

# ENGINEERING solutions MAINTENANCE

February/March 2022 | Issue 108

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Your Electrical  
Supply system can  
adversely impact  
on your Machinery  
– and Vice Versa.  
How to avoid such  
problems.



Page 4



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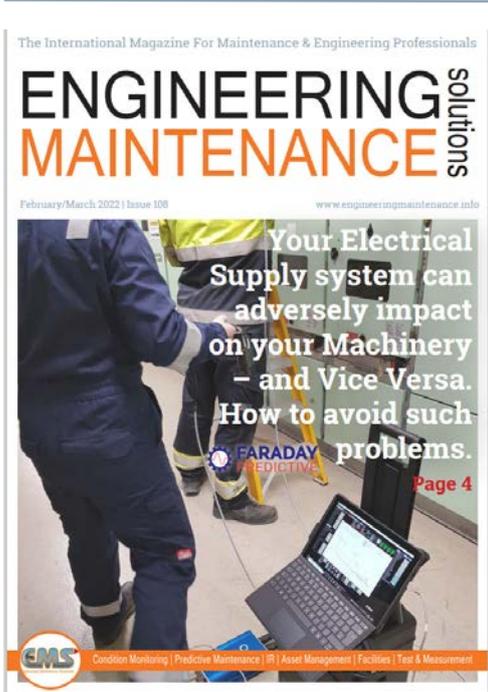
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## Page 3 Contents

Pages 4-5 Cover Story

Pages 6-21 News and Products

Pages 22-25 Hire

Pages 26- 27 Automatic Lubricators

Pages 28-29 Condition Monitoring

Pages 30-31 ATEX

Pages 32-35 Pumps & Valves

Pages 36-38 Maintenance Training

Pages 39-43 Compressed AIR

Pages 44 -45 Lubrication and Bearings

Pages 46-47 CMMS

Pages 48-49 Automation

Pages 50-57 What's new

Pages 59-59 Buyers Guide

Page 60 UE Systems



# Your Electrical Supply system can adversely impact on your Machinery – and Vice Versa. How to avoid such problems.

Most industrial machinery is driven by electric motor, indeed somewhere between 40% and 50% of all electricity generated is used by electric motors.

**R**eliable and efficient performance of those electrically driven machines is important to their users, whether they are in factories, facilities, utilities or services.

Achieving maximum reliable, efficient performance can be massively aided by Condition Monitoring, to avoid un-necessary maintenance whilst also avoiding unexpected breakdowns.

### Mechanical Behaviour can affect the electricity supply – which can be used for condition monitoring and diagnosis

The electric motor driving the machine can be used as an intrinsic part of a condition monitoring system. Because the current drawn by a motor is affected by the load, it effectively acts as

a torque sensor.

And because many or most faults create subtle variations in the torque required to drive the machine, each with their own characteristic frequency, detecting these subtle variations in motor current can identify the nature and severity of developing faults in a machine.

To make use of this, you need an appropriately designed sensing and analysis system, of which the current “best of breed” technology are Model-Based Voltage and Current (MBVI) systems. Systems like the Faraday Predictive S200 unit (see figure 1) automatically identify a wide range of faults, including mechanical and operational phenomena as well as electrical ones,

right across the entire machine (motor + transmission + driven equipment + process).

### The electricity supply can affect Mechanical Behaviour – sometimes with very serious consequences

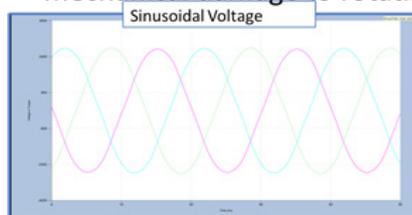
In the same way that variations in torque to drive a load alter the current (and to an extent, voltage) drawn by the motor, so a distorted electrical supply can put additional, and sometimes significant, oscillating torsional loads onto any machine connected to that electricity supply.

During a recent MBVI assessment of the health of a submerged pump (about the only way to assess the condition of this completely inaccessible ma-

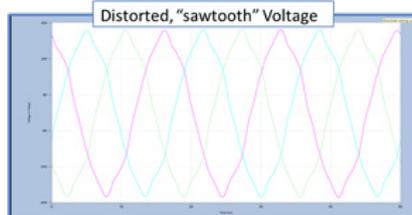
Figure 1 - Faraday Predictive S200 unit mounted in motor starter cabinet



### Distorted Electrical Supplies can result in real, serious mechanical damage to rotating machines



A perfectly sinusoidal voltage, applied to a perfect machine, will result in a magnetic field of constant strength rotating at constant speed – ie a constant torque with no oscillations.



A perfect machine subject to a distorted voltage waveform like this will experience severe torque variation, twice per cycle.

In this case it resulted in over-stressing the coupling between turbine and generator, fracturing the shear pin on repeated occasions

Figure 2 - comparison of “nice” vs “nasty” voltage profiles

Figure 3 - Taking monitoring readings in a nice, clean, dry safe area - the Switchroom



Not only can MBVI identify a wider range of faults than VA, across the entire machine with one set of sensors; because all the measurements are done in the switchroom, in a nice, clean, dry, safe area, capturing the data can be more straightforward.

Measurements in switchrooms like those shown in figures 3 and 4 can cover many machines all from one location, and permanent installations here require minimal cable runs – unlike connecting to accelerometers located all over the plant where the cabling costs can be very significant.

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



chine) it was observed that the voltage profiles were extremely distorted – rather than looking like a regular, smooth Sine wave, the waveform was more like a sawtooth profile – as shown in figure 2

seem unfamiliar, but in practice it has several advantages.

Shortly after making this observation, one of the generators supplying this installation suffered a catastrophic failure of the coupling between the turbine and the generator.

It appeared to be a classic fatigue failure – the coupling had been subject to severe alternating stresses 120 times every second of operation because of large non-linear loads connected to the network creating this distorted voltage.

Without having been able to see the shape of the waveforms in this way, the cause of this failure would have remained a mystery.

**Conclusion – use current and voltage monitoring to diagnose faults in your machines and simultaneously avoid serious problems**

For those mainly accustomed to Vibration Monitoring (VA), taking electrical measurements may



Figure 4 - many machines can be monitored from within a single switchroom, with minimal cable runs required for permanent installations

# Snickers Workwear – ISO Compliant High-Vis Workwear

A Superior Range of Working Clothes for Class 1, 2 and 3 protection.



**S**nickers Workwear has an extensive range of High-Vis men's and women's workwear for all kinds of working environments and light conditions.

With Jackets, Trousers, Shorts, Toolvests, Shirts and Fleece from Snickers' LITEWork, FLEX-IWork and ALLROUNDWORK families to choose from, there's a host of different garments in the range to satisfy the specific requirements of Classes 1, 2 and 3 protection levels.

These 'outstanding' products combine with Snickers Workwear's unrivalled hallmarks of functionality and comfort to satisfy the ISO 20471:2013 standard for high visibility warning clothes.

With advanced designs, high-tech fabrics and performance reflection features, all the garments have durable colour-fast protection that will last for wash after wash, retaining shape, comfort and protection levels throughout the life of the gar-

ments.

Added to which, Snickers Workwear High-Vis garments can be custom-profiled to ensure 'stand out' coverage for your corporate brand.

01484 854788

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

[sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)

## Cold Weather Working With Snickers Workwear's Sustainable Climate Control.

Dressing right and staying comfortable when it's cold and wet demands the best in Climate Control working clothes

**C**ontinuous work in cold weather produces body heat and sweat. But when your rate of work slows, the sweat cools and you'll start to feel cold and damp.

The solution is Snickers Workwear's body-mapping Mid-layer working clothes that deliver advanced ventilation to control and regulate the heat from your body.

Made to last from sustainable fabrics such as micro fleece and recycled polyester, they're great for both work and leisure activities. These garments insulate

and keep heat around your body by effectively creating an air pocket inside your clothes.

They complement Snickers Workwear's FlexiWork Base-layer undergarments that combine sustainable animal-friendly Merino Wool with polyamide for warmth and ventilation.

As well as the Top-layer or 'outer shell' AllroundWork and Flexiwork Weatherproof Jackets and Trousers that will keep you warm, dry and comfortable all day long.

For more information on Snick-

ers Workwear's sustainability philosophy and it's Climate Control garments you can call the Helpline on 01484 854788; check out [www.snickersworkwear.co.uk](http://www.snickersworkwear.co.uk) or email [sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)





## The new Prime GTX From Solid Gear. Hi-Tech Safety Boots For The Winter

Incorporating some of the most advanced technical features in safety boot design.

**I**ncorporating some of the most advanced technical features in safety boot design.

With a focus on comfort and S3 safety, Solid Gear's new and athletic-looking Prime GTX boots are probably the most comfortable and robust footwear you can get for the winter.

This hi-tech safety footwear will keep your feet dry so you can work comfortably in the roughest conditions on site – with effective protection all day long.

Solid Gear has combined a Vibram® outsole with a full and lightweight EPTU mid-sole to prioritise top-line comfort and stability. The sole combines excellent durability with oil-and slip-resistance and outstanding grip on snow and ice – even at low temperatures. What's more the GTX combines ergonomics with a torsional rigidity for safety that are enhanced by the durable microfiber upper that has a waterproof and breathable GORE-TEX® membrane.

Comfort and fit are delivered to the highest standard with the GORE-TEX® Stretch Technology in the upper which, together with a high heel counter and the snug BOA® Fit System, make this boot truly a unique experience in safety footwear protection.

**To get more information on Solid Gear Safety Footwear, check out [www.solidgearfootwear.com](http://www.solidgearfootwear.com); you can call the Helpline on 01484 854788 or email [sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)**

## Snickers Workwear to weatherproof your workday.

You can count on real comfort and protection from the rain with Snickers Workwear's AllroundWork and FlexiWork Jackets for professional tradesmen and women.

**S**tay dry, warm and comfortable by choosing from a range of water-repellent jackets that will keep you dry in light showers and deliver great breathability to ventilate your body when you're active on site.

But if you need 100% waterproofness for long periods, check out the GORE-TEX® jackets and the PU garments with welded seams. As part of Snickers Workwear's 'outer shell' clothing layer, GORE-TEX® jackets are extremely durable. With a waterproof membrane to keep you dry, they're windproof to keep you warm and breathable to keep you comfortable all day long.

There's a host of AllroundWork and FlexiWork jacket styles and extensive size options available so you can layer your working clothes properly to ensure that your energy and performance levels are as weatherproofed as you are.

**For more information on Snickers Workwear's 'Weatherproof Working', call the Hultafors Group UK Helpline on 01484 854788, check out the website at [www.snickersworkwear.co.uk](http://www.snickersworkwear.co.uk) or email [sales@hultaforsgroup.co.uk](mailto:sales@hultaforsgroup.co.uk)**



# Siemens donates facemasks to charities with Brammer Buck & Hickman's support

Siemens, working in conjunction with Brammer Buck & Hickman, the UK's leading supplier of industrial maintenance, repair and overhaul (MRO) products and services, has donated protective facemasks to two overseas charities.

The facemasks were ordered by Siemens through Brammer Buck & Hickman – Siemens' preferred supplier – at the start of the COVID-19 outbreak, as one of a number of measures to keep their staff safe.

The masks were welcomed and used by Siemens' factory staff and those deemed critical workers – including hospital maintenance and those working within power stations. However, with government rules and advice in 2020 regularly changing to reflect the shifting nature of the pandemic, the demand for disposal facemasks was considerably reduced. Rather than retain these facemasks, Siemens has donated them to two excellent charities for use overseas: Collective Aid and Medaid UK.

Collective Aid is committed to bringing dignity and care to refugees and other displaced people across Europe. Its mission is

to fill the gaps left by other aid actors. The facemasks donated by Siemens will be sent to Calais for use by Collective Aid's team to protect the vulnerable populations it distributes to, who do not have sufficient access to basic healthcare. To donate to Collective Aid's Emergency Winter Appeal, click here.

Medaid provides sustainable medical solutions, advice and training for those working in low to middle income countries, to make healthcare safe and accessible to all. It specialises in optimising donated equipment to achieve the best possible results. A current project in Northern Uganda will be benefitting from the Siemens donated facemasks.

Paul Duncombe, Siemens Purchasing Commodity Manager, comments on this donation: "Our top priority at the start of this pandemic was to maintain the safety of our staff. We understood that facemasks had a role to play in this, but PPE was becoming difficult to obtain. We partnered with Brammer Buck & Hickman during the pandemic for our PPE needs as they are a tried and trusted partner for us. Brammer Buck & Hickman successfully sourced the facemasks we wanted and a large number have been put to good use within

Siemens.

With the remaining facemasks, we decided that rather than holding on to them, we could put them to use where they are needed most. Brammer Buck & Hickman kindly investigated suitable options and we are pleased to see the facemasks will now go to people who are in most need of them, via two admirable charities. This has been a joint effort between our two companies to achieve something positive in very trying times."

**Brammer Buck & Hickman is part of the Rubix group, Europe's largest supplier of industrial MRO products and services. For more information, please go to <https://uk.rubix.com>.**



# Enerpac Releases New Industrial Tools Catalogue

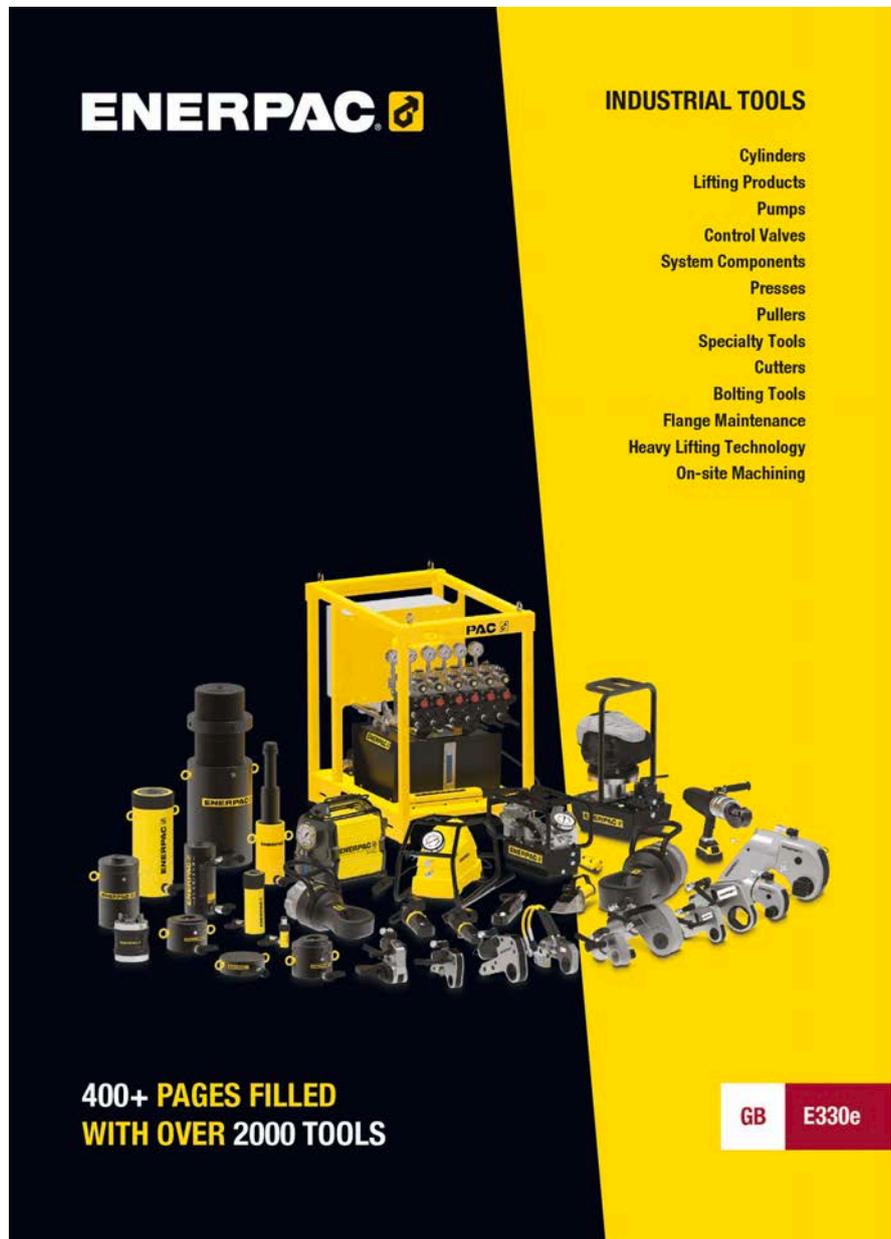
**L**ifting, pushing, pulling, bending, spreading, cutting, lowering, pressing, and punching: The new Enerpac E330 Industrial Tools catalogue is now available. At 420 pages, it is 1.5 times larger than previous editions and designed to better serve customers and provide professionals with all the hydraulic tools they need to work safely and productively.

with photos of actual product applications in factories, shipyards, power plants, paper mills, forge shops, and construction projects around the country. It quickly became—and remains—the industry standard.

