

# valveuser

## Magazine



## Future Leaders - Cohort 3



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**Precision, High-Quality & Simple to Use; Valve Lapping & Grinding Machines - H & S Tool Holdings**  
Page 67

# Malvern Company **SmartAct** connects to Android - Now that's **SmartActually !**



## New Small Electric Actuator & App Launch

Fresh from receiving the Queens Award and National Family Business Championship in 2017, The Smart Actuator Company team continues to innovate and has been working hard to develop and launch our new Small (0-40 Nm) electric actuator.

The Small actuator launch will coincide with the release of our Android App.

Our new App ensures an intelligent and easily operated actuator with advantages like no other within the current market.

Whilst our Actuators still offer a 75% energy saving we continue to innovate smart



solutions. The Smart Actuator Company has developed an easy and efficient platform that improves communication with SmartAct Actuators for both our existing and new customers.

An online portal system that can be operated with any Android device allows customers to access their purchased products, monitor the configuration and add or remove features right then and there.

It even has a torque detection function which auto detects the torque requirement of the valve for initial set-up and configuration.

**Now that really is Smart!!**

## Smart Price

End User (Distributor List) Pricing for the Standard Small Actuator starts at £125 per unit.

**£125**

## Smart but Simple

Standard Features include:

- Auto Detect Torque
- Rugged GRP Housing
- IP 67
- Bluetooth Control
- Manual Override
- 2 Year Warranty
- Set-up, configuration & Optional feature activation via Android App

**Full list of features available at:**

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**Email :**

**[sales@smartact.co.uk](mailto:sales@smartact.co.uk)**

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**01684 565709**





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## Comment

By BVAA Director  
**Rob Bartlett**

# Making a Contribution?

We all know the type. *'First out the taxi, last in the pub.'* The person who manages to reap all the benefits of our friendship group, but makes a rare and negligible contribution. But still, they're our friend, right?

How would it be though if they moved into your house? A few days on the sofa, maybe the spare room. We tolerate that, because they're part of our group.

What about if they came back and forth. As suits their fancy. Beginning to rankle?

Imagine then, that they camped out permanently. They might buy their own food, and argue you had the house anyway so your *'costs'* are not increased. But there *is* a cost involved in providing their lodging nevertheless. Not just the household water, heating and lighting, but also the rates, or the local precept for the upkeep of the roads, police, indeed the fabric of society that makes us civilized. Is the word *'unfair'* coming to mind?

In trade association circles, we have something of an analogous problem. Booting someone out of an association is traumatic enough, and most usually for non-payment of subs (i.e. not paying their share). But you can't boot someone out of an *entire industry!*

A fact of life is that an industry association supports a great many more companies besides those that subscribe. Those outside may argue that they are not directly buying the services, so have no obligation to contribute. But is that strictly true? Are they not benefitting anyway?

Let's take a fundamental thing like skilled staff. Who bore the costs of training them in the first place? What was it that allowed their lecturers / teachers to gain their own knowledge and experience? And what courses were they on? Who paid for their development? The supporting materials? The equipment, the building they learned in? Starting to rack up, isn't it?

Then there are standards. Dimensional. Materials. Testing. Services. Ancillary products.

Every business is affected by them. But someone had to come together to identify the need for those. To develop and draft them, etc. To go to BSI in London, CEN in Europe, perhaps further flung corners of the world to develop ISO or API standards. Occasionally *all* of them over many years. Then maintain them afterwards, forever. Who does that? Who coordinates it, pays an expert to lead it, pays to assist with travel costs, keeps the industry informed of commencement, publication, any changes, etc. Again, the Association.

Who steps up when Government agencies, the HSE, professional bodies and industry customers, etc., need help with industry-related problems? Who is the *'authority'* on behalf of the *industry*, not just the association members?

Who is it that keeps British products in the limelight? Develops and publishes magazines like this one - at some considerable cost - to showcase British valve products around the world? Who broadcasts and maintains that British reputation? Who liaises over export events with DIT? Travels the world to exhibit at expos. Sponsors the development of professional industry Market Forecasts reports, develops text books for the industry, guidance and interpretation on legislation? Keeps industry informed on all manner of developments?

*And who is it that keeps up a pretence of BVAA Membership long after they've left? And why? Could it be that it brings them credibility and respect? We know so. We know they know so too.*

BVAA and its members invested in the past, present and for the future for the British valve industry. We think it is incumbent on all to play a part in the industry body that supports their businesses and their families.

Any Association is of course devalued by the absence of key players - but those players *are* benefitting from its activities just the same.

# World Class Independent Valve & Actuator Training

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Introduction to Valve Actuators | *Tuesday, 3rd July*  
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, 3rd September\**  
Valves Advanced Level | *Tuesday, 4th September\**  
Control Valves (CPD Accredited) | *Wednesday, 5th September\**  
Safety Valves (CPD Accredited) | *Thursday, 6th September\**  
Introduction to Valves | *Monday, 1st October*  
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Control Valves (CPD Accredited) | *Wednesday, 3rd October*  
Safety Valves (CPD Accredited) | *Thursday, 4th October*  
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\*To be held at Emerson, Aberdeen

Most Courses will take place at the Association's offices in Banbury.  
Prices\* start from £290 for Members | £475 for Non-Members plus VAT.  
Prefer to host at your premises? Give us a Call.

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## BVAA Taining Courses Summer & Autumn 2018

Please complete the form and return to Barbra Homer - [Barbra@bvaa.org.uk](mailto:Barbra@bvaa.org.uk)  
 For full details on each course, visit [www.bvaa.org.uk/training\\_courses.asp](http://www.bvaa.org.uk/training_courses.asp)

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 Prices: £290 for Members | £475 for Non-Members plus VAT.  
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# A Series of Fortunate Events



BVAA's Business Development Consultant, Rob Boycott, holding the fort at DPTRE, Cardiff



BVAA's Director, Rob Bartlett, manning our stand at Fluid Power & Systems Exhibition, NEC Birmingham

## BVAA's been busy attending industry events up & down the country

### DPTRE 2018

The BVAA exhibited at the Defence and Procurement, Research and Technology, Exportability Event - one of the UK's leading defence procurement and supply chain events in Cardiff on the 27th March 2018.

With over 1,300 delegates, 125 exhibitors, 1-2-1 opportunities, and prominent speakers throughout the day covering a range of subjects regarding the defence industry's supply chain.

The day promised the BVAA an invaluable opportunity to find new MOD contacts, desktop, business and training opportunities and of course to say hello to members also visiting.

Attended by the BVAA Business Development Consultant, Rob Boycott and BVAA Events Manager, Barbara Lestak-Maynes, the BVAA stand was visited by a myriad of Abbey Wood MOD and Armed Forces personnel, potential future BVAA members and current members. Some 1-2-1 meetings with Raytheon and GE Aviation, as well as conversations with BAE Systems gave us a good insight into the amount of red tape and obstacles to conquer to be well-established in the defence supply chain.

With success meeting new contacts, we look to secure new opportunities with Abbey Wood and other MOD venues in the near future - watch this space!

### EDF Energy's Heysham Expo

On 21st March, BVAA's BD Consultant Rob Boycott attended an Engineering & Technology Solutions event at EDF Energy's Heysham site near Lancaster on behalf of BVAA.

The event drew over 600 visitors – mainly EDF staff and contractors – and Rob fielded a flurry of enquiries on products, services, membership and training.

There was a great deal of interest in BVAA's 'User Manual' too and Rob was completely cleaned out of promotional material!

As Rob himself said, 'The best exhibition I've ever been involved with!!' As a result, BVAA will now also be present at similar events in the summer at Stanlow Oil Refinery and BAE Barrow, underlining again that BVAA is keenly supporting all fluid control markets.

### Fluid Power Expo

BVAA exhibited 10th ~12th April at the Fluid Power Expo, part of the cluster of Engineering events held bi-annually at the NEC.

The Association's Director & CEO Rob Bartlett was joined by Vron Willard - a combination giving the stand we felt a rather unnervingly large number of years' of experience of the fluid power scene!

The small group of exhibiting members and the BVAA itself were rewarded with a steady stream of quality visitors and the occasional very good enquiry, and in BVAA's case, an awful lot of visitors popping by to say 'hello.'

Consequently we were able to point valve and actuator customers in the right direction for product-sourcing, and are currently pursuing a number of membership enquiries.

If you attended or exhibited at the event we'd welcome your thoughts and feedback, or even on taking a stand in two years' time.

# Desktop Season!



Desktop Exhibition, KBR, Leatherhead  
(photo courtesy of Stuart Holmes)

**The BVAA desktop exhibition scene moved into top gear again this spring, with FIVE events being held over a period of just FIVE weeks!**



Particularly pleasing was that Rob Boycott and his BVAA support team were able to include some new venues in the mix.

First up on 13th March was a visit to new host Apache, Aberdeen, which featured 18 BVAA exhibitors being rewarded with 38 visitors from Apache themselves as well as Nexen, Premier Oil, etc.

Next day was EnQuest's turn - another new venue - with a smaller group getting quality time with the Aberdeen company's small supply chain and specifying team.

On 22nd March we made a return visit to KBR in Leatherhead. 26 BVAA members exhibited and were rewarded with over 90 visitors, making it one of the best attended Desktops we've held in recent years! This event also benefitted from visitors from the company's own customer base.

April 6th saw us at SNC Lavalin in Epsom, with a small cadre of BVAA 'desktoppers' meeting with over 40 visitors. And finally on 19th April our team were again at Bechtel in London with 17 members welcoming 55 visitors.

A grand total of over 4500 interactions were made possible via these events - making well over 8000 in the last year alone!



Desktop Exhibition, EnQuest, Aberdeen

# Member's Testimonial



**Rodney Rice, Business Development Director at Langley Alloys attended BVAA's Suppliers Day back in February.**



*"As a first-time attendee at the recent Supplier Day I would wholeheartedly recommend it to other prospective members. The ability to hold multiple 1-2-1 sessions in quick succession was a great opportunity. Even though we already knew many of the companies, often as existing customers, there were new points of contacts and new items to discuss that were prompted by the event.*

*The weather on the day was truly shocking, with roads brought to a standstill by wild snow flurries. However, that engendered an esprit de corps amongst the attendees. On a sunnier day, I'm sure the attendance would be higher but the experience probably less memorable!*

*It's important for me to thank the valve and actuator manufacturers who gamely put themselves out there, to engage with more than ten prospective suppliers one after another, must have been equally hard work. However, I trust they got something from the experience too. More collaborative working between members can only benefit the association."*

**Members are at the heart of everything we do here at the BVAA.  
If you've recently attended a BVAA event, why not tell us your thoughts.  
Email Rob Bartlett directly - [rob@bvaa.org.uk](mailto:rob@bvaa.org.uk)**

## BVAA New Members



Ross Wilson, Valve Operations Manager, IKM Testing UK



# Future Leaders - Cohort 3



Future Leaders - Cohort 3

**BVAA's Future Leaders Programme continues into its third, barn-storming season and already the latest Cohort have three sessions well and truly under their belts**



After an induction day at BVAA HQ in February, and the obligatory 'get to know you' supper, the Group proceeded next day into a confidence-boosting presentation skills programme, delivered by BVAA's Personal Development Consultant, Dr Martin Haigh (Latitude7).

A few weeks later the Group met at Severn Glocon in Gloucester and were treated to masterclasses in Cryogenic and Anti-surge valves, as well as Project Management. As is traditional now, the Group also reviewed how they have applied their new-found skills and knowledge in the workplace.

Session 3, held recently at Heap & Partners' site in Birkenhead, was another 2-day special. FLP3s learned of Heap's unique history and place in the valve industry, and were treated to a Distribution masterclass, followed by a basic introduction to Safety Valves and then how the company manages its product development. Day 2 was another personal development day with Martin Haigh, focussed on 'Pressing the right Buttons' - in teamwork and management. This included the oh-so-simple yet frustratingly difficult 'Helium Stick' challenge, and practical examples of how teamwork can reduce a process time by a factor of 10!

Already the development improvements are apparent in both individuals and the group as a whole and BVAA is delighted that the 'FLP' is having such a dramatic effect on all it touches.



The 'Helium Stick' Challenge



Paula Rimmer with her Contribution to Session Award



A levitating FLP



Future Leaders Cohort 3 at Heap & Partners, Birkenhead

# Valve Training - Delivering Where You Need It!



Valves - Advanced Level, BVAA HQ, Banbury

**The spring period is always a busy time for the BVAA Training arm, but the first three months of 2018 has seen one of the busiest and most far-reaching UK programmes to date!**

Given the current trading conditions and depleted budgets, all the more remarkable.

As well as the usual extensive list of 'routine' scheduled dates at our Banbury HQ - inclusive of a new Mentoring Programme - we've delivered a series of courses involving Presentation Skills and bespoke valves courses in south Wales, Advanced Valves and more regular courses in West Yorkshire, and a wide range of what turned out to be very popular courses in Aberdeen. We have also been delivering training programmes across the industry for specific members and customers.

Our sincere thanks to Emerson, Crane and Severn for allowing us to use their local facilities. The fact that BVAA operates in the main its own cohort of lecturers coupled with flexible venues means that we can offer clients maximum flexibility both in terms of timing and course content - a winning combination. We will be in all these places again pretty soon.

Not content with this, we are also planning to put on once again our highly regarded 'Commercial Risk' course, now updated to reflect modern trading conditions - see page 22. This course seeks to eliminate the colossal risks that can result from poorly managed sales and T&Cs, something all of us could really learn from. Casting Design for Valves is also making a return too - see page 17 - and this will cover a range of topics from casting design principles right through to quality control.



Control Valves (CPD Accredited), Emerson facilities in Aberdeen

We publicised last issue that our courses are being awarded CPD certification and this process is continuing across the board. In doing so, we have also learned valuable lessons, resulting in significant changes in the way we assess delegates and gauge their knowledge both before and after the courses. We have also substantially improved and harmonised the look and feel of the supporting materials, which again are updated constantly to reflect the continual feedback we receive.

Finally - If you'd like to discuss your trained needs, contact [karen@bvaa.org.uk](mailto:karen@bvaa.org.uk)

# Mad Hatters

## Ross Okines - Going The Extra Mile!

Sporting our BVAA hat in this issue, we have Ross Okines, from Flowserve.



On the 15th of April Flowserve Flow Control's, Ross Okines, ran the Brighton Marathon to raise money for Seaford Down Syndrome and Special Needs Support Group (D.S.S.N.S.G) in recognition of the support given to their son Isaac, who has been diagnosed with Autism.

Ross described the D.S.S.N.S.G as *"...a relatively small charity who make a big difference to disabled children in the local area. Along with the drop-in sessions, they also organise swimming lessons, speech and language therapy sessions and music classes. Most of the charity organisers are volunteers from families or are parents to children with disabilities and special needs and all work so very hard to keep this charity running."*

The BVAA have donated £50 which now brings Ross's total to a staggering £1,510!

To read more on Ross's story or to donate visit:  
<https://uk.virginmoneygiving.com/RossOkines>



*"...raise money for Seaford Down Syndrome and Special Needs Support group..."*



### Hat Up!



If you've a charitable event planned, contact [rob@bvaa.org.uk](mailto:rob@bvaa.org.uk)

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



## INTELLIGENT VALVE ACTUATION MODULAR CONTROL & OPEN PROTOCOL COMMUNICATIONS

The **world's leading electric actuator specialist** allows you to specify the perfect actuator for your application with a modular approach for speed of build and flexibility. Choose from open protocol communications including industrial Ethernet.

- **Improve** control with variable speed options, eliminate water hammer and linearise flow
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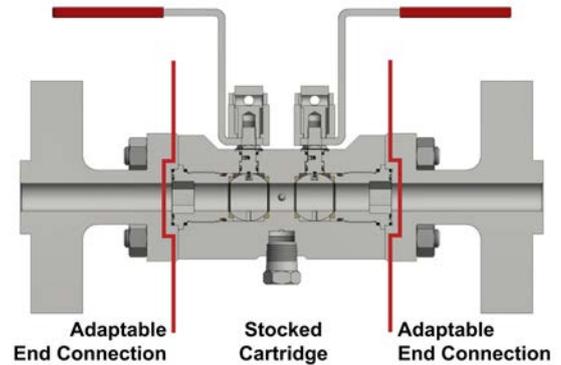
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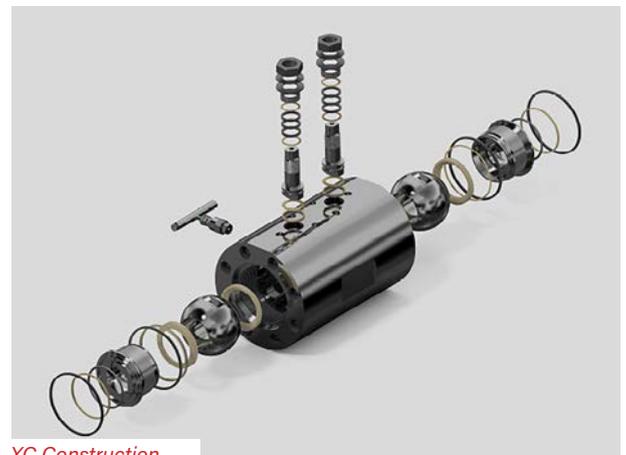
# Introducing the Next Generation of Double Block & Bleed Valve Technology



Final Product



Stocked Cartridge



XC Construction

## The Alco Valves XC Range



Alco Valves Group Ltd, part of the international engineering firm Graco, have enhanced its double block and bleed (DBB) valve offering with the release of the XC valve range. The new design features of the interchangeable DBB range, represent a forward-thinking approach by gaining the ability to offer customers highly engineered products with radically reduced lead times at competitive prices.

When fully assembled the XC valves are unlike any other DBB valve on the market. However, the Alco Research and Development team were able to challenge the conventional methodology of DBB design to create an innovative interchangeable valve solution. The XC compact design allows the centre module of the valve to be manufactured, assembled, tested and stocked without fitting the end connections, before the point of order placement. This means drastically reduced lead times for the benefit of the customer.

Alco Valves have invested heavily in the latest state of the art CNC machinery and other advanced manufacturing equipment which has supported the initiative to provide expedited deliveries for highly complex DBB technologies. This outstanding level of investment ensures that the company achieves operational excellence when meeting customer requirements.

### Design Features:

- Adaptable, Reliable & Robust;
- Compact design for cost efficiency and weight;
- Designed and manufactured in accordance with ASME standards;

- A wide array of material configurations available;
- A wide selection of end connections available;
- Service temperatures from -46°C to 200°C;
- Fire Safe;
- Low Emissions;
- Features 2 high performance floating pattern ball valves and a venting needle valve c/w NPT female vent.

### Pressure Ratings Available:

- ASME Class 150 to Class 2500

### Bore Sizes Available:

- 13, 19, 25, 38 and 50 mm

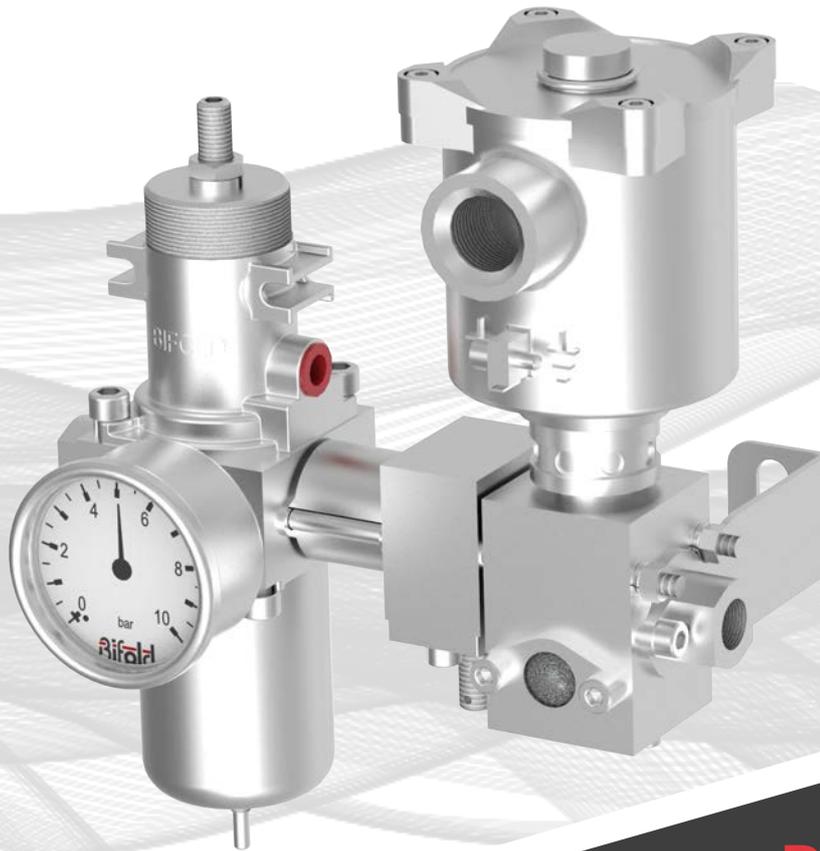
You can also refer to the case study article detailing technical features, testing methods and qualifications which you can download from [www.alco-valves.com](http://www.alco-valves.com)



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## BIFOLD CIRCUIT DESIGNER

The Bifold Circuit Designer allows you to design a bespoke modular solution or tubed valve circuit comprising a series of valves in any order or orientation (where applicable) using a schematic drag and drop system. The completed system can then be bought as a modular solution or as a list of separate valves from Bifold.

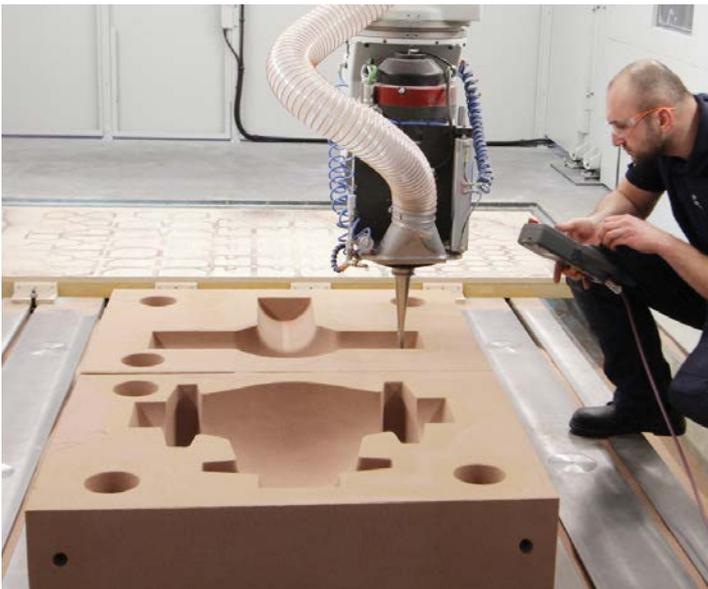
- ✓ **Design a circuit using drag and drop (new schematics added regularly).**
- ✓ **View the modular solution code and description or a list of separate valves and fittings.**
- ✓ **Create a PDF schematic diagram and description for sending with a quote.**
- ✓ **For users with Solid Edge ST6 and above, create a 3D model and dimensional drawing for a modular solution.**

Download and run setup.exe from <https://www.bifold.co.uk/BifoldCircuitDesigner.aspx>  
For more information, screenshots and getting started guide, visit [https://www.bifold.co.uk/BifoldCircuit Designer.aspx](https://www.bifold.co.uk/BifoldCircuitDesigner.aspx)



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# Back by Popular Demand - Casting Design for Valves



**BVAA - in partnership with the Advanced Manufacturing Research Centre (AMRC) - are delighted to announce the return of training course, 'Casting Design for Valves!'**



#### Coverage

The course will cover basic casting design principles, the building blocks to producing a good valve casting and how to improve product quality and recognise casting defects.

#### Course aims

The course provides design engineers, production, specification and procurement professionals with an in-depth understanding of the opportunities and constraints of a variety of casting processes. This will enable businesses to manufacture or source cast valve products to the most effective design.

#### Who should attend

The course is particularly suited to practising designers and procurement professionals, or methods engineers looking to gain or improve their depth of knowledge in producing valve designs suitable to be cast.

#### When & Where

To be held on Wednesday, 19th September 2018 at the AMRC facility in Rotherham, the day will also incorporate a 2 hour lunchtime visit to Casting Technology International (CTI). £330+vat.

#### More information

Contact BVAA on Tel: 01295 221270 or email [barbra@bvaa.org.uk](mailto:barbra@bvaa.org.uk)

# J+J Stock Power Genex Products



## J+J Automation, a leader in valve actuation solutions in the UK for over 20 years now has stock in Matlock of Power Genex products, the quality South Korean manufacturer of pneumatic actuator position monitoring, feedback & control devices

Power Genex have over 20 years' of experience designing and manufacturing quality positioners, volume boosters, switchboxes and other air control products, and with J+J's own brand range of CH-air branded pneumatic actuators, J+J can offer a complete package in the supply of, and control and monitoring of pneumatic actuators and air actuated valves.

