

SOUTHERN MANUFACTURING 2019: MAINTAINING EXCELLENCE

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SOUTHERN 19 Manufacturing & Electronics

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BEARING UP!

Unexpected bearing failure needs to be understood and seen as an opportunity for improvements.

Centrifugal process pumps are workhorses of pulp and paper, oil and gas, chemical and other industries. Keeping them operating reliably with proactive maintenance programs is essential for consistent, uninterrupted production. Rolling element bearings are vital to a centrifugal pump's reliable operation, assuring shaft-impeller position and smooth rotation.

Rarely is mean time between failure (MTBF) an issue from normal wear and tear of a pump. Unexpected, premature breakdowns of a critical component, such as a bearing, might occur, resulting in lost production. Solving the problem quickly and getting up running with no recurrence is paramount.

Bearing Selection & Problem Solving

Critical root cause analysis of the pump and bearing system is essential to deal with the unexpected bearing failure. A centrifugal pump's performance, reliability and a root cause analysis in a rapid and relentless fashion should be a capability of a solid maintenance program.

Pump bearings and seals should be selected to suit the operating conditions of the application. All bearings must perform specific functions: they have to support the loads from power transmission through couplings and systems as well as the hydraulic loads imposed on the pump impeller and shaft.

Bearings must maintain axial and radial deflections within acceptable limits for the pump impeller and shaft seal, minimizing friction on the rotating assembly. Friction results in power loss, heat generation, increased noise and wear. It can also lead to premature bearing failure. Leading bearing manufacturers offer bearing designs, technology and advice for any application, whether low-pressure water pumping or the uncompromising conditions of the oil and gas industry.

Careful analysis must be employed to ensure that existing problems have not been caused by poor or incorrect installation, or shaft misalignment, and other potential root causes. Study of the pump bearings can provide clues to the reason for any pump issues such as misalignment of components, which should leave corresponding

evidence of bearing ball path witness marks in the bearing raceway. Troubleshooting reference guides from bearing companies can be excellent tools for root cause analysis activity.

In this issue we aim to highlight the latest tools, technologies and services available to engineers working with seals, bearings and lubrication.

We hope that you find this edition both informative and interesting.

For further archived articles and press releases please visit:

www.engineeringmaintenance.info



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In This Months Issue



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Brunel and Durham engineering students win 2018 Design Challenge

Student teams from Brunel University London and Durham University have been crowned champions of this year's Design Challenge, which is organised by the Institution of Mechanical Engineers to encourage young engineers to develop their technical and design skills.

Around 2000 engineering undergraduates from across UK take part in the annual Design Challenge, a competition that provides a taste of the 'real world' of engineering by setting teams of up to 5 students a task to design, build, test and present a mechanical device based on a predefined technical specification.

It is open to first and second year students – Brunel's team won this year's award for second year students, while Durham won the first-year student category.

The Design Challenge is intended to complement the academic curriculum and allows participants to showcase their design skills and innovative ideas in projects that form part of their course.

The final, which was held at the Institution's headquarters in London, featured devices designed to climb autonomously up inside a pipe carrying an increasing load.

This year, the successful projects included a scissor design that moved up and down the tube in under four seconds, a design with caterpillar treads that worked on a timer to successfully stop at the correct point and also an exciting design propelled using canisters of carbon dioxide.

"We set up the Design Challenge to show students that their academic studies have real life application. We want to build on their interest to study the subject and subsequently follow an engineering career. The students give us great confidence for the future of engineering in the UK," said Colin Brown, Chief Executive of the Institution of Mechanical Engineers.

"The experience was truly valuable. We have become better engineers by learning to work to deadlines, the presentation and poster competition made us more ready for the corporate world," said Sam Whelan, leader of the Durham University team.

For the universities, the competition is a valuable opportunity to develop their creative and technical skills.

"The Design Challenge provides an essential and stimulating professional-level engineering project through which students can benchmark themselves against not only other universities but, most importantly, the expectations of industry," said Mark Atherton, Professor of Design Engineering at Brunel University London.

Here are the details of the winners:

1st Year Winners:

- National Champion: Durham University (Northeast Region)
- Poster Competition: Coventry University (Midlands Region)
- Presentation Competition: Coventry University (Midlands Region)
- Design Excellence: University of East London (GLR)
- 3rd Place: Coventry University (Midlands Region)
- Runner-Up: University of Salford (Northwest Region)

2nd Year Winners:

- National Champion: Brunel University London (GLR)
- Poster Competition: Manchester Metropolitan University (Northwest Region)
- Presentation Competition: Manchester Metropolitan University (Northwest Region)
- Design Excellence: Manchester Metropolitan University (Northwest Region)
- Runner-Up: Manchester Metropolitan University (Northwest Region)

For more information on the Design Challenge, please visit:
<http://www.imeche.org/events/challenges/design-challenge/about-design-challenge>



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Several new lines of stainless steel connector bolts and nuts have been added to our furniture fastener range. Connector bolts are designed to be used with connector caps nuts - nut applying an axial clamping force and the shank of the bolt acting as a dowel, pinning the joint against sideways shear forces. Our connector bolts are suitable for a variety of furniture applications, flat low profile bolt heads allowing for a decorative finish.

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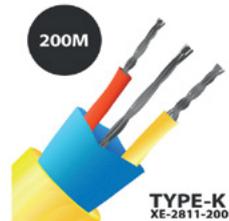
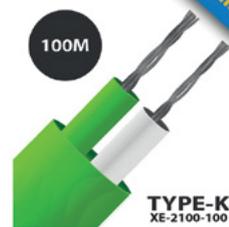
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Fluke's 70th Year celebrations include a DMM offer with a free Bluetooth speaker

Limited time period offer, till 31st December 2018

Until 31st December 2018, as part of its 70th Year celebrations Fluke is offering a FREE Bluetooth speaker to purchasers of a Fluke 179 true-RMS Digital Multimeter (DMM) while stocks last (using order code FLK-179EDSNF/SP). The Fluke 179 DMM is the industry-standard troubleshooting tool for electrical and electronic systems. With its precision, reliability, and ease of use, it includes the features needed to troubleshoot and repair electrical and electronic systems, plus it has a backlit digital display, analog bar graph, and built-in temperature measurements. The Bluetooth speaker is rugged and splashproof and features an AUX input. For more information about this and other Autumn Fluke Special offers, visit www.fluke.co.uk/promotions.

The rugged Fluke 179 Digital Multimeter is a full-featured, precision multimeter for industrial troubleshooting, or electrical and electronic system installation or maintenance. It delivers accurate true-RMS AC current and voltage plus frequency, capacitance, resistance, continuity and diode measurements. It increases productivity by means of features such as manual and automatic ranging, Display Hold, Auto Hold, and Min/Max-average recording. It also includes a built-in thermometer to measure temperature without having to carry a separate instrument.

It is independently tested for safe use in CAT III



1000 V, CAT IV 600 V environments and is backed by a lifetime warranty. It also comes with an ergonomic case with integrated protective holster.

Information about all Fluke products can be obtained via the Fluke web site at www.fluke.co.uk

Food manufacturer adds ABB drive to the mix

ABB drive and control package helps Baxters Food Group to increase production capabilities at its Colchester site.



Baxters Food Group is using an ABB variable speed drive (VSD) to help ensure consistent mixing of its range of sauces, dressing and marinades. The drive is used to adjust the mixer motor's speed based on requirements for a particular product.

Installed on a 750 kg capacity holding vessel, the VSD is used to mix sauces and other products at an elevated temperature – a process known as hot fill. This process pasteurises the product, preventing spoilage and prolonging shelf life.

Baxters Food Group produces a wide range of soups, sauces, condiments, dressings, preserves, pies and meal accompaniments in the UK and Poland. Previously, it had only produced cold fill products at its Colchester site, but wanted to expand production by manufacturing hot fill sauces and marinades.

The tank, which had not been used for several years, was re-located to Colchester from one of the other manufacturing sites in the group. It featured a steam-heated jacket that made it suitable for the hot fill process, but had no controls or electrical supply. Baxters needed a power and control solution that would turn the vessel into a fully usable asset and contacted ABB authorised value provider, Gibbons Engineering Group, for advice.

