



MOVUS Gets Investment Injection To Support Growth and Drive IIoT For Industry 4.0

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THE PRINCIPLES OF CONDITION MONITORING

Welcome to the April 2018 edition of EMS magazine. In this issue we will examine the latest techniques, products and services available to today's maintenance professional.

Condition monitoring (or, colloquially, CM) is the process of monitoring a parameter of condition in machinery (vibration, temperature etc.), in order to identify a significant change which is indicative of a developing fault.

It is a major component of predictive maintenance.

The use of condition monitoring allows maintenance to be scheduled, or other actions to be taken to prevent consequential damages and avoid its consequences.

Condition monitoring has a unique benefit in that conditions that would shorten normal lifespan can be addressed before they develop into a major failure.

Condition monitoring techniques are normally used on rotating equipment, auxiliary systems and other machinery (compressors, pumps, electric motors, internal combustion engines, presses), while periodic inspection using non-destructive testing (NDT) techniques and fit for service (FFS)[1] evaluation are used for static plant equipment such as steam boilers, piping and heat exchangers.

CM based monitoring is vital when looking to monitor and predict any costly failures.

We hope that this edition is both interesting and informative.

We wish you well within this exciting career.



Michael Dominguez,
Publisher.

IN THE NEXT ISSUE... EURO MAINTENANCE 2018

On the verge of the 4th industrial revolution, IoT and predictive analytics are bringing unseen possibilities in maintenance, reliability and condition monitoring.

Euromaintenance 4.0 aims to provide a comprehensive and attractive agenda of learning opportunities for CTO's, asset managers, group maintenance & reliability leaders, maintenance & reliability engineers, condition monitoring specialists and operational managers working in asset intensive industries in Europe and the rest of the world. The event will focus on disruptive technologies without omitting the essential basics and best practices in the field of maintenance, reliability, condition monitoring and asset management.

Euromaintenance 4.0 presents a unique opportunity to share your experience and expertise or to showcase your innovation in these fields. Euromaintenance, since 1972 the most important European conference for Maintenance, was for the first time organised in Belgium in 2008. Up to present, Euromaintenance 2008 was the most successful Maintenance conference in Europe, with more than 750 participants from 51 countries all over the world. Euromaintenance 4.0 aims to go beyond the successes of 2008.

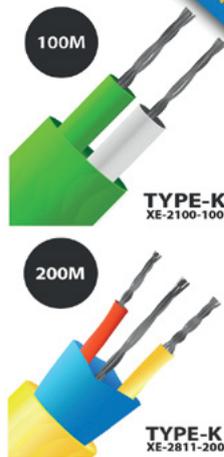
Topics include:

- **Maintenance 4.0**
- **Maintenance & Reliability fundamentals**
- **Asset Management**
- **Motor Systems 4.0**

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Densoseal Selected for RHS Garden Wisley

As part of refurbishment works at the Royal Horticultural Society's Garden at Wisley in Surrey, Winn & Coales (Denso) Ltd has supplied Densoseal 16A™ for the prevention of water ingress via cable entry ducts in the switch room and power stations on site.

A self-supporting, non-setting mastic, Densoseal 16A™ was developed for the sealing of cable ducts, conduits and service entry pipes or sleeves from the ingress of water and gas. The firm, fibrous mastic creates a flexible seal around electrical supply cables and is particularly suitable for ducts that are wet or liable to water entry. Compliant with British Telecom Specification M212C, it can also be used for the profiling of mechanical joints on hot pipes to permit the application of tapes.



The flagship garden of the Royal Horticultural Society covers 76-hectares (240 acres) and the three new power stations and renovated switch room are part of a program of investments taking place at the site in the coming years. Donated to the RHS in 1903, the site has evolved from its woodland beginnings into the cultivated gardens in place today, with further updates to the landscaping taking place as part of the planned renovation works.

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ABB wins Supplier of the Year at Pump Industry Awards

Prestigious award acknowledges ABB's commitment to driving growth through collaboration and innovation.

ABB wins Supplier of the Year at Pump Industry Awards

Prestigious award acknowledges ABB's commitment to driving growth through collaboration and innovation. ABB has won Supplier of the Year at the Pump Industry Awards for the second year running and the sixth time overall.

Backed by the British Pump Manufacturers' Association (BPMA) and held in Oxfordshire in March, the Supplier of the Year award recognises ABB's ongoing commitment to developing technologies and services that save energy, reduce downtime and increase the resilience of pump systems across all industries.

Rob Wood of ABB collected the award on behalf of the company: "Winning this award two years in a row is recognition of ABB's ongoing commitment to driving growth, both for itself and its customers, through a focus on collaboration and innovation. ABB is dedicated to creating products and services

that improve the performance, lifespan and resilience of pump systems. Most recently we have seen truly fantastic results when working with customers in the field to implement innovative, cloud-based solutions to tackle technical and environmental challenges."

ABB continuously strives towards enabling pump suppliers to harness the opportunities offered by the Internet of Things (IoT). The ABB Ability Smart Sensor for low voltage motors is just one example. This sensor can be attached, without wires, to any low voltage motors and, by measuring key parameters such as heat and vibration, is able to let the operator know in advance of any problems within the motor.

Another innovation is ABB's dedicated variable speed drive (VSD) for water and wastewater applications, ACQ580. Introduced in 2017, the ACQ580 is a truly digital drive that features a host of smart pump functions from anti-ragging to turbidity reduction.

ABB is an advocate of collaboration through the sharing of best practice. Throughout 2017 it



continued to expand its range of pump-related training courses, which are offered free of charge to pump manufacturers and operators, system integrators, consultants and contractors. Most recently this included the introduction of its CPD-accredited course, Understanding System Efficiencies. The hour-long course is designed to help pump operators to improve the efficiency of the electrical system driving their pumps (typically a transformer, VSD, electric motor, switchgear and cabling), while saving up to 20 percent in energy costs.

To find out more about ABB's free training, email energy@gb.abb.com or call 07000 DRIVES (07000 374837)

GP Global Expands European & Asia Pacific Bunkering Operations with Raft of New Senior Appointments

GP Global (Formerly Gulf Petrochem Group) has today announced the expansion of its European and Asia Pacific bunkering operations with the appointment of five senior traders alongside the establishment of a new office in Hull, UK and a new branch office in Seoul, South Korea.



Steven Taylor, Lead – Physical Supply, West of Suez and Susan Needham, Trading Operator – Physical Supply West of Suez, both previously of OceanConnect Marine UK Ltd, a Glencore subsidiary bring over 30 years' worth of experience in the market and will lead the brand-new GP Global office in Hull, UK.

At GP Global's London office, Chris Holroyd and Dave Matthews, two seasoned traders, joined as Bunker Traders, West of Suez and will be developing and growing GP Global's trading desk in the capital. Holroyd, previously of KPI Bridge Oil brings with him over 20 years' worth of experience in the industry. Matthews, previously of Ocean Connect Marine UK

Ltd, has over nine years' worth of experience in the industry with particular skills in risk management and contract negotiations.

Both the Hull and London offices will report into Chris Todd, Head of Bunkering, West of Suez at GP Global.

Joining GP Global's Asia Pacific operations as a Senior Bunker Trader is Robin Park. Robin will lead the Korean operations in the group's new office in Seoul, South Korea. Prior to joining GP Global, Robin worked with Asia MBS and Cockett Marine Oil in South Korea as well as Glander International Bunkering in Singapore.

Robin will report to Anil Keswani, Head of Bunkering, East of Suez at GP Global.

The appointments and new offices follow the launch of GP Global's Southern and Sub-Saharan African trading desks in late 2017 and further consolidates the group's trading business around the world.

Speaking about the appointments Chris Todd, Head of Bunkering, West of Suez at GP Global, said, "We are delighted to have strengthened our UK bunker team with experienced, well respected and seasoned professionals within our industry. Our UK operations continue to go from strength to strength with the opening of our brand-new office in Hull, strategically located close to the P66 and Total refineries in Immingham, and the expansion of our London office. We expect 2018 to be another successful year at GP Global's bunkering division due to the team we now have in place West of the Suez."

Anil Keswani, Head of Bunkering, East of Suez at GP Global, also commented, "We are pleased to expand our East of Suez operations to Korea with Robin on board. The expansion in our Asia Pacific operations is aimed at strengthening GP Global's reach in the Bunkering business.

Prerit Goel, Group Director at GP Global, added, "Our bunkering division enjoyed a successful year in 2017, despite challenging market conditions, and that was down to the people we have in place across our trading desks around the world. With these latest appointments, we are confident that the new team structure both in the UK and Asia Pacific, will allow us to capitalise on further opportunities moving into 2018."

For further information visit:
gulfpetrochem.com

The only surviving Prototype de Havilland Mosquito aircraft receives Engineering Heritage Award

The aircraft receives the accolade from the Institution of Mechanical Engineers in recognition of its pioneering bonded composite aircraft construction, which is still in use today.



The de Havilland DH.98 Mosquito, one of the fastest operational aircraft in the world when it entered service in 1941, has been presented with an Engineering Heritage Award by the Institution of Mechanical Engineers at a ceremony at the de Havilland Aircraft Museum in Hertfordshire on Sunday 1 April, the 100th anniversary of the Royal Air Force.

The fast, high-flying Mosquito was, for much of WWII, able to roam almost at will over enemy-occupied territory. Built with wooden components, it was designed for speed and range as a two-seat unarmed light bomber, unarmed reconnaissance aircraft and long range fighter. Its performance derived from a combination of careful packaging, an aerodynamically clean shape, a high wing loading and high power from two supercharged liquid-cooled V-12 Merlin engines.

The design of the Mosquito evolved over well over 30 variants and it excelled as a multi-role aircraft.

Image Credit: to the de Havilland Aircraft Museum / Garry Lakin.

The prototype achieved a maximum speed of 437mph in October 1942 at 29,000 feet.

Previous winners of Engineering Heritage Awards include Alan Turing's Bombe at Bletchley Park, the E-Type Jaguar and Concorde, the fastest ever airliner. Other aircraft-related winners include the Short SC1 VTOL aircraft, a plane which provided data that influenced later designs of aeroplanes, the Rolls-Royce RB211 engine and the Vulcan Bomber XH558, the last airworthy representative of the RAF's V-bomber fleet.

The de Havilland DH.98 Mosquito Prototype is the 117th recipient of the award.

Charles Clarke, Associate Member of the Institution of Mechanical Engineers, said:

"Confident in their vision for this aircraft, de Havilland persisted with the design and prototyping against Ministry setbacks (Lord Beaverbrook cancelled the project after Dunkirk) and the first flight took place on 25 November 1940. Exactly 7,781 Mosquitos were built – a vindication of de Havilland's vision. The Mosquito's construction from wood meant that it was easily repaired and it enabled furniture and piano factories in England, Canada and Australia to build the aircraft. The absence of armaments meant that it could be kept aerodynamically clean and could carry higher payloads – a philosophy continued by the Canberra and the V- bombers. Certainly no aeroplane flew so many different types of mission and performed them as well as the Mosquito."

Alistair Hodgson, Curator of the de Havilland Aircraft Museum, said:

"I am delighted that the Institution has recognised the Mosquito Prototype with this award. The aircraft is a very significant piece of our Aviation Heritage, the more so because the de Havilland Aircraft Museum is located on the site where this aircraft was designed and built in great secrecy during the War."

For images of the presentation, please click on the link at the top of the email, which shows Charles Clarke, Associate Member of the Institution of Mechanical Engineers, and Alan Brackley, Chairman of the Board of Trustees at the de Havilland Aircraft Museum.

For further information visit:
www.imeche.org

ELTA Group Announces Major Asian Expansion

Elta Group Ltd, an international leader in fans, air movement, filtration and distribution, has announced a major expansion of its Asian operation, with the creation of Elta Fans India alongside the recently rebranded Elta Fans Malaysia, formerly Eltafantech.



The establishment of Elta Fans India follows the development of a strong relationship with a local ventilation specialist, Airovient, which had been the company's agent in India for almost 9 years. The new entity will be run as a joint venture, with Managing Director Dilip Nemani heading up the Indian operation.

The move will allow Elta Group to further expand its reach across India, with new offices in Bengaluru, Kolkata, Mumbai and New Delhi as well as local manufacturing and distribution.

Dilip Nemani, Managing Director of Elta Fans India, added: "Elta Group is a highly respected global brand, with market leading products. We've seen a significant increase in requests for fan technology across a range of applications over recent years. Elta Fans India will focus particularly on the key markets of Building Services, Applied Technology and Agriculture."

Nick Heaton, CEO of Elta Group Asia, said: "The creation of Elta Fans India and Elta Fans Malaysia is in response to growing demand for quality fan

systems across the continent. The new entities will give our customers in India and South East Asia access to a much wider product portfolio and will allow us to develop new markets and industry sectors."

David Ball, Chairman of Elta Group, commented: "The success of any joint venture, is wholly dependent upon the people that will be responsible for developing that business. One of the core values of Elta Group is 'People – Trust in each other', which is integral to our approach and thinking when embarking upon acquisitions, joint ventures and partnerships, wherever they are in the world.

"Working with Dilip Nemani and his son, Mayank, as our Indian agents for Elta Fans for some time now, has enabled this natural progression to a joint venture arrangement. Elta Group are delighted that we are able to work more closely with our Indian partners, sharing ownership, sharing ideas, sharing development, and sharing in the success of Elta Fans India."

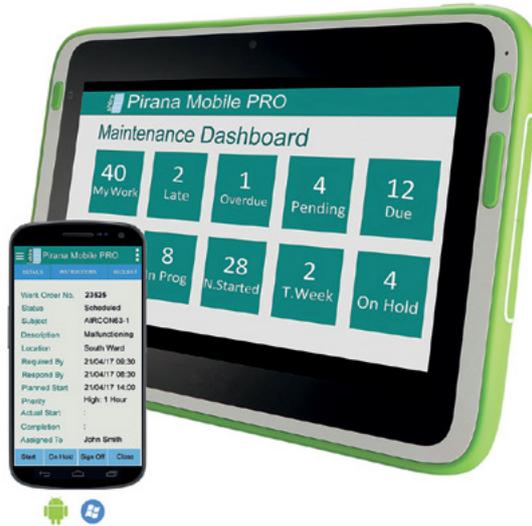
For more information on Elta Group Ltd. and its portfolio of global brands in the fields of fans, air movement, and distribution, visit www.eltagroup.co.uk.

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For further information visit:
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Successful Workshop On NDT Requirements For Marine Composites

This year saw the fourth NDT requirements workshop run by the British Institute of Non-Destructive Testing (BINDT). The Workshop on NDT Requirements for Marine Composites took place on 27 February 2018 at St Mary's Stadium, Southampton, UK.

Whilst a significant amount of non-destructive testing (NDT) is already performed on marine composites, the sector needs further support in a number of areas, including the development of NDT acceptance criteria at the design stage for manufacturing and in-service defects, guidance on appropriate NDT method and inspection process selection and new techniques for utilising NDT results for structural integrity assessment.

The workshop brought together marine sector regulators, insurers, designers, manufacturers, constructors and operators to discuss the opportunities for, and benefits of, improved and enhanced NDT of marine composites. The academic sector was also well represented, bringing potential solutions from leading-edge research. The aim of the workshop was to generate a document capturing all NDT requirements, 'what success looks like' for future NDT and the link to structural integrity and risk-based inspection management.

