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ENGINEERING MAINTENANCE SOLUTIONS

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# A WORD FROM THE PUBLISHER



## On a recent visit to the Southern Manufacturing exhibition, I came to some interesting conclusions...

Many of the successful companies attending the exhibition paid no attention to World events. Yes there are terrible atrocities being committed by unstable regime's and there are many political and national instabilities. A new US president, Brexit negotiations and the rise of the far right in European establishments.

The fact is that the World has never been stable or without conflict and concerns. Business and enterprise must and has always continued regardless of outside distractions.

Organisations that focus on the job in hand thrive and often achieve their goals. I recently read an article by Christer Idhammar , that in my opinion assesses business achievement and the psychology behind it.

The 70/30 Phenomenon not only applies to employees , but also companies and businesses alike.

### The 70/30 Phenomenon (Christer Idhammar)

When you ask front line supervisors or team leaders if all people in their teams are performing to the same standards or if some are doing more work and achieving more results than others, you will often get the same answer. All over the world, the most common answer, after some analysis, verifies that about 30% of the people do 70% of the work. This is not only true for front line people like mechanics and electricians, but also for planners, engineers, and other salaried employees. However, our focus in this column is on the front line of maintenance.

When I am involved in assessing maintenance performance for a customer, I always make an effort to talk one-on-one with individuals, but I also talk with a group of three to eight individuals. When you talk with people one-on-one, they are in most cases very open and honest about what they say. When you talk with a group of more than three, there will often be a change in attitudes.

In a good work system with a homogenous group of strong performers, there is not much difference in talking with people in a group or on an individual basis. However, in a typical work situation, it is common to see a big difference.

What I call "the griping level" is very high in a typical group. For example, in a group of nine, it is likely that three people will talk and complain about all the bad aspects of working in their mill, three people will show signs of support for the gripers, and three will say very little and remain passive.

I have discovered that the silent few are often very good craftspeople that belong to the group of good performers, the ones doing 70% of the work.

They are also sick and tired of hearing the gripers' constant complaints about everything that is wrong, especially when these gripers never do anything to improve the situation. As a manager, you should remember to listen to the good performers and to downplay comments from the gripers. You should give much more time and attention to the best performers; otherwise, you risk losing them.

When presenting observations and recommendations to a large, mixed group of people, I have often brought up the griping level as an improvement opportunity. After addressing this problem, I have had numerous craftspeople thank me for bringing it up. "If we could just get the 70% you talked about-and I believe you are correct with that figure in our organization — to pull their weight, we would do very well here," is a comment I have heard many times from individual crafts people.

I have also had human resource, production, and maintenance managers thank me for addressing the griping level. The fact is that people's attitudes change quickly after such an open discussion, especially after talking about the group they belong to. It is not positive to be branded as a griper, so the griping decreases and people start talking about more productive and positive issues. Then, when they hear others say that they do not have enough resources for a task, their reaction becomes "we must each do our own part of the work before we complain about not having enough people."

To really change the situation, supervisors or teams must start assigning work in such a way that all employees will have a chance to improve their performances. In a team environment, especially if teams are supposed to be self-directed, this can be difficult. In the pile of work orders that must be done, there are always jobs at the bottom of the stack that nobody wants.

As a supervisor, it is understandably tempting to hand work to your best performers, because you know it will get done and you won't need to worry about it anymore. However, to bring the whole team up to a high-performance level, you must make the effort to match the best performers with others when you assign work. It might take a little longer, but it pays off in the long run.

The same principal is vital when a proposed flexible work system transfers from the negotiated contract to reality. Unfortunately, it is common to see that after long negotiations, strikes, and increased pay, the flexibility agreement is not implemented. Remember that you only get the flexibility you have trained people for through their work assignments.

Michael Dominguez, Publisher.



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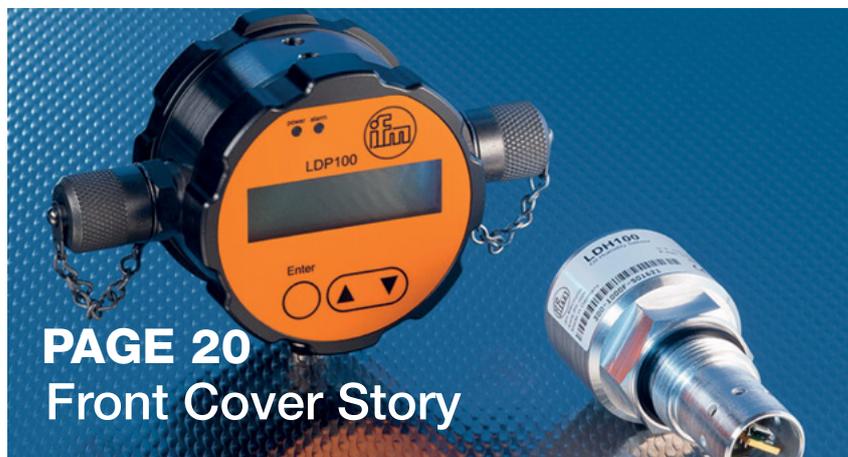


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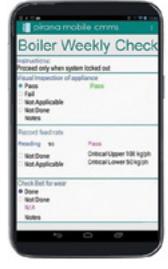

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# Theorem Solutions Launch FREE Mixed Reality Visualization App on the Microsoft App Store

UK-based Theorem Solutions' free Visualization application for the Microsoft HoloLens Mixed Reality device, has been officially launched on the Microsoft App Store, and is now available for download.

The App allows users to visualize and experience Engineering and Manufacturing design data in a mixed reality environment that combines the 'real-world' with high quality holographic representations.

It's a simple process to download the free Visualization Experience App from the Microsoft App store, and only requires a few details for validation: Name, Company Name and a valid email address, as well as a Microsoft HoloLens Headset of course!

The user will then receive an email that needs to be responded to in order to unlock a free 90 day trial of the Theorem Mixed Reality Visualization Experience.

The Visualization Experience gives users access

to a number of different sets of engineering data supplied by Theorem, that can be used to test the 'experience' in the Mixed Reality realm and see how the technology can suit a number of different use cases.

At any time during the free trial, users have the option to upgrade to the full subscription license (further details upon request) which will enable them to load their own engineering and manufacturing CAD and PLM data where it is automatically optimized for use in the Microsoft HoloLens.

Theorem's Experience Server then streams the data to the device allowing the user to interact and engage with their data like never before. The data



comes to life in the Visualization Experience as it's selected on the device, giving the user complete freedom of movement to view, manipulate and interrogate their 3D data, all controlled by the use of hand gestures and voice commands.

**To download the free App from the Microsoft App Store please visit:**

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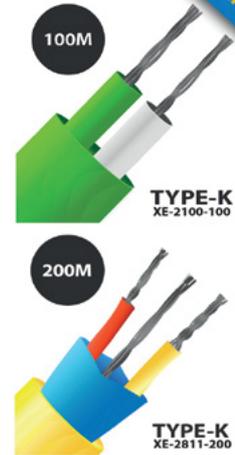
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# Hi-Line Freezes Prices For Seventh Year

Hi-line Industries, an established and reputable UK manufacturer of high quality compressed air purification equipment, has announced that customer prices are to remain frozen for the seventh consecutive year.

The company says it can do this thanks to greater product turnover and increased access to better prices as a result of rising year-on-year spend.

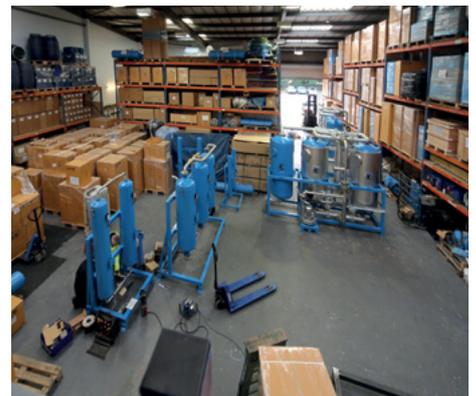
In a time full of uncertainty, Hi-line wants to let the marketplace know that some things remain clear and guaranteed. The fact that the company's energy-efficient compressed air equipment, which includes air dryers, nitrogen and oxygen generators, compressed air filtration equipment, condensate management/drains and service kits, has been available at the same price for the past seven years is a shot in the arm for customers in industries such as food, beverage, medical, general manufacturing, dairy, automotive and laser cutting.

Hi-line's strong market performance in recent years is a major contributory factor in the decision to freeze prices once more. For instance, at the company's year-end in July, turnover stood at a record level, with the order book continuing to swell in the period since.

Formed in 1999, Hi-line has expanded year-on-year, posting steady double-digit growth. Moreover, the demand for British-manufactured goods since the Brexit vote is unprecedented. In tandem with a weaker pound against the euro, Hi-line has performed impressively in the export market, although the UK is also proving strong, with an increasing number of national brands trying to support other manufacturers by placing orders in Britain.

A further factor behind Hi-line's ability to ensure prices remain unchanged is its good relationship with trusted suppliers. The company is part of the Made in Britain campaign and, whenever possible, opts to source wholly British materials to manufacture their flagship compressed air purification equipment.

Hi-line is a member of the British Compressed Air Society, carries ISO 9001:2008 certification and makes some of the most energy-efficient compressed air



dryers in the world. The company is also Britain's largest stockist of a broad range of air treatment ancillaries – and the country's largest supplier of refrigeration air dryers. As a result of its success, Hi-line recruited strongly in December and January to help cope with increasing demand for its products and services.

Further information is available from:  
Hi-line Industries Ltd  
Telephone: 01283 533377  
e-mail: [enquiries@hilineindustries.com](mailto:enquiries@hilineindustries.com)  
[www.hilineindustries.com](http://www.hilineindustries.com)

# Fluke offers a series of FREE CPD-accredited webinars

Throughout 2017, Fluke is running a series of free, scheduled, CPD-accredited webinars.



The first of these is titled 'Detecting Electrical Energy Loss Using Thermal Imaging' and is suitable for Electricians, Electrical Contractors, Electrical Engineers, Plant Maintenance Facility Managers, and Energy Managers. Other topics covered by the CPD-certified webinar series include power

quality and energy saving which are also aimed at personnel including Electrical Engineers, Plant Maintenance Facility Managers, and Energy Managers. The repeated schedule of dates and the means to apply can be found at [www.flukeacademy.shuttlepod.org/UK-Seminars](http://www.flukeacademy.shuttlepod.org/UK-Seminars).

The 'Detecting Electrical Energy Loss Using Thermal Imaging' webinars focus on the use of thermal imagers to detect electrical energy loss. The content covers fault finding in electrical equipment such as cables, connections, fuses, breakers, transformers, motors, etc., which can be associated with abnormal electrical energy losses. During the webcast, participants will gain a good introduction to the possibilities of using thermal imagers to find faults in loaded electrical equipment without disturbing production. The webinars are not intended as a full training package and are suitable for personnel with entry-level to intermediate knowledge of thermal imaging. Each 45 minute webinar concludes with a 15 minute Q&A session.

Information about all Fluke products can be obtained via the Fluke web site at: [www.fluke.co.uk](http://www.fluke.co.uk).

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## Hart Completes Ellesmere Contract

Hart Door Systems has completed a contract to install six Speedor Minis and six steel doors at the Ellesmere Port, Cheshire, factory of Less Common Metals (LCM), the world leader in the manufacture and supply of complex alloy systems and metals including those based on rare earth elements.

LCM required Hart's doors to conserve heat and save energy costs in its main working area. Steve Jones, Health and Safety and Production Superintendent for LCM commented: "Your guys were brilliant, very quick and tidy and very professional. It was a pleasure having them here, I would certainly recommend your company to others."



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# Empteezy Achieves Industry First As Its Safety Tank Shower Qualifies To Meet Two International Standards

Spill containment and spill control industry expert Empteezy has proof positive from three independent tests that its emergency tank shower (SE-VTS-1 tank shower) meets the rigorous standards set out by the American National Standards Institute (ANSI) and the three European Standardisation Organisations (CEN, CENELEC, ETSI).



Instead of simply going through a process of self-certification, Empteezy, which recently celebrated its 30th anniversary, has truly gone the extra mile and elected to have its tank shower undergo three independent tests to prove its compliance to international standards.

Empteezy worked with IAPMO R&T, North America's premium plumbing and mechanical product certification agency to demonstrate that the SE-VTS-1 tank shower, which distributes 75.7

litres of temperature regulated water per minute for 15 minutes met with ANSI standard Z358.1-2014. In addition, Empteezy worked with Applus+ Laboratories to verify the product's compliance with the ANSI standard.

Applus+ Laboratories also tested the emergency tank shower to verify its compliance with the European Norm (EN) standard for one piece of safety equipment. The product passed the test with flying colours.

Commenting on receiving the accreditations, founding director of Empteezy, Bruce Wishart said: "I am thrilled the tank shower has achieved the ANSI and EN standards, it's testament to the high-quality products Empteezy is associated with.

"Undertaking the test was entirely voluntary, but we were extremely confident in the tank shower's credentials and knew it would achieve the pass it deserved".

Andrew Lawrence, coordination manager at Empteezy continued: "The tank shower's new accreditations put it a class of its own, but also marks the next phase in the company's business development through being able to showcase it on a more international stage.

"There is plenty to be excited about within the company over the coming months, so I am excited to see how the rest of 2017 unfolds, we have got off to a flying start!"

Now fully compliant with two international standards (ANSI and EN) and verified by two trusted independent test bodies, the tank shower is set to achieve international recognition within the emergency shower and decontamination industry, and expected to further boost Empteezy's 18% increase in exports from 2016.

