ISSUE 49

KNOW +HOW

Aggressive Environments

In this edition we delve into a range of topics from understanding the importance of an effective pump management system to how our valve experts kept coffee flowing for a global manufacturer, and with a new lighting legislation, could changing too soon leave you with some shocking costs. In addition, our In Focus section digs into all things Aggressive Environments from dust to dirt and everything in between.

ERIKS

Quick Maintenance Review

Do you want to know more about bearing maintenance practices? Curious to see how yours compares with those of your peers?

By completing our new dedicated questionnaire, you can review and benchmark your bearing maintenance practices with similar companies from the same industry. Get free issue specific maintenance advice from SKF?

On completion, we will share a tailored maintenance maturity radar chart with you, making it simpler for you to identify areas for improvement. In addition, we will offer you recommendations and suggestions on how to improve identified areas.

SKF Authorized Distributor

New: Go to questionnaire and receive full benchmark report.

KNOW +HOW

Welcome

The mention of an Aggressive Environment can deliver thoughts of dirt, grime, oil, and grease. However, appearances can be deceiving. Some environments may seem clean on the surface, but underneath, they can be the most challenging and demanding.

Take the chemical industry, for instance, it may bring to mind a pristine, bright, and spotless station. However, it is actually home to some of the most hazardous situations for workers.

We kick this edition off with ERIKS in Action, where we look at how a penetrative powder posed a sticky situation for a global manufacturer and their cappuccino line. We learn how the ERIKS Smart Asset Management (SAM) system can ensure your pumps performance from the get-go and throughout its entire life cycle.

We then delve into our In Focus section where we find out how something as fine as dust was delivering major disruption to a cement manufacturer and its bearings. We also take a look at Schaeffler's new and innovative housings; designed to combat even the most aggressive environments without affecting performance and in fact improving efficiency and reducing downtime.

Making Industry Work Better shines a light on the recent changes to lighting legislation and presents the question – Could changing too soon deliver a 'shocking' cost? Meanwhile, we hear how an insulation manufacturer took advantage of the ERIKS Know How and data specialism to unlock new performance parameters and avoid a potentially catastrophic situation.

Finally, our popular Debate piece takes a look the recent report from MAKE UK. As they investigate a long-term vision for the industrial sector; could it be that their findings highlight potential success where others have previously failed? Or could it just be a pipe dream never to come to fruition?

We always enjoy our reader's feedback. So, if you would like to comment on the subjects covered, please join the discussion by emailing or tweeting us at @ERIKS_UK.

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

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Oldbury, West Midlands,
B69 4JR, United Kingdom

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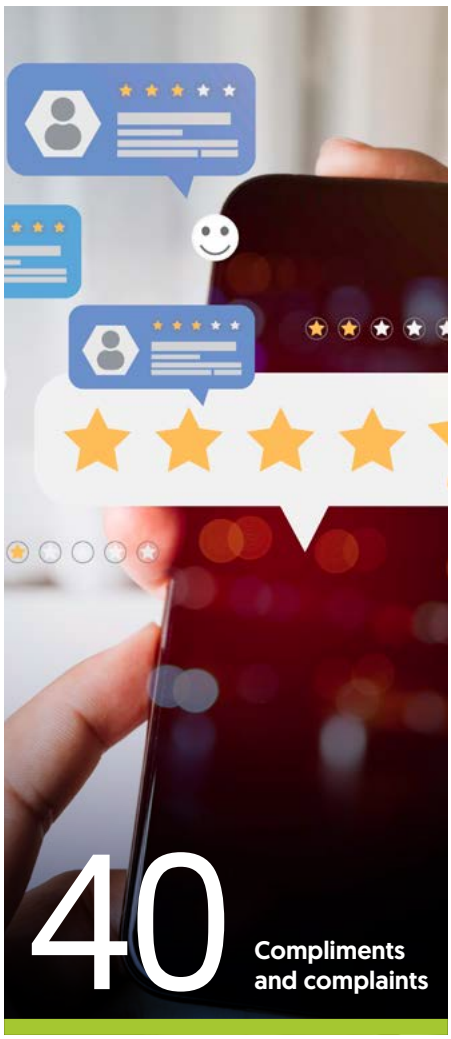
In Focus

Making Industry Work Better

Debate



Tata announces new £4bn UK battery plant

At least 4000 new jobs will be created at a new UK battery plant to be built by Tata, the owner of Jaguar Land Rover. Following negotiations to secure state aid for the project Tata has confirmed plans to build its flagship electric car battery factory in Somerset. It is expected that the plant will create 4000 new UK jobs and thousands more in the wider supply chain.

The new plant is set to be one of the largest in Europe and will manufacture batteries for Jaguar Land Rover vehicles as well other car manufacturers. Due to open in 2026 the announcement has been described in a BBC report as 'the most important investment in the UK automotive space since Nissan arrived in the 1980s'.

The Somerset plant, located on the site of an old munitions factory, will be Tata's first outside of India and is planned to assist the car manufacturing sector in transitioning from petrol and diesel to a heavier emphasis on producing electric vehicles. Given that batteries typically account for more than half of the value of an electric vehicle, a reliable supply is expected to be vital for the future of the UK car industry.

Industry insiders are hoping that the Tata battery investment will open the door to further battery manufacturing investment in the UK.

Automotive giants join forces in the UK

Automotive manufacturers Geely and Renault Group have signed a 50/50 joint venture agreement to launch a new powertrain technology company, set to be headquartered in the UK.

The joint venture aims to become the global leader in developing, manufacturing, and supplying hybrid powertrains and highly efficient ICE (internal combustion engine) powertrains.

The new company aims to build 17 engine plants and 5 R&D centres across three continents and to employ 19,000 people. It plans to use its UK headquarters to 'consolidate operations, build on synergies, and define future plans.'

Luca de Meo, CEO of Renault Group said "Facing today's automotive challenges, no one can claim to have all the solutions. Coming up with breakthrough innovations requires the combination of expertise and assets. When it comes to the global race for decarbonizing road transport, there is no time to lose, and it will not be business as usual."

The joint venture company aims to have an annual production capacity of up to five million internal combustion, hybrid and plug-in hybrid engines and transmissions. It hopes to supply multiple brands worldwide with a range of powertrains.

UK regions and Nations see manufacturing jobs boost

The latest Regional Manufacturing Outlook report issued by Make UK and accountancy firm BDO LLP reveals that the number of jobs in manufacturing has grown in six of eight English regions as well as in Wales.

The report claims to be the most accurate barometer for the economic climate facing UK manufacturers. The Yorkshire & Humber region has seen the biggest jump adding 46,000 jobs in 2022 compared to 2021, bringing the total number to 316,000, more than one in ten of the region's workforce. The South West saw the second highest increase, a further 28,000 jobs bringing the total to 249,000, or 8% of the region's workforce. This was closely followed by the East of England, which added 27,000 jobs bringing the total to 228,000, or 7% of the region's workforce. The East and West Midlands, together with London and the South East, Wales and Northern Ireland also saw increases in the number of manufacturing jobs.

The report also highlights the importance of manufacturing and jobs to the so-called 'red wall' areas where the sector occupies a substantially higher than average contribution to the regional economy. The average regional share of manufacturing nationally in the UK is just under 10%, whereas in Wales the sector accounts for almost a fifth of the economy (17.3%). It is also substantially above the average as a share of the economy in the East Midlands (16.4%), Yorkshire & Humber (15.4%), North East (15%), West Midlands (14.4%) and the North West (14%).

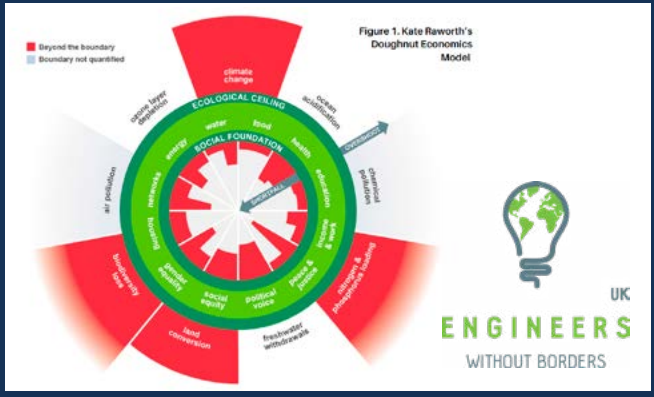
Richard Austin Head of Manufacturing BDO LLP said, "It is evident from our surveys that manufacturers continue to push forward despite prevailing uncertainties. Whilst the growth is not shared equally by all regions and nations in the UK, almost all parts of the UK have recovered or exceeded their pre-pandemic value of output for manufacturing according to national statistics by the end of 2021."

EWB UK launch revolutionary new sustainability tool

Engineers Without Borders UK has launched its Global Responsibility Competency Compass. Developed with support from the Royal Academy of Engineering. The new sustainability tool simplifies the way individuals, teams and companies identify and address their globally responsible engineering skills gap.

The Competency Compass, developed through extensive consultation and testing, comprises 12 competencies that are needed to deliver on the four key principles of globally responsible engineering – Responsible, Purposeful, Inclusive and Regenerative. The tool outlines the vital skills, knowledge and mindsets required to enable both individuals and their wider teams to reflect on their strengths and weaknesses, highlighting gaps in the skills needed to act sustainably, ethically, and equitably.

"The Competency Compass is an introductory and action-orientated tool aimed at anyone in the engineering sector who wants the skills to respond effectively to the complexity, uncertainty and challenges of our age," says John Kraus, CEO of Engineers Without Borders UK.



"It is a learning tool for individuals and teams, giving confidence that responsible engineering principles are being embedded at every level and that all decisions balance the needs of all people with the limits of our planet."

The Compass provides a framework to create a sustainability skills action plan, using a learning library of relevant professional development opportunities and resources. It empowers individuals to recognise their existing strengths whilst identifying important areas for self-led growth, it assists managers in identifying and articulating the strengths and gaps in their teams' capabilities and enables teams to ensure projects deliver the greatest benefit to people and the planet. The tool can support engineering businesses of all types to assess and bridge the sustainability skills gap across their entire workforce.

Key conference for manufacturing leaders now stands alone

Now in its 15th year, The Manufacturing Leaders' Summit took place at The Exhibition Centre, Liverpool on 14-15 November 2023.

The Manufacturing Leaders' Summit is the annual gathering of visionaries, senior executives, decision-makers and thought leaders within the manufacturing ecosystem. The event encompasses two days of debate and discussion about growth, innovation and key strategic, business and technical challenges hosted within an interactive conference with roundtable discussions, keynote presentations and panel Q&As.

With no exhibition taking place concurrently (Smart Factory Expo is now part of Manufacturing & Engineering Week) the Manufacturing Leaders' Summit is now solely focused on senior-level networking, content, debate and meaningful collaboration on the topics that are shaping the manufacturing industry.