**The Enerpac E330 Industrial Tools catalogue can be downloaded from [www.enerpac.com](http://www.enerpac.com).**

The catalogue features the full Enerpac portfolio of over 2,000 tools including the latest new products as well as other lines like Mirage machining, Equalizer flange tools, Sweeney aerospace tools and more. Each product series contains all the specifications, diagrams, selection charts and accessories needed to choose the right tool model and/or hydraulic system for the application. Customers and professionals can browse the catalogue by product category or go directly to a preferred model number using the index. And as in all the previous catalogs, the yellow pages section contains helpful information on the basics of hydraulics and safety instructions, along with tips for tool operation.

A legacy for the Enerpac brand, the original catalogue evolved from an "Idea Book" introduced in 1951. It illustrated hundreds of applications for what was then a budding division of new hydraulic tools for the company. The book was filled



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# maintec

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# Maintec - part of Manufacturing and Engineering Week 2022

Maintec is the UK's only dedicated exhibition for Industrial, Buildings & Supply Chain Maintenance Engineering taking place on 8-9 June 2022 as part of an exciting new event series during Manufacturing & Engineering Week (M&E Week).

**M**aintec is one of four live events that form part of M&E Week co-located with Design Engineering Expo, Engineering Expo and Manufacturing Expo. The shows cover the entire process from design, engineering, manufacturing and maintenance and seek to celebrate the sector sharing successes and future insight, raising critical discussion and is a destination for professionals to source products and services in order to keep them competitive.

Delivering the widest level of content, best practice and business engagement for the UK's industrial sector, it brings huge added value to attendees and exhibitors, with visitors registering for one event gaining access across all shows.

## Complete event solution

Maintec will be at the heart of this new series of events, which celebrate best in UK engineering excellence and innovation covering all vertical sectors including Aerospace, Automotive, Consumer electronics, Defence, Food and beverage, Medical, Motorsport, Oil & gas, Energy & renewables, Pharmaceutical, Print and packaging, Rail, Space and FMCG. The event offers access to CPD content and lead-

ing suppliers providing important information on topics such as the demand on UK production, impacts of Brexit, pandemic recovery, green economy and industry 4.0.

Maintenance plays an important part of the product lifecycle, helping companies maintain their resources, control time and costs to ensure maximum efficiency of the manufacturing plant. M&E Week provides a complete and comprehensive offering for the entire supply chain, ultimately improving processes, optimising asset management and future strategy.

Whatever your current design, engineering or manufacturing challenge, this is an incredible opportunity to connect with experts and leave armed with ideas and solutions to apply.

## What's on

### Exhibition

Thousands of new products from hundreds of leading brands allowing visitors to see the UK's leading maintenance engineering suppliers in one place.

### Conferences

High-level keynote presentations, panel discussions and debates covering a range of topics including digitalisation, regulation, predictive maintenance, analytics and digital twins, capital asset management, IT

and OT, waste treatment and recovery and much more.

### Workshops

Supplier case study led presentations which will deliver practical solutions to immediate manufacturing problems such as how to avoid predictive maintenance project failure.

### Innovation Zone

See live demonstrations and discover the latest technologies that are shaping the future of the industry in this country.

### The Great Egg Race

A live challenge where engineers will compete to build gadgets to carry eggs the furthest possible distance with leaderboard and winners announced onsite.

### Audit, Tax & Advisory Clinic

Run by MHA over both days. Drop in to speak to the experts and get advice on audit, tax & other business issues.

### Drinks Reception

Network and build strategic relationships at the drinks reception open to all attendees at the end of day one.

**Visit the event website for more information**

**[www.maintec.co.uk](http://www.maintec.co.uk)**

**Free to attend. Register now at <https://mandeweek.reg.buzz/ems>**



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# Maintek Show, the 1st equipment, technological and service's fair in Portugal

Maintek Show, the 1st equipment, technological and service's fair in Portugal for maintenance and Industrial Assets Management will take place at Alfindega do Porto Congress Centre on March 10th and 11 March.



This specialized and niche fair fills a sector gap and aims to be the meeting point for the professionals in the portuguese sector. Indus-

trial maintenance, as a critical area for the proper functioning of the entire production chain, has taken on an increasingly important role with a strong impact on the safety in human resources.

Maintek Show is entrance free, however the registration is mandatory.

[www.maintek.pt](http://www.maintek.pt)

## Conserving Human-Made Resources for 70 Years!



2022 marks the 70th anniversary of Belzona – an industry-leading designer of epoxy-based repair composite materials and protective coatings.

It all began in 1952 by flame spraying steel with zinc to provide corrosion protection to steel structures. Since then, the company has expanded into safeguarding various assets from corrosion and erosion produced by different factors. Belzona has been able to combat these issues through its dedication to continuous research and development of polymeric systems; engineering a wide range of the most reliable

and multipurpose products available. Belzona's specialised products are suitable for metal, rubber, concrete, and other surfaces. All Belzona products undergo a series of rigorous tests performed both in-house and by third-party laboratories. Belzona materials demonstrate a superb resistance to erosion, corrosion, abrasion, chemical attack, and physical impact. Unlike many traditional repair methods, Belzona solutions are safe, easy to work with,

do not require specialized tools, and offer a fast return to service.

For 70 years, Belzona has built a legacy on providing effective solutions and unparalleled customer service to our worldwide base established in over 120 countries. Join us this year in celebrating our collective achievements!

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

# Can Polymeric Technology Help to “Accelerate Decarbonization” Across Multiple Industries?

While real progress was made at the COP26 Summit, the main conclusion drawn by the Glasgow Climate Pact was that further emissions cuts are required and need to be provided by the end of 2022. This is to ensure that countries are on track to meet the UN Paris Agreement’s target of net-zero by 2050.

In order to achieve these carbon reductions, the 2021 State of Climate Action Report, authored by the world’s top climate analysis coalition, Climate Action Tracker (CAT)\* explains how: “In some industries, the technologies, practices, and approaches needed to accelerate decarbonization are well understood but have not yet seen the levels of investment and political support needed to rapidly scale up mitigation action.”

As polymeric repair composites and protective coatings fall into the bracket of “technologies” that can actively “accelerate decarbonization”, it could be argued that further investment into these systems could help many industries to ratchet up

their carbon intensity reduction plans in line with the net-zero target.

\*The CAT is backed by a number of or-

ganisations including the prestigious Potsdam Institute for Climate Impact Research in Germany.

Polymeric systems can help many industries ratchet up their carbon intensity reduction plans

COP26 Outcome: Further Emissions Cuts Needed

According to data from CAT, based on the goals made at the COP26 Summit, global warming is projected to rise to 2.4°C by 2050. Although this is an improvement on the 2.7°C rise that was projected prior to the conference, it is still way off the 1.5°C target.

To sum up the situation, the Report said: “The transitions required to avoid the worst climate impacts are not happening fast enough.”

Source: Climate Action Tracker

As such, the Report identifies how it is imperative that transformations towards a net-zero future must occur throughout every sector of society at a pace that is far faster than

recent trends.

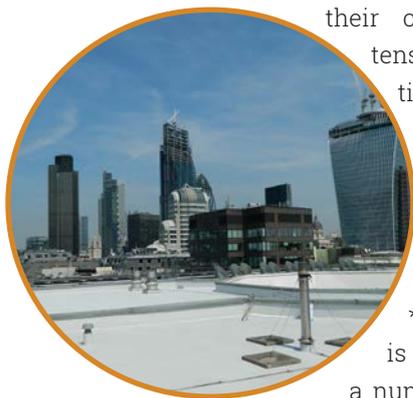
Indeed, as the goals set at COP26 fell short on achieving the Paris Agreement’s net-zero target, countries are preparing to deliver on COP26’s request to “revisit and strengthen their current emissions targets to 2030 in 2022.”

The Outlook for Industries Including Power, Steel, Cement and Buildings

The CAT’s Report goes on to share statistics on the carbon intensity reductions that need to be made by numerous industries including power, steel, cement and buildings, amongst others, by 2030, in order to limit warming by 1.5°C by 2050.

These reductions include:

- The carbon intensity of electricity generation will need to reduce to 50–125 gCO<sub>2</sub>/kWh
- The carbon intensity of steel will need to decline by 25–30% (relative to 2015 figures)
- The carbon intensity of cement will need to decline by 40% (relative to 2015 figures)



•The carbon intensity of operations in select regions will need to decline by 45–65% in residential buildings and by 65–75% in commercial buildings (relative to 2015 figures)  
Unlocking the Potential of Polymeric Materials for Carbon Mitigation

As part of the ever-growing arsenal of carbon mitigation technologies and initiatives, industrial coatings and repair composites can help industries, such as those outlined above, to achieve these reductions.

With a comprehensive range of polymeric systems including: epoxy repair composites, high-temperature coatings, liquid waterproof membranes, elastomeric roof coatings and pipe wraps, amongst others, these systems have been proven to not only repair and protect damaged assets across many different industries, but to also intrinsically improve them for the long term as well.

The environmental implications of this are astronomical. By bypassing the need to replace damaged assets and instead actively improving them, industries can make great strides in minimising their carbon footprints.

Belzona offers a comprehensive portfolio of polymeric repair and protection systems

Economic Benefits of Investing in High-Performance Coatings and Repair Composites

Not only this, the Report also describes the need for “energy- and process efficiency practices [that] can be economically feasible and help drive industrial system transitions”.

As explained through a case study later in this article, investment into composite repair materials and industrial coatings is also an “economically feasible” option. By purchasing these systems, this mitigates the fees that can accumulate in the process of asset replacement.

These fees include: the cost of the asset being replaced, the labor required during the removal, disposal and installation process and also the downtime that can be incurred during this procedure.

For these reasons, an increase in investment into these technologies would help many different industries in the process of ratcheting up their 2030 emissions reduction plans, in line with the net-zero emissions by 2050 scenario, in a way that is also financially advantageous.

Repair and Protection Technology Honed over the Course of 70 Years

For decades, companies such as Belzona, which was first established 70 years ago have been developing polymeric materials to improve the “energy and process efficiency” of buildings, structures, machinery and equipment found across multi-

ple different industries.

Examples of polymeric systems include:

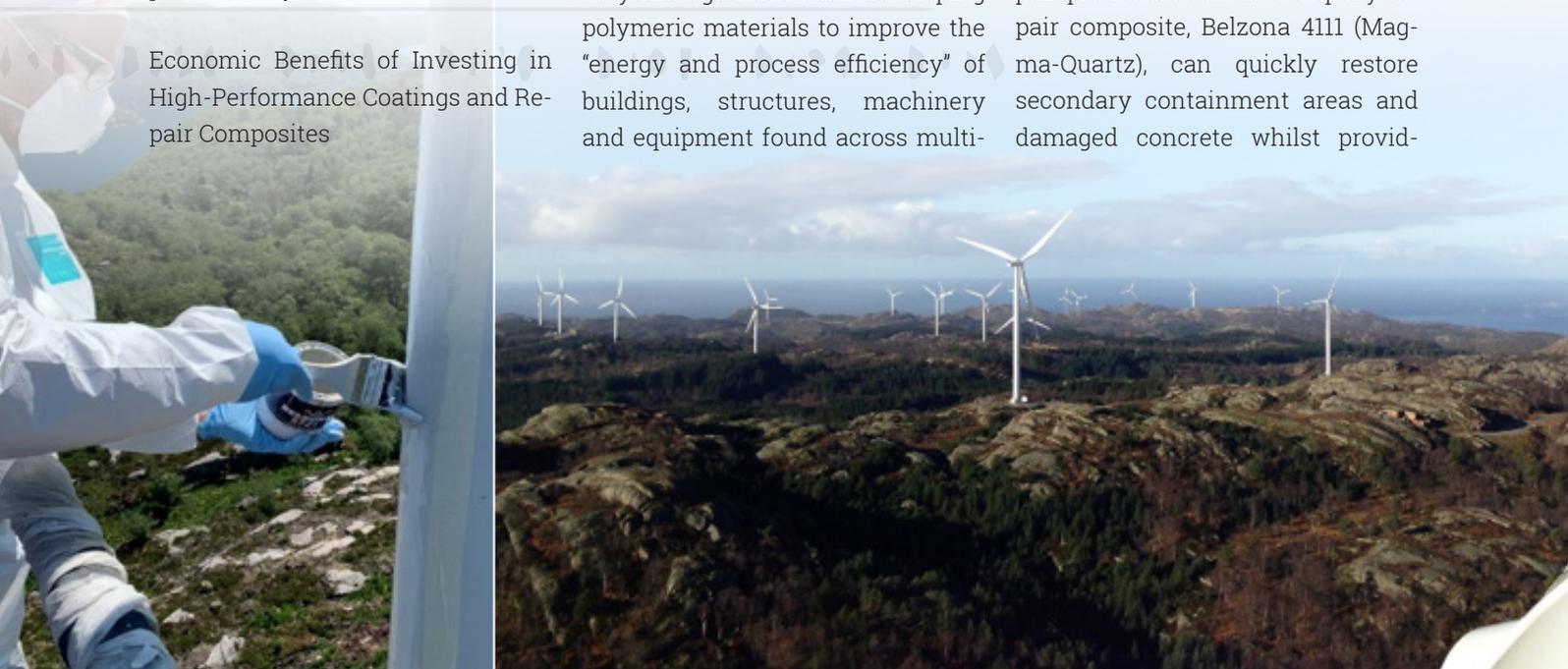
•Products such as high-performance coating, Belzona 1341 (Supermetalglide), can intrinsically improve pump efficiency by using hydrophobic technology to repel process fluids and reduce turbulent flow. This can create efficiency increases of up to 7% on new equipment and up to 20% on refurbished equipment.

•The liquid waterproof membrane, Belzona 3111 (Flexible Membrane), has been certified by Energy Star and ETA-Danmark (European Technical Assessment) and has proven to provide excellent protection of roofs for in excess of 25 years.

•Belzona 5871, a ‘cool-to-touch’ thermal insulation barrier reduces the amount of heat transfer through a surface, increasing the efficiency of equipment.

•For immediate leak sealing, fast-curing materials such as the repair composite, Belzona 1221 (Super E-Metal), and epoxy paste, Belzona 1212 are ideal for emergency repair situations.