The tank shower is available with options that include; PIR sensor activated light, eye wash, foot plate activator and digital temperature & water level gauges.

The 2,000 litre water tank capacity provides a gravity fed flow rate that surpasses the standards requirements, even when an optional eyewash is running at the same time, and the heater ensures tepid water.

For more information, and to find out how your business could benefit from expert spill control and containment advice, visit [www.empteezy.co.uk](http://www.empteezy.co.uk).

# Explosion Proof C Rails & Light Crane Systems

J D Neuhaus, world leader in air hoists, cranes, trolleys and monorail hoists, is now introducing a range of C rail and light crane systems for operation with the company's established and successful mini air hoist range.

Both the C rail/suspension tracks and the light crane systems are rated for use in explosion and hazardous dust-laden areas up to ATEX Zone 2, 22.

Featuring high quality standard elements, the modular C rail systems/suspension tracks make for simple assembly and smooth movement of loads in accordance with individual customer requirements. The units, which are ideal for flexible material transport applications, are purpose-engineered to offer high durability when deployed in challenging environmental conditions.

Similarly, the light crane systems offer easy adaptation to load and operating conditions. Available in four standard profile sizes, design modularity again provides users with the opportunity for light and easy assembly, the result of which is smooth movement of the reinforced crane bridge and optimal space utilisation at low headroom conditions. Air delivery is facilitated via hose trolleys in the crane rail.

To help maximise system life, users can pick from a range of surface protections for the crane rail and trolleys, including coated, zinc-plated or chromated, while stainless steel is available as an option for lighter capacities of 100 and 200kg.

Both the light cranes and C rail/suspension tracks give provision for straightforward system extension to accommodate changing requirements over a working life.

The crane track length is fully selectable in accordance with customer requirements, while the bridge length can be specified up to a maximum of 6000mm as standard, with larger sizes available upon request. Track width is dependent upon the bridge length, but typically, a system with a carrying capacity of 125kg would dictate a maximum track width of 4500mm. This rises to 5000mm for carrying capacities of 250, 500 and 980kg.

The carrying capacities are of course determined by the choice of pneumatic hoist utilised. Here, JDN offers its mini 125, mini 250, mini 500 and mini 1000

models, which are not only offer lube-free operation for use in hazardous areas, but a price-competitive alternative in comparison with other types of powered hoist.

Principal advantages of JDN mini air hoists include minimal components for ease of maintenance, a wear-resistant motor braking system and suitability for horizontal pulling (in addition to conventional lifting and lowering). Where fitted with an extremely sensitive lever control featuring an emergency shut-off valve, lifting heights of up to 8m can be specified.

With over 200 employees across the group, J D Neuhaus GmbH & Co. manufactures pneumatically and hydraulically-operated hoists and crane systems up to 115 tonne capacity from its state-of-the-art facility in Witten, Germany. This globally unique specialisation means that J D Neuhaus has set the quality standard for the market, a move that has seen the company become the established global leader in its technology field with customers in more than 90 countries worldwide.

Resilience and reliability are the key product differentiators, thanks largely to their explosive protection rating which makes them ideal for use even in the most challenging of operating environments. Extreme applications include oil and gas exploration in arctic temperatures as low as 45°C, along with underwater tasks such as ship hull repairs, and plenty of others in demanding sectors like mining, the chemical industry, heavy plant construction and many areas of logistics.

The wide portfolio of services provided by J D Neuhaus includes equipment assembly, inspection, maintenance and general overhaul, along with the supply of customer training courses.

Over 80% of production from the Witten plant is exported, which is why the company has long-established subsidiary companies in France, Great Britain, Singapore and the USA, all of which have helped create a tight-knit global network in collaboration with international partners.



J D Neuhaus has history that can be traced back to 1745, and is now in its seventh generation of family ownership. Visitors to the Hebezeug-Museum (Hoist Museum) in Witten, are able to see for themselves the remarkable history of this progressive company.

Further information is available on request to:

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# New greener GAST pump ranges provide greater flow and deeper vacuum

GAST – the leading designer and manufacturer of precision air products and member of the IDEX Corporation – is introducing a new range of vacuum pumps and compressors to its extensive portfolio.

These new products are simple in operation, robust and an effective source of compressed air. The three pump and compressor ranges include sixteen oil-free and oil-lubricated rotary vane models and, in a first for the organisation, four claw pump models.

Announcing the new ranges, Gast Group's Andrew Lidington explains that the company has extensive knowledge of the pneumatic industry and its customers' needs continually drive the development and introduction of new and innovative products.

"GAST is already renowned as a world-class manufacturer of vacuum pumps and compressors and these additions to our portfolio will provide customers with products that, compared to our traditional offering, can deliver even greater flow and deeper vacuum. The addition of claw pumps also perfectly complements our portfolio and opens up new industries and sectors that we haven't been able to participate in previously," says Andrew.

"Using simulation software and the latest manufacturing techniques, we believe that the performance of our new rotary vane and claw pump models are class-leading. The range is also more environmentally-friendly than ever and, thanks to extended maintenance schedules, total cost of ownership is also significantly improved," he says.

## GAST Claw Pumps

Claw pumps are an often-overlooked technology due to a slightly higher initial cost. However, compared to oil-free rotary vane, claw pumps use significantly less horsepower to provide similar vacuum capability. They also provide 100% duty cycle and, with no carbon vanes and significantly less gear lubricant to replace, are quicker, easier and cheaper to maintain.

With only moderate energy consumption and very high efficiency, GAST's four new claw pump models – PA.155, PA.315, VA.155 and VA.315 – use contactless rotors that are synchronised by gears

without any lubrication in the pumping chamber. This frictionless operation avoids any residue (generated by rubbing during rotation) from contaminating the air supply; and means lower maintenance and operating costs, longer lasting performance and improved total cost of ownership.

With nominal capacities from 155 to 250m<sup>3</sup>/h at 50Hz, vacuum capability to 150mbar(abs) and pressures up to 2bar, the GAST claw pump range is ideal for numerous vacuum, compression, aeration, extraction and drying applications in sectors including printing, environmental, medical, bulk material handling, CNC machining and vacuum hold-down.

## GAST Oil-Free Rotary Vane Pumps

Adding to an already impressive portfolio of rotary vane pumps, two new oil-free models – SB.16 and SB.40 – being introduced feature an industrial Monobloc design with the rotor assembled directly on the motor shaft. This direct-drive design means fewer moving parts, making these new dry vacuum pumps extremely compact, reliable and easy to maintain. Additionally, a rear centrifugal fan ensures optimal cooling of the pump and each model is equipped with protective filters at the inlet and silencers at the outlet. Both models are also suitable for use as compressors.

A third model, the SC.100, has the rotor installed on the shaft and fixed by two bearings, with the motor being connected by a flexible coupling. The fan is installed between the pump housing and motor to ensure optimal cooling; and a robust and compact housing provides protection and keeps noise levels extremely low.

GAST's new oil-free rotary vane models offer nominal capacities from 16 to 100m<sup>3</sup>/h at 50Hz. All models provide vacuum in excess of 120mbar(abs) and are ideal for applications including printing, conveying, wood/plastic presses, automated packaging and pick and place operations.



## GAST Oil-Lubricated Rotary Vane Pumps

Ideal for applications as diverse as laboratory conditioning/refrigeration appliances, mass spectrometry, packaging, medical equipment, thermoforming machines and glass and marble machining, GAST's new ten-model range of oil-lubricated rotary vane pumps – including the LB.8, LC.12, LC20, LC.25, LC40, LC60, LC106, LC151, LC.205 and LC.305 – are ideal where the intake flow may require higher flow and deeper vacuum.

Additionally, and for applications where intake vapour is considerable, a WR version also features an integral system that separates oil and water condensate, which is then expelled when the pump is stopped.

All six oil-lubricated models offer nominal capacities from 8 to 305m<sup>3</sup>/h at 50Hz and total final pressures between 2 and 0.1mbar(abs).

Summarising, Andrew Lidington says that, thanks to their advanced performance, durability and ease of maintenance and serviceability, GAST products are trusted globally to operate in critical applications. "The introduction of these new pumps now provides us with a comprehensive product line, which will allow OEMs to minimise their product development timeline and investment and get to market faster than their competitors," he says.

For further information on Gast's new vacuum offering, call +44 (0)1527 504040, email [gastgroup.uk@idexcorp.com](mailto:gastgroup.uk@idexcorp.com) or visit [www.gastmfg.com](http://www.gastmfg.com).



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## Riello introduces low NOx versions to popular RS series

Riello has introduced low NOx (<80mg/kWh) 'blue flame' versions to all sizes of its RS range of burners. This is achieved through the use of a low NOx combustion head to ensure emissions conforming to EN 676 Class 3 in capacities from 3,600 kW to 6,250 kW.

The RS series of high-power monoblock burners is characterised by the advanced technological developments that have contributed to its design and energy-efficient performance, delivering high power levels whilst minimising size and weight. Dual fuel RLS low NOx models will soon also be available, featuring a dedicated pump motor to ensure a long life for the oil pump, combined with energy-savings.



RS models 310, 410, 510 and 610 are available in various air-fuel ratio control configurations, with the option of mechanical cam or electronic cam for modulation control. Variable speed drive technology ensures both low noise and electrical power savings.

Easy access to internal components through a hinged panel facilitates speed of commissioning and maintenance.

For further information visit [www.rielloburners.co.uk](http://www.rielloburners.co.uk)

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## Byworth Boiler Hire Appoint Sales Director

Michael Rutter, who joined Keighley based Byworth Boiler Hire in 2006, has been promoted to Sales Director.

Originally appointed as Hire Sales Engineer over the last ten years he has been involved in many aspects of the business including training, service work, sales and hire of industrial steam and hot water boilers.

Following completion of an HND in Mechanical Engineering at Oxford Polytechnic in 1986 Michael moved to Yorkshire to take up his first job with a leading manufacturer of towing and trailer equipment. As his career progressed a number of jobs followed including Export Sales Manager for a manufacturer of spring making machinery and gas fired furnaces. This job involved extensive travel to many overseas markets in Europe, Africa, South America, Asia and the Middle East – an experience he described as fascinating! After a brief spell working for a company back in his home town of Shaftesbury in Dorset Michael relocated back to Yorkshire and in 2006 to join Byworth Boiler Hire.

Michael commented: "Working at Byworth Boiler Hire is challenging yet at the same time very rewarding. The diverse range of customers and applications means it is always interesting and I've learnt a lot

about the industry with its myriad of applications for steam which continues to change and grow. Being a family owned business there is a great team spirit with a commitment to developing long term relationships with customers, some of whom we have been serving for over 30 years."

He added: "One of our greatest strengths is having Byworth Boilers as a sister company who build all our boilers and ancillary equipment. This means we can offer the most modern fleet of boilers in the industry and provide both short and long term hire solutions for many industrial sectors. Across the two businesses we can provide tailored solutions for hire or new plant and often work hand in hand to support each other's activities."

Away from work Michael is married to Kathryn, they have three children and this year celebrate their silver wedding anniversary. His hobbies include cycling, bridge and horse riding.

Managing Director Peter Baldwin said: "Michael is a valued member of the Byworth Boiler Hire team who,



with his commitment and dedication, has greatly contributed to the development of the company over the last ten years. His promotion is well deserved."

Byworth's extensive fleet of over 100 hire boilers is constantly being enlarged, upgraded and maintained to ensure continuity and efficiency. The company also offers a comprehensive back-up service with an experienced team of professional engineers, based throughout the UK, able to attend site quickly to provide full support.

For more information visit:  
<http://byworth.co.uk/>

# Watkins Hire Rolls Out New WASPS Service To Cover Mandatory Steam Boiler Inspections And Emergencies

A leading UK packaging manufacturer is among the first companies to sign up for the pioneering Watkins Annual Steam Protection Service (WASPS), which guarantees business continuity during mandatory steam boiler inspections.



All steam boilers are subject to an annual insurance inspection, resulting in downtime for the boiler and potential interruption of manufacturing. The standard solution is to hire a temporary boiler; however, equipment availability cannot always be guaranteed, leaving manufacturing facilities potentially exposed and open to rapidly escalating downtime costs.

To address the problem, Watkins Hire introduced its WASPS scheme to guarantee customers access to a dedicated boiler package to cover downtime of steam plant for all locations, with an agreed number of transport movements and commissioning charges for a fixed monthly fee.

One of the first companies to sign up for WASPS is a leading UK packaging specialist with five manufacturing sites across the country, all using steam as a critical element in the production process.

Its interest in the scheme was sparked following an annual steam boiler inspection at one of its sites in December, which had to go ahead without a replacement hire boiler unit due to lack of availability, because of seasonal demand over the winter.

The forced shut-down resulted in an unplanned loss of production, resulting in additional costs and delays to orders.

The WASPS contract now in place ensures availability of a replacement boiler package for all annual steam boiler inspections at all of the company's sites, to ensure continuity of manufacturing. The agreement covers a six year period, (3 + 3 year extension).

The first stage is a comprehensive site survey carried out by Watkins' specialist team, to identify the plant support requirements across the customer's estate. This resulted in a 7000kg/hr 250psi trailerised steam boiler package being specified to cover all planned steam down-time.

Once the ring-fenced boiler support package is in place, Watkins' team liaises closely with key staff at all sites to programme anticipated annual inspections and co-ordinate boiler supply logistics to ensure it is always available when and where needed.

