



ENGINEERING MAINTENANCE SOLUTIONS

The International Magazine For Maintenance & Engineering Professionals

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A close-up photograph of several large, dark, weathered steel tubes stacked vertically. The tubes show signs of rust and wear, with some internal structures visible. The background is a blurred industrial setting.

Six-Figure Savings In Six Months For Steel Tube Producer

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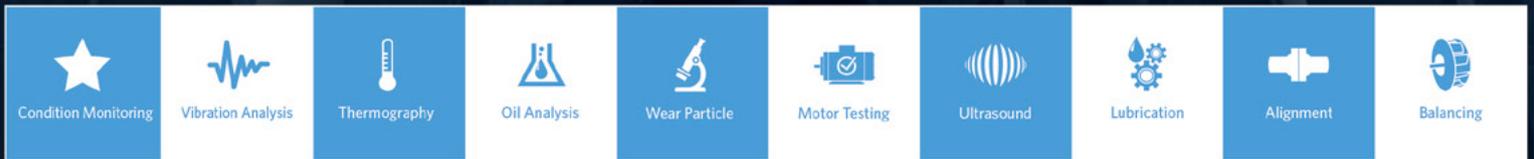


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Improve Your Strategy With Condition Monitoring.

Identification of a failure mode does not necessarily mean that an immediate maintenance action is needed. Just when maintenance action must be taken is the toughest part of managing a CBM programme! Your reputation may depend on it!!
The best course is to involve as many informed people in the decision making process.

Immediately after a machine has been repaired it should be subject to condition monitoring testing. This will potentially identify assembly or installation faults that may lead to early failure (infant mortality) or affirm the quality of improvement achieved through the application of improved work practices or maintenance standards.

The most commonly used techniques of condition monitoring are;

- Vibration Measurement and Analysis
- Oil Condition and Wear Debris Analysis
- Thermography
- NDT, especially thickness testing
- Performance trending, e.g. flow rate measurement

The developing focus is upon integrated condition monitoring giving better forecasts of remaining life. Of these, vibration is the most widely used and lends itself to detection of a wide range of faults.

Oil analysis is a particularly powerful technique for the monitoring of gearboxes and also reciprocating machinery.

The benefits of Thermography in surveys of electrical switchboards has long been recognized. It is now being used more widely for rotating equipment misalignment and wrong tolerance-and-fit problems.

Operations personnel can use thermography to identify pipe blockages and sediment build-up in tanks where higher temperature fluids are involved.

Condition Monitoring in the Real World

There is a wide acceptance of Condition Monitoring, but there are a number of limiting factors, most

- CM alone does not provide for reliability
- CM does not prevent failure – it detects and predicts it.

A very valuable, but often under utilised, source of plant condition information is the data that is available through the process control

Oil analysis is a particularly powerful technique for the monitoring of gearboxes and also reciprocating machinery.

coming from a historical context of the application being seen as the answer to all of maintenance's needs;

- CM is often used as a 'stand alone' maintenance concept
- Frequently CM is simply used for Failure Prediction, little else is asked for or expected
- Too often CM has been driven from the bottom upward

instrumentation. Increasingly this data is being accessed for maintenance purposes. Operators can be trained to monitor this data in order to draw attention to meaningful changes in equipment operation.

This issue aims to deliver some of the latest tools and techniques that are available to today's maintenance professional.



Michael Dominguez, Publisher.

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Denso Steelcoat Protects Scottish Water Pipes

The Denso Steelcoat 100-400 System has been used to protect two water pipes below a footbridge which crosses a small stream at Scottish Water's Killylour Water treatment Works, in Dumfries & Galloway.

The Denso Steelcoat 100-400 System comprises Denso Hi-Tack Primer, Denso Profiling Mastic, Denso Hi-Tack Tape, Denso Ultraseal RT Tape and Denso Acrylic topcoat. The system provides an excellent surface coating solution for exposed steelwork, particularly in areas that are faced with constant damp or humid conditions.

Due to the complexity of the structure and the small gaps between the pipes and supporting steel beams, both the Hi-Tack Tape and Ultraseal Tape had to be applied by a mixture of techniques.

This involved "weatherboard" methods at the joints and "spiral" and "cigarette" wrapping of the barrel lengths. On some sections the rolls of tape were partially "decanted" onto empty cores to allow spiral wrapping where possible.

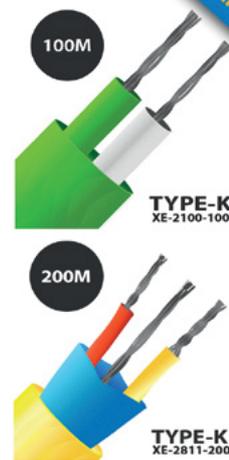
The main contractor for this project was George Leslie Ltd. Sub-contractor was HySpec Services Ltd.

For further information visit www.denso.net



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Major Speedor EFW installation

These eight Speedor 'Storms' are part of a mixed installation on a Scottish Energy from Waste plant constructed by Interserve which not only includes Hart Door Systems' Speedor high-speed doors but 15 fire and security steel roller shutters.



The Speedors are 5m x 7m and are being installed on tipping bays, their fast open/close cycles greatly reducing odour from the waste tipping process.

Speedor Storm has now been installed on a number of new build waste transfer sites around the UK and is proving reliable and resistant to the environment.

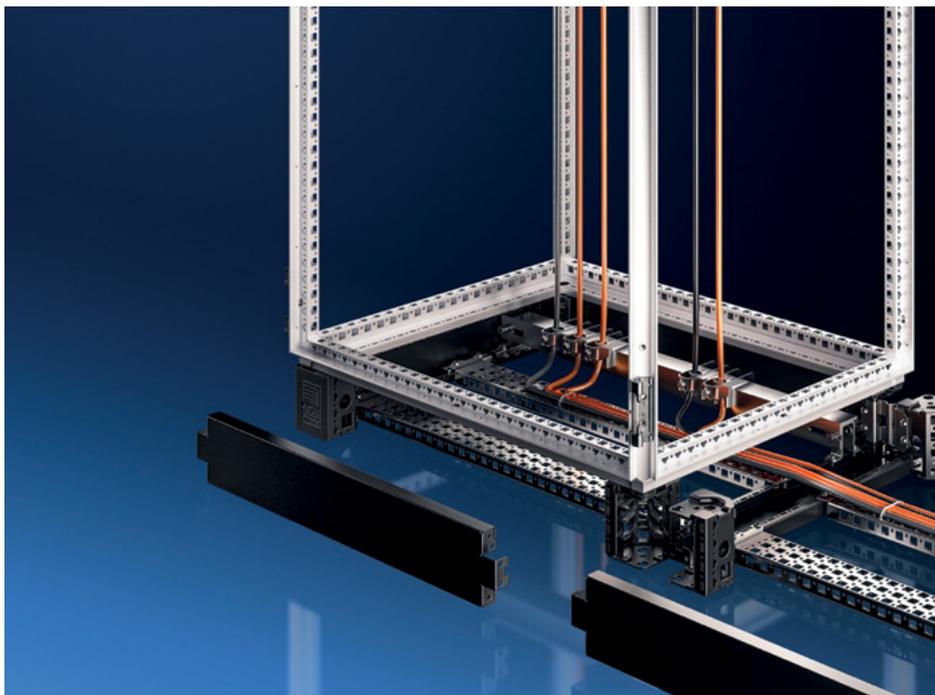
Speedor Storm is an energy saving, industrial, high speed door, designed for frequent use in high traffic situations where exceptional wind resistance is required. Used predominately as an external door with a unique guide system offering wind resistance up to class 5 as defined by DIN EN 12424, it is designed for intense use on larger openings up to 6m x 8m.

Capable of withstanding winds up to 70 mph when closed, Speedor Storms are of robust and reliable construction.

For more information visit:
www.hartdoors.com
or call: 0191 214 0404

A Base for Every Season

Rittal's new base/plinth system for enclosures and IT racks means it can now offer customers and end-users an unprecedented number of functions and options.



The latest innovation combines all benefits of the existing TS and Flex-Block base/plinth systems in one solution, plus much more besides. For example, engineers can install VX25 enclosure accessories, while the base/plinth can also be used as an intelligent cable chamber.

All this comes with reduced assembly time, lower costs and greater safety.

The new base/plinth system VX25 from Rittal is designed for the new large enclosure system, as well as being fully compatible with Rittal's existing enclosure solutions, the TS, TS IT, SE, CM, PC, IW, TP and TE ranges.

The new system combines all the functions and benefits of the Flex-Block and TS base/plinths, which it will soon replace.

As well as an extensive range of accessories, the base/plinth system offers users virtually limitless options around siting, transportation, cable routing, cable attachment and base/plinth configuration. Its consistent 25 mm pitch pattern means an

enclosure's mounting parts, such as punched sections and rails, can also be used on the base/plinth. So, in addition to installing baying brackets and cable clamp rails, routed cables can be easily and efficiently clamped and secured in the base/plinth using punched sections with mounting flanges.

This base/plinth system consists of sturdy corner pieces with trim panels at the front and rear and at the sides and is available in heights of 100 or 200 mm.

The corner pieces, like the trim panels, are made of sheet steel, and – due to an integrated centring aid that is pre-fitted in the VX25 frame – it is easy both to position the enclosure precisely on the base/plinth and install the corner pieces. Also new is the ability to attach the base/plinth directly from above, which simplifies screw-tightening. The base/plinth and enclosure frame can be screwed through the stable base frame with the aid of the nut integrated in the corner piece of the base/plinth. As an alternative, engineers can screw through the base/plinth into the enclosure's corner piece.

The sheet steel trim panels can then be easily snapped on and, if the enclosure needs to be lifted with a forklift or lifting truck, they can just as easily be removed again. Clip-in trim panels allow simple, fast access to the enclosure for individual use, e.g. as a cable chamber.

The system lends itself to many applications, thanks to the fully symmetrical corner pieces, and the use of the matching base/plinth trim panels, along the length and width of the plinth. For example, the vented trim panels and trim panels with brush strip accessories can now be attached at the sides, or exchanged for the front/rear trim panels. And all the trim panels can be clipped into the corner piece, or securely screw-fastened.

Pre-assembled captive nuts allow fast and simple assembling. Depending on the application, users can dispense with the trim panels between bayed enclosure suites, or, alternatively, a 100 mm high trim panel may be used to stabilise the base/plinth corner pieces.

SYSTEM PERFECTION. About the VX25

The VX25 is the first enclosure system that has been fully developed to meet the requirements for increased productivity in control and switchgear manufacturing and along the Industry 4.0 value chains.

It is a major innovative leap, requiring more than 25 registered property rights, and one which reflects both Rittal's deep industry experience as well as years of intensive customer dialogue.

The VX25 offers the highest possible quality and consistency of data, reduced complexity and savings in time, as well as safe assembly.

Further information at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

AirBench deliver 5.5m VertEx Booth to French customer.

AirBench have delivered a large VertEx booth to a major customer in France.

The customer will be installing their own mixing equipment within the booth area. The system is designed to capture dust from the whole contained area, with various operations taking place within the booth.

High grade H13 HEPA filters are fitted to allow recirculation of exhaust air within the factory facility.

The booth is based on VA181224 modules, each of which runs on high efficiency EC fans allowing the unit to run on ultra-low power, while moving tens of thousands of cubic metres per hour at full power.

VertEx booths are modular and can be completely reconfigured at short notice; each VertEx base unit can be rebuilt to, for example, relocate the extracted face or rebuild into smaller or larger booth systems.

AirBench maintain a demonstration booth at their factory in Colchester, and visits can usually be accommodated at short notice. Also on display is the full range of AirBench downdraught benches and mist filtration units.

More information, including videos and datasheets, is available at www.airbench.com/vertex. Contact us for an assessment of your dust issue or a demonstration of VertEx.

