropriate analytical method. Methods such as failure modes and effects analysis (FMEA) can be used to explore how each component failure mode effects the overall unit function, i.e., how the failure is manifest in terms of the unit's output behaviour (switch contacts stuck closed, no signal output, fail to move to the closed position, etc), and for each mode of failure, a failure rate can be obtained. Furthermore, knowing how the device is used in the overall safety function (i.e., with knowledge of the safety application – see Figure 1) each failure mode can be classified as 'safe' or 'dangerous'. Although these failure modes and rates are inherent to the hardware design, the use of designed-in diagnostics and external testing can reveal faults if/when they occur so that action can be taken to maintain the safe state of the process plant.

Random hardware failures are quantified and given the Greek symbol lambda (λ). Units can vary, but typically a λ-value is in failures per hour (index or scientific notation is used) or failures per 1,000 million hours, known as 'failures in time' (FIT). Component failure rates are summed in the analysis according to their effect on the output behaviour of the product (typically one or two dominant failure mode descriptions, or classified as 'safe', 'dangerous-undiagnosed', 'dangerous diagnosed', etc, if the safety application is known or can be assumed). This produces the following failure rate properties:

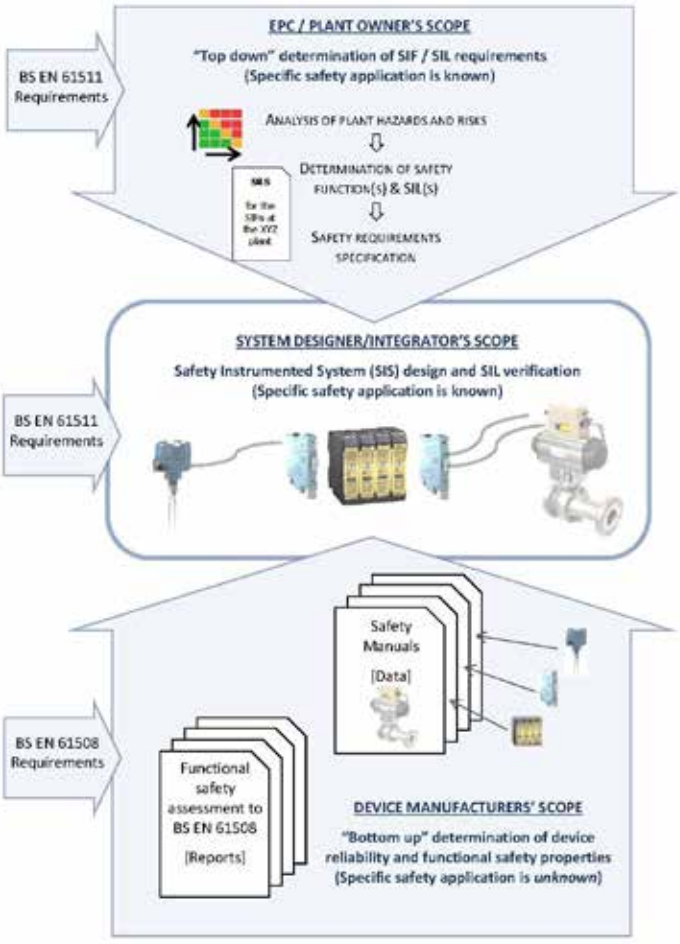


Figure 1: Relationship between SIL and functional safety properties of devices

Symbol	Property	Definition	Notes
λ	Failure	A general failure rate quantity; assumed to be the sum of all failures (if no other contextual information is given)	1
λ_D	Dangerous failure	A failure that prevents, or decreases the probability of, a safety function operating correctly	2, 7
λ_{DU}	Dangerous undiagnosed failure	As definition for λ_D but for those dangerous failures that are not diagnosed by designed-in diagnostics	2, 7
λ_{DD}	Dangerous diagnosed failure	As definition for λ_D but for those dangerous failures that are diagnosed by designed-in diagnostics	2, 7
λ_S	Safe failure	A failure that results in, or increases the probability of, the spurious operation of the safety function	3, 7
λ_{NP}	No part failure	A failure of a component that plays no part in implementing the safety function	4
SFF	Safe failure fraction	The (relative) proportion of all failures (except λNP) that are safe or, dangerous but can be rendered safe by diagnostics	5, 6, 7
DC	Diagnostic coverage	The (relative) proportion of dangerous failures that are diagnosed	6, 7

Using Valves or Actuators in SIL Applications

Notes to the table above:

1. The quantity for λ is subdivided: $\lambda = \lambda_D + \lambda_S + \lambda_{NP}$
2. The quantity for λ_D can be further subdivided: $\lambda_D = \lambda_{DU} + \lambda_{DD}$ (if diagnostics are designed-in)
3. The quantity for λ_S can also be further subdivided: $\lambda_S = \lambda_{SU} + \lambda_{SD}$ (often not generally required)
4. λ_{NP} is identified during analysis so it can be removed from the SFF and DC figures
4. SFF = $(\lambda_S + \lambda_{DD}) / (\lambda_S + \lambda_{DD} + \lambda_{DU})$
5. DC = λ_{DD} / λ_D
6. Classification of this failure type and its quantity requires the safety application to be known or assumed (see Figure 1)

Once the random hardware-related properties (described above) of all the devices in a SIS (or the 'final element' subsystem of the SIS) are determined for the safety application, the average probability of failure on demand (PFD_{AVG}) for a 'low demand' safety function can be calculated. (Most SIFs in the process industry are 'low demand'). The calculation requires a figure for the mean time to repair (MTTR) and the proof test interval (T_1) (both are typically assumed in the first instance, for illustration). For a single channel SIS (no redundancy), the simplified equation is:

$$PFD_{AVG} = \frac{\lambda_{DU} T_1}{2} + \lambda_{DD} MTTR$$

The PFD_{AVG} is usually calculated for each subsystem function (sensor, logic solver, final element) and then summed to obtain the PFD_{AVG} for the overall safety instrumented function. The result can then be compared with the table from BS EN 61508-1 table 2 (see previous article) to establish what SIL is achieved. Note, the SIL also requires a suitable architecture (covered next time) and the 'systematic capability' number to at least equal the SIL (explained below).

Safety Integrity Level (SIL)	Average probability of a dangerous failure on demand (PFD_{AVG}) for a low demand safety function
SIL 4	$\geq 10^{-5}$ to $< 10^{-4}$
SIL 3	$\geq 10^{-4}$ to $< 10^{-3}$
SIL 2	$\geq 10^{-3}$ to $< 10^{-2}$
SIL 1	$\geq 10^{-2}$ to $< 10^{-1}$

Systematic failures

These failures do not lend themselves to being quantified with a rate, but their introduction needs to be avoided or their effects controlled in some way. This comes down to a careful, systematic and suitably rigorous approach to the specification, design, development, testing and manufacturing process for the product. Greater rigour in the methods used leads to a greater integrity against systematic failures. The techniques and measures to be used for systematic design integrity are defined in BS EN 61508-2. Use of the right groups of techniques and measures will define a product as having a *Systematic Capability* (i.e., a built-in defence against these systematic failures), classified as SC 1, 2, 3 or 4. The SC number relates directly to the suitability of the product in safety functions with SIL 1, 2, 3 or 4 respectively (as far as systematic integrity is concerned). This is shown diagrammatically in Figure 2.

Designing safety instrumented functions (SIFs) using functional safety device properties

It is essential that the system designer / integrator uses each product vendor's failure data in accordance with what the device does in relation to the safety instrumented function (SIF). For example, if the vendor's data is for a valve to fail to move to its closed position, then the data for this failure mode should not be used for a safety application that requires the valve to open.

The functional safety parameters and all related information (conditions, assumptions, restrictions in use) should be contained in the product vendors safety manual and should be made available to SIS designers/integrators. The product safety manual is a mandatory requirement for devices that comply with BS EN 61508.

The way that the functional safety properties for each device are used to create a SIF and verify its SIL is the main subject of the next article. You can also get more information on SILs in the *BVAA Guidelines for suppliers of SIL capable products: www.bvaa.org.uk/news/2056/new-guidelines-for-suppliers-of-sil-capable-products*

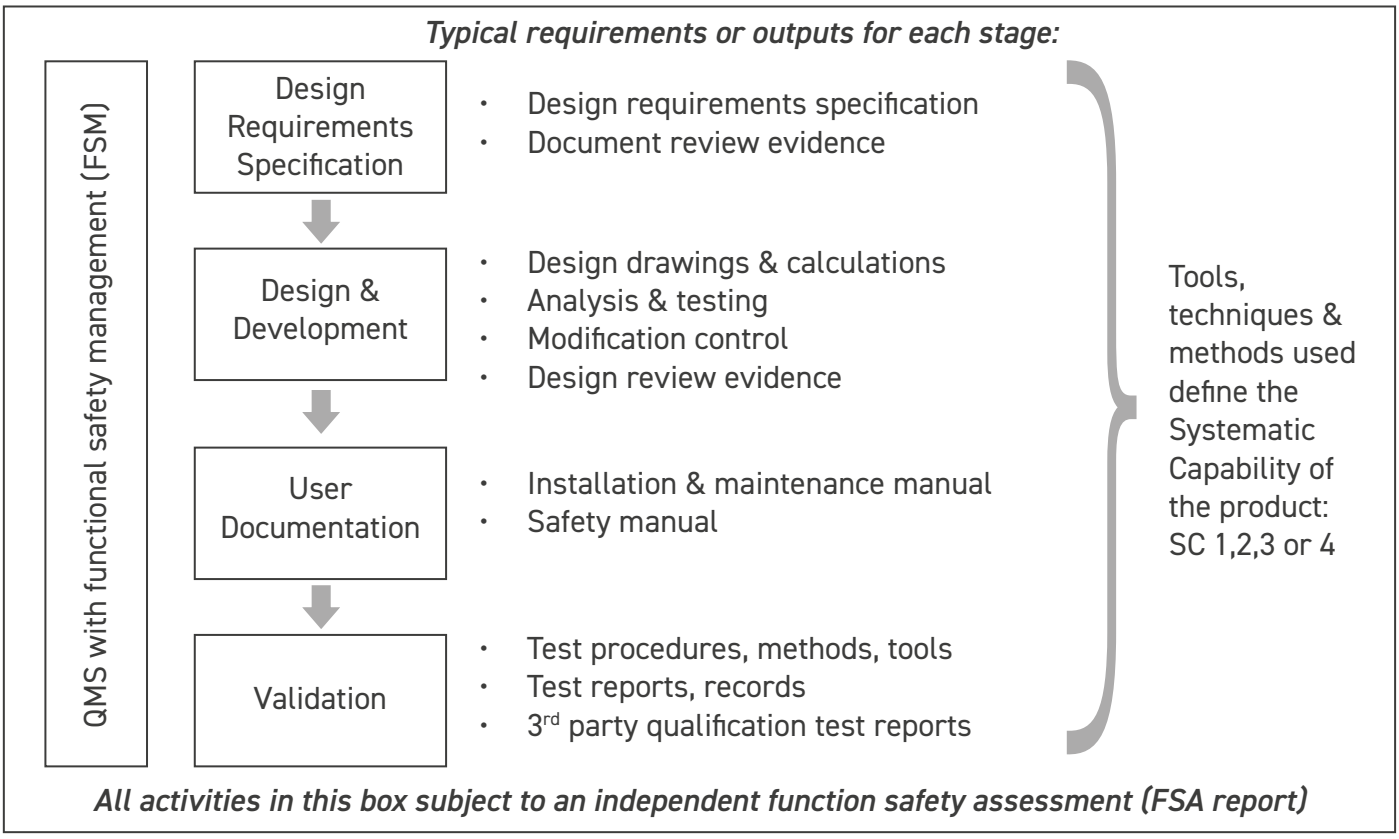
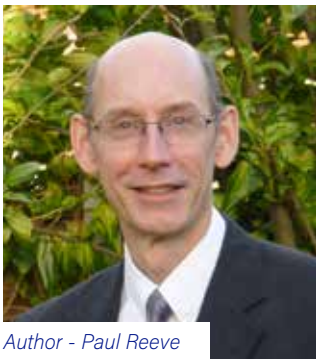


Figure 2: Requirements (simplified) to determine the 'Systematic Capability' property

Summary of the main points in this article

- Safety requirements for the SIF(s) and their SIL(s) flow "top down" from a process hazard and risk analysis
- Valve and actuator manufacturers need to determine the "functional safety properties" of their devices (together with any conditions and restrictions in safety applications) from a "bottom up" analysis of the device's reliability and integrity
- Some device (element) properties will place a limit on the achievable SIL *regardless* of the other devices used in the system; some properties may limit the SIL *depending* on the other devices used
- The *SIL* is not a property of a single device in the system, *it applies to the overall SIF* which is engineered from the sensor(s), logic and final element subsystems
- Devices have *random hardware failures* which, with knowledge of a particular safety application, can be divided into safe and dangerous failure modes and quantified with failure rates
- Devices are also designed with defences against systematic failures; the methods used determine the element's *systematic capability* (assigned SC 1, 2, 3 or 4) which will limit the SIF they are used in to SIL 1, 2, 3 or 4 respectively
- Safety system designers must use each product vendor's failure data (presented in the safety manual) in accordance with how the device contributes to the safety instrumented function (SIF)
- Safety system designers use the elemental functional safety properties according to the reliability model of the SIF they are designing (using the appropriate calculation) to establish the PFD_{AVG} figure and hence achieve the required SIL – this area will be covered in the next article

'Don't forget, if you would like some in-depth training about SILs, specifically with valves and actuators in mind, consider attending the BVAA one-day SILs course coming up very soon in Banbury.'



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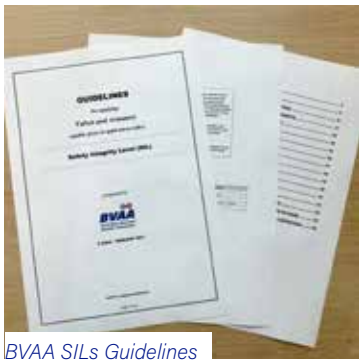

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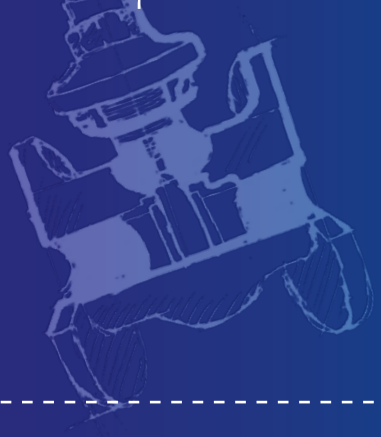
Control Valves *(CPD Accredited)* | *Wednesday, 4th July*
Safety Valves *(CPD Accredited)* | *Thursday, 5th July*
Valves Advanced Level | *Monday, 9th ~ 10th July*
PED/ATEX Directives | *Wednesday, 11th July*
Safety Integrity Levels (SILs) | *Thursday, 12th July*



Autumn | 2018

Introduction to Valves | *Monday, 1st October*
Introduction to Valve Actuators | *Tuesday, 2nd October*
Control Valves *(CPD Accredited)* | *Wednesday, 3rd October*
Safety Valves *(CPD Accredited)* | *Thursday, 4th October*
Valves Advanced Level | *Monday, 8th~9th October*
Safety Integrity Levels (SILs) | *Wednesday, 10th October*
PED/ATEX Directives | *Thursday, 11th October*

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BVAA

NEW Process Valves & Actuation Catalogue from Hydravalve (UK)

The comprehensive 600+ page catalogue showcases renown **European** and **worldwide brands** and **new product lines.**

The new additions from Haitima include the FW range of stainless steel 1, 2 and 3 piece ball valves and the 2013KMDR reduced bore 3 piece firesafe approved ball valve available in both carbon and stainless steel. Further additions include high performance butterfly valves, cast iron ball valves, class 800 gate, globe and check valves, bronze PN25 rated lift check, globe, gate and y-strainers and fire protection valves. The catalogue also includes flange tables, comparison of steam traps – advantages and disadvantages of each, technical information and conversion tables.

Hydravalve's actuation section contains over 250 pages of electric/pneumatic actuators, actuated valves and accessories from brands such as Haitima, HUK Valves, J+J, Morc and Prisma. The full range of Prisma pneumatic actuators are available in 90 and 180 degree operation in aluminium and stainless steel.

A polyamide body is also available in a 90 degree operation. All Prisma actuators are ATEX EXII2GDc certified and SIL rated. Recently added into stock are the full range of YTC products which includes electro-pneumatic positioners, volume boosters, lock-up valves and snap acting relays.

To support the user, a visual logo of ATEX, Firesafe, DNV, SIL, WRAS, UL Listed and Bureau Veritas have been introduced to allow easy identification of products that include any certification. Furthermore, to aid navigation through the 600+ catalogue, Hydravalve have included related product adverts and a wide-ranging index.

You may have already seen from previous news, Hydravalve have recently launched a full selection of steam products. Inside the catalogue, the steam product will be in section 3 where the range of products are isolating valves, actuated valves, check & safety valves, pressure reducing valves, steam traps, filtration and ancillaries.

During 2018, Hydravalve will be seeking to extend to their ever-growing product range. Due to this a product overview brochure of new products will be released later in the year to accompany the catalogue.

'Hydravalve's actuation section contains over 250 pages of electric/pneumatic actuators, actuated valves and accessories from brands such as Haitima, HUK Valves, J+J, Morc and Prisma. '

To request a copy of the new catalogue please email: marketing@hydravalve.co.uk or contact our sales team on 01902 637263. Alternatively, request your copy online using the link here: www.hydravalve.co.uk/contact

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Bonomi Growth Leads to Opening of New UK Actuation Centre

Process valve and **actuator** specialist **Bonomi** has consolidated its recent growth in the **UK marketplace** by **expanding** its **actuated valve workshop** and **warehouse facilities.**

The company has invested in a new 360m² unit just 3 miles from its Nuneaton base, more than doubling its current pallet racking space. This new location will be known as The Bonomi Automation Centre.

The extra capacity will provide an opportunity to expand Bonomi's hugely successful actuated valve assembly service in line with continuing growth; with additional storage space supporting the rapid delivery service for which the company is renowned.

Comments Bonomi's UK's sales director Jason Hill: *"The new unit has been custom designed to facilitate the speedy processing of orders, further streamlining what is already a highly efficient service. The move is timely given the ever increasing demand for our products and services."*

Bonomi's UK technical support office and sales office will remain at the company's main building, located at The Fluid Power Centre, whilst the space freed up by the move will allow greater efficiencies to be achieved in the company's central warehouse facility.

"The new unit has been custom designed to facilitate the speedy processing of orders, further streamlining what is already a highly efficient service."

Bonomi's UK operation has gone from strength to strength in recent years, with increased sales and the establishment of a dedicated Oil & Gas Division. Further afield, the Bonomi Group has recently opened a futuristic new manufacturing plant that combines operational efficiency with reduced environmental impact and is amongst the most advanced of its kind in the world.

Jason Hill concludes: *"This is a very exciting time at Bonomi UK as the infrastructure is now in place to facilitate continued growth. Growth that will be fuelled by our customer focused culture which is nurtured throughout the organisation."*

BONOMI GROUP

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BVAA

The British Valve & Actuator Association

For 80 years, the BVAA has been representing the interests of over 200 British companies that contribute to the valve and actuator industry.

Events

We host a number of events throughout the year, including conferences, exhibitions and golfing events.

Training

We run a variety of independent training courses, taught by professional experts.

Networking

We aid our members in expanding their networks, hosting regional dinners, etc.

Valve User Magazine

We publish the only valve and actuator-focused magazine in the UK, and exclusively allow members to contribute editorial free of charge.

Friendly Team

Here at the BVAA, we have a small, dedicated team, who work tirelessly to meet your needs and expectations.

If your company is associated with the valve & Actuator industry, and you're interested or curious about becoming a member. Please visit our website for more details.

www.bvaa.org.uk

SCAN ME

AVA Actuators Continues its Growth & Development with New Partners around the Globe

AV Actuators has had another year of growth and development of its range of quarter turn electric actuators.

The company has now had success in various countries, some of which were contacts made during the Valve World show where the product was officially launched back in 2016. Following the Valve World show, new distributors have been appointed in countries including South Korea, Russia, USA and Canada, Ireland and Netherlands. In addition to this the AVA electric actuators are being specified up and down the country here in the UK and Ireland.

AVA actuators have solved problems for many customers in various applications, with the most uptake in the product being with OEMs. For years electric actuators haven't been small enough, quick enough or at a price level that allows them to be sold in volume with the features that the AVA has. With thousands of AVAs now sold around the globe, AVA continues to grow and through its growth will come product development.

AVA will now concentrate on what it believes will complete its range of actuators. Having worked to develop the 60-110Nm series, the next development will be in a 200-400Nm actuator with the same design and features as the 20, 60 and 110. This includes, Smart and Basic series with the Smart series offering our unique OLED screen and menu system, brushless motor and digital encoder control system. Functionality will include on off, failsafe, modulating, speed control, bus communication and wireless control.

In addition to this, AVA are also looking to release their first ATEX approved, EXD Zone 1-2 electric actuator with the 20Nm ATEX actuator to be available Q2 2018. This will be available as on off, failsafe, modulating, BUS and speed control. The biggest demand AVA have had for ATEX approved actuators and will develop the range to have the full range of actuators ATEX approved.

AVA USA has successfully launched in the US and Canada with distribution networks being established and large volume OEM accounts now approving the range of actuators with life cycle testing now completed with various companies around the USA.

Finally, AVA will be building on the success of the Valve World Texas show last year and Dusseldorf 2016 by once again joining the BVAA at the Valve World exhibition this year. Managing Director, Adam Chapman explains why the show has been so important. *"Valve World gives us the global exposure that we feel our brand of actuators deserve. We feel the range is unique and not like anything else in the marketplace. All of our customers see the benefit of what the actuators offer and this has led to much interest and discussions with Valve Manufacturers. A lot of plastic valve manufacturers want to work with us for our small compact actuators and we have actuators being tested by manufacturers in Asia, Europe and the USA. We believe this will lead to some very strong relationships moving forward with global brands of valve manufacturers. The shows in Texas and Germany have resulted in new large-scale distributors in the US and Russia."*

Visit www.avactuators.co.uk for all the latest news.

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140-Year-Old Valve **Refurbished & Re-manufactured**

'One of the main challenges in the valve refurbishment programme was actually crafting lifting equipment...'

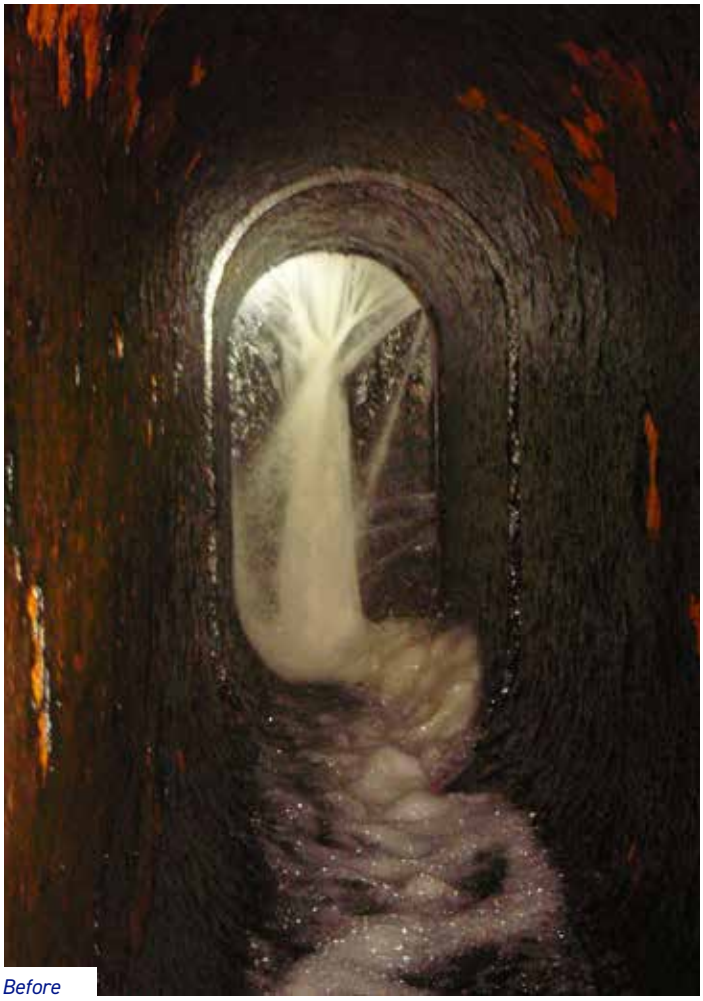
'The valves were then delivered to our Brighouse facility to be stripped and inspected.'

Blackhall Engineering Ltd save critical **valve from failure,** in one of **Yorkshire Water's** oldest reservoirs.

Fewston Reservoir, originally built in the period between 1876 and 1879 is located in Washburn valley to the west of Harrogate in Yorkshire, England. The capacity of the reservoir is 3.5 million cubic metres and is adjoined with the 3.9 million cubic metre capacity Swinsty reservoir. In 2011 during a statuary inspection, concerns were raised by the reservoir's panel engineer on the leaking valves that controlled the outflow from Fewston to Swinsty. Over recent years the valve had started to leak, and was progressively getting worse. The original valves had 9" square teak shafts, were over 54ft long and sandwiched between two 1.5" thick wrought iron plates. These along with the cast iron valve gates were calculated to weigh just over 9 tonnes each. The Blackhall valvologists were called in to inspect and diagnose the problem and conduct feasibility studies to provide the best possible refurbishment options.

