ISSUE 41

KNOW + HOW

Reliability

Thanks to improved technology and Industry 4.0 data capabilities, plant managers can now gain a better insight and understanding into the reliability of their assets, achieving positive impacts on production, efficiency, and maintenance.

ERIKS In Action

80 Years of Success

Looking back fondly on the past 80 years, we now focus on embracing new technologies to deliver unrivalled value, increased productivity, and improved reliability and performance to our customers.

In Focus

Making Online Monitoring Part of Your Maintenance Strategy

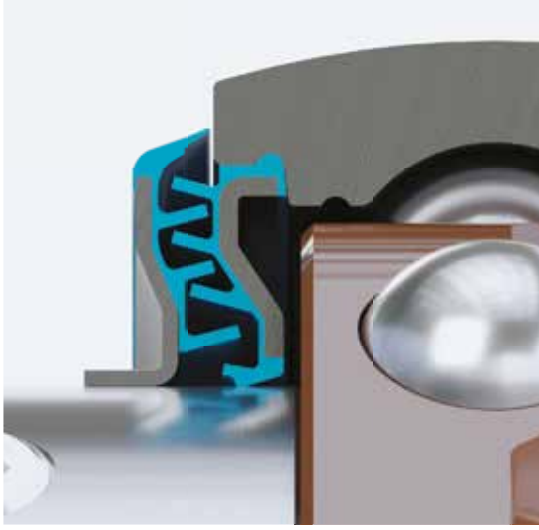
Gaining a holistic view of your assets will help you make a more comprehensive and effective response to maintenance and repair issues.

Debate

Playing Devil's Advocate

The disastrous effects of Covid-19 on the global economy are clear to see, but is there a positive light at the end of the tunnel?

ERIKS



Rethinking food safety

SKF Food Line ball bearing units - Blue Range: Proactive food safety

For food producers, hygiene and proactive food safety take top priority in asset design. However, bearings can be a potential source of serious food contamination.

SKF, with microbiology experts from RISE (Research Institutes of Sweden), have discovered that bacterial contamination can build up inside bearing units during operation, and even during hygienic cleaning.

If bacteria can get in, they can also get out! The answer is a hygienically-designed, fully sealed bearing unit.

The new SKF Food Line ball bearing units - Blue Range is a relubrication-free solution that supports your proactive food safety processes. Sealed from both sides and filled with allergen-free grease, they allow you to actively reduce food safety risks by combining hygienic design, relubrication-free technology, corrosion resistance and food grade components. Coming from SKF, they also provide outstanding bearing performance!

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Food safety risks: https://ter.li/video

The solution: https://ter.li/catalogue

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SKF®

KNOW +HOW

Welcome

The year is 1940.
The month is October.
To many of you, that might not mean much.
But to ERIKS, that was a truly special moment.
We were born. That's right, this year is our 80th birthday.

Richard Ludlam
Editor-in-Chief
Email me at:
knowhoweditor@eriks.co.uk

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West Midlands, B62 8WG

ERIKS 80 years looking forward

Since our humble beginning as a small supplier of gaskets, seals, v-belts and hoses to the dairy industry, we have grown in every way possible. We've crossed boundaries and borders, designed, innovated, expanded, explored, digitised and, although we look back with immense pride, we are very much focused on the future and new challenges in the next 80 years.

As you can imagine, Industry was different in the 40s, but technology doesn't sleep. Throughout the decades, we've been presented with innovation after innovation. Some haven't quite hit the heights as initially thought, but some have certainly changed the world for the better.

As we make our way through the 21st Century, we're now in the midst of the Fourth Industrial Revolution, the next major step in changing the way we operate, striving for a more digitally-enabled future.

By providing plant managers with a better understanding of modern technologies, greater reliability can be achieved, leading to positive impacts on production, and ultimately, on the bottom line of their business. Throughout Issue 41, we discuss many of the methods, technologies and strategies at your disposal, and how to best implement them to enhance operations.

For **ERIKS In Action**, we bring you part two of *Making Online Monitoring Part of Your Maintenance Strategy*, where we discuss the importance of gaining an holistic view of your assets, which will help you make better informed decisions on maintenance and repair issues.

Our **In Focus** section introduces ways to analyse and overcome many of the challenges faced in industry, outlining the importance of maintenance surveys, what to expect from them, and how they lead to driving down your Total Cost of Ownership.

We also discuss the impacts of Covid-19 on our supply routes and the global supply chain as a whole, reviewing the current obstacles, possible measures to improve, and how ERIKS has planned and dealt with such an unexpected scenario.

Last but not least, our **Debate** editorial continues to reference the Covid-19 pandemic, but this time, suggesting the positive impacts on the UK Manufacturing sector.

As always, we would love to hear your thoughts on any of the articles in this edition, so why not share your opinion with us via email or tweet us at @ERIKS_UK

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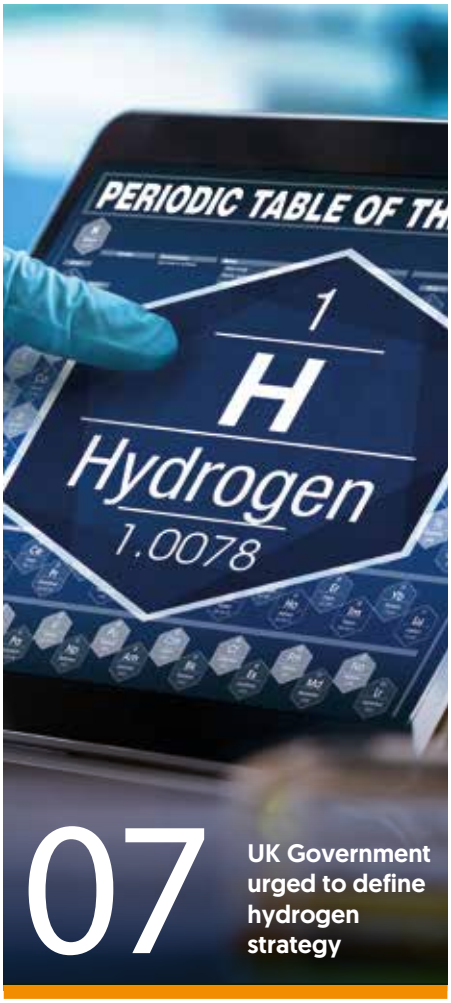

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Security driving businesses to 5G technologies

Recent analysis undertaken by Nokia and ABI Research has suggested that by 2030 there will be almost four billion wireless connections in smart factories across the globe.

Discussing the subject with more than 600 'manufacturing decision-makers,' it was noted that 74% are wishing to upgrade their communications and control networks come the end of 2022, and 90% were investigating the introduction of 4 and/or 5G technology within their operations.

The response revealed that 63% thought that they needed to digitalise and improve existing infrastructures, 51% wanted to implement technology to enhance their automation and robotics capabilities, and 42% were seeking higher levels of employee productivity. Ryan Martin, Principal Analyst at ABI Research concluded: *"It's evident that respondents are not entirely committed to Wi-Fi/WLAN and will consider latest generations of wireless technology."*

In addition, 84% of manufacturers would consider 4G/5G technology in order to own local private networks, safeguarding sensitive commercial and production data.

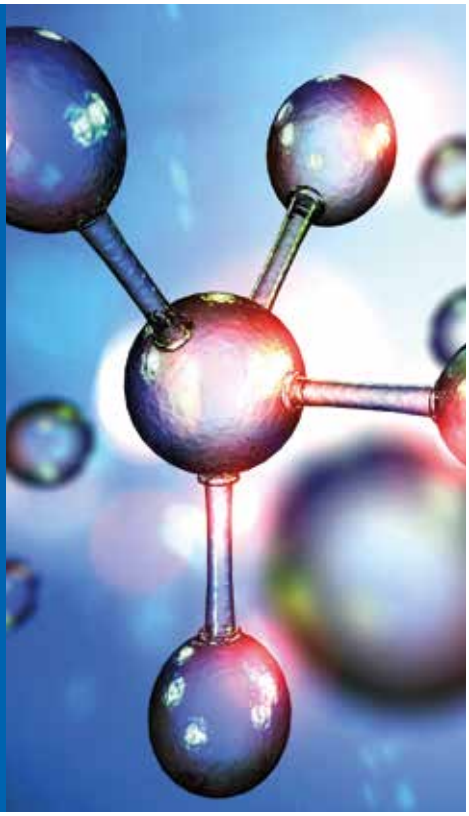
New type of nuclear reactor in development

Jacobs, a US-based technical professional service provider, has recently been selected to assist Moltex Energy to design and develop a new type of nuclear power plant known as the Stable Salt Reactor.

Backed by $6m of funding from Advanced Research Projects Agency-Energy, the reactor is designed to burn processes spent fuel pallets that would otherwise be stored as radioactive waste, generating low-cost power.

As part of the contract, Jacobs, who operate out of Birchwood Park in Warrington, will be responsible to build an experimental facility for thermal transfer testing, with their chemistry, material, engineering and instrumentation departments collaborating to create a complex simulation that will replicate the heat output of a fuel channel.

Clive White, Critical Mission Solutions International Senior Vice President at Jacobs, said: *"We're looking forward to continuing our support for Moltex into this phase of development. The Stable Salt Reactor design is significant because of its potential to recycle waste in a clean, safe and economical way, generating electricity which will power communities while reducing carbon emissions."*



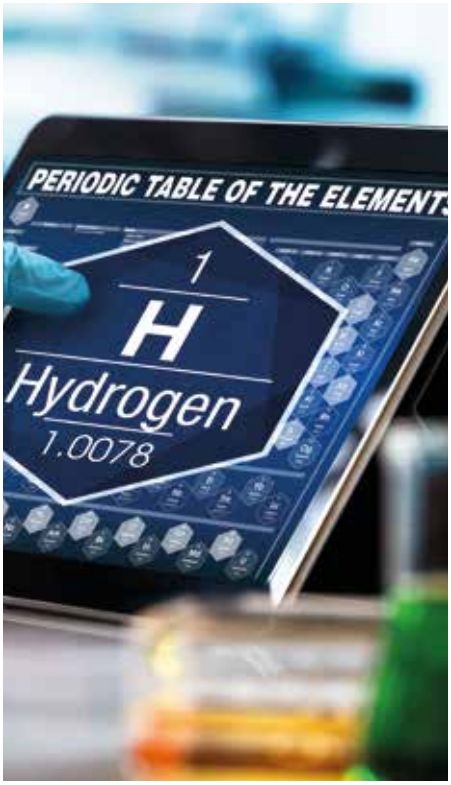
UK Government urged to define hydrogen strategy

The UK government has been urged to clarify its plans on integrating hydrogen fuel in order to reach net zero and meet its climate commitments.

While the UK is a step ahead in terms of technology and understanding, MP Philip Dunne, Chairman of the Environments Audit Committee (EAC) believes that we are failing behind other nations, as we are yet to implement a hydrogen strategy, stressing this fact to Business Secretary, Alok Sharma, in a recent letter.

It's believed that a robust and well-thought hydrogen strategy is essential to supporting cost-effective decarbonisation in transport sectors, in addition to forming hydrogen clusters around the country which will further support the economy by creating new jobs.

MP Dunne said: *"We must end our reliance on dirty fuels and hydrogen could be the key to realising our low-carbon potential. The UK's strength in innovation, technology and skills can be used to champion hydrogen as a major player in our energy mix – but the Government must pave the way."*



Leading a green revolution could provide more jobs

The impact of climate change is a growing concern, with calls to address the situation increasing daily, and the UK is well-placed to take the lead towards a greener future.

Over the past 30 years, the UK has reduced its carbon emissions by 44% and is the first major economy to commit to achieving net zero emissions. But acting now is essential if we are to continue to implement these changes.

A recent report by the Manufacturing Technologies Association (MTA) has suggested that moving towards green manufacturing could increase the UK's GDP by up to £20bn, as well as creating up to one million jobs, including up to 90,000 in UK manufacturing and a further 83,000 in the supply chain.

MTA Chief Executive, James Selka, commented: *"Going green is not an option, it's a necessity. The UK has a worldwide reputation for innovation within manufacturing and engineering. By embracing green technology, we can transform our economy as a whole and work towards sustainable growth, creating new, higher paid jobs and protecting the environment in the process."*

Surgery out of this world

The Covid-19 pandemic has without doubt created a range of new challenges but has also prompted a wave of new and exciting innovations as we look to overcome the obstacles that we now face.

As part of the Fast Start competition, which aimed to fast-track technological advancements created via the impact of the corona virus, i3Dr and the University of Sheffield Advanced Manufacturing Research Centre (AMRC) have teamed up on the Stereo Theatre Project, which could transform how surgery is observed.

Utilising Industry 4.0 technology previously adopted on guiding the Mars Rover millions of miles from earth, Stereo Theatre will look to further enhance the work already undertaken by AMRC, where an Industry 4.0 Digital Operating Theatre concept has been built, combing a VR digital twin, projection mapping and smart tools to enable the position of instruments and clinicians to be tracked in the operating space.

Dr Ben Crutchley, Senior Machine Vision Engineer at i3Dr explained: *"The ability for senior surgeons and doctors to remotely view and be immersed in a virtual representation of an operation will have a game-changing impact."*

Setting the standards in double-screw technology

Rethinking the technical and functional principles of this sophisticated pump technology, the Fristam FDS double-screw pump resets the boundaries as we know them.

Careful analysis has prompted the removal of previously known deficiencies, and optimised key aspects such as smooth running, temperature stability, maintenance and repair. Combining the advantages of double-screw technology with Fristam's high standards, the FDS is ideal for the most viscous products and is now capable of reaching higher speeds of up to 3,600 min-1.

The axial transportation principle results in very low pulsation even at the highest pressure. It also ensures superior hygiene as its mechanical seals are positioned in fully flushed areas with constant pressure conditions, and because there are no cavities, there is no residue when flushing.

Finally, thanks to its compact stature and specially designed bearings, the FDS can be mounted both horizontally and vertically – inspection and maintenance have never been so simple.

OKS welcomes its latest addition

A company known for its continual development; OKS welcome 478 plastic and elastomer grease to their ever-growing portfolio.

Available in various sizes – 1kg, 5kg and 25kg – OKS 478 is a silicone-free lubricating and sealing designed specifically designed for plastic/plastic and plastic/metal combinations.

Ideal for the lubrication of machine parts under heavy loads, cup holders in the automotive industry and a silicone-free alternative to O-rings and seals during assembly, OKS 478 is suitable to operate in temperatures ranging from -40 °C to +200 °C.