ERIKS to exhibit at Maintec 2024

ERIKS has announced that it is to return to Maintec in 2024. Maintec is the longest running exhibition for the predictive maintenance, reliability and asset management industry.

The company will use the exhibition to showcase not only its engineering knowledge but also its outsourced MRO stores offering which continues to evolve and be adopted by some of the largest manufacturers and engineering businesses in the UK and Ireland. Richard Ludlum, Marketing Manager said of ERIKS' return, "We have often exhibited at Maintec but felt that it had become a little staid in the pre-pandemic era. However, since being acquired by the Nineteen Group and becoming part of Manufacturing & Engineering Week it has had a huge shot in the arm. It's now a vibrant, dynamic event focused on uptime and the people that deliver it and we feel this is more aligned with our business."

Jos Diamond, Event Manager of Maintec said "We are thrilled that ERIKS is going to join us in 2024 as a Premium Partner, bringing not only its products but more importantly its engineering knowledge to the Maintec audience. I would urge ERIKS customers to visit the 'mandeweek' website to keep up to speed with the latest news."

MAINTEC

New Renold chain makes a splash

Now there's another reason for taking a closer look at the Renold Syno lubrication-free chain range. The new Renold Syno PC chain not only runs without the need for lubricant, but can even do it underwater.

Renold's latest poly-steel chain combines a polymer inner link with stainless steel pins and outer plates. Together with the elimination of metal bushes and rollers, that means there's no metal-on-metal movement, so no lubrication required.

Like the rest of the Syno range, it makes the new Syno PC a boon for applications where lubrication is difficult or impractical, or in wet conditions. But the new chain goes even further.

The absence of metal in its construction not only makes the Syno PC corrosion resistant and lightweight.

It also allows it to run totally submerged in water if required. And the potential to fit attachments to the outer plates makes the Syno PC as versatile as it is ground-breaking. Or maybe that should be 'water-breaking'. Available in 06B and 08B with ANSI sizes available on request.

Safety and flexibility with high current connectors for harsh environments

Whether in a Quarrying environment, where high mechanical strength is required or a mining application where dust and water ingress is of high importance, the high current connector range provided by CEENorm is always the right choice - safety, quality and reliability are key attributes to this range.

Manufactured by our Swiss partners Rauscher & Stoecklin, the IP55 & IP67 range of high current connectors, from 160amps to 600amps, have been developed to withstand the toughest conditions, they are resistant to many chemicals with a high durability to impact (IK10). With vibration resistant options available, these plugs and sockets ensure safe and reliable operation of your equipment.

All electrical contacts are silver-plated ensuring excellent conductivity within the circuit. Manufactured to the International IEC-60309 standard they have the additional benefit of self-cleaning contacts, offering a robust and corrosion resistant design ensuring reliable operation over long periods of time under the harshest of conditions.

Gloves that make the cut

Safety comes first in hazardous environments. But that's no reason why you shouldn't think about appearances too. With Ansell HYFLEX® 11-751 cut-resistant gloves, you can do both..

Designed with integrated dirt-masking, these gloves can be worn for longer without looking dirtier. Even when they're used for messy applications they keep their good looks, with stains and marks successfully hidden.

Which means your gloves stay clean, and so does your safety record.

INTERCEPT™ Cut Resistance Technology yarn ensures these polyurethane gloves from Ansell meet EN ISO C/ANSI 4 cut-resistance standards. With a durable PU coating, they also meet EN Level 4 and ANSI Level 6 abrasion resistance. And compliance with Centexbel EN420 standards for general requirements, and EN 388 for mechanical hazards, mean they have the safety bases covered. So they keep wearers safer, and their resilient construction also ensures they last longer.

With many gloves, that can be a problem – because the longer they're worn, the dirtier they can get. But not the HYFLEX 11-751.

Own the highs with OKS

High pressure, high load and high temperatures can be too much for many greases. But not for OKS 481 Waterproof High-Pressure Grease. Specially developed for food processing applications, this fully-synthetic, calcium sulphonate complex grease carries on performing at its optimum, under all kinds of stress and pressure.

From rolling and friction bearings to mechanical units (levers, joints and hinges), OKS 481 is a highly effective grease throughout your food processing technology. High temperatures? In contact with cleaning agents or water-alkaline or acidic disinfectants? Under strong water effect? This grease just shrugs them off.

Its high shear stability means it doesn't thin out under extreme mechanical loads (such as vibration), and its calcium sulphonate complex soap means not only excellent water resistance but also protection against corrosion. And the fully synthetic base oil provides high temperature and oxidation stability.

Suitable for applications at temperatures from -30°C to +160°C, OKS 481 grease is NSF H1 registered, and MOSH/MOAH-free.

That's the low-down. Now own the highs.

Shake, rattle, and monitor

David Manning-Ohren
Technical Manager, Smart Asset Management
ERIKS

Imagine trying to find the person clicking their fingers at a Def Leppard concert. You'd think vibration monitoring a vibrating asset would be just as tricky. But it's not if you talk to ERIKS.

> ERIKS are here to shake things up

Vibration monitoring is an effective way to identify abnormal operation in an asset. But what if the asset's normal operation involves vibration? Is it possible to vibration monitor, for example, a vibratory conveyor or a clay mill in a quarry, without a complex, hi-tech, expensive solution that can never be cost-effective?

If you don't believe it's achievable, then ERIKS are here to shake things up.

Shaking-up vibration

With any maintenance and repair function, the keys to success are to first understand the asset, then to understand the application. Only then can you establish the most effective way to maintain it, repair it – and monitor it.

Successful vibration monitoring is no different. What makes it possible to vibration monitor a vibrating asset is understanding that it's not simply vibration that's being monitored but change in vibration.

Once you know how the vibrating asset operates, issues can be identified when the nature of the vibration changes. As long as the sensors are mounted in the correct places, they can provide a clear picture of the asset's normal behaviour, pick up any change, and provide an alert for issues as they arise.

If, for example, the vibration changes from a side-to-side motion to a backward and forward motion, it's a warning sign.

> Wired vibration sensors

Reading right

Acquiring useful data depends not only on taking the right readings from the right place, but also on taking them at the right time within the right parameters.

Data from a heart-rate monitor, for example, is useless if it doesn't identify which readings relate to when the person was resting, and which from when they were running a marathon.

ERIKS' solution is to use wired vibration sensors, remotely uploaded with parameters according to the state of the asset – such as its current operating function, load, and speed. All displayed in real time using ERIKS Smart Asset Management platform.

This enables partitioning of the data gathered, and like-with-like comparisons

which make it easier to identify abnormal results. ERIKS' lengthy monitoring experience, together with the scale of ERIKS' monitoring installations, also allows data to be compared between similar assets in similar applications nationwide. That means vibration data anomalies can be spotted far more easily, and the root cause identified far more accurately.

Biopsy or autopsy?

The belief that vibrating assets can't be vibration monitored has left many of them with undiagnosed issues, leading to unnecessary repeat repairs, deteriorating efficiency, and underperformance.

Misdiagnosis of root causes of failure can lead to the wrong components being replaced, while the problem continues, and the asset continues to deteriorate. Ultimately, the continued wear and tear can lead to catastrophic failure, and associated damage to connected assets and components.

Diagnosing the failure mode at this point is the same as conducting an autopsy on a patient. When the asset is already 'dead' it's too late to save it. But utilising correct condition monitoring enables biopsies: gathering data, accurately identifying the root cause, and targeting the 'treatment' to achieve maximum success with minimum intervention, disruption, and cost.

ERIKS' extensive experience and know-how also enables a more holistic approach. This can lead to quicker and simpler steps to

> Achieve maximum success with minimum intervention

help reduce wear and extend asset life. For example, if vibration monitoring identifies the issue is with the bearing, then a simple change to the lubrication regime could solve the problem.

Alternatively, if repeated motor failures have only led to repeated replacement of motors, then vibration monitoring and ERIKS' know-how could reveal the cumulative effects of the unresolved root cause. These could be anything from deterioration of anti-vibration mounts to the imminent failure of critical structural welds.

This effective early warning not only helps avoid the cost, downtime and lost production resulting from catastrophic failure of the asset. It also makes it easier to: make the right decision on the necessary next steps; schedule the maintenance, repair or replacement; avoid the health and safety risks of carrying out engineering works under unwanted pressure of time.

So, technicians can sort out the shakes without being rattled, and your asset will always be ready to roll.

The rule of 3 for your assets

Jonathan Read
National Sales Leader - Engineering Services
ERIKS

There are three key things you need from your motors, gearboxes and pumps: optimum performance, highest reliability and maximum longevity. ERIKS takes a three-fold approach to helping you achieve them:
1. Being smart. 2. Being close. 3. Being hands-on

> 1. Being smart.
> 2. Being close.
> 3. Being hands-on

Being smart

The only thing worse than a failed asset is an unexpected failed asset. But by applying our expertise to your engineering issues in the most smart ways possible, we can help you to be prepared.

For example, ERIKS VibraConnect Online Vibration Monitoring eliminates guesswork. By collecting and analysing machine vibration and temperature data, combined with ERIKS' experience and know-how, VibraConnect gives you valuable and constant insights into the current and likely future condition of your motors, pumps, gearboxes and fans. Which gives you foresight, so you can plan maintenance with minimum disruption and costly downtime, prevent breakdowns, and optimize production.

ERIKS are also smart enough to offer you different ways to resolve your issues. Our engineering team will carry out a comprehensive on-site inspection to assess and report on the asset's condition. You then have all the information you need to decide whether to repair, replace or upgrade.

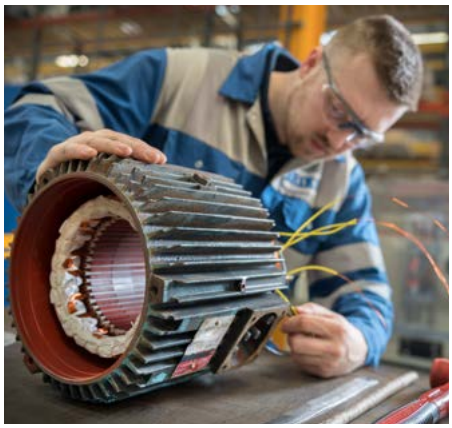
If you opt for repair, then many assets – from gearboxes to High Voltage equipment, and coils to commutators – will demand specialist repair equipment. But you can depend on ERIKS to have the necessary resources required, whatever choice you make, as well as the specialist know-how to go with it.

So, you're never forced down a path to suit us. You're given the freedom you need to make an informed decision to suit you.

Being close

We get close to our customers so we can work with them to understand their issues. Because when we understand them better, we can solve them better.

So, if for example, recurring electro-mechanical problems are causing repeated failures, we won't settle for repeated repairs.



