

# KNOW + HOW

## Hygienic Solutions

Hygiene is a theme that echoes through every part of our lives, whether at work, socially or at home. In this edition we delve into a range of topics from the first ever range of vegan lubricants, efficient and effective compressed air usage through to stainless steel tools to keep your brand reputation 'stainless'.

### ERIKS In Action

#### Who's there when the chips are down?

The worldwide silicon chip shortage is having a knock on effect across industry with inverter deliveries. Discover how ERIKS delivered an alternative solution to avert a crisis. Page 14.

### In Focus

#### Satisfying the appetite for vegan lubricants

Food grade lubricants are more or less standard across the industry. Now ROCOL has become the first lubricant manufacturer to be certified by the Vegan Society. Page 20.

### Debate

#### 2022: A Year for Optimism?

The past few years have been anything but optimistic for manufacturers and businesses alike. But does 2022 hold the key for a fresh outlook and a new approach? Page 48.





# TIMKEN



Innovation makes the world stronger and more efficient.  
Our world-class engineers and technologists  
use advanced science to minimize the friction that limits productivity.

We create value designed with the customer in mind.  
Focus, precision and passion for details deliver measurable and enduring results.

Work with us to overcome  
your toughest challenges.  
Together, we are **Stronger. By Design.**

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







# KNOW + HOW

# Welcome



After two years of Covid-19, it seems only right that we dedicate this edition of Know + How to the topic of hygiene. It is rare that a single subject captures attention on a global scale and in this issue, we explore the far-reaching impact this has created across industry.

Our In Focus section concentrates on hygiene developments in the food and beverage sector. Product Manager for Festo, Andy Parker, talks us through the need to distinguish between levels of compressed air cleanliness in food production leading to cost savings and improved efficiencies. While in ERIKS in Action, read how we beat the clock for one refrigeration manufacturer who needed a fast and innovative solution to support its continued production when its traditional supply chain failed.

In Making Industry Work Better, we learn how 3M are leading the way with advanced new earplug technology that improves on both fit, application and hygiene, with a revolutionary new washable foam.

Finally, our popular Debate article centres on whether 2022 can be the year that we build back better and stronger and what relationship changes industry may need to embrace to achieve this.

We always enjoy our readers feedback. If you would like to comment on any of the subjects covered in this issue, please join the discussion by emailing or tweeting us @ERIKS\_UK

**Richard Ludlam**  
Editor-in-Chief  
Email me at:  
[knowhoweditor@eriks.co.uk](mailto:knowhoweditor@eriks.co.uk)

Published by ERIKS UK & Ireland  
Seven Stars Road,  
Oldbury, West Midlands,  
B69 4JR, United Kingdom

# In this issue

## Latest News

- 06 Made in Britain Research
- 06 CCAT and Bladon Micro Turbine to launch hydrogen fuelled generator in 2022
- 07 Net-zero manufacturing firmly on the agenda for National Manufacturing Summit
- 07 New export strategy 'Made in the UK, Sold to the World' launched by UK government
- 07 UKRI invests £350,000 in skills, talent and training for PEMD sector



## Technology Update

- 08 New Energy Efficient EOY Plastic Pumps from Crest
- 08 DK proves more than O.K.
- 08 The attractions of magnets
- 09 Omron senses a 95% reduction in downtime for food and beverage manufacturers
- 09 Laser shaft alignment system 'saves energy and cuts downtime'



## ERIKS in Action

- 10 Now hose expertise goes deeper than ever
- 12 When a hammer's not enough
- 14 Who's there when the chips are down?
- 16 Going the extra mile (by taxi)





# KNOW + HOW

## In Focus

- 18 Thinking outside the gearbox
- 20 Satisfying the appetite for vegan lubricants
- 22 The distiller with a reason to celebrate
- 24 Air that's good enough to eat
- 26 Expanding the food safe menu
- 28 Life under the hygiene regime
- 30 Keeping your brand's reputation stainless
- 32 Introducing the new wave of water of water flow metering
- 34 How a spotted tie can improve safety and hygiene



## Making Industry Work Better

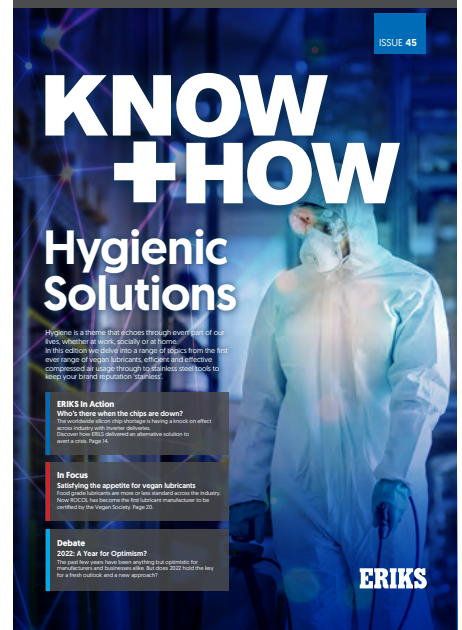
- 36 The customer is always...
- 38 Don't slip-up on safety
- 40 Earplugs to shout about
- 42 Making light work of making light work
- 44 A step in the right direction
- 46 Pumped for information

## Debate

- 46 2022: a year for optimism

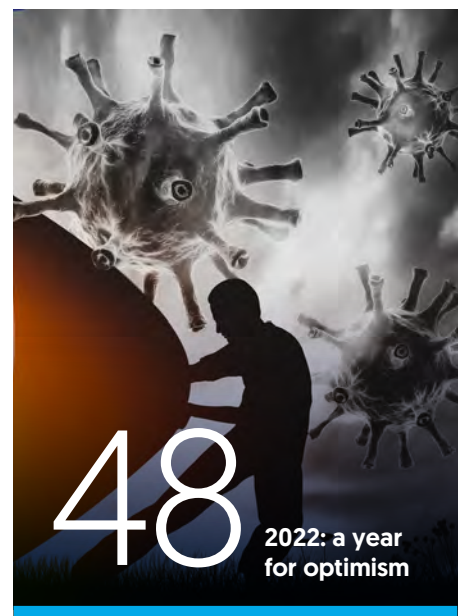


## NEVER MISS AN ISSUE



Subscribe today and receive your **FREE** copy delivered to your door

[eriks.co.uk/subscribe](https://eriks.co.uk/subscribe)





## Made in Britain research finds over 90% of buyers believe buying British products is a priority

The survey polled 1000 purchasing decision makers from UK companies. From this, 91% think buying British is important and 87% consider where a product is made before buying it on behalf of their business. Over half of respondents said they are more likely to buy a product with a British flag on its marketing materials and 63% said they are now more likely to buy British as a direct result of the pandemic.

As more businesses are taking the journey towards net zero, 73% of respondents agree that it would help to combat climate change if they bought more products that were made in Britain. However, just 3% of the companies polled have an active 'buy British' procurement policy in place. The research continues to reveal that more than half think their companies should consider implementing a buy British policy to prioritise British-made products.

John Pearce, CEO of Made in Britain, commented, "It's clear that buying British products is important to British businesses and their employees, but those making purchasing decisions still don't feel empowered to make informed choices. Customers are calling out for an easily recognisable and trustworthy mark such as the official 'Made in Britain' certification."



## NCCAT and Bladon Micro Turbine to launch hydrogen fuelled generator in 2022

The National Centre for Combustion and Aerothermal Technology (NCCAT) was set up in 2020 to act as a primary hub for research and development into traditional and sustainable fuels for low emission aero gas turbine technologies.

The team of researchers, designers and engineers from NCCAT are working with Bladon Micro Turbine to develop a micro turbine generator that is compatible with clean hydrogen fuel.

Together with the NCCAT team at Loughborough University, Bladon is adapting its gensets' modular design to incorporate the use of hydrogen.

They commented: "The micro turbine generator is already a truly innovative game-changer and through our work with Loughborough University we will have a hydrogen demonstrator to show our customers later in 2022."





## Net-zero manufacturing firmly on the agenda for National Manufacturing Summit

This year's National Manufacturing Summit once again will be held at the Manufacturing Technology Centre (MTC) in Coventry.

The main theme for 2022 is sustainable manufacturing in the UK, supporting our journey to net zero. Conference sessions will focus on three sub-themes of Field to Fork, Factory to Door and Fossil Fuels to Renewables. Discussion will centre on topics such as emerging technology and innovation, supply chains, talent and skills for SMEs, and finance for driving innovation in a bid to remain globally competitive.

Chief Executive of the MTC, Clive Hickman says: "We will celebrate the resilience of UK manufacturing as well as its ingenuity and diversity and demonstrate how those qualities combined with emerging technologies can enable change for a sustainable future."

In a move to ensure that the event remains agile, this year's National Manufacturing Summit will be a hybrid event with live presentations you can attend in person as well as the option to attend and interact virtually.



## New export strategy 'Made in the UK, Sold to the World' launched by UK government

The strategy will see the government work together with businesses to help them succeed in the global marketplace through a first-class export support framework.

Launched in November 2021, the new plan is intended to help British manufacturers increase exports from £600 billion recorded in 2020 to £1 trillion in the next 10 years, according to the secretary of state for international trade, Anne-Marie Trevelyan.

The 12-point strategy includes an Export Support Service and the expansion of the UK Export Academy. In addition, to help UK businesses maximise export opportunities, a new UK Tradeshaw Programme will be introduced to better serve businesses particularly in regions beyond London and the South East. It is believed this strategy will help boost the UK economy, increasing production, exports, jobs and wages.



## UKRI invests £350,000 in skills, talent and training for PEMD sector

The UKRI (UK Research & Innovation) Driving the Electric Revolution challenge has a total of £6 million earmarked for talent and skill development in the UK power electronics, machines and drives (PEMD) industry.

This initial funding of £350,000 will be invested in 14 projects designed to fill an immediate need in recruitment, development and training. Projects will include online learning and networking events to provide career advice aimed at attracting new students. In addition, training courses will be introduced to promote continual professional development for upskilling and reskilling

existing engineers from internal combustion roles to PEMD roles.

The Driving the Electric Revolution challenge aims to support a net-zero carbon economy and the development of clean technology supply chains. In total, £80 million will be invested in R&D, collaboration, talent, equipment and expertise projects to benefit the PEMD supply chain.



## New Energy Efficient EOV Plastic Pumps from Crest

Crest Pumps have just released their new EOV range of plastic pumps. With a quoted 15% increase in performance the new range is a huge improvement in efficiency allowing you to reduce energy consumption costs and reduce your risk of unplanned downtime.

The range is based on a radically re-designed volute casing and impeller featuring an improved vane design that improves efficiencies by up to 35%. Not only are flow rates and discharge pressure increased, these improvements are achieved whilst absorbing considerable less power and reducing running costs.

The Volute casing incorporates the optimum shape and cutwater clearances whilst the impeller has the perfect combination of number, depth and shape of vane for maximum efficiency. The Semi-open impeller design allows for some passage of solids, whilst the improved

hydraulic design ensures excellent performance in low NPSH applications as well as minimal mechanical vibrations ensuring a longer life.



## The attractions of magnets

W22 Magnet motors from WEG offer the highest efficiency levels on the market. In applications where speed variation, precise low-speed control, low noise levels and compact design are critical, they're an energy-saving solution with a low TCO.

WEG W22 Magnet motors feature rotors with permanent magnets, and the WEG CFM11 frequency inverter variable speed drive. This ensures constant torque across a wide speed range, with efficiency levels above those of an induction motor even at low speeds.

Available in Super Premium (IE4) and Ultra Premium (IE5) efficiencies, the WEG W22 Magnet motors reduce electric losses and operating temperatures, allowing for smaller frame sizes.

Compared with induction motors of the same speed and output, W22 Magnet Super Premium motors offer up to 77% reduced weight and volume. And replacing an IE2 induction motor with a WEG Magnet Ultra Premium would save enough energy in one year to power a 60W lightbulb for 20 years.



Scan the QR code for more suggestion on how to lower the TCO of your motors



## DK proves more than O.K.

Flender N-EUPEX machine shaft pin couplings have proved effective in applications across every industrial sector. Now the new DK double-cardanic version allows for a greater range of shaft angle offsets, and a greater radial offset.

The new double-cardanic, two-joint coupling incorporates two elastomer elements, to guarantee increased damping over the entire drive train. The high ratio of shaft and joint clearance also contributes to significantly lower restoring forces, which means a lower load on shafts and bearings.

However those are not the only improvements. With the introduction of the DK version, performance has been increased across the N-EUPEX series by an average of 30%, enabling higher torque and higher rotation speed. At the same time, the bore capacity of the hubs has been increased by up to 25%. So now it's possible to achieve the same performance with a smaller coupling, and even better drive protection.