It also offers high shear stability, excellent adhesion on plastics and metals, no hardening or bleeding, and is NSF H1 registered and MOSH-MOAH-free.

The most able label printer, from Panduit

Mobile printers have moved to the next level, with a new generation of printers for quality label printing.

Panduit and Epson have combined their identification solutions, experience and printing expertise to set a new benchmark in mobile printers for labels.

The Panduit MP100/E and MP300/E combine best-in-class capability with print quality and speed of use.

So when you need top-quality labels, these new printers will provide them faster and more easily than ever before.

Printing direct from Easy-Mark Plus software, the MP300/E prints at 1.4" per second on a wide variety of die-cut and continuous label materials. It also prints on label media in sizes up to 1.5". An integrated auto cutter then cuts them down to size, with full- and half-cutting capability.

Both the MP300/E and the MP100/E offer USB connectivity, so you can maximise your labelling capabilities with minimum fuss.

ERIKS Increase speed and efficiency with a Kiss Cut machine

Servicing a wide range of industries is part of the ERIKS philosophy, and recent investment in a second bespoke Kiss-Cut machine has enabled us to further widen our offering to our customers

Kiss-Cut machines are designed to effortlessly manufacture self-adhesive products, using clean die or laser cuts, including gaskets and seals, foam cutting, electronic filters, labels, packaging materials, medical products and much more.

Delivered and commissioned for use at our Barnsley facility, this new and exciting investment has provided us with the additional capacity demanded by our customers in the HVAC, domestic appliance and heating sectors, enabling us to deliver high-quality foam products that offer operational advantages including higher efficiency and productivity.

If you would like to know more information on our Kiss-Cutting capabilities, please call 0121 508 6000 and ask to speak with one of our highly skilled and knowledge Sealing & Polymer technicians.

Norgren completes the family

The latest ISOLine™ stainless steel cylinder means there's now a Norgren cylinder for every application.

If you have a cylinder application in a harsh environment, or where contact with food demands heavy wash down, the new ISOLine™ stainless steel cylinder from Norgren is the rugged, reliable solution.

Manufactured from 303, 304 and 306 stainless steel with a tie-rod construction, ISOLine™ KA/802000 Cylinders are available in bore sizes from 32-200mm. They also offer a choice of reed or solid state switches for position sensing, and a number of variants and mountings.

Stainless steel not only ensures resistance to the corrosive effects of wash down or chemical environments. It also helps to reduce the overall weight of the machine, which in turn reduces transport costs.

With an automatic Adaptive Cushioning System eliminating the need for cushioning setting, and with easy online configuring and ordering, the latest ISOLine Cylinder is a grown-up addition to the family.

80 years of success. 80 years of serving our loyal customers.

This year is a proud moment for ERIKS as we celebrate our 80th anniversary. From our humble beginnings in 1940, where we were founded by Arie ERIKS and W.J.A. Stroomer in Alkmaar, Netherlands, we have travelled a long way from supplying gaskets, seals, hoses and drive belts to the dairy industry, today, transforming into one of the world's most diversified industrial services companies.

ERIKS 80 years looking forward

From small steps to strong foundations

From initially expanding our operations across the Netherlands following the end of the Second World War to entering the UK market with the acquisition of WYKO in 2006, as you can imagine, throughout our 80 years, we've seen a lot.

We've seen the growth in automation, a decline in heavy industries, and now, the explosion of digital technologies with our customers driving towards Industry 4.0 – industrial challenges that we have often been at the forefront of, and challenges that have enabled us to expand and improve as a business.

> "Our objectives have never changed"

But our objectives have never changed – providing products, technologies, and services to change the face of industry, delivering unrivalled value, building long-standing supply chain partnerships, and helping our customers prosper through improved reliability and performance.

> "Our success has been based strongly on our ability to predict and adapt to change"

Over the years, our success has been based strongly on our ability to predict and adapt to change, exploiting the powers of the latest technologies, investing in the very best people and facilities, and building mutually beneficial partnerships with our customers. And we don't intend to stop there.

Continuing to innovate for a better future

Innovation has always been at the heart of ERIKS, and we're now a far cry from those humble beginnings working with leather belts, simple seals and gaskets. Instead, today, our knowledgeable people in our Product Technology Centres we continue to break ground in engineering and molecular science, developing cutting-edge and sophisticated materials, polymers, and components to bring industry into a new, advanced era.

The next phase of the ERIKS journey is simple: to continue helping our customers to become more innovative, more successful, and more profitable by investing in very best people, technologies, and facilities. It's been a philosophy at the core of ERIKS since day one – and one that will continue to drive us forward into the future.

> "Our customers prosper through improved reliability and performance"

We're extremely excited by the path that we see before us, and we believe that our forward-thinking strategy will continue to reshape industry as we know it. It's a place that we know well and one that we love even more. Here's to the next 80 years. Let's make industry work better, together.

ERIKS

80 years looking forward

Industries we serve

We help customers in a variety of industrial segments to improve their products' performance and reduce their total cost of ownership

Our Own Brands

We supply A-brands as well as our own ERIKS certified productsproducts' per-formance and reduce their total cost of ownership

SMITH · Goodall · econ · Leader Gasket Technologies · Flexion · Pioneer Weston · VE · Fenner

Who we are

ERIKS is a specialized **industrial service provider** that offers a wide range of technical products, co-engineering and customization solutions, as well as related services.

We help customers in a variety of industrial segments to improve their products' performance and reduce their total cost of ownership.

Where we are

ERIKS has branches in **17 countries**, with a strong position in Western Europe and North America, alongside a presence in Southeast Asia.

Our people

6,500

Our 6500 skilled colleagues worldwide serve customers in their original equipment manufacturing (OEM) and maintenance, repair and overhaul operations (MRO).

Our Product Groups

- Industrial & Hydraulic Hoses
- Engineered Plastics
- Flow Control
- Gaskets
- Power Transmission
- Sealing & Polymer
- Tools, Maintenance & Safety
- Conveying Systems

To learn more about ERIKS visit **www.eriks.co.uk/80-years**

Got it in one

Alex Price
Project Engineer
ERIKS

Engineering technology is continually evolving. As it does, new, simpler, more efficient and cost-effective solutions begin to appear – even for problems which have been around for decades. But sometimes it takes an experienced eye to spot them.

If you're used to working with the same old technology doing the same old job, it's almost inevitable you'll opt for the same old solution when there's a problem. 'If it ain't broke, don't fix it' subconsciously becomes: 'If it is broke, fix it the way we always have.'

A fresh perspective is something ERIKS brought to a drives issue at a water treatment plant – enabling one planetary gearbox to do the work of a far more complex set-up of three gearboxes and drives.

Past its best

In the words of ERIKS Project Engineer Alex Price, the worm drive that arrived at ERIKS' Pensnett workshop in the West Midlands had 'seen better days.'

Designed to produce torque of just over 76,000Nm at 0.167rpm, the drive was one of three operating in line to power scrapers that rotate on the bottom of settlement tanks to separate the solids from the liquid effluent.

Originally installed over half a century ago, it had been repaired countless times – including skimming the bearing faces and replacing the worm gear. But this time, to ERIKS' experts, it looked as if it's time had finally come.

> "ERIKS' commitment to repair/replace neutrality"

Even so, ERIKS' commitment to repair/replace neutrality meant the customer was given costs and lead times for both options, along with an expert recommendation of the most cost-effective choice.

The cost of the repair, and the fact the drive had been repaired many, many times already, made replacement the clear favourite. However, lead time for a like-for-like replacement was 3-6 months. So ERIKS' Centre of Expertise for Rotating Equipment & Services suggested a quicker, and better, alternative.

Three into one

The application was using three reductions, including a chain drive, to achieve the required result. This had been the best technology available at the time, but half a century, on ERIKS' proposal of a planetary gearbox offered a simpler, more efficient, more cost-effective solution.

Firstly, it replaced all three drives with just one planetary gearbox. Less complexity means a smaller risk of breakdown and simpler, easier maintenance. Complete elimination of the chain drive, for example, meant complete elimination of the need for chain maintenance.

Secondly, the new gearbox is designed to occupy precisely the same footprint as the original system. So, there's no reworking required before installation.

> "Simpler, more efficient, more cost-effective solution"

Thirdly, compared with manufacturing a new like-for-like replacement, ERIKS' solution took two weeks to design and just eight weeks to manufacture, including two weeks of Christmas holidays which fell during the order period.

Come rain or shine

One more improvement over the original drive is the use of Fenner UV outdoor inverters.

Standard inverter enclosures are made from plastic panels which, sooner or later, deteriorate in UV light from the sun. The Fenner UV inverter enclosures, on the other hand, have UV-resistant panels which are unaffected by sunlight. Not only that, but these inverters are also IP66 rated, meaning they are resistant to high-pressure jets of water from any direction. So, they're more than capable of standing up to the best and worst of the British summer and winter.

With no need for any special panel mounting, the inverters can be easily and cost-effectively installed next to the gearbox, where they are simple to operate and simple to maintain.

Old problems, new solutions

With new developments in engineering happening all the time, there's often a new and better solution than 'the same old, same old.' That's why it can be a valuable exercise to let an expert take a fresh look at a problem.

> "Let an expert take a fresh look at a problem"

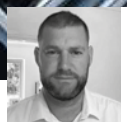
Engineers for ERIKS Projects for Rotating Equipment & Services can assess issues with larger projects, and propose solutions to increase reliability, improve efficiency, reduce maintenance, save energy and save money. As well as providing a full CAD redesign to demonstrate the potential.

For the customer at the water treatment plant, the cost of the planetary gearbox was £30k, whereas the cost of the repair would have been in the region of £70k. However, upon further investigation, the existing unit was deemed unviable for the repair.

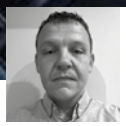
Not only did the customer save approximately £40k on the repair, they now have an off-the-shelf solution, meaning that spares are readily available reducing lead times and costs further. Also, throw in the fact that a new gearbox is far more efficient than the old unit, and will last many years longer than a repair that has a finite life, then the savings will just keep mounting up.

The reliability and cost-savings so impressed the customer, they placed an order for an identical unit for another treatment plant as soon as the first was installed. With the design already perfected, it will only be a matter of weeks before the next unit is ready to go.

So, is the customer satisfied? Got it in one.



Paul Freeman
Regional Operations Manager
ERIKS



Adam Bacciocchi
Service Centre Manager
ERIKS

How to manage stock management

Stock management takes time, space and money. Done inefficiently, it takes too much time, takes up too much space, and costs too much money. So a Tier 1 automotive manufacturing facility – needing to accelerate access, maximise accuracy and optimise space – turned to ERIKS for a money-saving automated solution.

Traditional stock management forces skilled engineers to spend their valuable time waiting at storeroom counters when they could be getting on with their job. And even after a walk and a wait, there's no guarantee the part they need will be available.

Most stock management systems rely on manual booking-out. So they're at the mercy of forgetfulness or even dishonesty, as items removed go under- or unrecorded.

At best, the result is empty shelves and engineers left empty-handed. At worst, a critical MRO item that's unavailable can mean extended downtime and lost production.

With ERIKS' help, by automating stock management and retrieval, the Tier 1 automotive customer was able to save time and space, and increase efficiency – recouping the cost of the project in just 30 months.

Stock up, and up, and up

For MRO parts storage, space is the first frontier. Valuable floorspace that could be put to more productive use has to be dedicated to storing parts where they are readily accessible by Stores staff.

In partnership with Agilon, ERIKS provided the customer with a storage system which utilises otherwise unused vertical space. The shelving racks are only 1.6m deep but up to 6m high, accessible only to stock-picking robots.

Now the customer can store 3,000 SKUs in two parallel racking runs only 14m long – releasing factory floorspace for other uses.

The stock is secure behind the racks' metal-cladding, and anyone wanting to retrieve an item has it delivered automatically to an access point, with no need to physically enter the stores.

There's also no need to wait for the item to be found. It can be ordered by digital input (via portable tablet or PC) from anywhere on site, and while the 'customer' makes their way to the access point, the robot will be quickly finding and retrieving the item. A touchscreen is also provided at the access point for on-the-spot retrieval.

> "Accelerate access, maximise accuracy and optimise space"

Who, what, when?

Digital inputting ensures all transactions are monitored and recorded in real time, enabling full accountability and traceability, as well as 100% stock accuracy. The system can even be integrated with a customer's SAP and TPM systems if required.

By knowing what items have been removed from stock, re-stocking will always be timely and accurate. Designated personnel can be automatically alerted when critical parts

are removed from stock. And consumption reports will help to spot trends, identify spikes, and inform engineering analysis of potential issues with specific assets.

The digital input also makes it possible to place automated controls on stock access.

For example, a limit could be placed on how many items of PPE can be withdrawn from stock by any one person in any one shift. In effect, this turns the stockroom into a giant automated vending machine for more effective management and reduced consumption of consumables. Access to high-value items (such as power tools) can also be restricted.

Right place, right time

Just as important as fast and accurate stock access is fast and accurate stock replenishment. Unless every single item is replaced in the correct place on the correct shelf every time, the whole system – whether manual or automated – slows down and ultimately breaks down.

The Agilon system maintains the stores in order at all times, through a carefully co-ordinated replenishment process.

When a replacement item is brought to the access point, the operator simply calls up the part on the touchscreen, and the robot arrives with the appropriate empty storage box. The part is placed in the box, and the robot returns the now replenished box to its proper position in the store, ready for easy access in minimum time, when required.

Critical items, crucial savings

The benefits of automated stock management and retrieval are clear.

A time and motion study identified 25,000 manual stockroom transactions per annum on average, each of which takes – on average – 235 seconds. Using the automated Agilon system, the time taken is reduced to just 40 seconds each: saving 1,300 man-hours per annum.

A subsequent cost/value analysis revealed savings of £100,000 over three years, against a system cost of £85,000.

> “Full accountability and traceability, and 100% stock accuracy”

> “Saving 1,300 man hours per annum”

The customer installed the original Agilon system for storage, management and retrieval of fast-moving, critical and high-value MRO items. Analysis of the savings achieved, after only one year, has encouraged them to commit to extending the original system by double and increase the scope of products being managed across their business, expanding beyond MRO part only.

But whatever they decide to stock within the automated system, one thing is certain. There will be sizeable savings in store.

A record rewind

David Bevilacqua
Technical & Commercial Manager HV Machines
ERIKS

Trevor Hilton
HV Motor & Sales Development
ERIKS

When a complex alternator stator at a major refinery required a rewind, the customer didn't pause. They wanted a partner with the experience, expertise and resources to meet the challenge. And that's where ERIKS know-how came into play, to complete the project in record time.