At the core of the PG range are their rotary or linear positioners, from basic robust EP positioners through to their auto-calibrating, programmable smart series suitable for hazardous area applications, with HART, Profibus PA and Foundation Fieldbus communication options, ATEX certified.

Supporting the positioner range are the SIL3 rated heavy duty ATEX approved volume boosters, available up to 3/4" offering high flow outputs and tight shut off, and extended temperature options down to -40°C or up to +120°C. Exhaust filters supplied as standard prevent unwanted foreign object ingress into the boosters.

PG's Snap acting relays and lock-up valves offer security against air system pressure malfunctions, and their air filter regulators protect the positioners and other devices from malfunction caused by dirty supply air.

The more commonly supplied position monitoring and feedback requirements are covered with the Power Genex safe area and ATEX approved hazardous area limit switchboxes, with optional 2 or 3 way valve flow indication, and a wide variety of switch options including hermetically sealed switches, and feedback options including 4-20mA position transmitter or by potentiometer.

Pilot solenoid control is covered by the PG series of ATEX approved SIL3 rated pipe to pipe or Namur solenoids for hazardous area applications, or a low power consumption durable single or dual coil quality Namur series for safe areas.

A shining jewel in the Power Genex crown however, is their Valve Position Monitor series which offer robust ATEX approved switch box with built in pilot solenoid and many feedback options which provide outstanding performance under harsh working environments. These all-in-one position monitors offer simple wiring to a single unit which adds to the cost savings a quality single monitoring and control device offers over purchasing a separate ATEX switchbox and ATEX solenoid valve.

Service will be as expected from a manufacturer and distributor with 20 years' experience supplying the valve distribution, OEM and end user markets, and J+J look forward to assisting with your valve position, feedback, control and monitoring requirements.



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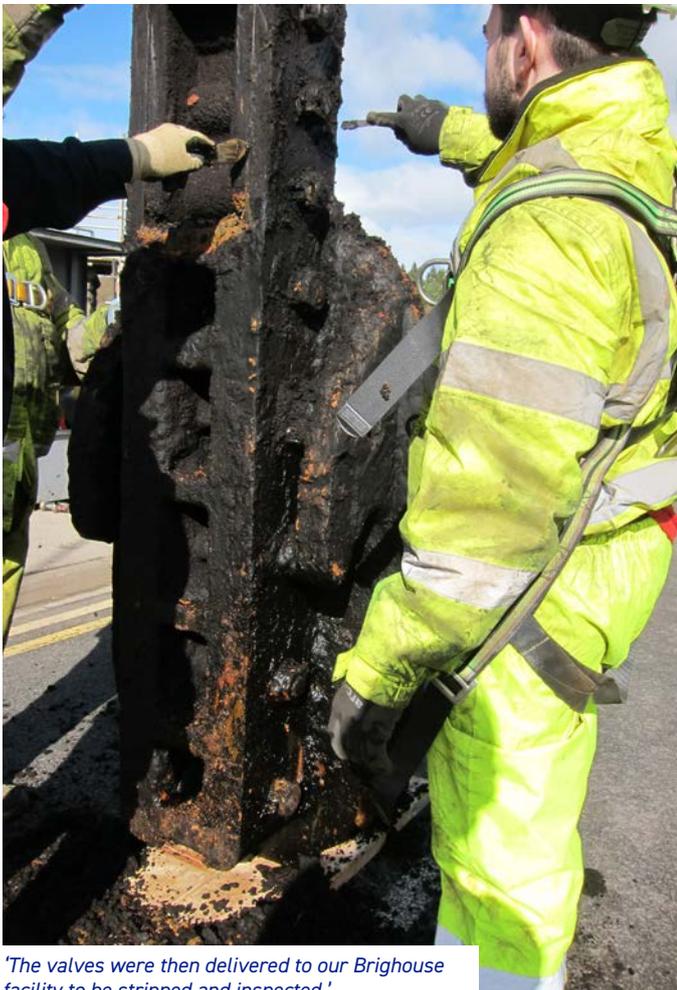
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# Blackhall Engineering Refurbish & Re-manufacture 140-Year-Old Valve



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



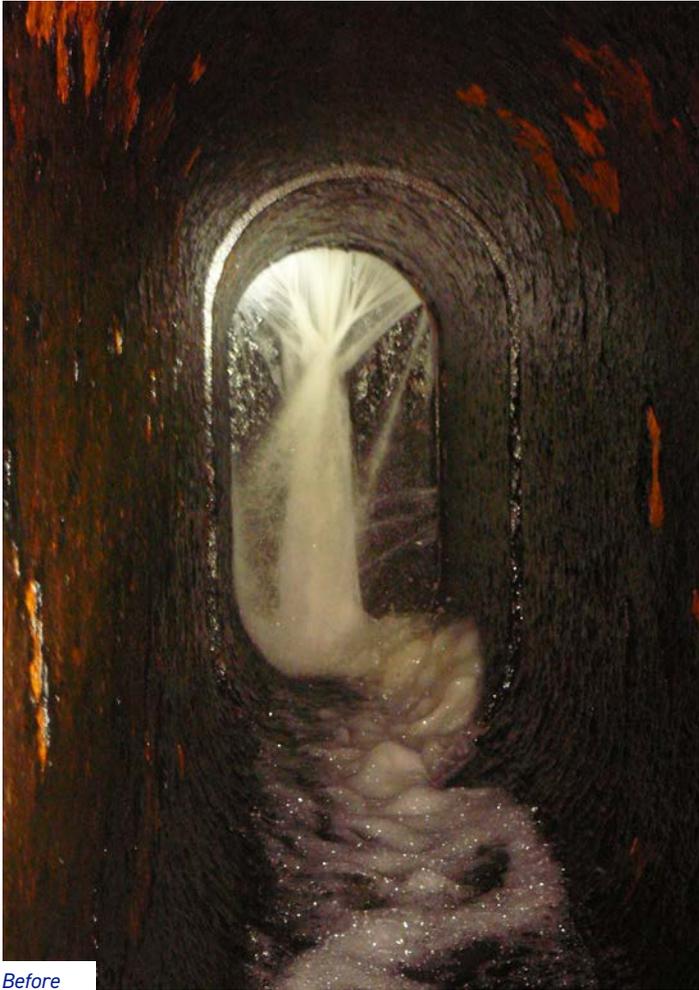
*'The valves were then delivered to our Brighouse facility to be stripped and inspected.'*

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

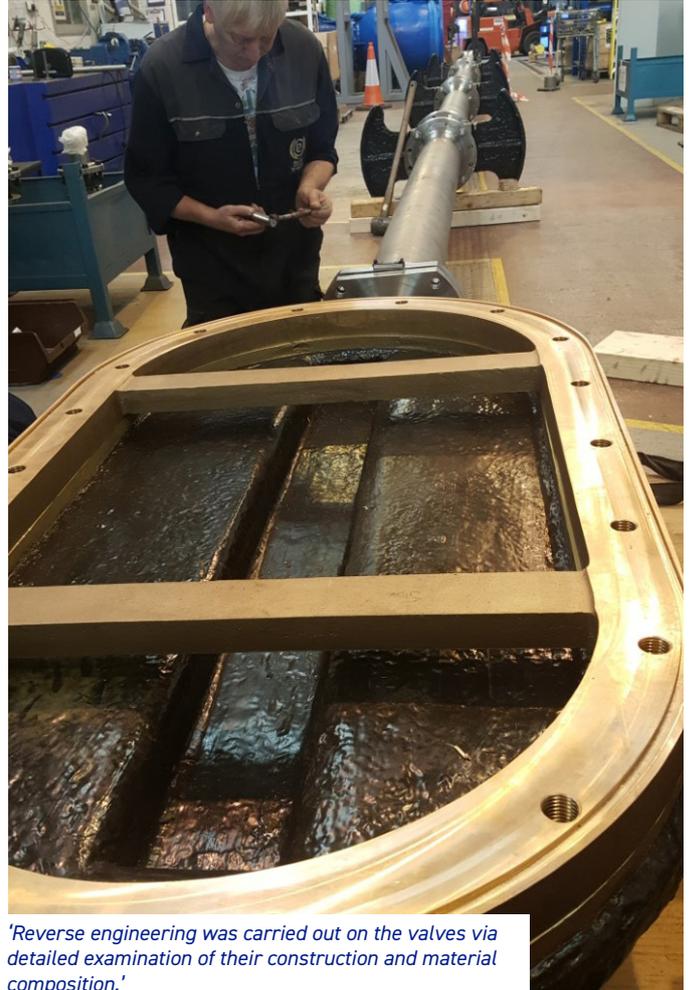
Fewston Reservoir, originally built in the period between 1876 and 1879 is located in Washburn valley to the west of Harrogate in Yorkshire, England. The capacity of the reservoir is 3.5 million cubic metres and is adjoined with the 3.9 million cubic metre capacity Swinsty reservoir. In 2011 during a statutory 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



'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 Brighthouse 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.



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*Featured again due to incorrect contact information - our apologies to Blackhall Engineering.*



After

# Branded Label Printing Service Now Available at Hydravalve (UK)

New to April 2018, Hydravalve (UK) can now offer branded labels on all stocked actuators where the customer's logo and information can be placed



Due to the continuing expansion of the company, Hydravalve (UK) have invested in thermal technology, allowing the company to create vibrant, robust, UV stable, chemical resistant and water-proof labels which are instantly ready for indoor and outdoor use.

Currently, the customer branded labels can be placed on the stock range of actuators which are the Haitima and Prisma pneumatic actuators and the J+J electric actuators. Other actuators may be available for custom label designs, so please contact our sales team for more information.

If you are interested in viewing a sample label, please contact a member of our sales team on 01902 637263 to discuss your requirements. Alternatively, please email [sales@hydravalve.co.uk](mailto:sales@hydravalve.co.uk)

**hydravalve**  
UK

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## Managing Commercial Risk

The BVAA is delighted to announce that, due to popular demand, they are bringing back their **'Introduction to Managing Commercial Risk, Contracts & Agreements'** training course

This one day training session is designed to raise awareness of key commercial risks and how to address them in practical terms. Topics covered include evaluating opportunities for level of risk, pricing, volumes, specification and warranty, liabilities, intellectual property and payment terms.

Confidentiality, Supply and Development Agreements are all addressed, in the context of stages in the relationship and business with customers, and with the focus on practical issues.

There is a section on preparing for negotiations, which links effectively to other sales/negotiation training material.

The course is aimed at Key Account Managers, Sales and Commercial Managers, Product and Marketing Managers, Sales Engineers, Technical/Technical Sales Managers and their teams, and will also benefit Customer Service Managers.

It is equally relevant for specific sector and general business and should be an integral element of induction training for new starters in the above roles.

The training is a mixture of presentation, case studies and group participation, and delegates will leave with a comprehensive "tool kit" of material to apply in practice.

The material has been prepared based on real customer experiences worldwide over the past 5 years, with additional inputs from third party commercial and intellectual property lawyers and liability insurance specialists.

The course, tailored to our industry, will be delivered on Tuesday, 30 October 2018. Costs are £395 +vat for members (£450+ vat non-members).



*'Go ahead and sign, we sort the details out later.'*

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# 2018 - The Year of the Investor

## In times of market uncertainty, the first thought on all companies' minds is consolidation & reduction

////////////////////////////////////

This was evident when the price of Brent Crude Oil collapsed in 2014, organisations all across the Oil & Gas industry initiated cost reduction strategies and re-organisations which inevitably led to redundancies.

Specialist Valve Services took a different approach when faced with the market downturn, our Managing Director, Gerry Henry, believed the best way to navigate SVS out of this problematic market downturn was to diversify our service reach, and invest in staff as opposed to reducing them.

During this time we also invested in a brand new facility in Aberdeen, Scotland which included a state of the art valve workshop and testing facility. SVS almost doubled our existing staff count from 17 in 2015, to 32 by 2018, illustrating our desire to grow and develop a skilled work force.

We utilised the Oil & Gas downturn as an opportunity to train and develop our employees, remodelling our company and investing in new technology, services and capabilities such as valve repair, modification, testing and inspection.

This period also enabled SVS to evaluate its client's changing needs and understanding the importance of prolonging the longevity of an operating asset.

Our exposure to coal face operations & rigours has led to the development of our regimented valve maintenance philosophy which enables us to identify GAPs in operator valve specifications, maintenance practices & procedures to produce bespoke output strategy solutions; all aimed at promoting optimal service life in our client's valves and operating assets.

As a reaction we developed a valve maintenance procedure that incorporated the use of Root Cause and GAP Analysis on client valves and actuators that were currently in line within their assets.

SVS consolidated all of the above into its new brand of "Total Valve Management", which facilitates the holistic management of a valve from the moment it is procured from us and installed in service, to the day it is no longer maintainable and has to be decommissioned.

SVS's decision to buck the trend of cost reduction and redundancies during the Oil & Gas downturn of 2014, and invest in people and development programs has resulted in the company growing exponentially. We have significantly grown our existing client base, extending our reach on a global scale, working on Subsea & Topsides projects in Brazil, Sakhalin, Qatar and most recently Malaysia.

SVS's contractual work has also received a significant increase after we were re-awarded local and international valve maintenance and management contracts with major Oil & Gas operators. Working internationally has required SVS to re-evaluate our current supply chain model and how we source products for our clients.

This has resulted in SVS fine-tuning the relationships we currently have with manufacturers, leading to key agreements being implemented for exclusive representation of valve and actuated brands.

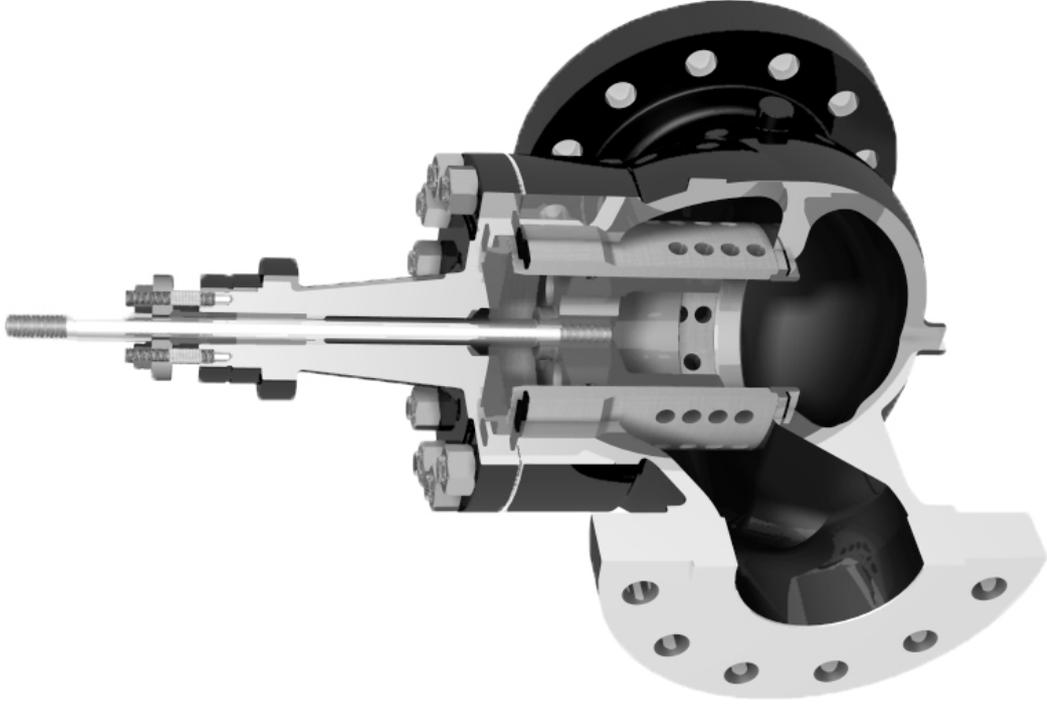


SVS has also continued to project manage a number of major North Sea critical path projects for major operators for highly specialist valves custom built for severe and challenging applications. These included 14" 900# double block and bleed ball valves, 2"-16" class 1500 and 2500 twin plug valves actuated in duplex material. 2"-24" class 900, 1500 and 2500 ball valves in LF2, F51 and F55 both manual and actuated. All valves delivered on or ahead of schedule meeting the most challenging conditions of the North Sea.

As we come to the half way point of the year, it is evident that 2018 has rewarded SVS' decision to invest in people and their development, and that tough times never last, but tough people will.



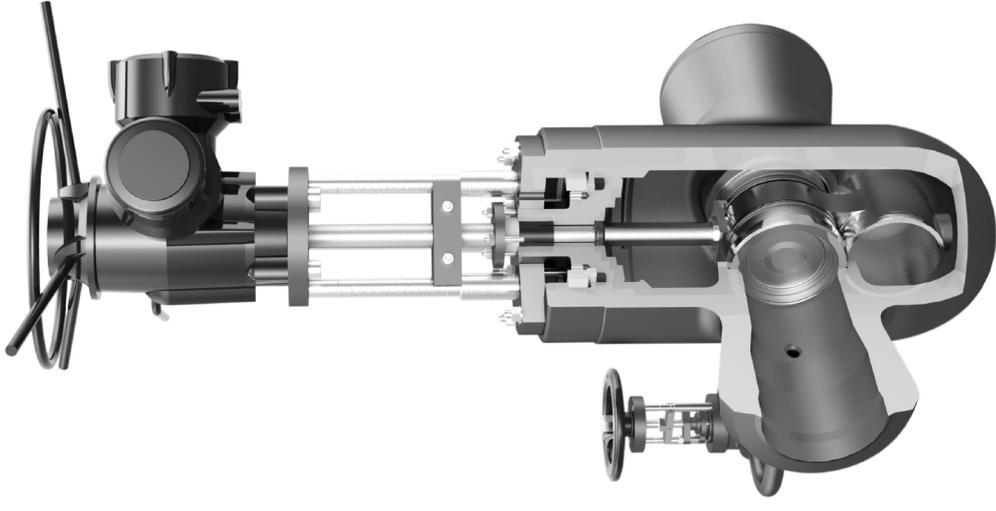
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# Kent Introl undertake Major Shutdown on Leading UK Refinery



## Kent Introl recently completed a major shutdown project of approximately 140 valves for a leading UK refinery

Having successfully undertaken 3 previous shutdowns for this client, Kent Introl was the first port of call and went on to fulfil requirements within a four week turnaround period.

### First steps

The scale of this project set it apart from previous shutdowns as it totalled approximately 140 valves at completion. From the off, it was clear that Kent Introl had the capacity to undertake the project in a cost effective and timely manner, due to our in-house facilities and highly experienced team.

Our project managers would also be proactive throughout, ensuring that each stage of the shutdown ran smoothly in order to deliver the best possible results: *"Communication and client collaboration are vital for a project of this scale,"* explained Martin Broadbent, Global Product Manager - Aftermarket. *"It's important to maintain a clear, constant dialogue throughout and ensure the client is actively involved and satisfied at each stage."*

This included meetings with the engineers responsible for each refinery unit, where we analysed the specifications and conditions of every valve and made our recommendations. It was clear that some valve internals could be overhauled rather than new replacements supplied, which dramatically reduced costs.

### Planning

The next step was a full team planning meeting with Kent Introl's service engineers and Service Manager, Nick Parker. Our intention was to identify any points that could save time and enhance our service.

The exercise was a perfect demonstration of the Kent Introl attention to detail. For instance, it was deduced that a larger wagon with fewer collection and delivery journeys would be more cost effective for the client. This ultimately saved more than 50% per valve in transportation.

It was also decided that a full service of each piece of test equipment and overhaul machinery should be completed before launching the shutdown, which safeguarded against failure and ensured the highest quality results that Kent Introl are known for.

### The process

Once the foundations were laid for an efficient project we began to assign numbers to each valve and ordered the necessary parts. The valves, which ranged from 1" to 16" control valves, were then delivered in batches and booked in upon arrival. After identifying the correct numbers on the paperwork we took photographs for reference of flow direction and the instrument setup. Pre-ordered spares kits for every valve were then allocated with the valve to the engineer. Several valves required immediate testing and were sent straight for leakage tests.

The valves could now be stripped down and assessed, with bodies, bonnets and actuators taken back to base material using our high performing shot-blasting machine.

After any necessary machining the valves were then returned to the engineer for rebuild, before sending them to our testing bay for hydro testing and seat leakage tests. After successful testing, the valves could be painted.



The final stage involved moving the valves into the dispatch area and pulling together the documentation. Each valve then underwent a torque check and instrument check by engineers, followed by a final review and sign off by a manager. *"One thing we never compromise on is procedures,"* said Martin. *"Everything we do is in line with the Kent Introl procedures which are audited every year."*

#### Highest quality guaranteed

Over the years Kent Introl have built a reputation of efficiency, expertise and the highest standards, all of which were exhibited throughout this shutdown. Our industry-leading facility and equipment also contributed to the success of this project, ensuring a fast turnaround and the highest quality finish.

Our people also play a leading role in the Kent Introl service. For this shutdown we assembled a highly skilled select team that consisted of Kent Introl service, application and design engineers, each with exceptional knowledge of our company, our processes and our products. This team proved incredibly balanced and dedicated, working together seamlessly throughout the project.

Reflecting on the success of this major refinery shutdown, Martin said: *"This project is proof that the more you plan, the better the results. We put together a team of people who made it a pleasure to come to work each day. Everything ran smoothly and the results show this."*

#### The end result

The shutdown was completed well within timescales and the client was extremely satisfied with the results. Plans are in place for a follow up meeting to discuss the shutdown and to highlight recommendations for future shutdowns. Kent Introl are also in discussions with other clients for similar projects.



# kentintrol

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| Safe Failure Fraction (SFF) of the element(s) used | Type A element or subsystem<br>(BS EN 61508-2 Table 2) |       |       | Type B element or subsystem<br>(BS EN 61508-2 Table 3) |       |       |
|--|--|-------|-------|--|-------|-------|
|  | Hardware Fault Tolerance (HFT)                         |       |       | Hardware Fault Tolerance (HFT)                         |       |       |
|  | 0  | 1     | 2     | 0  | 1     | 2     |
| <60%   | SIL 1  | SIL 2 | SIL 3 | NO SIL   | SIL 1 | SIL 2 |
| 60% - <90%   | SIL 2  | SIL 3 | SIL 4 | SIL 1  | SIL 2 | SIL 3 |
| 90% - <99%   | SIL 3  | SIL 4 | SIL 4 | SIL 2  | SIL 3 | SIL 4 |
| ≥99%   | SIL 3  | SIL 4 | SIL 4 | SIL 3  | SIL 4 | SIL 4 |

**Table 2: Architectural Constraints on the SIL from BS EN 61508-2**

Architectural constraints only apply to subsystems and elements (not systems); the SILs in Table 2 above impose a SIL limit on the SIF in which the subsystem is used (unless further architectural measures are used).

SIS designers in the process industry will normally be working to BS EN 61511-1. This standard offers alternative requirements for the architectural integrity that does not require meeting a SFF or type (A/B) definition, but instead stipulates a minimum HFT depending on the SIL and the demand mode of the SIF, as shown below:

| Safety Integrity Level (SIL)       | Minimum Hardware Fault Tolerance (HFT) from BS EN 61511-1 Table 6 |
|------------------------------------|---|
| 1 (any mode)                       | 0   |
| 2 (low demand mode)                | 0   |
| 2 (Continuous or high demand mode) | 1   |
| 3 (any mode)                       | 1   |
| 4 (any mode)                       | 2   |

**Table 3: Minimum hardware fault tolerance (HFT) from BS EN 61511-1**

| Device Parameter                                     | Solenoid   | Actuator   | Ball valve  |
|--|--|--|---|
| Device function for which failure data below relates | To remove pneumatic pressure on removal of electrical signal | To return to the de-energised position under spring force on removal of pneumatic pressure | To close valve by rotation of stem under actuator control |
| Type A/B   | Type A   | Type A   | Type A  |
| Dangerous failure rate, $\lambda_D$                  | 5.0 E-07   | 2.0 E-07   | 3.5 E-07  |
| Safe failure rate, $\lambda_S$                       | 3.5 E-07   | 5.6 E-07   | 1.2 E-07  |
| Safe Failure Fraction SFF                            | 41%  | 74%  | 77%   |
| Systematic Capability, SC                            | SC 2   | SC 3   | SC 3  |

**Table 4: illustrative parameters for each device in the final element**

#### A worked example of a final element reliability model

To illustrate a simple reliability model, we shall take the example of a final element formed by a single solenoid, pneumatic actuator and ball valve. We'll assume the SIL related parameters for these proposed devices are available from the manufacturer (e.g., in their respective safety manuals).

These are summarised in Table 4 below. Note, the values shown are only for illustration – they are not based on real element data so don't use them in a real project! (Refer to Part 2 of this series where the device parameters were explained). To keep things simple for this article we shall assume there are no external diagnostics used on the final element.

For this example, we shall define the required function of the final element as: To close the ball valve on de-energisation of the solenoid, and that the SIF (which is performed by the sensor, logic and final element) is required to meet SIL 2.