Valve Inspection, Condition and Survey Reports

An internal inspection survey was carried out by our confined-space-trained personnel to determine the condition of the valves. The inspection reports detailed the cause of the excessive leakage and concluded that critical failure of the valves was imminent should they be left unrepaired. On receiving the reports, Yorkshire Water proceeded to entrust Blackhall Engineering Ltd in carrying out the full removal, overhaul and refurbishment of these 140-year-old valves. The refurbishment plan, which combined both repair and replace elements, was a financially and environmentally conscious one, and in-keeping with the importance of heritage to Blackhall.



Before

After

'Reverse engineering was carried out on the valves via detailed examination of their construction and material composition.'

Valve Removal and Lifting Services

One of the main challenges in the valve refurbishment programme was actually crafting lifting equipment capable of accessing such a narrow space in order to remove the 9 tonne valves from the 59ft (18m) deep enclosure at the base of the valve tower. The safe removal of the valves took 3 days from start to finish.

Valve Strip and Inspection Report

The valves were then delivered to our Brighouse facility to be stripped and inspected. A detailed report was presented to the customer and refurbishment commenced. This is where the process of bringing the valves back to life began.

Back to Site

The newly upgraded valves were returned to Fewston Reservoir and safely reinstalled into the 59ft (18m) deep enclosure. Today, both valves are running soundly with no leakage detected, and should be fit for another 150 years.

Blackhall valvologists®

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Why Plant Engineers Specify J+J Valve Actuators

Model J3C-s, the latest series from the **innovative European designers** and **manufacturers J+J,** ensures that their **smart electric valve actuators** continue to be hugely **popular** with **plant engineers** across a broad spectrum of **industries** who, where possible, specify them.
So why is the J+J so popular?

Multi-colour LED Status light – continuous visual feedback
When plant engineers walk around to visually check the plant rooms, any equipment that visually interacts gives them at-a-glance feedback of that piece of equipment's current status. The deeper the level of visual interaction, the more at-a-glance status information can be received. J3C-S smart electric actuators offer 3 levels of visual feedback status; power on, active OK status, or inactive fault status.

Power on – Any illuminated LED indicates that external power is being applied, no lit LED shows that external power is not being applied. All J+J smart actuators are designed to have power continuously applied.

Active OK status – Specific colour sequences of either a flashing or solidly lit LED show if the actuator is opening or fully open, or closing or fully closed, and ready to accept command signals.

Inactive fault status - Specific colour sequences of a flashing LED show if the actuator is in fault status and unable to accept external movement commands, AND indicate the likely cause of the inactive status.

It is this latter fault advisory LED that scores the points with engineers. If a valve actuator offers no interaction with the engineers, they have no option but to instigate a series of checks to try and determine if the inactive status is due to the valve, the actuator or both. Depending on the manufacturer, this situation may require a site visit from the manufacturer's service provider which will usually result in a delay in resolving the situation until the service provide arrives, and will likely incur charges.

The advantage the J+J LED system offers is that it will advise if the valve has become blocked, if the actuator has been left in manual mode, and even if an incorrect command signal is being applied. Armed with this information the engineer can take immediate steps to correct the situation, rather than starting the sequence of checks. So the J+J smart actuator saves time, which saves money.

Standard protective features
Protection against the three most common issues that damage electric actuators is provided as standard in J3C-S smart actuators. These are damage from incorrect electrical command signalling, internal condensation and mechanical gearbox damage from trying to drive against excessive torque. J+J's solutions are clever, effective and supplied as standard:

Protection against condensation – J+J smart actuators are designed to have external power continually applied, and because the anti-condensation heater is powered from the same incoming power connection, is always active. This thermostatic heater maintains the internal temperature well above the dew point eliminating any risk of damaging condensation forming.

Protection against incorrect electrical supply – This protection takes two forms. Firstly, the J3C-S is unique in that it automatically accepts and senses any incoming supply signal voltage between 24V and 240V AC or DC. The risk therefore of burning out an electric actuator by applying 110 or 240VAC to an actuator that is 24V rated is eliminated.

Secondly, if an erroneous command signal is applied, the J+J smart actuator will not work, be damaged, and will advise with a pink flashing LED.

Protection against mechanical gear damage – J+J were key innovators in the development of the electronic torque limiter (ETL) back in 2002 where motor current is continually measured and if certain parameters are exceeded, the motor power is cut, eliminating the rise in motor winding temperature and mechanical damage to the actuator's gearbox.

The significance of J+J's ETL is that the actuator signal can immediately be reversed to try and use the flowing media to clear a blockage, something that is not possible in conventionally designed actuators where a thermal cut-out switch in the motor windings would prevent the motor from running immediately as the windings would still be hot and the thermal cut-out still active.

All of the above features are provided as standard in the J3C-S smart electric actuators from J+J. But there needs to be more to maintain and strengthen the J+J's specified status, and there is. Unrivalled combination of ease of use, flexibility of functionality and availability.

Ease of Use – J+J electric actuators have no internal terminal strips, all electrical connections are made with supplied user friendly, simple to wire external Din plugs.

Functionality – the J3C-S can have its on-off function converted to battery back-up failsafe, modulating with a digital positioner, or failsafe modulating, simply by installing user friendly plug and play function conversion kits.

Availability – The J3C-S range is available from stock from J+J UK, the ISO9001:2015 approved valve actuation specialists based in Matlock, Derbyshire.

For more information visit jjautomation.com, email: info@jjautomation.com, or call 01629 55577.

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SMC Launches Digital Flow Switch For Large Flow

The latest digital flow switch to join the SMC family, PF3A7#H, monitors the consumption of the main line with a 100:1 ratio.

The PF3A7#H is the latest addition to SMC's flow switch family that covers a large flow measurement range and features a clear and easy to read display, which is crucial in monitoring the main line, branch or specific equipment.

With an impressive 100:1 flow ratio, which is defined as the ratio between the full-scale range and the minimum point of measure, the PF3A7#H can detect leaks and monitor main line air consumption with just one product.

Accuracy of information sits at the heart of the PF3A7#H, with a 3-colour and 3-label screen display that can rotate in increments of 90°, allowing operators to take notes and set the flow switch while checking the measured value.

Furthermore, an analogue output gives more detailed information of an application's performance. In addition, the external input can reset the accumulated, peak and bottom values without the need for manipulation.

SMC Marketing Manager Bob Hitner said: *"We are always listening to our customers and seeking ways to enhance efficiency and reduce operating costs.*

"This next generation flow switch offers our customers greater flexibility and functionality, while being very simple to set and operate, this coupled with low air loss, makes the PF3A7#H the ideal product for those who care about energy efficiency."

Through a bore type structure made of aluminium alloy, the PF3A7#H is incredibly durable as the bypass construction reduces the levels of moist air and foreign matter that encounter the flow switch, guaranteeing a longer life span.

For more information about the PF3A7#H Series, please visit SMC's New Product Section at www.smc.eu

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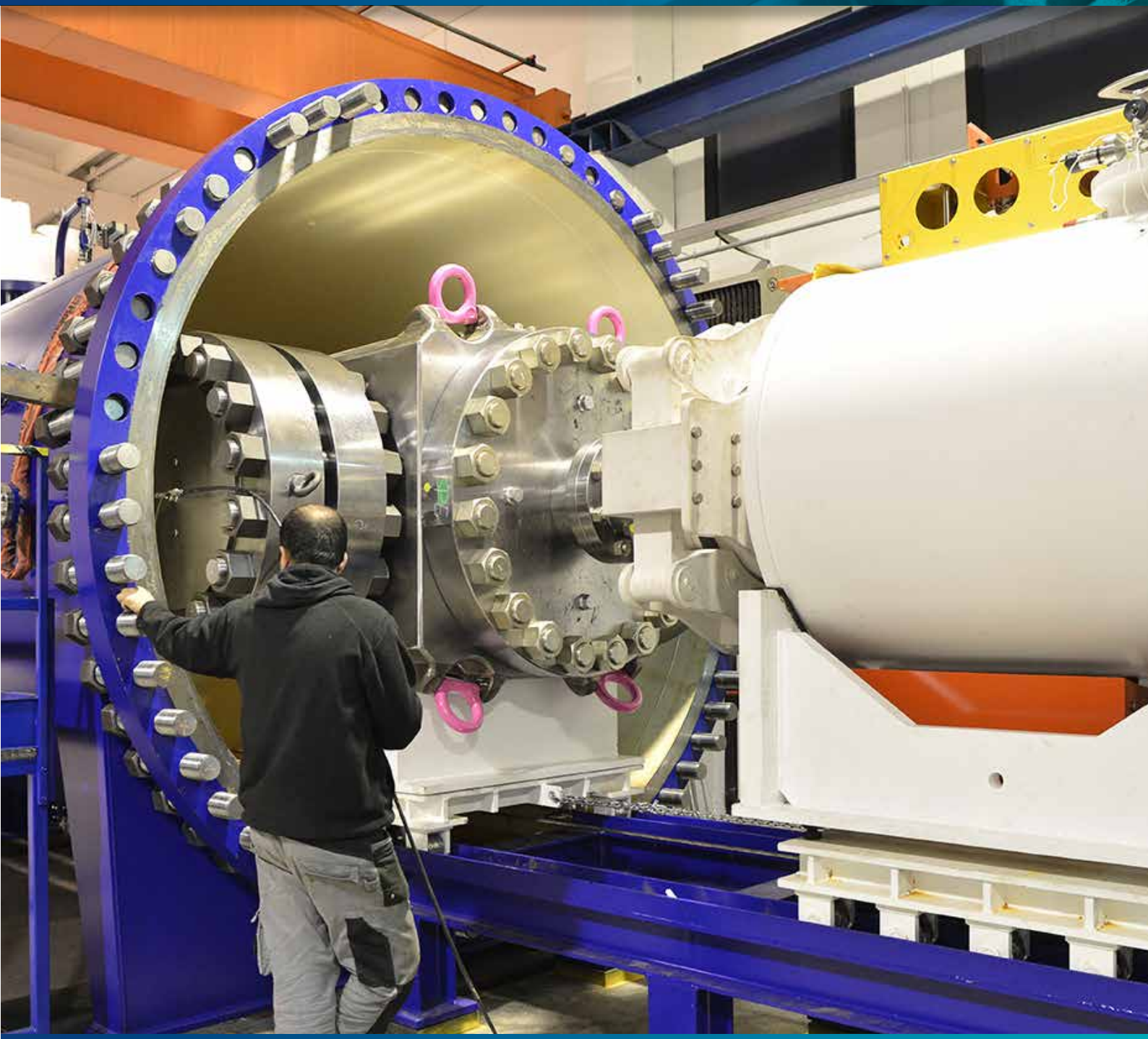
SPRING 2018

BVAA

Annual Review



British Valve and Actuator Association

About
BVAA

Who are BVAA? What does BVAA do?

Possibly the two most asked questions about the British Valve and Actuator Association (BVAA). When we respond, often a lengthy process to describe it all, the reaction is generally along the lines of *'Wow! I didn't realise you did all that!'* So, briefly, what are the answers?

Who we are

BVAA is the only organisation that represents all the main sectors in the UK valve industry; namely manufacturers, distributors, repairers and suppliers of valves, actuators and related products and services.

What we do

For 80 years, BVAA has been chartered to look after the interests of its members through: -

- Providing value-based services to enhance customer access or market knowledge
- Providing training and development to members and their staff, to enhance competence and knowledge that improves their business
- To act, on behalf of the members, to understand and input into technical specifications that impact on their products and services and potential business
- Facilitating technical support to members, through the provision of independent advice on issues relating to relevant valve activity
- To represent members where necessary to outside bodies.

Membership of the BVAA gives your company a voice in shaping the industry's future and a measurable return on investment in networking, training, technical support and new business opportunities that can only come from engagement with the BVAA.

Cover Image - Courtesy of Specialist Valve Services (SVS)

Chairman's Report

David Millar, Outgoing Chairman

Proud of our Past, Developing our Future

As I drew toward the end of my three-year tour as the BVAA Chairman, I was very surprised to learn that I had also been on the BVAA's Board for 15 years. I concluded that my retirement from the Chair at the autumn 2017 AGM should therefore coincide with stepping down from the Board, to give other members a chance to lead this fine association.

To say the BVAA has changed over that time would be a terrific understatement. In 2002, *'BVAMA'* as it was then called was struggling financially and was perhaps too focussed on its past, not its future. We offered remarkably little to our members and without change, I've no doubt *'BVAMA'* would have died.

The changes undertaken by the new-look BVAA from 2003 onwards, and the breadth of the offering to our membership today, is simply astonishing in comparison. We are a strong, healthy, fiscally stable, and substantially larger association offering a diverse range of products to our broad church of members. We do have to cater for all tastes, so our *'smorgasbord'* approach allows members to pick and choose those services that best fit them.

Not every service will appeal to *every* member, but our approach does mean there is something for everyone.

Our membership has been growing impressively throughout, but latterly our industry has suffered from a largely oil-price generated bare patch, plus a wave of inter-company consolidation. Active recruitment has kept our membership buoyant however, and our services developed despite the fiscal challenges such a dip brings.

More recently our new BD Group has been actively developing business opportunities for our members, as evidenced by a record 6 desktops events with customers in the latter part of 2017, and with many more slated. My own company (Heap & Partners) also landed our largest order in our 150-year history, thanks to a sales lead that was sent out by the BVAA to all its members.

When I took the chair, BVAA had committed to a £200k mortgage to buy our HQ. Today, thanks a series of early repayments, this is already down to £128k. This gives us access to a first-class facility, security of tenure and a substantial asset should we hit hard times again.

I have also been particularly pleased to support the hugely successful BVAA Future Leader's Programme (FLP), helping to develop the stars of tomorrow for our industry. The fathers of the FLP are my successor as Chair, Colin Findlay, his new vice Chair Tim Guest, supported of course by our Director, Rob Bartlett. Evidence, were it needed, that the Association remains in good hands.

On which, I must not past on the baton without thanking Rob and his team, who work wonders on a tight budget at the Secretariat. They are the ones that have delivered this success year-on-year. I'm pleased to say they are backed by a fantastic Board and I know the future is assured.

Heap & Partners Phase Valve

Meet The **BVAA Board**

Colin Findlay, New BVAA Chairman

A Word from the New Chairman

It was a tremendous honour to be asked to take the Chair of the BVAA, and I know that David will be a hard act to follow. I will miss his experience, wit and wisdom at the Board.

With my two vice Chairs, Rhys Jones and Tim Guest, and the support of the full Board, I look forward to the challenge of continuing the successes of the Association. I am also pleased to welcome back Andrew Will to the Board and Trevor Tagg as a new member, both of whom will add new thoughts and perspectives.

Delivering long term value to our members and ensuring that our industry is healthy and well understood by our customers is what drives your Board, in what are difficult times in all of our markets.

Working and advising inside the BVAA for the past couple of months has already shown me the complexity of juggling resources while offering such a broad range of services. Rob and his team are a tremendous resource and I very much look forward to working with them to ensure that the BVAA remains such a strong and vibrant Association.

Tim Guest
Vice Chairman
Zoedale Ltd

Rhys Jones
Vice Chairman
BEL Valves

Rob Bartlett
BVAA

Andy Will
Heap & Partners Ltd

Glyn Williams
Valve Solutions Ltd

Treve Tagg
Emerson

Lynn Mowbray
KOSO Kent Introl

Laurence Kettle
Rotork Controls Ltd

Richard Ellis
KT Hydraulics

Director's Report

Rob Bartlett, BVAA Director

Doing more, with less

Almost all of us have had to deal with that reality in our careers. At BVAA, this is no different.

Our outgoing Chairman has reflected upon the challenges that both he and I inherited in the mid-2000s, but the ones we faced last year were still somewhat challenging. The industry continued to corral resources, and members' trading experience inevitably had some knock-on effect for the BVAA.

Many people wrongly assume the BVAA is a charity. We are a Ltd company (but with no share capital). So, we face the same issues that members do – where will we derive income, when there's less money around in the marketplace? All this in an atmosphere where spending on association subscriptions comes under ever greater scrutiny in the search for *'value for money.'*

So it was with regard to our subscriptions income. We reached our budgeted target this year, but some contraction and consolidation continued, with outcomes for BVAA that may ripple on for a year or two yet.

Two non-subs lines that we have relied upon in recent years are Training and Exhibitions.

On average we draw our training delegates 50/50 from the user-base and the membership. As a discretionary spend in the current climate, this line was inevitably affected from both customer streams, but did recover to be on a par to last year. This success however was largely derived from choosing to deliver in more geographical locations and broadening the offer, plus some good, old-fashioned campaigning.

As a non-Valve World year, and thus the trough in our cycle, our exhibitions income and costs were expected to be diminished in 2017/18. Pre-bookings for Valve World 2018 (next financial year) remain buoyant however and should be much improved over the 2016 event. This year we did better overall from exhibitions than planned thanks to the superb success in extending the desktop exhibition programme, by number and by previously unvisited hosts, and credit for this must go to the effervescent Rob Boycott, BVAA's hard working Business Development Consultant. The benefits to be derived from these additional opportunities for members cannot be overstated.

There is a temptation to trim staffing in tougher times, but the BVAA Board showed great resilience in not only maintaining our head count, but also extending it to meet the new demands upon us. I'm delighted that our Marketing Co-ordinator Natalie Miller is making such a superb job of Valveuser magazine, with all pre-press work now being done in-house, and Barbara Lestak-Maynes is bringing her experience to bear on the avalanche of new events that we are now hosting.

This has enabled Karen Webb and I, supported ably by Barbra Homer, to focus our attention on member contact, understand your needs and briefing you more fully on member services and how to achieve better value.

Our Technical Consultant Martin Greenhalgh continues to steer our Technical Groups in his own inimitable style, and I'm very pleased to see new activities such as that with the Energy Institute – importantly involving the customer-base – coming online.

The Future Leaders Programme will feature elsewhere in this review. However I will add here this is the most satisfying activity of my trade association career. As we move into the third year of this initiative, it appears our fears of not having the talent we require in our industry were unfounded. We just have to seek it out, invest in it, develop it, then let it have the latitude it needs to make a difference!

To close, it is going to be a strange experience, attending a BVAA Board meeting that does not include David Millar among its number. David joined the Board just as I was appointed, and he's been a largely ever-present component since. I'm not sure it will be quite the same without him. That said, BVAA members are extremely fortunate in having such a dynamic and talented executive body as they do, and with their and new Chair Colin Findlay's support I'm positive we can raise BVAA to even greater heights.

The BVAA Team (Left-Right): *Rob Boycott, Karen Webb, Martin Greenhalgh, Barbara Lestak-Maynes, Rob Bartlett*

Actuator Working Group

Peter Hirst, Rotork Controls

The BVAA Actuator Working Group, in conjunction with BSI - PSE18/5 (actuators), met in October 2017 in the offices of Rotork UK in Leeds. Subjects discussed included European and International standards developments and the applicability of IEC 61508 (Functional safety) to mechanical devices such as valves, gearboxes and mechanical actuator components and systems.

Functional safety – "SIL" for mechanical devices and systems

The working group discussed a proposal made to ISO/TC153 (valves/actuators) regarding functional safety standard IEC 61508 and specifically the reliability assessment for mechanical devices. IEC 61508 addresses electric, electronic and programmable electronic components whose reliability measures tend to come from component databases. Such databases do not exist for mechanical devices and so transferring the standard's methodology to classification of mechanical components/systems is problematic. The proposal, led by Germany, is for the development of an ISO document specific to mechanical "final elements." Our working group's conclusion is in agreement and is generally supportive of the proposal. We will actively feed into any development work at ISO.

European standards activity (CEN)

Working group members along with the BVAA Technical Consultant attended several meetings of CEN/TC 69/WG 1 'Basic Standards' and CEN/TC 69/WG 1/SG 10 'Actuators' in 2017.

Current CEN standard development includes work developing prEN 15714-6 *'Industrial valves – Actuators - Part 6: Linear pneumatic and hydraulic actuators'* and WI 69189 *'Industrial valves — Gearboxes for industrial valves.'* As a working group and UK experts, we continue monitoring and actively providing input.

The preliminary work item PWI 00069187, to harmonise the EN15714 series with ISO 12490 *'Petroleum and natural gas industries — Mechanical integrity and sizing of actuators and mounting kits for pipeline valves'* has now been cancelled. The reason being that actuator experts believed there to be no significant conflicts or overlap.

International standards activity (ISO)

Working group members along with the BVAA Technical Consultant attended several meetings of ISO TC153/WG1 - Basic Standards & ISO TC153/SC2 – Actuators in 2017.

Standards under development include a gearbox standard, PWI 00069189 and an Electric actuator standard, ISO 22153. As CEN are also developing a gearbox standard and are nearing completion of a final draft, it has been agreed that ISO experts will consider the CEN draft. Similarly, EN15714-2 'Electric actuators' is published and current and it has been agreed by ISO experts to be the basis of their work.

2018 activity

As CEN and ISO standardisation continues apace, more meetings will be convened in 2018. BVAA experts will continue to attend and the WG, as a whole, will provide valuable support and input. Our working group will aim to meet twice this year, dates to dovetail if possible with CEN and ISO milestones. Dates will be announced in due course, probably late spring and autumn. The potential opportunity to develop a more appropriate means for the assessment of mechanical device reliability/availability provides an interesting and exciting challenge. It will remain a major topic for our working group.

As ever, I very much welcome any input, your contribution or attendance in our 2018 meetings.

Valve Working Group

Chris Williamson, BEL Valves

"I was very fortunate to take over from Peter Burnett (Heap & Partners) at the beginning of the year as chairman of the Valve Working Group..."

It continues to be well supported by members to the point of reaching meeting room capacity it seems on virtually every occasion. So it was that well-attended meetings were held at Alco Valves, Brighouse in March and BEL Valves, Newcastle in October.

The meetings were preceded by the now well-established social event on the evening before the session. This gives us a rare opportunity to network and discuss current affairs – not normally part of the working group's main discussions.

This year's hot topics for discussion were the oil price and the effects of Brexit on trade, European standards and directives. Both working group meetings finished with in-depth factory tours showcasing Alco Valves' and BEL's state of the art manufacturing, assembly and test facilities.

An area of growth and focus has been on the Technical Expert Groups (TEGs). This year TEGs have been active in the following areas; butterfly valves, fugitive emissions, SILs, Subsea and diaphragm valves.

These TEGs are at various stages of maturity and comprise a small number of experts interested in the TEG's subject matter. The TEGs have proved a good focal point to look at short or long-term industry challenges, developments, new standards and related issues. Further TEGs have been proposed for API 20 series and ISO 8000 – any member interested in participating should contact BVAA.

Martin Greenhalgh – BVAA's Technical Consultant – has throughout the meetings provided in-depth updates and commentary for industrial valve standards. Similarly, Ron Strang has done the same with regard to the PED and ATEX directives.

API activity has been very prolific of late, with the following standards being revised or published; API 6DSS 3rd Edition, API 6DSSX 1st Edition, API 6A 21st Edition and API 17D 3rd Edition.

BVAA members have been active on both API 6DSS and 6DSSX task groups with support funding being made available for travel from the BVAA.

Further activity has been based upon the API 20 series of standards, with API 20A 2nd Edition, published August 2017, and API 20E 2nd Edition, Carbon and Alloy Steel Bolting released on February 14th, 2017.

Our first meeting of the 2018 year is planned for March 7th at Rotork, Leeds.

Activities Report

Activity Breeds Activity!

'you get out of membership what you put into it'

When describing the benefits of membership, we are constantly telling members *'you get out of it what you put into it.'* Here at the Secretariat we are finding that the extensive effort put into boosting our programme of activities in the last year is proving this to be the case. The 2017/18 period was one of significant pay-back.

Future Leaders Programme

Covered in detail elsewhere in this Review, it would be wrong not to acknowledge here the extraordinary efforts that have gone into the programme's second iteration. With a constant BVAA senior management presence, and cross-over into several other BVAA events throughout the year, the 'FLP' has cemented itself fully into the fabric of the BVAA.

Exhibitions

With our focus on 'bang for buck' we continued our philosophy of attending events we thought would bring best advantage for BVAA members. Offshore Europe (September 2017) is a regular event for us, and the upswing in confidence in the oil and gas sector was palpable, although perhaps serious consideration needs to be given to reviewing whether Aberdeen can support an event for 4 full days. This was Offshore's last appearance at the AECC site and we are all looking forward to the improved facilities at the new centre.

Other events this year included EIC Connect in Liverpool and the PILOT Share Fair – both in November. These were extremely happy hunting grounds for the BVAA and several Desktop Exhibitions (see BD Report) came about directly from the contacts we made at these events.

L-R: Rob Boycott, Rob Bartlett at Share Fair, Image courtesy of Oil & Gas UK

Spring Conference

BVAA Sponsors, Spring Conference & Golf

Also a little out of the ordinary was the BHR Valve Testing Event that BVAA co-sponsored on 12th October. It was the second event of this type in recent years, whereby the host – a member of BVAA – takes the opportunity to invite its customers (also BVAA members) for a series of technical presentations and a tour of the facility. BVAA Director Rob Bartlett commented, *'We are constantly asked where members can source certain products and services, and very often the answers lie within our own membership. It is incredibly satisfying to see members make connections before your eyes, at an event you've helped bring about.'*

Spring Conference & Golf

The BVAA Conference & Golf event was held this year on 17th / 18th May 2017 at Celtic Manor and generated some of the best feedback BVAA has ever received!