•High strength, epoxy concrete repair products such as the epoxy repair composite, Belzona 4111 (Gamma-Quartz), can quickly restore secondary containment areas and damaged concrete whilst provid-



## News & Products

ing excellent chemical and impact resistance, as well as compressive strength.

Rivet tank sealed with epoxy repair composite, Belzona 4111 (Magma-Quartz)

How Polymeric Systems can Help to Mitigate the Carbon Intensity of Steel

Another way to illustrate the carbon mitigation potential of polymeric materials, is by considering the carbon footprint of steel. According to an article by Carbon Clean in 2021, for every ton of steel that is produced, nearly double the amount, 1.85 tons of CO<sub>2</sub> is released back into the atmosphere. To put this into perspective, this means that if steel was a nation, it would be the 5th largest producer of carbon emissions in the world.

By investing in repair and protection systems that are specially developed for application onto metal substrates, such as the 2-part epoxy repair paste, Belzona 1111 (Super Metal), asset-owners can extend the lifespan of their steel assets.

In doing so, this significantly decreases the amount of steel that needs to be purchased. Not only will this help to mitigate the carbon intensity of steel, but it also enables asset-owners to make considerable financial savings too, as demonstrated in the following case study.

Steel Fabricator Saves Millions Thanks to Polymeric Repair and Protection Systems



These types of carbon and financial savings were made by a Steel Fabricator in Scunthorpe, UK. Over the course of several years, the asset owner has saved millions of pounds by deploying a series of polymeric repair and protection systems, including epoxy repair composites and stainless-steel protective coatings, on their gas pipeline.

Steel Fabricator saves millions of pounds by deploying polymeric systems on gas pipeline

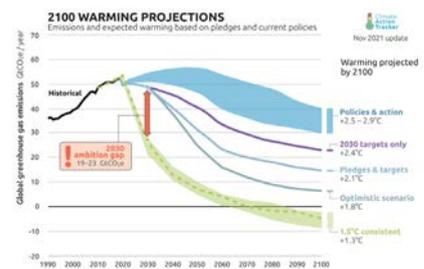
Previously, the Client had opted to replace the steel pipes that were severely damaged by corrosion. However, as each metre of pipeline costs £8,000, this meant that to replace a 90m section, a total expenditure of £720,000 was incurred.

In order to bypass these expensive replacement fees in the future, as well as mitigate the carbon intensity of replacing the damaged steel in this way, the Client was looking for an alternative solution.

Following a Belzona inspection and then approval from the Client, the following polymeric systems were used to repair and protect the corroded pipeline: Belzona 1151 (Smoothing Metal), Belzona 4151 (Magma-Quartz Resin), Belzona 4154 (Bulkfill Resin) and Belzona 5811 (Immersion Grade).

Starting in 2016 and continuing through into 2022, the Belzona systems were and continue to be deployed across the pipeline to combat the widespread corrosion - totalling a distance of 2,030m. This will help the Fabricator to not only minimise its carbon footprint, but also to make approximately £16m in financial savings as well.

In fact, this application won the Contractor a National Award for the



speed in which the repair was carried out, as well as the huge savings it allowed the Client to make.

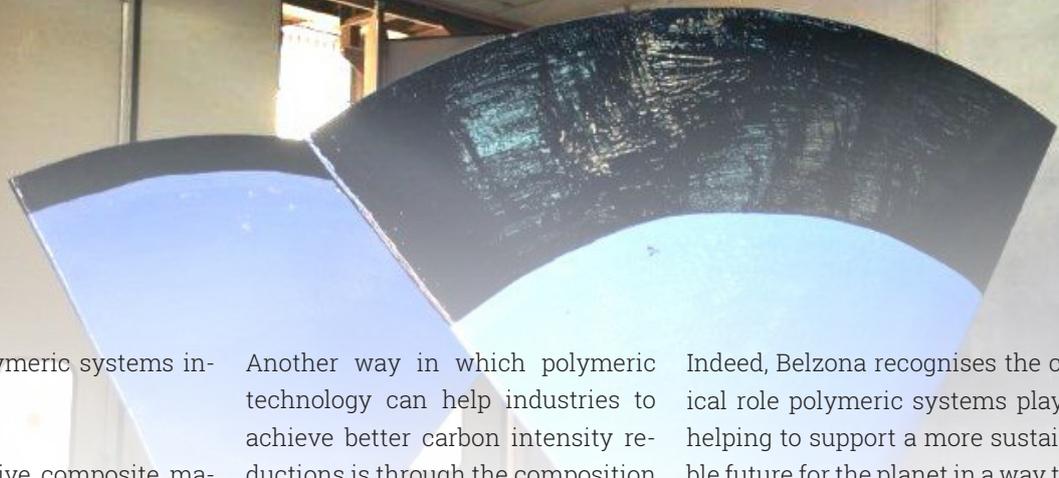
Safeguard Renewable Energy Assets with Polymeric Materials

While the CAT Report identified many areas that need urgent improvement, the Report also identified some positive areas of progress. It said: "In 2020, renewables reached a new all-time record, generating 29 percent of the world's electricity (IEA 2021d)."

The Report goes on to say how renewable sources of power, including hydropower, biofuels and wind, amongst others, are now the "generation technologies of choice, accounting for 82 percent of new capacity installed in 2020."

In regards to the future growth of these technologies, the Report said: "Decarbonization will be achieved by increasing the share of renewables, particularly wind and solar, in electricity generation." More specifically, it outlines the objective to: "Increase the share of renewables in electricity generation to 55–90% by 2030 and to 98–100% by 2050."

Considering the ongoing success and necessary future growth of these types of renewable energy technologies, it is important that investments are made into protecting vital assets. This can be achieved through the investment of polymeric repair materials and industrial coatings.



Examples of polymeric systems include:

- The reconstructive composite material, Belzona 5721, has been specially developed to repair leading edge damage on wind turbines. Thanks to the system's low-temperature cure, as low as 5°C/41°F, this ensures the turbines have a fast return to service.

- To repair damaged wind turbine shafts, the ceramic epoxy coating, Belzona 1321 (Ceramic S-Metal) can be deployed. This solvent-free coating provides excellent erosion and corrosion resistance to metal surfaces.

- For hydropower applications, for areas that are particularly subjected to high levels of cavitation such as Kaplan turbine blades, Belzona 2141 (ACR-Fluid Elastomer) can be deployed. This two-part polyurethane resin offers an outstanding level of protection against cavitation at ultra-high velocities (up to 115 knots with no damage).

Kaplan turbine blades protected with Belzona 1311, 1341 and 2141

- Suitable for both metallic substrates such as the external areas of penstocks as well as concrete substrates, Belzona 5811 (Immersion Grade) can offer excellent corrosion protection.

Another way in which polymeric technology can help industries to achieve better carbon intensity reductions is through the composition of the products themselves.

The Belzona Research and Development Team are currently in the process of formulating products made from bio-based materials that are produced from sustainable plant-based feedstocks, rather than the traditional fossil-fuel based ingredients.

With their high levels of renewable carbon content, this new line of greener, more environmentally-friendly products gives asset-owners a further opportunity to offset the environmental impact of their operations.

Polymeric Systems: A Welcome Addition to the Arsenal of Carbon Mitigation Strategies

For these reasons, an increase in investment into industrial coatings and repair composites would help countries in the process of ratcheting up their 2030 emissions reduction plans, in order to achieve the net-zero emissions by 2050 target. Not only this, as discussed, these technologies are also instrumental in helping asset-owners across many different industries to make significant financial savings as well.

Indeed, Belzona recognises the critical role polymeric systems play in helping to support a more sustainable future for the planet in a way that is also financially advantageous. As such, they are committed to making ongoing investments into the development of polymeric systems that meet the ever-growing and changing demands of industries as they evolve towards a net-zero future.

Belzona is a leading company in the design and manufacture of polymer repair composites and industrial protective coatings for the repair, protection and improvement of machinery, equipment, buildings and structures.

**For more information, please visit: [www.belzona.com](http://www.belzona.com)**



# HART

DOOR SYSTEMS

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For  
Endurance**

## **Parker Hannifin to present its H2-compatible products for off-road machinery & heavy-duty transportation at the Hydrogen Online Workshop**

**W**arwick, UK, 17. February 2022 - Parker Hannifin, the global leader in motion and control technologies, will present a wide range of H2 solutions at the Hydrogen Online Workshop on 3 March 2022, which will include the latest emission reducing hydrogen technologies available for off-road machinery & heavy-duty transportation.

The Hydrogen Online Workshop is a 24hr interactive event featuring the best H2 experts and key players in the hydrogen community from around the world. This exciting virtual meet-up will bring together over 15,000 hydrogen professionals, 100+ world-class experts, and more than 150 exhibitors.

To discover how the latest H2 applications can reduce emissions, improve efficiency, or capture growth opportunities in these or other sectors, join Parker at the event. Parker's hydrogen range includes valves, filters, manifolds, fluid controls, high-pressure hoses, connectors, sealing, and thermal management solutions. The Parker team will explain how these hydrogen-compatible products can benefit heavier transportation platforms.

In addition to this, Parker will also be hosting a panel of hydrogen and material experts comprising Clara M. Moyano, Fabian Brücker, and Robert Airey. This panel will discuss how to choose components and materials for H2 applications and explore the material science of hydrogen components.

Clara Moyano, Innovation Engineer - Material Science, Parker Hannifin Instrumentation Products Division Europe, said: "As a member of the Hydrogen Council, Parker is committed to fostering a clean energy transition and creating a better, more resilient future."

**Find out more: <https://prker.co/35TpHxO>**



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Rich Crawford, President and CEO of IGS (left) with Tube Tech Managing Director Jon Camp (right)

# Major global acquisition promises enhanced capability for asset maintenance

Integrated Global Services, Inc. (“IGS”), a leading provider of thermal spray and other surface protection solutions and portfolio company of investment affiliates of J.F. Lehman & Company (“JFLCO”), is pleased to announce it has acquired international cleaning and inspections solutions provider, Tube Tech.

With more than 30 years’ experience helping customers evaluate and solve critical surface engineering challenges, IGS has the largest global footprint in the sector, delivering its proprietary solutions on six continents.

Tube Tech leads the market in the research and development of innovative fouling removal technologies, and its pioneering research and development program has included the launch to market of the world’s first robotic fouling removal solutions guaranteed to restore assets to design efficiency regardless of fouling.

“We could not be more excited to introduce Tube Tech to our global customer base,” said Rich Crawford, President and CEO of IGS. “This transaction significantly expands IGS’ portfolio of specialty services and enables us to directly address both fouling protection and maintenance to enable world-class asset performance for our clients.

Our acquisition of Tube Tech represents another step in IGS’ mission

to be the most valued provider of engineered surface solutions in the world for mission-critical equipment.”

“We are delighted to be part of IGS,” says Tube Tech’s managing director Jon Camp. “There is a vast amount of experience and capability between the two organizations, with aligned values and a shared mission to innovate and transform.

This acquisition enables a sharing of people, products and services that will offer capability levels unique to the industry. The benefits and returns on investment for our customers are significant, from increased asset uptime and shorter turnarounds to enhanced reliability and seamless access to the most innovative and effective solutions on the market.”

Jones Day served as legal advisor to IGS and JFLCO. ReSolve Corporate Finance served as financial advisor to Tube Tech.

About Integrated Global Solutions (IGS)

Based in Richmond, VA, IGS is an international company with over 30 years of experience in providing in-situ internal thermal spray surface protection solutions, internal ceramic coating solutions, and environmental products that focus primarily on metal wastage reduction, corrosion mitigation, process efficiency improvements and emissions reduction.

Specializing in customized, engineered solutions, IGS is the largest provider of in-situ thermal spray and ceramic surface protection.

IGS, a portfolio company of investment affiliates of J.F. Lehman & Company (“JFLCO”), maintains global operations with locations across the U.S., Canada, Europe, the Middle East, Africa, and Asia.

**For more information on our global service capabilities, along with details on how to contact IGS personnel who can support your needs, refer to the IGS website at [www.integratedglobal.com/contact-us/](http://www.integratedglobal.com/contact-us/) or through email to [info@integratedglobal.com](mailto:info@integratedglobal.com).**

# Hi-line reveals expanded line-up of class-leading desiccant air dryers

**H**i-line Industries, an established and reputable UK manufacturer of high-quality compressed air purification equipment, can today offer a fully featured range of desiccant air dryers. The company's series of class-leading HPSA heatless dryers includes new standard

models, the recently launched HPSA-CT (Carbon Tower) version, plus the bespoke HP-HPSA (High Pressure) model. As a result, Hi-line can fulfil the needs of any company that needs dry, clean compressed air or nitrogen, whatever the application.

The Hi-line HPSA (Heatless Pressure Swing Adsorption) series of desiccant dryers features proven

technology developed and manufactured in the UK by the company's expert engineering team working to approved engineering standards. These 'plug and play' units with digital control panels come skid-mounted with their own filtration package (pre and after-filtration). Available for next-day delivery, all standard HPSA dryers use Dri-Zorb 27 desiccant media that delivers



constant low dewpoints while consuming the lowest possible quantity of regeneration air.

In order to meet ongoing industry demand, Hi-line is constantly looking to expand its portfolio, recently enhancing the HPSA range with two smaller capacity models. The new HPSA 70 and HPSA 100 bring the total number of standard models to 12, with flow capacity from 75 to 1130 scfm (larger heatless dryers are available if required).

Another recent introduction to the range is the HPSA-CT (Carbon Tower), a three-stage dryer with the Carbon Tower added after the adsorption dryer. Clean, dry air passes through the Carbon Tower and adsorbs gases and aerosols dependant on requirements and the zeolites selected. This capability makes the HPSA-CT extremely flexible and suitable for use in many specific applications. The Hi-line HPSA-CT features pre-filtration sub-micron oil removal and safety valves as standard, as well as an after-filter for particulate removal. A total of 12 standard HPSA-CT models are available with flow capacity from 80 to 1130 scfm. Larger HPSA-CT dryers are available upon request.

Hi-line can also now offer its bespoke HP-HPSA (High Pressure) heatless dryer. This model features the same proven HPSA technology, just running at high pressure. Control air is at 7 bar, but with elevated pressures up to 450 bar for specific applications such as P.E.T. blowing and moulding, R&D applications, breathing air/diving applications, speciality gas blending



and laser cutting.

Every HPSA model in the extensive Hi-line range is a fully automatic, IP65-rated, self-contained unit featuring HDC1 digital dewpoint controller, stainless steel pipework, independent switching valves, exhaust silencers and a one-year warranty on parts

and labour. Options include the company's AEMS - Automatic Energy Management System (with digital dewpoint readout, high-humidity alarm, and set and demand regeneration), dewpoint to  $-70^{\circ}\text{C}$ , and automatic start/stop control.

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



# Boiler Hire Short or Long Term You can't beat Byworth



## Long Term

Long term hire can be a cost effective alternative to outright purchase.

- Capital outlay for new plant alleviated
- Maintenance and servicing costs included
- Plant designed and manufactured to suit exact needs

**Unity** - Byworth's unique remote monitoring system available

## Short Term

When you need help in a hurry you can depend on Byworth for a rapid response. Temporary boilers provided for:

- Breakdown cover
- Cover for repairs and maintenance
- Urgent need for extra production capacity
- Short term projects and trials

Trust in the UK's leading industrial boiler hire company using the latest fuel efficient boilers, manufactured in our own factory. Byworth Hire gives total flexibility to cover any eventuality with full back-up support.



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# NEW CHAIRMAN AND BOARD MEMBERS FOR HAE EHA

**L**eading trade body for the hire and events industries Hire Association Europe Event Hire Association (HAE EHA) is pleased to announce the appointment of Neil Bravery, Managing Director of SHC Hire Centres, as Chairman of the Main Board. Neil takes over the reins from Brian Sherlock of Brandon Hire Station, who stepped down as Chairman after three years in the role.