The workshop programme consisted of six

key sessions including: regulator and insurer requirements; industry and user requirements; current NDT experience; future advanced NDT and structural integrity; a breakout session; and panel session.

Professionals and academics from the marine industry briefed attendees on ways that NDT could help increase the use of composites, covering subjects such as naval fleets, tidal turbine sectors, high-performance yachts, ultrasonic testing (UT), RNLI lifeboats and pulsed thermography. The programme included speakers from influential companies and organisations such as Land Rover BAR, Navalmartin Ltd, BAE Systems, AEL Airborne and Minton, Treharne & Davies, as well as educational institutions and research centres such as the University of Bristol, the Defence Academy of UK, the National Composites Centre and the University of Southampton.

Professor Robert Smith, chair of the workshop, opened the event by welcoming over sixty delegates

from a broad spectrum of industry sectors to address inspection issues potentially facing the marine industry. Following the workshop, Robert said: "I was delighted that the marine sector responded so enthusiastically to this initiative by the BINDT Composites Group to consult representatives on their current and future requirements. We learned a lot from the marine sector presenters and, during the breakout session, the NDT and marine communities jointly contributed to the final list of headline requirements. The presentations and report from the workshop will be made publicly available on the BINDT website and a new working group on NDT certification for marine composites will be established. The BINDT Composites Group will actively work on meeting the requirements reported from this workshop. The next NDT requirements workshop, in 2019, will be focused on the wind power sector."

Presentations from this workshop are available to download from the BINDT website, <http://www.bindt.org/events/PastEvents/marine-composites-workshop-2018-closed/>, where the final report will also be made available.

Educational webinar on Master Alarm Databases from M.A.C. Solutions

M.A.C. Solutions, developer of the ProcessVue® suite of alarm management software, is hosting an educational webinar on Master Alarm Databases on 16th May 2018.



The webinar session on "Master Alarm Databases: What Format?" will be hosted by Ian Brown, Alarm Rationalisation and Services Manager at MAC Solutions (UK). Further webinars are planned for 2018, including "Alarm System Performance KPIs" (13th June) and "Alarm Enforcement or not?" (19th September).

To register to attend any of the above webinars, please visit www.processvue.com

Master Alarm Databases

A Master Alarm Database (MADb) is defined in the alarm management standards as an "authorised list of rationalised alarms and associated attributes". A MADb is one of the fundamental building blocks

required to underpin the success of any alarm improvement initiative. It is required for the life of an alarm system, and without one, process manufacturers would struggle to manage their alarms appropriately.

The MADb webinar will discuss a variety of topics including the reasons why a database is often a superior tool compared to a spreadsheet; future proofing; accessibility; memory usage and performance; user interface; data validation; ancillary information; management of change; bulk copy and edit; audit and enforcement.

The webinar should appeal to a wide range of process industry plants, particularly Upper and Lower Tier COMAH-regulated or FDA-regulated

sites. These include oil & gas, petrochemicals, chemicals, pharmaceuticals, power stations, food processing and water companies. It doesn't matter what the customer's process is or what type of plant-wide control systems they have in place. If there is a need to manage and resolve alarm issues on site, the webinar can offer useful advice on selecting the right format for your MADb.

Ian Brown, Alarm Rationalisation and Services Manager at MAC Solutions (UK) comments:

"Although spreadsheets are often used as Master Alarm Databases for process plants, once these companies begin to consider 'management of change' and 'alarm rationalisation', which may be a requirement from a regulator, then the use of a spreadsheet becomes unworkable. If you are serious about managing and maintaining your alarms with robust management of change control throughout the lifetime of your plant, the only real option for a MADb is a database application, designed with alarm management as its core functionality. For those companies that are still unsure how to take the next step from spreadsheets to databases, the webinar is a great starting point."

Alongside the webinar series, M.A.C. Solutions will be running a number of comprehensive alarm management training courses in 2018.

For more information, please visit www.processvue.com or telephone MAC Solutions on 01527 529774 or email sales@mac-solutions.co.uk

Closing The Skills Gap

To be effective, an electrical circuit can't have any gaps. Here, Jonathan Wilkins, marketing director at industrial automation equipment supplier, EU Automation, uses this analogy to explain why we need to raise the interest in engineering to bridge the skills gap.



A broken circuit is no use to anyone. However, with an exceptional amount of voltage, a spark can jump the gap and carry the current. Similarly, a skills gap in engineering is breaking the employment circuit — there are not enough skilled young people to fill the industry's vacancies. But where can we source the determination, the lightning and the exceptional talent to bridge this gap?

It's no surprise that successive governments in Europe are charged with ensuring that the flow of graduates with science, technology, engineering and mathematics (STEM) degrees is appropriate and fit for purpose. Especially as the EngineeringUK report 2017 highlights an increasing need for people with higher level skills, and a decreasing confidence in recruiting these in sufficient numbers.

EngineeringUK modelled the supply of entrants into engineering roles, through higher education and higher level apprenticeships, and projected a shortage of at least 20,000 graduates per year.

Too late for great

To nurture and encourage the engineers of tomorrow, we need to harness the energy of the workforce of today. The ASPIRES report by Kings College London points out that the ages of 10-14 is

a critical time for the development of young peoples' attitudes to science. By age 14, most young people's attitudes to science are fairly fixed.

But how can we really engage a ten year old without bribing them with sweets?

Over 80 per cent of young people surveyed for the ASPIRES report agreed that 'scientists are brainy'. The problem lies in students who do not consider themselves as being among the 'brainiest' in the class and therefore don't see science careers as achievable. In partnership with local companies, schools need to educate students on the sheer scope of STEM careers and the huge demand for them.

It's important to remind these ten year olds that they still have a lot learning left. Furthermore, it's okay not to be top of the class at the age of ten, and it certainly doesn't rule out a career in engineering.

Different routes for different suits

Ultimately, the more options to progress into an engineering role there are, the bigger the talent pool will be. There are many different paths into a STEM career — and it doesn't just include university degrees. Apprenticeships provide on-the-job training

and higher apprenticeships can even result in a vocational qualification or a degree.

Employers are backing apprenticeships, appreciating the real work experience they give the learner. Some employers are even tailoring new apprenticeship standards for occupations in their sectors, designing Trailblazer courses. This results in people with the relevant workplace skills for a specific industry, whether this is advanced manufacturing, aerospace or energy generation.

Apprenticeships are also backed by the UK Government, which promised three million new apprentices by 2020. To fund this, the Apprenticeship Levy has been put in place. All businesses with a payroll over £3 million must pay a percentage of this into an online account. This can only be spent on apprenticeship training and assessment and must be spent within 18 months. This encourages more businesses to take on apprentices.

Ultimately, it's this real world training that provides the most up-to-date and relevant skills. With new roles being created as part of the rapid digitalisation of Industry 4.0, we need qualifications to adapt. We will no doubt need artificial intelligence (AI) experts, big data analysts and augmented reality (AR) developers in the future, but do we have the qualifications in place for these roles now?

We may be able to meet the future employment demands of the engineering sector, but it will take the right level of engagement, financial support and pathway flexibility to allow the tomorrow's engineers to bridge the gap and complete the employment circuit.

For further information please visit:

www.euautomation.com

CED Distributor Gets Smart with Bins to Build Business

Technology Enables New Business Opportunities, Delivers Fast ROI

Royal Wholesale Electric is a distributor based in Salt Lake City, Utah, specialising in electrical components for use in automation and industrial applications. It is part of Consolidated Electrical Distributors, one of the nation's largest distributors of electrical components.

But Royal faces a problem common to every distributor, regardless of offering or size — competing for business with a service that can be easily commoditised.

Combatting “3 Bids & a Buy”

All too often, customers request proposals from three distributors and choose the lowest bid without considering the value a distributor brings to the relationship. To avoid this price-based competition, Royal looked at how technology could set them apart.

According to Dusty Siddoway, Royal's PC manager, they began using the ACTYLUS™ Smart Bin Solution from Apex Supply Chain Technologies® to automate some of the distributor's vendor-managed inventory (VMI) programmes. One of their first installations was with Intermountain Electronics (IE). IE manufactures rugged electrical distribution and control equipment designed for the oil and gas, mining and power generation industries.

Before the ACTYLUS Solution, IE was using a large, homemade metal shelf with slots to store its components. Bulky by design, it could easily accommodate any inventory IE might have on hand. This resulted in IE carrying surplus inventory, at significant expense.

“It was obvious IE had more inventory on hand than they needed,” said Siddoway. “We knew automating their VMI program for electrical components would decrease their inventory and make them more efficient. This frees up money and floor space for IE, without creating any new or additional costs.”

Solution Allows For 24/7 Inventory Monitoring

Now three ACTYLUS racks, with a mix of 144 large and small bins, handle the homemade shelf's SKUs with room to spare, all within a smaller footprint. Its LED lighting and brightly colored bins make it easier for workers to identify components accurately. For Royal, the biggest benefit the solution brings is the one you can't see, the Apex Trajectory Cloud™ data platform.

“With the Trajectory Cloud platform, we know when IE's bins are running low,” said Siddoway. “This helps prevent stock-outs and eliminates the need for us to conduct bin checks. And since IE is located in Price, Utah, every customer visit entails a four-hour round trip. So, this visibility into IE's material flow is critical.”

Trajectory Cloud can be accessed online from any computer or through a mobile phone. In addition to automatically notifying Royal when preset minimum thresholds are reached in each bin, it generates monthly reports to show IE inventory consumption.

“We wanted to eliminate bin checks from the replenishment process,” says Siddoway. “The 24/7 access to real-time inventory levels makes this possible. We would not have this customer without having the ACTYLUS Smart Bins in place.”

With an accurate inventory count, Royal provides IE with only the amount needed to replenish its inventory each week. This has helped streamline the procurement process and decrease the number of suppliers needed to service IE.

Since the ACTYLUS Smart Bin Solution virtually eliminates stock-outs, IE no longer needs safety stock. All of this, in turn, decreases IE's spend and their inventory manager has been able to make better use of her time. This includes working with Royal to look at opportunities to expand IE's use of this technology.

ACTYLUS Brings Royal New Business & a Fast ROI Not only has ACTYLUS made Royal more competitive, it's also proven to be surprisingly affordable. To that end, Royal's smart bin systems were obtained through the Apex Complete Technology Subscription (ACTS). This leasing program makes the investment in ACTYLUS an operational expenditure. Based on this and on Royal's ability to calculate a return on their investment, the ACTYLUS solution has been easy to afford.

Siddoway simply takes the amount of revenue ACTYLUS generates each month, subtracts the cost of the ACTS subscription and reflects the cost savings generated by only having one visit to IE each week. Using these factors alone, Royal estimates it sees a return on investment every month.

This math may become even more attractive for Royal. With 12 empty ACTYLUS bins in its system, IE can give more SKUs to Royal. And as the ACTYLUS Solution enables remote site monitoring, the distributor has been able to expand its new business efforts to a broader geographical area.

“By automating VMI replenishment, we can expand our business without investing in additional overhead,” said Siddoway.

ACTYLUS Smart Bins have helped set Royal apart from its competitors and expanded new business conversations to a broader base of potential customers. This helps ensure its services won't be commoditised with other distributor programmes. Instead of focusing on “a vendor's price,” now Royal can show their potential and existing customers “a business partner's value.”

To learn more about ACTYLUS Smart Bin Solutions from Apex Supply Chain Technologies, visit:
www.apexsupplychain.com/gb/feature/actylus-2/
 or email us at:
info@apexsupplychain.com.

MOVUS Gets Investment Injection To Support Growth and Drive IIoT For Industry 4.0

MOVUS, the developer of Industrial IoT (Internet of Things) sensor and machine monitoring solution, FitMachine® ‘the Fitbit® for machines’, has secured \$4.8M in Series A funding.



The round, led by Blackbird Ventures, included Telstra Ventures and Skip Capital (Atlassian co-founder Scott Farquhar’s private investment fund).

The investment will allow MOVUS to scale up to international markets, further refine its product, expand its Research & Development Lab, and grow its team.

In just under two years, MOVUS has developed and launched a cost-effective Industrial Internet of Things (IIoT) sensor and software-as-a-service (SaaS) monitoring platform, FitMachine. The platform uses Artificial Intelligence (AI) to help organisations proactively monitor, manage, and maintain the condition of their industrial machinery providing compelling return on investment by reducing the need for manual inspections and turning unplanned outages into planned situations.

Known as Industry 4.0, the Predictive Maintenance market is expected to be a USD \$5bn industry by 2021. With its disruptive FitMachine technology and uniquely customer-focused business model, MOVUS is poised to rapidly capture share in this growing market.

“This Series A funding is critical as we are poised to scale with many new customer deployments which allow us to accelerate growth globally and pass on the benefits to customers via more rapid delivery of

improvements. We’ll also be growing our engineering team and are particularly interested in people with a passion for hardware design and machine learning,” said Brad Parsons, CEO and Founder of MOVUS. “Our vision is to transform machines across their lifecycle to dramatically improve these industries for the benefit of the planet.”

With a track record of investing in high growth digital businesses, Rick Baker, Co-Founder of Blackbird Ventures said “Industrial machinery is the engine room of our economy and the FitMachine plays a crucial role in ensuring it runs smoothly and efficiently. We’re proud to join the journey of MOVUS.”

MOVUS serves the transportation, oil & gas, mining, energy, manufacturing, water and utilities, agriculture, building & facilities management sectors. It has already secured a growing list of domestic and international clients including Wesfarmers Chemicals, Melbourne Water, University of Queensland, Unitywater, and Bombardier Transportation among others.

“Water Utilities globally are transforming how they operate, how they utilise assets and manage Asset Lifecycles. MOVUS FitMachine has come through Isle’s TAG program as it is a great example of Industrial IoT. FitMachine has gained great traction in the water sector as it is simple to deploy

and generates powerful insights for predictive maintenance. MOVUS has demonstrated an ability to execute coupled with a completeness of vision for IIoT,” said Timothy Day, Managing Director at Isle Utilities (UK).

MOVUS will be deploying in the UK from May.

About MOVUS

Headquartered in Brisbane, Australia, MOVUS specialises in Industrial IoT (IIoT). Its FitMachine® technology transforms dumb machines into ‘smarter machines’ and enables this on a global level through consumer styled simplicity combined with world class artificial intelligence.

The Benefit of MOVUS and IIoT For Industry 4.0 Siemens recently published a report that said that only 3% of the world’s machines are internet connected. IIoT is the key to enabling the other 97% of machinery. Without internet connectivity through the IIoT, then the benefits of industry 4.0 are difficult to achieve. Existing technologies such as SCADA and PLC technologies are extremely useful for control and protection of machinery, however they provide very little value in terms of machinery health, utilisation, location and more. These are areas where we are filling the gaps using IIoT.

The FitMachine overcomes several large hurdles that inhibit broadscale adoption of Industry 4.0, namely speed of adoption (our units can be installed and running in 5 mins), complexity of machinery (our units operate, regardless of make and model), complexity of data (our Artificial Intelligence Engine is the result of years of research and development, it handles complex data) and finally scalability (our cloud based platform has been specifically architected for massive scale, using leading edge Amazon Web Services technologies).