When the temporary boiler plant is not on a customer's site, it is held by Watkins on permanent standby to cover emergencies resulting from

breakdowns or unplanned maintenance.

The arrangement overcomes the need for substantial capital outlay on new plant by the manufacturer, replacing this with a monthly payment that for tax purposes can be treated as a standard business expense.

The WASPS agreement includes full servicing and maintenance costs for the boiler rental plant for the duration of the contract, ensuring equipment is always in tip-top condition with no unbudgeted expenditure.

Terry Stevens-Smith, Watkins' director – National Accounts, says: "Mandatory inspections of steam boilers are a vital part of the safety and insurance regime for this critical piece of equipment. For manufacturers who depend on such plant, however, it often presents a significant logistical challenge, due to the importance of such plant for industrial processes and manufacturing.

"The WASPS package provides complete peace of mind for end users in this position, ensuring continuity of manufacturing, budgetary certainty, and providing a valuable additional safety net in the event of plant breakdown. We are in discussions with a number of companies who are similarly reliant on steam plant, and believe this contract will be the first of many similar agreements in the near future."

For more details, call 0800 999 6365 or email [hire@watkinshire.co.uk](mailto:hire@watkinshire.co.uk), or visit [www.watkinshire.co.uk/wasps](http://www.watkinshire.co.uk/wasps)

# Fulton Celebrates As 1000<sup>th</sup> Trainee Gains City & Guilds Certification

Just three-and-a-half-years after their introduction, Fulton Limited – the leading heat transfer specialist – is celebrating having welcomed its 1,000<sup>th</sup> trainee onto its City & Guilds Accredited training course.



The City & Guilds-certified, one-day training course was introduced by Fulton in 2013 and offers a mix of theoretical and practical operational assignments which, the company claims, bridges the gap between the more expensive courses (that can cost many thousands of pounds per employee), and cheaper, straightforward 'toolbox' training.

Commenting for Fulton, customer services manager Jeff Byrne says: "This is a real milestone for the company. We are delighted to have welcomed Muhammad Ateeb Farooq, our 1,000<sup>th</sup> trainee, who successfully completed the course and gained the City & Guilds certificate. We operate the courses throughout the UK and Republic of Ireland and at

our Bristol-based manufacturing facility, which has a dedicated training room."

He goes on to say that with no two boiler systems being the same, Fulton prefers to run its training courses at customers' own facilities, so technicians and engineers learn on the equipment they will be monitoring day-to-day. However, Fulton's in-house facility can accommodate training for its range of electric, gas, oil and dual-fuel-fired vertical and horizontal steam boiler systems.

City & Guilds certification adds value to the training courses and supports both the Safe Management of Industrial Steam and Hot water boilers Guidelines



BG01 (SAFed) and INDG-436 (HSE) regarding operation and training.

The Fulton Operator Routines & Maintenance course is designed for boiler operators and covers basic day-to-day operation and monitoring; and provides employees with the knowledge required to monitor a boiler and ensure it is running efficiently and safely. It also includes training in operational procedures, daily blowdowns, and checking of water levels, alarms, etc. the course also examines the importance of correctly treated feedwater and what boiler inspectors will look for during routine insurance inspections.

"We have always promoted the benefits of operator training to our customers and enjoy seeing technicians and engineers grow in confidence as they improve their knowledge," says Jeff.

Fulton's training has proven to be invaluable to employers, with operators managing more of their own maintenance and repairs and avoiding costly call-outs that require no more than the simple flick of a switch to resolve.

"Real examples like this prove that a Fulton one-day Operator Routines & Maintenance course could potentially save the cost of many expensive and unwanted engineers' visits," says Jeff.

For further information on Fulton's City & Guilds Accredited training programme, call 0117 972 3322, or email [jeff.byrne@fulton.co.uk](mailto:jeff.byrne@fulton.co.uk).

## Which Technologies Should You Use?

How do you decide which condition monitoring technologies to use?

There are many condition monitoring technologies that your company should employ. And within each technology there are sub-technologies. For example, within vibration analysis we can use high frequency analysis, spectrum analysis, time waveform analysis and phase analysis. Within each sub technology there are settings we must select. For example, we must set the frequency range when collecting spectra. But which technologies should we use? Which settings are correct? The best way to make those decisions is by understanding the failure modes of the equipment.



If you understand what leads to failure, and what is likely to fail, you can select the most appropriate technologies and settings. You may argue that that is an obvious statement to make. You are probably not using vibration analysis on your steam traps... But after 30 years of experience in vibration analysis, it is common to see that fault conditions a totally missed because of the misapplication the technology.

It is not necessary to perform a full RCM (reliability centered maintenance) or FMEA (failure modes effects analysis) to make this determination. A so-called "accelerated RCM" is sufficient to ensure that you make the right decisions.

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# Condition Monitoring. A different type of insurance

**Insurance.** It is probably fair to say that no one likes paying for it, but we are relieved to have it when the time comes to make a claim for an unexpected breakdown, loss of equipment or loss of output.

A real bugbear of insurance is that it can feel like 'lost' money in the years when a claim is not made.

The same 'what am I getting for my money' can also be applied to condition monitoring sensors when used as part of a predictive maintenance strategy.

You buy and fit the sensor and then...? If your gearbox, for example, is running well then the sensor can just show that all is fine and no maintenance is required. That's fine, but where is the return on investment in that?

However, like insurance it can be a longer game before you see a return on your expenditure. Unlike insurance though, you only pay the premium once.

Condition monitoring is a different kind of insurance. It provides re-assurance when all is well, but a real-time, continuous sensor, such as vibration or oil debris, will also provide you with the cover of alerting you early when a problem is developing. This gives the opportunity to take remedial action in a planned and efficient way before that problem develops into a catastrophic failure.

The high costs of downtime, repair and loss of output mean that, typically, preventing one failure will provide a full return on the investment cost of the condition monitoring sensor.

Additionally, when used as part of a predictive maintenance programme, a condition monitoring



sensor will reduce your maintenance expenditure by providing the insight that the equipment is running well and does not require any routine or time-based activity.

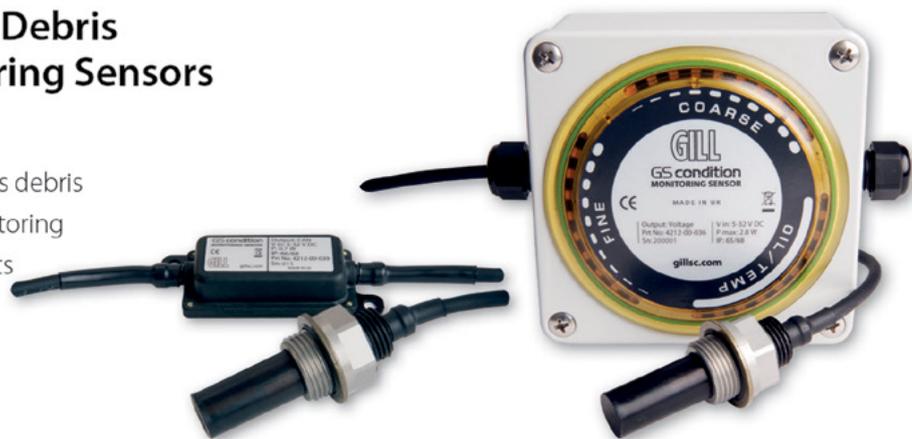
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# Mitsubishi Electric Adds Advanced Condition Monitoring Capabilities To The FR-A800-E Inverter Series

Mitsubishi Electric has extended the diagnostics capabilities of variable speed drives by integrating smart condition monitoring (SCM) technology in a new version of the FR-A800 inverter series.

With the new FR-A800-E line, the company has advanced the concept of drive-based condition monitoring. The user is able to carry out condition monitoring functions directly within the inverter.

The additional capability comes via the integration of the SCM Kit-1 into the FR-A800-E inverters. The pre-configured, plug-and-play solution includes the FAG SmartCheck vibration sensor from e-Factory Alliance partner Schaeffler. Combined with the PLC function, also integrated within the FR-A800-E models of inverter, it provides a complete drive-based solution for preventative maintenance. It is the only solution of its kind on the market.

This integrated approach to monitoring the health of individual assets combines traffic-light indication of the asset through red, amber and green status lights on the sensor, plus more detailed analysis within the FR-A800-E series. Within the inverters operating temperature and vibration feedback from the SmartCheck sensor is combined with the monitoring of a full range of other external parameters, including speed, voltage and current information. Detailed diagnoses can be monitored remotely, or displayed on the FR-A800-E inverters' integrated screen.

In the event of a deterioration in operating conditions or a likely impending failure, the system will recommend countermeasures via clear text



Above: The pre-configured, plug-and-play solution includes the FAG SmartCheck vibration sensor from e-Factory Alliance partner Schaeffler. Combined with the PLC function, also integrated within the FR-A800-E models, it provides a complete drive-based solution for preventative maintenance.



Above: Mitsubishi Electric also offers a separate SCM kit – the SCM Kit-1 COMPACT – which consists of a preconfigured control cabinet with sensor controller, a touch panel with multilingual display and pre-assembled vibration sensor.

messages, or by forwarding them to higher-level systems. This means that maintenance personnel do not need any special diagnostics expertise in order to be able to identify faults. They can observe the drive messages, take the necessary actions and schedule any maintenance work required. As a result, downtime is minimised and system availability maximised – which in turn leads to further cost reductions. The net result is that system maintenance for critical assets can be planned in advance, resulting in a longer service life.

### System configuration

Within the FR-A800-E models, the PLC function acts as the sensor controller for the SmartCheck sensor, eliminating the need for a separate controller. The sensor itself can be added to assets where required, being easily retrofitted to the fixing bolts of rotating machine components such as motors, shaft bearings, pumps, fans, drums and gearboxes. Once set up, the SCM provides 24/7 monitoring of the machine, with functions including bearing defect detection, imbalance detection, misalignment detection, lack of lubricant, temperature measurement, cavitation detection, phase failure recognition and resonance frequency detection.

Up to two further SmartCheck sensors can be added and wired over Ethernet to FR-A800-E type inverters as needed, and cabling requirements are

minimised through the use of Power-over-Ethernet (PoE), so that the vibration sensor can be fully integrated using only a single cable.

While the display on the FR-A800-E models provides clear text messages, more detailed feedback and analysis can be provided by connecting an optional Mitsubishi Electric GOT2000 HMI. This can display not only detailed status information relating to the machine condition, but also maintenance proposals, alarms with a time stamp or trend data. Early diagnosis enables initial or pre-emptive maintenance work to be carried out promptly.

Further, the FR-A800-E series provides an in-built web server, enabling operators to use a standard web browser to connect using PCs and mobile devices. Fine-tuning production settings and adjusting individual parameters in line with system requirements then becomes possible while on the move.

An app suitable for use with mobile devices, including iPhones and iPads, is also available and this expands the range of motor control and monitoring functions, from simple motor control functions through to managing alarms and operating parameters remotely. In addition, status information from the SCM solution is still shown on the display as clear text.

Today more than ever before, manufacturers need to respond to global competition, adapting their business models accordingly. A key aspect of the digital future of Industry 4.0 is the ability to control and optimise processes in real time, and this can only be achieved with intelligent monitoring systems. Together with its e-Factory Alliance partners, Mitsubishi Electric is developing the technologies that will help companies rise to the challenges of Industry 4.0, and the SCM solution is a prime example.

The FR-A800-E inverters with SCM Kit-1 will be officially launched in April. In the meantime, Mitsubishi Electric is already offering a separate SCM kit – the SCM Kit-1 COMPACT – which consists of a preconfigured control cabinet with sensor controller, a touch panel with multilingual display and pre-assembled vibration sensor.

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# Need To Keep Track Of Your Maintenance Activities?

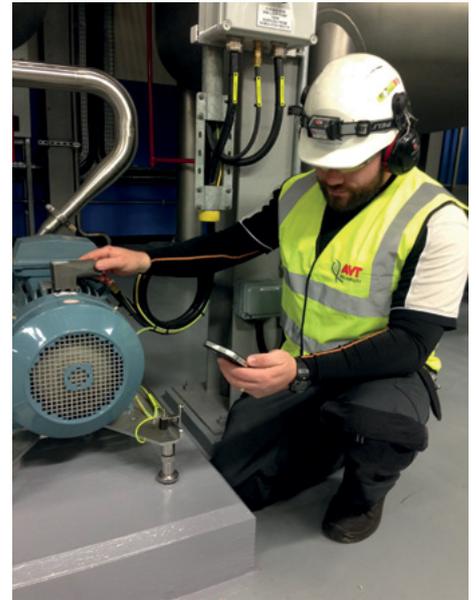
Machine Sentry® provides the perfect tool to do this. Whilst not directly linking to an enterprise financial/stock management program like SAP, Machine Sentry® is a convenient and inexpensive method of collecting and reporting data, planning maintenance activities and monitoring adherence to a plan.

Machine Sentry® removes old paper based systems and replaces them with a software tool that can run on any Android or Windows smart phone/tablet. Collected data is uploaded directly to a web hosted database, allowing any authorised user to view from any location in the world the current and historical activity.

Keeping a track record of any activity performed on an asset is not only a legal requirement, it is a key necessity for any asset management program. The use of 'off the shelf' mobile phones or tablets coupled with easy to use software gives optimal staff productivity that improves equipment reliability using a single integrated platform for all your condition monitoring measurements and activities. No longer do you need lots of different equipment and systems to gather, record and track your assets.

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# CBM by ifm - Condition-based maintenance

The more a plant runs, the more efficient it is. That is, of course, until it breaks down.



