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Compressed Air

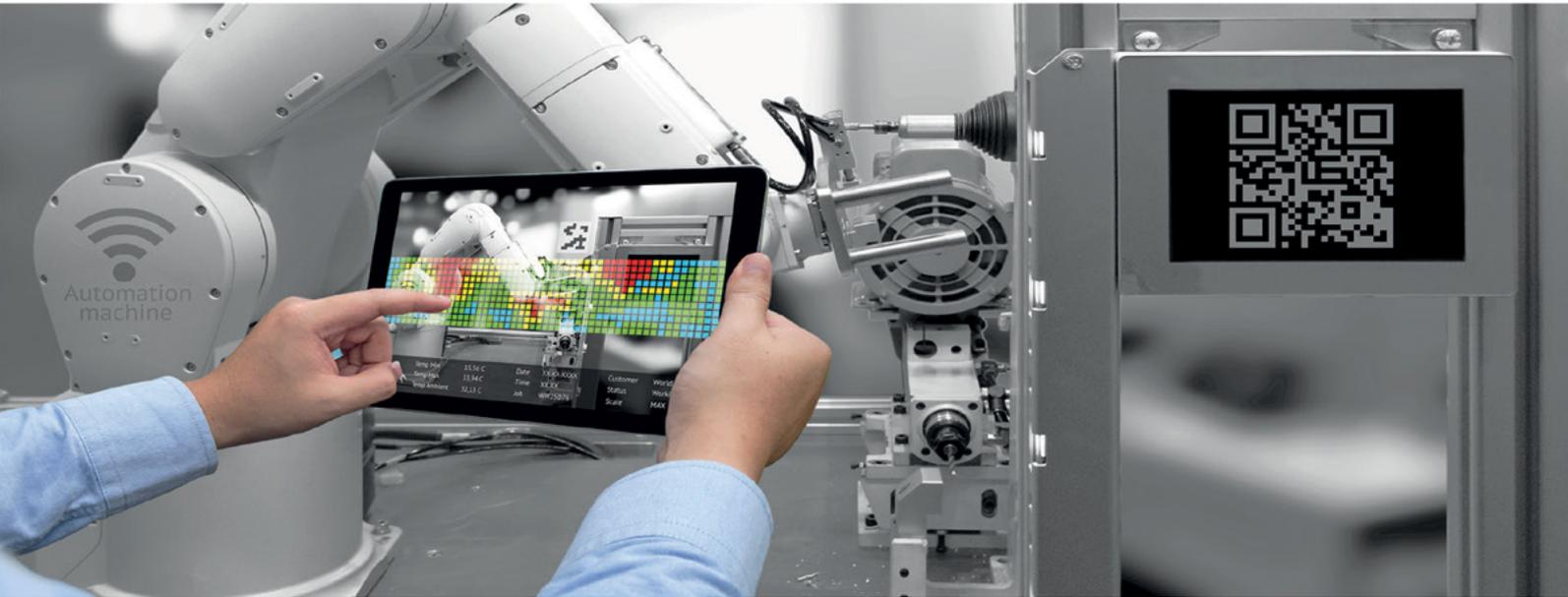
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# What's fueling our data?

## Improving energy efficiency in data centres

In 2018, Chinese data centres produced 99 million tonnes of carbon dioxide (CO<sub>2</sub>) — generating the equivalent environmental footprint of around 21 million cars. With global data traffic more than doubling every four years, it's no surprise that the environmental impact of data centres is coming under scrutiny. Here, Simone Bruckner, managing director of power resistor manufacturer Cressall Resistors, investigates the efficiency of our data centres.

Data technology is usually perceived as positive for the environment — think smart metres, predictive analytics and autonomous vehicles. In fact, even the notion of 'The Cloud' invites thoughts of crispness and clean air. However, the reality is that data centres consume a lot of energy.

As the uptake of cloud computing continues to increase at a rapid pace, more companies are relying on dedicated facilities to collect, store, process and distribute data. If data is going to continue to act as the powerhouse of the information revolution, evaluating its inefficiencies is crucial.

### Power hungry

China's data centre sector makes up eight per cent of the global market and is the second largest in the world. There are data centres everywhere, whirring away unseen across the globe. The biggest, covering over a million square feet, can consume as much power as a city of as many people.

The energy required to run a data centre can be broken down broadly into the power consumed by computing resources and that of supporting infrastructure, such as cooling systems. Typically, server rooms in data centres are cooled using classic ambient air-cooling with cold water-

recirculation coolers. For high power applications, water-cooled racks are also used.

### Brighter skies

Businesses are working to address the efficiency issue. In fact, there are a number of companies jostling for the title of greenest technology company. Both Apple and Google claim to run on 100 per cent renewable energy, while Microsoft announced that it is ahead of schedule to hit its target of 60 per cent renewable energy in its data centres by 2020. Renewables of choice for data centres include rooftop solar, wind, geothermal and waste heat reclamation.

The technology to improve data centre efficiency already exists. We've been harnessing the benefits of renewable technologies in a number of industries for decades, so there is no reason why data centres cannot benefit from the likes of solar power. However, the sheer mass of energy that a data centre requires means that ensuring the efficiency and continuity of renewable energy is crucial — data simply doesn't have time for a cloudy day or broken panel.

When installing renewable energy systems onto data centres, operators will also need to put technology to avert potential inefficiencies into place. For example, when connecting new solar panels or disconnecting existing installations from

the grid for maintenance, the panels continue generating electricity. This excess energy could damage equipment, so it must be safely dispersed.

To achieve this, load banks or dummy loads like those offered by Cressall should be added onto the solar panels to dissipate excess energy to help safely increase and maintain the renewable energy sources installed on a data centre. Load banks also help test a data centre's air conditioning system — which is vital for keeping servers cool and functioning — to make sure it is working properly before the data centre is put into action.

While we cannot deny that the rise of big data presents a big energy challenge, they are the engines of the digital economy and it would be almost impossible for modern businesses to function without them.

The vast amount of energy that data centres require doesn't mean that the cloud must return back to Earth with a bump. By making sure that renewable resources have the technology in place to provide more sustainable energy generation, we can continue to benefit from the wealth of data we create while minimising its impact on the environment.

To find out more about Cressall's resistors for generating, testing and controlling renewable power, visit the website today:  
<https://www.cressall.com/>

# New ranges of stainless and spring steel fasteners

SD Products Ltd is a third generation family owned business with over 40 years of experience as a stockist distributor of specialist fasteners, we supply product across all industries. The corner stones of our business are Quality Products at Competitive prices with Service and Supply requirements tailored to our customers' needs. As our business continues to grow we constantly aim to expand our extensive product catalogue.



A brand new range of 12- 150mm safety clips is now available from SD Products website. These fasteners are manufactured from high grade spring steel, offering excellent stress and corrosion resistance, as well as ability to withstand considerable forces without any distortion. High yield strength of spring steel in our safety clips allows them to return to their original shape, even after substantial deflection, twisting or compression, without suffering any significant deformation. Safety clips are well suited for both domestic and industrial applications and can be easily installed or removed by hand.

with connector caps nuts - nut applying an axial clamping force and the shank of the bolt acting as a dowel, pinning the joint against sideways shear forces. Our connector bolts are suitable for a variety of furniture applications, flat low profile bolt heads allowing for a decorative finish.

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Several new lines of stainless steel connector bolts and nuts have been added to our furniture fastener range. Connector bolts are designed to be used

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## WWW.SDPRODUCTS.CO.UK

# Rittal Launches New Blue e Chillers in 11 to 25 kW output class

Rittal has significantly improved its range of cooling technology for machines and enclosures with its new Blue e chillers in 11 to 25 kW output class.

Using 40 per cent less refrigerant, the devices will make an important contribution to sustainable environmental protection. Meanwhile users benefit from the chillers' precise temperature control, simplified operation and installation, as well as new safety functions.

Pre-configured option packages, which are quickly available from stock, can meet almost any need, from precision control systems with higher pressure requirements to robust outdoor applications in cold climates.

The re-cooling of liquids by chillers is one of the basic requirements for smooth operation in many industrial processes. For example, enclosures and machine tools must have strict temperature control for the precise machining of metal.

## Sustainable and Environmentally Friendly

The latest generation of chillers need to be easy to operate and install, as well as offer maximum user safety. Customers also need fast order turnaround such that customised solutions must be available off-the-shelf, and there is an increased focus on sustainability and environmental performance.

With the development of its new Blue e chiller range and combined with the existing Blue e+ chillers (1.5 to 6kW), Rittal can offer a mature solution package that meets all these needs.

The adoption of a 100 per cent aluminium heat exchanger with micro-channel technology results in stand-out benefits for the user: it improves exchanger efficiency and it reduces the amount of refrigerant needed by 40 per cent compared to

other chillers. In addition, the use of aluminium means that the possibility of galvanic corrosion is completely eradicated.

## Regulated Performance

The fan and compressor are regulated via a digital controller which means the temperature of the cooling medium can be precisely regulated. As standard, the hysteresis is  $\pm 2$  K; however, a precision control (hot gas bypass) of  $\pm 0.25$  K is also possible as an option. This prevents temperature fluctuations that cause inaccuracies on the machined workpiece, and also ensures consistent quality.

## Ease of Use

The multi-lingual and industrial-grade touch display, plus the intelligent communication interfaces, make both operation and analysis easy.

The parameterisation of the devices, as well as the read-out of the data and messages are performed quickly and shown in plain text. Error messages are prioritised and displayed in three escalation levels.

## Rapid Commissioning

Blue e chillers are wired ready for connection and can be up and running quickly, via plug-and-play.

Lifting eyebolts make transport easy, as does the base/plinth, which is suitable for transport by forklift truck. Uniform water connections, an adjustable overflow valve (bypass valve) and ideal

accessibility to all the components make it easier for fitters and service staff to work on the units.

## Designed with Safety in Mind

Integrated overflow valves ensure a constant circulation of cooling water when the consumer is closed, and the pump is running. This protects the coolant pump from overload.

The valve is pre-set for the pump being used 50Hz operation but it can be set for 60Hz. A filling level monitoring system ensures maximum reliability and improved availability. Besides this, optional flow monitors emit an alarm if the flow rate is too low and can detect hydraulic errors such as blockages in the system at an early stage.

## Option Packages

Rittal also offers pre-configured option packages that are available quickly from stock and which offer a suitable solution for almost any demand.

For example, performance-enhanced pumps (4 and 6 bar) are available for increased performance. If necessary, a precision control system (hot gas bypass) can be used to improve control accuracy. In addition, the Blue e chillers can be prepared for cold zones of down to minus 20°C, as well as for laser applications, and they can also be fitted with a water-cooled condenser or with pre-heating and customised with special paint.

Further information at:  
[www.rittal.co.uk](http://www.rittal.co.uk)  
and [www.friedhelm-loh-group.com](http://www.friedhelm-loh-group.com)  
or on twitter @rittal\_ltd.

# Leading nuclear engineer appeals to girls to solve engineering challenges of the future

Fellow of the Royal Academy of Engineering Dr Dame Sue Ion DBE FREng FRS will urge young women to take up a career in engineering to help address the world's greatest challenges, when she gives the autumn term Principal's Lecture at Cheltenham Ladies' College on Saturday 12 October 2019.

In her final speech as Chair of the judging panel for the Royal Academy of Engineering MacRobert Award, Dame Sue will tell the inspiring story of geologist, suffragette and philanthropist Lady Rachel MacRobert, who attended Cheltenham Ladies College herself in the 1890s. Born in Massachusetts in the US, Rachel became the first woman to study at the Royal School of Mines, and the MacRobert Award – the most prestigious annual prize for UK engineering innovation – was founded in 1969 to reflect her lifelong love of science and engineering.