## Omron senses a 95% reduction in downtime for food and beverage manufacturers

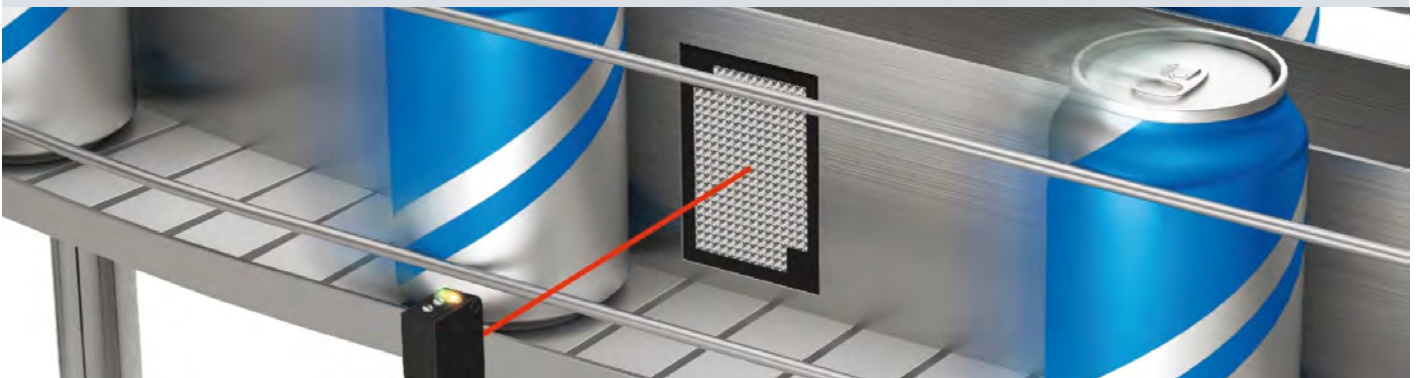
Adjusting conventional retro-reflective sensors whenever the shape, colour, pattern, or reflectivity of the workpiece changes is a time-consuming challenge to productivity in food and beverage manufacturing. The latest laser sensor from Omron eliminates this problem, reducing equipment adjustment time by up to 95%.

The Omron E3AS sensor series accurately and reliably detects variable shapes, colours, and materials – including a wide range of curved surfaces of cans, plastic bottles and glossy packaging on multi-lane conveyor lines.

This stable detection for variable workpieces removes the need for repeated equipment redesign, and significantly reduces manufacturing downtime.

The sensors can be used at various stages of the production process: the E3AS-HL CMOS Laser Sensor for primary and secondary packaging; E3AS-F TOF Laser Sensor for final packaging; and E3AS-L Distance-settable Photoelectric Sensor for simple shaped workpieces.

No complex manual adjustment is required. With the sensor selected according to the workpiece and sensing distance, the E3AS series automatically does the rest.



## Laser shaft alignment system 'saves energy and cuts downtime'

Schaeffler has announced a tool for aligning rotating shafts which, it says, is particularly easy to use and results in precise shaft alignments. Unlike other laser-based alignment tools which need two laser beams to be aligned with each other, the new Laser-Equilib2 tool uses only one laser/sensor device and a reflector. The single laser is simply aligned with the reflector, making it easier to use, saving time and resulting in precise measurements.

According to Schaeffler, around 60% of all unplanned downtime is due to imbalance and misalignments. Laser technology is one of the most precise methods for aligning rotating shafts and thus avoiding unplanned machine downtime.

The new tool's single-laser technology allows it to be deployed quickly and precisely. A non-verbal user interface with an 8" TFT display and capacitive touchscreen (which can be operated wearing gloves) is said to result in intuitive, user-friendly operation. Four-point measurements result in accuracies.

By reducing maintenance times, the alignment tool is said to cut downtime. It also reduces the amount of repair work resulting from imbalances. Schaeffler suggests that if an aligned machine uses just 1% less energy, it could result in annual electricity cost savings of several thousand pounds in some installations.





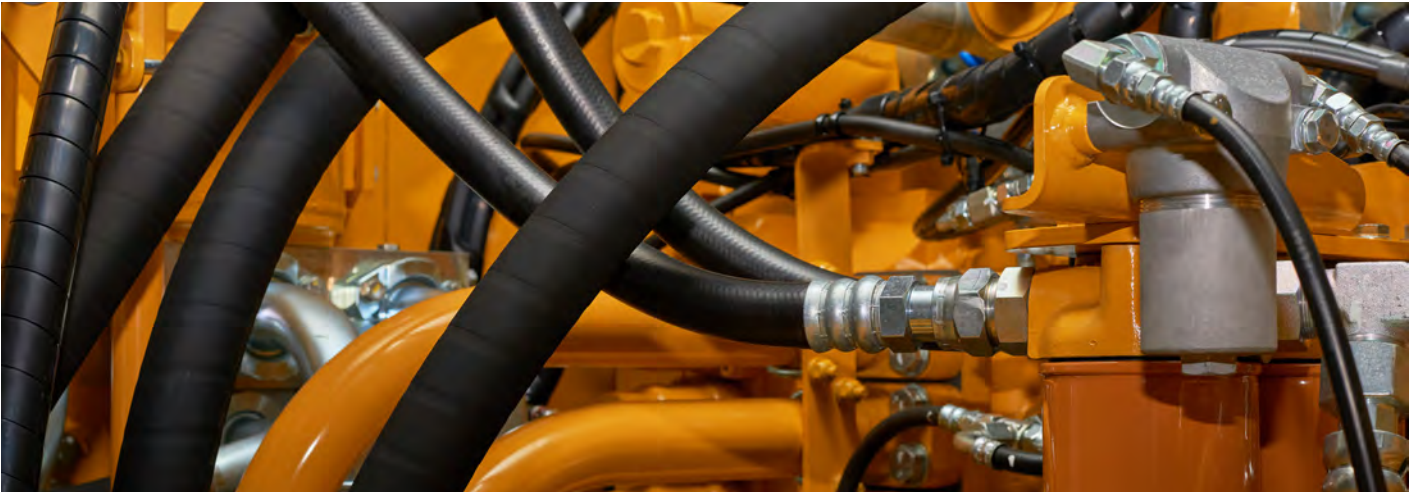
# Now hose expertise goes deeper than ever



**Sam Harper**  
Application Engineer

**ERIKS**

A submarine costs over £1 billion to build. So the Royal Navy doesn't just hand over the keys to the crew and tell them to head out to – and under – the sea. Instead they train them to the peak of expertise on a submarine simulator. And when that simulator needs to be maintained, they don't just hand over the keys for that either.



Before ERIKS' Hose Technicians could even start on a major hoses overhaul of a Royal Naval submarine simulator, they had to undergo extensive background checks. And even when they had been approved as suitable to enter the Naval base, they had to be accompanied at all times by an escort. Only then could they start work on a major 10-year maintenance service in some very challenging conditions.

On the plus side, the submarine simulator is on dry land, not hundreds of fathoms underwater. On the minus side, the available space for ERIKS' technicians to work in was very small and cramped, scaffolding and platforms were needed for access. Finally, to add to the pressure, if the deadline for completion was missed the whole service would have to be postponed for another year.

And who knows what that might mean for the UK's submarine deterrent?

“ Pump condition monitoring is so essential ”

#### Hunt the hose

The overhaul required the replacement of a total of 63 hydraulic hoses and the hydraulic power pack. Before the hoses could be removed, ERIKS co-ordinated a specialist

partner to drain, remove and safely dispose of the hydraulic oil, and replace the filtration units.

Now, with over 40 years' hydraulics experience between them, the Hoses team at ERIKS Northampton Centre of Excellence were more than ready to 'Dive! Dive! Dive!' into the job.

However, on-site safety is always a priority for ERIKS, and in this case the challenging working environment made a comprehensive safety review essential. ERIKS' own Health & Safety experts visited the site to carry out a point-of-work risk assessment, and a tag-out safety procedure was implemented.

With ERIKS ready to go there was a last minute hitch, with their main hoses supplier unable to meet the necessary delivery deadline. Fortunately, ERIKS' lengthy experience and extensive contacts meant a new supplier was quickly found so the work could continue.

#### Improving 'sub' standard

In the 10 years since the submarine simulator's last overhaul, new and improved hoses have reached the market. So rather than simply swapping like-for-like, when hoses with better flow or pressure ratings were available, ERIKS' technicians upgraded the installation for greater efficiency and better performance.

Each replacement hose was also labelled with its own unique barcode, which can be scanned with a smartphone or tablet to link to the ERIKS Hose Asset Management app.

“ Makes monitoring more effective ”

This not only brings up the hose's complete specification and service history, but also identifies whether or not the hose is compliant with any new legislation introduced since its installation.

ERIKS recommend at least an annual inspection of hydraulic hoses, and a 5-year pressure- and cycle-testing programme, with replacement of any hoses which fail to pass. They also advise that no hose should be left for more than 8 years without being replaced. The Hose Asset Management app will provide alerts to ensure important hose service and maintenance milestones are not missed. This enables proactive and preventative maintenance of hydraulic hose assets, to optimise efficiency and safety.

#### Passed – with flying colours

Despite the supply issues, the complexity of ensuring safe working conditions, the additional work of upgrading some hoses, and the installation of the barcoding for improved monitoring and maintenance, ERIKS completed the overhaul of the hydraulic hose system with a whole week to spare.

The success of the project justified the faith of partners Thales, who contracted ERIKS for the Royal Navy project after seeing them successfully complete a similar job on an RAF flight simulator for the Airbus A400M Atlas military transport plane.

“ Information you can act on ”

Working from the Northampton Centre of Excellence for Hose Technology, ERIKS project managed and executed both jobs on time and on budget. Leaving one customer flying high, and the other happy to have that sinking feeling once more.





# When a hammer's not enough



**Trevor Hilton**  
High Voltage (HV) Sales & Development Manager  
**ERIKS**

To the person with only a hammer, everything is a nail. But to the person with every option open, the solution is whatever's best for the job. That's why ERIKS' repair/replace neutrality means customers are never pressured to make a choice. With all the options and costs presented to them, it's their decision. And when one option offers significant savings, as it did for a UK power station operator, that decision isn't difficult.

The customer's original supplier was keen to replace a failed 10 year-old boiler feed pump motor with a like-for-like new one. Perhaps to 'help' the customer with their decision, the new 11kV 630kW motor was priced at £94,000, and a rewind at £98,000.

With no sales axe to grind, ERIKS' rewind cost came in at £10,000 less than a new motor. But it was no cut-price solution.

## Back to basics

Firstly, ERIKS' engineers at the Chesterfield HV Motor Centre of Excellence [see box-out] carried out a complete strip-down inspection of the motor, to identify the root cause of failure. This revealed the motor core was

“ No sales axe to grind ”

undamaged, but also that the specification was far from standard.

The stator slot thickness was more suited to a 6.6kV motor, and the insulation tape was correspondingly thinner. As a result, the windings had less than optimum protection in the slots and deteriorated prematurely – drastically shortening the motor's lifespan.

Changing the slot width or the copper thickness weren't viable options. But ERIKS could engineer a solution to offer more protection within the existing slots.

## Got it taped

ERIKS' motor rewind know-how made it easy for the engineers to find a far higher-quality replacement insulation tape, of the same thickness.

To further enhance its insulating properties, ERIKS used a high-grade epoxy resin pressed cell insulation system, to impregnate the tape and give the windings greater protection in the slots. Many repairers use alcohol- or ethanol-based resins, which evaporate at higher temperatures, leaving a void in the insulation.

ERIKS Chesterfield is one of the few UK repairers with its own vacuum pressure impregnation (VPI) facility. This gave ERIKS the flexibility to use a longer, lower-temperature process, to ensure the resin fully impregnated the tape.

“ ERIKS could engineer a solution ”





The tape thickness on the end windings was also restored to the thicker, standard 11kV specification, giving the motor the best possible protection.

With the new coils manufactured and fully tested, the motor was rewind incorporating the new insulating tape, and tested again, all on-site at Chesterfield. Then it was returned to the customer 17 weeks early and £10,000 cheaper than a new motor would have been.

## “ All on-site at Chesterfield ”

### All things considered

That's one cost-effective rewind completed. But the customer has four more identical motors of the same age, potentially in the

same condition, and all possibly prone to a reduced lifespan.

Using the Chesterfield Centre's Partial Discharge and Tan Delta testing facilities, ERIKS can carry out a health check on all four motors. If the results indicate it's feasible, a dip in the VPI tank would re-cover the insulation system – avoiding a potential rewind and saving around £70,000 per motor (or £80,000 for a replacement).

Alternatively, if the tests show a full rewind is required, ERIKS can upgrade all four motors in line with the first, to provide a similar extended in-service lifetime and more cost savings.

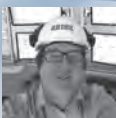
It's the customer's decision, of course. But when all the options are available – and all in one place – it's much easier to make the right decision every time.

## Chesterfield HV Scope of Service

- ERIKS Chesterfield HV Motor Centre of Excellence. A comprehensive range of HV and DC motor, transformer, generator and traction engine repair facilities and capabilities, all in one place.
- All coils manufactured on-site. Bought-in coils all arrive together, meaning a longer lead time and no chance to make changes before the full set has been manufactured. On-site manufacture means one coil can be fit-tested and installed while the next is still being made.
- In-house technical expertise and manufacture make upgrades easier to identify, propose, test and build.
- Motors: 3.3, 6.6 and 11kV. Up to 30 tonnes, 20MW (approx.) and 4.95m height.
- Generators: 3.3, 6.6 and 11kV. Up to 30 tonnes, 20MW (approx.). 4 pole.
- Transformers: 415V – 11kV. Up to 30 tonnes and 2.5m height.



