

# **VALVE** *user*<sup>®</sup> MAGAZINE

ISSUE NINE



**Econosto**  
– Celebrating 25 Years

**British Valve & Actuator Association**



*Metso's  
Q-trim*



*KKI for  
Severe  
Service*



*Pakscan  
goes  
wireless*



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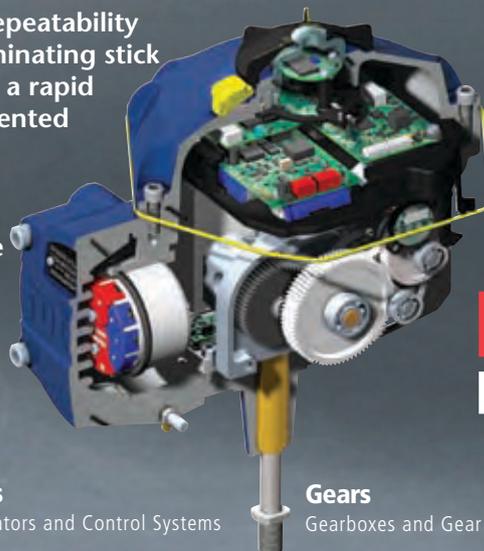
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MAGAZINE

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# Engineering – The Way Back

*“For the future, Britain needs an economy with less financial engineering and more real engineering.”*

No, not an incisive comment from the humble Editor of this industry journal, but the words of the UK’s Secretary of State for Business, Lord Mandelson, perhaps better known in wider Europe as a former European Commissioner for Trade.

My initial reaction on hearing this ‘Thank goodness, realisation at the top at last.’ Then I realised how cross I was, because this strategy is one that I and many other engineering Trade Association CEOs have been exalting – and repeating - for years!

Engineering and manufacturing in general has been interfered with, pillaged, degraded and latterly ignored by successive Governments. Now the sexy ‘cash cows’ (?) of banking and finance have failed us all, and the UK is set to be a net importer of oil for the first time in decades. We now find ourselves in a position where we need – desperately - industries that take relatively inexpensive raw materials, manipulate them with skills and processes to turn them into valuable products that people want and need. Oh, and handily generate a sustainable profit. It’s not rocket science, although you would be forgiven for believing the concept was recently invented in Whitehall.

The UK has a highly specialised, typically non-commodity valve industry with an enviable reputation for quality and engineering know-how. We continue to buck the trend and have a buoyant market for our products. Despite being a profit generator for UK plc, the valve industry – unlike banking and the motor industry - has received very little in the way of Government support. Imagine what we could all do with the backing of our own Government!

I hope you find this issue of Valve User interesting and informative. Remember, Valve User is your magazine and we always welcome your input.



by BVAA Director,  
Rob Bartlett

## Spring Training Week



BVAA’s spring training sessions at our Banbury, UK Headquarters will commence on the 23rd April 2009 with PED/ATEX, and courses will follow on introductions to valves, actuators, control valves, safety valves and Safety Integrity Levels the following week. You can find full details on page 39 or by visiting the BVAA website, <http://www.bvaa.org.uk/training>

### Did You Know?

As well a printed copy, VALVE user magazine is also available as an email attachment, and as a download from BVAA’s website, [www.bvaa.org.uk](http://www.bvaa.org.uk)

# BVAA 'Regional Meetings'



*Regional Strategy meeting at Coombe Abbey*

BVAA has held another successful regional 'strategy' meeting, this time for our members in the Midlands area at Coombe Abbey, near Coventry. Once again we had a wide diversity of members, many of whom are not 'regulars' on the BVAA meetings scene. A wide variety of issues were discussed, but it was interesting to note that the underlying theme this time was the concept of BVAA members coming together to help

one another through the current trading challenges - a strategy BVAA will be delighted to help develop. A number of the group's ideas have already been actioned, with further developments in hand.

Unfortunately the recent 'weather event' (aka 'snow') led to the cancellation of the 'Southern' meeting, which we will be re-scheduling shortly.

## Still More New Members!

The membership of the BVAA continues to grow at an impressive rate...  
*this month's new recruits include:-*



*Colin Wilson and Dave Speight of International Procurement Ltd receiving their BVAA Member plaque from BVAA Director, Rob Bartlett*



*Tony Thornton of Tyne Valves*



*Nigel Fitton of Precision Polymer Engineering Ltd.*



*Beldam Crossley MD Mark Seekings receives his plaque*



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## BVAA 'Mad Hatters'

*How far can you go wearing a BVAA Hat?*

In this issue, Abi Collins is photographed with the hat way out east, with probably one of the world's most picturesque backdrops. This group of islands are certainly stunning and in constant demand as locations for feature films. *Clue: This isn't 'James Bond' island, but that is close by.* There's £50 to the charity of your choice if you are the first to identify this specific island location. Answers - or requests for free caps - to [rob@bvaa.org.uk](mailto:rob@bvaa.org.uk)



*Bad weather,  
nice hat!*



*Our congratulations to Dave Bowen of Truflo Marine, who correctly identified that Rob Bartlett was pictured last time at the Chateau de la Guignardiere in France. £50 has been donated to the Bournville Young Singers.*

## Score Peterhead

*Desktop Exhibition*

BVAA held a very successful Desktop Exhibition on 18th November at Score Europe's tremendous 'STAMP' facility in Peterhead, Scotland. Thirty-two BVAA-member companies exhibited, and were rewarded with over 200 visitors from the Score group of companies. A selection of members was also able to make presentations to Score personnel on their products and companies. The exhibition was preceded by a tremendous evening dinner for exhibitors, kindly sponsored by Score Europe Ltd. and hosted by STAMP MD Dave Anderson, Score MD Ian Davidson and colleagues.

*If you are a significant buyer or user of valves, actuators and related products, why not ask BVAA to arrange a zero-cost, no hassle desktop event at your premises? There's no better way to meet the industry and its product and services.*



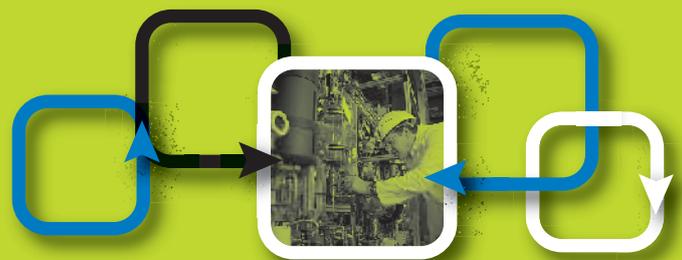
*BVAA Desktop Exhibition at Score*

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## APPOINTMENTS

### BEL Valves expand into Australian Oil & Gas market



Gordon Affleck

Bespoke valve manufacturer BEL Valves has signalled its intent to expand into the Australian Oil and Gas sector with the appointment of a new Area Sales Manager. Gordon Affleck took up the post of Area Sales Manager – Australia, in December 2008, with a remit to grow the number of high integrity valve installations in this region.

BEL Valves anticipates a sustained period of activity in Australia with regard to Subsea developments, an area in which BEL Valves is now a

market leader, and this appointment is designed to provide a level of sales coverage in keeping with other established and emerging global markets. The organisation has already enjoyed success winning business from Australian based Oil and Gas Exploration & Production companies and expects this success to continue.

Part of British Engines, BEL Valves manufactures high integrity valves for the Subsea and Surface Oil and Gas industry worldwide, with a specific focus on High Pressure and High Temperature applications. Gordon, formerly the company's Area Sales Manager for Scotland and Ireland, has spent the last 11 years with BEL Valves in Aberdeen, expanding the company's UK North Sea business, and has more than 30 years in the Valve industry. Based in Perth, he will travel to other Australian states as determined by the market and also support the established sales activities of BEL Valves in the Asia Pacific region.

### BEL Valves appoints a new Area Sales Manager for Scotland (Aberdeen)



Peter Robertshaw

BEL Valves is pleased to announce the appointment of Peter Robertshaw to the position of Area Sales Manager for Scotland, taking over this important role from Gordon Affleck. Peter's remit is to further develop BEL Valves' already significant presence in the UK North Sea for Surface and Subsea valves. Peter has more than 20 years' experience in customer-facing roles in the valve industry, as well as extensive knowledge of the Oil & Gas markets in the UK North Sea.

Prior to joining BEL Valves, Peter was Technical Sales Co-ordinator for PetrolValves (GB) Ltd. Peter has also worked for L & N (Scotland) Ltd, Pibiviesse (UK) Ltd (Transmark) and Pegler & Loudon.

## Repair Code of Practice

The aftermarket for valves and actuators would appear to be on everyone's lips at the moment. Certainly it has featured in this magazine several times in the 'Your VU' column and was a 'hot topic' at the recent strategy meetings hosted by BVAA. True to form BVAA are hot on the case and have already held a number of meetings to discuss repair and related issues. Work has already started on a revision of the existing BVAA guidance document, with a view to developing a new Code of Practice.

We are particularly keen at this stage to get the views of users of valves and actuators and related repair services. If you would like to express these views, or get directly involved with the group, where you would be most welcome, please contact [rob@bvaa.org.uk](mailto:rob@bvaa.org.uk). Our next meeting is March 25th 2009.



## BVAA's Marketing Committee at BEL Valves

The BVAA Marketing Committee continues with the development of a series of successful marketing initiatives for the BVAA and its members. The most recent meeting was hosted by BEL Valves in Newcastle, on January 15th 2009, and was followed by a facility tour of this most impressive UK valve manufacturer. The sizes, pressures and temperatures handled by BEL Valves are truly amazing – no wonder this is always a very popular venue.

*Marketing Committee members with a 40 inch, Class 1500 through conduit slab gate valve that weighs in at a mighty 68 tons. It's one of a pair manufactured by BEL Valves as part of a competitive order for the Troll Project in Norway.*



**Surface engineering technology company, Hardide Coatings Limited, has appointed Nick King as business development manager for UK and Europe.**

Nick King brings 30 years experience in the surface treatment market and joins from Praxair Surface Technologies Ltd where he most recently held the position of UK sales manager. He previously spent 25 years with Praxair progressing through a number of technical, production and sales roles.

He will be responsible for developing the UK and European sales of Hardide's patented

tungsten carbide-based coating across high-wear industries including oil and gas, aerospace, fluid handling and chemicals. He will also manage the commercial aspect of the company's strategy to develop further applications in both new and current markets.

Graham Hine, chief executive officer of Hardide plc said: *"Nick is a strong addition to the management team at Hardide. His extensive knowledge and contacts within the UK and European surface treatment market together with his proven business development skills will add important value to our business. I am delighted that we were able to secure such an experienced and talented individual for this senior position."*

Hardide Coatings provides a unique low temperature tungsten carbide-based precision coating which provides excellent wear resistance against abrasion, erosion and chemical resistance on components made from ferrous and nickel-based

alloys. It can coat internal surfaces and complex shapes to dramatically extend the life of parts and seals. It offers significant technical and environmental advantages over technologies such as hard chrome and HVOF. Independent ASTM G65 testing has shown that Hardide wears out 40 times slower than abrasion resistant AR-500, 12 times slower than hard chrome and four times slower than thermal spray tungsten carbide.

The coating is in use by customers around the world in high-wear industries including oil and gas downhole and drilling, aerospace, valve, power, chemical and food manufacturing.

Hardide Coatings Limited is a Hardide plc company. The Group has manufacturing facilities in Bicester, Oxfordshire, UK and Houston, Texas, USA.

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# Choke valves rise to the challenge

When pressure and flow control on oil and gas installations gets tough, the industry's leading names turn to Koso Kent Introl (KKI) for its choke valve expertise.

After more than 30 years of innovation and development, KKI leads the way in the design, manufacture and delivery of high-performance choke valves for the most arduous duties.

## Severe service applications

Choke valves are the first primary valve used to control flow and pressure when oil and gas exits the well. In this position the valve is exposed to high velocities and direct impacts from material suspended in the oil, from fine sand and grit to sizeable chunks of rock and other debris. It is one of the most arduous applications for any valve. KKI has established

a reputation as one of the world's foremost specialists in designing and manufacturing robust, efficient and reliable valves for this most demanding duty.

As well as surface choke valves, KKI manufactures an impressive range of technically advanced control valves, rotary valves and engineered severe service valves for the oil and gas, petrochemical and power industries worldwide. From its extensive manufacturing base in the UK, the company offers an unrivalled blend of proven expertise, innovative design technology and skilled engineering, which have enabled it to set the standard in severe service valve markets for more than 40 years.

## Natural progression

The company began manufacturing choke valves in 1975 as a natural progression of its established control valve expertise. Customers were demanding valves for severe service applications further back in the pipeline. These applications called for robust choke valves – and KKI responded.