FitMachine has been designed and built by the MOVUS team who have decades of industrial and technology industry experience. It is this applied experience that companies can leverage to kick off their Industry 4.0 rapidly, with low cost and low risk.

For more information please visit:
www.movus.com.au

Fulton's PURE Technology approach achieves world-first vertical steam boiler design with highest efficiencies and ultra-low NOx emissions

The all-new gas-fired, vertical spiral-rib tubeless steam boiler from Fulton, the VSRT, is the first range to emerge from the company's new 'PURE Technology' approach, an initiative that has resulted in a world-first design that is durable, long-lasting and boasts the highest efficiencies and ultra-low NOx emissions as standard.

By adopting a systems-engineering approach to design and implementing PURE Technology – the result of a clean-slate design approach that combines new people with new skills bringing a new approach to the design and optimisation of heat transfer solutions – Fulton's VSRT radically challenges the heat transfer and mechanical design principles of traditional steam boilers. It is also claimed by the company to be the most radical change to vertical steam boiler design since Fulton pioneered the vertical tubeless boiler in 1949 and, for the right application, a worthy successor to the company's renowned J Series.

Commenting for Fulton, sales and marketing manager Leigh Bryan says: "To meet ever-more stringent industry and environmental standards, our PURE Technology approach looks to enhance heat transfer, provide class-leading efficiencies, improve steam quality and reduce NOx emissions. So rather than improve existing products to achieve these goals, PURE Technology radically challenges

conventional boiler design by engineering solutions that are fit-for-purpose and applications."

With over 15 patents pending in three continents, the VSRT's spiral-rib heat exchanger is a world first. It attains industry-leading heat transfer rates thanks to its unique spiral design, which achieves low stack temperatures by passing the flue gases through a spiral-wound heat exchanger that is fully immersed in water.

"This all-new spiral-rib design benefits from an extended heat transfer path and dual-direction heat flow, with the spiral annulus designed and optimised to create high heat transfer rates," says Leigh. "This optimises heat transfer to create a longer-lasting boiler that we believe will beat the competition in every category of durability!"

The ground-breaking spiral rib heat exchanger design not only allows Fulton to improve boiler efficiency but, with virtually zero thermal stress, a thick walled construction and featuring vertical tubeless design architecture, the VSRT is one of the most durable steam boilers available.

It features a fully water-backed pressure vessel, which is wrapped in high-density insulation to achieve minimal thermal losses and low outer surface temperatures. The tubeless design has also enabled Fulton to create a compact boiler with minimal footprint. No refractory also means significantly lower weight (compared to traditional vertical steam boilers) for ease of installation.

Ultra-low NOx emissions of less than 20ppm are achieved thanks to the VSRT's combustion technology, which features a modulating burner and furnace that have been purposely-designed as a single component and fully-matched with the VSRT in mind. This has helped Fulton to achieve up



to 10:1 turndown capabilities and industry-leading performance of >82.5% gross thermal efficiency and 99.75% steam quality at 8 bar. When correctly sized for applications, the exceptionally high turndown will result in savings above and beyond those gained from the stated efficiencies.

With features including a tubeless design, no internal refractory and revolutionary cyclonic air filtration, the VSRT is extremely easy to maintain and operate. For applications where contaminated air can reduce boiler uptime – such as laundry and dry cleaning – the VSRT's cyclonic air filter effectively separates debris and damaging particles from the combustion air and, because it won't clog over time, eliminates the need for replacement filters. Maintenance is further improved compared to other vertical boilers thanks to the VSRT's industrial control platform and easy access to the pressure vessel.

The VSRT is currently available with outputs from 160 to 960 kg/h, complies with the City of London Air Quality Strategy and anticipated MCPD regulations, is constructed to BS EN 12953 and CE marked to PED. Its pressure vessel and burner are backed by a five year guarantee as standard.

For further information on the VSRT Series, call Fulton on 0117 972 3322, email sales@fulton.co.uk or visit www.fulton.co.uk.



Riello Extends RX Premix Burner Range

Riello has recently extended its RX range of premix packaged burners.



Building on the tried and tested RX range with outputs up to 1500 kW, Riello has now extended the offering with numerous variants up to a 3 MW model, whilst still achieving NOx levels of less than 30mg/kWh, combined with very low noise output - Riello RX premix burners feature a unique design

that includes a patented woven wire gauze 'sock' covering the combustion head cylinder.

Unlike traditional pressure jet burners, in RX premix burners the gas and combustion air are mixed upstream of the combustion head. The mixture

then passes through precision-located ports and the patented gauze 'sock' to ignite on the external surface of the combustion head. The result is a very compact flame with a diameter directly related to the burner firing rate, ensuring precise heat control and optimum efficiency at all loads.

Riello premix technology enables high turndown ratios of up to 8:1, making RX burners ideal for systems with variable heat loads, from condensing boilers through to process applications such as spray booths and industrial ovens.

RX burners can be used in conjunction with variable speed drive motors to reduce electricity consumption and lower noise levels even further than the typical 30% noise reduction compared to many other combustion applications. Control options include progressive two-stage operation and fully modulating via 0-10V or 4-20 mA. Full electronic control with operational and diagnostic display is also available.

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Adding Steam To A Biomass System Can “Turn A Good Opportunity Into An Unmissable One”

As industry's drive towards greener fuel sources continues, biomass users could gain up to double their Renewable Heat Incentive (RHI) income by adding steam to their processes, it has been revealed.

Angelo Giambone, business development manager for Spirax Sarco in the UK, believes many remain unaware of the potential to double their RHI payments, while also reaping the benefits of cogeneration.

“Industries that implement biomass have a fantastic opportunity to increase the RHI that they receive, while generating a small amount of power for their plant,” says Angelo.

“Generating steam instead of hot water in a biomass system allows the latest technology in electrical power generation to be used. This production of electricity from a ‘renewable’ fuel then allows users

to claim as much as double the RHI benefit. Once the power is generated, the steam can then produce the hot water the site needs.”

While the UK government's introduction of the Renewable Heat Incentive (RHI) to encourage investment in biomass was relatively well-publicised, the versatility and efficiency of steam remains largely understated. Today, steam plays a vital part in industry worldwide, from pharmaceuticals to clothing, food production and healthcare.

Angelo continues: “Combustion advances and government initiatives have now brought the hi-tech world of steam to a whole new group of users, who



stand to benefit in a big way.

“The beauty is that any industry can benefit. Opting for a steam biomass system is effectively a greener way of turning a good opportunity into an unmissable one.”

For more information on Spirax Sarco's extensive range of steam products and services, visit spiraxsarco.com/uk, or for expert advice on improving the performance of a steam system, visit the Spirax Sarco blog.

THE SHOW MUST GO ON!

The Importance of Quality Servicing & Maintenance

Anyone who has ever had responsibility for 'keeping the show on the road' in any type of factory or processing facility understands the necessity of keeping all the production equipment working at optimal pace.

Service and maintenance are fundamental to that, providing a far greater chance of the plant running smoothly between maintenance visits.

Never has that been truer than in the case of process heating systems. Certainly with Steam Generators and Steam Boilers, regular attention is required. Even in the case of thermal fluid heating systems, which are considered by far the easiest to run and maintain, regular servicing pays dividends.

Manufacturer or Service Company to the Rescue?

You might think that the logical option when looking for a service and maintenance provider is to opt for a dedicated service company as that's all they do. A manufacturer, on the other hand, has its primary business making and selling machinery and servicing is an added extra.

However, can you really expect a service company to know every piece of machinery in depth? To service and maintain process heating systems, it's essential the service supplier has an extensive knowledge and experience of that specific machine model and the back up to support it. Service companies by their very nature have to work on a variety of different manufacturer's products, whereas the manufacturer designed it, built it and have serviced the same models over many years; their wealth of knowledge is second to none when it comes to that piece of kit.

What Constitutes Quality Servicing?

The key factors at the heart of good servicing surely have to be reliability and support; supporting the product and giving the customer a solution to the problem at hand.

Babcock Wanson always provides customers with detailed equipment instruction manuals, but let's not forget that process heating systems are a lot more complex than your average consumer item and the manuals reflect this; they too are large and complex. We find customers often prefer to ask us about an issue directly and receive a response either with the information they need or an action to be taken, and we're always happy to help. That level of support should also extend to associated equipment and the overall process.

Some service companies offer an "out of hours" service, but the reality of such a service is that the person on call will most likely only re set the machine, leaving any repair works to the following day. A far better alternative is to empower onsite staff to solve basic problems by ensuring they are trained and competent and have relevant spare parts on site. The level of that customer training should therefore be considered a factor when selecting a company to perform your servicing.

Lastly, consider access to spares when making your decision. Service companies will struggle here as they cannot possibly keep spares for all the machines they service and their knowledge will be minimal for all but the most common parts. A manufacturer will be better placed for this.

What should be included in a Service Contract?

Flexibility is important here. All manufacturing plants are different and the service contract you choose should reflect that, rather than being an off-the-shelf type contract.

Generally a rolling one year contract is the norm, which features one major visit to investigate all aspects of key maintenance tasks. Most customers



also choose to have at least one other interim service visit per year, with a visit every quarter being the most common. Customers understand the greater likelihood of any potential problems or future failings being identified and addressed during that minor maintenance visit. Unlimited telephone support should be offered as standard.

The agreement itself can be inclusive i.e. covering parts and labour, and can also include spares holding.

We are finding that many customers are now opting for extended warranties on equipment as part of the service contract. It's convenient for the customer as they pay a single annual fee so can budget for it accordingly and don't have the hassle of raising purchase orders and all the admin that surrounds that.

Of course, you don't have to have a service contract at all. You could simply have a service company that you call in when needed but be warned: it's likely to cost you more and take longer.

Babcock Wanson offers a complete range of products and services for boiler houses and other process heating needs.
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www.babcock-wanson.co.uk

Bosch Launches Series Of High Efficiency Air Conditioning Solutions

- 3D DC inverter technology offers significant energy savings
- The Climate 5000 ranges can be used alongside larger commercial air conditioning systems such as the Bosch Climate 5000 VRF
- The units provide hot and cold air to meet requirements, all year round



Providing efficient, effective and environmentally-friendly temperature control, Bosch Commercial and Industrial has launched its comprehensive range of residential air conditioning (RAC) solutions.

The Bosch Climate RAC air conditioning units, suitable for new installations in domestic and small commercial properties, come paired with a comprehensive after-sales service. This comprises of five years parts and labour warranty, a contact centre open 364 days a year, and Bosch trained engineers providing national coverage and quick onsite response time.

The new range can also be used in conjunction with larger commercial air conditioning systems, such as the Bosch Climate 5000 VRF, to support temperature-critical areas.

Included in the series are the Bosch Climate 5000 RAC standard Split and the 8000 RAC premium Split air conditioning unit, which are both available

in outputs of 2.6kW, 3.5kW, 5.3kW and 7kW. The systems feature five operating modes, which can be adjusted to application and comfort requirements in order to offer greatly improved performance and efficiency.

Using 3D DC inverter technology, the Bosch Climate RAC air conditioning units offer 40% lower energy usage, compared to conventional systems. A compressor and fan speed electronic drive allow units to produce hot and cold air to meet the requirements of the property, while the brushless 3D DC inverter interior and exterior fan motors are both quieter and more energy efficient than traditional units.

The systems utilise R410A refrigerant, which is highly efficient, non-flammable, and can withstand high operating pressures. An in-built purifying filter also eliminates up to 95% of dust particles, smoke, and pollen, in order to provide cleaner air flow and maintain air quality.

In addition to these features, the premium range of air conditioning systems offer a swing function for better distribution of air, an intuitive display, and a fault diagnostics function. What's more, these systems have low energy consumption in stand-by mode and can offer energy savings of up to 60% on normal operation during ECO mode.

Installation is simple for qualified refrigeration engineers, with a mounting template for the interior unit. Crucially, the units are extremely simple to operate too, with various integrated functions and the option to use remote controls.

Shaun Mansbridge, Business Development Director at Bosch Commercial and Industrial, comments:

"We are really excited to launch a new range of Split air conditioning systems. Improving efficiency and reducing energy costs, while ensuring a comfortable environment for occupants is a key challenge for any building, and these new units offer an effortless solution. With the ability to supply both cool air and heat, the Bosch Climate RAC range is suitable for a whole host of applications. The innovative systems are also compact, quiet, and stylish, helping them to fit seamlessly into any building."

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).

SKF Shows How To Maximise Machine Productivity At Hillhead 2018

At Hillhead 2018 (Buxton, Derbyshire, 26 – 28 June), SKF will highlight a range of products, services and technologies designed to increase uptime and reduce maintenance costs for quarry and construction plant operators.

Luton, 12 April 2018: SKF is a regular exhibitor at Hillhead, the world's largest demonstrator event for quarry, construction and recycling equipment and plant. The company's focus this year will be on improving productivity by increasing the availability of machinery, while reducing the frequency of maintenance in some of the toughest of industrial environments.

Sealed SKF Explorer spherical roller bearings, a product synonymous with SKF, will feature prominently on the stand. Designed to operate in extremely dusty and mechanically arduous conditions, this bearing type has been upgraded to a new level of performance. Featuring a combination of high-quality steel and an improved heat treatment, the bearings deliver improved performance under contaminated or poor lubrication conditions. The upgraded bearings are ideally suited to quarrying operations, which are subject to high levels of mechanical vibration and shock, particulate contamination and/or poor lubrication regimes.

Visitors to the stand will also experience the ultimate in contaminant protection – the SKF Three-Barrier Solution. Incorporating a standard SNL housing, a sealed SKF Explorer spherical roller bearing, labyrinth S-seals (or SKF Taconite Seals

for ultimate protection) and SKF Biodegradable Bearing Grease LGGB 2 in the housing which acts as a contamination barrier. This housed bearing unit delivers consistently higher performance over the longer term in challenging contaminated environments, compared with that of competing products.

Among the other market-leading bearing developments displayed will be solutions specifically introduced to reduce machinery repair times. These include examples from the SKF Cooper split bearings range, which feature a 'split to the shaft' design that allows bearings to be more easily removed from so-called 'trapped' applications (difficult-to-access locations in machinery that would otherwise require the dismantling of large components), saving both time and money for the quarry operator.

Demonstrated for the first time at Hillhead will be two new condition monitoring solutions. SKF QuickCollect is an easy to use, Bluetooth enabled, handheld sensor that connects to apps that work with both iOS and Android tablets and smart phones. Combining vibration and temperature sensing, overall data can be viewed on the spot in real time or pushed to the cloud for future analysis.



The SKF Multilog On-line System IMx-8 provides a complete system for early fault detection. This compact device offers eight analogue and two digital channels, with connectivity to mobile devices as well as laptops for easy configuration and monitoring. Machine intelligence data will help you avoid unplanned downtime and schedule maintenance proactively, prolonging machine availability whilst minimising maintenance and repair costs.

Product and technical specialists will be on the stand to provide advice on the deployment and utilisation of the complete range of solutions developed for the quarrying and construction sectors, maximising your plant availability through improved asset reliability.

See SKF at Hillhead: stand F2.