Generously supported by our sponsors and underpinned by a strong head-count of member-delegates, the day opened up with Baroness Nicholson of Winterbourne, who spoke on the topic of Opportunities for International Trade in the Context of Brexit, and on the Role of the Trade Envoy.

Additional papers were delivered by Professor Joe Nellis, Jeremy Leonard, Steve Robertson, Matthew Barnett, Steve Charles, and BVAA's own Andy Will & Tim Guest, on a broad range of topics including market outlooks, valve-integrity issues in the customer-base, specialised support from BVAA member-services and the digital workplace. As is commonplace, several new initiatives and services have spun out of the feedback received from members, underlining, were it necessary, the effectiveness of feedback and a responsive Secretariat.

Golf Winners 2017 - HSP & Severn

AGM Evening Entertainment

AGM Evening

Annual Golf Day

Brilliant sunshine arrived to order for the post-Conference Golf Day, making it another spectacular success. Thirty-two members and guests competed for the coveted BVAA Cup and other generous prizes. Nearest the Pin was won by Dewi Byles (Crane) and Longest Drive by BVAA Future Leader David McClymont (Crane). Taking 3rd Prize with 81 points were the Heap & Partners / KT Hydraulics combination. Runners up with 83pts were the Crane/Rotork team. The BVAA Cup Winners however were the Severn / HSP team of Mark Breese, Barry Wilder, Rob Lloyd and Matt Lynn with an impressive 89 points! The 2018 event will this year take place at Formby Hall, Southport.

BVAA AGM

The BVAA AGM this year was held at Rookery Hall, Cheshire and comprised the established yet relatively new-style format of a mini-conference in the morning, Association business in the afternoon, including the appointment of the Association's new Chairman, Mr Colin Findlay (Severn Group).

There's a fuller report in the BVAA section of this issue of Valveuser, but the 'forward looking' theme of topics covered included Export Controls and associated best practice, the Service Technician of the Future, the Future Leaders Programme and the Benefits of Developing Staff. The day closed out with the usual Black-Tie dinner dance and some spectacular diversions and entertainment. The Association also took the opportunity to thank publicly the unsung heroes – volunteers all - working behind the scenes for the benefit of all members.

Our thanks to our AGM Sponsors:

L-R: Colin Findlay, Baroness Nicholson, & BVAA Director Rob Bartlett

Spring Conference

Technical Report

Martin Greenhalgh,
BVAA Technical Consultant

BVAA Technical Service

Technical Services covers a wide range of activity. Training is hugely important. We must pass on our knowledge to members, customers and suppliers. Every attendee at our courses benefits from the unrivalled expertise of the BVAA trainers. We can provide the training at any location.

Standards and Directives are essential tools for everyone in the industry. There is continuous change, which needs monitoring and the information communicating to all members in a way that allows the relevant information to be easily found. Attendance at BVAA events such as conferences, trade shows and working group meetings helps to ensure that the technical service has up to date knowledge that can then be shared with the membership. Technical Expert Groups have proved to be an effective way of bringing together experts to address specific topics. Expert advice is provided to members in response to specific queries and to users such as the Energy Institute who are seeking our help to develop Guidelines for the Integrity Management of Valves.

Training

Our training courses are technically up to date, interesting and readily digestible. They are presented by experts with an unrivalled knowledge of the specific course they are presenting. We are seeking to have all our courses approved by the CPD Certification Service. Courses that are presented at the user or member location are routinely tailored to meet the specific needs of that organisation.

Directives

We continue to support CEIR in their work to achieve an agreed position in respect of actuated valves and the Machinery Directive. We have maintained a dialogue with the HSE and with CEIR. The commission's Machinery Directive WG published a position paper following its meeting in November 2017. The text of this is not clear so we are working with the HSE and CEIR to try and obtain clarifications. The directives work is shared with Ron Strang (Alco). We regularly receive member enquiries regarding directives and Ron's expertise and commitment to helping to answer these is an extremely valuable resource.

Standards Activity

In my role as chairman of PSE/18, I have attended the plenary meetings of CEN/TC69 in June and ISO/TC153 in October as the UK's principal delegate. Mike Gray (Safety Systems) continues to be responsible for all Safety Valve activity at both PSE/18 and TC185 and similarly Peter Hirst (Rotork) takes care of the Actuator standards activities as Chairman of PSE/18/5 and UK's principal expert to both CEN and ISO. I am very grateful for their contributions.

The UK has agreed to host the ISO/TC153 Plenary and working group meetings in London, in October, and the BVAA will be making a significant contribution to the holding of these meetings.

Monthly standards activity reports are issued to members of the Valve and Actuator WG. The KEY word column on the left allows members to efficiently find those activities that are of interest to them.

23 HOT SPOTS have been issued in the last 12 months to Valve and Actuator WG members advising them of EN/ISO standards that are published, EN/ISO New Work Item Proposals, EN/ISO Draft Standards that are issued for public comment.

These HOT SPOTS are clearly being read as indicated by the feedback we are receiving.

We are pleased to welcome Dr Taj Chapman as the BSi programme manager for PSE/18 and its sub-committees. Dr Chapman took on this new role from 1st March 2017 and as part of her induction programme availed herself of the opportunity to attend the Introduction to Valves training course

Technical Expert Group Activity

The Butterfly Valve TEG completed its work in respect of the revision to EN593 Metallic Butterfly Valves standard. UK views were taken account of in the final approved draft. The BVAA is grateful to all those who contributed to this standard

Following the work of the Diaphragm Valve TEG, which produced recommendations for revision of BS EN 13397 *'Industrial Valves - Diaphragm valves made of metallic materials'*, CEN/TC69 has agreed to open a new work item for the revision of this standard and to appoint David McClymont, Crane ChemPharma & Energy, as Chairman of the working group responsible for this work item.

End users have raised a number of questions regarding fire testing of valves and the requirements of BS EN ISO 10497. These questions have been considered and answered by the Fire Test TEG. The answers have been published as HOT SPOTS to our members with recommendations for action.

The Safety Integrity Level TEG has finalised the BVAA *'Guidelines on supplying valves and actuators capable of use in applications with a Safety Integrity Level (SIL).'* The Guideline was published in February 2017 and gives members practical instructions as to how to answer customer requests for certification for their SIL systems.

Energy Institute

The Energy Institute is developing *'Guidelines for the Integrity Management of Valves for the Upstream and Downstream Hydrocarbon Industries'.* Integrity management of valves is recognised as being a key component of each organisation's overall integrity management requirements. In addition, the industry has highlighted common valve integrity management issues which the industry should be addressing. The Guideline aims to provide good practice guidance to assist organisations to develop their valve integrity management arrangements. The BVAA strongly supports the EI aim and is delighted to be able provide its expertise to help in the writing of the document.

Goals for 2018

Obtain CPD accreditation for the BVAA training courses and expand the delivery of these to member and user locations.

Assist the Energy Institute to complete their document Guidelines for the Integrity Management of Valves for the Upstream and Downstream Hydrocarbon Industries and develop training materials to help with the implementation of this document.

Ensure the successful hosting of the ISO/TC153 plenary meetings in London in October.

New Technical Hotspot Logo

Finally I am indebted to the rest of BVAA team for their ongoing support which ensures an efficient communication of all the Technical Service output to the members.

Training Report

The Value in Training

Karen Webb,
BVAA Member Services Manager

There is a tendency to treat Training as an *'optional extra.'* Indeed, many companies regard it as a discretionary spend and only do it *in extremis.*

Regrettably, many undertake to do it only *after* a situation has occurred. The full cost of a mistake is often many times more that than the training that might well have prevented a situation arising, and if someone is injured – or worse – then there is little solace to be found in bolting the proverbial stable door.

Added Value - Independent

Most people will recognize that BVAA's training portfolio is not only delivered by some of the industry's most knowledgeable lecturers, but it is also independent of any particular brand or product type. This gives us a unique position in the market.

We also sit in a privileged position between the supply chain and the customer base – indeed we regularly draw our training delegates on a 50/50 basis from both sectors.

Our other advantage of course is that being part of a not-for-profit organisation, we also have an eye to delivering at the best possible price and therefore provide the best possible value to our stakeholders.

Added Value - Innovative Approach

2017/18 has certainly seen the BVAA's course programme challenged by the oil and gas downturn. We have however managed to keep our income on target by applying an innovative approach to delivery.

BVAA has provided training courses at our customers' premises for many years, but this year we *'opened the taps'* and delivered at hosts' sites all over the British Isles. The advantage to clients is that the training comes to them, and they then avoid all the additional travel and subsistence costs associated with days out of the office.

We have also tailored courses to suit our customers' requirements – many become bespoke - something not readily available elsewhere. We also contract with other august bodies in areas of even greater specialism where required, such as metallurgy, casting, etc. We have also run scheduled 'standard' courses in convenient geographic locations such as Wales, West Yorkshire and Aberdeen.

Soft Skills / Personal Development courses – *originally part of the Future Leaders Programme offer* – have also proven very popular with our members.

Added Value - CPD Certification

Finally, this year we moved into new territory and had our courses certified for Continuous Professional Development - CPD. At the time of writing I am delighted to report that both the Control Valves and Safety Valves courses have been successfully certified already, with several more slated for processing during the Spring of 2018. This is a major development for BVAA and underlines our commitment to provide even greater value for our stakeholders.

BVAA Courses Offered

A full list can be found at www.bvaa.org.uk/training or by contacting myself at karen@bvaa.org.uk

Future Leaders Programme

Developing the Next Generation

Such is the importance of the Future Leaders Programme, it really does merit a page of its own in our Annual Review.

Conceived in 2015 and launched at the very end of that year, it is doubted that few of those involved realised just what an impact this unique initiative – aimed at developing the next generation of valve industry professionals - would have on the association, its member companies or indeed the individuals themselves.

Put simply, the 'Future Leaders Programme' (FLP) delivers to delegates a unique set of experiences and development opportunities not available elsewhere.

It basically comprises a comprehensive personal development programme, free BVAA technical training, a series of 'hosted' days at members' premises (product awareness/knowledge sharing/benchmarking/best practice) all coupled with customised visits to industrial centres of excellence. What must not be under estimated however is the networking opportunities delivered by the programme too, both within and beyond the group.

BVAA also sponsors an ILM accredited Mentoring course for FLPs who 'graduate' and choose to take this option. As each cohort completes the programme, they become the mentors for the group following on – ensuring the groups all get to know each other and cementing the relationships between the cohorts.

The year-long course culminates in what would seem a nerve-wracking presentation to the assembled masses of the BVAA senior executives at the AGM. Or at least it would be. As testified by one of the 2017 delegates, such is the change in confidence and capability, the individuals and the group breezes through a very slick presentation with few of the fears and hang-ups they once held.

The magic mix of ingredients and experience, coupled with the guiding hand of our Personal Development Consultant, Dr Martin Haigh MBE (Lattitude7) has been phenomenally successful – and that is the universal view of all the delegates and their sponsors. Indeed, the feedback from both has been astonishing, and many of the delegates have already had their new-found skills and confidence recognised with promotions and further awards.

A key bonus however is that the FLP is rapidly gaining traction and recognition in the wider industry as a hugely desirable programme upon which to place valve industry people with talent and drive. A third Cohort was recruited for 2018, and we already have people on a waiting list for 2019 – a remarkable situation!

Follow the Future Leaders Programme on Twitter - @BVAAFLP

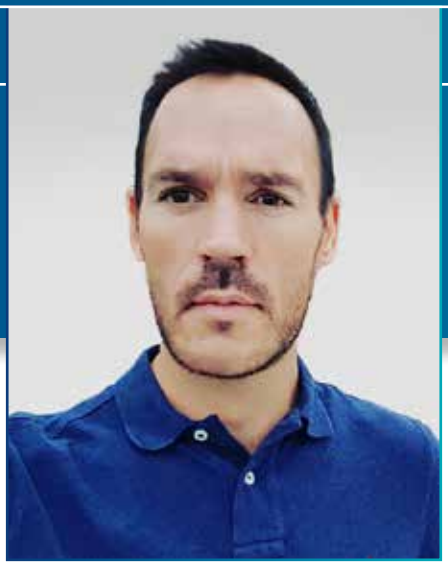
BVAA FLP Cohort 1 with former Chairman David Millar

FLP Cohort 2 after their 2017 AGM presentation

Eddie Sheard (Cohort 2) recieving a Highest Achiever Award from Rob Bartlett

Future Leaders Programme New Logo

Business Development Group Report



Tim Guest,
Business Development Group Chairman

'I Love it When a Plan Comes Together'

Admittedly the catchphrase of Hannibal (Smith, he of the *'A-Team,'* not the Elephants) but 2017/18 really was a very rewarding time for the BVAA's Business Development (BD) activities, as so much of what we planned did indeed come to fruition.

Last year, we announced the appointment of Rob Boycott as BVAA's BD professional. After several months of laying down a firm foundation, knocking on doors and putting the case for BVAA, we were delighted when Rob was able to deliver opportunities for members through a significant uplift in the number of Desktop Exhibitions.

'...a desktop exhibition is a 2~3 hour "pop-up" expo. inside a major valve buyer's premises, with lightweight banners, exhibition pieces, literature and a technical expert at each station.'

Desktops

As 2017 progressed we held Desktop events in June in Aberdeen, firstly at Petrofac, then Amec City View and Amec Annan House.

We also went on to organise events in September at Fluor Farnborough, and immediately afterwards at Amec FosterWheeler's site in Reading. In October it was CB&I's turn in London.

On 13th March we visited Apache, on the 14th EnQuest, both in Aberdeen, and on 22nd a BVAA huge contingent exhibited at KBR in Leatherhead.

All told, we calculate a potential 5000 interactions between customers and suppliers were made possible – a staggering success for Rob and his support team at the BVAA.

Another significant outcome is the warm relationships we are now enjoying as a result of the regular dialogue with EPCs and major customers, leading to co-operation in other areas.

Foster Wheeler Desktop Exhibition 2017

AMEC Desktop Exhibition Annan House

Fluor Desktop Exhibition 2017

www.britishvalves.com

www.bvaa.org.uk

www.valveuser.com

Supplier Day at Brighouse

Following a similar concept, at least for the exhibition element, the BVAA Supplier Day in February was a tremendous success too, despite the British weather's best attempt at interfering with it with an impromptu blizzard. Aimed mainly at supporting our Supplier-members, the event actually has a double benefit, as indeed suppliers to the industry can find new outlets for their products and services, but also our major OEMs get a chance to meet with dozens of potential new suppliers in just a few hours, with a view to widening their options and seeking alternatives. The 'speed date' element is unique in the valve industry and facilitated nearly 100 such interactions in just one morning and got a '100% Excellent' rating in feedback.

Regional Dinner

The night before the Supplier Day is traditionally the 'BVAA Regional Dinner.' Although covered in more depth in the BVAA section at the front of this magazine, it is worth noting that this Networking event is the single largest gathering of BVAA members annually, and continues to be a thoroughly well supported and enjoyed event. The addition of Simon Weston as Guest Speaker was a masterstroke leading to some excellent feedback ('94% Excellent' rating).

BVAA Websites

BVAA now operates three *different* websites which are doing completely different jobs for the Association and its stakeholders.

www.bvaa.org.uk remains the main BVAA-focussed website, hosting all the traditional information and services – and much more - that you might expect from a trade body, including membership listings, product search facilities, publications and the like.

www.valveuser.com is the homepage for the BVAA magazine, and hosts all of the material ever created for the magazine since its inception, some 44 issues ago! The mass of articles now runs into thousands and once an article appears in the magazine, it stays on the website forever. It is developing into a major resource for the industry and is a huge draw for our customer base.

www.britishvalves.com is a direct replacement for the BVAA DVD which contained members' brochures and catalogues, with the added benefit of including all the BVAA literature, Directives Guides, etc. previously circulated on the DVD.

Supplier Day & Regional Dinner 2018

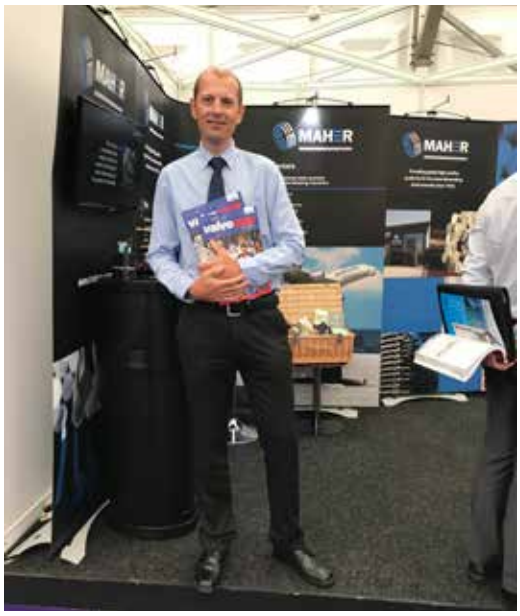
Oxford Economics Market Forecast

2017 was the first year for our successor to the EIF Global Valve Market Forecast and its different approach – based on verifiable national statistics data – generated some quite different results. Various improvements and changes have been proposed and we wait in anticipation the 2018 iteration, to be launched at the BVAA Conference, which will include the global data set, the Global Report pdf and the UK Focus.

Protel Project Tracking Tool

In 2017 we continued to work with the Project Tracking specialists, Protel. Theirs's is a unique data visualisation tool, which shows how many process projects, at what value, have been signed off in any single or combined-set of geographical areas, over a specifiable period.

Sometimes the value in a ***'free to subscribe'*** service is misinterpreted as *'worthless,'* but we trust more BVAA Members will eventually cotton on to what a powerful tool this can be, particularly in helping make BD decisions and the assistance it gives members' sales teams in deciding what sectors and locations in UK and Ireland to focus upon.



Members of the BVAA at Offshore Europe 2017

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Emerson Introduces SIL Certified Vortex Flow Meters To Enhance Plant Safety & Reliability

New SIL 2/3 certified Vortex meters for safety instrumented systems reduce process downtime and prevent spurious trips

Facilities with safety instrumented systems can now take advantage of the new SIL 2/3 functional safety certification of Emerson's Rosemount™ 8800 Vortex flow meters, per IEC 61508, which can help mitigate risk, enhance plant safety, and protect personnel.

The non-clog Rosemount 8800 Vortex portfolio offers safety and reliability features such as online removable sensors to reduce process downtime and a critical process valve for aggressive applications which increases personnel safety by preventing exposure to hazardous fluids. A variety of configurations are available to suit a variety of requirements, including flanged, wafer, reducer, dual, and quad meter body styles, supporting installations up to 12in (300mm) line sizes.

Per an accredited third-party assessment, a single Rosemount 8800 Vortex meter may be used up to SIL 2. The Dual Vortex meter is capable of up to SIL 3 and offers a simple drop-in solution to reduce installation costs. This configuration includes a single or dual shedder bar(s), dual sensing elements, and dual transmitters for redundancy and 1oo2 voting to reduce unexpected shutdowns.

Exclusive to Emerson, the Rosemount 8800 Quad Vortex uses a dual shedder bar, quadruple sensor, and quadruple transmitter configuration to meet hardware fault tolerances and eliminate the need for multiple flow meters. This option offers the highest level of reliability to guard against spurious trips using 2oo3 voting and includes a fourth transmitter for process control.

"The new addition of SIL 2/3 certification allows Emerson to offer the most comprehensive Vortex portfolio to address the importance of plant safety, process availability, and measurement stability," said Wally Baker, director of product marketing for Rosemount Vortex flow meters.

For more information, visit www.emerson.com/vortex

EMERSON

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Email: uksales@emersonprocess.com
Web: www.emersonprocess.co.uk

TECHNICAL HOT SPOT

BVAA's Technical Hot Spot

Testing of valves - Fire type-testing requirements (ISO 10497:2010)
BS EN ISO 10497:2010

What is it?:

This International Standard specifies fire type-testing requirements and a fire type-test method for confirming the pressure-containing capability of a valve under pressure during and after the fire test. It is not applicable to the testing requirements for valve actuators other than manually operated gear boxes or similar mechanisms when these form part of the normal valve assembly.

Why Is it Important?:

This standard is widely used for fire type testing. Members are reminded that valves that have been tested in accordance with this standard or, which are qualified as being Fire-Type tested as a result of representative samples having been tested, are required to be marked in accordance with Clause 7.5 as follows: -

7.5 Special marking

In addition to the marking required by relevant standards and regulations, valves conforming to this International Standard shall be marked "ISO-FT" (which stands for ISO fire-tested).

Gall Thomson Launches First Locking Camlock

Camlock-R™ - fully sealed ratchet mechanism that locks as it's tightened and which can only be released using its built-in central push button.

Camlock-R™ - example of 5 in place.

Gall Thomson, the world leader in marine couplings, has just introduced a new range of next generation locking cams for its Camlock Couplings.

The Camlock-R™ is a fully sealed ratchet mechanism that locks as it's tightened and which can only be released using its built-in central push button. The Camlock-R™ is up to 50 times faster than a traditional flanged connection. The connection time for a three-cam coupling can be as little as 20 seconds.

The patent pending design of the new Camlock-R™ features two rings of teeth in a 360 degree engaged ratchet ensuring that the ratchet mechanism is engaged at all times. This eliminates any concern over the effect of vibration on the cams. The ratchet mechanism is also fully sealed, safeguarding against the ingress of seawater, dirt and dust so ensuring minimum downtime. The Camlock-R™ can only be disengaged by depressing the push button release then rotating the cam by hand.

The Camlock-R™ is precision engineered to the same high standards of all Gall Thomson equipment and has been field tested and proven over the last 18 months. The Camlock-R™ is an important advancement for the Gall Thomson Camlock range which is very versatile and effective for all types of applications including low temperature and submersible application, amongst others, utilising manual and hydraulic operation. They are used every day in marine loading and discharge terminals, ports, refineries, dock facilities, chemical plants and distribution centres worldwide.

With over 38 years of experience in the marine industry, Gall Thomson is the global leader in the design, manufacture and application of anti-pollution and safety Marine Breakaway Couplings as well as Camlock Couplings which offer a much quicker and safer solution to traditional flanged connections. These are all engineered solutions that minimise the risk of spill and protect against operational downtime, workforce injury and damage to assets, reputation and the environment.

"These are all engineered solutions that minimise the risk of spill and protect against against operational downtime..."

A YouTube video demonstrating the advantages of Camlock Couplings can be viewed at:
https://www.youtube.com/watch?v=8Bx5RcZWLhM

Further information on the new Camlock-R™ is available from Gall Thomson on +44 1493 857936, by emailing:
sales@gall-thomson.co.uk or by visiting the company's website at www.gallthomson.com

Gall Thomson
proven technology

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Deepwater Deployment Gets Tough

Samples of three different coatings after salt spray corrosion tests.
Left to Right - *Hard chrome after 288 hours, CVD tungsten carbide coating after 480 hours, HVOF after 480 hours*

A partnership set up to find a way to **protect subsea choke valves** in **high pressure, high temperature (HPHT)** conditions has seen **success** with its first deployment to the **Gulf of Mexico.**

Two years ago, Canada-headquartered Master Flo Valve Inc approached Hardide Coatings looking for a new coating for its choke valves' stem assemblies. The coating had to be rated to temperatures as high as 400°F — a requirement that eliminated all standard coating options — and be capable of withstanding operating pressures up to 20,000psi.

Resistance to corrosion, erosion and wear were all critical. The choke valves use a metal-to-metal primary stem seal system, so to maintain sealability the surface finish on the stems has to withstand the wear of hundreds of choke cycles in subsea environments.

As a result of working together, the Hardide-T chemical vapour deposition (CVD) coating is now used to hardface stems on the Master Flo P4-15k and P4-20K subsea bolted bonnet choke valves.

Fully qualified to API 6A, API 17D PR2 / PR3 requirements, and designed per API 17TR8 requirements, the subsea choke valves using the Hardide-T coating are rated to depths of 10,000ft for temperatures from -20°F to 400°F and pressure of 15,000psi for the P4-15k and 20,000psi for the P4-20K. The CVD coating is also used on an application for a capping stack, for deployment in a blow-out situation.

Everett Marshall, Master Flo engineering subsea team lead, said: *"The company worked with us to provide a solution that met all our criteria, and to fine-tune the manufacturing process to achieve the specific surface finish and geometrical tolerance required."*

Hardide-T belongs to a novel family of nano-structured tungsten/tungsten carbide coatings used on components subjected to high levels of wear, erosion, corrosion, galling and shock loading. The coating can be used in applications requiring smooth external and internal surface coatings, and even on complex shapes, including control valves, downhole tools, and retrievable packers.

The CVD coatings are crystallised atom-by-atom from low-pressure gas media, producing a uniform, pore-free coating.

The dispersed tungsten carbide nanoparticles give the material enhanced hardness, which can be controlled and tailored to give a typical range of between 800 and 1,600 Vickers hardness (HV).