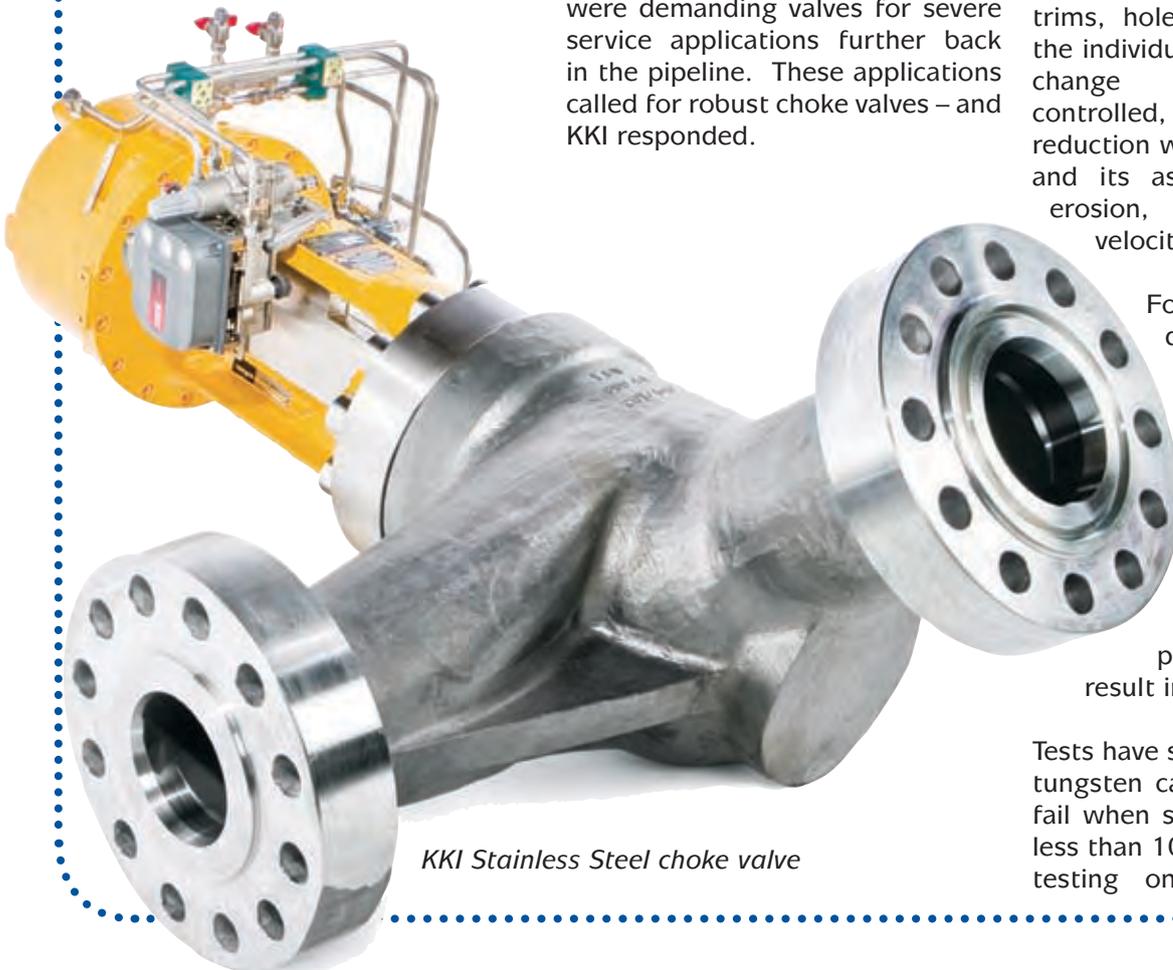
KKI's Choke Valve Business Manager, David Johnson, has been in the valve industry for 26 years and today is one of its principal experts in choke valve technology. He says: "Since the introduction of our first choke valves more than 30 years ago we have been continuously developing and enhancing our designs to engineer individual solutions for varying client and plant demands. We have applied our knowledge of low-noise and anti-cavitation technology to choke valve trims, enabling us to design valves that are able to withstand very high pressure, high velocity and contaminated environments."

## Trim technology

Over the years, KKI has developed a range of trim designs to cope with varying in-service conditions. These trims include single stage and multi-stage trims, as well as protected seat trims for particularly sandy applications. On multi-stage trims, holes are aligned so that the individual jets must repeatedly change direction, providing controlled, staged pressure reduction while avoiding cavitation and its associated problems of erosion, vibration, noise and velocity.

For highly contaminated duties, where suspended debris is likely to damage the tungsten carbide trim, KKI has developed a protective 'brick stopper' trim. This sits around the tungsten carbide component and is designed to prevent impact damage that could result in catastrophic failure.

Tests have shown that unprotected tungsten carbide components can fail when subjected to impacts of less than 10 joules. Recent impact testing on KKI brick stoppers



KKI Stainless Steel choke valve

has shown that these robust components can withstand impacts of up to 1300 joules without damaging the tungsten carbide trim within. KKI fits brick stoppers as standard to the majority of its surface choke valves.

### Rigorous testing

David Johnson says: "Impact tests are just one of a whole suite of tests that we carry out on our valves to ensure they meet customers' exact specifications. We have our own sophisticated testing facilities within our manufacturing plant, enabling us to despatch assured-quality components direct to our customers around the world."

KKI conducts a range of tests, including hydraulic, flow, cryogenic, cycle and API 6A PR2 tests,

depending on the demands of each application. The company has recently manufactured a number of 14" and 12" ANSI 2500 rated choke valves for use on customer FPSOs.

### Customer champions

David continues: "At KKI we actively encourage customer involvement and we take time to get to know each customer's applications and understand their individual needs. We then, when required, design our valves from first principles to fulfil each specific requirement."

KKI's in-house design capability, with 3D modelling and CAD, gives the company complete flexibility to manufacture bespoke valves. Consequently, it has produced some unique shapes and specifications of

valve to satisfy specific applications and the peculiarities of individual oil and gas installations from Australia to Norway.

"The majority of machining and manufacturing work is carried out by our own skilled engineers," adds David, "giving customers the reassurance that their essential components are being produced in dedicated facilities. The result is complete peace of mind for our customers and tailor-made, high-quality, high-performance valves that are second to none."

### Koso Kent Introl Ltd

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info@kentintrol.com



## BEL VALVES

BEL Valves is a leading supplier of Gate, Ball, Globe and Check valves in sizes up to 42" and pressures up to 15,000 psi for Subsea, Topside and Onshore oil and gas applications. The products are supplemented by a range of actuators and controls.

A recent addition to this product portfolio is the E-Ball Valve, a double block and bleed all metal sealing eccentric ball valve.

BEL has a vast experience in design of products for Deepwater, High Pressure and HIPPS applications, working with all leading Contractors and Oil & Gas Companies. BEL currently have subsea valves hyperbarically tested to 3000 meters and in service at depths up to 2200 meters.

### BEL Valves

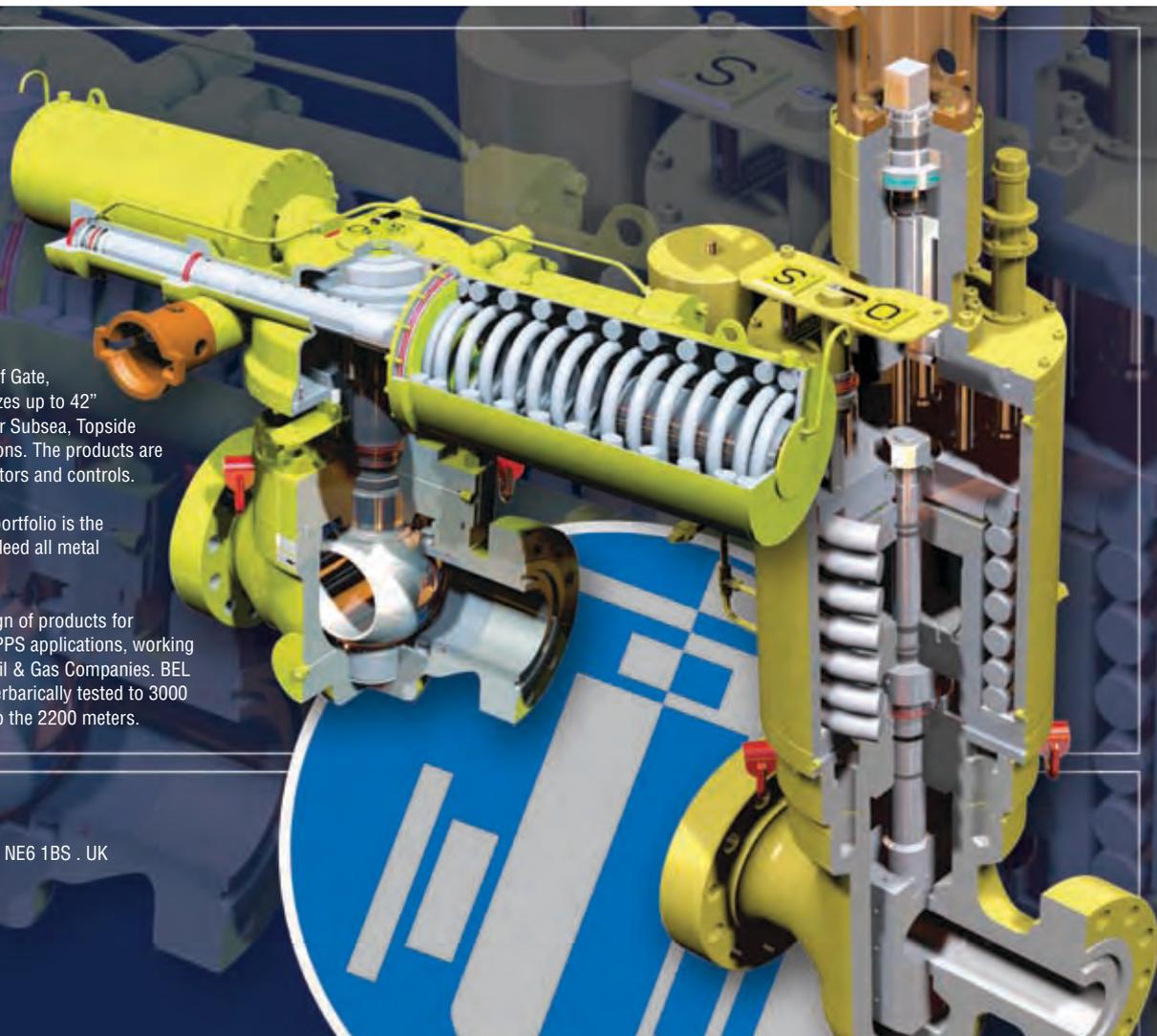
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# Bray Controls – Butterfly Valves and a whole lot more!

**Bray Controls is a world renowned manufacturer of rugged and reliable butterfly valves, and the company's red valve logo is one of the most instantly recognisable in the industry.**

This rapid rise to the top is all the more remarkable, given that the company was only formed a little over 20 years ago. The company continues to go from strength to strength, with twelve of its own divisional operations and a further thirty distribution outlets around the globe. And the expansion continues...

The Inchinnan, Scotland based UK headquarters, which also heads up the European operations, has recently been extended again, with the addition of new offices and warehousing, taking the site over 25,000 square feet, representing a £1m investment in the company's future.

## Extensive Range

Bray's range of butterfly valves includes a wide variety of sizes and materials, as you might expect, but the Bray range is augmented by complimentary products such as valve status monitors, electric and pneumatic actuators, gearboxes, explosion proof and fire safe products, with servo, AS-i and Devicenet control options, all with the necessary PED, API and ISO approvals. All this makes the company a true process controls business. But there's a whole lot more to Bray than simply butterfly valves...

## Flow-Tek®

Flow-Tek is a wholly-owned Bray International subsidiary and manufactures a wide range of high quality, high performance ball valves in three, two and one piece bodies, for a wide variety of applications and

with a wide range of end connections. Flow-Tek ball valves are available in a wide range of sizes, up to ASME class 1500 pressure ratings, and with an extensive range of accessories and speciality products.

## Check Rite®

Check Rite is another Bray International subsidiary, and a manufacturer of high quality, state of the art wafer combination swing check valves. Flow-activated, the valves are shape-optimized to achieve a fully open position at low flow rates and their performance remains unsurpassed. Available in a size range of 25mm to 1500mm, ASME classes 125 to 2500, Check Rite check valves have numerous approvals, deliver zero leakage and low pressure drop, and are available with a wide range of available accessories.

## TriLok® – the Ultimate Critical Service Triple Offset Valve

Bray recently launched its TriLok series of triple offset butterfly valves, the latest evolution in high performance quarter turn valve technology. With the aid of 3D computer design, FEA and solid modelling, Bray has fully optimised the complex geometry of triple offset sealing, to provide a true 21st century valve solution.