# Who's there when the chips are down?



**Martin Codona**  
Automation Project Manager, Industrial Electronics  
**ERIKS**

While they wait for their next delivery, what song are OEMs nationwide singing? 'I hope it's chips, it's chips; I hope it's chips, it's chips.' The worldwide silicon chip shortage is having a knock-on effect across industry, with inverter deliveries, for example, taking up to 20 weeks. For one manufacturer of refrigeration equipment, that kind of delay would have completely derailed a major project. So naturally they contacted ERIKS Electronics, to see if ERIKS know-how could deliver an alternative solution in time to avert a crisis.

## “Avert a crisis”

The refrigeration manufacturer was building a spiral chiller application for baked products, which needed to incorporate an inverter drive. But that wasn't the only requirement. The drive also had to integrate with the PROFINET industrial communications protocol, via Siemens Totally Integrated Automation (TIA). And time was running out.

Could ERIKS Electronics beat the clock?

### A fast drive, by rail

The first issue was the availability of a suitable drive. As a supplier of Fenner drives, ERIKS Electronics – part of ERIKS Power Transmission – has access to a huge stock of drives, available at speed through the Fenner Quick Build service. In this case, they could source and supply a suitable drive in time to meet the customer's project deadline.

## “No time to lose”

### First problem: solved.

The second issue was the need to integrate this non-Siemens drive with Siemens TIA and PROFINET. Starting from scratch, this could have been a time-consuming challenge. But the OEM customer's integration journey was shortened, thanks to Network Rail and London Underground.

As part of earlier projects for these customers, ERIKS Automation Project Manager Martin Codona had already programmed a dedicated function block, allowing Fenner drives to work with Siemens TIA version 17. This could be provided to the customer as, essentially, an off-the-peg integration solution.



## “ Additional benefits ”

### Second problem: solved.

A quick demonstration over Microsoft Teams showed the customer how simple it is to integrate the Fenner product. Satisfied, the customer placed an order the next day with ERIKS East Midlands Service Centre, for 12 Fenner QD Neo drives of various sizes.

With only a week before installation on the end-customer's site, there was no time to lose.

### One step backwards

The PROFINET communications protocol is designed to reduce wiring, accelerate system development and commissioning, and cut costs. Integrating the Fenner PROFINET modules with Siemens TIA was an additional complication, but the module already developed by ERIKS helped resolve it.

However, there was one more hurdle to overcome.

While ERIKS had written the PROFINET module for Siemens' latest TIA version (V17), the customer was using the previous V16. Faced with the need to rewrite the module as quickly as possible, Martin Codona did the most useful thing he could: he went home.

Working away with another customer at the time, Martin had the PLC / drive test rig at his house. At the end of the working day, he drove home to collect the rig, drove back to the hotel room he was staying in while working on site, then spent the evening rewriting the module for TIA V16, and testing it on the rig.

Once proved on the test rig, Martin sent on the revised module to the customer,

whose engineers successfully integrated it into their project.

### Safety and savings

By choosing the Fenner QD:Neo inverter, the customer gained additional benefits which will last much longer than their project timescale.

For example, the motor control connection is more reliable, with a single, uninterrupted Ethernet cable. The QD:Neo also features a TUV certified safe torque off function (STO), as standard. This not only enables faster, simpler integration into machine critical safety circuits. It also allows for faster shut down and reset procedures.

## “ Reduced maintenance, lowering TCO ”

The amount of time spent on system maintenance is also reduced, which helps to cut ongoing costs and the Total Cost of Ownership.

### Chiller thriller

Despite the challenges and the tight timescale, ERIKS' OEM customer successfully completed the spiral chiller project by the deadline.

ERIKS supported them not just during the adaptation and supply of the drive and communications module, but all the way to final installation and commissioning of the application. Which is why the customer emailed to say 'thanks again for the quick turnaround on this and for your support so far.' And why they are planning to use the Fenner drive for future projects.





# Going the extra mile (by taxi)



**Martin Gingles**  
Product Manager, Sealing and Polymer  
**ERIKS**

There's been a scheduled maintenance shutdown. Now which component do you think is the one most likely to delay the restart? If you can't think of it until it's too late, you're not the only one.



Too many assets are stripped down for maintenance, serviced and ready for reassembly before someone remembers the one component that can't just be put back in position. You have to replace it, you need a new one, and you need it now.

It's a gasket.

So many maintenance shutdowns fall behind schedule for this very same reason, and shutdowns at the premises of one ERIKS customer – a leading agriculture company – are no exception.

Fortunately, they can rely on ERIKS Sealing & Polymer to go the extra mile.

## “ Close working relationship ”

### 'Taxi!'

With an on-site presence at the customer's production facility, and a contract going back around 15 years, ERIKS has a close working relationship with the company. Over the course of that relationship, ERIKS Sealing & Polymer have probably replaced almost every gasket the customer owns.

And it never gets any less urgent.



Fortunately, ERIKS has always pulled out all the stops to make sure the customer can get their new gasket manufactured, delivered, and fitted in as little time as possible. Even if it means the gasket has to take a taxi.

Rushed by cab to the nearest ERIKS Sealing & Polymer production site, the gasket that needs replacing can be manufactured and returned to the customer within the hour – keeping downtime, lost production time and costs to a minimum.

## “ Pulled out all the stops ”

### Making the numbers add up

Whenever a soft-cut gasket arrives with ERIKS requiring urgent replacement, the Technical Service Centre team drop everything – whenever possible – to achieve a fast turnaround.



## “ Stringent quality checks ”

Nine times out of ten, the customer doesn't know or doesn't supply the part number, product drawing, or a specification. So, with every gasket, it's down to ERIKS to start from scratch.

Firstly, the old gasket is handed to Production for a new CAD drawing to be created. Then the drawing is passed on to Systems for the allocation of an ERIKS part number. Next, it's on to the machinist to set up the cutting machine for the actual production of the new gasket. And finally, the finished item must pass through stringent quality checks before it can be put back in the waiting taxi and despatched back to the customer.

In most cases, the whole process is completed in less than an hour, and – because of the long relationship and contractual commitments – at no extra charge to the customer.

But now, new systems and the power of data are helping to make the process even faster, even more efficient, and less of a last-minute rush for all involved.

Over the past 15 years, whenever ERIKS have manufactured a replacement gasket, it has been allocated a part number and description and loaded onto the ERP database. With the linked customer part codes growing all the time, all the customer needs to provide is either their own part code or the ERIKS part number at the time of order; it's a quicker and easier process from start to finish.

In less than 2 minutes, the ERP system can search for the part and provide a quote. This linked part code hides behind the scenes offering, the full working instructions including all the gasket dimensions, material grades and which machine to cut on with the correct programme, and begin cutting, ensuring the exact same part is supplied each and every time with full part and order history visible with just one click of a button.

### Above and beyond

Technically, this aspect of the service provided by ERIKS can be described as 'gasket manufacture.' But it might also be called 'keeping the customer satisfied.'

You don't have to be a customer of 15 years standing. You don't have to be in the middle of a major scheduled maintenance shutdown. You certainly don't have to call a cab to deliver your gasket.

But if you contact the ERIKS Sealing & Polymer division, you can always expect service that goes above and beyond the average. That adds value to the solution you need. And that maintains quality at all times.

So even when a gasket needs cutting to the tightest of deadlines, you can be sure there'll be no cutting of corners.





# Thinking outside the gearbox



**Mahesh Patel**  
Engineering Manager, Power Transmissions

**ERIKS**

When there's an issue of repeated gearbox failure, the obvious route to resolving it is via the gearbox. But the obvious answer is not always the right answer. Or the simplest. Or the most cost-effective. That's why – as ERIKS engineers recently proved yet again – there's a big difference between knowledge alone, and know-how.

“ Difference between knowledge and know-how ”

A major petfood manufacturer operates four product extrusion lines, each of which incorporates a gearbox sourced from an American manufacturer. Initially designed to run with a nominal input speed of 1,400rpm, for operational reasons the customer has increased this to 2,000rpm. Unfortunately, the result has been repeated gearbox failures.

ERIKS' Norwich Service Centre was being called-in to make running repairs as often as every 3-6 months. These repairs were made even more challenging due to the difficulty of obtaining spare parts for a gearbox made in America.

The customer felt it was time to upgrade to gearboxes with a faster running speed. But that wasn't as simple as it sounds.

#### **In line for an upgrade?**

The customer's co-axial extrusion line gearboxes have the input and output shafts directly in line. With gearboxes of identical design, size and footprint being impossible to source, a gearbox upgrade would mean a reordering of all four extrusion lines to accommodate them – with all the additional design and engineering costs that would involve.





In addition, between failures, the existing gearboxes are doing the job they are designed for. So if the root cause of failure can be addressed and rectified, then there's no reason to go to the expense of replacing them.

ERIKS' engineers assessed the situation, and discovered that the higher running speed is causing the oil in the gearboxes to overheat. The overheated oil then breaks down, so it no longer effectively lubricates and protects the gears and bearings.

For example, the gear case outer temperature was measured to be 100°C therefore the temperature of the oil would be assumed to be up 110°C - unsustainable without breaking down and failing as a lubricant.

However, the oil being used is the correct specification and viscosity for the application. So it's not an option to change to a different oil to cope with the higher running speed and higher temperatures.

This is where ERIKS' know-how comes into play.

## “ Design and engineer a cooling system ”

### Playing it cool

If the gearbox is the right gearbox for the application. If the oil is the right oil for the gearbox. If the high operating temperature can't be avoided at the required running speed.

## “ Food-grade stainless steel ”

If all of those things apply, then the problem isn't the gearbox. It's the way the oil behaves when the high operating temperature of the gearbox heats the oil.

Which means the solution is not to change the gearbox, but to resolve the overheating of the oil.



ERIKS' answer has been to design and engineer a cooling system to remove the oil from the gearbox, cool it to a suitable temperature, and return the newly-cooled oil to the gearbox.

The design involves the lubricant being drawn out of the box through a pipe, which then carries the oil through a vessel full of chilled water. This chilled water is already part of the production process on the extruder side, so providing it requires no more engineering or energy than simply piping it into the vessel.

Passing the oil through the vessel rapidly reduces the lubricant temperature to just 60°C, in just a 4-minute cycle the 40 litres of lubricant is cooled and at which point it can be returned to the gearbox once more.

Not only has ERIKS designed and manufactured the solution. They have also made all the necessary food-contact parts out of food-grade stainless steel, so there are no food safety complications arising from the new system.

Now installed on one of the extrusion lines, the oil cooling system has proved so effective at preventing gearbox failures that the customer has commissioned the same system for their remaining three identical gearboxes.

All of which goes to prove that 'knowledge' is simply knowing information. But 'know-how' is information, plus experience and understanding, practically applied with wisdom and skill. Or 'ERIKS in action', for short.



# Satisfying the appetite for vegan lubricants

**Shaun Heys**  
Marketing Communications Manager  
ROCOL

There may have been a time in the distant past when lubricants were just lubricants. Even in the food and beverage industry. But food grade lubricants are now more or less standard across the sector, and even more specific lubricant categorisation – such as Kosher and Halal – is becoming more common. Now ROCOL has become the first lubricant manufacturer to have its lubricants range certified by the Vegan Society.



The facts prove that veganism is not just a passing fad. During last year's Veganuary campaign alone, over 825 new vegan products and menus were launched. 580,000 people signed-up to the campaign.

And 82% of participants are reported to have carried on consuming far fewer animal-based products long after the end of the month-long campaign.

By 2024, Mintel expects meat-free food sales to exceed £1.1 billion.

If you're involved in manufacturing or processing products for the vegan market, it's clearly time for you to get your teeth into the issue.

### Reading the small print

It's estimated that more than 90% of vegans and vegetarians look for verification that the products they buy are truly vegan. One of the things they often look for is the Vegan Society Trademark, which has been used by animal ingredient-free products since 1990.

Certification of a product by the Society shows that it's not only been manufactured or produced free from animal or animal-derived ingredients, but also produced without cross-contamination from non-vegan and non-vegetarian ingredients.

For manufacturers and processors producing vegan and non-vegan products in the same production plant, the risks of cross-contamination are high. So it's more important than ever to ensure traceability to demonstrate the use of exclusively vegan products on vegan production lines.

Of course what hasn't changed since the very first specialist lubricants were introduced, is the need for high-performing lubrication.

### Making the grade

A lubricant may be certified as food grade, Halal, Kosher or Vegan. But maintenance engineers still need to choose and use the right lubricant for the right application.

Different machinery and different production environments have different maintenance requirements. Achieving optimum performance and minimum downtime in a food and beverage production environment is not as straightforward as simply selecting an NSF (food safe) registered product and assuming it will work for everything, everywhere.

But start with a range of technically advanced lubricants with proven performance, and specialist certification is then the [vegan and vegetarian] icing on the cake.

### Vegan and beyond

The Rocol FOODLUBE range has been specially developed for all sectors in the Food and Beverage industry: from beverages to bakery, pharmaceutical to dairy, and fruit & veg to confectionery.

And now it's the first lubricant range to receive Vegan Society certification, for 46 products in the range.

With the Vegan Trademark alongside the relevant NSF approvals, you can be sure that the Rocol FOODLUBE lubricant you choose has been produced without animal or animal-derivatives or Genetically Modified Organisms involving animals. And that there has been no animal testing for the product or its ingredients, where this is controlled by the manufacturer.