Dr Yuri Zhuk, Hardide Coatings' technical director, said: *"The valves' qualification to all API requirements demonstrates the success of this specific collaboration, as does the successful deployment deepwater for a major oil and gas operator."*

Outperforming the alternatives
The CVD coating outperforms alternatives such as high velocity oxy-fuel (HVOF) and hard chrome plating (HCP) in a number of critical areas such as protection against corrosion, wear, erosion, acids, and other chemically aggressive media.

- **Chemical and corrosion resistance**
  The pore-free CVD coating's performance was confirmed in accordance with ASTM B117-07a standard. Here, mild steel plates were coated with HCP, HVOF, and CVD coatings, and were subjected to 480-hour neutral salt spray tests. The HCP samples were badly corroded and were removed from test after just 288 hours' exposure. HVOF-coated samples showed heavy rust stains and the coating blistered. The CVD samples showed only light staining.

- **Sulfide stress cracking**
  The CVD coating was tested in accordance with the NACE standard (TM0177-2005 / ASTM G39) 30 Day Sulfide Stress Cracking Test. Samples were tested with coating elongation up to 3,000 microstrain. The CVD-coated substrate showed no micro or macro-cracking or degradation.

"Hardide Coatings worked with us to provide a solution that met all our criteria, and to fine-tune the manufacturing process to achieve the specific surface finish and geometrical tolerance required."

- **Wear and erosion**
  Wear resistance tests performed in accordance with the ASTM G65 standard showed the coating wear rate is 40 times lower than abrasion resistant steel, 12 times lower than hard chrome and four times lower than thermal spray.

Dr Zhuk concludes: *"The CVD coatings offer a unique combination of protective properties, adding value to components, tools and equipment; reducing operational costs; saving downtime; and increasing productivity."*

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Ultravalve Wins **Contract & Territory Extention** Through Vexve **Deal Renewal**

Bonomi-owned process valve and RPZ valve specialist **Ultravalve,** has signed an extension to its **partnership** with Finnish **valve manufacturer Vexve.**

The deal marks an extension to the company's previous contract, as well as expanding the territory over which Ultravalve enjoys sole supplier status to include the whole of Ireland.

Vexve specialise in District Heating & Cooling Valves, a large quantity of which were supplied for use in the recently completed ground breaking Greenwich Energy Centre project. The company is also the first valve manufacturer to be awarded the EHP003 certificate for steel valves. Issued by RISE (Research Institute of Sweden) EHP003 is part of Euroheat & Power's certification program certifying steel district heating valves (EN 488) for pre-insulated valve assemblies and involves rigorous tensile, compression and bend testing.

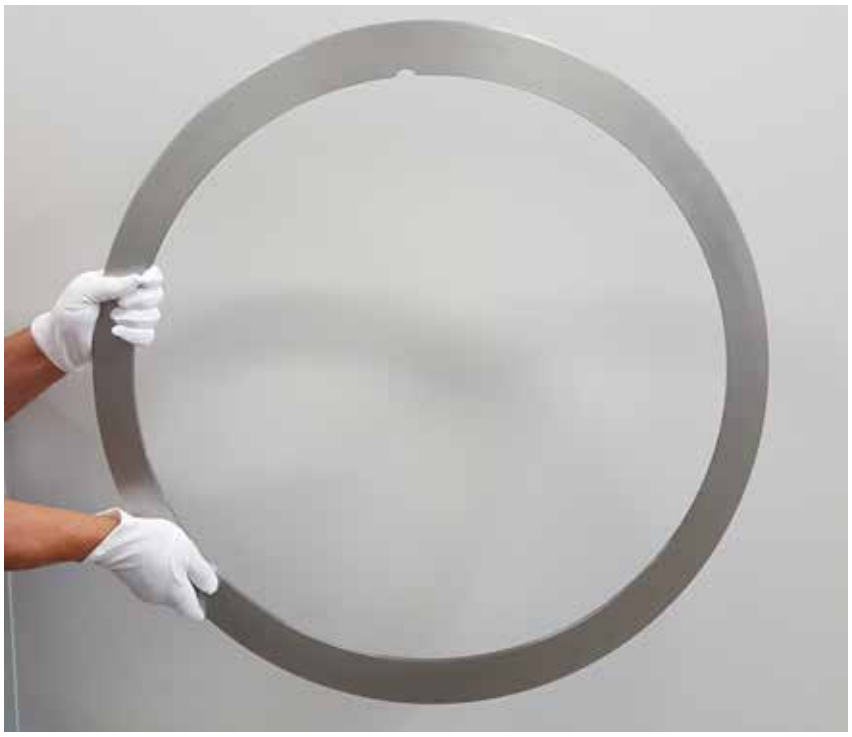
Comments Ultravalve managing director Bill Brach: *"We are delighted that Vexve have chosen to continue and extend their contract with Ultravalve as sole UK supplier and are looking forward to the new opportunities that being an ambassador for their range across Ireland will bring.*

"Achieving EHP003 is a significant achievement for Vexve and recognises their strength as a supplier of high performance directly buried pre-insulated valves.

"We look forward to further strengthening our partnership and giving Ultravalve customers access to our combined expertise."

Tel: 01384 411 114
Email: sales@ultravalve.co.uk
Web: www.ultravalve.co.uk

Groupe Latty's New Gasket Specially Designed For Triple Offset Butterfly Valve



The new gasket **LATTYgraf S** is a highly tolerance **machined gasket** specially designed for **double and triple offset butterfly valves.**

LATTYgraf S is a multilayer gasket made from a metallic element and compressed graphite in sandwich format.

It has high elastic recovery which provides perfect sealing, optimum reliability and reduced maintenance.

LATTYgraf S meets the requirements of the harshest applications with cryogenics, gas, liquid and steam fluids.

LATTYgraf S have many advantages such as:

- Withstands very significant temperature variations
- Reduced friction coefficient Improved sealing lifespan
- Little wear of the seal faces
- Available in two versions: Gasket on obturator, (sealing face on the outside of the gasket) or gasket within the body of the valve, (sealing face on inner side of the gasket).

LATTYgraf S can be used on double, triple or quadruple offset butterfly valves and in the Oil and gas, Refinery, Chemicals and Energy industries.

Tel: 01777 708 836
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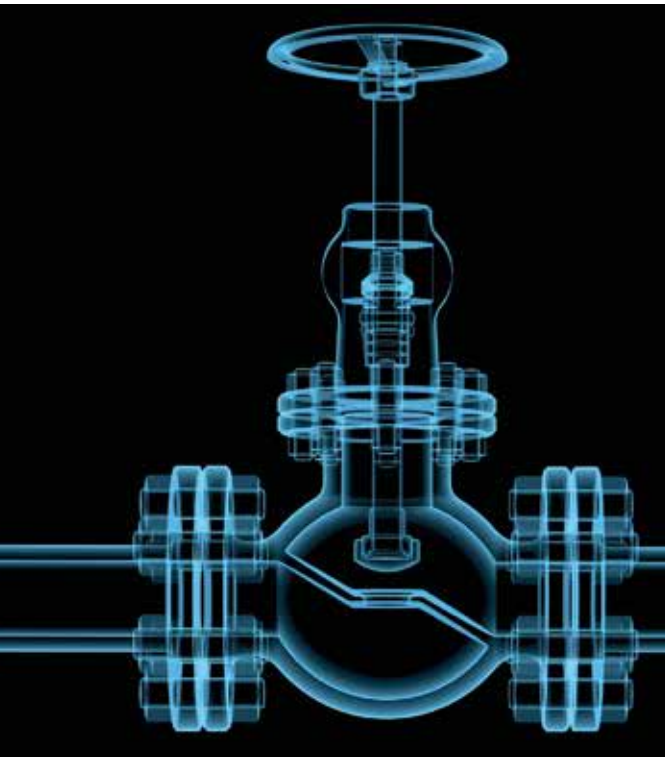

Take the stress out of **valve spring** design

Our expert engineers are happy to provide all BVAA mambers with a **free spring design check** service, whether for new applications or the development of existing products.

Using our advanced spring design software we can validate your spring concept for in-service performance, functionality and behaviour.

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Next Generation In Industrial Breakaway Couplings

Improves efficiency and reduces risk to assets and people

KLAW has launched the next generation in safety industrial breakaway couplings designed to activate in an emergency such as drive-off or extreme pressure flow.

Flowbreak contains an Easy Refit Facility that allows the resetting of valves after servicing or activation without the need to remove it from the line. Flowbreak is also the most compact and lightweight on the market and is designed for loading and transfer environments where space is at a premium.

Flowbreak contains KLAW Flip-Flap Valve and Breakstud technology, delivering 100% instantaneous closure of both upstream and downstream flow of media when activated. The coupling then separates, therefore minimising risk of damage to assets such as loading arms, hoses, mountings and other parts of the transfer system.

Injury to personnel, extended downtime to operations and damage to reputations are also minimised.

The KLAW Flowbreak Breakaway Coupling is suitable for 99% of all liquids and gases including LPG, ethanol, propane, bitumen, hydrochloric acid, chlorine, diesel, fuel oil, ammonia, sulphuric acid and jet fuel.

Typical applications include loading arms, hose transfer assemblies, refuelling, bunkering, railcars, road tankers, ship terminals and loading bays.

Threaded, flanged or weld end connections are all available and there is the option to include a proximity switch. ATEX cable is fitted as standard. Flowbreak is available in diameters of ½ to 12 inches.

KLAW is a world leader in the design, application and manufacture of breakaway couplings and safety transfer systems.

KLAW

Tel: 01373 858 877
Email: support@klawproducts.com
Web: www.klawproducts.com

BVAA's Technical Hot Spot

ISO 5209:1977 General purpose industrial valves - Marking
5 Year Systematic Review

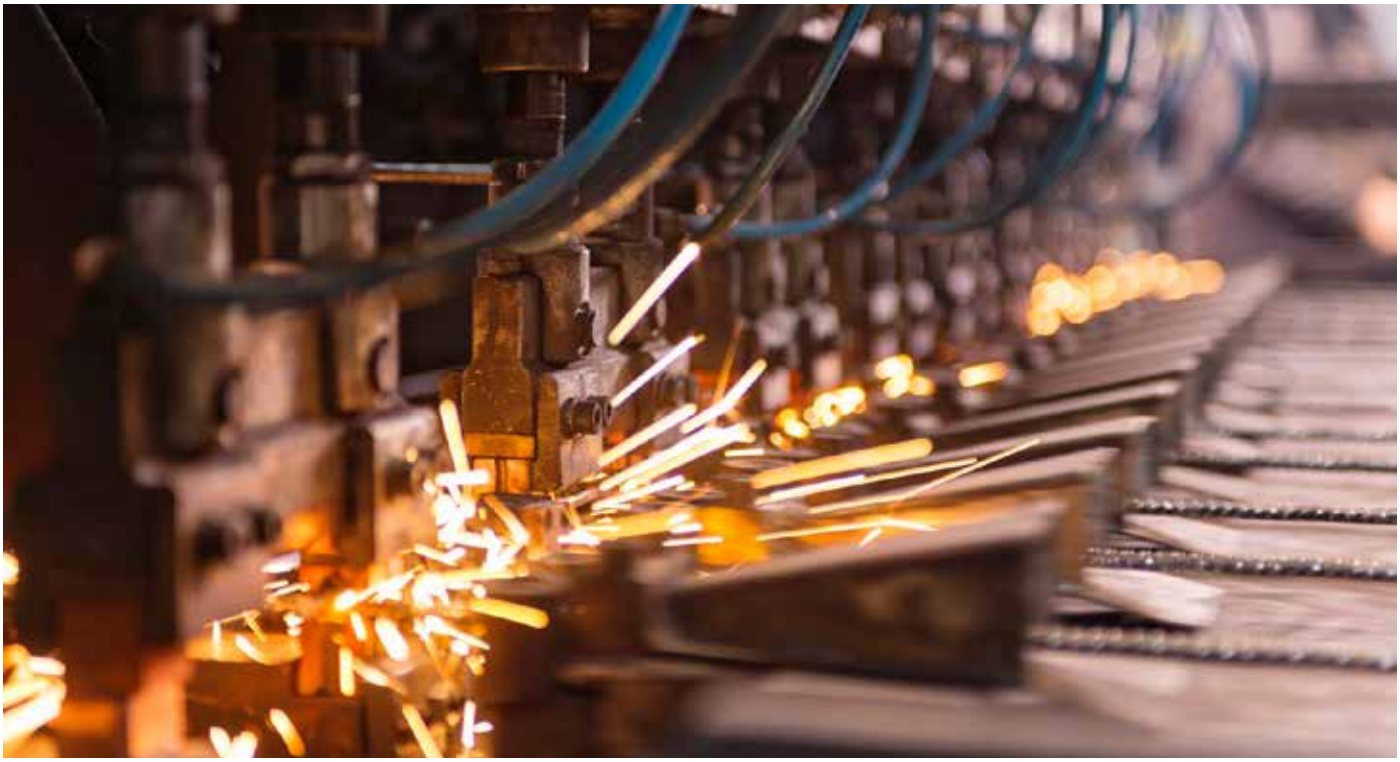
What is it?:

This International Standard specifies mandatory and optional markings of general purpose industrial valves and states the manner of applying the markings, i.e. on the body, on a flange, or on an identification plate..

Why Is it Important?:

It applies to valves manufactured to international valve product standards. It has never been revised following its initial publication and is now a long way out of date compared with EN 19. It is subject to the 5 year review. Should the inconsistencies with EN 19 be allowed to continue or should the ISO be updated?

Valve Technology Taking The Lead In Industrial Workplace Safety



Les Littlewood, Sales Director of Albion Valves UK Ltd discusses how valve technology is taking a lead in industrial workplace safety, and explains how getting the basics right can help safeguard Britain's workforce.

It is a well-known and sobering fact that due to the nature of the job in hand, industries such as building services, construction and manufacturing, have one of the highest occurrences of workplace injuries and fatalities.

Although there has been improvement in health and safety at work, statistics still reveal a huge cost to human life and quality of life, as well as financial implications for businesses in dealing with the consequences. Yet, more can be done to help further reduce the number of incidents by getting the basics right.

To help promote safer working environments, at Albion we urge specifiers and engineers to be vigilant and not to compromise on the products they are sourcing for industrial and building services applications, and always ensure they have the correct accreditations and are fit for purpose.

Paying attention to the basics makes for a safe and healthy workplace, which can in turn increase productivity, support engineering excellence and focus energy into meeting customer needs.

The majority of our distributors have customers operating in industrial and construction workplaces, where explosive atmospheres are commonplace. This includes environments where industrial processes may release flammable gases or vapours.

This is a potentially dangerous environment on two levels: explosions or fire can cause loss of life, serious injury as well as significant damage; and poisonous gases can cause long-term respiratory problems for those in direct contact with them.

Albion has added a range of fire-safe, anti-static, stainless steel ball valves to its product portfolio, designed to prevent the leakage of hazardous substances from the valve in the event of a fire.

Anti-static valves are suitable for installations within the pharmaceutical and petrochemical industries, as well as a variety of other industrial processes dealing with oil, gas and other flammable media, where there is an increased risk of explosion if substances leak during a fire.

The anti-static device fitted on the valve, ensures that friction caused by the operation of the valve does not cause a build-up of static, which could potentially spark and have disastrous consequences.

Compliance with the API 607 standard ensures that the valves are fire-safe. The standard looks at the performance of valves by establishing limits of acceptable leakage when they are exposed to defined fire conditions.

Valves that meet the API STD 607 requirements should be able to retain the pipeline media long enough for the fire to be extinguished - to avoid fueling the fire further. Fire-safe valves are also required to be operational after exposure to fire in order to move from the 'open' to the 'closed' position.

Les commented:
"We do the utmost to ensure that engineers and anyone working in potentially dangerous situations and using our products can do so with complete confidence. We are also aware that health and safety legislation and keeping up to date with new regulations can be a

complicated and time-consuming process, which is why we have a dedicated quality team to ensure our products are all fit for purpose."

Similarly, the ATEX certification mark is designed to minimize the risk of fire or explosion arising from the ignition of dangerous substances in the workplace. Albion's range of stainless steel valves is ATEX certified for use in potentially explosive environments, and guaranteed not to spark if they come into contact with a combustible foreign body.

The ATEX directive applies to electrical and mechanical equipment intended for use in potentially explosive atmospheres including; mines, factories, sewage plants, biomass processing, oil and gas distribution.

The ATEX directive also requires the traceability of products, including valves and fittings, throughout the whole supply chain, ensuring that manufacturers, authorized representatives, importers and distributors all guarantee that the product they place on the market complies with this directive.

Another major safety threat posed to engineers and industrial work staff is in environments with high-pressure systems operating above 0.5 bar. In this instance pipework, valves and fittings are required to be compliant with the Pressure Equipment Directive (PED) to ensure the equipment is able to withstand pressure and prevent system's bursting.

A common and potentially lethal occurrence in this situation is when relief valves are specified to do the job of a safety valve. Safety valves are the last line of defence in a pressure system, however engineers and specifiers need to be mindful that requirements can vary significantly from system to system.

In applications where PED is applicable, it is mandatory to use safety valves with the appropriate approvals. If a valve without type test approval is installed there is no guarantee that required blow-off at 10% would be reached, which poses a big safety risk.

Albion's range of safety valves is based on a traditional model; they have been improved to bring them up to date with modern valve design and performance. They come with a unique 2-piece spindle to ensure a safe, tamper-proof discharge, even if some form of external restraint has been applied, as well as an increased discharge capacity and a 24 month market-leading warranty.

Gunmetal Safety Valve

Fire-safe stainless steel ball valve

The Gunmetal Safety Valve and its sister product the Gunmetal High Discharge Safety valve, are both designed for use with steam, gas and liquids. The products are WRAS approved, can operate in temperatures from -50°C to +195°C (with a maximum 16 bar pressure), and can be also ATEX certified upon request.

Safety valves are all either set, sealed and certified by the factory, or onsite at Albion on a test rig prior to dispatch. Each valve is laser etched with its own unique serial number to allow certification to be traced.

Working with gas is one of the most hazardous industrial occupations; in the UK natural gas is distributed through a 275,000km network of buried pipes to domestic, commercial and industrial users. Dangerous and illegal gas work carries high penalties, and careful network management and equipment procurement is of paramount importance in this field.

To help get the basics right Albion's range of brass ball valves for gas applications is verified with industry standard EN331 from BSI (British Standards Institution) ensuring products meet the optimum standards for quality, reliability and safety.

Les added:

"It is important to realise that the liability for using a non-conforming product rests with the installer, which is why Albion recommends using a certified safety valve wherever possible and making safety a priority."

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Web: www.albionvalvesuk.com

WSG ...The Sum of the Parts

WSG UK Ltd all set to shake up the industry approach.

Mention Well Services Group or WSG to anyone in the industry and there's instant recognition. We've been well known for many years, but did you know that as part of the WSG group of companies, we are now doing something that has never been done before?

It sounds a little clichéd, but all the same it's true. The past year has seen WSG UK bring together a number of different companies under a single umbrella organisation that is challenging and changing the sector's future direction.

Under the stewardship of the group's Managing Director, Gareth Turner, WSG UK Ltd is now home to three well-established strategic businesses, namely; Process & Pipeline Services (formerly PNS Ltd), WSG Provalve Ltd and WSG Industrial Services. Combined, WSG UK Ltd are able to offer customers across all industry sectors the first fully end-to-end service solution.

As a progressive business, WSG have been quick to recognise the changing customer landscape and with it, the new customer experience requirement. The past ten years have dramatically changed the economic landscape, requiring organisations to seek more cost-effective and higher-value solutions. In response to this, WSG have consolidated three of the core elements in the industry's life-cycle under a single entity. Whilst this has been a first for the UK, something not found across any other valve or services supplier.

The ability to provide a single project entity delivering real 'blind to blind' capabilities brings many client benefits.

Speed - A number of different project and team changeovers which had previously created unavoidable process and operational delays, leading to longer project cycles, is now a single, unified and connected project entity, effectively removing these barriers and therefore providing faster turnarounds.

Efficiency - A single project solution benefits from inherent business and service efficiencies, removing service duplication and overlap. Similarly, cross-project and service visibility increases the likelihood of a friction-free experience.

Reduced risk - Naturally, a single solution team with aligned processes helps minimise all areas of business and safety risk. Full project line-of-sight adds both peace of mind and increases overall business trust.

Cost - It should go without saying that a single, unified operation will help keep the bottom line down. Service rationalisation built around complete in-house synergy is where you'll find the whole is greater than the sum of the parts.

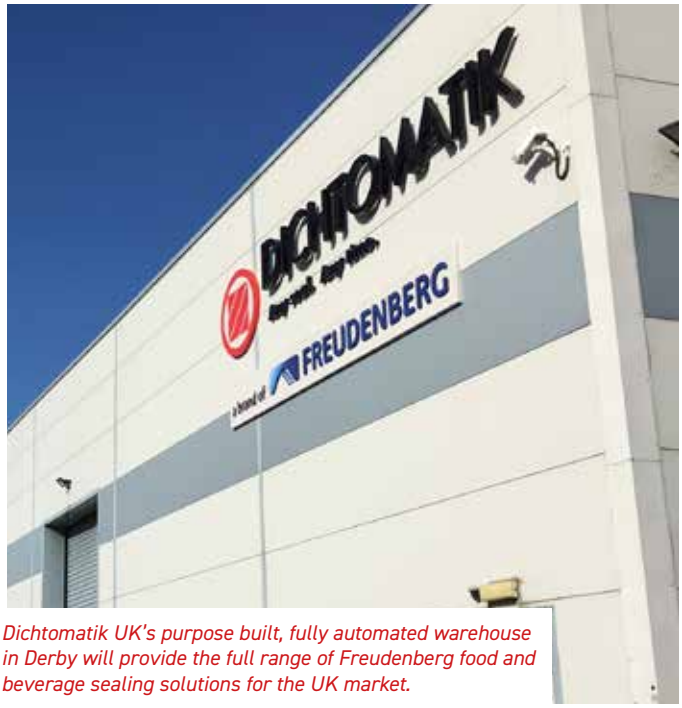
In short, WSG provide better solution scope without the added cost, time, complexity or risk of juggling multiple partners. You'll be surprised just how capable we've now become.

Strategically located in the middle of the country, with premises in Normanton, Middlesbrough and Cramlington, WSG remain the only operation in the UK with full coast-to-coast reach, focused on the land market. We continue to provide turnkey solutions of all complexities to our customers both on and off-site through our expanded workshops, warehousing and extensive mobilised fleet capabilities.

WSG® Provalve

Tel: 01924 898 250
Email: uksales@wellservices-group.com
Web: www.wsgprovalve.co.uk

New Local Expert For Food & Beverage Sealing Solutions



Dichtomatik UK's purpose built, fully automated warehouse in Derby will provide the full range of Freudenberg food and beverage sealing solutions for the UK market.

Dichtomatik UK Ltd becomes the exclusive local provider for **Freudenberg Sealing Technologies' food** and **beverage sector** in the **UK.**

Freudenberg Sealing Technologies is the world's leading specialist for high-quality sealing solutions for the food and beverage sector. As Dichtomatik UK Ltd is a part of Freudenberg Sealing Technologies, this enables the company to provide UK customers with local support and local availability, resulting in shorter delivery times and even higher service levels.

As the official UK representative, Dichtomatik UK is now the exclusive source for Freudenberg food and beverage sealing solutions, providing the full range from its purpose-built, fully automated warehouse in Derby. Dichtomatik is also providing technical support and customer service to the UK market.

Outstanding product and material expertise makes Freudenberg the preferred partner for any customer requiring high-performance seals and services for demanding applications in the process industry. Whenever hygiene is a critical factor, the company offers special product solutions like dead-space-free seals and certified elastomeric and plastic materials that conform to FDA and EU regulations regarding food safety.

The food industry includes a wide variety of applications with distinct requirements. Here, the diversity of products and the use of numerous flavours can have varying effects on sealing materials. For instance, in breweries, seals have to withstand wort, beerstone and the essential oils of hops, while in dairies, they must offer long-term resistance to fatty and protein-rich products.

Freudenberg Sealing Technologies' Hygienic Usit® washer makes screw connections according to Hygienic Design possible.

In the production of chocolate, fatty ingredients are sometimes heated to a very high temperature, which again provides a challenge for seals. Likewise, seals used in ice cream production have to cope with extreme temperature fluctuations. Jam manufacturing is another demanding process, where pieces of fruit and crystallised sugar are a source of seal abrasion and wear.

To exacerbate the situation, food and beverage manufacturing equipment is increasingly operated at full capacity, which requires more frequent product changes and cleaning cycles. With this in mind, Freudenberg offers materials that minimise flavour transfer and reduce the impact of frequent product changes.

Among current examples of the innovation levels available is the Hygienic Usit® washer, which makes hygienic screw connections possible as it offers a sealing design that prevents the formation of a breeding ground for bacteria under the screw head. The Hygienic Usit hermetically closes off the area between the screw head and the surface, using geometry that guarantees excellent cleanability of the connection. The Hygienic Usit is available in three different material variants that comply to all industry specific legal regulations and withstand CIP-/SIP cleaning processes as well as demanding process media and conditions.

All Dichtomatik UK staff are highly skilled and trained on the special sealing requirements of the food and beverage industry. Providing specific product and material expertise locally is a vital part of the co-operation project.