Different operating philosophies can be applied to running any operation. Traditionally it was common to take the machine out of service on a regular basis, service it, and then put it back into operation but more recently that has been seen as potentially wasteful, because there might not actually be anything that needs doing, yet the production time will never be regained.

The technology to predict what could go wrong has never been better than it is today, so there is every reason to run machines as much as possible and only stop to maintain them based on the condition they find themselves in.

Estimates vary, but it is generally accepted that at least 70% of all hydraulic failures and up to 45% of all bearing failures are caused by oil contamination. So it certainly makes sense to monitor the condition of the oil in any system.

Two major factors determine the condition of the oil; how much water it contains and the extent of solid particle contamination.

What are the consequences of water in oil? Once any water molecules dissolved in oil exceed saturation of the oil, the water will exist as droplets in emulsion, then eventually free water. It is these latter two stages that can cause the most harm through corrosion, and the incompressibility of water which leads to wear. Water will cause the viscosity of the oil to deteriorate and will react chemically with the oil thereby having a detrimental impact on its

lubricating properties. In addition, water will lead to ageing (oxidation) of the oil. The end result will be cavitation of pumps, and poor filterability, leading to a reduction in filter service intervals, and overall a reduction in machine availability.

When it comes to detecting the amount of water in the oil, ifm electronic Ltd offers ideal solutions with their LDH. The LDH is a sensor designed to measure the relative water content in the oil in the range of 0 to 100 % by means of a capacitive measuring element and to provide this as a proportional 4 to 20mA signal.

To break that down a bit: At 0 % the oil is absolutely "dry", and the output signal level would be 4mA. At 100 % the medium is completely saturated, and this would be signalled by 20mA. No more water can then be dissolved so it is present as free water, which causes a cloudy appearance. The water molecules are no longer in the gas phase but they are present in the oil in liquid form. The LDH100 sensor measures in the gas molecule phase.

The great advantage of this is that countermeasures can be taken long before free water is formed.

Besides the relative water content the sensor also measures the oil temperature as a 4 to 20mA signal between -20°C and +120°C, and it will operate up to a system pressure of 50 bar.

So that is the water problems solved, but what about solid particles?

The presence of solid contaminant particles in the oil interferes with the ability of the fluid to lubricate and causes wear to the components. The extent of contamination in the fluid has a direct bearing on the performance and reliability of the system and it is necessary to control solid contaminant particles to levels that are considered appropriate for the system concerned. Heavily contaminated oil can reduce the power by as much as 15-20%, slowing machine response and taking longer to perform an operation.

Remembering that at least 70% of all hydraulic failures are caused by oil contamination, what is the cure? Filters can be used, and they are valuable, but the system needs to be turned off to check or change them. Again the solution can be found in the product range of ifm electronic Ltd with the LDP particle count monitor.

Oil cleanliness is standardised under ISO 4406, and the LDP monitors to this standard, meaning that particle sizes of 4 µm, 6 µm, 14 µm & 21 µm are detected and reported. The optical technology deep with the LDP detects any particles and provides the information in the form of analogue, digital or CAN outputs.

The LDP is designed to take the pressure, too, with a dynamic rating of 420 bar and a static rating up to 600 bar.

So keeping a plant running at its most efficient is a worthy aim, but only possible with the right equipment. The right equipment, and advice, comes from the right supplier: ifm electronic Ltd.

ifm is committed to working closely with its customers to develop products which precisely match their needs, and the company provides expert, readily accessible technical support to help users maximise the benefits they gain from ifm products.

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# New Fluke ProcessMeter combines the functionality of a loop calibrator with an industrial safety-rated DMM

**Addition of a simple module enables wireless connectivity to a mobile phone using the Fluke Connect app**

Fluke has introduced the Fluke 787B ProcessMeter™ which offers double troubleshooting capabilities by combining the power of an industrial safety-rated digital multimeter (DMM) and a mA loop calibrator into a single, compact test tool. Based on the trusted measurement capabilities of the Fluke 87 DMM, the 787B adds the ability to measure, source and simulate mA with the accuracy and resolution you would expect from a Fluke mA loop calibrator, giving the ideal tool for troubleshooting and calibrating current loop applications. When it is fitted with a Fluke ir3000 FC module, technicians can wirelessly monitor, log, and share data from the field with their team using the Fluke Connect® mobile app.

The 1000V CAT III / 600V CAT IV safety-rated Fluke 787B ProcessMeter can source / simulate a 20mA

DC current, providing a simultaneous mA and percentage scale readout for calibration purposes. It offers Manual Step (100%, 25%, Coarse, Fine) plus Auto Step and Auto Ramp. For troubleshooting purposes, it features true-RMS DMM capabilities to measure to 1000V AC/DC and 440mA AC/DC, as well as resistance and frequency (to 20kHz). It also offers Min/Max/Average/Hold/Relative modes, diode test and an audible continuity check.

When fitted with a Fluke ir3000 FC accessory, measurements can be wirelessly transmitted to the Fluke Connect app on smartphones or tablets and automatically uploaded to FlukeCloud™ Storage, eliminating transcription errors. Technicians can collaborate in real time with other colleagues with ShareLive™ video calls, increasing productivity in the field. Measurements from the 787B can be



combined with measurement data from multiple Fluke Connect test tools to create and share comprehensive reports from the job site via email.

Technicians requiring the added functionality of a 24V DC loop power supply and a HART mode setting with a built-in 250Ω resistor should choose the Fluke 789.

Information about all Fluke products can be obtained via the Fluke web site at: [www.fluke.co.uk](http://www.fluke.co.uk).

# Measuring Temperature Was Never So Cool

## The TN Temperature Sensor From Ifm Electronic

**With a wide temperature range and fast response the TN temperature sensor from ifm electronic is the best in its class and simple to use, on liquids or gases.**

The TN is a complete temperature switch with a fixed probe. Naturally the TN features IO-Link for immediate Industry 4.0 integration.

With a range from -50 to 150°C, freely scalable, the TN is ideal for most industrial processes, and can react as fast as one second (T05). The pushbutton setting is intuitive and the display versatile. Showing four digits in red or green as well as the yellow output LED, the display is easy to read and can be seen from all angles by rotating the head. In addition, the user can select when and how the colour changes to show a switching status change

or to highlight a particular range of temperatures.

Outputs are available as single switch and analogue, or two switch points, depending on the version chosen. The TN recognises signal polarity automatically and switches PNP or NPN as required.

ifm is committed to working closely with its customers to develop products which precisely match their needs, and the company provides expert, readily accessible technical support to help users maximise the benefits they gain from ifm products.



For further information  
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Telephone: 020 8213-2234.  
Visit: [www.ifm.com](http://www.ifm.com)

# Start the Season on the Right Foot with SpeedClean's Coil Cleaning Checklist

Proper air conditioner maintenance boosts energy efficiency, saves money



With warmer weather just week's away, spring is the ideal time to perform coil cleaning and maintenance. Cleaning coils before the summer is smart for businesses because it can help ensure that systems perform properly throughout the season and without consuming excessive amounts of energy.

"Coil cleanings save money through increased energy efficiency. With the right products, contracting professionals can take care of condenser and mini-split coil cleanings fast, saving themselves money."

When coils are not cleaned regularly, particles build up in between, which makes the air handler work harder and the heat exchange process less efficient. Industry-leaders state that preventative maintenance practices, such as regular coil cleanings, are key to keep equipment running at their peak efficiency, save energy and decrease the likelihood of system failures, potentially extending the life of the HVAC system.

Dirty coils also negatively impact indoor air quality. When dirt, dust and pollen are clogging the coils, more of these particles are let out into the home or office along with the cooled air. Uncleaned coils also promote the growth of bacteria, mould spores and

other unhealthy organisms that can produce bad odors, allergies and generally contaminate the air.

## What steps should contractors take to clean condenser and air handler coils?

SpeedClean's coil cleaning checklist will help ensure HVAC technicians and contractors have taken all the necessary steps to properly clean a building or office's condenser or air handler coils. Some items on the list include:

- 1. Inspect and clean mini split ductless systems at least annually.** For greater efficiency, check mini split systems between seasons – once in the autumn and once in the spring. Inspections should include checking filters, coils and blower wheels for dirt buildup.
- 2. Avoid cleaning coils using compressed air or nitrogen.** This blows dirt and debris into the air, creating IAQ problems and possibly recontaminating the coil and blower wheels that were just cleared. It also displaces any mold spores, which can create health problems and further mould issues if not properly managed.
- 3. Use pressurized water.** This is the best way to flush dirt and debris and thoroughly clean



the coils, using limited chemicals. Consider using a portable, battery operated coil cleaning system like the CoilJet CJ-125 for cleaning coils and blower wheels.

- 4. Protect walls and floors during the coil cleaning.** Condensate lines generally don't do a good job of moving a lot of water. Using a bib system, such as the Mini Split Bib® Kit, will safely capture excess water and cleaner and protect walls, floors and furniture from overspray.
- 5. Treat coils to prevent the smelly "dirty sock syndrome."** Apply an EPA-registered mold and mildew inhibitor to protect against odor-causing bacteria for months at a time. Make sure the chemical is safe to apply while the space is occupied, like Mould Control from BBJ.
- 6. Don't forget about the condenser coils.** Dirty condenser coils can drive up the ductless system's heating and cooling costs. Make sure to clean condenser coils with pressurized water every time indoor coils are cleaned.

SpeedClean carries a variety of coil cleaning equipment are simple to use and can be operated by one person. The CoilJet® CJ-125 quickly cleans coils without damaging sensitive fins and makes it easy to clean HVAC coils even in hard to reach areas. For mini-split systems, the Mini-Split Bib® Kit makes coil cleaning quick and mess-free.

Visit [www.speedclean.uk.com](http://www.speedclean.uk.com) for additional education and check out the wide array of residential and light commercial HVAC maintenance tools.

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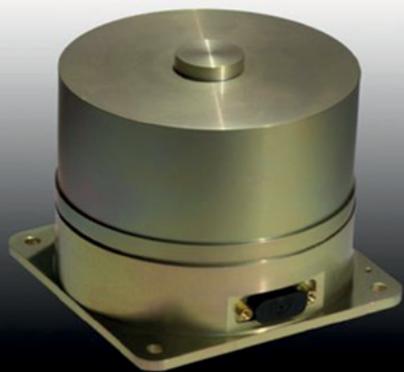
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into a bucket.



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Welding for the aerospace industry requires an extremely high level of precision. For products to work under a zero gravity atmosphere, air tight joints are essential, making laser welding the perfect choice.

Carrs are currently involved in welding part of the reaction wheels used by New Space Systems. These wheels are increasingly popular for use in satellites and spacecraft for full three-axis manoeuvrability and accurate speed control.

With huge success, these wheels have been exported to the USA, Indonesia, China, Spain, Germany and Italy.

# ELA Container Offshore GmbH delivers office containers for MPI Enterprise

ELA Container Offshore GmbH has recently delivered three ELA Offshore Multipurpose Rooms on the MPI Enterprise, an offshore construction jack up vessel.



The vessel, which is designed to transport, lift, install and decommission components such as jackets, monopiles, wind turbines and transformer stations, has been contracted to complete a turbine installation project including monopiles.

The ELA Offshore Containers are equipped as Office containers and will be used during the offshore transportation and installation of turbines on an Offshore Wind Farm.

The containers are expected to be used until July 2017 and are equipped with tables, whiteboards, cabinets, chairs, fire extinguishers and trash cans as requested by the client. These containers will offer employees the best possibility to work offshore while still feeling at home in well-designed containers with wooden details in the interior. "Thanks to their ISO 20 ft. High Cube dimensions and plug & play system, lifting and installing the containers is very easy. Hence the reason why the client chose to install the containers themselves" says Frank ter Haak, Business Development Manager at ELA

Container Offshore. In addition, all containers are delivered with a technical handbook, explaining the electrical outfitting of the containers and enabling a smooth connection to the board system. "If assistance during assembly or disassembly is required, ELA technicians will be able at any time to assist during installation in any on- or offshore location in the world", continues ter Haak.

Within 10 days after the purchase order ELA Container Offshore was able to deliver the containers to the mobilization port, where they were installed on the vessel. In addition, parent company ELA Container GmbH has also provided onshore containers for the companies in the mobilizing port. Hence, the ELA Container Group worked closely together to offer an "all-in-package" both on- and offshore to satisfy all needs and requirements of their customers. Thanks to good communication between ELA Container Offshore and the client, delivery went smoothly and the containers are currently being used during the installation project, both on- and offshore.



ELA Container Offshore has already gained diverse experience in the Offshore-Wind and Offshore Oil & Gas Industry. Whether on pontoons, transformer platforms, rigs or supply vessels - ELA Container is the ideal partner, offering tailor-made concepts for all requirements in the form of Living Quarters, Offices, Dining Rooms, Galleys, Laundries, Recreation or Locker Rooms and all types of Carrying Units. ELA Offshore containers are equipped with all the necessary utilities. This guarantees, in combination with all ELA Offshore features, a long service life, functionality and comfort.

The high quality Containers are "Made in Germany" according to German quality standards and possess all necessary certifications such as DNV 2.7-1 / EN 12079-1, DNV 2.7-2, based on SOLAS, IMO FSS Code and MLC as well as CSC and are approved from several IACS-companies. In terms of fire resistance, an A60 insulation provides high safety standards. Every container will be checked before delivery. Depending on customer requirements, ELA Offshore Containers are individually customized, immediately operational and are available at short notice.