So you maintain the integrity of your vegan production line, and offer full traceability and reassurance to vegan customers.

But there's no need to limit Rocol lubricants certified by the Vegan Society to machinery used for manufacturing or processing vegan products. By using them for all applications, you can eliminate any risk of cross-contamination, simplify the sourcing of lubricants, and rationalise lubricant use across your facility.

Being vegan-aware isn't just for Veganuary, and it doesn't have to be difficult. With Rocol lubricants certified by the Vegan Society, it's easy for all food and beverage manufacturers to satisfy and reassure their vegan customers, all year round.

## Certified Vegan – by the Vegan Society

The Rocol FOODLUBE range is the first lubricants range to receive Vegan Society certification. No fewer than 46 products in the range have been certified, including:

- FOODLUBE 1500 Spray
- FOODLUBE Anti-Seize
- FOODLUBE Chain Fluid and Chain Spray
- FOODLUBE Dismantling Spray
- FOODLUBE ENDURE 00
- FOODLUBE Extreme
- FOODLUBE Hi Torque 150, 220, 320 and 460
- FOODLUBE Hi-Load SF
- FOODLUBE Hi-Power 100, 22, 32, 46 and 68
- FOODLUBE Hi-Temp 2
- FOODLUBE Multi-Lube, MultiPaste and MultiPaste Spray
- FOODLUBE Protect Spray
- FOODLUBE Ultra
- FOODLUBE WD Spray
- FOODLUBE XT Chain Fluid





# The distiller with a reason to celebrate



**Daniel Seddon**  
Application Engineer  
**ERIKS**

If you enjoy a whisky now and again, you probably also enjoy a top-up. But when you're responsible for lubricating your mechanical assets, topping-up is just one more time-consuming, costly, and sometimes potentially dangerous task. So let's raise a glass to one of Scotland's leading distilleries, who – with ERIKS' help – found a way to simplify their lubrication regime.

With an on-site presence at the distillery, ERIKS are always on hand to provide support, advice and know-how. Which meant that when the customer asked them to review their lubrication regime, it didn't take long for ERIKS' engineers to propose an improvement.

In a location as remote as the site of the distillery, spare parts – and engineers – can take a long time to arrive. So the reliability of assets is enormously important. But whether you are located in the Highlands or the Midlands, and whether you're distilling whisky, producing food or manufacturing equipment, a key part of maintaining reliability is efficient and effective lubrication.

“ Efficient and effective lubrication ”

#### Lubrication by luck

Although most maintenance engineers will claim to have a lubrication timetable in place, it's inevitable that practicalities can sometimes see the timetable forgotten or ignored.

For reasons of resources and timing, often an asset will be lubricated only monthly, or during scheduled maintenance, or when the

asset isn't running – or not at all. An asset with a lubrication point that's difficult or dangerous to access may actually be overlooked more often than it's oiled or greased.

And all the time an engineer spends making lubrication rounds is time not spent carrying out other tasks which could improve efficiency, further enhance reliability, or reduce costs.

ERIKS' inspection of the distillery's mechanical assets identified all these kinds of problems. But it also identified the most critical applications, and enabled ERIKS to propose a more efficient lubrication solution.







### A lubrication expert for every asset

Lubrication done properly is a skill. Not too much grease, not too little, at just the right time and in just the right place. For a busy maintenance engineer, it's one more job they may lack the time to carry out to the necessary standard.

### “ A ‘lubrication expert’ ”

But it's possible to assign a 'lubrication expert' to the lubrication points of every critical asset, to ensure optimum lubrication for peak performance, maximum reliability and a longer service life.

The simalube automatic lubricator is that lubrication expert: a staggeringly simple solution which replaces lubrication by luck with the perfect lubrication regime.

Quickly and easily fitted to the grease line of the asset – even if the machine is running – the simalube lubricator can be set to dispense grease for 3, 6, 9, or 12 months before it needs checking and refilling if necessary. So fit and forget – for up to a year.

#### Lubrication on demand

A simalube lubricator never dispenses too much grease, or too little. That's because grease is effectively drawn down from the lubricant reservoir only as the asset consumes the grease already supplied.

### “ Lubricant costs can be reduced ”

As a result, lubricant costs can be reduced by as much as 30%.

At the same time, asset reliability is increased because the equipment is always optimally lubricated. Maintenance costs are reduced as the risk of breakdown is reduced. And maintenance engineers, released from regular lubrication rounds, are free to focus on more productive tasks.

Automatic lubrication with simalube can also improve site safety. At the distillery, for example, some lubrication points on top of silos and stills are the equivalent of 20 storeys above ground. Gaining access annually to refill the grease reservoir is obviously safer than lubricating every month.

#### Matured to perfection

Following the lubrication survey, ERIKS spent a day and a half installing simalube automatic lubricators on all the distillery's critical assets. Now, three years on, the only requirement is to refill the reservoirs every November.

To be classified as 'Scotch', a whisky has to be matured in oak casks for a minimum of three years. So some of the spirit distilled when ERIKS first carried out its lubrication survey is now ready to bottle. It would be the ideal drink to celebrate more reliable and more effective lubrication throughout the customer's site.





# Air that's good enough to eat



**Andy Parker**  
Product Manager  
**FESTO**

Compressed air is an essential part of the diet of any production facility – and the food manufacturing sector is no exception. In fact this sector uses compressed air in three different ways, making it more important than ever to ensure the air is produced efficiently, and used effectively.

Like most other modern manufacturers the food industry firstly relies on compressed air for its pneumatic systems. Secondly, some processes within the industry involve compressed air coming into contact with food itself. And thirdly – where air cleanliness is most critical – some food manufacturing involves direct injection of compressed air into food (known as flocculation).

“ Some compressed air users are incurring unnecessary costs ”

These three different uses demand three different levels of compressed air purity which, using their practical experience in the field, pneumatics manufacturer Festo has categorised [see box-out].

However, some compressed air users are incurring unnecessary costs by cleaning their air to the wrong level, in the wrong place, at the wrong time.

**Cleanliness where it counts**

One cubic metre of unprepared ambient air at 50°C contains up to 180 million dirt particles, up to 80g of water and up to 0.03mg of oil.

“ A m<sup>3</sup> of unprepared ambient air contains up to 180 million dirt particles ”

These can cause corrosion, friction, mechanical damage, blockages and long-term consequences such as higher maintenance costs, malfunctions, shorter service life and higher energy costs. In food production, if any of these contaminants find their way into end products, the consequences can be even more severe: from fines to reputational damage.

So if you use compressed air anywhere in your manufacturing process, you'll be well aware of the need for it to be clean. But where and when should you clean it for the greatest cost-efficiency?

**Make a clean start?**

Many food manufacturers clean their compressed air in the compressor house, to food- contact levels of cleanliness.

This not only means they're having to use more energy to achieve the required flow



rate through these upstream finer filters. It also means that when the air reaches point-of-use, its pressure could have dropped below the required operating pressure. And most worryingly, by the time the air has travelled through the system and comes into contact with food, it could have picked up all kinds of new contaminants.

To ensure optimum air cleanliness – with the most efficient use of energy, reduced energy costs and a smaller carbon footprint – Festo offers 5 Best Practice top tips.

**Tip 1 Size and position air preparation units carefully**

Filter bowls oversized for the flow rate required by the air preparation unit impair filtration performance and waste money. Using smaller units with coarser filters upstream, and finer filters downstream at point of use, can ensure cost-effective clean air where you really need it.

**Tip 2 Drain condensate effectively**

Mounting condensate drains within or below filter units will prevent carry-over of extracted liquid into the downstream air flow. This will reduce contamination and corrosion.

**Tip 3 Set pressures accurately**

Machine pressure is often set by the requirements of only one or two components. Introducing individually regulated pressure zones, or a pressure booster, can allow for reduced pressure and reduced energy use and costs.

**Tip 4 Monitor pressures frequently**

Gauges with pre-set operating zones enable fast setting and checking of operating pressures, even by unskilled technicians. When over- or under-pressure is easy to see it can also be quick to adjust. Pressure monitoring also makes it easy to see when filters need changing.

“ Optimise performance, minimise pressure drop, reduce energy use ”

**Tip 5 Change filters appropriately**

Clogged filter elements reduce airflow rates by up to 50%, and fail to remove particulates. Monitoring pressures [see above] and using flow meters will help to identify when it is appropriate to change a filter element. This is a low-cost, simple maintenance task that will optimise performance, minimise pressure drop and reduce energy use.

Or to encapsulate all these tips into one simple, basic rule: clean your compressed air in the right place, with the right filter, to the right level of cleanliness.

**Air cleanliness values in food production**

Based on the VDMA standard sheet 15390-1, for pilot air applications.

Application	Specification of typical applications	Particles	Moisture (vaporous)	Total oil content
Food industry, pharmaceutical, dairies	Direct contact between compressed air and:	1	4	1
	packaging material			
	“non-dry” products			
	“dry” products	1	2	1



# Expanding the food safe menu



**David Oliver**  
Channel and Platform Manager



To meet the increasing demand for hygienic design in all food processing assets, SKF has added another innovative product to its range: a standard Deep Groove Ball Bearing in a food safe configuration.

A SKF customer survey revealed that no fewer than 87% of respondents involved in food production and food manufacturing equipment felt this type of product was important or very important for their assets.

The result is the new SKF Foodline Deep Groove Ball Bearing, designed with the principal objective of reducing food safety risks.

## “ Reducing food safety risks ”

The SKF Foodline ball bearings have sealing technology that minimises the risk of grease escaping the bearing. If leakage does occur, the NSF H1 registered, religion-compliant and allergen-free grease is permitted for incidental food contact. As an additional precaution, the blue material used for the seal – made from FDA and EC approved food grade nitrile rubber compounds – makes it easy to identify fragments in the food stream.

But that's not all that makes the new bearing an ideal choice for the sector. It also combines several other proven SKF technologies.

- **SKF Explorer performance class bearings**  
Made from extremely clean, highly homogeneous steel, using a unique heat treatment process, SKF Explorer bearings offer maximized rating life, higher running accuracy than ISO standard, and exceptional strength and durability.
- **High-efficiency food grade seal**  
SKF RSH seal technology ensures excellent water and solid contaminant exclusion. It also complies with US Food and Drug Administration (FDA) and European Community (EC) recommendations.
- **High-performance food grade grease**  
A specially developed grease – proven effective even in cases of incidental water or detergent penetration. Registered by NSF as category H1, and allergen-free, it meets all allergen standards issued by the European Community (EC)
- **Halal and Kosher certified**  
Further lubricant options include food grade Solid Oil, and alternative grease fills to your specific requirements.

### One of the family

The new SKF Foodline Deep Groove Ball Bearing is the latest option in the SKF Deep Groove family.

The whole range, outlined opposite,, complies with industry standards, and uses food grade grease and optically detectable food grade sealing.



Bearing type	Operating environment	Grease fill	Solid Oil* lubrication technology
Deep Groove Ball Bearing	Non-corrosive, for all load conditions	Variable percentages as an option	YES
Stainless Steel Groove Ball Bearing	Corrosive	Variable percentages as an option	YES
MRC Ultra corrosion resistant Deep Groove Ball Bearing	Harsh and extreme conditions	Sealed	YES

\*Solid Oil: Food grade Solid Oil – ideal when extended life is required, or in harsh environments – is a polymer matrix, saturated with a lubrication oil that completely fills the internal space in a bearing, and encapsulates the cage and rolling elements. It contains 2-4 times more lubricating oil than a corresponding sealed, grease-filled bearing.

## “ Proven SKF technologies ”

### Lubricated for life – and food safety

Alongside the new food safe Deep Groove Ball Bearing, SKF Foodline Ball Bearing Insert Units – originally introduced over 10 years ago – have been updated and improved to meet the sector’s changing food hygiene requirements.

Now they not only meet hygienic design standards, but are also sealed to prevent ingress of penetrative, caustic-based disinfecting fluids. All components meet food and beverage industry regulatory requirements.

To further improve reliability, they contain an NSF H1 registered grease specially formulated for optimum performance in the presence of caustic fluids.

The Blue Range of SKF Foodline ball bearing units offers a comprehensive selection of hygienic and high-performance bearing unit solutions, for the most demanding food and beverage environments. Specially developed to help eliminate contaminants and to reduce the spread of bacteria, they are lubricated for life and designed to withstand frequent washdowns.

Meanwhile, a new SKF general purpose food grade grease has just been launched.

Formulated to replace LGFP 2 in System 24 lubricators, LGFG 2 is a high-performance food grade grease, which uses complex calcium sulphonate thickener technology and a white mineral oil. Suitable for high loads, wet environments and fluctuating temperatures, it is ideal for food and beverage applications.

So when you’re looking for a full menu of lubricants and bearings to meet your requirements in the food and beverage sector, make sure you consider SKF for starters.

## “ New general purpose food grade grease ”



## Foodline Range





# Life under the hygienic regime



**Dennis Briggs-Price**  
UK Aftermarket Field Sales Manager



Hygiene is the key ingredient in food and beverage manufacturing. Complying with stringent hygiene standards demands frequent thorough washdowns to remove dirt and unwanted grease, often at high pressure with chemical cleaning agents. This can often damage sealing systems – allowing water and cleaning solutions into the bearing cavity, and leading to grease washout, corrosion, and – ultimately – reduced bearing life.