"The holding vessel is vital to the production of our hot fill sauces. Without its agitation and heating capability, we would struggle to meet the required levels of product consistency and thermal process. This would potentially compromise the high-quality standards of the product range," says Tony Bellian, European Technical Director for Baxters.

Gibbons designed, built and installed a stainless steel-enclosed control panel, which incorporates a 4 kilowatt ABB micro drive to control the speed of the holding vessel's agitator via a door mounted potentiometer. The VSD enables the speed of the mixer to be adjusted from 30 to 80 rpm, ensuring the hot fill sauces are agitated at a consistently controlled speed to give the correct end product quality.

The control panel also controls the temperature of the steam. This is adjusted to suit different product recipes.

The project involved fitting associated cabling, along with setting up and testing the panel. The control panel took four weeks to fabricate and a day to install on site.

"We had a tight deadline of two months to produce, install and test the solution. Gibbons was ready to conform to all of the working requirements associated with a food production environment. In addition, they were very cost competitive." Bellian adds.

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner in ABB Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees.

For further information visit:
www.abb.co.uk/energy

Rittal Offers Panel Opportunity to Test Drive the Perforex Solution

Rittal is offering UK customers the chance to 'test drive' its Perforex machining and automation systems before they buy.

Rittal Perforex machining centres are a major advance for switchgear manufacturing. They are designed to automate the creation of bore holes, cut-outs and threads in mounting plates, enclosure doors and side panels. It means that the time-consuming and mechanical processing steps required for the preparation of enclosure panels can now be accomplished in a single work step to an extremely high degree of accuracy. The work can be simply programmed into the Perforex to be repeated multiple times for fast, effective batch processing.

Customers are being invited to Rittal's new Working Demonstration Centre in Rotherham to see a working demonstration model of the Perforex. They can bring examples of their own enclosure modification projects using Rittal AE enclosures and compare the quality of finish they're currently achieving, as well as the time a job takes, with that delivered by the Perforex.

"The Perforex really is a game-changer for panel builders," says Paresh Kansara, Rittal's Product Manager for Industrial and Outdoor Enclosures. "Automation of mundane and routine

tasks improves accuracy and quality, as well as increasing productivity and customer satisfaction.

"We've heard of projects that would have taken up four hours, now completed in 20 minutes to a consistently high standard of finish, whether the order was for one panel, or 100. And because it's cleaner and there's less waste, it can also transform the working environment.

"This is the first time we've been able to offer a no-obligation opportunity for customers to see it in action and 'test drive' it in the UK. We're looking forward to demonstrating it to them."

Rittal's Working Demonstration Centre also includes a RiMatrix Rig – Rittal's integrated modular solution for IT infrastructures - and a working IT chiller, which demonstrates Rittal's ongoing commitment in preparation for IoT demands and delivering edge computing solutions.

The Perforex is one of a range of automated tools, developed by Rittal, to support panel building and switchgear manufacturing.



They include tools to help with:

- handling and ergonomics in the assembly of mounting plates and panels
- cutting centres for effortlessly cutting cable ducts, cable duct covers and support rails
- automated wiring to automatically wire enclosure mounting plates, which is a huge time-saving advance – potentially saving 15 working hours per enclosure

To book a Perforex Free Trial customers should contact their Local Rittal Area Sales Manager, or email information@rittal.co.uk.

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Demand for training soars as smart meter deadline looms

Demand for smart meter training is heating up as firms race to meet the new smart metering equipment technical specification 2 (SMETS 2), that comes into force next month (October), reports utilities specialist Develop Training Limited (DTL).

The government has called on energy companies to replace all old-style gas and electricity meters with smart meters.

But the roll out to 36 million households and small firms has been hit by delays, largely due to a shortage of skilled installers, and now DTL says the new SMETS2 standard has taken the demand for training to a new level.

Gavin Davies, Energy Training Manager at DTL, said: "We recognised early on that smart meters would require a massive training programme across the industry, and there is no question that the introduction of SMETS2 will increase demand significantly. We have put in place a number of specialist, NSAP and EUSR approved courses to help utility companies and contractors by training people to be technically competent and giving them the customer care skills they need when working in people's homes."

By June, smart meters had been installed in

12.5 million households. These are supposed to transmit data to the supplier via a national network without the need for meter readings and to be transferrable between energy suppliers. However, many of the old type SMETS1 (Smart Meter Equipment Technical Specification) meters are not fully compatible with the network, meaning consumers may find their meter returns to being 'dumb' if they switch suppliers.

This led to the introduction of the SMETS2 standard. The deadline by which new meters must meet the standard is now October 5, having been pushed back three months, but many companies are still installing the old-type meters. The energy regulator Ofgem is allowing 12 suppliers to continue installing them beyond the deadline to ensure a smooth transfer.

DTL points out that the introduction of new technology will continue to exacerbate the skills shortage in the utilities and construction industry. As artificial intelligence, robots and virtual reality

become more commonplace, the industry will need to adapt, adding to the need for training. Meanwhile, there is a skills shortage due to the unfashionable image of working in these industries and an ageing workforce reaching retirement.

Gavin Davies adds: "Smart meters are part of a growing nationwide digital grid, including smart home products and electric cars, which will be used to manage energy demand. It has become increasingly clear that in the coming years technology will become ever more important across all the utilities, not just in electricity. Contrary to the popular idea of people working in trenches, utilities personnel are highly skilled professionals requiring specialist training, and this will increasingly be the case in future."

DTL is already providing training for a number of big names in the utilities and construction industries and, as soon as SMETS2 goes live, we only see this increasing."

www.developtraining.co.uk



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Denso Protal Protection For Pipeline Bends

G & J Engineering are nearing completion of a high pressure pipeline diversion project for Wales & West Utilities in Newton Abbot, Devon. The pipeline bends are being installed for a housing development in Hele Park and are protected with Winn & Coales Denso Protal 7300.

The development is based on a 800mtr diversion of a 500mm high pressure pipeline. The job involves two 5-way stopples with multiple drillings under pressure and line stopping.

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Densostrip™ Used On Refurbished Ross Fountain

As part of a recently completed £1.5million project to refurbish the historic Ross Fountain in Edinburgh, Winn & Coales (Denso) Ltd supplied Densostrip™ and Densostrip Primer™ to provide a permanently watertight seal between precast concrete units.

These precast units form the trenches which house the underground supply of services to the fountain and were both supplied and installed by Creagh Concrete Products.

The year-long restoration project on the new foundations and waterworks (under the Ross Development Trust) now enables the fountain to operate for the first time in years. Industrial Heritage Consulting Ltd were the project managers on the fountain conservation works.



For further information visit: www.denso.net

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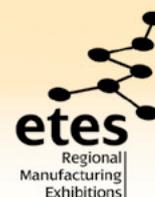
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Southern Manufacturing 2019: Maintaining Excellence

Southern Manufacturing & Electronics, the UK's largest annual engineering show, returns to Farnborough from February 5th to 7th 2019. The move to a new permanent venue last year proved a landmark in the show's two decade history and the impetus for further expansion in 2019.



2019 include control panels and electrical systems from Instrutec Controls and metalworking fluids and management from Oemeta UK.

Another significant step forward for the show is the establishment of links with several highly influential industrial organisations, including Composites UK, the Confederation of British Metalforming, Farnborough Aerospace Consortium, The British Gear Association, Society of Motor Manufacturers and Traders and the Gauge and Toolmakers Association. These partnerships will enable the roll-out of new show features and access to authoritative technical expertise via the show's comprehensive free technical seminar programme, open to all visitors. Some of the new areas to be addressed as part of the 2019 programme include a look at incremental sheet forming processes, automated mould design and large scale 3D printing.

Exhibitor bookings for next February's event are currently over 20% ahead of last year, which indicates that the show will comfortably reach its maximum capacity. The show's venue, Farnborough International Exhibition and Conference Centre, opened earlier this year and at 20,000m² is the largest purpose-built exhibition venue to open in the UK for twenty years. With approximately 22% of the UK's 3,400 Aerospace businesses and significant numbers of Automotive, Medical Technology, Marine and High-Tech engineering located within a 50 mile radius of Farnborough, the show is situated right at the centre of one of the UK's most important manufacturing regions. Sharing the site with one of UK manufacturing's most important international showcases, the Farnborough Air show, has brought Southern Manufacturing to the attention of an increasing number of international exhibitors over the last decade. That trend has taken an encouraging upturn for 2019

with an impressive 26% surge in bookings from overseas companies, significantly expanding the international aspect of the event and the range of solutions on show.