Typically, a device manufacturer will classify failure modes of the device as 'dangerous' ( $\lambda_D$ ), 'safe' ( $\lambda_S$ ), etc, but these terms are only meaningful with respect to the target SIF application. Manufacturers of mass produced devices can only assume a general context of use if they are making these classifications, at best. It is therefore essential that the final element designer only uses vendor failure data if it fits with the specific SIF application, otherwise the model is invalid and gross numerical errors can result.



Part of this suitability check for the target application considers whether each device performs its function by de-energisation (e.g., by force of the actuator return spring) or by energisation (e.g., relies on the availability of a utility supply).

## Reliability modelling

A common modelling method is a Reliability Block Diagram (RBD) which represents the series and parallel paths of reliability. (This representation also shows the HFT visually). This will indicate which equations to use in calculating the  $PF_{AVG}$ . The blocks represent each device and can be attributed with the respective failure data. Where the diagram for the subsystem architecture indicates the blocks are in series their failure rate figures of the same type can be summed, and likewise for each of the other  $\lambda$ -figures, giving series-summed totals for  $\lambda_{DD}$ ,  $\lambda_{DU}$ , and  $\lambda_S$ . Where blocks are in parallel the equations from BS EN 61508-6 for common redundant architectures can be used. This is illustrated in Figure 2 for a proposed simplex channel implementation of the SIF (using the BS EN 61508-2 requirements for architectural integrity).

Note that because in this case there are no diagnostics in/for any elements,  $\lambda_{DD}$  is zero and  $\lambda_{DU}$  is effectively  $= \lambda_D$ . For the same reason, the diagnostic coverage (DC) is zero and the safe failure fraction (SFF) reduces to  $\lambda_S / (\lambda_S + \lambda_D)$ .

The analysis and results in Figure 2 can be compared with the requirements from BS EN 61508-2 in Tables 1 and 2 above. It can be seen that the overall capability of the final element is limited to SIL 1 due to the Architectural Constraints of the solenoid being the "weakest link". (The  $PF_{AVG}$  and SC would otherwise indicate SIL 2).

So, the requirements of SIL 2 for the SIF will not be met with the implementation shown in Figure 2. Addressing the "weakest link" leads to the proposal in Figure 3 where the Architectural Constraints of the solenoid has been increased by adding a second solenoid (i.e., giving an HFT of 1 for this element).

By comparing the results of this implementation against the requirements of BS EN 61508-2 in Tables 1 and 2 above shows that a SIL 2 capability is now achieved for the final element package for its use in the specified SIF.

Note that the systematic capability (SC) cannot be modelled as it is not a probabilistic quantity. It is just shown for information alongside the probabilistic parameters so it can be considered in the "weakest link" evaluation.

## Explanation of some terms used in the PFD calculation

Looking at the equations used for the calculation of  $PF_{AVG}$  it can be seen that certain terms are used that need to be defined. These are as follows:

- $T_1$  The 'proof test interval' – the time in hours between full (in-situ) tests of the SIF
- MTTR The 'mean time to restoration' – the time allowed to complete any repairs that have been found necessary as a result of proof tests (or any diagnostics if used)
- $\beta$  This factor is to account for the probability that multiple devices in a parallel (redundant) configuration may fail due to a common cause. The  $\beta$ -factor is a proportion of the  $\lambda_D$  value for each device in the parallel combination. There are methods to determine  $\beta$  based on considerations such as diversity of device manufacturer, complexity or technology used in the devices, environment, physical proximity to each other, etc. Values for  $\beta$  typically fall into the 3-5% region using these methods so for simplicity and conservatism we have used 10% in this example.

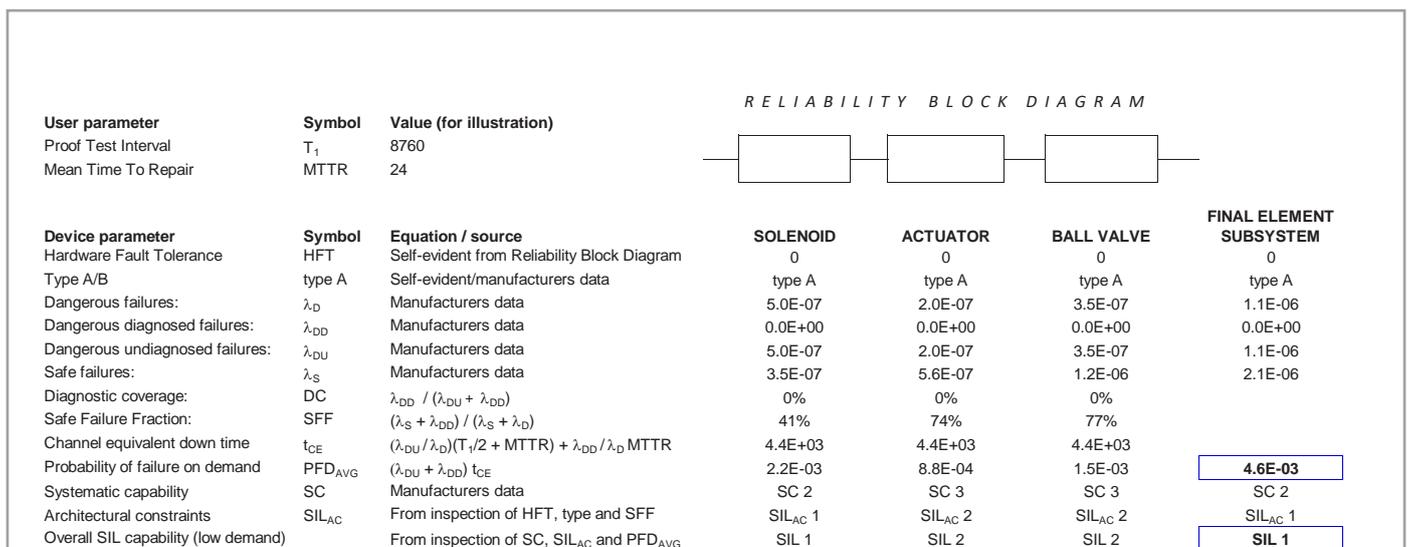
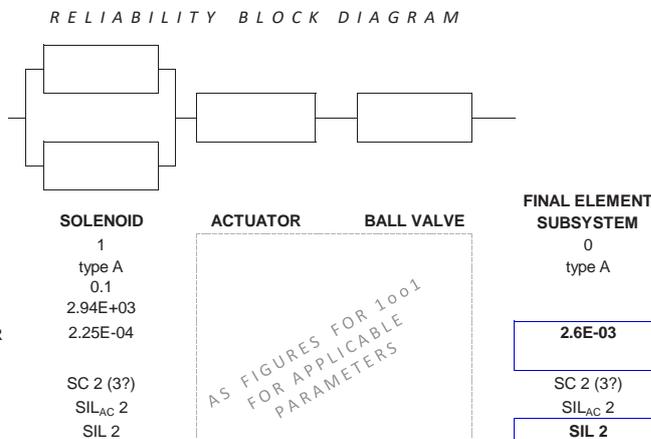


Figure 2: Reliability model and  $PF_{AVG}$  calculations - 1oo1 architecture



| User parameter       | Symbol  | Value (for illustration) |
|----------------------|---------|--------------------------|
| Proof Test Interval  | $T_1$   | 8760                     |
| Mean Time To Repair  | MTTR    | 24                       |
| Common cause failure | $\beta$ | 0.1                      |

| Device parameter                    | Symbol            | Equation / source  |
|-------------------------------------|-------------------|--|
| Hardware Fault Tolerance            | HFT               | Self-evident from Reliability Block Diagram  |
| Type A/B                            | type A            | Self-evident/manufacturers data  |
| Beta factor (common cause failures) | $\beta$           | Assumed for illustration (worst case)  |
| System equivalent down time         | $t_{GE}$          | $(\lambda_{DU}/\lambda_D)(T_1/3 + MTTR) + \lambda_{DD}/\lambda_D MTTR$   |
| Probability of failure on demand    | $PFD_{AVG}$       | $2[(1-\beta)\lambda_{DD} + (1-\beta)\lambda_{DU}]^2 t_{CE} t_{GE} + \beta\lambda_{DD} MTTR + \beta\lambda_{DU} ((T_1/2)+MTTR)$ |
| Systematic capability               | SC                | Man. data and 61508-2, 7.4.3 rules   |
| Architectural constraints           | SIL <sub>AC</sub> | From inspection of HFT, type and SFF   |
| Overall SIL capability (low demand) |                   | From inspection of SC, SIL <sub>AC</sub> and $PFD_{AVG}$   |

Note: the increase to SC 3 in this example assumes that 'sufficient independence' is achieved between the two parallel devices (e.g., using diverse solenoids from different manufacturers and possibly other measures). Refer to BS EN 61508-2, 7.4.3.2 and 7.4.3.4.

**Figure 3: Reliability model and  $PFD_{AVG}$  calculations - 1002 (solenoid) architecture**

## Summary of the points in this article

- The following three parameters of the 'Final Element' in a safety system need to be determined for it to be suitable for use in safety instrumented systems:
  - Probability of failure ( $PFD_{AVG}$ )
  - Architectural integrity (e.g., redundancy of elements used)
  - Systematic integrity (e.g., quality, duty and environmental design measures)
- The three parameters above determine the 'SIL capability' (SIL 1, 2, 3 or 4) of the Final Element which will be limited by any one or all of the three parameters (independently)
- The three parameters above are determined with respect to the Final Element's function in a specific application
- When device vendors publish reliability ('SIL capability') data they generally must state or assume the application of use, so the system designer must check the vendor data is relevant to their actual application
- A system reliability model can be defined based on the architecture and individual device failure data to estimate the probability of failure ( $PFD_{AVG}$ ) for the Final Element function
- It may be possible to increase the 'SIL Capability' of a Final Element in a specific application by various methods (reducing test intervals, diagnostics partial stroking, etc.)

## Can the SIL capability be increased any further?

Sometimes, as in the example of Figure 2, the analysis does not initially yield the SIL capability that is required. In this case it may be possible to increase SIL capability by one or more of the following methods depending on whether the  $PFD_{AVG}$  or Architectural Constraints is the limiting issue:

- Reduce the proof test interval ( $T_1$ ) which will decrease the  $PFD_{AVG}$
- Increase the hardware fault tolerance HFT
- Provide external diagnostics (which may improve  $PFD_{AVG}$  and Architectural Constraints depending on the diagnostic test interval, process safety time of the application and change in 'type A/B')
- Apply partial valve stroke testing which will decrease the  $PFD_{AVG}$

If the plant operator uses higher values for  $T_1$  and MTTR than those used in the reliability analysis, then the  $PFD_{AVG}$  needs to be recalculated to ensure it still meets the required SIL.

If the plant operator cannot use either of the first two options above, the last two options can be considered, but these get quite a bit more complicated - maybe a subject for another article in the future!



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# Langley Alloys - Competitive & Convenient



**Langley Alloys' objective is to provide our customers with a competitive and convenient service. By combining processing with the supply of our materials, we can save time and cost, allowing you to focus on your own priorities**

Recent months has seen further investment at Langley Alloys, adding to the services that can be offered to valve and actuator manufacturers. We have just commissioned a large deep-hole borer, in principle able to handle bars up to 600mm diameter and 2.5m long. Due to the size of the machine, it has been installed in a separate facility nearby.

By ordering bored bars directly from Langley Alloys we are able to generate savings in cost from less transport, handling and purchase risk, whilst lead times can also be reduced. Added to which, you only need work with a single point-of-contact, with the benefits of our quality systems and traceability.

Besides providing a competitive general machining service, we can use this capability to offer hollow sections in small amounts that would not otherwise be available ex-stock. Using our metallurgical know-how, we can further process our alloys to create either solid or hollow bars with significantly increased strengths, creatively replacing much more expensive materials options.

During the last 12 months Langley Alloys has been appointed as Sandvik's UK distribution partner for duplex and super duplex stainless steel bars, and invested £1.5M in stocking a more complete range of nickel alloys (625, 725, 825, 925, K-500, 718).

Besides the newly installed deep-hole borer, our warehouse has seen additional racking to increase our stockholding by up to 30%, combined with more new saws. This upgrade to our main UK location means that we have an improved stock range and depth, quicker and more accurate saws, plus extra processing options, all to support the growth of our customers.



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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.



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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](http://www.bvaa.org.uk)



# Bonomi Extends Valpres Wafer Pattern Ball Valve Range



Bonomi has extended its Valpres Wafer Pattern Ball Valve range with the introduction of new models with carbon or stainless steel bodies, available in a variety of pressure ratings

The Italian manufactured range, offers a weight and space saving design when compared to standard split body type ball valves.

Models with standard PN16 and ANSI 150 end connections are available from stock, with other end connections including PN40, PN63, PN100, ANSI 300 and ANSI 600, available to order.

The valves, which have a wide range of potential applications across many different marketplaces and industries, can be supplied with an ATEX approved antistatic device, with firesafe versions also an option.

With many different seat and seal options available, including Cavity Filled seats and seats suitable for steam service application, valves can also be fitted with a 'V' port ball for flow control applications and can incorporate Open/Closed locking devices if required.

A 3-way option is also on offer, as are valves with Heating Jackets; enabling the extended range to meet the needs of a far greater range of potential users.



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# Drop Forged Components in UK



## Forging specialist W H Tildesley Ltd (WHT) continues to produce a wide range of components for the oil & gas, petrochemical and process industries

Current products range in size from elbows and tees at a few grams each to parts such as valve bodies and forged flanges up to 70Kg.

We forge parts in a many grades of steel including LF2, stainless steels 316, duplex and super duplex. In addition, we forge in a range of nickel alloys and other non-ferrous metals such as brass, bronze and aluminium.



WHT offers a complete solution for forged components from initial concept, where our Engineers can assist with component design and simulation through to post forge processing, where we can proof or finish machine parts in-house, if required. Using the most up to date CAD & simulation software packages, we can optimise material usage and ensure that our die designs and parts are right first time.

From its base in the West Midlands, W H Tildesley has been serving the oil & gas market for many years and is particularly competitive on small and medium quantity runs. Our commitment to the principles of LEAN manufacturing helps to makes us proficient in setting up to produce just a handful of components, if required by our customer. We also produce higher quantity runs up to several thousand. For some customers we hold stock at our site which then gets called off to schedule or order.

W H Tildesley have been producing components under NORSOK qualifications since 2008. Our M650 Edition 4 QTRs extend until mid-2020. Materials covered are super duplex stainless steels F51 (UNS S31803), F55 (UNS S32760) and austenitic stainless steel F44 or "6Mo" (UNS S31254).

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# LK Valves & Controls Introduce A New Addition To Their Range Of Winel Tank Vent Check Valves



**LK Valves & Controls Limited, the Liverpool based stockist & distributor, are proud to announce a new addition to their wide range of marine and general industrial valves, the Winel type 'CMO' aluminium OVERFLOW tank vent check valve, suitable for direct discharge 'over-board'**

Winel's latest development is manufactured from a seawater resistant ALMG4.5 aluminium alloy. Available in sizes DN40 to DN400, this latest valve has a high flow capacity, it is a lightweight, yet extremely rigid slimline design.

The new CMO compliments Winel's 'standard' type CM aluminium tank vent check valve which was launched in Autumn 2016. The standard CM discharges on deck. If discharge on deck is not possible, the new CMO tank vent check valve can be simply mounted in the piping system, allowing discharge directly overboard.

Winel have been producing tank vent check valves for over 50 years and have Type Approvals from all major Classification Societies for the whole range of tank vent check valves. The new CMO has been tested and certified in accordance with the relevant requirements of the European Union Recognised Organisations Mutual Recognition procedure for Type Approval.

Tank vent check valves or vent heads as they are more commonly known, are used on all ships in order to ventilate ballast and void tanks, while also preventing any contamination of the contents of the tank with water during rough seas. It is a requirement that all tanks aboard ships are protected from penetration of seawater in accordance with the International Convention on Load Lines 1966.

Winel tank vent check valves can be used on any type of commercially used ship or yacht, navy vessel and offshore platform.

By using Winel tank vent check valves, you are taking advantage of a solid, maintenance free and fully automatic operating system.

LK Valves & Controls hold stock of both the standard galvanised steel type RM, and Bolero tank vent check valves and the new CM and CMO range of seawater resistant ALMG4.5 aluminium alloy tank vent check valves, available with standard PN10 flange connection and also JIS 5K and ANSI.

For more information, ex-stock and short lead time supply of Winel tank vent check valves in the UK or Eire, please contact one of LK Valves & Controls Limited experienced team, contact details are below.

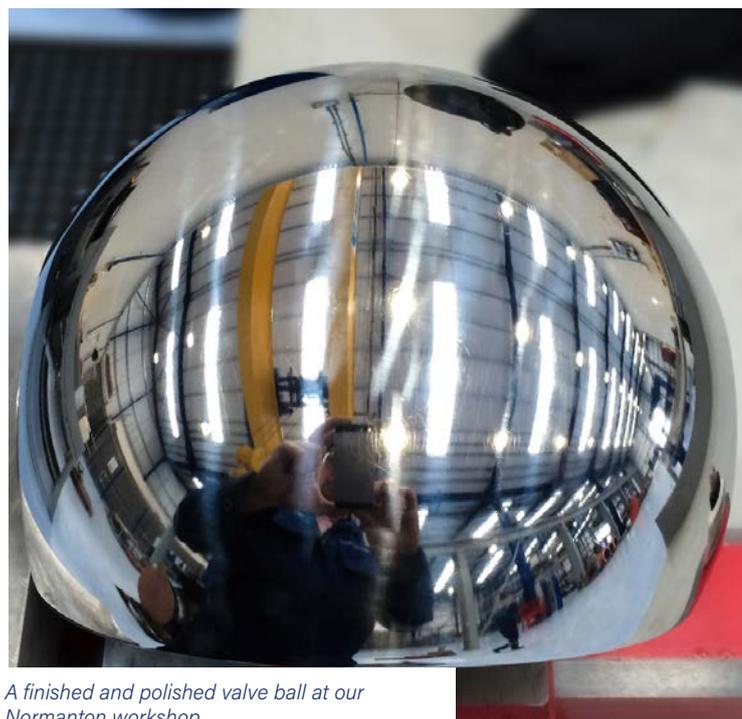


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# WSG Provalve - Valve Ball and Seat Refurbishment



An engineer performs a visual inspection of hard facing on a re-ground 30" ball.



A finished and polished valve ball at our Normanton workshop.

**Size Matters. WSG** expand on their extensive **CNC capabilities and expertise to grind ball valves between 2" and 46" diameters**

A valve ball relies on the roundness and quality of surface finish of its ball and the condition of its seats to create an effective pressure seal.

Debris or particulate can be dragged across the sealing surfaces of the ball and seat during operation causing wear or scoring of the surface.

Damage will most likely affect the 'soft' polymeric seat material as it is not as resilient as the steel ball.

However, depending on the service or the type of entrained solids in the pipeline, the ball surface can also become impaired. When scoring or damage occurs to either the ball or seat, this is likely to lead to leakage through the closed valve.

'Soft' valve seats are designed so that they can be easily, and cost effectively replaced and WSG Provalve are expert at renewing or re-profiling these inserts.

Also, at WSG Provalve, with our specialist equipment and expertise, balls can be cost effectively repaired and put back into service within days, sometimes even hours.

At our newly built 35,000 sq.ft. valve service facility in Normanton, we have 3 Computer Numerically Controlled (CNC) dual axis ball grinding machines that allow us to spherically grind balls from 2" to 46" Diameter, in a wide range of materials, to tighter tolerances than conventional ball lapping machines.

These materials include but are not limited to; high strength steels such as 17/4PH, F51/F55 Duplex, AISI 4140 and hard facings such as Tungsten Carbide and Stellite.



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# Auma Launches Explosion-Proof Variable Speed Actuators



*AUMA's new SAVEx and SARVEx variable speed actuators combine accurate setpoint control with mechanically gentle valve operation.*

## Electric actuator manufacturer AUMA has launched explosion-proof variable speed valve actuators for use in potentially hazardous environment

The new SAVEx actuators for open-close duty and SARVEx multi-turn actuators for modulating duty, combined with intelligent ACVEx actuator controls, provide full control of the motor speed at any time.

Variable speed offers significant advantages for challenging valve control tasks, since it allows the optimum operating speed to be selected for each change of valve position.

High positioning accuracy and optimised setpoint control considerably increase the effectiveness of pressure control valves in gas pipelines, for example. On multiport valves, variable speed actuators aid rapid and accurate switch-over between ports.

Mechanical stresses on valve, actuator and pipeline are minimized by reducing the operating speed close to the end positions, allowing the moving element of the valve to make gentle contact with the seat. Pressure surges and cavitation effects in the pipeline can be avoided by using speed profiles.

When working in modulating duty, the actuator speed can be set to reduce progressively as the valve position approaches the setpoint, giving a significant increase in positioning accuracy.

Actuator speed can also be controlled by an external signal – either 4–20 mA analog or 0–100 % digital – to take full advantage of additional control variables or algorithms. A further option is speed synchronisation between two actuators.

AUMA's new explosion-proof SAVEx and SARVEx actuators complement the weatherproof SAV and SARV type range. They are available in six sizes covering torques up to 1,000 Nm. Speed ranges include 6–60 rpm, 12–108 rpm and 24–116 rpm.

AUMA Actuators Ltd is part of the global AUMA group.

**auma**<sup>®</sup>  
Solutions for a world in motion

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# Proud History of Ashdale Engineering & Lifting Services

Formed in 1996, Ashdale Lifting Services have a proud history of providing mechanical, fabrication and engineering solutions to the hydrocarbon and utilities industries



Based in Milford Haven, Pembrokeshire, Ashdale Engineering & Lifting Services are located in the ideal environment to provide quality service provision to the many businesses and industries which surround the Milford Haven Waterway, and beyond.

With 22 years of trading, and with a management team who have been with the company since its formation, combined with a highly qualified and motivated workforce, we are proud to be one of Pembrokeshire's sought-after employers.

Commitment and support from the top down, low staff turnover and a robust training and development programme means that we are able to keep the best local employees and enable them to progress and improve their knowledge in all areas of our business.

Ashdale Engineering & Lifting Services are certified with the British Standards Institute to ISO9001:2015, and in compliance with the Construction Products Regulation (CPR), EN 1090 - 1:2009+A1:2011 - Execution of steel structures and aluminium structures, for the design, manufacture (including welding) and installation of structural steelwork in steel up to and including Execution Class 2 (EXC 2).

At our workshop in Milford Haven, we are able to service and repair pumps and valves to client requirements with OEM and supplier support.

During Q1, 2018, Ashdale Engineering & Lifting Services has invested heavily in supporting the pump and valve servicing capability. We have recently completed the new build of a bespoke valve servicing bay, and in February 2018, twelve members of staff attended a very successful Advanced Valve's training course, delivered on-site by the BVAA.

Ashdale Engineering & Lifting Services capability portfolio includes the following:

- Precision machining with the ability to manufacture, modify, or replace components, and to provide machining services for all types of industries.
- Preventative and Reactive maintenance, offering a 24/7 emergency breakdown service and we source and supply essential components necessary to get plant repaired and re-commissioned.
- Fabrication and welding. With qualified welders and procedures, verified by TUV, we are able to provide both pipe and steel stock fabrication and welding in carbon and stainless steel.
- Lifting Equipment statutory inspection and certification in compliance with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).



- Engineering and Bearing Supplies. Our extensive product range includes bearings, belts & pulleys, chains & sprockets, pulleys & taper bushes plus much more.
- Project management of bespoke, turnkey projects in compliance with the Construction (Design & Management) Regulations 2015. Undertaking the role of Principle Contractor, Ashdale Engineering & Lifting Services are able to discharge their responsibility to provide safe, managed, compliant projects to clients on time and within budget.

Ashdale Engineering & Lifting Services has a long history in the Pembrokeshire Engineering world. Whilst many have come and gone, we have managed our business proportionately to demand and are as able today to provide the top-quality services expected by our clients as the very first day we started.