We'll use our expertise to get closer to the problem, to provide a more effective solution - such as providing Root Cause Failure Analysis to help eliminate bad actors once and for all.

We're close in another way, too.

Hands-on

When you work with a reputable, nationwide provider of engineering services like ERIKS, you can always expect the best.

Our engineers are trained to industry standards and are fully compliant in Health & Safety practices. In addition, all work is undertaken to the same structured and proven quality procedures, across our National repair network.

Every single asset is tested thoroughly throughout the repair process, to ensure it's right first time, every time. Wherever possible, we repair as good as new – and in many cases even better than new. That's why we can confidently invite you to visit our workshops and witness our engineers in action on any repair.

> "Make your assets, and industry, work better"

Making industry work better

Being smart, being close and being hands-on makes ERIKS better at making your assets work better. But that's not our only focus.

We understand that any motor, gearbox or pump is only part of the bigger picture of production, productivity and profit. So we take a wider view to make your assets, and industry, work better.

We know that motors account for up to 65% of a site's electricity use. So optimising their energy efficiency can have a significant impact on your bottom line. We always aim to help you keep them running more reliably and more efficiently for longer. Root Cause Failure Analysis can also help to eliminate and avoid problems (such as misalignment or bearing failure), to minimise downtime and reduce repair costs.

For gearboxes, all units are stripped and inspected to establish what work is required. If a repair is judged uneconomical, we will offer you a like-for-like replacement to get you back up and running as soon as possible.

For your pumps, we offer not only the most effective solutions for every situation, but also know-how that goes beyond the pump alone: to sealing technology, flow control, drives and more, for a comprehensive solution to all your pumping issues.

So when you want to optimise the performance, productivity and service life of your most essential assets, it simply has to be ERIKS Engineering Services. No three ways about it.

To find out more, **click here**

Made just how you like it

Chris Dixon
Director of Flow Equipment and Services
ERIKS

If you're a coffee drinker – and these days, who isn't – you'll be very particular about how your coffee is made. When you're a coffee producer, the same principle applies to your production equipment.

“A tough, fast-moving operating environment”

How do you like your coffee? Around 95 million cups of it are drunk every day in the UK alone, and though there won't quite be that many different options, there will certainly be plenty of variety.

One of them is sure to be cappuccino, and many mugs of that will be made with coffee from one of the UK's largest producers. So repeated downtime on their cappuccino line threatened not just their own productivity, but also the productivity of tens of thousands of bleary-eyed coffee drinkers nationwide.

When an off-the-shelf replacement part wouldn't solve the problem, ERIKS' engineers had to turn baristas, to design a bespoke solution that got the cappuccino flowing once more.

'Coffee, the favourite drink of the civilized world' – Thomas Jefferson

With so many coffee lovers to keep supplied, the customer's cappuccino line is a tough, fast-moving operating environment for a valve.

The valve's role is to control the flow of cappuccino powder – a highly abrasive and sticky substance, delivered at +90bar pressure at a temperature of 45°C. But around every three months on average, the build-up of powder on the ball of the high-pressure actuated ball valve is enough to cause it to stick in its open or closed position and bring the line to a halt.

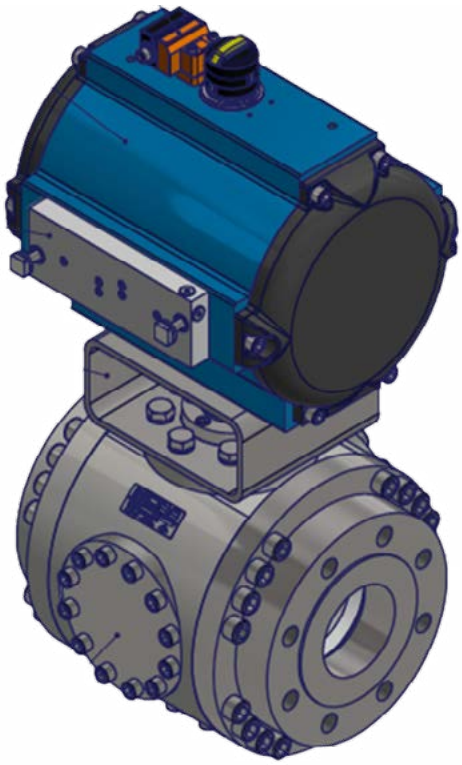
When that happens, the valve has to be removed, taken to a workshop, stripped, inspected, fitted with new parts, and then taken back to the line for installation.

“A minimum of six months between failures”

With a total of six valves on the process line, that's a great deal of downtime, mounting maintenance costs and excessive lost production.

It was clear to the customer that this couldn't continue, and that a standard part was never going to be the answer. So ERIKS were briefed to create a bespoke design that would last a minimum of six months between failures.

Fortunately, they had specialist expertise to call on.



For more on ERIKS Valve Technology **click here**

'No work would be possible without coffee' – Henning Mankell

To design a specialist actuated valve, it makes sense to work with actuated valve manufacturer – and ERIKS-owned AMG-Pesch/ABK Valves GmbH are exactly that.

Experts at designing and engineering valves for challenging or unusual applications, their capability – combined with ERIKS know-how – led to several prototypes for consideration. The most promising design included several features to help overcome the issues and extend the service life of the component:

- Firstly, it was designed with no dead space where the cappuccino powder could accumulate. This immediately reduces the amount of powder at risk of sticking to the ball.
- Secondly, the ball itself was protected with an FDA approved special coating to help prevent the powder from adhering.
- Thirdly, a special sealing system was included in the design, to remove any powder which did somehow manage to stick to the ball.
- And lastly, an automated system intermittently blasts the valve with nitrogen to blow off any powder that remains where it shouldn't.

“A live trial on the production line”

'What goes best with a cup of coffee? Another cup' – Henry Rollins

After a period of continuous development, the ERIKS / AMG-Pesch team achieved the ultimate prototype. Now it was time to install it for a live trial on the production line.

The original actuated ball valve lasted an average of three months before failure. The customer had asked for a new design which would operate trouble-free for at least six months: giving them double the reliability.

What ERIKS gave them was a prototype which completed not just three months, not even six months, but an unbroken nine-months in the production line's most aggressive operating conditions. No wonder the customer decided they had seen enough... and placed an initial order for 28 of the new valve design.

These will be installed on the cappuccino line process and replace the competitors similarly failing valves at the UK site. In addition, work has already begun on slight modifications to the original design, to satisfy an order for 12 more units at the same customer's around the globe, resulting in a orders of over 1m in total.

All of which calls for a celebratory drink. Anyone for coffee?

Saving energy for customers is our bag

Victor Harris
Senior Project Manager - Industrial Electronics
ERIKS

Helping customers maintain and repair their assets, to minimise downtime and maximise productivity, are our key concerns. But if we can optimise efficiency and reduce energy use at the same time, so much the better.

The UK's leading paper bag manufacturer was having issues with a slip ring motor on one of its production lines. Over 70 years since the line was first installed, replacement parts are no longer available as a standard order. So bringing the machine's complex design back to spec would need more than a paper bagful of cash. The estimate was around £38,500 in total.

This is where ERIKS' repair / replace neutrality comes into its own – enabling customers to make informed decisions that are right for themselves.

With ERIKS' impartial advice, the customer decided a new motor and drive system would be a more cost-effective option than repair. And that ERIKS would be the best people to provide it.

Working in the dark

While the customer's own on-site team worked on upgrading the mechanical components, ERIKS began work on the installation of the motor, powertrain, new electrics and the automation systems.

The line's age meant that the original engineering drawings had long since disappeared. And after several decades of on-the-hoof repairs and undocumented upgrades, even if they had been available they wouldn't have had much resemblance to the asset that confronted today's engineers.

> "Improvements and benefits"

So as the installation proceeded, several unexpected issues were revealed and challenges were overcome. However the outcome was the development of a far more refined solution for the new main drive panel, with a number of improvements and benefits.

Looking good on paper (bags)

Productivity and performance are important. Safety paramount, that's why ERIKS recommended the installation of a new Pilz safety PLC for the main control panel. The safety design is certified to the highest possible level for the customer's complete peace of mind.

The new print station motor is now controlled by an inverter, which is more effective at protecting the station's mechanical components. In addition to a soft-start and soft-stop function, in the event of a printing jam the inverter will trip far faster than the original direct-on-line system – helping to reduce the likelihood of serious damage to the print mechanics.

The rubber roller is particularly at risk if the machine is stopped and the roller is left in contact with the print plate. This can cause an irreparable dent in the rubber which means the roller has to be scrapped. The automatic mode for the print station makes this much less likely to happen.

Making a good impression

The print station drive now operates independently of the main drive. Once the print impression function has been turned on, the independent drive can be set to auto control.

Then, if the e-stop, safety guard, web brake or main drive stop is activated, the impression will be turned off and the print roller will automatically disengage. This not only protects the roller from damage, but also protects the customer from expensive roller replacement costs.

And that's not the only saving ERIKS achieved for the customer.

> "Not the only saving ERIKS achieved"

Saving energy, night and day

The WEG IE3 motor, Fenner drive and Fenner pulleys proposed and installed by ERIKS are delivering significant energy cost savings.

> "Pay for itself in just 3 years"

Operating both day and night shifts, the customer is charged a slightly lower rate for electricity used overnight. So the greater energy efficiency of the upgraded machine is saving £4,500p.a. on night-time energy costs, and £6,000p.a. on daytime energy bills.

As a result, the upgrade will pay for itself in just 3 years through energy savings alone. And as these two quotes prove, it doesn't stop there.

The first quote is from the customer, who says that 'it was a great job and the machine has been running very well since. We... really appreciate the great service and partnership which is developing between our respective companies.'

The second quote is the kind you'd expect from ERIKS, detailing the cost of a similar upgrade on another of the customer's paper bag lines.

Once approved, it looks like more energy savings are in the bag.

For more on ERIKS Electronic Services **click here**

When Archime was screwed

Mahesh Patel
Engineering Manager
ERIKS

The Archimedes screw has been doing a great job of lifting and transporting fluids and powders since the time of, well, Archimedes (around 24 centuries ago, give or take). So when a cement manufacturer began having problems with theirs, they called in the experts with experience. Though not quite that much experience.

The manufacturing plant uses a total of eight plain bearing assemblies to support Archimedes screws which lift cement in a powder form vertically. Each Archimedes screw and bearing assembly would rotate at a speed of approximately 1,400rpm. Or at least it does when things are going well.

For three months or so at a time the system would work perfectly. But then, time and time again, the bearing would fail and the screw would stop turning. The whole asset would have to be taken out of service for at least a day, to replace the whole bearing assembly i.e, connecting flanged shaft, plain bearing, labyrinth, and housing too and a completely new assembly would need to be installed.