As usual, visitors can expect to meet an incredible variety of suppliers, from major international machinery manufacturers to specialist components suppliers and everything in between. Many of the more familiar names return for 2019, among them well-known industrial component vendors such as igus UK, Wurthe Industry and Acorn Industrial Components. Regular machinery manufacturers exhibiting once again include Bystronic UK, C. Dugard, Matsuura, Yamazaki Mazak and YMT Technologies, plus some notable returnees to the show. Citizen Machinery UK will exhibit for the first time since 2007, joined by other major former exhibitors such as Mitutoyo (UK), SCHMIDT Technology, Filtermist International and LNS Turbo amongst others. New exhibitors for

Farnborough International Conference and Exhibition Centre offers free car parking for 3,500 vehicles and is well-served by road and public transport links. A regular free shuttle bus service operates from both of Farnborough's mainline railway stations directly to the show. The venue itself offers a high standard of facilities including a free WiFi service in the foyer area and high quality catering outlets.

Southern Manufacturing & Electronics 2019 opens from February 5th to 7th. Admission to the show is free. More information and tickets are available from www.industrysouth.co.uk.

Breathable Tank Base Sealing

Why tank base corrosion is an issue

Corrosion at the base of a heavy structure is obviously bad news for the asset owner or operator. Regulations have been set in place designed to prevent the escape of hazardous media into the environment. And whilst it would take years for any significant loss of integrity to occur, those years, would be remembered for frequent, costly maintenance and inspection.



Above: Storage tank displaying water ingress at the base

When and why tank base corrosion occurs

The crevice at the interface between a steel tank and its base is where we see corrosion set in, at the chime angle. The main cause of corrosion is water ingress, sometimes exacerbated by poor drainage and sloping of the foundation towards the tank.

A sealant would prevent this water penetration. However, it is difficult to seal a steel tank to its foundation, typically concrete, as these dissimilar materials are subject to movement, expansion and contraction at differing rates.

“Solutions” or more problems?

Tank cement, bitumen, asphalt, caulks and other sealants have been tried for many years, typically proving to be temporary solutions due to poor adhesion and rigidity while the tank is in operation. In some cases, this tank base “protection” can do more harm than good. Localised failures can effectively seal the moisture in, thus exacerbating



Above: Tank base corrosion

the corrosion. As well as this, inspection of these systems can prove difficult as devices cannot “see” the remaining steel thickness through the sealant.

Microporous membranes: more than just roofing systems

Originally developed for water- and weatherproofing roofs, tank maintenance engineers started noticing some features of these microporous membranes, which could prove useful on tank bases:

- 1) Application of the membrane system is straightforward, without the need for hot work or any specialist tools.
- 2) Unlike sealants, membranes prevent water ingress but do not trap moisture. Similar to human skin, their microporous nature allows the vapour



Above: Tank base sealing with a flexible membrane

to escape, leaving the underlying substrate dry and firm.

3) Membranes adhere very well to different substrates.

4) We know that most tank base protection systems fail due to their rigidity, however, membranes can accommodate the natural movement of the substrate and move in sympathy. For example, Belzona 3111 (Flexible Membrane)



Above: Belzona 3111 inspection in service

has been tested for elongation against BS 2782. After 7 day cure at 20C/68F, the elongation of a reinforced system will be 20% lengthwise and 100% crosswise. The same system will exhibit tear strength tested in accordance with ASTM D624 (7 days cure at 20C/68F) of 188 pli/ 33 N/mm.

Membrane in action

Tanks at a refinery in France were suffering from water ingress. They had a polyester tank base sealing system in place, which was failing due to its rigidity. The failed system had resulted in water ingress, causing corrosion at the base of the tank.

Belzona 3111 was used to waterproof the tank base in 2004. The annular ring was subsequently inspected in 2004 and 2017, using non-destructive methods, and found to be in excellent condition.

For further information visit:
www.belzona.com

Temperature and Media Stability with Latest Freudenberg EPDM Sealing Materials

Freudenberg Sealing Technologies, a leading global specialist in sealing products and their application, has announced the release of its latest generation of EPDM sealing materials. The latest material portfolio offer optimised temperature and media stability, as well as full safety testing in accordance with industry standards. Material availability is via Dichtomatik UK Ltd, the exclusive provider for Freudenberg Sealing Technologies' food and beverage related products in the UK.



Due to critical processes and the use of demanding or aggressive media in food and pharmaceutical production, there is ongoing demand for seals that can deliver high levels of stability. Thanks to its latest generation of EPDM materials, Freudenberg Sealing Technologies is opening up individual optimisation potential for plant constructors and operators. Offering a temperature range of up to 180°C, the materials provide notably higher stability in water and steam for a short period. Furthermore, the latest EPDM generation is highly resistant to CIP/SIP procedures.

Whether designed as an O-ring, shaped part, lip

seal or diaphragm, the qualities of the latest EPDM material generation mean it can be put to use in three different degrees of hardness: 60 EPDM 290; 70 EPDM 291; and 85 EPDM 292.

Firstly, 70 EPDM 291 is the standard elastomer and is ideally suited to static seals. For seals that are dynamically stressed, a friction-reducing RFN™ coating is deployed to optimise the properties of the component. With RFN™ (Reduced Friction by Nanotechnology),

Freudenberg modifies elastomer materials so that the friction coefficient is not only reduced dramatically, but remains virtually constant over

the part's entire service life. The harder 85 EPDM 292 can be used for dynamic seals, while 60 EPDM 290, in contrast, has been developed specifically for diaphragms; here, excellent material properties are exploited in combination with high flexibility.

Importantly, Freudenberg Sealing Technologies can offer a comprehensive range of approvals for its latest generation of EPDM materials. For example, the materials meet the specifications of the European standard DIN EN 681-1 WB and the American NSF 61. All three EPDM qualities also even meet the strict requirements of the US FDA 21 CFR 177.2600 and of the EU Regulation No. 1935/2004. The high degree of purity of 70 EPDM 291 and 85 EPDM 292 is underlined by the approval according to USP Class VI, while the latest EPDM generation also qualifies for the 3-A® Sanitary Standard Class II And of course, all three EPDM qualities are 'ADI free' and thus particularly suited to the drinks, food and pharmaceutical industry.

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Densostrip Seals Hinckley North Berth Surfaces

Construction is well underway by Costain on the North Berth project that will serve the forthcoming construction of the Hinckley nuclear power station.

Precast concrete units are being applied to the surfaces of the North Berth. As can be seen in the photo, within the black circles, Winn & Coales Densostrip is used to permanently seal the concrete units following application of a special primer.



Densostrip is a compound rubber and bitumen joint sealing strip specifically for precast concrete units to provide a permanently flexible watertight seal when compressed between joint faces previously primed with Densostrip primer. As well as water and sea water it is resistant to chemical and biological attack.

It is also an effective seal for precast concrete box culverts, manholes, inspection chambers, shafts, tunnels and pipe sections.

www.denso.net

ATS Electro-Lube (UK) Ltd Have Added Another Product To Their Well Proven Range Of Self Contained Automatic Lubricators.

The new Jack-Luber is a fully self-contained battery powered lubricator available with either a 125cc or 250cc replaceable grease cartridge.

Grease cartridges can be supplied filled with the specific brand & type of grease type required for the application & can be changed in seconds by the user.

As the Jack-Luber is a motor-driven lubricator, it can generate up to 250psi operating pressure, meaning that it can be used with long feed lines or in cases where there is high back pressure at the bearing. The innovative new Jack-Luber



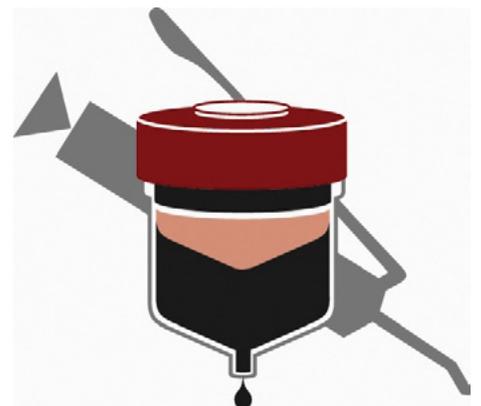
Jack-Luber Model 125 & Replacement Cartridge

incorporates a Jackscrew mechanism which reduces wear & therefore prolongs the operational life of the unit.

