

# KNOW + HOW

## Aggressive Environments

What springs to mind when you think 'aggressive environment?' For most it's probably heavy industries. But what we often fail to consider is that the term doesn't necessarily only represent the environment, it can also refer to the materials that are processed or pass-through equipment.

### **ERIKS In Action**

#### **Unidentified production problems can hide no more**

Recurring issues cost money. But the introduction of expert online vibration monitoring is the first step to highlighting and removing unidentified production problems.

### **In Focus**

#### **Upgrade and unlock energy savings today**

Adopting new energy saving methods will soon be industry best practice. And what better way to start that by switching to high efficiency IE4 motors.

### **Debate**

#### **Are we ready for the reshoring revolution?**

Although Covid and Brexit have without doubt accelerated the move towards reshoring, there are other long-standing factors that must be considered.

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+ HOW**

# Welcome



When you think ‘aggressive environment, what industries immediately spring to mind?’ Our guess is industries such as steel, mining and quarrying, oil and gas where the surrounding environment is particularly harsh.

What we often fail to consider is the term aggressive doesn’t necessarily only represent the arduous environment. It should also refer to the materials that are processed or pass through the equipment such as those found in water, wastewater, and chemical settings.

So, with such a wide spectrum, we must take time to consider the individual challenges that each area faces, and how do we best overcome these issues to ensure we reach our maximum potential.

Throughout this edition, we take a closer look at these challenges and highlight a range of solutions to overcome the potential production problems our readers will face.

For ERIKS In Action, we look at how one wastewater company utilised our vibration monitoring capabilities to solve a recurring

but unidentified problem with a critical low lift pump, including the long term benefits their decision will provide far into the future.

In Focus, we highlight how companies are being pushed to improve efficiency and environmental impacts, and how the introduction of high efficiency IE4 motors can unlock significant savings as well we support sustainability objectives.

And finally, for Making Industry Work Better, we discuss how choosing the perfect pump for your application is not as simple as comparing price tags.

Last but not least, our debate piece focuses on reshoring manufacturing back to the UK, and if we are ready?

As always, we would love to hear your thoughts on the subjects covered in this issue, so why not share your opinion with us via email or tweeting us at @ERIKS\_UK

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

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**ERIKS In Action**  
Unidentified production problems can hide no more  
Resolving issues costs money. But the introduction of expert online vibration monitoring is the first step to highlighting and removing unidentified production problems.


**In Focus**  
Upgrade and unlock energy savings today  
Adopting new energy saving methods will soon be industry best practice. And what's better way to seal the deal, switching to high efficiency EA motors.

**Debate**  
Are we ready for the reshoring revolution?  
Although Covid and Brexit have without doubt accelerated the move towards reshoring, there are other long-standing factors that must be considered.

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**54** Are we ready for the reshoring revolution?



## Fast track programme to drive Industry 4.0

Siemens Digital Industries have launched an innovative training solution with the aim of upskilling their customers and suppliers, driving the opportunities presented by Industry 4.0.

Co-designed and delivered in conjunction with the University of Salford, the one-

year 'top up' degree combines academic modules in automation, robotics, and embedded systems, and Siemens S7 Certified PLC programmer training and accreditation, before awarding successful candidates with a BEng Hons (Bachelors of Engineering) in Control and Automation.

Peter McMorrow, Engineering Director, said: "Our growth strategy means we need

to increase the pipeline of talent every year. By moving to the Siemens one-year degree programme, we can fast track the upskilling process of our engineers with industry relevant training content, while the block release approach allowed them time to focus on their studies and condense their learning periods."

## New manufacturers cloud platform launched

Computing giants Microsoft have recently announced the launch of a new cloud platform dedicated to the manufacturing sector, which will be made available for a public preview in June.

It is believed that this unique offering will support industry's core processes and needs with its move towards data-driven automation, IoT, machine learning and AI.

With manufacturers accelerating investment in multiple key areas in response to the Covid pandemic, Microsoft believes that it can help companies improve in the following areas: Building more agile factories, transforming workforces, engaging customers in new ways, creating more resilient supply chains, and unlocking innovation and ways of delivering new services.

This is just one of multiple industry-specific cloud offerings that the company is intended to launch in the near future – with others including financial services, retail, healthcare and non-profit.





## PMI highest in UK manufacturing for 27 years

Following the recent release on HIS Markit/CIPS PMI for April 2021, it has been highlighted that UK manufacturing activity has grown at its fastest rate since 1994.

*Rising to 60.9 in April from 58.9, and .2 above the flash estimate, Rob Dobson, Director at ISH Markit said: "Signs of Spring have appeared in the UK manufacturing sector, with PMI hitting its highest level in a decade. Growth output, order books and employment all gathered momentum and optimising about the year ahead improved further."*

New orders remained the primary source and at their highest level since 2013, and it is believed that this trend will continue and be even higher in another years' time. New export business also rose at the fastest rate in the year to date.



## UK recycling scheme celebrates its 10,000<sup>th</sup> hard hat

The National Hard Hat Recycling Scheme is proud to have hit a huge milestone, saving 10,000 hard hats from landfill.

Working with a wide range of sectors from construction and transport to defence, utilities and extreme sports, this innovative UK scheme provides a user-friendly method for your old hard hats to bypass traditional waste disposal treatment. Meaning that end-of-life hats

land directly into reprocessing, where they are shredded into 10mm flakes before being separated, washed, dried, melted down and filtered.