Only 12% of UK engineers are female and just 9% are from black and minority ethnic backgrounds, but the UK has an annual shortfall of up to 59,000 engineers. Dame Sue will highlight the benefits of engineering to society and share the achievements of some of the women engineers who have won the MacRobert Award.

Dame Sue hopes that this personal address will help inspire the students to find out more about

engineering, how it works and how it impacts every aspect of our day-to-day lives.

She will also talk about her own career to date and how it challenges society's widespread misconceptions about engineers and the profession among young people. Aged 16, with the support of a championing chemistry teacher, Dame Sue won a book on atomic energy as a prize for her O-level attainment in science, which encouraged her enthusiasm for the subject. After studying for a degree and PhD in Materials Science at Imperial College London she spent 27 years with British Nuclear Fuels Limited, rising to the position of Chief Technology Officer, and has held numerous national and international energy policy advisory roles. She is currently Honorary President of the National Skills Academy for Nuclear.

Dame Sue believes that by highlighting the variety of ways engineers shape the world around us – often unseen, taken for granted and unsung

– she will help encourage more pupils from all backgrounds to consider a career in engineering.

This year, the MacRobert Award celebrated its 50th year and Dame Sue is stepping down from the position of chair of the panel judges after five years.

## Dame Sue Ion said:

"I am passionate about engineering and the difference it makes to our daily lives. More and more women are realising what fantastic careers they can have and the wealth of areas in which they can work.

"The traditional image of an engineer as someone in a hard hat isn't a reality. There are amazing opportunities for engineers affecting every aspect of our lives from manufacturing to transport to construction, fashion, food, healthcare, energy, cyber security and making the world a better place. Nowhere is that so apparent as in the winners of the MacRobert Award over the last 50 years.

"I could never have dreamed how rewarding and exciting a time you can have with a background in engineering nor of the amazing and talented people I'd be lucky enough to work with and have as colleagues and friends."

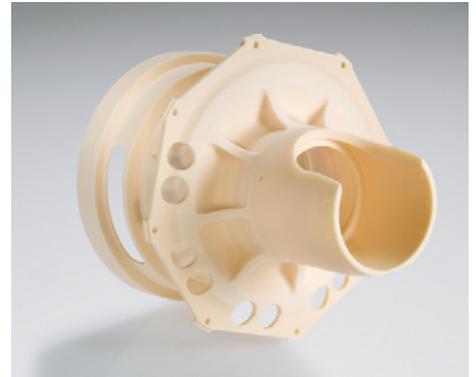
## What is the MacRobert Award for engineering innovation?

First presented in 1969, the MacRobert Award is widely regarded as the most coveted in the industry, honouring the winning organisation with a gold medal and the team members with a cash prize of £50,000. Founded by the MacRobert Trust, the award is presented and run by the Royal Academy of Engineering, with support from the Worshipful Company of Engineers.

For more information visit:  
[www.raeng.org.uk](http://www.raeng.org.uk)

# Fine Ceramics in Space

The leading ceramic manufacturer Kyocera presents its products relevant to aerospace and astronomy applications at Space Tech Expo 2019 in Bremen from November 19th-21st.



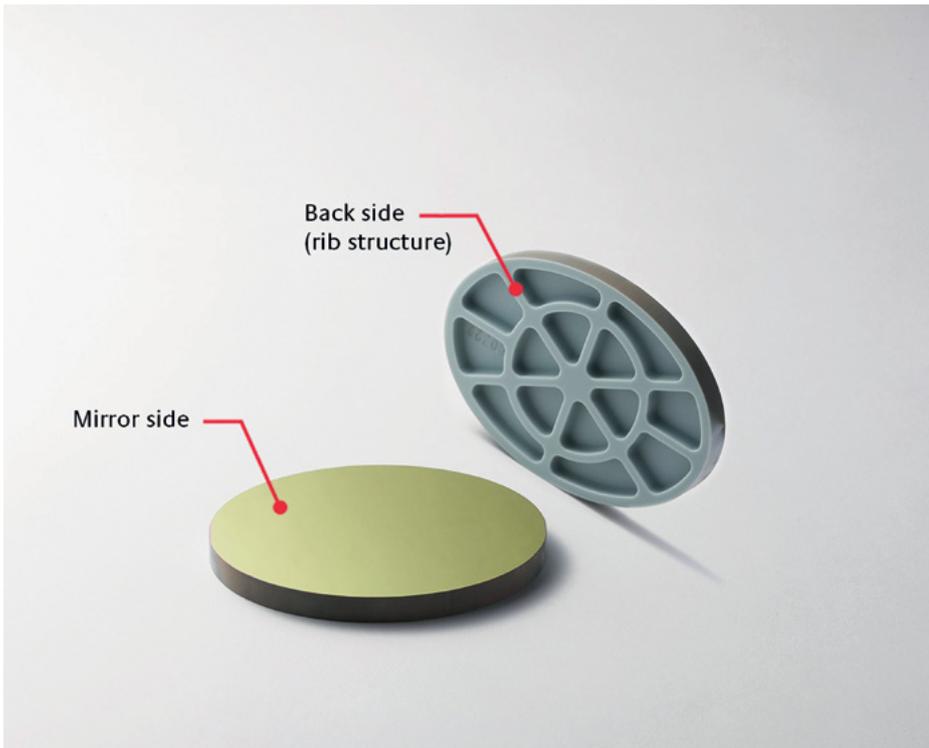
perfectly suited for manufacturing very complex components like shaped mirrors, optical assemblies, frames, fixtures, temperature control and structural components.

## Alumina F99,7 and 5 axis CNC machining

Kyocera is also very experienced regarding traditional ceramic materials like zirconia and alumina. The high electrical insulation and thermal strength of alumina (F99,7) allows its use in components of ion thrusters. When required, Kyocera also supports the metallization of ceramics, along with in-house 5 axis CNC machining which can be used for manufacturing complex components with very high complexity such as camera housing. Excellent performance of the products in ultra-high vacuum is guaranteed by minimal desorption and leakage rate.

Kyocera recently expanded its manufacturing presence in Europe by acquiring two German ceramic manufacturing plants in Selb (Kyocera Fineceramics Precision GmbH) and Mannheim (Kyocera Fineceramics Solutions GmbH). With these acquisitions, in addition to its other international production facilities in Japan and USA, Kyocera comprehensively offers the entire know-how and variety of fine ceramics to the market worldwide.

For more information on Kyocera:  
[www.kyocera.co.uk](http://www.kyocera.co.uk)



Kyoto/London, October 16th, 2019. During Space Tech Expo 2019, Kyocera will showcase, amongst other materials and components, its specializations in cordierite, silicon-infiltrated silicon carbide, zirconia and alumina materials which are well-suited for the demanding requirements of this industry.

## Cordierite

Cordierite is an extremely low thermal expansion ceramic, which is ideal for light-weight designs of mirrors and telescopes. The forming capabilities of Kyocera allow for a more efficient processing and light-weighting, while the material properties of cordierite (CO720), such as high stiffness and long-term dimensional stability, serve functional advantages over low thermal expansion glasses in such applications. Cordierite can be used both for

telescope mirrors, which are now made to sizes of over one meter, as well as for structural parts which hold the mirrors in place. Kyocera's highly accurate assembly techniques can produce an entire optical system with positional tolerance of a few microns.

## Silicon infiltrated silicon carbide

Kyocera's silicon-infiltrated silicon carbide (SiSiC) and its manufacturing and joining technologies allow the monolithic production of intricate, fine-detailed and complex components in a large-scaled format up to 1 m x 1 m x 650 mm, and in near future even larger. Moreover, components with water- and helium-tight inner cooling channels, undercuts, rib and fin structures can be realized. With the high thermal conductivity, strength, and hardness of SiSiC, this material is

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# Hart's waste effort

Hart Door Systems' (Hart) expertise in the Energy from Waste sector is fast being acknowledged with more contracts for its Speedor Storm doors just announced.

One of the latest is the replacement of 17 doors using Hart's Storm doors which are designed for frequent use in high traffic situations and where exceptional wind resistance of up to 70 mph is required.

"Bearing in mind Climate Change and the many issues arising, the successful development of Speedor Storm is timely," says a Hart's spokesman.

"This particular contract replaces non-Hart doors where the supply of spare parts was an issue

and the door type being replaced was not fit for the high-traffic situation on-site and all the other issues arising on Energy from Waste sites.

"Companies we work for are tackling Climate Change through waste management for example and Hart is delighted to be at the forefront of providing particular solutions in these challenging times."

Speedor Storm is a robust and reliable system used predominately as an external rolling door. It features a unique guide system offering wind



resistance up to class 5 as defined by DIN EN 12424, on larger openings up to 8m x 6m.

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For more information visit: [rms-reliability.com](http://rms-reliability.com)


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 VA CAT I, The Stoke by Nayland Hotel, Essex - 15th to 18th June  
 VA CAT III, Stratham Lodge Hotel, Lymm - 13th to 17th July  
 VA CAT I, The Stoke by Nayland Hotel, Essex - 7th to 10th Sept  
 VA CAT II, The Stoke by Nayland Hotel, Essex - 12th to 16th Oct  
 VA CAT III, The Stoke by Nayland Hotel, Essex - 16th to 20th Nov

#### Asset Reliability Practitioner (ARP)

ARP CAT I, Dates to be confirmed. See Website - circa Feb  
 ARP CAT I, Dates to be confirmed. See Website - circa April  
 ARP CAT I, Dates to be confirmed. See Website - circa Aug

5.0

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## Zeba Kazi Osmani wins IMechE Apprentice of the Year Award

Zeba Kazi Osmani, a manufacturing engineering apprentice at Rolls-Royce in Birmingham, has won the Institution of Mechanical Engineers' Apprentice of the Year 2019 Award.

The award was made at a special ceremony at the Institution's headquarters in Westminster.

In second place was Jeremy Blakey from Jaguar Land Rover and in joint third place were Tatiana Kayleigh Peters from missile systems manufacturer MBDA and Lewis King from aerospace company Leonardo.

Zeba impressed the judges with her achievements at work and how she has promoted engineering through her role as a STEM Ambassador which has involved taking part in engineering activities in local schools, careers fairs and STEM workshops.

"It's a very prestigious award and I am very happy to represent apprentices, Rolls-Royce and the engineering community today. Apprentices have a growing role in engineering, and I am proud of

helping shape the UK's engineering future," Zeba Kazi Osmani said at the awards ceremony.

Zeba works at Rolls-Royce Control Systems in Birmingham, specialising in electronic and hydro-mechanical control systems for civil large jet engines.

This is the ninth year of the Institution's Bryan Hildrew Apprentice of the Year Award which is named after Bryan Hildrew, a former apprentice and President of the Institution.

"There was a very high standard of entries and the judging panel had a tough time reaching a decision. Our engineering apprentices are the skilled technicians of tomorrow and are vital to ensuring a bright and progressive future for our profession," said Dr Colin Brown, Chief Executive



of the Institution of Mechanical Engineers, who hosted the ceremony.

The judging panel considered a number of criteria when making their decision. They took into account accomplishments at work as well as charity or voluntary work related to engineering and encouraging young people to consider a career in engineering.