For further information visit:
www.skf.com

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Bottled water producer Highland Spring selects Mainsaver CMMS

Spidex has announced that Highland Spring, a leading supplier of natural source bottled spring water, has selected Mainsaver CMMS to support best-practice maintenance at its plant in Blackford, Perthshire.



The new facility, part of a £50m investment programme, officially opened in July 2017 and was designed to increase Highland Spring's production capacity by 50 percent in response to rising consumer demand for bottled water in recent years.

Previously the company recorded its plant maintenance work using a bespoke software package that had been developed in-house. Head of Group Engineering Jonathan Bell recalls: "It wasn't a bad system, but it was just a record of what jobs had been carried out."

"What I actually required was accurate data on total cost of ownership for each plant asset. That means being able to assign expenditure like engineer hours, spare parts and contractor time for every maintenance job. The existing system didn't have

those facilities, so it became clear we needed to replace it."

Highland Spring approached several CMMS providers in order to assess potential solutions. After an initial evaluation, the field was narrowed down to a final three, each of whom was invited to present their system.

"Following the onsite demos, the project team felt that Spidex's Mainsaver offering was some way ahead of the other contenders" says Bell. "As a further due-diligence step, we then sought references from other Spidex customers in the food & beverage manufacturing sector to get a sense of the day-to-day practicalities of using the system. The feedback from those conversations was also very good, and made us confident of the eventual selection."

Following installation, set-up and user training, the first stage of the Mainsaver CMMS project was to establish the asset care and work order management regime. Having recently gone live, the initial signs are positive.

Jonathan Bell: "Our engineers are now able to log far more detail against each maintenance task, which is giving us valuable data to support our Reliability Centred Maintenance program. Another immediate benefit has been the availability of an End-of-Shift report, which has made the handover process between shifts slicker and more effective."

A recent audit for one of the Big Four supermarkets provided further encouragement. "The assessor was certainly impressed with Mainsaver, rating it as one of the best systems she'd seen" says Bell. "In fact, she said she'd have liked to have used it herself!"

"This kind of feedback helps confirm that we've selected a system that will support robust management of our maintenance activity and to help drive departmental improvement."

Having gone live with work order and asset management, the next phase will be to incorporate engineering stores inventory within the CMMS to provide even greater detail with which to analyse maintenance expenditure.

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

IMVAC Europe Keynote “The Future of Vibration Monitoring and Analysis – Will Computers Take Your Job?”

Mobius Institute founder Jason Tranter provides June 7th keynote address at the International Machine Vibration Analysis and Condition Monitoring conference held in Antwerp, Belgium, June 4-7, 2018.

ANTWERP – Belgium – IMVAC keynote speaker

Jason Tranter presents “The Future of Vibration Monitoring and Analysis – Will Computers Take Your Job?” This keynote examines a new age of intelligent, low-cost, wireless vibration monitoring (and the Industrial Internet of Things/IIoT) plus cloud-based software systems that utilize machine learning to detect and diagnose fault conditions. So, what does that mean for operators of industrial plants, vibration monitoring companies, service providers and vibration analysts across the world? Will the plant operators reach new levels of plant output and reduced costs? Will many of the traditional vibration companies go away? Will vibration analysts be replaced by computer systems? Or is it all hype? In this keynote presentation, Mr. Jason Tranter, founder and CEO of Mobius Institute, will attempt to answer these questions and explain what the current approaches are to the automated measurement and analysis of vibration and other process/condition data.

About Jason Tranter

Mr. Jason Tranter has been involved with condition monitoring and vibration analysis since 1984. In 1986 he formed product development company, ARGO, which was heavily involved in vibration monitoring and systems development. In 1990 he sold that company to DLI Engineering in Seattle (now AzimaDLI) where he directed product development, and later in charge of the entire DLI vibration product line. By 1999, he had returned to Australia and formed Mobius Institute, a vibration analysis training company. Today, Mobius Institute is the largest vibration analysis training company worldwide, provides comprehensive plant-wide reliability improvement training, and is the parent company of the global IMVAC conferences.

About IMVAC

The International Machine Vibration Analysis and Condition Monitoring (IMVAC) conference is a



professional development conference serving vibration analysts, condition monitoring technicians, condition monitoring managers and reliability engineers who want to improve their knowledge about vibration analysis and condition monitoring technologies. IMVAC provides unmatched learning opportunities that range from basic to advanced levels, having multiple streams of workshops, presentations, case studies and hands-on sessions delivered by condition monitoring experts. During 2018, IMVAC events will be held in Singapore, Belgium, Australia and the United States.

To learn more visit
www.imvacconference.com.

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The most cost effective oil and diesel fuel cleanliness monitor on the market just got better! Introducing the new Particle Pal V2

Filtertechnik's Particle Pal is a self-contained portable measuring system that gives ISO, NAS and SAE Cleanliness readings and the option of Water Content analysis for Oils and/or Diesel Fuels.



Complete with a re-chargeable battery, high pressure internal gear pump and controlled flow rate. Whether on-site or in the laboratory, the Particle Pal will provide cleanliness readings in real time to allow an Engineer to fully understand the condition of their oils or fuels.

The FS9V2 units now have a single LCD display showing all the connected sensors in real time. Filtertechnik have added an internal memory for capturing data with a simple USB data transfer of results that can be printed showing tabular and graphical results. Also included is powerful trending software which shows real time cleanliness data in graphical format via USB transfer to a connected PC.

Water sensors can be included to show the humidity of any oil as a % saturation. For diesel fuels a genuine water parts per million (PPM) sensor is deployed. Also for fuels Filtertechnik have developed a density sensor version which accurately detects the slightest change in a diesel fuel's density which

is helpful when fuel tampering is suspected.

All Particle Pal's can draw from oil stored in tanks or from sample bottles. Alternatively, the units can analyse oils from pressurised systems via a High Pressure adaptor which is capable of 350 Bar inlet pressures. Viscosities up to 420cst are catered for as standard with higher viscosity oils capable of being measured if pre-heated to 40-55 °C.

OIL TESTING:

In both Hydraulic and Lubrication systems knowing the particulate cleanliness and water content data can prevent serious system failures and component damage. By testing oil cleanliness in real time, the necessary protection can be put in place to protect sensitive components. Samples can be taken directly from the reservoir or direct from an active fluid power system (via a High Pressure Adaptor if necessary) or from an oil sample drawn from the system earlier. Results can be displayed as ISO, NAS or SAE cleanliness codes.

The Particle Pal can be used in a range of applications and industries including off-road plant, rail, construction, hydraulic and mechanical presses, marine and many, many more.

DIESEL FUEL TESTING:

The Standard Particle Pal FS9V2 is also suitable for measuring the solid particulate content in all diesel fuels. Results are displayed as ISO, NAS or SAE cleanliness codes. The diesel fuel market has adopted ISO cleanliness codes as the standard for ensuring fuel cleanliness. Ideally fuel should be at least ISO 18/16/13 as a bare minimum.

The FS9V2 is ideal for tank sampling, bottle sampling or drawing from a live system, for water analysis Filtertechnik have included an accurate, temperature compensated genuine Parts Per Million (PPM) water sensor. Also available is a highly accurate density sensor to detect the slightest change in diesel fuels integrity, this can be useful to detect if fuel has been tampered with or substituted with, for example, water or kerosene.

The all new Particle Pal range:

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- New FS9V2-RH Particle Pal: Live Particulate and % RH Water detection (oils only)
- New FS9V2-PPM Particle Pal: Live Particulate and genuine PPM (Parts Per Million) Water content (diesel fuel only)
- New FS9V2-PPM-DEN Particle Pal: Live Particulate, Water PPM and accurate Density sensor to alert to the presence of kerosene, water or any other foreign substance.

Particle Pal was proudly designed and built in Nottingham UK.

Further information can be provided by:
Richard Price, Managing Director
call: 01159003600
richard.price@filtertechnik.co.uk

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ISO	6µ	16		0.842 kg/l
ISO	14µ	12	Moisture:	
Temp	22°C			110 PPM
<div style="display: flex; justify-content: space-around;"> CHARGE USB MONITOR SUCTION </div>				

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- Particulate ISO codes
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Vibration Analysts; Worth their Weight in Gold

Genuinely good vibration analysts are worth their weight in gold. But how do you create good vibration analysts?

A good vibration analyst provides an early warning of faults, with a clear statement of what's wrong, what must be done, and the urgency of the required action. Good vibration analysts are accurate and confident.

How do you make a "good" vibration analyst? You train them at an Authorized Mobius Institute Training Partner Center.

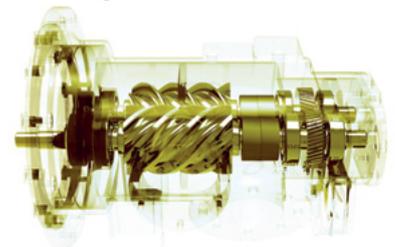
The difference is in the unique way we train them. In the old days, with "death-by-PowerPoint" presentations, the analysts just had to take the word of the instructor - "I know it is confusing, but take my word for it, this is how it is - and now we need to move to the next topic" is the attitude of too many instructors. People often came home from the course more confused than they were before. And sadly, this is still the case with the majority of (non-Mobius) courses today.

But Mobius approved instructors are different.

Mobius Institute approved instructors use training materials rich with 3D animations and sophisticated simulations - hundreds of them! The animations and software simulations explain the machinery failure modes, the vibration signals, signal processing, and the instrumentation. They make everything crystal clear.

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And that's the real difference. Mobius students



understand the machine, the failure modes, the root causes, the vibration patterns and analysis techniques, and the analyzer; they are not just forced to remember.

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Tackling Air Pollution Requires ‘Better Understanding Of Our Attitude To Cars’, Says Bureau Veritas

Amid recent pleas for tougher action to improve air quality, Bureau Veritas has called for a greater understanding of consumer attitudes to low polluting vehicles in order to speed up the phasing out of diesel and petrol cars.



It comes as a major new report by MPs – the first delivered by a joint audit committee across the multiple areas of transport, environment and health – recommends that Britain introduce new, more ambitious legislation to tackle poor air quality after estimates show it contributes to 40,000 early deaths each year and costs the UK £20bn annually.

The MPs are also demanding a faster phase-out of petrol and diesel cars. Currently scheduled for 2040, the MPs believe the ban should be brought forward

in line with India’s pledge that all new vehicles should be electric by 2030.

Dr Richard Maggs, Consulting Group Manager on Air Quality at Bureau Veritas, comments: “The poor level of air quality in the UK, particularly in urban areas, is a massive concern to population health and wellbeing. To tackle the problem head on, the move away from diesel and petrol vehicles must be accelerated.

“However, to achieve this requires the active engagement between behavioural scientists and air quality experts in order to rapidly change the British public’s perception of alternatives to petrol and diesel vehicles. Added to this, a complete overhaul of public transport and associated infrastructure for adoption of electric vehicles (e.g. charging points and battery storage) should be prioritised to overcome the significant barriers to a quicker adoption of low polluting vehicles and private vehicle alternatives.

“At present, vehicle ownership is still largely driven by socio-economic factors related to household incomes and reflects our status in society. Unless scrappage schemes remove older more polluting vehicles, their continued use remains an attractive proposition for low income households.

“On top of this, with the choice of vehicle also determined by performance and access to charging points, there also needs to be adequate infrastructure in place first to support alternatively-fuelled options; be it electric, liquid nitrogen or emerging hydrogen models.

“This, of course, is just one area of concern; local transport networks and pricing remain inefficient and unless an overall authority has control and management of transport modes similar to the Transport for London model, passengers will continue to find it difficult to move around using multiple payments across buses, trains and trams.

“Crucially, while the choice for better air quality is an obvious one, the plan for delivery is inherently complex and requires a greater understanding of how best we can influence consumers to switch faster to low polluting transport such as electric cars in order to achieve the level of air quality we all deserve.”

For further information:
call 0345 600 1828
or visit www.bureauveritas.co.uk.

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Find out more on our website: www.empteezy.co.uk

SCX's Double Recognition In Leading Awards

Sheffield specialist engineering group SCX is gearing up for two major awards ceremonies on the same night this month.

It is shortlisted in two categories at this year's Made in Sheffield awards, which celebrate the region's world class reputation for manufacturing quality, on April 26.

On the same evening, the Wincobank-based group, which is a leading mechanical handling solutions provider, is in the running for three prizes at the Yorkshire Business Masters Awards 2018.

The shortlists reinforce SCX's growing international reputation for engineering excellence, highlighted by its contracts for retractable concertina-style roofs for two courts at the All England Lawn Tennis Club at Wimbledon and the world's first dividing retractable pitch for Tottenham Hotspur's new stadium.

Last December the 45-year-old company capped its best-ever year by being named Large Business of the Year at the Sheffield Business Awards, backed by Sheffield Chamber of Commerce and Industry.

SCX group managing director Simon Eastwood said: "We are in for a busy night on April 26!

"These latest honours are further testament to the expertise, experience and commitment of our growing workforce and their efforts in 2017. We've seen enormous growth, groundbreaking projects, a full order book and the opening of our own training academy.

"It certainly looks like we are going to have another great year, despite these challenging times."

SCX is on the shortlist in two categories – Innovation and the overall Made in Sheffield 'Champion' award - of the Made in Sheffield awards, to be hosted by Yorkshire Business Insider at the Cutlers Hall.

The prizes reflect a commitment to upholding the reputation of one of the world's great brands in sectors as diverse as advanced manufacturing, materials technology, the creative and digital industries, food, biomedical / healthcare technology and the creative and digital industries.

Meanwhile SCX is on three shortlists in



TheBusinessDesk.com's Yorkshire Business Masters Awards 2018 – Innovation, Investment and Medium-Size Business of the Year.

The ceremony, at The Queens Hotel, Leeds, is one of the key dinners in the region's business calendar, attracting decision makers, business owners and senior managers from a wide range of high-profile companies and business sectors.

The SCX group has over 160 employees across its three divisions - bespoke precision engineering arm SCX Special Projects, crane servicing and repair firm Street CraneXpress and Burnand XH, which specialises in electronic, electrical, electromechanical and pneumatic control components.

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

Grasping The Next Generation Of Robotics

The Amazon Picking Challenge, set by global online retailer Amazon, challenged roboticists to create a robot that can pick and stow twelve products from a shelf, into a bag. The Shadow Robot Company, designer and manufacturer of state-of-the-art anthropomorphic robot hands, addressed the challenge with the help of precision bearing specialist, SMB Bearings.



Sounds simple right? Well Amazon set this challenge because this is the only area of their warehousing process that isn't currently mechanised, due to the sheer variety of objects to be packed. This presents a gap in robotics for a smart grasper that is able to recognise and pick different objects effectively.

Grasping is a problem for many industries, not just picking up an object — but grasping it well and ensuring that each grasp is correct for the object that's being picked.

"More and more I've had people come up to me asking how we can improve robotic grasping," said Rich Walker, managing director at The Shadow Robot Company. "The market is pushing us to improve the technology."

Standard industrial grippers are built to pick up one thing, move it and put it down. If you have two different sets of objects, you'll need two different grippers to perform the task. Modern manufacturers are increasingly diverse, producing reams of different products, often with custom finishes. Single use tooling is no longer sufficient to keep up with demand. There is a need for tooling that is easily adaptable to pick up many different types of objects.