Once this new process is completed, the pure molten polymer is transformed back into pellet form, the universal raw material for all plastic manufacturing, meaning that your hard hats have been fully recycled.

## How COVID changed our working futures



The COVID pandemic has undoubtedly disrupted global markets, with the short-term consequences drastic. But as we move into a post-COVID era, the first of three MGI reports from McKinsey has suggested that the way companies operate will take a new direction.

Firstly, many companies are planning to opt for more flexible working conditions based on the success of remote working.

A survey of 278 executives in 2020 suggested that on average they planned to reduce office space by 30%.

Secondly, work environments with high physical proximity are set to adopt automation and AI processes in a bid to save additional funds through reducing the share of routine tasks. A global survey of 800 senior executives in July 2020 highlighted that two-thirds were looking to increase their investment in either or both significantly.

So will you be taking a new approach?

# The HyFlex® 11-819 ESD, Technology at Your Fingertips

Ansell's HyFlex® 11-819 ESD safety glove is created with ESD functionality certified to EN 16350:2014 which protects products against electrostatic discharge. They offer an exceptional fit, providing safety in explosion hazard zones (ATEX Atmospheres Explosives).

The HyFlex® 11-819 ESD offers a lot more than just safety and protection for hands, providing solutions for challenges faced when using regular gloves. Some of the prominent features include:

**Touchscreen compatibility:** Its touchscreen functionality allows the wearer to work with multiple touchscreen devices while keeping safety gloves on.

**Long-lasting protection:** The FORTIX™ nitrile foam coating offers excellent grip and long-

lasting protection, reducing the total cost of ownership.

**Barehand-like tactility:** The seamless 18-gauge nylon and spandex liner, combined with the ultra-thin FORTIX™ coating, provides protection while maintaining bare hand sensitivity for tasks that require dexterity and precision.

**Comfortable and clean:** The careful selection of materials, the Ansell ZONZ™ Comfit Fit Technology, and proprietary washing process creates a clean, ultra-breathable and comfortable glove.

**Skin friendly:** Dermatologically approved by Dermatest® and certified by OEKO-TEX®

The HyFlex® 11-819 ESD is the perfect combination of comfort, dexterity and protection that paves the path for the future of glove technology.



## A flexible modular system for every customer application

Compared with hydraulic and pneumatic systems, Schaeffler's electromechanical P.ACT Linear Actuators offer significantly improved energy balance.

Built with a robust and rigid aluminium hexagon-design housing, the P.ACT Series of linear actuators is suitable for an extensive range of industrial applications including in-production machinery, drive technology, mobile machine, industrial automation, or the raw materials industry, and can be used both as force actuators and precise positioning systems.

Offering maximum power density and efficiency, as well as flexible configuration and adaptation options, the P.ACT Series is suitable beyond the traditional areas of use, proving their worth in new fields of application such as commercial vehicles.



## Eliminate 99.995% of airborne pollutants with SilentCare

In rooms with a high amount of foot traffic, the level of fresh air cannot be guaranteed to the optimal level, with airborne pollutants likely to rise significantly, increasing the risk of infection.

Thanks to SilentCare from Filtration Group, air can now be filtered effectively, recycling the total volume of the room multiple times per hour.

This special protection features three-layer filter media, certified to the European standard EN 1822, ensuring the efficient filtration of almost all aerosols found in the ambient air of closed areas, reducing pollutants to an absolute minimum.

SilentCare, as the name suggests, operates very quietly, with its noise level well below that of an average office environment, currently 50-60 dB[A].



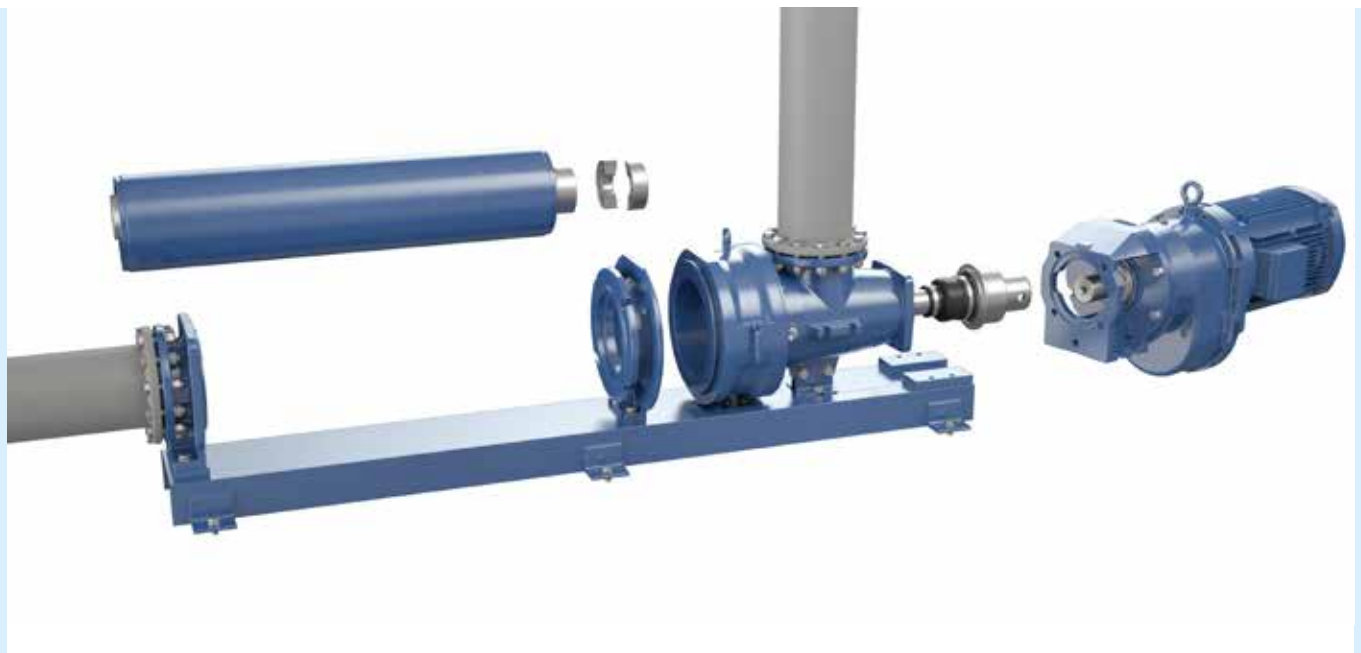
# Enable easier and standardized designs