## The main features of ELA offshore accommodations include:

- Flexibility on demand
- One base type with various accommodation solutions
- Easy handling thanks to standard 20ft High-Cube ISO standard dimensions
- Highest quality standards

For more information about the company, its products and services, please visit [www.ela-offshore.com](http://www.ela-offshore.com)

# Make Beko Technologies The First Place To Come To For Your Measurement Needs

For the last few years BEKO TECHNOLOGIES have been consolidating their position as the leading provider of solutions for treatment of compressed air and condensate.



At the same time a number of innovative measuring devices have been brought to market such as the METPOINT OCV which is the best way for companies who require the highest levels of "oil free compressed air" to continuously measure the remaining oil vapour content.

Not only are BEKO TECHNOLOGIES involved in the treatment of air downstream of the compressor but also out in the factory, measuring leaks, flow, pressure, dewpoint, breathing air, ISO quality checks, and providing customers with real expert advice.

Energy efficiency and quality assurance are important constituents in the planning and maintenance of production plants. They both require the monitoring of processing measurement equipment to be able to immediately identify deviations and energy losses.

With the comprehensive series of METPOINT measurement equipment, BEKO TECHNOLOGIES has taken a leading market position. METPOINT® OCV, for example, is the only measuring system in the world with TÜV certification that is able to measure the residual oil-vapour content, and as a high-performance product it is now established and much in demand in the fields of compressed-air/compressed-gas technology.

**Other members of the METPOINT measurement team are:**

**METPOINT DPM :** Stationary and plug in portable dewpoint measuring device for measuring moisture content in compressed air. The data of the continuous measurements are shown on the display and automatically stored in the data logger.

Easy installation and rapid response means a quick answer to "How dry is my compressed air?"

**METPOINT FLM:** Flowmeter for precise and reliable measurement of compressed air usage.

**METPOINT LKD :** Leak Detector for the detection of leaks in the compressed air system. Small leaks can be costly. With 15m range, this hand held ultrasound detector will find all significant leaks safely and quickly. The BEKO leak detector is a low cost solution to saving compressed air costs.

**METPOINT MMA :** continuously and reliably monitors the quality of breathing air, developed for use in hospitals. This enables pharmacists to comply with the legal obligations of the European Pharmacopoeia. Monitoring of medical compressed air in a single box. It can check O<sub>2</sub>, CO, CO<sub>2</sub>, SO<sub>2</sub> oxides of nitrogen and water vapour. Includes advanced features such as 24 hour auto calibration cycle. It can also be linked to other METPOINT devices.

**METPOINT PRM :** Pressure transducer that detects the relative pressure (gauge pressure) in gaseous and liquid media. High Accuracy, better than 0.5%. Operating pressure 0-25 bar or 0-60 bar.

**METPOINT BDL:** innovative graphic display recorders for the recording of the parameters for compressed-air and gas applications. The electronic recording system measures the connected input signals and determines the information that is required for the respective application. These are displayed and stored on the device. The device handles up to 12 optional sensor inputs which can be digital, analogue or a mixture. This device makes it very easy for the responsible person to have a complete picture of the compressed air system with the corresponding saving of energy, rejected products compressed air and operator time.

If you would like any further information on our METPOINT range please call us on 01527 575778 or email us [info@beko-technologies.co.uk](mailto:info@beko-technologies.co.uk)

# ICS Cool Energy's new i-Chiller Compact

For industrial applications demanding high efficiency cooling with a small footprint, temperature control specialist, ICS Cool Energy, has introduced the i-Chiller Compact range.



The five model range of air cooled liquid industrial chillers, brings the compact models in ICS Cool Energy's acclaimed high performance Eurovent-certified i-Chiller range up to date. There are a variety of features and options including stainless steel panels for food and laboratory applications as well as versions that provide highly accurate close temperature control to 0.5°C.

The i-Chiller Compact models have cooling capacities ranging from 1.4 to 4.8kW, making them suitable for use in a variety of industrial applications, with the whole i-Chiller range providing capacities up to 230kW. All models are equipped with a high efficiency finned coil evaporator installed within an atmospheric hydraulic storage tank and a non-ferrous hydraulic circuit. This ensures reliable operation in particularly challenging applications and with liquids containing impurities.

The i-Chiller Compact's storage tank also provides optimum precision in temperature control, even if there are imbalances caused by sudden changes in load demand from the user. The operation of

the compressor in highly stable conditions means the chiller can run with almost unvarying inlet temperature despite its surrounding conditions. Together with a constant water flow rate, this ensures the maximum lifetime of the compressor.

Users are also given optimum control with the addition of an XR60CX parametric microprocessor controller. This allows management of the i-Chiller Compact's key functions such as outlet water temperature control, alarms and the user interface. What's more there is added flexibility for installations as it only requires a single phase power supply.

Richard Metcalfe, Sales Director at ICS Cool Energy, said: "The i-Chiller Compact range extends the flexibility and performance of our i-Chiller range, making the advanced performance features and benefits associated with larger chillers accessible to users requiring lower duties, or where space is at a premium."

All models in the range share compact dimensions with a width of 486mm and length of 660mm.

## About ICS

ICS Cool Energy is a £50m temperature control solutions provider with nearly 30 years' international experience within the HVAC and industrial markets.

Offering sales, hire and service support, ICS Cool Energy can provide temperature control solutions for a wide variety of applications including: Food, Beverage, Chemical, Pharmaceutical, Healthcare, Plastics, Rubber and Heat, well as HVAC solutions for Data Centres, Server Rooms, Factories, Facilities, Hotels and Leisure.

The business also offers 24/7 emergency breakdown cover, servicing and maintenance via a 24 hour a day customer service desk and an extensive team of field service engineers.

All ICS Cool Energy temperature control units are manufactured to ISO 9001 and ISO 14001.

The ICO8C, ICO3C and the ICO5C models stand 623mm high and the more powerful ICO8C and ICO10C models are still under a metre high at 876mm. The units are available in standard version with power supply dual frequency 230V/1Ph/50-60Hz (mod. IC02C - IC03C) and 230V/1Ph/50Hz (mod. IC05C - IC10C).

For more information on ICS Cool Energy's range of temperature control solutions, please visit [www.icscoolenergy.com](http://www.icscoolenergy.com) email [info@icscoolenergy.com](mailto:info@icscoolenergy.com) or call 0800 774 7426.

Follow ICS Cool Energy on Twitter @icscoolenergy.

# New Thomson Web Videos Provide How-To Guides on Ball Screw Applications

Thomson Industries, Inc., a leading manufacturer of mechanical motion control solutions, has released its latest set of educational web videos, illustrating how to efficiently handle ball screw demands.

Via these videos, Thomson experts enable customers to make complete use of their applications by providing solutions for ball screw instalment or transfer errors.

The "Tech Tips" videos disclose information on how to install an XC lead nut; transfer a ball nut to a ball screw; and load ball bearings into a metric series ball nut.

## How to Install an XC Lead Nut Video:

To demonstrate the full anti-backlash functionality of the screw assembly, this video shares essential steps around the installation of an XC nut.

How to Transfer a Ball Nut to a Ball Screw Video:

This video illustrates an efficient method of installing or replacing a ball nut in order to avoid ball bearing mishaps.

## How to Load Ball Bearings into a Metric Series Ball Nut Video:

In case of ball nut accidents causing ball bearing loss, Thomson demonstrates how to reload and assemble a metric series ball nut back onto a screw.

Thomson strives to continually innovate and lead the marketplace in linear motion solutions and share their application engineering and technical expertise. To that end, Thomson has created a wide range of



educational videos, webinars and technical white papers available now at <http://www.thomsonlinear.com>. These resources inform and guide design engineers, explain technology alternatives and simplify the linear motion component selection process.

To view these four videos as well as other useful Thomson Tech Tips videos, visit [http://www.thomsonlinear.com/website/com/eng/design\\_tools/techtip\\_videos.php](http://www.thomsonlinear.com/website/com/eng/design_tools/techtip_videos.php).

# Sulzer offers solutions for renewables at All-Energy 2017

Attendees at this years' All-Energy 2017 exhibition will have the chance to visit Sulzer, a key provider of services and solutions to the renewable energy sector, in Glasgow from the 10th-11th May.

Taking place at the Scottish Exhibition and Conference Center, the exhibition will provide a forum for the energy community to discuss the latest innovations occurring in the industry. Visitors will be able to liaise with Sulzer experts to discuss solutions at Stand K20 throughout the show.

Sulzer is a leading service provider for all brands of rotating equipment including pumps, turbines, generators and electric motors – all of which play vital roles in the wind and hydropower sectors. The company will be displaying its unrivalled experience in the manufacture of high voltage coils for motors and generators, plus its expertise in cable connectors, drives and their associated controls. Furthermore, Sulzer will also showcase its expertise in the design, manufacture and maintenance of pumps, which can influence the reliability and efficiency of certain renewable projects.

The primary service Sulzer provides to the industry is market leading, full-service, electromechanical service packages, which incorporate state-of-the-art workshops and on-site capabilities to tackle the largest maintenance projects the sector has to offer. The company's nationwide network of service centers combine to offer a comprehensive package of repair and maintenance solutions throughout the UK.

This capability is illustrated by Sulzer's Falkirk Service Center, which is currently celebrating its 40-year anniversary of providing high quality engineering solutions. With considerable experience in delivering maintenance solutions to the offshore and power generation industries, the engineering team at Falkirk is fully qualified to meet the challenges of the renewable energy sector.

All-Energy 2017 will tackle all aspects of renewable



energy, from wind and hydropower to energy storage and smart cities, attracting over 7,000 attendees who will have the opportunity to discuss renewables requirements with 400 leading businesses. Conferences will also be taking place throughout the duration of the event, offering plenty of opportunities for visitors to engage with the renewable energy sector.

All-Energy 2017 takes place from the 10th – 11th May at the Scottish Exhibition and Conference Center (SECC) in Glasgow, with Sulzer available throughout the show at Stand K20.

For more information visit: [www.sulzer.com](http://www.sulzer.com)

# Variable Speed Drive Cuts Risk Of Sewerage Leaks

A pump control system based on an ABB variable speed drive is helping Severn Trent Water protect local homes from the risk of sewerage overflow.



Severn Trent Water has cut the risk of flooding homes with sewage overflow by installing an ABB variable speed drive (VSD) within a pump control system.

The new control system is switched on if the primary programmable logic controller (PLC)-based wash water control system fails, avoiding the need to use an emergency tank which only has capacity for eight hours of incoming sewage.

The wash water is a critical part of the wastewater treatment process at Severn Trent's Stoke Bardolph facility near Nottingham. It is used to clean the screens at the inlet works. If no wash water is available, the screens become blocked, the water level in the inlet channel rises and the inlet screw pumps turn off to prevent the screen house from flooding.

The six pumps controlling the wash water are usually controlled by a PLC, but this has suffered a number of failures over the last five years caused by the controller's memory loss, which have led to it going offline. When this happens, no wash water

is available to clean the inlet screens. The treatment process stops and sewage arriving at the site, which comes in at a flow rate of up to 4000 litres per second, needs to be stored in an emergency tank until the system can be put back into operation.

Zac Dorn, electrical and instrumentation maintenance technician for the site, says: "The PLC doesn't take long to put back in operation but we may not get notification of a failure for some time after the event. The person with the skills and equipment to resolve the problem may also not be immediately available. It can be a particular challenge if the failure occurs at night."

Failure to cure the PLC problem within eight hours risks the sewage storage tank overflowing, potentially inundating the homes of local residents with raw sewage. "The last failure saw the sewage tank filling to within a couple of inches of its capacity," says Dorn. "An overflow of sewage into local residents' homes would be very undesirable for them and cost the company large sums in compensation."

Dorn was looking for a simple alternative system that avoided the cost of installing and programming a complete standby PLC system that might sit idle for most of the time.

The system would need to handle the essentials of the wash water control system, while leaving out some of the less crucial aspects such as control of the wash water filter's backwash system and duty rotations.

Dorn designed a system that would act as a back up to the main PLC while it was out of service. This is based on an ABB machinery drive, ACS355, acting as a PID controller. The drive uses a watchdog relay to monitor pulses from an output on the PLC. When these pulses are not detected, because the PLC has gone offline due to a failure, the drive goes into action. It can also be switched on manually, for example when the PLC-based system is undergoing routine maintenance.

The drive controls two wash water feed pumps that pump water into a buffer tank. It monitors the level of water in the buffer tank and starts the pumps when the water level becomes too low. At the same time, it opens an inlet valve into the tank from the pump lines.

The pressure of the water leaving the buffer tank is maintained at five bar by four booster pumps. This is important as the buffer tank is sited some 500m from the screen house and the booster pumps ensure that the water is at the correct pressure when it arrives there. The four booster pumps are speed controlled by four ABB general purpose drives, ACS550. They receive a speed reference signal from the ACS355.

Dorn says: "I chose the ABB solution because of its compact size that fitted the restricted space we had available. I also know from long association with ABB that its products are reliable, have the functions I need and are easy to use."

For more information visit:  
[www.abb.com](http://www.abb.com)

# University cuts carbon emissions by over 809 tonnes a year using drive technology

Installation of ABB drives sees the University of Leeds achieve significant reduction in energy use, cutting carbon emissions and energy costs.



The University of Leeds is saving over 809 tonnes in carbon emissions and £194,000 a year in energy costs following the installation of 94 ABB variable speed drives (VSDs) ranging from 5.5 to 55 kW.