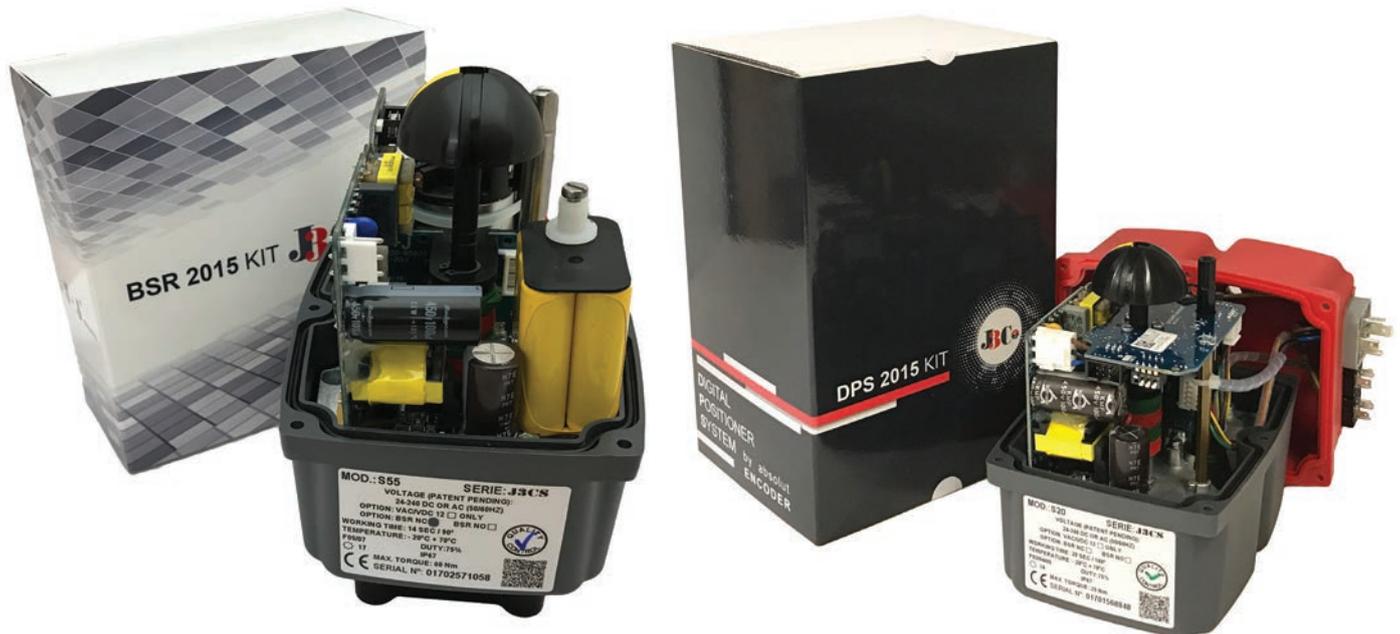
The management at Ashdale Engineering & Lifting Services would encourage you to get in touch with any service requirements. We are confident that no matter your issue, we will have the solution.



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# J3C-S Series J+J Electric Actuators - Flexibility Offers Unrivalled Delivery Times



## In many cases these days, orders seem to be being placed nearer to the 'required on site date,' despite quotations confirming delivery times

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This typically results in suppliers having to exert pressure on manufacturing colleagues to pull 'rabbits out of hats' to get the products delivered on time, and runs the real risk of errors being made due to everyone rushing around.

The J3C-S Series of electric actuators, designed and manufactured in Spain by J+J, are almost immune to the usual difficulties late orders create due to their unrivalled flexibility.

J+J's ethos of having a standard on-off actuator's function capable of being changed by installing function conversion kits at distributor level eliminates the 'factory assembled product only' typically applicable to failsafe, modulating and failsafe-modulating functionality, that most of J+J's rivals suffer from.

There are many options to cover in failsafe and / or modulating electric actuators which makes stocking function specific actuators cost prohibitive for most rivals, but these options are covered as standard options in the function conversion kits from J+J.

Ordering late J+J therefore causes few problems because all function options - on-off, failsafe and or modulating - are generally available from J+J's UK stock.

The failsafe conversion kit is a quick and easy to install battery back-up system that includes the battery and small trickle-charging control PCB.

It installs within the housing of the original on-off J3C-S actuator, and can be user configured to fail closed or fail open on loss of external power. J+J's BSR (Battery 'Spring Return') System has provided failsafe function for J+J actuators for over 20 years now.

For proportional control, the positioner for the J3C-S uses the latest digital magnetic position sensing technology, an improvement from its predecessor that used a mechanical potentiometer for output shaft position feedback.

The DPS (Digital Positioning System) offers typically 4-230mA or 0-10V I/O, is also remarkably simple to install and self-calibrate, and again fits within the housing of the original on-off J3C-S actuator.

For failsafe modulating functionality, which isn't available from many manufacturers, both the BSR and DPS kits are installed, still within the original on-off J3C-S actuator housing.

In most cases J+J will install and configure the J+J failsafe and modulating function conversion kits, and of course, function test every actuator that they ship. Both kits are however true plug and play and very user friendly, so can be fitted by sub-distributors, or even users.

For further details contact J+J UK.

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# New Kalrez® 7375 Range Of FFKM Sealing Products Offer Outstanding Properties & Performance



*DuPont™ Kalrez® 7375 perfluoroelastomer parts are an innovative FFKM product tailored for chemical process industry applications where broad chemical and water/steam resistance are needed at elevated temperatures.*

## The new DuPont™ Kalrez® 7375 innovative FFKM sealing products provide high temperature as well as broad chemical and water/steam resistance properties

Sealing performance, reliability and safety are ensured for applications in the most demanding industrial, chemical and general industrial fields of operation.

These high performance perfluoroelastomer O-ring components are available from Dichtomatik Ltd, the authorised distributor for a wide range of DuPont™ finished O-rings, as well as custom shapes, sheets and cord sealing components.

The Kalrez® 7375 parts are tailored for specialised chemical applications covering broad operating temperatures from -20°C to 300°C. These products, which incorporate patented cross linking technology, combine both superior chemical resistance with a thermal stability which exceeds many other competitive FFKM products.

They are also available in most standard O-ring sizes including AS568, metric and JIS, with custom sizes and shapes also available on request.

In addition the Kalrez® 7375 product range exhibits an excellent compression set resistance incorporating outstanding physical property retention, while also maintaining good mechanical strength properties even under highly aggressive performance conditions.

Excellent sealing properties can be maintained under the most aggressive operating conditions for pumps, valves and compressors, together with associated connectors, vessel lids, filtration and distillation columns, as well as flowmeters and analytical equipment.

These sealing products also provide the broadest chemical and temperature resistance (water and steam), as well as long-term compression-set resistance for hot air at temperatures up to 300°C.

These features are also coupled with good compression stress relaxation of the sealing product, as well as an excellent resistance to a broad range of chemicals which ensures low volume changes when operating with products such as Acetic Acid, Maleic Anhydride and Ammonium Hydroxide at 100°C temperatures, together with a 98% Sulphuric Acid content product at 150°C.



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# Leengate Valves distribute Bronze & Aluminium-bronze Shut-Off Ball Valves by Brandoni



**Strong partners for more than a decade, Leengate Valves provide a large range of Brandoni product from stock, part of this product profile focuses on the bronze and full aluminium bronze ball valves which Leengate Valves offer to the UK market**

From casting to test and delivery these bronze and full aluminium bronze ball valves are proudly Italian, through and through. Manufactured to strict product standards and ISO 9001 quality management, their high quality and finish makes these shut-off ball valves truly special.

Available flanged PN16 or ANSI 150 full bore and flanged ANSI 150 reduced bore and suitable for a range of services, from agricultural applications to chemical processing and offshore, seawater or naval use; these valves are equally comfortable for in-line or end of line positions and their durability make them perfect for demanding, high frequency services. Other features include an anti-blowout stem and PTFE reinforced seat, which maintains constant torque despite temperature changes.

Built-in ISO 5211 direct mounting support allows the installation of a wide range of actuators and Leengate Valves' in-house actuation centre can satisfy needs for automation with various actuators and ancillary equipment; including IP68 rated epoxy coated aluminium Valbia electric actuators from stock, supported with full 2D and 3D general arrangement drawings and the teams' years of technical experience and knowledge.

Other accessories available to suit these valves include stem extensions for thermal insulation, square cap for water main system connection, lockable levers and limit switches for on off position indication.

Leengate Valves and Brandoni can also offer gearbox, chain drive operation and anti-static devices on request.

Subject to 100% testing, in accordance with EN12266 cat. A standards (ISO 5208 cat. A,) Brandoni and Leengate Valves guarantee superior quality from these bronze and aluminium bronze valves.

As well as the aluminium bronze and bronze valves featured here, Brandoni and Leengate Valves also offer a range of cast and ductile iron ball valves with RPTFE seats and NBR or Viton o-rings. Valves are available flanged PN6, PN16 and ANSI 150 and, with ISO 5211 direct mount support on all of these Brandoni ball valves, Leengate Valves' extensive engineering support can offer an all round technical service to satisfy any need.

**Leengate  
Valves**

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## Pneumatic Systems as a Genuine Alternative

### The importance of considering service life costs in water technology

When planning municipal water management systems, it is worthwhile to consider the service life costs. In addition to the purchase price, the follow-up costs such as operation, energy consumption, maintenance and repair can also become real cost drivers. Not so with pneumatic automation technology, though. It is robust, cost-effective and reliable because the compressed air is easy to transport, store and regulate. A comparison of pneumatic and electric actuator technology reveals surprising results – in favour of pneumatics.

A classic example of a filtration system for a municipal water treatment plant with seven multi-layer filters, seven activated carbon filters and 84 automated process valves revealed that the acquisition costs of a pneumatic system are 28% more advantageous. The acquisition and installation costs included actuators and accessories, installation and commissioning, control components up to the fieldbus interface, as well as energy supply components such as pneumatic actuators, compressor with dryer and air reservoir as opposed to electric actuators with control cabinet elements for energy transfer and safety devices.

#### Study on power consumption

The project consortium EneffAH, an energy research programme sponsored by the German Federal Ministry for Economic Affairs and Energy, prepared a detailed comparison between pneumatic and electric actuator technology for operating the system. According to this study, modern compressed air systems offer efficiencies of 42%, from generating the air to supplying the actuators. Using a recognised formula, the ratio of usable to consumed power for electric actuators resulted in an efficiency level of 40%.

So why do pneumatic systems offer such cost benefits? Pneumatic actuators only require electricity for regulating and generating compressed air; the movement itself is triggered by the compressed air. By contrast, electric actuators continuously need energy for the electronics, the heating and movement. For the water treatment plant in question the energy costs in comparison to the investment costs are, in any case, negligible.

#### Overload-proof

In water technology plants, process valves are often actuated only infrequently or not at all for long periods of time. This can lead to the formation of deposits and caking and thus to increased breakaway torques or forces. Pneumatic actuators can overcome this problem simply by increasing the air pressure. They cope well with loads without getting damaged and are not affected by differences in temperature, contamination and humidity. Pneumatic actuators only require electricity for regulating and generating compressed air and act directly on the shut-off valves.

Since pneumatic actuators are overload-proof and a higher actuation force can be achieved very simply by increasing the pressure, it is often possible to use smaller sizes with a lower weight than would be the case for electric actuators. Provided the tubing has zero leakage and the units are precisely dimensioned, the resulting solutions are energy-efficient. Pneumatic systems from Festo are able to deliver high forces of up to 75,000 N and torques of up to 10,000 Nm.



*Saving energy is easy: with its integrated flow rate and pressure sensors, the energy-efficiency module MSE6-E2M automatically reduces and monitors the air consumption of systems.*

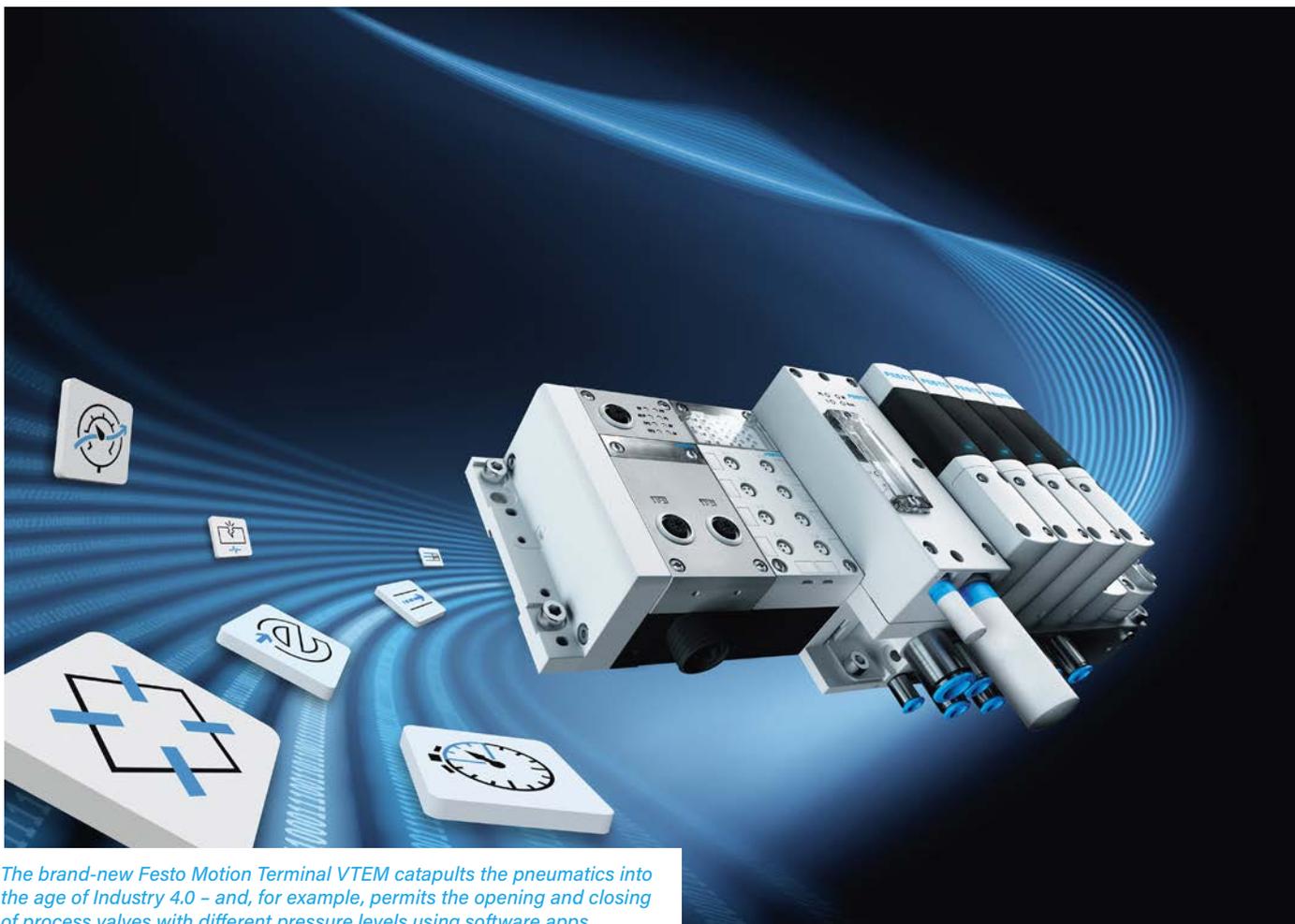
#### Digitalisation for even greater energy efficiency

The brand-new Festo Motion Terminal VTEM catapults pneumatics into the age of Industry 4.0 – with apps that can replace over 50 individual components. Just as the smartphone turned the mobile communication market on its head a decade ago, so too is the Festo Motion Terminal set to revolutionise automation technology. The new type of function integration – combined with software apps – simplifies the entire value chain, since only one piece of hardware is now required.

With the Motion Terminal, for example, different pressure levels can be used for opening and closing process valves. This can drastically decrease compressed air consumption. In addition, a diagnostic function can be activated after a freely selectable number of switching operations. This function detects any leaks on an actuator-specific basis and sends specific maintenance messages or shuts down that section of the plant. This makes laborious manual leakage detection in extensive compressed air networks unnecessary.

#### Energy efficiency perspectives

The energy-efficiency module MSE6-E2M, makes saving energy easy. The integrated flow rate and pressure sensors monitor and automatically reduce the air consumption in systems. The module detects the operating status when no compressed air is consumed, and automatically shuts off the supply. Once the supply is shut off, it checks for any leaks in the system. If there is too much of a drop, the controller is notified. This automatic leakage detection system enables specific maintenance to be carried out, and the continuous monitoring of consumption increases process reliability.



*The brand-new Festo Motion Terminal VTEM catapults the pneumatics into the age of Industry 4.0 – and, for example, permits the opening and closing of process valves with different pressure levels using software apps.*

#### Simple and uncomplicated

Pneumatics is an uncomplicated technology, and is easy to install. Apart from end-position sensing and monitoring the compressed air supply, it doesn't need to be monitored and checked. It follows the "fit and forget" principle.

Pneumatic actuators have proven to be resistant to vibration and durable. They are made from a small number of components and are thus less likely to break down. Pneumatic actuators are also resistant to continuous loads and remain maintenance-free over their entire service life.

#### "Unbreakable"

With up to 1 million switching cycles, the average service life of pneumatic actuators is rather impressive. This is true even in harsh environments with high temperature differences, contamination and humidity. Extreme heat or cold and humidity cannot harm corrosion-resistant pneumatic components – they are temperature-insensitive between -20 °C and +80 °C, with special low-temperature designs being insensitive down to -40 °C and high-temperature designs up to +120 °C. Components made entirely of stainless steel supplement the product portfolio.

#### Reduced costs

The low costs mean that it is even worthwhile automating manual process valves at a later date. Specifically when compared to electric actuator technology, the consistent use of decentralised automation concepts with valve terminals provides significant cost benefits – savings of 30% are possible, and in individual cases up to 50%.

#### Safety first

Pneumatic actuators have three emergency functions – open, closed, stop – in case of a voltage drop. They are ideal for use in ATEX zones, especially when explosion-proof valves, e.g. Namur valves with corresponding coils, are used. It is more cost-effective to position valve terminals outside the explosive zones in non-hazardous areas. The pneumatic standard actuators used in ATEX zones are supplied via tubing while the electronic controls can be installed in the non-hazardous areas. Pneumatic actuators are ATEX-approved up to zone 1 as standard.

#### Competent, professional advice

Experts from Festo are available to help with the calculation of the compressed air consumption and the optimum layout of the compressed air network, and can also provide support during the tendering process on request. The customer receives everything from a single source – making the order handling process simple and ensuring rapid implementation of the project.



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# Albion Valves UK - The Growing Population Paradox



## Paul Wightman, Technical Specifications Manager at Albion Valves UK Ltd talks about the paradox of a growing population; an increasingly sprawling built environment and ever decreasing space for building engineers to operate in

The modern buildings services industry has never been under more pressure. There is an ever-growing requirement for engineers and system designers to deliver better efficiency, performance, innovation and system control, yet the space in modern building design for piped services is ever-decreasing with little room for manoeuvre.

Diminishing space for developing, combined with an industry culture of oversizing is a compounding issue for building engineers. It has never been more important to ensure that a building's internal systems are designed to make the very best use of space available. As a consequence specifying equipment designed specifically to save space has become a fundamental element of modern building design.

In new-build and major refurbishments, it is the decisions made in the design process that ultimately determine whether or not the building will run efficiently.

The design team must take an integrated approach to all aspects of design to ensure they are fit for purpose, but without creating overcapacity.

Designing systems that optimize space can mean real commercial gains. In a piped system, using fewer larger valves and reduced pipework in risers, not forgetting a reduction in plant room sizing, can create more commercial retail or living space - so potentially the size of an additional unit in a city apartment block!

At early stages of building design specifiers should consider incorporating products such as Albion's Monolink, a preassembled factory tested valve arrangement, in which one single unit combines all the features required for a terminal end to meet a distribution pipe; including a strainer, bypass valve, balancing valve and drain cock with no need for assembly on site.

The Monolink is adaptable for a wide range of pipe connections; its H block structure comprises only four simple union joint connections instead of the standard 22.

In addition, the simple and highly compact arrangement minimizes the time and space required to connect, allowing much easier installation than the traditional approach and with a much-reduced risk of leakage.

In accordance with the BSRIA (Building Services Research and Information Association) the Monolink also contains all the features required for the process of flushing, reverse flushing and chemical cleaning heating and cooling systems, prior to balancing and setting for standard operation.

Additionally, dynamic balancing allows engineers to control the requirement exactly where the energy demand is e.g. meeting rooms, offices or shop floor space. Using products such as the PICV which will work as a combined commissioning valve, differential pressure control valve and 2port motorised control valve i.e. a 3 in 1 product, means there is the opportunity to save on installed products throughout the system so no need for bigger balancing valves on branches or even bigger balancing valves on risers.

Ultimately, variable volume systems can help ensure that pipework, valves and fittings are as compact as possible, potentially helping to save space, installation and commissioning costs whilst ensuring performance and reduced energy consumption.

A system based on this design and product specifications can ultimately mean less access points or smaller risers and branch core spaces within the building, potentially creating more value added asset to the property.

In addition to their shopping list of space saving equipment, building engineers need to consider building occupancy, convergence factors and diversity to help prevent needlessly oversizing.

If we consider a commercial building designed to accommodate 2000 people, we should be mindful that the likelihood of all 2000 people being in that same building, at the same time is unlikely.

An informed estimate would speculate that on any one day, a maximum headcount may be between 1600-1700 people and that is probably overestimating, yet the building caters for 2000.

If a building has an accurate terminal control, then better comfort catering for higher occupancy levels may be achievable within a given space so saving on original building size outlay. This a diversity calculation, when more people are in an area than anticipated the flow can be directed to these areas whilst ensuring a base load flow in lower occupied levels still ensuring comfortable conditions.

Engineers should also be mindful that there is also greater flexibility within dynamic controls and variable volume systems; the flexibility lends itself to long-term projects on installation.

If we consider a new building, which is only part-finished when the first phase of tenants moves in, dynamic products allow that part of the system to be commissioned and made operational.

As development reaches completion and remaining parts of the building become occupied and the system becomes operational, there is no need for the original phase areas to be revisited or re-commissioned, as would have been necessary with traditional static balancing valves and control products.

Informed designers will fabricate a building with diversity in mind and intentionally undersize, so that although the system is built upon a design condition



#### Albion Valves - Monolink

this may be less than 100% capacity, and in many cases is designed to meet in the region of 70-80% of capacity.

Therefore, if everything in the system called for full demand at once the system would be undersized and unable to cope. System control is paramount to ensuring that building performance is accurately adjusted and regulated demand is met 100% of the time without the inefficiencies of oversizing.

Modern dynamic products mean engineers can make extensive changes via the building management systems controls to meet demand, without having to 'get their hands dirty' with the complex task of altering pipework and valves.

Experienced designers can be confident that occupancy levels and cycles of movement of people and processes are such that in mixed use development e.g. retail, office, residential, there an extensive diversity of loads throughout the day and areas of priority change, so that the system whilst on the surface appears undersized will actually deliver perfectly.

So as population and our built environment grows, and paradoxically our space within it diminishes, sizing of piped services has a vital role in new building developments but will only deliver the best results when part of a fully integrated design that also considers diversity, convergence, building use and crucially the people using it.

For further information visit: [www.albionvalvesuk.com](http://www.albionvalvesuk.com), call 01226 729900



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# How Versatile is the M65 Valve?



## Offshore or underwater, it works just the same

The M65 range of pilot operated valves is manufactured by Nadi Srl in Italy to provide the functionality of conventional solenoid valves but without the electrical control. The valves were developed by replacing the solenoid core tube assembly with a compact pilot piston arrangement which allows the use of compressed air or water between 2 and 10bar to provide the control function irrespective of the process media flowing through the valve.

The M65 has recently been specified for an offshore pump control system where the wide flow capability (up to 2" BSP), compact dimensions and flexible pilot media capability was ideal. The client specified stainless steel construction for the valve requirements but the M65 series uses brass which would not be acceptable in the intended marine environment.

Before deciding on the valve solution, another air operated valve was considered which did offer the all stainless steel construction but the significantly larger installed volume and crucially in this case, the weight of the stainless valve, tipped the balance in favour of the M65.

In order to improve corrosion protection, the valves are offered with an option for nickel plating throughout (as pictured) with stainless steel fasteners. Since other parts of the pump system were already specified to be nickel plated, the client approved this option and the first batches have already been delivered.

M65 valves are often specified where electrical controls are impractical or not permitted for safety reasons. They have been installed in playground and theme park water fountains, curtains and water jet control systems where complete electrical isolation is necessary due to the water coming into contact with the users of the water displays. The other benefits for the installer are the compact envelope size and the ability for the valves to work when fully submerged in the underground supply tank. For these applications the M65 can be piloted with water rather than compressed air, removing the need for a compressor for standalone displays.

In very wet environments, the M65 offers the same flow performance as a solenoid valve, fits in the same volume and there is no electrocution hazard. Why pay for IP67 or IP68 solenoid valves when the M65 will eliminate the problem?



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# Rotork CK Actuators at Mexican WWT Plant Following Upgrade



One of the new Rotork CKc actuators (Model number CKc60) during installation at the Los Horcones waste water treatment plant.

**A gate valve upgrade project at the Los Horcones waste water treatment plant in Sinaloa, Mexico has enabled the operator to install Rotork CK modular electric valve actuators**

The new valves are equipped with Rotork CKc double-sealed watertight actuators to provide reliable on/off control, position monitoring, alarm signalling and datalogging of operating history to support asset management.

Among the features introduced with the introduction of CKc actuators at the plant is simple, rapid and secure commissioning and configuration using local controls or a Rotork Bluetooth® setting tool. The modular CK design provides flexibility to suit individual applications, whilst plug and socket connections between modules assist efficient installation, commissioning and maintenance.

Increased valve protection is provided by independent torque and position sensing, continuous valve position indication, even during power loss, and safe, motor-independent handwheel operation.

The Centronik integral starter and control module provides local control and houses a datalogger enabling data extraction for analysis, diagnostics and asset management. For valves experiencing high temperatures or strong vibrations the Centronik module can be remotely mounted in a safe area up to 100 metres from the actuator.