The all-new E2E NEXT DC 3-wire series of proximity sensors from BPX Omron offers the latest generation sensing distances designed to reduce target contact, solve size limited applications, and provide real-time condition monitoring with IO-Link.

To avoid false detections with previous models, operators were forced to adopt sensor installation designs that posed risks of unwanted contact, but with the E2E NEXT PREMIUM you can now accurately detect from a greater distance.

This innovative range also enables predictive maintenance by connecting sensors via controllers using IO-Link Master, that will help you improve production efficiency thanks to effective data acquisition, in addition to reduced stock and handling costs.

The high-spec model's sensing distance is approximately twice that of previous models, and by using these sensors in conjunction with the e-jig offers easy upgrade to existing facilities enabling proximity sensor replacements in just 10-seconds.



## Smart Maintenance. Fast and Simple.

SEEPEX, global leader in design, manufacture, and application of progressive cavity (PC) pumps, macerators, and digital technology, continues to extend its world class portfolio of maintain-in-place pump technologies.

The new patented BNM range of pumps with capacities up to 300 m<sup>3</sup>/hr and discharge pressures up to 48 bar can

handle flowable to highly viscous products with a high dry solids content. The design features a suction casing that enables quick and easy access for rotor and stator removal without having to dismantle the rotor side joint. As a result, maintenance time can be reduced by up to 80% with a significant reduction in maintenance costs.

The suction casing and pressure branch remain in place, eliminating the need for pipework dismantling. The pump drive can then be quickly removed complete with

mechanical seal, drive side universal joint and coupling rod.

SEEPEX new ease of maintenance solution for big pumps complements their Smart Conveying Technology (SCT), launched in 2008 and still setting standards in the maintenance of smaller standard PC pumps, and Drive Joint Access (DJA) technology for open hopper pumps. All of these patented solutions increase uptime and plant availability.

# The future of the industrial supply chain



**Andy Neville**  
General Manager FCE  
**ERIKS**

Since the first global impacts of the Covid pandemic began to make themselves felt, in 2020, the issue of supply chain disruption has become one of the most widely discussed topics in boardrooms around the world.

## “ Change to Increasing supply chain challenges ”

Although the impact of Covid has clearly been dramatic and far-reaching, it has in fact been just the latest in a growing list of supply chain challenges facing industrial companies. In recent years, we've witnessed trade disputes and tariff wars between major trading nations, political instability in regions that supply vital raw materials and the

prolonged uncertainties of Brexit, combined with a rise in populism and nationalism in countries around the world that is driving movements to localise production and employment.

The pre-existing dynamics of global trade, however, depend largely on the use of extended supply chains, which exploit the manufacturing resources and labour available in low-cost regions. Although this model was already showing signs of weakness in the years leading up to the outbreak of the pandemic, Covid has exposed its fragility still further, in many cases to breaking point.

Clearly, a new approach is required. One that accommodates the business, political, environmental and cultural changes that society has undergone. The challenge for many companies will be to find methods of building resilient and agile supply chains that improve business competitiveness, while delivering the security and certainty that underpin long-term business growth.

## “ A new approach is required ”

### A new approach to supply chain logistics

Our position at the heart of many of today's global supply chains gives us a unique perspective on the issues facing our customers around the UK and Ireland. From our longstanding experience partnering with companies that range from major automotive suppliers with high volume continuous production operations, to specialised providers of low volume engineering services, we have gained considerable knowledge and insight into the challenges of







balancing short-term supply disruption with strategic long-term growth planning.

Our solution has been to re-engineer our entire UK operation to meet the changing needs of our customers, both today and as they evolve in the coming years. Our intention is to build a dedicated, customer-centric operation that is truly resilient, robust and agile; an operation that provides customers with products, services and the security of supply that they need to run their business, supported by an unrivalled level of technical, applications and commercial know-how that will give each customer a vital competitive edge.