Once activated, the Jack-Luber runs intermittently to supply grease on the optimum "Little and Often" principle. Integral switches allow users to set the required feed rate, allowing up to 2 years operation between cartridge/battery change.

The Jack-Luber is suitable for indoor or outdoor use and is not affected by changes in temperature. In addition, the Jack-Luber is certified intrinsically safe for use in hazardous areas.

This new addition fills the gap in the ATS Electro-Lube product range, fitting between the low pressure (50 psi) Electro-Luber Gas Series and



the higher pressure (900 psi) Ultimate-Luber Motor Drive Series.

Detailed information, including demonstration videos for the entire ATS Electro-Lube product range can be found at their new website: www.atselectrolube.co.uk

What makes a quiet bearing?

Noise in a bearing is can be caused by a number of factors, but almost all are related to vibration. Here, Chris Johnson managing director of miniature bearing supplier SMB Bearings, explains how quality, fit and lubricant choice can all impact the level of vibration and noise in a bearing.



Noise coming from a bearing is commonly associated with damaged wheel bearings in cars. When wheel bearings become damaged, excess noise is probably the easiest way to identify the bearing is broken. But, what about bearings in other applications?

Bearing rings and balls are not perfectly round. Even after extensive fine grinding and polishing, the balls and raceways are never perfectly smooth. These imperfections can cause unwanted vibration, potentially damaging the bearing during its lifespan.

Usually, there are machining imperfections in the form of rough or uneven surfaces which will cause one ring to move or oscillate radially in

relation to the other. The amount and speed of this movement contributes to the amount of bearing vibration and bearing noise.

Rough or damaged balls or raceways, poor ball or raceway roundness, contamination inside the bearing, inadequate lubrication, incorrect shaft or housing tolerances and incorrect radial play can all contribute to a bearing's vibration and in turn, can be contributing factors to excess noise.

When searching for a bearing with low noise, a good quality bearing will have excellent surface finish on balls and raceways. During the manufacturing process, the roundness of the balls and bearing rings will be very closely controlled. The smoothness or quietness of a bearing can

be checked by accelerometers which measure bearing vibration at the outer ring, usually with the inner ring rotating at 1800 rpm.

Another way to control noise is to specify a radial play that allows the bearing to operate with almost zero radial play when in use. If the shaft or housing tolerances are incorrect, the bearing can be too tight, which will lead to excessive noise. Similarly, poor shaft or housing roundness can distort the bearing rings, which can also impact the vibration and noise of a bearing.

Bearing fitting is another important factor to consider. Poor fitting practices can cause dents in the bearing raceways which will greatly increase vibration. Similarly, contaminants in the bearings can cause unwanted vibration.

To be low noise, a bearing must be free of contaminants. If the bearing is not used in a very clean environment, protection against dirt, such as contact seals, should be considered.

In a good quality bearing, a low noise lubricant is also recommended. As the name suggests, these finely filtered greases will allow the bearing to run quietly due to the absence of larger solid particles. There is now plenty of choice in relation to low noise greases, with several options on the market.

Bearing rings and balls are never perfectly round and some vibration will always occur. However, there are ways to select a bearing which is better suited to applications where low noise is required.

For more information on low noise bearings and lubricants, contact the team at SMB Bearings on +44 (0) 1993 842 555.

NSK Self-Lube bearings help food plant save over €54,000 a year

As a result of pillow block bearings that were failing every six weeks on the multiple-belt dough-prove section of a process line, a UK-based tortilla wrap manufacturer turned to NSK for help.



Investigations by NSK's expert engineering team attributed the failures to the ingress of flour particulates and set-screw loosening (shaft creep) due to vibration. A recommendation was subsequently made to replace the tortilla wrap manufacturer's standard pillow block units with Self-Lube Triple-Lip Sealed Units and eccentric locking collars from NSK. The replacement bearing units have successfully extended operating life from six weeks to over one year, resulting in significant cost savings. B112018-N-Image1.jpeg - Flour particulates can be extremely damaging to incorrectly specified bearings on dough-prove belt conveyors

The dough prove at the tortilla wrap manufacturing plant has 42 rollers in total, which prior to the NSK

recommendation were each supported by two pillow-block bearing units with a single lip seal and set screw locking arrangement. Rotation speed is around 120-rpm. A belt is wrapped around the rollers to convey the tortilla wraps and retain them for long enough to prove. The tortilla wraps travel from one end of the dough prove, flip over on to the belt below, and travel in the other direction. This sequence is repeated until they enter the oven for baking. Dough-prove conveyors operate in harsh conditions where they are exposed to flour particulates and metallic debris from chain and sprocket wear (a number of rollers on dough-prove conveyors are typically driven by sprockets and chain). For the tortilla wrap manufacturer, this operating environment meant that two mounted bearing units and one 35mm diameter shaft

required replacement approximately every six weeks. The bearings were reported as damaged beyond use due to heavy contamination and creep damage to the bore, while the roller had to be replaced due to an undersized shaft diameter at the bearing fitting surface (from wear damage caused by creep). Every failure would require a significant number of man hours to perform the replacement, and bring about substantial machine downtime and costly production losses. In contrast, the introduction of NSK Self-Lube Triple-Lip Sealed Units has produced zero failures over a 12-month period. These bearing units feature a nitrile rubber triple lip that is bonded to a protective pressed-steel shield. As a result, longer bearing life is achieved through superior seal performance. Additionally, the bearing units provide extended re-lubrication intervals, which in turn greatly reduces maintenance costs and increases the productivity of machinery and equipment. In total, the annual savings at the tortilla wrap manufacturer have been calculated at €54,665. Self-Lube Triple-Lip Sealed Units offer simple implementation and represent a ready replacement for existing bearing units. They are available for both set-screw and eccentric locking collar insert options, in metric and imperial bore sizes. Importantly for the application at the tortilla wrap manufacturer, the selection of eccentric locking collars successfully reduced insert loosening in service, without damaging the shaft.

For more information, visit:
www.nsk europe.com

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Valuekeep launches a new maintenance dashboard library to their add-on offer

Valuekeep Analytics is a new add-on that features an interactive dashboard library accessible from anywhere.



Valuekeep announces the release of Valuekeep Analytics, a new add-on featuring a powerful library of dashboards that provide real-time reports on Assets, Costs, Issues, Work and Spare Parts directly from the company's maintenance software. This new product adds value to the decision making of maintenance managers, as well as facilitates the control of all the performance indicators of the maintenance department.

Built and processed with Microsoft Power BI, Valuekeep Analytics offers 5 fully interactive and easily accessible maintenance dashboards from anywhere, in both the web and mobile versions.

In relation to the Assets Dashboard, the maintenance manager can access more detailed information on the type of failures and the availability/unavailability details of each asset.

On the other hand, in the Work Dashboard, there

is the possibility of controlling all the activity of the technicians and work centers, based on data from the reports related to the hours worked and work orders executed of each one.

The Issues Dashboard allows the maintenance manager to analyze maintenance requests by location, by asset or by priority level. It also indicates the status and type of incident in question.

In the new version, Valuekeep has been dedicated to the creation of a Costs Dashboard where managers can find not only reports on the costs of maintenance operations during a certain period of time, but also the costs per asset. This dashboard allows managers to search for all expenses by type of maintenance, labor, among others.

Another great feature is the Spare Parts Dashboard that contains simplified information on

all consumptions of spare parts in stock. These indicators provide maintenance managers with a more accurate view of the costs of parts used and, in the same way, make it easier for them to manage their stock.

All maintenance dashboards and KPIs comply with international maintenance standards (Maintenance Key Performance Indicators EN 15341:2007). The new add-on is available exclusively for the Universe subscription plan, for an additional £15 per month.

To learn more about Valuekeep Analytics, please visit www.valuekeep.com/maintenance-dashboards-valuekeep-analytics

Visit us at www.valuekeep.com



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The Valuekeep team will be showcasing their CMMS software at Maintec 2018

Valuekeep confirms the presence at the Maintec exhibition for the second year, together with the most important manufacturers and technology suppliers in the Maintenance Engineering area.