For more information visit: [imeche.org](http://imeche.org)

# CBM CONNECT® Conference, powered by Mobius Institute

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# AFRC and Siemens get connected to accelerate the rise of smart factories across Scotland

The University of Strathclyde's Advanced Forming Research Centre (AFRC) has agreed a Tier One Partnership with global technology giant, Siemens, aiming to stimulate the uptake of digital technologies within the manufacturing industry and support the factories of the future across Scotland.



Combining advanced manufacturing and digital expertise, the two organisations will work together to increase the adoption of industry 4.0 within the UK supply chain, encouraging firms of all sizes to embrace digital manufacturing to boost efficiency and productivity.

Smart factories are highly digitalised and connected production facilities that use a constant stream of data to adapt to new demands. This brings enormous opportunity for improvement across all stages of manufacture along with back office and supply chain management.

A global leader in technology for industrial automation and digitalisation, Siemens will provide the world leading research centre, located next to Glasgow Airport, with support in kind to the value of £200k per year.

The company will supply innovative software and hardware, in addition to consultancy and access to research, unlocking smart usage of

data to improve manufacturing processes. It will collaborate with the AFRC's digital manufacturing team, sharing expertise and acting as a testbed for de-risking innovation as firms seek to adopt new technologies.

Siemens technology is already in use across the AFRC's collaborative research and development projects, including the creation of a digital twin for the whisky cask filling process and a platform offering an industry 4.0 based solution for machinery.

Both Siemens and the AFRC are also collaborating with AFRC Tier One Partner Virtualis. Together they are engaging with firms across Scotland and using a virtual reality environment to help firms enhance their decision making and plan for the future using digital technology.

Michael Ward, Technical Director at the AFRC, said: "As our digital activities have grown, we've

continued to expand our use of the extensive suite of Siemens software and we're extremely excited about the new capabilities that this partnership will open up.

"As the manufacturing sector shifts towards a more data-led approach, it's crucial that we're working with industry and supporting companies to use digital technology on shop floors to enhance the factories of the future.

"Working with both Siemens and Virtualis, and other relevant AFRC Members and Partners, we are increasingly using innovative technologies within research projects across a range of sectors, while advancing the development of smart factories."

Alan Norbury, Chief Technologist at Siemens, said: "We're thrilled to come on board as a Tier One Partner at the AFRC, providing support from software to training, enhancing innovation and cross-sector relationship building across Scotland.

"The early stages of adopting industry 4.0 technology are often where companies hit hurdles. Working in partnership with the AFRC, we're aiming to help customers accelerate investment cycles with enhanced access to skills, technology, processes and research that will reduce risks associated with investment in smart factories.

"As the partnership evolves, we're keen to share best practice across sectors, engage with small to medium sized businesses to develop fully connected supply chains, and further invest in software, hardware and training to create a strong infrastructure that will maximise benefits of the technology to accelerate digital manufacturing."

For more information visit:  
[www.afrc.org.uk](http://www.afrc.org.uk)

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# London Stock Exchange lists ECS Engineering as inspirational and a leader in its sector

ECS Engineering Services has been selected as one of UK's most inspiring companies for 2019 and listed to receive the London Stock Exchange's "1000 Companies to Inspire Britain" award.



ECS's Operations Director Jamie Wesley says the nomination came as a surprise. "We knew nothing of this beforehand. It is not something you apply for and hope to be short listed; the Stock Exchange independently review lots of companies and draw up their own nominees. As such it is very gratifying to be included in such an illustrious group."

ECS Engineering Services specialises in bespoke design and construction of water, energy and environmental processing and management projects. Its clients include UK water and utility companies, government agencies, drainage boards, building and construction companies and architects.

1000 Companies to Inspire Britain is an annual programme that recognises the achievements of the UK's fastest growing and most dynamic small and medium-sized enterprises (SMEs). Part of its remit is to identify the sectors and trends that are shaping the national economy. The London Stock Exchange (LSE) uses a rigorous methodology for selecting companies that have outperformed their peers and are likely to continue doing so due to their dynamic and innovative approach to business.

The selection process starts by identifying all eligible companies, the criteria for which are: they must be registered at Companies House,

have been operating for at least three years and have a turnover of between £6m and £250m. This long list is then divided up by Standard Industry Classification (SIC code) groupings and the average growth rate for each sector is calculated over the last four years. The LSE then selects those companies that have best outperformed their contemporaries.

The overall idea is to identify high growth British businesses that are helping the national economy evolve. They are, or shortly will be, part of the backbone of society, creating high quality, well paid jobs, innovating and driving economic growth.

Jamie Wesley says: "Being an engineering company, in many ways we just get on with our work; concentrating on delivering the best engineering solutions possible to our customers and providing infrastructure that is important to the local community and/or the national economy. Much of our work is far from glamorous and is often invisible to the general public, so getting recognition through the 1000 Companies Awards is very gratifying."

For more information:

ECS Engineering Services Ltd

Tel: +44 (0)1773 860001

[www.ecsengineeringservices.com](http://www.ecsengineeringservices.com)

# SOUTHERN 20 Manufacturing & Electronics

FARNBOROUGH | Hants | GU14 6XL

11<sup>th</sup> | 12<sup>th</sup> | 13<sup>th</sup> FEBRUARY 9.30am – 4pm  
(3.30pm close Thurs)

## Where Industry and Innovation converge

Meet over 800 national and international suppliers at the Farnborough International Exhibition & Conference Centre this February at Southern Manufacturing & Electronics (inc AutoAero) 2020. See live demonstrations and new product launches of machine tools & tooling, electronics, factory & process automation, packaging & handling, labeling & marking, test & measurement, materials & adhesives, rapid prototyping, ICT, drives & controls and laboratory equipment.

Free industry seminar programme online @  
[www.industrysouth.co.uk](http://www.industrysouth.co.uk)

The exhibition is **free** to attend, **free** to park and easy to get to. Doors open at 9.30am on Tuesday 11th February.

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# Sulzer introduces the latest addition to the submersible dewatering XJ pump range

In 2012, Sulzer introduced the XJ series of submersible dewatering pumps with outstanding hydraulic performance, increased wear resistance and high-efficiency motors. The XJ 900 is a performance range extension of the XJ series pumps.



Like all Sulzer submersible drainage pumps, the new XJ 900 offers an economical and reliable option for dewatering applications. Whether working in mining, tunneling or construction, the Sulzer pumps are a valuable asset against water-related downtime.

The new pump is equipped with a high-efficiency electric motor rated 90 kW for 50 Hz markets and

108 kW (145 hp) for 60 Hz markets. The high-efficiency IE3 motor and new hydraulics combined with low-friction bearings reduce power losses. As a result, the total energy costs are low, and the carbon footprint is reduced. The unique hydraulic design allows for easy conversion between high-head and high-flow configurations. This makes it possible to stock fewer pumps and still have the right hydraulic performance for the job.

For more information on Sulzer's products and solutions for dewatering applications, please visit: [www.sulzer.com/dewatering](http://www.sulzer.com/dewatering).



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[www.dualpumps.co.uk](http://www.dualpumps.co.uk)

# Optimise performance with a bespoke Chemical Injection System from SPX FLOW

Space and weight constraints are key considerations in offshore oil and gas installations. Through its Bran+Luebbe brand, SPX FLOW specialises in the development of metering pumps and chemical injection systems that ensure the precise and safe delivery of high value chemicals whilst meeting customer specifications for space and weight.

The innovative Bran+Luebbe Novados double-acting, double diaphragm (DADD) metering pump for chemical injection applications harnesses proven technology to reduce the size and weight of a pumping installation while ensuring safe, reliable, efficient performance. It provides the capacity of equivalent duplex pumps but significantly reduces the cost, footprint and weight.

The DADD is based on Bran+Luebbe's proven Novados diaphragm pump technology, giving assurance of performance and reliability while helping to address the physical constraints encountered on offshore platforms. It also reduces lifetime maintenance costs through the use of a single gear, rather than the two gears required in traditional arrangements.

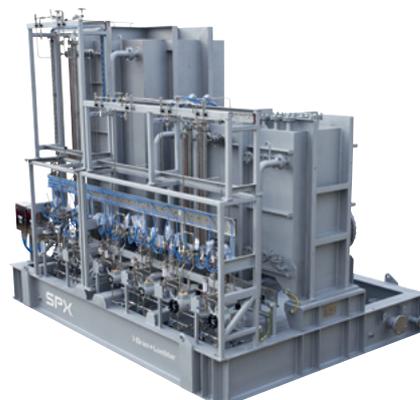
The diaphragm technology used in Novados metering pumps offers additional safety features with a configuration that is designed to provide hermetically sealed handling of hazardous and dangerous chemicals. The inherent accuracy of diaphragm technology also assists in reducing raw material costs and increasing pumping efficiency in high flow, high pressure applications. These characteristics are particularly useful in certain applications: for example, in optimising the amount of high cost polymer used in EOR polymer injection. Bran+Luebbe pumping technology also ensures gentle transfers of the polymer fluid, preserving its bonds and helping to maximise EOR efficiency.

## The full package

The Novados pump's potential benefits can be fully optimised when it is incorporated as part of an integrated chemical injection system. These systems can be designed to deliver precise amounts of chemicals, including antifoam, corrosion inhibitors, demulsifiers, glycol and polymers, at different points in the extraction and refining process. A complete integrated package solution comprises all the pumps, storage tanks, valves, associated filters and pipework, as well as control instrumentation. These chemical injection packages can vary in size from a simple, single pump skid to sophisticated multi-pump, multi-tier storage and injection packages.

There are numerous benefits to be derived from commissioning a specialist like SPX FLOW to design and build a chemical injection package. The system can be designed to accommodate specific space and weight constraints from the outset while meeting the required scope of supply, rather than bringing together a series of individual components on site. The package is constructed under factory conditions, which results in better build quality, and reduces local build time.

Once complete, the system is subjected to rigorous testing at an SPX FLOW engineering facility before being delivered, which gives confidence that it can be brought onstream more quickly. An integrated chemical injection package is also simpler to incorporate into the wider offshore installation, because it comes ready for final connection. Significant time and cost savings are therefore possible. It also eliminates factors like weather-dependency and creates less on-site disruption.



In addition, dealing with a single supplier greatly simplifies the procurement process and makes sourcing parts or aftersales support so much easier. Customers are fully supported through the SPX FLOW global network, which means whole lifecycle services from qualified engineers are never far away.

The Bran+Luebbe brand is associated with reliable, robust and high performance pumping solutions and has a long and successful history in the oil and gas industry. A global aftermarket footprint and fully qualified offshore service engineers mean that Bran+Luebbe can provide support at any stage of a project: from initial pre-order (FEED), through design and build, to comprehensive testing, commissioning and life-cycle maintenance.

This is further supported by SPX FLOW's commitment to ongoing technical product development, in-depth understanding of applications, professional services and expert engineering - making it a partner of choice for oil and gas operators.

For more information about Bran+Luebbe, the Novados range and chemical injection systems, visit: [www.spxflow.com/en/bran-luebbe/](http://www.spxflow.com/en/bran-luebbe/)

# Forrester Chicken Wash-Saver

Most large food processing and production sites have a centralised hygiene or sanitation cleaning system, many of which feature one or more high-pressure pumps feeding a distributed array of wash-down guns and lances.

Using high pressure water demonstrates advantages over chemical-based cleaning, not least of which are effective removal of deposits and simpler waste-water disposal. With many users moving to pressures below 60 bar, the objection against airborne aerosols has also been largely addressed.