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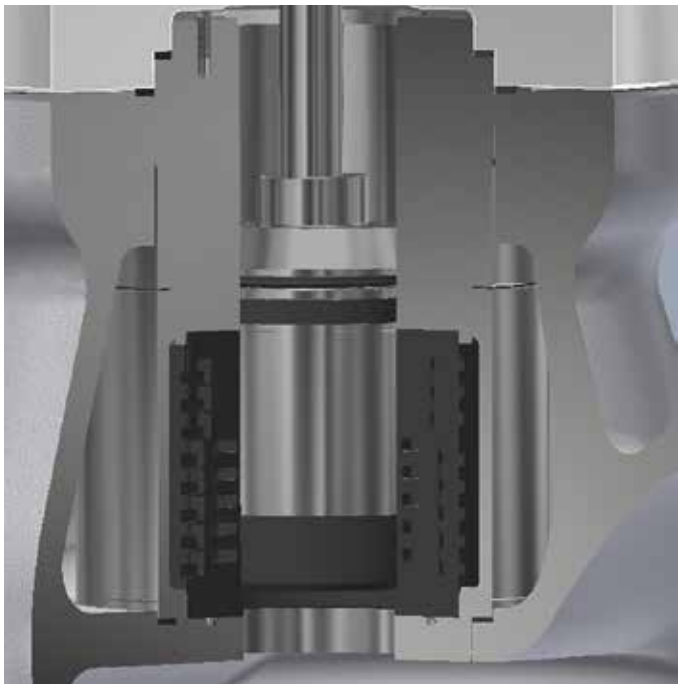
Kent Introl Engineer In-house Vector Upgrade Solution

Kent Introl completes **retrofit upgrade** for a **water injection dump valve manufactured** in the **mid 90s**

Project Overview
Kent Introl recently completed a challenging retrofit upgrade for a water injection dump valve operating on an FPSO in the North Sea. The project was undertaken exclusively in-house, utilising the design prowess and advanced technology that sets Kent Introl apart in the industry.

The valve was originally manufactured in 1995 and required minimum maintenance. We supplied a new trim in 2015, however due to a change in process conditions it was returned to us after just two years of service. It was clear a new solution was required to ensure the valve was fit for purpose to meet the new process conditions.

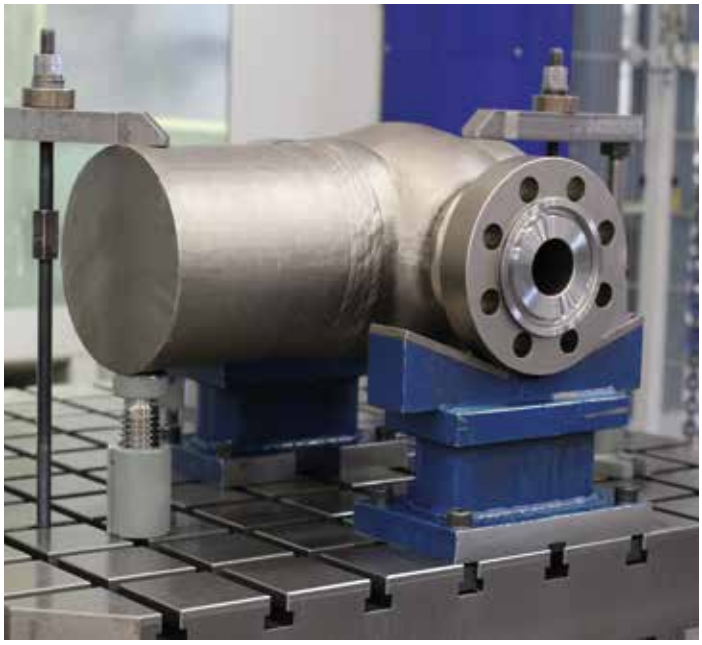
Arrival and inspection
Upon stripping the valve we identified that while the body was in a fair condition there was extensive erosion to the trim. This was caused by a combination of abrasion and cavitation owing to injection water with high sand content. There was also erosion between the guide and seat, which suggested the valve had been operating too close to the seat.

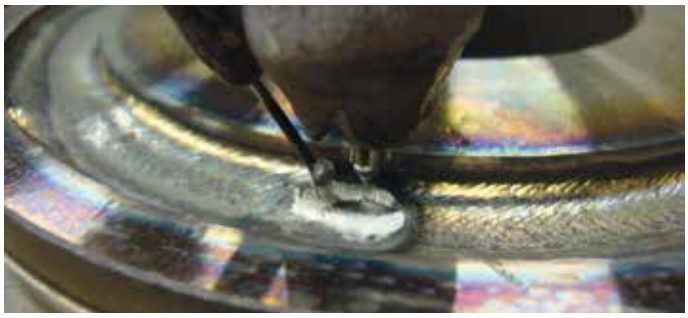


Technical review
The Kent Introl Applications Department identified the challenge of highly erosive conditions. The original Turbotrol valve had 7 stages, but erosion meant that several of these stages were damaged, an inherent problem with this type of design. After reviewing the service history of the valve against current process conditions, we strongly recommended an upgrade from a steel trim to harder wearing materials and a new design solution.

As an industry leading OEM, Kent Introl's offering is not typical of other service providers. We have the technical capabilities to engineer and implement bespoke solutions that others simply can't. As such, we were able to recommend a tungsten carbide Vector stack upgrade. With strength and durability that cannot be surpassed, tungsten carbide would ensure long term valve performance. This 6 stage solution can control the velocity of the medium as it passes through the trim, thus minimising erosion. Its stacked series of plates would also be considerably smaller than its former.

The customer was happy with the proposed solution, securing long term cost efficiency by limiting the expense of downtime as well as future repairs.





Design
The Kent Introl team designed an in-house solution with each stage taking specific pressure drops, which would also help with velocity control. The aim was to keep kinetic energy at a constant low within the trim and prevent blockages. In order to achieve this, passageways must increase in width as the medium expands.

We produced a CAD drawing of the valve according to existing body dimensions and reworked our trim design until it was compatible. When we were happy with the design, it was put into the system and manufacturing began.

Engineering the solution
We faced the challenge of designing a smaller technical solution that would fit into the same valve. Fortunately, our in-house machining capabilities exceed those of a typical service provider.

The original seat was screwed in and welded. We removed this and completed a weld repair, before remachining to the dimensions of the new seat. We also upgraded from a screwed in seat to a clamped in seat, which is much more efficient from a serviceability point of view. The RTJ flange grooves were also damaged and required extraction and welding to build back up.

Re-assembly and testing
Upon completion, the valve was reassembled in our dedicated aftermarket facility by Kent Introl specialist engineers. We were then able to carry out a number of tests to ensure performance standards including a Hydrotest and the Seat Leakage Test.

Our client also benefited from our OEM warranty, which we offer on all our repair projects. This protects against manufacturing fault and material defect, as well as covering labour and any associated costs when resolving issues. We also further our Aftermarket service by providing a follow up, ensuring the solution has been a success.

Kent Introl can provide a specialist OEM upgrade service that is tailored to each client's individual process requirements and service conditions. With our dedicated engineers and wider team of specialists, we ensure that Applications across the world continue to perform correctly.

kentintrol

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‘Supply chain agility crucial to capitalise on recovering market’ claims Actuated Solutions

Actuated Solutions Ltd emplore the Oil & Gas sector to embrace agile supply chain practices

In February, a month after Brent crude surpassed the $71 marker for the first time in three years, specialist provider of value automation products, Actuated Solutions, is calling on the oil and gas sector to embrace agile supply chain practices to capitalise on the anticipated demand the recovering market is likely to yield. Keen to keep their finger on the pulse of market fluctuations and support customers, ASL has been working in partnership with European supplier Quifer to increase stock holding of castings and springs for heavy duty Scotch Yoke actuators.

With Quifer already on the approved vendor list for many oil and gas corporations and, thanks to agile operations and intelligent forecasting, ASL is able to reduce lead times for heavy duty Scotch Yoke products by up to 75 per cent, compared to other brands on the market.

Commenting on the predicted upturn in the market and ASL’s commitment to providing the right part, at the right time, and at the right price, ASL’s Director, Chris Hickey said: *“The rising cost of oil represents good news for the sector but also a potential risk if businesses aren’t prepared to fulfil the enhanced demand due to a lack of flexibility within the supply chain. Because of the restrictive specifications imposed within this sector, some of the larger, specified brands have become complacent: lacking the ability and sometimes the desire to respond to customer needs quickly.*

“We’re proud to offer the market a solution and, through close partnership working, a swift and responsive supply chain to support customers in the delivery of their vital projects. We’re also continuing to add value to customers by using our extensive technical knowledge to help specify valve and actuator packages that meet unique needs.”

“The rising cost of oil represents good news… but also a potential risk if businesses aren’t prepared…”

ASL provides the oil and gas market with a wide range of products, designed to actuate larger valves used in critical applications, that can operate effectively in very harsh environments. In addition, ASL’s products come with ATEX approval, European supply accreditation and Safety Integrity Levels (SIL) equivalent to any other product on the market.

To find out more about Actuated Solutions, please visit: http://www.actuated-solutions.co.uk/

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Digital Position Control Transmitters: The SMART PST Method

Testing the installed base is an incredibly important aspect of any **valve monitoring** program, and **partial stroke testing (PST)** methods are the go-to solution because of the **related safety** and **cost-savings benefits.**

PST can extend intervals between full stroke tests, enable operators to plan inventory for maintenance turnarounds, and in some cases, reduce the need for redundant valve solutions. Yet, from mechanical jammers and modulating valve controllers, to solenoid valves and smart positioners, plant operators have had a limited selection of PST methods to choose from, each providing varying features that solve some problems, but present others in the process.

Additionally, these traditional methods, while capable of performing the basic PST function, don't have the ability to capture usable data and translate it into valuable diagnostics, a luxury we as a society are becoming more and more accustomed to in other aspects of our lives. However, as it is in all industries, with every mechanical solution comes technological advancements that offer expanded benefits capable of revolutionizing the way a process is conducted. The digital position control transmitter is that advancement for the process of partial stroke testing.

Smart technology has enabled manufacturers like Westlock Controls to develop an automated PST method that offers broader diagnostic abilities, easier implementation and a more cost-effective maintenance program. The digital position control transmitter is based on solenoid valve (SOV) technology and is capable of testing the complete automated valve package, including the SOV, electronically measuring the valve's position and creating a feedback signal using analog and/or bus technology to report the valve's true position to the plant's control system.

Unlike the PST methods of the past, digital position control transmitters can capture diagnostic information during the full stroke test, as well as an ESD event and translate that into predictive data that can be used to determine which automated/discrete valves are healthy and which are not during plant turn-around, before an emergency shutdown event occurs.

Westlock, one of only a few digital position control transmitter suppliers, offers this technology through its Digital EPIC product line (versions 1 and 2). In addition to the features already listed, the latest Digital EPIC-2 offers reliable non-contact position feedback with digital communication via HART® protocol in an integrated package, providing 4 to 20mA feedback so the user can validate the information received and be confident that the valve not only shifted, but went to the fully closed, tight shut-off position.

However, the most interesting of the expanded features offered, and an approach unique to the Digital EPIC-2, is the ability to store up to seven full stroke tests in non-volatile memory. Five of these are diagnostics tests, including baseline, dynamic baseline, and maintenance signatures which can be reviewed on the user's host system via DD/DTM technology and used to make determinations on valve health and schedule maintenance accordingly.

"Smart technology has enables manufacturers like Westlock Controls to develop an automated PST method that offers broader diagnosis abilities, implementation & a more cost-effective maintenance program."

The other two tests (integrator and installer) are used to document the function of the valve assembly, both at the automation supplier or OEM location, as well as after being installed in the field by the contractor, assuring traceability along the entire valve package commissioning process.

Digital position control transmitters represent an evolution in PST and valve maintenance. Thanks to products like the Digital EPIC-2, plant operators have access to a wealth of information about their in-line valves, allowing them to make more informed decisions that directly impact personnel, safety and costs.

WESTLOCK CONTROLS

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WSG Provalve - Proficiency In Safety and Relief Valves

Relieving real world challenges & pressures are all part of **WSG Provalve's** day job.

Periodic maintenance and testing of safety relief valves is a necessary aspect of plant safety and should not be seen as a box ticking exercise to ensure compliance with a relevant standard or legislation. The downtime, co-ordination of services and cost implications of a relief valve campaign can be complex and demanding and if the job is not done properly or causes extended outage it can really add to the stress.

Of course, the potential of poor or inexperienced workmanship can stretch much further than mere inconvenience; poor maintenance of such safety critical equipment means unacceptable risk to the safety and well-being of people and plant.

At WSG Provalve we can take the stress away and you can rest assured that your safety valves are in good hands. We have the equipment and expertise to ensure that nothing is left to chance. We are able to offer the most extensive service currently in the UK, both on and off-site.

We are as serious as you are about the safety of your process and whatever the frequency of your valve inspections, we are ready to help. Be confident that your relief valves are going to work when you need them the most!

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The Humble **Solenoid Valve…** A Vital **Ingredient** In **UK's Food Industry**

The food & beverage industry in the UK is worth over £95billion* and accounts for over 50% of all retail sales, making the supply chain one of the most expansive & specialist in the UK.

Keeping the cogs of the food machine turning at a pace that satisfies the appetite of retail giants, contract caterers and consumers is no mean feat, yet it is often the case that with all the state-of-the-art technology involved in the food production process from 'field to fork' in bakeries, dairies, breweries, fruit and vegetable canneries, and animal feed …it is the humble solenoid valve that keeps the food engine running.

A solenoid valve has a simple mechanic designed to shut off, release, dose, distribute or mix fluids. In the food industry they are most frequently used to control the flow and direction of fluids, as well as being an absolute necessity for any operation that requires batch control such as in bottling plants and canneries.

The solenoid also drives pneumatic and hydraulic systems, flush systems, control cylinders, fluid power motors and helps control and energize the operation of larger industrial valves.

Solenoids can be found in almost any process operation that requires measurement, such as grouping and flow control so is essential, for example in the processing of condiments, sauces into jars such as mustard, mayonnaise and ketchup. They are also widely used in hot beverage dispensing equipment, such as coffee brewing systems to control flow into and out of drink dispensers.

Les Littlewood, Sales Director of Albion Valves commented: *"Solenoids are very common place in the food processing industry and as such are a product line that our distributors require again and again. To cater for demand we have introduced a wide range of design options to offer greater choice, and more cost effective engineered solutions.*

Our solenoid valve program currently includes valves for air, steam, oil, and gas, suiting a number of food processing applications.

The range also includes pilot operated, direct acting and high temperature valves with a variation of different diaphragm options.

The solenoid's function of managing a variety of media including water, air, oil and steam along with their high reliability, long service life, good medium compatibility, low control power and compact design makes this line a best seller."

'Solenoids can be found in almost any process operation that requires measurement, such as grouping and flow control so is essential, for example in the processing of condiments, sauces into jars such as mustard, mayonnaise and ketchup.'

In the food processing industry stainless steel is always primary choice of material as is doesn't corrode, rust or stain, it has excellent hygiene properties and is able to withstand extreme temperatures from -25°C to +200°C.

Albion was one of the first companies to introduce a range of stainless steel valves and fittings, which conform to ISO 4144 standard, specifying the pressure-temperature ratings, dimensions and materials of stainless steel fittings.

Although it is commonplace for process engineers to assess system components for quality including valves, it is less likely that the fittings are checked in these inspections to ensure they conform to the industry standard.

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.

Similarly, Albion recommends manufacturers of food processing equipment specify valves with ATEX approval as standard. Processing some food products like cereals, flours, animal food or powdered milk, tea, coffee will produce a dusty hazardous environment.

Dust can when mixed with air create a potentially explosive atmosphere that could be ignited by a spark or flame. So, for all hazardous environments it is very important that an ATEX rated valve is used.

Pneumatics also play a large role in the equipment used throughout the food and beverage industry. Often food processing equipment manufacturers rely on air control valves to make, dispense or preserve their food and beverage products such as wine, condiments, bottled water and other soft drinks.

When exposed to oxygen, perishable food items are susceptible to rapid deteriorating or spoiling. Nitrogen is used during food processing to prevent oxygen from reaching the food in order to maintain freshness. Nitrogen preserves taste, texture, and color during processing for a better quality when packaged and stored.

Albion's range of butterfly valves are often specified in pneumatic applications, where gas flow needs to be managed – butterfly valves are simple, clever, reliable and extremely hard wearing.

They are designed to control the flow of gases by simple quarter turn rotation of a disk either manually or via pneumatic or electric actuation that either enables flow or prevents it, making them an ideal component to help preserve perishables.

With over 65 million mouths to feed, the UK's food industry and must rely on the simple but effective mechanics of valves to keep industry machinery operating at maximum efficiency, and keep food production in line with population growth and demand.

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ValvTechnologies, Inc.: ITC 2018 Recap

The biennial ValvTechnologies' International Technical Conference and Users Group (ITC) was held on February 8-9 in Houston, Texas.

Seeking to educate, inspire and engage attendees over a two-day period, the event brought together hundreds of attendees from across the globe to share valuable insight into the severe service valve industry's leading-edge products, technology and solutions.

The conference united members of the valve community from 35 countries including industry experts, distributors and end users who participated in a series of technical lectures, roundtable discussions and networking activities.

Retired seven-time NBA champion, Robert Horry delivered the ITC 2018 featured keynote address entitled, *"How to be a Big Shot,"* with remarks highlighting the hard work and dedication it takes to succeed.

"ITC 2018 was a fantastic opportunity for attendees to get the latest information and developments in severe service valve applications," said Ross Waters, President CGIS. *"I learned so much of what our business looks like from the different perspectives and eyes of valve users and process designers. Participating in focus groups gave me a better understanding of the need of the clearest communication regarding valve performance and valve technologies, preparing us all for success. I look forward to another great conference experience at the next ITC and meeting up with my friends and colleagues."*

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Rotork Delivers Customised Solution for Challenging Subsea Applications

One of the Rotork Gears customised WGS550 subsea gearbox and Fluitek valve packages ordered for the Zawtika oil and gas field.

Rotork Gears has successfully completed an order from Fluitek Valves

The order was for customised heavy-duty gearboxes to operate 450mm (18") Class 600 subsea ball valves at a depth of 130 to 150m (460 to 490ft) in the Zawtika oil and gas field in the Bay of Bengal.

The Rotork WGS range of quarter-turn gearboxes are designed for heavy-duty subsea applications and constructed with carefully chosen materials to offer the highest level of reliability in very harsh environments.

The customer specified that the model WGS550 gearboxes should be built with a special vertical input structure with a total height of 750mm, capable of sustaining 3,000Nm of bending moment force and a vertical axial load of 3,000N.

The design has been validated by Rotork Gears, using a Finite Element Model (FEM) software simulation that predicts how a model reacts to physical effects, followed by a Mechanical Advantage (MA) test on an in-house test rig to confirm the efficient performance of the design.

The gearboxes can operate the valve by using a Class 2 Remotely Operated Vehicle (ROV) or a removable handwheel used by a diver. To avoid damage to the valves the input torque is limited at 170Nm. For added security, special handwheels with calibrated Duplex stainless steel shear pins have been supplied and a highly visible operating data plate is attached next to the ROV bucket on each gearbox.

Completed valve and gearbox assemblies tests were performed in a hyperbaric chamber, simulating an external pressure of 27bar (around 1.8 times the required pressure).

rotork

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Introducing Alco's New Website & New Range of High Pressure Products

We are pleased to announce the **release** of our **brand new website** which will be **launched** on the **28th February.**

This also coincides with the expansion of our already impressive product portfolio to now cover a range of pumps, instrumentation valve fittings, high pressure gauges and our revolutionary XC Double Block & Bleed (DBB) valve range. There have also been a number of impressive investments including the purchase and installation of more state of the art engineering equipment. Alco Valves is a company with the ability to provide multiple solutions.

Our new cutting edge website has been designed and built specifically to ensure users can find what they want quickly and efficiently. Supporting our customers is essential, and to aid this we have designed our website to make it simple to get in touch with our regional teams via telephone, email and now our new live chat facility, enabling instant communication with our sales and technical experts. All our newly designed brochures can be downloaded with a few clicks. With its user friendly interface, simple navigation and striking design, the site looks sharp on any device. We have a competition running where we are giving away iPads and Alco goodies. Visit the website to find out more.

To accompany our extensive valve ranges, we are also pleased to announce the release of our new pump range which includes standard and bespoke air operated power packs, air driven hydro test power packs and air operated double diaphragm pump skids. We are also releasing a specially designed range of high pressure gauges to complement our products. We also recently introduced a comprehensive range of compression fittings for use with our instrumentation valves, designed to meet the demands for high precision standards. Brochures for all of our lines are available on the website. All our products are manufactured in the UK under ISO 9001.

One of our greatest achievements of recent times is the introduction of our XC Valve Range. Being a revolutionary improvement on the original (and already impressive) DBB range, this compact, safe and very reliable valve is without doubt the most technically advanced product range we have ever produced. With bespoke end connections including flanged, threaded or welded, the XC is adaptable and efficient, manufactured from the highest quality materials, and available off the shelf for fast delivery. To demonstrate all the advantages, we have released a series of technical articles (available on the website) outlining the capabilities, technical data and the accreditations and quality standards awarded.

Our investment in technology enables us to manufacture the most technically advanced, precision engineered products on the market. The technically advanced machine shop contains 20 state of the art precision engineering machines including Mazak Integrex and a new Mazak Hyperquadrex as well as a number of Citizen L32 lathes.

Check out our website at www.alco-valves.com or call the experts on +44 (0)1484 710511 to ensure all your requirements are quickly fulfilled. Alco Valves delivers trusted solutions for critical applications.

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Trust ARI For Economical Solutions In Control, Isolation, Safety & Steam Trapping

ARI-Armaturen UK Ltd will be exhibiting on stand BV100 in the 'Valve Zone' at the Fluid Power & Systems show at the NEC, Birmingham, 10-12 April.

Specialising in equipment for steam, heat transfer and energy management, ARI-Armaturen offers an extensive range of valves, steam traps and engineered systems for numerous applications and industries.

Providing various equipment, ARI works with many companies over the UK to help those sites achieve low maintenance, maximum sustainability, optimum efficiency and increased operational lifetime.

On stand BV100 at this year's exhibition will be a variety of products that promote energy efficiency, safety and durability. As well as an impressive range of valves and steam traps, ARI will be exhibiting the ENCOsys – a compact, low maintenance steam to water plate heat exchanger. With the ability to supply hot water instantaneously up to 2100Kw, this is a proficient heating and hot water system which can offer considerable savings in energy and cost when compared to more traditional systems such as shell and tube.

The CONA Control will also be featuring, this is a smart device designed to test all onsite steam traps and eliminate unnecessary steam or energy loss. With reports showing that around 22% of steam that leaves boilers in a plant is lost via leaking traps and that a 3mm orifice under a pressure of 7 bar/100 psi can result in the loss of 25 tonnes of steam per annum, this product is a great tool for keeping boiler plant costs down, improving efficiency and reducing the risk of safety hazards caused by blockages in a steam system.

The ZETRIX premium triple offset isolation valve will be set up as a double block and bleed arrangement. Boasting zero leakage and emissions, the ZETRIX provides guaranteed isolation (conforming to leakage rate A in accordance with DIN EN12266-1) and is suitable for liquids, gases and vapours. The block and bleed system offers the only proved isolation, in accordance with HSE guidance 253 (Safe Isolation of Plant & Equipment), which states that double block and bleed is greatest in the hierarchy of mechanical security for isolation methods.

For more information on solutions for control, isolation, safety and steam trapping contact ARI-Armaturen UK Ltd on 01684 275 752 or email enquiries@uk.ari-armaturen.com

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- Used for isolation and control
- Can also be set up as a double block and bleed arrangement
- Range includes double flanged, fully lugged and butt weld end versions
- Suitable for liquids, gases and vapours in a wide range of applications
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BVAA

PTFE Diaphragms from ElringKlinger Raise the Bar

Fig. 1: Valve diaphragm made of HS 22121

Fig. 2: Possible designs for PTFE diaphragms

High-performance **PTFE HS 22121**—the ideal material for **diaphragm seals**

ElringKlinger's modified fluoropolymer HS 22121 not only combines an extremely broad range of material properties but also significantly exceeds the bending strength and leak tightness of standard PTFE.

Diaphragms are often used in dynamic systems in which they act as a hermetic seal for carrying or separating media. They are generally made of elastomers or elastomers reinforced with woven fabric materials. Chemical, pharmaceutical and food industries primarily make use of PTFE laminated rubber diaphragms in order to exploit the fluoropolymer's special properties such as chemical resistance, physiological safety, or anti-adhesive behaviour for example. Thermally pressed or machined diaphragms made of HS 22121 (Figure 1) offer an advantage over composite diaphragms owing to their high reverse bending strength, leak tightness and low power input.

Advantages of diaphragms made of fluoropolymers

Diaphragms made of PTFE have a longer service life than those made of a composite materials. When composite materials are subjected to higher pressures and temperature fluctuations, delamination can occur because of the different mechanical properties (Young's modulus and shear modulus) of each layer which significantly reduces their service life. Depending on their design, PTFE diaphragms can achieve the same mechanical properties as composite membranes made from elastomers and thanks to their high chemical resistance, there are almost no restrictions on their use (FDA/USP 6/3A approval, ATEX directives 94/9/m (European standard EN 13436), etc.).