> “Cement dust is an aggressive, intrusive substance”

The cause of the problems was fairly obvious. Cement dust is an aggressive, intrusive substance and – as the name suggests – it's not something a cement works is short of.

Despite the phosphor-bronze bush bearing being protected by a labyrinth seal, the dust still found its way in and soon caused the bush to fail.

The ingress of dust was also steadily damaging the main shaft, which was another replacement or failure just waiting to happen.

The customer had tried regular purging of the grease to try to remove the contaminant, but this not only increased the maintenance burden and – obviously – the bill for grease. It also failed to resolve the issue.

Since Archimedes is no longer available, the customer called in ERIKS.

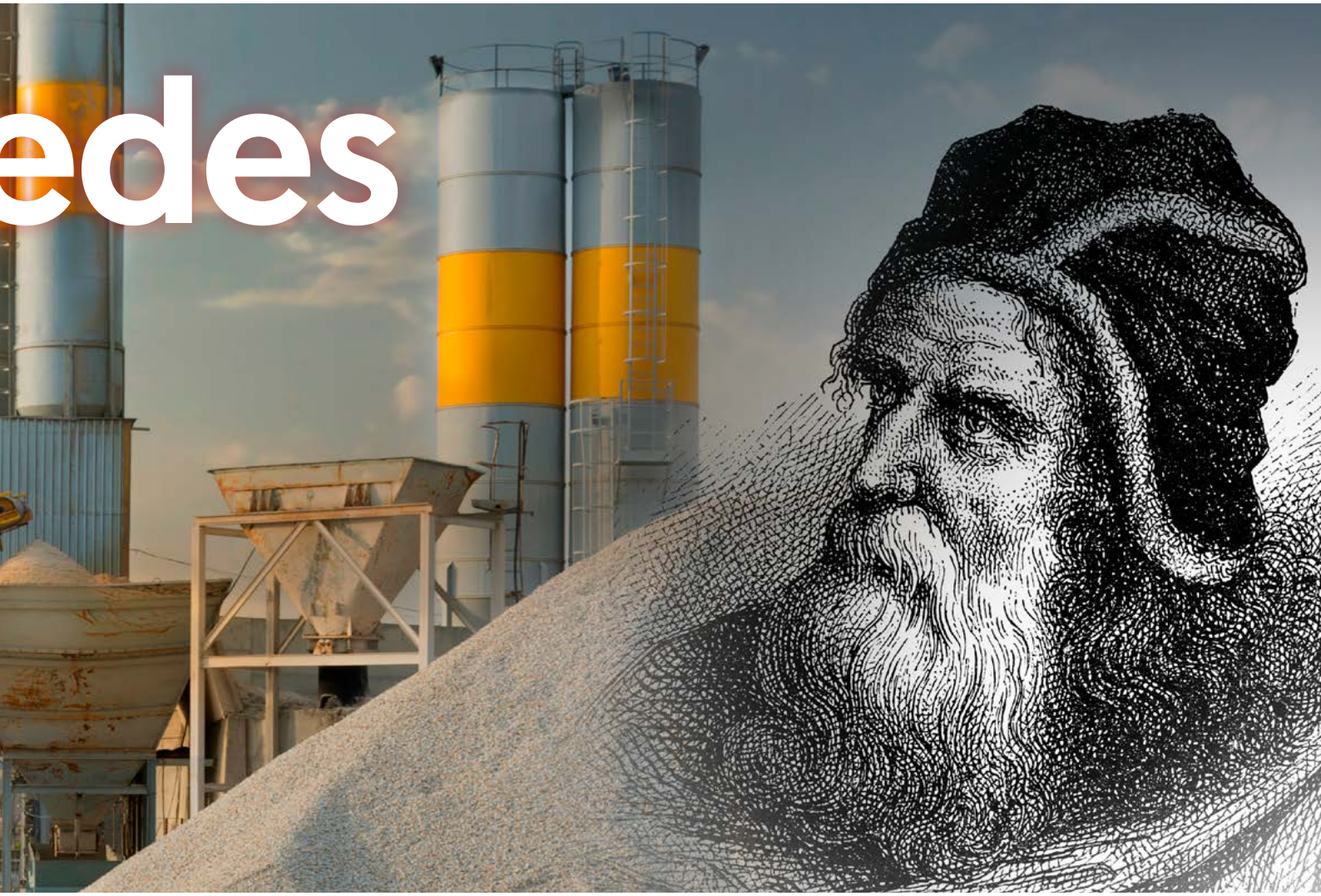
Taking Einstein's advice

Einstein wasn't an engineer himself, but he did have some useful advice for engineers. 'Insanity', he said, 'is doing the same thing over and over and expecting a different result.'

So instead of replacing the old bearing with an identical one, ERIKS' engineers brought some fresh pairs of eyes and new ways of thinking to the problem.

They began by observing the application, continued by identifying the root cause of the problem, and finished up by designing an entirely new bearing housing assembly.

The new assembly doesn't just offer greater protection against cement dust ingress, thanks to its special H-Ecoupur seals. If the bearing ever needs to be removed, the new



> Fresh pairs of eyes and new ways of thinking

design also make this far quicker and easier, because there's no need to remove the shaft to remove the bearing.

Hard and fast

The shaft has also benefited from ERIKS' attention.

The original through hardened steel design suffered scoring from the dust – and although the shaft hadn't failed as a result, it could only be a matter of time.

So ERIKS replaced the original shaft with a case-hardened and ground version: providing more resistance to any small quantities of the aggressive dust that still gained ingress.

And if and when the bearing or seals need attention, the new Split Roller Bearing (SRB) in its SRB housing can simply be opened up into two halves and lifted off the shaft, which stays securely in place.

> A quick two-hour sprint

This shortens bearing removal and replacement, if required, to a quick two-hour sprint rather than a whole day marathon.

The cost of replacing the bearing or seal is also reduced, as both are standard items available from stock.

Wear? What wear?

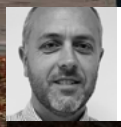
Previously, the Archimedes screw and bearing assembly was failing roughly every three months. With the new bearing in place, and no sign of failure after the same period, the assembly was dismantled for inspection.

What was revealed were bearings that were still fully greased and in excellent condition, and seals which were virtually immaculate. So the new SRB solution is already delivering on its promise of easier, less frequent maintenance and a longer life.

Hardly surprising, then, that ERIKS has been asked to quote for replacing bearings and seals on the remaining seven Archimedes screws. And the customer still has less downtime and lower replacement costs to look forward to.

For more on ERIKS capabilities **click here**

Only one bearing beats the SKF Explorer SRB



Stephen Davis
Engineering Manager - SKF UK Industrial Market

When the SKF Explorer self-aligning roller bearing was launched almost 25 years ago, it was ground-breaking. Nothing could match its load-carrying capacity and extended service life. But now there's a bearing that performs even better: the upgraded SKF Explorer. With improved wear resistance and extended failure mode, it provides significantly longer service life, increased equipment uptime – and the virtual elimination of unplanned downtime.

> "Virtual elimination of unplanned downtime"

In many of today's harshest and most challenging operating environments, bearing failure is an ever-present threat. Severe contamination or poor lubrication can quickly lead to a failed bearing, an equipment shutdown, and extensive – and expensive – downtime. In these conditions, the original SKF Explorer self-aligning roller bearing offers high reliability.

Now the good news is that the upgraded SKF Explorer offers even greater reliability, thanks to an improved heat treatment process which delivers a range of bearing performance benefits.

The heat is on

Engineers and scientists worked together to develop the original SKF Explorer range. Blending their knowledge of metals, engineering design and industrial equipment operating conditions, they created a bearing with a superior performance certified by two of the leading certification bodies (Germanischer Lloyd and Det Norske Veritas).

Utilising an extremely clean and homogenous bearing steel, processed with a unique heat treatment, the pioneering team produced a bearing material with exceptional strength and durability, and the optimal combination of hardness and dimensional stability. Then they incorporated the achievements of the

scientists with the expertise of the engineers, to produce a bearing concept with improved surface structures and refined internal geometry tolerances.

The result was a bearing specification which couldn't be improved on. Until now.

> “Where reliability and long service life are key”

Hard and tough – just like the conditions

Metals and mining, mineral and cement processing, wind power and marine are typical of the industry sectors where contamination can be high, lubricating conditions poor, and where ordinary bearings struggle. They're also the sectors where the upgraded SKF Explorer self-aligning roller bearing comes into its own.

The unique, patented SKF Xbit-II steel rings have undergone an improved heat treatment. While maintaining their toughness and enhancing their wear resistance, this has increased their hardness by up to 2 HRC (depending on bearing size). The outcome is longer uptime for virtually any application where reliability and long service life are key.

The same treatment also gives the bearings excellent crack resistance. This means minor faults take longer to turn into major ones, and there's more time from the first signs of damage until the bearing becomes unserviceable.

For medium-size and large bearings used in process equipment, that gives more time to prepare for repairs. So it's easier to schedule maintenance around planned shutdowns, and virtually eliminates unplanned downtime and associated additional costs.

> “Expect the bearings to last up to twice as long”

Leading a double life

Even with poor lubrication and in contaminated conditions, the upgraded SKF Explorer bearings outperform the earlier version. Independent and SKF testing has shown that customers can expect the bearings to last up to twice as long.

On medium and large bearings, the tests showed that the time from initial spalling to through-fracture is extended. The flange strength is also greater, so in tests the upgraded SKF Explorer still ran twice as long after the flanges fractured, and only developed spalls.

Of course, bearings in process equipment are never deliberately run to through-fracture, but the tests give real reassurance that once damage has been detected there's time to plan, order parts and prepare for a shutdown with less downtime.

For sealed SKF spherical roller bearings, the figures are even more impressive. By keeping out contaminants, they have been shown to last at least three times as long as open bearings.

More life, less...

...friction

SKF Explorer spherical roller bearings have self-guided rollers for excellent friction control. This can increase machine efficiency, or reduce the frequency of relubrication.

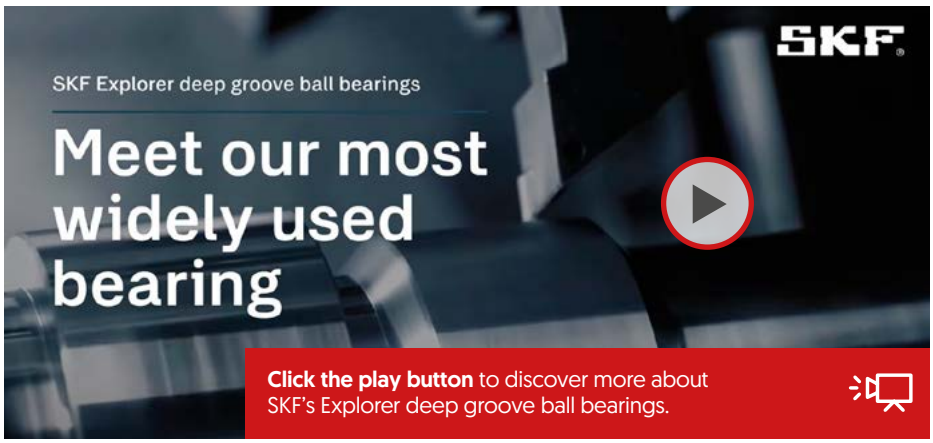
...CO_2

Lower-friction bearings mean greater energy efficiency in use, which means fewer CO2 emissions..