As if life wasn't tough enough for bearings in those conditions, many primary food preparation stages – washing, peeling, grading, cutting and mixing – require large amounts of water and process fluids. Combine those with routine cleaning cycles and you have one of the worst operating environments for rotating assets. Tests have shown that just 1% by volume water ingress can reduce bearing life to less than 1/10th.

“Function reliably with minimal maintenance”

The result is frequent bearing failures, unpredictable machine reliability, costly downtime and environmental risks.

#### A new lease of life

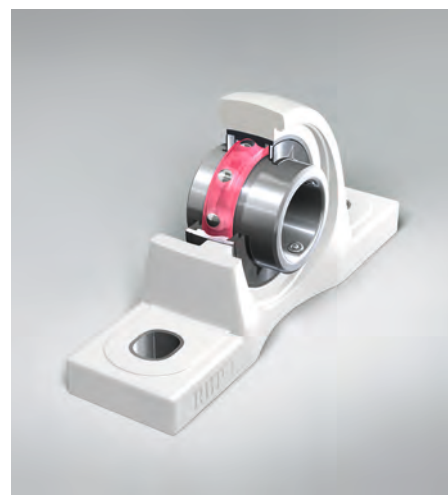
To survive – and thrive – in this kind of operating environment, a bearing needs to function reliably with minimal maintenance. So NSK has developed the RHP Life-Lube® bearing series to do just that.

Life-Lube® housings are made from PBT thermoplastic polyester resin – which is both corrosion-risk free, and resistant to detergents and a wide range of chemicals. The housings' smooth surface, free from paint and coatings, also helps to make wash-downs more effective, and eliminates any threat of flaking or chipping.

“Innovative Molded-Oil™ lubrication technology”

Even the specially moulded-in stainless steel bolt hole reinforcements are designed to minimise the number of places where bacteria may grow.

The bearing insert's rings, balls, two-piece riveted high-strength metal cage, set screws and flingers are all made from high grade stainless steel, providing superior corrosion



resistance. A high-performance single lip seal in Nitrile rubber is standard, combined with a flinger to deflect water used in cleaning processes, and to protect the seal from damage. Most important of all, the inserts are charged with NSK's innovative Molded-Oil™ lubrication technology.

Molded-Oil™ is a solid lubricant produced from a proprietary oil-impregnated polymer, which completely fills the bearing cavity. In operation, the carrier matrix slowly releases oil to lubricate the bearing running surfaces, while at the same time acting as a barrier to prevent ingress of contamination such as water and particulates.

The lubricant cannot be washed away to enter other areas of the machine, where it could potentially come into contact with foodstuffs. So the operating environment remains clean.

With no re-lubrication required, Molded-Oil™ inserts are also maintenance free.

Life-Lube® bearings are available in pillow block, two-bolt flange, four-bolt flange and take-up units, giving system designers flexibility, and making it easy to find the optimum solution for any application.

## “ The optimum solution for any application ”

### More to life than lubricant

Life-Lube® units have even more to offer than corrosion resistance and long-life lubricant.

For example, the seating's spherical fit allows for initial misalignment on mounting. While set screw locking enables close-fit shaft mounting. In addition, super-finished raceways provide quiet and efficient running.

The recommended operating range for a Molded-Oil™ insert is -15°C to +80°C (maximum continuous operating temperature: 60°C). It also has a high maximum allowable speed. Both these qualities make the inserts highly suitable for food industry applications and the high continuous speed of many food plant machines.

Hygiene is a way of life in the food and beverage manufacturing sector. Life-Lube® units from NSK more than live up to the challenge.

### A cut above the rest

A major snack food producer was experiencing frequent bearing failures on its cutter line.

As part of its AIP Added Value Programme, NSK conducted a process map survey of the site, analysed the failed bearings and reviewed the application. This revealed extensive grease washout following production line washdowns. Planned six-weekly maintenance included bearing changes, but bearing failure often occurred before maintenance was carried out.

NSK engineers trialled replacing the bearings on one production line with NSK Life-Lube® housed units. After a year, the bearings were still performing well with no failures. This vastly improved bearing lifetime resulted in annual savings of **€134,478**, from reductions in the costs of maintenance labour, replacement bearings and production downtime. The plant is now installing Life-Lube® units on all its production lines.



# Keeping your brand's reputation stainless



**Eddie James**  
Business Development Manager - Tools & Workplace Equipment  
**ERIKS**

It can't be bought, it can only be grown. It takes years to create, yet can be destroyed in minutes. It's your brand's reputation, of course. In the food or pharmacy sectors, just one safety incident and product recall can do untold reputational damage. But a significant step towards protecting your most valuable brand asset is – literally – in your hands.

The reputational repercussions and financial costs – through lost production and lost sales – of a product recall due to a product safety issue are potentially enormous. The losses to the bottom line can be recouped, eventually. Your brand will take far, far longer to recover.

So wouldn't you like to know one way you can reduce the risk of that kind of nightmare scenario?

## Maintaining like with like

Your production process may be clean and hygienic, and meet the highest safety standards. But what if there's a weak link? And what if the thing that keeps your production running could be the same thing that shuts it down for a safety breach?

The potential problem is hiding in plain sight: in the toolboxes of your production and maintenance engineers.

Your production equipment is manufactured from stainless steel for the essential qualities it provides: corrosion and chemical resistance.

## “Hiding in plain sight”

However, if your maintenance engineers are driving stainless steel screws or tightening stainless steel nuts with standard ferrous tools, then it won't be long before even the stainless steel becomes liable to corrosion. You then have a potential source of product contamination, present in the production line itself.

Every ordinary steel spanner, or screwdriver, or wrench or pair of pliers used by

your engineers is a possible source of contamination from ferrous particles. And those same tools are also home to millions of microbes. Microbes which are transferred to your production line every time the tools come into contact with it.

The solution is to choose tools forged from stainless steel, by manufacturers such as Bahco and Facom.

## “Reduce the risk”

### Space in your toolbox

Stainless steel is not just rustproof, but also acid-resistant. Stainless steel tools don't create corrosion particles which can transfer to food or pharmaceutical products. And just as importantly, because they can be fully heat-sterilised after every use, they don't carry microbes (or the Covid virus) which could find their way onto your production line, into your products, and ultimately to your consumers.

In addition, Bahco stainless steel tools are made with steel specially toughened using an ice hardening process developed by NASA and the European Space Agency.

All stainless steel tools last far longer than ordinary steel versions. Steel toughened with space technology lasts longer still.





### Controlling contaminants – and tools

Eliminating microbe and rust contamination with stainless steel tools is one aspect of maintaining food and pharmacological safety and your brand's reputation. But there are also much larger foreign bodies which have been known to find their way into the production process with potentially catastrophic results: the tools themselves.

That's why a Tool Control System is essential for keeping track of the location of tools, and ensuring they are all accounted for at the end of every shift.

**“ Eliminating microbe and rust contamination ”**

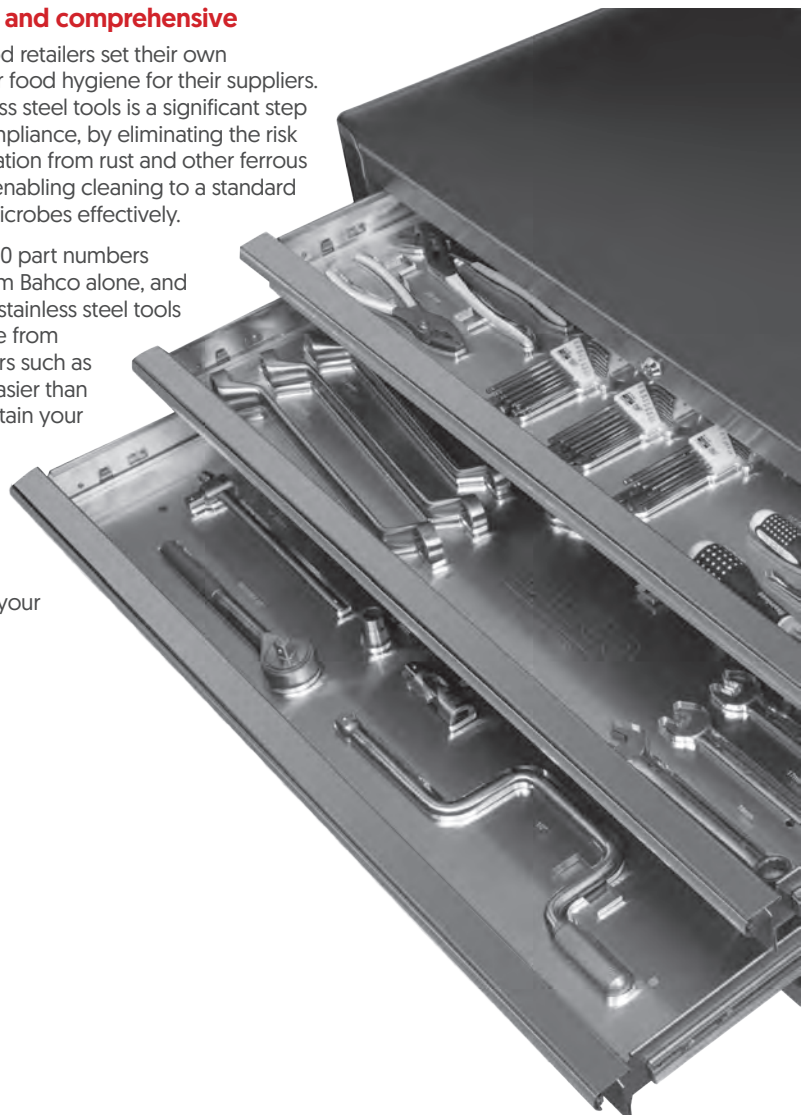
To maintain hygiene, stainless steel tools can be steam cleaned or jet washed before they are moved from one production area to another. If they are also stored in a stainless steel cabinet, that can be cleaned in the same way. And with Bahco Altuglass® Food Contact sheet inlays, the tool control system can also undergo steam or other rigorous cleaning.

With laser-cut templates for each tool required, the inlays are specially designed to meet the latest EU and other European national regulations: ensuring microbes don't have a home, but your tools all have their place.

### Compliant and comprehensive

All major food retailers set their own standards for food hygiene for their suppliers. Using stainless steel tools is a significant step towards compliance, by eliminating the risk of contamination from rust and other ferrous debris, and enabling cleaning to a standard which kills microbes effectively.

With over 230 part numbers available from Bahco alone, and high-quality stainless steel tools also available from manufacturers such as Facom, it's easier than ever to maintain your machinery, meet food hygiene standards, satisfy your customers – and protect your brand.





# Introducing the new wave of water flow metering



**Thomas Steele**  
Account Manager, Midlands

**bürkert**

The Covid pandemic has had major effects on the pharmaceutical industry. One of the more positive has been growth in demand for laboratory diagnostic products. At the same time, the sector has increasingly been looking to adopt new technology to improve efficiency and productivity, to reduce costs and simplify installation. All these factors came together in the recent major expansion of production at a healthcare diagnostics manufacturing plant.



## “ Innovative Surface Acoustic Wave (SAW) technology ”

The customer was already an early adopter of the relatively new and innovative Surface Acoustic Wave (SAW) technology for the measurement of flow.

Despite recent developments in more traditional solutions, SAW still leads the market, with several important advantages

over other instruments which use different methods to measure flow.

Like many of the applications within pharmaceutical manufacturing, water flow measurement has to meet stringent specifications for hygiene and accuracy. An additional complication for this customer's application – monitoring ultrapure water – is the very low conductivity of the fluid, making mag-flow meters unsuitable for the job.

This had severely limited the available choice of suitable precision flowmeters, until Bürkert developed a versatile new option meeting all the sector's requirements.



## “Stringent specifications for hygiene and accuracy”

### Going with the flow

Incorporated by Bürkert into the FLOWave flowmeter, SAW technology enables the flow of ultrapure water to be measured without any of the flowmeter's components coming into direct contact with the liquid. This means there is no restriction to the flow as a result of taking its measurement.