### The Oldbury Fulfilment Centre of Expertise

At the heart of our new operation will be a custom-built Headquarters and Fulfilment Centre of Expertise in Oldbury, in the West Midlands. This is a multi-million pound investment – one of the largest that the ERIKS Group has ever made in its 80-year history – and comes with a clear set of goals, to:

- Stock the exact products customers need
- Deliver the right products every time
- Supply products to customers when they need them
- Give customers end-to-end visibility and connectivity
- Support customers' future growth

A key factor in the development of the new Centre is to ensure that it supports the future needs of our customers and, by association, those of our business.

It's been designed with significant capability for growth, with sophisticated and scalable i4.0-ready technology throughout. This includes integrated ERP and warehouse management systems that control advanced

automated vertical picking systems, rapid transit conveyors and integrated scanning, vision and weighing equipment. In essence, we'll have end-to-end visibility of every part and process, combined with precise forecasting and business modelling.

## “ Re-engineer our entire UK operation ”

Over time these new systems, supported by insight from our customer-facing technical and commercial teams around the UK and Ireland, will provide us with a rich pattern of data from which we will be able to fine-tune existing operations while creating a dynamic digital platform on which we can develop new customer service options for the future.

The new Oldbury Fulfilment Centre will form the heart of our new operational model, supporting a specialised network of logistics and services hubs located at key locations around the UK. These will be based primarily at our existing regional locations but will also include new sites as the needs of our customers evolve. They will provide

dedicated distribution and engineering services to meet the needs of each local market, with services ranging from parts kitting, coding and customisation, to motor and pump repair and refurbishment.

We've already started the process of investment in a number of regional hubs. For example, our site in Southampton is being relocated to a custom-built unit, with significant investment in dedicated stockholding and specialised engineering services to support the needs of our customers in the water, waste treatment and aerospace sectors. Similar investments are being made at our regional hubs in Chesterfield and Cardiff.

*Our CEO for the UK and Ireland, David Gillies, explains, "This is an exciting development for our customers, and a huge endorsement by our parent company in both our team and the ongoing success of our business. We recently celebrated our 80th year as a major industrial services provider and are excited to be embarking on the next phase of our development."*

*The new Fulfilment Centre of Expertise will become our primary fulfilment hub and headquarters in the UK & Ireland, enabling us to set the standard in quality, accuracy and value of service provided to all our customers."*





**Peter Mitchell**  
Regional Reliability Manager, North  
**ERIKS**

# Unidentified production problems can hide no more

There are many factors that can determine the efficient running of your production line. But when inefficiencies arise, it's not always straight forward to identify the root cause.

Failures have a variety of root causes – incorrect maintenance activities, lack of regular maintenance schedules, the common issues surrounding ageing and obsolete assets, as well as premature failure due to incorrect installation.

However what we can tell you is, no matter how trivial the problem, the longer it remains unidentified, the more catastrophic and costly it becomes.

So, when one large water treatment works was experiencing unidentified repeated failures on a crucial low lift pump, they called on ERIKS' expertise to discover the root cause and provide a solution that would empower them with insight and foresight into managing future problems.

## Enough was enough

Over the past five years, the customer had invested millions of pounds following repeated failures of their assets, many of which dated back to the mid-1970s - not unusual within the water and wastewater industry.

However, with costs constantly rising with each repair, as parts were having to be reverse engineered, and SEPA ready to intervene due to serious environmental

threats, enough was enough. Now was the time to understand the real root cause.

“ Costs would have hit a staggering £240,000 with potentially serious damage ”

## Sens{or}ing the problem

The ERIKS Reliability team attended site to inspect the critical low lift pumps in question, before proposing online vibration monitoring as a method to identify the root cause of these recurring failures.

12 wireless Bluetooth sensors were installed across three problematic machines. This enables the team to monitor the condition of the pumps 24/7 remotely.

After monitoring key parameters including only a few weeks of testing, measuring attributes including temperature, velocity,







## “ Vibration was not present at all times ”

acceleration peak to peak and rms, the condition of one of the assets was deemed critical, with automated analysis identifying the root cause as looseness within the machine structure due to incorrect installation. A site team was scrambled, and shockingly, the simplicity of a loose flange mounting bolt was causing excessive vibration, leading the asset down a path of certain failure.

What should be pointed out is that due to the variable speed nature of the asset, vibration was not present at all times and highly directional, making it doubtful that a portable monitoring strategy would have identified the root cause and a wired online system needed 'luck' to have placed the sensor in the right place, therefore only through the correct selection of the appropriate ERIKS online vibration monitoring solution was the true issue established.

### Costs hard to comprehend

To put this problem into a pound note perspective, best case scenario a bill of

£80,000 for the removal and overhaul of the asset would have resulted, while if left unattended, costs would have hit a staggering £240,000 with potentially serious damage to the civil infrastructure, motor, commutator, seals, pumps and internals, with many of the components requiring reverse engineering due to obsolescence.

With the problem now identified, the customer was able to rectify the issue, simply by tightening the rear bolts by half a turn, and the front bolts by two full rotations. It's hard to comprehend that something as simple as a loose mounting bolt could have such a disastrous impact on the customer's capital, but that was the reality.

### The future is online monitoring

Many systems providers often talk about predicting 'end of life' to plan intervention, but at ERIKS we talk about extending life by timely intervention and hence safe, calm, rational, total cost of ownership-led decisions can be made.