The stator is part of a customer's generator, driven by steam from the refining process. After several decades service it was at the end of its life, and at risk of failure. It was already producing high partial discharge in service. To rewind it would be a 3-month project, but manufacturing new coils beforehand would normally take an additional 6 weeks. With the generator out of action for so long, the customer would have to buy-in their energy, with significant cost implications.

Fortunately, ERIKS' forward-planning and rewind capabilities helped to save the client time and money.

Here's one we made earlier...

The customer's stator is not a standard design. It incorporates unconventional coils of a complicated shape, that demand special tooling and jigging for their manufacture. This all helps to increase the cost and the lead time.

Fortunately, ERIKS had manufactured replacement coils for the customer several years before. They were stored in special crates, inside sealed foil bags with a desiccant, and all ready to be used immediately.

ERIKS' understanding of the stator, gained during the manufacture of the coils, made them the obvious choice for the rewind. But it was a rewind with nothing obvious about it.

Stator stats.

A typical stator has a diamond coil winding which is relatively straightforward to rewind. This one was far from typical and far from straightforward.

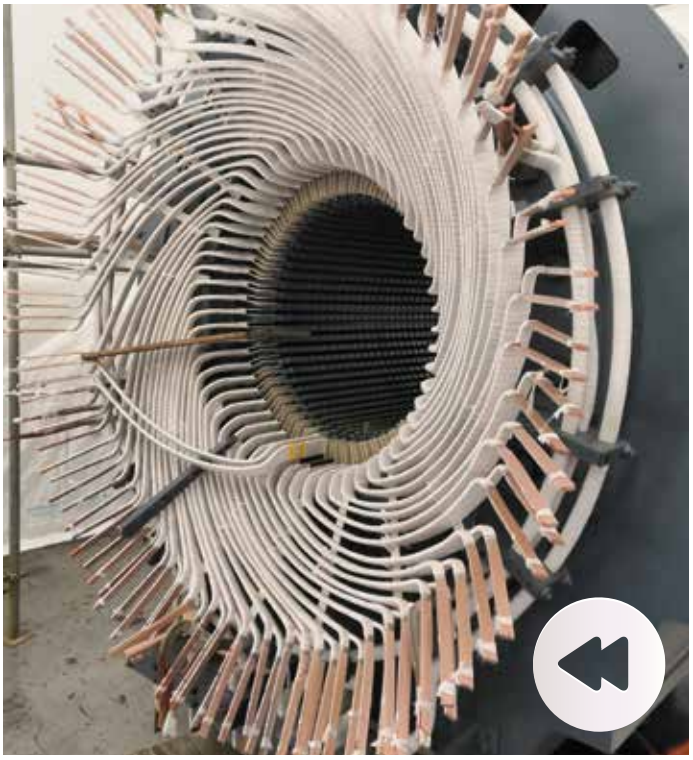
> "Nothing was left to chance"

The individual coil bars forming the winding are fanned out at the end winding, with each bar end required to be manually formed, joined and connected, to complete the winding and create the 3-phase, 2-pole circuit.

The stator consists of 60 slots, with a top and bottom bar in each slot. Each of those bars has 2 conductor turns, and each conductor turn comprises 10 parallel copper sectional strips. That's a total of 2,400 individual sectional strips running through the stator and protruding at each end – making 4,800 copper strip ends in all.

Each of these ends has to be individually shaped – a process requiring care, precision and skill – then cut to size, braze joined, insulated by hand, and formed into the individual conductor turn. The completed and formed noses then have to be over-insulated, and all the associated end-winding supporting and bracing structure also has to be formed and secured.

It's clear why the whole rewinding process took even ERIKS' experienced engineers 12 weeks of round-the-clock working.



Rewind re-think

When the alternator stator had last been rewound, the only insulation available was Class B rated. Many years on, the availability of Class F insulation enabled ERIKS to propose an upgrade.

The thinner insulating material meant there would be enough space to accommodate conductive ripple spring side packing to secure the coils in their slots. This ensures more effective prevention of partial discharge in service and securing of the coils.

> “Far from straightforward”

The customer agreed, and the stator was rewound to the new, higher standard, for even more effective performance. But even so, nothing was left to chance.

A test at every turn

A battery of tests was carried out throughout the rewind process, and once it was completed, to eliminate any potential mistakes and guarantee the quality of the operation.

These tests included:

- low resistance tests to check for poor joints
- circuit resistance balance tests
- polarity tests
- inter-turn tests
- a variety of insulation tests.

Lastly, before the rewound stator was approved to leave ERIKS’ workshop, it was subjected to a one-minute HV withstand test at 23,000V, followed by partial discharge and tan delta tests.

Put on the spot

The customer’s operating environment – a major oil refinery – is clearly a volatile one, with numerous associated health and safety risks.

So to carry out the rewind, the alternator stator was transported from the customer’s site to the ERIKS workshop, where it was stripped and rewound before being returned to the refinery for installation.

However, the customer was sufficiently impressed by the conduct and capabilities of ERIKS’ engineers in the workshop that a second job has now been booked. And to eliminate the time, complexity and cost of transportation, this time ERIKS will be working on-site.

Meanwhile, the successfully rewound and generator alternator stator with its upgraded insulation is back in operation, with a service life confidently expected to equal that of the plant.

With few suppliers able to match their experience, expertise or resources, it’s clear that ERIKS should be the first choice for a rewind of this scale and complexity. And you can put that on record.

> “Save the client time and money”

Making Online Monitoring part of your maintenance strategy

Part 2: Bringing it all together

Tom Boswell
Product Manager, Smart Asset Management
ERIKS

In the previous issue of Know+How, we looked at how making Online Monitoring part of your maintenance strategy can deliver a range of benefits. These include reduced maintenance costs, increased uptime and efficiency, and optimised productivity.

In this issue, we consider the importance of gaining an holistic view of your assets, to help you make a comprehensive and effective response to maintenance and repair issues.

The previous article described Predictive Maintenance in terms of monitoring variables in a car. Firstly you would use sensors to monitor, for example, oil pressure, oil temperature and fuel level. Then you would use this information to predict and inform necessary actions such as an oil change, or refuelling.

The more variables you can monitor, the more comprehensive and in-depth will be the picture you create of the car's performance, and the more accurate your maintenance predictions will be.

> “A single meaningful and actionable result”

However, there are problems when you try to translate this scenario into a factory-floor setting, involving production or process assets. That's because, unlike a car, factories are not generally built as a whole from scratch. So a single production operation may involve, for example, half a dozen pumps, from three or four different OEMs. Which in turn may mean three or four different reporting methods, with as many different data sets, and each stored in a different place.

It's hard enough to keep track of it all, let alone bring it all together to produce a single meaningful and actionable result.

> Everything that can be monitored will be monitored

Predicting: the future

Though there's still a long way to go from the current situation to the ideal scenario, the future of Predictive Maintenance is easy to see.

A single reading from an individual sensor, considered in isolation, can only ever be an indicator. Currently, the amount of monitoring and the depth and breadth of the data it provides gives only a 'two-dimensional, black and white' image. And even this is blurred, with some parts of the picture missing completely.

But a combination of readings from a range of sensors, considered as a whole, provides a true picture of what is happening not just to one component, but to the entire asset or across the complete process.

So in the factory of the future, everything that can be monitored will be monitored. Every variable that can be measured, will be measured. But perhaps more importantly, all the measurements gathered will then be collated into one database, where they can be cross-referenced with each other to create a complete 'three-dimensional, full-colour' image of each and every asset and its performance.

While this perfect Predictive Maintenance methodology is easy to imagine, it is much harder to achieve. When it is achieved – providing a comprehensive and fully-rounded image – it almost certainly won't be by an OEM.

Wide-screen focus

By definition, OEMs are focused on their own original equipment and its performance. Monitoring and understanding how another manufacturer's assets are performing is of no interest to them.

Yet in many manufacturing and production processes, the performance, efficiency and maintenance of one asset can have a direct or indirect effect on another. So to return to the car analogy, changing the oil will not help you complete a journey if you have not also noticed that the fuel tank is almost empty.

The ideal output from monitoring, data gathering and analysis will tell you whether and when you need to make an intervention, or by what date you need to undertake maintenance. It will also advise you of the cost of repair compared with the cost of replacement. And it will tell you where any necessary parts are stored – or their lead time to produce – and how soon they can be on site. You then have all the information you need to make a fully-informed decision on your next steps.

As a broad-base supplier partner, ERIKS has a wide focus across all production and process assets: their status, condition, maintenance, repair and operation.

We are equally experienced in monitoring all the key indicators of an asset's condition: vibration, temperature and acoustic emissions. We understand failure modes across a huge range of assets and key components: from motors and inverters to drives, couplings and gearboxes. And from valves, actuators and pumps to bearings, hydraulics, pneumatics and lubrication and filtration systems.

> Solution-neutral analysis

In addition, once the data has been reviewed, ERIKS has the expertise and resources to offer a solution-neutral analysis of the next steps required.

So while a 100% holistic view of assets – the ultimate goal for totally effective Predictive Maintenance – is still some time away, ERIKS' all-round know-how is already bringing it closer.

> A single meaning-ful and actionable result

Raising the reliability bar through sophisticated technology

Gavin Coull
Service Sales Manager
SKF

Asset performance and reliability are popular buzzwords across industry, and critical factors for engineers and plant managers. Over the years, the importance of optimising production uptime has increased significantly, alongside the requirements for planned maintenance, with engineers now embracing regimes of predictive maintenance to closely monitor their machine health.

This new approach anticipates issues and provides engineers with time to react before problems become too serious. And serious ones are normally costly problems.

Predictive maintenance diverges from the traditional approach, which tended to wait until assets had failed before fixing them. But by constantly monitoring the health of your machines, this modern approach can help to lengthen product lifecycles, improve productivity and reduce your Total Cost of Ownership (TCO).

> “Predictive maintenance diverges from the traditional approach”

But we mustn't forget that applying best practice is always the most effective way of reducing your TCO. However, companies do not always follow the rules, which will often lead to equipment failure, downtime and rising costs. In fact, analysis has shown that in just over a quarter of all cases, asset reliability issues are caused by ignoring fundamental principles, proving that getting the basics right is crucial for any organisation.

The basic approach

It may seem strange to suggest that highly sophisticated engineering companies should follow a basic approach as they strive for success, but that doesn't mean that they should only be implementing rudimentary tools or methods. Many of the tools now that their disposal are powerful, sophisticated and rooted in the latest Industry 4.0 protocols.

But even with that being said, they should be operated in a methodical, repeatable and effective manner, meaning that following basic, well-proven guidelines remains essential.

Many of these new tools do more than simply facilitate asset inspection or log results in the Cloud. They help maintain and improve employee skill sets by recording their progress and providing detailed instruction of jobs in hand. Simultaneously, they can offer instant access to online catalogues to instantly determine whether or not a replacement component is readily available.

An example of this is SKF's Bearing Assist – a mobile app designed to assist customers in how to mount replacement bearings more efficiently.

Bearing replacement has never been easier

Speaking with customers on what would help them better perform their jobs,

field research uncovered a clear picture. Quicker access to product information and maintenance instructions for workers, and assistance in improving maintenance and asset reliability emerged at the forefront of the wish list.

> “Many of these new tools do more than simply facilitate asset inspection”

Many also agreed on how it should be done. Place a barcode on the box or bearing, which can easily be scanned with the mobile app for instant access to information. These comments helped in the creation of the recently launched SKF Bearing Assist.

Available to download from the App Store today, SKF Bearing Assist helps users quickly source the information they require, saving time and effort using application filters. It also provides detailed instructions, so even technicians with limited experience can now mount a wide range of bearings correctly and efficiently. It also allows a group of users to share asset information, history, notes and photos of completed jobs for future reference, to increase and simplify collaboration and knowledge transfer.

An affordable entry

Implementing a predictive maintenance regime requires investment and commitment. In the past, small to medium sized manufacturers in particular may have struggled to adopt this new approach due to restricted budgets, shortcomings in plant infrastructure and lack of skills. However, a system such as SKF’s Plug and Play, which combines an intuitive sensor called SKF QuickCollect with the Pulse mobile app, offers an affordable entry point to predictive maintenance.

The sensor collects data such as velocity and temperature from your rotating equipment, and transmits it wirelessly to the app. A green, amber or red indicator shows whether an asset requires attention. For more difficult issues, the app provides users with instant access to SKF experts, who are ready and waiting to offer remote support on any bearings and lubrication issues.

The app also provides access to SKF’s e-learning platform, designed to help technicians improve their skills further and learn how to best implement a condition monitoring regime. SKF Mobile Solutions Product Manager, Barrier Rodgers

> “Offers an affordable entry point to predictive maintenance assets”

commented: *“Providing remote access to our expertise enables us to support small and medium-sized customers and transition them to more advanced solutions when required.”*

Gathering more data

For more advanced solutions, you to need to gather data more extensively, and by introducing SKF Enlight Collect IMx-1 sensors, you’re on the right track. These advanced sensors collect and transmit data, across a low-energy mesh network, to a gateway.

Transmission is not affected by typical wireless obstacles on the factory floor, therefore from the gateway, the data connects to the plant’s network or the internet to access services such as remote diagnostics.

For an appropriately sized organisation, this innovative approach is an effective way to build an automated machine monitoring system. IMx-1 sensors have the capability to detect a host of issues, such as imbalance, misalignment, and electrically inducted vibration. This constant monitoring of assets helps to avoid unnecessary downtime and reduces the need for manual site walks, reducing the risk of accidents.

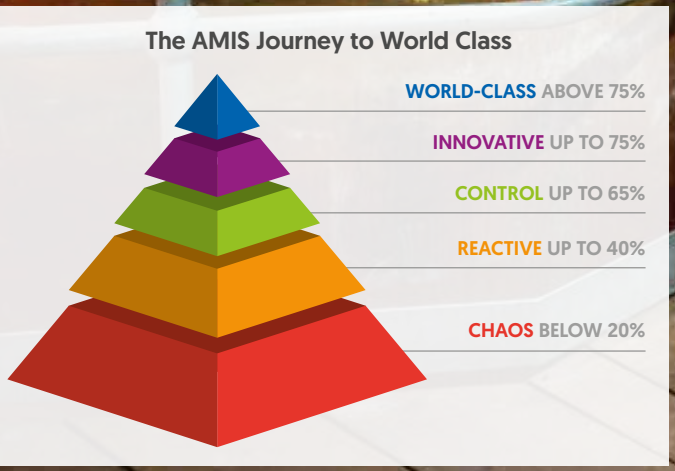
Best practice is key, but only the beginning

In short, best practice guidelines exist in order to help engineering organisations operate at maximum efficiency, productivity and safety. But this is only the beginning.