However, many such systems were installed at a time when excessive energy consumption was not even a consideration. The rotary pitot-tube type pump had its advocates but today is widely recognised as being very inefficient. Typically running at less than 40% mechanical efficiency even at its optimum operating point, this can drop even lower under part-loads. A further disadvantage is that these pumps have to be run at very high speeds (4,500 to 5,500 rpm) in order to achieve even 60 bar so cannot be slowed down by use of a VFD (Variable Frequency Drive) 'inverter', and also making them highly susceptible to lime scale build-up throwing the rotor out of balance. This in turn leads to early seal and bearing failure, requiring the pump to be removed from service and sent away to a specialist for what can be a lengthy and expensive repair. Conversely, reciprocating positive-displacement pumps such as those manufactured and supplied by Cat Pumps have a long and respected reputation in food factory sanitation systems. Running at speeds of 1,000 rpm and slower, these pumps return consistent high pressure and typically 85% mechanical energy efficiency irrespective of operating speed.

## Forrester Chicken's Experience

One advocate of Cat Pumps is Forrester Chicken, based in Cheshire and described as 'one of the leading UK suppliers of raw, cooked and coated chicken products to both the retail and foodservice sectors.' Forresters have used Cat Pumps for many years, including a fixed-speed model 2530 plunger pump to power their factory hygiene wash-down lances.

Operations Director Angus Dilliway-Parry explains: "I've always been impressed with Cat Pumps reliability, ease of servicing and customer support. When we needed more cleaning capacity we had no hesitation in choosing their latest variable-speed technology with its promise of energy savings and improved reliability." He continues: "We installed a Cat Pumps Wash-Saver system based around the same pump model, which gives us the benefits of commonality of parts. The new pump came complete with the manufacturer's original-equipment valves and accessories already fitted, together with their automatic inverter control panel. The system has already been running over 1,000 hours and we haven't needed to touch anything since it was set up and commissioned by Cat Pumps."

General Manager of Cat Pumps UK adds: "During the night shift the pump runs at variable speeds, continually matching its output to the number of guns Forresters' operators are using at any moment whilst maintaining the same high



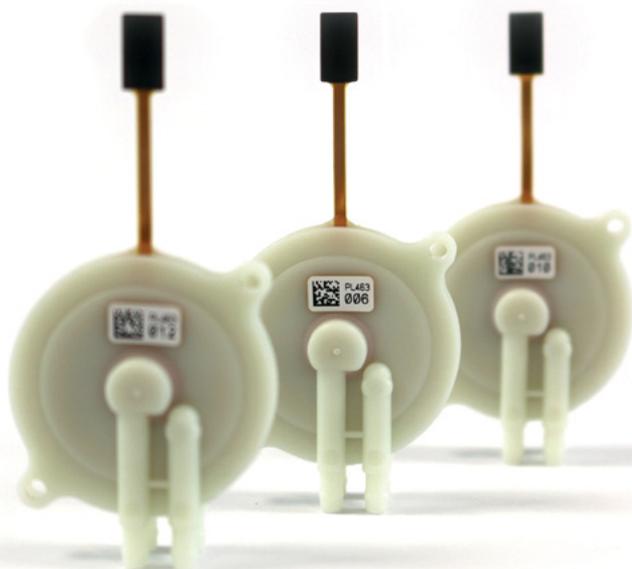
energy efficiency. During the day the pump mostly remains in its pre-programmed idle mode, consuming almost no power at all. However, it is pressurised and ready to re-start automatically as soon as the first wash-down gun is opened, then returns to idle when not required. It also has in-built protection against dry-running, minor and major leaks amongst other features."

Angus continues: "I'm impressed how the Cat pump still generates the same high pressure even when running at the lowest speed. In the past we ran the old pump at full speed the whole time, just recirculating water and consuming power unnecessarily. As a result we also suffered short life of some associated components not supplied by Cat Pumps, such as the unloader valve. But the new pump only runs as and when required. Even ignoring the energy savings, the reduced wear and tear on the whole system is sure to result in longer service intervals. Then when the electricity bills come through the cost advantages are obvious". "We still have the previous pump in place as a back-up but have never needed to use it. I'm sure we've made the right decision. VFD inverter drives make sense on many types of machinery and we are delighted with our new Cat Pumps system"

For more information visit:  
[www.catpumps.co.uk](http://www.catpumps.co.uk)

# Ion Science Confirms Exclusive Agreement With TTP Ventus To Offer Award-Winning Disc Pump™

Piezoelectric pump's innovative features deliver ultrafast millisecond response and more sensitive gas detection, monitoring, analysis and sampling



ION Science a leading manufacturer of gas detection sensors and instrumentation for occupational health and environmental monitoring applications – has confirmed an exclusive agreement with TTP Ventus ([www.ttpventus.com](http://www.ttpventus.com)) to distribute its award-winning Disc Pump™ to the global gas detection market. The micropump platform offers a wide range of innovative features designed to deliver ultrafast millisecond response and more sensitive detection of gases including volatile organic compounds (VOCs).

An excellent fit with Ion Science's market-leading photoionisation detection sensors (PIDs), the lightweight TTP Ventus piezoelectric pump offers key features for the gas detection, monitoring, analysis and sampling industries including silent, vibration-free operation, exceptional pressure and flow, true pulsation-free flow, fast response to set-point changes, high precision controllability and resistant to magnetic fields.

These benefit many applications by allowing, simpler instrument design – especially for

chromatographic systems, lower limits of detection, real time capability to respond to trigger conditions, intermittent sampling against pressurised lines, and improved user experience in wearable applications.

The agreement between the two Cambridgeshire-based hi-tech businesses covers two Disc Pump product lines: the XP Series provides a combination of performance and efficiency benefits with a wide temperature range from -25 up to 55°C for supporting the most demanding applications whilst the BL Series is a lower cost, entry-level version.

Tom Harrison, Business Development Manager at TTP Ventus comments: "We are excited to partner with Ion Science to offer our Disc Pump to the global gas detection industry. It represents an opportunity to accelerate our growth in this previously untapped market by leveraging Ion Science's extensive experience, worldwide presence and technological expertise."

Duncan Johns, Managing Director at Ion Science adds: "The TTP Ventus Disc Pump is truly revolutionary making it an excellent fit with our well proven MiniPID sensor technology. Offering these complementary products under one roof helps us to respond to the ever increasing demand for rapid, sensitive detection of VOCs. We are confident the relationship will be a success and look forward to it further strengthening our position in the global gas detection market."

The TTP Ventus Disc Pump is already widely used across a range of markets including medical, life science, environmental and defence. It offers two pumping chambers which are configured at the point of manufacture either in series for high pressure applications, or parallel for higher flow.

Most piezoelectric gas pumps rely on the movement of piezo actuator to compress the gas in a cavity which increases its pressure. Such 'displacement' pumps have limited performance because the movement of piezo actuators is very small.

By instead creating a standing wave TTP Ventus is able to deliver much greater pressure and flow than traditional piezo pumps. Further, Disc Pump operates at ultrasonic frequencies making it completely silent.

Turning an ultrasound standing wave into useful pumped flow requires a highly specialised valve, able to respond in a matter of microseconds. The patent-protected Disc Pump achieves this delivering unrivalled pneumatic performance.

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

# The Importance of Chemical Storage Ventilation

Many industries require a number of potentially hazardous chemicals in day to day maintenance, manufacturing, cleaning, sterilization, testing and operating applications. The safe storage of these chemicals involves a number of considerations in terms of temperature, ignition control, ventilation and segregation.

The ventilation of chemical storage areas is of paramount importance to ensure clean air and a safe working factory environment. Ventilation is needed for chemicals and their containers as they have the potential to release dangerous quantities of vapours or gases that are damaging, flammable, corrosive, irritating or toxic. These vapours quickly accumulate and present a considerable hazard if left unventilated.

Well ventilated storage is particularly key for those substances classed as fuming or highly volatile. It is recommended that such ventilation be by air extraction from the storage room or cupboard to an external exhaust at a safe distance from any openings (windows or doors) back into the building.

The fume extraction system needs to be suitable for handling air that is potentially corrosive, given the nature of the chemical vapours to be carried from the storage area. Axair offers a range of fans designed specifically for extracting corrosive air, due to their polypropylene construction. In addition to standard corrosive fume extraction, Axair also provide polypropylene fans suitable for ATEX Zone 2 applications. These applications will have been assessed by an official ATEX specialist and deemed to have a risk of the accidental presence of explosive fumes.

In such chemical fume extraction systems, it is best practice to site the fan at the end of the ductwork system. The reasoning behind this is to

keep the ductwork under negative pressure which means, in the event of a leak, the system would draw in clean air rather than blowing out fumes into the building. This would limit any damage caused by the leak before it was identified.

In order to accurately specify a fan, there are two key pieces of information required; the airflow rate and the system resistance. Airflow rate is based on the number of air changes per hour needed in the storage area. From the airflow rate, the size the ductwork is determined and so the system resistance is calculated. There may be a requirement to control the fan with a sensor to switch the fan on and off. This can be achieved with the use of an inverter. The sensor sends a signal to the inverter, which in turn controls the power source to the fan.

Please note that if there is a possibility the installation needs to be ATEX rated, then an expert needs to determine the Zone classification for the area. The information they provide will cover the size of the Zoned area and the standard of equipment to be used in the Zone.

For further information or to specify a solution for a chemical fume extraction application, please contact Axair on 01782 349 430, email sales@axair-fans.co.uk or visit www.axair-fans.co.uk.



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# Is Dust Under Control in Your Workplace?

The HSE have recently announced that their inspectors are beginning a new round of site visits across the UK to ensure that appropriate control measures are in place in work environments where dust poses a health risk. If dust is a potential issue within your business, how confident are you that your team understand the risks, effectively plans to prevent dust exposure and, where this isn't practicable, adequately controls it?

The Dust Hub on the HSE website is a key resource for anyone looking to implement protection from dust; it promotes knowledge of dust-related health issues as well as outlining employer responsibilities, control principles and training.

It's important to understand that all uncontrolled dusts are potentially hazardous. Variants each have different chemical components and particle sizes and some are more harmful than others. Excessive exposure to some types has been linked to health problems including asthma and lung cancer. Occupational diseases can cause life-changing health issues or even premature life-ending illness.

Essentially there are four ways in which dust can harm health: Inhalation, skin contact, eye contact and ingestion. Breathing dust into the lungs can create respiratory problems which can sometimes take years to develop. Inhalable dust is invisible to the naked eye and can get trapped in the nose, mouth, throat or upper respiratory tract where it can cause numerous issues. Respirable dust is even finer in particle size and can be breathed deeply into the lungs causing problems including pneumoconiosis.

Certain types of dust can also cause irritation or ulceration of the skin. Dusts such as epoxy resins, rubber processing chemicals, wood dust and fibre glass are known to be a cause of dermatitis. Dust particles in the air can also cause eye damage or irritation, sometimes due to their chemical content.

Workers can swallow dust when it becomes trapped in the mucus which lines the respiratory tract and can cause gastrointestinal irritation. Swallowed dust can also enter the bloodstream where it can cause harmful effects in other organs and tissues.

In addition to the Health and Safety at Work etc.

Act 1974, the Control of Substances Hazardous to Health (COSHH) 2002 regulations help employers control risks by providing a framework underpinned by a risk assessment. On the HSE website, the 'COSHH and your industry' page allows you to search by industry to view key hazards for 10 specific industry workplaces including engineering, offshore oil and gas, motor vehicle repair and welding.