SPX FLOW® Appoints Jeffrey Pato as District Sales Manager in the Food and Beverage Markets for Eastern Canada

SPX FLOW has announced the appointment of Jeffrey Pato as District Sales Manager for Eastern Canada. With previous experience in SPX FLOW industrial sectors, Pato will help further grow the already strong SPX FLOW food and beverage business in the region.

SPX FLOW's success in supporting the food and beverage industry is based on leading, innovative technological solutions and excellence in customer service, with leading, experienced personnel and application knowledge. Its brands, including Waukesha Cherry-Burrell®, APV®, Gerstenberg Schröder® and Seital Separation®, often set the benchmark for reliability, efficiency and performance in the industry. In his new role, Pato joins the already formidable SPX FLOW East Region Sales Team to support its Channel Partners in Eastern Canada.

Jim Brink, Eastern Regional Sales Manager at SPX FLOW commented: "Jeffrey's previous experience

with our Industrial Operations team gives him a clear understanding of the core values and needs of our business; in particular, our continued commitment to excel in customer service. I am delighted he is joining the East Region Team and am sure our customers and partners will greatly appreciate his skills and knowledge."

Pato has a strong engineering background, having graduated from Humber Polytechnic Institute in Toronto in Electro-Mechanical Engineering with a Robotics and Automation Technology Advanced Diploma. In his new role, he will support SPX FLOW partners and their customers in Ontario, Quebec,

Newfoundland, St. John's, New Brunswick and Nova Scotia with responsibility for Manitoba and Saskatchewan to be added at the start of 2019.

On his appointment, Pato said: "It is good to work for a business that is an industry leader with many ground-breaking technologies. SPX FLOW's continued commitment to research, development and improved customer service provides many exciting opportunities to increase processing efficiency and quality. I am looking forward to getting to know our channel partners and their customers in the region and helping them get the best from their businesses."

For more information visit:
www.spxflow.com



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Fluke Diagnostic Videoscopes enable maintenance teams to diagnose problems without dismantling equipment

The new videoscope probes are IP68 rated to stand up to the dirtiest, harshest industrial work environments



While videoscopes are commonly used in many applications, industrial inspections require a powerful, high-resolution videoscope that clearly displays the condition of internal equipment components. High-resolution videoscopes allow industrial maintenance teams to quickly identify equipment issues and schedule preventive maintenance measures to avoid costly unplanned shut-downs. The new 800 x 600 resolution Fluke DS701 Diagnostic Videoscope and 1200 x 720 resolution Fluke DS703 FC High Resolution Videoscope are built for industrial maintenance troubleshooting and quality assurance testing and are designed to stand up to the challenges of a rugged environment. For more information on

the Fluke DS701 and DS703 FC High Resolution Diagnostic Videoscopes, visit: www.fluke.co.uk/ imaging.

Each videoscope features:

- high definition probes with dual-view cameras, allowing the videoscope to take images and video either forward or to the side to capture the images in difficult or hard to reach locations
- a 7-inch LCD screen for easy viewing
- an IP68 rated probe (imager) for protection against dust and water projected from a nozzle
- a rugged design, engineered to withstand a 2 metre drop

- Up is Up® technology, which rotates the display screen to allow for appropriate image display, regardless of the orientation of the probe location (available with selected probes)
- a macro to micro zoom function
- adjustable lighting to capture the best image
- processing speeds that render a smooth, clear, consistent image
- an intuitive user interface with easy-to-navigate button technology.

The rugged Fluke DS701 and DS703 FC videoscopes are designed for a variety of industrial applications, such as production (e.g. inspection of bearing surfaces and lubrication; gear helix inspection), aircraft maintenance (e.g. blade inspection; engine hot section contamination), and automotive quality assurance (e.g. testing of casting goods; inspection for cracks, chips, and contamination in HP chambers), and heavy duty maintenance (e.g. inspection of clogged pipelines; corrosion in rotors and stators).

The Fluke videoscopes include an EVA foam protective case, hand strap, neck strap (DS703 only), HDMI and USB cables, and TPAK magnet hanging strap.

For more information about all Fluke products, please visit the Fluke web site at www.fluke.co.uk.

Denso Protection System for Hereford Water Pipeline

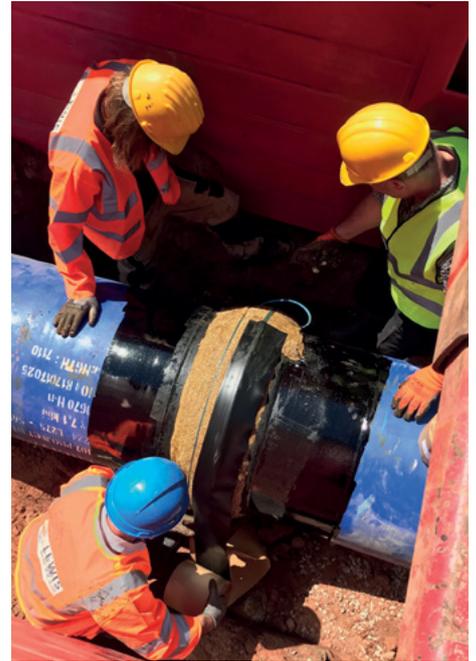
Lewis Civil Engineering is currently constructing an 8km length water main pipeline in Hereford for Dŵr Cymru Welsh Water.

Winn & Coales (Denso) Ltd were contacted for information on the most suitable anti-corrosion system along with application training of Lewis Engineers for the pipeline's Viking Johnson joints.

The selected Denso system meets the P2 Civil Engineering Specifications for Water Industry and consists of Denso Primer D™, Profiling Mastic and 150mm width Densoclad™ 70 Tape. Denso Profiling Mastic is a vital part of the system, it is applied to seal the voids, bolts and heads around the joints to avoid moisture entrapment. The Densoclad™ Tapes

consist of a thick polymer-bitumen adhesive, giving superior adhesion and flexibility, laminated to a tough plasticised PVC backing.

It is expected that Lewis Civil Engineering will install more than six hundred 700mm by 600mm joints and nearly two hundred 700mm diameter Viking Johnson joints. In addition to this there are six 450mm diameter spigot & socket joint pipes. All pipe lengths and joints were supplied in new condition, so no blasting pretreatment was required.



For further information visit
www.denso.net

Premier Coatings Ltd Support The Wyvern School

Premier Coatings Ltd are delighted to support The Wyvern School in Ashford by presenting the staff and pupils with their own brand-new minibus.

The £31,000 minibus, donated by the Mayor of Ashford's Charity Project with a £27,000 donation from Premier Coatings Ltd, has a specially designed access ramp allowing ease of access for wheelchair users. A special commercial vehicle license is normally required for a vehicle of this size, however, this lightweight vehicle can be driven on a normal car licence ensuring it is readily available to the school staff for the maximum benefit of the pupils. Additional contributions for the vehicle were collected from the general public and from

fundraising events held by the Mayor and students, including a 15,000 ft tandem skydive.

Based near the Premier Coatings factory in Smarden, The Wyvern School supports 230 pupils with severe, profound and complex educational needs. The school aims to assist in promoting the social and cultural development of all pupils and prepare them for the opportunities, responsibilities and experiences they will encounter in their lives. The donation of a minibus has helped the pupils to

engage with the wider world as part of the school's curriculum and has had a positive effect on the well-being of all of the pupils.

Premier Coatings Limited are leaders in corrosion prevention and sealing technology. Since 1982, the company's products have been manufactured in Smarden and are predominantly used within the oil, gas and utilities industries. Their 35-year track record of success was further cemented with the presentation of a Queen's Award for Enterprise in 2017 by HRH The Duke of Kent K.G.

For further information visit:
www.premiercoatings.com

Rittal Publishes UL Regulations Advice

Rittal embraces the need for a high degree of responsibility for the safety of users and the electrical equipment its enclosures are designed to protect. As such the company has a policy of always being on the front foot when it comes to fully complying with international regulations.

interference. Control gear and switchgear manufacturers should always take care to ensure that these safety standards are met for any components they are shipping to the USA or Canada.



For enclosure manufacturers such as Rittal, compliance with UL 508A is an important basis for the swift commissioning and approval of equipment and machinery, and the company offers a broad spectrum of industrial enclosures with UL approval. Most have UL approval with a Type 12 protection category (NEMA12); some enclosures with enhanced sealing protection even support Type 4x applications.

Rittal has recently published advice and support for engineers who are designing or specifying systems in line with UL508A, covering all the expectations and requirements for compliance. Details are available to download from www.rittal.com/uk-en/content/en/unternehmen/presse/pressemeldungen/pressemeldung_detail_55232.jsp.

In the USA and Canada, for example, a machine cannot be commissioned until approved by the AHJ (Authority Having Jurisdiction) to confirm compliance with the valid regulations, such as the National Electric Code NEC (NFPA 70).

understated for any company exporting electrical equipment into these territories.

UL regulations relate to the protection that enclosures must provide to the internal electronic components. This includes environmental factors such as dirt, dust, humidity and electromagnetic

The importance of UL regulations cannot be

Further information at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

A horizontal banner advertisement for Rittal. On the left, it says 'Rittal - The System. Faster - better - everywhere.' with a QR code. In the center, a pink box says 'See us on stand D720 Drives & Controls 10 - 12 April NEC Birmingham'. Below this is a row of various Rittal electrical enclosures. At the bottom, a navigation bar lists 'ENCLOSURES', 'POWER DISTRIBUTION', 'CLIMATE CONTROL', 'IT INFRASTRUCTURE', and 'SOFTWARE & SERVICES'. The Rittal logo and website URL are in the bottom right corner.

Selecting Compressed Air Purification To ISO Quality Standards

The international standard for compressed air quality, ISO 8573:2010, is the primary documentation to facilitate compressed air systems component selection, design and performance measures.

Hi-line Industries, UK manufacturer of high-quality compressed air purification equipment have been working closely with the British Compressed Air Society to produce a best practice guide for the filtration and drying of compressed air.

The ISO standard introduces a simple system of classification for the three main contaminants present in any compressed air system – particulate, water and oil. Whenever the purity of air required is specified then the standard must be referenced and then the class for each contaminant is simply listed in turn.

For example, compressed air to quality class 2.2.2 would be equivalent to a maximum particle size of 1

micron for solid contaminants, a pressure dewpoint of -40°C or lower and 0.1mg per cubic metre of compressed air of oil content filtration.

Hi-line Industries provide a wide range of energy efficient compressed air equipment to meet ISO standards including compressed air dryers, nitrogen and oxygen generators, filtration equipment, condensate systems, heat regenerative adsorption dryers, membrane dryers, drains and service kits.

All equipment is designed and built to the highest standards and quality and suitable for use in a broad range of industries ranging from food, beverage, pharmaceutical, medical, dairy, automotive, electronics and breathing air, through to general manufacturing and engineering requirements.



All Hi-line products are supported by a nationwide network of Hi-line service engineers, for the service and maintenance of air dryers of all brands both adsorption and refrigeration.

The Filtration & Drying of compressed air guide (216-1) will be available to download from the BCAS website shortly.

For further information visit:
www.hilineindustries.com

Premier Coatings Gains Environmental Standard ISO 14001:2015

Premier Coatings Ltd, leaders in corrosion prevention and sealing technology, announce that they have achieved the internationally recognised environmental standard ISO 14001:2015.

The certification recognises an organisation's commitment to reducing the environmental impact of their operations, hereby positively enhancing their environmental performance. By gaining this award, Premier Coatings Ltd have demonstrated their commitment to working sustainably and have implemented procedures across all areas of the business to ensure their environmental obligations are successfully fulfilled.

Gaining this standard for their manufacturing site in Smarden, Kent, where they have been manufacturing their products since 1982, is a major achievement for the company, who also hold the ISO 9001:2015 certification for quality management. Over the last 35-years they have earned an enviable reputation for producing and supplying high-quality, cost-effective corrosion prevention, sealing and waterproofing products to customers in both the



UK and overseas; a fact that was recognised and celebrated with the presentation of a Queen's Award for Enterprise in International Trade by HRH The Duke of Kent KG in November 2017.