The robot engineers at the Shadow Robot Company have had plenty of experience manufacturing dextrous robotic hands for academia and nimble work, but this type of robot isn't suitable for industrial applications. Instead, they looked to create a robust and reliable Smart Grasping System™, with the intelligence to recognise many different objects and select the appropriate grasp.

As part of the design process, the Shadow Robot Company needed specific bearings with very tight tolerances in dimensional accuracy. This is important for ease of installation and accuracy of the smart grasper's movements. So, the team contacted SMB Bearings as the business is well known for consistency and vast supply of non-standard bearings.

Based on the requirements of this unique project, SMB Bearings recommended and supplied EZO thin-type precision bearings.

"The EZO thin-type precision bearings we provide have such accuracy as a result of EZO's advanced manufacturing techniques and quality control," explained Chris Johnson, managing director at SMB Bearings. "If every bearing that comes off the production line is not the same shape and size every time, then the accuracy of the robot joint positions and overall behaviour would be compromised."

With the support of SMB Bearings and using a small sample of the EZO thin-type precision bearings, the research and development team at the Shadow Robot Company trialled different grease levels to find the optimal grease fill. As robotic movements need predictable and accurate some friction is essential to ensure this control. A process of testing and trial and error demonstrated the correct friction coefficient and its corresponding percentage grease fill for optimum performance.

SMB bearings then supplied the full amount of bearings required to this exact specification.

"These bearings were very easy to install in our Smart Grasping System™," said Luke Moss, robot engineer at the Shadow Robot Company. "This is a direct result of the quality, tolerance and consistency of these bearings, something that is essential for repeated assembly and high precision across multiple robots. Additionally, as the essential core to the lifespan of any robot, we expect these bearings to outlive most other parts of the Smart Grasping System™."

Created to stand-out from standard graspers on the market, the Smart Grasping System is still in development, but ultimately will have built-in "smart" intelligence, allowing it to pick up many types of objects, reducing the need for numerous hands in a factory. Additionally, torque sensing on each joint will ensure the Hand can make the most accurate and

reliable grasp of whatever object it picks up.

"Industry 4.0 is on everyone's lips at the minute, but we can't forget the basics," said Chris Johnson, managing director at SMB Bearings. "Bearings may not be considered smart, but if they enable the reliability and robustness of smart systems such as this Smart Grasping System™, then I guess that is as close to being smart as a bearing can get."

"I'm calling it transformative, because I know it will transform the manufacturing industry," added Rich Walker, managing director at the Shadow Robot Company. "When companies have deployed robots in the past, they've used grippers that were designed to perform one function, so you get a robot that performs one function. The modern manufacturing industry needs more flexibility than this, and the Smart Grasping System™ will address this need."

The Smart Grasping System™ will reduce the need for manufacturers to keep investing new grippers for different tasks. Changing machinery incurs huge costs, and takes up a lot of time. Equally, having many robots performing one single task is wasteful in terms of both capital costs and floor space. Together, SMB Bearings and the Shadow Robot Company are working to solve this real-world manufacturing problem, freeing up floor space for a more efficient production line.

Remember the Amazon Picking Challenge we mentioned? The Shadow Robot Company set its own picking challenge, using objects from Amazon's challenge as well as others, to put the Smart Grasping System™ to the test. The Smart Grasper recognised and grasped these objects with ease, demonstrating the success of smart engineering and high precision bearings, to give the manufacturing industry what it desperately needs.

For further information visit:
www.smbbearings.com

Medical Devices Are Copping A New Material

The Environmental Protection Agency (EPA) has recognized copper as the world's leading anti-bacterial metal. This has led to a number of uses and opportunities for copper in medical applications. Here, Melissa Albeck, CEO of materials comparison website Matmatch, explains the benefits of using copper in comparison to other materials on the market.



When you think of a typical hospital environment, you'll probably think of a sterile setting that is likely adorned in white. However, many hospitals are beginning to punctuate the clinical white with another colour; the reddish glow of copper.

For example, a hospital in Chile recently started applying copper or copper alloys to medical applications that require repeated touching and handling. This includes pens for inputting data on computers screens, bed levers and chairs for hospital visitors — all of which were traditionally made of plastic. This is just one example. More and more healthcare equipment designers are swapping out plastics for time-tested copper.

The copper industry is a major contributor to the global economy and used in everything from construction to electrical wiring. It's reported that a tonne of copper can be used to power 60,000

mobile phones and distribute electricity to 30 homes. In addition to being a ductile metal with very high thermal and electrical conductivity, copper also contains very potent antibacterial and antiviral properties.

Awareness of copper's natural antimicrobial properties dates back centuries. In fact, the Smith Papyrus, an Egyptian medical text written between 2600 and 2200 B.C, records the use of copper to sterilise chest wounds and drinking water. Evidence like this has led researchers to believe that copper compounds can not only cure disease but assist in reducing the number of infections.

This is particularly important in Europe, where a study conducted between 2011 and 2012 from the European Centre for Disease Prevention and Control found one in 18 patients were reported to have at least one healthcare associated infection each

day. Resulting in 90,000 deaths, infection can be spread among patients in a clinical setting by various means, including contaminated equipment.

According to the Environmental Protection Agency (EPA), copper can kill 99.9 per cent of bacteria that lands on its surface within two hours. In comparison, additional chemicals and contaminants can leach onto plastics and make them harmful to both humans and wildlife.

Similarly, stainless steel, which is another material used widely in hospitals and health-care environments, is known for harbouring bacteria and, if left uncleaned, can also lead to pathogens.

With these antimicrobial features in mind, it's no surprise that copper has become increasingly popular as an alternative to plastic in medical applications, such as sterile table tops and medical cart handles.

By replacing the current surfaces in hospitals with antimicrobial copper surfaces, it's reported that the number of healthcare associated infections could be reduced by 58 per cent, according to the Infection Control and Hospital Epidemiology.

Turning to traditional materials, like copper, offers designers some surprising benefits compared to the materials that are currently used in medical applications. By helping healthcare professionals to significantly reduce the risk of spreading infections across a hospital, copper can help medical staff improve the overall quality of care for their patients.

For future projects, design engineers and product designers should look to Matmatch to research materials for their application. With over 90,000 materials to choose from, designers and engineers can search the required shape, material type and density to source the best material for their product.

For further information visit:
www.matmatch.com

The New uvex CBR65 Lens Ensures Sharp, Relaxed and Focused Vision with Blue Light Protection

uvex's latest innovation in its renowned safety eyewear portfolio is the new CBR65 lens tint, which protects eyes from harm while delivering relaxed, focused vision with sharp contrast and all-important blue light reduction, all in one lens.



This advanced new polycarbonate lens offers a three-point armour against potential eye damage. So, what does 'CBR' mean? The 'C' denotes improved Contrast, giving clearer vision, reducing strain from harsh light or reflective surfaces and increasing comfort, making the lens ideal for all indoor and outdoor applications and enabling wearers to focus on the task in hand without distraction.

The 'B' in CBR indicates Blue light reduction of up to 50% up to 450nm, rendering the CBR65 lens perfect for screen work and for use in bright, harsh, unnatural light such as LED lights, as well as outdoors to protect against the natural blue light emitted by the sun's rays. Blue light can be extremely harmful and may contribute to age-related macular degeneration (AMD).

The 'R' signifies a Relaxed field of vision, with 65% transmission of light, making the lens spot-on for tasks with high visual requirements such as close inspection, outdoor work, or jobs that require high levels of concentration, where the eye can easily and quickly tire. The CBR65 lens tint makes operating in workplaces with bright natural or artificial light much more comfortable, enabling the wearer to remain focused for longer without strain.

Both the popular uvex sportstyle and new uvex pheos cx2 safety spectacles incorporate the CBR65 lens tint. The uvex pheos cx2 lenses features uvex supervision excellence lens coating, making them permanently anti-fog on the inside, and extremely scratch and chemical resistant on the outside, while the uvex sportstyle features uvex supervision extreme lens coating, which also features permanent anti-fog and scratch resistant coating and has been specifically designed to withstand long-lasting exposure to condensation and a high degree of dirt.

To view uvex's extensive range of safety products, go to: www.uvex-safety.co.uk

All uvex products can also be quickly located via uvex's Product Finder App, available free from the Apple App Store.

To Repair Or Replace?

Over the years, contractors have found some odd things when taking up flooring, from gigantic bee's nests to the remains of royalty. Though this rarely happens, contractors can learn a lot about a floor covering from what's underneath. Here, Oscar Peralta, West Coast territory sales manager at surface preparation equipment expert, National Flooring Equipment, explains when to repair and when to replace a floor covering.

It's not always easy to tell when a floor needs replacing. It's important for building managers to stay on top of the issue, as if left for too long, a poorly maintained floor can cause health and safety hazards. To do this, building managers can keep track of whether their floor requires attention by assessing visible changes on the surface, as these can indicate that there is something problematic going on underneath.

Excess moisture

Most issues with floor coverings are caused by excess moisture in the substrate underneath. Too much moisture can impact the covering in many ways, causing issues including discolouring, bubbling and cracking.

Excess moisture in the substrate can have hazardous consequences, as floors can become slippery or workers can become ill from exposure to mould. Facility managers must work with contractors to address the issue as soon as it is found to avoid incidents.

What went wrong?

Water will follow the path of least resistance, so it easily soaks through floor coverings. One way it can reach the substrate is for water to enter the building from outdoor sources, such as sprinklers and drains directed towards the building.

Insufficiently preparing the substrate for a covering can also allow moisture into the surface. By choosing the correct adhesive and removing

contaminants, contractors can reduce the risk of moisture soaking into the covering and substrate.

Before determining whether to repair or replace the floor, contractors should peel back a section of the covering to understand what is happening underneath. Contractors can then address the cause of the damage, such as redirecting drains, before attempting to start repairs. This will ensure that the same problem will not happen again once maintenance has taken place.

Repair or replace

The size of the affected area will ultimately determine if the covering must be repaired or replaced. If the issue is isolated, it may be easier to repair that section individually. In this situation, facility managers may prefer to repair the floor, as it will only require the closure of certain sections of the facility at each point, not downtime of the entire site at once.

However, if the problem impacts a large area, it can be best to close the entire facility to replace the covering. Closing the site may be costly, but it is extremely important that the surface is correctly prepared and laid to avoid further damage.

Some coverings are easier to replace than others. Anything sold as tiles, such as modular carpet, is easy to repair, as the tiles in the affected area can simply be removed and replaced with new ones.

Soft coverings, such as vinyl, can be far more difficult to repair as they are bought in rolls. There is no way to cut out a section and blend a new



covering into the existing floor, which can make the repair work obvious. In this circumstance, it is best to replace the whole covering.

Whatever the covering needed, contractors must consider the appearance of the new area compared with the existing surface. Contractors should be particularly careful when choosing the dye lot. There is nothing more conspicuous than a replacement carpet tile that is the wrong shade of blue.

Preparation is key

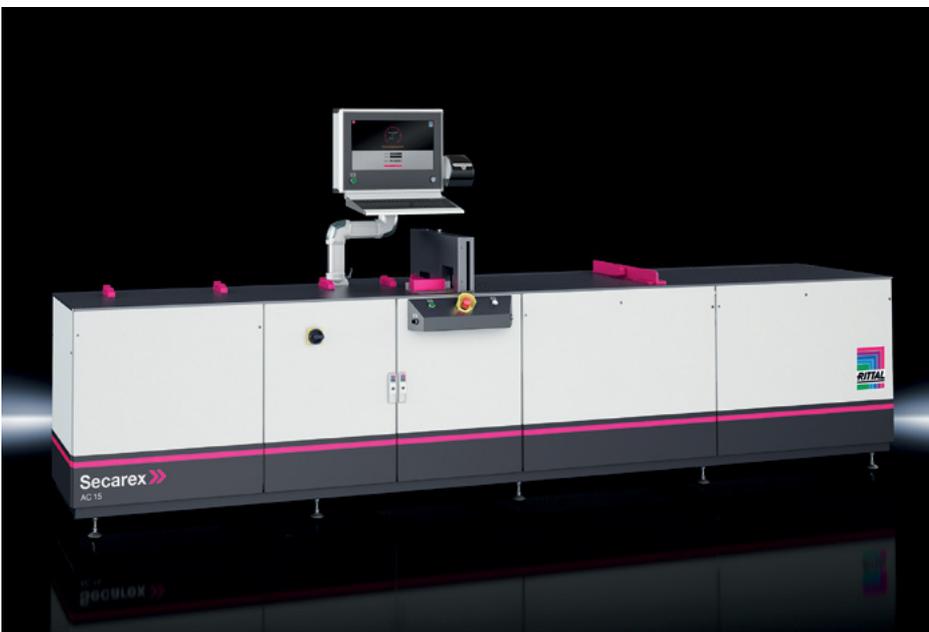
Downtime and repairs can be expensive for both facility managers and contractors. Both parties must prioritise preparing the substrate to avoid moisture and other issues that cause costly downtime from facility closure.

Contractors are unlikely to find royal remains under a floor covering during surface preparation work. However, they may find the issue to problems on the surface itself. Taking the measures to protect the substrate when replacing the covering can also prevent larger issues in the future.

For more information on how to correctly prepare a surface, visit www.nationalequipment.com.

The Easy Way to Machine Rails and Cable Ducts

Manufacturing switchgear can be very labour intensive. Despite the advances in automation, there is still a huge amount of manual work involved in cutting and machining busbars, support rails and cable ducts.



Rittal Automation Systems is now offering new and improved machines and tools that will help automate or part-automate these previously time-consuming activities.

The Secarex AC 15 cutting centre is just one example of an innovation by the company, making otherwise laborious tasks, easier, quicker and more efficient.

Cutting support rails and cable ducts to the right length is a task that many engineers still perform by hand. The rail is first measured on the mounting plate and then cut to the appropriate length. It may also be labelled with a felt-tip to denote a particular enclosure and its position.

The Secarex AC 15 cutting centre is an easy and simple-to-use alternative, controlled by a PC with a trackball.

The length of the rail can be set using design planning software (such as EPLAN Pro Panel), the information is loaded up and then the machine does the rest. If multiple rails are required, the cutting centre works out how to do with minimal waste while the integrated label printer marks the finished rails so they can be easily assigned during the assembly process.

The cutting centre is able to cut DIN support rails, C rails and cable ducts in all standard sizes.

Coming Soon: Cutting, bending and hole-punching copper bars

Working the copper bars used in switchgears for power distribution or as busbars are another job for the electronics workshop. The bars typically need

to be cut to length, bent, and may also have holes punched in them.

All this will soon be completed quickly and safely using the CW 120 (Copper Workstation) bending and hole-punching unit, which is shortly being launched in the UK.

Workshops will have a choice of either a stationary benchtop unit for cutting, bending and hole-punching busbars with external hydraulic supply, or a mobile version designed with castors for flexible use in the workshop, which comes with integrated hydraulic pump. Power is just a single simple 230-V mains connection.

Both options will process rails at a width of up to 120 mm and thickness of up to 12 mm and will punch round holes, varying in diameter from 6.6 mm to 21.5 mm. Slots will be machined up to a maximum width of 21 mm and length of 18 mm.