This innovative new product includes many design improvements over competitor products, including:-

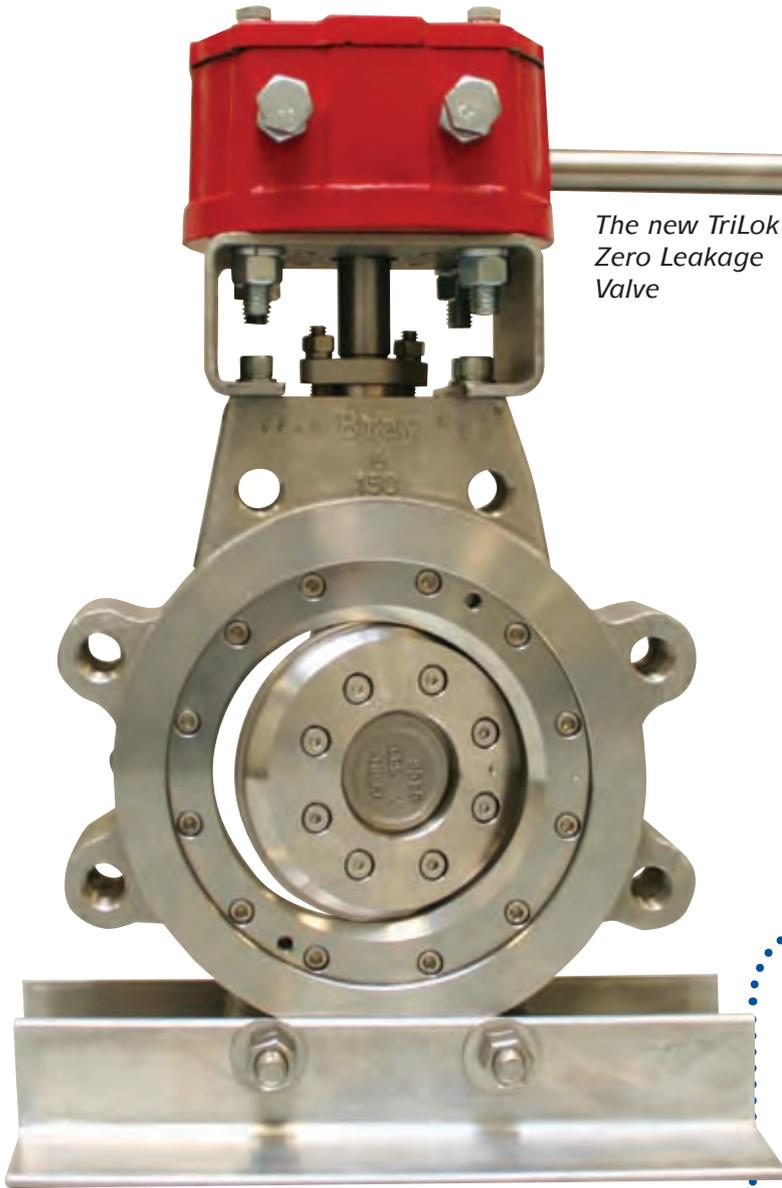
- Unique hub and bearing system to provide maximum stem support while preventing media ingress
- Unique splined disc/stem connection to facilitate self-alignment of the disc seal with the seat, eliminating external pins
- Seat/seal system featuring field replaceable body seats and disc seals

## Zero Leakage

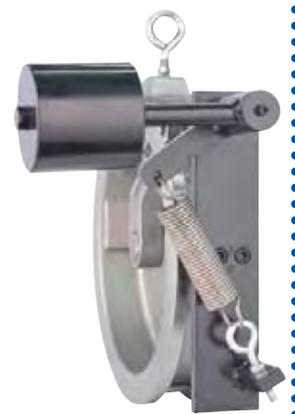
TriLok's frictionless, non-interference resilient metal-to-metal seated valves deliver zero leakage with the least amount of torque. It is also inherently fire safe – indeed the TriLok valve has recently been successfully tested in the UK for compliance with the very latest European and USA Fire Test standard ISO 10497 and API 607, 5th Edition.

*Part of the new  
£1m extension*





The new TriLok Zero Leakage Valve



Check Rite SA-1



Close up of TriLok's innovative new geometry

The stem bearings are offered in 316SS nitrided as standard. Graphite bearing seals are a standard TriLok feature too, as are disc seals in laminated 321 SS/graphite ring. Bray also offers a solid metal disc for high temperature and severe applications.

TriLok valves are available in a wide range of body types and materials, including carbon steel, CF8M stainless, Monel, Hastelloy.

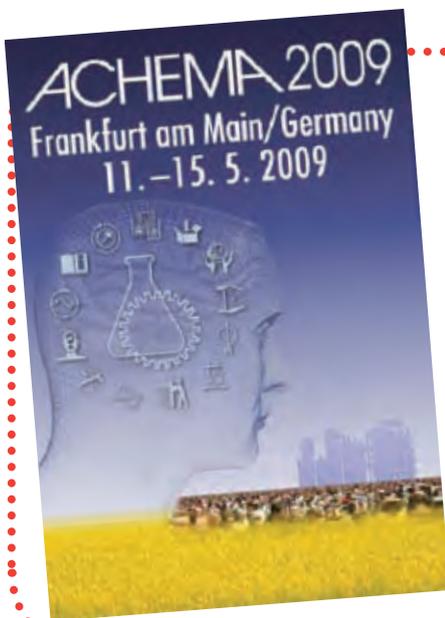
- Temperature Range:  
-254 to +538 degrees C
- Pressure Ratings:  
ANSI Class 150, 300 & 600 to full ASME B16.34, PN 20, 50 & 100.

For further information, contact:  
Bray Controls (UK) Ltd, Tel: (0) 141 812 5199, email: brayuk@bray.com, www.bray.com

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## ACHEMA 2009 – MEETING PLACE FOR GLOBAL PUMP AND VALVE USERS

Despite the global financial situation, we are told that exhibitor bookings for the three Pumps and Valves Halls at ACHEMA 2009 are running at record levels. Three months before the show, 930 companies have booked space. The final 2006 figure of 945 exhibitors will almost certainly be exceeded by the time the show opens in May. Thirty-seven British companies have booked space so far.

With many companies seeking larger booths, the amount of space requested is 50% higher than in 2006. As a result, the original space allocated by the organisers is now fully booked and there is a waiting list for new applicants, pending the release of additional exhibition area.

The growth in exhibitor numbers is entirely made up from companies from outside of Germany, which now account for 50% of the total.

The exhibition as a whole, which is spread across 22 halls, is approaching capacity, with many halls already fully booked.

The driving force seems to be energy related investment, both for the suppliers in the oil, gas and power sector who are building new plant and for users in the chemical, pharmaceutical processing and environmental sectors investing in new energy-efficient plant.

BVAA members will be well represented in the Pumps and Valves halls, having booked directly, via parent or sister companies or on the booths of their distributors. BVAA will also be exhibiting in its own right.

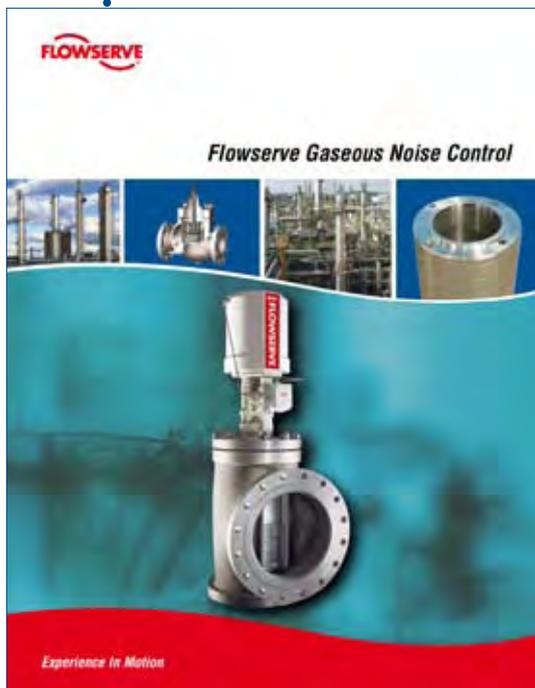
## New Flowserve Application Guide Outlines Solutions for Noise Attenuation

Flowserve has released a comprehensive publication that provides solutions to resolve noise issues in gaseous equipment.

Flowserve Gaseous Noise Control is a comprehensive guide to available noise-attenuation technology. The publication provides an in-depth analysis of common noise problems, helps customers choose the effective solutions, and includes explanatory diagrams and product-comparison charts.

*"We are committed to helping customers create quieter environments,"* said Eric Anthony, director of marketing for control valve products at Flowserve. *"Our new application guide provides a variety of design options, allowing customers to choose the products that best meet their needs."*

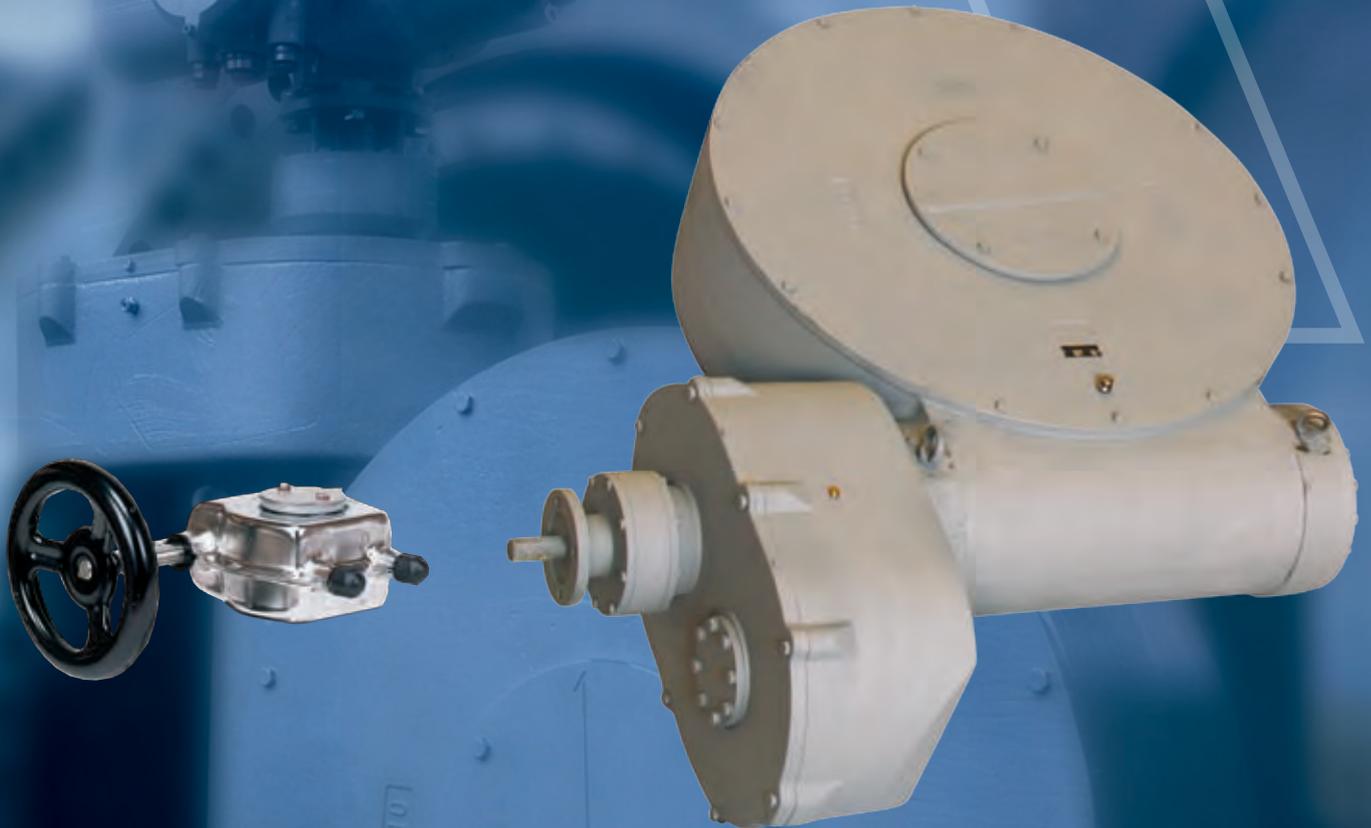
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# Emerson's Smart Wireless Solution Reliably Monitors Critical Fuel and Feedstock Delivery at BP Bitumen

## Monitoring by wireless instruments increases plant availability

Emerson Process Management's Smart Wireless technology has been successfully used to overcome a fuel supply outage at BP Bitumen near Brisbane, Australia. Wireless instruments normally monitor the pipeline integrity of transfer lines from the nearby BP refinery and report exceptional conditions to control room operators via the easy-to-use self-organising wireless network. The wireless solution showed its flexibility recently when two wireless transmitters were quickly deployed to manage fuel delivery from temporary LPG tanks rushed into service during a refinery shutdown of the normal fuel system.

Officials at BP Bitumen recognised Smart Wireless as a cost-effective and reliable method of monitoring the temporary fuel gas supply system. The plant normally fires natural gas in a heater to maintain a hot oil network at 280° C. All plant bitumen lines have hot oil tracing to keep the viscous product flowing. Even a temporary interruption to the supply of fuel to the

heater can adversely effect operations because if the heater shuts down, the plant cools very quickly. If the plant goes completely cold, it can take three to four days to restart. The cost of sourcing replacement product to meet existing contracts could be as much as \$150,000 AUD (€77,000 Eur) for a fuel outage of one week's duration. For this reason, a close visual watch had to be maintained on the temporary LPG supply to monitor it 24 hours per day. The Smart Wireless solution was implemented to monitor the transfer lines in May 2008 and fuel monitoring was put into service shortly thereafter.

The Smart Wireless field network solution included two Rosemount® wireless pressure transmitters that were installed to monitor the fuel delivery from the LPG tanks. With relatively little time to prepare for the natural gas outage, it was not possible to size the temporary LPG system for the maximum firing capacity of the hot oil heater. Without careful monitoring, the heater's burner control system could call for more gas than was available, sucking the fuel line dry and tripping the heater. However, with the wireless pressure transmitters in place, the burner



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The only source of knowledge is experience

control system could monitor the LPG supply pressure and avoid the trip scenario. The wireless monitoring of the LPG fuel delivery kept the bitumen plant running, saving the company \$20,000 AUD (€10,250 Eur) per day in lost production. The wireless solution also provided safe remote oversight of the fuel supply instead of continuous operator monitoring at the LPG facility. The plant operated successfully in this way for the duration of the week-long outage.