For further information visit:
www.premiercoatings.com

Moving Towards Secure Remote Access

The Challenges In Providing Secure Remote Access In Manufacturing

Whether you're working from home, picking up e-mails on the go or away on business, it's usually possible to remotely access your company's network. Though easy to implement in many enterprises, complexity and security present hefty barriers to many industrial businesses. Here Jonathan Wilkins, marketing director of obsolete industrial parts supplier EU Automation, discusses secure remote access and the challenges it presents.

remote-access includes virtual private networking (VPN) and remote desktop connection (RDC). These technologies are complex, expensive and lack the flexibility and intelligence manufacturers require.

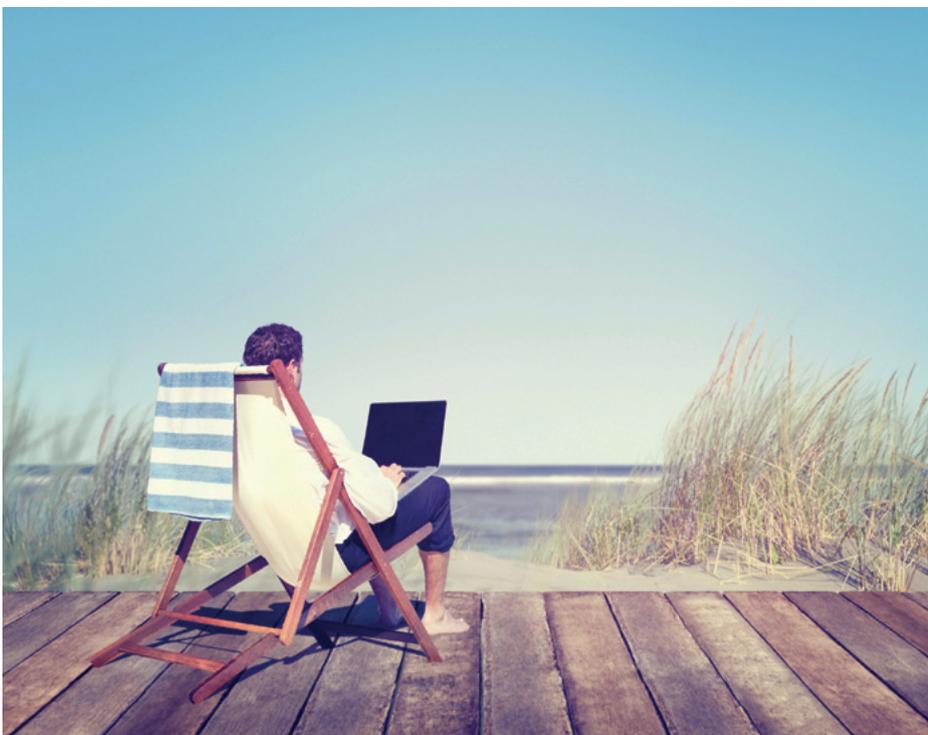
Additional complexity added by traditional technologies can increase security vulnerabilities. Industrial control systems were not typically designed to be connected, and using a VPN connects the system to the IT network, increasing the attack surface. It also means if a hacker can access one point of the system, it can access it all. This was the case in attacks on the Ukrainian power grid and the US chain, Target.

To overcome these issues, manufacturers require a secure, flexible and scalable approach to managing machines remotely. One option that can achieve this is cloud-based access, which uses a remote gateway, a cloud server and a client software to flexibly access equipment from a remote location. In this way, legacy equipment can be connected to the cloud, so that it can be managed and analysed in real-time.

Most manufacturers find that the benefits of remote access can offer outweigh the investment and operational risks. To counteract them, businesses should put together a security approach to mitigate the additional risks remote access introduces. This often involves incorporating layers of security so that if one section is breached, the entire control system is not vulnerable.

When implementing remote access into an industrial control system, manufacturers must weigh up all available options. It's crucial to ensure your system is as secure as possible to keep systems safe when accessed remotely, whether the user is working from home, on the go, or away on business.

For further information visit:
www.euautomation.com



Industry 4.0 provides an opportunity for manufacturers to obtain detailed insights on production. Based on data from connected devices, plant managers can spot inefficiencies, reduce costs and minimise downtime. To do this effectively, it is useful to be able to access data and information remotely. However, this can present challenges in keeping operations secure.

Secure remote access is defined as the ability of an organisation's users to access its non-public computing resources from locations other than the organisation's facilities. It offers many benefits such as enabling the monitoring of multiple plants without travel or even staffing being necessary. As well as monitoring, maintenance or troubleshooting is possible from afar. According to data collected from experienced support engineers, an estimated 60 to

70 per cent of machine problems require a simple fix, such as a software upgrade or minor parameter changes – which can be done remotely.

Remote access reduces the cost and time needed for maintenance and troubleshooting and can reduce downtime. For example, by using predictive analytics, component failures can be predicted in advance and a replacement part ordered from a reliable supplier, such as EU Automation. This streamlines the process for the maintenance technician, flagging an error instantly, even if they are not on site.

The challenges of remote access
There are still significant challenges to remote access of industrial control systems, including security, connectivity and complexity. Traditional

SKF and Hexatronic sign development partnership for industrialization of fiber optic sensing systems

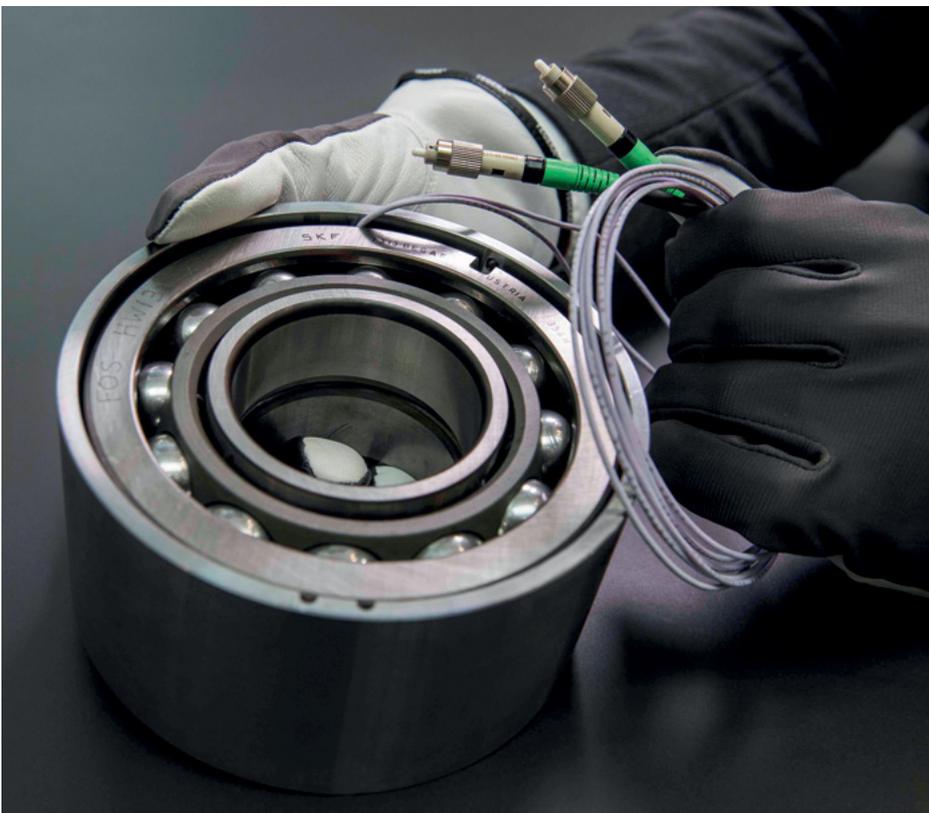
SKF and Proximion AB, a wholly-owned subsidiary of Hexatronic Group AB have entered into a development partnership for the industrialization of fiber optic sensing systems.

The two parties will work together to combine SKF's fiber optic bearing sensing technology with Proximion's application integration experience and knowledge within development and production of advanced fiber optic sensors and data collection hardware units.

Victoria Van Camp, CTO and President, Innovation and Business Development, says: "Fiber optic sensing technology is an exciting opportunity, as it enables bearings to become process and quality control instruments. We have worked for some time to develop these sensors and by taking the next step together, we will be able to speed up the process of integrating these into customer applications."

Fiber optic technology allows for end-of-line integration into existing bearing production environments, whilst most existing sensor technologies place additional requirements on rebuilding manufacturing sites to cater for safe handling of electronics

For further information visit:
www.skf.com



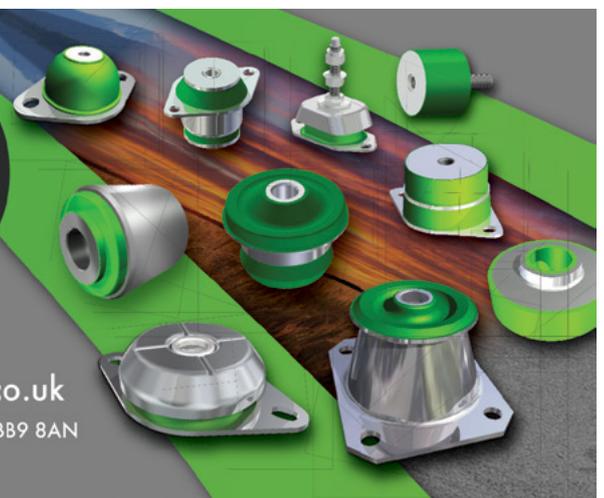
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Internet of Things – Sulzer boosts pipeline profitability with BLUE BOX™

Turning data into value: Sulzer's BLUE BOX advanced remote analytics platform went live for Phillips 66. Two pipelines with 40 performance-critical pumps (Sulzer and third-party) are connected in real-time.

BLUE BOX provides significant savings and substantial operational improvement in the automation of field-testing and targeted service activities to increase the efficiency, performance and reliability of pumps and pipelines.

66 pipeline operations. Sulzer's BLUE BOX provides Operators higher flexibility, better performance, and improved knowledge sharing. All these benefits translate into higher revenue and major cost savings.

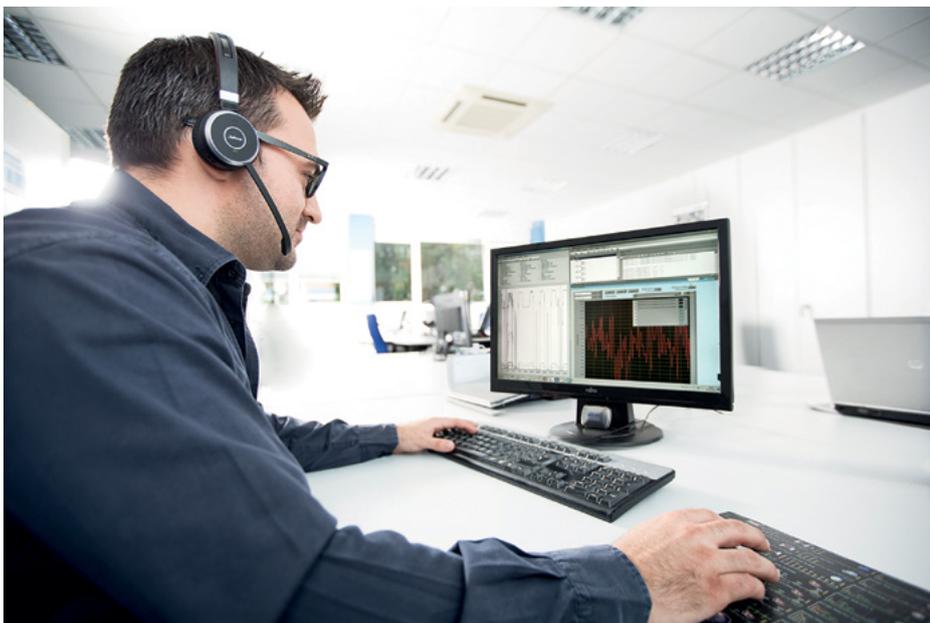
Why real-time data analytics with BLUE BOX?