Neil brings with him extensive experience, having been part of the Tools, Plant & Equipment Board and the HireTrain Committee. He also helped lead the development of the Digger & Dumper Safety Working Group which aims to drive change across the industry and eliminate fatal accidents. As HAE EHA looks onwards and upwards to the future, this new appointment brings with it exciting times ahead as the sector is set for a strong bounce back after the events of the last 18 months.

The Association thanked Brian Sherlock for his hard work over the last three years, and it goes without saying that the last year and a half in particular has been one of the most challenging times for those working in the hire and events industries. This of course has had a huge knock-on effect for the inter-connected web of industries that rely on these sectors. Outgoing chairman Brian praised the Association's resolute approach during this difficult period, and commented that "HAE EHA were relentless in their actions to re-ignite events and keep the tool and equipment sector trading."

Brian has now been appointed Association President at HAE, and he looks forward to all the opportunities and challenges this will bring as work continues to ramp up in the hire and construction sectors.

The after-effects of the COVID situation have made it clear that lobbying the government on behalf of hire and events business-

es has never been more essential, and the Association continues to ensure the sector's voice is heard in both the UK Parliament and in all Devolved Assemblies.

Along with this latest appointment, HAE EHA has also welcomed seven new members onto its board from a spectrum of hire and events related backgrounds, each nominated to represent their industry, attend meetings and act in the best interest of the association and its members. A full list of all HAE EHA Board Members is available on the website.

HAE EHA is interested in welcoming more voices, particularly round its marketing table, so if you are involved in marketing in the hire industry, please contact Ann Harrison, Group Marketing and Communications Manager for more information and meeting dates.

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

# ALL ABOARD THE HIRETRAIN AT EXECUTIVE HIRE SHOW

Executive Hire Show, February 9-10, CBS Arena, Coventry, Stand C32

**H**ire Association Europe (HAE) is promoting careers and training in the hire industry, including the unmissable programmes through HireTrain, at the 2022 Executive Hire Show in the CBS Arena, Coventry from February 9-10.

The national event for tool, plant and equipment hire executives is the perfect platform for the benefits of signing up to HireTrain, a dedicated training group for everybody in the hire industry. Supported by HAE and ConstructionSkills, HireTrain aims to raise standards by developing and facilitating quality training for all staff.

The cost-effective programmes offered by HireTrain will enable HAE members to increase profit, boost turnover, improve safe working practices and reduce staff turnover.

Despite the ongoing impact on businesses due to the COVID-19 pandemic, HAE remains committed to attracting people from

all age groups, skill sets and backgrounds, to boost the workforce in the tool, plant and equipment hire sector. The Association is a gateway of the DWP's Kickstart Scheme, a multi-million-pound government initiative designed to create thousands of high-quality work placements for young people aged 16-24 who are at risk of long-term unemployment.

HAE is also showcasing the benefits of apprenticeships to employers as part of National Apprenticeship Week (7th to 13th February). Encouraging more young people into the industry creates a sustainable skills base through vocational training and academic options that will contribute to the UK's major construction projects of the future.

Industry-leading SafeHire Certification Scheme will be another key feature on the HAE stand (C32) at the show. It allows customers to approach tool and equipment, plant hire including event hire companies with confidence, as it proves a firm's competence in upholding high standards in health, safety, en-

vironment and quality of equipment as well as a well-trained workforce.

Paul Gaze, HAE EHA Chief Executive Officer, said: "Our training programmes like HireTrain cover everything from equipment usage through to health and safety and other key business skills. Working with key partners we are able to offer apprenticeships, management and leadership programmes. Through HAE's accredited providers we can also offer NEBOSH, IOSH and Driver CPC, offering something of relevance to companies of all sizes."

The Executive Hire Show is a premier trade-only event open to hire executives throughout the UK and Ireland, as well as attracting visitors from Europe and beyond. Senior executives from national hire operations attend the show, along with large numbers of independently-owned hire outlets.

**For more information on HAE's services call 0121 380 4600 or visit [hae.org.uk](http://hae.org.uk) or [eha.org.uk](http://eha.org.uk)**



# ICS Cool Energy Delivers a Record Number of Ice Rinks Across the UK Hire Solutions

Temporary ice-rinks have attracted visitors with tens of thousands square feet of real ice created thanks to ICS Cool Energy temporary cooling solutions.

Southampton, Feb. 9, 2022 – ICS Cool Energy, an international market leader specialising in complete temperature control solutions for manufacturing process and facilities applications, announced that it closed the 2021/2022 season with a record number of temporary ice-rink projects successfully delivered across the UK and Channel Islands. ICS Cool Energy has worked with Rink Operators throughout the UK providing them with hire chillers, temporary power solutions, cable and distribution to supply refrigeration for the popular temporary ice-skating rinks.

“Demand for ice-rink cooling keeps growing. It was particularly noticeable this year, when skaters of all ages, from across the UK, from Aberdeen to Guernsey, and from Cardiff to the Scarborough have been looking forward to have a superb experience and forget about the pandemic reality,” said Simon Ward, Hire Sales Manager at ICS Cool Energy. “After last year and all the uncertainty of the pandemic and its effect on the events industry, we didn’t want to let

people down. We used all our resources to ensure that ice rinks could operate and bring much needed release for the skaters and the operating companies.”

“Reliability during the hire period is a must and at ICS Cool Energy, we build in contingency in to all our packages. This includes multiple chillers, each with multiple circuits and compressors, running and standby pumps, correct system readings on pressures and temperatures, and also telemetry when required. Our hire systems have been maintained at all times to keep the ice surface fresh even in the constantly changing weather conditions, including rain, sunshine and ice-melting temperatures,” continued Simon Ward.

ICS Cool Energy has supplied cooling to customer mats from 250m<sup>2</sup> up to 1200m<sup>2</sup>, all requiring the correct flow rate and pressure evenly across the mat. Throughout the season from November to January, a typical ice rink requires the chillers to operate 24 hours a day, 7 days per week with required cooling capacities varying from 100kW up to 480kW at a -12 degrees Celsius fluid off temperature. This duty

is supplied using a glycol mix through the customers mat system.

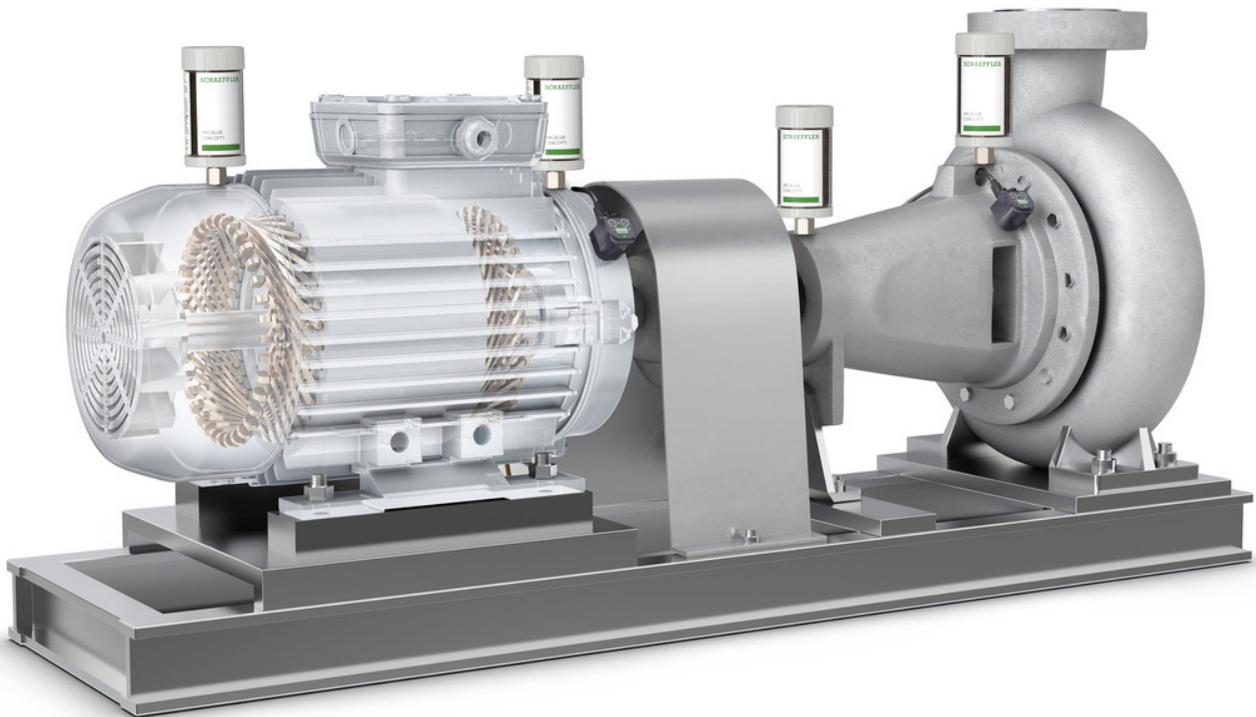
“With over 30 years of experience, our technical engineering teams have developed a wealth of know-how and experience in delivering flexible and reliable temperature control solutions for the ice-rinks and across many leisure sectors,” said Simon Ward. “We manage the full project including delivery, installation, commissioning of the equipment and 24/7 on call service throughout the hire. That’s why we’ve been the trusted partners for such extraordinary projects throughout the UK.”

With national coverage as well as across Europe, ICS Cool Energy customers benefit from one dedicated point of contact for all their temporary equipment needs and a wide range of hire solutions suitable for any type of application, including many leisure sectors.

**For more information on ICS Cool Energy complete process temperature control solutions, please visit <https://www.icscoolenergy.com/>.**

# ARCALUB CONCEPT1

## The lubrication system that gets straight to the point



### Uniquely Refillable

The ready-to-use CONCEPT1 can be simply installed without the need for special tools. Uniquely designed to be refilled up to 3 times with either Schaeffler Arcanol or own brand lubricants, it's a great flexible and cost-effective solution, ideally suited for difficult to access areas and auxiliary units.

[www.schaeffler.co.uk/CONCEPT1](http://www.schaeffler.co.uk/CONCEPT1)

Page - 26 | February /March2022 - [engineeringmaintenance.info](http://engineeringmaintenance.info)

**SCHAEFFLER**

# Case in Point:

## Automatic lubricators offer reduced maintenance and improved safety

**B**y switching from manual relubrication of bearings in fans and blowers to CONCEPT1 single-point automatic lubricators from Schaeffler, Visayas Slaked Lime Corp. (VSLC) has improved the productivity of its maintenance team, whilst also increasing they as they no longer need to relubricate equipment in hard-to-reach locations.

As well as being easy to install, CONCEPT1 is also helping to maintain the integrity of lubricant with no penetration of impurities during relubrication, thus helping prolong bearing life. The solution is also sustainable, as the CONCEPT1 lubrication cartridges can be refilled up to three times.

### Challenge

In 2010, VSLC was established as a fully owned subsidiary of Japan's JFE Mineral Company, LTD. in the Philippines. VSLC's main business is the production and sale of slaked lime. The VSLC plant in the Philippines is a very dusty environment due to the slaked lime and limestone. This means that impurities often penetrate into the lubricants, particularly if relubrication is carried out manually.

These impurities affect, among other things, the life of bearings in the fans and blowers. The maintenance team at the plant must therefore keep an ongoing focus on lubrication. As the numerous lubrication points were checked and relubricated manually – and due to the sometimes difficult-to-access lubrication points – the safety of maintenance staff was at risk.

“We needed a robust solution that, on the one hand, simplified our maintenance work, while on the other hand, gave our maintenance team more security. Unplanned plant downtime can have an impact on

the entire supply chain,” says Elmer Tampus, Mechanical Foreman at the Philippine plant.

The maintenance team at VSLC approached Schaeffler with this request.

### Solution

Schaeffler recommended a flexible, cost-effective lubrication solution with the CONCEPT1 single-point automatic lubricator. Engineered to ensure optimal lubrication in a broad range of industrial machines and devices – including electric motors, bearing housings, fans, blowers and pumps – CONCEPT1 eliminates the need for time-consuming manual lubrication procedures, while preventing lubrication mistakes such as over or under-greasing, which can cause unplanned equipment downtime.

CONCEPT1 has one outlet and comes in 2 cartridge size options, 60ml and 125ml driven by a gas-producing dry cell. The flow rate can be pre-set differently depending on the amount of lubricant needed.

Simply screwed into place and the time interval between relubrication set up, the unit is ready for immediate use and can be installed easily, without the need for special tools. They are available pre-filled with Schaeffler's industry-leading range of Arcanol greases or alternatively, customers can purchase empty lubricant cartridges and use their own

grease.

To reduce waste and help protect the environment, CONCEPT1 can be refilled up to three times using specially designed refill kits. The flexible and cost-effective solution is particularly suitable for machines that are difficult to access and, due to ATEX certification, they can also be used in potentially explosive atmospheres.

### Benefits are scalable

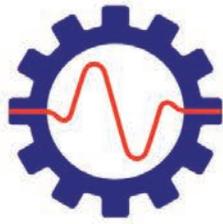
In a pilot, VSLC first used 10 x CONCEPT1 units on different sized blowers and fans. VSLC quickly recognised the advantages of this solution, in particular, how easy the units were to install, as well as the reduced maintenance effort.

“With the automatic lubricator, we were able in a short time to significantly reduce efforts compared to manual lubrication. We are impressed and absolutely satisfied,” states Rendle Rai S. Cua, Maintenance Section Manager at VSLC.

VSLC is very satisfied with the lubrication solution and has fitted a further 50 lubrication points with CONCEPT 1 as a first step. Another 50 lubrication points for motors will soon be installed with automatic lubricators.

**To learn how Schaeffler can help you, please visit <https://medias.schaeffler.co.uk/en/lubrication/lubricators>**





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**For more information see our website or contact us direct.**

# Stadler Rail selects NSK condition monitoring subsidiary B&K Vibro

**B**rüel & Kjær Vibro (B&K Vibro), part of the NSK Group, has signed a long-term agreement with Stadler Rail to install its state-of-the-art VCM-3 condition monitoring system (CMS) on 606 rail carriages for the Berlin Underground (U-Bahn). The VCM-3 CMS will serve to optimise maintenance schedules, maintain uptime and reduce operating costs. This multi-million-euro condition monitoring project is an integral part of a recent contract win by Switzerland-based Stadler that entails the delivery of up to 1,500 new rail carriages for use on the Berlin underground network. The framework agreement has a value close to €3 billion, making it one of the largest supply contracts ever awarded in Europe.

B&K Vibro's comprehensive CMS

solution includes vibration sensors and edge devices (on-board diagnostics), as well as diagnostic and analysis services that constantly monitor rail-carriage bearings and other rotating parts to deliver the ultimate in reliability.

Due to the high reliability demands of the public transportation sector, operators today focus extensively on reducing downtime and operating costs. Adopting a CMS solution enables the implementation of next-generation predictive maintenance strategies that not only help to optimise maintenance schedules but boost operational reliability and uptime when combined with a lean operations team.

Ensuring the high availability of rotating machinery and components with intelligent moni-

toring solutions, B&K Vibro has been a global pioneer in this field for decades. NSK acquired B&K Vibro in March 2021 to further strengthen its ability to meet demand for advanced automation, smart technology, and environmental measures. The move also serves to accelerate the company's CMS business development on a global basis.

B&K Vibro's extensive range of products and services includes vibration sensors (acceleration, velocity, displacement), vibration monitors, software and online-integrated plant-wide monitoring solutions. These technologies enable the safe and secure operation of transport systems, factories, petrochemical facilities, power plants and wind farms around the world, where they form part of innovative maintenance and production strategies.