Payback of 1.2 years has been achieved on a capital outlay of £228,859.

The project formed part of the university's Carbon Management Plan, in which it identified ways to save energy and cut its carbon emissions. This included installing VSDs on existing motors powering fans in air handling units and fume extraction equipment and water pumps. Most of the assessed motors had no speed control, being connected direct-on-line.

The Carbon Management Plan originally estimated the VSDs to deliver annual savings of £45,655 in energy and 364 tonnes of carbon at a capital cost of £251,600. Based on these figures, the university estimated a payback period of just under six years.

However, the ABB drives substantially improved on the university's estimates, producing savings of

1,800MWh a year in energy consumption, providing a payback of 1.2 years.

Robert Douglass, energy project officer for the university, says: "Initially we used ABB's online DriveSize tool to identify which motors would be best for use with VSDs. This showed that any motor of 10 kW or above would produce the greatest savings."

ABB authorised value provider Halcyon Drives was chosen to supply the drives as it was able to meet all of the university's technical specifications. Amongst its requests were harmonic mitigation, a five-year warranty and the ability to use one model of VSD across all installations. Halcyon Drives also had the ability to provide service for drives and had the stock availability.

Says Douglass: "Halcyon provided a comprehensive spreadsheet detailing the drives purchased together with delivery dates, so that the warranty period could be tracked."

The drives, most of which are concentrated in 20 buildings across the campus used for teaching and research, are controlled by a building management system (BMS) using a 4-20 mA connection to provide speed references to the drive and monitor alarms. The BMS also maintains an operating schedule and signals when the drives should be switched on and off. ABB drives can monitor their own energy use and run hours and this has been used to identify the kWh used at various times, thereby proving the savings.

The drives were bought by the university and Halcyon kept them in stock. The university's in-house team installed all the drives over 18 months as funds were released.

Part of this work involved installing shielded cabling between the drives and motors to conform to the Electromagnetic Compatibility (EMC) Directive, to ensure that electromagnetic fields from the cables do not cause interference with other electronic equipment.

Harmonic mitigation was another important factor for the university. The ACH550 has harmonic mitigation built-in as standard. Swinging choke technology ensures the drive delivers up to 25 percent fewer harmonics at partial loads compared to a conventional choke of equal size.

The university says: "Due to the nature of the research in some of the buildings the drives were being installed in, we wanted to ensure that harmonics were being controlled at source as much as possible. One reason is to minimise the impact of harmonics on other equipment fed from the same distribution board. Another is to minimise any increase to the building supply point and the associated high voltage transformer. To date we have not had any issues with harmonics."

For more information visit:  
[www.abb.com](http://www.abb.com)

# Spanish engineer promotes Obeki motors in UK

An overseas apprentice at Lammers Exico has driven sales of Spanish Obeki motors, particularly into the marine, energy and cranes sectors.

**obeki**  
GROUP



*Based in Ibarra, 30km (20 miles) south of San Sebastian, Obeki is one of Spain's leading motor manufacturers and is probably best known for bespoke and special motors and brake motors.*

The placement has helped to strengthen the relationship between the two companies, with Lammers Exico representing Obeki in the UK market.

Twenty-two year old Itziar Manero joined the Wellingborough-based motor, drives and generator specialist in November for a six month placement from Obeki and has mainly worked in the sales department. A native of San Sebastian on the north eastern coast of Spain, she recently graduated from the University of the Basque Country, where her final year project on generators was completed with Obeki.

The relationship between the two companies started when Lammers Exico was asked by a major pump manufacturer if it could supply a large, IP67 rated brake motor. Sales Director Lucie Hodkova recalls: "Although we have a great capability for supplying unusual and bespoke motors, we realised that to meet the particular requirements of this request would take us some time. So we used our knowledge of European motor manufacturers to see if we could help in another way and found a solution in Obeki.

"In fact we were so impressed that we went over to see them in Spain. This led to a formal audit and an agreement that we would represent them in the UK. When one of their directors was on a reciprocal visit to the UK, he mentioned that the Basque government would sponsor a young engineer to join us for six months, helping to build a firm bond between our two companies."

Based in Ibarra, 30km (20 miles) south of San Sebastian, Obeki is one of Spain's leading motor manufacturers and is probably best known for bespoke and special motors and brake motors. It was founded in 1950 to produce electric motors for dockside cranes and other local industries. It quickly developed a focus on motors for cranes including dockside, marine and overhead cranes. These projects often needed bespoke motors and brake motors, so Obeki developed an advanced engineering capability, which it maintains to this day and which allowed it to develop the expertise to address other industries that have special motor needs.

Special motors manufactured by Obeki now include roller table motors for steel productions, high performance water-cooled motors for demanding environments, IP67 and IP68 motors and brake motors, two-speed motors and permanent magnet motors and generators.

Lucie again: "Another specialism of Obeki is drop-in replacement slip ring motors. Slip ring motors are quite rare these days, so when one is due for replacement, the users have two realistic choices, switch to a motor and drive combination – which is likely to involve reengineering of the driven machinery – or look for a like for like replacement. Most prefer the latter option, so with Obeki we are well placed to meet their needs."



*"The Obeki range of motors and generators fits well into the Lammers Exico portfolio," says Itziar. "Whilst here I have been delighted to find that the UK clients have a high regard for both Lammers Exico and Obeki. Many of the clients come to us with quite technical enquiries and we are always happy to help."*

Joining Obeki, Itziar was keen to travel and was delighted by the opportunity to come to the UK to work for her employer's official distributor.

"I have enjoyed visiting the UK previously for holidays and to perfect the language," says Itziar. "Since joining Obeki I have come to admire Lammers Exico because they have achieved so much since setting up in 2014.

"The Obeki range of motors and generators fits well into the Lammers Exico portfolio," says Itziar. "Whilst here I have been delighted to find that the UK clients have a high regard for both Lammers Exico and Obeki. Many of the clients come to us with quite technical enquiries and we are always happy to help."

After her placement in Wellingborough, Itziar will return to Obeki's head office in Ibarra, where she hopes to specialise in projects involved in renewable energy.

Exico Electric Motors Limited  
Tel: +44 (0)1933 277930  
Web: [www.exico.co.uk](http://www.exico.co.uk)

# Demand Driven Planning

There was a lot more to the 1950s than sock hops and rock 'n' roll. In fact, several popular technologies were designed and invented in the decade, including credit cards, automatic doors and the microwave.



An important manufacturing concept, materials requirements planning (MRP), was also born in this decade. MRP is a system to manage manufacturing processes through production planning, scheduling and inventory control.

Here, Bob Davies, international operations manager of obsolete components supplier, EU Automation, discusses the potential of demand driven MRP and whether maintenance can be integrated into the process.

MRP relies on detailed forecasts to procure and push orders through the manufacturing process, ensuring that materials are available in the right quantities to suit manufacturing activities. For a long time, manufacturers have used this system to plan what they are going to buy and when.

## Meeting consumer demand

However, the world has changed since the 1950s and the needs of both the modern consumer and the modern B2B buyer have changed apace, with the need for a greater variety of product chief amongst these developments. To meet a rising demand for personalisation and customisation, companies are now offering more product variations than ever before.

More complex and varied products create a challenge for supply chain execution when using

traditional MRP systems, because consumer behaviour has become more difficult to forecast. Failure to properly position inventory can be a huge source of waste in the supply chain – so buying materials based on predictions can be risky. These changing market demands have led to an updated materials planning methodology, demand driven MRP (DDMRP).

## Demand driven MRP

Because of its push approach to inventory and reliance on forecasting, traditional MRP is considered by some to be outdated. Push manufacturing, a phrase which means forcing work through the factory, irrespective of actual demand, is unquestionably out of synch with the needs of the millennial customer. To help solve this problem, DDMRP incorporates many features present in MRP, but does not rely on potentially inaccurate forecasts.

Demand driven MRP streamlines the supply chain and aligns resources to actual demand, enabling businesses to make better decisions during planning. The software that underpins the methodology means manufacturers do not need to choose between lean manufacturing and MRP, by removing the conflict between the push mechanism of MRP and the pull philosophy of lean. The idea that the market pulls resources and work through the plant, producing only what will be sold is more consistent with modern buying behaviour.

Demand driven MRP uses five core elements; strategic inventory planning, buffer profiles, dynamic buffers, demand driven planning and highly visible and collaborative execution. This means that manufacturers can develop greater control of inventory, to match production needs. The key is to ensure the system is strategically buffered to increase its stability.

Using demand driven MRP, companies can plan and manage inventories and materials in complex global supply chain, taking into account ownership, market changes, engineering sales and supply. The system is intelligent about which parts are at risk of causing the manufacturer inventory problems. During manufacturing, is it not only production materials that can cause these problems, failure of an industrial automation component could lead to serious production downtime if there isn't a replacement part at hand.

## Maintenance

To eliminate this issue, requirements for obsolete industrial components could be fed into a demand driven MRP system. Instead of stockpiling spare parts or risking costly downtime, the equipment could be analysed to see how regularly maintenance or a replacement part is required. The system could then order a replacement as part of the predictive maintenance supply chain, so the right obsolete parts are delivered to the line just when the manufacturer needs them. This would simplify ordering, reduce the danger of not being able to obtain scarce parts and allow obsolescence management plans to be made more sophisticated.

MRP has come a long way since its introduction in the 1950s, and the technology is still evolving. Incorporating maintenance into demand driven MRP could minimise downtime and make manufacturing processes more streamlined. Credit cards, automatic doors and microwaves still fulfil their purposes brilliantly, and there is no need to give up on MRP just yet.

For further information contact:  
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e-mail: [jonathan.wilkins@euautomation.com](mailto:jonathan.wilkins@euautomation.com)  
Twitter: <http://twitter.com/euautomation>

# Gaylin / Rigmarine Offer William Hackett Subsea Lever Hoist

Gaylin International Pte Ltd and Rigmarine, part of its group of companies, will stock the William Hackett second-generation SS-L5 subsea lever hoist, available in capacities from 800kg to 20t, from 10 global locations.



Further, they will support the product offering with comprehensive training and after-sales service.

Singapore-headquartered Gaylin, a specialist supplier of lifting, rigging and marine equipment primarily to the oil and gas industry, also has facilities in Korea, Malaysia, Vietnam, China and Indonesia. Rigmarine hubs, meanwhile, can be found at its most recently opened site in Aberdeen, in addition to Azerbaijan, Kazakhstan and the UAE.

Mike Duncan, managing director at Gaylin, said: "The SS-L5 is a great product in its own right, specifically designed for use in offshore and subsea operations, a key customer base for our companies. However, what creates the real customer value are the safety features of the hoist combined with our global stock and the level of training and support we offer alongside the equipment."

He added: "Across the world we have the ability to service, repair and re-certify the subsea lever hoist, designed for multi immersion over an extended period, and other equipment, in addition to conducting world-class, approved training. We can get personnel and equipment to an offshore location with a tailored solution as soon as the support is needed."

For over two decades Rigmarine has offered an unrivalled range of 24/7 services to clients in the ultra demanding oil and gas sector. Since 2009 it has been operating its own training school in Azerbaijan to provide employees and clients specialist training, available 365 days per year.

Ben Burgess, director of William Hackett Lifting Products Ltd, said: "We embrace this holistic

approach to application of our equipment in the oil and gas sector. The product's life span will depend on the environment in which it is used, the frequency of use and the quality of its servicing. In partnership with Gaylin and Rigmarine, we are proud of the testing regime at our lifting centre of excellence in the UK."

Burgess explained that the SS-L5 subsea lever hoist has been through a particularly arduous testing process witnessed by DNV, a global provider of knowledge for managing risk, which verified that the SS-L5 type lever hoist could be safely used subsea over a 21-day single immersion and a 31-day multi immersion period.

The benefits of such accreditation are two-fold, Burgess said: "First, in terms of lifting offshore and subsea, industry best practice points towards only using a hoist that the manufacturer approves for offshore and subsea use, backed up by written guidance about its use for the said application." Second, he continued, "The DNV testing and verification process over an extended period provides independent data which proves that the hoist not only meets current standards but exceeds them."

Two key features of the SS-L5 are its dual anti lock brake, which reduces rigging time whilst improving diver safety and efficiency; and performance ratio, a measure of product design and material quality, based on working load limit (WLL) divided by the unit mass. The SS-L5, with a WLL of 1,600kg and weight of 8.5kg, can lift 188 times its own mass giving it a performance ratio of 188:1.

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# New Fluke Three-Phase Electrical Energy Loggers simplify the discovery of electrical energy waste

Intuitive energy loggers help facility managers and electrical professionals develop and implement cost saving strategies.



Fluke has introduced the Fluke 1732 and 1734 Three-Phase Energy Loggers, intuitive, easy-to-use tools with professional-level energy data gathering capabilities. They enable a broad category of maintenance professionals to confidently gather energy data, while the accompanying new Fluke Energy Analyze software enables users to compare multiple data points over time to build a complete picture of energy usage, which is the first step to reducing the cost of energy bills. The Fluke 1734 is a member of the Fluke Connect family, enabling the user to access and share data remotely with a team via the Fluke Connect® app.

Even well-run facilities can experience energy waste, most commonly through equipment and system

inefficiencies or by operating at expensive times of the day. The Fluke 1732 and 1734 negate the need for expensive power quality analysers operated by engineers with advanced training, whose cost and skill barriers have made energy audits impractical for many facilities. The 1732 and 1734 are streamlined energy logging tools with a straightforward, intuitive design, allowing technicians to carry out load studies and energy logging right out of the box. The results provide facility managers with the information necessary to identify and prioritise energy saving projects.