Harnessing the power of modern innovations and technology is a sure-fire way to manage and improve the fundamentals of your operating environment, and help to ensure that the rules are being applied constantly.

Achieving your AMIS aims

For over 30 years, the MCP Consulting Group has been taking businesses on the Asset Maintenance Improvement System (AMIS) journey. Helping clients to move their maintenance organisation from "Chaos", through "Control" to "World-Class", it's a journey recently undertaken by a large distillery, with the help and support of ERIKS Integrated Solutions.



It's been four years since the distillery decided to embark on their AMIS journey, with the aim of becoming a more streamlined maintenance organisation. This was partly driven by the fact that they wanted to be seen – and be – at the forefront of excellence.

> "At the forefront of excellence"

AMIS [see box-out] is the industry standard for demonstrating the success of an organisation's operations, through KPIs which measure maintenance and asset management performance on a consistent basis. It provides the largest database of benchmarks and key performance ratios of efficiency and effectiveness, worldwide.

To help ensure the best possible performance against these benchmarks, the distillers enlisted the support of ERIKS Integrated Solutions, who placed a team on site in 2018 to drive improvements in the MRO stores.

Parts are only part of it

Supplying the right parts at the right time and the right price should only be part of the story of successful support for Maintenance, Repair and Operations. If there are still issues in your storeroom, or recurring failures of your assets, throwing parts at the problem won't help.

> "Throwing parts at the problem won't help"

ERIKS' approach recognises this and differs from competitors by looking beyond product supply and taking a view that's wider than just the storeroom. In fact, ERIKS Integrated Solutions' team becomes a fully integrated partner, playing a vital role not only in maintaining your assets, but also in improving and streamlining your processes to deliver optimum efficiency and performance.

For the customer, this involved ERIKS' on-site team working together with them to undertake a number of initiatives in and around their product ordering and storeroom processes. These included:

- Entering all stocked asset parts onto IFS management system
- Creating a catalogue grouping all spares and showing their location in stores
- Undertaking an obsolescence exercise to remove parts no longer needed and archive any uncertain items
- Following obsolescence exercise, updating catalogue with pictures of parts and a Non-Stock catalogue
- Demarcating shelf contents on floor/ceiling
- Instituting a pump and motor turning regime
- Standardising valves, actuators and seals, to reduce number of vendors
- Creating a Bill of Materials against critical assets
- Creating a taxonomy of instrumentation, pumps, gearboxes, filters
- Rolling-out parts kitting and Drop Zone

Searching for parts. Finding savings

ERIKS research reveals that 50% of all MRO spend on carriage is avoidable, and 10% of store costs are tied up in obsolete items. 15% of downtime is caused by lack of spare parts, and 13 minutes is wasted searching for replacement parts.

By working closely with the customer, ERIKS Integrated Solutions was able to identify potential risks to efficient asset management, and establish safeguards to mitigate them: such as obsolescence management and standardisation. By adding this engineering know-how to the latest MRO methods, processes and technology, and combining this with maintenance supply chain and procurement functions, ERIKS have helped customers achieve cost savings of 3-15%.

> "Cost savings of 3-15%"

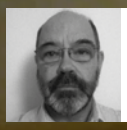
For the distillery, ERIKS' improvements to the stores and MRO parts processes helped the business to gain an AMIS score of over 75% – which equates to a "World-Class" rating. And when your MRO stores are performing at this level, the reliability, efficiency and productivity of your assets can't help but follow suit.

Asset Maintenance Improvement System (AMIS)

Recognised as the industry standard, the AMIS journey begins with an assessment designed to identify gaps between an organisation's current performance and industry best practice. It produces a set of effectiveness scores, as well as comparisons with similar or competitor organisations within the same sector.

Using a standard system and defined maturity levels, the assessment enables its providers – MCP Consulting Group – to benchmark performance and generate KPIs, to be used as the basis for an improvement programme.

When the chips are down, know-how matters



Dave Johnson
Application Engineer, Power Transmission
ERIKS

How frequently does an asset have to fail before it's not just a nuisance, but a serious issue? For one potato processor, even motors which needed a repair every three months weren't identified as a concern. But like potatoes, ERIKS engineers have eyes everywhere and soon spotted the problem.

During regular weekly meetings with the customer, ERIKS engineers noticed that the motors used to power knife peeler machines were repeatedly being listed for repair. Closer examination of the figures revealed that each of the 24 knife peeler motors was failing on average every three months.

Necessary repairs generally included rewinds and bearing replacements, at a cost the customer clearly considered sustainable. ERIKS' engineers thought otherwise.

Getting to the root

With the customer's permission to look deeper into the issue, ERIKS' first step was to undertake a Root Cause Analysis to identify the reason for the motors' failure.

The motors in question play a part in one of the earliest stages of the customer's production process: powering the knife peelers used to peel thousands of potatoes a day. They operate in arduous conditions in an environment where water is widely present at all times. Built to hygienic food standards from stainless steel, the motors are vertically positioned, with the output shaft at the top.

> "The failure mode was quickly identified"

The failure mode was quickly identified by ERIKS as water ingress, and on-site inspection revealed several factors which were allowing this to happen.

Even at first glance, ERIKS' engineers could see that the motor bodies were poorly assembled, with rough-and-ready seams where water could potentially find a way in. In addition, cabling and glands were a basic specification, unsuitable for the wet operating environment. Lastly, the motors vertical installation presented a flat horizontal top surface where water could collect. With only a basic seal around the shaft drive this meant that, as the shaft turned, any water which had pooled on the top of the motor would sooner or later work its way into the motor.

Sorting the leaks from the potatoes

With a proper understanding of the root cause of the problem, ERIKS could begin to solve it. This meant ensuring water ingress to the motor was eliminated through a number of design improvement measures.

The vertical positioning of the motor allowed gravity to play a part in enabling the water to seep in around the shaft. Changing the orientation of the motor would have required a major redesign of the entire application, but preventing water from pooling on the top of the motor was simply a matter of making the horizontal surface sloping rather than flat. Any water which landed on the motor would now tend to flow away from the shaft and down the motor's exterior.

> "Eliminated through a number of design measures"

Using a mechanical seal around the shaft added a second layer of defence against water ingress.

Lastly, the new motor was, of course, designed to be manufactured from stainless steel to IP66 ingress protection standards.

The customer has now installed two of the redesigned motors for a trial period, and ERIKS is confident the results will lead to further replacements, as the remaining motors inevitably fail in the coming months. Meanwhile, ERIKS has been involved in discussions with the original equipment manufacturer, to identify how the benefits of the improved motor designed for this specific case can have wider implications for other applications.

Small potatoes?

One of the main reasons the customer had never taken action over the frequently failing motors was the low cost of repairs. However ERIKS engineers' figures showed that the cost of each new motor could be recouped by savings on just three rounds of repairs over the space of around nine months.

With a potential life expectancy of several times that, the new motors will more than pay for themselves, even before taking into account cost savings on maintenance and repeated installation after repair, compared with the previous design.

Now the value of looking deeper into asset failures has been clearly demonstrated, the customer has given the go-ahead for ERIKS' engineers to monitor downtime in relation to asset failure. Anywhere that 70% or more downtime can be attributed to 30% of assets, ERIKS will look for the root causes, and identify cost-effective solutions.

Clearly it's not just in the potato field where a bit of digging can yield impressive results. And even if you're not involved with potatoes, you can rely on ERIKS' engineers' expertise when the chips are down.

> "New motors will more than pay for themselves"

Reliability starts at the very beginning

Robert Bryan
UK Territory Manager
NSK

Reliability is a popular buzzword in industry but can have different meanings for different businesses and engineers. But when it comes to your bearings, reliability is summed up in two main areas – quality and operating environment.

Firstly, we must consider the bearing itself. To put it simply, the higher quality the materials, the better the bearing. The higher purity of steel, the overall quality and reliability of the bearing is increased.

Now we must consider the production of the bearing. The process itself can be particularly challenging as it requires high accuracy turning and grinding, followed by a super finish to the raceways, ensuring that they present the lowest possible friction – exactly what you want to see from your bearings.

This process must be undertaken in a controlled manner as repeatability is essential. Repeatability and accuracy go hand in hand, and it's the only way to ensure that the last bearing your produce, is as good as your first.

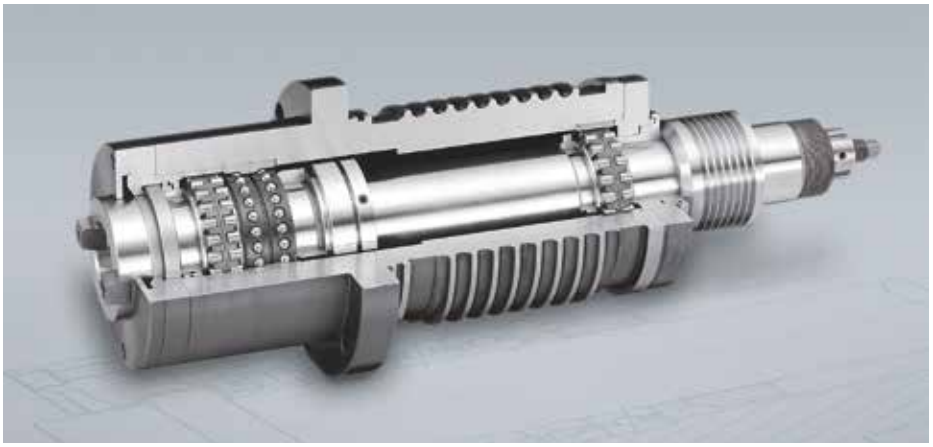
> "Repeatability and accuracy go hand in hand"

Production complete. What's next?

Now that the physical bearing has been produced, to the highest standards of course, you need to assess any external factors which may affect its operating life, with the main two regarded as load and speed.

The demand for high volume production, particularly in high cost environments, continues to grow. But as production levels are increased, seemingly, little regard is given to how this will significantly impact the quality of your bearings. Increasing operational speed or quantity may seem feasible but increasing the applied load can be disastrous.

Here's some food for thought: It's not only the big things that can cause bearing failures, sometimes smaller issues over time lead to dramatic consequences.



> Sometimes smaller issues over time lead to dramatic consequences

AIP to the rescue

A large automotive manufacturer was experiencing regular failures on their tool spindles, leaving the maintenance department to replace the bearings every 4 months. Not only was this disastrous on the uptime targets of the plant, but also had a significant bearing on cost implications.

The current bearings in use were NSK Super Precision Bearings – high accuracy and specifically designed for the demanding and high-speed world of machining centre spindles.

Specially trained to find the cause of production pain by utilising their experience and knowledge, NSK experts introduced the innovative Asset Improvement Program (AIP). By implementing the AIP value cycle, which is a standardised tried and tested process, coupled with viewing the working practices, production processes and a choice of different bearings, NSK were about to identify the areas which required improvement.

The initial visual inspection of the application offered very little insight to the problems, as there were no obvious signs of mistreatment load or excess speeds. Essentially, the bearings appeared to be suitable for the job. In-depth full bearing failure analysis was completed, and the results left little doubt as to the cause of these repeated failures – metal-to-metal contact of the balls to the raceway.

This type of failure increased the bearing temperature, resulting from an increase in friction, which caused the bearing steel to expand and cause seizure. However, this failure was a symptom and not the root cause. Further analysis of the grease lubrication displayed a strong presence of cutting fluid within the bearing, that was emulsifying the lubricant grease causing it to become ineffective, inadequate and unreliable.

Knowing this detail, the solution was simple – keep the grease from emulsifying. A solution was required quickly with limited modification to the application itself. The cutting fluid source could not be changed due to the spindle design. Luckily, NSK has just the right solution for the job – Sealed Super Precision Bearings.

Problem identified. Problem solved

NSK Sealed Super Precision Bearings are factory filled with the exact quantity of high-quality grease lubricant required to fulfil the task at hand. The innovative seal design is non-contact ensuring that the speed capability isn't compromised. The seal also offers the benefit of keeping cutting fluid contamination out of the bearing, whilst ensuring that the lubricating grease is retained within the bearing.

With the added benefit of pre-lubrication, fitting time is also reduced, increasing productivity. There was now no longer the need for the regular lubrication technique of carefully and systematically filling the bearing with the desired amount, which can more often than not become a difficult and messy job.

Additionally, grease lifecycle has been extended by 50% as a result of switching to a high grade NSK grease.

> Grease lifecycle has been extended by 50%

The summary of this simple, yet effective change was staggering.

- Bearing Lifetime improved from 4 months to over 12 months, a massive achievement that allowed the automotive plant to marry this into the annual maintenance of each machine.
- Bearing purchases for these machines were now 1/3 of what they were, £7k instead of £21k.
- The major factor was the massive reduction in unplanned downtime, saving nearly £150k per year.

How a customer saved over £100,000p.a. by ringing the changes (and changing the ring)

Martin Gingles
Industrial Sealing Manager
ERIKS

Some customer issues demand in-depth investigation and complex solutions, but deliver relatively insignificant cost savings. Then there was this one…

A manufacturer of agrochemicals uses a large vessel for storage of various media. The vessel is sealed with two O-rings, each over 1.8m in diameter. For several years, the OEM-supplied O-rings repeatedly failed – sometimes as soon as 4 weeks after replacement.

Once is irritating. Twice is annoying. Up to twelve times a year is infuriating and incredibly expensive.

Yet it took an ERIKS application engineer only minutes to spot the problem, propose the solution, and save the customer at least £100,000 a year.

> “Only minutes to spot the problem”

> “The figures were frightening”

Poor-performing seals

The poor performance of the seals was causing massive downtime costs for the customer.

Each time a seal failed the production line had to be halted, the vessel emptied and dried, the failed O-ring removed, the area for sealing cleaned, and a new O-ring fitted before production could restart.

The whole process typically took 12-16 hours and several site engineers. The resulting costs and losses were in the order of £50,000 – £60,000 per seal failure. With as many as a dozen failed seals per year, the figures were frightening.

However, every time an O-ring failed, the customer simply called the OEM who supplied a like-for-like replacement – no questions asked.

Fortunately, ERIKS application engineers are trained to ask questions.

What? Where? Why?

Already on site carrying out a Stores survey, an ERIKS' application engineer from the Sealing & Polymer Product Business Unit was invited to take a look at the latest failed O-ring.

Naturally he considered all the usual causes of failure. Was it the material the O-ring was made from? Was it the media stored in the vessel? Was it the operating environment or temperature? Was the O-ring the wrong size?