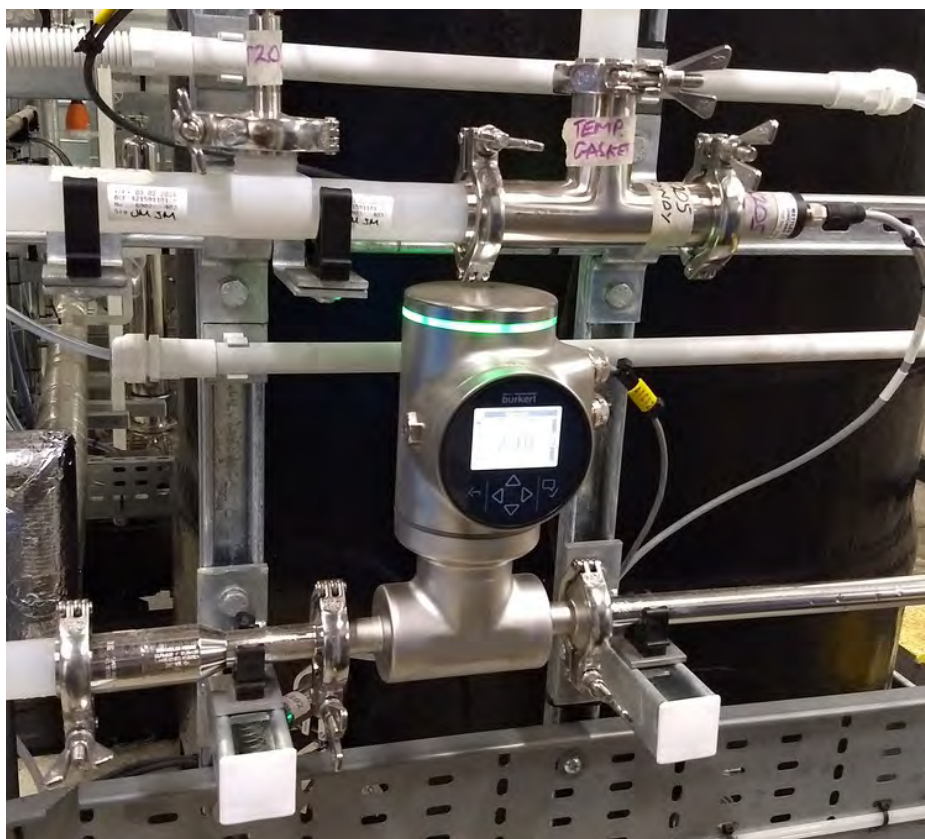
The technology also allows the internal surface of the flowmeter tube to be manufactured to the same surface finish as the rest of the pipeline – so its level of hygiene, ease of cleaning and flow conditions match every other piece of straight pipe within the process.

In addition, while some high-end flowmeters cause issues such as system vibration, and unwanted magnetic and electrical effects, the Bürkert FLOWave with SAW technology eliminates all these factors, to ensure the flow measurements are highly accurate and reliable.

### Laboratory tested and proven

After 4 years of successfully using the FLOWave to measure ultrapure water volumes for their laboratories, when the need arose to expand production the customer naturally turned to Bürkert.

The installation of a new production line manufacturing a key component used in Covid diagnostic testing meant more ultrapure water flow metering capacity was required. As always in the pharmaceutical sector, hygiene and accuracy were crucial requirements.



In the new installation, the ultrapure water is supplied by a ring main. The customer needs to measure the ultrapure water volumes as part of the new process, to ensure there is sufficient volume for manufacturing purposes.

Technical consultation with a dedicated water and process engineering company demonstrated that the innovative FLOWave solution will provide all the data the customer requires, in a hygienic setting, without any of the drawbacks associated with more traditional instruments.

Two FLOWaves have now been installed as part of the new production line: one on the supply leg and one on the return leg of the

## “Quicker and easier installation”

ring main. Calculating the difference in the flows at each point allows the ultrapure water production system to match the process's demands.

### Compact size, connectivity and control

Quicker and easier installation are two of the factors which helped to make the FLOWave an attractive choice for the customer.

The device can be mounted in any orientation, and because of its compact design it was easy to integrate into the plant's overall design. Its connectivity also made control integration simple, saving more time and making it easy for this customer to meet their tight deadline for commissioning the new line.

The customer has operated their first two Bürkert FLOWave flowmeters for four years without any issues. The two new installations are sure to prove just as reliable, accurate and cost-effective.

In fact, their Surface Acoustic Wave technology successfully turns the tide on the problems traditional flowmeter technology can face. And ERIKS Flow Control know-how means that, however challenging the application or complex the issue, our engineers are never out of their depth.





# How a spotted tie can improve safety and hygiene



**Paul Nolan**  
Territory Account Manager, UK IEI  
**PANDUIT**

A carefully chosen tie is ideal for making you smarter. And if you want to be really smart, you'll choose cable ties from Panduit – because they're designed to be easily spotted for improved safety and hygiene.



When health, hygiene and brand reputations are at stake, there can be no loose ends. Or loose cables. They're not only a health or safety risk, or a potential trip hazard, but they can even lead to equipment failure. And where cables run through food, beverage or pharmaceutical manufacturing and processing facilities, it's not enough to use ordinary cable ties and mounts. After all, who wants to find a cable tie in their food or drink, or a piece of cable mount in their medicine?

## “ Health, hygiene and brand reputations at stake ”

You need ties that fix securely – and that can quickly be spotted before they risk contaminating your product and undoing your reputation for meeting safety and hygiene standards.

### Contamination detection all tied up

It's important that cables are safely secured. It's essential that the ties and mounts you use are also secure. And it's absolutely vital that you can easily detect any ties and mounts that end up where they shouldn't.

The answer is to use Panduit cable ties and mounts specially designed for food, beverage and pharmaceutical operations, which can be spotted by your usual contamination detection methods.

## “ Cables are safely secured ”

Panduit Metal Detectable Cable Ties and Mounts contain metal impregnated material. In the unlikely event they become detached and fall onto the production line – or worse still, into the actual product – your X-ray or metal detection equipment will quickly detect and identify them as foreign objects. And to make them even easier to detect, they're coloured a distinctive blue, which means they can also be spotted with the naked eye.



So they help you to comply with EU hygiene monitoring regulations, and US FDA standards.

For general purpose applications, the metal detectable cable ties and mounts are available in a Nylon material. Or, for applications where stringent cleaning regimes employ jet pressure washing and harsh chemicals, the same ties and mounts are available in a Polypropylene material which resists the challenges of the environment.

Used in food, beverage or pharmaceutical processing, handling or packaging locations, and inside electrical control panels in the same areas, the Panduit range of Metal Detectable Cable Ties and Mounts keeps your cables – and your brand reputation – secure.

### Labelling that cabling

Just as important for health and safety as securing your cables, is knowing which cable is which. So Panduit offers labelling and permanent solutions for reliable identification.

The labelling range is classified up to IP69K for ingress protection, which means it protects against ingress of dust, and resists high temperature and high-pressure water. In manufacturing and processing areas where equipment is extensively sanitised, these Raised Panel / Super-Tack Labels and Non-Printable Clear Overlaminates are ideal for cable labelling and asset identification.

For an even longer-term solution, the Panduit Permanent Identification System, such as embossed Stainless Steel marker plates, uses customer on-site marking tools, which can be used for highly durable, legible identification of pipes, conduits, cables and equipment.



## “ Unique locking system ”

### Safety locked-in

Stainless steel is an ideal material for use in hygienic environments, or where metal detection is crucial. So the Panduit product portfolio includes the Pan-Steel® System of Stainless Steel Ball-Locking Ties.

Available in uncoated and fully-coated options, these 4.6, 7.9, 12.7 and 15.9mm wide cable ties are specially designed for strength, vibration, corrosion and extreme temperature resistance.

Using Panduit Ergonomic Hand Tools for installation, and with a fully-rounded #1 Grade Rounded Edge which eliminate burrs and sharp edges, both the cable bundle and the installer are protected. The tension-controlled, automatic cut-off tools – suitable for Nylon, Polypropylene and Stainless Steel cable tie installation – also capture the cut-off tips [reducing the risk of product contamination]. And with 40% less recoil at the point of cutting, they can help reduce the risk of Repetitive Strain Injury for installers.

Once installed, the Panduit Pan-Steel® System's unique locking system within the head of the tie increases resistance to vibration, which can loosen less secure ties.

So if you want to protect your consumers, maintain health and hygiene standards, and preserve your brand's reputation, get smart. Get a Panduit tie.



# The customer is always...

...empowered... ...informed... ...and supported. At least they are if they're a customer of ERIKS WebShop.



**Russell Williams**  
eCommerce Manager  
**ERIKS**

The ERIKS WebShop is more than just an online shop. It's a digital customer interface where ERIKS customers can find what they need and get the help they want. Faster, easier and with total control of budgets and traceability.

It's not only a portal to the whole of ERIKS' stockholding, that's open 24/7. It's also a powerful tool for quickly identifying and specifying products and parts. For managing quotes and orders. For controlling spending. And for speeding-up and simplifying the whole business of finding, selecting and purchasing your industrial engineering components.

There's also an 'O' ring wizard to help you spec. the right 'O' ring for the right application. And if you're confused by the lengthy part numbers on your bearings, the WebShop decoder will explain what dimensions and attributes are identified by each number and letter.

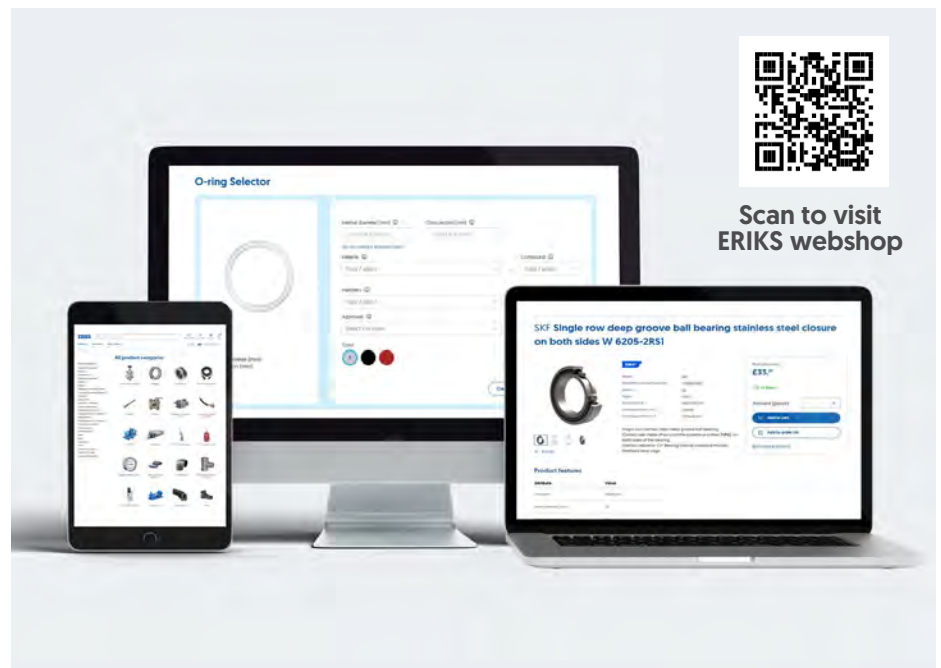
“Time- and money-saving features”

“Faster, easier and with total control of budgets”

### Goodbye to guesswork

Finding the right parts in the ERIKS WebShop doesn't rely on pictures, brief descriptions and guesswork. Instead, you can call on a range of selection guides, calculators and filters, to find precisely the right product for your specific application and budget.

For example, enter your motor's spec. and your operational parameters into the Motor Calculator, and you'll be presented with a range of fully-costed options. These cover repair, replacement, and – if available – an upgrade to a more efficient motor. And all with relevant energy-saving statistics.





### Quick click shop

One of the key time- and money-saving features of the ERIKS WebShop is its Request for Quote (RFQ) function.

The usual route to finding and comparing prices is to share your requirement with several different suppliers, and wait for a response. The quotes will come in at different times. You may have to chase a couple of them. And once you've collated and compared quotes, and chosen your favourite, you'll have to contact your chosen supplier again to place your order.

But with ERIKS WebShop RFQ, you won't just receive a competitive quote. You'll also receive a link which takes you directly to the quote in the ERIKS WebShop. So all you need to place your order is a quick click there and then, for speed and efficiency.

## “ Complete visibility on one platform ”

RFQ is also a useful shortcut to finding a product you need, if you can't locate it yourself in the WebShop. Simply raise an RFQ, and ERIKS will find the product in stock, and send you a price and a link so you can click and order.

The WebShop even offers a quicker way to purchase all the maintenance parts you need for a specific asset. All you have to do is upload a Bill of Materials or Schedule of Parts, and you can create and save it as your own custom kit of parts ready for fast ordering the next time maintenance is due.

### See-through shopping

The ERIKS WebShop is only one way to purchase your parts from ERIKS. But whether you buy via the WebShop or your local Service Centre, online or offline, the WebShop gives you complete visibility on one platform.

You can check your order history and keep track of all orders. You can configure your WebShop account to allow you to analyse what is being spent and on which of your assets. And because you can easily spot which assets are soaking up most of your budget, you have the information you need to identify and action necessary steps to cut costs, increase efficiency or optimise spending.

ERIKS WebShop can even be configured to show who is spending the budget, when, and on what. You can then set spending limits and manage authorisations, so you have complete budgetary control.

### Still here to help

The ERIKS WebShop gives you a more efficient way to manage everyday purchases. But it also helps ERIKS' technical specialists to be more efficient at serving customers better.

That's because, with your day-to-day, straightforward purchasing automated and digitised via the WebShop, ERIKS experts are more available to give you more support for purchases and queries which help your systems work harder and faster.

So whenever, wherever and whatever you buy from ERIKS, you can expect the best service, best support and best value.





# Don't slip-up on safety



**Bob Orme**  
Senior Technology Expert  
**LOCTITE**

'It's okay – I only tripped up.' 'I slipped but it's nothing.' 'I fell over at work.' Now imagine hearing that over 217,000 times in one year. That's approximately the number of times slips, trips and falls were reported as causes of non-fatal injuries in the workplace, in the latest HSE statistics\*. And those avoidable accidents led to an incredible 11.25 million lost working days in the same year. Clearly it's time to take steps to stop slips.



“ 11.25 million lost working days ”

Which is more surprising: that slips and falls on a level surface are one of the leading causes of unplanned absence from work, or that it can be so easy to do something about it?