In the oil and gas industry, Operators face three main challenges. Reliability: Case studies revealed annual unplanned outage costs of up to USD 40 million. BLUE BOX strives for cutting these costs by 25%. Efficiency: Large pipeline Operators can pay annual energy bills of USD 50 million to more than USD 100 million. The ambition of BLUE BOX is to save 5% – recurring every year. Performance: Operators want to best leverage existing assets. As needed, BLUE BOX helps to free up throughput worth another USD 10 million annually for a typical pipeline company assuming a 5% capacity increase at an annual revenue of USD 200 million.

In summary, BLUE BOX is a game-changer for Operators improving asset health of individual pumps and of pipelines as a whole.

Digital transformation – the BLUE BOX vision

Building on real-life experience with BLUE BOX in the market, Sulzer's current R&D efforts target even more powerful predictive maintenance algorithms, machine learning and Smart Asset Management functionalities at system level to help customers revolutionize their business through connected field service. This type of smart industrial solution empowers oil and gas customers at all levels to move from a costly break-fix model to a proactive service model and creates exceptional customer experiences. Customers can choose a winning combination: a digital twin and the expertise of Sulzer, the leading innovator in flow control.



"The future lies in gaining insight from the available data, and ensuring we have the right information at the right place at the right time – saving tens of millions of dollars every year" – Marc Heggemann, Head of Group Commercial Digital Solutions at Sulzer

Accelerating Industrial Agility

The BLUE BOX™ by Sulzer is a set of smart software services leveraging the Internet of Things (IoT) for asset optimization and real-time predictive maintenance. Using Sulzer's Advanced Analytics Engine, BLUE BOX encompasses the capabilities of data capture, integration, visualization and big data analytics tied together for the explicit

purpose of improving the reliability, efficiency and performance of physical assets. BLUE BOX also includes the concepts of condition monitoring, predictive forecasting and real-time actionable insights through remote process transparency. All data analysis components including data modeling, real-time predictive analytics and machine learning are performed in the Sulzer secure cloud platform. Further, this cloud-based solution simplifies regulatory compliance with a minimal IT footprint and was designed to be easily scalable.

In a joint effort, Phillips 66 and Sulzer have introduced comprehensive data management, advanced data analytics and optimization reports to increase availability, improve process safety and reduce the energy consumption of selected Phillips

For further information visit:
<https://www.sulzer.com/bluebox>

The Right Crane In Just A Few Clicks: Crane Advisor Makes It Easy To Search

Konecranes introduced the new advice tool Crane Advisor in English in the United Kingdom – and launched its STORE in additional countries



With the Crane Advisor, Konecranes offers a comfortable way to search for the right crane. The browser-based tool finds the individual crane system in four steps. The global leader for cranes and lifting equipment introduced the new version of Crane Advisor in English in September 2017. Further language versions have been developed since then. At the same time, Konecranes STORE launched online in diverse countries with more than 100,000 products, from electric hoists, to rope guides through to complete hoist gearboxes.

“Our Crane Advisor identifies the right crane system in only four steps, by industry, the maximum capacity needed, the required span width, and the individual class of use”, explains Mark Goringe, Konecranes Industrial Service - Area Director, Mid West Europe. Konecranes introduced the new browser-based tool at craneadvisor.konecranes.com/ in English globally in September last year.

Find the right crane system for every use

The intuitive user interface of the Crane Advisor works with all devices – whether smartphone, tablet, or desktop PC. “More than 4,000 visitors have already tried our tool in only a few months. We expect high demand in the UK as well”, says Mark Goringe. “We also want to continuously expand the choice of languages. For example, we are currently planning a Spanish version. Other languages will follow.”

The Crane Advisor is currently available in the following languages:

- English
- German
- Chinese
- French
- Polish
- Russian
- Czech
- Greek
- Other language versions will follow.

100,000 products from the entire Konecranes range

In the STORE at store.konecranes.com, Konecranes offers operators of crane systems of all types and sizes more than 100,000 products, from electric hoists, to rope guides through to complete hoist gearboxes – 24/7 and in 34 countries. Just like the Crane Advisor, the STORE can also be used on all devices. Illustrative product images and categories



help with selecting from the wide range of products. Very handy: Products bought are stored to facilitate recurrent orders. Moreover, relevant instructions for use are available in various languages. “We are constantly improving our STORE – right now we are working on introducing payment by card in Europe”, says Mark Goringe.

Konecranes Demag UK Limited
www.konecranes.co.uk

Crane Advisor – in four steps to the right crane

With the Crane Advisor at craneadvisor.konecranes.com/ Konecranes offers a comfortable way to search for the right crane. The browser-based tool finds the individual system in four steps.

- Browser-based tool for all devices, whether smartphone, tablet, or desktop PC.
- Available in English, German, French, Chinese, Polish, Russian, Czech and Greek
- Inquires intuitively about industry, maximum capacity, span width, and class of use – and a Konecranes expert then gets involved
- Already more than 4,000 users across the world

Konecranes STORE – more than 100,000 products

The Konecranes STORE at store.konecranes.com offers operators of crane systems of any type and size in 34 countries a wide range, an intuitive user interface, and short delivery times.

- Works with all devices – from smartphone to desktop PC
- 100,000 products, from electric hoists, to rope guides through to complete hoist gearboxes
- Spare part lists and instructions for use are available in various languages at any time
- Available around the clock, delivery in 34 countries
- Detailed purchasing history facilitates recurring orders

Konecranes is one of the world's leading brands in Lifting Businesses™ and supplies production enterprises and process manufacturing, shipyards and harbours with innovative lifting technology solutions. Besides productivity-increasing lifting solutions, Konecranes also offers customised services across the whole spectrum of lifting machinery. 16,200 employees at 600 locations in 50 countries work for Konecranes. Konecranes stocks are quoted at the Helsinki stock exchange (Nasdaq Helsinki Ltd) under the abbreviation KCR1V.

Full steam ahead with help from Riello

Riello has donated an RL34 oil burner to the Internal Fire Museum in Cardigan for use in the first of its steam halls. The burner is fitted to a Beel VFB boiler donated by Cochran UK.

The Internal Fire Museum was founded in 2003 to cover the history and use of large engines in the 20th Century. Engines are run every day, with at least six engines running all day, and exhibits include the oldest daily working diesel engine in the world.



The first of the steam halls, where the Riello burner is in use, was opened in April 2018. The Museum's Paul Evans commented: "The steam hall has seen a fantastic show of help from companies such as Riello and Cochran. Without the generous assistance of these companies the museum would not have been able to complete the project on schedule."

The RL Series of two-stage burners covers a firing range from 154kW to 2700kW, and has been designed for use in low or medium temperature hot water boilers, hot air or steam boilers, or diathermic oil boilers.

For further information visit www.rielloburners.co.uk



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In this article, Carl Knight, managing director of heat transfer specialist Fulton, looks at the Medium Combustion Plant Directive (MCPD).

The list of applications for high quality, dry steam is almost endless. However, while many steam boilers are extremely robust, they are based on old or ageing technology and often inefficient. As a result, and in an effort to make them more efficient, many manufacturers have simply fitted modulating burners and bolt on economisers in an attempt to improve both steam output and efficiency.

But for how long can boiler manufacturers simply keep reinventing the wheel when new legislation is knocking on the door and only likely to become more stringent over time?

In December 2017, the Medium Combustion Plant Directive (MCPD) was introduced to improve air quality by controlling emissions to air on all types of generators. It becomes effective on new installations from December 2018 and, depending on size, existing plant in 2025 and 2030. The MCPD applies to all combustion plant with a rated thermal input equal to or greater than 1MW but less than 50MW irrespective of the fuel used; and complements the Large Combustion Plant legislation covering plant above 50MW. However, it is worth noting that an aggregate input of all combustion plant is applied to new installations, so the MCPD can encapsulate smaller individual items of plant if the total exceeds the 1MW thermal input threshold.

Seen as a significant source of air pollution, medium combustion plant such as gas- and oil-fired steam boilers are not currently regulated in the UK; and the government's main aim for action on air quality is the impact it can have on both people's health and the wider environment, because a cleaner and healthier environment benefits individuals and the economy.

Limits are being imposed on Nitrogen Oxides (NOx), Sulphur Oxides (SOx) and particulate emissions, with different fuels (natural gas and gas oil) attracting different limits. Carbon Monoxide (CO) must also be monitored and reported but, as yet, there are no legal limits set.

An estimated 15,000 to 30,000 manufacturing sites and public, private and government estates in the UK will eventually need to comply with the MCPD legislation; with emission limit values (ELVs) being less onerous for existing plant and depending on their input rating and fuel used. However, if manufacturers install new plant before 20th December 2018, life within the requirements of the MCPD will be less of a burden and less expensive because new plant commissioned before this date will not be aggregated.

This is all quite transparent if you're installing new plant, but what if you want to upgrade existing plant? At the moment, this hasn't been clearly defined, but the Environment Agency in England is set to publish further guidance over the summer, with Natural Resources Wales, the Northern Ireland Environment Agency and Scottish Environmental Protection Agency undoubtedly following suit very quickly afterwards. What is quite certain is that the Environment Agency's costs for administrating the MCPD will no doubt come via fees for registration, testing, etc. from the main polluters.

As a plant owner/operator, regardless of whether you are installing new or upgrading existing plant, your obligations under MCPD legislation will include registering and/or obtaining a permit for plant; ensuring plant is regularly monitored and meets ELVs; taking measures to ensure non-compliance is minimised; recording plant operation information; keeping records proving continuous and effective operation of secondary abatement; reporting upgrades to plant that affect ELVs; assisting with



MCPD-compliance inspections; and ensuring periods of plant start-up and/or shut-down are minimised.

At Fulton, rather than further-improve products like the J Series to achieve these goals; and realising the implications the MCPD will have on its fuel-fired steam boiler portfolio, we have gone back to the drawing board and, by adopting a new 'PURE Technology' initiative, the VSRT – the world's first Vertical Spiral Ribbed Tubeless steam boiler – emerged and features a design that is durable and long-lasting, boasts higher efficiencies and reduces NOx emissions to levels that easily exceed the requirements of the MCPD. And while the requirements of the MCPD do not apply to some of its smaller models, Fulton's new VSRT range has been designed to not only meet, but exceed the requirements set out by the new directive.

With over 15 patents pending in three continents, the VSRT's spiral-rib heat exchanger is a world first. NOx emissions for the new boiler are an ultra-low 20ppm, which means they will not only meet the 100mg/m3 NOx requirement of the MCPD, but the full range will also meet the planning requirement for new commercial developments from the City of London 2015-2020 air quality strategy, which states outputs of less than 40mgNOx/kWh.

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

Bosch Simplifies Commercial Boiler Installations With Technological Innovation

- New Condens 7000 F condensing boiler provides improved performance and simplified installation
- Heat exchanger improvements ensure systems can be installed without the need for additional accessories, such as low loss headers and primary pumps
- Simplified system design, compact dimensions and low weight allow the 7000 F to be installed as a replacement to traditional non-condensing boilers
- Integration of the new Control 8000 allows remote monitoring and operation, as well as fault finding

Bosch Commercial and Industrial has developed a new mid-range commercial boiler, designed to dramatically cut the cost and complexity of installation.

The Condens 7000 F, which is available in four output models ranging from 150kW to 300kW, can be installed without the need for ancillary equipment such as a low loss header and primary pumps.

In effect, the Condens 7000 F offers the ease of installation of an older non-condensing boiler, with the vastly improved performance of a state-of-the-art condensing system.

The latest development means that heating engineers benefit from a lower cost system and reduced installation time, making the boiler perfect for both new and replacement scenarios.

Best in class heat exchanger

The simplified system design has been made possible by major advances in heat exchanger technology.

Optimisation of the waterways and flue has led to reduced resistance, while low water content aids heat transfer. As a result, flow temperatures of up to 95°C can be maintained, without the need for additional pumps and a low loss header.