> “Trained to ask questions”

Then a glance at the failed seal immediately revealed the answer.

It was made from an EPDM grade material that was clearly suitable for the job. There was no degradation, and no physical damage. It was suited to working at the low temperature and high pressure required. It was resistant to the aggressive chemicals sometimes present in the stored media.

What it wasn't, was made in one-piece. There was a bonded joint which was a weak spot.

The engineer noticed what everyone else had missed or ignored: where there should have been remnants or residue of the bonding agent at the join, there was nothing.

Although the O-ring material itself was resistant to any aggressive chemicals in the vessel, the bonding agent wasn't. That was why the seal failed, and why replacement joined O-rings kept on failing.

The all-in-one solution

When the vessels were first installed, it is unlikely that a fully moulded O-ring was necessary or deemed commercially viable. However, continuing to use a joined ring, many years after when a better option was available, was doing the customer no favours.

ERIKS arranged the manufacture of replacement one-piece O-rings in EPDM material. At the next planned shutdown, the customer installed the new all-in-one alternative.

Around 10 months later, these replacement O-rings are still in place, and still effectively sealing the vessel.

The new O-rings cost around £300-£400 more than the joined OEM version. However, with the cost in downtime, labour and lost production amounting to £50k-£60k per seal failure, the customer is saving at least £100,000 a year through the replacement's greater reliability and longer life.

Alongside that, £400 is a small price to pay.

KISS

The 'Keep It Simple, Stupid' design principle was develop by the U.S. Navy in the 1960s. It was meant to apply to systems, proposing that they work better if they are less complex. But it also applies to ERIKS' solutions.

Why look for a complicated solution to a problem if there's a simple one? Why involve high-tech when lo-tech does the job? Why cost the customer more with a solution that looks clever, when there's a lower-cost answer that's just as effective?

All it took to change the story was to change the type of O-ring. Plus ERIKS' know-how, of course. No change there, then.

Skills and success go hand-in-hand

Andrew McPherson
Food & Beverage Industry Manager
FESTO

As the Fourth Industrial Revolution continues to evolve and progress, developing and introducing new technologies to enhance the way we operate, we must ensure that we also remain focused on upskilling our current knowledge base if we are to truly understand the opportunities that we are presented with.

Due to the vast array of emerging technologies flooding the market, it's unlikely that any one engineer could be a master of all, which now places greater demand on developing softs skills to ensure that new opportunities are understood, realised and capitalised on.

> "Developing softs skills to ensure that new opportunities are understood"

Festo Food & Beverage Industry Manager, Andy Macpherson, commented: "These soft skills include a need for greater analytical thinking and complex problem-solving capabilities, as well as greater creativity and cognitive flexibility to help integrate robots and cobots safely into production.

"The challenges of implementing new technologies requires a cross-function approach and at times it can take longer to get the people talking than the machines. All engineers in the food industry – from corporate level through to heads of engineering and shop floor personnel – will need to constantly and increasingly update their skill sets. The acceleration of technology is becoming hyperbolic, therefore the half-life – the decay of their knowledge – will rapidly decrease."

Skills breakdown

So, what are the most important skills required by engineers who are setting out to implement and run a digitalised food facility? These skills fall into two main areas – technical and soft skills.

> "These skills fall into two main areas – technical and soft skills"

New technology skills involve understanding IT networks and the cloud, data gathering and analytics, cyber security, robot and cobot safety and integration, AI application and smart maintenance. While soft skills draw down on improving analytical thinking, people and team management, emotional intelligence and creativity, and decision making. The difference is vast, but both equally important in optimising production and effective implementation, not only in the food sector, but any that wishes to adapt such technology.

To help companies drive the implementation of new technologies in a non-disruptive manner, Made Smarter published their six guiding principles for digitalisation, asking businesses to commit to themselves in order to drive towards producing good jobs, improving productivity and achieving a cleaner footprint.

Each of the following categories have been suggested to incite improvements within businesses as we continue our Industry 4.0 journey. They are:

- Partnership at work
- Health, safety, welfare and environment
- Developing digital skills for the future
- Respect at work
- Job security and enhancement
- Equalities, diversity and inclusion

> "Industry 4.0 is a vision and a roadmap of standards"

Focus on Food Industry

The UK Food and Beverage sector has much to gain from the adoption of increased automation and new digital technology. However, it remains more vital than ever that the adoption of new engineering skills, alongside upskilling existing know-how, continues within workforces if we are to bring this industry into the new era. To put it bluntly, time must be invested in both soft and hard skills, if we are to realise its potential.

"When setting out on your Industry 4.0 journey, it's essential to have a vision of what your business wants to achieve," said Keith Thornhill, Head of Food & Beverage Industry at Siemens Digital Industries UK. "Digitalisation offers the tools to achieve your goals, but we must begin with minor, slow adaptations to existing equipment."

The fact is soft skills are required to help the workforce adapt and adopt to change. Introducing cobots and robots to production can help humans undertake more meaningful and intelligent tasks, but we first must accept them as workmates that add value. Engineers, machine operators and other factory employees are encouraged to upgrade their skills to be aware of new technologies that are implemented, and also the language associated with it.

Thornhill added: "Not everyone can be a data analyst, but a basic understanding and training should be provided to support the workforce with their new digitalised job function."

Addressing the skills gap

Speaking with Mettler-Toledo Head of Systems Engineering, Ian Cumming, he commented: "A key issue for us is finding engineers with appropriate expertise. There are many qualified people out there, but they often lack that relevant 'hands-on' experience."

To address this skills gap, the product inspection company participate in a range of engagement initiatives, including working with local schools, delivering workshops to give students first-hand experience in the manufacturing sector. The company also offers apprenticeship programmes that introduce new recruits to the varied experiences and environments from the outset.

Concluding, Cumming said: "The success of our own apprentice scheme relies on the support and commitment of all team leaders. For industry to prosper, this sense of purpose needs to be replicated. It is incumbent on every company to work with colleges and universities to nurture and develop the skills they need to remain successful, and provide a platform for prospective engineers and technicians to gain valuable, hands-on experience."

A vision of standards

Industry 4.0 is a vision and roadmap of standards that unlocks increased productivity, new business opportunities and growth, and although not a new technology, it's an acceleration of the existing trend of automation and digitalisation.

Projects around digital maintenance and energy saving have shown to have fast paybacks, but the challenges of implementing these new innovations remain. One thing is for certain, we must not lose sight of a traditional people orientated approach if we are to achieve our goals.

The introduction of new technologies to make production quicker, more efficient and more reliable will no doubt continue to benefit industry as a whole, but humans are central to achieving our true capabilities, therefore maintaining a high level of knowledge and expertise remains the ultimate goal.

If at first you don't succeed – ask the experts

Stewart Royle
Regional Engineering Manager North
ERIKS

If there's one thing we know that gets on the nerves of an engineer, it's an asset failure. But what's even worse, is repeated failures of the same assets. And when one customer's inverter drive motor was causing recurring problems, a fresh set of eyes was requested for support.

Over and over again, the bearings on the 420kW motor, used to drive a water pump, had failed. Over and over again, they'd been replaced with the same standard bearings. Over and over again, they'd failed.

You don't have to be Einstein to spot that there must be a better way. Perhaps you just have to be ERIKS. Which is why one more motor failure led to the customer contacting ERIKS to carry out a Root Cause Analysis.

All change

Simply changing one standard bearing for another had already proved inadequate. So this time, when the failing motor went to ERIKS' workshop, ERIKS went back to basics.

This meant dismantling the motor, removing the bearings from the shaft, then splitting the bearings to reveal the running track and any

> Investigation, analysis and experience

tell-tale signs of how and why the bearings had failed.

A combination of investigation, analysis and experience led to the conclusion that strong bearing currents were the issue.

Now the new problem was how to prevent a repeat of the old problem.

Raising the standard

With the standard bearing solution being no solution at all, ERIKS brought together experienced engineers from two Product Business Units – Bearings and Lubrication – to provide a more comprehensive assessment of the way forward.

Engineers and the customer had already been working together to understand the problem and develop the most cost-effective resolution. Now, brought together at the workshop, they made the decision to adopt a three-pronged response.

Firstly, the standard action for problems of this type: an insulated bearing fitted on the non-drive end of the shaft. Secondly, ERIKS' bearings expert recommended fitting an earthing ring to the drive end of the shaft. This would allow the electrical current to discharge more effectively. Thirdly, ERIKS' lubrication specialist recommended a change of lubricant to Polyrex grease.

But this was only the start.

Above and beyond

The earthing ring required an additional component to make it work: a new adapter flange to enable fitting at the drive end.

This had to be designed to fit, and specially manufactured by ERIKS.

By contrast, the new lubricant selected could work perfectly well on its own. ERIKS' analysis and experience had revealed that the new grease was more resistant than others to separation, when subject to electrical discharge. Yet as a standard grease it was a highly cost-effective solution compared with a specialist lubricant.

> A highly cost-effective solution

Since utilities sites are often remote and unmanned, automated lubrication not only optimises lubricant usage, but can also reduce the number and duration of site visits by lubrication teams.

Rebuilding, realignment, reliability

The motor, with its new insulated bearing, earthing ring, adapter flange, and automatic lubricators, was fully reassembled at ERIKS' workshop. This involved a complete overhaul of the unit including a Baker surge test static test on the stator, a steam clean, stove drying, and a re-varnish of the winding.

Once reassembled, it was returned to the customer's site for the customer to install. Then ERIKS' engineers carried out a laser alignment to ensure motor and drive were perfectly aligned for safe and efficient operation.

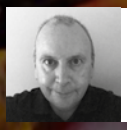
> Still running reliably

6 years on, the motor is still running reliably with no more bearing failures. The customer has been so satisfied with the result, that when vibration analysis revealed a developing problem in a second identical motor, they called in ERIKS before it had a chance to fail, to carry out the same adaptation .

Now ERIKS has repaired and adapted all three of the motors on site, to provide massively improved reliability, and a greatly reduced Total Cost of Ownership.

If at first you don't succeed, you obviously didn't call ERIKS.

A helping hand with palm oil



Joe McLaughlin
Area Sales Manager
ERIKS

In some projects, the least important role a supplier plays is supplying components or products. Instead, what makes one supplier stand out from another is the support and expertise they provide. So when a sustainable palm oil producer decided to build a substantial storage tank facility on Merseyside, ERIKS was right by their side – from initial design proposals to after sales, and through all the project management in-between.

The customer is a subsidiary of the world's largest producer of Certified Sustainable Palm Oil. Regular shipments from Papua New Guinea are currently offloaded for storage in tanks on a site next to the customer's own. Tank rental – at close to £20,000,000 per annum – is a substantial cost, so the customer decided to build their own on-site tanks.

Not just one or two tanks, but a total of 16 with a combined capacity of 54,800m^3.

Having on-site storage capacity is not only about saving on rent. As a palm oil producer committed to a traceable, sustainable supply chain, it's essential for the customer to have storage tanks where there's no danger of the product being mixed with oil from other sources.

ERIKS Flow & Equipment Services have worked closely with the customer as an MRO partner for several years. So they were a natural fit with the customer's Project Engineers and Procurement Team for the tank farm project.

FEED for thought

The initial Front End Engineering Design (FEED) Study began in February 2017.

One of the requirements identified was for actuated ball valve packages. As ERIKS already supplied valves and actuators to the site, the customer had confidence in asking them for advice and support in specifying the new packages. These will be assembled and tested in ERIKS' Leicester workshop, before shipment to the customer's site.

> "A supplier with know-how"

However, as a supplier with know-how, ERIKS has done more than simply match the spec.

The ERIKS Flow & Equipment Services local Application Engineer, together with an

ERIKS Project Team, closely considered the customer's requirements, and proposed a competitive solution with significant added-value engineering design features.

No added salt

Firstly, ERIKS recommended ECON (part of the ERIKS Group) for the supply of turnkey flow control solutions. But rather than simply specifying a standard product – high-quality and reliable as it may be – ERIKS looked at the customer's specific application.

The storage tanks are being built on the banks of the River Mersey. This exposed location close to the sea puts the tanks' associated components at significant risk of corrosion from salt in the atmosphere. Actuators in standard aluminium enclosures would soon be badly affected.

ERIKS' solution is to apply an epoxy coating to all the actuators, for exceptional corrosion resistance – resulting in a far longer service life.

Crossing the T's

Palm oil has to be stored and transported at an elevated temperature to avoid solidification. This means all pipework entering and leaving the storage tanks must be lagged.

However, lagging increases the diameter of the pipe systems. And, what could easily be overlooked, is that this in turn reduces clearance between the pipes and the operating levers for manual valves. ERIKS' experience made them aware that this isn't just inconvenient for operators but, with restricted space between pipes and levers, presents a potential health and safety risk, with a danger of trapped hands or fingers, or burns.

> "Added-value engineering design"

ERIKS' solution was to incorporate T-bar extensions into the manually-operated actuator designs, to create safe and adequate clearance for the operators.

Switch and save

With over 500 switchboxes on site, any issues they have can quickly become a major problem. ERIKS' involvement in the tank farm project offered the perfect opportunity to resolve a long-standing problem for the customer.

The switchboxes were acting like greenhouses, causing condensation to build up inside. With electrics in close proximity, this frequently led to electrical failures, and the switchboxes had to be replaced repeatedly.

Working in partnership with Pepperl+Fuchs, ERIKS proposed a valve open/close sensor, which removed the need for switchboxes, eliminated the cause of the repeated failures, and meant significant savings on replacement costs.

Complete package deal

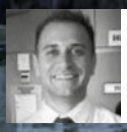
ERIKS' involvement with this customer started long before the tank farm project, and will continue long afterwards.

From their initial role as an MRO partner, ERIKS' experience, expertise and knowledge of the customer's requirements led to a close working relationship on the project, and an order for 128 ECON actuated ball valve packages worth over £1/4m.

> "Close working relationship"

The customer also appreciates knowing that ERIKS will be around for the long-term as a valued and trusted MRO supplier: providing after sales, spares, and maintenance support. After all, as a producer of sustainable palm oil, the customer wants a working relationship that's going to be sustainable too, long after the current project is completed.

The £200,000 oil change



Charles Flint
Food Industry & MRO Sector Specialist
moove UK

Oil and water don't mix. But for a utilities company in the South of England, putting the right oil together with a water treatment plant has resulted in a successful mix of cost savings, improved efficiency and reduced CO^2 emissions.

As part of the technical support they offer, Mobil UK supplier and ERIKS partner, Moove Lubricants undertook an in-depth equipment survey at a customer's water treatment site. Already acting as the oils supplier to the site, and with a lubrication team carrying out on-site tasks such as oil changes, the survey is another way Moove adds value to oil.