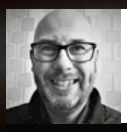
...waste

Many SKF Explorer bearings can be remanufactured, potentially reducing their carbon footprint by up to 90% compared to buying new.

With so much to gain (like wear resistance and service life), and so much to lose (all the bad things) isn't it time you explored the upgraded SKF Explorer self-aligning roller bearings?



The split decision everyone agreed on



Mark Prior
Power Transmissions ERIKS
ERIKS

It wasn't the conveyor chains which shackled one customer to costly downtime. It was the sprockets. So they turned to ERIKS to see if there was a better way to keep their conveyors moving, their process running, and their production rolling.

The cement manufacturing process is a tough environment for machinery. Even the conveyors carrying fuel to the kilns operate in less than ideal conditions. And for this leading cement manufacturer, there is an added reason why their conveyors need to keep moving 24/7. It's because, whenever a conveyor is offline, the process running costs increase by no less than 50%, thanks to the need to switch from their sustainable fuel source back to coal [see box-out].

> "There's no time to waste"

So when chains and sprockets need repair or replacement, there's no time to waste. But removing a 1.5m diameter heavyweight sprocket from a driveshaft, in a difficult-to-access location inside a 180ft-long piece of equipment, is a tough and time-consuming business.

That's why the sprockets were normally run to fail, and not even the chains had been serviced or replaced for several years.

Wondering whether, to make life easier, it would be possible to use a split sprocket, the customer turned naturally to ERIKS for the answer.

Not rocket science: sprocket science

Split sprockets are not new, but they are unusual. Even for a standard application they're not generally available off-the-shelf– and this customer's application is far from standard.

The sprockets carry steel conveyor chains of 6in. pitch – 85ft. long and 4in. wide – with attachments for cross-flights approximately every 5ft.

One conveyor runs above and one below, with the cross-flights scouring and flattening the material carried on the lower conveyor, turning it into a 3in. thick layer. This material is then conveyed to a chute from where it is loaded into the kiln.

So designing and engineering a suitable solution demanded experience of sprockets, conveyors, and rotating equipment, together with expertise in aggressive environments.

> "A suitable CAD design completed"

Or to put it simply: it needed ERIKS know-how.

ERIKS' Rotating Equipment Product Business Unit got down to work, using CAD to design a split-sprocket solution.

One crucial consideration was the size of the hubs: they had to be big enough to withstand the torque necessary to tighten the bolts which keep the two halves of the split sprocket together.

With a suitable CAD design completed, ERIKS approached an experienced supplier partner to manufacture the sprockets, ready to install at the customer's next scheduled shutdown.

The chain gang

The ERIKS Project Drives Team was drafted in to remove the original one-piece sprockets from the shafts. Firstly, the conveyor chains

had to be undone. Next, the bearings had to be stripped from the shaft and the shaft removed. Finally, the sprockets had to be pulled out using a heavy-duty 70-80 tonne puller.

The team then polished the shafts to good-as-new condition, installed the new split sprockets, replaced the conveyor chains, and had the refurbished conveyors back up and running to meet the customer's end-of-shutdown deadline.

In the past, removing and replacing the one-piece sprockets was a three-day task.

Now, the new split sprockets can be taken out of the machine without stripping the bearings or removing the shaft. After undoing the bolts joining the two halves, all it takes is a few blows with a heavy hammer to separate the halves for removal. Any repairs can then be carried out on site, the sprockets replaced in the machine, and the conveyors be back in action – all in one day.

No wonder when people discuss the benefits of split sprockets, opinions aren't divided.

> "Repairs can then be carried out on site"

Cutting costs and carbon

The customer's conveyors carry a critical fuel source to the kiln for the cement-making process.

Sustainable and renewable, the fuel is manufactured from paper, plastic and fibrous wastes that are uneconomic or impossible to recycle. This fuel helps to reduce reliance on burning coal, which reduces the customer's energy bill for the process by 50%. At the same time, burning a non-fossil fuel helps to shrink the customer's carbon footprint.

The need to sustain these savings makes the continuous running of the conveyors crucial. Which is why the customer relied on ERIKS to provide a solution for removing the sprockets that keeps downtime, costs and carbon emissions to a minimum.

When the going gets tough, the bearings get going

Dennis Briggs-Price
UK Aftermarket Field Sales Manager
NSK

It's okay for us humans. When working conditions get too challenging – if the aircon breaks down, for example – we can insist on working from home. Bearings don't have that luxury. Extreme temperatures, vibrations, shock loads and contaminants can all be part of their ordinary working day. In conditions like these, you need more than an ordinary bearing.

> “Productivity and profitability problems”

Even in regular industrial settings, bearing failures often lead to lengthy downtime. But some of the toughest environments – such as quarries and mines – where operating conditions for bearings are harshest, also tend to be remote and hard to access. This means sourcing and receiving replacement parts can take longer, and downtime becomes even more of an issue.

Rather than replacing failed bearings over and over again, the solution can lie in making relatively simple changes, that often lead to major improvements.

Cementing success

Conditions in the cement industry are highly challenging for machine components. One customer was seeing bearing failures every two to three months on a blade support for a concrete pipe slotting machine, with each failure leading to around eight hours of downtime.

The failures were mostly due to concrete dust contaminating the grease. When NSK engineers examined the application, they identified that the existing shielded Deep Groove Ball Bearings weren't suitable for the environment. Their recommendation was to switch to NSK's Molded Oil bearings, which come with a DDU seal.

Available as ball, spherical roller and tapered roller bearing types, NSK's Molded-Oil bearings contain a resin holding a supply of lubricant. This is distributed in small, continuous quantities on to the raceway. The result is bearings which are well adapted for corrosive, watery and dust-filled environments. Their inbuilt continuous supply of lubricant also means they don't need refilling, so their maintenance-free performance is extended.

For this customer, the change to Molded Oil more than quadrupled the life expectancy of the bearings – from two to three months to more than a year. Cost-savings for the company were in the region of £33,000 per annum.

> “Seven times the service life”

Good vibrations

Quarrying and mining environments are tough for workers and even tougher for bearings. While employers naturally take good care of their employees, taking care of their bearings – and making the right bearing choices – is important too. In fact, the impact on productivity and profitability can be huge.

The vibrating screens in one particular quarry were failing every six months, due to bearing faults caused by issues with load, lubrication and contamination. Every failure resulted in 24 hours of production downtime.

Specialist NSK engineers evaluated the situation and recommended a switch to NSK VS Series bearings, made from High-Tough Steel (HTF) which is specifically designed to hold up even under the most severe operating conditions. HTF can be utilised for cylindrical, tapered and spherical roller bearings, and offers up to seven times the service life of conventional bearings when dealing with contaminated lubrication.

Thanks to their superior resistance to wear, seizure and heat, the new bearings had triple the lifetime of their predecessors. This ultimately saved the company around £47,000 per annum, through reductions in both downtime and maintenance costs.

> “Reductions in downtime and maintenance costs”

Keep on rolling

Steelmaking is another industry where bearings routinely take a beating. After repeated unexpected bearing failures at a cold rolling mill, a steelmaker contacted NSK for help.

The highly-contaminated operating conditions within the mill were causing costly unplanned shutdowns with a catastrophic effect on production. After analysing the problem, NSK experts recommended adoption of the STF range of spherical roller bearings, made from long-life Super-Tough Steel. These bearings have been specifically developed to combat debris contamination in the lubricant.

Compared to conventional bearings, the NSK STF range offers longer life, and increased resistance to wear, seizure and heat. Service life when dealing with contaminated lubrication can be up to 10 times longer, up to four times longer even at 160°C, and with a 40% improvement in seizure resistance.

Before the switch, the company's bearings were failing every three or four months. Now they are now being changed out just once a year as part of regularly scheduled maintenance – representing a cost-saving of around £14,000 per annum.

Clearly, if you take care of your bearings, your bearings will take care of you.

Buy online

Find the perfect formula for chemicals industry safety

Jason Braham
Sales Account Specialist – Commercial EMAP Sales Enablement & Analytics
Ansell

The chemicals sector presents employees with some of the most high-risk working environments to be found anywhere in industry. Expert chemical risk assessments and effective risk controls are essential to help minimise harm to human health. By working together, Ansell and Chemwatch provide a solution that can meet the unique safety needs of any company working with hazardous chemical substances.

Before you can act to reduce risk at your site, you need to know what that risk is. In the chemicals industry, that means evaluating the chemical hazards on site. Then you can take appropriate control measures to remove or minimise the level of risk, and provide PPE to safeguard workers.

With Ansell and Chemwatch working together, you can easily access expertise in chemicals management and workplace chemical safety solutions, to find the perfect solution for your specific needs. Because together, they have risk, safety, protection and compliance completely covered.

> “Risk, safety, protection and compliance completely covered”

12,000,000 ways to be safer

There are thousands of ways that different hazardous chemicals – alone or in combination – can act, react, and potentially cause harm. Workplaces have a responsibility to store, handle, and label chemicals according to the regulations enforced in their respective jurisdictions.

Knowledge and understanding of all the issues doesn't come overnight. It takes decades of experimentation and testing to build extensive knowledge and practical understanding of what can occur, why it occurs, and how to prevent it or protect against it. Chemwatch has been operating in chemicals management for over 30 years, and in that time has amassed a wealth of experience, expertise and data.

The Chemwatch database covers over 3 million chemicals and hazardous substances, and incorporates more than 7,500 regulatory lists from over 90 countries. The information in the database covers all aspects of chemical safety regulations – from storage and labelling to distribution and transport obligations.

Chemwatch also holds a database of over 12 million safety data sheets. With this archive of information, it has the data points needed – such as physical and chemical properties, GHS classifications, and precautionary statements – to quickly and easily generate accurate risk assessments which are invaluable to chemical industry operators.

Ansell's Chemical Guardian tool can also generate unique and personalised safety assessments using a proprietary Risk Assessment tool, to identify when a hazard requires PPE or other risk controls, to reduce injury and illness, ensure regulatory compliance, and improve worker safety.

> “A wealth of experience, expertise and data”

The science of protection

Knowing the hazards which chemicals and toxic substances present is the first aspect of chemical safety. Understanding the risks of exposure – the probability and degree of harm or adverse health effects – is the second. Controlling exposure to chemical hazards and toxic substances to protect workers is the third.