Aside from being able to attend the demonstration of the Valuekeep's maintenance management software (CMMS), visitors can also join the presentation of the most recent add-on - the Valuekeep Analytics – containing a vast library of interactive dashboards that provide real-time information reports on Assets, Costs, Issues, Work and Spare Parts, available in the company's CMMS software.

Valuekeep will be receiving visitors at the stand 90, where it's possible to review the latest mobile development, the new Asset Management

module, that comes as an update for the mobile application Valuekeep Mobile. This module was built to simplify the asset management and inventory of equipment anywhere. The mobile CMMS app that was launched in 2017, has this new powerful feature that complements the existent modules for Maintenance Request, Work Management, and Work Report, becoming even more versatile and effective for all maintenance work on site.

For the company, promoting their product and services at this event is an opportunity to expand

the business and a great occasion to establish new contacts with potential clients/partners. Valuekeep's goal is to strengthen the presence of their software in the United Kingdom, a highly competitive market around Maintenance Management, as well as in other international markets.

Find out more about Valuekeep at www.valuekeep.com

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Performance always in sight with new cloud based Solution

Nederman Insight puts information at the fingertips of the user wherever they may be. It provides valuable data on how a filter is working and it also helps to build a broader understanding of the filtration system, its performance, maintenance needs, associated costs and potential improvements.

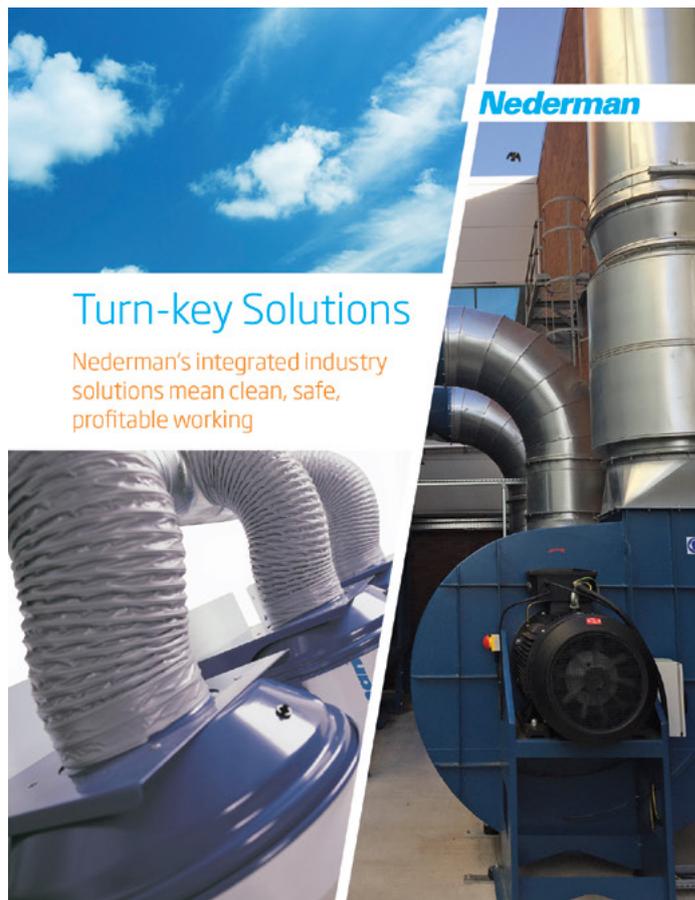


The Insight technology incorporates a series of sensors that monitor conditions in the filtration system. From the sensors, data is securely uploaded to the cloud via an Industry 4.0 gateway. This data can easily be read and interpreted via the Nederman Insight web-based user interface and dashboard.

What this gives the end user is around the clock access to real time and historical data that enables optimisation of filtration systems and an understanding of how to utilise it fully. This system performance is complemented by a risk management alert feature that informs the user when action is required to prevent extended downtime and keep the work place safe. This feature also helps meet the longer term need for environmental compliance whilst reducing the potential for incorrect filtration management.

This alert system ties-in with maintenance schedules and the access to historical data and the ongoing control of performance data will enable end users to plan maintenance needs. Nederman experts will help interpret the data and advise on settings, adjustments and product management strategies. The improved awareness and maintenance of the filtration system will allow businesses to detect problems before they arise.

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ATEX Compliant Fume Extraction: Landfill Case Study

Landfill gas is a natural byproduct of the decomposition of organic materials which are put into landfill. The gas is composed of roughly 50% methane (CH₄) and 50% carbon dioxide (CO₂) and a small amount of non-methane organic compounds. Methane is a potent greenhouse gas and harmful to the environment



When organic waste is first deposited into landfill, it goes through the initial stages of decomposition where small amounts of methane are generated. As the conditions change during the subsequent stages of decomposition, an increase in methane is generated. After a period of time, the generation of methane slows down. These fluctuations in the organic waste and the amount of methane generated means the ventilation equipment needs to adapt to continue the extraction of methane effectively.

Various fume extraction processes are available with certain systems being designed to capture methane for use in generating power. Other equipment may be designed to burn the methane to stop it from entering into the atmosphere. This depends on the rate methane is generated from

the decomposition of the organic waste.

Axair Fans supplies polypropylene fans for fume extraction systems in landfill applications. One such customer in the landfill gas renewable energy industry is Landfill Systems Limited. Based in Suffolk, the company manufactures bespoke landfill and biogas gas flares, installing plant worldwide. Andrew Ward, product sales engineer at Axair Fans, specified the 'S' range of fans designed to provide high air flow rate against medium system pressures. Due to the potentially flammable nature of landfill gases, the ATEX (Atmospheres Explosibles) certified version of the 'S' range was required. The fans are constructed from a polypropylene type material that is certified for ATEX Zone 2 applications with the fan pedestals manufactured in steel. Likewise, the fan



motors are also made to an ATEX specification to conform to the European equipment directive.

To achieve better energy efficiencies, an inverter was used to control the fans. This facilitates speed control, meaning the fan will only do its required duty. As the fan only uses the minimum energy required, savings were made on running costs. The fan motors were also fitted with thermistors which are wired into the inverter to shut the system down if the motor starts to overheat. This failsafe is a regulation requirement.

In addition to the 'S' range, Axair Fans also offer 'ST' fans available in ATEX versions suitable for Zone 2 applications. These ranges of fans are both suitable for extracting corrosive air from a wide range of applications other than landfill gases, such as biomass systems and odour control systems.

For more information or to ask one of Axair's specially trained ATEX product sales engineers to specify fans for your application, call 01782 349 430, email sales@axair-fans.co.uk or visit www.axair-fans.co.uk.

AirBench celebrates 25 years

In September 2018, AirBench Ltd are proud to celebrate 25 years in business. Since beginning operations as WorkPoint Environments Ltd, we have supplied in excess of 10,000 dust and fume extraction units to customers across the UK, EU, and Worldwide.



The AirBench Ltd name change came into effect in February 2011 and since then the AirBench brand has been the Go-To name for downdraught dust and fume extraction.

A family business, AirBench Ltd have grown from our beginnings as a small contracting firm supplying dust extraction equipment from across a range of suppliers; to focus on our own small range of products designed to solve specific problems for industry.

The initial AirBench range of downdraught benches has grown to include a much wider range including the UK's most advanced downdraught bench, the AirBench RP. We also manufacture a range of cross-draught systems (VertEx) and dust control booths; coolant mist filters (OMF); and air cleaning systems (MF).

With some of our staff being with the company since the very early days, we can offer a continuity of customer service that is unrivalled in our industry; and our network of distributors outside the UK ensure AirBench products are available widely.

As always, we continue to offer on-site demonstrations of our products across the UK including assessments of your dust or fume extraction issues. Contact us if you have a problem we can help you solve.

For further information visit: www.airbench.com

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Gardner Denver's Ultima compressor still sets benchmark in oil-free technology

For those seeking a best-in-class oil-free system, Gardner Denver's CompAir Ultima compressor sets a benchmark in performance, operational efficiencies and for meeting the highest possible air quality standards.