> "Adds value to oil"

In this case, £197,000 of added value.

Spinner doctors

Critical assets at the customer's water treatment site are the aerators. They had already been flagged-up by the customer as having too much downtime for maintenance and oil changes. So they were one of the first areas the Moove team considered.

As with any asset they are investigating, Moove's experienced oil technicians analysed the equipment, its operating mode and its operating hours: which in this case are 24/7/365.

With all this information to hand, they then brought their expertise to bear to identify and liaise with the site to recommend the best oil to optimise performance, minimise downtime, increase overall operating efficiency and provide even further additional benefits.

Moving up a gear

The customer was using a mineral gear oil in the spinner aerator gearboxes. As a result, they were suffering from shortened oil change intervals, higher levels of oil consumption, increased energy consumption and unacceptably high maintenance requirements.

After carefully analysing all the factors involved, Moove's technicians recommended Mobil SHC600 Series synthetic oil, as the lubricant which would provide the best combination of benefits.

> "Best combination of benefits"

Compared to mineral oils, Mobil SHC 600 Series products have low traction co-efficients. This means they offer low fluid friction in the load zone of non-conforming surfaces, such as the gears in the customer's spinner aerators. Low fluid friction means, in turn, lower operating temperatures and improved gear efficiency, for reduced power

Mobil synthetic oils use the very latest proprietary, patent-pending Mobil SHC technology. This helps them to deliver outstanding, balanced performance at high and low temperatures, even in demanding applications. Benefits include resistance to mechanical shear – even in heavily loaded gear and high shear bearing applications. So there's virtually no loss of viscosity.

Their formulation also helps them resist oxidation and deposit formation at higher temperatures, as well as protecting against rust and corrosion.

Oil change – all change

The customer initially changed to Mobil SHC 600 Series oil in a single spinner aerator gearbox, for a four-week, independently monitored trial.

The results were convincing.

Power consumption reduced by an average of 0.65% from the previous lubricant's energy usage. Over the oil's five-year life, this equates to a projected cost saving of £196,964, if applied across all of their 448 spinner aerator gearboxes.

There are also additional benefits, which are harder to cost and quantify, but which are equally valid. For example, greater equipment efficiency means lower CO^2 emissions. A longer oil life – often up to five times longer than a conventional mineral oil – means a longer oil drain interval. This means fewer oil changes which, together with reduced maintenance, means greatly reduced downtime.

> "Fewer oil changes"

Less maintenance also means fewer maintenance visits. For a customer with critical assets on a large number of often remote and unmanned sites, that can be another significant saving. Which is why this particular customer has since converted over to long-lasting energy-efficient lubricants: for everything from engines to gearboxes and including greases as well as oils.

Now Moove is working in partnership with ERIKS across the UK, customers can expect the wheels, gearboxes, bearings and critical assets of industry to run more smoothly – and more cost-effectively – than ever.

How oil changes everything

The benefits of Mobil SHC 600 synthetic oil.

Superb high-temperature thermal/ oxidation resistance	Helps extend equipment's high-temperature operating capability Extends oil life, to help reduce maintenance costs Helps minimise deposits, for trouble-free operation and longer filter life
High viscosity index and absence of wax	Maintains viscosity and film thickness at high temperature Helps enable exceptional low-temperature performance, including start-up
Low traction co-efficient	Helps reduce friction and increase efficiency in sliding mechanisms such as gearing Potentially reduces power consumption and steady-state operating temperatures Helps minimise effects of micro-slip in rolling contact bearings, to extend rolling element life
High load-carrying capability	Helps protect equipment and extend life Helps minimize unplanned downtime Extends service intervals
Balanced additive combination	Provides excellent rust and corrosion prevention, water separability, foam control and air release performance Enables problem-free operation and reduced operating costs

Eat your heart out Netflix, Sky and iPlayer

Sinneli Jayampathy
Marketing Executive
NORGREN

Game of Thrones no longer rules. *Line of Duty* isn't arresting any more. *Normal People* is over, people. Now what everyone's watching is the new series of webinars from Norgren, that breathe new life into compressed air: its applications, best practice, safety, systems, and innovative new products.

Many of us are getting back to work at last. But it will be a long time before it's back to work-as-normal. And when face-to-face support has to be facemask-to-facemask support, it's going to be harder to get the help and advice you want and need, to keep up-to-date with the latest best practice, safety advice and product developments.

> "Best practice, safety advice and product developments"

That's why Norgren has launched an ongoing series of compressed air webinars – to keep you not just informed, but entertained too.

73 years in the making

The first two episodes have already aired, but are still available to view. Both were presented by the double-act of Ian Cole – Distributor Sales Support Engineer – and Andrew Warren – Norgren Express Product Manager.

With 73 years' experience in pneumatic motion and fluid control technologies between them, they really know what they're talking about.

And what they talked about in the first episode – Ready, Steady, Flow – was how to safely and efficiently restart compressed air sysytems.

Many systems were shut down for weeks due to lockdown. Even now, some are still waiting to be restarted. A prolonged shutdown is challenging enough for a compressed air system. When there's also been a period of warm, dry weather – as at the beginning of lockdown – things get even more complicated.

'Start' as you mean to go on

Pressing the 'Start' button and hoping for the best simply won't work. If you want your system to restart without risk to engineers, operators or productivity, there are critical maintenance, operational and safety issues to consider.

Do you know how to tell whether you should carry out a routine service before start-up? The webinar will help you. Do you know the greatest single contaminant in your compressed air system, and – more importantly – how to remove it? The webinar will advise.

> "Real-life experience and Norgren expertise"

And what about equipment and procedures to ensure maintenance engineers and operators are protected at start-up and beyond? The webinar gives you the answers, based on real-life experience and Norgren expertise.

Watch more, discover more, enjoy more

Too many webinars are like 'Death by PowerPoint'. The Norgren 'webin-airs' are different.

They present valuable, easy-to-follow advice and information in a format that's part theory, part real-life applications, and part product guidance. Which means every part is interesting and enjoyable to watch. All episodes are also archived, with the recording shared following the event, and will remain available to you if you register, even if you are unable to attend on the day. Or you can register to watch live and take part in the question and answer sessions.

> "Interesting and enjoyable to watch"

Episode two – An Introduction to pressure sensors – is available to watch online now. It looks at the appropriate uses of sensors, and the operational benefits they can provide: like improved safety, accurate process monitoring, and improvements in control sensitivity. It also considers the key factors involved in making the right choice of product, and identifies where a switch or sensor can make a real difference.

Then Ian and Andrew bring their decades of experience to bear on a range of questions from participants.

If you would like to be one of those participants for the next episode, you can sign up now and you'll be notified of the date, and topic. There's no episode in August, but from September onwards topics – presented by a range of Norgren experts – will include IO Link, valve islands, and electric v pneumatic drives.

The 'new normal' for industry doesn't make it easy for you to get on with your job safely, efficiently and productively. With these new 'webin-airs' and innovative new products, Norgren does.

WEBINAR 1

How to Run Safe & Effective Compressed Air Systems

Key content:

- **Safety First / PPE**
- **Compressors and Receivers**
- **Bowls / Drains / Drip Legs**
- **Zoning**
- **Service / Planned maintenance**

WEBINAR 2

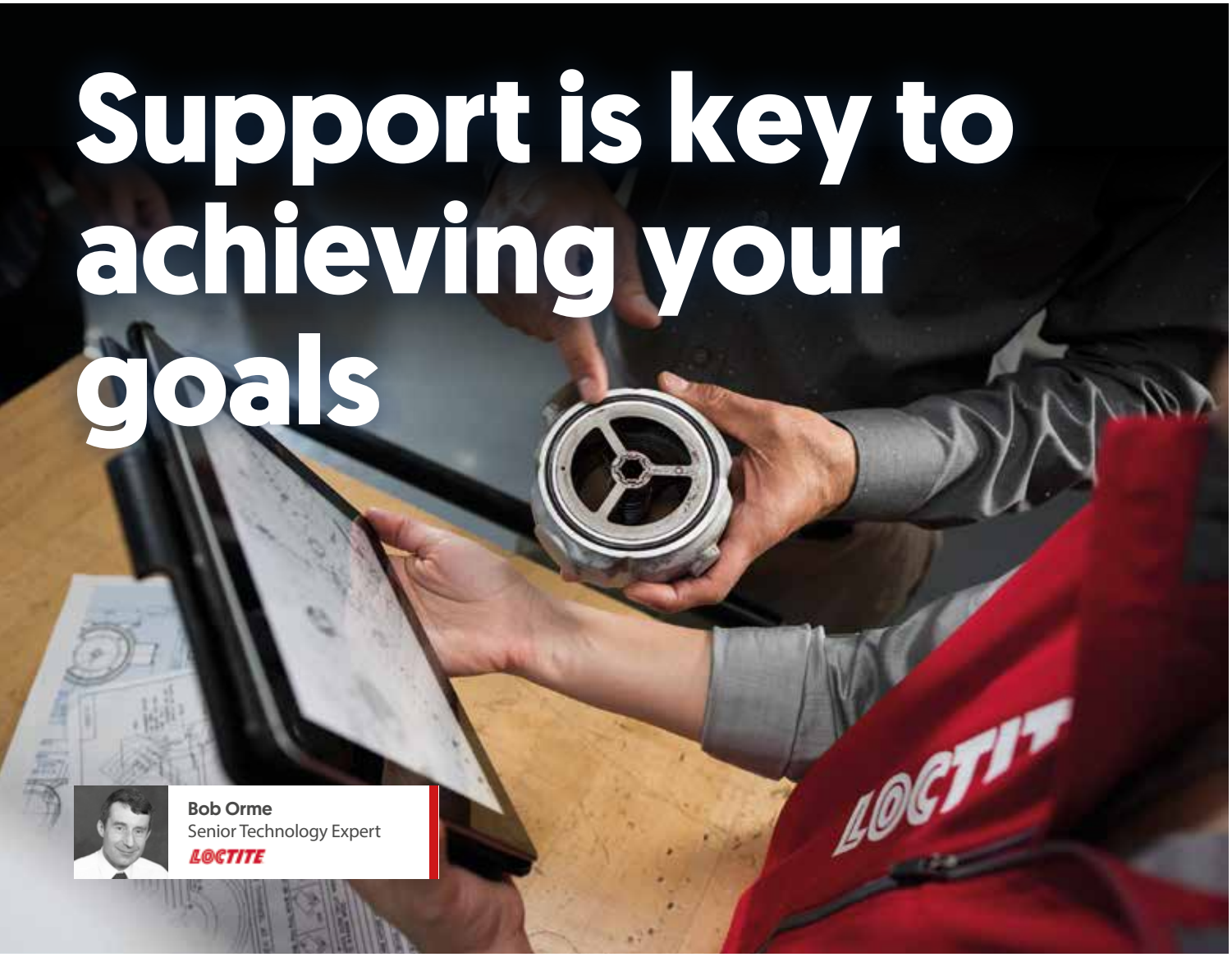
Norgren Guide to Pressure Switches and Sensors

Key content:

- **Sensor or Switch?**
- **Pressure Sensor Terminology**
- **What to choose**
- **Application examples**

To view these webinars visit https://.eriks.co.uk/norgren-webinars enter a few simple details to begin watching.

Support is key to achieving your goals



Bob Orme
Senior Technology Expert
LOCTITE

Challenges. We all face them, irrespective of industry. Could it be classed as a typical day in industry if we didn't. But it's how we analyse and overcome these obstacles that has a true bearing on our performance, productivity and, ultimately, expenditure.

Here's where maintenance surveys can play an essential role in optimising plant reliability, increasing production capacity, improving our capabilities, all leading to driving down your Total Cost of Ownership.

> "Innovation is rarely accomplished alone"

Innovation is rarely accomplished alone. It requires a team with expertise, passion, and a desire for taking calculated risks in order to deliver a competitive gain. Many challenges simply aren't clear and obvious, or easy to overcome, so thinking outside the box is often needed to get to the route of a complex problem. And this equally applies to adhesive, sealant, and functional coating solutions, particularly when considering the vast nature of application range.

Production line surveys, maintenance workshops and design seminars really add value to your business, therefore, on-boarding a reputable adhesives supplier such as Henkel, owner of the LOCTITE® range, will undoubtedly be invaluable in achieving the optimum solution to attain your goals.

So, what should I expect?

Now that we've outlined the importance of maintenance surveys, our guess is that you want to know what to expect from a full-service adhesives' supplier?

Well, where do we start. A comprehensive production analysis service should certainly be a major part of the offering. By understanding and scrutinising the current manufacturing process, it's possible to identify problem points, while making improvement recommendations that may not have been previously advised.

Chemical management should also be another core service. A good supplier of adhesives, sealants and coatings has the ability to monitor processes and materials to provide cost reduction solutions, improvements in overall quality, increased levels of productivity, and not forgetting environmental compliance.

The most comprehensive of suppliers may even offer some level of digital online reporting tools, allowing customers to create data extracts, build dashboards and export the results.

Consultation and training also form essential components of a comprehensive service. Through deploying a team of experts to assist customers in achieving their desired outcome, refining current, or even designing new, processes that are cost-effective and environmentally sustainable will enhance your current levels of productivity and reliability, thus providing a more efficient workflow.

And of course, design is a major added value in the industrial product arena, even more so in relation to cost efficiency and suitability for volume production. The best advice we can offer for those seeking expertise in design, is to select a supplier that has design centres around the globe where testing and developing customised solutions can take place. This will inevitably help reduce the costs and time associated.

Additional service provisions associated with prominent and recognised adhesives, sealants and coating solution providers such as Henkel may include maintenance and assembly services, equipment partnerships, lab testing, onsite support, sampling and prototyping, and value calculators – the latter helping to quantify the impact of a product and potential savings before committing to investment.

Calling on our partners

Over the years, Henkel has provided countless examples of how its services have assisted industrial customers in solving problems and adding value.

With a strong desire to reduce maintenance downtime, while increasing working capital and production efficiency, a globally recognised fibre cable company was seeking a solution to suit their goals. Enlisting the assistance of ERIKS, in this case, their facility in Ipswich, a proposal to involve LOCTITE® solutions was put forward, and consequently a discussion arranged between a set of engineers.

> “Free training alone saved the customer £1,250”

As an authorised distributor of LOCTITE® solutions, ERIKS were able to offer the customer, at no extra cost, a plant survey to target equipment failures and maintenance downtime issues. This was followed up with a range of two-hour customer training sessions in the areas identified for improvement, with focus also turning to specific product solutions, hands-on demonstrations, and implementation cycles. The free training alone saved the customer £1,250, and let’s not forget the associated future savings.