**ATEX**

## Safe for use in hazardous areas, ATEX certified installed LED lighting is now available from Wolf Safety



**W**olf Safety have introduced a powerful new range of ATEX certified LED installed lighting, designed for permanent use in potentially explosive atmospheres.

The world's leading manufacturer of portable and temporary ATEX and IECEx certified hazardous area safety lighting, Wolf have been keeping people safe for 110 years.

The company's designers and production engineers have now brought their vast knowledge and expertise to bear on a new range of highly effective LED installed lighting, which is safe to use in Zones 1 and 21 hazardous areas.

The range includes:

•**Linear luminaires featuring the new, revolutionary Directional Linear Optics**

**(DLO) or standard Forward Facing Array LED configurations (with battery back-up emergency versions also available);**

•**Floodlights with a maximum light output of up to 25,932 lumens;**

•**Bulkhead lighting, also featuring DLO (with battery back-up emergency versions also available);**

•**High bay lighting.**

DLO directs light exactly where it's needed, is ideal for use in specific, close-up workspaces, reducing glare to avoid people being 'blinded' by the emitted light, while its excellent colour definition facilitates safety critical hazardous area tasks.

Forward Facing Array (FFA) technology can be preferable for safely illuminating large hazardous areas which need wide, even and bright light coverage, where lights are mounted away from people

or at heights where glare and intensity can't have an adverse effect on the working environment.

In the unique position of being able to offer both DLO and FFA lighting, Wolf can supply the most effective lighting solution for every hazardous area workplace.

Says Miles Jackson, Wolf Safety's Sales and Marketing Director: "We know that users of Wolf products trust us to keep them safe, especially when they need to work in highly volatile atmospheres and other hazardous workplaces.

"All the values people expect from Wolf and are seen in our portable and temporary lighting ranges can now be found in this new installed lighting range, which we are proud to introduce."

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

**Wolf**

### NEW ATEX INSTALLED LED LIGHTING FROM WOLF SAFETY

A full range of Zone 1/21 Installed Hazardous Area LED Lighting, introducing Directional Linear Optics (DLO), and including Linears, Floods, Highbays and Bulkheads

[WWW.WOLFSAFETY.COM](http://WWW.WOLFSAFETY.COM) | 0114 255 1051 | [INFO@WOLFSAFETY.COM](mailto:INFO@WOLFSAFETY.COM)

# New Sales Team appointments at Peli Products (UK)

Peli Products (UK) Ltd, distributor of the Peli™ brand of protective cases and professional lighting, is pleased to announce the appointment of Ross Carter to the position of Sales Manager.

**R**oss has previously been responsible for sales in the South-East of England and has very successfully developed this region.

He will now oversee the Peli team of 10 regional sales representatives who all offer spe-

cialist advice on the ranges of protective equipment cases and lighting products, along with the Peli Sales support team.

He will play a key part in developing the company's ongoing strategy of offering full protective packaging solutions with custom engineered foam.

"Ross has been with the company for almost 7 years and during that time has been a key part of our success.

He has worked tirelessly in difficult times recently and I am delighted for him and very pleased to promote him to this position," commented Sales Director David Smith.



# Landia wastewater mixers stand test of time

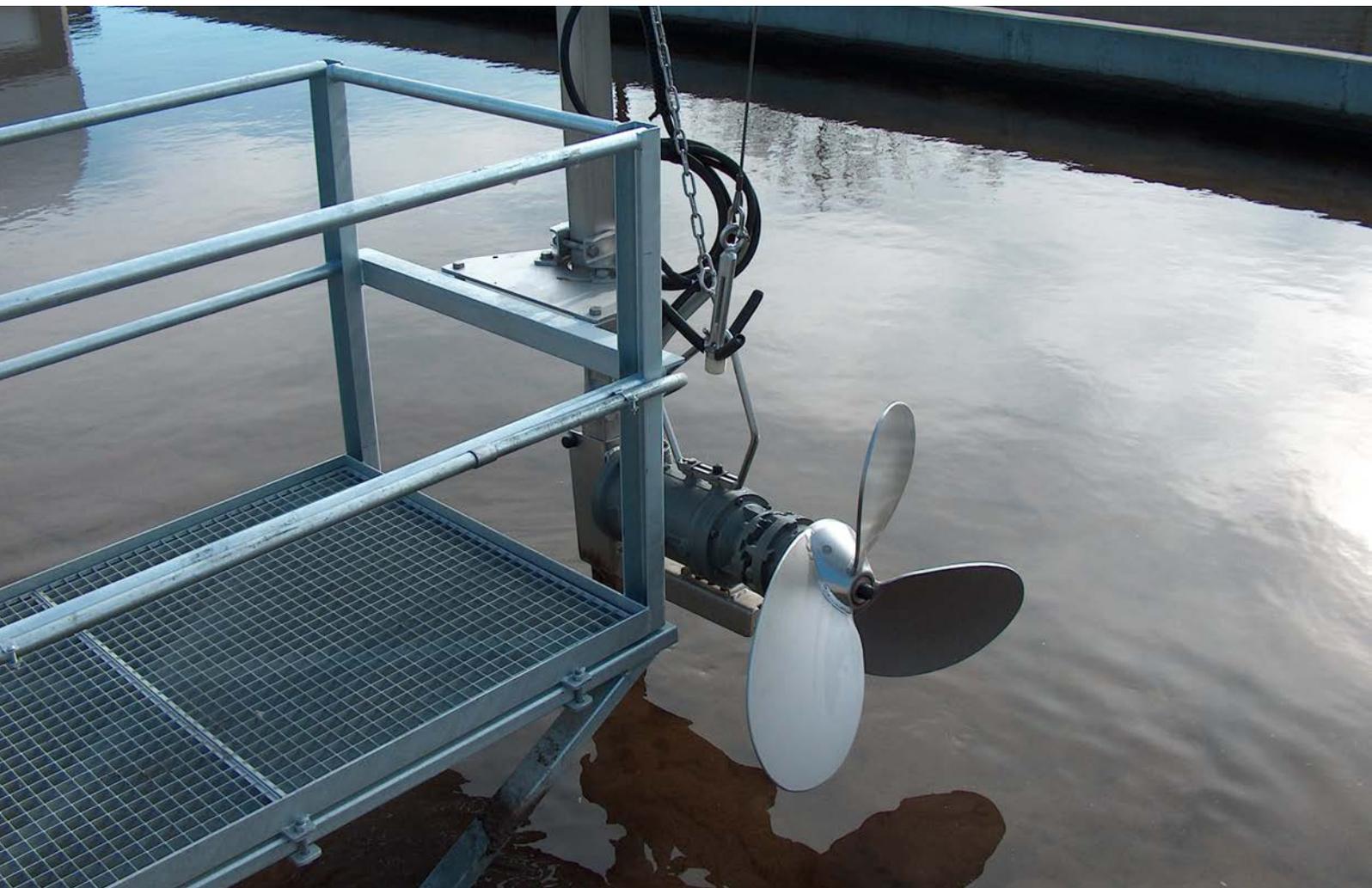
Fifteen years on since a major UK water utility chose Landia as its framework supplier for anoxic mixers, over 200 of the units continue to work day and night across the extensive region.

Installed in anoxic zones during 2007 at over 20 wastewater treatment plants, the Landia POP-I Flowmakers were seen at the time as the equipment that could offer the very best in performance and efficiency,

as well as the most accurate, predictable, low-maintenance whole life costs.

From smaller sites with just a few mixers, right through to the utility's two largest treatment plants (40

mixers) and 39 mixers respectively, the 3kW to 5.5kW, 150rpm units were supplied, installed, tested and commissioned by Landia, who also now carry out servicing twice per year.





'Gentle treatment of activated sludge'

With their slow revolutions and low floc shear, these Landia mixers are designed for the gentle treatment of activated sludge in continuous applications where sedimentation in anoxic (or anaerobic) tanks must be prevented. Installed with stainless-steel mounting equipment, the POP-I's were the UK's first ever flowmakers to have a propeller rotation of just 150rpm.

Landia's Paul Davies, commented: "Long before there was so much talk about the need for TOTEX (Total Expenditure), this major investment was way ahead of the game – very perceptively realising the significant benefits of introducing equipment with long-term maintenance and parts guarantees included – not just some pathetic 12-month warranty fob-off that shouldn't be part of any sentence with the word 'longevity' in it".

'Capital, maintenance and energy savings'

He added; "The water industry can learn a great deal from the capital, maintenance and energy savings that have been achieved by this water authority during the past 15 years.

There were plenty of cheaper alternatives on bid day, but the best, long-term economic solution was chosen, which has been proven to be a very wise, insightful decision and a victory for quality over cheapest price".

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# MASTERING THE DAILY GRIND

## A better way to prevent pump blockages

**T**extiles and other unconventional debris can be a tough problem for pumped wastewater systems. That's why more and more operators are addressing the problem at source with Sulzer's Muffin Monster™ grinder technology.

Wastewater only flows downhill, but there are plenty of situations where it simply isn't possible to provide a consistent gradient between users and sewage treatment facilities. That's why satellite pumping stations are a common feature of private and municipal wastewater systems.



Modern pumps are compact, reliable and energy efficient. In the right conditions, they can operate for years with minimal maintenance, but they don't always get to enjoy those conditions. As populations grow and habits change, wastewater systems are exposed to a rising tide of difficult materials, especially tough fibrous products such as wet wipes and disposable nappies. Left unchecked, these materials can jam up pumps, reducing flow rates, driving up energy consumption and ultimately bringing operations to a halt.

That leads to costly and time-consuming maintenance visits to rectify the situation. Rajeev Seth, Sales Manager Pacific – Channel Partners at Sulzer Australia, explains: "One of the most effective ways to stop wastewater blockages is with dual shaft grinder technology. Sulzer's Muffin Monster™ range offers the best dual shaft grinders available in the market, generating the high torque required to grind difficult and large solids.

They can be installed both inline and in-channel upstream of critical entry points in the wastewater network, where they go to work on unconventional waste, tearing plastic and non-plastic debris and crushing solids into small particles that flow freely through the system."

### Happier holidaymakers

Situated only 10 meters from the ocean, the pumping station serving a New South Wales holiday park faces extremely high peak loads during the busiest part of the season. When the pumps become blocked by diapers or wet wipes, the resulting overflow could run straight into the sea.

That could create health risks for holidaymakers and the potential for steep fines for the park operator. After examining the situation at the park, Sulzer NSW channel partner QMax Pumping Systems, recommended a grinder to protect the pumps.

As the size and location of the pumping station precluded the installation new equipment within the existing facility, the answer was a Muffin Monster Manhole – a 1.2-meter diameter fiberglass chamber containing a channel version of the Sulzer grinder. Installation on the main sewage line leading to the pumping station was quick and simple, taking less than three weeks including all civils works. Since the installation of the new system, the park has suffered no overflows or service interruptions.

### A restful retirement

Elsewhere in New South Wales,

QMax supplied Muffin Monster technology as part of a pumping station upgrade at a retirement village for the over 55s. The original plan involved the installation of two new pumps alongside two units that had been in operation for some years. As part of the design process, QMax specialists spent time talking to the system operator and understanding the maintenance challenges they faced with their current installation.

The conversation revealed a history of unscheduled maintenance, caused primarily when one or both pumps became blocked by incontinence products in the wastewater stream. On occasion, both pumps had become blocked, leading the system to shut down and overflow until engineers could attend the scene, lift and clear the pumps before cleaning up the site.

With this insight, Qmax was able to recommend the inclusion of a high-capacity Sulzer 10k series Channel Monster™ grinder upstream of the two new pumps. Equipped with the suitable control and monitoring technology, the grinder was a “fit and forget” option for the site owner, requiring only the same frequency of routine checks as the pumps themselves. Indeed, the new system has run so smoothly since its installation that the site owner is now planning to add Muffin Monster units to its two original pumps.

### Solutions for Australia and New Zealand

As facilities around the world continue to face rising demand and pressure to keep costs under control, the reliability of key infrastructure has never been more critical. Sulzer Muffin Monster grinders are being installed in holiday parks and elderly care facilities across the UK,

Europe and worldwide, providing highly effective treatment for troublesome wastewater problems.

Sulzer Australia stocks pre-engineered grinders in Brisbane and uses a network of established channel partners to install these at any location or facility. Rajeev concludes: “This is a comprehensive offering for end-users, with Sulzer manufacturing and supplying quality products with process and warranty support to local channel partners who tailor every installation to suit specific

customer requirements.”

#### Image Captions:

Image 1: The Muffin Monster grinder ensures submersible pumps are unaffected by tough, fibrous materials.

Image 2: The new pumping station was equipped with Sulzer pumps and a grinder. Image 3: The success of the first Muffin Monster has led to plans for another unit to be installed on the same site.

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



# Fuel duty scrappage: What are the alternatives to red diesel?

A point of interest that Fulton has noted recently is that some fuel suppliers have acknowledged that a high percentage of light oil fuels tested on site (approximately 80% of samples) are contaminated in one form or another. Contaminants in fuel can include particulate matter and water that can affect the flow of oil and cause waxing and corrosion, which can lead to boiler lockout, incomplete combustion and/or wear on components, corrosion of fittings and pipework, etc., all of which affects a boiler's efficiency.

**T**his is why with our current range of steam boilers, including the award-winning VSRT, liquid petroleum or natural gases are considered the optimum and most stable and efficient methods of firing a steam boiler because they avoid the use of potentially contaminated fuel oils, or the requirement for costly fuel polishing to remove moisture and debris from contaminated oil installations.



However, we understand that moving from oil to liquid gas can be cost and even geographically prohibitive, so steps should be taken to ensure that fuel oils remain stable. These include regular checks for moisture and particulate matter in the fuel and tanks; and ensuring the steam boiler itself is regularly maintained and serviced according to manufacturers' guidelines, which should include valve inspections and oil filter changes.

Example of Fuel Polishing. Image courtesy of Crown Oils For those where cost and geography do not pose an issue, moving to a cleaner fuel (such as liquid gas from Flogas) and one that is easier to manage does come with huge benefits to businesses operating steam boilers. For example, following a site survey and steam load distribution analysis by Fulton and Weishaupt at a brewery in the South West of England in 2020, the two companies identified opportunities to reduce carbon

emissions at the site and save money on fuel by upgrading the burner on a Fulton RBC2500 horizontal steam boiler that was installed in 2007.

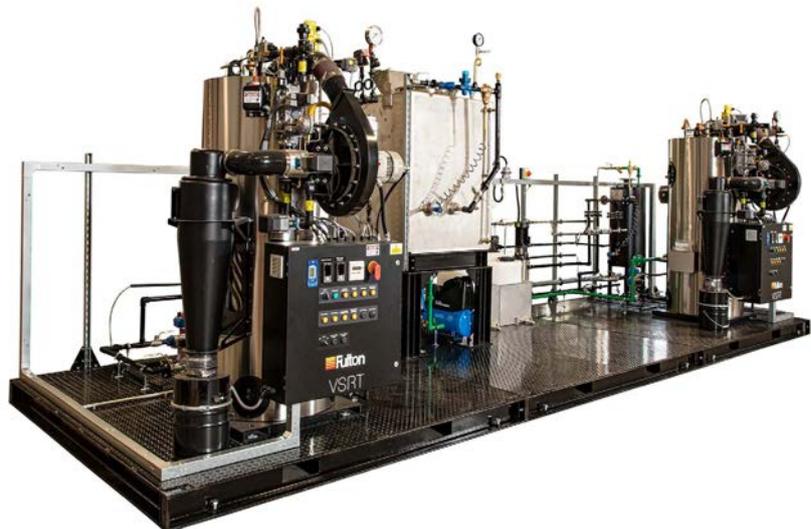
The boiler was originally fitted with a high/low, conventional control box oil-fired burner, which was achieving a turndown ratio of less than 2:1. Partnering with Weishaupt, a micro-modulating LPG burner with integrated digital burner management system – air and gas servo motors accurate to within 0.1° – was specified and installed, with Fulton also specifying optional burner motor variable speed drive to reduce electrical power Soot buildup in a horizontal boiler consumption and oxygen trim to maximise combustion efficiency. Additionally, with NOx levels reduced as a result of the upgrade, the RBC2500 is now also fully MCPD compliant.