All Rotork CK double-sealed actuators are certified IP68 watertight and temporarily submersible (8 metres for 96 hours), providing suitability for all valves in non-hazardous environments.

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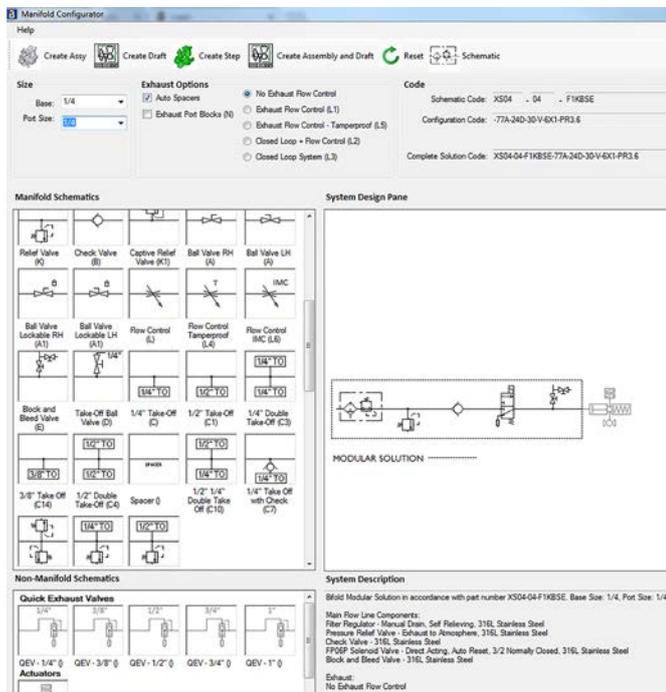


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# Bifold's Circuit Designer – Modular Solutions with Drag & Drop System



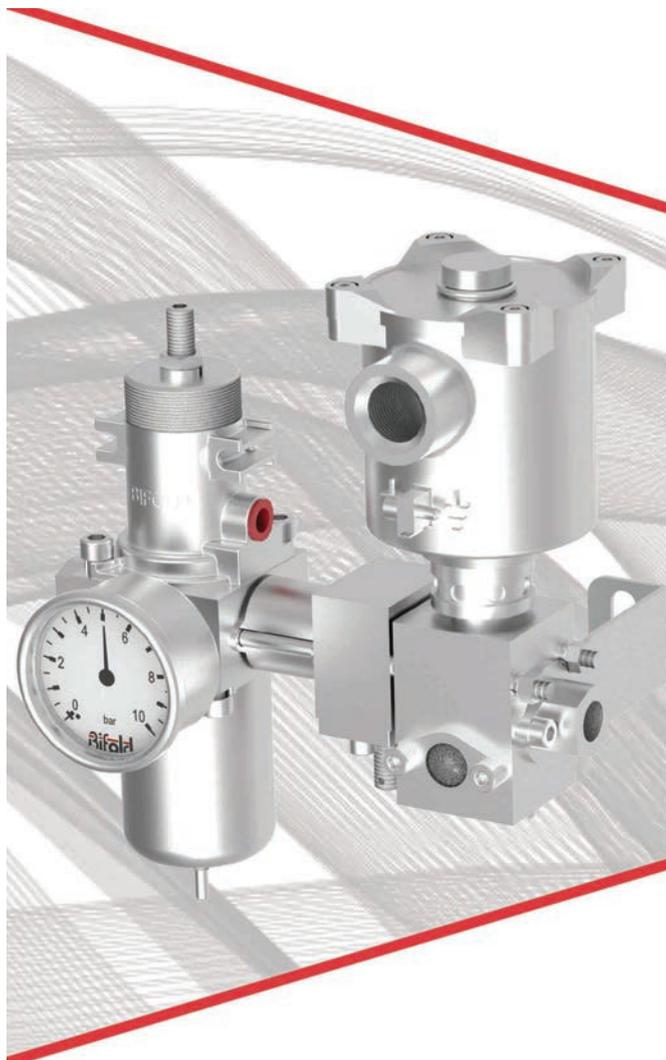
The Bifold Circuit Designer allows you to design a bespoke modular solution or tubed valve circuit comprising a series of valves in any order or orientation (where applicable) using a schematic drag & drop system

The completed system can then be bought as a modular solution or as a list of separate valves from Bifold.

- Design a circuit using drag and drop (new schematics added regularly).
- Organise and manage your projects in the Project Centre.
- View the modular solution code and description or a list of separate valves and fittings. Create a PDF schematic diagram and description for sending with a quote.
- View and print the Modular Solution Bill of Materials (BOM) or separate valves (BOM).
- For users with Solid Edge ST6 and above, create a 3D model and dimensional drawing for a Modular Solution.
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- New users configuring systems every week.

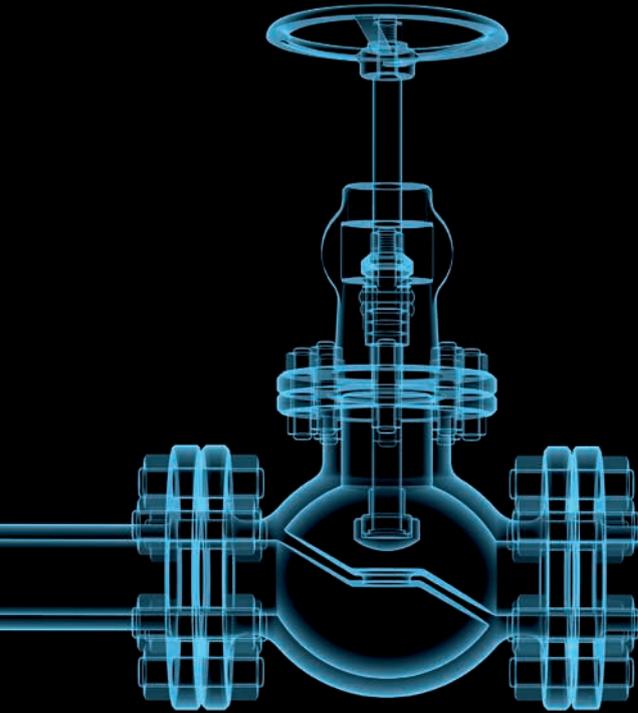
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# Rotork Valve Actuation Robust & Accurate

## Robust and accurate Rotork valve actuation at the centre of advanced oil tanker VOC emission control system

Minimising the emissions of VOCs (Volatile Organic Compounds) from oil tankers during the fluctuating ambient conditions experienced during sea voyages is vitally important from both environmental and commercial points of view.

The controlled release is often undertaken when the gas pressure approaches a pre-set point. However, it is not always clear at what pressure a manually controlled release should be stopped. Without this information, excess vapours can be released, causing air pollution and a loss of cargo.

To meet this challenge the VOCON Valve and Reporting System controls the vapour pressure in oil cargo tanks to minimise and fully control VOC emissions. Designed to comply with the latest international rules and regulations it is equipped with the most advanced reporting system available.

At the centre of the system, a venting control valve operated by a Rotork CMA electric process valve actuator is installed on the bypass line between the IG (Inert Gas) main pipeline and the mast riser.

---

*"Designed to comply with the latest international rules and regulations it is equipped with the most advanced reporting system available."*

---

In automatic mode the actuator modulates the valve position in response to a control signal from a pressure transmitter to control the vapour pressure in all the cargo tanks. This critical duty reduces VOC loss by maintaining a constant pressure in the cargo tanks during the voyage.

The compact and robust CMA actuator selected for this duty is environmentally sealed to IP67 and internationally certified for use in Zone 1 hazardous areas. The wide ambient operating temperature range of -20 to +65°C facilitates long-term reliability and maintenance-free operation in the exposed environments experienced on the decks of oil tankers.

Accepting an industry-standard 4-20mA control signal, resolution is 0.2%, delivering the accurate, repeatable and backlash-free positional control demanded by the VOCON application.



VOCON venting control valve with Rotork CMA actuator installed on the deck of an oil tanker.

---

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# Finding Hidden Cost Savings in Control Valve Selection

Power plant operators are facing the need to maintain strong business results with shareholders demanding better return for their investment, in the search for cost savings, control valves and their accessories are frequently overlooked as the culprits of unnecessary running costs



Through careful initial valve selection, attention to maintenance, and adapting to changes in plant operating modes, control valves can make big contributions to reduced running costs.

Many control valves are initially selected on a series of limited service conditions often exaggerated at each stage of the plant design as an operational safety margin. Selecting valve assets under these pretenses means plant operators are increasing their initial costs on over-specified valves that will often be operating under 25 percent open in normal operation.

In these cases, the valves are operating outside their optimum range at the extreme minimum and maximum conditions, making control at lower flows more difficult. In addition to poor flow control, because of changes in operating regime, plants may experience severe damage to valve trims, leading to increased leakage rates. Operating under these conditions can also lead to flow cavitation and can even damage valve assets enough to require frequent valve replacement.

Proper valve selection begins by taking into consideration specific needs and operating cycles of the type of power plant in which the valves will be utilized. Valve selection for a base load power plant, for example, can be very different from a plant running through multiple start/stops cycles per day. The startup phase of operational cycles creates challenging conditions for valve components with high pressure drops and low flow rates.

Daily startups compared to occasional startups will dictate which control valve and trims are appropriate for these environments. Additionally, long term tight shutoff capabilities are crucial to achieving performance targets for valves serving critical functions, such as boiler water level control, turbine bypass and steam vents.

Power plant operators working through the challenges of improper initial valve selection can avoid repeating the problem. By resizing the valve to real-life service conditions, operators can work with a main valve partner to tailor the trim geometry to the actual service conditions, paying special attention to startups with low flows and high pressure drops to prevent cavitation.

Advancements in smart valve technology have also enabled remote monitoring of valves in service, giving operators the opportunity to monitor control valve health and performance through regular diagnostics. Emerson's Fisher™ FIELDVUE™ Digital Valve Controller 6200 and FIELDVUE™ Digital Valve Controller 2000, for example, provide valve health information by monitoring live data from the valve or by performing online performance diagnostics when the plant is running.

This steady stream of data helps ensure the valves are working at peak performance and can help develop preventive maintenance planning.



Modern valve technologies, such as this Fisher FIELDVUE Digital Valve Controller 6200, can help power plants reduce costs by providing valve health and performance diagnostics.

Thus, valve lifecycle increases, as well as process control and operational certainty.

To learn more about Emerson's Fisher flow control technologies, visit:  
<https://www.emerson.com/en-us/automation/fisher>



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# Festo's VTEM Motion Terminal - Revolution in Automation



*Beneath the VTEM's somewhat unassuming exterior and classic Festo product design lies technical refinement based on state-of-the-art information technology.*

## Revolution in automation: Festo's new VTEM Motion Terminal enables the activation of new functions via apps, so machine developers can create a basic machine type and equip it with different features to meet customer requirements

The brand new VTEM Motion Terminal from Festo propels pneumatics into the era of Industry 4.0 with apps that can replace over 50 individual standard components, thanks to the latest developments in piezo technology and software.

*"We predict that the VTEM Motion Terminal will revolutionise automation technology in much the same way that the smartphone turned the mobile communication market on its head a decade ago," says Andy Parker-Bates, Product Manager at Festo. "In addition to transforming pneumatic products into true Industry 4.0 components, the VTEM simplifies system design, reduces costs and offers greater energy efficiency."*

Festo predicts that the new method of function integration exemplified by the VTEM – combined with software apps – will simplify the entire value chain, since only one piece of hardware will be required. Beneath the new Motion Terminal's somewhat unassuming exterior and classic Festo product design lies technical refinement based on state-of-the-art information technology.

### True Industry 4.0

Piezo technology, integrated stroke and pressure sensors – together with control via motion apps – opens up entirely new perspectives for machinery and plant manufacturers.

The fusion of mechanics, electronics and software featured in the Festo VTEM Motion Terminal will transform a pneumatic product into a true Industry 4.0 component, and enable flexible production.

Changes in pneumatic functions and adaptations to new formats are controlled via apps by changing parameters. The integrated intelligent sensors for control, diagnostics and self-learning tasks will eliminate the need for additional components.

### Motion apps

At launch, the VTEM Motion Terminal offers ten different functions via motion apps: from basic modification of the directional control valve functions to energy-efficient motion, and from proportional control to different motion profiles. What makes this so special is that the same valve hardware is used for everything.

Thanks to the fast activation of new functions via apps, machine developers can create a basic machine type and then select the relevant apps on the fly, to equip it with the necessary functions and features to meet customer requirements. Further apps are already in development.

Assigning functions via software has the added benefit of protecting against

tampering and protecting know-how, since it is not possible to tell from the outside which functions the valves are executing. Maintenance is also simplified, as long lists of spare and wearing parts will be a thing of the past.

### Intrinsic energy efficiency

The specially developed motion apps as well as the leakage diagnostic function save energy during operation.

However, the energy-saving piezo technology for the proportional valve's preliminary stage also plays its part.

The air consumption can be flexibly adapted to the requirements using the 'Selectable pressure level' and 'ECO drive' apps. With the selectable pressure level, a digitally selected pressure can limit the pneumatic force to the level required for the application.

ECO drive reduces the compressed air consumption to the minimum level required to achieve motion, provided no pressing or holding forces are needed in the end position.

This enables savings of up to 70% compared with standard operation, depending on the application.



*Revolution in automation: Festo's new VTEM Motion Terminal enables the activation of new functions via apps, so machine developers can create a basic machine type and equip it with different features to meet customer requirements.*

**Reduced costs and complexity**

Festo's VTEM Motion Terminal permits both fast and powerful movements and leakage diagnostics at much lower costs than current solutions. For example, fewer controllers are required compared with electrical solutions since one controller can control up to eight movements with the VTEM. Energy consumption is also reduced, and the required installation space is decreased by up to 65%.

In a comparison of the technology, solutions with the VTEM Motion Terminal offer truly cost-effective alternatives for eight applications. Instead of a valve, a pressure regulator and a pressure sensor (in other words three components), only one single technology – a valve – is needed.



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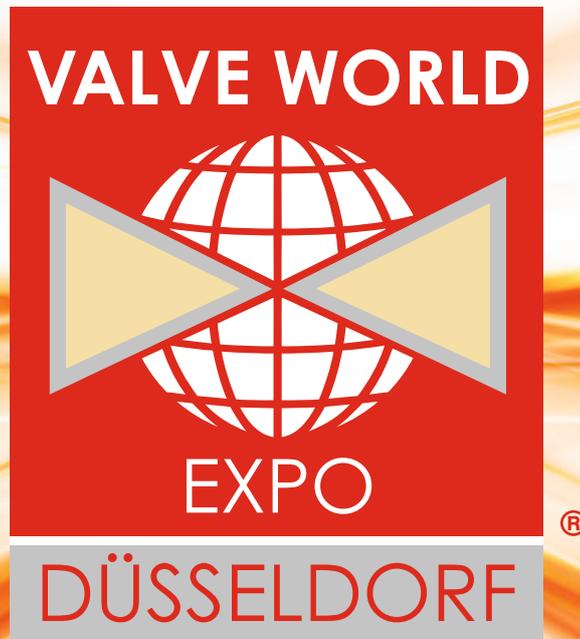


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## 7 Steps to Help Achieve Functional Safety

Automated safety systems are increasingly being integrated around the world and across diverse industries – including process, household and commercial products, medical, nuclear, automotive, railway, and avionics

This has significantly elevated the importance of functional safety evaluation and certification internationally. A valuable tool in identifying, controlling, and mitigating hazards and risks, functional safety evaluation can help ensure a system's safety operation responds promptly and correctly to potential errors or failures, helping to avoid or reduce the risk of damage, injury, or even death.

As more customers seek safety system products that comply with global functional safety standards, it is vital that companies understand and follow the requirements of the IEC 61508 series of standards for safety-related systems associated with electrical, electronic, and software-based technologies. Following these seven steps can help you achieve functional safety and gain consumer confidence in your product.

### 1. Conduct a Safety Integrity Level (SIL) Determination Study.

Identify the hazards and risks associated with your existing process and any associated control and instrumentation system, then undertake a SIL determination study to establish the amount of risk reduction required for the implementation of a safety-instrumented system. It is at this point the SIL of the safety-instrumented function is defined. Keep in mind that each SIL has its own range, with an "order of magnitude" between end points. If the demand from the process on the safety function is predicted to be less frequent than once a year, it is classified as a low demand system. If the demand is more frequent, it is a high demand system.

### 2. Prepare Safety Requirements Specification

Functional safety standards emphasize the importance of capturing functional requirements, deriving more detailed design requirements (right down to low level hardware and software) and tracing these through the design and development stages, integration and testing process, and all the way through to final validation. At the end of every stage of the product lifecycle, a verification process must be followed to capture any details not fully addressed that can affect compliance. This can help avoid systematic failures.

### 3. Conduct a Quantitative Assessment to Address Risk of Random Hardware Failures

A theoretical model of the equipment's reliability must be constructed, decomposing the design into functional blocks to form a reliability block diagram. An analysis of each block should follow, using methods such as failure modes and effects analysis.

This helps to categorize both detected and undetected failures into "safe" and "dangerous," helping to calculate the probability of failure on demand. You will also need to calculate the safe failure fraction and the hardware fault tolerance using information from circuit diagrams, mechanical assembly drawings, parts lists, and other sources following design

### 4. Establish Processes to Help Control and Avoid Systematic Failures

The verification of systematic failures (hardware or software) requires a qualitative assessment of the evidence of using the prescribed lifecycle, although the actual processes and work activities used will depend on the technologies in the design and type of safety equipment in question. For equipment developers, evidence of using these methods must be gathered during the design stage and made available for assessment. The verification task is applicable across the whole product lifecycle, from product safety specification to validation.

### 5. Establish Processes for Software

Special attention from developers is needed for software involved in performing safety functions. This includes, but is not limited to:

- Capturing and tracing requirements through the development lifecycle
- Fostering a software review culture
- Configuration management
- Investing in, and maximizing the use of automated test tools
- Using recommended development tools to facilitate the structure of the safety software compliance

### 6. Conduct a Functional Safety Assessment

All safety systems must undergo an independent functional safety assessment that covers hardware and software, as well as all related processes used in the realization of the instrument/system. The requirements for the assessment, including the methods and techniques prescribed, increase in rigor with higher SIL.

### 7. Manage Functional Safety

All organizations that deal with safety-instrumented systems must develop and maintain a functional safety management (FSM) process. This can be a company-wide process, typically part of the company's Quality Management System, or be implemented as an over-arching plan that covers a specific project and details how functional safety will be managed. An important part of the FSM is the development structure, deployment, and assessment of the competence of all staff who have any roles or responsibilities associated with safety systems. For companies starting a functional safety project for the first time, FSM is a good place to begin as it establishes the procedural infrastructure in advance.

In a highly complex, safety-related system where functional safety is a requirement, equipment suppliers should identify an accredited third-party agency, such as CSA Group, that can evaluate and certify compliance with the IEC 61508 or applicable industry-specific standard.

Download our functional safety white paper and contact CSA Group to learn more.



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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, 3rd September\**  
Valves Advanced Level | *Tuesday, 4th September\**  
Control Valves (CPD Accredited) | *Wednesday, 5th September\**  
Safety Valves (CPD Accredited) | *Thursday, 6th September\**  
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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Safety Integrity Levels (SILs) | *Wednesday, 10th October*  
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# Enermech's Minteg Make inroads in Australian LNG and Oil & Gas Sectors

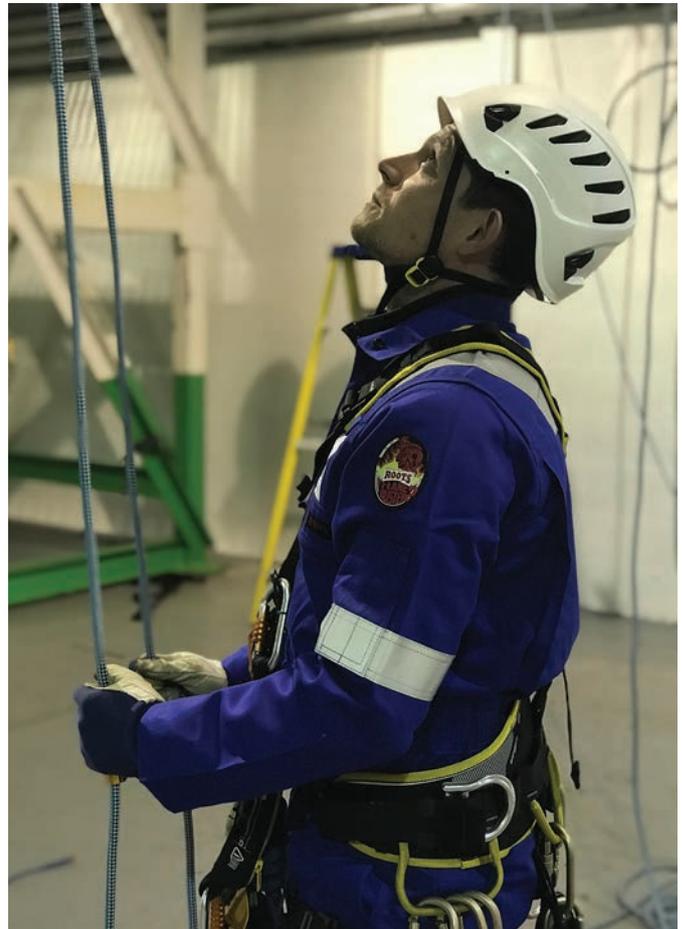
Aberdeen-headquartered maintenance, inspection & integrity specialist, MInteg, have opened their first international base as it targets growth in new geographic markets

The facility in Perth, Western Australia, will be the launch pad for entry in to LNG, upstream oil gas and industrial sectors in the Australasia region and to lead the expansion MInteg has appointed oil and gas integrity and inspection veteran Michael Munro as Operations Director in Australia, with Pete Speight joining as Operations Manager.

MInteg will initially offer integrity management, non-destructive testing and mechanical rope access services and, capitalising on parent company EnerMech's extensive presence in Australia, will look to add facilities in Gladstone, Darwin and Melbourne.

Patrick Gallagher, MInteg director, said years of experience and immersion in North Sea projects would be attractive to Australian clients and he is confident the company's integrated approach of providing working at height expertise with traditional technical skills will prove successful.

He said: "We believe there are opportunities for MInteg services in LNG and upstream gas on the East Coast, in Victoria, Queensland, the Northern Territory and South Australia and in oil and gas across Western Australia."



"Australia has gone through a massive construction phase over the last 10 years and has now transitioned in to the operating phase which will require additional integrity management and inspection expertise. We identified that the market is ready for a new entrant and we will leverage the relationships established by EnerMech to showcase our capabilities."

Michael Munro added: "A combined service offering which pulls in EnerMech's core services and compliments our strengths in NDT and rope access will offer something new to the oil, gas, LNG and industrial sectors, and we are looking forward to extending our footprint in Australia, which will be a precursor to further international growth."



Michael Munro, Operations Director Australia, MInteg Ltd



Pete Speight, Operations Manager, MInteg Australia



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# 136 Years of Experience Behind Latest Packing Innovations

James Walker is a name synonymous with sealing technology in the valve industry



In fact, the business has been around since 1882 so it's fair to say it is somewhat an area of expertise. Worldwide, today the company has over 2,000 experts focused on solving customers' engineering challenges with the same ethos their founder had some 136 years ago – to deliver the very best performance, value and service to customers.

Throughout the history of the business, James Walker has been at the forefront of compression packings, registering some of the earliest modern packing patents.

Their outstanding application knowledge is a result of a long history working with proprietary materials in some of the most challenging environments and pioneering new developments as industry requirements have continued to evolve.

136 years later, the company is still pushing boundaries, utilising the latest design and manufacturing techniques to meet a wide variety of technical and commercial expectations across a range of industrial and geographical markets.

The James Walker compression packing portfolio is today one of the most extensive on the market. A range of over 40 Lionpak® products manufactured in PTFE, graphite, carbon, aramid, natural and specialist fibres provides both performance and value covering virtually every industrial valve application, whilst the company's well known Supagraf® materials offer the ultimate in performance for critical applications such as oxygen duties and fugitive emissions applications.



Still carrying the lion name, the Lionpak® range of compression packing products incorporates the latest in yarn specification, lubrication packages and manufacturing techniques.

As a result of their 136 year history, there are not many challenges that the company's experts have not faced, regularly helping to answer questions related to materials, lubrication packages, additives and installation best practice.

This breadth of experience and expertise is available to valve manufacturers, refurbishers and end-users at all times through customer clinics, seminars and training courses as well as being committed to print in a series of technical papers that are regularly presented at major industry conferences and events.

At James Walker, it is clear that heritage is at the heart of the business and the company's continually evolving offer delivers the very best partnership with customers to optimise operational performance and meet the most challenging application conditions, whatever they may be. Furthermore, the ranges of both standard and specialised packings undergo rigorous testing and continuous improvement to ensure customers can trust the James Walker name every time.