When considering other models available, a major drawback that traditional two-stage oil-free compressors have is the reliance on a gearbox. Not only do these consume large amounts of energy, but they also require high volumes of oil to lubricate the gears.

In contrast, the CompAir Ultima compressor has been engineered with two highly-efficient, permanent magnetic motors that replace the traditional gearbox design. These two, variable-speed motors are capable of achieving speeds of up to 22,000 RPM and efficiencies greater than IE4, which directly drive the airend without the need for a gearbox.

Furthermore, while conventional models still use oil to lubricate and cool both a system's motors

and airends, Ultima uses water in a closed-loop circuit to cool these components. This allows greater heat transfer and cooling efficiencies, as well as ensuring as little oil as possible is used in the system for assured air purity. Water-cooling also places less stress on these components, limiting the opportunity for any maintenance issues that might otherwise arise during the compressor's lifetime and reducing servicing costs.

Ultima is offered as standard from 75kW to 160kW, with each unit fully upgradeable between this kilowatt range. This means that if a site's energy demands increase in the future, customers can choose the optimal Ultima variant based on the increased capacity. There is no need to purchase a new compressor, eliminating the associated

downtime or delivery wait that comes with upgrading to a new system.

Emitting the quietest noise level in its class of only 69 db(A) and the smallest footprint available for an oil-free model, Ultima can be installed easily at the point of use, rather than in a separate compressor room. Ultima's highly-efficient internal cooling also means adjacent compressors can be sited close to one another, optimising the space available.

David Bruchof, Product Manager for Industrial Compressors at Gardner Denver, explains: "Launched only last year, our Ultima compressor has been installed on sites around the world, quickly establishing itself as a proven and trusted oil-free technology from the CompAir brand. There is no question that Ultima continues to deliver high levels of air quality and purity, due to its highly innovative design and the fact that so many conventional models still rely on the traditional gearbox and single motor set-up.

"Supported by our six-year, PureCare warranty, which is completely free of charge, users can rest assured that they have selected an oil-free compressor that will save considerable cost and deliver high operational efficiencies.

"For those operating in production sensitive environments, such as the food and beverage industry, electronics manufacturing or pharmaceuticals sector, you need to be confident that you can invest in a system that offers assured air quality and purity. Ultima meets this need and continues to drive the oil-free compressed air market forward."

For more information on Gardner Denver's CompAir Ultima compressor, please visit www.gardnerdenver.com/industrials.

A 'OneAir' solution from Gardner Denver for the aquaculture market with Gael Force Group

Marine equipment, technology and engineering business Gael Force Group has agreed to a three-year partnership with Gardner Denver for all its industrial air needs.

Gael Force is a specialist in the design and manufacture of highly engineered fish feed barges and systems. Requiring an industrial air supplier that could provide low pressure, high volume blowers and compressed air technology for a range of applications, the organisation has agreed to an exclusive three-year agreement with Gardner Denver.

The aquaculture sector has been the fastest growing food production market for the last 20 years. Due to this increased demand, the opportunity for feed barges is only set to grow. Gael Force has already built more than 80 feed barges to date, with the largest offering a capacity of up to 450 tonnes. Each barge typically features between four to six feed lines, however Gael Force is also constructing barges that are capable of running eight feed lines in total.

Delivered by a pneumatic conveying system, these feed lines require low pressure, high volume technology to ensure the air flow rate remains at a suitable level when supplying the feed to the pens holding the fish. Pellets are susceptible to damage and can be lost when being conveyed from the feed barges to the pens. As a result, the pressure of the air being delivered is absolutely critical.

As part of the agreement, Gardner Denver is supplying a range of rotary lobe blowers and side channel blowers for this application. The units' compact design, small footprint, low noise emissions and performance levels make these ideally suited for fish feed conveyance. These machines are also offered with motor and frequency convertors, so operators of these barges can ensure efficiency levels remain optimised at all times.

One of the new blower technologies Gael Force will be considering for ongoing and new projects is the Robox Aqua from Gardner Denver. Designed to fulfil the specific requirements of the aquaculture industry, the new rotary lobe blower offers an innovative, space-saving design, with three side-by-side units taking up the same space as two conventional blowers. Direct coupling prevents transmission efficiency losses, while also reducing the costs associated with servicing. In addition, the blower is available with an improved noise enclosure, plus its modular and stackable design enables the units to be installed on scaffold structures. This is ideal for barges with only very limited space available.

Gardner Denver is also supplying a number of compressors to Gael Force, which will provide high quality compressed air for a range of services. This includes conditioning, which ensures the cleanliness of compressed air to help extend the service life of pneumatic components, allow aeration during farm treatments and assist in controlling operational processes.

Neil MacDonald, Project and Design Engineer at Gael Force Group, explains: "There is a bigger drive than ever before to accommodate more and more equipment on feed barges, which help manage the health and handling of the livestock, as well as deliver the on-board operations. At the same time, as the level of requirement has increased on feed barges, so too has the demand for compressed air.

"As a result, space is really at a premium, and we need efficient blower and compressor technology that we can depend on. We were impressed with Gardner Denver's range of rotary lobe blowers, which already have an excellent reputation in the



aquaculture sector, as well as the company's side channel blowers and compressed air systems.

"No matter the application, unit size has been a prime consideration here. All products meet this critical requirement, offering technologies with a compact design and small footprint, coupled with excellent performance.

"Gardner Denver has been engaged with us from the very beginning, bringing its extensive experience and innovation to the table. The company has been really easy to work with, proving themselves to be a very trusted supplier."

Umberto Onetti, Aquaculture Key Account Manager at Gardner Denver, adds: "Our ability to offer a 'OneAir' solution really sets us apart from the competition. Whether it is rotary lobe blowers, side channel blowers or a compressed air system, our extensive portfolio means we can offer the right solution to meet your industrial air needs.

"The agreement with Gael Force is also a great example of a company that has understood the efficiencies that can be realised from working with a single industrial air supplier. From lower administration costs and better terms through volume, to strengthened relationships with a single supplier that knows your business's needs intimately, we can help meet all of Gael Force's industrial air requirements."

For more information on Gardner Denver, please visit:
www.gardnerdenver.com/industrials.

Keeping it clean

Compressed air needs to be clean in order to maintain system efficiency. The most effective way to do this is to ensure that each compressor is sited in the best available position and has adequate filtration to remove impurities, as BOGE's General Manager, Mark Whitmore, explains.

We all prefer to inhale clean air – and the same is true of air compressors.

In humans, particulates and other impurities in the air can lead to respiratory problems. In compressors, concentrating these impurities (including hydrocarbons and even bacteria) into a smaller volume magnifies their effect: so, what may have begun as relatively clean air can become much 'dirtier' when compressed.

These contaminants – as well as water vapour and aerosols – can cause internal components to wear, while also playing havoc with compressor coolant. This can lead to more frequent breakdowns – requiring costly attention from the service department – and inevitably shorten the life of the compressor. Further down the road, the contaminants could even affect the end product, especially something sensitive such as food or medicine – and nobody wants to sanction a mass product recall. Compressors working in dirty, dusty or contaminated environments are particularly susceptible to damage if they are not looked after properly.

However, these effects can be overcome with scrupulous attention to best practice, particularly regarding filtration and drying. Scrubbing the incoming air to remove as many impurities as possible is critical to the longevity – and ongoing efficient operation – of a compressor.

Air transport

The journey of atmospheric air through the compressor – turning it into clean compressed air – is one of several stages. The specific details

will change depending on a multitude of factors, such as the compressor's location (e.g. indoor or outdoor), ambient temperature, the environment in which it sits (for example, whether there is dust, dirt or noxious gases) and the industry in which it will be used: compressed air for pharmaceuticals or food, for instance, must be far cleaner than that used for metalworking or textiles. All of these factors, and more, will dictate what type of filter or dryer is chosen.

On the water front, a cyclone separator typically removes around 99% of all the water vapour from the air once it has been compressed. This air can then be fed through a dryer, which will normally be one of two main types: refrigerant dryers, which work by lowering the temperature of the air, encouraging the water vapour to condense; and adsorption dryers, where the moist air passes over a chemical desiccant, which takes up the water.