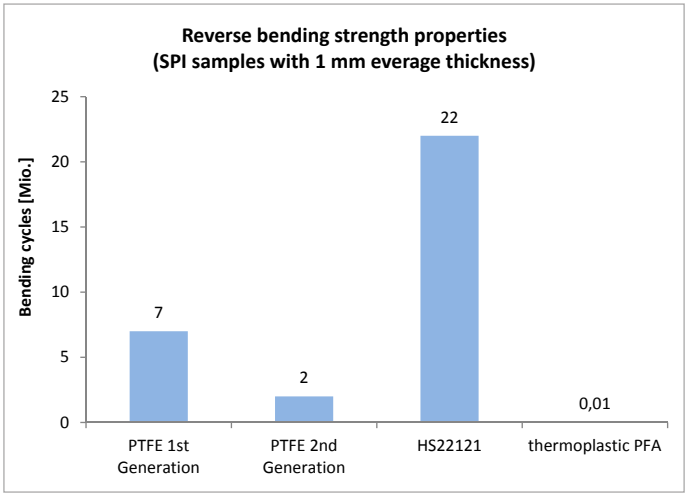

Fig. 3: Reverse bending strength of HS 22121 compares with first & second generation PTFE

Machined PTFE diaphragms can be produced more cost effectively and in less time than composite alternatives. Because no special tools are needed, small batch quantities or samples required for testing can be made quickly thereby reducing the number of development loops required.

The advantage of machining is that small and large series parts can be produced under controlled process conditions and without fluctuations in quality.

Figure 2 shows possible design solutions for PTFE diaphragms. This level of design freedom makes it possible to integrate multiple features and functions in the same unit.

Threaded bolts or inserts can be welded or screwed into place for example and these are firmly bonded with the PTFE which allows them to withstand high mechanical stresses in dynamic applications.

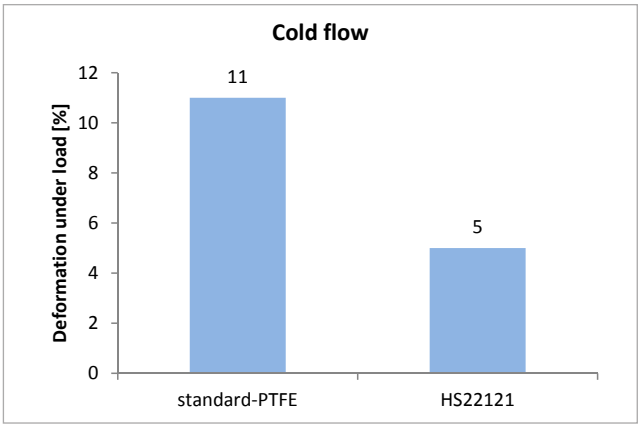

Fig. 4: Reduced cold flow of HS 22121

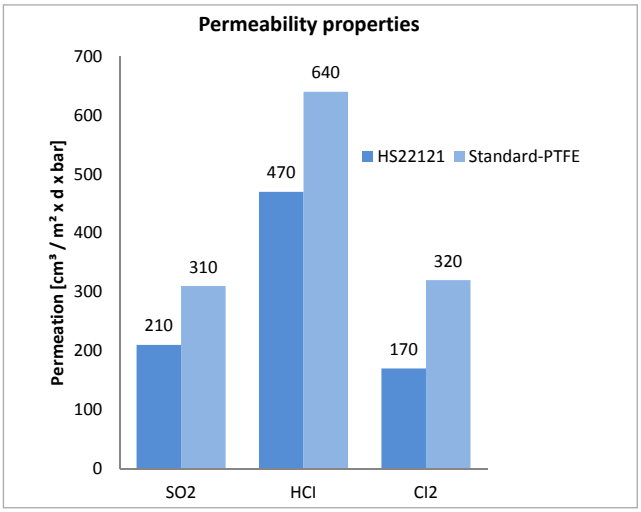

Fig. 5a: Exposed to aggressive chemicals (measurement method: DIN 53380

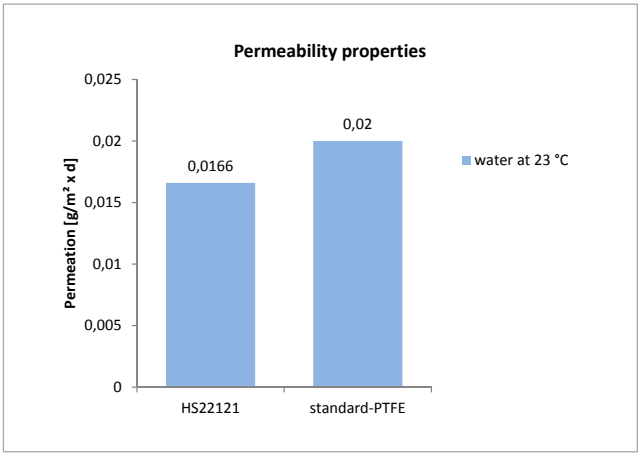

Fig. 5b: Exposed to water/steam at 23°C

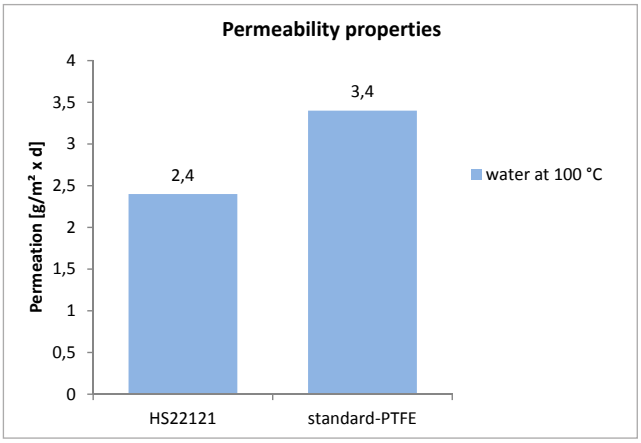

Fig. 5c: Exposed to water/steam at 100°C

Reverse bending strength

What particularly sets PTFE apart is it's extreme resistance to frequent structural bending. Previously in applications requiring the use of modified PTFE, there were often limitations with regard to the amount of reverse bending which could take place.

With HS 22121, ElringKlinger has succeeded in bringing a material to market that combines the unique properties of various modified PTFE types which is able to surpass the performance of standard PTFE types by a wide margin.

As Figure 3 shows, in HS 22121 ElringKlinger Engineered Plastics has developed a modified PTFE that surpasses previous bending strength values for PTFE by three times in the case of first generation materials and up to ten times that of second generation PTFE.

To determine the reverse bending strength, a test bar with a thickness of 1 mm was bent 180° each time at a frequency of 4 Hz with no media contact.

Reduced cold flow

In addition to high reverse bending resistance, the reduced cold flow of HS 22121 ensures that the diaphragm will remain stable in the clamping area, representing an additional advantage in terms of leak tightness and service life (see Figure 4).

Resistance to permeation

To ensure lasting performance, diaphragms are designed with thin walls. It is therefore all the more important that the material used has a strong barrier effect against permeation.

This is true in the case of modified fluoropolymers and also applies to aggressive chemistry applications using gaseous chemicals such as SO_2, HCl, and Cl_2 for example. Water presents a challenge for fluoropolymers, particularly at high temperatures in the steam phase (see Figure 5c), or in the form of aqueous aggressive chemicals.

Compared with standard PTFE, the permeation rate can be almost halved through the use of modified PTFE HS 22121, depending on the ambient temperature and medium. Diaphragm walls can thus be made even thinner thanks to the enhanced barrier effect.

Valve diaphragms made of HS 22121 in high-purity applications for the semiconductor industry

Among other applications, HS 22121 is used as a valve diaphragm (see Figure 1) in high purity applications. Here, the advantages of this material over composite diaphragms can be fully exploited. This application calls for material purity, smooth surfaces, and chemical resistance. A surface roughness of Ra = 0.3 µm can easily be maintained.

The structural design minimises dead space and contributes to optimal leak tightness in the system. The high reverse bending strength and permanently welded threaded pin lengthen service life and increase the interval between inspections. In pneumatic control systems, the low power input of the HS 22121 diaphragm also contributes to a reduction in operating costs.

elringklinger Engineered Plastics

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Parker Hannifin signs EFA with Shell for Instrumentation Products

Shell's Enterprise Framework Agreement covers the supply of instrument tubing fittings, manifolds, valves, process-to-instrument valves and related products

Parker Hannifin Corporation, the global leader in motion and control technologies, has signed a new Enterprise Framework Agreement (EFA) with Shell for the provision of instrumentation valves, manifolds, process-to-instrument valves, fittings, tubing, protective enclosures and related products. As per the EFA spanning 4 years, Parker's Instrumentation Group will supply a broad range of process instrumentation products to Shell and its affiliates worldwide.

"Parker is proud to be associated with Shell. Our engineering and commercial acumen demonstrate our capabilities as a key supplier in the energy market", said Andrew Spivey, General Manager of Parker Hannifin's Instrumentation Products Division in Europe. *"We have collaborated with Shell on engineering projects, and this has given us a front row view of emerging technical challenges in critical application areas."*

"We are proud to see our clients place their confidence in our products and services." adds Nicolas Villemain, Division Market Development Manager of Parker Hannifin Instrumentation Products Division in Europe.

"We believe that such cooperative relationships between major players in their respective spheres will help establish new standards for performance, safety and cost reduction."

Over the last decade, Parker has invested heavily in innovation, and has made many significant advances in areas including safety, speed of installation and maintenance, and lowering emissions. In particular, Parker's new products can dramatically reduce the number of potential leak paths in a fluid system technology, and improve ergonomics for instrumentation and maintenance engineers. Its core values engineering customer challenges capture the company's goal of leadership in the process instrumentation market.

Also important is Parker's long experience in designing and manufacturing instrumentation using corrosion resistant alloys that optimize protection in upstream and downstream environments - a major problem for many current oil and gas projects.

Parker

Tel: 01271 313 131
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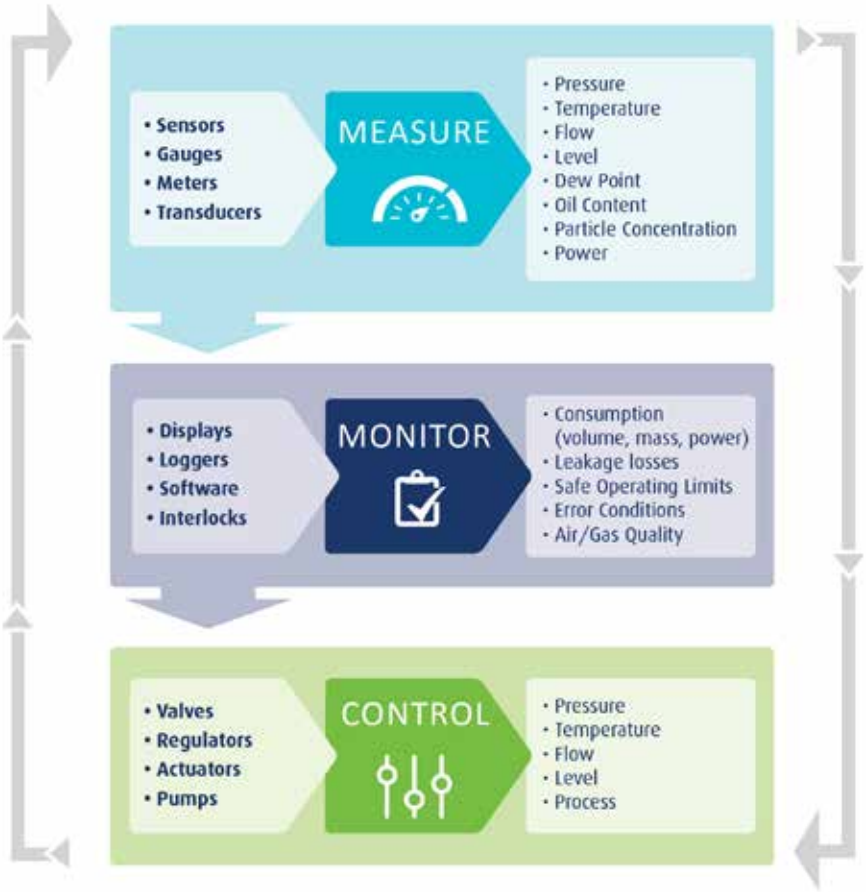
Red Dragon is now Measure Monitor Control



Red Dragon Ltd has recently launched a completely **new and rebranded website** at **measuremonitorcontrol.com** that reflects the **changes** in the **business** since it was formed in **1998.**

Their previous web presence was under the Red Dragon Valves banner which reflected the company's specialism in solenoid valves as UK agents for Italian manufacturers Nadi and FG Line. Over time however, customer demand has led to a broadening of the supply capability with a particular emphasis on hazardous area certified valves, regulators and pneumatic instrumentation for valve automation.

Alongside valves, Red Dragon has been regularly supplying complementary instrumentation products as part of valve and instrument packages and increasingly as a single source provider. The technical capability of the Red dragon sales engineers and their attention to detail was one of the key aspects that have contributed to gaining further UK distributorships, increasing the available product range for both valves and instruments.

This broadening of the product range prompted a need to rebrand away from a purely valve bias to one that reflected a more balanced portfolio. The Measure Monitor Control tag line had been in use for some time and seemed a logical development for the URL as it reflected a typical industrial control loop where valves and instruments are employed together. The new website added a webchat facility that enables clients to contact the sales engineers, ask questions and share information without the cost of a phone call and in a more interactive way than emails. This tool has proven useful for both new and existing clients as well as their supply partners for simplifying instant communication.

Jerry Cook, Managing Director of Red Dragon Ltd explained the adoption of Measure Monitor Control as the trading name for the company. *"Extending the new URL to the business trading name is a positive change that reflects the breadth of our product range and technical abilities. We have a new, balanced platform for future planned developments that will continue to bring benefits for our customers.*

In these times of change, Measure Monitor Control can respond with flexibility to difficult market conditions and by not concentrating on any particular market sector or region, has proved that technical ability and a practical approach to customer service are continuing to support our clients' business goals."

MMC
measuremonitorcontrol.com

Tel: +44 (0) 1443 772 500
Email: sales@measuremonitorcontrol.com
Web: www.measuremonitorcontrol.com

Severn Glocon Valves Eliminate Control Cavitation at Jazan

Severn Glocon, using their renowned **valve engineering capability** and **experience,** have provided their 48" **butterfly valves,** complete with full **anti-cavitation trims,** for cooling water start-up control for the new **Jazan refinery.**

The Jazan project is currently in construction in Saudi Arabia and will have an anticipated capacity of 400,000 barrels per day, separating crude oil into its constituent useable parts such as gasoline, diesel, etc.

To provide the high level of specification to carry out this critical service effectively, the valves are fitted with anti-cavitation trims and are operated by QTRCO SG pneumatic spring-to-open the actuators. These are fitted with 316SS positioners and closed loop breather systems, to protect the actuator internals from the corrosive effect of a hot saline costal atmosphere.

Severn Glocon assessed the exact requirements of the project. To protect the valves and downstream pipework from damage, the valves were designed with special discs to prevent the formation of cavitation. In addition to this enhanced specification, the valve bodies have a glass flake lining, which is resistant to localised high velocity. This also protects the body from the corrosive effects of the line fluid.

It is anticipated that the Jazan refinery will be commissioned in 2018. The plant would struggle to start-up and run without Severn Glocon's valves, which are an integral part of the critical service control requirement supplied to the project by Severn.

"Severn Glocon had a number of issues to solve in selecting and sizing the right valves for the application, because the valves had to be capable of handling cavitation control at start-up, the high normal running Cv, and also a secondary capability to be able to offer isolation. This is why severe service butterfly control valves complete with QTRCO actuation (QTRCO-SG is also a Severn Glocon Group product) were the best choice," commented Ken Winpenny, Severn Glocon's Business Development Manager for Butterfly Valves.

Ron Baker, Severn Glocon's Group Sales Director, reinforced the Group's strength by confirming, *"We are very proud that we have the ability to not only offer Severn Glocon linear valves for control applications, but also a rotary range that continues to expand our Group capabilities in line with the demands of our customers."*

For more information on Severn Glocon butterfly valves visit:
www.severnglocon.com

SEVERN GLOCON GROUP PLC

Tel: 0845 223 2040
Email: sales@severnglocon.co.uk
Web: www.severnglocon.com

Customised Rotork Actuators Fulfil Critical Offshore Safety Duties

Rotork linear hydraulic spring-return valve actuators meet the critical safety-related specifications for an offshore gas field.

Rotork Fluid Systems customised linear hydraulic spring-return valve actuators meet the critical safety-related specifications for an offshore gas field in the Middle East.

These actuators operate 220mm (9") gate valves on skids requiring a High Integrity Pressure Protection System (HIPPS) certification manufactured for the Hasbah Offshore Facilities Increment II Project in the Arabian Gulf. Reliable failsafe operation of these HIPPS valves is essential to prevent potential damage by shutting off the source of high pressure before the design pressure of the process is exceeded. The innovative configuration of hydraulic cylinders, quick exhaust valves, flow regulators and internally mounted discharge ports provides an extremely compact and reliable actuator solution with significant reductions in associated piping.

Standard design features include electro-nickel plated cylinder walls, providing minimum friction and maximum protection against corrosion, carbon steel pistons with PTFE/rubber seals for reduced friction and stick-slip elimination even after prolonged periods of inactivity and totally enclosed carbon steel spring cartridges.

The Hasbah Offshore Facilities Increment II Project will supply an additional 2.5 billion standard cubic feet per day of clean natural gas to meet growing domestic energy demands in Saudi Arabia.

rotork

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Email: information@rotork.com
Web: www.rotork.com

IKM Valve Services – Engineered to Operate Under Pressure

IKM Testing Aberdeen is delighted to announce the expansion of its service provision to include IKM Valve Services, which oversees the supply & repair of valve packages and the swift delivery of quality new and overhauled products.

IKM Testing Aberdeen made a substantial investment in 2017 to enable the construction of a fully equipped valve repair workshop within its custom built facility in Westhill, Aberdeen. This development enables IKM to deliver a comprehensive service to its clients. Its customised and advanced testing facility further ensures that all of its clients' valve supply and repair needs can be satisfied in-house.

Ross Wilson joined IKM in 2017 as Valve Operations Manager and was tasked with heading up this exciting new chapter in IKM's growth. During his 15 years' experience in the valve industry, Ross has worked for both OEM and service companies, ranging from manufacturing and leading valve service divisions, through to valve contract management for multiple North Sea oil and gas operators. Ross combines a comprehensive technical knowledge of the valve industry with a clear understanding of the needs and challenges faced by clients. With less money to go around and the industry continuing to move forwards cautiously, this capability means clients can rely on IKM to consistently provide an efficient and cost effective service.

Ross commented *"I was delighted to be brought on board to lead this exciting and challenging new service line within IKM and to be joining such a dynamic and multi-skilled organisation. I have taken great pride in overseeing the growth of the valve services department and surpassing each milestone set. I have always been an optimist, but even without such optimism, I am confident 2018 will be a fantastic year for IKM Valve Services. To put it into context, this is just the tip of the iceberg. Watch this space!"*

Since its inception in 2017, IKM Valve Services have tackled several particularly challenging valve work scopes, both onshore and offshore, for multiple North Sea clients who required carefully engineered solutions tailored to their specific needs.

An example being non-intrusive acoustic leak detection and quantification, which can be done on a live system. IKM's unique approach allowed the client to gain a thorough overview of the valve seating capability on the full spread of valves on their export compressor system. This allowed strategic planning of valve change outs and overhauls, saving time and money.

IKM Valve Services draw on its extensive experience and know how, with the aim of reducing production downtime, providing an efficient and cost effective service, whilst maintaining the highest level of safety. IKM Valve Services are bolstered by IKM's integrated service model, enabling the smooth delivery of additional bolt on services by IKM Testing Aberdeen, such as torqueing and tensioning, leak testing and on-site machining. This ability to oversee the seamless delivery of multiple service lines out of one location, whilst ensuring both the client and safety remain their utmost priority, confirms IKM Testing Aberdeen's status as a market leader in service quality, integrity and innovation.

IKM Valve Services deliver on both the supply and repair of any valve type, including bespoke engineered valve solutions, all the way through to Complete Valve Management. IKM Valve Services aim to continually exceed client expectations, while maintaining the highest standard of safe operating practices, whether on an urgent repair requiring 24/7 support and dedication or partnering on a long-term project, where robust planning and communication are key.

I·K·M

Tel: 01224 725 599
Email: www.ikm.com/valve-services
Web: www.IKM.com

NEW MEMBER

Testing at HH Valves

HH Valves have been established as a quality supplier of **valves** around the **World** for almost **20 years** with our **focus & commitment** to controlling all aspects of the **quality procedure.**

Our in house hydro test rigs represent an impressive range of capabilities due to the size & pressure classes catered for & have been a key factor in successfully winning numerous projects.

Our test rigs can incorporate valves up to 24" in diameter (larger depending on external dimensions), with ANSI Pressure classes from 150# - 4500# all fully tested according to API 598 and/or BS EN 12266-1. Customer specific testing available on request.

Recently HH valves have received increased enquiries for external testing to be carried out using our facilities, which we are more than happy to provide. Our factory incorporates a 10-tonne overhead crane which offers further flexibility & capabilities.

As a valve manufacturer we understand that 3rd party witness inspections are often required and with our tailored test reports we can easily accommodate individual customer requirements & produce the documentation required. Should you have any testing that HH valves can assist with, please get in touch to discuss your specific needs further & we will be happy to assist.

HH Valves Ltd

Tel: 01942 218 111
Email: info@hhvalves.com
Web: www.hhvalves.com

TECHNICAL HOT SPOT

BVAA's Technical Hot Spot

BS EN 736-3 Valves - Terminology - Part 3: Definition of terms
5 Year Systematic Review

What is it?:

This European standard defines the terms and their definitions (or the source if defined in other European standards) used for several types of valves or in several fields of application. These terms concern the pressures and temperatures, the dimensions, the design, the flow control characteristics and the test of valves.

Why Is it Important?:

It applies to all valves and actuators manufactured to European valve product standards. It was last revised in 2008. It is subject to the 5 year review. It is important that the definitions are both correct and complete.

Hydravalve (UK) Launches New Website Redesign

The Hydravalve website has recently undertaken a completely new interface & design. The website now has various new features that improves the functionality of the website.

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www.versatilecontrols.co.uk

Due to the increasing demand in online orders and the website recently reaching £500,000 sales. Hydravalve have made a significant investment to develop the website and improve user experience and offer innovative new features.

The new features to the website include:

- Lead time information available on all products
- Improved user interface – search facility allowing users to search by part number, brand or keyword
- An option at checkout for payment to be completed through a proforma invoice
- Navigation bar allowing users to browse by product category

Features coming soon:

- Online technical support available via Live Chat
- Search for products by industry

Over the coming months, new products will be added to the extensive range and data sheets/technical information will be available to download online for every product. Furthermore, high resolution images will be used on all products, making it the perfect one-stop online shop for all your process valves and actuation requirements.

Take a look at Hydravalve's website for yourself on the below website address and sign up to the newsletter to receive company news, information on new products and regular discount codes.

hydravalve

Tel: 01902 637 263
Email: sales@hydravalve.co.uk
Web: www.hydravalve.co.uk

Approvals of sealing solutions on industrial valves

By virtue of a policy of constant innovation, Groupe Latty, via its Research & Development department, is able to satisfy new requirements and keep pace with changing standards & directives.

Whether certifying its customers' equipment or its own products, trust must be ensured.

Equipment approval by Groupe Latty for its customers, whether users or manufacturers, is performed within our own test and measurement laboratory in France, with independent verification if required.

Our testing area is over 500 m², and can accommodate large and small valves alike. Approvals can thus be carried out up to ISO 15848-1 (control valves, on-off valves, in dimensions 1" to 10" and pressure classes of 150 to 2500 lbs).

The work of our R&D department focuses on the research of any type of seal that withstands significant pressure and temperature variations, reducing friction, reducing fugitive emissions, developing solutions to meet the latest applicable requirements, standards and directives and safety of persons and goods.

Our laboratory provides more than 15 test cells equipped with precision measuring instrument with pressure: vacuum to 650 bars, temperature: -200°C to 650°C, several helium mass spectrometers to measure leaks and 5,500 kN press for flat gasket qualification tests under extreme conditions.

The advantages are approvals delivered by certified bodies in collaboration with sealing experts. Energy savings resulting in the selection of sealing solutions adapted to your specifications: reduced friction coefficient, eliminated corrosion, suitability for contact with food, etc. and adapted sealing training.

To date, we have obtained over 100 test reports confirming the approvals (available on request).

Tel: 01777 708 836
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Web: www.latty.com

NeoNickel services the Valve Industry across Europe

Examples of machined components supplied by NeoNickel

NeoNickel is a group of companies supplying high performance alloys for valves used in demanding & hazardous applications, across a wide range of markets.

The markets we serve include Chemical Process, Oil & Gas, Petrochemicals & Refineries, Power Generation, Pharmaceuticals and Bio Synthetics.

NeoNickel supplies high performance alloys for a variety of valves including:-
Ball valves, gate valves, control & choke valves, double offset & triple offset butterfly valves, plug valves, globe valves, ultrapure – aseptic valves, charge point split butterfly containment valves, safety pressure relief valves and rotary lobe pumps.