Commenting for Fulton, Leigh Bryan says: "The result of the partnership between Fulton and Weishaupt, with Flogas also involved as the liquid



gas supplier, is an upgraded steam boiler with turndown improved to at least 7:1 which, combined with the added burner options, is predicted to save the brewery in excess of 20% in fuel consumption alone. Impressive reductions in carbon emissions by changing to a cleaner, lower-carbon fuel like liquid gas will also be achieved and add to the efficiency savings.

"The cost savings predicted for the upgrade project at the brewery are expected to deliver a payback period of less than 12 months and will go a long way in assisting the company's impressive Road to Net Zero efforts."



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Motion Amplification, Thermography, Oil, Balancing, Laser Alignment, Ultrasonic and Motor Analysis. Our partnership with industry OEM’s highlights the commitment we make to showcasing innovative technologies. One such example is RDI Technologies. Their revolutionary technology, Motion Amplification, is a video-processing product and software package that detects subtle motion and amplifies it to a level visible with the naked eye. RMS is also a UK approved distributor of Emerson/CSI Machinery Health Manager products and solutions.

The Reliability Training Institute is a UK & Ireland accredited Training Organisation for both Mobius Institute (MIBoC) and The British Institute of Non-destructive Testing (BINDT). Professional training courses in Vibration Analysis, Ultrasound and Asset Reliability prepare students to take the ISO certified examination. We use the very latest computer-based simulations and animations to help make even the most complex subjects understandable. Study options include Onsite, Hotelbased, Hybrid, Virtual Instructor-led and Self-paced courses.”

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VCAT I, Novotel, Worsley, Manchester - 27th Jun - 30th Jun (H)

**Ultrasound Analysis (ISO 18436-8)**

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For further information on Fulton’s industry-recognised, affordable and practical training courses that bridge the gap between straightforward ‘toolbox’ training and expensive courses costing thousands per employee, visit [www.fulton.co.uk](http://www.fulton.co.uk), email [training@fulton.co.uk](mailto:training@fulton.co.uk) or call +44 (0)117 972 3322.

# MSC INDUSTRIAL SUPPLY CO. UK AND NEXT GEN MAKERS TO LAUNCH INNOVATIVE PROJECT TO HELP MANUFACTURERS FIND ENGINEERING APPRENTICES

MSC Industrial Supply Co. UK, a premier distributor of Metalworking and Maintenance, Repair and Operations supplies to industrial customers, is launching an innovative project with business partner Next Gen Makers to make it easier for its West Midlands-based customers to find and recruit Engineering Apprentices.

The online Engineering Apprenticeship Finder platform, developed by Next Gen Makers, will launch in National Apprenticeship week 2022 beginning 7 February and will signpost young people looking for Engineering Apprenticeships within the West Midlands region to a range of vacancies.

Over 50 high schools and colleges are set to receive access to the platform for their students, with Next Gen Makers also delivering webinars for career leaders in partnership with the Black Country Consortium.

Several of the region's leading engineering apprenticeship training providers are also partnered with the project, including BMet, Make UK, Dudley College, Black Country & Marches Institute of Technology, City of Wolverhampton College and South Staffs College.

In November 2021 MSC, acquired a 49% stake in Next Gen Makers; a move it believes will help address the engineering skills shortage. The Engineering Ap-

prenticeship Finder project is the first of several new initiatives to be launched because of this partnership and represents a direct solution to help match relevant individuals to the apprenticeship opportunities of MSC's customer base of engineering and manufacturing firms in the West Midlands region.

"2021 was a poor year for recruitment into engineering apprenticeships, with total starts falling considerably," said Adam Tipper, Managing Director of Next Gen Makers. "We have become acutely aware that one of the barriers preventing the filling of the many available engineering apprentices is lack of awareness of these opportunities by young people interested in starting a career in the sector... This project is aimed at raising awareness of these opportunities across the West Midlands."

MSC and Next Gen Makers have partnered for two years to explore and understand the true challenges of the manufacturing sector and identify specific skills shortages. In addition to the Engineering Apprenticeship Find-

er project in the West Midlands, Next Gen Makers partners with engineering firms on a national scale to help them identify their skills gaps in an everchanging market. Its Best Practice Programme equips manufacturers with the tools they need to better plan for, attract and retain apprentices. Through the programme, Next Gen Makers provides a host of best practice resources and peer-to-peer discussion forums. This enables manufacturing firms of all sizes to adopt new practices that have been proven in other successful apprenticeship schemes.

Next Gen Makers has recently partnered with Make UK to develop an Engineering Apprenticeships Employer Kitemark, which recognises companies that achieve a best practice benchmark and endorses them as an exemplary employer of apprentices. This helps make businesses more attractive to young engineers and assists them in finding placements that offer genuinely prosperous career opportunities.

<https://www.mscdirect.co.uk>

# British Compressed Air Society appoints new Vice President



The British Compressed Air Society (BCAS) has elected Steven Rohan, Division Engineering Manager at Parker Hannifin Manufacturing (Parker) as the Society's new Vice President.

Steven has been a member of the BCAS board since 2018 and brings a wealth of engineering and sector knowledge to the role, gained during almost 30 years in the air and gas treatment industry. He will join Mark Ranger, the BCAS President, in ensuring that both members and end-users alike are provided with expert, independent guidance on the issues affecting the compressed air and vacuum sector.

Steven will focus on the new UKCA marking, which is replacing the CE marking, and will continue to lobby government to ensure it is fit for purpose and can meet industry's changing demands. He will also be encouraging the uptake of energy-efficient technologies alongside effective maintenance regimes, that can help to reduce overall electricity consumption for compressed air and vacuum systems.

Having joined Domnick Hunter in 1995 (prior to its acquisition by Parker) as an Engineering Tech-

nician Apprentice, Steven was awarded a Whitworth Scholarship from the Institute of Mechanical Engineers and went on to graduate from Newcastle University as a Bachelor in Mechanical Engineering.

Since then, he has held senior roles in engineering, operations and business leadership at Parker, in the UK, Netherlands and in the Asia Pacific region, each with a strong focus on engineering and operational excellence. He is also an active member of the Whitworth Society committee and champions Parker's EMEA Engineering Graduate Programme to support the development of outstanding young engineering talent.

Commenting on the new appointment, Steven added, "In the wake of Brexit and changing legislation and standards, it is vital that BCAS acts as an independent champion for air users. I will be working with the Board and committees to ensure that the industry's voice is heard and that any divergence as we transition from the old CE marking to the new UKCA marking, is managed effectively.

"In addition, following the recent COP 26 climate summit, the industry has a renewed focus on installing cleaner, greener technologies. Together with the BCAS

Board, I will ensure that we provide timely and accurate information to help end users implement the energy reduction programmes that will drive the sector towards a lower carbon future.

"As an active member of the Whitworth Society committee too, I am looking forward to seeing the Society's new compressed air and vacuum technician apprenticeship programme progress. I know first-hand the opportunities that an apprenticeship can provide and will be encouraging the industry to get involved in developing our next pool of talented engineers."

Commenting on Steven's appointment, Vanda Jones, BCAS Executive Director said:

"We are delighted to welcome Steven as our new Vice President. His passion for the industry and enthusiasm for driving up standards and improving environmental performance will be a welcome addition to our team. He will provide a clear and relevant direction during his term in office and help build a strong basis for the future - on this area that is of critical importance to our manufacturing, distribution and end-user members."

## Compressed Air

# BOGE Compressors Airtelligence Provis 3 sets new standards in efficiency with networked control over unlimited machines

The latest networked control system from compressed air specialist BOGE promises to reduce energy consumption and improve maintenance efficiency in manufacturing operations. BOGE Airtelligence Provis 3 also futureproofs businesses, through its flexibility and its capacity to control unlimited numbers of compressors, compressed air networks and ancillary components.

“Provis 3 offers manufacturers an easy way to start turning their facilities into Industry 4.0 smart factories,” says Mark Whitmore, General Manager for BOGE Compressors in the UK. “It’s simple to introduce, with no need to invest heavily in additional infrastructure or capabilities, and its savings bring a fast return on investment. Once installed, it adapts to address both fluctuating daily demands and longer-term evolving needs.”

Optimising compressed air management All but the smallest compressed air setups consist of a physical network of machines connected by pipes and valves. Typically, there are large, fixed-speed compressors to supply the base-load of air, with smaller, variable-speed units kicking in to meet variations in demand. The compressed air network may also include ancillary equipment like dryers, filters and storage tanks. Control systems co-ordinate these components and their activities.

BOGE Airtelligence Provis 3 is an intelligent management solution which takes remote control, monitoring and auditing of compressed air systems to a new level. Unlike previous networked control products, Provis 3 is limitless in its scope and scale. It has been developed for larger and more complex plants with multiple compressors and equipment. Important-

ly, it can securely integrate and upgrade new and old components from different manufacturers.

Lowering energy and maintenance costs Essentially, Provis 3 maximises energy efficiency by intelligently and proactively matching fluctuations in compressed air demand with flow from the optimum combination of compressors and other components. Further energy-saving benefits result from Provis energy auditing, reporting, costing and performance testing functions, whose clear insights enhance budgeting, decision-making and planning.

In addition, Provis 3 enables monitoring of equipment condition and activity, so maintenance interventions are timed optimally to minimise costs and downtime. Authorised users can access intuitively displayed information and check, control or adjust equipment via the in-built Provis 3 display, or remotely on their PCs, tablets or smartphones.

The BOGE Connect service, whose secure internet link connects systems to the BOGE central analytics facility in Germany, is an optional extra. Continuously gathering live data from the equipment, it allows operators and service providers to analyse and understand each site’s operating conditions.

In the event of a deviation, specialist engineers at BOGE decide what corrective action, if any, is necessary. If the occur-

rence poses no threat, they teach the system to ignore it in future. As understanding deepens, they can adjust parameters in the machines’ controllers and enable them to alert customers directly to emerging problems.

### Futureproofing businesses

As well as optimising the existing compressed air equipment and its use, Provis 3’s advanced reporting allows BOGE to simulate and evaluate proposed changes in its design, configuration and components. This expands the scope for efficiency improvements and adaptation to changing needs. Systems are also regularly enhanced by updating with new software.

“With its plug-and-play simplicity, Airtelligence Provis 3 is an easily installed and immediately beneficial add-on to your equipment – but that’s just the start,” says Mark Whitmore. “From there it initiates almost limitless improvement, customisation and futureproofing. And best of all, it quickly pays for itself through lower energy, downtime and maintenance costs.”

**For more information on BOGE Compressors’ new Airtelligence Provis 3 system, please contact BOGE Compressors Ltd, Units 10-12 Park Valley Mills, Meltham Road, Huddersfield, HD4 7BH.**

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# Industry-first as BCAS announces the first Compressed Air and Vacuum Technician Apprentice during #NAW22



The British Compressed Air Society (BCAS) is delighted to announce the first candidate to be enrolled on the new Compressed Air and Vacuum Technician (CAVT) apprenticeship.

Owen Webb, from Alton Compressor Services Limited (Alton) in Fareham has begun his training to coincide with this year's National Apprenticeship Week and is the first young engineer in the UK to benefit from the scheme.

Owen's training will be delivered by Semester Learning and Development (Semester), also the first provider in the UK to run the apprenticeship. Using its proven online learning platform, Owen can train around his other work commitments. Scott Margison, Managing Director of Semester explains: "Following conversations with both the BCAS Training and Development Committee as well as the team at Alton, we could see the value that the CAVT apprenticeship would offer. In particular, how it could meet the urgent market requirement to develop specific skills related to compressed and vacuum systems.

"We are therefore proud to be the first training provider to offer the new CAVT apprenticeship and are really looking forward to working with Owen as he progresses through the variety of modules. Our online delivery means that he can work flexibly, and at a pace which fits around his work schedule.

"Owen will benefit from a dedicated course tutor, alongside individual subject experts and an NVQ assessor."

Commenting further, Jordan Sains-

bury, Managing Director at Alton added: "Owen started with us in October last year and initially, we were looking at a number of engineering training courses to help with his training and development.

However, none of these offered any in-depth insight into the field of pneumatics, or the specifics of our industry. "So, when we learnt about the new CAVT apprenticeship, we were really keen to find a provider that would be able to deliver the training. Scott and the team at Semester have been really enthusiastic throughout the process and we are all so proud that Owen will be the first person in the UK to kickstart the scheme!"

"Working in a family-run business like ours and managing multiple priorities can make it more difficult to schedule training. The online approach really suits us. Owen can schedule his apprenticeship modules around the daily demands of a busy service and engineering department. We can't wait to see how he progresses!"

During the three-year apprenticeship, candidates will learn how to commission compressed air and/or vacuum equipment and their associated systems, alongside service and maintenance, fault diagnosis, repair and system optimisation.

The course will also include the development of transferrable skills, which can be provided via

BCAS training courses including working safely with compressed air and compressed air treatment technology to name a few.

The final two years will be more focused on developing the key engineering skills required by the industry, including installation, commissioning, service and repair of compressed air and vacuum systems.

Roy Brooks, Technical Development Officer at BCAS added:

"We are delighted that Owen will be undertaking the new apprenticeship, helping to plug the skills shortage of qualified engineers. The standard ensures that upon successful completion, the apprentice achieves a national apprenticeship, academic qualifications and may apply for the professional recognition of EngTech with The Society of Operations Engineers.

"We look forward to seeing how Owen progresses, paving the way for the latest generation of compressed air and vacuum technicians."

**To learn more about the CAVT apprenticeship and to view the full occupational standard, visit**

**<https://elearning.bcas.org.uk/compressed-air-and-vacuum-technician-cavt/>**

**To learn more about Alton, visit**

**[www.altoncompressorservices.co.uk/](http://www.altoncompressorservices.co.uk/)**

# ELIMINATE YOUR CONTAMINATION RISKS NEW OIL-FREE TOOTH COMPRESSORS



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# New oil-free compressor eliminates contamination risk and reduces costs for food & beverage producers



The safety of food and beverage production in the UK is set to take another step forward in 2022 with the introduction of next generation oil-free compressors from leading industrial compressor brand, ALUP, which have also been designed to reduce operating costs.

From the packaging of eggs to baked goods and brewing to vegetables, the need for pure compressed air is a critical part of the production process, to ensure the safety of products from 'farm to table'. With increasingly stringent legislation surrounding health and hygiene in the food and beverage supply chain, ALUP's new OF 20-75 line of oil-free rotary tooth compressors delivers class zero 100% oil-free air and eliminates the risk of any contamination.

As there is no lubrication in the compression cycle of the machine, ALUP's oil-free technology delivers 'Class Zero' compressed air, that is certified\* to be 100% free of any traces of oil or other contaminants, which meets the stringent BRC (British Retail Consortium) Global Standards, as well as the Food and Beverage Grade Compressed Air Best Practice Guidelines issued by

BCAS (British Compressed Air Society). Innovations made by ALUP replace previous generation oil-injected compressors, that rely on downstream filtration to achieve the required high levels of air purity demanded by food and beverage producers.