Stamps and dies for round holes and slots will be available as accessories and come in different sizes.

Ultimately, the major benefit is not just to make workshops more efficient. Automating processes also lowers operational costs but just as importantly it also delivers a better quality product for the customer.

Products from Rittal's Automation Systems range will be on show along with other solutions from Rittal – The System, at Drives and Controls (the NEC Birmingham, 10-12 April 2018), on Stand D720.

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

Fast, Simple, Effective: Rittal Edge Data Center for innovative IoT solutions

- Companies that employ machine-to-machine communication to streamline manufacturing require real-time capabilities.
- IT resources deployed in close geographical proximity ensure that latency is low, and data readily available.
- The Rittal Edge Data Centre provides an effective answer to this need. It is a turn-key, pre-configured solution based on standardised infrastructure. It can be implemented rapidly and cost-efficiently – paving the way for Industry 4.0 applications.

control, power distribution, UPS, fire suppression, monitoring and secure access. These units are available in various output classes, and can be easily combined for rapid deployment. Moreover, to safeguard critical components from heat, dust and dirt in industrial environments, the Rittal Edge Data Center can be implemented in a self-contained high-availability room.

As Clive Partridge, Rittal's Technical Manager for IT Infrastructure, observes: "The Edge Data Center allows organisations to quickly and simply establish IT environments equipped for the challenges of what's been termed "the fourth industrial revolution". Combined with the as-a-service offering that we jointly provide with iNNOVO Cloud, the Rittal Edge Data Center is a complete, one-stop solution for enterprises of all sizes."

They are then free to focus on their core tasks while harnessing the benefits of the Internet of Things (IoT) for their business. Hand-in-hand with its IT-as-a-service (ITaaS) platform provider iNNOVO Cloud, Rittal also offers private-cloud data centres in shipping containers, plus ITaaS. The containers are fully equipped with all key active components, such as servers, network connectivity and storage for immediate use.

The Rittal Edge Data Center can be extended two racks at a time. Moreover, the modular approach provides customers with diverse options, allowing it to accommodate a variety of scenarios – for example, installation in an IT security room, or in a container, to be located wherever it is required.



The sensors and actuators deployed in smart production systems continuously relay information on the status of processes and infrastructure. This forms the basis for innovative services – such as alerts, predictive maintenance, and machine self-optimisation – delivered by the company's IT department in real time. To make this possible, and to rapidly respond to events and anomalies, low latency between production and IT infrastructure is critical.

Fast, simple, effective

A remote cloud data centre is unable to support these scenarios. The solution is edge computing, i.e. computing resources at the perimeter of a given network. With this in mind, Rittal has introduced a new edge data centre: an end-to-end product with standardised, preconfigured IT infrastructure.

The Rittal Edge Data Centre comprises two Rittal TS IT racks, plus corresponding modules for climate

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

The Rittal Edge Data Center will be on show along with other solutions from Rittal – The System, at Data Centre World (Excel, London, 21-22 March 2018) on Stand D510.

Eco-Friendly Solution For Ergonomic Workplaces

A new Ketterer crank lifting system 3053 is now available from SD Products – the “green” solution for vertical adjustable work surfaces. It allows for stepless adjustment of working heights from of 590 mm to 1,250 mm in less than no time with minimal required installation space, all without electricity.

The new, purely mechanical crank lifting system from Ketterer allows a maximum lift of 660 mm. Tables can be adjusted quickly, because each crank rotation creates 40 mm of height difference. Thus any table height between 590 and 1,250 mm can quickly and easily be set with just a few turns. The new crank lifting system meets the European sit-stand norm DIN EN 527-1 for ergonomic workstations and even provides an individually ideal working height for taller people. The Ketterer lifting system runs extremely smoothly even under loads: Working surfaces can be easily and effortlessly adjusted up to a recommended load of a maximum of 40 kg. The lifting system is self-braking and holds a table in its fixed position up to a maximum table load of 120 kg.

Installation and adjustment of the table height takes place without electricity, only manpower is required. Here too, the smoothly running crank lifting system from Ketterer is extremely economical, because it can be easily operated without much effort.

Ketterer meets the individual requirements of its customers during construction and assembly. The Ketterer system is faster and easier to install than comparable products on the market. In addition, it is modular. An advantage of this design: The vertical adjustable tables can be sent with minimum packing dimensions.

The high-quality production and material selection makes the Ketterer crank lifting system extremely



durable and suitable for everyday use. Gear ratio, spindle pitch, and gas spring force are perfectly matched: Spring assemblies or counterbalances, as used in comparable systems, are unnecessary. This is how Ketterer creates the sleek design and hence small packaging units of the fast crank lifting system.

For more information visit:
www.sdproducts.co.uk

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WWW.SDPRODUCTS.CO.UK

REDUCE YOUR COOLING COSTS BY 90% with EcoCooling's direct evaporative cooling, ventilation and control systems.

With over 4500 installations worldwide, UK based EcoCooling are innovators in low energy, direct evaporative cooling and ventilation technologies. They have developed energy efficient cooling solutions to suit all types of buildings including data centers, comms rooms, industrial, retail and commercial.

EcoCooling's 1500m² of warehousing provides a manufacturing and R&D facility, as well as a storage base for all spares and coolers. This ensures that short lead times and adequate supply of spares are guaranteed.

Founded in 2002 EcoCooling provides energy efficient and low carbon alternatives to air conditioning. Developed from one of the oldest and simplest technologies known to man, EcoCooling have taken the concept of direct evaporative cooling and reengineered it to provide a sophisticated cooling and ventilation system that can outperform the alternatives on most counts.

Fresh Air Cooling with EcoCooling can provide a 3m³/s or cool a 30kW load from 1kW of power at a cost of under 14p per hour.

Simple ventilation can provide a perfectly satisfactory solution to cooling many industrial and commercial premises, however recent advances in fan technology, controls and evaporative cooling have now taken this principle to a new level of performance, which has proven to be very popular for industrial purposes.

EcoCoolers can either be used for blanket cooling a building or for spot cooling of workstations and production lines. The solution is perfect for factories, warehouses, and mezzanine floors. Clients include: TKMaxx, Cummins Diesel, Net-a Porter, and Matalan.

The EcoCooler is highly cost effective in comparison to traditional refrigerant air conditioning, and can operate on less than 10% of the running cost.

Cummins Diesel Engines recently invested in 42 EcoCoolers, due to very hot uncomfortable temperatures on their main shop floor. These units

introduce fresh, chilled and filtered air to the various workstations throughout their production facility. They are all controlled from two floor mounted centralised control panels. The system reduces summertime temperatures from over 30°C to a far more comfortable 21°C.

Many locations can maintain compliant conditions by using only 'free cooling' (fresh air). Multiple EC fans can be connected directly to simple temperature controllers giving the simplest of automated solutions. PLC's can be used where more stringent conditions have to be met or when heating and cooling systems need to be integrated.

Ventilation coupled with evaporative cooling and modern controls can provide industrial and commercial premises with a sophisticated air handling system that can compare with any air cooling refrigeration system at a fraction of the energy cost and provide a high level of control of the environment.

The EcoCooler is also available in several different configurations, meaning they are suitable for any location and are easy to install and come with minimal maintenance.

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.

INTERNAL PRODUCT RANGE (ECT): Compact and Flexible Solutions

The ECT range of coolers are designed to be installed internally. They have multiple configuration



options to allow for easy installation into rooms with limited space. Worried about getting it into your room? The ECT5400 will fit through a single door! Worried about water in your facility? For complete peace of mind a sophisticated alarm and leak detection system, capable of cutting off the water supply, has been incorporated into all of our internal products.

EcoCooling's R&D Department and Patents

EcoCooling are credited with revolutionising the control systems required to use the equipment in IT and air handling systems. The in-house R&D department works to incorporate the latest energy efficient technologies into all product ranges ensuring our clients have some of the most innovative ventilation and cooling systems in the world. This focus on innovation has also resulted in EcoCooling holding a number of patents for fresh air technologies.

Our complimentary in-house design consultancy service capitalises on our vast industry experience to work closely with consultants and clients to design the most efficient systems possible.

If you are having temperature problems in your factory please contact us on the number below.

More information and case studies are available on our website.
Tel 01284 810586
Email sales@ecocooling.org
www.ecocooling.org

FRESH AIR COOLING

EcoCooling Evaporative Cooling

Cost effective
cooling



Free Cooling

When the temperatures outside are low, outside air is used to cool the building or people



Evaporative cooling

On the hottest days, efficient evaporative cooling is used as an alternative to refrigeration



Filtration

A number of filtration options are available for different industrial and IT environments

EXPLOITING FREE COOLING - Guarantee temperatures below 23C all year round in your factory without using refrigeration.

Save up to 90% on your cooling costs with EcoCooling's evaporative cooling and free cooling solutions.

1000s of UK installations

Simple, safe and efficient.

AWARD WINNING EFFICIENCY
Industrial Cooling Specialists

Connecting The Pieces

Jason Peng, connectivity expert for Transtherm Cooling Industries Ltd, explores how IoT compatibility of cooling solutions is helping to improve the energy efficiency of factory equipment.



No longer a buzzword or a vision of the future, the Internet of Things (IoT) is a key driver in the UK's move towards smart manufacturing. Armed with more data than ever before through enhanced reporting and greater connectivity of devices, manufacturers are making great strides to improve productivity, reduce operating costs and enhance worker safety. And this is just the beginning.

Accenture predicts that Industrial Internet of Things will boost the UK economy by \$531bn by 2030. Globally, McKinsey estimates that IoT will have a potential economic impact of up to \$6.2 trillion by 2025 whilst Accenture goes even further to say it could add \$14.2 trillion to the world economy over the next 15 years.

If we are to make the most of this emerging revolution, however, it needs an honest and joined up approach from the entire industry. Engineering and manufacturing equipment can no longer operate in isolation and those supplying the industry with innovative plant solutions can no longer be precious about the role played by their own equipment. The Internet of Things will only drive optimum efficiencies if it is applied across the entire facility.

Benefits of connected cooling systems

Take cooling equipment, for example. Back in 2015, Transtherm led the way by integrating PLC (Programmable Logic Controller) interfaces into our industrial cooling systems. These enable smart communication between complex machinery including the cooling solution and software systems such as the building management system, in order to give greater control of the building environment and maximise system efficiencies.

The benefits of IoT connectivity are plentiful – and will not come as a surprise to any forward thinking manufacturer. With the addition of PLCs, operators can check read parameters such as energy consumption, adjust write parameters such as water temperature and understand the impact that changes will have not just on the cooling system, but on other related equipment too. It means improved efficiency, whilst facilitating the option to check performance and even prevent downtime by spotting problems earlier and undertaking preventative maintenance. And all this at the touch of a button from a central control point.

Crucially, this development enables a holistic, 'whole

facility' approach to sustainability, really pushing the door wide open for lower energy bills and reduced carbon emissions.

One of the biggest barriers to improving energy efficiency remains the fact that too many companies don't understand other systems well enough. That doesn't just mean a technological interaction between appliances – it's a human interaction too.

OEMs and specifiers of related products must work closely right from the initial design stage to establish the optimum conditions for the system as a whole, rather than individual products - particularly where sold as packaged solutions.

Cooling systems, for example, are designed to reduce the temperature of other equipment. But by analysing the effect this change has on entire system, it could mean greater energy savings overall.

Added value

Energy efficiency – and the subsequent reduction in energy bills - is not the only benefit of connected cooling systems, however. Having instant, remote access to data reports covering every aspect of the equipment means it is far easier to maintain compliance with regulatory schemes like ESOS, the Energy Savings Obligation Scheme, which requires large organisations (more than 250 employees and turnover in excess of €50m) to audit their energy usage. Enhanced connectivity can also improve safety and reduce downtime, by automating processes which might previously have needed human intervention.

Whether specifying equipment directly or as part of a packaged solution from an OEM, manufacturers are now firmly switched on to the benefits of IoT compatibility. In fact, as we hurtle towards Industry 4.0, it is widely recognised that any investment without such compatibility would soon become obsolete. Don't settle for anything less.

Transtherm Cooling Industries
www.transtherm.co.uk
Tel: 024 7647 1120
Email: sales@transtherm.co.uk

ICS Cool Energy Launches Definitive Guide To Cutting Costs For Industrial End-Users

With the spotlight firmly on energy consumption within the manufacturing industry, temperature control specialist, ICS Cool Energy, has unveiled a new, free-to-access guide with the aim of helping industrial end-users to reduce carbon emissions and energy costs.



With industrial cooling and refrigeration equipment (including pumps, chillers and fans) accounting for a significant proportion of a plant's total electricity cost, there is clearly a need for industrial activity to be undertaken in as efficient a way as possible for ultimate savings alongside minimal environmental impact.

'How to reduce your energy costs: A guide to temperature control efficiencies' highlights several short and long-term actions that can be easily implemented to start delivering more efficient systems that will reduce both carbon emissions and utility bills. Included in the guide, are more details on

several techniques and considerations to improve the efficiency of temperature control equipment used in industrial applications, including free cooling, heat recovery and refrigerant choice.

Richard Metcalfe, Sales Director at ICS Cool Energy, comments: "Inefficient or under-performing temperature control equipment can have a dramatic impact on energy usage and therefore costs, yet it can often go unnoticed by industrial end-users with limited in-house technical knowledge and expertise in this area.

"However, support is available from equipment

manufacturers and funding such as The Carbon Trust's Green Business Fund. This particular scheme is designed to help small and medium sized businesses to identify energy saving opportunities and offers grant funding for energy efficient equipment, helping them to reduce carbon emissions as part of their corporate social responsibility.

"Although making changes to equipment and processes can at first seem a daunting prospect, these changes can result in significant energy savings for industrial users. Whether it's upgrading the internal elements of a chiller to factoring free cooling into a new-build installation, our new guide aims to help end-users take back control of their site's energy consumption to improve profitability and boost their CSR profile."

Russ Baker, UK Sales Director of the hire division at ICS Cool Energy, adds: "Maximising efficiency during seasons where free cooling is more plausible can be made easier with the option of equipment hire which will ensure equipment is only used when needed."

To download a copy of 'How to reduce your energy costs: A guide to temperature control efficiencies', on our website.

For more information about ICS Cool Energy, please visit:

www.icscoolenergy.com

email info@icscoolenergy.com

or call 0800 774 7426.

Follow ICS Cool Energy on Twitter

@icscoolenergy.

“Rittal – The System” on show at Drives and Controls 2018

Visitors to Rittal’s Stand D720 at Drives and Controls 2018 will be able to see Rittal’s renowned infrastructure solution - widely specified as the No.1 choice for protecting critical equipment - plus some exciting new product innovations.



“Rittal - The System” has five, wholly compatible components: enclosure, power, cooling, security, and monitoring with remote management, all of which will be on show. Alongside them will be information about panel-building automation, as well as servicing and maintenance programmes, designed to maximise a system’s efficiency, flexibility and longevity.

The Rittal team will be on-hand to discuss key issues such as:

- How can controller and switchgear manufacturers implement Industry 4.0 (Internet of Things) solutions, automate production processes and set up data centres quickly and easily?
- How can systems and people be reliably protected against danger?
- How can power consumption be made transparent and significantly reduced?
- How can maintenance scenarios for cooling devices be planned in advance?