Our comprehensive inventory includes Super Austenitic Stainless, Duplex, Super Duplex, Nickel and Titanium Alloys.

Key alloys stocked to meet the demands of the valve applications include:

- AL-6XN® (6% Molybdenum stainless),
- 17-4PH
- Nitronic 50
- Nitronic 60
- Duplex – UNS S32205/UNS S31803
- Super Duplex- UNS S32760 / ZERON®100, UNS 32750
- Alloy 22, C276, 400, K500, 625, 718, 718API, 725, 825, 925
- Titanium Grades 2 and 5 (6Al-4V)

We supply material in sheet, coil, plate, bar, pipe, pipe fittings, flanges and welding consumables.

Our processing capabilities include bar sawing, laser cutting, water-jet cutting, plate sawing and shearing.

NeoNickel has the capability to supply finished machined components from bar or forgings including precision ground shafts, spindles and laser cut, spun seats for valves.

Precision ground shafts are used to open and close the Butterfly valve disc. High strength is often important as the shaft can operate under high levels of torque.

The two most popular alloys NeoNickel has supplied for the manufacture of precision ground shafts are K500 and 17-4PH. In addition, we have supported other projects where shafts have been manufactured using C276, 725, Super Duplex - ZERON®100 and Titanium Grade 5 (6Al-4V).

We also make secondary metal seats that are laser cut and then metal spun. These are made from 1mm and 1.2mm 625 sheet for use in double offset butterfly valves.

NeoNickel supplies 625 sheet for use in triple-off-set butterfly valves. The triple offset butterfly valve only requires the shaft and not the secondary metal seat. The disc or part of the body on this type of valve is manufactured from laminated 625 sheet and graphite bonded together.

NeoNickel operate service centres in the UK, Czech Republic, France, Germany and Italy. For more information, please visit our website: www.NeoNickel.com

NeoNickel

Tel: 01254 582 999
Email: enquiries@neonickel.com
Web: www.neonickel.com

NEW MEMBER

Curtiss-Wright Offers Restricted Lift Options for a Series of Pressure Relief Valve

Curtiss-Wright's Industrial Division offers restricted lift options for the Farris 2600/2600L series pressure relief valve.

Curtiss-Wright's Industrial Division has announced that its business unit Farris Engineering will now offer restricted lift on its 2600 and 2600L Series API-type pressure relief valves. The restricted lift option is available on orifice sizes D-Z for compressible service for both new 2600 Series valves and as a retrofit option for Farris' in service valves.

ASME Code Section VIII and API 526 both provide for certification and use of a restricted lift design for relief valves. Farris' design option allows operators to customize the valve lift to meet their specific capacity requirements. ASME code requires that restriction should be not less than 30% of the PRV's full rated lift or less than 0.080 inches.

The benefits of using a restricted lift valve for operators is that they can more closely match the pressure relief valve's flow capacity to their system's required capacity. Restricted lift can improve a valve's performance and stability especially in larger orifice size valves. Pressure relief valves with a restricted lift option are also a cost effective solution for situations where PRV's experience inlet pressure losses in excess of 3% of set pressure.

To learn more about Farris' restricted lift product offering, please visit our website at: www.cw-valvegroup.com/farris

CURTISS-WRIGHT

Tel: 01536 425 980
Email: salessp@curtisswright.com
Web: www.farris.cwfc.com

TECHNICAL HOT SPOT

BVAA's Technical Hot Spot

API 6DSS Subsea Pipeline Valves 3rd Edition

What is it?:

API 6DSS specifies requirements for the design, manufacturing, quality control, assembly, testing, and documentation of ball, check, gate, plug, and axial on-off valves for application in subsea pipeline systems for the petroleum and natural gas industries.

Why Is it Important?:

6DSS 3rd Ed, was published in August 2017, with an effectivity date of August 1st 2018. The standard has been extensively revised with numerous changes to all sections. For monograming purpose, existing design packages will need updating before the effectivity date. Any gaps will need to be closed within the design, manufacturing, quality control, assembly, testing and documentation sections. The standard has been aligned with API 6D. There is the inclusion of a validation section similar to API 6A and API 17D Annex L hyperbaric requirement. These sections are under Design and Hyperbaric validation tests Annex F and G respectively. It should be noted are non- mandatory informative annexes.

EnDura® V91K Now Approved to Shell MESC SPE 85/301

EnDura® V91K has for many years been trusted to **deliver reliable sealing performance** in the most critical **oil & gas applications. EnDura® V91K** is now approved to **Shell MESC SPE 85/301** following a successful **Type Acceptance Test (TAT).**

This achievement allows Precision Polymer Engineering to collaborate with partners specifying the Shell MESC SPE 85/301 standard, and represents another technical landmark in the continual development of the EnDura® range of oil and gas sealing materials.

The Shell MESC SPE 85/301 standard concerns explosive decompression (ED) resistance in high temperatures, and subjects test samples to more challenging test conditions than other standards – including ISO 23936-2 and NORSOK M-710. For example, NORSOK M-710 tests are carried out at 100°C, whereas the equivalent tests under Shell MESC SPE 85/301 are conducted at 150°C. Under Shell TAT test conditions, EnDura® V91K O-rings achieved a '0000' rating – which is indicative of zero damage to the sample.

Third party testing carried out for Precision Polymer Engineering on EnDura® V91K was able to show data for sour gas performance at temperatures and time periods greatly exceeding those required for Shell MESC SPE 85/301. Requiring 150°C for 24 hours to pass Shell TAT, PPE successfully tested EnDura® V91K at 150°C for 1344 hours, as well as 175°C for 1296 hours and 200°C for 168 hours.

"Precision Polymer Engineering recognises the need for approvals and qualifications to meet not only industry standards, but those of end users and Supermajors", said Chris Allan, Product Manager for Oil and Gas at Precision Polymer Engineering.

"EnDura® V91K offers a perfect fit to meet and invariably exceed the requirements set out by Shell Global Solutions for Type Acceptance Testing according to SPE 85/301, and we are now proud to be able to offer this material to markets requiring this most stringent of approvals."

EnDura® V91K is a high performance fluoroelastomer which combines excellent ED resistance with extreme low temperature performance (operating temperature between -41°C to +225°C), making the material grade an ideal choice for downhole, surface and subsea oilfield equipment. The Shell TAT approval applied to various products manufactured from EnDura® V91K, including O-rings, S-Seals, T-Seals, packers and chevron stacks.

For information on EnDura® V91K, and how it could help you meet your upcoming oil and gas sealing challenges, call 01254 295400 or click here to find your nearest sealing specialist.

"This achievement allows Precision Polymer Engineering to collaborate with partners... and represents another technical landmark..."

PPE

Tel: 01254 295 400
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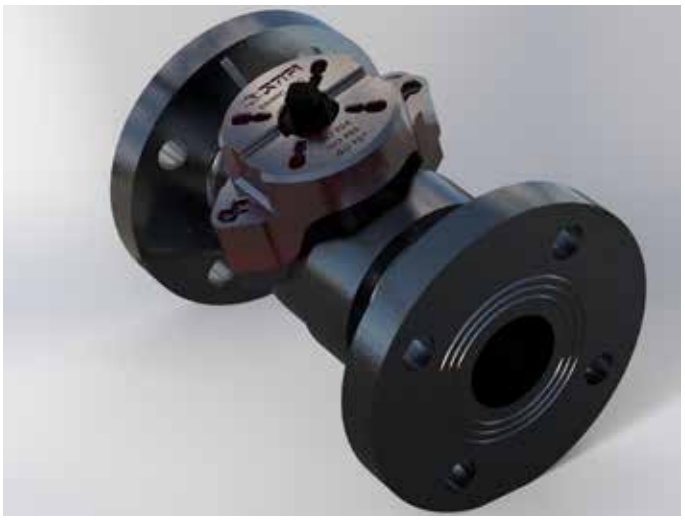
Web: www.prepol.com

SAFI Show Us Another Solution to Corrosion



Corrosion is a **natural process** and one of the most evident types is caused by the environment. This break down of material can be caused by something as simple as a **saline atmosphere** as you would expect at any costal site or a **highly corrosive application,** such as in a **chemical processing plant.**

We have all seen examples of fixings; screws, bolts and brackets that quickly perish in such applications, notwithstanding the more serious effects visible on the metal and iron castings of valves, actuators and gearboxes.

Solutions do exist by moving to more exotic materials such as Stainless Steels; 316, Duplex Steels Uranus® B6 (stainless steel 904L) and super alloys such as Hastelloy ® C276, alternatively there are many solutions in paints, epoxy coatings and other similar protective coatings. Neither solution is cheap or full proof. **A corroding material is just waiting to fail, causing plant downtime or the risk of serious injury.**

But what if there was another way to solve this problem!

Thermoplastics have been proven to be a very effective solution to the often destructive and sometimes catastrophic nature of corrosion, both in the pipeline and the containment of the effects of severe environments.

SAFI is a manufacture of Thermoplastic Valves, being the first company in France to use plastic materials in valves. SAFI listened to its customers and today SAFI offers its clients a corrosion resistant solution, not only for valves and actuators, but now offers a new plastic mounting bracket to fit directly onto their range of 2 way and 3 way ball valves. The new bracket is designed for the smaller range of ball valves DN15-50 respecting the industry standard ISO 5211 and will be able to be retro fitted to a previously manual lever operated ball valve.

Manufactured in Polypropylene with Glass Fibre (PPGF), their extensive research and testing has proven that the plastic version is mechanically stronger than the classical metal box-section used by them in the past, notwithstanding that PPGF is a material very well known to SAFI as having excellent resistance to many corrosive media, while unaffected by UV light.

As part of a mounting kit you will be provided with a plastic bracket, a suitable square drive and fixings; stainless steel 316 as standard. Coupled with a range of actuators and accessories, many of which are in plastic housings, giving the customer an effective solution to corrosion.

SAFI
Thermoplastic Valve Solutions

Tel: 01202 624 618
Email: sales@safi-valves.com
Web: www.safi-valves.com

The Distributor's Distributor

Leengate Valves are further proving their commitment to **supporting** their **network** of **distributors.**

6" Brandoni 3 way L ported ball valves fitted with IP68 120° modulating electric actuator - Specially assembled to customer's porting requirements.

A successful start to 2018 has seen Leengate Valves' daily order processing record broken multiple times already but they're not letting their success get in the way of them supporting their distributors with important services and special enquiries.

"Our success can be vastly attributed to the range of service we can provide to our customers. We've always made customer service a top priority; even if that means sourcing the most obscure of products." – Mick Loseby, Sales Director.

Leengate Valves have long made waves in the industry with a strong commitment to fulfilling a much needed wholesale service and they are now keen to publicise that their vast catalogue is but an overview of the true extent of their services and ever increasing stock levels.

From supplying valves to customers' own paint specifications, conforming to the most meticulous requirements and sourcing almost anything; Leengate Valves are breaking barriers and ensuring they can provide virtually anything that's asked of them.

"... We've always made customer service a top priority; even if that means sourcing the most obscure of products"

Brandoni ball valves supplied to customers' own paint specification

As well as going above and beyond to satisfy their customers' requirements; Leengate Valves are constantly developing their existing services, such as their engineering and actuation services, courier options and stock availability.

Over the last 5 years, Leengate Valves have expanded their range of actuation and engineering services to include new technology; with their latest addition of dot peen engraving services, they are now able to offer branded stainless steel tags in-house.

"The dot peen technology is our latest additional service and it's going to mean that we can offer an exhaustive valve tagging service. Effective valve tagging can future proof large installations and simplify servicing and replacement for decades to come. Our tags can also feature our distributors own logos, ensuring that end users will know exactly where to direct their repeat orders." – Arran Macalister, Engineering Manager.

Leengate Valves have also added a digital printing service which means they can offer ball valve handles branded with customers' own logos and contact details. This service has proved very popular since its inception in 2016.

"We really want our distributors to know that we're here for them, whatever their requirement, and will continue to make supporting our network our number one priority." – Mick Loseby, Sales Director.

Contact Leengate Valves on 01773 521 555 or email: info@leengatevalves.co.uk to see how the team can help you.

You can also visit www.leengatevalves.co.uk for further information.

Leengate Valves

Tel: 01773 521 555
Email: info@leengatevalves.co.uk
Web: www.leengatevalves.co.uk

Multi-Purpose **Safety Relief Valves,** for **Liquid, Gas & Steam Applications**

The Seetru LGS® Safety Relief Valve range represents state-of-the-art design with dual guided spindle as well as the Seetru Rock-Seal™ seal technology for repeatable high performance sealing.

The Seetru LGS® safety relief valve is a high quality valve of modular design and construction incorporating the Seetru proprietary compact design technology – providing a highly cost-effective range of valve solutions.

LGS® valves have a robust and reliable construction designed for the widest range of industrial applications. The LGS®range is suitable for a wide variation in flow characteristics, coping with both low volume and high relief capacity applications.

The single trim design means that the components are all common across liquid, gas and steam; and that any LGS® valve can be used in any of these applications.

Features:

- Bronze body with dezincification resistant brass wetted parts; stainless steel spring, spindle and seal retainer
- Supplied with Declaration of conformity, EN 10204 3.1 material certification available on request
- Test certificate supplied free of charge
- Size range DN15 to DN50 (½" BSP to 2" BSP)
- Pressure range: 0.2 to 24 bar g. (steam up to 14 bar g. with PTFE seals, contact Seetru for information on other seals)
- Temperatures -60°C to +200°C with PTFE seals (EPDM -45°C to +140°C)
- Degrease for oxygen available on request
- PTFE or EPDM sealing as standard (other seal materials available upon request)
- Easy to fit spares kit
- Self-draining design
- Adaptors available to give male connections
- Open Lever or Sealed Cap
- Designed in accordance with the requirements of BS EN ISO 4126 Part 1 and CE marked as a Category IV Safety Accessory
- WRAS approved

Applications:

- Hot water, including boilers (vented and unvented)
- Steam boilers and steam plants
- Pump and thermal relief
- Bypass relief
- Process liquids and gases
- Pressure vessels and lines
- Heating and cooling systems
- Heat exchangers and industrial cooling systems
- Refrigeration systems
- Refrigeration systems
- Pressure booster systems
- Solar power systems
- District heating systems
- Water supply systems
- Sewage systems
- Pressure control and regulation
- Chemical plants
- District heating systems
- Ship building and marine applications

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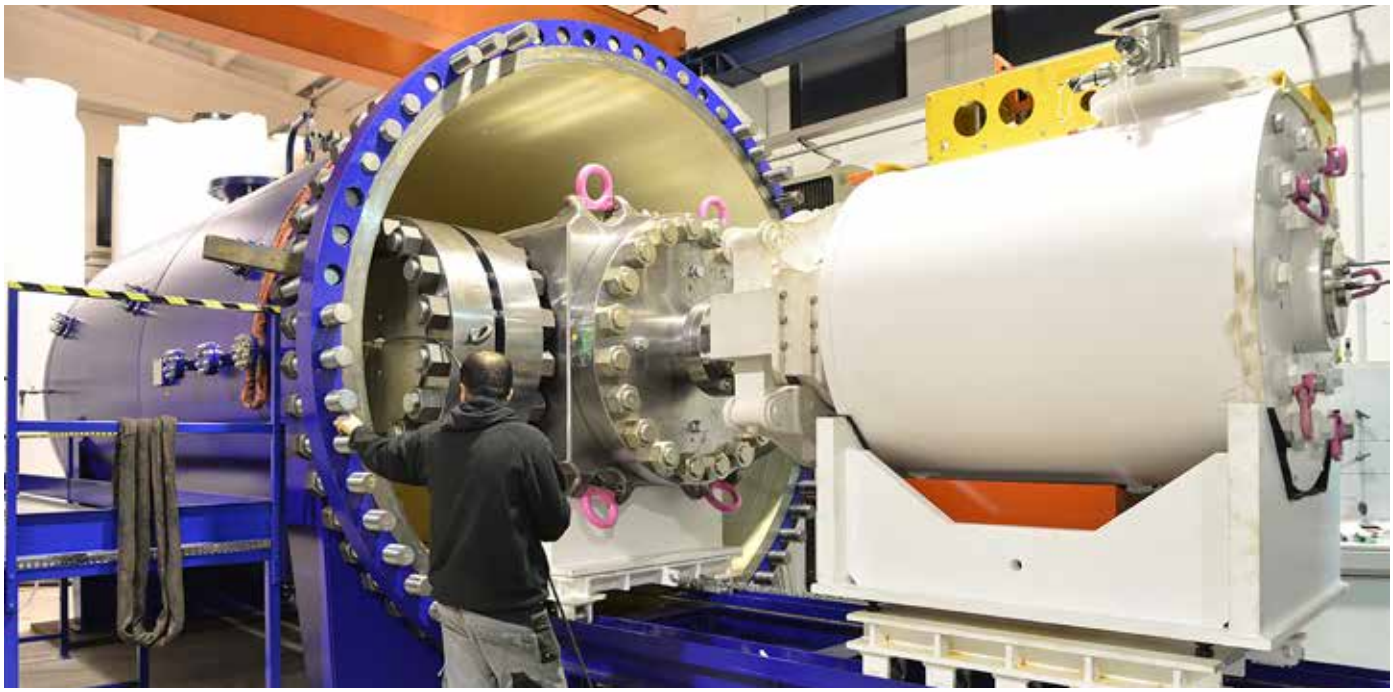
SVS - Total Valve Management on a global scale



Specialist Valve Services is a multifaceted company, offering an unrivalled **Total Valve Management (TVM)** package on a global scale, saving clients **time and money.**

TVM can involve supply, testing, maintenance, inspection, integrity surveys, and training for the complete life span of Subsea and Topside valves and actuation packages – all of which are available from SVS.

TVM has facilitated our growing involvement in both Project and Contract Management. We provide consultancy services that review Pipeline & Instrumentation Diagrams and evaluate where the client can make savings with regard to engineering, documentation, inspection and testing costs.

Our extensive knowledge and experience providing GAP and Root Cause Analysis (RCA) to clients is another key selling point which again differentiates us from current competitors. The aforementioned has allowed for clients to improve overall efficiency, make cost savings and improve safety and training.

Strong Pedigree

SVS was formed in 1998 by its Managing Director, Gerry Henry, specialising in the supply of valves, actuators and ancillary equipment for clients in the oil, gas and petrochemical industries. Initially this was with a UK focus before moving quickly onto a global client base.

Since the company's formation, in Europe's oil capital Aberdeen, SVS have supplied products and services from Brazil to Sakhalin. The company has a rich experience in meeting and exceeding the most strenuous client requirements, and has always adhered to providing integrity to clients without compromising the quality of the job or products provided.

Total Valve Management:

Supply	Root Cause Analysis
Testing	Elastomer Review
Maintenance	Gap Analysis
Repair	Reverse Engineering
Integrity Site Surveys	Expediting
Inspection	Consultancy
Training	Valve / Spares Management

We are specialists in the provision, maintenance, repair and testing of Topside & Subsea valves, actuators, and ancillary equipment with a full range of pipe, fittings & flanges to meet the most challenging of client requirements.

SVS's innovation and success has led us to grow our business, diversifying into new industries including: Refining, LNG, Ship Building, Power Generation, Mining and more recently Pulp & Paper.

State of the Art HQ

Our headquarters are located in Westhill, Aberdeen, where we have a custom-built facility that houses our Sales, Engineering/ Testing, Project Management, QHSE, Documentation and Finance Departments.

We have also invested in a considerable stockholding of valves, actuators and ancillary equipment to meet our clients' more urgent requirements.

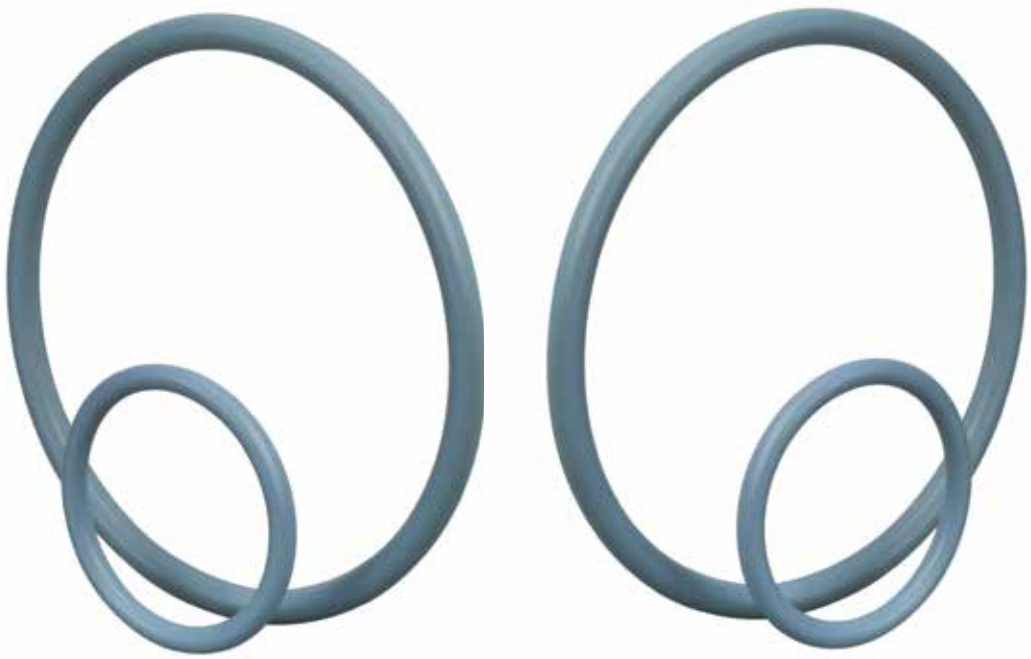
In addition, we have installed the latest and most advanced testing equipment, allowing us the capacity to test a full range of valves from 2" to 48" and pressures up to 690 bar in our custom built test rigs housed in the safest of environments.

This facility is fully supported by our project team in Italy, responsible for project management, expediting, testing and inspection to ensure the quality and deliveries are achieved to meet the most critical of schedules.

Tel: 01224 278 840
Email: sales@svservices.com
Web: www.svservices.com

NEW MEMBER

Freudenberg's Fluoroprene® XP now available in the UK



Fluoroprene® XP, a universal all round sealing material specifically designed for **process industry applications** is now available in the **UK via Dichtomatik UK Ltd,** the exclusive provider for **Freudenberg Sealing Technologies food and beverage** related products in the **UK.**

Extreme temperature conditions, aggressive media, high hygienic standards and safety requirements – the demands on the food and beverage, chemical and pharmaceutical industries are unique in many dimensions. Freudenberg Sealing Technologies, one of the world's leading specialists in high-quality sealing solutions, provides not only seals but also exceptional materials to help its customers meeting these challenges. One of these materials is Fluoroprene XP, a highly fluorinated premium material with outstanding resistance in both water-based and fatty media.

With Fluoroprene XP, process industry applications only need one material instead of the use of different sealing materials, typically made from EPDM, VMQ or FKM. Selection would be based on factors such as the working environment during the CIP/SIP or steam sterilisation processes, and the type of media coming into contact with the seal, such as fats, flavours and acid concentrations. Today, however, there is a universal material to suit all applications, Fluoroprene XP, which has been specifically designed to combine the positive attributes of the aforementioned materials.

Fluoroprene XP displays very good media resistance (in both water-based and fatty media) in all critical areas of the food and beverage industry, as well as broad sections of the pharmaceutical and chemical sectors. The material's stability in a wide range of temperatures (from -15 to +200°C) is also impressive.

Beyond the material's versatility, another of Fluoroprene XP's advantages is its low capacity to absorb flavours and the corresponding prevention of flow back into the product media. This ensures that the material is perfect for applications in breweries that process and bottle a variety of differently flavoured beverages on the same production line. Put simply, seals made of Fluoroprene XP significantly reduce the transfer of flavours from one product type to the next.

Fluoroprene XP's unique media resistance ensures complete process protection while maintaining high economic efficiency. Storage tests performed with 75 Fluoroprene XP 40 over 168 hours are a good example, showing that it is extraordinarily well suited to applications involving concentrated acids and bases, high temperatures, and water and steam.

The Fluoroprene XP product family also includes 70 Fluoroprene XP 41 and 85 Fluoroprene XP 43, which have been optimised for injection moulding processes, and 75 Fluoroprene XP 45, which is ideal for the production of metal composite parts, especially hygienic usit rings. All of the materials meet approvals and standards relevant to the food, beverage and pharmaceutical industries, such as FDA, EC Regulation 1935/2004, 3-A® Sanitary Standards and USP Class VI.

Ultimately, Fluoroprene XP offers high sealing performance for a broad array of applications, making it a cost-effective alternative for all process industry sealing requirements.

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Leengate Valves Partnership With Didtek Valves to Gain Further Momentum in 2018

Leengate Valves Directors, Liegh Pickering, Steve Pickering & Mick Loseby meet with Didtek General Manager, Bo Zhang at Valveworld 2016

Leengate Valves have been developing a strong business relationship with Didtek Valves since 2014 and now holds large stocks of Didtek's valves in its central distribution hub in Derbyshire.

Established in 1985, Didtek Valve is a major player in the worldwide industrial valve market and has been recognized throughout the industry as a valve manufacturer with superior quality and technical capability.

Didtek have spent the past 30 years developing their brand and hold many accolades, including ISO9001:2008, PED directive Mod H, API 6D, CU TR 010/032.