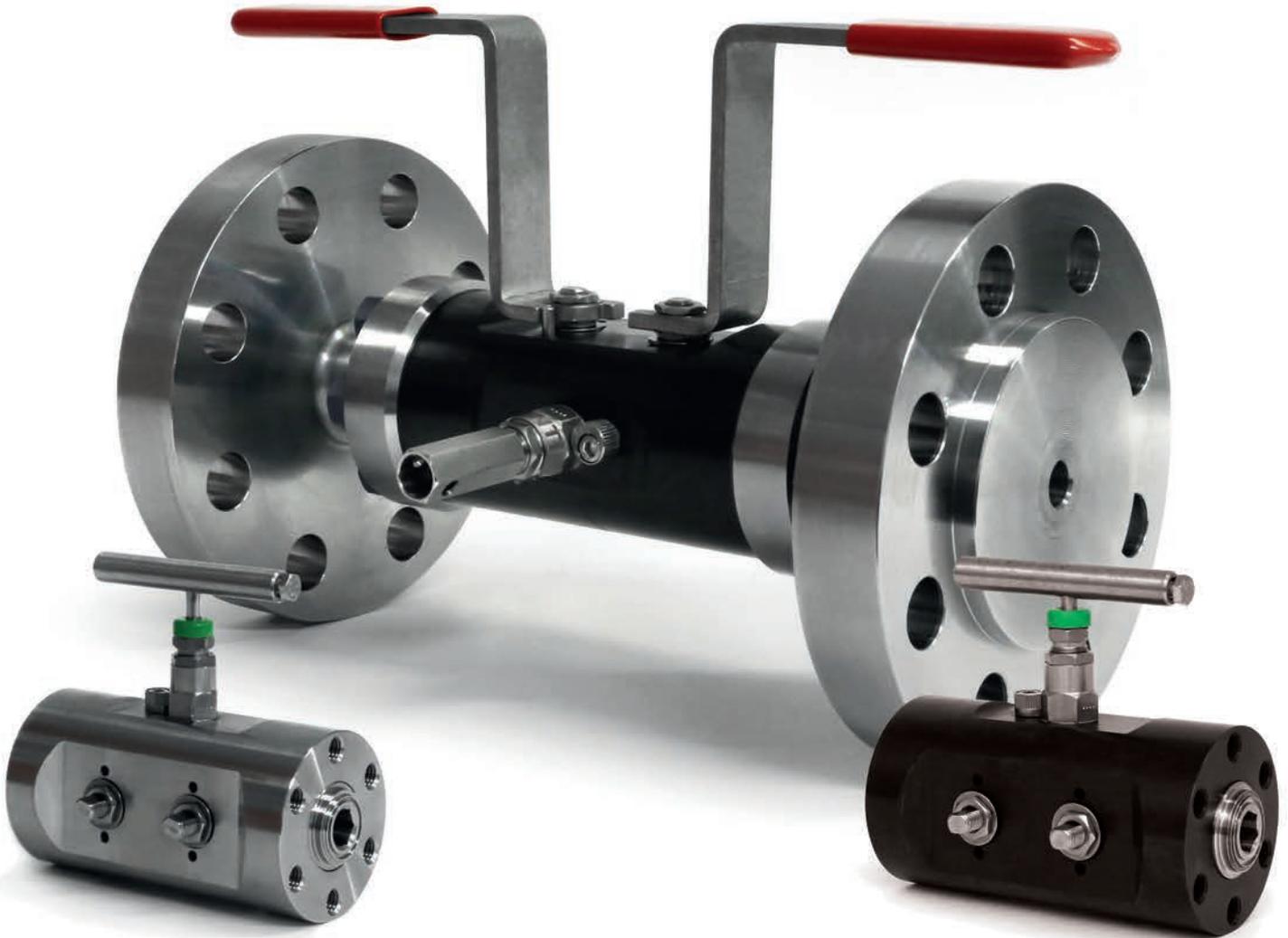


## James Walker®

The Lion name and icon were chosen by the company's founder to protect his very first patented packing innovation. The famous Walker Lion trade mark, for steam and hydraulic packing, first appeared in March 1889.

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# Retrofit, the Key to Supporting the UK's Manufacturing Revival?

**Les Littlewood, Sales Director at Albion Valves UK Ltd asks, "Is retrofit the key to supporting the UK's manufacturing revival?"**



According to the EEF, The Manufacturer's Organisation, British manufacturers are planning for improved trading conditions in the year ahead, with export a particularly encouraging growth area and 47- 51% of exporters expecting higher orders this year from both EU countries and beyond.

Economic indicators show manufacturing on the rise in the UK, and a recent EEF public survey shows support for the industry with 70% of adults saying that Britain should aim to be a top five manufacturing nation.

While increased demand for British goods and increased productivity in British factories can only be positive – the economic conditions and volatility of sterling, along with rising commodity prices means that manufacturers must also be mindful of managing production costs in their factories.

Yorkshire based Albion Valves (UK) Ltd, supplies valves and fittings for the buildings services and process industries and is keen to support the manufacturing revival in the UK.

Albion's Sales Director, Les Littlewood, believes the best way to support increased productivity while managing the budget is to refurbish and retrofit in British factories and production lines.

Les commented: *"Many companies are holding back on investment until the economic situation stabilizes, but in the meantime the process industry needs to capitalize on this opportunity for growth. Much of Britain's process industry relies on equipment and plant that is decades old, at Albion we believe that one solution to helping ensure that process is in good order and can cope with increasing demand while not breaking the bank, is to retrofit."*

A retrofit, carried out in conjunction with taking preventative measures with older systems, can ultimately mean less investment, less operation downtime and less ongoing maintenance issues. For the purpose of refurbishments and renovations, Albion stocks a comprehensive range of valve models and components commonly specified in older buildings.



In addition, Albion's specialist sales team can also help evaluate the system in question to identify potential technical issues that may arise and recommend the best engineered solutions and products for the job.

Albion's stock is carefully considered to support the process industry and help ensure the wheels of manufacturing continue to turn. In production lines, solenoids are one of the most widely used valves and are vital to keep machinery running.

Solenoids can be found in almost any process operation that requires measurement, such as grouping and flow control and are an inexpensive preventative measure that can be easily fitted to increase the efficiency credentials of older systems; for example by preventing dripping taps, non-closures and leaks to save water.

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. Albion's solenoid valve range currently includes valves for air, steam, oil, and gas, suiting a number of processing applications.

Pneumatics also play a large role in the equipment used in production lines. 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.

Albion's range of butterfly valves are also 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.

Les added: *"In any factory, plant or commercial building facilities managers can preempt potential issues with ageing systems by timely retrofitting."*

For example, to upgrade a water system it is not always necessary to tear out all the building infrastructure and pipework. It is entirely feasible for a



Les Littlewood, Sales Director,  
Albion Valves UK Ltd

modern, efficient system to be created using existing materials with a few strategic tweaks. This will result in saving money on energy for a fraction of the cost of a new installation, as well as achieving a short payback period via the savings.

Similarly, if the existing pipework is in good condition, then the terminal units such as FCU's, over-door heaters and internal water coils are likely to be equally sound. However, to boost efficiency and comfort performance, the controls may benefit from improving speed control on the fan - to optimise airflow over the coil. This small tweak can add years to the system's service life without a huge cost.

Older factories with ageing equipment always come up against compliance issues. New regulations, directives and adhering to compliance policies to ensure equipment is fit for purpose can cause one of the greatest problems for engineers.

So where compliance is a minefield, Albion has delivered a quick fix to help take the issue away from specifiers and has prioritised approvals and accreditations across their product portfolio assuring that the products they specify are fit for purpose and fall within new legislation.

As with anything the devil is in the detail, but while the opportunity is there, a quick fix or retrofit could be the ideal solution to keep the cogs of industry turning without breaking the bank.



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## Safety-First Approach for New APL7 Switchbox

### Actuated Solutions is announcing the launch of the new APL7 switchbox to the UK market



Designed with safety in mind, the product boasts an ATEX approved aluminium body (for use in hazardous environments) and, unusually for this type of product, an integral single coil solenoid valve.

*Our entry-level APL2 switchbox remains one of the best-selling products on the market and the addition of the higher specification APL7 is further evidence that we have the most comprehensive range of switchboxes in the UK."*

The APL7 can offer a cost-effective solution when compared to a standard switchbox with a separate solenoid valve as only one cable & one cable gland is required. This can reduce costs significantly in systems where multiple actuated valves are used.

Available in either 110VAC, 220VAC or 24VDC, the APL7 is IP67 rated and includes a beacon visual indicator, quick-set cams and captive cover bolts as standard. Additionally, a Namur drive makes it easy to mount to actuators.

As with all ASL's products, the APL7 switchbox is supplied with full documentation to assure customers of the highest levels of safety and authentication.

Commenting on the product, ASL's MD, Paul Slaughter said: "We're really pleased to be able to offer the market a unique switchbox solution that has the potential to save users money on both installation and product.

For more information on ASL and the APL7 switchbox, please visit:  
<http://www.actuated-solutions.co.uk/>



Paul Slaughter, Managing Director,  
Actuated Solutions Ltd



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# Saunders® Diaphragm Valves

For the most part engineers have a good understanding of metallurgy used in aseptic processing. However, the critical importance of non-metallic components, such as the diaphragm, has previously tended to be underestimated.

Diaphragm and other non-metallic 'wetted' components are now becoming increasingly important to plant engineers in terms of standards compliance and product quality.

Customers have become aware of the complexities of elastomer utilisation in the total plant process system. Elastomers are a complex mix of ingredients chosen to provide the right properties for the function of the component and the intended application. Elastomer ingredients may include carbon black, fillers, process aids, activators, accelerators and curing agents, as well as the base polymer. All these ingredients can, to some extent, affect the properties of the elastomer in terms of resistance to and tolerance of temperature, abrasion and chemical attack.

The correct base polymer is the starting point for an elastomer. This is crucial in creating the desired physical properties, environmental and chemical attributes in the finished diaphragm. Depending on diaphragm material there can be up to 40 to 50 commercially available base polymers. It is very important, therefore, to select the right one to obtain the required diaphragm properties for any application.

The design, ingredients, manufacturing process and control all play a major part in ensuring the finished diaphragm provides optimum performance in the customers' process. For acceptance within the Biopharmaceutical industry, all ingredients must be FDA and USP Class VI conforming, but this is only the beginning.

Over many years, the expertise of Crane ChemPharma & Energy's Saunders® brand in polymer processes has continually progressed so that all diaphragm solutions are developed, processed and controlled in-house, from base polymer mixing through to reinforcing, curing, testing, packaging and shipping.

Today, customers are also demanding traceability and Saunders® has been instrumental in complying with the end user's validation requirement by providing fully certified traceability for the range of FDA/USP-conforming Saunders® HC4 Diaphragms. It is mandatory that all diaphragms used in Life Science applications must be manufactured from FDA conforming materials.

Diaphragm materials such as Modified PTFE, EPDM and silicone rubbers have to conform to the FDA code of Federal Regulations (CFR) Chapter 1, Title 21, Part 177 paragraph 1550 (Perfluorocarbons) and paragraph 2600 (Rubber Articles). A further pre-requisite for any diaphragm supplier is to provide not only FDA conformance but also USP Class V and VI certification, which includes a detailed series of tests to determine the biological response of elastomers and polymers used in medical applications. All certified diaphragms must meet the criteria in section '88' Biological Reactivity Tests, In Vivo Plastic Classes I to VI.



## Saunders® Unique Drivers

- 85 year old history and accumulated polymer expertise
- Front to back ownership of all elements of the manufacturing process (raw ingredient to finished product)
- Conformance to all international regulatory and test accreditations
- Life Science industry commitment

Ethylene Propylene Diene Monomers (EPDM) is the most commonly used elastomer in aseptic applications due to a number of inherent properties - excellent resistance to aqueous media, heat and ozone resistance, and high performance steam resistance. The Saunders® new ER Resilience EPDM has been specially formulated in-house to provide industry leading performance.

## Landmark developments

1. First Modified Steam grade TFM
2. NEW Saunders ER Resilience EPDM Diaphragm
  - Enhanced surface finish integrity to assist process purity (ASME BPE compliant)
  - 30% improvement in compression set ratio versus typical EPDM to reduce need for re-torque and ensure seal to atmosphere
  - Excellent chemical resistance to typical Biopharm process media
  - Front to back technology ownership optimizes security & reliability



4. Passivation Diaphragm
  - Reduced cost and TCO (Total Cost of Ownership) benefits versus single use of PTFE diaphragm
  - High visibility tag reduces risk of diaphragm not being replaced after passivation
  - Interchangeable fixing with Saunders PTFE diaphragm range
  - Materials suitable for use with citric acid and EDTA-based passivation chemicals and typical post passivation clean and rinse solutions

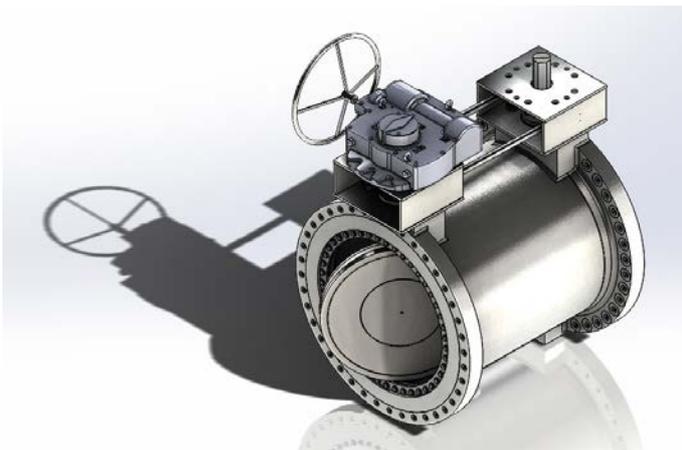


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3. EX Endurance Diaphragm
  - Outstanding high temperature performance and resistance to long term exposure at elevated temperatures (up to 175C constant steam)
  - Ideal for steam distribution and supply, sterile barrier, and block-and-bleed applications
  - Improved seal-to-atmosphere performance and reduced requirements for re-torquing of fasteners after thermo cycling

## Hobbs 44" Double Block & Bleed - 'Houston we have a solution'



**Double block & bleed valves are something of a speciality for Hobbs Valve.**

- Double isolation in an integral cast? ✓
- Special face to face requirements? ✓
- Single actuation with linkage systems? ✓
- Bespoke bleed requirements (single, double etc)? ✓



Hobbs Valve pride ourselves on our ability to design bespoke solutions to your specific needs.

Our latest offering included solving a problem at a major Petrochemicals facility in the USA. Our client initially made an enquiry for two 44" lugged valves, with the intention of fabricating a spool piece to create a double isolation package. Little did they know at this early stage of our in-house design capabilities. After further correspondence on the detailed requirements, we came up with a bespoke solution to meet their needs.

The client was facing a specific challenge on site and required a zero-leakage solution. With the space and piping restrictions; we came up with a special face-to-face package and designed a linkage system, to allow the use of a single actuator to operate both discs.

Through our close partnership with our supply chain, we were able to work closely with the foundry to create a new pattern, to incorporate every request from the client; right down to the specific bleed requirements.

Our standard double block & bleed product range covers valves from 2" to 24" ASME classes 150lb & 300lb. However, no matter how large or complex your requirement is, Hobbs Valve can come up with the solution to meet your needs.



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# Solving the Threefold Challenge of Fugitive Emissions in Chemical Processing with Valves

Since the days of the industrial revolution, the chemical industry has been encumbered by fugitive emissions challenges, with global emissions trends on the rise and world powers implementing and revising strict regulations to protect the environment

////////////////////////////////////  
A 2015 study conducted by the Rhodium Group estimated that 3.6 trillion cubic feet of natural gas is released annually to the atmosphere, translating to about \$30 billion in lost revenues.

Today's chemical plant operators face a threefold challenge: reduce lost revenue due to fugitive emissions, remain compliant with local emissions standards, and uncover emissions-compliant technologies that are appropriate for their application needs. Working with a main valve partner such as Emerson can help operators face these challenges, while also reducing operational costs on maintenance and minimizing the risk of financial penalties from noncompliance.

Emissions standards around the world are primarily focused on valves and their stems. The Environmental Protection Agency (EPA) determined that valves were responsible for 63 percent of emissions, prompting operators to pay close attention to their valve purchasing decisions.

Operations that are processing severe corrosive and toxic media should pay special attention to their valve selection process, as significant temperature fluctuations make valve assets more susceptible to failure and leakage. In these cases, ill-suited valves can lead to complete valve failure, increased maintenance costs, and unnecessary plant downtime.

Valve design can make a significant difference in minimizing emissions. The potential for fugitive emissions greatly decreases with rotary quarter turn designs, such as ball valves, where sealing is only subjected to a 90-degree rotation cycle. Other designs place greater reliance on packing sets enduring a linear pull-through motion.

Selecting valve products that have been pre-certified to meet standards such as the European Union's TA-Luft/VDI 2440 can also help operators in extreme environments address emissions challenges.

Valves that are equipped with a perfluoroalkoxy (PFA) lining are designed to withstand corrosive and toxic media so that end users get the longest lifecycle possible from their valve investment with minimal maintenance. Emerson's new Neotecha™ NXR, a PFA-lined ball valve, for example, is manufactured for high reliability, and addresses fugitive emission leakage and valve failure issues in harsh applications.

The valve's offset split body design is also better suited to handle the stresses of significant temperature fluctuations associated with chemical processing. Its maintenance-free design increases plant uptime and lowers total cost of ownership to facilitate operational certainty.



*Emerson's Neotecha NXR lined ball valve is fugitive-emissions certified and designed to endure corrosive and toxic media*

No matter the application, chemical processing end users facing these and other fugitive emissions challenges should navigate fugitive emissions standards and solution options with a trusted main valve partner at their side for optimal results. Not only will their operations adhere to regulation even as they evolve over time, they also stand a stronger chance of reaching top quartile performance.

For more information about Emerson's Neotecha lined ball valves, visit:  
<https://www.emerson.com/en-us/automation/valves-actuators-regulators/neotecha>.



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The CLIMAX | CALDER valve grinding and lapping machines span working ranges for gate valves from 1.25 to 39 inches (32 to 1000 mm) and Globe valves from 0.375 to 24 inches (10 to 600 mm) as well as conical seats.

Our patented planet wheel design ensures superior flatness and finish. Special abrasives allow lapping of valve seats in less time than other models. A variety of accessories are available including swing check adapters, and fixtures for grinding and lapping wedges.

*"...CLIMAX | CALDER valve repair machines pay for themselves..."*

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- Lapping papers
- CBN grinding discs (on some models)
- Flashlight and knife
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# Special Quality Alloys Ltd wears NORSOK Seal of Approval



Back in 2014, Sheffield based **Special Quality Alloys Ltd**, were successfully certified a **NORSOK M650** approved manufacturer for **open-die forgings & rolled rings in F51 Duplex and F55 Super Duplex materials.**

*"Having recently joined the BVAA, we were keen to share significant developments at SQA to the other members" explains Shane Higgins, Field Sales. "We are still only one of very few UK based forgemasters to hold this approval."*

Jason Miller, Forge Director who headed up the efforts to secure the approval explains the challenge and the eventual success of this achievement for the company.

*"As a supplier to the Oil and Gas industry we recognised the need by our customers for supply of NORSOK high integrity Duplex and Super Duplex stainless steel forged products."*

*"In order to gain the NORSOK M650 manufacturer qualification, we refined our manufacturing routes and processing procedures from material procurement through to thermal processing, testing and final release."*

*"Approval by the qualifying auditor only took place after SQA had demonstrated high level process control and also conformed to the exacting requirements of the NORSOK M650 standard."*

*"The final achievement of gaining NORSOK M650 approval by an industry recognised company and respected qualifying oilfield metallurgist was a very satisfying outcome to the hardwork and effort made by all involved."*

To summarise, Special Quality Alloys are approved to supply forged products in the form of rings, blanks, blocks, boss shapes and rolled rings. This covers F51 Duplex S31803 & F55 Super Duplex S32760 materials.

To compliment the forging capabilities, SQA also carry extensive NORSOK approved finished round bar stock in the Duplex and Super Duplex grades.



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## Performance – enhancing

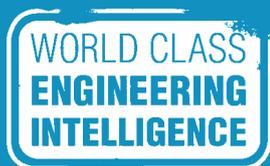
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# Hydravalve (UK) Now Stock WRAS Approved Bronze Ball Valves

Hydravalve's Process Valves & Actuation catalogue was released on the 8th January and since then are pleased to announce the positive feedback and support from customers'

Following the already new additions from Haitima that includes 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. And other 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.

Since then, Hydravalve has introduced a new stocked item and are now offering bronze BSPT ball valves now available in sizes 1/2" to 2" from stock. The bronze ball valves are all WRAS approved and has a maximum working temperature of 186°C.

For pricing and more information please contact a member of our sales team on 01902 637263 or email [sales@hydravalve.co.uk](mailto:sales@hydravalve.co.uk).



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## The Challenges of Meeting International Oil & Gas Valve Sealing Requirements

**NORSOK M710, NACE TM0297, ISO 10423 (API 6A) and similar testing standards provide general methods for qualifying manufacturers of elastomeric valve seals – as well as their sealing materials – for oil and gas service applications requiring resistance to sour gas (H<sub>2</sub>S) and rapid gas decompression (RGD). Unfortunately, there are sizeable challenges in that these testing standards are often misinterpreted or underutilised**

One such challenge is that seal testing standards are not material specifications. Requesting a valve sealing material “to NORSOK M710” without further information around the application requirements is unlikely to provide a sealing material which is fit for purpose. Also, many engineers have only a cursory understanding of these testing standards and their relevancy to field conditions, with the latest revision of a standard seemingly never far away. Consulting a valve seal manufacturer with a comprehensive knowledge of the latest standards can prove helpful when navigating this minefield. Expert guidance can also be sought on how laboratory testing correlates to field conditions, as well as areas where tests are excessive or deficient in predicting field service performance.

Valve sealing materials need to satisfy testing standards from three key body categorisations, namely industries, OEMs and super majors – the six largest non-state-owned oil and gas suppliers. Qualifying elastomer materials to these standards is challenging due to the sheer number of different standards, and the width of test parameters within each of these standards. Disparity between these testing procedures demonstrates the varying levels of sealing or elastomer knowledge across industries, OEMs and super majors. Qualifying valve sealing materials to conform to all of these standards can prove an impossible task, leading to inevitable compromises in performance. For example, formulations optimised to enhance properties for one test standard might result in poorer performance when measured against another standard. Furthermore, certain criteria across test standards are discretionary or vague, which can result in different interpretations and test results between laboratories.

### Variations in Sour Gas Aging Test Standards

Sour gas (H<sub>2</sub>S), or hydrogen sulphide, is a poisonous, flammable and odorous gas found in wells at concentrations from parts per million to in excess of 20%. Elastomeric valve seals which are not resistant to sour gas become hard and brittle, resulting in poor sealing, cracking and eventual seal failure. Sour gas aging tests immerse a material in a heated, pressurized liquid (hydrocarbon-water) and gas (H<sub>2</sub>S/CO<sub>2</sub>/CH<sub>4</sub>) mixture.

Dimensions, hardness and tensile properties are measured before and after sour gas exposure. The table in Figure 1 shows the complexity and variation across several common sour gas aging test standards. The NORSOK M710 Annex A, ISO 23936-2, Shell and Saudi Aramco sour gas aging test standards specify 2% H<sub>2</sub>S concentrations.

The ISO 10423 (API 6A) DD/EE and ISO 10423 (API 6A) FF/HH standards require much higher H<sub>2</sub>S levels of 5% and 10%, respectively. The NACE TM0187 testing standard allows gas phase compositions of 5% or 20% H<sub>2</sub>S. Manufacturers are likely to test using the lower 5% concentration unless their customers specifically request testing at the higher H<sub>2</sub>S levels. These percentages are the percentage of the gas phase composition. For example, in NORSOK M710 Annex A, the 2% H<sub>2</sub>S represents 2% of the 30% gas phase.

ISO 10423 standard testing is done at a single test temperature of 177°C. All the other sour gas aging standards require testing at three different temperatures for acceleration purposes. The test temperatures in the NORSOK and Saudi Aramco sour gas testing standards allow manufacturers to select three test temperatures at their discretion. The ISO 23936-2 standard provides nine temperature range options ranging from a low combination of 36°C, 51°C and 66°C to a high set of 195°C, 210°C and 225°C. The Shell standard has different test temperatures depending on the material (FKM versus HNBR).

### Variations in Rapid Gas Decompression Resistance Test Standards

Rapid gas decompression (RGD), or explosive decompression (ED), is a failure mechanism of elastomer seals and O-rings caused by a rapid reduction in pressure of a gaseous media. Gas that has permeated into the elastomer seal expands violently when the pressure is released rapidly, causing fissuring and seal failure. RGD testing requires specialised high pressure test rigs capable of pressurising various seals at different depressurisation cycles and temperatures.