In addition, the maximum Delta T has been increased to 50°C, with no minimum flow requirements; aiding efficiency and reducing heat losses. With the added benefit of a 6-bar maximum pressure, the 7000 F is well suited to heat networks.

Enhanced safety

The new boiler is one of the first to be manufactured to the new EN15502 standard and has many of the safety features normally associated with higher capacity systems. These include an increased number of pressure switches and gas valve proving on all models. As a result, the 7000 F will help to futureproof for changes to building regulations and can be installed in higher-risk applications.

Compact and lightweight design

The new unit also benefits from an extremely small footprint, standing at just 0.61m² for the 150kW model, and 0.88m² for its 300kW equivalent.

With a lift weight of between 117kg and 178kg and available in both left- and right-facing models, the Condens 7000 F can be installed in a cascade to achieve outputs of up to 600kW.

Internet-connected control compatibility

The new system is also fully compatible with Bosch Commercial & Industrial's Control 8000, which makes it possible to manage multiple plant rooms remotely, via a computer or tablet from anywhere in the world. Alternatively, the unit can be integrated into an existing building management system (BMS) through Bosch's simplified MX25.

Improved functionality

The improved system design means that the boiler can be installed as a replacement to non-condensing systems in all scenarios. The unit



operates at a seasonal efficiency rating of 96.5% to 97.1% across the range. The 7000 F also has a wide turndown ratio of 1:6 to better cope with lower heating requirements and avoid cycling. As a result, end-users benefit from a highly efficient, durable system.

Shaun Mansbridge, Business Development Director at Bosch Commercial and Industrial, comments: "With the 7000 F we've been able to combine the simplicity of installing a non-condensing boiler unit, with the high efficiency and improved functionality of condensing technology. By focusing our attention on significantly improving the heat exchanger, we've eradicated the need for low loss headers and primary pumps, reducing whole system costs and cutting the complexity of installation.

"This is part of our overall product development strategy, whereby we are combining highly efficient products with optimum system solutions to provide the best possible performance for installers and end-users. Coupled with internet enabled control and functionality, we're ensuring commercial heating systems are fit for the future."

For more information on Bosch Commercial and Industrial and its range of heating, cooling and hot water technologies, please visit www.bosch-industrial.co.uk or call 0330 123 3004. Alternatively, follow Bosch Commercial and Industrial on Twitter (@BoschHeating_UK) and LinkedIn (Bosch Commercial and Industrial UK).



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Boiler Manufacturer Cochran Saves £12,000 And Cuts CO₂ Emissions With Calor LNG

Leading industrial steam and hot water boiler manufacturer Cochran has made annual savings of £12,000 and reduced CO₂ emissions by 28 per cent since switching to liquefied natural gas (LNG) from Calor.

Cochran was previously using oil for space heating at its site in Newbie, Scotland, but opted to switch to LNG to facilitate the development of a proposed R&D centre. LNG is now used for space heating at the boiler manufacturer's site, as well as for powering the boilers to be tested at Cochran's R&D facility.

The conversion process was carried out by Calor's sister company PrimalNG and involved supplying a 20,000-litre LNG unit, supported by vaporisers that offer extra power when demand increases.

Cochran trains over 500 employees and commercial customers annually, and the R&D centre will enhance the training while facilitating further product development. Training provided includes the Combustion Engineering Association's BOAS (Boiler Operation Accreditation Scheme) and I-GAS (Industrial Gas Operations Accreditation Scheme) programmes.

Following some civil works to accommodate the storage tank and adapting the site's steam boiler to use LNG fuel, the conversion was completed in September 2016. As a result, Cochran is saving £12,000 a year, as well as cutting CO₂ emissions by 28 per cent – or 169 tonnes – annually too.

David Branch, Business Development Manager at Cochran, explains: "We had been looking for greener fuel alternatives for a long time before deciding on LNG. The majority of boilers we manufacture are fuelled by gas and, when considered alongside the environmental and cost advantages LNG has over oil, it made commercial sense for us to introduce LNG as our fuel partner of choice.

"We have been really pleased with the savings realised after converting our site to LNG, and were delighted by Calor's service and support during and after this process. We look forward to working together in future."



Kevin Houlden, Business Development Manager at Calor, adds: "LNG is a highly efficient fuel with even greater calorific value than propane gas, offering an impressive output of 15.2 kWh per kg. LNG also emits up to a third less carbon dioxide than oil or diesel-based products, depending on the application.

"This makes it an attractive proposition that is both more cost-effective and environmentally superior to oil-based alternatives. For manufacturers such as Cochran, conversion to LNG can greatly impact their bottom line while improving environmental performance, as has been shown here."

For more information on Calor LNG, please call 0800 121 7827 or visit www.calor.co.uk/business.

Smart just got smarter with Filbertechnik's new Particle Pal *Life*

Filbertechnik has developed what it describes as a world first with its new Particle Pal *Life* self-contained portable measuring system.



Building on the success of the award-winning Particle Pal, this new offering provides real-time ISO cleanliness readings, together with water content and oil condition information for over 500 commonly used oils all within one compact kit.

Particle Pal *Life* can provide detailed insight into the health of oil in real time, helping engineers to make informed choices regarding oil replacement or treatment planning.

New software

A 10" touchscreen LCD tablet allows users to view data in clear detail, while a zoom facility can be used to focus on specific results. Within the software Filbertechnik has embedded oil ageing profiles for over 500 oils, as well as the ability to self-calibrate an oil *life* profile should a particular oil not be on the database. This is a one-time routine where oil is taken through a calibration cycle.

Oil *life* sensor

The built-in Tan Delta full spectrum holistic oil condition sensor monitors the overall condition of the oil, providing data with a high level of sensitivity,

accuracy and precision. This enables the oil's remaining useful *life* to be calculated accurately. Filbertechnik explains that the sensor can work with virtually any oil, drawing on its extensive database of common industrial oils with the ability to self-calibrate.

Laser particulate counter

Filbertechnik states that its laser particulate counters are accurate to within ± 0.5 of an ISO code with a repeatability of $\pm 0.1\%$. Reporting in ISO, SAE and NAS classes as well as giving the particle quantity counts in 4, 6, 14 and 21 micron sizes.

Water sensor

Water in oil is a contaminant that causes additive depletion, microbial growth and encourages contamination from solids. The in-built water sensor shows the humidity of any oil as a % saturation.

Case design

Lightweight and heavy duty, the outer casing of the Particle Pal *Life* is ideal for working in the field. Supplied with an accessory case containing all the

equipment you need to conduct tests and self-calibrate oils not on the database.

Off-site data back-up

A built in SIM card provides an option for data to be automatically transferred off-site and backed up where it can be viewed at any time. Once data is logged it can be recalled at any time to build trend history.

Optional yearly licence

All new Particle Pal *Life* units include software updates and off-site back-up licence for the first year. Every 12 months thereafter there is an optional charge for annual sensor verification/calibration, off-site back-up and software updates, including all new oils profiled.

High pressure internal gear pump

Draw from oil stored in tanks or from sample bottles. Alternatively, the unit can analyse oils from pressurised systems via a high-pressure adaptor, allowing connection to live systems up to 350 bar.

Rechargeable battery

Particle Pal *Life* comes complete with a rechargeable battery, giving 3 to 6 hours of continual use (depending on oil viscosity).

Wide range of applications

In both Hydraulic and Lubrication systems, knowing the particulate cleanliness and water content data can prevent serious system failure and component damage. Traditionally, samples are taken and sent off to laboratories for analysis, often an expensive and time-consuming practice. The new Particle Pal *Life* enables engineers to assess their oil's condition quickly including an indication of the remaining *life* of their oil.

Particle Pal *Life* is suitable for use in a wide range of applications, including: power generation, off-road

mining and construction, wind power, hydraulic and marine.

Also available – the FS9V2

Particle Pal *Life* is part of a family of products. The FS9V2 Particle Pal provides instant cleanliness readings to allow users to fully understand the condition of their oils and diesel fuels. A self-contained system, complete with integral pump and controlled flow rate.

Survey

Richard Price, managing director of Filtertechnik, commented: “A survey of over 20,000 oil samples showed that the vast majority of oil changes without oil analysis would be conducted at the wrong time – by following OEM recommendations rather than by analysis of the oil’s ability to continue working and in most cases before the oil’s *life* was fully depleted [Source: learnoilanalysis.com]. This is largely why the use of a reliable oil condition sensor, particle counter and water sensor is invaluable.”

He continued: “Although the 500 oil types and profiles built into the Particle Pal *Life* is a substantial number, it is of course only a fraction of what is available on the market. Indeed, certain oils are not

on the existing database of the system because some suppliers and OEMs source a standard oil and rebrand it before providing to their customers. This is why we have built a self-profiling capability into the kit. Therefore, users can simply run virgin oil through a heat cycle for about 10 to 15 minutes, all components to perform this self calibration routine are included in the kit. Users can then create their own profile for that oil and determine its approximate *life*. We have tested this function extensively in laboratories and it has been proven to be very accurate. And because Particle Pal *Life* comes with self-calibration functionality and is able to combine particulate water and oil *life* within a single highly portable kit – this combination is a world-first.”

R&D

Price explained that Filtertechnik invested a lot of R&D time and resources developing the very best software and circuit board for the new product, as well as sourcing the very best sensors; most of which, incidentally, have been designed and built in the UK. “We wanted to ensure the software could communicate in the most reliable and effective way with the circuit board and also wanted to ensure the circuit board and software was able to communicate perfectly with the sensor,” he said. “Different sensors often talk different languages – some are 4 to 20mA,



some are Modbus, some are CAN bus, some are RS485, for example – so we had to overcome various technical challenges when developing the circuit board to ensure communication with the various sensors wouldn’t be an issue. With our new Particle Pal *Life* we have more than achieved this goal.”

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

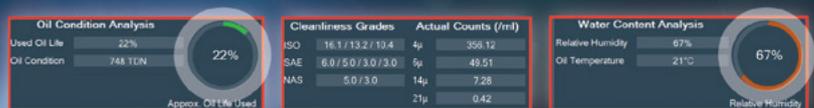
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Condition monitoring solution for gearboxes provides six-figure savings in six months for steel tube producer

By implementing condition monitoring based on FAG SmartCheck units from Schaeffler, a steel tube producer has saved a six-figure sum (approx. 126,000 euros) after just six months.



Welded Tube of Canada is a leading producer of steel tube and pipe with an annual production capacity of 700,000 tonnes. Founded in 1970, the company has 700 employees and is headquartered in Concord, Ontario, Canada. Welded Tube owns and operates five manufacturing and finishing plants in Canada and the US, which serve the needs of the North American market.

Challenge for Schaeffler

Welded Tube's metal tube forming line in Concord comprises of four sections: forming, finishing, sizing and squaring. In the first three sections, only one electric motor drives three to four gearboxes. The forming line manufactures tube on a continuous basis. Therefore, if a gear stops turning or a gearbox fails, the whole production line comes to a standstill. This is particularly true of the large, costly brass worm gears on the 13 tube forming gearboxes. If these gears are damaged or fail, the subsequent costs of unplanned downtime is extremely high.

Welded Tube therefore decided to introduce a predictive maintenance regime at Concord. This would increase gearbox availability and achieve extended lead times for gearbox spare parts. The main requirement was to introduce a cost-effective condition monitoring solution with reduced cabling effort, which could also be used on standard double output drives.

The decision to implement a system based on SmartCheck units from Schaeffler paid for itself as soon as the first unplanned downtime was prevented. Furthermore, the company saved a six-figure sum (approx. 126,000 euros) after just six months.

Condition monitoring solution

The solution recommended by Schaeffler was to continuously monitor the condition of all gearbox shafts and gearbox bearings, as well as the brass worm gears. This was implemented by installing 13 SmartCheck units to monitor gearbox vibrations from the 13 tube forming gearboxes.

A Schaeffler SmartController was also installed, which acts as a bi-directional gateway between the customer's control system and the sensors. Both the signal routing and the power supply (Power-over-Ethernet) for each SmartCheck unit were implemented using a single Ethernet cable, while the production facility and monitoring office were linked wirelessly using a WiFi router.