- How can enclosures in the food industry be hygienically climate controlled?

Innovations in Power Distribution and Climate Control

Rittal will also be showcasing product development and innovation at the show. These include an extension of its RiLine Compact power distribution system in the form of the new RiLine Compact motor control unit. Added to which, the team will be demonstrating the company’s new push-in conductor connection clamps for the fast and tool-free mounting and connecting of cables to busbars.

The Blue e+ cooling unit range has also been upgraded and extended. It now includes appliances in the lower output range with a cooling output of 1.6 kW (previously 2 to 6 kW).

Furthermore, the new IoT Interface means Blue e+ cooling units can be networked with customer-specific monitoring and energy management

systems. This, in turn, makes it possible to add new applications such as predictive maintenance and data analytics.

Challenging the Edge

The digitisation of processes now generates huge volumes of highly sensitive data.

Companies running an IT infrastructure that comprises just three or four racks require an IT environment that combines easy installation with cost-efficient and fail-safe operation.

Rittal will be using the event to exhibit quick and easy IT solutions for all applications. IT product highlights on display at the show will include the hugely popular TS IT rack and IT cooling units.

Smart Engineering at Eplan

Rittal will be supported at Drives and Controls 2018 by its sister company Eplan (on stand D712). Eplan will be showcasing innovative solutions for enhanced engineering efficiency and demonstrating the benefits of EPLAN Cogeiner.

What’s more, there will be the chance for Rittal customers to win an iPad.

Visitors who have Rittal enclosure cooling solutions (such as top therm, roof-mounted fans, Blue e or Blue e+ cooling units) installed in their Rittal enclosures, and who book a free inspection survey at the show, will have the chance to enter a prize draw to win an iPad.

If you’re attending the show, be sure to visit Rittal on D720 to find out more.

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

High Precision For Aerospace Show

Precision gearing specialist Harmonic Drive UK will be exhibiting its range of high precision gears at this year's Farnborough International Airshow. The company will be on Stand 4026 in Hall 4 from July 16 to 22 to advise aerospace manufacturers on the best gearing system for their product.



More than 40 years ago, the first Harmonic Drive® gears were sent into space during the Apollo 15 mission. Having been involved in the aerospace industry ever since, Harmonic Drive® has developed a range of gears specifically designed for the needs of the industry and will be exhibiting these at this year's Farnborough Airshow.

Aircraft rely on precision gearing in order for critical mechanisms to work properly. During flight, the slats and flaps located on the wings are monitored using a position pick-off unit (PPU), which sends position

feedback to the flight control system. This ensures that the mechanisms are operated accordingly, allowing aircraft to ascend and descend safely.

Gears for aviation therefore need high positioning accuracy and zero backlash in order for the PPU sensors to have a smooth movement and provide precise feedback. As the tips of aircraft wings are exposed to very cold conditions during flight, it is important that the gears function at low temperature to ensure consistently high quality operation.

Harmonic Drive's® strain wave gears are favoured by many large aerospace companies due to their excellent positioning accuracy, lightweight design and repeatability. As such, they can be used on a number of aircraft applications such as nose wheel steering, wing flaps and landing gear retractors.

"A particular trend that visitors to the Farnborough Airshow will notice is aircraft manufacturers moving from hydraulic controls for steering, flaps and lifting the wheels, to electromechanical actuation", explained Graham Mackrell, managing director of Harmonic Drive UK. "To achieve high accuracy, electrical actuators must have high precision gears, as Harmonic Drive® offers. The gears must also be lightweight, to avoid adding any additional load to the component and the aircraft.

"Through our years of experience in the industry we have developed gears that are perfectly suited to the needs of the aerospace industry, including high torque capacity and high torsional stiffness. For example, all our gears for the aerospace industry are made from stainless steel and are completely traceable, which is essential to comply with safety regulations in the aerospace industry."

To find out more about Harmonic Drive UK's high precision gears for the aerospace industry, visit representatives on Stand 4206 in Hall 4 at the Farnborough Airshow 2018 or visit <https://harmonicdrive.de/en/>.

Rittal Hits The Road With Routeco Live 2018

Rittal will again be joining Routeco Live in 2018, to showcase its renowned infrastructure solutions – widely specified as the No.1 choice for protecting critical equipment – and demonstrate how its products and services can address specific problems faced by different industries.

This year, the Routeco shows are visiting three venues across the UK, featuring the latest industrial controls and automation products.

Whether you are a business leader, engineer, technical or commercial manager for a machine builder, system integrator, panel builder or manufacturing plant, this event is for you!

It's The Little Things that Matter

During Routeco's seminar programme, Rittal's Industry Manager for Food & Beverage, Christian Westwood, will be presenting: "Eat, drink and be..... how the humble enclosure can benefit end users in the Food & Beverage sector", exploring how manufacturers in the sector can improve production efficiency, reducing costs and ensuring a growing global population survives and prospers.

As part of his presentation, Christian will explain how, where and why electrical enclosures and cooling equipment (a seemingly small part of any production process) can make a significant contribution to maximising efficiency. This includes the impact of 'downtime' and how this represents the worst case scenario for plant operators.

He will also highlight why, in hygiene-critical production situations, downtimes are typically longer, and how something as seemingly simple as the choice of enclosure can have a major impact on production and output.

EPLAN Joining Rittal on the Road

Rittal will be partnered at the Routeco Live events by its sister company, EPLAN, to demonstrate innovative solutions for enhanced engineering efficiency and the benefits of EPLAN Cogeiner.



Dates and Locations

- Tuesday 17th April - Leeds South, Village Hotel, Leeds
- Thursday 19th April - Milton Keynes, Stadium MK
- Thursday 3rd May - Glasgow, Hampden Park

Visitors must pre-register to attend via email routecoLIVE@routeco.com. For more details please email information@rittal.co.uk

Further information about Rittal infrastructure solutions can be found at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

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J D Neuhaus To Showcase New Mini Air Hoist At CeMAT 2018

J D Neuhaus, world leading manufacturer of pneumatic and hydraulic hoists will be showcasing their new Mini series of air hoists at the 2018 CeMAT exhibition, taking place on 23-27 April in Hannover, Germany. On display in hall 24, booth A54 throughout the show will be a Mini 500 hoist, just one of the models in the new range.

Developed using 20 years of experience of the previous model along with suggestions and collaboration with many customers both before and during new development, the new Mini represents the highest benchmark in hoisting technology.

The new Mini is available in four lifting capacities of 125kg, 250kg, 500kg and 980kg and is ideal for a wide range of light/medium manufacturing applications no matter what the environment, whether it be wet or dry, hot or cold, in dust-free rooms or extremely dirty conditions or in areas where an explosive atmosphere (Zone 2) is present.

The new model incorporates a multitude of enhancements and innovations to maximise productivity, occupational safety and efficiency. The smartest new feature being the unique integrated NFC tag meaning operation instructions and certificates for the hoist can be accessed by the end user via the JDN service app.

The Mini's maintenance tasks are greatly improved with much of the necessary maintenance work, such as lubricating the motor chamber, exchanging the chain guide or even changing the motor unit, now being carried out 'on the hook' without dismounting

the Mini. Through targeted optimisation, the number of operating hours has been doubled, allowing it to stay in operation for 800 hours, considerably enhancing efficiency and providing an important contribution to the reduction of total cost of ownership.

JDN have brought together the advantages of direct and indirect control of the hoist. Three control lines are bundled within one hose to keep the lines from twisting and providing more flexibility and operating comfort. New precision valves administer a more precise dosing of the air supply to ensure smooth lift and lowering of loads. Lifting speed can be adjusted up to a maximum 12 metres per minute at a full load (mini 500), making it 20% faster than the previous model. Lift speed can also be adjusted without loss of power providing better protection of loads without compromising speed control.

A new global innovation is the redundant optional fall support capable of holding the maximum capacity of a hoist coming free from the support structure. New limit switches offer another safety improvement, capable of switching off the lifting and lowering movement as soon as the bumper touches the stop valve. This slows movement and keeps the



chain from being overloaded. Wear risks and safety hazards are therefore minimised and occupational safety is improved significantly.

For flexibility, a standardised interface for using various types of hooks has been developed with hooks also available in steel and stainless steel. Load sleeve, chain and chain guide are available in stainless steel, the motor housing is also available in uncoated cast aluminium. This makes the JDN Mini ideal for use in fields such as the food industry.

Further information on the new Mini series can be seen at www.newgreatmini.com.

Spill Containment Specialist Sets New Industry Standards With Recycling Investment

Empteezy Group installs recycling plant to tackle excess production waste on site

Spill containment specialist Empteezy's sister manufacturing company Romold is leading the way with a cleaner, greener production waste process at its Livingston facility, which enables waste production material to be 100 percent recycled so that the company no longer has any scrap material leaving the site.

The company is a strong advocate of environmentally friendly processes, and installed the recycling plant to dramatically reduce the disposal of production waste from site and lessen the impact they have on the environment. The company has invested in a pulveriser and granulator to grind down excess material that can then be reused in the production process.

The new plant produces up to 450 kg of recycled material per hour, and once the material has been fully processed the resulting powder is then used in Romold's production process.

Commenting on the company's boosted environmental credentials, Romold and Empteezy managing director Bruce Wishart said: "Environmentally friendly waste control is paramount to Empteezy and Romold. The reduction in waste generation from commercial and industrial sites is

moving in the right direction but still has a significant way to go.

"High waste generation on industrial sites is unavoidable, so the focus needs to shift to making improvements that really make a difference. By

expansion and three appointments to sales and marketing to cope with high demand.

Sandra Geddes has been appointed as Romold UK and Ireland sales manager, bringing with her over ten years of industry experience from roles across the

"The new plant produces up to 450 kg of recycled material per hour, and once the material has been fully processed the resulting powder is then used in Romold's production process."

installing the recycling plant, it means that no excess production waste leaves our site, more businesses need to adopt a similar approach if waste generation figures are to be reduced."

Romold has also seen a period of increased growth marked by a senior appointment to the sales team, rapidly following sister company Empteezy's

waste management, construction and manufacturing sectors.

At Romold, Geddes will use her strong background in these sectors to continue growing the company sales by developing the brand name and attracting new distributors across the UK and Northern Ireland.

Commenting on her appointment, Romold UK and Ireland sales manager Sandra Geddes said: "I am familiar with Romold's products from my waste management days and know Romold has a reputation for excellent high-quality products within the spill containment industry, and I look forward to the new challenge and working with such a great team."

"The company is a strong advocate of environmentally friendly processes, and installed the recycling plant to dramatically reduce the disposal of production waste from site and lessen the impact they have on the environment."

Find out more on our website
www.empteezy.co.uk

BCA updates CPR guidance

Specifiers looking for the latest CPR guidance can now download the British Cables Association's paper 'Construction Products Regulation and Cables – UK position' from its newly updated website.

The paper, as well as the BCA's Guidance for Specifiers document, has been updated to reflect concerns and questions raised by specifiers over Reaction to Fire cables and which Class should be achieved for each installation.

Construction Products Regulation for cables came into effect last year and over the past nine months the BCA has received numerous enquiries from specifiers looking for clarification on this issue.

Unlike many other EU countries, the Ministry of Housing, Communities and Local Government (MHCLG), charged with responsibility here, has said that the UK has no legislation to determine the level

of performance required for Reaction to Fire cable.

Although amendments to The Building Regulations 2010, and especially to Approved Document B, may happen in the light of Dame Judith Hackitt's report, it is most unlikely to lead to any prescriptive legal requirement on Reaction to Fire for cables.

The choice of performance level, which is expressed in terms of Classes, is therefore a matter for designers and specifiers who are free to make their own decisions if it reflects the demands of other applicable regulations.

The BCA's guide explains the general nature of the

range available so that specifiers have an awareness of the types and their terminology.

From 1st July 2017, it became compulsory for cables, with a Reaction to Fire performance and intended for permanent installation in buildings and constructions works, to be accompanied by a Declaration of Performance (DoP) and have CE marking.

The updated guide can be downloaded here www.bcauk.org/membership/resources-guidance and position paper at <http://www.bcauk.org/membership/latest-news>

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

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



Sealing performance, reliability and safety are ensured for applications in the most demanding industrial, chemical and general industrial fields of operation. These high performance perfluoroelastomer O-ring components are available from Dichtomatik Ltd, the authorised distributor for a wide range of DuPont™ finished O-rings, as well as custom shapes, sheets and cord sealing components.

The Kalrez® 7375 parts are tailored for specialised chemical applications covering broad operating temperatures from -20°C to 300°C. These products, which incorporate patented cross linking technology, combine both superior chemical resistance with a thermal stability which exceeds many other competitive FFKM products. They are also available in most standard O-ring sizes including AS568, metric and JIS, with custom sizes and shapes also available on request.

In addition the Kalrez® 7375 product range exhibits an excellent compression set resistance incorporating outstanding physical property retention, while also maintaining good mechanical strength properties even under highly aggressive performance conditions. Excellent sealing properties can be maintained under the most aggressive operating conditions for pumps, valves and compressors, together with associated connectors, vessel lids, filtration and distillation columns, as well as flowmeters and analytical equipment.

These sealing products also provide the broadest chemical and temperature resistance (water and steam), as well as long-term compression-set resistance for hot air at temperatures up to 300°C. These features are also coupled with good compression stress relaxation of the sealing product, as well as an excellent resistance to a broad range of chemicals which ensures low volume changes when operating with products such as Acetic Acid, Maleic Anhydride and Ammonium Hydroxide at 100°C temperatures, together with a 98% Sulphuric Acid content product at 150°C.

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Riverside Road, Pride Park,
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Fax: 01332 524425
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www.dichtomatik-kalrez.co.uk

CET Calibration: a new identity for a growing specialist

Following acquisition by CET in May 2016, Chesterfield-based Omega Calibration has been rebranded as CET Calibration to signify its fully-integrated position within the wider business.

CET, a leading supplier of specialist outsourced services to the UK infrastructure, engineering and insurance sectors, acquired the calibration business as part of a wide-ranging growth strategy to develop a comprehensive set of services. As CET Calibration, the team will continue to provide complete metrology calibration solutions on-site or in the laboratory, covering a series of services including electrical, dimensional, temperature, pressure, testing and repairs.

Since acquisition, CET Calibration has enjoyed a series of successes and new initiatives, including the introduction of a new apprentice scheme, the launch of a bespoke gauge manufacturing service, and received Alpha standard accreditation for health and

safety from Alcumus SafeContractor. In addition, it has increased the scope of its scale, tension and compression capacity – doubling it in volume – and signed a new supply agreement with Mitutoyo, a world leader in precision measurement.

Peter Eglinton, CEO of CET, explained the decision to rebrand: “Over the past 18 months, the calibration business has been transformed with investments in an expanded service portfolio, enhanced accreditations and an innovative job management system – the latter building on CET’s commitment to technological innovation. We now share a common technology platform and the calibration team truly share the CET mantra of ‘Giving Our All’.

“Omega is a long-established business and we have been working closely with the team to introduce a range of service and process improvements since the acquisition resulting in, for example, market leading turnaround times being achieved as standard. The business is better positioned than ever to provide a quality service to the UK’s engineering and manufacturing base.”