Between RGD testing standards, the number of test cycles varies from one to 10 across the different RGD testing standards. Soak periods range from six hours to 48 hours. Test temperatures vary from 50°C to 230°C or to “process temperature.” The NACE TM0297 standard has the widest range of allowable test pressures (7 MPa to 38 MPa) and temperatures (50°C to 230°C). While NACE TM0297 could be considered a more aggressive test standard, it could also be considered the least aggressive; the severity of an NACE RGD test depends on the parameters selected. If an engineer requests an elastomeric seal material qualified to “NACE TM0297” without specifying pressures and temperatures, a manufacturer could test using the lowest temperatures and pressure (50°C and 7 MPa). This might not truly qualify a material for the actual field conditions with higher temperatures and pressures, as 80% of oil and gas applications see field temperatures in the 120°C to 150°C range.

Valve seal manufacturers are likely to test materials using the minimal requirements unless their customers provide the field conditions or request specific test parameters within the limits of the standards. Regardless of the standard, the test pressures, temperatures and fluid media should be representative of the field application.

### Engineering and Selection of Oil and Gas Elastomeric Seal Materials

While having a single valve seal material capable of meeting all of the divergent testing standards might reduce part counts, such a material cannot realistically meet all of the standards. An “over specified” seal material with too many requirements can compromise seal cost and availability.



|   | NORSORK M710<br>Annex A (2%)                                     | ISO 23936-2   | NACE TM0187  | ISO 10423<br>(API 6A)<br>DD/EE                                    | ISO 10423<br>(API 6A)<br>FF/HH                                     | MESC SPE 85-301<br>(SHELL)                                       | 06-SAMSS-001<br>(SAUDI<br>ARAMCO)                                |
|---|--|---|--|---|--|--|--|
| <b>Test vessel<br/>Composition:</b>       |  |   |  |   |  |  |  |
| Gas Phase                                 | 30%  | 30%   | 90%  | 35%   | 35%  | 30%  | 30%  |
| Oil Phase                                 | 60%  | 60%   | 5%   | 60%   | 60%  | 60%  | 60%  |
| Water Phase                               | 10%  | 10%   | 5%   | 5%  | 5%   | 10%  | 10%  |
| Gas phase<br>Composition:<br>Volume (%)   | 2% H <sub>2</sub> S, 3% CO <sub>2</sub> ,<br>95% CH <sub>4</sub> | 2% H <sub>2</sub> S, 3% CO <sub>2</sub> ,<br>95% CH <sub>4</sub><br>or<br>10% H <sub>2</sub> S, 5% CO <sub>2</sub> ,<br>85% CH <sub>4</sub> | 20% H <sub>2</sub> S, 5% CO <sub>2</sub> ,<br>75% CH <sub>4</sub><br>or<br>5% H <sub>2</sub> S, 20% CO <sub>2</sub> ,<br>75% CH <sub>4</sub> | 5% H <sub>2</sub> S<br>10% CO <sub>2</sub><br>85% CH <sub>4</sub> | 10% H <sub>2</sub> S<br>80% CO <sub>2</sub><br>10% CH <sub>4</sub> | 2% H <sub>2</sub> S<br>3% CO <sub>2</sub><br>95% CH <sub>4</sub> | 2% H <sub>2</sub> S<br>3% CO <sub>2</sub><br>95% CH <sub>4</sub> |
| Oil phase<br>composition:<br>Volume (%)   | 70% heptane, 20%<br>cyclohexane,<br>10% Toluene                  | 70% heptane, 30%<br>cyclohexane<br>or<br>70% heptane, 20%<br>cyclohexane, 10%<br>toluene  | 5% toluene<br>25% n-hexane<br>20% n-octane<br>50% n-decane   | Supplier<br>Discretion  | Supplier<br>Discretion   | 70% heptane, 20%<br>cyclohexane, 10%<br>toluene                  | 70% heptane, 20%<br>cyclohexane, 10%<br>toluene                  |
| Water Phase<br>composition:<br>Volume (%) | 100% distilled<br>water  | 100% deionized<br>water   | 100% ASTM D1193<br>type IV water   | 100% water  | 100% water   | 100% distilled water   | 100% distilled water   |
| Test specimen<br>location                 | Oil Phase  | Oil Phase   | Gas Phase  | Oil phase   | Oil Phase  | Oil Phase  | Oil Phase  |
| Temperature:                              |  |   |  |   |  |  |  |
| #1  | Supplier discretion<br>to select 3<br>temperatures               | 9 temperature<br>range options min:<br>36°C, 51°C, 66°C<br>to<br>max: 195°C, 210°C,<br>225°C  | 100°C<br>or<br>150°C<br>or<br>175°C  | 177°C   | 177°C  | 80°C & 115°C (FKM)   | Supplier discretion to<br>select 3 temperatures                  |
| #2  |  |   | -  | -   | -  | 80°C, 115°C, & 150°C<br>(HNBR)                                   |  |
| #3  |  |   | -  | -   | -  |  |  |
| Pressure                                  | 100 bar  | 60 bar  | 1000 psi   | 1000psi   | 1000psi  | 100 bar<br>(60 bar New ver.)                                     | 100 bar  |
| Test Duration                             | 8 weeks  | not defined, min -<br>48 hours  | 160 hours  | 160 hours   | 160 hours  | 24 hours   | Suppliers discretion   |

Figure 1: Comparison of industry and super major sour gas aging testing standards for evaluating and qualifying sour gas resistance of elastomer seal materials.



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In field applications with very aggressive conditions, engineers may need requirements beyond typical standards to achieve optimum seal performance. Some valve seal manufacturers choose to undertake material testing at elevated temperatures and sour gas concentrations of 25%, exceeding the standard NORSOK test levels. These aggressive tests find the limits of the elastomer's capability providing the design engineer with a sufficient "safety factor" for extreme sealing situations. Highly engineered perfluoroelastomer (FFKM) materials can provide sour gas resistance, with specialised grades able to combine this resistance with exceptional low temperature performance, which was unheard of a few years ago.

During oil and gas seal selection, design engineers need to balance performance, life, availability and cost when selecting seal materials. Design engineers should consult with experts in elastomer seal materials to meet the diversity of requirements. Specialised valve seal engineers can help select the appropriate test parameters within a testing standard based on an understanding of your field application.

A reputable sealing specialist can rapidly evaluate and qualify seals to mechanical and thermal properties and validate different engineered variations for specific requirements. These requirements may include pressure extrusion resistance, thermal cycling resistance and other mechanical properties.

Contact a specialist application engineer today to discuss your valve sealing application, and evaluate the most suitable high performance elastomer material to improve the performance, reliability and safety of your oil and gas operations.



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# Parker Completes Range of Double Block & Bleed Valves for Oil & Gas

Parker Hannifin, the global leader in motion & control technologies, now has a complete range of valves that conform to the API 6A specification for Christmas tree and wellhead applications



For a number of years, Parker has offered a range of double block and bleed Process to Instrument valves in 5,000 PSI and 10,000 PSI maximum rated working pressures. The needle valve version is already available in all three pressure ratings (5K, 10K, 15K), but the ball valve version has only been available in 5,000 and 10,000 PSI until now.

Due to customer demand for higher pressure straight-through bore, Parker has introduced a 15,000 PSI fire-safe version to complete the range in both configurations.

Parker sourced a new packing material and modified head assembly to ensure great results and successful PR2 and PSL3 testing was achieved.

Jim Breeze, Product Manager at Parker – Instrumentation Product Division Europe, explains: *"We have responded to demand in the market for a higher pressure 15,000 PSI double block and bleed valve, which enables us to meet all customer requirements for this type of valve."*

Parker's valves are lightweight and compact, which is essential for offshore installations. They can easily be installed to existing designs and offer low cost fabrication.

Parker's valves are also suitable for HIPPS (High Integrity Pressure Protection Systems) for use in wellhead flowline pressure protection.

All Parker's double block and bleed valves have been tested for conformance to API 6A specifications by an independent test house, as well as by the internal test laboratory that Parker operates at its European design and manufacturing facility in Barnstaple, UK.



The new 15k ball valve and existing range will be exhibited at AICHEM in June. Parker will also be exhibiting the original needle-needle-needle valve with Hub ends and Parker Autoclave Engineers' outlet combination.

For more details about Parker Hannifin, Instrumentation Products Division's products and services, visit [www.parker.com/ipd](http://www.parker.com/ipd)



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## BVAA's Technical Hot Spot

**EN 736-1 :2018 Valves - Terminology - Part 1: Definition of types of valves. Updated standard issued**

### What is it?:

This European Standard specifies the denominations of valves to provide a uniform and systematic terminology for all types of valves.

### Why Is it Important?:

The main technical changes compared to the previous edition is the editorial revision of the standard.

# HH Valves Ltd Complete Supply of Forged Pressure Seal Check Valves into South Africa



## HH Valves recently completed the supply of two 16" block forged 1690# pressure seal check valves into South Africa, as part of a project consisting of various high pressure forged valves, including our small bore high pressure parallel slide gate valves

The customer indicated a bespoke face to face requirement for the application which we were more than happy to accommodate. As these were block forgings, the addition of the extended face to face was much less of an issue from a manufacturing perspective and as no pattern modification was required we were able to keep costing to a minimum.

Due to the size and dimensions involved the machining of the valves tested our production capabilities to their limit but due to the experience of our engineering team we were able to complete the relevant fabrication in a safe and timely manner to the required standards and level of quality.

Downtime, replacements/repairs and a damaged reputation are at the forefront of any customers mind when it comes to issues within pipelines, valves and auxiliary equipment. The possibility for a defective casting or other potential unavoidable issues that come with a casting call for further NDE which in some cases can significantly increase the initial cost of the valve.

With HH Valves one-piece forgings, we are able to offer an increased level of material quality compared to a casting and eliminate almost all the issues that can occur during the casting process.

We pride ourselves on ensuring that our customers always receive the highest quality of product and offering our forged range alongside our traditional cast products allows our customers further peace of mind.

Further investment into our manufacturing process has enabled HH Valves to produce our large bore high-pressure range of valves, not only at comparable prices to our cast range, but also with identical lead times. This gives our customers the option of a higher integrity valve without the usual cost/delivery limitations.



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# AIV acquires Zenith Supply

**AIV, LP, a Houston-based global wholesale distributor of valves and actuators for the oil & gas, power generation, chemical, petrochemical, refining, pulp and paper and water treatment industries, has announced that it has acquired Zenith Supply.**

Founded in 1946, Pennsylvania-based Zenith Supply is a leading master distributor of Velan valves – a premier manufacturer of valves used primarily in power and downstream applications of the energy industry. Specializing in pressure seal valves, Zenith typically holds approximately \$25 million in inventory, making them a “go-to” provider for hard-to-find and long-lead-time items.

*“The opportunity to combine the strengths of AIV and Zenith are truly once in a lifetime and we feel honored to be able to continue the legacy that Mr. Marstine has built over the last few decades.”* stated AIV President Trey Cook. *“This acquisition will greatly strengthen our presence in the power industry as well as complement our offerings into the downstream industries we currently serve around the world.”*

Zenith Supply will continue to operate under its own name and in its current facilities in Pittsburgh, Pennsylvania for the foreseeable future.

*“We are excited to join forces with AIV as they are a great fit with Zenith.”* says former Zenith Supply owner Sheldon Marstine. *“Together, we will be a powerhouse in the valve industry.”*

Founded in Houston in 1991, AIV now boasts additional sales and stocking locations in the U.S., Canada, the United Kingdom, Dubai and Singapore, with more than \$80 million in inventory worldwide.



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## Ultravalve Cements Mondeo Relationship



**Ultravalve has celebrated 25 years as an exclusive distributor for Italian valve specialist Mondeo, by being awarded an extension to its sole supplier territory**

The Midlands-based process and RPZ valve supplier, which is owned by valve and actuator company Bonomi, will now handle Mondeo sales for the whole of Ireland, in addition to supplying the UK and Scotland as it has for the last quarter century.

Comments Ultravalve managing director, Bill Brach: *“Extending Ultravalve’s exclusive territory into Ireland cements what is already a strong and proven partnership between our two companies.”*

*“There is strong demand for the type of high quality Stainless Steel Manifolds and WRAS approved IDRJA Check Valves for which Mondeo are renowned worldwide, especially in Ireland, where many food producers and drug manufacturers are located.”*

Thomas Brach, who is undertaking a four year sales and management graduate trainee programme with the Bonomi group, will be handling sales of Mondeo products into the new Irish territory.



*left to right - Bill Brach, managing director, Ultravalve; Giancarlo Ghiotto, founder, Mondeo; Nicola Ghiotto, owner, Mondeo; Thomas Brach, sales graduate, Ultravalve*



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# Webtec - Industry Standard-Bearer



## Nigel Moore, Engineering Director at hydraulics expert Webtec shares his thoughts on the latest ISO 9001 quality management system



Many think that certification to the ISO 9001 quality management system (QMS) is a fairly routine exercise, but in reality there is no shortage of effort involved. Here at Webtec, we have recently achieved certification to the latest ISO 9001:2015, and discovered a number of key differences against the previous 2008 version.

What really stood out for us was the introduction of risk-based thinking. Under the new system, you have to determine risk opportunities and plan accordingly, all the way from order quotation to final product shipping. You are now strongly encouraged as an organisation to use risk analysis in order to decide which challenges you expect in the management of your daily business processes. To emphasise this shift of focus, the concept of 'risk' crops up 48 times in ISO 9001:2015, compared with just three times in ISO 9001:2008.

Management involvement is another prominent change in ISO 9001:2015. At Webtec, we have 22 internal auditors, which is essentially half of our UK workforce, but importantly this number includes the entire senior management team. Reviews are held every six months, so it's a big commitment. However, we have a requirement to show our customers that Webtec is serious about quality, so they can rest assured about the professional nature of our business.

Another notable difference in the latest system is greater emphasis on a process-based approach, which demands not just performance evaluation, but the requirement to measure and analyse – to check how well any process is performing.

The context of the organisation is also important in ISO 9001:2015. We were encouraged to construct our QMS from the specific context within which we are active. As a business, we must take into account the needs and expectations of stakeholders, and evaluate and deal with internal and external strategic questions. We have to show that we understand and respond to the expectations of all parties concerned.

Ultimately we feel that our company's vision and values align perfectly with ISO 9001:2015. You only have to read our QA policy, which refers to our values, to see that it's totally embedded in what we do at Webtec, and how we do it. Perhaps more simply, it is our management system, and how we ensure that our customers are satisfied. In this respect, nothing is more important.

Of course, it doesn't end here. Moving forwards there will be further development of the internal audit team at Webtec, along with ongoing evaluation and development of our processes and procedures. We always aim to be better than we are today and ISO 9001:2015 is a powerful business improvement tool that helps facilitate that ambition.



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# Leengate Distribute Ghibson Butterfly & Check Valves



With a strong reputation spanning over 35 years, Ghibson export products all over the world and work closely with Leengate Valves in the UK to develop & distribute butterfly valves & check valves in a wide variety of materials for the UK market

Newer additions to the Ghibson range available from Leengate Valves includes a fully PTFE disc check valve, wafer patterned to suit PN10 and 16, in sizes between ½" and 4". This PTFE valve has a stainless steel outer jacket, a 316 grade stainless steel spring which is fully coated in PTFE and a PTFE disc and seat. Capable of handling working pressures up to 6 bar and temperatures up to 180°C, this check valve lends itself to a range of applications and is ideal for use in many industries.

As well as the PTFE check valve, Ghibson also offer butterfly valves, both lugged and wafer patterned, to suit PN10, 16 and ANSI 150 flange arrangements. In sizes from 2" to 20" (wafer) and 12" (lugged,) these butterfly valves have a PTFE liner and PTFE or HALAR coated stainless disc and are available in ductile iron, carbon or stainless steel body materials (lugged version is ductile iron).

Within their 2017 catalogue, Leengate Valves also introduced Ghibson's aluminium bronze butterfly valve which features an NBR liner, a PN16 pressure rating and a maximum temperature of 100°C; perfect for marine applications and backed up with Ghibson's many approvals and certifications.

Leengate Valves are keen to remind its distributors that Ghibson products are available in a huge number of combinations, from a range of body materials, including ductile iron, stainless steel and aluminium to multiple seat material options, including NBR, carboxide or neoprene, there's always a combination to meet your requirement.

As Ghibson continue to innovate in Italy, Leengate Valves are continuing to provide a key insight into the needs of the UK market and helping to ensure Ghibson continues to expand here in the UK valve industry.

**Leengate Valves**

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# The Seetru Screw Jack



## A simple and effective hydraulic tester for safety valves – now available to customers!

### Overview:

The Seetru Screw Jack is a simple yet effective device which was initially designed to allow technicians from our Engineering Services division to quickly and accurately assess the functional performance of Safety Valves on-site.

Due to the sheer number of enquiries our engineers have received regarding this fantastic piece of kit, we have now made the Screw Jack available for purchase. The size range available is from ¼" to 2" inlet.

### Features & Benefits:

- Lightweight (dry weight 3.9kg)
- Durable (stainless steel construction)
- Ease of operation
- Bench mounted or sat in a vice
- Can be used with either water or oil
- Gauge can be supplied (optional extra)
- BSP or NPT
- 6 adaptors available (optional extra)
- Suitable for screwed and flanged valves
- Max working pressure: 460 bar.g /6671 psi

### Other Products & Services from Seetru include: -

- Safety Relief Valves
- Stock Safety Valves (Quick Delivery)
- LGS® Safety Valves (Liquid, Gas & Steam)
- Auxiliary Valves
- Liquid Level Contents Gauges
- Window Sight Glasses

### Flanged Safety Valves

Seetru also offer a comprehensive range of flanged safety valves through our sister company Leser UK, see [www.leser.com](http://www.leser.com)

### Seetru Engineering Services

Service offered through our Engineering Services division include: -

- Safety Valve Testing & Certification
- On-Site Services
- TruTest® In-Situ Valve Testing
- Safety Valve Reconditioning



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# New SmartAct® Small Electric Actuator Launch



**Fresh from receiving the Queens Award and National Family Business Championship in 2017, The Smart Actuator Company team has worked hard to bring the new Small (0-40 Nm) electric actuator to market**

////////////////////////////////////  
The long-awaited launch of the Small actuator has been eagerly anticipated by our Distributors and we have ensured that the timing of this full launch coincides with the release of the Android App to ensure an intelligent and easily operated actuator with advantages like no other within the current market.

This product will be fully released for open sale in Q3 this year!

The launch of the SmartAct® (40-100) Medium product in 2014 was quickly followed by the SmartAct® company winning €2.4 Million grant funding for a Horizon 2020 (EU) project to develop both Small and Large versions. That completed in late 2017 when the Large Subsea unit was introduced.

The Android App has been developed to coincide with the launch of the Small unit but will be compatible with all SmartAct® products. It provides an efficient communication platform for both our existing and new customers.

The App works on any Android device. It allows customers to access their purchased products, monitor the configuration and add or remove features right then and there. This ease of access allows customers to personalise, change and add anything they require and has proved a great success!

One Distributor has already reported using it to good effect when working with a customer over 500 miles from his home base! The App even has a torque detection function which auto detects the torque requirement of the valve for initial set-up and configuration. *Now that is Smart!!*

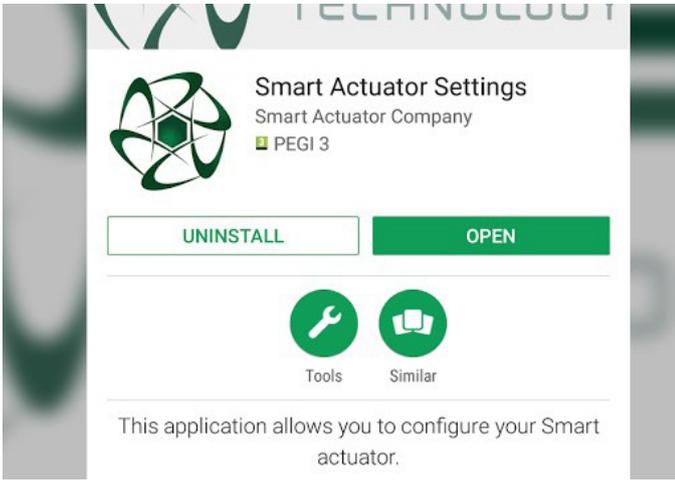
The Standard Features in the Small Actuator are:-

- Up to 40 Nm Torque Output (Auto Detect)
- Torque Limiting
- 2 Year Warranty
- ISO 5211 Mountings, F03, F04, F05
- 14 mm Drive Adapter
- Low Voltage Quarter Turn
- Rugged GRP Housing
- IP 67
- Anti Condensation Heater
- Manual Override
- Local Power Control
- Visual Position Indicator
- Volt Free End of Travel Relays
- EN 15714-2 Compliant
- Bluetooth Control
- Set-up, configuration and Optional Feature activation via Android App on any Android device.
- Auto detection and calibration of valve torque requirement for easy set-up in Android App.
- Uses 25% or less energy to turn the valve compared to competitor products.

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**Smart but Simple to Install & Configure**

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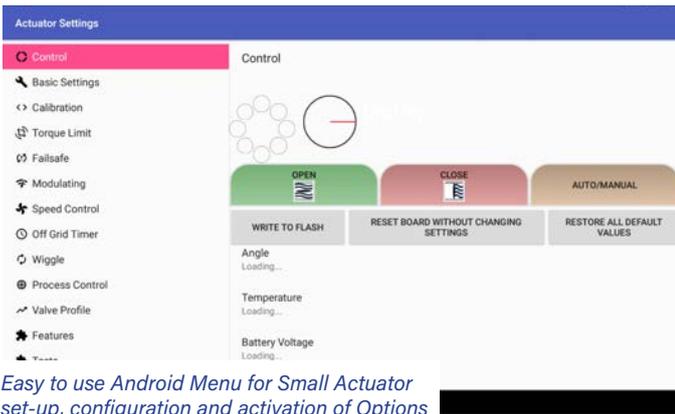


End User (Distributor List) Pricing for the Standard Small Actuator starts at £125 per unit.

The Optional Features in the Small Actuator are:-

- Failsafe
- Modulation
- Loss of Control Signal
- Speed Control
- Valve Profiling
- Colour Own Branding
- Wiggle – auto clear valve seal
- High Voltage
- Multi-Turn

For Optional Feature pricing contact SmartAct® on 01684 565709 or email sales@smartact.co.uk



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**Web:** www.smartact.co.uk

*Easy to use Android Menu for Small Actuator set-up, configuration and activation of Options*

# Great British Valve Group Hat Trick

The Great British Valve Group are pleased to announce that Hobbs Precision Engineering join both Cambrian Valves Limited & Hobbs Valve Limited in certification to ISO:9001.



Following almost two weeks of auditing at our Caerphilly facility in South Wales, Hobbs Valve successfully transitioned to the 2015 revision of the standard and Hobbs Precision were awarded ISO 9001: 2015 on their first assessment attempt.

These third party certifications are endorsement of our strategic tactics to improve customer satisfaction, ensure that our decision making is evidence based and that we realise improvements and efficiency. The structured Business Management System also provides an environment for continual improvement and the engagement of our staff.

The 2015 revision features heavily on leadership and risk based management, as such it is a robust structure that we can continue to develop our businesses around.

If we can assist you with your precision engineering or valve and actuation requirements please feel free to contact us.



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# 25 Years Working in the Valve Position Monitoring Industry

The realisation that 2018 represented the 25th anniversary of my starting full time employment in the Valve Position Monitoring Industry arrived with an element of shock a few weeks ago



This was partly due to the fact my ego refuses to accept that I might be 'getting on a bit' now (although my kids are more than keen to ensure my ego is regularly put back in its place) but also that I never imagined in 1993 as a recent engineering graduate that the Valve Position Monitoring Industry could possibly hold my interest for that long! My youthful self was very wrong!

As this 25th year begins, I have naturally been reflecting on what has and hasn't changed over the years and where the industry is likely to head in the future. Whilst on the face of it little has changed – the ubiquitous '2 switches in a box' is still by far the largest volume product in the industry – there have been some distinct trends that have risen, and occasional fallen away, over the years. Here are 5 that I have noticed:

1. The move to 'engineered products' for Valve Position Monitoring – In 1993 there was still a large number of automated valves that didn't have any feedback to confirm valve position and, where they did, this was often provided by exposed switches fitted directly to the actuator and terminated into a separate junction box. Where an enclosure was provided for the switches, this was often a crude, off-the-shelf box that some customisation was done to. When I started out, many of my sales visits involved selling the benefits of product specifically designed for valve position monitoring with features like visual indicators, easy set systems for the switches and integral termination points. These type of units are now very much the Industry standard.
2. The rise – and decline? – of fieldbus systems – The late 1990s saw considerable interest in the use of fieldbus systems for valve position monitoring, primarily due to the potential savings in terms of cabling. The attraction is obvious – if you can run one 2 or 4 core cable to multiple valve position monitors rather than an individual 4 or 6 core cable to each and every monitor that the potential cost savings are large. However a number of issues such as the complexity of getting systems to work reliably, a lack of a clear universal standard protocol and the potential for the loss of feedback on a large scale meant that significant momentum never gathered for implementation in the Industry. In addition, in terms of valve position monitors which are relatively simple feedback devices, many of the protocols available are over complex and expensive for the application.
3. The increased use of transmitters – Analogue transmitter position feedback from on/off valves was relatively rare in the 1990s as it was seen as an overkill for the application. However, over the last 10 to 15 years I have noticed a distinct increase in the number of transmitters supplied for on/off valves. The main reasons for this are twofold. 1) Using a 4-20mA transmitter in place of 2 limit switches on a valve means less I/O required on a site 2) the continuous nature of the feedback makes it much easier to identify when a valve is causing an issue or the feedback is lost.