Dust can be a problem in almost any industry. So, how should employers approach monitoring and controlling it in the workplace? A good starting point is the 'Dust in the workplace: General principles of protection' guidance note EH44 published on the HSE website.

This explains simple checks to identify whether a problem exists, employers' legal responsibilities, Workplace Exposure Limits (WELs), risk assessments, prevention and control measures, local exhaust ventilation (LEV), personal protective equipment (PPE) and respiratory protective equipment (RPE), washing facilities, cleaning, information and training, emergency procedures and health surveillance.

A risk assessment will often identify the need for an air sampling survey to establish the level of exposure. These measurements should be made under normal working conditions and should demonstrate the ability to detect very fine dust particulate.

Dust monitoring instrumentation can take the form of wearable personal dust monitors, handheld portable monitors or area/environmental monitors for indoor and outdoor use which are available to buy or hire for shorter-term or occasional surveys. As with any part of the dust control process, if surveying is not done correctly it will not give an accurate result so ensure your supplier offers a comprehensive after-sales service and free product user training.



PPE, which includes RPE, should be used as part of a strategy for controlling exposure and should only be considered when all other practicable measures cannot achieve adequate control - not as a substitute. All PPE should be selected according to the type of airborne hazardous substances (dust, fumes, fibres, mists, gases, vapours) and should be introduced alongside a programme which covers all aspects of selection, use and maintenance. The properties of the hazardous substances, the needs of the wearer, the task and the workplace conditions should all be taken into consideration.

RPE wearers are legally required to be fit tested to ensure they are competent in wearing and maintaining their RPE, as well as establishing that the RPE actually fits without leaks. People come in many different shapes and sizes, as do face masks. Research shows that up to 50% of all RPE used does not offer the assumed level of protection because it simply doesn't fit properly and cannot create an effective seal.

Fit testing must be carried out by a competent person using an approved method and technology. The fit2fit.org website, backed by the BSIF and HSE, contains companion guides for the whole range of different fit testing methods as well as a register of accredited Fit2Fit testers.

If you would like any further advice or information regarding dust control monitoring in the workplace or fit testing, please feel free to contact Shawcity to discuss your requirements.

www.shawcity.co.uk  
Tel: 01367 899419  
marketing@shawcity.co.uk

## Stop Operators Blowing Coolant Into The Atmosphere

The New BD1000 from AirBench helps control coolant problems.

AirBench BD is a self-contained blowdown station for the removal of coolant and swarf from machined parts. An operator can simply place parts in the cabinet, lower the screen, and use the integral blow gun to clean parts using factory



compressed air. An integral venturi system assists with capture of coolant and the filter system in the base of the unit is easily replaced when full.

The new model 1000mm wide BD 1000 joins the existing 500mm wide BD500 and is designed for longer components. Both models run solely from factory air supplies with no requirement for electrical connections – making them ideal for location next to machine tools for regular operator use.

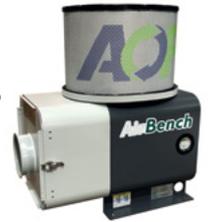
Maintenance is minimal with only occasional filter pad changes required.

Contact AirBench Ltd to arrange a trial or visit:  
[www.airbench.com/bd](http://www.airbench.com/bd)

## Upgraded AOF Mist Filters From AirBench

AirBench Ltd have announced an upgraded range of AOF Oil Mist Filters. The AOF range is designed for extraction of oil mist and smoke from machining applications. AOF units can be machine-mounted, or supplied with separate stands where required.

AOF is designed to use the wind shear principle for initial separation of mist from airstreams. As the contaminant loading on the fan is very low, typically they do not suffer from loss of impeller balance and so can be serviced in-house at relatively long intervals.



Units are supplied as standard with a high-grade final filter with an estimated life of up to 3600 working hours.

Usually available from stock, and supplied complete with all parts required for mechanical installation, AirBench can solve most mist extraction issues quickly and simply.

AirBench also supply the OMF range of stand-alone coolant mist filters, which are designed for continuous operation and can be configured to provide a central system supporting multiple machine tools.

Contact us for more information or a site survey; or visit:  
[www.airbench.com/mist](http://www.airbench.com/mist).

# 3M launches Secure Click respirator series

## Advanced features for breathability, comfort and wearer peace of mind

3M, the science-based technology company, has launched a new half facepiece respirator series, Secure Click HF-800, with features providing next-generation breathability, comfort and simplicity.

The respirator has an innovative Secure Click connection that works like a seat belt, enabling workers to easily connect filters and cartridges to the facepiece with a simple click that is audible, so wearers can hear that the filter or cartridge is installed properly. A one-touch user seal check also gives wearers confidence that their respirator is being worn properly.

Secure Click HF-800 Series from 3M also features the world's first quad-flow cartridge system. Two dual-flow cartridges on each respirator combine to create four air flow paths for easier breathing and comfort. The exhalation valve helps direct exhaled breath and moisture downwards.

The respirator also incorporates a speaking diaphragm (optional in some models) to make communication easier while working.

Additionally, the low-profile facepiece design features a unique silicone faceseal with a flex-joint nose bridge for greater comfort, a wide field of view and compatibility with certain welding and grinding shields.

Applications of use (with correct filter selection) may include grinding, sanding, light welding, spraying, blasting, cleaning, forging, cutting, finishing and painting.



The HF-800 respirator may be used with Secure Click D8000 Series gas and vapour cartridges and D3000/D7000 Series particulate filters from 3M against a variety of gases, vapours and particulate hazards, according to European Standards (EN).

For additional information on the new Secure Click HF-800, visit:  
[3M.co.uk/secureclick](http://3M.co.uk/secureclick).

# Rubix UK acquires Peter Campbell Sales Ltd.

Rubix UK has completed the acquisition of Peter Campbell Sales Ltd. (PCS). PCS is a leading specialist supplier of metal cutting tools and offers bespoke manufactured solutions across Oil & Gas, Aerospace & Defence, Automotive and Precision Machining industries. Operating from two sites between Airdrie, Scotland, and North East England, PCS also manages around 70 industrial vending machines for its customers, with sales of £8m in the last twelve months, following continued strong growth.

The acquisition provides Rubix UK with the opportunity to consolidate Rubix's leadership in the UK specialist cutting tools market – a key growth area for the UK business – following the acquisition of Matrix Tooling Services in 2018.

PCS also brings a new speciality to Rubix – special tools manufacturing and tool regrinding services. In addition, the acquisition will further strengthen Rubix's expertise and experience in the UK Oil & Gas and Aerospace sectors.

PCS will continue to operate independently to Brammer Buck & Hickman and alongside Matrix Tooling Services. Andy Jeffrey will continue in his role as Managing Director of PCS and will report to Nigel Banks, Rubix UK MD Services Division.

Mark Dixon, CEO Rubix UK said: "This acquisition supports our ambition to be recognised as a preferred supplier with the technical expertise and network in place to provide a multi-specialist

range of products, services and solutions. It is further evidence of our status as the consolidator of choice for the industrial distribution market in Europe."

"I am pleased to welcome the PCS team, customers and suppliers into the Rubix family and further reinforce our position as a leader in the UK cutting tools market, by not only expanding our product offering to customers, but also providing strength in depth in both our technical expertise and services."

Andy Jeffrey, Managing Director, PCS said: "I am excited at this next step for PCS as a company; Rubix perfectly complements and enhances the culture, value and customer understanding of our business. Together with Rubix, and Matrix Tooling Services, we are looking forward to the growth and development of PCS. Our regional and industry footprint perfectly complements that



of Matrix Tooling Services and also means we will be able to jointly leverage the scale of Rubix and extend our offering across the UK."

Nigel Banks, Rubix UK MD Services Division said:

"We are delighted to welcome the PCS Team to Rubix UK and would like to express our deepest gratitude to Peter and Helen Campbell as they use this as an opportunity to retire from the business fully. They have built a strong and successful business that we at Rubix UK are now looking forward to develop further as part of our Cutting & Machining specialist division."

For more information visit:  
[www.rubix-group.com](http://www.rubix-group.com)

# Mark of quality for food sector sealing materials

Now available from Dichtomatik Ltd, the authorised UK distributor of food and beverage related products manufactured by Freudenberg Sealing Technologies, come two sealing materials with high purity levels that are ideal for food industry applications, as well as those in the pharmaceutical sector.



*Above: Freudenberg VMQ series materials are highly suitable for use in food plants, particularly if the application has extreme thermal requirements.*



*Above: Freudenberg 70 VMQ 117055 is resistant to animal, ethereous and plant fats/oils.*

In fact, these advanced Freudenberg silicone elastomers - 70 VMQ 117055 and 60 VMQ 117117 - have just achieved compliance with two important food industry regulations in China, adding to a host of existing certifications applicable in the EU and US.

When it comes to food, everyone wants to be sure that it is free of harmful substances. In order to guarantee safety, not only the food, but the materials with which it contacts, must meet particularly stringent criteria, a statement that also applies to sealing materials.

Freudenberg VMQ series materials are highly suitable for use in food plants, particularly if the application has extreme thermal requirements (-50°C to +200°C) and cleaning processes that do not rely on steam sterilisation.

A good application example for 70 VMQ 117055 is dairy operations, which frequently use the material to manufacture O rings as the high fat content of the process media must be taken into consideration. Freudenberg 70 VMQ 117055 is resistant to animal, ethereous and plant fats/oils.

Due to the material's purity, which is reflected visually in its transparent colour, it is fast becoming the preferred choice in the food sector. Importantly, 70 VMQ 117055 is ADI-free and conforms to FDA 21 CFR 177.2600, EC Regulation 1935/2004, 3-A Sanitary Standards Class I and USP Class VI (121°C).

In China, specific standards were created in 2016 - GB 4806 and GB 9685 - which deviate from corresponding regulations in the EU and US. Freudenberg has now successfully tested 70 VMQ 117055 and 60 VMQ 117117 for conformity with the Chinese regulations, highlighting their ongoing global appeal.

More information at:  
[www.dichtomatik.com](http://www.dichtomatik.com)  
or [food-beverage-seals-uk.fst.com](mailto:food-beverage-seals-uk.fst.com)

# Thordon Bearings To Enter Hydro Power Market With New Turbine Range

Thordon Bearings, through its subsidiary T-G DNALOP, has been awarded a 1.3 million zloty grant from Poland's National Centre of Research and Development (NCBiR) to design, manufacture and market a series of new micro-hydro turbines in the 5 to 100kW range.



The 1.8 million zloty project will mark Thordon Bearings' entry into the hydro turbine market, following TG-DNALOP's acquisition in March 2019 of the 67kW Struzyska hydro power plant near Pila, Poland.

Thordon Bearings will collaborate with the Polish Academy of Sciences to develop a low noise, pollution-free, highly efficiency, double-regulated Kaplan-type turbine based on Permanent Magnet (PM) technology.

Tomasz F. Jerzak, General Manager of T-G DNALOP, Thordon's manufacturing plant in Poland said: "We are delighted that NCBiR has approved funding for the development of a new hydro turbine. A key element in being awarded the grant is that the development will result in Poland's first completely pollution-free turbine for sale to hydropower sites all over the world."

Work will start in October to prepare the Struzyska facility for turbine manufacture and testing, with

the plant's existing 17kW No.2 turbine scrapped to make way for the new design.

The other two machines at the plant will be completely refurbished to showcase the new turbine along with Thordon's new range of water lubricated turbine guide bearings, wicket gate bearings and face seals, all of which will be a key feature of the environmentally sustainable turbine.