Due to their complex gear ratio, the brass worm gears are technically very difficult to monitor. However, SmartCheck units feature special frequency-selective component specifications and a "track frequency band" template, which means they are more than a match for these complex requirements and are suitable for both standard and special gearboxes.

Significant cost savings

Investing in condition monitoring solutions based on SmartCheck units often pays for itself within a short period of time by helping to prevent unplanned downtimes and their subsequent costs.

Shortly after being put into service at Concord, the SmartCheck devices proved their reliability by identifying high vibrations on various gearboxes. In just six months, Welded Tube's maintenance team detected three brass worm gear failures at an early stage. This information was particularly important, as gearbox spare parts were only available on long lead times.

Welded Tube is so satisfied with the condition monitoring solution and services provided by Schaeffler that it has now also switched to sourcing bearings from Schaeffler. Furthermore, the company plans to install additional SmartCheck units at two further Welded Tube plants in Welland (Canada) and Buffalo (USA).

For further information visit:
www.schaeffler.com



Condition Monitoring

Monitor the vital signs and avoid unplanned downtime

Early diagnosis of machine condition is key to healthy engineering plant and equipment

By monitoring the vital signs, engineers are in control of their plant and machinery and can prevent unforeseen problems turning into costly breakdowns.

Online fixed systems and handheld CM devices from Schaeffler have a proven track record in a diverse range of industry sectors from steel, paper, quarrying and mining to pharmaceuticals, food processing, wind energy and marine. However, the objective is the same: to maximise production output by avoiding unplanned downtime.

Our experienced CM engineers work closely with production and plant personnel to understand and maintain efficiencies and achieve cost savings.

Schaeffler (UK) Ltd E-mail: info.uk@schaeffler.com | www.schaeffler.co.uk

SCHAEFFLER

Keep Learning with CBM CONNECT

If you are involved with condition monitoring and reliability improvement, you know there is a lot to learn, and there is so much at stake. As they say, “you are only as good as your last recommendation”. But how do you keep learning? Do you randomly ask google and keep your fingers crossed (that you find what you want and that it is accurate and up-to-date)? Well, now there is a much better way to stay ahead, and to contribute if you are willing to share.

CBM CONNECT is a new website that is filled with videos, tips, articles, and mini-courses that covers the topics you need – well, assuming you are interested in the following technologies: Alignment & Balance, Condition Monitoring Management, Lubrication, Motor Testing, Oil Analysis & Wear Particle, Thermography, Ultrasound, and Vibration Analysis.

If you are familiar with the Mobius Institute animated training, including the now famous “Nine Minutes of Knowledge” videos and popular webinars, then you will love CBM Connect. But CBM Connect goes way beyond Mobius. CBM Connect has brought together

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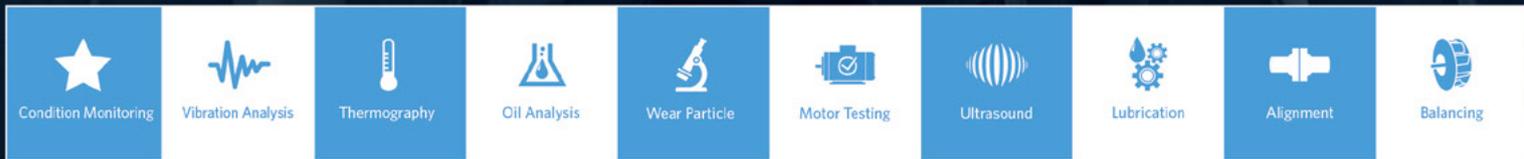


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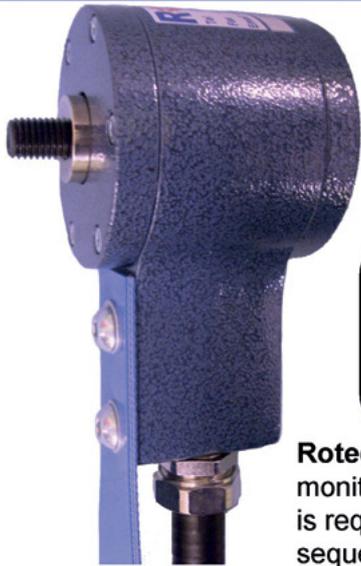
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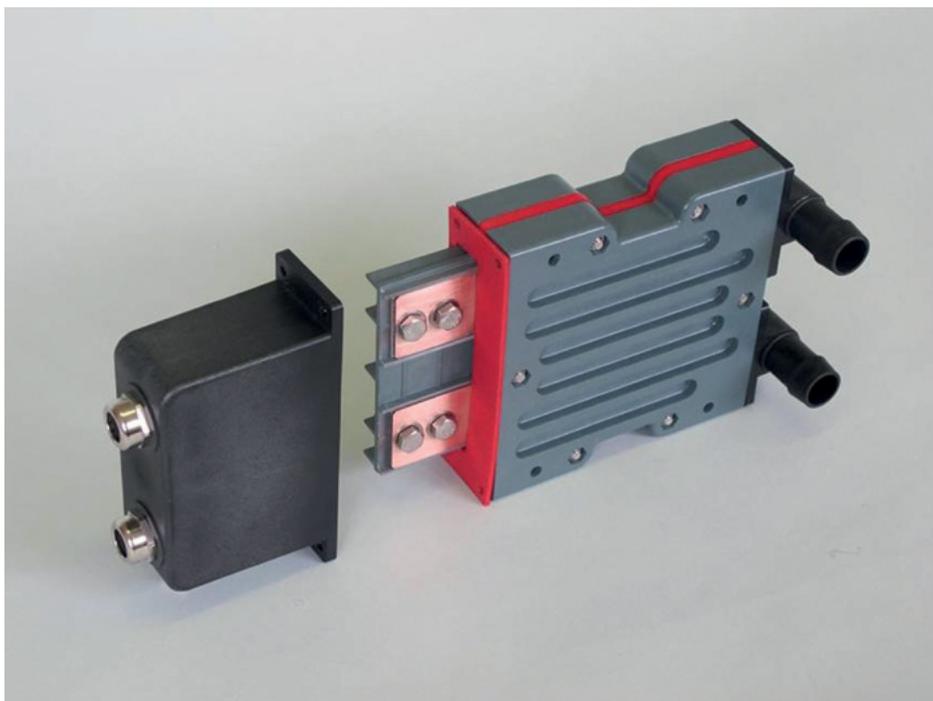
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Resistor liquid cooling boosts 3.3kV medium voltage loads

In motor driven applications like cranes, lifts, hoists and conveyors, air cooled resistors are common, but in medium voltage, high power applications liquid cooling wins out. A medium voltage drive running off a 3.3kV supply to turn a 500kW motor will put a severe heating load on the application's power transistors – hence the need for water cooling, as David Atkins, projects director at Cressall Resistors explains.



In marine applications, for instance, the drive is typically located in the bowels of a vessel, which makes heat dissipation a problem. Because of this, ships and oil rigs usually have chilled water systems with a single heat exchanger - a more efficient way of getting heat out from the vessel, compared to ducting warm air everywhere.

Water cooling

If 1MW or more of heat needs to be dissipated, direct water cooling makes more sense. A typical 1MW fresh water-cooled brake resistor for marine use is basically a 10 foot tube with large heating elements similar to those found in common household kettles. The braking electricity that is being regenerated powers these elements. Most ships have a chilled water system, which circulates cool water throughout the vessel, used for both air conditioning and equipment cooling. Over the last ten years shaft-driven shipboard

mechanical power transmission has been increasingly replaced by electrical power. For example, both the Royal Navy Type 45 destroyer and the Queen Elizabeth carrier are electrically driven. The prime mover is used solely for generating electricity, which is then distributed to various motors, including those driving the propeller shaft(s), and other consumer loads.

All-electric ship design

The logic behind all-electric ship design that is two-fold. Firstly, ship layout - a large motor does not need to be in the middle of the ship, which is better used as prime passenger and cargo space. Secondly - energy efficiency. Traditional ships could have up to four diesel engines located mid-ship running at low power under normal operating circumstances. This often made them inefficient. By using smaller diesel engines together with a couple of gas turbines, the right number of prime movers

can be fired up to suit power demand, whether it is a fully-laden oil tanker afloat at sea or stationary at port.

In drilling or cable-laying vessels, where anything up to a mile of cable has to be paid out over the side during passage, the weight of the cable is so massive, that the drive motor has to reverse its function from motor to generator, in order to brake the cable reel. Air cooled resistors have heating elements enclosed within a fan cooled cabinet. This makes them suitable for deck mounting, often on anti-vibration mounts.

When most people think of a resistor, they see little components used in electronic equipment. However, a resistor is essentially a way of turning electric energy into heat energy. The latter can be easily wasted if it is not wanted at the location where it is produced.

This brings us back to the reason why a 500kW drive is typically supplied from a medium voltage 3.3kV supply instead of the usual low voltage 415V. Transmitting power at low voltage increases current - as formulated by Ohm's law. The thickness of the copper therefore has to be increased to cope with the extra current. This is one of the reasons why power transmission over long distances is typically at high voltage 400kV - to reduce current and consequently, cable thickness.

Cressall's EV2 advanced water cooled modular resistor range for low and medium voltage applications is especially designed to function in severe environments, like the ones marine systems have to function in. This patented design encapsulates and completely separates the resistor elements from the coolant.

An important benefit from using an electric drive is that reliable systems of regenerative and dynamic braking are available to complement or replace traditional mechanical braking systems. The advantages of electric braking include control, reliability, mechanical simplicity, weight saving and, in certain cases, the opportunity to make use of the regenerated braking energy.

For further information visit:
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A breath of fresh air from EcoCooling: specialists in direct evaporative cooling



Many industrial and commercial spaces are now suffering the effects of heat, particularly in areas where mezzanine floors have been built or in new warehouses that have been well insulated for the colder months. EcoCooling evaporative coolers offer a balanced ventilation scheme which can ensure full compliance with typically only 60% of the capital costs of air conditioning and 10% of the running costs.

Due to the large floor space within most warehouses and factories, the financial and energy savings can be astounding. Many customers who make the switch from traditional air conditioning to evaporative cooling are overwhelmed with the results. Some of the clients EcoCooling have helped save money include BT, Herman Miller, Decathlon and Cummins Diesel.

GSM Automotive in Brecon, Wales, a key supplier to Jaguar Land Rover, were experiencing exceptionally warm conditions on their shop floor, affecting production and making working conditions extremely uncomfortable. The ideal solution was to find a cooling system that allowed naturally fresh air into the building, giving workers fresh natural air to breathe as well as cooling the shop floor for

production purposes.

Providing the ultimate fit to the solution, EcoCooling were able to use their ECP evaporative coolers to help remedy the high shop floor temperatures. Two EcoCoolers were installed along the roof including two roof-mounted extraction fans, allowing for ideal shop floor cooling.

GSM Automotive were considering using traditional air conditioning to cool the area, however, when compared to the EcoCooling system, the operational running costs resulted in massive savings. The EcoCoolers will cost less than £195 per annum to run. In comparison, cooling such a large area with Air Conditioning would have cost over £3,266 per annum to operate. The massive saving for the company also provides an environmentally friendly solution which reduces the company's carbon footprint.

EcoCoolers are the perfect environmentally friendly solution for any large building. In fact, EcoCoolers are 90% MORE efficient than any traditional refrigerant-based air conditioning unit. They use 100% fresh air, require minimum maintenance and are safe and easy to operate. Plus, unlike many

large-scale cooling systems, EcoCooler solutions only require a single phase AC power supply, taking efficiency and versatility of application to the next level.

The EcoCooling range is the only evaporative cooler designed specifically for the UK and European industrial and commercial market. Having been operational for over 15 years, they have more than 3500 installations in the UK with a growing roster of different applications.