Don’t let you costs corrode away

A beverage manufacturer was experiencing issues with rivet corrosion on several of its delivery trucks and was becoming increasingly frustrated with the slow and labour-intensive assembly methods, keeping engineers from undertaking more pressing matters.

The process was duly examined, and training was provided on ways in which the assembly process could be optimised using bonding with structural adhesives. LOCTITE® structural adhesives were used to completely replace the rivets on the front and rear exterior walls of each delivery vehicle instantly eliminating the corrosion issue. This new method consequently reduced assembly time by 25%.

> “New method consequently reduced assembly time by 25%”

Selection is essential

Ultimately, a respected supplier should be able to work with customer teams to develop and optimise adhesive, sealant and automated application solutions inline with specific requirements. Whether designing a new assembly or enhancing an existing design, your adhesives partner should be able to help reduce costs and improve overall reliability.

The provision of support throughout the development cycle, including engineering assistance, adhesive development, product selection, testing, validation, cost optimisation, solution implementation, end-user training and application audits, is essential to the success of any project.

To conclude, selecting an adhesives supplier is value-based decision making in its purest form.

Positively impacting production using robots

Ian Hodkinson
Technical Sales Office Manager
piab

Order fulfilment is a vital part to any transaction. It's essentially the part of the process whereby the product begins its journey into the hands of the customer. And as we know, providing the customer's order in the shortest time possible is always part of the service.

> Designed to be fitted to the end of any type of cobot arm

In the past, it could have taken up to five people to manage a conventional manual picking process; someone in the warehouse to pick the order, someone to bring it to the line, someone to verify it, someone to kit it, and finally, someone to pack and ship it.

But now, thanks to innovations in robotics, this process is now faster, easier and more efficient.

Now even more collaborative

Ergonomic, safe and adaptable, Piab's gripping and moving solutions such as piCOBOT® are specifically designed to enhance your overall working environment, operating as an 'extra pair of hands.' When mounted onto a collaborative robot, this user-friendly solution promises to:

- Increase productivity and energy efficiency
- Eliminate risk of injury
- Increase speed and reliability
- Increase uptime and operational savings

Powerful and modular, the piCOBOT® can be configured to work with any collaborative robot and other smaller industrial robots, as well as multiple options for mechanical mounting plate dimensions in accordance with the ISO 9409-1 standard.

Originally only certified to work with cobots from Universal Robots, the piCOBOT® system has now, through offering generic compatibility, answered the calls from many manufacturers of cobots to incorporate their innovative range of End Of Arm Tools thereby offering a higher degree of configurability.

> Specifically designed to enhance your overall working environment

Through a user-friendly online configuration tool, Piab's customers now have the option to choose between a generic electrical interface, including a standard cable or one specified by Universal Robots. Customers can also choose various different mechanical interfaces, extending its potential application range.

Designed to be fitted to the end of any type of cobot arm, piCOBOT® provides optimal payload capacity and only weighs 720g inclusive of the gripper. Despite its minimal weight, it still has the capacity to lift objects weighing up to 7kg. That's nearly 10 times its own weight.

Thanks to the multi-stage and highly efficiency COAX® cartridges, the high flow capacity of piCOBOT® is truly outstanding. It can grip anything from very porous to sealed materials. Operating with a vacuum system based on COAX® technology provides users with three times more vacuum flow than conventional systems, increasing speed, maintaining reliability and reducing energy consumption.

The compact format and a low build height of only 69mm allows piCOBOT® to be installed and effortlessly operated in space-restricted areas. It is also combined with adjustable and flexible grippers that can be fitted with a variety of different suction cups.

Grabbing those savings

One large logistics company required a flexible, modular automation system that would effortlessly integrate with their existing work cell to accurately pick and pack items into the correct boxes at their fulfilment centre.

Following simulated research to determine the most suitable peripherals, the customer chose to deploy Universal Robots' UR10e cobot in conjunction with Piab's piCOBOT® gripper – a UR+ certified product – and a DataLogic camera that has the ability to scan multiple barcodes simultaneously, or can part of a number and serial number.

Making that decision, they quickly realised a 500% increase in efficiency, 50% savings in labour, a three month return on investment and 100% order accuracy – a significant all-round improvement, and one that all businesses attempt to discover.

The customer's President commented: "What we have seen is up to a 500% increase in productivity by using robots. The ROI has so far been three months, although we expect the time to ROI to decrease as we continue to integrate more robots."

When a robot replaces a worker to complete a task, the worker can then be reallocated to another part of the production line, or even be trained specifically to manage and maintain the robot itself, effectively expanding your working capacity without employing additional team members. This is particularly ideal during peak seasons.

> Quickly realised a 500% increase in efficiency

As technology continues to evolve, Piab continues to create smart solutions for the automated world, centred on improving energy efficiency and productivity, removing the stress associated with menial, although important tasks. This, in essence, allows their customer to focus their efforts and resource on other areas of business, grabbing those vital savings along the way.

Why now is not the time for cuts

Chris Brown
Sales & Marketing Director
martor
UK

Even in difficult times for industry, there are some cuts you should always avoid. The kind of cuts that can reduce efficiency. That can cost you more than £500 each. And that can put your employees at risk of serious injury, and you at risk of prosecution. The kind of cuts that Knives are specifically designed to protect against.

It might be used for cutting pallet wrapping, opening cardboard boxes, unpacking products or any one of a hundred cutting needs in factories and warehouses. But whatever it's used for, and whoever is using it, a knife is never just a knife. It's a potentially dangerous tool.

> "A knife is never just a knife"

Like any potentially dangerous tool, it needs to be designed for the task at hand. The user should be trained in its safe and effective operation. And your aim should always be to cut risks, not efficiency.

'But I've never had a knife injury in twenty years,' is a common response from knife users. Then they've been exceptionally lucky.

Amongst 100 knife users, evidence shows there will almost certainly be at least one accident a year, ranging from minor to serious. A quick glance at most business's injury logbook will likely reveal a higher number of incidents than they might have realised.

And while it's the employee who risks injury, it's the employer who risks prosecution for failing in their Duty of Care.

So it helps if you understand the risks and costs, and how to avoid them.

Adding invoice to injury

Even the slightest knife injury accident has a cost. A major injury has a major cost. Yet because most of these hidden costs don't come with an invoice, they're often overlooked.

The Health & Safety Manager of a major UK scaffolding business, for example, estimates that every injury incident – however small – costs the business £500. That's the hidden cost of investigating and reporting the incident, taking corrective action, reporting to the Board, and Management time involved. And that's before taking into account lost production or reduced productivity through downtime or employee injury.

A major injury will lead to far greater costs – perhaps including compensation after legal action.

So the best protection – for employee and employer – is to know the risks, and take action in advance to avoid them.

Don't take risks. Assess them

MARTOR have been manufacturing industrial safety knives for decades. That gives them a unique insight into how knives are used and misused.

> "Unique insight into how knives are used"

A MARTOR Knife Risk Assessment is as useful a tool as a knife itself – not only considering risks to employees, but also risks to your profitability, including:

- Where and how knives are used in your processes
- Alternative methods / change of process to reduce risk, optimise productivity opportunity / reduce cost
- The safest, most efficient knife options for each task

Following a MARTOR assessment, one business saved £500,000 a year through reduced

> Knife Risk Assessment saved £500,000p.a.

product wastage – garments were being slashed by exposed blades when opening boxes from the Far East. MARTOR identified the cause of the product damage and, by recommending a different type of knife, eliminated it.

Life with a knife

The right knife for the job can make a huge difference to safety and productivity – but only if it's used correctly. So from on-site training and safety days, to training videos on YouTube, MARTOR help to ensure knives are used safely and effectively.

Simply thrown in a normal waste bin, a blade can even cut when it's blunt. So MARTOR also offer special blade bins, to ensure used knives or blades are safely disposed of.

With Knife Risk Assessments, a range of knife options, and knife disposal solutions, a MARTOR knife can deliver the most an efficient, productive and – above all – safe tool, that's a cut above the rest.

Safe on all levels

The MARTOR range of industrial knives offers 3 levels of safety.

LEVEL 1 SECUMAX

A recessed or concealed blade shields against cut injuries and damage to goods.

LEVEL 2 SECUPRO

The fully-automatic blade retracts as soon as it leaves the material being cut.

LEVEL 3 SECUNORM

Once the user releases the slider, the blade retracts as soon as it leaves the material being cut.

To find out more about a Martor Knife Risk Assessment

Contact your local service centre on **0121 508 6000** or visit

https://eriks.co.uk/martor-survey

Fit properly. Breathe correctly. Protect effectively.

Paul Sakde
Category Manager, PPE & Site Safety
ERIKS

The current global pandemic has increased the importance of face masks in all walks of life. It literally is a matter of life or death. But the regular use of respiratory protection equipment (RPE) has been visible for years in hazardous industrial environments, helping to protect both your short and long-term health and well-being.

But RPE is only effective if worn correctly. You wouldn't believe how many employees are unaware of how to correctly fit PPE, with respiratory equipment falling into this category more than any other.

> "Respiratory disease accounts for 12,000 deaths annually"

This is particularly concerning when official figures reveal that there are approximately 12,000 deaths annually courtesy of respiratory diseases contracted in the workplace. This is an astonishing figure considering the amount of PPE and RPE available on today's market.

5 simple steps

The use of respirators should be part of an overall respiratory protection program. This includes proper selection, fit testing, medical evaluation, and training. When operating with any RPE, your first port of call should be to ensure that the manufacturer's instructions are complied with.

This is often where the first error occurs. It's certainly something that most of us are guilty of not doing, but in this instance, reading those instructions could be the difference between being protected and being in danger – and to put it bluntly, you can't forecast long-term damage.

Companies such as Honeywell have been providing high quality respiratory equipment for many years, all of which are compliant with the latest EU regulations. To help you gain maximum protection, Honeywell have devised a simple 5-step plan to ensuring that your single-use face mask is fitted correctly and comfortably.

- Step 1: Open mask and shape nose-bridge
- Step 2: Hold elastic headband and place mask under the chin
- Step 3: Adjust the mask by pulling the sides and mould nose area to the shape of your face by pinching the nose bridge
- Step 4: Check for air leakage by placing hands over the mask and inhaling sharply. If any air is entering, tighten nose piece and retry
- Step 5: Check facial fit by smoothly moving the mask from right to left, up and down

Users must also be clean shaven where the mask meets the face, as hairs may perforate the materials, reducing its overall effectiveness. This may be off-putting to some people, but remember your health is at stake, your beard will grow back.

Please also remember that single-use face masks really are only intended for single use.

> "Health and safety in the workplace will always remain the number one objective for any employer."

Once you have completed your task, all face masks should be removed and discarded in the correct manner. Your site may have their own individual disposal regulations, so we advise that you liaise with your manager if you're unsure.

If you wish to further understand the requirement of fitting and testing PPE, HSE 282/28 provides clear and concise information on how the Health and Safety Executive expect this procedure to be conducted.

Health and safety in the workplace will always remain the number one objective for any employer. But only by testing, checking and following instructions regarding correct PPE and RPE usage can we effectively safeguard ourselves from harm.

It's now down to you, but companies like Honeywell and ERIKS will always be on hand to support you with the right information and sourcing the correct products for the job.

Is the manufacturing supply chain model broken?

Richard Ludlam
Marketing Manager
ERIKS

Without doubt the Coronavirus pandemic has had a dramatic impact on UK manufacturing, with an overnight fix certainly out of the question. Time is a healer as they say, and it is time that we need if we are to return to the prosperous, thriving industry of old.

One of the most serious consequences has been the rapid and widespread disruption of our long-established supply chains. The immediate effect of this challenging scenario has left us in a precarious situation where we may now have to change the way we operate and conduct our business, not only now, but possibly forever.

A fresh challenge

For years, manufacturing businesses have worked tirelessly to optimise their supply chains, with the goal of driving down costs and reducing inventories. This has led to a manufacturing model that is based on linear supply chains, with raw materials and basic component parts being converted and assembled through a sequence of suppliers. But even at the best of times, this model is open to exposure to temporary disruption such as political instability, cyber and terror attacks, and even extremes of weather.

But the Covid-19 pandemic has indeed threw a completely fresh set of challenges its way, clearly demonstrating the fragility of our existing supply chain.

Returning control

Regardless of the current threats, extended supply chains suffer from inherent risks.

One of the major challenges for OEMs and manufacturers at the head of supply chains is having clear visibility of all companies and processes that contribute to their supply line.

Companies with limited visibility are generally unable to react quickly to sudden changes in the market, and as a result counterbalance with, for example, higher levels of stock-holding, which isn't always a positive.

A recent study undertaken by ERIKS found that companies struggled to maintain a balance between excessive stocks and stock-outs. Seemingly, companies that implement robust supply chain and business continuity strategies are far better placed to respond to sudden changes in demand or operating conditions.

These companies have typically diversified their supply chain, reducing independence on a small number of countries or suppliers, with a model that allows them to quickly switch between suppliers for critical parts – an approach that sometimes includes the use of local suppliers.

The ERIKS way

COVID-19 has forced companies to find suppliers, such as ERIKS, that are close to their centres of manufacturing. It was impossible to predict these current events, but being at the heart of the industrial supply chain, we have been planning for scenarios that may cause significant disruption. As a result, we've developed a robust and flexible business model that allows us to respond promptly to both long- and short-term changes.

For example, for standard products, we have multiple sourcing agreements in place with manufacturers across the globe, while also holding buffer stocks for all our customers' critical components. For specialist technologies such as seals and gaskets, we have local manufacturing centres capable of rapid production of both standard and bespoke parts in low and high volumes.

The impact of Covid-19 has been dramatic to say the least, and now is time for companies to re-evaluate their strategies to identify risks and maybe even rebuild supply chains utilising local and regional partners. One thing is for sure, things have changed, and maybe forever.

Why not download our latest free whitepaper at:

https://eriks.co.uk/supply-chain

Where we analyse in-depth these threats, discuss how to assess these risks, how ERIKS has counteracted these challenges, and highlight some of the measures that your business should consider to ensure business continuity.

Back to work – and back in business

Shaun Heys
Marketing Communication Manager
ROCOL

As industry gets back to work, Covid-19 protective measures aren't making life any easier for manufacturers and producers. But with the right choice of maintenance products, the 'new normal' can be much more like the old one.

Responsible employers have made careful plans for productive operations while keeping their workforce safe. These may include anything from mandatory mask-wearing to one-way routes around the factory floor, to fewer workers per shift. However, even at the best of times, plans can quickly be thrown into turmoil by an emergency such as equipment breakdown or unplanned maintenance.