Anti-slip coatings applied to risk areas are a quick and easy health and safety initiative. And because they can directly reduce lost working days, they're highly cost-effective too – as two examples of recent applications prove.

## Ship-shape and surface traction

Loctite PC 6315 is a two-part, black epoxy that is not only fire-resistant when cured, but also resistant to most acids, alkalis, solvents, grease, oil, salt water, detergents, alcohol, petrol, jet fuels and hydraulic acids.

It's so durable that it can even withstand heavy vehicular traffic. Which together with its resistance to salt water is what made it ideal for a ferry operator. The poop deck of the ferry had been fitted with anti-slip rubber strips, but sea water and condensation caused them to lose adhesion to the aluminium of the deck.

Once applied, the Loctite PC 6315 anti-slip coating stayed securely in place. The 'valleys' of its surface profile trapped contaminants





## “ A greatly reduced number of falls ”

that could otherwise make the surface slippery, and the ‘peaks’ provided traction and grip. The result was a greatly reduced number of falls amongst passengers and crew.

At the same time, the extra surface traction enabled quicker vehicle manoeuvring, which reduced vehicle loading time onto the ferry by 10%.

### All aboard – safely

A similar issue was causing problems for a tram operator in the North of England. Anti-slip tape on tram carriage doorways soon lifted under standard cleaning processes, and lost its grip once it began to weather. Replacement was a slow process, taking around two hours.

In this case, the customer chose Loctite PC 6261 single-part epoxy. Quick and easy to apply, it can be rolled-on to create a ridged profile, or sprayed on for a more uniform finish. Extremely durable, it's primarily designed for applications where there is high pedestrian footfall or light rolling traffic.

Fire-retardant when cured, and resistant to petrol, oil, acids, alkalis and aliphatic solvents, Loctite PC 6261 is available in yellow as well as grey.

This gave the customer a high-visibility strip, suitable for repainting when required without removal or rework.

The saving in maintenance time – together with the enhanced passenger safety – has led the customer to consider the coating for the company's bus fleet, and for general operational areas with high-footfall.

### Don't get it taped

Typical anti-slip solutions are either sand-in-paint systems or tapes, but neither of these match the strength and slip-resistance of the Loctite range of anti-slip coatings.

## “ Saving in maintenance time ”

Based on epoxy adhesive technology, these tough and long-lasting coatings create anti-slip surfaces that are easy to clean, resistant to chemicals, and available with fire-resistant qualities. Also available in the Loctite range are water-based acrylic coatings that are chip, scuff, impact and UV-resistant – making them suitable for indoor and outdoor applications.

Both types are rated for use in dry service temperatures from -29°C to +60°C.

The solvent-free Loctite PC 6315 is particularly suitable for odour-sensitive environments, such as food and drink processing and production facilities, hospitals and confined areas.

### Walk don't slip

Typical applications for Loctite anti-slip coatings include ramps, walkways, stairs, changing rooms, machine shops, assembly areas, warehouse floors and loading docks. And they can be applied by paint roller, or trowel and hard roller, to surface materials such as concrete, asphalt, wood, ceramic, fibreglass and metal.

So across industry and commerce, the utilities, transport and public service sectors – in fact, anywhere that people walk – Loctite anti-slip coatings can help them to walk more safely.

\*<https://www.hse.gov.uk/statistics/causinj/index.htm>



Copywrite: Henkel Loctite



# Earplugs to shout about



**Steve Ellis**  
Technical Service Engineer, 3M Personal Safety Division



Have you heard? There's a revolutionary new earplug available. According to Bryan Myers – 3M's Business Director with responsibility for hearing protection – it's the first in more than 20 years to offer 'multiple new, innovative and patented benefits to the user.' So why exactly is it such a big noise?



The risk of hearing loss in noisy working environments is understood better now than it was. So most employers now do the right and safe thing, by providing employees working in these conditions with hearing protection. But the most appropriate and effective protection hasn't always been the most comfortable or easiest to use. Which often means it's no longer effective, because it's in someone's pocket, on their workbench or in their locker, instead of in their ear.

3M improved the situation when, in the 1990's, they introduced the first 'push-to-fit' foam earplug. The foam improved the comfort and fit, and the 'push-to-fit' plastic

fitting stem made it easier to use and insert the earplug properly, even with gloves on or with dirty hands.

The idea was so successful and effective, a whole range of different shapes and sizes of foam ear tips has been developed by 3M, to fit ear canals of an equally different shapes and sizes. These include the Push-Ins™, Push-

“ Next-generation push-to-fit earplug ”



Ins with Grip Rings™, Push-Ins™ Softtouch™, No Touch™, Torque™ and Pistonz™.

And now, the next-generation push-to-fit earplug – the 3M™ E-A-R™ Flexible Fit HA Ear Plug – is coming to ears in noisy industrial environments everywhere.

### Giving hearing protection a hand

If earplugs are going to work effectively, they have to be inserted properly. That's easy when, for example, someone is showing you what to do in a training room. But when you're on a busy factory floor, and you've got dirty hands or you're wearing gloves, it's much harder.

Unless you're using the new 3M Flexible Fit HA.

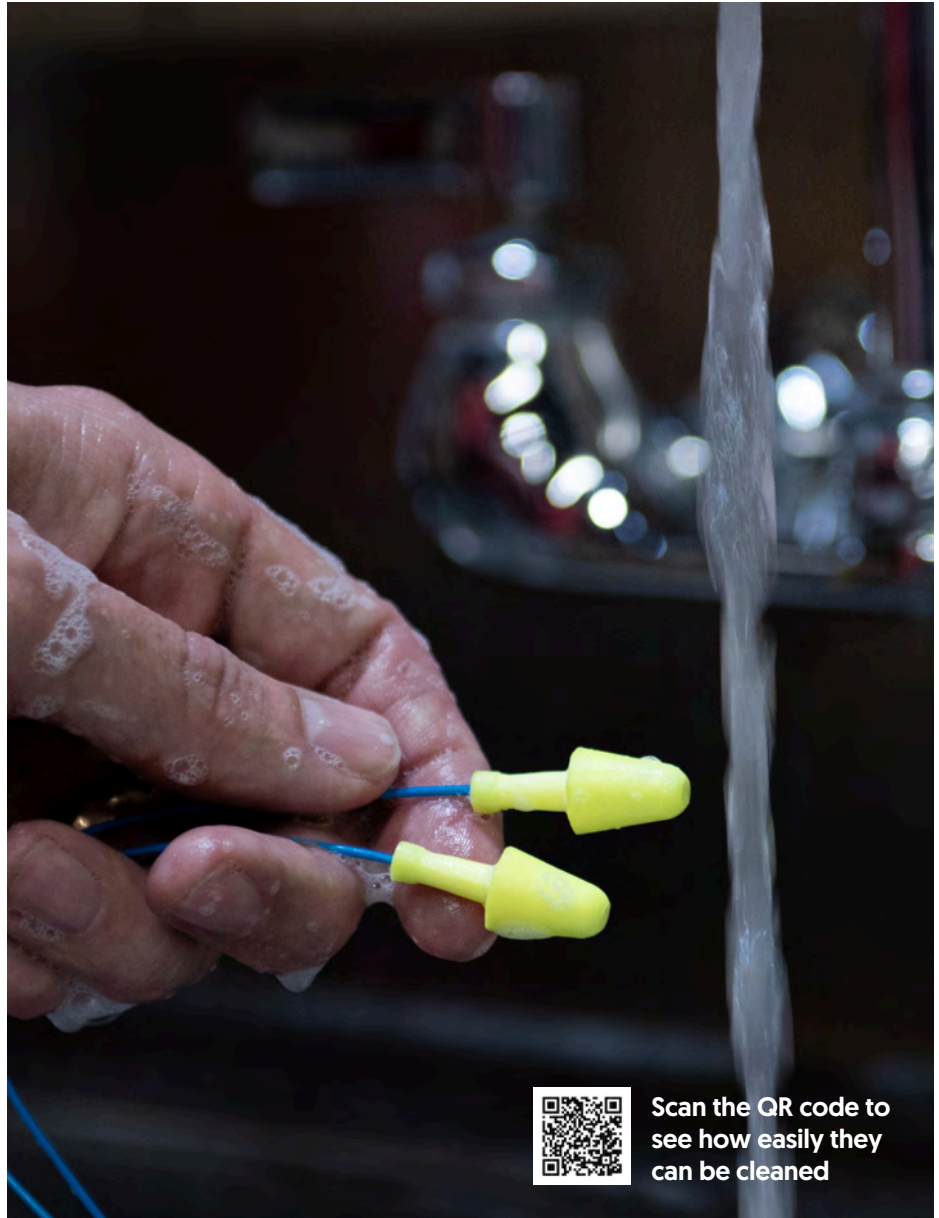
Firstly, this earplug has been carefully designed and manufactured to balance stiffness and flexibility. The soft foam ear tip can be pushed into the ear without being squashed, and without having to be rolled down – or touched at all, in fact.

So there's no need for the user to wash their hands or even take off their gloves before inserting the earplug. Just push to fit, and the flexible fitting stem guides the soft foam tip into the ear canal to where it needs to be.

It's so easy to insert, it can even be done properly with just one hand, and still provides hearing protection to a Single Number Rating (SNR) of 30dB. Inserted with two hands, the SNR rises to 35dB.

### The plug for the sink

Even though there's no need to touch the foam ear tip with hands, it still gets dirty when it's inside the ear canal. So instead of the foam used for traditional earplugs, 3M have used a patented TPE foam for the Flexible Fit HA. This is the first fully washable foam, and can be washed in a sink with mild detergent and water after each use.



Scan the QR code to see how easily they can be cleaned

“ The first fully washable foam ”

Like any earplug, the Flexible Fit HA should be replaced at once if the foam tip is damaged, is coming away from the stem, or loses its softness and pliability. But otherwise, careful washing means that these earplugs can be used for up to two weeks from first use.

So users get the comfort of a foam earplug, with the washability and longer life of a reusable earplug. Or as Brian Myers, 3M Business Director for Extreme Hazard, Hearing Protection & Connected Safety explains it: 'Users get the best of both worlds, and more.'

### Flexible Fit for purpose

Whether the 3M E-A-R Flexible Fit HA earplug is being fitted with one hand or two, the technique is the same.

The earplug should be inserted into the ear until the sides of the cone-shaped foam tip are inside the ear canal, and invisible from the outside. For a user with a larger ear canal, it may be necessary to insert even deeper, while a user with a small or sharply curved ear canal may not be able to insert as deeply.

When the earplug can only be inserted less deeply, its effectiveness should be verified by fit testing.

“ One or two handed fit ”





# Making light work of making light work



**Tom Morgan**  
Product Manager, Industrial Electrical  
**ERIKS**



LED has been lighting's latest great leap forward in providing more efficient illumination in offices, warehouse and on the production floor. But despite their relatively long service life, now some LED fittings are beginning to fail. Which makes this the ideal time to consider a new form of lighting which can help to improve employees' wellbeing, and make them more productive. And acting now could keep you one step ahead of legislation.

Circadian lighting is designed to work with the human brain's body clock, known as the circadian rhythm [see box-out]. Before the Industrial Revolution, our working day was effectively dictated by the sun, and our brains are still most comfortable and efficient if they can follow roughly that pattern.

That's why jet-lag makes us feel so lousy. The light entering our eyes is telling us one thing, but our body – because it has not yet adjusted to being in a different time zone – is telling us another, and makes us want to sleep when we need to be awake.

Fortunately for us all, the working day doesn't disrupt the circadian rhythm as much as jet-lag does. But it can make it drift away from its optimum. This is especially true the more the working environment's lighting conditions differ from the natural world.

So in a large warehouse with no natural light, workers won't have the natural passage of daylight to influence their circadian rhythm. Even in an office, with artificial lighting that's constantly the same wavelength, intensity and brightness, there won't be enough visual stimulus from natural light to keep its occupants' circadian rhythm on track.

“Updating workplace lighting guidance”

That's why regulators are beginning to consider updating their workplace lighting guidance. And now technology has come up with a solution.

### Your light, your way

Lighting designers and installers used to think about lighting spaces. With circadian lighting, illumination lights people. In other words, circadian lighting is designed to provide light tailored to the individual, the task they are doing, and the level of natural light in their working environment.

The aim is to replicate the effect of nature in the workplace, with lighting which changes by the hour and by the season. Ultimately, individuals should be able to tailor the lighting to suit their own personal situation, which can be affected by age, eyesight and other factors.

Of course circadian lighting won't mimic natural light entirely, or warehouse workers





would stop work at 4pm in winter and office workers would be logging-on to their PCs at 4am in summer. But it can help people to feel more alert, increase feelings of wellbeing, and be more productive.

“ More controllable lighting can be more energy-efficient ”

More controllable lighting can also be more energy-efficient – helping to reduce energy costs and shrink a building’s carbon footprint.

**Shining a light on legislation**

Current regulations concerning workplace lighting don’t mention circadian lighting. The Workplace (Health, Safety & Welfare) Regulations are concerned with ‘adequate’ lighting for health and safety, based on an average person of average working age, with average eyesight. This leads to illumination that makes an area bright enough to work safely, rather than light which increases alertness or helps mood and wellbeing.