The introduction of online monitoring has allowed for the implementation of a condition-based maintenance strategy, so now, when any issues arise, the customer has access to real-time data to determine the cause, and thereby a solution, at the earliest indication of any changes in condition, along with immediate affirmation that a change has occurred.

The standard set-up of sensors means that data is acquired continuously, with summary information sent via an on-board signal processing edge-calculation programme every two minutes – equating to over 700 data sets per parameter per day.

Making use of algorithms based on 40 years of monitoring expertise, Artificial Intelligence is applied to the data reading in order to produce summary reports that are prioritised by condition.

The ERIKS Digital Reliability Services interface is easy to navigate, with all data and parameters displayed clearly. Data is narrowed down to individual assets, with thresholds shown with severity scores – from 1 to 10 – for each chosen parameter. The list of asset data is displayed as individual trends for a more in-depth analytical view. The power is in your hands.

### Managed assets. Long-term benefits

Through the introduction of ERIKS Reliability Services and online monitoring capabilities, the customer now has the support they need when it comes to managing their assets. Energy and cost savings, increased uptime, high productivity, true reliability, and improved efficiency can be achieved not only now, but in the long-term.



“ Algorithms based on 40 years of monitoring expertise ”



# Power is Knowledge: Virtually improving your skillset



**Jayne Bodsworth**  
Active Marketing Manager  
**ERIKS**

Every year we grow even more complacent with our skillsets and expertise, in fact, the average skilled person with 20 years' experience is several years behind in skill despite years of training and qualifications achieved.

With technology developing daily, it's essential to keep your workforce up to date with latest training and skills, and that's exactly why ERIKS not only identified the need to further develop our internal teams, but those of our customers by offering a range of Web-Based training courses, specifically designed





## “ 37% of customers identified a skills gap in the industry ”

around Rotating Equipment Performance (REP), SKF Bearing Lifecycle, and Maintenance Assessments.

The main driver behind this decision was to support our customers' apprentices with training, whilst colleges and universities remained closed throughout the multiple lockdown periods. So, why?... well, 37% of customers identified a skills gap in the industry, at a significant cost of and estimated £1.5 billion each year.

### The ERIKS philosophy

At ERIKS, we believe that for industry to truly evolve, we need to build for the future. We understand that the present is extremely important, but we mustn't neglect what the future has to hold. It's this foresight that will start to blaze the way for our budding engineers of the future. Engage now and industry as a whole will reap the benefits – 'Let's Make Industry Work Better'

Working closely with key supply partner SKF, we identified an opportunity to improve our online training via Microsoft Teams and embarked on a journey to create a detailed training schedule that would enable our young apprentices to gain the benefits of decades of knowledge and expertise in bearings.

## “ We need to build for the future ”

### The aim

The goal of these virtual training courses was to achieve best practice knowledge and an understanding of the tools and mechanisms available, receiving support from both ERIKS and SKF on a day-to-day basis.

Each webinar was designed to cover one facet of the Bearing Lifecycle, providing support and understanding surrounding the significance of good maintenance practices, and the impact that this has on bearing failure modes. Our message here was simple.... Best Maintenance Practice will always improve Rotating Equipment Reliability.

The extensive scope of training included:

- SKF Bearing Lifecycle
- Mounting & Dismounting
- Alignment
- Lubrication

- Condition Monitoring
- Maintenance Assessment consisting of apprentice feedback on plant reliability and physical assessment reporting

### The outcome

Initially aimed at those in education or apprentice level, we quickly found that Engineering Managers, Reliability Engineers, and Workshop Managers with years of knowledge were in attendance, realising that even with their experience, what they were once taught may not necessarily be the best way any longer.

For example, a few of the post-training comments included: "I can't believe we've been doing that wrong since I started," "I didn't know that was an option" or "We use a 125ml single point lubricator, so should we use a different type for a 300mm bearing."

Receiving this type of feedback just goes to show that regardless of experience there's always something new to learn, and more importantly, people are ready and willing to learn – as the saying goes 'the future is looking bright.'

### There's more to come

At ERIKS, we believe that best practice

improves reliability and increases productivity, whilst enhancing the skillset of your workforce, and this is just one example of several courses offered and facilitated by ERIKS specialists.

Education is essential for both growth and stability, and ERIKS, in partnership with many of your favourite suppliers, are excited to announce that we have many more apprentice training courses in the pipeline for 2021, covering a range of other topic areas including pumps and maintenance products. Watch this space!



Watch this space, or sign up today to receive updates on future training.

<https://eriks.co.uk/subscribe>

## “ Best practice improves reliability and increases productivity ”





# Servo Motors

## Test, repair or overhaul

### The choice is yours

Servo motor repair and testing is a specialist service that requires skills in electrical, mechanical and electronic disciplines.

Backed by an experienced team of engineers, ERIKS offers a specialist Servo motor repair service out of our Haydock Regional Hub. Our capabilities include:

- Purpose built Servo motors / repair cell
- Full fault assessment & overhaul / rewind capabilities
- Motors stripped, tested & aligned using a Mitchel TI500
- Spindle motors, water cooled generators, AC / DC Servo motors, Resolver Servo Motors
- Encoders including SRS, ERN & EQN



Call 01942 408702 or visit  
[eriks.co.uk](http://eriks.co.uk)

Let's make industry work better

**ERIKS**



# A Super Servo Service



**Mark Cranham**  
Engineering Service Centre Manager  
**ERIKS**

Have you ever considered how your metal cutting machines create that precise motion for milling or bending those perfect lines in hard surfaces during metal fabrication processes? The answer, a specialised Servo Motor.