As well as the enhancements to product safety, the launch of oil-free technology enables food and beverage producers to save time and money by removing the need for regular monitoring, cleaning, and maintenance of oil filters, thereby contributing to lower operating costs.

With energy costs accounting for up to 70% of the total operating cost of a compressor over a five-year period, ALUP's variable speed compressors in its oil-free models match the supply and demand of the air. As the food production industry generally has a constantly fluctuating requirement for compressed air, selecting a variable speed drive compressor to meet a differing air demand profile can reduce overall energy consumption by as much as 35%, on average.

Commenting on the launch of its oil-free compressors, Mark Keen, Business Line Manager at MultiAir UK & Ireland, which supplies ALUP machines via a network of approved Oil-Free distributor partners, said:

"With food and beverage producers facing increased energy costs, as well as pressure to achieve safer and more sustainable production, the use of oil-free technology offers a significant advancement in more environmentally-friendly compressors, that avoid risk to products, expensive product recalls and brand reputation, as well as delivering a lower total cost of ownership.

"ALUP remains committed to improving efficiency and commercial value across the food production sector, so our new OF compressors feature ALUP's latest Airlogic<sup>2</sup> Touch controller with integrated ICONS, which provides monitoring and control capabilities to maximise compressor reliability and performance. This also helps producers to schedule optimum service windows, predict any risk of failure and measure overall machine health."



# NSK Life-Lube® bearings improve the reliability of vegetable washing operations

The food industry demands many prerequisites of its bearings, not least long service life, high-speed capability, hygienic operation and robust sealing technology. Without these attributes, food plants will incur higher maintenance costs and unscheduled production downtime, both of which impact upon bottom-line profitability. To overcome these issues, increasing numbers of vegetable processing facilities are identifying NSK's Life-Lube® series as the optimum bearing choice for demanding applications such as washing systems.

Life-Lube® bearing units comprise two key components, the first of which is a thermoplastic polyester (PBT) housing that provides corrosion resistance and eliminates any risk of contamination from painted or coated surfaces.

The housing also features nitrile rubber seals to prevent the ingress of contamination and water/cleaning chemicals from repeated washdown procedures. In comparison with standard bearings, users of Life-Lube® units can reduce or even eliminate the annual costs associated with maintenance and downtime.

The stainless-steel insert of the Life-Lube® series features NSK's proprietary Molded-Oil cavity, which contains a lifetime of lubricating oil and polyolefin resin so that no relubrication is required – again reducing maintenance costs.

Among a growing number of food plants enjoying the benefits of Life-Lube® bearing units is a

premium vegetable processing company. The facility was previously experiencing frequent bearing failures on a high-volume carrot washing line, causing significant downtime and reduced production. The company would often have to change its bearings every six weeks.

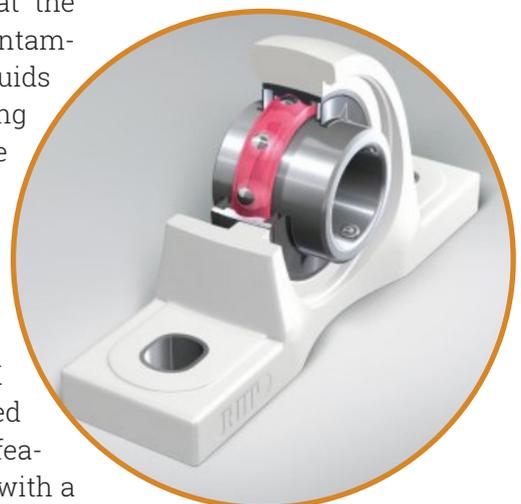
NSK performed a bearing failure analysis and application review as part of its AIP Added Value Programme. In particular, NSK conducted a process mapping exercise of the carrot washing operation, identifying problematic areas for the bearings.

The analysis revealed that the ingress of hard-particle contamination and washdown fluids were significantly reducing bearing life. In effect, the lubricant of the standard bearings was washing out, leading to premature failures.

The expert team of NSK specialists recommended Life-Lube® bearing units featuring Molded-Oil inserts, with a

subsequent trial demonstrating vastly improved bearing life. No failures had occurred after a year of operation. The vegetable processing company is now enjoying significant annual cost savings, with reduced downtime and maintenance, as well as increased productivity.

PR Ref. B242021-N | 1/3 Ideal for any operations where contact with process fluids is unavoidable, NSK Life-Lube® bearing units are available in bore sizes from 20-40 mm. To ensure design flexibility, housings come in various types, including two-bolt, four-bolt, pillow block and take-up units.



# Petronas Lubricants International launches new 20L PETRONAS Ecovent pail with up to 50% recycled plastic

Lubricants leader presents new European packaging with patented anti-glug feature and reduces plastic usage

**L**ondon, UK – 9th February 2022 – PETRONAS Lubricants International (PLI) today announced the launch of its new 20L PETRONAS Ecovent packaging which introduces one pail standard in Europe, achieving both consistency, efficiency and a greener supply chain. The new packaging is a major step forward in PLI's aim to achieve net-zero emissions by 2050, as it is manufactured with up to 50% Post Consumer Resin (PCR). A patented anti-glug feature incorporated into the neck of the pail ensures quicker and smoother pouring with less oil waste.

Due to various legacy reasons, PLI supported five different 20L packs in Europe. However, since those requirements no longer exist, the lubricants brand saw an opportunity to standardise the range and achieve efficiency in size and labels, and consistency in look and feel. This resulted in a pail that is up to 250 grams lighter and contains up to 50% recycled plastic.

The pails themselves are fully recyclable and come in black, blue and silver.

Another improvement to the new packaging is the anti-glug system. An inner air channel creates a free air flow entrance, which results in oil flowing out uniformly. This design tackles the common challenge of pouring the oil out of the pail whilst trying to avoid wasting any of it.

This new single pack is UN level 3 certified, meaning it passes heavy destructive tests. 20L PETRONAS Ecovent also meets the requirements for the new 'Plastic Tax' that has been introduced across Europe, whereby all virgin plastics will be taxed, to therefore encourage the reuse of plastic and reduce waste.

Domenico Ciaglia, Managing Director of EMEA at PETRONAS Lubricants International, said: "The 20L PETRONAS Ecovent packaging offers a greener option and better customer experience because of the registered Ecovent anti-glug system. We are pleased we can offer our customers these benefits, and contribute to achieving a more sustainable supply chain.

"This new packaging is again a step forward in PLI's aim to achieve net-zero carbon emissions by 2050 and supporting our

customers to operate more sustainably. Besides the pail we've also optimised our steel drums, so they are now lighter than before, which reduces greenhouse emissions in the production process enormously. These changes are just the first steps in our packaging journey; there is much more to come in 2022."

The 20L PETRONAS Ecovent comes in a PETRONAS branded or plain option for EOMs/ branded caps.

[www.pli-petronas.com](http://www.pli-petronas.com).



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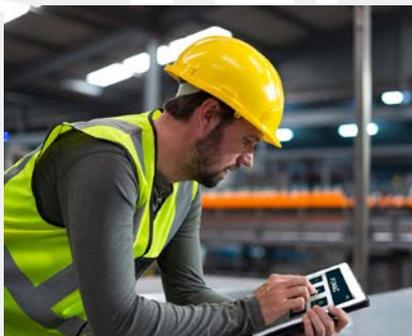
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# PEMAC: Delivering Powerful & Intelligent Predictive Maintenance Management through Award-Winning CMMS

PEMAC, an Irish and UK-based software company provides a market-leading best-of-breed Computerised Maintenance Management System (CMMS) that helps companies reduce equipment breakdowns by analysing the reasons for failure and informing decision making.

Through its premium CMMS solution called PEMAC Assets, PEMAC delivers powerful features and benefits. PEMAC also offers the option to integrate its health and safety software and paperless approval tools with its CMMS ensuring that client key assets, people and equipment are aligned in delivering a successful maintenance strategy.



PEMAC's mission is to provide world class asset management solutions that are tailor-made to support any organisation's needs whilst assisting a seamless transition into the digital age. PEMAC has over 35 years' experience in the pharmaceutical, medical devices, utilities, and food and beverage industries and excels in highly regulated and compliance-intensive frameworks such as 21 CFR Part II and ISO 55000.

The company has worked with some of the world's top brands including Leo Pharma, Aga, and Heineken, who have used PEMAC to run their businesses better, faster, and more profitably.

When companies use PEMAC Assets CMMS, they can continue to adapt core processes that have already

been automated and streamlined. While designed to dramatically shrink processes such as work order approval, risk assessments and TPM methodologies, PEMAC Assets is also highly configurable.

In essence, PEMAC eliminates the need for paper-based processes through customisable electronic forms and digital signature captures.

These features allow PEMAC users to set up automated workflows and receive auto-generated notifications.

PEMAC Assets typically delivers an 80% maintenance cost reduction for clients. The CMMS works to analyse historic and real-time maintenance data, providing the user with intelligent insights to deliver time and performance-based improvements, that in turn enable maximum asset availability.

Since its launch back in 2017, PEMAC Assets has grown considerably and is improved through regular software updates. Recent enhancements include the new PEMAC Assets API Gateway, Google Map integration, the ability to create forms and contractor visits via a mobile app, inventory cycle counting, production planning, maintenance enhancements, downtime tracking, new interactive dashboards, reports and much more.

PEMAC Assets also integrates with a wide range of third-party ERP financial, production (OEE), supply chain, spares management systems and smart machines, and contains an automated integration with SAP.

PEMAC's new API Gateway allows

clients to seamlessly integrate data between PEMAC Assets CMMS and 3rd party software in real-time. This significantly reduces the setup time and costs associated with systems integration, while improving consistency and accuracy.

Engineering Maintenance Solutions highly recommends the PEMAC Assets CMMS and would encourage any business seeking to improve its maintenance management or any potential channel partner looking to augment its offering, to reach out to PEMAC. PEMAC is also an award winner having been recognised as the 'Best Maintenance Management Software Provider – Europe' for 2021 at the Corporate Vision Global Business Awards.

**Further Information:**  
[www.pemac.com](http://www.pemac.com)

**Email: [sales@pemac.com](mailto:sales@pemac.com) to arrange a free, no-obligation maintenance management consultation or CMMS software demonstration.**



# OMRON

## REECO AND OMRON TEAM UP TO DEVELOP MOBILE ROBOT SOLUTIONS FOR THE UK

Information!

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Reeco Automation, specialist in Collaborative Robot (Cobot) applications, has been appointed Omron's Autonomous Mobile Robot (AMR) solution partner. The partnership enables the duo to offer time-saving operational efficiencies that address the logistical, warehousing and end-of-line challenges faced by UK manufacturers, distributors and large retailers.

This latest venture between the two companies follows the joint development of Reeco's RB1200 palletiser, which features an Omron TM12 collaborative robot. Designed to accommodate a wide range of pallet and box dimensions, the cost-effective RB1200's modular design provides flexibility and simple programming for rapid redeployment.

Reeco is now the sole UK Mobile Robot solution partner for Omron; together Reeco and Omron will develop solutions that address manufacturing and warehousing challenges. Kicking off the partnership, Reeco will receive delivery of the first HD-1500 Mobile Robot in the UK which boasts a unique payload capacity of up to 1500kg.

Llewelyn Rees, Managing Director at Reeco, believes the ongoing partnership with leading industrial automation provider Omron can help transform the future of logistics operations. He said: "Companies designing factory floor space are already considering forklift-free zones and autonomous movement of materials. I want Reeco to be at the forefront of that technology."

Newly appointed Head of AMR Applications Mick Deegan heads up the division with more jobs set to follow. He has significant experience in the FMCG sector, working in maintenance and more recently as a project engineer tasked with improving existing systems and implementing solutions in manufacturing environments.

Speaking about the new appointment at the Powys company, Llewelyn Rees added: "Mick is passionate about robotics like I am. He brings a different perspective and understands the challenges faced by companies and what's needed to deliver a complete solution."

Mick commented: "AMR technology offers companies more freedom when automating material movement and internal logistics. The ability to easily add to existing AMR configurations through hybrid fleets or additional tasks allows companies to gradually introduce the technology and will give more inhouse capability and control, which is essential in ever changing modern manufacturing environments.

"The great thing about AMRs is that they aren't limited to factory environments. Anywhere that

something needs to be moved from A to B there's a potential for value to be added. We've seen it in the likes of decontamination in hospitals."

This move further strengthens the growing relationship between Reeco and Omron with a complete end-of-line packaging solution on offer. Omron's UK General Manager, Sam Tilley, said: "Developing strong, bi-directional partnerships with world class solution providers is key to helping the UK manufacturing sector thrive in the future.

"The success of the RB1200 is a testament to the hard work put in by Reeco and Omron. This further development in our relationship opens up even more opportunities for us to collaborate and position the UK as a force in the manufacturing sector for years to come."

Reeco's partnership with Omron began in 2020, and since then has gone from strength to strength. The collaboration over the introduction of the RB1200 palletiser has highlighted the capabilities of the parties' joint efforts in creating solutions that deliver real application value.

**For more information visit**  
**[reeco.co.uk](http://reeco.co.uk)**

# Smartening up temperature control

A smart power controller does what it says on the tin. It is smart because it has a microprocessor and sophisticated programming. It controls power using sensors that monitor voltage and current, adapting and making decisions as conditions change within the parameters of the application that it's being used. However, it's a valuable tool that is often overlooked. Here, Eric Rios, product manager for controls at industrial technology company Watlow, explores why smart power control is vital in heating applications.

**T**here are many types of power switches that are used in commercial and industrial applications. Mechanical relays and contactors are ideal for applications where they are not switched very often because they are relatively inexpensive and do not produce much heat. But for precise control of electric heating, these switch types are a poor choice because they wear out and fail quickly if switched frequently. In this instance, smart power controllers are a sensible choice.

### Improved performance

Being able to control the output based on the measurement of power delivered to the load improves temperature control performance because it compensates for line voltage fluctuations or even partial load failures faster.

This means that there is significantly less deviation from the temperature set point than would occur with the same temperature controller paired with a traditional solid-state power switching product.

The temperature controller and power controller work together. The

temperature controller measures the temperature with a sensor and determines how much of the available power is necessary to achieve set point.

The power controller interprets the output from the temperature controller and controls the delivered power accordingly. Finally, the power controller adjusts the power delivered for voltage fluctuations and to the best of its ability when there is a partial failure of the heater.

### Process and equipment characterization

The smart power controller measures the line voltage and the current through the load. With that information it calculates the load resistance and how much power is being delivered by the heater. Equipment manufacturers can use this information during commissioning to identify if there is a problem. For example, abnormally high resistance



# Temperature Control

could indicate a poor connection that might eventually cause a premature failure or even a fire if not corrected.

For instance, power controllers can help companies monitor the load parameters during equipment installation and compare the profile with previous known good start-ups. By doing this, they can receive warning of issues localized to the heated zone, allowing preventative action to be taken before a failure occurs.

End users can similarly monitor these parameters overtime and correlate them to good and bad production results.

## Integrated communication

Integrating a smart power controller with other automation equipment allows process variables to be monitored remotely and allows operators and line maintenance personnel to quickly locate problems.

Consider this example, from a Watlow customer. A manufacturer of power transmission cables once relied on employees to periodically check the current gauges visually for each zone of extruders that coat the cables.

On shifts with lower staffing, faulty product was often the first indication of a problem. The customer replaced the solid-state

power controllers in the extruders with the ASPYRE® DT power controllers from Watlow, so they could determine if cable needed to be scrapped or whether production could continue until the scheduled maintenance.

Watlow's range of heating equipment, including its ASPYRE controllers, is frequently used by heavy duty industrial companies in petrochemicals, heat treatment and power generation.