Versatile Product ranges:

EXTERNAL PRODUCT RANGE (ECP): Proven Technology and Results

The ECP range of coolers can be installed externally or inside a plant room. The standard unit is down flow, however top and side discharge configurations are also available.

Capitalising on their vast industry experience, EcoCooling work closely with consultants and end-user clients to optimise cooling technology, whatever the scale, age or purpose of the space. Simplicity is the core principal of evaporative cooling and EcoCooling carry this notion through every area of their complimentary design advice service.

The several large warehouses in Bury St Edmunds are home to our innovative R&D team and on-site manufacturing as well as stock for all coolers. With an extensive and streamlined UK installation network, lead times are short. Should they be needed, an adequate supply of spares are also guaranteed. EcoCooling pride themselves on their service to clients and are at the forefront of evaporative cooling technology and energy efficiency.

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More information and case studies are available on our website.
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4 Hidden Ways Of Improving The Energy Efficiency Of Your Process Cooling System

Industrial cooling and refrigeration equipment accounts for up to 50% of a plant's total electricity cost. However, while targeting the mechanical elements of a chiller – such as compressors, pumps, and fans - is a well-known way of cutting a process cooling system's energy consumption, there are a few lesser-known tactics that can be employed to maximise marginal efficiency gains for industrial end-users.



Richard Metcalfe, Sales Director at ICS Cool Energy, explains more:

1) Free cooling

Free cooling uses cool ambient air temperatures to reduce the energy consumed by a cooling circuit as well as the electrical power load of a system.

"The UK's mild climate presents a significant opportunity for energy savings in process cooling applications via this method" says Richard. "Capital expenditure may put some industrial end-users off investing in free cooling systems, but the great news is that most systems offer a pay-back period of just 18-24 months."

2) Refrigerant type

When it comes to refrigerants, end-users have the opportunity to reduce operating costs and improve system efficiency while complying to current legislation, by opting for low GWP (Global Warming Potential) refrigerants.

Richard explains: "The best example of this is that newer chillers, more often than not, incorporate screw compressors, meaning they can operate using the likes of R513A which is both non-flammable and efficient, and benefits from a much lower GWP than its predecessor, R134A."

3) Heat recovery

"The benefits of re-using excess heat from hot discharge refrigerant are undeniable, and include tangible efficiency savings, more comfortable

working conditions and reduced environmental impact to name but a few," says Richard.

"To access these benefits, end-users must purchase equipment which facilitates heat recovery or retrofit an existing chiller of 250kW upwards with a heat recovery unit. With the latter scenario though, end-users should consider the age and condition of the plant, as well as its thermal output and load profile, to ensure a healthy return on investment."

4) Power factor correction

Power factor correction, which measures how effectively electrical power is converted into useful output, is often overlooked by industrial end-users, despite its impact on energy efficiency.

Richard explains: "With a chiller, compressor efficiencies average a power factor of around 0.86 but many operate with a power factor as low as 0.81-0.82. Industrial end-users should target any areas with lower power factors and correct them to as close as 0.95 as practical to reduce on-going running current and, therefore, utility bills."

Thinking outside of the box and adopting some lesser-known techniques when it comes to improving the efficiency of temperature control equipment will quickly help industrial end-users to take back control of their site's energy consumption and improve profitability.

To download a copy of 'How to reduce your energy costs through temperature control and process cooling efficiencies', please visit: <https://www.icscoolenergy.com/reduce-manufacturing-costs/>

For more information about ICS Cool Energy, visit www.icscoolenergy.com email info@icscoolenergy.com or call 0800 774 7426. Follow ICS Cool Energy on Twitter @icscoolenergy.

Rudridge promotes Paul Duke and Emma Taylor to operational roles

Groundwork and materials supplier Rudridge has promoted Emma Taylor and Paul Duke to jointly take on the day to day running of the business.

Emma Taylor, who joined the company as Financial Controller two and a half years ago, will take up the role of Commercial Finance Manager. She will be responsible for overseeing the finance, credit services and admin departments and will be key to Rudridge's ongoing financial and commercial success.



Paul Duke will move from General Manager of the Farnham branch to become the Sales Director. Paul has worked at Rudridge since the business began, starting off as Branch Manager at Farnham. He will be responsible for focusing on the company's sales, operations and strategic direction and leading all Branch Managers, Sales and Estimating Teams.

Commenting on their respective promotions, Emma Taylor said:

"I am delighted to be taking on the role of Commercial Finance Manager. Rudridge is a fantastic place to work thanks to the great relationships that exist between our team, customers and suppliers. I am looking forward to working together with Paul to lead Rudridge into an exciting future."

Left: Paul Duke



Above: Emma Taylor

Paul Duke added:

"These are incredibly exciting times for Rudridge. I am very much looking forward to what the future holds and continuing to deliver the outstanding customer service that we are renowned for."

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

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Climate change will lead to higher UK water costs

- Water treatment plants will have to run at peak rates for longer
- Pipework replacement needs to be increased significantly
- More investment required in sustainable urban drainage

Britain's water industry will face higher costs for treating and managing water supplies due to the increasing occurrence of drought and flood resulting from climate change, according to a new report from the Institution of Mechanical Engineers.

As summers become longer and hotter, water treatment plants will be required to run at peak flow rates for longer, raising maintenance and running costs as well as energy consumption. The increased water flow will also require more chemicals to clean the water faster.

The Institution said in the report "Water: Drought and Flood" that companies will also need to increase the

companies will face running treatment plants at higher flow rates as well as reducing leakage," said Dr Jenifer Baxter, Head of Engineering at the Institution of Mechanical Engineers and the report's lead author.

"Sustainable drainage and water recycling systems along with reducing water use are all part of the solution of helping us adapt to climate change."

Most Government policies, strategies and reports do not consider hot, dry weather together with flooding – looking at one or the other – and a new water infrastructure sustainability plan is needed which combines drought and flood.

The Institution made the following recommendations in the report:

1. **All major UK cities to publish research on what their infrastructure needs will be in relation to water.** Water is a limited resource – infrastructure for new-build homes and businesses should be designed and developed with increased extreme weather in mind. This should include sustainable urban drainage and grey water recycling in new-build properties, reducing the burden on water treatment works in the summer months and helping to manage extreme rainfall events.
2. **UK Government should run a public awareness campaign on the value of water and consequences of our changing climate.** This could include what householders and businesses need to do to build resilience into their properties, in order to mitigate the impacts from poor drainage when periods of dry weather end this year, and in future years.
3. **The water industry, with the support of Water UK and the National Infrastructure Committee, creates a forum of water-intensive industries and the water companies create a water infrastructure sustainability plan for UK industry that combines drought and flood.** It is crucial that supply exceeds demand not just by ever increasing production, but instead by mitigating use in a similar way to the electricity grid which has clients on interruptible contracts.

For further information visit:
<http://www.imeche.org/>

"Sustainable drainage and water recycling systems along with reducing water use are all part of the solution of helping us adapt to climate change."

pace of pipework replacement significantly, which will be expensive but is becoming essential.

To combat flooding, particularly after long periods of dry, hot weather, greater investment will be required in drainage systems in urban areas including more sustainable options such parkland, ponds and ditches.

"We need to make people aware of the value of water as a resource. Consumers need to understand the challenges of managing water in more extreme environments and the increased costs that water

The Institution supports a "systems thinking" approach to water management as highlighted in regulator Ofwat's report, "Resilience in the Round", which was released in 2017 and identifies the linkages between many aspects of urban life – physical, social and economic.

The Ofwat report brings together the challenges of unexpected events, such as superstorms, heatwaves and blackouts, but also infrastructure, and an ageing and growing population.

The Complexity Of Modern Material Selection

One of the key decisions in the development of every product is the selection of the materials of which it will be constructed.



But as new materials and manufacturing methods have proliferated, this decision has become more complex. Here, Joshua Devlin, materials scientist at Matmatch, explains why material selection has traditionally been so difficult, and the importance of other factors involved in the decision-making process.

When developing a new product, there are several key decision points involved. In addition to choosing a material, developers need to consider function, design, manufacturing and cost. Each of these aspects has a push-pull relationship with one another.

A set constraint in any of these areas will have a flow-on effect influencing all the others. These relationships create a complex optimisation problem during product development. Of all these decision points, material selection – due to its complexity – is arguably the most difficult.

Selection of the right material or materials has increased in complexity over time, as new materials and manufacturing methods become available and the amount of in-depth material data has increased.

According to Myer Kutz, author of Handbook of

Materials Selection, there are an estimated over 100,000 potential materials for a designer to select from, and this number is only growing every year. Engineers are then required to evaluate these materials based on a broad range of information, including anything from material strength and corrosion properties to recyclability and source location.

Accessing this information is key to making the choice, but navigating to find the right information is a recurring problem for engineers.

Until now, one of the main challenges has been that there is no single location to go to find all the required information. Many people still rely on general search engines, traditional methods like textbooks and material supplier catalogues, as well as leaning on in-house expertise and external consulting. The problem with these methods is that the information is relatively inaccessible by modern standards and is dispersed across multiple sources.

Modern digitised sources for material data, while considerably easier to access, still suffer from several limitations, such as narrow scope, limited scientific information or a lack of links to trusted material suppliers.

A review of online material data resources by J. H. Westbrook back in 2003 already found that while there are numerous sources for material data on the internet, a step change in their presentation, accessibility and scope was required for them to really modernise the material selection process.

The flow on effect of product developers not having direct access to material information hinders their ability to make an informed selection. This may result in project problems, from increases in development periods to a reduced capacity for innovation in respect to material selection.

Materials comparison website Matmatch was founded to address these problems mentioned. The company's goal is to provide easily accessible, diverse and detailed material information online.

Matmatch is ambitiously working towards developing a modern material selection knowledge hub, combining quantitative material data with qualitative information such as applications and processing methods.

To construct this solution Matmatch is combining information from traditional materials sources, some modern digital sources, and materials manufacturers. The aim is to link general material properties, manufacturing information, standards, use cases, available suppliers and more to provide the most comprehensive set of information for materials.

By developing a unified database linking specific information around materials, Matmatch is empowering product developers and design engineers to make the best material selection. This approach illustrates that while the range of materials available is becoming more complex, the material selection process doesn't need to get more complicated.

For further information visit:
matmatch.com

Fortress celebrates Queen's Award hat-trick

Fortress Interlocks, experts in automation safety and interlock systems, has been awarded its third Queen's Award for International Trade, recognising the outstanding growth in overseas sales over the last three years.



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Fortress Interlocks is amongst 230 businesses nationwide recognised this year in categories that include sustainable development, promoting opportunities through social mobility, innovation and international trade. In 2007, the company won the Queen's Award for Innovation and in 2008, the Queen's Award for International Trade. Winners of the International Trade Award must demonstrate substantial growth in overseas earnings relative to business size and sector.

This award is the result of a 5-year strategy by Fortress Interlocks to build export growth, targeting regions such as Europe, Asia Pacific (including China) and The Americas. Interlocks are traditionally a mechanical solution but Fortress prides itself on embracing the digital revolution to incorporate electronic and software-based solutions for customers. Business leaders in different local markets are empowered to make their own

decisions and an online distributor portal tracks global success, encouraging other members of the sales force to replicate such efforts.

Jo Smith, Managing Director of Fortress Interlocks commented "Our business strategy is based upon innovative customisation, creating robust solutions to allow our customers protect their employees and productivity, whilst our competitors have gone down a route of standardisation". In 2016/17, total sales were £22.5million, with export sales accounting to £18.3 million. Over the last three years, sales have grown by over 62%.

The company is committed to growth by innovation, continuing its development of intelligent interlocks and most recently adding connectivity to its robust amGardpro range – with safety information exchanged using either PROFIsafe or CIP safety protocol.

Fortress also recently launched the ncGard product range, a complete solution of non-contact safety switches for safeguarding machinery. In autumn the company will launch ATOM, the first high coded RFID gate switch designed in a high robusticity and ultra-compact form factor. When discussing future growth, Smith said "Winning this award is testament to the effort we have made to take our solutions to new markets. Our target is to continue to grow sales at 10% per year, and be the automation safety supplier of choice in the machine safety market."