With the risks identified and assessed, Ansell has the expert knowledge to provide the optimum protection from harm.

Working at the forefront of protection science, Ansell is constantly researching, developing and investing to manufacture and distribute cutting-edge product innovations and technologies. Ansell's expertise in chemical permeation testing and barrier materials is helping protect customers worldwide from a wide range of occupational diseases caused by exposure to hazardous chemicals.

Under health and safety regulations, employers have an obligation and responsibility to provide sufficient well-maintained PPE, as well as to train workers in how to use it effectively. Ansell manufactures an extensive range of chemical protective

clothing and gloves to help prevent exposure to hazardous chemicals.

> “The expert knowledge to provide the optimum protection”

An Ansell GUARDIAN on-site assessment is also available, which can help with injury reduction, reduce the cost of protecting employees, increase compliance, and even help to reduce the complexity of your PPE portfolio.

More expertise, less risk

The partnership of Ansell and Chemwatch brings together two of the leading experts in the fields of chemicals management and chemicals PPE.

By combining their experience and knowledge, the two companies make it easier for any business in the chemicals sector to find a comprehensive solution for reducing risk, maximising protection, and keeping employees safe from harm.

Click here to find out more about Ansell Products

Discover more about Chemwatch products and services **here**

A fan-tastic result all round

Duncan Webb
Reliability Systems Manager
ERIKS

When a fibreglass insulation manufacturer had a problem with a noisy fan unit, it wasn't just risking catastrophic failure. It was also upsetting the neighbours. Fortunately, ERIKS' know-how and ingenuity helped to keep the peace.

Maintenance engineers walk a tightrope between the pressures of production and the need to maintain assets at optimum efficiency. Often it's the long-view which loses out, and a deteriorating asset is kept running until finally it falls over. Sometimes it brings associated assets down with it, but that's a gamble with downtime that many manufacturers are prepared to take.

One customer's critical fan unit was already on borrowed time, growing increasingly noisy and running hot.

ERIKS' on-site team, which runs the customer's engineering stores, advised keeping a spare unit ready in stock, until a suitable maintenance window could be found. Meanwhile ERIKS monitored the unit for vibration and temperature, to provide useful data ammunition for the maintenance engineers.

> "A gamble with downtime"

Talking hot air

The fan unit is vertically mounted on the outside of a chimney, which vents hot air from the manufacturing process. The fan extracts the air – loaded with tiny glass fibres – out of the chimney for filtering, so that only clean air is vented to the environment.

ERIKS' Online Vibration Monitoring revealed a steady increase in fan vibration over several months, with two alarm levels breached. However the situation was confused when the bearing temperature – which monitoring revealed had also been rising – began falling again in.

Because the Online vibration data continued to show an upward trend, ERIKS' engineers knew there must be another reason for the drop in temperature. And they found it was... a drop in temperature.

The customer's site is in Scotland, and the cold Scottish winter weather had helped to cool the externally-mounted fan. This anomaly shows the importance of having more than one set of data from more than one type of sensor.

With Online Vibration Monitoring still showing a rising trend, it was possible to confirm that the problem remained, and the root cause was still unresolved.

Now the customer's own maintenance engineers had a valuable counterbalance to the production department's demands, and a brief shutdown was quickly arranged.

> "The importance of more than one set of data"

A race against erosion

With the fan's metre-high motor removed from the chimney and taken to ERIKS' local engineering workshop, it didn't take long to discover the cause of the vibration and rising operating temperature & noise.

The outer bearing race was showing clear signs of erosion due to electrical fluting. The rotor of the inverter-driven motor was generating an electrical field, and the current was escaping via the bearing. Every time it did, it created a tiny electrical arc which was gradually eroding the bearing metal.

Undetected and unresolved, the bearing deterioration could have catastrophically affected the motor, fan, pulleys and drive belt. In the worst-case scenario even the chimney stack could have been damaged, and a fire could have resulted.

To prevent a repeat of the problem, ERIKS fitted a bearing with an insulated outer race. This reduces the amount of current passing

Click play to see ERIKS VibraConnect in Action

> “Worst-case scenario”

through the bearing and minimises the resulting electrical fluting. In addition, earthing brushes were fixed to the body of the motor, to provide contact with the exposed shaft at the drive end. These brushes offer an easier route for the current to escape to earth.

Readings from sensors fitted to the new motor show that both vibration and temperature have been dramatically reduced. Meanwhile the overhauled and updated motor remains in the engineering stores as a spare.

Music to their ears

It wasn't only production which was threatened by the problem with the fan. The noise from the increased vibration – the result of the electrical fluting – was also attracting complaints from nearby residents.

Before ERIKS' intervention, the customer had been planning to spend around £40,000 on an acoustic chamber for the motor, to muffle the noise. The new and improved motor has proved so much quieter that complaints have stopped and the idea of the chamber has been scrapped.

Good relations with the neighbours – and £40,000 – have both been saved.

For more on ERIKS Vibration Monitoring **click here**

Meet the new kid on the plummer block

Steve Boyle
MRO Sector Manager
SCHAEFFLER

It's been 20 years at least since the design of plummer block housings was last improved. Meanwhile dust, dirt and other contaminants haven't changed either. But the pressure to reduce plant downtime and improve efficiency has. That's why Schaeffler has developed a completely new generation of innovative, high-quality housing, engineered to perform in even the most aggressive operating environments.

The purpose of a plummer block housing is to increase the service life of the bearing inside. But what about the housing itself? If that can be designed and engineered to last longer too, then the bearing automatically benefits. It's a win-win situation for the customer.

So the starting point for designing Schaeffler's FAG SES plummer block housing was to make it more robust, easier to maintain, and more resistant to ingress of contaminants – all so that the bearing inside can carry on performing better, for longer.

> "A win-win situation"

Improved – as standard

The new SES plummer block housings are changed and improved, but not beyond all recognition. It's still built to the same dimensions as current standard housings, so that it's quick and easy to switch to the new design.

Whether you're replacing standard housings in conveyor systems, crushers, mills, drive drums, fans & turbines, you can swap for the new, improved solution with minimum fuss.

Added to which, with the new housing installed, things get easier still.

Ready to go

With older versions of plummer block housings, the housing is just the start. If you want to install condition monitoring or mount automatic lubricators, you have to locate and drill them yourself.

> "Easy to switch to the new design"

But with the FAG SES, half the job's done for you.

Blind mounting holes for monitors and lubricators are already tapped into the housing, and they're engineered for optimum effectiveness.

Firstly, they're drilled to the perfect size so dust, dirt and other contaminants have less chance of finding their way into the bearing. Secondly, they're quick and easy to align due to markings on the housing that indicate the shaft and bearing centre.

A standardised outlet hole is also provided, to control egress of lubricant and help to reduce wastage and costs.

Easing the load

The optimised design of the SES housing gives it a 25% higher rupture load compared with standard housings – with no increase in weight.

The housing is also available in a choice of two materials. Flake graphite cast iron is standard, but a spheroidal graphite cast iron option will bear even heavier loads.

Any outer surfaces which are not machined by chip-forming methods have a universal paint coating. For even greater protection against corrosion, this can be finished using a choice of finishes: synthetic resin, polyurethane, acrylic, epoxy resin, chlorinated rubber, nitrocellulose, or acid-hardening hammer tone.

> "Protects against water ingress"

Sealing the deal

However tough the housing, it's still essential to keep out contaminants to protect the bearing within.

The FAG SES plummer block housing incorporates a labyrinth-type Taconite seal to keep the bearing free from contamination in the dirtiest, most aggressive operating environments. In fact this seal is so effective, it even protects against water ingress.

Designed so that split SRBs will fit easily into the housing, the SES means bearing replacement can happen more quickly. Though with the higher level of protection it offers, it means it happens less often.

Case Study: Gold mine finds cash

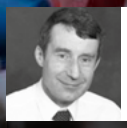
Gold mining operations at a pair of mines in Western Australia run 24/7, through extremes of high daytime and low night-time temperatures. The tough conditions were causing the bearings on the tube mills to fail annually, disrupting production for two days each time.

Schaeffler's solution was to replace the sliding base housing at the floating bearing location with sliding sleeve housings and spherical roller bearings. The floating bearing displacement now takes place between the sliding sleeve and the housing bore – constantly fed with lubricant – rather than between the housing and sliding plate.

The results are:

- a low coefficient of friction when thermal expansion takes place inside the tube mill
- no more annual bearing failures
- no more two-day shutdowns
- cost savings of approximately €30,000/hour of saved downtime.

Sticking together through challenging times



Bob Orme
Senior Technology Expert
LOCTITE

The U.K. economy isn't in recession. Is that how it feels to you? Thought not. So if, like many businesses, you're still working hard to overcome rising energy costs, supply chain disruption, changing consumer demands and increased competition, stick around and keep reading.

“Always a reliable choice”

When you are striving to achieve a balance between cost reduction and quality assurance, there's one set of substances that's always a reliable choice. Adhesives and sealants are not always the first thought, but our customers are often surprised by just how valuable a solution they can be.

For example, there is a huge variety of tasks that can be improved by using structural adhesives.

From train carriage construction to recreational vehicles, and lift doors to electric motors, a vast swathe of manufacturing and industry relies on adhesives for structural integrity. And in maintenance, repair and overhaul applications (MRO), the right adhesive can make all the difference to a tricky repair: cutting costs and saving time, while still delivering a safe, secure bond.

“Innovation and agility that adhesives and sealants make possible”

Stuck where to start?

The sheer variety of tasks that can benefit from adhesives, and the sheer size of the LOCTITE range, can make it tough to know where to start. That's why Henkel offers extensive support to manufacturers and MRO teams. Through dedicated survey and training services, we help businesses to make informed choices, to harness the innovation and agility that adhesives and sealants make possible – and ultimately to maintain their competitive edge.

Our detailed survey of your manufacturing plant and processes can identify potential cost-savings and improvements. It involves a tour of your production lines and sub-

assembly areas, to document cost-reduction opportunities and potential challenges in MRO.

With the survey completed, a detailed audit of operations is provided, together with recommendations for process improvements, a report of cost-saving opportunities, and a cost analysis.

Using the findings, we can also deliver tailored seminars at your site, covering topics such as bonding, sealing, dispensing and curing equipment. The training incorporates technical guides, application information and case histories. Industry-specific application training helps manufacturers with selecting the proper adhesive and equipment for their assembly challenges, and attendees are encouraged to bring parts and specific design tasks to the workshop.

“Your true design partner”

After an in-plant seminar, your teams will have all the knowledge they need for optimal application of adhesives and sealants: to increase process efficiency, reduce work in progress and manufacturing costs, improve throughput, increase quality and reliability, and automate previously manual processes.