Thordon innovator and 2019 winner of the Elmer A. Sperry award, George A. (Sandy) Thomson said: "The new turbine will be the most environmentally and energy efficient turbine in its power range. There will be no drives or gears, it will be flexible enough to deal with different water flows and there will be absolutely no risk of pollution; it will be completely grease- and oil-free. It will also be one of the most affordable turbines in the market."

The first test hydro turbine is expected to be installed and commissioned at the Struzyska facility in December 2020, with an additional set of turbines produced for onward sale.

Greg Auger, Thordon Bearings' Hydro & Clean Power Business Unit Manager, said: "We are very excited about entering this market. It is a challenging and interesting project for us to work on, leveraging our experience working to promote oil and grease free solutions in the hydropower market. Our initial focus is on the design and successful testing of the first prototype, after which we will establish a sales and marketing network across the areas in which we look to position the new turbine."

While coal-fired power plants currently dominate the Polish energy market, renewable energy-based power generation is forecast to grow exponentially over the next decade as part of Poland's long-term strategy for sustainable development.

"Currently, hydro power makes up less than 2% of the total amount of electricity generated in Poland. However, we understand that Poland's objective is to increase their share of energy from renewable sources to 15% over the next few years including constructing small hydropower plants and modernizing existing facilities, so we hope to be an important part of this transformation," said Auger.

Although micro-hydro systems were used in Europe and the USA from the end of the 19th century, many were abandoned as larger grid connected power became available. However, there is a growing trend, particularly in Germany and the UK, to set up micro plants along small rivers, usually on sites which were previously used for water mills.

Smaller hydro plants have also been set up in the hilly areas of Sri Lanka, the Philippines, China and the Americas.

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

# Bearing mounting with induction heating 4.0 technology

Bearings fail for many different reasons. One such reason is improper mounting. If the right techniques and tools are not used, bearing life is jeopardized. It is estimated that approximately 30 percent of bearing failure is caused by poor fitting.

## What to consider when selecting an induction heater

The customer may have particular requirements including a cylindrical or progressive expansion, automatic demagnetization, microprocessor-controlled heating, automatic power adjustment, logging of the heating process. Questions to be asked are: What is the size and type of the bearing or part? The size of the heater is determined by the smallest inner diameter and the largest outer diameter. How often is heating required? Do you need speed, or do you need a controlled heating process using Delta-T? Do you have both mounting and dismounting requirements?

## Reducing maintenance costs

Significant cost savings can be achieved with induction heater technology. Sometimes savings are enormous: heating times are reduced dramatically; parts are reused that would otherwise be scrapped; a production plant reduced overhaul time from ten to eight days. But when it comes to bearing mounting, perhaps the most important advantage is the improved quality of the assembly process.

## Induction heating specialist Bega

Bega Special Tools has been selling induction heaters for over 40 years. Over the years the design of the induction heaters has evolved, starting with the change from analogue heaters to digital heaters; the introduction of the ergonomic swivel arm; the continued development of the microprocessor for maximum control; automatic demagnetization; production in accordance with CE directives; CSA/UL certification for the Canadian and US market; and finally the design of medium frequency induction heaters for both dismounting and mounting.

For more information visit:  
[www.begaspecialtools.nl](http://www.begaspecialtools.nl)



For many bearing types, bearing manufacturers recommend induction heating as the optimum heating method. The new generation of Betex induction heaters are specially designed for industrial use. The low and medium frequency induction heaters of the Smart series enable full control over the heating process. They have an easy to use touchscreen with many heating options. More importantly: they are fitted with a Delta-T control system. Two temperature sensors measure the inside and the outside temperature of the bearing or other part and adjust the heating according to the selected variable settings. In this way, the maximum permitted temperature difference between two points can never be exceeded. Heating is even and uniform, and material stress is avoided. Heaters have a USB port for logging purposes. Nowadays it is becoming more and more important to be able to store heating data or create a proof of work report.

## Heating bearings

Bearings should never be heated above 120°C (248°F) unless specified otherwise. Extreme heat

can affect metallurgical structure and lubrication. Betex induction heaters offer full control including Delta T. When this option is used, the temperature difference between the inner and outer ring can never exceed the maximum pre-set value.

## Betex medium frequency induction heaters for mounting and dismounting

These heaters solve difficult assembly or disassembly jobs for medium-sized and large bearings. Compared to traditional methods, the heaters are easy to use. Fast when necessary for disassembly, or controlled and slower for stress-free assembly of valuable bearings. Fixed or flexible inductors can be used depending on the application. Fixed inductors are used for serial work. Flexible inductors are multifunctional and are used for large bearings or irregularly shaped parts, with all the advantages of a safe, stress-free, damage-free, clean and energy efficient heating process. For special applications it is even possible to carry out tests in advance or to use simulation programs.

# Optimal's EMMA AI energy management innovation nominated for Wright Commission Award final

Optimal Monitoring, a thought-leader in energy management software, has been nominated by the Retail Energy Forum as one of three short listed finalists for the prestigious Wright Commission Award with its pioneering EMMA AI (Artificial Intelligence) solution.

Optimal Monitoring, finalist, will present EMMA AI at: The Wright Commission Final, Energy Live Expo, 5 Nov 2019, QE11 Building, Westminster, London.

Developed in partnership with The University of Reading, EMMA AI is a unique, artificial intelligence energy management platform from Optimal. This 'game-changing' solution is one of three award finalists at this year's Energy Live Expo – as voted for by the Retail Energy Forum (REF). Encompassing several of the largest organisations in the retail sector, REF is a collective of businesses with a mission to support the UK's transition to a low carbon economy. Its annual Wright Commission Award highlights new, exciting and innovative ideas in the energy management space.

Winning a place in the final, Optimal Monitoring is one of the most established providers of energy management systems and the only energy management finalist. Optimal empowers organisations to make smarter decisions about utilities, energy consumption and the impact on corporate social responsibilities. It is proven to deliver substantial savings to many vertical markets including retail, logistics, manufacturing and public sector. However, its latest cutting-edge solution takes this value even further by not only gathering and interpreting data but analysing and communicating recommended solutions direct to those responsible for actions within a building management team. No longer do Energy and

Facilities Managers have to analysis data and drive implementation – EMMA AI delivers the intelligence to perform this task whilst continually learning and evolving for future cost savings, increased scalability and long-term sustainability.

EMMA AI is a state-of-the-art solution that identifies anomalies and critically, sends simple-to-implement instructions straight to those tasked with managing the efficiency of estate buildings – meaning one energy manager can now easily oversee many more sites. Faster rectification means time and cost savings resulting in untold commercial benefits in terms of resource management, carbon efficiency and financial gain.

Duncan Everett, Optimal Monitoring Managing Director, comments: "We are delighted that EMMA AI has achieved a finalist nomination for the Wright Commission Award. EMMA AI is changing the way that companies operate, allowing more to be achieved with less time and cost consumption. Using artificial intelligence to constantly analyse energy and utility consumption, our system can make suggestions to overcome any specific site issue – directly to individuals with hands-on responsibility, such as facilities managers and site engineers. This allows Energy Managers more time to concentrate on wider company energy management and long-term goals. Additionally, EMMA AI can significantly reduce the cost of current operating behavioural programmes and delivers the added advantage of maintaining and



improving future energy management outcomes. The platform can easily be added into an existing estate management helpdesk and entry and operating costs are very low – it's a win-win situation."

Michael Prager, Optimal Monitoring Chairman, concludes: "To the best of our knowledge, EMMA AI is the most advanced instance of artificial intelligence in energy management – a world's first. Nobody wants data, they want solutions – EMMA AI provides this to the right employees at the right time, with positive proof of how implementation has improved energy efficiency. Securing a place as just one of three overall finalists, supports our belief that EMMA AI represents a real step-change in energy management."

For more information visit:  
[optimalmonitoring.com/emma-ai-the-wright-commission](https://optimalmonitoring.com/emma-ai-the-wright-commission)

# Valuekeep focuses on Latin America

The Portuguese company Valuekeep, dedicated to the development and marketing of maintenance management solutions, announces an investment of 1 million euros for internationalization in this region of the American continent.

Valuekeep has just reinforced its presence in the Latin American region, through the creation of a network of local partners, who are responsible for providing support to companies that are using its solutions.

Among the partnerships, we highlight the association with Cognitiva, an Ecuadorian consultancy specialized in the implementation of business solutions. The two companies are developing strategies to reach the Ecuadorian, Peruvian and Colombian markets, where Cognitiva has a prominent presence and will from now on represent the Valuekeep software.

Inversiones San Gabriel, a Peruvian company

specialized in the production and distribution of disposable plastics, has already surrendered to Valuekeep's software to manage its technical operations at its production centre located in the country's capital, Lima.

The internationalization is one of the company's priorities in terms of international expansion, foreseeing an investment of one million euros in the next three to five years, with the objective of strengthening its presence in this continent. Valuekeep's Managing Director, Luís Cadillon, reveals that:

"The Valuekeep solution is universal, is prepared to support the asset maintenance processes of all

companies and has already proven its efficiency in the European market. Now our priority is the Latin American markets where we want to expand our presence".

In Spain, where Valuekeep began operations over three years ago, it has a presence in practically all the autonomous communities of the country, including the Balearic Islands and the Canary Islands, registering strong growth, as in the United Kingdom. Valuekeep software allows users to centralize all information related to the maintenance of equipment and assets in a single digital platform, which provides more efficient control of the equipment and assets of the organisations in the various sectors of activity.

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

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# Arnlea successfully renews ISO 9001:2015; reveals proof of innovation

Arnlea Systems Ltd, global leader in industrial mobile software for tracking, inspection and maintenance for the oil & gas industry, has successfully renewed its ISO 9001:2015 certification, the international standard for Quality Management Systems, for an additional three years, further underpinning its commitment to continuous improvement and innovation.



The ISO certification audit was performed by global standards organisation LRQA. They say that the ISO 9001 certification has been achieved by more than 1 million organisations worldwide, making the standard arguably the most important piece of business literature ever written.

Jeremy Lai, Arnlea's Finance Director, said: "Arnlea is committed to the ISO 9001 standard and is a further demonstration of our ambition, aspirations and innovative ethos, to continuously meet our customers' requirements and exceed their expectations."

ISO 9001: 2015 is specifically a quality management standard that affects the delivery of products and services. It provides Arnlea's customers with the assurance that the business can consistently provide its products and services to meet their requirements and applicable statutory and regulatory requirements.

Lai adds, "By and large our customers expect ISO 9001 as a matter of course. When we receive a request to bid for a piece of work or to provide a solution, the prequalification questionnaires usually request evidence of a QMS and whether it complies with a recognised standard. It's part and parcel of

the bidding process, and something we're able to demonstrate easily through compliance with ISO 9001."

It is a standard that prevents complacency; with ISO 9001:2015 as the backdrop, Arnlea has embedded a mindset of continuous improvement and innovation as an integral part of the company's ethos, which helps Arnlea stay ahead of the competition.

For further information visit:  
[www.arnlea.com](http://www.arnlea.com)


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# Vert Rotors to reveal its latest product at Major International Conference in London

Industry innovator Vert Rotors UK Ltd. will unveil its new A150 compressor which features the pioneering Vert Conical Rotary Compressor technology at a major industry conference next week in London.



The Scottish firm's A150 – based on its patented Conical Rotary Compressor (CRC) technology – will be on display at City University of London which is hosting the 11th International Conference on Compressors & their Systems. Industry leaders from around the world will see the A150 – designed specifically for operation in areas where low noise and continuous operation is an advantage – in action for the first time.