It is worth pointing out that, while many industrial operations correctly choose refrigerant drying, it is not appropriate in every single case: for instance, if pipework passes through ambient temperature zones below 3°C, a desiccant dryer should be used, as it is unaffected by lower temperatures.

Oil-free air is also becoming increasingly important, especially in industries with higher standards of cleanliness. In traditional compressors, oil is injected into the compression cavities. This improves the sealing properties of each air path, reduces pressure drop and dissipates heat during air compression.

However, even well-sealed downstream systems have some degree of leakage. Oil-free



compressors do not inject oil into the air paths but still use it to lubricate other moving parts. A further option is to use a compressor such as BOGE's LPT150, which uses 'turbo technology' to dispense with oil altogether.

These can be augmented – if needed – by an increasingly fine series of filters, such as those that use activated carbon to separate the last remaining impurities.

The overall aim is to produce high quality compressed air as cost effectively as possible. However, it is important to draw attention to a common misconception – that reducing system pressure saves cost because it lowers energy consumption. Doing this can actually reduce air quality because filters and dryers that are sized for higher pressures can quickly become inefficient at separating particulates or moisture when operated at below their optimum settings.

In reality, the best way to decrease system cost is to ensure peak efficiency, long lifespan and minimal maintenance, which best practice, and the use of appropriate filters and drying, will help to deliver.

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New Thermodynamic Pump Monitoring System Monitors Pump Performance And Efficiency

Corroserve has just announced further major investment in its Thermodynamic Pump Monitoring (TPM) System.

As a result, the Leeds based corrosion protection and engineering services specialist can now monitor the performance of any class C industrial pump over its working life and as a result highlight significant cost saving opportunities for the user.

Calibrated and certified by the Yamari Standard Laboratory in accordance with relevant Japanese standards, the updated TPM system calculates pump efficiency by the thermodynamic method based on the first law of thermodynamics. The effect is that energy losses in the pumping process are transferred to the pumped liquid in the

form of heat energy, causing a rise in temperature. The TPM unit measures temperature and pressure at the pump suction and discharge and by inputting the motor power consumption, the system calculates the flow rate and actual pump performance and efficiency.

TPM identifies pump wear and measures changes in performance and efficiency, allowing the customer to make informed decisions about refurbishment and the optimum time for any work to be carried out. It also identifies the most efficient pumping conditions providing customers



with a detailed & accurate report.

The financial investment in TPM testing will be quickly recouped in savings made by reduced energy costs from running a more efficient pump - savings that might be increased even more by using the company's Fluiglride coatings to further enhance pump efficiency.

For more information visit:
www.corroserve.com

Gardner Denver seals the deal with HACCP standard vacuum pump enclosure for Proseal

Gardner Denver has supplied a leading food packaging machine manufacturer with an innovative solution to help ensure it meets required hygiene and safety standards.

Based in Adlington, Cheshire, Proseal uses oil-lubricated, rotary vane pumps from Gardner Denver for its vacuum/gas packing technologies, to help ensure goods are tightly sealed. For food packaging business, best hygiene practice demands that these machines must be washed down at the end of every shift, which naturally poses a problem for vacuum pumps located in these facilities.

The harsh working environments and corrosive cleaning agents used by food manufacturers mean there is a very real risk of rusting and reduced pump performance over time. To overcome this challenge, Gardner Denver has developed a specially designed enclosure for its Elmo Rietschle VC 303 vacuum pump, which means it can be sited alongside Proseal's vacuum/gas packing machines in wet environments.

The cover has been developed in line with the Hazard Analysis and Critical Control Point (HACCP) principles, which establish the

appropriate food safety management procedures that businesses should have in place. Made from stainless steel, the cover means the vacuum pump can withstand wet environments, ensuring Proseal can help its customers maintain the highest hygiene standards, without affecting the vacuum pump's performance.

Steve Windsor, Senior Development Engineer at Proseal, explains: "If a vacuum pump cannot be sited alongside the food packaging technology, then it has to be installed remotely and piped to the machine. This is a costly process, so it is in our customers' best interest to have the pump positioned as near as possible to the food packaging system.

"Gardner Denver has created a stainless steel cover for its Elmo Rietschle VC 303 pump that is ideally suited to meet the needs of the wet environments in which our technologies operate. These enclosed pumps offer a very attractive 'plug and play' solution for Proseal.

With a capacity of 300 m³/h and an ultimate vacuum of 0.1 mbar, Elmo Rietschle's VC 303 vacuum pump offers a robust and economical solution to Proseal and other manufacturers supplying to the food industry.

Gardner Denver has also supplied a range of Elmo Rietschle vacuum booster and oxygen compatible pumps throughout its working relationship with Proseal.

Steve Plane, UK Sales Manager for Vacuum and Blowers at Gardner Denver, adds: "Air quality and hygiene standards are, naturally, an important consideration in a food manufacturing environment. Most sites will follow the recognised principles of HACCP to make sure they are complying with food hygiene and safety legislation, removing any potential hazards or at least reducing these to an acceptable level.

"It has been great to partner with Proseal and develop an assured solution for our Elmo Rietschle VC 303 vacuum pump, which helps minimise the risk of contamination and meets HACCP standards.

"At Gardner Denver, we work with businesses to help identify and reduce any hygiene risks with a free site survey. This may then extend to working with the production team to ensure any equipment that could pose a risk is included in the site's HACCP assessment. Please get in touch with us if you would like to find out more."



"Developed to meet HACCP standards, our customers can feel confident that they're investing in a system that is robust and built to last, which allows them to easily carry out the necessary hygiene and safety procedures that are required.

"We couldn't be happier with the solution from Gardner Denver, which is not only cost-effective but provides assured and efficient vacuum at all times too."

For more information on Gardner Denver, please visit www.gardnerdenver.com/industrials.

NERO are now stocking a full range of Stainless Steel Press Fittings.

The range stocked includes Elbows, Couplings, Bridges, Adaptors, Tees, Valves & Reducers, from 15mm up to 108mm. To complement this range we are stocking all sizes of tubes to suit. The full product range can be seen on our website www.nero.co.uk.



The comprehensive range of Tube and Fittings are 316L / 1.4404 Stainless Steel and WRAS / DVGW approved which means they are suitable for use in Industrial and Domestic applications. They have a maximum operating pressure of 16bar and a temperature range of -35°C to +135°C, higher temperatures can be achieved using the optional FPM seals.

All the fittings come with a blue press indicator which will break off once a full seal has been achieved and as it is a press system there is no risk of fires as with welding or soldering and can be assembled in situ.

All products are available from our central warehouse based in the Midlands which offers a next day delivery on all stocked items if placed before 4:30pm. Orders can be placed at www.nero.co.uk or by speaking to one of the Sales team on 0121 665 3900.

Darryl Spencer-Hicks, Operations Director said, "This is an exciting time for everyone at Nero and a significant investment in a product range which I know will enhance the 15 products groups we are already renowned for.

The new range has also required further

investment in storage solutions which will streamline our despatch process and safeguard our statement of having one of the latest cut off time for despatch in our industry."

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Improving Work Safety For Over 20 Years!

Established as a supplier and maintenance provider of safety equipment for over 20 years, Rockall Safety have and continue to provide a wealth of reliable resources that are being used nationwide; this has earned them an unrivalled reputation for quick turnarounds / great customer care, for which they have seen continuous year-on-year growth as a result of their hard work.

Due to their price match promise and affordable rates, they have steadily become the source to go to in regards to quality safety solutions at great value for money.

Operating in Cardiff as a B2B business, through the years they've fostered a trusting relationship with numerous high-profile organisations across the UK. Many of these companies, which include fire fighters, laboratories, water/waste water treatment plants and chemical, rely on Rockall to provide a consistent customer experience that they can continue to use in their time of need.

What Do They Offer?

By partnering with brands such as Honeywell, Dräger and Crowcon, Rockall specialise in premium, highly configurable gas detectors, which can be tailored to accommodate countless operations when working in potentially hazardous environments.

Their other ranges include sophisticated confined space kits, fall arrest tools, cable avoidance and breathing apparatus.

With a well established team of in-house engineers, their ranges are calibrated, tested and certified prior to dispatch; this ensures that what you receive is immediately fit for use upon arrival. Additionally, training courses can be acquired through Rockall to enforce best practices and provide your staff with the technical knowledge



they require to use the equipment effectively out in the field.