In addition to the fuel monitoring, three Rosemount wireless temperature transmitters are placed along the plant's bitumen transfer lines to monitor flow of the hot (170°C) bitumen. These instruments transmit status continuously, allowing immediate action if needed to maintain the flow of bitumen to the plant.

*"This wireless network monitors pipeline integrity, helping to ensure that no issues go unnoticed for any length of time,"* according to Matthew James, Operations Manager at the BP Bitumen facility. *"If we had not had the wireless installations, we could not have reacted so quickly to the fuel outage and that could have shut us down for over a week. As a tool to help troubleshoot unusual process conditions anywhere on the plant, they're indispensable."*

Each field device in Emerson's self-organising wireless technology acts as a router for other nearby devices, re-transmitting messages until they reach the network's Smart Wireless Gateway, which channels

the incoming data to a control point. If there is an obstruction, transmissions are simply re-routed along the mesh network until a clear path to the gateway is found. As conditions change or new obstacles are encountered in a plant, such as temporary scaffolding, new equipment, or a parked construction trailer, these wireless networks simply reorganise and find a way to deliver their messages.

All of this happens automatically, without any involvement by the user, providing redundant communication paths and better reliability than direct, line-of-sight communications between individual devices and a receiver. This self-organising technology optimises data reliability while minimising power consumption. It also reduces the effort and infrastructure necessary to set up a successful wireless network, because up to 99 wireless devices can be served by one gateway. New instruments can normally be added to a network in just minutes.

*"This wireless concept is not a fad or gimmick,"* James said. *"It really works, and the operating range is amazing. It is a long distance from the temporary LPG bullets to the control room. The fact that we could transmit that far and do so reliably without a single loss of signal is quite magical."*

For further information on Emerson's Smart Wireless solution, go to [www.EmersonProcess.co.uk/SmartWireless](http://www.EmersonProcess.co.uk/SmartWireless)



*BP Bitumen found Emerson's Smart Wireless technology to be a cost-effective and reliable method of monitoring a temporary fuel gas supply system*



## Econosto UK - 25 Years sterling service, much more in the pipeline

In 2009 Econosto UK Ltd is celebrating 25 years in the valve supply business and it is shaping up to be a busy as well as challenging year.

From the company's inception in 1984 as Ball Valves UK, it was clear that the market needed suppliers who could deliver on much faster lead times than had become the norm. Recognising the requirement to maintain a stock range which truly covered the needs of customers brought the company rapid success and it fast became one of the UK market leaders.

Acquisition by the Royal Econosto Group in 1998 further enhanced the product portfolio with own-brand and complementary products. This brought with it opportunities to offer all round solutions as well as the comprehensive valve product range. More

recently the Econosto Group was bought by ERIKS Group, a move which opens up further opportunities for Econosto.

Econosto UK now works with some of the biggest names in industry on contracts across the globe. A dedicated Projects team works to ensure the smooth transition from enquiry to completion of orders varying from carefully timed delivery of straightforward stock items to production of complex special products for one-off applications. Experience in sectors ranging from marine and shipbuilding through to oil, energy and processing industries gives the team a unique insight into customer's needs.

The company was also one of the first in its field to have an e-commerce site and this year a new version has been launched that reflects the increasing demand for purchasing via this route.

Clive Gamble, Managing Director of Econosto UK remains committed to development that benefits both the company and customers and had this to say about the coming year,

*"We know that 2009 looks like being a tough one for many of our customers and we are continually alert to finding ways to help with this. Our product range is constantly under review to match the needs of the market and we aim to keep stock at levels which ensures that, wherever possible, downtime is reduced or eliminated for our customers."*

*After 25 years supplying valves we understand that the market continually develops and will always have challenges to overcome. It has always been our aim to provide the best service and our strengths lie in both the wide choice of valve products supplied – own brand alongside well-recognised premium brands – and the ability to provide sound technical advice and a range of services from actuation through to specially manufactured products.*

*The launch of our new e-commerce site is our latest development aimed at making the purchase of our products simpler and more accessible to all our customers."*

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# Rotork pipeline valve actuators in Kurdistan economic improvement project

Rotork Fluid Systems has supplied heavy duty GO Range gas-over-oil valve actuators for a new strategic gas pipeline bringing economic benefits to the Kurdistan region of Iraq.

The 180km pipeline, supplying natural gas to the Arbil and Sulaimaniya power plants, is the first phase of the \$650 million Kurdistan Gas Project, a joint venture between Dana Gas – the Middle East’s first private sector natural gas company – and Crescent Petroleum. The joint venture has formed a strategic alliance with the Kurdistan Regional Government to generate 1250MW of power that will save Iraq about \$2.5 billion of annual import costs.



Rotork Fluid Systems GO Range gas-over-oil valve actuators



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Majid Jafar, Executive Director of Crescent Petroleum, recently explained: *“This is the first project of its kind in Iraq and will provide important economic and social benefits for the Kurdistan region and all of Iraq.”* Ahmad Al Arbeed, the Upstream Executive Director for Dana Gas, added that they now aim to build on these achievements in the Kurdistan region and across Iraq, with a strategic focus on maximising economic benefit and addressing local needs.

Rotork GO range valve actuators use pipeline gas as the power source to pressurise the hydraulic operating system, which can be configured to meet virtually any valve duty requirement. They are especially suitable for valve applications in

the remote locations associated with cross-country pipelines. The actuators for the Kurdistan Gas Project are operating ten ANSI Class 900 Econosto ball valves in sizes up to 24 inches. Actuator site assembly and function testing were carried out with the assistance of Rotork trained and certified technicians from Omas Ltd, Rotork’s agent in Turkey.

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Fluid Systems

# Helping to get clean water to southern Iraq

Rotork actuators have been supplied for a project designed to provide an uninterrupted supply of water to the Iraqi province of Basrah and develop the infrastructure to improve the quality of life for the citizens.

Included in the contract, IO and AWT electric actuators have been ordered for gate valves and ball valves manufactured by JC Fábrica de Válvulas, S.A. for new plant that will increase the treated water supply capacity to the province from 4,000 to 16,000 cubic metres/hour.

The project is funded by the US Army Corps of Engineers, who are investing \$9.5 million to increase the capacity of pumping units at Qurmat Ali and install new chlorination systems. The contract was awarded to the Al Dayar United Company for General Construction in January 2008 and is due for completion by the end of the year.

The actuators on the project are locally supported by Rotork's UAE sales office in Abu Dhabi.



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## Improve maintenance safety with Spirax Sarco's new single unit for safe double isolation

Steam and fluid systems can be upgraded quickly and easily to safer and more cost-effective maintenance procedures with the new space-saving Spirax SafeBloc™ Double Block and Bleed (DBB3) Valve. The design of new plant layouts is also simplified.

*Spirax Sarco state that SafeBloc is the only commercially available product that provides double block and bleed in a compact, single unit (shown here with optional bleed valve).*

This innovative, patented design incorporates two isolation valves and a bleed port in a compact assembly, making it easy to install into the space left by an existing single isolation valve. No other commercially available product provides double block and bleed isolation in such an integrated, compact unit.

The Spirax SafeBloc has ANSI or EN standard face-to-face dimensions, enabling it to replace an installed standard single isolation valve,

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without pipework modifications. A retrofit can be undertaken quickly, eliminating the time-consuming and expensive pipe cutting, welding and pressure testing needed to engineer a conventional double block and bleed arrangement from separate isolation and bleed valves.

Significant plant space is saved, with the Spirax SafeBloc taking up only a third of the pipeline length compared with conventional fabricated arrangements. This enables double block and bleed to be installed in spaces where it may otherwise be impossible.

Spirax SafeBloc uses proven technology from the Spirax Sarco range of bellows sealed globe valves that offer zero gland leakage, while ensuring tight shutoff conforming to DIN 3230 BO1 and ISO 5208 Rate A specifications. The unit's internal flow path offers the same minimal pressure drop as conventional arrangements.

Double block and bleed enables a section of plant to be safely isolated for maintenance without having to shut down the entire system. Double isolation is achieved by closing both isolation valves, with the bleed valve being left open to ensure that the downstream pipeline remains isolated during maintenance work. This is widely recognised throughout industry as being best practice for safe plant maintenance.

With a carbon steel body and stainless steel internals, Spirax SafeBloc is available from DN15 to DN100 and flanged to PN40 or ANSI 300. Spirax SafeBloc can be used on general steam plant as well as other fluid systems, such as hot water.

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### **Emerson Enters into Supplier Services Agreement with Fluor Corporation to Provide Automation and Control Solutions and Services.**

Emerson Process Management has been selected as a preferred supplier of automation and control instrumentation and services to Fluor Corporation. The two global industry leaders have entered into a Supplier Services Agreement to collaborate on development and implementation of processes intended to improve the management and execution of worldwide capital projects.

Fluor used a rigorous analysis and evaluation process to select Emerson as a supply partner. As a Fluor preferred automation and control supplier, Emerson will support risk mitigation efforts on large projects involving automation and control instrumentation and services.

Headquartered in Irving, Texas, USA, and with offices in the UK and Ireland, Fluor is one of the world's leading publicly traded engineering, procurement, construction, operations, maintenance, and project management firms. It has procured more than \$60 billion of equipment, materials, and services over the last decade and manages more than 1,000 projects annually. Fluor's customer's span key industries, including energy, chemicals, life sciences, water, transportation, manufacturing, government, and power production, including alternative power.

*"Due to the depth and breadth of Emerson's technology, products and services, as well as our global supply chain, we can greatly contribute to risk mitigation in important areas of project delivery and execution such as schedule, cost, quality,*

*and safety,"* said Lance Boudreaux, Fluor account director, Emerson Process Management. *"We bring the industry leading technology, expertise, and resources from more than 15 different Emerson divisions that are involved in this global strategic supply agreement with Fluor."*

Through the strategic supply agreement (known as a SRA Agreement within Fluor), Emerson will supply its complete product range and services that comprise PlantWeb® digital plant architecture, including its Fisher® FIELDVUE® digital valve controllers and valves, Rosemount® transmitters, Rosemount Analytical analysers, Daniel® flow meters, and Micro Motion® Coriolis flow meters. Also supplied will be PlantWeb process control and asset optimisation technologies including DeltaV™ and Ovation® digital automation systems, and AMS® Suite predictive maintenance software; Emerson industrial drives from Control Techniques; motors from US Motors® (NEC) and Leroy-Somer® (IEC); Bettis®, Hytork®, and EI-O-Matic® actuators, as well as Emerson Industrial Automation™ Appleton® (NEC) and ATX® (IEC) electrical construction material products.

The SRA relationship between the two companies allows their mutual end users to benefit from efficient project development, execution, and design, including through early supplier integration. This process, coined by the Construction Industry Institute (CII) as PEpC (Procure strategic suppliers, Engineering, procurement transactions, Construct), was demonstrated in a CII study to significantly reduce project time and improve overall project efficiencies.

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# PPE LAUNCHES NEW GENERATION LEAD-FREE, STEAM RESISTANT SEALS



Precision Polymer Engineering Ltd

High performance elastomer seal expert, Precision Polymer Engineering, has launched a new range of lead-free FKM grades that comply with REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) legislation. The company's lead-free, steam resistant fluoroelastomer, V75J, has been specially developed to provide improved in-service performance over lead-cured seals in high performance sealing applications such as marine diesel engines, heat exchangers, paper/pulp processing equipment and hot water/steam systems.

Traditionally lead oxide was used in the litharge curing process during seal manufacture to increase steam resistance of fluorocarbon elastomers. Materials experts at PPE have improved the strength of a peroxide-cured, terpolymer, FKM using innovative filler combinations. The result, V75J, is one of a number of 'new generation' fluoroelastomers from PPE which display outstanding resistance to

hot water and steam without the use of litharge curatives. These materials also offer resistance to oils, fuels and hydraulic fluids, high temperature performance and superior, long-term sealing ability.

*"Precision Polymer Engineering Ltd operates at the forefront of elastomer technology and by innovative use of polymer architecture, additives and fillers we can now offer realistic alternatives that are not only lead-free, but offer improved long-term sealing performance over litharge-cured seals"* comments Peter Cloney, PPE's Managing Director.

Fluoroelastomers have two main cure profiles: bisphenol cure and peroxide cure. Although peroxide-cured materials have a better inherent steam resistance than bisphenol cured alternatives, they tend to be weaker. Bisphenol-cured elastomers are typically formulated with metallic oxides, of which lead oxide (litharge) is the traditional choice for steam resistant applications because it prevents the seal from swelling when it comes into contact with water or steam.

In recent independent fluid immersion tests, V75J was benchmarked against 11 leading material compounds (including perfluoroelastomers) in water/steam for 1000 hrs at 140°C. V75J was found to be the best performing material followed by Perlast G80A. The remaining materials were badly deformed or disintegrated. In another example, V75J was chosen by a leading engine manufacturer to replace an incumbent litharge-cured FKM. The existing material was failing prematurely due to excessive temperatures causing 'un-crosslinking', leading to failures within the warranty period of the engine. By replacing this material with V75J, the customer successfully extended the life of the seals beyond the warranty period, into tens of thousands of hours' service, with no issues.

To meet diverse requirements, additional steam resistant elastomers offered by PPE include; A75H (FEPM), E70K (EPDM), Perlast® G75B and G80A (FFKM) perfluoroelastomers and V76F and V88F (FKM).