Firstly, let us differentiate between a traditional AC motor and a servo motor. Unlike a traditional AC motor, which does not comprise of a particular assembly, a Servo motor is made up of a magnet rotor, stator and a feedback device used for position and control. The feedback device is set up in a precise position and when the motor is took apart and put back together the feedback device will need to be put back to exactly where it was originally taken – they are most commonly used in closed-loop systems.

Designed to rotate specific parts of a machine with accuracy and efficiency, a servo motor is controlled with an electric signal, which can be both analog or digital, to determine the specific amount of movement required. For example, think of a paint line at a car manufacturing plant, where the motor only needs to move a certain distance to cover its required course, with an encoder serving as a sensor that determines speed and position feedback.

As you can appreciate, operating with such complex machinery often comes with its own problems. So, when errors do arise, it's good to know that companies such as ERIKS have the technical expertise to provide an impartial solution that will get your production back running to its most efficient.

## Test, repair, overhaul – The choice is yours

At ERIKS we are committed to providing only the highest quality of repairs, whether that be traditional motors through to servo motors.

“ Committed to providing only the highest quality of repairs ”

Our approach remains, and has since day one, that any repair or refurbishment request will be returned 'as good as new' ensuring that your production line will be as efficient as ever before.

Servo motor repair and testing is a specialist service that requires skills in electrical, mechanical, and electronic disciplines – a combination of skills difficult to source in today's industry.

Backed by an experienced team of engineers with decades of knowledge and expertise, ERIKS offers an unrivalled servo motor repair service out of our specialist Haydock Regional Hub.

With the capabilities to offer support with spindle motors, water cooled generators, AC / DC servo motors, ERIKS repair capacity includes:

- Bespoke servo motor/repair cell
- Complete fault assessment
- Full overhaul and rewind capabilities
- Motors stripped, tested, and aligned using a Mitchel TI-5000
- Encoders including SICK (SRS, SRM), Heidenhain (ERN, EQN) and Tamagawa
- Resolvers
- Hall effect sensors
- Tachometers

## Unsure of specification?

With a small yet dedicated team of three specialist servo motor engineers, our Haydock



facility also has the expertise and skillset to reverse engineer components utilising data sheets that are readily available online.

This means that even if you're unsure of the correct specification for your application, our engineers can source the blueprints you need and ensure that your servo motor matches any requested specification.

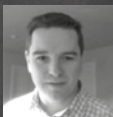
Utilising an unrivalled support network, ERIKS are proud to offer a 24/7 servo motor service, with anytime call-out option, with geographical coverage capturing the entire UK. Add that to our renowned impartiality, and whether it be a simple test, complex repair, or complete overhaul, we'll get your production line back up and running in no time.

For more information on our expert Servo Motor capabilities or to make an enquiry, please call us today on 01942 408702.

“ Reverse engineer components utilising data sheets ”



# Wiping the steam clean



**Martin Gingles**  
Industrial Sealing Manager  
**ERIKS**

Have you ever been driving along, and your car windows begin to steam up? Well the first thing you would do is switch on your air condition system and the problem is resolved. Leave it and your vision is seriously impaired and danger is imminent. It's the same principle in a manufacturing environment, the more steam, the more your vision will be challenged.

So, when a renowned steel manufacturer was experiencing issues with condensate blurring their blast furnace inspection windows, ERIKS Sealing Technology specialists were on hand to deliver not only a solution to the recurring problem, but one that was far more suitable, and far superior.

In the past, the condensation caused by the steam from the blast furnace posed the customer no problems, as the windows used for inspection and could easily be manually wiped clear when required. However, with technology taking significant strides forward, the customer made the decision to introduce a more accurate and automated Tuyere camera system for its inspection process.

“ Remotely controls 30 cameras strategically positioned ”

The newly installed Tuyere camera system remotely controls 30 cameras strategically positioned around the base of the furnace, that are constantly checking for any signs of abnormalities in the furnace environment, whilst sending back accurate data to regulate optimum operating conditions.

Right from the get-go, the problems became apparent.

### Running into steam

Condensation caused by the escape of steam via leak paths in perished gaskets was obstructing the cameras vision, resulting in the remotely controlled camera being rendered completely useless.

The only solution was for an engineer to manually change the relevant gaskets on the corresponding windows, an occurrence which needed repeating 3-5 times a month per camera, requiring valuable engineering time and a reliance on holding an increased stock of replacement gaskets. In short, defeating the object of investment in more modern technology.

Originally, the site had specified an extreme high-temperature Vermiculite-based gasket material for the blast furnace in question, believing that this was the best option. But in reality, this type of gasket does not recognise the higher temperatures within the furnace and a far more suitable gasket could have been utilised.

### Understanding the conditions

Upon investigation as to why the windows were having condensation problems, it was found that, although a Mica-based material was suitable for extreme heat, the Vermiculite-based Mica being used was





not suitable for the constantly changing temperatures of such an aggressive environment, conditions that caused the gaskets to expand and contract.