Located in Oubei (Zhejiang, China), Didtek's manufacturing facility occupies over 25,000 square meters; of which more than 95% is dedicated to production. Throughout a relatively short time, Didtek have proved themselves more than capable of handling even the most demanding of international customers and partners; a skill which Leengate Valves have found invaluable in keeping up with the growing demand for forged and cast Steel valves that they face on a daily basis.

With Leengate Valves' continued development of relationships with major manufacturers across the globe, and capability for holding large amounts of stock, you can expect to see even more of Didtek's products becoming everyday core products for the industry.

Managing Director, Steve Pickering, said *"We're really keen to show that we're not just about ball and butterfly valves; we have huge offerings from around the world and the expansion and development of our supply range is a major priority for us. Over the course of this year we will see more of Didtek's products coming to the forefront of our extensive portfolio."*

Leengate Valves are currently supplying Didtek's forged and cast steel gate, globe, check valves and strainers to the UK market on a regular basis.

Throughout 2018 you can expect to see cast and forged flanged ball valves, as well as trunnion mounted and cryogenic valves becoming a more prominent feature of the range offered by Leengate Valves.

"Proudly bringing the world to your doorstep."

To find out more about this exciting range of quality valves, contact Leengate Valves on 01773 521555 or email: info@leengatevalves.co.uk.

You can also find out more about Leengate Valves wide supply range on their website; www.leengatevalves.co.uk.

Leengate Valves: proudly bringing the world to your doorstep.

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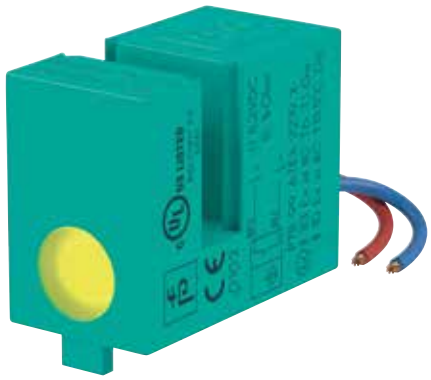
Sofis Uses Pepperl+Fuchs Sensors for Precise Position Feedback on Manual Valves



Sofis, the experts for **valve operation applications** in the **process industry,** relies on **Pepperl+Fuchs sensors** for its latest solution called **"Valve Position Indicator" (VPI).**

VPI provides an overview of manual valve position in plant networks. With a combination of integrated sensors from Pepperl+Fuchs and an innovative counting mechanism that automatically detects valve stem rotation, VPI offers reliable valve position information. Due to highly visible LEDs, valve position can easily be read and reported to the control room. This prevents incorrect positioning of manually operated valves, reduces costs, and increases overall process reliability.

Individual sensor solutions for manual rotary valves

VPI can be used for indication of open and closed position as well as open or closed position. The highly accurate counting mechanism ensures that the open or closed signal is only initiated when a valve has actually reached its final position.

This status indication can be individually configured using different types of sensors from Pepperl+Fuchs.

Thanks to a broad portfolio of inductive sensors with cylindrical or slot housing design and Ex i, Ex nA, versions, users can solve individual applications with maximum flexibility.

A wide temperature range of -50 ... +100 °C and versions for safety applications up to SIL 3 make the devices suitable for the most challenging conditions.

Sensor portfolio for the process industry

These sensors are part of Pepperl+Fuchs' comprehensive portfolio that is tailored to the process industry and valve positioning in particular. Regardless of the location or drive, the range covers products for indoor, outdoor, and extreme conditions. Extensive engineering know-how and decades of experience in explosion protection ensure an absolutely reliable application solution.

Ruggedness combined with quick installation

VPI housings are made of coated aluminum or AISI 316L stainless steel and protect electrical and mechanical components from harsh industrial environments. Thanks to a universal mounting kit for every valve type, VPI can be installed quickly and used anywhere.

Highlights:

- Precise position detection of open and closed manual valves
- Reliable performance thanks to precise parameterization and easy reset of "open/closed" position
- Broad portfolio of inductive sensors for position detection in a variety of housing styles
- Explosion-proof sensors (Ex i and Ex nA) available
- Rated for use up to SIL 3
- Robust coated aluminum or AISI 316 stainless steel housings
- Universal mounting kit for easy installation and versatility

For more information please visit:
www.sofisglobal.com/products/valve-position-indicator/

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Webtec Recognises Young Talented Engineer with Arkwright Scholarship

From left to right : Mark Ward, Webtec, presenting the Roy Cuthbert Scholarship award to George Cheeld

Webtec, the **St Ives, Cambridgeshire,** based **hydraulic measurement & control company** have announced sixth-former **George Cheeld** as this year's recipient of **the Roy Cuthbert Scholarship.**

This award, part of the wider UK Arkwright Engineering Scholarship Scheme, was named after Webtec's founder, a passionate engineer and entrepreneur who passed away in 2013.

The Arkwright Engineering Scholarships act as a beacon to the most talented STEM (Science, Technology, Engineering and Maths) students in the UK schools and help to ensure that high-potential young people stay engaged in the engineering careers pipeline, in the critical 16 to 18 age range.

The Scholarships are supported by more than 200 different sponsoring organisations including commercial and industrial companies, Universities, Government and trade organisations. The successful scholars receive their awards at the annual ceremony which take place at the Institution of Engineering and Technology.

Webtec recognises the importance of encouraging young talent in engineering and in addition to the Arkwright Scholarships the company also actively supports other programmes including the Secondary Engineer® Fluid Power Challenge and the Engineering Education Scheme (EES).

"It is so important to nurture the engineering talent that our young people have and schemes such as the Arkwright scholarships help to recognise this home grown talent which is so crucial to the future of our industry", commented Webtec's Managing Director, Martin Cuthbert. *"We are looking forward to welcoming George to Webtec and to encourage the passion that he has for a future in engineering,"* he added.

Tel: 01480 397 400
Email: information@webtec.co.uk
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In 2018, Saunders® Valves Celebrates its 85th Anniversary as a Company

Saunders® is proud to share its excitement in making 2018 a year to reflect on its successes that started with P.K. Saunders's (company founder's) 1928 invention of the first diaphragm valve, and the subsequent establishment of the company in 1933.

A historically interesting artefact depicts a hand-drawn image of London's skyline from eighty-five or so years ago, juxtaposing the bonnet-shaped upper casing of a Saunders® valve with the distinctive cupola of St. Paul's Cathedral. It is not known whether P.K. Saunders got his inspiration for his valve design after having observed the cathedral's dome, but the original bonnet-topped valve design launched a new class of valves and prompted many iterations and imitations. Since the invention of the original diaphragm valve in 1928, Saunders® has led the way in providing class-leading fluid handling solutions for a wide range of critical applications in diverse industries. The invention and incorporation events were appropriately followed by expanding the Saunders® team, and in 1936 the company held its first Sales Conference. In 1939, Saunders® moved to Cwmbran, UK. This was succeeded by the invention of its ball valve for use in Britain's aircraft industry. Following its impressive growth over several decades, Saunders® was acquired by Gallagher Tobacco Company in 1971.

International expansion started in 1975 in Houston Texas, and in 1982 the company set up its Australia location in order to serve the expanding Australasian market. Alfa Laval bought the company in 1987, and Saunders® established operations in Germany (as Saunders Armaturen GmbH, in 1988), and in India (as Saunders Valve India, in 1991). In 2001, Crane Co. acquired Saunders® and has continued its progress and success story, leading up to 2018 with its 85th anniversary commemoration.

The maxim Saunders® uses to highlight the technical quality in its valve design is "The Science Inside™", intended to denote its engineering excellence as a differentiating feature of Saunders® valves. This year, the company plans to introduce a series of initiatives and promotions to be announced at strategic intervals, specifying for its customers the advantages the Saunders® brand of valves will contribute to the safety and efficiency of their operations.

The Saunders® brand remains emblematic of security, reliability and trouble-free operation in meeting the challenge of corrosive and abrasive industrial processing applications.

Among its valves' many desirable features are essentials such as providing Zero Dead Leg, intelligent sensing aseptic solutions for the Life Science industry, and simplicity in design, and compliance with relevant global standards, among others. Saunders® diaphragm valve technology derives from over eighty years of avant-garde innovation, enabling valves to handle a wider range of fluids than other valve types. Saunders® develops and manufactures its own polymer compounds to ensure top quality for its diaphragms.

Saunders® prides itself on reliable aftersales service and technical support available worldwide via its locally based sales associates and distribution partners.

CRANE

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Versa Adds High Pressure Stainless Steel Filters To The Range Of High Pressure Regulators

Versatile Controls Ltd, who are the sole **UK distributors** for **Versa Valves,** announce the addition of the **Type AFH-316** series of **high pressure stainless steel filters** to their range of **stainless steel valves & regulators.**

They are designed to stand up to the harshest environments while providing system protection from contamination.

It makes the AFH-316 ideal for the challenging applications that are found involving high pressure control systems utilising air or sweet and sour natural gas media in pipeline, offshore platform and onshore gas terminal control valve systems.

The Versa filter is designed to accept up to 6000 psi input pressure and is available in three configurations:

- 1/4" NPT inline mounting
- 1/4" NPT inline mounting with additional outlet port in the cap
- Manifold mount.

The additional outlet port in the inline cap provides for a gauge or alternate signal port, eliminating extra fittings. The manifold mount interface facilitates the connection to a customer designed manifold system requiring an integral filter.

A proven 316L stainless steel housing assembly is available with two types of filter elements, and filter elements. Filter element materials are either polyethylene or 316L stainless steel, with filter elements of 3, 10, and 25 microns for choice of filtration.

The number of available filter element sizes ensures the proper selection for system design and provides efficient contamination removal for maximum protection.

The high-pressure filter from Versa compliments the single stage, high pressure regulator which is also designed to accept up to 6000 psi input pressure and reduce it to a working range of 10 to 500 psi.

The 316L stainless steel construction of both the filter and the regulator is ideal for sour gas and/or corrosive environments and is NACE compliant.

This meets the sulphide stress cracking material requirements for NACE Standard MR-01-75.

As with all Versa stainless steel valves they are suitable for operating temperature ranges of (minus) -40°C to + 120°C.

VERSATILE CONTROLS LIMITED

Tel: 01452 731 447
Email: sales@versatilecontrols.co.uk
Web: www.versatilecontrols.co.uk

Forged in Sheffield...

Left to right: James Oates (Regional Sales Manager), Darren Pryce (Sales Director), Shane Higgins (Field Sales), Benn Beardshaw (Managing Director)

Sheffield based forge & raw material experts, Special Quality Alloys Ltd, have a proven track record of manufacturing critical steel products for the world's most challenging industries.

Established in 1986, Special Quality Alloys Ltd is part of the Special Steel Group. From its own 4-acre site, the family owned company manufacture forgings, bar, rolled rings and machined components in a range of materials from Nickel Alloys, Duplex/Super Duplex, to Stainless Steels and Carbon/Low Alloys.

The NORSOK approved forge with 5 open die hammers and a ring mill will produce a range of products from heavy walled rings, blanks, blocks, and boss shapes.

In addition to the forging capabilities, the company is also a major stockholder with more than 1250 tonnes of pre-qualified finished bar stock on site in Sheffield.

The Special Steel Group evolved from the Special Steel Co Ltd which was originally founded in 1925. Through continuous investment the group has become one of the UK's most successful private enterprises in the steel industry.

With the support of the group companies, Special Quality Alloys have the capabilities to maintain full control of the manufacturing process through Forging, Heat Treatment, Mechanical and Metallurgical Testing, NDE, and Machining. Working closely with their customers, tailored solutions are developed to ensure requirements are met in accordance with specifications.

The company has a wealth of experience in supplying forged and round bar products for the Valve industry. Sales Director, Darren Pryce, explains *"In my time with the company, I can remember SQA supplying forged seat rings for the BP Bruce field in the North Sea way back in the late 1980's. Our involvement with the Oil & Gas industry in particular has continued throughout the decades. Most recently we have been supplying the raw materials for valves destined for the Chevron Gorgon project"*

Sheffield, with its enriched history of steel making, is not short of stories passed through the generations.

"it has been a real change in fortunes over the years for the Steel industry" explains Benn Beardshaw, Managing Director. *"SQA have only recently moved into the 'Continental Works' site which is directly opposite our previous home for the past 20 plus years"*

In a twist of fate, the new site is the exact location of where Benn's Great-Grandfather, Bennett Beardshaw set out on his career in the Sheffield Steel industry back in 1906. This was with the iconic tool steel manufacturer Jonas & Colver as a junior clerk in the accounts department. After 18 years of service, Bennett suggested the company should venture into the heat treatment business. Unconvinced of this, he was invited to leave and in May of 1925 he set up the Special Steel Co Ltd only half a mile away which is still the site of the head office.

"It is quite something to be the second Bennett Beardshaw to be walking through the same offices almost 100 years later. As a family, we'd love to know what he'd think of the business he started now owning Continental Works!"

Having recently joined the BVAA, Special Quality Alloys Ltd are looking forward to working with its other members.

SPECIAL QUALITY ALLOYS Ltd

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Web: www.specialqualityalloys.com

NEW MEMBER

Latest Parker 'Smart' Sensors Support Drive Towards Industry 4.0

Parker Hannifin, the global leader in motion & control technologies, is supporting Industry 4.0 initiatives with its new P8S CPS series of 'smart' sensors for pneumatic cylinders.

The sensors feature intelligent functionality such as the ability to acquire and locally process information, and communicate with upper level controllers and/or local networks.

There are three principal building blocks of what Parker Hannifin terms '*smart pneumatics*': sensors, processors and communications protocols.

As part of a project that saw the company investigate available sensors that can be applied to pneumatics technologies, the company has developed its P8S CPS series. Moving forward, the technology know-how acquired during this process will be fed into other Factory Automation projects, with the advantage that learning curves and time-to-market can be shortened considerably.

The P8S CPS Continuous Position Sensor enables quick, precise, high-resolution and contactless sensing of a piston's position in a cylinder. Importantly, direct detection of the piston magnet is achieved without the need for separate position encoders or additional mechanics.

For cylinders, linear slides and grippers with common T-slot dimensions, P8S CPS sensors can be mounted without the need for extra accessories, while mounting on other cylinder types, such as round-rod, tie-rod and profile cylinders (and cylinders with a dovetail groove), is possible using a simple adaptor. External mounting of the sensor on the piston cylinder saves time and money right from the start as there are no complicated integration requirements or drilling of the piston rod.

Furthermore, thanks to retaining ribs on the side, the sensor holds its position even before the screw is tightened, ensuring that it does not fall out. The rugged screw then holds the sensor in the desired position during operation, even when subjected to shock and vibration. Sensor settings can be adjusted during or after installation using a teach pad or, depending on the variant, IO-Link.

P8S CPS sensors continuously supply data via analogue signals, IO-Link process data or flexible switching point (an LED indicates the output state). The continuous transfer of position data serves to upgrade the functionality of pneumatic cylinders and drives by making them more intelligent and, as a result, more versatile. With this in mind, it is possible to solve engineering challenges in areas such as quality monitoring and process control, particularly in consumer goods markets like packaging. Handling and small-part assembly, machine building, and electronic and solar applications will also benefit.

Both analogue and IO-Link versions are available in measuring ranges from 32 to 256mm. The operating temperature range is -25 to +75°C, while the enclosure is rated to IP67.

Tel: 01271 313 131
Email: ipd@parker.com
Web: www.parker.com/ipd

AVS UK Hosts First Training Workshop

Advanced Valve Solutions UK Ltd Celebrates Their First Successful Training Workshop in Crewe

Advanced Valves Solutions (AVS) was established in 1998 to provide solutions to the Power Generation Industry when excessive wear, thermal cracking and stressing became a major problem – resulting in millions of pounds in lost revenue. AVS takes their industry knowledge and actively shares it with key customers and end users to create a detailed understanding of cause and effect in power generation.

The first workshop covered the challenges that engineers face in relation to IP and HP bypass stations. The feedback has been excellent according to AVS.

UK Director, Rik Barry explained, *"This course was offered as a result of industry demand. We ask the industry what their problems are and cater for them with bespoke courses that offer the up-to-date innovations and, more importantly, a genuine fix for their issues."*

The workshop was attended by Power Station engineers and graduates throughout the UK and Ireland with special guest speakers being drawn from both OEMs and end users with 'true-to-life' case studies being presented. The delegates included staff from Scottish & Southern, Suez, Sita, ESB, Uniper and Intergen, as well as students from the MMU and South Cheshire College. There were 21 delegates in total.

Dave Colston, an engineer with SSE stated, *"It was a good day, with excellent subject matter and good presentations."*

Most of the courses are offered free of charge and include refreshments and lunch.

For more information on our training schedules please contact Sadie Beavis, Training Administrator, on 01270 586944 or email: sadie.beavis@advancedvalvesolutions.co.uk

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Allvalves Enjoys Consecutive **Year-on-Year Growth &** Adds Another **Major Brand** to its Offering.

Now it's their 7th year, Allvalves Online Ltd are seeing continued growth with 2017 being another successful year for the company.

Having acquired ISO 9001-2015 Quality Accreditation at the end of 2016, this has allowed Allvalves to supply into new customers and applications. Starting back in 2012 with not much more than a website, Allvalves has grown into a well-respected, award winning company with sales all over the globe.

Allvalves is now the official distributor for Cepex Extreme Series of plastic ball valves for the UK marketplace. Cepex are mainly known for manufacturing valves to be used in pool, spa and irrigation applications. However, the Spanish manufacturer has now launched its Extreme Series which offers a range of industrial ball valve, butterfly valve and diaphragm valve in a variety of materials. This offers an alternative to other brands available and often specified due to there being no alternative available, well now there is.

The Cepex Extreme ball valves are available in PVC-U, CPVC, ABS, PP and PVDF with stock held in the UK. The valves are available in various sizes and end connections and are stocked ready to be actuated in house by the Allvalves team. The Cepex actuation kit allows Allvalves, and other actuation houses to fit their actuators easily to the ball valves. Allvalves will be able to offer large quantities from ½" to 4" from stock as either manual valves, electrically or pneumatically actuated. Allvalves offer the AVA range of actuators, a compact plastic actuator that makes the perfect partner for the plastic ball valve series.

In addition to the ball valves, the Cepex Extreme butterfly valves are also available with a GRPP body and a variety of disc materials available, again in PVC-U, CPVC, ABS, PP and PVDF with EPDM or Viton liners available. As with the ball valves, the butterfly valves can be actuated from stock using the actuation bracket kits.

Cepex Diaphragm valves complete the Extreme Series with various ends and body materials available.

Actuated Cepex valves available from All Valves

Actuated valves is Allvalves specialty

For many years Allvalves feel that the plastic valve market within the UK has been crying out for an alternative to the 2 main brands offered in the UK. Allvalves feel that the Cepex Extreme range in combination with Allvalves actuation capabilities will offer the UK market place something new.

With plans to grow again this year, Allvalves are updating the website that has given them so much success. The new look Allvalves site will showcase more products than ever before and will have a much more technical foundation to the site offering its customers all over the world technical information, videos on the products offered and 3D models. The Cepex range will also be available for online purchase as manual or actuated valves with full technical documentation available online.

Allvalves will also exhibit at the Valve World show again this year to continue the success experienced from working with the BVAA since 2012 and having exhibited at the 2014 and 2016 shows as part of the BVAA stand.

Visit www.allvalves.co.uk for all the latest news.

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Whitford UK's Guide to Fluoropolymer Coatings

The successful application of advanced fluoropolymer coatings depends on a number of important factors. Whitford UK explains how to avoid some of the main pitfalls and outlines how you start is critical to the finish achieved.

Preparing for a Better Finish
Each year, across industry, substantial amounts of both time and energy are wasted because the surface finish is not up to the required quality standard.

When it comes to pinpointing the cause; applicators, whether subcontractors or in-house finishing facilities, quite often point the finger at the coating. In the vast majority of cases this is unjustified and time after time the cause of failed or sub-standard finishes rests fairly and squarely with poor surface preparation or pre-treatments.

Thorough degreasing, detailed attention to surface preparation and meticulous standards of preparation are a pre-requisite to attaining a high quality, lasting finish.

Successful surface finishing should be just a matter of following the manufacturer's recommended methods contained in datasheets and technical literature, yet a fair proportion of applicators still fall foul, with a desire to cut corners and save money or simple bad housekeeping as the principal causes.

In the worst cases some operators will try to cut a stage out of the process, such as gritblasting, altogether. Sometimes they *'get away with it'*, but on many occasions they don't, with the desire to save a little eventually costing a lot due to rejected product having to be re-processed from square one, or in the worst cases, even scrapped.

When this happens and the applicator is handling work on sub-contract, it does little to engender trust or confidence for the manufacturer facing the prospect of lost stock and unfulfilled deliveries.

Where problems occur, a high proportion of the causes can be traced to deficiency either in method, materials or equipment somewhere along the line. By carrying out regular checks and following procedures through the processing stage, it is possible to pinpoint and eliminate problems.

So, taking things step-by-step, things to consider are:

Degreasing: Ensure that degreasants are not over used or contaminated. Degreasers are specially made chemicals for removal of grease and oils. These are generally solvent based, or contain solvents that have a dissolving effect on grease and other contaminants. They may also contain active ingredients such as surfactants. They may be used hot for greater solvency power through condensation and evaporation.

Alkaline and acid (pickling cleaners): These are usually used to remove grease and oils prior to plating and are usually part of a much wider process. Ensure the strength of cleaner will be tolerated by the component. For example, strong alkaline cleaners may be used for steel, but for zinc and aluminium a solution with much lower free alkalinity must be used. Always check with the manufacturer about the suitability of a cleaner for use with each metal.

Gritblasting: A crucial area where problems are most likely to occur. Don't try to avoid gritblasting where it is recommended. It is an expensive process, but skipping it is false economy and a recipe for problems further down the line, such as poor adhesion.

Even though abrasive grit is costly, it needs to be changed regularly, as continued use alters the profile and size of the abrasive. At best a 'tired' grit will prolong the abrading process, at worst it could damage or destroy the product being treated by becoming embedded in the surface.

With gritblasting always ensure that the compressed air lines and equipment is checked for water and oil and drained DAILY to prevent contamination of the blast medium and guard against damaged or poorly finished product.

For Whitford's Xylan® industrial coatings we recommend the use of 80/120 mesh aluminium oxide at about 80-100 p.s.i. to give a smooth surface finish of about eight microns on aluminium and four microns on steel. This provides the correct finish for a thin film coating of about 20-25 microns. Abrasives that are too savage for this type of application include steel shot, which has the effect of peening the surface, resulting in the coating failing on adhesion.

Phosphating: Using phosphates as a base coat provides a uniform texture with capillaries and microactivities into which the coating can key, providing a greater surface area onto which a coating's adhesive forces can act. The adequate preparation of surfaces for phosphating is just as crucial as it is for applying industrial coatings direct to bare metal. Degreasing and gritblasting are needed to clean and activate the metal surface. Application of the industrial coating should be carried out within a few hours of phosphating to reduce the chances of the surface absorbing moisture or other contaminants detrimental to the surface coating.

Application: Final application of industrial coatings can give rise to a number of problems, which can easily be avoided with good housekeeping and best practice. Where coatings are spray-applied the spray area should be totally separate from dirty operations, such as gritblasting, to reduce the threat of airborne contamination. Spray areas should be enclosed and used for spraying only and ideally should have a balanced, controlled air supply.

Insufficient mixing of the coating material can also lead to poor results. Gravity is an uncompromising phenomenon and sooner or later solid particles suspended in the liquid coating will head for the bottom of the container.

If not thoroughly re-dispersed important active components will be missing from the dried film, reducing properties. One of the 'key' causes of coating failure identified on a regular basis is under-curing due to the substrate not reaching the recommended temperature or where the temperature has not been maintained long enough.

For this reason, Whitford UK always recommends the use of thermocouples to ensure temperatures are substrate temperatures – the temperature of the metal – which should be monitored by linking the components to thermocouples during the curing cycle. Flash-off temperatures are also important as they ensure gradual heat up and even removal of solvents, preventing blistering and solvent boil.

By adopting and implementing best practice in surface preparation and pre-treatments, following the recommendations provided by manufacturers and ensuring that the coating applied is the best for a particular purpose, the threat of coatings failure can be easily avoided.

As a general rule – *always read the instructions and if in doubt, ask!*

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HPE have recently invested in larger-capacity heavy duty milling machines capable of machining components up to 1 cubic metre in size. These incredible machines are particularly suited to machining the exotic materials required by the Oil & Gas industry.

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A uniquely accurate and powerful process, a waterjet simplifies the cutting of the widest range of materials and thicknesses. Offering a rapid transition from drawing to finished part, the benefits are many and varied. The high accuracy and superior edge finish often remove the need for secondary cutting.

Waterjet cutting is a cold process. Heat affected zones, hardened material or material stresses are, therefore, simply not present. A clean accurate burr-free finish often removes the need for secondary surface finishing.

Additionally, our DMG Mori DMU75 5-axis vertical milling machine provides 5 axis simultaneous machining, highly dynamic high-speed milling, with spindle speeds up to 20,000 rpm cutting with torques up to 86Nm. With the new monoBLOCK machines, every component produced becomes an impressive masterpiece.

With a team of experienced engineers having a wealth of knowledge in all industries, we look forward to helping you achieve your machining needs.

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