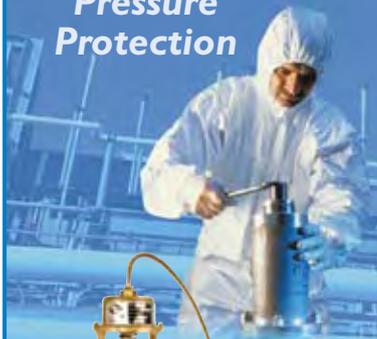
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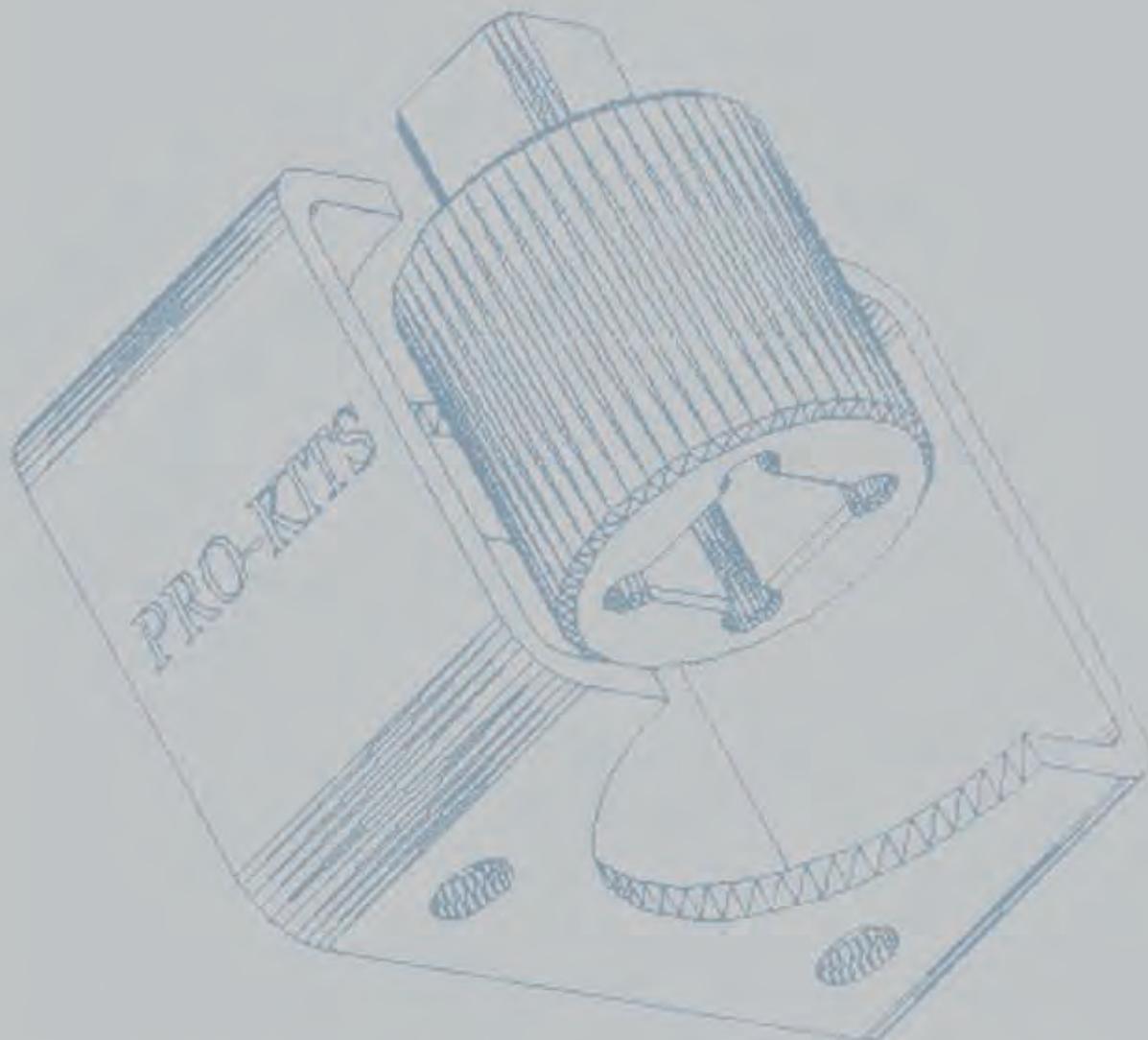
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# Valve Solutions for Biofuels

by Jari Kirmanen, Product Manager Neles, Metso's Automation Business Line

## Introduction

Biofuel production is growing very fast. The main drivers for growth are greenhouse gases and the need to reduce the use of conventional crude oil. In addition, the EU has set a target of 10% for the share of biofuels in overall road transportation consumption by 2020. The two main biofuel products are bioethanol (usually produced by sugar fermentation) and biodiesel (made from vegetable oils). Bioethanol production is already considerable – in the USA and Brazil for example, while biodiesel production is increasing in the EU.

## Bioethanol and biodiesel

Bioethanol production is based on a fermentation process using corn, wheat or sugar cane as the raw material. Biodiesel is traditionally produced by the transesterification of vegetable oils, such as rape. The 2nd and 3rd generation biodiesel processes, such as Neste Oil's NExBTL or Choren's Sun Diesel, have recently appeared on the market. These processes are more complex than transesterification, but increase the high value added products (biodiesel and glycerin) and they avoid the production of low end products, such as fatty acids. In contrast to bioethanol, biodiesel is normally used as such in engines without the need for any engine changes.

## Valve solutions and challenges

Most valve applications in biofuel production are at low or moderate pressures and low temperatures. Because production units have had relatively small capacities (e.g. Neste biodiesel unit in Porvoo 170 000

ton/year), control valve sizes are also relatively small – typically 2-3 inches. Modern biodiesel production is more challenging for control valves than that of bioethanol, because high pressures and temperatures may be needed in biodiesel conversion and product-upgrade phases. However, both processes require safe, reliable and accurate control, which means high-performance control valves.

## Fugitive emissions

Environmental issues have led oil companies to pay increased attention to emissions from control valves. This has made rotary valves more attractive, because they typically have lower gland-emissions than globe valves. Rising stem packings tend to wear more quickly than rotary stems, because their linear movement transports process media into the packing area. Spring-loaded packings in rotary valves (Fig 3) provide an easy, maintenance-free solution to the control of fugitive emissions.

## Dirty service

Soft- and metal-seated technology is utilized for common control valve applications in biofuels. However, metal-seated control valves are more rugged and last longer, especially if the flow media contain impurities, which may require the use of non-clogging valve designs. Valves may 'stick' or become completely clogged, if dirt lodges in the valve trim, bearing or stem area. Valve seat and body may also suffer erosion. In such conditions, metal-seated rotary valves are the most reliable. In extreme cases, dust-proof seats will prevent media build-up behind the seat area.

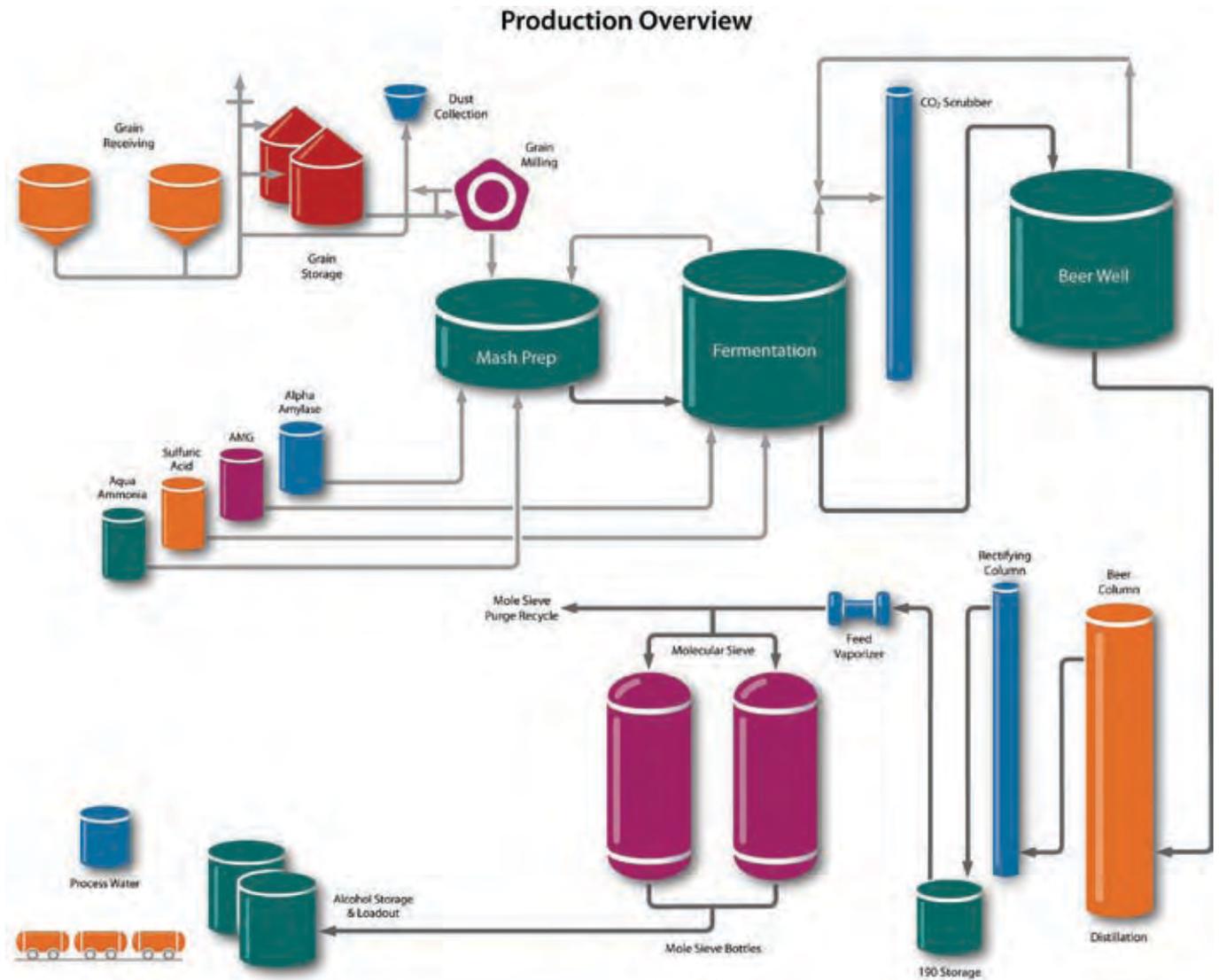


Figure 1. Corn-to-ethanol process.

## Flashing

When a control valve's downstream pressure is lower than the liquid vapour pressure, some liquid is vaporized and remains downstream of the valve, thus the flow downstream is partly liquid and partly vapour - a phenomenon called flashing. It cannot be avoided by valve design, but is addressed by re-considering both valve and piping design. Flashing may cause mechanical damage, e.g. erosion or vibration, if the velocity is too high. An eccentric plug valve is a reliable solution for moderate-pressure flashing, because the flow stream does not hit the valve body or downstream pipe wall (see Fig 4).

## Cavitation and noise

Cavitation is a two-phase phenomenon that occurs in the liquid flow through the control valve under certain conditions. Initially, the liquid pressure decreases below vapour pressure to create vapour bubbles. In phase two, the vapour bubbles collapse rapidly, creating pressure shocks as the pressure rises above the vapour pressure. If process design cannot eliminate cavitation, valves with anti-cavitation trims are usually utilized.

When a high pressure-differential is released in a control valve, noise and vibration may be generated. Noise is generated mainly by turbulence and shock waves produced in choked flow conditions. To reduce noise, multi-stage noise reduction trims are used - e.g., the Neles segment valve with Q-trim, which provides high capacity combined with good cavitation resistance and noise reduction, in a manner no sliding stem valve can match (see Fig 5).

## Molecular sieving

A typical dryer system consists of 2 or more columns packed with molecular sieve material (Zeolites). While the wet or sour stream is processed in one column, the other is regenerating. It is the molecular sieving valves that sequentially switch from adsorption to regeneration.

The operating speed of these valves is not demanding, but they must withstand frequent cycling while maintaining bi-directional tightness. Particulates and temperature fluctuation during sequential operation present an additional challenge. Metal-seated and

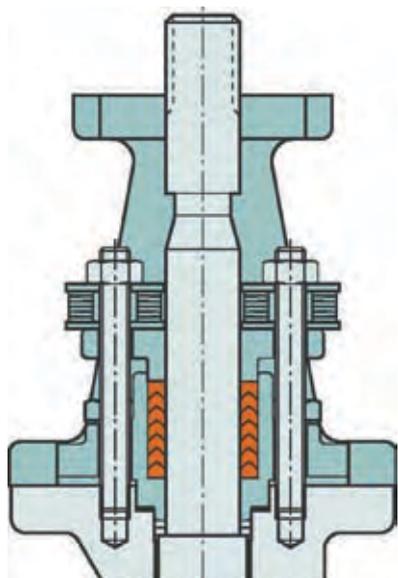


Figure 2. Spring-loaded low-emission gland packing for hazardous service

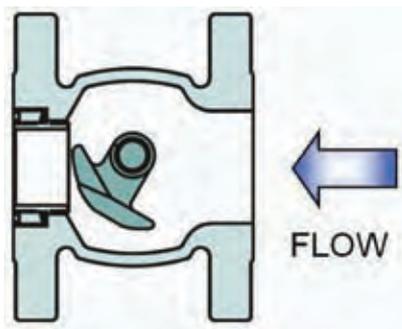


Figure 3. Eccentric plug valve for flashing service.