As the gasket relaxes, the bonding material fillers which are used to layer the thinner heat resistant Vermiculite mineral begin to degrade due to steam. Resulting in a weight deficiency to the overall gasket from which the steam can find a problematic escape route.

#### **Trial initiated**

With the root cause of the escaping steam identified and analysed, the ERIKS Application Engineer suggested changing the current style of gasket in operation and, aided by the use of the ERIKS Engineered Gaskets Brochure, was able to suggest various options that would solve this recurring issue.

“ Manual replacement 3-5 times a month per camera ”

Taking ERIKS' suggestions on board, the customer's engineering team decided to trial the Leader Egraflex grade of tanged graphite. Although unable to withstand the same temperature range as Mica-based gaskets, it was realised that these properties weren't essential due to the location of the camera windows not being exposed to the same heat intensity as elsewhere in the furnace.

The key characteristics of graphite-based gaskets are that they have the capabilities to work well within steam pressurised systems and also don't require the filler materials which were the original downfall within the Vermiculite-based Mica gaskets when fluctuations in temperature arose.

“ Utilising ERIKS know-how aided by extensive materials and behavioural knowledge ”

#### **Trial success leads to complete process change**

Following the initial trial period undertaken on two furnace camera windows, the site reported back to ERIKS, expressing their delight at the vastly improved results of the proposed gaskets. They are currently completing a fully documented engineering management change process that will facilitate the installation of a full change of gaskets on all of the blast furnaces equipment within the Tuyere camera system.

This change of direction, utilising ERIKS know-how aided by extensive materials and behavioural knowledge, provided the customer with a simple solution to a very irritating and time-consuming problem.



Not only has the condensation issue been resolved, but the visibility of the camera investment has also been significantly improved.

In addition, the customers overheads have been reduced due to less stock holding, thanks to the versatile properties and longer lifecycles of the newly installed gaskets, while plant and engineer safety has also been increased dramatically.

Finally, and arguably the most important factor, onsite engineers are now able to focus their valuable time and efforts elsewhere across the site, improving the customer efficiency and productivity.

It just goes to show, that with the right advice and expert knowledge, making even the simplest of changes to your production can offer the greatest benefits. The material datasheets and gasket info contained within the Engineered Gaskets brochure is a great source of reference for engineers and is ready for download from the ERIKS website.



# A true story

(to be taken with a pinch of salt)



**Tony Wilson**  
Application Engineer  
**ERIKS**

Salt in the air. Salt crunching underfoot. Salt coating every surface. It's probably what you would expect at a major salt processing plant. And if you're there to investigate a repeated drive failure, it would be easy to assume the aggressive environment was the obvious cause of the problem. But it doesn't pay to jump to conclusions.

Too much salt is as bad for mechanical assets as it is for people. However, if you're adding it to a massive plate of greasy chips with a battered Mars Bar, you need to look further than the salt to see what's going to do the real damage. Similarly, although the operating conditions might be tough, are they really the cause of the drive failure?

This customer's motor and gearbox are positioned around 70ft up in the air, at the top of a vertically-running bucket elevator.

“ Getting to the bottom of the problem ”

It's a far from ideal location to be carrying out repairs or frequent replacements. Installing a new drive – weighing around 500kg – demands a crane for initial lifting, then a block and tackle for manoeuvring. And it means engineers working at height, with serious Health & Safety implications.

Add in the cost of a new gearbox and motor every twelve months, and it's no surprise the customer's Reliability and Improvement Manager wanted to get to the bottom of the problem at the top of the elevator.

#### One call – unlimited expertise

An ERIKS' engineering team from the Regional Hub at Haydock, had been involved in the most recent gearbox swap-out. So ERIKS were the natural choice to carry out further investigation. Haydock Service Centre Manager Mark Glover was the customer's first

point of contact, and Mark called for expert Technical Application Engineering support.

“ First point of contact ”

The drive operates a vertical bucket elevator which carries salt from a hopper on the ground to discharge into a silo for storage. The salt is extracted from brine, pumped over 20 miles from its extraction site to a holding reservoir prior to processing. Salt is present everywhere on site, and corrosion is inevitable. However, it wasn't the leading cause of the drive failures.

The application involved a 15kW motor driving a worm gearbox. A coupling then





## “ Easy and stress-free ”

pressure on the chain and lengthen its service life.

The combined geared motor had a bedplate suitable for the existing mounting. Also simplifying matters, no guard modifications were required to accommodate the new motor unit or the triplex chain. So removal of the old unit and installation of the new took just one week during a scheduled shutdown, and was far easier than previous like-for-like swap-outs. Predicted service life is also far longer than the 12 months of the former gearbox and motor solution.

The customer had easy, stress-free access to ERIKS' unparalleled resources, extensive experience and exceptional know-how, all through one initial contact. And ERIKS not only recommended, supplied and installed a solution, but also provided CAD documentation and complete traceability of all components for future reference.

Impressed by the comprehensive service, the customer has now briefed ERIKS to resolve an issue with short-lived bearings at the base of the same elevator.

Whatever solution ERIKS' engineers come up with, it's sure to give the customer a lift.

connects to a reduction chain drive at the headshaft of the bucket elevator. A first glance indicated, based on long experience, that the gearbox was almost certainly too small for the job it had to do. And collecting and assessing the application data proved the hunch to be correct.