The compact Fluke 1732 and 1734 energy loggers conduct key measurements of voltage, current, power, and power factor to identify areas of energy

waste. All measured values are logged automatically and can be reviewed during logging. Common setup errors are rectified, through re-engineered cables, digital check and auto-correct of all connections, and an on-screen wizard for interval setup. They have the highest safety rating in the industry (600V CAT IV / 1000V CAT III) and can be powered directly from the measured circuit eliminating the need to find a power outlet. While both models feature two USB ports for fast data downloads to PCs or standard memory sticks, the 1734 includes the capability to capture data from Fluke Connect modules and use the Fluke Connect App to create reports and share important data while in the field.

Data logged by the 1732 and 1734 can be imported into the new Fluke Energy Analyze Plus software for further processing and archiving. The software allows users to analyse energy or load profiles, including zoom-in and zoom-out on details; add comments, pictures, and other information to data; overlay different logging sessions; create reports; and export measurement results.

The higher-end Fluke 1736 and 1738 models extend the capabilities for professionals requiring more in-depth details about power quality.

The Fluke 1734 is part of Fluke Connect - a system of more than 40 wireless test tools that communicate via the Fluke Connect app, or Fluke Connect Assets software, a cloud-based solution that gathers measurements to provide a comprehensive view of critical equipment status - allowing technicians to view, record, and share measurements from the clamp in real time via their smartphones or tablets and automatically upload them to Fluke Cloud storage along with tags and the GPS location of assets.

Information about all Fluke products can be obtained via the Fluke web site at:  
[www.fluke.co.uk](http://www.fluke.co.uk).

# UK's Scientific Measurements completes acquisition of Ireland's Eurolec Instrumentation Ltd

Global instrumentation leaders Scientific Measurements Pte Ltd has acquired Ireland-based Eurolec Instrumentation Ltd for an undisclosed sum.

Scientific Measurements – parent company to Cirrus Research and Acoustic Instruments International – has more than 40 years' experience in the sector and counts product ranges Optimus, Revo, doseBadge, Trojan and Invictus among its industry-leading brands.

Eurolec as a brand and trading name will continue within the Scientific Measurement fold, with the existing head office remaining in Dundalk, County Louth. Its chain of distributors will also be unaffected.

Coinciding with the handover, Eurolec founder and

Managing Director Tom Mears will be retiring after a five-decade career in the sector and 19 years since establishing the company. Chris Mears has been appointed the new MD, formerly heading up the company's sales & marketing. The rest of the Eurolec team will remain unchanged by the buy-out.

Moving forwarding, product enhancement and development are a key priority for the new owners and its experienced marketing team will begin work on an updated website for its newest subsidiary.

"This is a new chapter for the company but we have inherited a strong legacy from Tom and a great



platform to build upon," said Daren Wallis, Scientific Measurements Director.

"Scientific Measurements as a company has an unrivalled track record of innovation and product development and we want to put that experience into play with Eurolec's temperature and pressure gauge products. The ranges are an ideal fit for our current product portfolio and the Eurolec team will be able to enjoy the added benefits of our R&D and global sales & marketing team behind them."

# Cyberhawk achieves 50% cost saving for large North Sea operator

Cyberhawk Innovations, the world leader in inspection and survey using unmanned aerial vehicles (UAV), has once again proven its credentials thanks to analysis from a leading international E&P company, which shows UAV inspection is twenty times faster and half the cost of traditional inspection methods.

The company has analysed inspection data from the last two years and concluded Cyberhawk's UAV inspection technique proved 20 times more efficient than traditional inspection methods, such as rope access. This meant that for every day on site, Cyberhawk inspected 20 times more structures than rope access was able to achieve.

This data also highlighted that Cyberhawk was 50% cheaper than rope access inspection, which means that Cyberhawk delivered each inspection report for half the cost of traditional inspection techniques.

Aside from the cost and efficiency savings, use of UAVs also means reduced working at height, reduced requirement for offshore bed space, reduced use of standby boats and less helicopter usage, meaning further indirect efficiencies and savings.

Chris Fleming, CEO at Cyberhawk, said: "More and more operators are changing their inspection philosophy, and looking at safer, more efficient techniques which

minimise risks to personnel and reduce costs. By adopting a forward thinking, innovative approach, and using UAV technology for all initial visual and thermal inspections, this means that personnel are only required for contact and advanced inspection if required.

"The feedback received from the client confirms what we already know – that UAVs offer the most efficient solution when it comes to asset inspection, across a multitude of industrial sectors. Few methods offer the same safety, time and cost advantages.

"Having completed more than 18,000 commercial inspection flights, clients who have worked with us know that they can trust our highly-trained teams to safely capture data and deliver detailed inspection reports in the most efficient way possible.

"We expect demand for UAV technology to continue growing, particularly in the international oil and gas sector as operators adjust to working in a new, lower oil price environment. Innovative technologies such as



drones, which can offer cost savings of up to seven figures and boast huge potential, cannot be ignored."

For further information contact: <http://www.thecyberhawk.com/>

# Fluke Offers New Introductory Prices On The Recently Launched Laser Level Products

Rugged Fluke laser levels deliver the simplicity and accuracy to perform layout tasks fast



The Fluke Laser Level family enables layout tasks to be performed fast, simply and accurately, in every environment. Designed to survive a one metre drop and keep working, the Laser Levels feature a fast settling, self-levelling gimbal that quickly delivers accurate reference points. Until 30th June 2017, Fluke Laser Levels are available at new introductory prices while stocks last, with some models representing savings of over 30%. They can be seen at [www.fluke.co.uk/laserlevels](http://www.fluke.co.uk/laserlevels)

The Fluke Laser Levels offer full-room line projection to all walls, including floor and ceiling, with clear, thin lines which do not fade with distance. Layout work can be achieved quickly since stabilisation is achieved in less than one second and they require no laser locking when they are moved.

The Laser Levels can be used for accurate layout and transfer of drawings to work sites. For example, light cans and other overhead fixtures and outlets can be measured on the floor and a point laser used to shine an accurate mark on the ceiling. Accurate alignment of outlets, switches and sockets, level lines for pipes and conduit, or vertical plumbing of chases and conduit can be achieved with a laser line. Each model is supplied with an accessory that enables ease of operation.

#### The Fluke Laser Level family includes:

- **Fluke-3PR (red laser) and Fluke-3PG (green laser) Point Laser Levels**— self-levelling, three-point laser levels for fast, accurate layout

of reference points. Accurate to 6mm at 30 metres, it includes a floor stand for fast, easy overhang and centreline measurements. The green laser (Fluke-3PG) is up to three times brighter for improved visibility in outdoor and long-range applications.

- **Fluke-180LR and Fluke-180LG Line Laser Levels**— self-levelling, horizontal- and vertical-cross line laser levels for rapid, accurate (3mm at 10 metres) levelling and layout.
- **Fluke-LDR and Fluke-LDG Laser Line Detectors** — laser line detectors for use in high ambient light settings with visual and audible indicators for ease of use. The detectors are compatible with Fluke-180LR (Fluke-LDR) or Fluke-180LG (Fluke-LDG) models and include mounting bracket for quick, steady positioning.
- **Fluke-180LR System and Fluke-180LG Systems** — comprehensive self-levelling, horizontal- and vertical-cross line laser level systems that include laser line detector and detector bracket for use in high ambient light settings.

All laser level models include magnetic wall brackets for easy, stable mounting.

Information about all Fluke products can be obtained via the Fluke web site at [www.fluke.co.uk](http://www.fluke.co.uk).

## New Latch clamps from Elesa

The new Elesa range of latch clamps with safety release trigger offer easy installation and robust operation of industrial jigs, fixtures and fittings, or for temporary assembly and closure of packing containers.

They are ideal for torsioning of covers and frameworks or for applications where high tensions are required with resistance to strong vibrational stresses. They ensure that a high force and positive release is required to open, so guarding against accidental opening and release of the secured component.



The MTS-S steel and stainless steel heavy duty clamps provide weld-on installation, while their sister MTP-S units simply bolt-on. The companion MTC-S bolt-on over-centre clamps share a similar safety push-button feature - they also come in steel or stainless steel and provide additional operator comfort with a moulded handle in soft red polyurethane.

Opening of these hook type toggle clamps is achieved in each case by operation of the manual release trigger which then permits the lever to be opened.

All the pulling hasps may be length adjusted and locked in position to ensure optimum tension, with closing forces MTS-S + MTP-S up to 40000N. MTC-S up to 7500N.

Further information regarding Elesa products may be found at: [www.elesa.com](http://www.elesa.com) or follow them on twitter: [www.twitter.com/ElesaUK](https://twitter.com/ElesaUK).

## Delta Controls launches new Nuclear Qualified Fast Reaction Air Temperature switch

The measurement of air temperature in and around the nuclear containment area is an important parameter indicating whether a problem has occurred, possibly a line break resulting in steam or coolant water loss.

Delta Controls, one of the leading manufacturers of nuclear qualified instrumentation has launched a new fast reaction air temperature switch for this application. The switch has been tested to meet seismic and radiation exposure requirements and orders for over 250 units for use inside the containment and the nuclear island of an operational BWR reactor have already been secured.



The Fast Reaction switch offers many advantages over conventional bulb and capillary systems including ease and cost of installation, significantly improved reaction times and high accuracy and repeatability built around Delta's proven Nuclear Performance Range of switches.

For more information contact [info@delta-controls.com](mailto:info@delta-controls.com) or visit the website <https://www.delta-controls.com/Industries/Nuclear/>

## Fusible resistors from TT Electronics save PCB space

Radial taped power resistors ideal for minimal footprint designs

TT Electronics, a global provider of engineered electronics for performance critical applications, today launched its ULWP2R range of fusible wirewound resistors. By combining the functions of a fuse and a line input resistor in a single, vertical radial formed component the resistors save valuable PCB space.

The UL recognised, 2W rated power resistors are aimed at designers of high-density PSU circuits where PCB space is at a premium, fusing must be provided, and where automatic insertion is a requirement. For use in both the industrial and consumer sectors, the resistors can be deployed in power supplies, white goods controllers, circuit breakers, line input circuits, protection circuits and other applications.

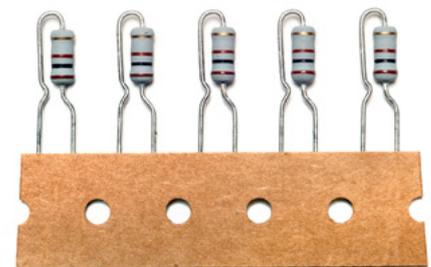
Factors driving the demand for this type of component are cost reduction re-designs that are increasing both the popularity of dual function components and the automated insertion of parts that cannot be switched to SMD. Further, the

increasing electronic content in electrical products is putting pressure on the space available for PSU sections.

With UL1412 recognition, TT Electronics' ULWP2R range of fusible wirewound resistors makes it easier for customers to get UL approval and provides third party assurance of a safety critical part. The resistor's radial, vertical format saves PCB space and also stops surrounding components and the PCB overheating, reducing field failure costs.

The inrush and surge withstanding resistors provide failsafe mains fusing at 120/240Vrms and they feature a UL94-V0 flameproof coating. Supplied in tape and reel packaging they are ideal for minimal footprint designs that require flameproof components for automated through-hole assembly, simultaneously reducing assembly costs.

The ULWP2R range of fusible wirewound resistors enables designers to build compact and affordable fire prevention into their products. TT Electronics



also offers other 2W rated wirewound and metal film power resistors that are now available in radial taped format including the wirewound high surge WHS series.

For TT Electronics radial taped resistors part selection visit: <http://www.ttelectronics.com/resistors/parts-search?combine=radialtaped2W>

Download the ULWP2R datasheet here: [www.ttelectronics.com/sites/default/files/resistors-datasheets/ULWP.pdf](http://www.ttelectronics.com/sites/default/files/resistors-datasheets/ULWP.pdf)

# New Yaw Brake Lifting And Installation Tool Cuts Maintenance In Half

Svendborg Brakes, the leading global manufacturer of premium quality caliper brakes has released its yaw brake lifting and installation tool, which aims to improve safety and reduce the time taken to maintain the yaw brake systems on wind turbines.

This latest innovation uses a simple carriage assembly to position, raise and lower brakes to ensure that maintenance engineers minimise any heavy lifting and complete their tasks more efficiently.

The LBS 120 yaw brake lifting and installation tool has been designed to work on brake assemblies with a maximum width of 502 mm and with a brake disc thickness of 40 mm. The tool incorporates a winch mechanism that is used to raise and lower the brake to floor level, with a maximum lifting height of 2,000 mm. Created to improve safety and productivity of the engineers, the tool is easy to

transport and assemble on site.

Once the lifting tool has been installed, the original brake can be released, allowing it to rest on a sliding carriage which is used to position the brake below the winch mechanism that is used to lower it to the floor. The process is reversed to install the new brake, after which the tool can be repositioned to work on the next brake.

The new service tool significantly reduces the time required to maintain yaw brakes which reduces the downtime of the turbine and minimises running costs.



Svendborg Brakes, which is part of Altra Industrial Motion Corporation, is the market leader for the supply of yaw brakes to the global wind industry, delivering state-of-the-art yaw systems for all modern medium and large wind turbines.

For more information and to see a video of how the tool works, visit <http://www.svendborg-brakes.com/en/products/service-tool.aspx>

# Norelem Clamps Down On Machining Precision With New Fixture

As engineers face growing pressure to meet shorter lead times and ensure greater quality, one manufacturer of systems and components is helping the industry machine workpieces in a single set up with its new 5-axis clamping fixture.