Figure 4. Neles Segment valve with Q-trim for noise reduction and cavitation abatement.



Figure 5. Neles SwitchGuard, an intelligent valve controller mounted on the top of a Neldisc metal-seated butterfly valve, for demanding on-off applications.



Figure 6. Valve performance on-line diagnostics and analysis before shutdown.

special soft-seated butterfly and ball valves are typically used in this very demanding application.

Because the operation of this system is critical for the process, valve performance should be monitored. Intelligent products, such as Neles SwitchGuard, an intelligent valve controller for automated on/off-valves (Fig 6), can be utilized to detect valve operation automatically.

### Intelligent, modern on-line diagnostics

Valves must be serviced regularly to keep processes efficient and maintain performance throughout their life cycle. Servicing valves before necessary is a possible answer, but expensive and time-consuming. Waiting until valves fail and cause an un-scheduled shutdown can also be costly. Ideally, only those valves that require maintenance should be serviced during a shutdown, but this requires valve diagnostics and/or a monitoring program.

On-line diagnostics can monitor valve performance while the process is running, indicating any decrease

in valve performance and warning the user before failure causes excessive process variability or a shutdown. The most efficient predictive maintenance uses valve controllers, which store results in their memory and send warnings and alarms based on performance limits stored in their memory. No additional manpower is needed to analyse these results continuously, because the controller together with advanced asset management software measures valve performance automatically.

On-line diagnostics can be utilized for all valve functions from control to on/off, even for safety valves. Together the utilization of inherently reliable valves and of intelligent devices can raise valve application reliability to a significantly higher level than before.

METSO, 0870 606 1478

# Rotork valve actuators specified for southwest China's first major refinery

More than one thousand Rotork intelligent electric valve actuators have been ordered for the US \$1.6 billion Qinzhou Refinery project in South China. The new refinery, which is owned by PetroChina, is designed to improve the energy supply throughout southwest China.

Rotork IQPro intelligent actuators with Pakscan P3 network control systems are being installed in areas including the crude oil, LPG, petroleum and diesel tank farms, processing and water purifying plants and waste water treatment works.

The actuation contracts are being co-ordinated and supported by Rotork's office in the city of Guangzhou, in Guangdong Province. The Qinzhou Refinery is among the latest in a series of Rotork project successes in the Chinese oil and gas industries, including the 4000km strategic West to East Natural Gas Pipeline, for which over 700 Rotork IQ electric actuators have been ordered.

Qinzhou is a port city in China's Guangxi Zhuang Autonomous Region. The refinery will process oil imported from Sudan and will have a daily processing capacity of 200,800 barrels after production starts at the end of 2009.

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*Rotork IQPro valve actuators installed on a processing area of the Qinzhou Refinery.*



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# Norgren's 48xx Series



Just like the existing series of solenoids, the stainless steel solenoids 48xx can be used flexibly with the SIL-certified 24010/24011, 98015, 98025 and 97105 valve series.

New stainless steel solenoids of the 48xx series for the most extreme operating conditions in the chemical and petrochemical industries.

Norgren has been a leader in the explosion protection field for decades. Protection of people and material assets against explosions has our top priority. To carry on this Herion tradition, Norgren has perfected and supplemented the existing 42xx and 46xx series of solenoids for extreme application conditions with the newly developed 48xx series of stainless steel solenoids.

Norgren's new development is aimed at the preferences and requirements of customers in the chemical and petrochemical industries, particularly for offshore applications. Stainless steel solenoid valves are especially suitable as control modules for offshore applications, where efficient protection systems for potentially explosive atmospheres and corrosion resistance are key factors.

These solenoids are made of high-quality stainless steel with a high resistance to chemicals and corrosion so that they are suitable for outdoor applications at temperatures of -40 to +80 °C. Naturally, these solenoids, classified with protection ratings of EEx mb d IIC T4, T6 and EEx mb e II T4, T6, have received all the relevant international approvals (ATEX, GOST, IECEx, etc.).

For more details contact: Norgren Ltd, Cross Chancellor Street, Leeds LS6 2RT. Tel: 01132 457587, email: [ckrishna@norgren.com](mailto:ckrishna@norgren.com)

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DELTA FLUID PRODUCTS LIMITED

## AEON CHOOSES THE KITEMARK® TO ENHANCE ITS VALVES

To confirm the quality and safety of its renowned double-seal gas and water valves and to further enhance their appeal in both UK and overseas markets, Aeon, one of the UK's leading innovators in valve technology, has chosen to obtain Kitemark certification from BSI Product Services.

*"Our products are designed in the UK, manufactured in China and, for the most part, they are distributed via our facilities in Poland and Dubai,"* said Stephen Toas, Quality Manager of Aeon. *"One of our essential requirements in selecting a certification partner was, therefore, that it should be an organisation that could support us effectively and efficiently in all of these locations."*

*"In addition, it had to be an organisation that held Notified Body status for certifying gas valves to GIS V7 in line with the European Pressure Equipment Directive (PED). And finally, we wanted to go beyond simply meeting our legal obligations in respect of certification – we wanted a mark of approval that would indicate unequivocally to specifiers and buyers that our manufacturing operations as well as our products meet the highest quality standards."*

After carefully evaluating the capabilities of certifying organisations, Aeon decided that it would work with BSI Product Services to obtain Kitemark approvals for its products. An important factor in this decision was the impeccable reputation and wide recognition of the Kitemark, not just in the UK but also in the company's main overseas markets, including the Middle East and China.

Aeon found the Kitemark certification process to be searching but ultimately beneficial for the company itself and for its customers. The process necessarily involved extensive product testing which, after it had validated all of the rel-

evant design data, was organised and witnessed by BSI Product Services. Gas valves were tested in line with GIS V7, while Aeon's water valves were tested to EN 1074.

In addition to product testing, the Kitemark certification process also involved an in-depth evaluation of Aeon's manufacturing methods and techniques, as well as the company's quality standards and procedures.

Since its manufacturing plant is in China, Aeon could have confined this detailed evaluation to that plant alone. However, the company decided that the evaluation should also encompass its distribution centres in Poland and Dubai, partly to confirm that the same high standards are being adopted throughout its operations, and partly to cover those situations where components manufactured in China are assembled at the distribution centres to satisfy local customer requirements.

*"Throughout the certification process, we received outstandingly good support from BSI Product Services,"* said Stephen. *"In relation to this, it's worth remembering that the Pressure Equipment Directive alone has hundreds of clauses and to obtain certification, it is necessary to demonstrate compliance with every single one of these."*

*"It would have been very difficult – not to mention time consuming and costly – for us to have done this without the expert assistance and advice provided by BSI Product Services, particularly in relation to the interpretation of the provisions of the directive. The inspectors from BSI Product Services were also a great help to us in relation to our own internal procedures and methods,"* he continued.

*"They suggested improvements that not only helped us to meet the requirements for Kitemark certification, but which have also helped*



*us to enhance the efficiency and smooth running of our operations. Individually, these improvements were minor, but they all add up, and taken together they have produced very useful benefits."*

A unique and patented feature of both the gas and water valves manufactured by Aeon is a wedge system that provides a double seal. This means that, even if the seal fails on one side of the valve, the valve can still carry out its essential function of safely and completely interrupting the flow of gas or water. For this reason, along with their proven performance and excellent value for money, Aeon valves have been successful in achieving high levels of market penetration around the world.

*"The Kitemark is undoubtedly helping us to build on this success,"* said Stephen, *"and it would be no exaggeration to say that it is proving to be a very powerful marketing tool for us. Our customers are impressed that the Kitemark not only proves our products to be of the highest quality but also guarantees that they can depend on this quality being maintained, since we have to undergo regular reappraisals to retain our Kitemark licence."*

*"Seeking Kitemark certification for our products was a big decision for us,"* he continued, *"but it has proved to be an excellent move. It is certainly helping us to expand our customer base and to increase our sales both in the UK and around the world."*

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# Emerson Unveils New Smart Network Switch for the DeltaV™ Digital Automation System



*Emerson's smart network switches are specifically designed to 'plug and play' within a DeltaV™ digital system network*

New smart switches are pre-configured out-of-the box, 'plug and play' for use in DeltaV system network

Emerson Process Management has unveiled a new line of smart network switches specifically designed to 'plug and play' within a DeltaV™ digital system network. These switches come completely pre-configured, requiring no setup of the switching functions by the user. In addition, they provide an easy-to-use security feature to help prevent unauthorised network connections to the switch.

Emerson's new smart switches feature software which is specifically designed to provide switch monitoring capabilities and securi-

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ty features for the DeltaV system. They use patent pending, Emerson "one-click lockdown" software for these security functions.

*"These smart switches are as easy to use as an unmanaged switch but with all the features of a managed switch for network security and monitoring,"* said Bob Huba, product manager for DeltaV Security. *"Smart switches are configured for use out-of-the-box in the DeltaV system. No configuration is required to gain the added security benefits of the DeltaV smart switch."*

*"Our customers tell us they want the ease of use of an unmanaged switch, but they must have the security and monitoring capabilities of a managed switch,"* says Duncan Schleiss, vice president of product marketing, Emerson Process Management. *"The DeltaV smart*

*switches give the customer exactly what they are asking for – easy and secure."*

*"The great thing is that we are doing this with the low cost and high reliability of commercial off-the-shelf technology that customers have come to expect,"* Duncan continued. *"The smart switch is part of the DeltaV product family and is tracked as part of service agreements, and follows the same 10 year life cycle availability as all our products."*

DeltaV switches provide Megabit and Gigabit speeds over wired and fibre communications. They are available from 8 port DIN rail mounted switches to a modular 24 port rack mount switch with 8 wired ports and up to an additional 16 wired or fibre optic ports. Both the DIN rail and rack mount switches provide a modular solu-

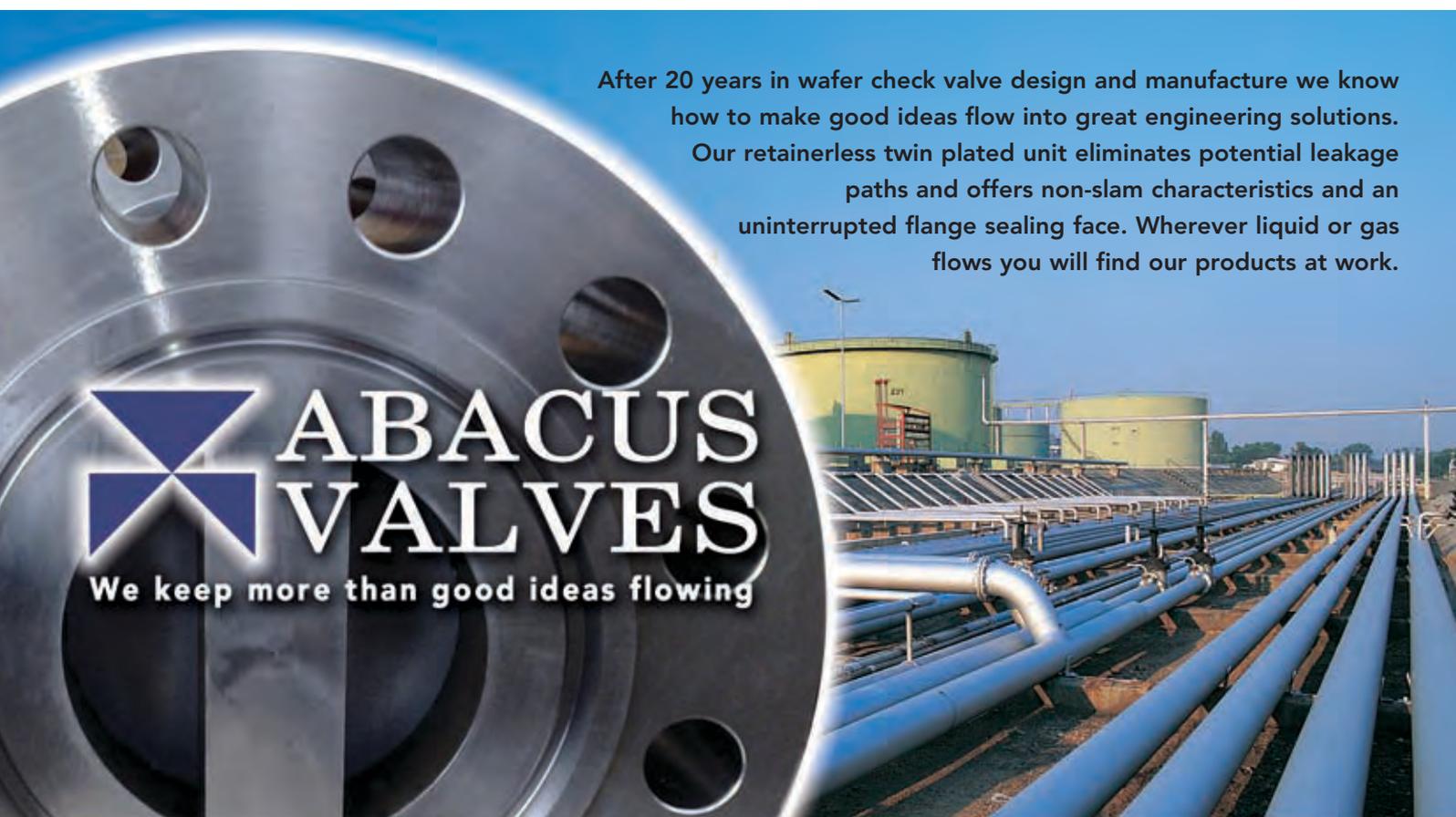
tion so a user can optimise the cost and footprint to more exactly meet their specific need.