However the regulations are currently under review, and any new version could include stipulations about controllable, human-centric lighting.

So if your LED fitments are due an overhaul, now is the time to talk to ERIKS – who have the know-how and expert partners to throw useful light on the subject.



**In the dark?**

Why is the circadian rhythm so important for wellbeing, happiness – and productivity?

Essentially, the circadian rhythm is your 24-hour body clock. Controlled by the hypothalamus region of your brain, it dictates when you feel at your most alert, when you feel at your most tired, when you sleep and when you wake up.

Unlike, for example, a central heating clock, it can’t be set manually, but its operation is dictated by the amount and wavelength of light entering your eyes. This triggers your hypothalamus to release melatonin – and melatonin levels within your brain control your sleeping and waking patterns.

“ Increases alertness, helps mood and wellbeing ”

Managing the lighting environment will manage your circadian rhythm, and therefore how you feel, how and when you sleep, and how and when you work best.



# A step in the right direction



**Leigh Hopkins**  
President Industrial  
SCHAEFFLER

We are all becoming more aware of the need to protect the world from catastrophic climate change. This is putting increasing pressure on manufacturers to operate in more environmentally conscious ways. Schaeffler is leading by example, by implementing sustainability-based initiatives across its operation.



COP 26 called on world leaders to take action on climate change. But we can all play our part in other environmental imperatives, such as minimising waste, avoiding ecological damage and eliminating overuse of natural resources in industry.

The spotlight is shining on manufacturers. And sustainable manufacturing operations are critical to their future success and brand reputation.

### Not just box-ticking

Sustainability must be more than a tick in the Corporate Social Responsibility box. It requires a strategic corporate agenda that outlines short-, medium- and long-term objectives. For example, Schaeffler's production processes focus on energy efficiency, environmental compatibility and conservation of resources, and the company aims to be carbon neutral across all production sites worldwide by 2030.

Companies which issue sweeping statements about their commitment to environmental responsibility give themselves room for manoeuvre to avoid being held to account. What's really required is transparency and detail, to demonstrate the progress they are making.

Improving sustainability also needs a multi-faceted approach, taking all operational areas into account: management, products, the environment, energy use and efficiency, and more. It should also identify how employees can contribute. The intention must be to combine economic success with responsible activity, through innovation, agility and efficiency – to ensure better processes, occupational safety and a sustainable supply chain.

### Strategic direction

Of course management structures and processes to implement environmental objectives must be legally compliant and meet the highest ethical standards.

Social media makes it easy for individuals to express concerns about industries and companies they deem guilty of environmental irresponsibility. This pressure towards responsible and sustainable manufacturing is only going to grow, so it's increasingly important for organisations to take action.

Acting with integrity is a key aspect of corporate governance. Business dealings should be in line with defined environmental values, which should extend throughout the supply chain. In fact, transparency, collaboration and a holistic approach to sustainability along the entire supply chain should be a core part of any organisation's drive for sustainability.

### The bigger picture

When a product which doesn't meet the correct specification goes to scrap, waste or for rework, this doesn't just have a negative impact on productivity. Everything that



went into making it is also wasted: whether that's human resources, machinery or tool wear, energy and natural resources, or raw materials.

The fight against climate change also requires the development of technologies that promote the switch to renewable energies. Schaeffler increases energy efficiency in wind turbines with low friction bearings and develops alternative drive technologies that reduce the average CO<sub>2</sub> emissions of vehicles. It has also entered into an agreement with H2 Green Steel to purchase 100,000 tons of virtually CO<sub>2</sub>-free steel, produced using hydrogen.

An issue manufacturer's often overlook is water scarcity. Planned new water-intensive production facilities should be designed to treat industrial wastewater so that it can be reused or discharged into the sewers. And locations that pose a risk to watercourses must be operated to eliminate any danger of contamination.

### Power to the people

Sustainable practices are just as important as sustainable production.

Schaeffler is involved in working groups and industry initiatives to help shape development in human rights and labour laws, and recognises that the expertise, skills and dedication of its employees ensure the continuous development of its sustainability-based agenda.

Employee health and wellbeing should also form part of any sustainability strategy, with work-related threats identified to reduce the risk of illness and accidents. A comprehensive approach to occupational health and safety also improves working conditions, and management and corporate culture. At the same time, training courses help to increase health awareness and improve competitiveness.

### Action plan

Sustainable procurement should always have what is best for the environment at the heart of its strategy and turning this ambition into reality requires every organisation to play its part in tackling the climate crisis.


It's time for manufacturers to stop paying lip service to carbon reduction. Becoming more sustainable should be welcomed as an opportunity for industry to mitigate the effect of its actions on the planet.



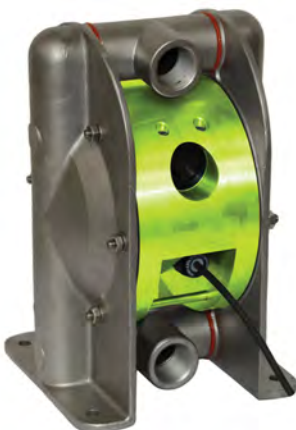
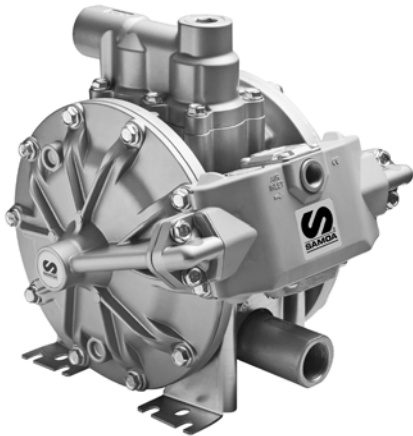


# Pumped for information



**Nick Lees**  
Product Manager, Pumps  


Just because something is widely used across a range of industries and applications, doesn't mean it's being used the right way. Familiarity breeds contempt, sloppy practices creep in, and what should be the most efficient and effective solution can all too easily become a liability. That's why we pumped ERIKS' engineers for their know-how on Best Practice for air-operated double diaphragm (AODD) pumps – to help you make the simplest solution the most successful too.



AODD pumps are the most common pump in use across the whole of industrial manufacturing, because of their capabilities and flexibility. You will find them used for liquid transfer applications in industries of all kinds, from chemical manufacturing to printing. And you will see them applied to anything from pumping viscous products to handling foodstuffs.

Their popularity is mainly due to the advantages they have over other types of positive displacement pumps.

### Pump plusses

AODD pumps can happily handle aggressive chemicals and abrasive products. They can run dry without damage, and self-prime up to 7 meters. They are generally easier to maintain, and simpler to operate. And it's not just the pumps themselves which are simple.

It's their installation too.

Because they are powered by compressed air, there's no need for electrical cabling or control panels. So there's no need for an electrical power source. This simplifies installation, and means they can be located in explosive or hazardous environments where electricity would be a safety hazard.

## “Simplicity and flexibility”

In fact, for almost any difficult application, the simplicity and flexibility of AODD pumps has made them the go-to solution. Yet they do have a significant disadvantage.

Fortunately, Best Practice can help to overcome it.

### As free as air?

Producing compressed air can be expensive, and AODD pumps can consume a lot of it.

There has been significant progress in reducing the cost of compressed air production, particularly from ERIKS partners Ingersoll Rand, Tapflo and Samoa, who are designing extremely efficient air motors. For example, Tapflo's Low Energy Air Pump technology (LEAP) is – as the name suggests – a real leap forward in energy-efficiency.

However, selecting the wrong pump, or installing it incorrectly, will still lead to inefficiencies. So it's important to follow Best Practice in specifying and installing.

## “Producing compressed air can be expensive”

## “Optimise performance and cost-efficiency”

### Take control

The most common error is to install an AODD pump without a flow control valve or pressure regulator. This will negatively affect running costs and service life.

Firstly, the pump will consume more air than the application requires. So you use, and pay, for energy you don't need. Secondly, without flow control or pressure regulation, the pump will constantly be running at full flow. This has the effect of shortening the life of the diaphragms, resulting in more downtime and higher service costs. Pumps with PTFE diaphragms are particularly affected.

Clearly a flow control valve and a pressure regulator are essential for efficiency and cost-effectiveness. But what else do you need for a Best Practice AODD pump installation?

### Bells, whistles and valves

There are several additional accessories which should be added to any AODD installation to optimise its performance and cost-efficiency:

- To enable control of the pump operating pressure, the air inlet valve should be fitted with an air shut-off valve, a filter, and a regulator with a pressure gauge.
- To control airflow into the pump – which affects the pump running speed – a needle valve should also be fitted. The pump running speed ultimately dictates the flow rate of the fluid being pumped.
- To prevent vibration issues and reduce the risk of compressed air leaks, the pump should be mounted on anti-vibration mounts, and connected into the pipework using flexible bellows. All pipework should also be fully supported.
- For the most efficient priming of the pump, suction lines should be kept as short as possible.
- For easier isolation in case of operating issues, shut-off valves should be fitted to the fluid inlet and outlet.
- A pressure gauge will be a useful diagnostic tool for engineers troubleshooting problems with the pump or the system.
- In addition, pulsation dampeners, diaphragm failure sensors and batch counters can all be fitted if appropriate to the application.

Follow all these best practices, and your AODD pumps will prove why they're still the most commonly used in industry.



# 2022: a year for optimism?



Optimism among manufacturers has been in short supply in recent weeks, as a surge in Omicron infections over Christmas and into the new year has led to growing uncertainty of what the immediate future might hold.

Contrast this with the situation as late as September last year, when surveys were showing output levels growing at record rates – albeit from a relatively low base – and business confidence rising steadily.

The situation is neatly encapsulated by separate surveys on the manufacturing sector from Make UK<sup>1</sup> and Deloitte<sup>2</sup>. These highlight the fact that recent optimism about revenue growth is being held in check by concerns over the growing number of economic and structural risks.

## Shortages and uncertainty

These include workforce shortages and supply chain instability, volatile energy prices and the imposition of new import and export regulations and tariffs. Added to this mix is the rapid rise in inflation – something that many managers may not have previously experienced, as the inflation rate has remained at historically low rates of 4% or less for almost 20 years. This compares with the widely fluctuating rates of inflation that beset the UK in the nineteen seventies and eighties, where annual inflation peaked at around 25% and 18% respectively. Although nobody is predicting a return to these extremes, there is growing concern that there may need to be corrective action by the Bank of England, with higher interest rates and rising price pressures that manufacturers will struggle to pass on to their customers.

Perhaps the greatest challenge is the degree of uncertainty. This affects longer term investment decisions and makes it increasingly difficult for manufacturers to plan for shorter term requirements, such as production, staffing, sourcing and stockholding schedules.

Although there is no simple solution – and different companies will need to take measures that are appropriate to their unique situation – the overwhelming requirement has to be the ability to respond quickly and agilely to changing circumstances.

In part, this will depend on much stronger, interconnected and mutually beneficial relationships with key partners across each company's supply chain. This might, for example, mean making far greater use of outsourced services or facilities for non-core production or business activities. Alternatively, it might involve integration of supply chain processes, from source to the factory floor, with connected IT systems to enable detailed information and data sharing by all multiple suppliers at each stage of the chain.

## Significant change in mindset

Crucially, for many manufacturers that are used to controlling all aspects of their business in-house, this may require a significant change in mindset. In particular,

it will need acceptance that ownership of what might previously have been considered commercially sensitive information has to be shared with select partners if business success is to be ensured. At a fundamental level, even with legally binding contractual agreements in place, it also demands a much higher level of trust between partner organisations, with mutually agreed operating mechanisms and robust reporting systems to provide the foundations on which trust between teams and individuals can be built.

As we enter the increasingly uncertain world of 2022 and beyond, it is clear that we cannot expect to continue to structure our businesses and trading relationships as we have in the past; there are, to quote the American politician, Donald Rumsfeld, simply too many 'known unknowns'. Future success depends on change; and change requires a fresh outlook and approach.



<sup>1</sup> <https://www.makeuk.org/insights/reports/manufacturing-outlook-q4-2021>



<sup>2</sup> <https://www2.deloitte.com/us/en/pages/energy-and-resources/articles/manufacturing-industry-outlook.html>

# Norgren ELION Electric Actuators Fast-Track Service



The Norgren ELION range includes Rod-Style and Rodless Electric Actuators supplied in different configurations to meet our customers' needs across a wide range of applications:

- » Standalone mechanical actuators
- » Cylinders complete with Nidec motors and control drives
- » Mechanical actuators with an interface to suit a customer's motor of choice
- » IP 65 protection (optional) for Rod-Style versions

## Our FAST-TRACK Electric Actuator service offering:

Standalone Norgren mechanical actuators and complete cylinders are available in **7 to 10 days**. Contact us for lead times on actuators with custom interfaces.

Some of our customers are experiencing longer lead times from alternative suppliers.



Find out more  
[norgren.com](https://www.norgren.com)



# Online Vibration Monitoring

3 simple steps to improve productivity

1



ERIKS install and commission vibration monitoring systems on agreed assets

2



You receive daily asset condition reports, impending problems are highlighted

3



Receive suggested recommendations for problematic assets, to plan and schedule maintenance



Call 0121 508 6000 or visit  
[eriks.co.uk](http://eriks.co.uk)

**ERIKS**