With the development of new innovative technologies, Rockall Safety has continued to expand with frequent product launches, sourcing only the best equipment available on the market. One example is their introduction of the brand new Honeywell BW Ultra Gas detector and Connect wireless adapter; the combination of these devices provide the user with a seamless experience that will minimise risks in the workplace and streamline their internal processes.

Their Values?

Offering an in-house maintenance and calibration service, they are able to improve the longevity of your equipment and make sure it meets the base requirements for a project, before you consider using it. Considered a jack of all traits in the safety field, their core philosophy is to ensure you've got the resources you need to keep you and your workers safe.

With an excellent CR department to help you throughout your initial purchase to your after sales support, they are able to advise of best practices and help you find the product you are looking for. Having recently been awarded the **'Most Innovative Public Safety Equipment Specialists'** and **'Customer Service Excellence'** awards by Corporate Vision, their quality of service continues to be acknowledged time and time again by their peers.

What's Next For Rockall Safety?

The Rockall team continues to grow, bring onboard new specialists that can further improve and build upon their existing values. One of their most recent developments is the introduction of their new website design, which is now accessible and better incorporate the Rockall principles, while further improving the user experience.

With their ear to the ground on developing technological trends, new equipment is being introduced to their website, with compatible accessories being added weekly.

Their next objective will be to further expand their existing services; this will include providing onsite training upon request, widening their coverage across the UK through the acquisition of additional vehicles and exploring new brands to source additional product ranges.

If you're looking to find out more or would like to hire one of their products, contact their dedicated sales team or visit the new Rockall Safety website today.

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Expertly designed for use in **confined spaces**, the new **BW Ultra gas detector** is aptly named for its unmatched configuration technology. With four built in sensors to detect **O₂, LEL, H₂S and CO**, a **fifth additional sensor** can be added in to suit your personal requirements.

- Intuitive, user-friendly design.
- Enhanced hole watch for improved situational awareness.
- The new 1-Series sensor for enhanced reliability.
- TouchConnect Technology for easy management.
- Remote monitoring for added protection.



BW Connect

A excellent addition to the Honeywell family, the brand new **BW Connect** seamlessly **integrates your mobile device** with your existing gas detector via bluetooth. With **fast real-time** results, this allows you to easily monitor the safety of your workers.

- Easy to setup.
- Compatible with the BW MicroClip XL, X3 & Max XT II.
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- Provides alarm notifications.
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The PowerCap® Infinity® is the very latest in Powered Air Purifying Respiratory technology offering 4 in 1 fully integrated protection to the head, eye/face, hearing and respiratory protection in one intuitive lightweight head mounted unit.

The PowerCap® Infinity® has been designed by JSP's research and development team who were inspired by feedback received from people about the compatibility issue of having to wear respiratory, head, eye and hearing protection but also the weight, heat and restriction of movement when wearing a waist mounted PAPR filter unit.

Through extensive user trials JSP engineered out restrictive waist mounted units and hoses which resulted in an easy to operate lightweight head mounted unit.

The PowerCap® Infinity® PAPR unit has a highly efficient twin impeller system that controls the airflow through the head-top which has a cooling effect to maximise user comfort and optimise energy efficiency. Real time diagnostics monitor

the performance of the airflow twice per second and ensure that the unit delivers the optimum level of airflow depending on the wearer's demands regulating the intake and internal pressure delivering a minimum of 160 litres a minute of filtered clean air.

Feedback is given on battery and filter condition via the heads up display and audible notifications and Indicator lights on the front of the unit allow co-workers to also see if there are any issues. The Powercap® Infinity® provides users with respiratory protection to a level of TH3, EN 12491:1998 + A2: 2008 – with the highest possible rating of APF 40. It also offers head protection to EN397, eye protection to EN166.B and hearing protection to EN352-3 with the optional Sonis®



helmet mounted ear defenders with an unbeaten SNR of 36.

All key elements of the PowerCap® Infinity® are user-replaceable, allowing easy maintenance and cleaning which is imperative so the PAPR unit can be used in very dusty environments.

The Powercap® Infinity® brings a simple solution to the complex problem of providing combination above the neck PPE. Its intuitive features simplify user acceptability improving compliance whilst keeping people safe at work.

For further information visit:
www.jsp.co.uk

Hart's first order for Oman

Hart Door Systems has recently begun work on its first order from Oman for four highly specialist 'ATEX' shutters for compliance with regulations relating to environments with a risk of explosion.

John Loftus, Manager of International Estimations at Hart, commented: "ATEX doors are designed to eliminate all sources of ignition when in operation, allowing safe use in hazardous environments. These hazards can include dust, waste products such as wood shavings, gas and vapour."

Hart's success came from its relationship with G4S - Oman, which is working on a high security government project in Oman.

Mr Sumit Arora, Managing Director at G4S commented: "These are exciting times and I am looking forward to developing this relationship which will be mutually beneficial for both organisations."

Hart is a Newcastle upon Tyne based manufacturer of a variety of vertical roller doors and shutters, including the Speedor brand of high speed doors, Firebrand fire-rated shutters, Terror Screen security shutters and steel or aluminium roller shutters. ATEX is a specialist custom version of that product.

The company also has a strong reputation across the Middle East, with a track record on some large-scale and high profile projects including in the United Arab Emirates where Hart has provided Speedors, fire shutters, insulated shutters and roller shutters to major retailers like IKEA, a Hypermarket, Dubai Airport, and food and beverage manufacturers including Iffco.



Hart has supplied Speedors and fire shutters to airports in Saudi Arabia, and Baghdad Airport in Iraq. It has also supplied a flour mill in Sudan and the National Museum of Egyptian Civilisation in Cairo, Egypt.

G4S is the world's leading global, integrated security company specialising in the delivery of security and related services.

www.hartdoors.com

Building your safety strategy

According to research by the Health and Safety Executive (HSE), manufacturing is statistically one of the highest risk industrial sectors to work in. With more than 3,000 major injuries and nine fatalities occurring every year in the UK, can more be done to protect the health and safety of those working in industrial environments? Here, Jonathan Wilkins, marketing director of industrial obsolete parts supplier, EU Automation, explains what goes into making a workplace safety strategy.

The current situation

Some manufacturers may be further along their health and safety journey than others, with a relatively robust set of procedures in place already. The group must take a step back and look at the business' current strengths and weaknesses. By pinpointing critical issues, you can then take appropriate action, be it with training or other means.

Identify your objectives and how to achieve them. With the weaknesses identified, it's now time to determine how they will be addressed. Each weakness should be assessed on an individual basis, with specific objectives allocated. This step is perhaps the most time consuming as it is here where an action plan is developed to deal with the various issues.

As part of the strategy, the group should also consider developing a planned maintenance programme as regular maintenance can prevent equipment faults from arising, minimising potential hazards.

Communication and evaluation

Once the safety strategy has been created, it must be communicated and implemented. The exercise is pointless if the document is simply printed and put inside a drawer. The action plan should be evaluated on a regular basis and adapted accordingly if safety does not improve in the plant.

As the factory floor becomes 'smarter', a detailed safety strategy is vital in ensuring the plant is a safe working environment. Without the proper training, procedures and protocols in place, the number of workplace accidents will continue to climb, causing considerable losses for businesses.

For further information visit:
www.euautomation.com



Work related injuries and sickness costs businesses €2,680 billion each year and while Industry 4.0 technologies are believed to reduce accidents, without a robust health and safety plan that includes training on new equipment, problems can still arise. But where do you start when formulating your health and safety strategy?

Develop your work plan

With any cultural change it's important to have a strong team from across the business leading the initiative. Once formed, roles should be allocated and the group should identify key issues in their own working environment to address.

Communicate your mission

The mission and vision of the strategy should be clearly articulated across the entire company.

While having the top-down support is vital to the success of any strategy, it's equally important to have backing from the rest of the company.

Without their participation, the strategy's implementation will fall at the first hurdle. The mission statement must be clear and concise and made accessible to all employees.

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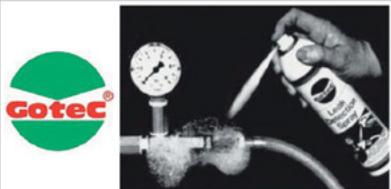


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