So as well as protecting against the virus, it's important to protect against the kind of threats to productivity that have been around for much longer.

Trouble-free performance

The more effectively lubricated you can keep your bearings and critical components, the more efficiently they'll operate, the less likely they are to fail, and the longer they'll last between failures. So the right choice of lubricants is crucial.

And with post-pandemic operating procedures making maintenance, servicing and repairs more complicated, that's more true than ever.

If you can extend lubrication intervals without compromising the protection and performance of components such as bearings and chain, you can reduce the level of risk to which employees are exposed.

Less lubrication means less walking production lines, and less opportunity for breaking social distancing guidelines. Longer-lasting, more effective lubricants can also mean longer intervals between routine maintenance operations. And higher-quality lubricants providing trusted performance offer greater protection against breakdowns and unplanned maintenance.

Unscheduled downtime always eats away at productivity. But when you have to remove operators from the area, or sanitise assets, before emergency repairs can even begin, then reducing health and safety risks will be at the cost of even greater lost production.

> “Effective lubrication means efficient operation. Reduce the level of risk to which employees are exposed”

Using lubrication such as ROCOL® chain lubricants and ROCOL® bearing grease can help to ensure reliable asset performance, reduced downtime, and uninterrupted production.

PPE (Performance Protecting Equipment)

The longer a lubricant lasts, the less time spent on relubrication. So using a ROCOL chain lubricant – which typically lasts much longer than conventional chain lubricants – immediately reduces the need for engineers to walk the line and risk contact with other employees.

> “Greater protection against breakdowns and unplanned maintenance”

The better a lubricant performs, the longer the chain will last, the fewer unplanned repairs will be required, and the fewer unexpected breakdowns will occur. As well as reducing breakdowns and repairs, the superior performance of ROCOL chain lubricants helps to ensure longer intervals between lubrication top-ups. They’re highly resistant to oxidation, highly water-resistant, and have good adhesion to reduce dripping and fling-off.

ROCOL bearing greases also provide performance you can trust.

A PFPE-based grease such as ROCOL SAPPHIRE® Endure is highly resistant to the aggressive factors that cause other types of lubricants to fail. A key benefit is that SAPPHIRE® Endure is inert – meaning it won’t behave aggressively itself in a delicate environment.

PFPEs are also highly effective at staying in place during wash downs. Which means lower lubricant consumption, less potential environmental contamination and – the key point in the post-pandemic production facility – less relubrication.

To find out more about how ROCOL lubricants can help keep your employees safe, and keep your assets running at pre-pandemic productivity levels, contact your local ERIKS Service centre.

Start-up as you mean to go on

After a shutdown, starting-up assets is a high-risk operation and when the majority of gearbox wear occurs. The longer the shutdown, the greater the risk of serious wear or even damage.

The answer is a ROCOL lubricant with the unique Start Up Protection System – known as SUPS.

ROCOL Lubricants with SUPS are reinforced with a range of additives which ensure the oil adheres and lubricates immediately: climbing the gears and resisting fling-off, whereas other lubricants would need to warm up and be splashed around the gearbox before they can protect the gears.

Manufactured from only FDA-listed ingredients, ROCOL FOODLUBE® Hi-Torque is a SUPS lubricant that’s certified to NSF H1 food grade, and is ideal for food, pharmaceutical and other clean environments.

ROCOL MTLM Assembly & Running-In Paste is another product used in the start-up of machinery. Its high molybdenum disulphide content eases assembly, increases the mechanical advantage from start-up and provides protection against seizure during the critical start-up and running-in periods, before the service lubricant has circulated.

Tape has a simple job, but what if it could do more?

Neil Rutson
Regional Channel Manager
3M | VHB

All new designs begin with a simple idea. But for that idea to come to fruition, the execution must be as good as the initial idea. Removing the barriers between you and your invention is only possible by choosing the right components along the way.

Increasing trends such as lightweighting, automation and reducing costs are now the driving force behind engineers attempting to find new ways to bond beyond their typical assembly methods, and 3M™ VHB™ Tapes are a game-changer in the approach from concept to construction.

Bonding individual components with precision, ease, reliability and strength requires an approach that breaks the conventional barriers of construction. Opening up a world of new possibilities,

> "You can maintain consistency from sketch to construction"

3M™ VHB™ Tapes are specifically designed to maintain consistency from original sketch to final construction, eliminating distracting, visible fasteners including screws and bolts, allowing you to enhance your design appearance through virtually invisible bonding.

> "A long-lasting bond that actually builds strength over time"

The high strength of these double-sided acrylic foam tapes allows you to quickly and easily create a long-lasting bond which increases in strength over time. Not only do they increase bonding strength saving time through added reliability, but the ease of application saves engineers time, increasing productivity.

The superior bonding strength of VHB™ Tapes has the capability to resist the rigours of exposure to extreme environments such as hot, cold and cycling temperatures, UV light, moisture and solvents, as well as sealing against environmental conditions, damp and vibration, significantly reducing wear and tear.

Rethinking what is possible

Plastics, composites, and other low surface energy (LSE) materials are integral to the future of manufacturing. Unfortunately, bonding these materials with adhesives can be extremely difficult and often requires the use of a primer or adhesion promoter – but the innovative 3M™ VHB™ Tape LSE Series rethinks your possibilities.

Developed specifically for LSE substrates including polypropylene (PP), thermoplastic elastomer (TPE) and thermoplastic olefins (TPO), the LSE Series is a double-sided acrylic foam tape that creates long-lasting, high-strength bonds without the requirement of primer or any other promoter.

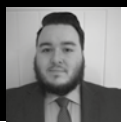
Like all members of the VHB™ family of tapes, the LSE Series significantly improves the aesthetics of your designs, while pushing the limits on shapes via unique material combinations and textures allowing you to realise your breakthrough designs faster and with more durability.
Offering even more possibilities, the 3M™ VHB™ Tape LSE Series also has the capacity to

> "Improve aesthetics and push the limits on shapes"

bond a variety of high and medium surface energy materials including aluminium, steel, glass, plastics and painted surfaces. Finally, they allow for low temperature bonding with high initial tack and low temperatures on frost-free surfaces down to 0°C.

The VHB™ Tape LSE Series is just one of many 3M™ innovative bonding solutions. So, whether you're bonding LSE plastics, powder coated surfaces or transparent materials, 3M™'s VHB portfolio has a tape to suit your design requirements.

A major step towards higher energy efficiency



Alex Mills
Product Manager, Gearboxes, Motors & Drives
ERIKS

Electric motors are one of the most widely used applications in factories worldwide. In fact, according to 'Energy Efficiency Opportunities for Electric Driven Systems,' a 2011 report produced by IEA, they account for 46% of all electrical consumption.

With growing concerns surrounding the growth of CO^2 and CO^2-equivalent emissions, Governments are now, more than ever, being prompted to focus their efforts on reducing these emissions by making their electric motors more energy-efficient.

So, are you aware that legislation surrounding electric motor efficiency is scheduled for change?

Why is it time for change?

In 1999, the EU agreed a Directive defining a timeline for the introduction of Minimum Energy Performance standards for induction motors. But a decision has now been made to repeal this regulation from July 2021 and replace over the two-year period to July 2023 with new energy-efficiency requirements covering a wider range of motors.

Under the current regulations, more efficient motors are expected to achieve annual energy savings across the EU of 57 TWh by 2020. However, the efficiency levels of the current measures are low by current norms. There is also no correlation between the different standards and regulations established by the various governments or industry bodies.

Over the past two years, energy consumption has increased by 50%, and if the increase rate continues, we will far surpass the anticipated figure of 1,470 TWh for 2020, significantly rising to 1,500 TWh by 2035. This is causing concern, and it's believed that a revised legislation is a major step in ensuring that our applications are more energy efficient.

Making your mind up

These regulations will inevitably affect the range of motors available to industry, as manufacturers will no longer be able to build those which fail to comply with the new regulations. This will without doubt have a bearing on your motor purchasing decisions.

The fact is, higher-efficiency motors will generally have a higher purchase price, which may normally influence your decision. But although price shouldn't be ignored, don't let it completely cloud your judgement. Higher-efficiency motors will almost certainly provide the lowest Total Cost of Ownership in the long-term.

Given that the design life of most electric motors is 15-20 years, the long view is essential in making an informed motor choice that is cost-effective, compliant, and abides by the new energy-efficiency legislation.

Tools such as the online ERIKS TCO Calculator are available to help you make better-informed decisions based on all relevant information, specific to your application.

> "The long view is essential in making an informed motor choice"

> "Higher-efficiency motors will almost certainly provide the lowest Total Cost of Ownership in the long-term."

Let Us Help You Stay Compliant

If you would like to know more regarding the changes to electric motor efficiency legislation, then why not download our latest Whitepaper from

https://eriks.co.uk/motor-whitepaper

Store away your efficiency and time savings

Paul Maynard
Project Sales Manager
bott

Achieving efficiency and time savings is a very basic principle for most companies. But not all savings are particularly obvious. You might say it's all in the finer details. And an area that you may not have considered previously is tool control.

Tool control systems, such as those manufactured by bott, boast multiple advantages over conventional toolboxes and tool stations. Not only do they make your workplace look professional, but by giving your tools specific individual spaces, the higher level of organisation provides users with easy identification, leading to increased time and efficiency savings.

Built To Last

Designed specifically for effective tool control, bott have been manufacturing a diverse range of storage solutions, encompassing cupboards, cabinets, drawers and workbenches with a 'Built To Last' philosophy.

Within the two distinct modular systems – Cubio and Verso – bott offer a range of sizes, colours and configurations, with versatility at the core of each design, which can be specifically tailored to suit any working environment.

> "Truly impressed by the versatility and durability"

> Higher level of organisation provides users with easy identification

The bott Cubio range is an advanced, professional storage system, specifically designed for the most demanding environments. Benefits of bott's systems include:

- Ergonomic, professional and modular design
- High load capacity
- Complete integration for advance storage options
- Comprehensive selection of accessories available
- Easy tool identification
- Increased productivity and tool protection
- Extended product lifecycle – 10-year guarantee

Creating a workspace from scratch

A leading global healthcare company that develops, manufacturers and distributes over-the-counter pharmaceutical products wanted to install a safe storage system for their pharmaceutical compression tools but required heavy-duty cabinets that would hold up to 200kg per drawer and maximise the limited available space.

In such a specialised and sensitive environment, safe storage is particularly important. Maintaining organisation and cleanliness is essential and a bott storage systems exactly fitted the bill.

The company were already familiar with bott cabinets, understanding their benefits and quality after seeing the Cubio system in use at another facility. The aim was simple, replicate these advantages in their own tooling area.

A choice based on versatility

Visiting the site to fully understand the application and measure the area, options were discussed, and the manufacturing process explained in detail. The customer was truly impressed by the versatility and durability of bott's innovative systems.

3D drawings were produced to display to the customer how the finished room would look, provided alongside planned drawings and the specified dimensions. Optimising the storage for their standard trays was vital, and by pre-designing how many trays would fit into each drawer wasted space was eliminated and safe, secure storage was created throughout.

In addition, the company requested that forklift bases were fitted to enable the complete cabinets to be moved as and when required. No problem for bott, as they simply included a coverplate to finish the design adding to the complexity and versatility of the final system.

Finally, bott incorporated additional storage onto the walls, complete with lockable cupboards from the modular Cubio range. This final step has provided the customer with the capability to integrate all cupboards, cabinets and benches to create a convenient, bespoke layout.

The project was completed, delivered and in operation within three weeks, delivering further time savings directly to the customer, with an added bonus of complete UK manufacturing and a 10-year guarantee. The customer commented: "We chose bott as we had seen their products in use in a similar environment and were aware of the quality of the brand. The project manager was able to assess our workspace to understand our requirements before customising a solution to suit us. Our new area looks professional and is efficient and secure."

> Capability to integrate all cupboards, cabinets and benches

Playing Devil's Advocate:

There are positive effects of Covid-19

The disastrous effects of Covid-19 on the global economy are there for all to see, but is there a positive light at the end of the tunnel as we embark on our journey of recovery? Recent research has suggested so, with an unpredicted spike in UK manufacturing.

The past few months have seen lockdown restrictions loosened, although we now seem to have hit a slight blip with a second lockdown, businesses have worked hard to regain control and return to production, even if not at full capacity.

But this momentary return to normality has seemingly had a positive impact on UK Manufacturing with recent research by HIS Markit/CIPS Purchasing Manager's Index (PMI) recording a near three-year high of 59.3 in terms of manufacturing output, although we have seen a 0.9% fall from August to 54.3. But that doesn't mean the progress since our return shouldn't be applauded.

With supply routes closed for many of our usual suppliers, the UK manufacturing sector has been handed a boost with businesses now having to fill the void of products and components from within the UK, although this may not be out of choice, it is still welcome.

With many businesses on complete lockdown during the initial stages of the pandemic, some of which are yet to fully reopen, seemingly, the Government imposed lockdown has put businesses in a position where they are behind on targets, and now intentions have turned to catching up on production and regaining the ground necessary to fill the void created in the early part of lockdown.

The temporary requirements for items such as PPE and RPE have been significantly increased, volumes which in the past wouldn't have existed, alongside the need for other critical Covid-related products to assist the NHS and defend against the spread as we go about our lives has also had an impact.

Increased demand, coupled with severely damaged supply chains, has clearly had some positive effects on the resurgence of the UK manufacturing sector, at least up until this point. But don't get us wrong, now certainly isn't the time to get carried away. The road ahead is long, arduous, and uncertain, but there is a reason to be optimistic.

> "Increased demand, coupled with damaged supply chains, has clearly had a positive impact on the resurgence of the UK manufacturing sector"

The current climate isn't one that will change overnight, it's a slow, steady process. But if we can continue this positive push to recovery and invest in UK manufacturing, despite the odd hiccup along the way, we can certainly remain confident that we will once again flourish and eventually return to higher levels than the pre-Covid era.

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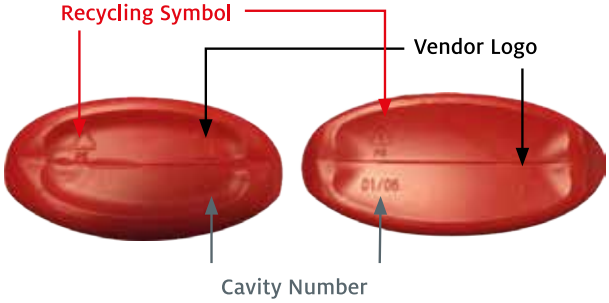

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