DeltaV systems are a core component of Emerson's open standards-based PlantWeb® digital plant architecture which substantially reduces project costs, with customers typically saving over 30% on installed costs.

To learn more about Emerson's DeltaV smart network switches, watch a brief video at <http://www.emersonprocess.com/videos/CONTENT/BobHubaPresentation/player.html> or go to [www.EmersonProcess.co.uk](http://www.EmersonProcess.co.uk)



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Xomox®XLD process butterfly valves have robust liners: The wall thickness in the flow area is a minimum of 3 mm (PFA) and 4 mm (PTFE), offering a high level of operational safety, as media permeation is considerably slower compared to thin-walled standard liners. Also, this feature allows increased up-time and enables a longer effective product life – which translates into a safety and a cost advantage. The integrity of the lining is reaffirmed by subjecting it to a 20,000 Volt electrical defect detection test.

The DIN/ISO-5211 flange enables direct mounting of the operating device and the neck length (which is in accordance with ISO requirements), allowing for simple thermal insulation.

Xomox®XLD butterfly valve features lower (breakaway) torque compared to other products currently available in the market. Low torque is enabled by our revolutionary design of the internal sealing mechanism and bearings. This also permits the use of smaller

and more economical actuators, resulting in lower operating costs and reduced energy consumption.

### Product Features:

- Substantial PFA liners for 3" through 12" sizes and PTFE liners for 14" through 24" size. Benefit is resistance to permeation leading to extension of product life and operator safety because of lack of atmospheric leakage.
- Live loaded stem sealing system. Benefit is atmospheric sealing integrity and no manual adjustment over the life of the valve.
- Low torque. Benefit is smaller operators taking up less space, ease of operation and cost savings with less expensive automation packages.
- Improved disc design leading to less deflection at higher pressures and tighter in-line seal
- ISO 5211 Actuator Mounting Pad for standardized operator mounting
- Live loaded self-adjusting shaft seal with triple O ring protection
- Blow-out proof shaft design for additional operator safety
- Extended body and disc liner above the shaft seals provide optimum protection of the O ring shaft seals from corrosive media
- PTFE atmospheric seal protects internal components from atmospheric corrosion and provides locating ring for actuator mounting



- Fully encapsulated bottom shaft eliminates potential leak path at bottom of valve and obviates the necessity for further sealing elements

### Materials:

EN-JS1049 / ASTM A395 Ductile Iron body and disc full fluoropolymer lined. Other materials on request

### Pressure Range:

PN 10 and ANSI Class 150 (Max shutoff pressure at 150 psi)

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2" (50mm) through 12" (300mm) PFA Lined  
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# **CURTISS WRIGHT** *Flow Control (U.K.) Ltd.*

## **Three Great Products - One Committed Supplier** **Another Successful Year for Curtiss Wright Flow Control UK**

### **Solent & Pratt**

Solent & Pratt had an exceptional 2008 for orders and coupled with a number of firsts for the company, closed the year on a high.

An order was received for six 138" cooling water isolation valves for use on a major UK power station, thought to be some of the largest butterfly valves supplied to a UK site and will be installed in May 2009. The order provided the purchasing & design teams with a number of challenges all of which were overcome to the satisfaction of the client. Ductile iron castings for body and disc were placed with the UK foundry Coupe in Lancashire.

Another prestigious order was secured for almost 400 valves to be supplied to the North Rankin platform off the northwest coast of Australia. S & P worked closely with the client to offer technical solutions to problems previously experienced with other valves and equipment installed in the very corrosive off shore environment in this part of the world. 32 of the valves are pneumatically operated ESD & SDV butterfly valves fitted with Rotork actuators and Emerson DVC 6000 foundation field bus valve controllers, used to monitor the valve signature and allow partial stroking of the valve.



S & P fulfilled an order for a number of ESW valves in sizes 36" & 40" for a UK nuclear power station. The valves, classified as ASME III class 2, had to be supplied with very stringent testing and material requirements along with detailed design & qualification documents.

The continuing investment at the Bridport plant will ensure that the name of Solent & Pratt will be synonymous with quality and the ability to rise to the challenges set by the customer.

### **Farris Engineering**

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**Control Valves**

Wednesday 29th April 2009:  
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**Introduction to Valves**

Monday 27th April 2009:  
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**Safety Valves**

Thursday 30th April 2009:  
Banbury, £295+vat

**Introduction to Valve Actuators**

Tuesday 28th April 2009:  
Banbury, £295+vat

**Safety Integrity Levels (SILs)**

Friday 1st May 2009:  
Banbury, £155+vat

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- Control Valves – Wednesday 29th April 2009
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# Emerson's AMS<sup>®</sup> Suite Enables Solvay to Increase Maintenance Productivity by up to 15 per cent

**PlantWeb<sup>®</sup> digital plant architecture supports intelligent device commissioning and diagnostics for enhanced reliability**

Solvay's plant in Tavaux, France has applied technology supplied by Emerson Process Management to bring about maintenance department productivity gains of between 10 and 15 per cent. The Tavaux plant, the largest chemical plant in the Solvay group, has installed Emerson's AMS<sup>®</sup> Suite predictive maintenance software to better manage field devices.

As the total number of devices at the plant increased to 15,000, with over 20 per cent of these being complex instruments, plant staff looked for ways to capitalise on diagnostics to empower better business decisions. AMS Suite: Intelligent Device Manager, together with Emerson's DeltaV<sup>™</sup> digital automation system, present real-time plant floor information to workers across the enterprise to improve reliability by identifying potential plant upsets before they occur.

Emerson's AMS Suite enabled Solvay to create a complete database of device information in less than one day. It has also enabled the number of sophisticated and powerful instruments and valves being managed on site to be increased significantly, without increasing staffing levels. Maintenance staff now use AMS Suite to manage the calibration of devices, and document and trend the calibration information.

*"During the start up of the EPICEROL production unit, the process to produce Epichlorohydrin from glycer-*

*ine, Emerson's AMS Device Manager ensured the complete automation system, including DeltaV were configured right the first time allowing us to save valuable time during setup,"* said Giacomo D'Andrea, Service Manager, Automation/Instrumentation and Electricity, Solvay. *"AMS Suite is of great value when commissioning and it is also our daily tool for identifying, standardising, configuring instruments, and saving reference values."*

A critical part of the plant is the chlorine service and Solvay is using Emerson's AMS ValveLink<sup>®</sup>, a SNAP-ON<sup>™</sup> application to AMS Device Manager, to monitor the control valves. These valves are fitted with Fisher<sup>®</sup> FIELDVUE<sup>®</sup> DVC6000 digital valve controllers, which enable a "partial stroke test" to be performed every month, without shutting the plant down or bypassing the valve. Partial stroke testing enables higher reliability of the valve and reduces manpower required for full testing. This procedure has already successfully detected an anomaly on a valve that is critical for the unit allowing plant personnel to fix the issue before there were any plant upsets.

## Comid Valve Services

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Comid provide a certified and guaranteed valve repair and valve reconditioning service for all types of valves, including safety valves, in every sector of industry

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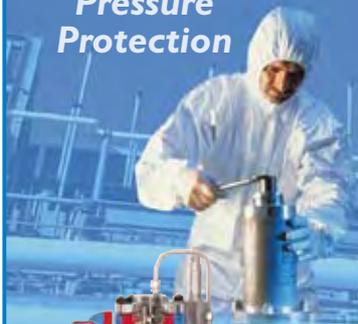
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## Six figure contract for Weir Valves & Controls UK Ltd.



Weir Valves & Controls UK Ltd, part of the Weir Power & Industrial Division, is pleased to announce it has won a six figure repeat order for its Batley Butterfly Valves (BV) 22000 series from British Energy. The new order follows on from the successful development and delivery, in only 20 weeks, of a solution specifically developed for British Energy.

The BV 22000 valves are destined for Heysham 2 Nuclear Power Station, near Morecambe in the UK, where they have been installing Polyethylene pipe work within the Reactor Sea Water System.

The new pipe work is being installed to reduce the effects of corrosion within the reactor cooling system and support increased pipe work life, and part of the work involves using BV 22000 valves to replace existing valves.

The BV 22000 valves were manufactured using Super Duplex stainless steel which gives better strength and corrosion resistance than conventional 300 and 400 series stainless steels, particularly on ambient sea water applications. Mike Craddock, System Health Engineer for Steam & Rotating Plant for Heysham 2 Power Station said, *"We are extremely pleased not only with the performance of the BV 22000 valves but also with Weir Valves & Controls UK's ability to develop, manufacture and deliver the valves in only 20 weeks, which was a key requirement."*

Weir Valves & Controls UK Ltd, based in Elland, West Yorkshire, has a long established relationship with British Energy. Sales & Marketing Director at Weir Valves & Controls UK Ltd., Peter O'Reilly commented, *"The recent multi-million pound investment in the new facility in Elland has allowed the company to significantly cut lead times, which means we can deliver all our valves within a 20 – 36 week schedule. This is proving to be a major benefit to many of our customers."*

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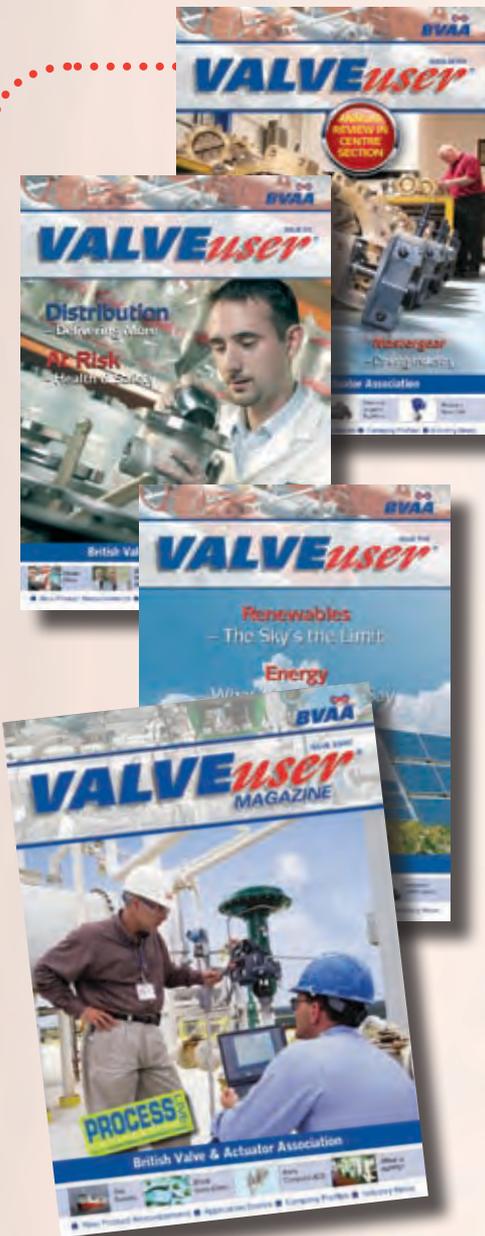
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# Proximity switch turns 50

## The inductive proximity switch - indispensable for modern automation

Dr.-Ing. Peter Adolphs  
Pepperl+Fuchs

In 1958 - 50 years ago - the proximity switch was invented in a Mannheim laboratory owned by Pepperl+Fuchs. What was originally conceived as a customer-specific solution for an intrinsically safe current circuit in the chemical industry, has since become the universally recognized industry standard for non-contact switching. The proximity switch is one of the oldest electronic components in automation due to the fact that it has been continuously reinvented over the years to keep pace with ever-changing requirements.

### How did it all begin?

Fifty years ago, when Walter Pepperl and his colleague Wilfried Gehl were commissioned by BASF to find an alternative to mechanical

contacts, they had no idea that they would set a milestone in the development of automation technology. The challenge was to develop a robust component that would operate reliably after many thousands of switching cycles at very low switching currents, in the corrosive atmosphere of a chemical plant. As trained radio engineers, they knew what happens when a metallic object approaches a coil system. With the bi-polar transistor, which William B. Shockley had invented 10 years earlier, the two engineers had at their disposal a new compact component with which the damping of an oscillating circuit could be easily evaluated and converted into a switching signal. The invention of the proximity switch is consequently an early example of how communications engineering expertise advances automation technology.