Buy online

Stick with us

Our commitment is to be your true design partner, so LOCTITE seminars are just one aspect of the services and solutions we offer.

We aim to help your business to get the best from our solutions, whether you are creating a new assembly or enhancing an existing design. We work with you to develop and optimise adhesive, sealant and automation solutions to your specific needs – so you can reduce costs and improve reliability.

We understand that – recession or no recession – you face a multitude of challenges. But whatever the future holds for the economy, we are here to help you balance profitability and performance. Our products are designed to create a lasting bond, and we're here to stick with you through even the toughest times.

LOCTITE in action

When a manufacturer needed to repair a shaft on a large fan that had been damaged by a loose, spinning bearing, the original solution was hardfacing and machining the shaft. This required five days of downtime and carried the risk of distorting and weakening the shaft. There was also no guarantee that the machining would prevent future fretting corrosion to the bearing fit.

After an assessment, the LOCTITE Engineering Solutions Expert provided training on a new repair method using LOCTITE products.

The main bearing was cleaned and removed, then before the bearing was slipped into the correct position, LOCTITE 638 Retaining Compound was applied to the shaft. This compound fills voids to prevent fretting corrosion and ensure even distribution of high load stress.

The whole operation was easily performed by maintenance personnel, and the fan was up and running in just 8 hours. The LOCTITE solution also prevented future damage to the shaft and maintained the fit over the life of the bearing.

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When the going gets tough...

Gareth Procter
Senior Product Manager
ROCOL

...Rocol high-performance lubricants, cleaners and maintenance solutions get going. That's because ROCOL is a leading global manufacturer of products specifically designed to excel in aggressive environments, across a wide range of different industries.

Going to extremes

Extreme temperatures are often a key feature of an aggressive environment, and a major challenge for lubricants and similar products. ROCOL solutions are formulated to perform whether the operating environment is consistently hot, consistently cold, or fluctuates frequently between the two.

ROCOL's FOODLUBE Chain Fluid is just one example, specifically designed to provide superior lubrication and protection for chains operating in extreme temperatures. For applications from ovens to freezers, and countless other harsh environments found in food processing and manufacturing, it's guaranteed to help customers keep their cool about their asset's performance, reliability and safety.

> "Superior lubrication and protection"

Weathering the storms

If you think operating conditions at some factories and other sites are tough, imagine how much tougher they are out at sea. It's not just the extreme weather and environmental conditions, but the difficulty of getting engineering support and spare parts.

So only reliable, hard-working, specialised solutions – tailored to the unique operating environment – will do.

> "Whatever the working day throws at them"

ROCOL's understanding of specific industries' requirements lies behind its range of high-performance, highly specialised solutions.

One example is ROCOL WIRE ROPE Dressing. This is specifically formulated for lubricating and protecting wire ropes used in marine and offshore applications, where corrosion and saltwater exposure are just some of the common challenges.

Back on dry land, heavy industries such as oil, gas and mining can also be tough on parts. For them, ROCOL ANTI-SEIZE Compound is one example of a specially-formulated solution, designed to prevent seizure and galling of threaded fasteners whatever the working day throws at them.

Raising the standards

Making products to cope with the toughest conditions is one thing. Making them compliant with the toughest quality standards and regulations is another. ROCOL does both.

That's why you can find ROCOL products in use even in industries with high regulatory requirements. In food processing and packaging facilities, for example, where food safety and hygiene are of utmost importance, ROCOL's NSF H1 registered FOODLUBE range is fully approved for use.

> "Reliable, hard-working, specialised solutions"

ROCOL products also comply with industry standards such as ISO 21469 for hygiene requirements, ISO 9001 for quality management and ISO 14001 for environmental management.

So ROCOL customers can be sure they are using products that not only meet the highest standards of quality and sustainability. They also protect equipment and machinery. And enable smooth-running, reliable operation, even in the harshest and most aggressive operating environments.

Buy online

The shortcut that's actually safer

Tom Morgan
Product Manager - Electrical Products
ERIKS

99 times out of 100, taking shortcuts in any industrial maintenance procedure is risky. Where electricity is involved, it's downright dangerous. But what if there was a shortcut that could save 20 minutes on electrical maintenance work? And that was also safer and more reliable than the longer, slower way of doing things? Isn't it safe to say you'd want to know more about it?

“Simplifying and automating the voltage verification process”

Opening up an electrical cabinet for maintenance or repair is one of the most dangerous things an electrician or engineer can do. There's the ever-present risk of electrocution, and also of arc flash. In environments where dusts, chemicals, gases or oils are present, there is also the added danger of the arc flash igniting these flammable substances, with catastrophic consequences.

Of course there are procedures and systems in place to protect against these risks.

A warning lamp on the outside of the cabinet is one valuable safety measure – unless the lamp has failed so doesn't illuminate as it should. Also anyone opening up an electrical cabinet or working on an electrical panel should wear appropriate PPE. And workers must comply with safety regulations, which require a voltage verification test to confirm there is no voltage present.

Unfortunately, donning PPE and carrying out manual testing all takes time. If a production line is out of action while this preparation is taking place, even the most experienced electrician is going to feel under pressure to work faster. And if that doesn't lead to cutting corners, it could still lead to potentially dangerous mistakes.

So how can workers comply with safety regulations, protect themselves from danger, and at the same time minimise the impact on productivity? By simplifying and automating the voltage verification process, with the VeriSafe™ Absence of Voltage Tester.

“Saving around 20 minutes per cabinet”

Safety on the button

Designed-in to the cabinet or easily retrofitted, the VeriSafe™ Absence of Voltage Tester incorporates a push-button and indicator. All a worker has to do to check the safety of a cabinet is push the button and check the battery-powered indicator.

How long does testing take? About as long as it took you to read the paragraph above: roughly 10 seconds.

Understanding the test result is simple.

- A red light means don't enter, hazardous voltage is present.

- No light illuminated means voltage is not detected, but does not guarantee voltage is absent. In this case, the 'TEST' button should be pressed to initiate a voltage test.
- A flashing amber light indicates caution. Residual current may still be discharging.
- A green light means the test is completed and the absence of voltage is verified. It is safe to open the cabinet and access the panel.

Compared with using hand-held portable test instruments, that's a saving of around 20 minutes per cabinet.

The VeriSafe tester can also be used to support compliance as part of the Lock Out / Tag Out process – verifying that power has been isolated in advance of locking and tagging.

“Minimise downtime without compromising safety”

Twice as safe

There are two versions of the VeriSafe Absence of Voltage Tester to choose from, both of which meet the requirements of SIL 3.

Partners in safety

ERIKS' Zero = Hero safety campaign promotes ERIKS' vision of zero work-related accidents – whether at our own sites or our customers'. It means zero harm, zero injuries, and zero compromise.

The Panduit VeriSafe is just one example of products from ERIKS partner suppliers that make industry work better – and safer.

VeriSafe 1 is for testing circuits up to 600V – covering most small-to-medium electrical panels. The new VeriSafe 2 is for cabinets with circuits of up to 1000V AC and DC.

VeriSafe 2 also offers the option of a second remote indicator in addition to the cabinet-mounted light. This could be located outside a safety barrier around the cabinet, for example, or in another room entirely. A network card enables output to a PC, where the testing result can be viewed alongside other data if required.

Fail-safe and reliable, the VeriSafe Absence of Voltage Tester lets you minimise downtime without compromising safety. So why just be safe, when you can be VeriSafe™?

For more on VeriSafe **click here**

Are you being easily LED?

Tom Morgan
Product Manager - Electrical Products
ERIKS

With T8 and T5 fluorescent tubes soon to be banned, LED tubes can look like a quick energy saving, emissions reducing, space saving win for lighting refurbishment projects. But without some detailed thinking and careful planning, what seems to be a quick switch for the better can soon take a costly turn for the worse.

> “Suddenly your ‘quick fix’ is slower”

From September 2023, in accordance with ecodesign and RoHS directives and their UK equivalents, the sale of T5/T8 fluorescent and compact fluorescent lamps (CFLs) will be phased out of the European and UK markets. Lighting schemes which currently use any of these lamps will need to find new light sources.

That could mean availability issues and rising costs, as large numbers of building operators face the same challenge. Getting ahead of the game could save time and money. But before you leap into LEDs, there are hurdles to avoid and questions to consider.

Fittings fit for purpose?

If an existing fitting has been in place for some time, there’s always the risk of plastic degradation. This could easily result in breakages when removing the existing tube or swapping in the replacement, leading to a bodged job or extra costs for replacement parts. Suddenly your ‘quick fix’ is slower and more expensive than expected.

Lights too heavy?

Weight and thermal characteristics differ significantly between LED and fluorescent technologies. In particular, LEDs require a method of heatsinking to remove heat, which inevitably adds weight.

As lamp holders are specified based on a specific lamp weight, any weight increase can result in them being insufficiently robust to hold the LED tube.

> “Realise the efficiency savings you expect”

The right kind of light?

How efficiently a lighting product produces and distributes light (its photometric performance), is based on the light source it was designed for. When you are replacing fluorescent with LED, you will need to re-run those calculations to be sure you are still achieving the same directional light output.

If not, then impaired, poor, non-uniform lighting or glare will affect the experience and comfort of those using the space, and you may not be compliant with EN1264:1 2021 legislation.

How efficient is efficient?

When swapping fluorescent for LED, any modifications to the original luminaire will invalidate existing warranties.

Rewiring the product – for example, to remove existing components from the electrical circuit – will make safety tests null and void, and any marking on the product (such as the UKCA / CE mark and manufacturer marking) should be removed.

The product must be retested to the relevant safety standards and recertified in its new configuration before it can legally be operated.

Formal testing, to ensure conformity with the ecodesign and RoHS legal requirements, is also required, and the results must be documented in the technical product file.

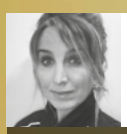
“A legal requirement”

When you take all the questions above into consideration, LED tubes may not be such a quick, cost-effective replacement for T8/T5 tubes as they first appear. Why not ask your usual ERIKS contact to shine more light on the situation?