Expansion is backed by private equity firm Dunedin, who provide both finance and management experience.

For details of the full range of services available from CET Calibration, visit www.cetcalibration.com

New wheel-end seal from SKF offers extreme performance

SKF’s new Scotseal X-Treme wheel-end seal for trucks and trailers offers superior reliability and high temperature performance, as well as a market leading 5-year/500,000 mile warranty on trucks and 7 years on trailers.

Luton, United Kingdom, 16 April 2018: Truck and trailer operators can now dramatically reduce the risk of premature wheel-end failures, as well as the high costs associated with unplanned downtime and vehicle recovery, by changing to a new wheel-end seal design from SKF.

Scotseal X-Treme is the latest addition to SKF’s well established line of wheel-end seals for drive, steer and trailer axles: Scotseal Classic, Scotseal Long Life, Scotseal Pro and Scotseal Plus XL. It offers the vehicle service market and OE truck and trailer manufacturers reliability and long life in the harshest of operating conditions.

Scotseal X-Treme offers an extension of the current 3-year full parts and labour warranty provided by Scotseal Plus XL to a new market-leading 5 years for truck and 7 years for trailer applications for the

new product under the SKF Trouble Free Operation coverage plans TFO 5 and TFO7 respectively. SKF has been able to offer this generous guarantee thanks to new design features that include optimised primary and axial lip profiles, new metal unitiser geometry and the use of an upgraded HNBR lip material which enhances the performance of SKF’s unique “wave” lip design. Collectively, these new features deliver unrivalled under-lip temperatures, lower running friction, improved contamination exclusion and longer seal life.

With a wheel-end seal replacement and hub relube taking around two hours, vehicle downtime costs can quickly soar. Thanks to its innovative new seal design, Scotseal X-Treme has the potential to cut unscheduled downtime events by half and could drastically reduce wheel-end failure events due to seal problems. The new seal is also designed



to cope with the higher temperatures generated by braking systems that are compliant with new ‘shorter stopping distance’ legislation.

Scotseal X-Treme will be available for most standard axle types by the beginning of 2018 in a variety of sizes.

For further information visit: www.skf.com

Expert Servicing, Direct from the Manufacturer

The servicing and maintenance of enclosure climate control units is an area that is often overlooked in manufacturing. However, regular servicing has been shown to significantly reduce unit failures and thus prevent production downtime.

Rittal After Sales Service offers tailor-made, fast response, service packages, direct from the manufacturer, worldwide, and around the clock.

Production downtime is always expensive but it is particularly annoying when it's preventable – for example, when a cooling unit fails because it needs servicing, thereby bringing everything to a standstill.

Regular maintenance of cooling units is important, especially for critical environmental conditions. Ambient air containing oil or dust can easily result in dirty filter mats; this results in reduced air throughput in the external circuit and decreased cooling output. If this causes a steep rise in temperature inside the enclosure then failure is simply a matter of time.

And yet, in practically all cases, maintenance costs are significantly lower than those resulting from a system failure.

If the servicing cannot be managed by the company's own employees, Rittal offers customised solutions with

its After Sales Service packages.

Customers who sign up will be serviced by a single local engineering company, with the backing of the manufacturer's expertise.

"With Rittal After Sales Service, we are using central contacts, our own engineers and local presence to provide an expert service with short response times," says Karl Lycett, Rittal's Product Manager for Climate.

He adds: "Support is provided by our own service engineers and selected authorised regional service partners with a high level of expertise on Rittal products."

From Service Checks to Service Contracts

Customers can agree a one-off service or an individual service contract and the contract package can be tailored to meet any customer requirements, including: availability, response times, service intervals and spare parts stocking.



Quick response times

If, in spite of regular servicing, a fault does occur, those signed up to the Service will benefit from the short response times from Rittal's network of highly-trained service engineers across the UK and internationally, with over 1,000 service engineers in 150 locations worldwide guarantee very fast service.

If required, a contract can be agreed to ensure a service engineer can be on-site within four hours – 24 hours a day, 365 days a year.

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

Sanitary Flange Air Conveyors Ease Installation and Cleaning for Chemical, Pharmaceutical and Food Systems

EXAIR's new Sanitary Flange Line Vac air operated conveyors are the best way to convey materials through systems which require frequent or mandatory cleaning.

The ISO 2852 compatible sanitary flanges limit areas where bacteria can grow and help prevent contamination. Made from type 316 stainless steel to provide maximum hygiene and corrosion resistance, these Line Vacs are available in 1-1/2", 2", 2-1/2" and 3" flange sizes. Flanged Line Vacs convert flanged piping systems into a powerful conveyor for product, parts, scrap, trim and other bulk materials. Their larger size makes them perfect for conveying bigger parts and large volumes of material over long distances.

Sanitary Flange Line Vac Conveyors eject a small amount of compressed air to produce a vacuum

on one end with high output flows on the other. Response is instantaneous and regulating the compressed air pressure provides infinite control of the conveying rate. Applications include material conveying, part transfer, fiber tensioning, scrap trim removal and filling operations.

All EXAIR Line Vacs are CE compliant, meet OSHA pressure requirements, and are ready to ship from stock. Additional families of Line Vac are available to fit hose, tube or threaded pipe. Many smaller sizes are available down to 3/8" hose or 3/8 NPT threads and large hose or pipe sizes up to 5". Many other materials are available including aluminum, type 303



and type 316 stainless steel. A Heavy Duty Line Vac is available in hardened alloy for abrasion resistance and maximum conveying power. Sanitary Flange Line Vac prices start at \$1095.

For more information visit:
www.exair.com/sflv.htm

Extended Range Of Ball Bearings Now Available With High Performance Seal Option

Applications requiring larger bearing sizes can now benefit from longer maintenance intervals and greater resistance to contamination.

SKF is making its high performance RSH seal design available on a larger range of SKF Explorer deep groove ball bearings. The tried and tested RSH seal uses a highly optimised dual-lip configuration to provide additional protection in demanding environments. For users, the result is bearings that last longer, especially in wet, contaminated or dusty operating conditions, and that need to be replaced less frequently.

A secondary lip on the seal withstands high pressure cleaning and offers increased resistance to the ingress of dust and other contaminants, while the seal's internal geometry has been optimised for smooth running and improved grease retention.

The seal is made from acrylo-nitrile-butadiene rubber (NBR), which is resistant to mineral oil based lubricants, petroleum products and animal or vegetable fats. It has an operating temperature range of -40 to +100 °C and

up to +120 °C for brief periods.

Previously only available on bearings with a bore diameter of 25mm or less, the RSH seal has now been further developed and tested for use in bearings up to 60mm in bore diameter.

Users can specify SKF Explorer deep groove ball bearings with the new RSH seal installed on one or both sides, depending on the requirements of the end application. The extended RSH offering joins a growing list of options and improvements in the SKF Explorer range. These include numerous different shield and seal configurations and a choice of cage materials and lubricants.

SKF Explorer was originally developed to take advantage of research into high purity steels with improved fatigue resistance, allowing the development



of bearings with a longer rated life and lower friction. The SKF Explorer offering has been continuously extended and improved for more than two decades, with deep groove ball bearings joining the range 15 years ago. Since their introduction, SKF Explorer deep groove ball bearings have set the performance benchmark for the industry, with more than 4 billion bearings sold. SKF Explorer bearings are used in thousands of applications of around the world, from domestic goods to wind turbine generators.

For further information visit:
www.skf.com

Fluke offers a Thermal Imaging Camera at a special discount as part of its Spring Specials Campaign

Until 30th June 2018, Fluke is offering its TiS20 Thermal Imager at a reduced recommended list price.

A model in the Fluke® TiS Performance Series Infrared Cameras, the TiS20 offers good quality at an affordable price to help industrial, maintenance, and HVAC professionals analyse equipment health at a distance more quickly and accurately. With a rugged design and an easy-to-use interface, they are ideal for troubleshooting tasks. More information about all Fluke's Spring Specials can be found at www.fluke.co.uk/promotions

The fixed-focus Fluke TiS20 Thermal Imager provides up to 320x240 resolution. It features three pre-sets of IR-Fusion® with AutoBlend which, by combining visible and infrared images into one, reveal key details to help the user find potential issues and make documenting problems quick and easy. Replaceable lithium ion smart batteries, with a five-segment LED charge level display, help avoid

unexpected power loss. Fluke Connect SmartView® Desktop Software, for optimising and analysing thermal images, is also included.

The TiS20 works with Fluke Connect® - a system of wireless test tools that communicate via the Fluke Connect app, or Fluke Connect Assets software, a cloud-based solution that gathers measurements to provide a comprehensive view of critical equipment status - allowing technicians to view, record and share thermal images, as well as mechanical, electrical and vibration measurements, in real time via their smartphones or tablets and automatically upload them to the cloud. Reports can be created and shared right from the job site via email, allowing technicians to collaborate in real time with other colleagues with ShareLive™ video calls, which increases productivity in the field.



Also included in Fluke's money saving Spring Campaign are a Fluke 1663 or 1664FC Multifunction Installation Tester with a free Fluke T130 or T150 2-pole tester and free Fluke DMS software; a Fluke T150 Voltage and Continuity Tester with a free H15 holster; and a DMM Safety Bundle representing a discount of over 40% on the items purchased separately.

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

NEMA 4X Cabinet Coolers Fit In Tight Spaces

EXAIR's new Type 316 Side Mount Kits make the mounting of a NEMA 4X Cabinet Cooler possible when an electrical enclosure has limited space on the top or side.

These Type 316 Side Mount Kits are corrosion resistant. The compact Cabinet Cooler is a low cost way to purge and cool electrical control panels, protecting sensitive electronics from heat, dirt and moisture.



Cabinet Coolers convert an ordinary supply of compressed air to 20°F without refrigerants or CFC's. The cold air is circulated through the enclosure to eliminate high temperature malfunction. Cooling capacities up to 5,600 Btu/hr. are available. Cabinet Cooler systems include a compressed air filter to assure no moisture or dust is introduced inside the panel. Optional thermostat control minimizes compressed air use. Cabinet Coolers are UL Listed, conform to the CE general safety directive for machinery and have no moving parts to wear out.

The Side Mount Kits maintain the NEMA 4X rating of large and small electrical enclosures. Models for use on NEMA 4 and 12 enclosures are also available. Applications include cooling PLCs, microprocessors, variable frequency drives, industrial computers, and robotics. Side Mount Kits start at \$220.

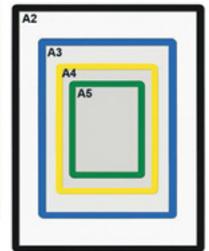
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Easily print durable signs to increase safety & efficiency

Brady Corporation's new S3100 Sign & Label Printer enables users to easily print a wide range of reliable safety signs and facility labels, even in standalone mode, to increase workplace safety and efficiency on demand.

A wide range of labels & signs

The new S3100 Sign & Label Printer enables users to print a wide range of signs and labels to increase safety and efficiency in any workplace. Safety signs, floor marking, 5S labels, lean labels, labels to identify racks, doors, stairs, bins, desks and chairs and CLP-labels to identify chemicals can all be printed with the S3100 at location whenever they are needed.

Designed to last

The S3100 prints on Brady's industrial grade vinyls that offer 8-10 year outdoor durability, and on durable polyesters including ToughStripe floormarking. Signs & labels printed with the S3100 can be used both in- and outdoor, which

is extremely useful for safety & facility identification in large plants, in and around production halls, warehouses and logistics & distribution centres. Brady's sign & label materials are designed to last in industrial environments and have been tested in line with international ASTM test methods. Technical data sheets are available for every sign & label material.

Extremely easy to use

The new S3100 Sign & Label Printer is extremely easy to use and features auto-calibration and automatic label material setup. This enables users to just walk up to the printer and start printing the signs and labels they need. Switching to another label material is easy and extremely fast thanks to the printer's 'drop-in' label materials and matching



ink ribbons that can be switched out in less than 20 seconds. An intuitive user interface with touch screen offers a wide variety of sign & label design options, even when the printer is used in standalone mode. When connected to a computer, sign & label design options can be further expanded using Brady Workstation label design apps, available for download from the Brady websites.

For more information visit: www.brady.co.uk

Optical Rotary Torque Sensors Suitable For Low Torque And High Band Width Measurements

Sensor Technology has set new benchmark performance standards for optical rotary torque transducers, with the launch of the digital ORT 230/240 series. These new optical rotary torque sensors are ideal for applications when the demand is for low torque and/or high bandwidth, providing precise, dynamic measurement of rotary and static torque of less than 100Nm and for bandwidths of up to 50kHz.



The new ORT 230/240 devices replace Sensor Technology's E200 ORT series, benefiting from all-new electronics that deliver significant gains in resolution, frequency response, reduced sensor current consumption and faster digital data throughput.

The high speed capability comes from an inherently low inertia, since the electronics are not fixed to the shaft, while non-contact operation ensures a long and reliable life (backed up by Sensor Technology's lifetime warranty) with high accuracy. The optical operating principle also ensures excellent noise immunity.

TorqSense ORT 230 series sensors provide fixed voltage or current analogue outputs – one for torque and one for either speed or power. The TorqSense ORT 240 provides two user selectable voltage or current analogue outputs – one for torque and the

other for either speed, power or peak torque – plus digital outputs including RS232, CANbus and USB for interfacing with modern instrumentation and laptops. The ORT 240 enables users to connect up to 10 transducers via USB, and transducer configuration software for making changes to transducer variables.

Features of both devices include self-diagnostics to report if the transducer's torque, speed ratings or calibration date have been exceeded, while inbuilt sensors monitor shaft temperature for better compensation and accuracy. The device also offers a simple 'sensor status' output.

Complementing these products is Sensor Technology's TorqView software, providing an easy-to-use advanced torque monitoring package for Windows PCs to assist with data display and recording. It offers real time chart plotting, and is

compatible with both Matlab and Excel. Further, LabVIEW VIs are available for users to design their own process control applications, and DLLs are available for users who wish to write their own custom software.

These latest optical rotary torque sensors are an important extension to the Sensor Technology torque monitoring range, and offer an alternative solution when low torque or bandwidth requirements preclude the use of the more cost-efficient SAW-based TorqSense products.

Optical rotary torque sensors use a pair of gratings attached a short distance apart on a strain-sensitive shaft to modulate a light source. As torque is applied to the shaft, a slight twist results which changes the alignment of the gratings and thus varies the light transmitted through to a detector. The use of this technique results in a transducer which is able to detect torque bi-directionally, and which has a fast mechanical and electrical response, low inertia and complete freedom from brushes or complex electronics.

The absence of brush gear allows high-speed operation with a continuous rating up to 30,000rpm standard. Further increases in rpm are available depending upon shaft size. The torque shaft is of low compliance $\frac{1}{2}^\circ$ maximum torsion deflection on the smaller transducers and $\frac{1}{4}^\circ$ maximum on the larger transducers at full-scale deflection

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www.sensors.co.uk

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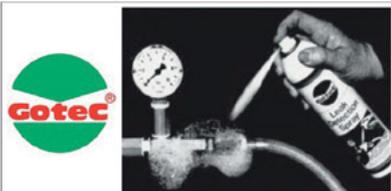



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