The ASPYRE model is available between a range of 35 to 2,100 amps

to support a wide variety of applications. For example, a single high amp ASPYRE unit is ideal for applications using multiple small units with low range amps.

Overall, the smart features and functionality of smart power controllers enables users to minimize scrap and unscheduled down time – improving operations and output.

**To find out more about Watlow's industrial heating solutions, visit [www.watlow.com](http://www.watlow.com).**



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# Bearing Inspection with SONAPHONE

## App release & new ultrasonic sensor for condition monitoring in preventive maintenance

**S**ONOTEC launches a holistic solution for ultrasonic bearing inspection with new SONAPHONE LevelMeter 2.0 app, the BS40 structure-borne sensor and new features in the SONAPHONE DataSuite maintenance software.

The new version of the SONAPHONE LevelMeter App not only shines in a new design, but also offers all SONAPHONE users an optimal workflow for bearing inspection. Thanks to integrated manual gain changeover, constant measurement conditions can be ensured, e.g. in the context of comparative measurements. With the adjustable band-pass filter, the frequency range can be flexibly adapted to the respective test task and interference noise can be suppressed. The SONAPHONE is thus the world's first digital ultrasonic testing device capable of acquiring broadband ultrasonic signals with a bandpass that is variable in frequency and bandwidth, and of outputting calculated characteristic values.

The characteristic values for performing a bearing inspection have been expanded to include the CREST factor (crest factor). This factor represents the peak content in the measurement signal and is an important aid in the detection and evaluation of rolling bearing damage.

Another completely new feature is the ability to view and log the time signal as a Time Wave Form (TWF) directly on the

SONAPHONE. The time signal completes the previous display of the ultrasound as level curve and spectrogram. An advantage of the time signal is the possibility to measure the repetition frequency in signals in the PC software SONAPHONE DataSuite.

With the new BS40 structure-borne sound sensor, SONOTEC introduces a sensor that is ideally suited for testing rolling bearings. It is handy and robust at the same time. In addition, it convinces with a laser-welded stainless-steel housing. The standard 1/4"-28 UNF threaded bolt allows maximum flexibility in mounting. Thus, the BS40 can be used with magnets for flat or curved surfaces or can also be screwed to adhesive pads with an internal thread of 1/4"-28 UNF.

The optimized sensor characteristic in the range from 10 kHz to 65 kHz ensures a nearly linear frequency response. The downward extension of the previous ultrasonic frequency range to < 1 kHz also provides more flexibility for machine diagnostics. A piezo composite developed by SONOTEC is installed in the sensor itself. Here, the ultrasonic expert draws on its 30 years of experience in sensor manufacturing.

The revised SONAPHONE DataSuite software rounds off the new complete solution for rolling bearing inspection. For the first time, trending of key figures for rolling bearing evaluation is now possible. The transfer of the previous measurement conditions from the PC software to

the LevelMeter 2.0 on the SONAPHONE is a prerequisite for error-free data collection and meaningful trending.

Thanks to a new analysis feature, repetition frequencies in the time signal (TWF) can be read by means of a cursor in the SONAPHONE DataSuite. This tool is particularly useful for bearing testing, but also for evaluating partial discharges, in conjunction with an airborne sound sensor (e.g. BS10 or BS30).

**Deeplink:** <https://www.sonotec.eu/en/products/preventive-maintenance/applications/bearing-monitoring-lubrication/>





# A real time-saving test solution

## Increase real-time capability, save time and speed up engineering decisions

**H**öttinger Brüel & Kjær has launched the latest version of its Tescia software, with enhanced features to help users achieve greater efficiency through time-saving functionality.

The Tescia system provides a safe way of capturing critical data, targets vibration, acoustics, and monitoring applications. Its unique capabilities and a user-centric workflow help to reduce setup time, safeguard test items – and improves data quality and test-result validation.

To enable automated conditioning monitoring tasks on floors, rotating machinery and sensitive machinery, Tescia now supports Reference Profiles, so the user can define – from simple to very complex – levels at every frequency, allowing the system to detect and trigger on profile exceedances.

For long test runs or condition mon-

itoring of – for example – propulsion systems, a metric recorder has been introduced, allowing users to record key metrics such as overall, band-pass, spectral lines and order values. This reduces the need for time consuming post analysis tasks, saving valuable time. Metric data can be directly imported into HBK's BK Connect® software.

For larger multichannel test campaigns, the amount of recorded data can be overwhelming. The new real-time data conversion and archiving functionality provides the ability to convert and archive data in the right place during the test campaign, thereby avoiding time-consuming business of copying or archiving tasks after the test activity.

Adding data processor licenses provides extra real-time analysis capability and monitoring, making it possible to increase the number of test participants. This enables multiple

engineering specialists to engage in test sessions, on multiple independent analysis seats without interfering with the recording. These seats can operate in real-time, completely autonomously, either locally, connected to the same network as the acquisition system or remotely. Each Data Processor has the same analysis possibilities as the main data acquisition system and local configurations can be saved, then reused later.

Tescia Product Manager Flemming Schultz Larsen said: "I am very proud of this current Tescia release. Tescia is better than ever. It provides the level of features and performance needed by our customers, saves them valuable time and allows them to make decisions faster."

**For more about Tescia, visit: <https://www.bksv.com/en/analysis-software/data-acquisition-software/tescia>**

# New Babcock Wanson Brochures Highlight Steam Solutions and Thermal Fluid Heating Applications

**I**ndustrial process heating manufacturer Babcock Wanson has launched two new brochures: a guide to the company's Steam Solutions, and a Thermal Fluid Heating Solutions brochure with a focus on the applications and industries most suited to this energy efficient, easy to use process heating technology.

The new 12-page Steam Solutions brochure emphasises Babcock Wanson's expertise and in-depth knowledge of industrial steam products and services, for which the company is renown. It features Babcock Wanson's latest steam boilers, including Coil, Fire Tube, Water Tube and Electrical Steam boilers, along with the company's new generation of micro-modulation Burners with very low NOx.

The brochure continues with a look at Water Treatment products, plus the range of services available, from maintenance to equipment rental, training and latest digital services. Smart products and services, which are becoming increasingly popular, are also highlighted, which include

unattended operating mode (up to 30 days), automation, HMI for easy day to day boiler operation, and cloud based Navinergy and e-Water remote monitoring Apps.

The new Thermal Fluid Heating Solutions brochure takes a different approach, with the main focus on applications and industries that are best suited to thermal fluid heaters and that have potentially the most to gain from swapping to this process heat technology.

This includes pressing, curing and moulding; tanks, vessels and cookers; printing, coating, laminating and drying; and heating and cooling, which can be combined in a single thermal fluid system for exothermic

reaction control or simply to maximise the use of a plant. Each section is illustrated with photography and clear graphics showing how a typical thermal fluid system works in that specific application.

The brochure finishes with a brief overview of the thermal fluid heaters available from Babcock Wanson, including the TPC and EPS ranges, along with the services provided by the company.

**For a PDF copy of the new Babcock Wanson brochures go to [www.babcock-wanson.com/resources/brochures/](http://www.babcock-wanson.com/resources/brochures/) or request a hard copy from Babcock Wanson on 020 8953 7111 or [info@babcock-wanson.com](mailto:info@babcock-wanson.com).**



# Anti-slagging Boiler Coating Facilitates Fuel Diversification



In 2020, a large power generation company in Southeast Asia commissioned the production of a new 600MW Pulverized Coal (PC) Boiler at its plant. The company had a requirement to be able to burn the full range of its coal, which had proved challenging due to the high calcium content of the fuel. As a result, a new boiler had been built and commissioned by a reputable manufacturer.

Since the boiler has been in operation, the plant has suffered with a build-up of slagging on the tubes. The plant's requirement to burn the full range of coal means that some ranges had to be burned at an increased temperature, which had been causing excessive slagging at the bottom of the boiler. To fix the problem, the build-up was being regularly blasted, which was time consuming and inefficient.

## The Issue of Boiler Slagging

Pulverized Coal boilers experience slagging as the molten ash adheres to the surrounding substrates. This is also commonly referred to as slag. The amount of slag is primarily dependent on temperature and the types of coal being used and whether it is anthracite, bituminous coal, subbituminous coal, or lignite. Boilers will often slag in the upper sections of the furnace where the temperatures are higher near the superheat pendants, but slagging may also occur on the waterwalls.

The build-up has a negative effect on boiler operation. The slag acts as an insulation to the tube substrate and this loss of heat transfer is detrimental to perfor-

mance.

When the slag builds up on the tubes, the heat transfer decreases lowering the temperature of the steam going to the superheated portion of the system, therefore decreasing the overall efficiency of the system. Finding a solution to excessive slagging can have tremendous benefits for a boiler operator's bottom line.

## The Solutions

In most cases there are two viable options to resolve the issue of slagging. A reactive method comprises of the installation and maintenance of the water cannons to regularly remove the fouling.

However, whilst the cannons are effec-





tive at removing most of the build-up, parts of the cannon often need replacing due to the erosive effect of water running through them and the ash burning around them. This makes the installation of water cannons a time consuming and costly method.

The other option available is to apply a ceramic coating alternative to reduce the build-up of slagging, which was the solution chosen by the plant in Southeast Asia. The properties and benefits of such a ceramic coating are discussed in more detail, below.

### **Anti-Slag and Fouling Properties of the Ceramic Coating Surface**

Anti-slugging technology such as that offered by Integrated Global Solutions (IGS) bonds tightly to the boiler tube's surface, creating a non-porous, non-wetting, non-reactive surface.

The coating will significantly limit molten slugs from bonding to the surface, reducing slag and fouling agglomerations.

Waterwall furnace tubes and Superheater tubes can benefit from being protected with the coating. IGS has developed a series of ceramic coating formulations which are modified to match boiler environments.

### **Increase Heat Rate, Lower Furnace Gas Exit Temperatures (FGET)**

Ceramic coatings can help increase heat absorption into boiler tubes by reducing the amount of slag or fouling on the OD surface of the tube, and by eliminating the formation of corrosion scales on the tube surface.

The coating itself exhibits high thermal conductivity and high emissivity, which means the coating layer will not insulate the tubes.

A coated tube will have higher heat absorption compared to an uncoated scaled tube. It is possible to rebalance a boiler that is suffering from severe slagging or fouling.

The lower FGET is possible by absorb-

ing more heat into the waterwalls while achieving the same final steam temp (reduced fuel input, same final steam temp, reduced waste heat).

It is even possible to help address boilers that have de-rated their MW output capacity due to superheater fouling.

### **Reduce Damage from Soot Blowers and Water Cannons**

By significantly reducing the amount of slag or fouling on a tube's surface, it is possible to significantly reduce the frequency at which soot blowers or water cannons are activated.

As there will be less slag attached to the tubes, lowering heat absorption, there's no need to continuously run the slag control equipment.

When soot blowers or retractable lances remove slag and fouling, the tube itself will be thermally shocked due to the removal of the dirty insulating material, creating the potential for circumferential cracking or corrosion assisted fatigue (CAF) of the tube. Reducing soot blower usage inhibits this and slows the wasting of the tube's surfaces.

### **The In-situ Application**

The plant and the boiler manufacturer agreed that a ceramic coating would be the most efficient long-term solution to increase productivity and negate the requirement for water cannon blasting and the associated maintenance costs.

The contractor, IGS, mobilised a team to the plant in December 2021 to complete the application of the ceramic coating on 10% of the total surface area.

After results testing for effectiveness,

the remaining 90% would be coated. The work was carried out across four night shifts during a planned shutdown.

### **The Result**

The ceramic coating will significantly reduce the amount of slag build-up throughout the boiler.

The sensors coated with the IGS anti-slugging technology will be hotter due to the prevention of fouling inhibiting the heat transfer process.

The plant is expected to see significant financial and carbon savings associated with reduced maintenance and increased efficiency.

### **IGS Comment**

Pete Johnson, Director O&G – APAC at IGS, said, "This project has been a great success for IGS.

We have been able to fulfil the client's requirements to help resolve the issues that they had been experiencing in relation to slagging and fouling within the boiler.

"The feedback we have received from the client has been very positive; they were particularly impressed with our professionalism, our communication channels, and our safety protocols.

"We are pleased with the results that we are initially seeing, and we'll be working closely with the client moving forwards to monitor and maintain the performance of the boiler."

**For more information about anti-slugging solutions, visit: <https://integratedglobal.com/services/boiler-deslagging/>**



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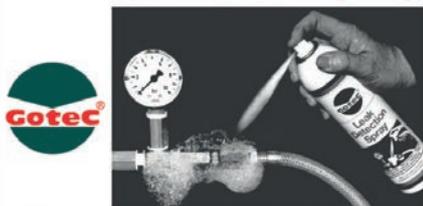
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**We've got you covered**  
Do you need Professional Gas Detection advice?  
Do you need more Gas Detection cover?  
Do you need a review of your existing Gas Detection System?  
**FREE NO OBLIGATION ON-SITE GAP ANALYSIS**

**GfG GOOD FOR GAS**

UNIT 8 GRIGGS BUSINESS CENTRE WEST STREET COGGESHALL ESSEX CO6 1NT  
sales@gfegas.co.uk www.gfegas.co.uk Tel: 01376 561463

## Temperature Sensors

**LABFACILITY**  
TEMPERATURE & PROCESS TECHNOLOGY  
www.labfacility.com

Phone: 01243 871280 Email: sales@labfacility.com

Labfacility are the UK's leading manufacturer of  
Temperature Sensors and Thermocouple Connectors.

- \* Thermocouple Connectors (IEC, ANSI, JIS)
- \* Thermocouple Cable (IEC, ANSI, PRT)
- \* Temperature Sensors (Thermocouple & PRT)
- \* Sensor Installation Fittings
- \* L60 Thermocouple & Fine Wire Welder

In addition to stocked  
items, Labfacility also  
offers bespoke  
Temperature Sensors.

## Thermal Fluid

**Babcock  
Wanson**

**Thermal Fluid Heating**

Technology now for the future

- Up to 50% energy savings
- Compact size
- Easy & safe to use
- Works up to 350°C
- Low exhaust emissions
- High efficiency
- Requires no specialist knowledge
- Corrosion free operation
- No chemical treatment

Tel: 020 8953 7111  
info@babcock-wanson.co.uk  
www.babcock-wanson.co.uk



### MODULAR SYSTEM

Each OnTrak is capable of 16 sensors. Easily scale OnTrak systems to thousands of sensors to one central dashboard

### COMMUNICATION

(Ethernet, wifi or cellular)



### SINGLE POINT LUBRICATOR

Dispense lubricant with precision only when needed from up to 16 single point lubrication devices



### MOBILE VIEW

Viewable on any network connected device; pc, laptop, tablet, phone using a standard browser

### ALARM NOTIFICATION

Built-in events system, which is configurable, and has the ability to display, email and text any alerts the system has

# BEARING LUBRICATION REIMAGINED

## Remote and Real Time Bearing Monitoring and Lubrication



The OnTrak SmartLube is a unique remote bearing monitoring and lubrication system. Designed to **monitor and lubricate bearings remotely**. With remote condition-based lubrication you can greatly reduce bearing failures.

System uses ultrasonic sensors: identify bearing issues beyond lubrication at the earliest possible point

Lubricate bearings remotely with a push of a button, using always the right grease and the right amount

All data accessible anytime, anywhere, via user-friendly dashboards

System includes single point lubricators: no more lubrication issues!

Easy to install, affordable and scalable

Integrates with existing databases and CMMS

**CONTACT US FOR A DEMONSTRATION WITH REAL LIFE DATA!**

**UE SYSTEMS UK & IRELAND** - CHRIS HALLUM  
+44 (0) 7930 352 188 | chrish@uesystems.com

**ue**  
SYSTEMS INC  
The *ultrasound* approach