Running from September 9-11, the biennial convention is a gathering of research organisations, developers, manufacturers, equipment suppliers and users of compressors, expanders, pumps and their systems. It provides a forum for discussion on developments, challenges and opportunities in the gas, refrigeration and air sectors.

The A150 offers 150lpm flow and 10 bar pressure with an optional variable speed drive, all with low levels of noise and vibration to ensure minimal impact on surrounding people and equipment.

The portable and compact unit fits neatly under a bench or in a van, so can be sited close to the point of use.

Its unique combination of benefits also includes a 100% duty cycle for maximum productivity, meaning that it is capable of running continuously. Connecting to a standard 240V power source with quick coupling of the compressed air connection means it does not require the expensive installation of some other rival compressors.

Phil Harris, chief executive of Vert, said the company is delighted to bring this latest innovation to the market.

"Previously thought unachievable, our CRC technology is forging a new path in the industry and this latest A150 product launch demonstrates the benefits of the technology in action.," Phil said.

"We are excited about the potential to exploit its benefits across a variety of markets, and are

greatly looking forward to putting the A150 on its first public display next week. The International Conference on Compressors & their Systems is an ideal showcase for the latest development from Vert."

Vert was founded in 2013 to develop its conical rotary compressor technology, which has been hailed as the biggest innovation in the compressed air industry of the last 40 years. The technology has won multiple awards since the first working prototype was produced in 2014, and led to Vert securing a prestigious government grant earlier this year from the UK Department of Business, Energy and Industrial Strategy (BEIS).

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



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# Gardner Denver takes care of SHJ Hospital Pipelines' medical vacuum needs with oil-free screw technology

SHJ Hospital Pipelines (SHJ) is using Gardner Denver's leading Elmo Rietschle oil-free, screw vacuum pumps in its piped medical gas systems, delivering efficient oil-free vacuum while significantly improving whole life costs too.

SHJ is a leading supplier of piped medical gas systems for hospitals, compliant with HTM 02-01, which incorporate vacuum technology to help draw off liquids that might occur during surgery in theatres, or from patients staying on wards. Having worked with an extensive range of NHS trusts and healthcare organisations for the past 40 years, SHJ is responsible for designing, installing and maintaining these critical gas systems in hospitals across the UK.

To help deliver the medical gas required, Gardner Denver has supplied its S-VSI 301 screw vacuum pump to SHJ. The innovative dry-running screw vacuum technology requires less maintenance than alternative oil-lubricated competitor models, which rely on lubricating oil to operate effectively. There is no oil at all within the screw technology's pumping chamber and so the risk of process contamination is reduced to zero. This makes it ideally suited to the healthcare environments in which SHJ need these solutions to operate in.

Offering suction capacities from 100 to 600 m<sup>3</sup>/h and end vacuum of 0.01 mbar (abs.), the S-VSI screw vacuum pump delivers a lower total cost of ownership throughout its lifetime, due to the vacuum pump's contactless technology. This not only reduces potential breakdowns but minimises on-going maintenance costs too.

The vacuum pump also offers exceptionally low noise levels, courtesy of the low rotational speed of the screw technology. Quiet operation was an important consideration for SHJ too, to help ensure low noise levels for engineers and other staff.

The new S-VSI screw vacuum pumps from Gardner Denver have already been supplied to a range of hospitals with existing vacuum plant, in order to help their medical gas systems operate more efficiently. This includes Charing Cross Hospital, Hammersmith Hospital and St Mary's Hospital in London.

Kevin Witt, Service Manager at SHJ, explains:

"The gas used in hospitals is absolutely vital.

There's typically no back-up to the vacuum pump being used in these medical gas systems, so it's critical that we install trusted and reliable plant equipment.

"Most hospitals will commonly fit oil-lubricated centrifugal vane vacuum pumps within these systems. In contrast, we are one of only a few medical gas companies in the UK that are now using screw vacuum pumps too. This is for a number of good reasons, but the key one is the improved energy efficiency that the technology offers. Driven by an inverter, these variable-speed vacuum pumps are in line with the NHS' commitment to reducing its carbon footprint, offering an efficient solution that consumes less energy.

"Oil-free technology requires less servicing as well, which is another key advantage. There is no oil in the gearboxes and bearings, which means no separator elements are required. The result? Maintenance spend that is at a fraction of the cost of oil-lubricated models.

"And when it comes to dealing with Gardner Denver, we have been continually impressed with



the delivery dates that have been met, the market-leading products on offer, and the aftersales support that we receive. The team continues to go above and beyond to ensure that all our needs are met, and I would not hesitate seeking out their advice, support and expertise when it comes to vacuum solutions."

Rocco Fanella, Northern Europe Key Account Manager at Gardner Denver, said: "By choosing our oil-free screw vacuum pumps, SHJ can be confident that they are investing in a robust, reliable and energy efficient product.

"We initially approached SHJ some years ago, replacing a number of competitor rotary vane pumps with screw models, which were better suited to meet the needs of SHJ's customers. Thanks to their oil-free operation, our latest screw pumps provide long service intervals, helping to dramatically cut down on costs, while delivering efficient vacuum that can be relied on. SHJ's units deliver essential medical gas to hospitals across the country, and we are very happy that our screw vacuum pumps play such an important role in these systems."

For more information on Gardner Denver, please visit [www.gardnerdenver.com/industrials](http://www.gardnerdenver.com/industrials).

# Rapid Reverse Engineering

Sulzer reverse-engineers compressor component with 40% cost saving

Many industrial processes rely on compressors for a host of essential tasks, from powering machinery to squeezing industrial gases for storage and transportation. When one of its main compressors failed, a company in the Philippines faced high costs and the prospect of a long wait for a critical replacement part. That's when it turned to Sulzer for help.

Modern centrifugal compressors are high-performance machines. Used in the most demanding industrial applications, their job is to deliver air or other gases at high volumes and high pressures into storage, transportation pipework or to downstream machinery. The machines themselves can be very large indeed, consuming hundreds of kW of power, but the critical component at their heart is a precision-engineered high-speed impeller, which can be just a few cm in diameter.

For one company in the Philippines, damage to this vital part was to be the cause of a prolonged period of expensive disruption. When a large compressor failed, investigations showed that the machine had been operating out of balance for some time. The resulting vibrations had caused such extensive damage to the machine's 7.4-inch (188 mm) diameter impeller that the part was beyond repair.

With the original manufacturer of the compressor unable to offer a timely or cost-effective replacement, the company approached rotating equipment specialists at Sulzer for a solution.

## Digital modelling and measurement

The damaged impeller and shaft were removed from the casing and shipped to Sulzer's facility in Indonesia. Once there, the local engineering team set about collecting all the data needed to recreate the part. Using a combination of

laser scanning technology and conventional measurements, the team collected digital and dimensional inspection data to build a complete 3D representation of the impeller.

The data was then used by Sulzer experts to build a 3D solid model of the replacement component. The damage to the impeller was extensive, so the Sulzer team had few complete surfaces they could use as a basis for their model. By applying engineering analysis to the geometry of the broken part however, they were able to "undo" the damage digitally and determine the precise geometry of the original component.

While the experts were working on the geometry, their colleagues were continuing their own work to reverse-engineer the component. They used x-ray fluorescence (XRF) analysis to establish the exact chemical composition of the impeller. That allowed Sulzer to source the same alloy in order to manufacture the replacement. Finally, the team used zebra analysis to determine the surface continuity quality in the 3D model that would affect the surface finish required for the new part during the machining process.

## Machining expertise

With the model, material and relevant manufacturing information now available, it was time for Sulzer's CNC machining specialists to step in. A manufacturing team in Houston produced the replacement part, which was



machined from a single block using five-axis milling techniques.

After surface finishing, the part was spin tested at high speed in Houston to check for any imbalance before shipment to Indonesia. The Indonesian team assembled and balanced the new impeller on the original shaft before returning it to the customer for installation in the machine.

"This project shows Sulzer's global capabilities at their best," says Hepy Hanipa, Head of Turbo Services South East Asia. "This was a relatively small, but highly complex component and its performance was critical to our customer's operations. Close cooperation between Sulzer teams working on opposite sides of the world allowed us to deliver a high-quality solution on a timescale that met the customer's needs whilst delivering a 40% cost saving."

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

# Riello's premix burners up to 3MW

Riello RX premix packaged burners are available in outputs up to 3MW, offering NOx levels of less than 40mg/kWh, with high turndown ratios of up to 8:1.



The main differences between traditional pressure jet burners and premix burners relate to the ways in which the air and gas is mixed and in the technology of the combustion head.

In traditional pressure jet burners, the gas and the combustion air are mixed at the point of ignition on the end of the combustion head in the space available in the combustion chamber (diffusive flame).

Riello RX burners feature an exclusive design that includes a patented woven wire gauze 'sock' covering the combustion head cylinder. This arrangement enables a very compact flame with a diameter directly related to the burner firing rate, ensuring precise heat control and optimum efficiency at all loads.

The high turndown makes RX burners ideal for systems with variable heat loads where low NOx levels are also required. These range from condensing boilers through to process applications such as spray booths and industrial ovens.

The geometry of the gas ports is designed specifically to ensure that throughout the modulation range the speed of the air/gas mixture is sufficient to avoid burn-back. Also, the high combustion intensity developed on the premix burner head means that a greater heat output is achieved over a much smaller combustion head dimension, when compared to other burner technologies.

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.

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

# Introducing the world's first hybrid bearing life model from SKF

SKF has unveiled a pioneering model that, for the first time, enables the working life of hybrid bearings to be determined more realistically.

Called the Generalized Bearing Life Model (GBLM), its development will ensure that SKF customers and distributors choose the right bearing for the right application, every time.

Until now, it has been difficult for engineers to predict whether a hybrid bearing will outperform a steel one in a given application, or whether the possible performance benefits that hybrid bearings enable are worth the extra investment they require. The conventional equations engineers use to calculate the rating life of a bearing do not reflect the real-world performance of hybrid designs.

To rectify this issue, in 2012 engineers at SKF started to develop what would become Generalized Bearing Life Model, or GBLM. A primary version of the model was presented at the Hannover Messe in 2015, but at this stage the model was not ready yet to perform

calculations for hybrid bearings. Four additional years were needed by scientists and technicians at SKF's facilities in the Netherlands and Austria to incorporate this feature into GBLM.

Using GBLM, SKF engineers have been able to determine the real-world benefits hybrid bearings can have. In the case of a poorly lubricated pump bearing, for instance, the rating life of a hybrid bearing can be up to eight times that of a steel equivalent. For a screw compressor bearing running with contaminated lubricant, meanwhile, the hybrid offers a rating lifetime a hundred times greater than a conventional steel bearing.

"SKF has always been at the forefront of developing new methods for calculating bearing life", says Guillermo Morales-Espejel, Principal Scientist at SKF Research and Technology Development. "GBLM is a



giant leap for bearing science and will enable better choices to be made when selecting bearings for a wide variety of applications."

Now, through SKF Bearing Select, this capability is available to SKF customers and distributors. SKF Bearing Select can be used to model hybrid deep-groove ball bearings and hybrid cylindrical roller bearings and can be found at [www.skfbearingselect.com](http://www.skfbearingselect.com) More advanced calculations are available in SKF internal calculation tools to support application engineers in customer projects.

Visit SKF for more information:  
[www.skfbearingselect.com](http://www.skfbearingselect.com)

# The importance of ARC Flash clothing

ARC flash clothing is being increasingly needed due to the rise in ARC flash hazards becoming more of a risk in many workplaces. Due to the high demand of electricity and power that we continue to use in our daily lives, it is important that electrical workers are full equipped to deal with an ARC flash hazard event should it occur in the workplace.