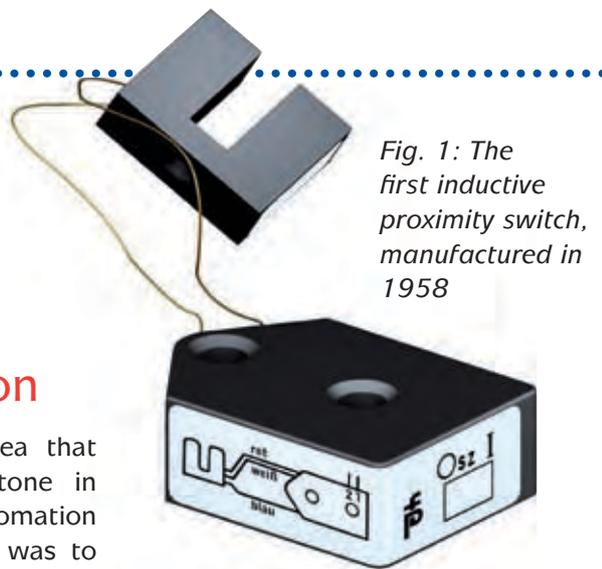


Fig. 1: The first inductive proximity switch, manufactured in 1958

In the early years, application of the inductive proximity switch was restricted to the chemical industry, where problems with mechanical contact wear due to the low currents used and the resulting absence of cleansing through contact erosion, were the most severe. However, in the early sixties, people also began to appreciate the practically unlimited service life of these switches in other automation applications. So it was no surprise when Pepperl+Fuchs introduced an inductive version of the DIN 43 694-compliant roller lever limit switch on the market in 1968. This device shared mounting compatibility with its mechanical counterpart and had the option of 5 different positions for the active sensor surface, so that any possible travel direction of the mechanical switch could be replicated. Furthermore, in those days it was not yet possible to reproduce all the different voltage ranges electronically. Nevertheless, the 60 different versions of proximity switch required as a result could not prevent its success

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Fig. 2: Proximity switch from 1968 - functionally compatible with the roller lever switch

on the market. The absence of wear was a major advantage for the reliability of automation systems.

Ten years later, the next-generation device was presented, which simplified applications. The user could now change the active sensor surface himself and the amplifiers with different voltage ranges could be easily replaced by insertion. This proximity switch design continues to be one of the highest selling, but the development of this technology has resulted in much greater variety.

### Versatility of the proximity switch

The most familiar proximity switch design is the cylindrical threaded bushing. Its design resembles a threaded stud and, consequently, it can be easily mounted on any machine. The sturdy brass or stainless steel housing protects the electronics against all types of environmental influence and, of course, mechanical destruction. Moreover, there are hundreds of other designs available on the market today, taking account of the various installation requirements in machine manufacturing. This sensor is probably one of the few electronic components whose housing design must be adapted to the application rather than to the packaged electronics. Versatility is therefore a matter of course.

In the 1990s, the proximity switch electronics were also fundamentally further developed. Integrated circuitry was introduced, which extended functionality and improved EMC interference immunity. New oscillator concepts enabled switches with a reduction factor of 1 to have the same switching distances for different metals. For applications with especially high durability requirements, proximity switches are available with active sensor surfaces made of stainless steel. Extremely sensitive evaluation is required for such applications, as



Fig. 3: Analog position measurement (functional principle on left) (designs on right)

the pre-damping of the oscillator through the end surface of the housing is quite significant.

Micro-controllers have now also become established in proximity switches. These enable even higher switching distances to be achieved and provide for simplified adjustment of components in production, in addition to improved functionality. All this in a device which is subject to constant price pressure owing to the very high unit volume requirements.

These facts show that the development of the proximity switch has never stopped over the last fifty years. Driven on by incessant new requests and requirements from machine manufacturing and plant engineering, the proximity switch has been continuously reinvented and this trend is set to continue into the future.

### The future of the proximity switch

There are presumably several reasons for the market success of the proximity switch. On the one hand, the coil as sensor element is cost-effective to produce and evaluate. On the other hand, these switches are extremely sturdy, easy to use and reliable. Soiling or other environmental influences hardly effect their function. These properties distinguish the proximity switch favorably from other types of sensor. It is therefore no surprise that the quantities sold have increased dramatically in recent years, with no sign of a downturn currently in sight.

And there are some interesting applications in automation technology that exploit the basic principle of the proximity switch and provide the same benefits to the user. Analog position measurement is a good example of such an application.

For this purpose, multiple coils are arranged in a row to precisely measure the horizontal displacement of a metal target to a tenth of a millimeter. A micro-controller evaluates the damping of the different coils by the target and thereby calculates the exact position. The measurement result is independent of the precision of the vertical guidance of the target. This is a good example of how a fifty-year-old principle can be transformed into a reliable and easy-to-use displacement measurement system with the aid of modern electronic technology.

### Outlook

Sensors as the sensory organs of machines are indispensable in the field of automation. In principle, it is merely a matter of transforming physical events into electrical ones. The coil as a sensor element for the proximity switch has established itself as an almost perfect device for position recognition. As long as machines are constructed primarily from metallic materials, the further success of the proximity switch is assured.

Dr. Peter Adolphs  
General Manager Factory  
Automation  
Pepperl+Fuchs  
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# Pakscan digital valve control goes wireless

Starting with site trials in 2009, market-leading valve actuation specialist Rotork is extending the capabilities of the globally acknowledged Pakscan digital control system with the addition of a wireless option. The modular nature of the latest Rotork Pakscan P3 master station now allows the user to have the choice of a fully wired loop for control and monitoring, a fully wireless control and monitoring system or wired control with wireless monitoring.

Utilising the internationally accepted 2.4GHz frequency the Pakscan P3 wireless network card gives the user access to all the standard data available from the wired Pakscan system, together with the diagnostic and asset management information stored by Rotork actuator data logger and configuration files. It allows easy extraction of these files, which up until now have only been downloadable locally, using hand held tools.



*Cutaway illustration showing a Rotork IOPro intelligent electric valve actuator fitted with the wireless Pakscan digital control module.*

The wireless system also increases the available actuator count of each master station to 300, and has a line-of-site operating range of approximately 70 metres indoors and 1000 metres outdoors. The use of meshing and repeaters further increases the range to individual field units.

To provide robust on-site communications, the wireless option operates a meshing system which will ensure that all nodes have the facility of at least two routes back to the master station. If the normal traffic route is blocked, the network will find another way to route the messages. This self-healing network complements the loop-back capabilities of the established Pakscan two-wire loop and therefore makes it an ideal addition to the Pakscan range. Along with the existing in-built security features of the Pakscan P3 system, the security of data over the air is ensured by using encryption facilities.

Support for third party devices such as pumps and flowmeters is possible using the Rotork general purpose field control unit (GPFCU), where the communications from the supervisory control system are transparently routed to the device.

Pakscan P3 wireless offers simple access to asset management information. Built in web pages make it possible to easily extract actuator data logger and configuration files from the control room.

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## Truflo Marine hosts 19th BAE Key Supplier Forum

On Tuesday 27th January, Birmingham based Truflo Marine were honoured to host the Key Supplier Forum for the first time on behalf of BAE Systems (Submarine Solutions). The event provided Truflo Marine with the opportunity to showcase their products, premises and key personnel.

Truflo Marine is a well-established and highly respected naval marine valve manufacturer and has been supplying high integrity valves for warships and submarines since 1962.

Ten of BAE's key suppliers attended. This represented almost 70% of BAE's supply chain and included Rolls Royce, Babcock Marine (S&H) as well as BAE's customer, the Ministry of Defence. Truflo Marine extended their hospitality to the Skills Academy for Manufacturing, a world class centre of excellence and innovation in skills. It provides an independent national standard for manufacturing training content, advice and delivery.

BAE Systems Submarine Solutions is responsible for the design, build and commissioning of the Astute Submarine which will be the most powerful vessel of its kind ever operated by the Royal Navy.

Both Malcolm Dare and Ian Burns BAE Systems Submarine Solutions Supply Chain Director and Head of Supply Chain respectively, addressed the delegates.

Ian Burns has since expressed his sincere thanks to Truflo Marine; *'On behalf of BAE can I thank you for your excellent hosting of Key Supplier Forum 19. The hospitality was excellent and Truflo showed themselves to be a dynamic and forward thinking company. The shop floor is a real credit to the progress made over the last few years.'*

Bob Bowser, Managing Director for Truflo Marine concluded that the day had been a huge success and had achieved the aim in further developing already strong relationships and cementing key supplier commitment to BAE.

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Delegates, visitors and exhibitors attending the forthcoming POWER-GEN Europe, Renewable Energy World Europe and POWERGRID Europe exhibition and conference have the opportunity to attend a joint keynote session where power industry and policy leaders will address the energy challenges facing Europe in this and the coming decades, including their views of the role that conventional and renewable energy will play.

The joint keynote session will take place on Tuesday 26 May 2009 at 09:30 – 11:00 in the Konrad Adenauer-Saal, Koelnmesse Congress Centre and features these industry experts and their respective topics:



**Dr.-Ing. Johannes F. Lambertz,**  
President and CEO RWE Power AG, Germany

*Future Power Generation In Europe -  
Meet the Challenge*



**Dr.-Ing. Joachim Schneider,**  
Senior Vice President,  
Member of the Management Board,  
ABB AG, Germany

*New Power Plants need new Grids -  
A Chance of Investments in Europe*



**Mr Wolfgang Dehen,**  
CEO Energy Sector,  
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# Flowserve Launches ValveSight

## An Asset Manager for Control Valves, ValveSight Reduces Costs, Improves Uptime Through Predictive Diagnostics

Flowserve has recently announced the launch of Flowserve ValveSight, an asset management solution for integrated control valves and automated quarter-turn valve packages.

The ValveSight solution significantly reduces unexpected plant or process downtime by predicting potential failure modes and prioritizing condition-based maintenance before the performance of the working process can degrade. ValveSight reduces maintenance costs associated with preventative and break-fix activities by ensuring that actions are focused on solving root causes and not just symptoms. Most importantly, ValveSight improves safety and environmental compliance by proactively identifying critical issues before they occur.

ValveSight's intelligent diagnostic software continuously captures rich diagnostic data from the valve,

actuator, positioner, and control signal while the process is running and displays the data in an intuitive graphical user interface. The ValveSight interface is designed to allow users to translate a broad spectrum of different alarms and data points into simple at-a-glance color-coded health indicators. Because the diagnostic algorithms within ValveSight are built on Flowserve's knowledge and experience gained through decades of designing, manufacturing, operating, and servicing valve and automation solutions, ValveSight is able to recognize data patterns that indicate an eroding service condition before a process variable reaches an out-of-tolerance level, and translate that condition into actionable device-specific maintenance advice.

*"Plant operations depend on the performance, health, safety and environmental considerations of valves and actuators. ValveSight's predictive intelligence built into the Logix MD digital positioners addresses these concerns by improving output and lowering costs without sacrificing safety and reliability,"* said Ahmad Zahedi, Director of

Research and Development, Control Sector, Flowserve Flow Control Division. *"ValveSight allows for increased mean time between failures by allowing plant managers to pinpoint developing malfunctions while the control valve is still in service, and reduces mean time to repair during turnaround periods. ValveSight software is easy to use and simple to integrate into plant operations."*

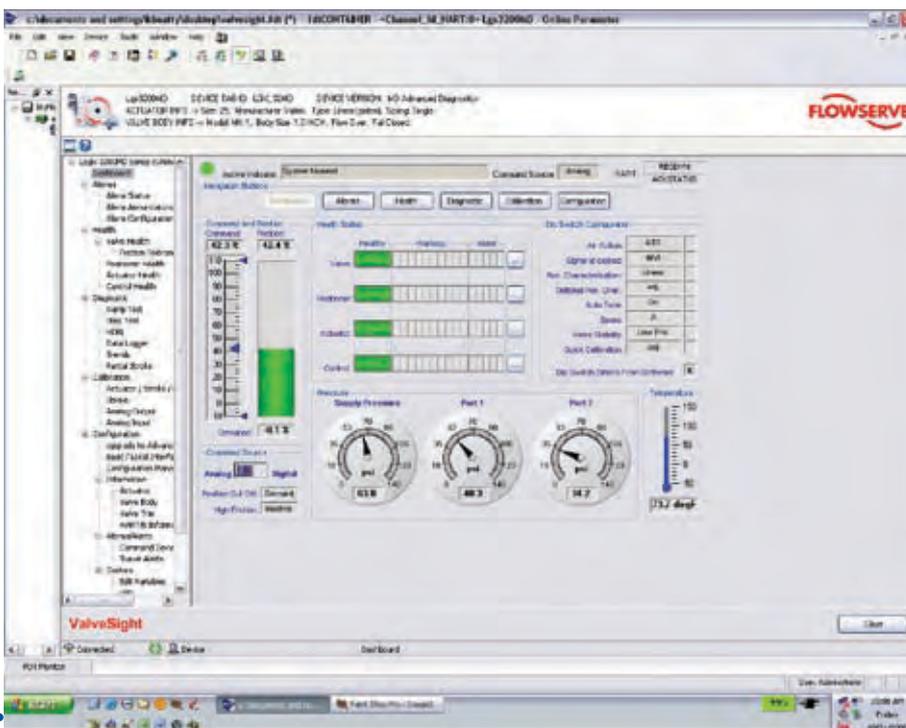
ValveSight helps plant managers better prioritize planned maintenance. Instead of checking and servicing hundreds of control valves during scheduled downtime, ValveSight alerts maintenance only when and where it is needed, saving time and money.

Because the intelligence of the diagnostic software lies within the Flowserve Logix MD series of positioners, the system is compatible with both Flowserve and competitor valves. ValveSight is also available as an upgrade to most existing Logix 3000 series positioners. The company plans to make ValveSight available on the Flowserve Logix 500 and PMV D3 family of positioners in the near future, as well as the Flowserve Automax family of smart switchboxes for quarter-turn valve packages.

Running on FDT/DTM, a globally recognized integration standard, ValveSight can be connected to a Host DCS, workstations, or any system that supports FDT/DTM open architecture. Due to the FDT/DTM technology standard, the user does not need special training in order to gain immediate benefits of the ValveSight system.

For more information about ValveSight, please visit [www.valvesight.com](http://www.valvesight.com).

*The ValveSight Dashboard*



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