Click the play button to find out if LED refurbishment is right for you

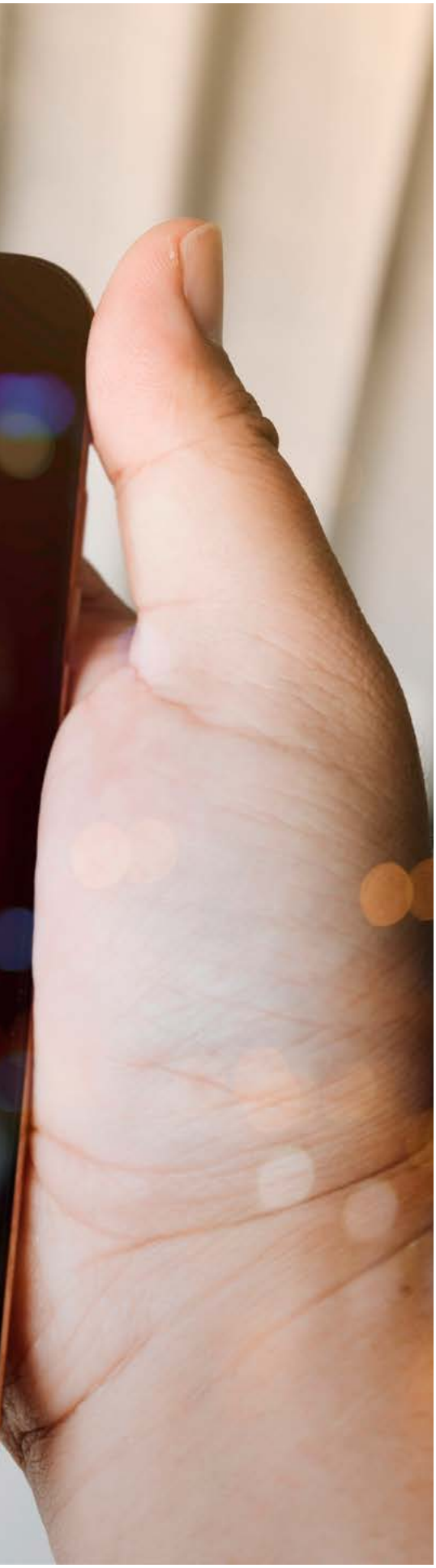
For further information **click here**

Compliments and complaints



Isabel Smith
Quality Manager ERIKS
ERIKS

We know from time to time that not everything we do is perfect, and, on those occasions, we want to hear from you so that we can not only solve your problem but also look across the business to ensure other customers are not experiencing the same thing. Similarly, when we do great work, we want to make it easy for you to quickly give us this feedback. This is why ERIKS UK is adjusting its customer complaints and feedback process as part of our continuous improvement drive.



We have created a portal which all customers have access to, so that you can put complaints directly onto our system. When you log a complaint, you will receive acknowledgement and then within 24 hours you will receive a call from an appropriate person within ERIKS perhaps seeking more information about the complaint and advising of a likely response time. Our aim is to have all complaints resolved within seven days.

> "All complaints resolved within seven days"

The rationale behind these changes is that we want to give you the opportunity to explain what problems you are experiencing. It allows you to be more granular in detail about the complaint as you have all the evidence.

By allowing you to post a complaint, it cuts out an additional operation (the site or contract management putting a synopsis of the problem into our system) and allows us to get to the heart of the problem more quickly.

Isabel Smith, Quality Manager for UK & Ireland explains, "If a customer complains because ERIKS has sent them a blue pen and they wanted a red one – the corrective action cannot be simply 'sorry I'll send you a red one'.

> "Interrogating the complaint"

That's just a sticking plaster solution, getting the immediate issue out of the way. What we should be doing is interrogating the complaint to see why they received a blue one in the first place.

So, the issue is actually one of administration. There will have been verbal complaints or issues raised but these have not been transposed onto our system and therefore potentially the issue has not had its root cause investigated, escalated and supported to prevent further issues."

We believe that the new changes to our complaints and feedback process provides our customers with benefits that include speed of reaction and the prevention of problems reoccurring, while for ERIKS we will be able to look at trends, root causes and to remove non-value-added activities to continually improve.

This new approach allows our customers to share insight, good or bad, and we can learn from their experience and ensure that how we work better suits them in the future. This can then be aggregated across the whole company.

> "Speed of reaction and the prevention of problems reoccurring"

One logged complaint can help everyone.

In conclusion Isabel Smith says, "The fundamental change with the introduction of this portal is rather than having our team put the complaint on the system we are allowing our customers to have direct access and to feel free to tell us about all their issues both positive and negative.

We are not pushing the problem back onto the customer or stopping the communication and relationship between the customer and direct ERIKS contact, but we are opening a new line of communication.

> "Opening a new line of communication"

It's important to note that our customers don't have to do this, they can still communicate issues verbally or in writing to their ERIKS contact, we hope our but many customers will like the fact that they can formally register a complaint, that there's a clear communication path and that they can expect a timely resolution."

Contact a member of the team **here**

Going digital with new ERIKS App

Mick Holland
Chief Product Officer ERIKS
ERIKS

If you visit the Apple App store or Google Play you'll find ERIKS UK has its own App available. But what does this App do? We spoke to ERIKS' Mick Holland, Chief Product Officer and Suzie Knowles, Online Marketing Manager, to find out!

> "Fast, efficient and reliable next-day delivery"

Across UK industry, ERIKS is synonymous with engineering products, supplied from trusted manufacturers. Whilst our state-of-the-art supply-chain capabilities provide high availability and delivery performance, there are always items that must always be to-hand at point of use.

Enabled by shop.eriks.co.uk and the ERIKS App, our Digital Replenishment process vastly simplifies the re-ordering processes associated with line-side and open stores. QR codes are generated and applied to two-bin storage systems allowing immediate ordering of the right product and quantity required to replenish the bin. The process is then fully integrated into the ERIKS webshop, where many other advanced features are available to the customers.

Using the App in conjunction with the web shop allows the user to search for products, to set up a favorites list and to build a shopping cart – much as most people do when they use Amazon or other web shops. It's simple to check out and a full order history is available to view. An important feature of the App is that lead times for products are shown when searching for them and, as with Amazon, products are picked, dispatched and delivered in 24 hours via the ERIKS Fulfilment Centre.

Mick Holland, says, "The App removes the challenge of distance and allows users to interact seamlessly with our IT system in a way that adds genuine value and a great deal of process efficiency."

The ERIKS App is simple but powerful and once downloaded users can have all their product and order information in their pockets. Using the App means less chance of making mistakes with no more writing down or copying item numbers or quantities. It all provides faster and easier ordering.

Another major advantage of using the App is that it is possible to add a default purchase order to the system for a certain period

> "The ERIKS App is simple but powerful"

(such as a month). It's possible to specify a PO number which applies to all maintenance products, and this can be repeated month by month. This combined with the spend authority controls allows users to give autonomy to the engineering team to buy products up to a certain spend limit through the App and then receive all the spending information on one invoice at the end of the month – which obviously makes life much simpler in terms of vendor management and budget control.

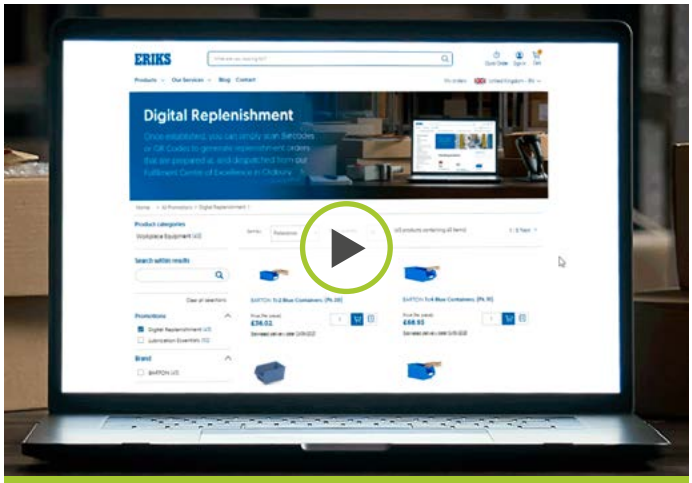
To set up the system users need to understand what they have and want on their shelves, and this requires a little bit of planning (and ERIKS can help with this if needed). The great thing about the App is that it scales easily and quickly. Once customers have ascertained the part numbers and quantity per location that they want, they simply drop

the

that information into an ordering list on the Webshop to create QR codes that print onto Avery labels on a standard printer. ERIKS has also put together a solution whereby customers can buy racking shelves, tote bins and labels all in one place on the webshop to get set up quickly.

> “Simple, intuitive and it takes just minutes”

Suzie Knowles says, “It’s a one stop shop. Because it’s phone-based technology, people are very comfortable with it and they can use it to quickly improve their workshop or engineering stores. We have made it really easy, in one order users can get the products they need to set up a solution. This will free up capacity and make things more efficient. It is remarkably simple, intuitive and it takes just minutes. The biggest investment in time is printing the labels and sticking them onto boxes. However, should users want more information they can go to the e-business team and make contact through the webshop.



Click play to find out how the ERIKS App works

To find out more about the ERIKS App **click here**

“The App and the launch of Digital Replenishment is our first venture in providing our customers with a fully digital experience – it’s a big focus for us. The user interface means that customers will control all aspects of their digital experience with ERIKS. The objective is to make us easy to work with.”

Will a Royal Commission do what politicians won't for industrial strategy?

A recent report, Industrial Strategy – A Manufacturing Ambition, from MAKE UK calls for a Royal Commission to be established to develop a long-term vision for the industrial sector. But will the report's recommendations succeed where successive Governments have failed?

The MAKE UK report calls for four policy recommendations.

Firstly, to establish a Royal Commission on Industrial Strategy to determine a cross party consensus on future priorities. Secondly, to re-establish the Industrial Strategy Council as an independent oversight body. Thirdly, to have the Cabinet Office be responsible for ensuring government co-ordination and the implementation of industrial policy and lastly that as part of the Royal Commission stakeholders should negotiate and agree institutional reforms to ensure the stability of policy delivery and outcomes.

These recommendations show a path towards long-term thinking which is sorely needed by a sector that over the last 15 years has had to endure the government department responsible for managing industrial policy being renamed and reorganised five times and in those same 15 years has seen 15 Secretaries of State come and go!

The devil, as always, is in the detail and while the report's recommendations are wholly sensible the concern remains - are they practical? In the first instance the initial task of the Royal Commission would be to gain "cross-party consensus on future priorities and ambitions", which one year out from a general election seems wishful thinking.

However, if we suspend reality for a moment and concentrate on the issues which the report proposes an industrial strategy must address, then hopes of moving forward in a way to challenge Germany, the USA and China shrink even further.

What the UK needs for a successful industrial strategy can be broadly categorised into five key themes, skills; infrastructure; finance; innovation and the business environment.

However, each of these themes is such a 'big issue', requiring the co-ordination of many areas of government as well as the private sector and indeed, in the case of skills, the educational system and immigration policy, that any type of solution seems as far away as ever.

As the report depressingly says, "The number of engineering and manufacturing apprentices has fallen by more than a third since the introduction of the apprenticeship levy in 2017, with over £3 billion of unspent levy funds returned to the Treasury."

So, while the report makes a clear-eyed argument for its recommendations to be adopted there's no real belief sadly that, due to the landscape in which it lands and the structure and system of government that it must operate within, it will have any greater effect than anything that preceded it.

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