## Why should I wear ARC flash protective clothing?

Arc flash PPE is often called arc-rated (AR) clothing, and is specifically designed for the effects of a flashover without being bulky and difficult to work in. It is made from flame resistant materials such as cotton and nylon which is also lightweight and comfortable for the worker to be able to wear all day. It also includes several layers to wear to provide maximum protection should an ARC flash occur; by wearing multiple layers it minimises the impact of high impact bursts of heat on your skin.

The damage that an ARC flash can have on a person's skin can be devastating, which is why this specialist clothing is needed – each layer is designed to take the impact of the heat and blasts to prevent your skin from burning. In the worst cases, victims have suffered 3rd degree burns and even death from an ARC flash occurring. It is better to wear more PPE than required to keep safe when working with electricals than wearing minimal PPE in case an ARC flash incident occurs.

For more information visit:  
<https://www.reecesafety.co.uk/arc-flash-clothing.html>

## What is an ARC flash?

An ARC flash – sometimes called a 'flashover' or 'electrical arcing' – occurs when a burst of light and heat is created from an arc fault. ARC flashes can be caused by sparks, equipment failure, dust, corrosion or improper installation. This electrical explosion can cause serious harm to a person within close proximity of an incident if the correct personal protective equipment (PPE) is not worn. An ARC flash can cause the following injuries:

- Loss of memory or brain function due to concussion
- Hearing loss
- Damage to eyesight from the high-intensity flash
- 3rd degree skin burns
- Other physical injuries from being knocked over by shock waves

## What is ARC flash protective clothing?

ARC flash clothing is created in accordance with both national and international safety standards, and acts as a last line of defence in protecting the wearer from serious injuries, especially burns, due to the thermal hazards in an ARC flash event. ARC flash clothing includes under base layers, outerwear, switching suit kits, gloves and face protection such as visors and balaclavas. It is important to wear multiple layers of Arc flash PPE for full skin protection and face protection when working with electrical equipment.

To be properly protected from heat and faults that may occur when working with electrical equipment, wear ARC Flash Clothing from Reece Safety to greatly reduce the risk of burns and shocks and always comply with health and safety and risk assessment standards in your workplace.





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## Think you're safe? Wolf Safety voltage alerts remove doubt

Working in potentially explosive atmospheres is hazardous enough without concerns that the voltage being supplied to temporary lighting is no longer within certified limits.

How can anyone be absolutely sure what voltage is being supplied, especially in a typical, long cable FPSO situation? Could it be one volt more or less than the certified safe range?

Reassurance is now available from Wolf Safety, whose latest technology gives immediate warning when voltage either slips below or exceeds certified limits, even by just one volt.

Their SOVI™ technology - it stands for Safe Optimal Voltage Indicator - removes all doubt, giving operators the confidence that temporary lighting is operating safely, effectively and at the optimal voltage.

Unique to Wolf Safety products, the groundbreaking technology is now incorporated into its ATEX and IECEx certified Hazardous Area Temporary Lighting range, further enhancing safety in potentially explosive atmospheres.

It also ensures that a lighting solution is operating effectively and at the optimal voltage.

In the unlikely event that a light is operating at a voltage above the maximum certified limit the beam will pulse from bright to dim, giving a clear warning that action is needed to ensure that work can continue safely in the hazardous area.

It's more likely that issues will arise at the lower end of the voltage range. If too many 24-volt lights are strung together and the transformer is overloaded, voltage could drop below the optimal level and light output will reduce incrementally.

If this does occur, SOVI™ ensures the light will pulse bright, indicating that the lamp is not operating at its optimal voltage range, though the light itself is still safe as it is certified down to zero volts.



This differs from other ATEX lights, where a reduced voltage supply can lead to the light operating outside the certified voltage range.

Wolf Safety's clear, visual warning system and certification down to 0 volts enhances user safety even further in hazardous areas.

For technical info visit:  
[www.wolfsafety.com/temporary-lighting](http://www.wolfsafety.com/temporary-lighting)

## NEW PRODUCT: Low Cost Conveyor For Materials Up To 900°F

EXAIR's new 2.5" and 3" High Temperature Line Vac Conveyors convert hose, tube, or pipe into a powerful in-line conveying system for high temperature materials up to 900°F (482°C).

These air operated conveyors are available with smooth ends, to fit into hose or tube and secured with a simple hose clamp or they are available with NPT threaded ends, to mount onto threaded pipe. They feature large throat diameters for maximum throughput capability.



The High Temperature Line Vac Conveyors eject a small amount of compressed air to produce a vacuum on one end, resulting in high output flows on the other. The response is instantaneous. Regulating the compressed air pressure provides infinite control of the conveying rate. High Temperature Line Vacs are CE compliant and available in seven sizes from 3/4" to 3". Construction is durable Type 303 or Type 316 stainless steel to resist high temperature, corrosion and contamination. Applications include sampling hot flue gases, exhausting fumes, conveying soot, ashes, salts and other hot debris. Other models for hopper loading, scrap trim removal, small part transfer and packaging are available. High Temperature Line Vac prices start at \$435.

For more information visit: [www.exair.com/303htlv.htm](http://www.exair.com/303htlv.htm)

Protect your people, plant and processes

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Working in the chemical, petrochemical, pharmaceutical or food and beverage industries? From manual handling to industrial processing, the risk of generating static electricity is ever present. Transferring or mixing gases, liquids or solids, particularly in hazardous areas, could see a spark discharge, causing an explosion in your plant.

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[www.newson-gale.co.uk](http://www.newson-gale.co.uk)

Leading the way in hazardous area static control

# Have you heard about THE CBM CONFERENCE?

As you may know, Mobius Institute trains thousands of people just like you every year, and we know that everyone needs the opportunity to learn more about condition monitoring and reliability improvement.

It is important to get hands-on experience with the tools and techniques, listen to educational presentations, meet with other practitioners, learn from practitioner case studies, and meet with the companies that provide products and services that help us in our work.

**You can do all this and more at THE CBM CONFERENCE; there is nothing else like it!**

We listened to your feedback and have added more reliability training, certification opportunities, and more interactive and hands-on sessions, and we have clearly identified the level of each session (beginner, intermediate, advanced). The conference is growing, and we expect this year's to be bigger and better than ever!

Coming up, THE CBM CONFERENCE will be in Antwerp, Belgium (3-6 June 2019) and Manchester, UK (7-9 October 2019), where Jason Tranter, the CEO & Founder of Mobius Institute, will deliver the Asset Reliability Practitioner (ARP) 3-day course with optional certification exam and a dedicated stream of interactive sessions. Paul Dufresne, Advisor at Mobius Institute, will deliver a keynote address (seriously, don't miss it), and Dennis Swanepoel, Lead Technician at WearCheck, will deliver an interactive vibration analysis session, but that is just the beginning of the great hands-on sessions and workshops that you can experience!

In addition to Europe and the United Kingdom, THE CBM CONFERENCE tour will also be coming to the

CBM CONFERENCE.

www.thecbmconference.com

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USA (September 10-13), Australia (November 11-14) and Mexico (December 3-5), in 2019.

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Check out our website for more information and to register: [www.thecbmconference.com](http://www.thecbmconference.com)

## New SLED-401, 601 and 1000 series LED floodlights: the evolution of the Cortem Group SLED family featuring a greater Lumen Output

Three years after the market launch of the SLED floodlights family, Cortem Group has designed three new models featuring a diffused light beam and a greater Lumen Output: the SLED-401 (18.490 lumens), the SLED-601 (32.092 lumens) and the SLED-1000 (46.145 lumens).



The three new models complete the family together with the SLED-250, 400 and 600 models characterized by LEDs with a "square shaped beam" reflector that allows concentrated light distribution and perfectly uniform lighting in every direction.

All the models of SLED series floodlights combine lightweight, compact design, high performance in

terms of reliability, safety, efficiency and energy saving.

The finned body of the floodlight acts as a heat sink for the LED plate, allowing the installation of greater light output without incurring the deterioration of the LEDs. The flat protective glass

is resistant to shocks and high temperatures and ensures an environment friendly lighting. Thanks

to their high luminous output and to a white light with a colour rendering index greater than 70, SLED series floodlights are able to replace the traditional rectangular floodlights that use discharge lamps sodium vapour or metal halide, guaranteeing lighting quality, lifespan, visual comfort and energy saving.

[www.cortemgroup.com](http://www.cortemgroup.com)

## Conker launches SX50 barcode scanner and drives productivity

Scanner improves data capture, analytics and efficiency for teams

Conker, a British producer of business rugged tablet, touch screen and mobile devices, announces the availability of its SX50 barcode scanner. The SX50 is designed for hard-wearing environments, where accurate and reliable barcode scanning devices are required to improve data capture, data analytics and productivity.

The SX50 has been ergonomically designed for repetitive tasks and forms part of Conker's SX range. It operates effectively within warehouse and logistics scenarios where organisations are trying to replace paper-based processes and improve team productivity. This includes managing receipt and delivery of goods, 'pick packing' or during inventory management and 'fulfilment' scenarios where a digital audit trail is necessary for firms.

Conker's Android 7.0 handheld device is IP67 rated. It features an integrated 2D barcode scanner; an Octa-core processor; 32GB storage; has dual SIM

capabilities and includes an optional pistol grip for control and comfort during repetitive scanning related tasks.

James Summers, CEO and founder, Conker says, "When you provide staff with the right tools to do their work, they will undoubtedly do a great job. Our scanners are designed to be fit-for-purpose for clients' working environments. They are cost-effective, ergonomic, easy-to-use, robust and capable of forming a key component within any supply chain strategy. Our installation and post-sale customer service is second to none too."

Cottage Farms, a Conker customer, has used the SX50. Georgi Belov, Cottage Farms says, "Conker's devices enable us to accurately track our apple deliveries. We use its devices during inventory management, fulfilment and delivery. Since using Conker's devices, we've noticed an uptick in staff productivity and efficiency. The devices are easy

to use and we've noticed our staff are also more satisfied with the technology they use while doing their jobs. The scanners are also rugged enough for our working environment and our IT team has valued Conker's fast, efficient and personable customer service."

Using Conker's SX50 devices to improve and replace antiquated paper-based systems can contribute towards digital transformation and reduce an organisation's carbon footprint. Conker offers a strong and compelling sales and after sales support. Throughout the entire purchase lifecycle, including repairs and support, customers liaise with an efficient person.

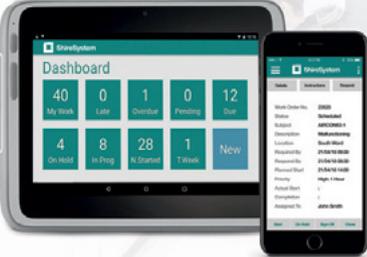
Conker will exhibit the SX50 at IMHX, 24-27 September 2019, NEC, Birmingham (Stand 6D26). If you would like to book a meeting with Conker at IMHX to learn more about its devices please contact: [conker@elatecommunications.com](mailto:conker@elatecommunications.com).

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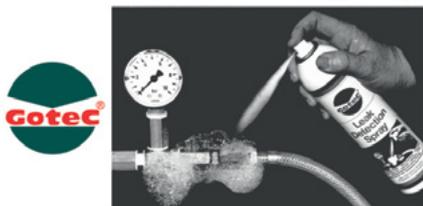
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