The latest addition to norelem's range of more than 33,000 individual standard parts, the company's new 5-axis clamping fixture makes it possible for engineers to quickly and easily machine an entire workpiece in one set up. This enables engineers to reduce set up times for each individual job, whilst achieving greater component precision at a time when workpieces are becoming more and more complex.

The product facilitates vibration-free machining with the highest cutting and feed forces, and minimal interfering edges. As a result, engineers can achieve more accurate tolerances and surfaces using shorter tools. When used in conjunction with modern 5-axis milling centres, norelem's clamping fixture can help deliver a particularly impressive surface finish.

The 5-axis clamping fixture has been carefully designed to provide easy operability and rapid

adjustment via the means of a scale, enabling it to be adapted to new workpieces. The workpiece is always centred with the drawing spindle located directly under the component support. This results in a very short distribution of forces during clamping, preventing the jaws from expanding under heavy loads.

Marcus Schneck, CEO of norelem, said the introduction of the 5-axis clamping fixture adds to the company's range of clamping technology, of which it can provide more than 300 parts. All of these components can be sourced through THE BIG GREEN BOOK, norelem's complete reference guide for engineers.

Marcus Schneck commented: "Our 5-axis clamping fixture has been carefully designed to offer very high traction and rigidity for greater accuracy, whilst facilitating quick and easy assembly and set up. By



delivering the optimal adjustment of the clamping jaws to a workpiece, the fixture provides reliability and secure fixing, enabling engineers to completely machine workpieces in a single set up. At a time when industry is facing time and cost pressures, small marginal gains such as this will help operatives meet more challenging lead times, and engineer higher quality components."

norelem's 5-axis clamping fixture is available with a jaw width of 90mm to 125mm, with clamping widths possible from 20mm to 320mm.

To see norelem's full range of clamps and fixtures, download THE BIG GREEN BOOK at <https://www.norelem.co.uk/gb/en/Service/Order-catalogue.html>

# High Performance Seals Extend Process Equipment Operating Times By 6000%

DuPont™ Kalrez® Spectrum™ 6375 perfluoroelastomer O-ring seals have been chosen by a major European manufacturer in the AgroSciences marketplace to replace PTFE sealing products previously utilised in their manufacturing equipment.



Plant processes included aggressive solvents, surfactants and concentrated herbicides at temperatures ranging from 10 to 45°C, and operating pressures from 1.5 to 3.5 bars Efl. Filling machine valves on the line were previously fitted with dynamic PTFE O-ring seals, while the machine hoses were equipped with static seals, also of PTFE. Each time seal replacements or clean-in-place procedures were performed at 80°C, this resulted in mechanical damage to PTFE seals. Subsequently PTFE O-ring replacement was being undertaken on a daily basis.

In addition the effect of steam on FKM O-rings generated product embrittlement and volume swell, causing surface cracking, reducing tensile strength and leading to premature loss of sealing force and eventual process leakages. The costs in loss of productive time and increased maintenance

became unacceptable, coupled with the need for a more resilient sealing material that would withstand frequent cleaning and product changes, while providing extended seal lifetimes.

As a result of adopting the 6375 product, the previously daily procedure of seal replacements for their filling line equipment has been extended to an average of a two monthly procedure. This has achieved a 6000% improvement for their filler machine equipment, while a similar replacement of FEP/FKM seals on other equipment has extended plant operating times from an average 8 hour period to a substantially higher MTBF period of between 8 – 12 months. Since switching the Kalrez® Spectrum™ 6375 custom O-rings, the manufacturer has substantially increased their operation uptimes for filling machines, as well as achieving improved overall reliability of packing lines. A significant result

in the reduction of O-ring replacements has also led to increased production with accompanying improvements in safety and reliability, as well as reducing general plant maintenance requirements.

Kalrez® perfluoroelastomer parts are available in the UK from the official DuPont™ licensee company Dichtomatik Ltd. Kalrez® Spectrum™ 6375 components have been designed specifically for applications in the chemical processing industries. These products also combine innovative polymer and cure technologies to ensure outstanding performance with an extensive selection of chemicals and operation at excessive temperature levels. The range of aggressive fluids handled includes acids, bases, amines, steam, ethylene oxide and many other even more hazardous chemicals.

These once problematic fluid mixed streams encountered with chemical processors can now be safely and effectively handled by the 6375 compound, which enables an upper service temperature of 275°C (527°F). This level is approximately 100°F higher than competitive products that also claim suitability for broad chemical resistance applications. The high temperature stability achieved with the 6375 compound range is also applicable even where short duration temperature excess also occurs.

Further information is available from:  
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Riverside Road, Pride Park, Derby  
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Fax: 01332 524425  
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[www.dichtomatik-kalrez.co.uk](http://www.dichtomatik-kalrez.co.uk)

# New Fluke Stakeless Earth Ground Clamp Performs Tests Without Disconnecting The Earth Ground Electrode From The Grounding System

New wireless earth ground and AC leakage clamp delivers fast, safe, indoor/outdoor ground loop and leakage tests without driving stakes



Testing the grounding components of equipment in hard-to-reach spaces, including areas that are indoors or fully paved and do not permit driving auxiliary test stakes, can be dangerous and time-consuming. With the new Fluke® 1630-2 FC Stakeless Earth Ground Clamp, electricians and maintenance technicians can measure earth ground loop resistances indoors/outdoors for multi-grounded systems using only the heavy-duty, dual-clamp jaw, so measurements can be taken quickly and safely without the need to disconnect

then reconnect the earth electrode from the system. It also enables the user to access and share data remotely with a team via the Fluke Connect® app.

The clamp automatically records data at pre-set intervals and saves up to 32,760 measurements in memory at the set logging intervals. Its heavy-duty clamp jaw is designed to stay in alignment and calibration even in the harshest industrial environments.

The Fluke 1630-2 FC clamp measures earth ground loop resistances for multi-grounded systems using the dual-clamp jaw. This test technique eliminates the dangerous and time-consuming activity of disconnecting parallel grounds, as well as the process of finding suitable locations for auxiliary test stakes. Ground tests can be performed in places that were previously difficult: inside buildings, on power pylons or anywhere without access to soil to place auxiliary test stakes. With this test method, a two-process measurement is made around the earth ground wire or bus bar using the specially-designed jaw of the 1630-2 FC clamp. Auxiliary test stakes are not used at all. A known voltage is induced by the source in the clamp, and the current is measured by the sensor in the clamp. The tester automatically determines the earth loop resistance for this section of the earthing system.

The Fluke 1630-2 FC is part of Fluke Connect - a system of more than 40 wireless test tools that communicate via the Fluke Connect app, or Fluke Connect Assets software, a cloud-based solution that gathers measurements to provide a comprehensive view of critical equipment status - allowing technicians to view, record, and share measurements from the clamp in real time via their smartphones or tablets and automatically upload them to Fluke Cloud storage along with tags and the GPS location of assets.

The clamp is also available as a non-Fluke Connect model.

Information about all Fluke products can be obtained via the Fluke web site at [www.fluke.co.uk](http://www.fluke.co.uk).

# New Concept Standardises Hoist & Crane Control

J D Neuhaus (JDN) has developed an innovative and robust new concept for controlling hoists and cranes.



The company's JDN-RC (Radio Control) receiver is designed for long-lasting performance in rigorous operating environments commonly found in industrial and offshore applications, including ATEX (explosive atmosphere) zone 2/22 conditions.

Featuring a solid and extremely compact receiver (w = 250 mm, d = 120 mm, h = 200 mm) to suit even hoists with low-carrying capacity, all components are accommodated in a shock-resistant GRP casing offering protection class IP65. This means that the device is totally protected against the ingress of dust, and can withstand low-pressure water jets from any direction, thus making it resistant to seawater in offshore applications. Breathable membranes are deployed to help guide any condensation from the interior to the exterior.

The meticulously-designed device facilitates quick and straightforward installation. This is largely because the JDN-RC has been developed to help standardise hoist and crane control. As a result, the receiver can be mounted on the hoist or trolley, or at a separate location, in line with specific customer requirements. What's more, the standardised interface on the JDN-RC means it can be offered as a retrofit solution for JDN's existing product range, e.g. their industry-leading Profi air operated hoists.

At the transmitter, single or two-step commands are supported by control elements that include a key switch, start and stop buttons, joystick, LED

operating status display and LED low-voltage indicator. The JDN-RC control allows users to work at a safe distance from the load and take a better viewpoint during operations. Here, the signal and selected command is transmitted and transferred into the controls of the crane or hoist by the receiver to ensure instantaneous performance.

Ultimately, the JDN-RC is ideal for spanning long distances between the hoist and the operator, and represents a sensible alternative to applications demanding a long control hose. The design also facilitates use in hard-to-access locations, while multiple hoists can be controlled simultaneously if required. A charger for the external battery and a leather strap are supplied with every unit.

Both the transmitter and control receiver are rated for operation within the toughest of working conditions and are insensitive to dust and humidity. The transmitter has a working temperature range of -20 to +55°C whilst the receiver operates within a -25 to +55°C range. A transmitter Ex classification is provided of Ex II 3G Ex ic IIB T4 Gc and Ex II 3D Ex ic IIIC T95° C Dc for zones 2 and 22 respectively and Ex II 3G Ex nc [ic] IIB T4 Gc (zone 2) Ex II 3D Ex tc [ic] IIIC T135° C Dc (zone 22) for the receiver.

With over 200 employees across the group, J D Neuhaus manufactures pneumatically and hydraulically-operated hoists and crane systems up to 115 tonne capacity from its state-of-the-art



facility in Witten, Germany. This globally unique specialisation means that J D Neuhaus has set the quality standard for the market, a move that has seen the company become the established global leader in its technology field with customers in more than 90 countries worldwide.

Resilience and reliability are the key product differentiators, thanks largely to their explosion protection rating which makes them ideal for use even in the most challenging of operating environments. Extreme applications include oil and gas exploration in arctic temperatures as low as 45°C, along with underwater tasks such as ship hull repairs, and plenty of others in demanding sectors like mining, the chemical industry, heavy plant construction and many areas of logistics.

The wide portfolio of services provided by J D Neuhaus includes equipment assembly, inspection, maintenance and general overhaul, along with the supply of customer training courses. Over 80% of production from the Witten plant is exported, which is why the company has long-established subsidiary companies in France, Great Britain, Singapore and the USA, all of which have helped create a tight-knit global network in collaboration with international partners.

J D Neuhaus has history that can be traced back to 1745, and is now in its seventh generation of family ownership. Visitors to the Hebezeug-Museum (Hoist Museum) in Witten, are able to see for themselves the remarkable history of this progressive company.

Further information is available on request to:  
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Fax: +49 2302 208-286  
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www.jdnngroup.com

# XS brakes from Warner Electric offer quiet, powerful braking performance in an exceptionally compact, lightweight package

The XS-series of spring actuated, electrically released brakes from Warner Electric - part of the Altra Industrial Motion Corporation - has been developed specifically to meet stringent space and weight requirements, providing reliable braking performance in a package weighing as little as 27g.



Above: The most powerful XS brake in the series delivers a holding torque of 0.5Nm in a package weighing only 100g.



Designed as statically engaged holding brakes, the XS units can also be used to stop a moving load in exceptional situations.

The latest innovation from Warner Electric is designed to operate with actuators that spend most of their time stationary. The actuator is designed to move a load into the desired position, then hold it there while the product or machine performs its role. Typical applications for this type of motion include the position adjustment systems used in seats or medical equipment.

In systems like these, it is essential that the actuator can maintain its fixed position, regardless of changes in the applied load or interruptions to the power supply. That calls for a mechanical brake, and since these applications often have extremely stringent weight, space and cost constraints, that brake needs to be a highly specialised design.

Where minimum size and weight is a priority, equipment manufacturers need a brake that

*Above: One of the first customer applications for the new XS series brakes was in the actuators used on a range of first and business-class seats for a major global aerospace OEM.*

precisely matches the requirements of their application, and which can be easily integrated into their overall design. To facilitate this, XS brakes are available in six sizes, with overall diameters of 22mm, 29mm and 33mm. Each diameter includes a variant optimised for the shortest overall length and minimum weight, together with a slightly longer version optimised for greater torque. The most powerful unit in the series delivers a holding torque of 0.5Nm in a package weighing only 100g. The three brake diameters are designed to accommodate maximum shaft diameters of 3.5mm, 4.5mm and 6mm respectively.

To maximise mounting flexibility, XS brakes are supplied with a custom designed mounting plate

tailored to the needs of the end-user's application. The actuating coil is designed to operate via a 24V DC power supply as standard, with other voltage options available to suit end application requirements. Operation of the brakes requires as little as 3W of power for the smallest units and only 7W for the largest. Thanks to Warner's investment in highly flexible, lean manufacturing operations, custom brakes can be manufactured with short lead times in volumes that suit customer requirements.

One of the first customer applications for the new XS series brakes was in the actuators used on a range of first and business-class seats for a major global aerospace OEM. In addition to extremely stringent space and weight requirements, the customer also wanted exceptionally quiet operation. Its seat specification called for a brake whose characteristics were perfectly aligned with the XSB29 brake series.

Working closely with the customer during its seat development and test programme, Warner Electric's engineering team was able to provide an XS brake that met or exceeded all the application requirements. Moreover, the design was more cost effective than competing permanent magnet brake designs.

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