Fortress Interlocks is based in the Midlands and prides itself on a family-oriented culture. Protecting productivity but most importantly people are at the heart of the business, ensuring loved ones working in dangerous environments return home safely to their families every day. Bespoke solutions can be provided for all industrial applications from power generation, automotive and steel manufacturing, to food and beverage processing, materials recycling and construction. All products ranges are compliant with the latest machinery safety standards and independently approved by TUV.

For further information visit:
www.fortressinterlocks.com

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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."

This is all backed up by our commitment to all of our customers to offer the best products, price and service in the industry.

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Industry 4.0 Insight Solution for Clean Air Management

In order to accomplish its core competence of supplying clean air to industry, Nederman is setting its sights squarely on the Industry 4.0 revolution with its new Nederman Insight platform.

Dedicated to retaining its position as global leader in the supply of clean air, Nederman has always placed great emphasis upon helping customers meet the most stringent requirements and regulations. Nederman Insight provides the user with much more than a filter and far more than raw data. Nederman Insight provides customers with key insights that help them get more out of their filters with less effort and less cost.

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.

For further information visit:
www.nederman.com

AUMA Actuators Supply Turnkey Valve Control System

AUMA has supplied a turnkey valve automation solution to Indonesian oil and gas company Pertamina that includes explosion-proof multi-turn SA actuators with intelligent AC controls and a SIMA control system.

The delivery is part of the first phase of an expansion project at the TBBM Manggis LPG tank farm on the island of Bali.

AUMA's SIMA control system was successfully integrated into the tank farm's existing SCADA system using Modbus RTU protocol to communicate with the valve actuators and the higher-level SCADA system. The actuators connect to the SIMA in a ring topology with integrated redundancy. At SCADA level, the AUMA system operates in parallel to an existing system with older actuators using a

proprietary communications protocol.

"This project shows that upgrading to AUMA in existing plants is possible at any time and without any problems," says Stefan Kolbe, Sales Director Southeast Asia at AUMA. "The customer particularly appreciates the flexibility and future-proofness of the investment thanks to the open fieldbus standards.

The short response times of the AUMA solution also allow them to optimise process control."

Pertamina is the state-owned company responsible



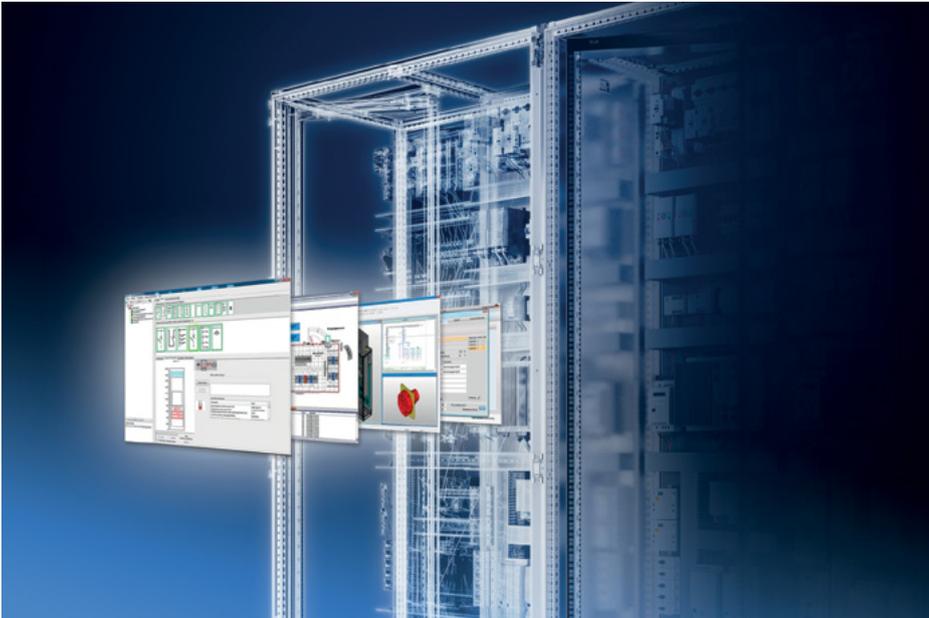
for crude oil and gas production and processing in Indonesia. AUMA has a proven track record of more than 20 years supplying electric valve actuation solutions to Pertamina.

For further information visit:
www.auma.com

AUMA Actuators Ltd is part of the global AUMA group.

VX25 Enclosure Transition Made Easy

Rittal is supporting control and switchgear engineering as it transitions to Industry 4.0 and adopts its new VX25 large enclosure system.



The new VX25 conversion assistant for parts lists (www.rittal.com/vx25conversionhelp) provides free data and an intelligent selector and configurator, simplifying the transition from the TS 8 enclosure system to the new VX25 large enclosure system.

Control and switchgear manufacturers wanting to improve productivity, in line with Industry 4.0, need high-quality data to deliver the results they are looking for.

The new Rittal VX25 large enclosure system does just that, providing high-quality data for every process along its value chain – from electrical planning through mechanical design to manufacturing.

A variety of web-based software tools are available from Rittal so that companies can quickly, easily and precisely convert to the new enclosure system.

Converting parts lists at speed

Parts lists from the earlier TS 8 enclosure system can now be easily turned into VX25 parts lists with the VX25 conversion assistant. TS 8 parts lists from projects that are to be used again simply need to be loaded into the conversion tool as an Excel file, using drag and drop.

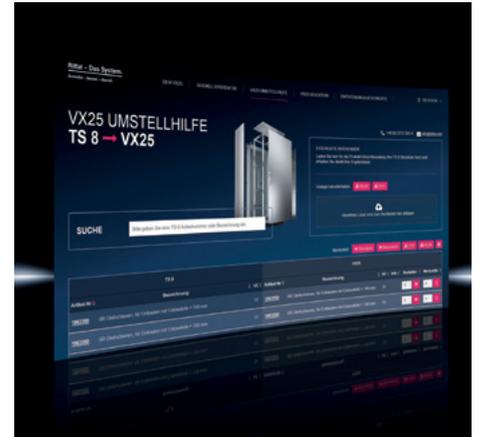
If the selection is based on the model number and quantity, the VX25 parts list will be provided with just one click. It also automatically displays any items not relevant to the VX25. The converted parts list can be simply downloaded or placed in the shopping cart for online ordering. TS 8 Model Numbers can also be entered individually and corresponding VX25 Model Numbers along with additional product information, will quickly be found.

Plant constructors are also given support in converting from TS 8-based 3D enclosure layouts to VX25 system technology in EPLAN Pro Panel projects. The entire process of replacing TS 8 enclosures and accessories with VX25 articles is virtually all automated.

Data for all common CAD systems

Rittal provides further help with the easy and free download of detailed, validated CAD data in more than 70 formats, which allows the transmission of data to all common CAD systems.

The EPLAN Data Portal can be employed to load macros of the VX25 bayed enclosure system for mechatronic engineering using CAE/CAD and for generating 3D enclosure layout with EPLAN Pro



Panel. Moreover, Rittal offers data for the VX25 for classification as per eClass (Advanced) and ETIM.

Selecting and configuring products with ease

The VX25 selector means it's easy to select Rittal enclosures along with the corresponding accessories for appropriate applications. The enclosure types can be populated to suit individual requirements with a pre-selection of common accessories.

The web-based configurator, Rittal Configuration System, offers simple and error-free configuration – even without prior CAD knowledge – of the VX25 and the desired installation components.

The tool facilitates the configuration of free-standing enclosures and bayed suites based on the VX25 – a task that is “plausibility checked”. So, while accessories are being placed, the system will automatically check if the selected components can be placed at the chosen location.

The Configuration System also supports machining, because the configured data package contains both the parts list and a CNC program for the Perforex machining centre, as well as a 3D step model of the complete enclosure including the accessories. It means the data about the enclosure flows directly into the machining processes. The configured items can be ordered directly via the linked online shop, which makes the ordering process even easier.

Further information at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

Dixon Introduces new EZLINK™ Armless Cam & Groove

A new push-to-connect positive locking system and low-profile design dramatically improves the ability to easily transfer and unload fuels, water and other liquids.

Dixon Group Europe Ltd, leading provider of hose and coupling solutions, are pleased to launch their new armless Cam & Groove product line - EZLink™

The EZLink system is an innovative design concept that features an armless positive locking system. The EZLink's innovative engineering is in stark contrast to conventional cam & groove products. EZLink is easier to connect, and the new design also requires less maintenance since there are no cam lever arms that tend to break and need replacing.

Simply push to connect the EZLink coupler to any standard cam & groove adapter to achieve an ultra-

reliable connection. In addition, the product's low profile allows for easy connection and disconnection in tight applications and operating conditions.

At present, Dixon's EZLink product line includes types B, C, D and dust caps in 1½" to 4" in aluminium and from 1½" to 3" in stainless steel. These configurations come with a black Buna nitrile rubber seal as standard but FKM and Fluorosilicone are available on request.

Other operational and safety features of the EZLink product line include coupler push tabs that can be locked with safety pins and/or a zip tie.

About Dixon

Dixon is a leading manufacturer and supplier of hose assemblies, fittings, fluid control products and accessories. Dixon serves a broad range of industries – including the agricultural, chemical, construction, fire prevention and suppression, food and beverage, industrial, mining, petrochemical and pharmaceutical segments – by offering the industry's most comprehensive product line available from a single source.

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In an era when the industrial world is becoming ever-larger, there is a growing responsibility on equipment suppliers to make sure the market has everything it requires to function safely, reliably, efficiently and cost effectively.

With this notion in mind, J D Neuhaus (JDN) has always had a policy of continuous investment in its class-leading range of hoists and cranes for the general industrial marketplace.

JDN has been at the vanguard of hoist and crane technology for over 270 years, whether for moving heavy or light loads. The company's range today is broad and feature-rich, ensuring virtually every type of general application can be served. Products available include pneumatic cranes, C-rail/light crane systems, pneumatic hoists (Profi, Mini and M ranges), manipulators, trolleys (including low headroom versions), big bag handling hoists and monorail hoists. Such products have become the mainstay of general manufacturing and process operations around the world as a myriad of industrial tasks demand lifting and manoeuvring, which without mechanical assistance would prove unproductive.

JDN's focus on R&D ensures that its range continues to evolve. The latest products have been engineered to offer extended service life, simple operation and ecological compatibility, all without any compromise to safety or performance. Among the latest innovations from JDN is a newly developed remote control concept that brings exceptional ease-of-use and convenience to users across all industries. Comprising a transmitter and receiver, the JDN-RC (Remote Control) is available for both new and retrofit applications.



Of course, due to the wide-ranging demands of industrial applications in which hoists and cranes are expected to perform, all JDN products are engineered for extremes. Typical applications include aircraft construction, general assembly lines, auto plants, dairies, electroplating lines, foundries, paint shops, steelworks, power plants, refineries, sawmills, shipyards and tempering plants, as well as a host of uses in the chemical, cement, food, furniture, glassmaking, paper and textile industries, to list but a few.

Explosion protection, which is paramount in many industrial applications, is assured as JDN chain hoists and crane systems are driven by compressed air, which offers an unbeatable advantage in comparison with electrical hoists: air generates no sparks.

Ultimately, there are virtually no general industry lifting applications for which JDN cannot offer the ideal hoist or crane solution. Lifting capacities of up to 100 tonnes are available to move loads reliably as part of repetitive cycle lifting, day after day, in more than 70 different sectors. Furthermore, the 100% duty-free cycle of the equipment, which can either be used directly in applications or as part of OEM material handling devices, allows workers around the world to work longer and harder.

Company Information

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 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.

For more information contact J D Neuhaus
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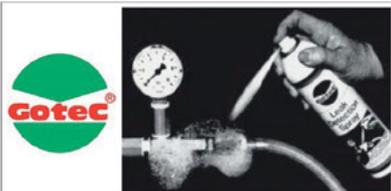


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