Paul Turner, Engineering Manager, Imtex Controls Ltd

*"...in 1993 I never imagined that the Valve Position Monitoring Industry could possibly hold my interest for that long! My youthful self was very wrong!"*

4. One enclosure required to provide multiple feedback modes – Back when I started in the Industry, it was very rare that a Valve Position Monitor was required to have more than a single pair of switches fitted. Occasionally, a request for a unit with two DPDT switches (essentially two 'normal' SPDT switches packaged in one switch) would be received to allow feedback to two control systems but these were rare. As the years have past, I have seen an ever increasing demand for more feedback from individual monitor units. This includes multiple switches or a combination of multiple switches and transmitters. At Imtex, we regularly supply monitors with a 4-20mA transmitter and 4 switches which allow discreet feedback to, say, a Process Control System and an Emergency Shutdown System whilst also offering an input to a diagnostic system.
5. The increased requirement for condition monitoring – Building on trend 4, recent years has seen a distinct demand for valve position monitors to form part of a condition monitoring system for the valves on which they are installed. In a number of industries such as Oil and Gas testing regimes such as Partial Stroke Testing are becoming increasingly prevalent as well as a desire to identify issues with valves before they become critical. As a 'monitoring' device, the valve position monitor plays an important role in this more general condition monitoring requirement and I can only see this role growing.

At Imtex, this has meant that we are building much greater functionality into our monitors that allow them to become a diagnostic tool to the end user as they strive to make their plants 'smarter'. These units are a long way from being just a simple 'two switches in a box' position monitor!

25 years from now I will be 72 years old, and, given the current progression of retirement ages, will very likely still be working. Will I still be in the Valve Position Monitoring Industry? Who knows, but, if it continues to develop and challenge as it has over the last 25 years, I see no reason why not!

So these are my five trends. It is by no means exhaustive and there are many more that I have seen since I started in the Industry and could comment on.

Whilst the biggest volume in the Industry remains a two, wired switch solution – and this solution will continue to remain dominant for the foreseeable future – some of the 'niche' trends above will increase their market penetration.

In addition, new technology such as wireless feedback loom just over the horizon and suggest the possibility of a significant shift to the focus of the Industry in the future.



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# Bonomi UK Showcases Hydraulic Components Portfolio



**Bonomi UK release hydraulic components brochure, displaying a wide range of products available to their customers**



Bonomi (UK) Ltd has published a hydraulic components brochure, showcasing the comprehensive selection of products available to customers from its network of specialist European manufacturers. Couplings, high pressure ball valves, flow control valves and check valves are included.

Thanks to its impressive stock holding capacity – recently extended even further due to its expansion into new larger warehousing facilities – Bonomi can despatch the vast majority of orders on a same day basis.

Over the phone technical advice and support is available with Bonomi also able to offer on-site support if required.



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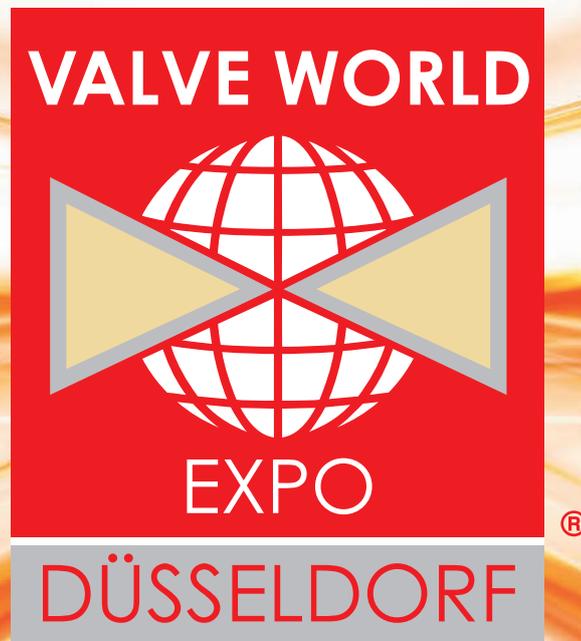


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# Oxford Flow Raises Over £6m to Fuel Global Growth & Sector Expansion



Neil Poxon, CEO, Oxford Flow

**Oxford Flow, the pressure control equipment specialist for water and gas distribution, oil and gas and industrial process applications, has raised £6.1m in a funding round to support the company's rapid growth, product optimisation and customer base expansion**

The funding – secured from five new investors and two existing partners – was led by London-based fund management firm, Parkwalk, which invested £2.5m.

The remaining £3.6m was raised by six other investment groups. This includes funding from the world of academia – with Oxford University and Oxford Sciences Innovation (OSI), who already held stakes in Oxford Flow, and the Institute of Mechanical Engineering (ImechE) all contributing. RT Capital Management, UK fund services group Thompson Taraz, and individual investor Simon Henry, former chief financial officer at Shell, make up the rest of the investment.

Neil Poxon, Oxford Flow CEO, says: *"To have achieved so much interest from such a varied array of investors – both new and existing – reflects the confidence stakeholders have in the innovative new products, progress made so far and our plans to expand into new sectors and regions."*

*"This funding will provide a runway for the next two to three years as we grow our business in North America, Central America and the Middle East, driving product development and market readiness for our valves, while we expand our offering."*

Oxford Flow manufactures and designs innovative pressure regulating valves and provides solutions which are more accurate, precise, reduce costs and increase reliability in many global industries.

Poxon adds: *"This funding allows us to expand into new sectors in three stages. Initially, we will push further into water and gas distribution – where we already have significant traction – then branch out more widely across upstream, midstream and downstream oil and gas. After that, we plan to expand into the wider industrial process sectors – which include a huge range of applications for our technology – such as chemicals, power generation, food & drink, marine and construction."*

Alastair Kilgour, Chief Investment Officer at Parkwalk says: *"We are delighted to add our backing to Oxford Flow as it extends its presence globally. There is almost limitless scope for Oxford Flow's technology in terms of the sectors it can reach, and we are excited to support them through their next stage of growth."*

## **BE™ Bonut Engineering Ltd** T/A **DEREVE™ Valves**

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Gunmetal body construction  
Fig 5, Fig 8 and 9 Fusible Plugs  
Fig 17H and 22/22H Fusible Plugs for Air

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# Saunders® IDV Saving Cost & Delivering Environmental Benefits



Saunders® Industrial Diaphragm Valves (IDV)

**Saunders® Industrial Diaphragm Valves (IDV) plastic-lined valves coated in a new corrosion-resistant powder are saving cost and delivering environmental benefits**



The Saunders® Industrial Diaphragm Valve range encompasses a complete line of manual and linear actuated diaphragm valves, both weir and straight through styles, each of which plays a vital role in various flow control applications.

Recently, Saunders® announced a product enhancement that offers cost savings to the operator and environmental benefits.

As of this year, all Saunders® plastic-lined valves will now be coated in a new corrosion-resistant powder. This paint upgrade offers excellent resistance to corrosion, chemicals and weather, as well as most acids, alkalis and oils.

*"This paint upgrade offers excellent resistance to corrosions, chemicals and weather..."*

The powder coating is electrostatically sprayed onto the degreased, clean metal component, which is then held at approximately 200°C for ten minutes to produce a high bake.

The result will be a more durable, high quality finish that resists chipping and scratching. This clean process results in negligible waste, low-level emission and contains no solvents, making it a smart choice for the environment, as well.



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# Gee Graphite Provide Gasket & Sealing Products



**Founded in 1989 and based in Dewsbury, England, Gee Graphite provide a range of industrial gasket & sealing products through adaptable, high quality, innovative solutions via the constant development of unique methods, using the latest technology**

Gee Graphite has an established history of solving application-based problems, including the effects of cryogenic and elevated temperatures, along with vacuum and high air pressure environments.

Providing butterfly, spun metal, double and triple offset valve seals along with high quality sealing components, Gee Graphite focus on complete quality control to ensure high quality, reliable products. Having developed methods of bonding graphite foils to a wide range of metal cores with our in-house laminating system, it allows the laminated material to be suitable for high temperatures, but also prevents delamination during die cutting and water jet cutting processes.

With products made in-house, protocols and product specifications are constantly monitored, reviewed and adjusted to reflect any changes in industry, allowing us to guarantee high quality, bespoke products. As our products are shipped internationally to a variety of markets, it is imperative our quality remains consistent through rigorous control testing.

The latest software available on-site includes, but is not limited to, IGEMS CAD/CAM software. Having one of the most advanced drawing and nesting packages allows us to take concepts from sample drawings in CAD, DXF and DWF formats to working designs for manufacture. In addition, the nesting capabilities of the software allows wastage to be kept at a minimum. Our unique techniques mean we are also able to recycle our graphite allowing us to reduce our impact on the environment.

The vast variety of valve seals Gee Graphite produce, represent the unrivalled experience gained by our staff over the past 35 years.

With flexible graphite, PTFE, RPTFE, Mica type and fibre-based gasket materials, all options are supplied as interlayers and body mounted styles supplied from 2" (50mm) to 118" (2950mm), this allows the variety required to meet all customer needs.

In addition, having the capability to produce the seal through waterjet cutting alongside the expertise we possess with regard to flexible graphite, we are able to produce laminated valve seals to suit specific applications. This combination allows for our butterfly valves to be fully machined to customer drawings with reliable quality.

The spun metal seals are also available in a variety of sizes: 2" (50mm) up to 60" (1500mm), this method gives a flat and scratch surface regardless of diameter.

To widen the product range further, Gee Graphite also have the capability to machine double and triple offset seals with both inner and outer sealing surfaces in a variety of materials. With some of the options including: laminated, solid, body or disc mounted, graphite layer and combination layers, the gaskets can be made bespoke to suit customer needs.



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**NEW MEMBER**

# Electro-Hydraulic Quifer KEH Failsafe Series launches in the UK



Chris Hickey, Director, Actuated Solutions Ltd

The UK's leading independent provider of valve automation products, Actuated Solutions, has announced the exclusive availability of the KEH series quarter turn actuators from Quifer

The KEH electro-hydraulic features a compact modular design, incorporating a spring return actuator and closed loop hydraulic pump. The springs provide a true failsafe action making the KEH ideal for critical and remote installations where instrument air is unavailable. When energised, hydraulic pressure is generated to open the actuator, upon loss of power the KEH automatically moves to the failsafe position. The KEH springs do not require maintenance and are considered the industry standard for field proven reliable shutdown, offering better reliability than other solutions such as batteries which have a restricted temperature range, and require regular monitoring and periodic replacement.

ASL's Director, Chris Hickey, said he was pleased to be adding the KEH series to the firm's portfolio: "The KEH is a real step forward in quarter turn actuation and it's already proving to be very popular with customers demanding a robust solution for failsafe applications when air is not available. It's a hugely versatile product and one that we know performs exceptionally well even in the most challenging of environments."

The KEH series is available in nine sizes, delivering up to 1800NM of torque using a rack and pinion, and up to 50,000NM when using a Scotch Yoke. It offers multiple options - including push button local controls, limit switches, and manual override - and is available in a wide range of voltages from 24VDC to 400VAC Three phase.

SIL rated and available for both ATEX and safe areas, the new electro-hydraulic actuator affords users safety and functionality which includes full European certification and manufacture.

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# All Complete for the Clients

## Combination of pressure measuring instruments with instrumentation valves and accessories as a complete solution



Critical situations in the process are often looked after with pressure gauges and process transmitters in combination with valves and protective devices. Plant operators can install such arrangements themselves. Economic and safety-related reasons, however, suggest that such measuring points should be designed by a qualified manufacturer as a complete solution – a “hook-up.”

Pressure continues to be one of the most important measured variables in industry. For the reasons such as safety, reliability, longer service life, optimized maintenance, etc., rarely are the pressure measuring instruments mounted directly on the process pipeline. Very often, they are required in combination with instrumentation valves, protective devices and/or other mounting accessories.

For example, in critical situations such as overload or/and over temperature in the process, the pressure gauges can quickly reach their physical limits and then lose their reliability. To protect the pressure gauges against these process situations and have reliable measuring results, protective devices such as over pressure protector and syphons are needed to be assembled on the pressure gauges before they are installed to the process pipeline. For the purpose of maintenance, instrumentation valves enables the pressure gauges to be replaced or recalibrated without effect the process.

The design and construction of pressure instrumentation with valves, protective devices and accessories must be based on the specific application and process conditions of the measuring point to ensure the desired performance and maximize benefit for the application.

Plant operators can assembly the needed arrangements by themselves. However this would mean:

1. they have to purchase the instruments and required valves, protective devices or/and other parts from different suppliers which generates additional effort on purchasing with regard to supplier maintenance, the risk of compatibility problems and different quality standards.
2. considerable logistical effort, especially when different parts, certification etc. are needed.
3. they need their own resources such as work labour, working bench and all required tools.
4. additional quality controls on the whole assembly to ensure the functionality and reliability such as the tightness of the whole assembly
5. required know-how such as the standards on how to perform the assembly especially when different valves and protective devices are needed for one assembly, how to perform the testing etc.

All these efforts, inconvenience and risks can be avoided with a so-called “hook-up.” Manufacturers such as WIKA can supply an application-specific complete solution of pressure measuring instrument, instrumentation valves, accessories and process connection. Completely assembled, tested and ready for quick and easy installation.



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# DMI Young & Cunningham Ltd acquire International Procurement Ltd (IPL)

The IPL business found itself in some financial difficulties during the early part of 2018 and had called in business advisors and subsequent liquidators FRP



The business was put up for sale and after visits, deliberations and discussions with FRP, the Directors of DMI Group voted that IPL would make a worthwhile bolt-on investment for its valve company DMI Young and Cunningham Ltd.

This new DMI acquisition, IPL which is quite different to DMI Young and Cunningham (Y&C) will operate as a trading name of Y&C. Retaining its IPL identity for marketing, supplies and services but adopting Y&C's systems for purchasing and invoicing. IPL brings along with it an added advantage to the DMI Group of increasing Y&C's knowledge and everyday offerings to General Industry, Power Companies and Oil Refineries with the extra bonus of Steam Technology and even more diverse Actuation solutions, provided by world renowned suppliers.

IPL who are based in Stockton-on-Tees, will have its warehouse stock relocated to Y&C's North Shields site. This will not involve any loss of jobs and the present staff will still operate out of the Tees Area, where they have been based since 2003. IPL will continue to provide critical and severe service, isolation and control technology. IPL will continue extending its product range to serve its growing global process markets, offering the same efficient service they are accustomed too. Val Fitzgibbon will still be running the IPL office and will be the main, day to day contact on: +44 (0) 1642 625495  
val.fitzgibbon@yandc.co.uk

IPL's 15-year long trading history proves it has the technical ability to offer Total Isolation and Control Solutions, ensuring each customer gets the full benefits of consistent process quality, safe operation and efficient and high productivity.

DMI Young & Cunningham can trace its history even further back to 1924. Our other Y&C brand, Dobbie McInnes has an even longer history providing gauging and control systems. Throughout this time the business philosophy has always been to offer to the market the highest quality product at a competitive price, well designed and expertly manufactured, guaranteeing longevity of service. This philosophy of value will continue in the future.



DMI Young and Cunningham Ltd manufacture bronze valves and other bronze castings to order. Utilising the vast experience of the workforce here in North Shields. As well as manufacturing Y&C also stock our own bronze valves and partner valves, ready for immediate despatch.

One of our specialities is Repair and Refurbishment of our previously supplied valves and actuators, many still in service after 20 to 30 years. Our engineers, technicians and sales staff always strive to provide the highest standards of customer service, quality of workmanship and seek to exceed our client's expectations. We are ISO accredited.



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## BVAA's Technical Hot Spot

**BS EN 12266-1:2012 "Industrial valves - Testing of metallic valves - Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements"**

**BS EN 12516-3:2002 "Valves - Shell design strength - Part 3: Experimental method"**

**BS EN 15081:2007 "Industrial valves - Mounting kits for part-turn valve actuator attachment"**

### What is it?:

These BS EN standards have been subject to the CEN 5 year Systematic review procedure. They have been confirmed for use without need for amendment for a further five years

## Using Position Transmitters on Automated Valves for Enhanced Plant Operational Efficiency & Safety

Over the past 30 years, globalisation, pressures on costs and the desire for greater efficiencies have led to a significant reduction in manpower and an explosion in the automation of processes



Increased automation has allowed plants to operate more efficiently and, importantly, more safely.

The increased usage of automation within the Process Industries has had a significant effect on the nature of valves supplied into the sector. At plant level, there has been a move away from manually operated valves to automated valves where valve actuators move a valve in response to a condition change within the Plant Control System (PCS).

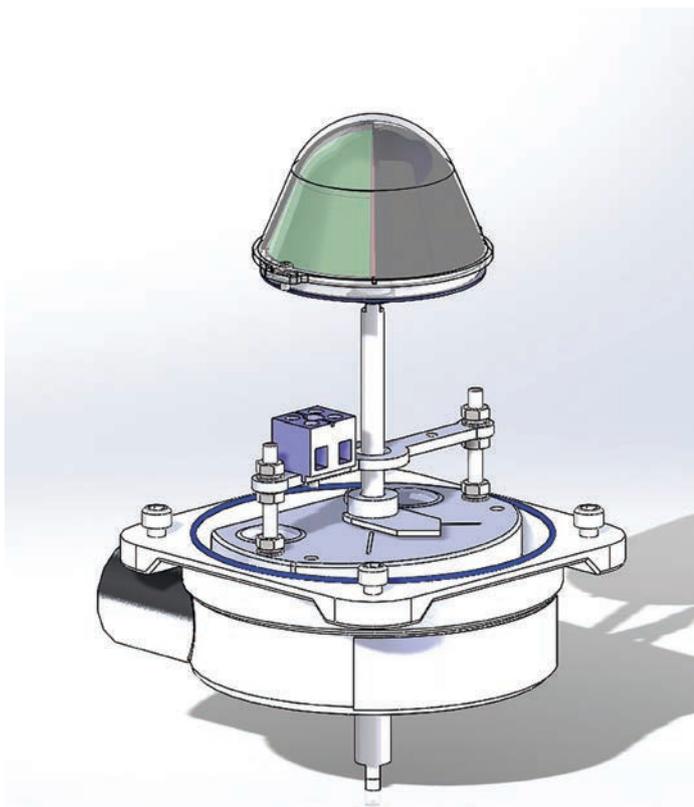
Whilst the functions of the valve and valve actuator are fundamentally the same regardless of whether the automated valve is being used for control (modulating) or for On/Off operation, the equipment that interfaces between the control room and the valve differ depending on the valve function.

Control valves will typically employ a Positioner to initiate a valve movement and potentially a Position Transmitter to confirm valve position matches required position.

On the other hand, an On/Off Valve will connect using a Solenoid Valve to allow a change in a digital output status in the PCS to operate the valve and a Limit Switch Box to confirm the valve is in the required position.

As the requirement for automation has increased, significant resources have been allocated to Control Valves, particularly with the advent of smart positioners. In contrast, the Position Transmitter on a Control Valve has been largely overlooked and hence many control valves suffer performance issues solely because of the limitations of the position feedback mechanism. Similarly, because On/Off valves are often viewed as less critical than control valves resulting in reduced technological development.

On/off valves that fail to perform can have a significant effect on both plant productivity and plant safety particularly when employed in Emergency Shut-Down (ESD) applications. This potential safety impact has accounted for some developments in On/Off valve technology, particularly in the area of diagnostic methodologies (for example Partial Stroke Testing). Generally, on/off valves have seen relatively few developments.





### The Common Problem

The vast majority of Position Transmitter products currently available utilise a potentiometer. Whilst a relatively cheap and fast acting device, potentiometers have a number of limitations when used on valve applications. Potentiometers are susceptible to wear and liable to contamination from foreign particles such as dust, sand or water. In addition, they are easily affected by vibration, are tricky to set correctly and will often need their resistive signal converting to either a Voltage or Current feedback input. The signal conversion is typically performed by a Control Card or an Electronics Module. Whilst providing the interface (typically 4-20mA) and the instrument calibration facility required, these conversion products will have their own limitations.

These issues, along with those encountered with other transmitter technologies (such as Hall Effect Sensors and Optical Encoders) are often not appreciated by the Plant Operator until the product is already in service and performance is not as expected.

### The Way Forward

A few specialist companies providing Valve Position Monitoring solutions, such as Imtex Controls Limited in the UK, have recognised both the potential benefits to Plant Operators for using IVPTs on valves but also the severe limitations of the products currently available. For this reason, new 'smart' solutions, designed specifically for valve applications, are now being offered that solve the traditional issues of IVPTs and enable plant operators to maximise their returns from these devices. So what is different about these smart IVPTs?

### Feedback Technology

The new generation of smart IVPTs employ more robust feedback mechanisms. For example, the Imtex NC transmitter range utilises inductive sensor technology in non-contact, solid state feedback devices that are both highly accurate and largely impervious to challenges presented by the environment in which they operate.

### Easy Set Up

Traditional IVPTs are often tricky to calibrate, requiring the use of tools or a laptop to complete the setting of zero and span. Smart IVPTs simplify the calibration by allowing the user to calibrate through push buttons built into the transmitter unit. In addition, where the smart IVPT is equipped with the ability to interface with a digital protocol such as HART, the device might also be calibrated remotely.

### Fast Update Rates

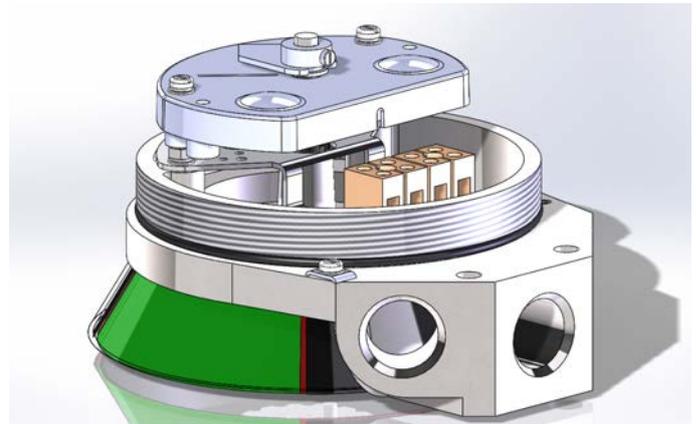
Traditional IVPTs, particularly those using electronics can have very slow update rates which compromises their effectiveness. Smart IVPTs have fast update rates, typically in the range 50 to 100 ms.

### Valve Specific Characterisation

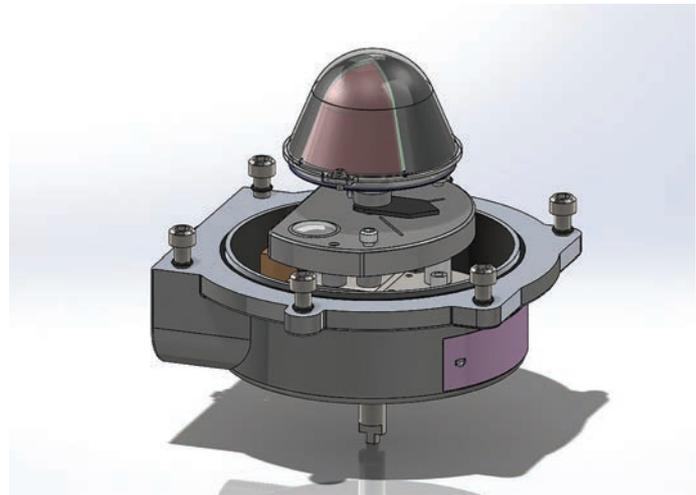
When mounting a rotary transmitter on a linear valve, a non-linear output is often generated due to a linear to rotary conversion kit being used. Smart IVPTs have recognised this issue and provide the means to adjust the output from the device. For example, the Imtex NC transmitter is available with the ability to set up to 20 intermediate feedback points to linearise the output.

### Diagnostics

Smart IVPTs put intelligence in the field device. The ST-4312 NC Transmitter from Imtex Controls analyses the stroking speed of the valve every time it moves and compares this information with a stored 'as new' profile of the valve. The device is then capable of sending a warning signal via the HART communication interface, flagging when the valve has started to slow down by a user defined amount.



*Independent Valve Transmitter based on Solid State Position Measurement and Equipped with User Friendly Pushbuttons for Calibration*



### Conclusion

With the ever increasing needs to improve plant efficiency and safety, Independent Valve Position Transmitters provide a simple and cost effective method to deliver these demands. However, it is critical that the right IVPT technology is selected to eliminate the issues traditionally found with these types of products. By employing the latest generation of 'smart' IVPTs, plant operators are able to dramatically improve their efficiency and safety by gathering information on valves that permits targeted preventative maintenance.



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