For an elevator of this type, a gearbox service factor of 1.5 is ideal. This one had a service factor of barely 1, even when new. Its capability for transmitting the necessary motor power was borderline. So it was constantly running under an excess load, leading inevitably to excess wear on the worm and wheel set, and premature gearbox failure.

### Less stress all round

Discussions with the appropriate ERIKS Product Business Unit led to the proposal for a replacement geared motor. This would have the same operating characteristics, but importantly with a Service Factor of 2+ to reduce stress on the gearbox. At the same time an upgrade to the final reduction chain drive – from a 1" pitch duplex to triplex – was also recommended, to reduce bearing



# How much of a risk taker are you?



Working in a hazardous or aggressive environment, risk is always on your mind. But by doing the right thing for safety, are you raising your financial risk to danger level? Fortunately, making the right component choices for your safety circuits can ensure you protect production and profitability as well as personnel.



**Jani Perala**  
Sales Manager Process Automation

**FESTO**



If the worst happens and a safety device fails, the consequences can be catastrophic. People can be injured, or worse. Pollutants can escape into the environment. Plant can be damaged or destroyed. And production will inevitably be lost until checks, repairs, replacements, clean-ups – and perhaps even investigations and enquiries – are completed.

## “ A productivity bonus ”

So how do you make safety devices even safer, and reduce all kinds of risks across the board? By looking for safety components with a 'productivity bonus'.

Right across industry, modern engineering and safety systems are already optimised. That means squeezing out greater efficiency and productivity now has to come down to maximising reliability and minimising downtime.

One chemical manufacturer who has realised the potential productivity bonus of reliable safety systems is Bayer Crop Science.

## “ Uniquely low failure rate ”

### Better-performing seals

The Bayer Crop Science site in Dormagen, Germany, includes a multi-purpose process development and production system. This uses flammable operating fluids, requires frequent process changeovers, and incorporates numerous interfaces and intervention points. The whole system is classified as a potentially explosive, either zone 1 or 2.

Numerous instrumentation and control technology devices protect the system, by switching dosing, exhaust, steam and other valves to failsafe positions. The actuators are activated by solenoid valves with an SIL classification which matches or exceeds the classification of the entire safety loop.



Most solenoid valves for use in safety instrument circuits are certified for between 4 and 8 years before they have to be changed. With over 1,500 valves across safety-related and non-safety-related circuits, for Bayer that would equate to significant regular downtime, lost production and component replacement costs.

The weak point of most valves is the seal, which – because it can become porous – is a finite product. The commonly-used piston spool valves have up to six seals, increasing the risk of seal failure. But by choosing Festo VOFC solenoid valves, Bayer maximised valve life and optimised safety and productivity. That's because the Festo VOFC series incorporates a hard-sealed polyurethane valve seat rather than the usual soft seal.

### Planning 2,410 years ahead

Certified up to SIL 3, these valves guarantee a failure probability rate of 2.41 E-4 and a safe failure fraction of 75%. In other words, there's a predicted maximum of one faulty operation in 2,410 switching cycles.

In a safety loop which undergoes an annual failsafe inspection, a faulty operation will only occur once in 2,410 years.

## “ Lower costs and improve productivity ”

This incredible low – and unique – failure rate is why the Festo VOFC solenoid valve is the only one with open-ended certification. There's no specified due date for change, no downtime for maintenance, no replacement cost, and no lost production as a result of valve failure – until around the year 4000!



### Now with added reliability

With that kind of unimaginably-low failure rate, it might seem impossible to add even more reliability to your safety system. But you can.

The Festo DFPD-C quarter turn actuator is just as well-equipped for the chemical industry environment as the VOFC valve it's designed to work with.

## “ Reduce the risk ”

Its end cap is hard anodised to prevent scratches. The screws for adjusting the end position are blow-out-proof under pressure. Perfect alignment of the actuator and process valve are ensured by shaft centring rings. And captive, non-ferrous spring packages provide additional security against spring fracture.

Using NAMUR interface, the Festo DFPD-C can be connected to the Festo VOFC with no additional piping. So you not only save on the time and cost of installing piping, but also reduce the risk of installation errors, the cost of maintenance, and potential leakage points.

### Saving on safety

Safety is never a cost-saving issue. Personnel must be protected at all costs. Preventing pollution is non-negotiable. SIL certification is mandatory in the kind of environments encountered in the chemical industry and many others.

But the Festo VOFC solenoid valve, and Festo DFPD-C quarter turn actuator, prove that risk reduction can also reduce costs, and give you a productivity bonus into the bargain.



Scan here to download Festo's SIL for the Chemical Industry Whitepaper



# Upgrade and unlock energy savings today



**Lewis Bratcher**  
Regional Sales Manager  
**ERIKS**

As demand continues to grow across industry for companies to adopt a more energy efficient approach to manufacturing, the UK Government is pushing businesses to find new ways to reduce energy consumption, carbon footprint, and emissions.

Automatically, due to their excessive energy usage, you would assume that Water Utility companies have very competitive energy rates, ensuring that costs remain at a manageable level. But in fact, this is far from the truth.

For example, one company in the south of England currently pays 12p per kW/h, although the industry standard is 10p per kW/h. A two pence difference may not seem a large amount, but when you consider that many of the motors used throughout a water facility operate 24-7-365, the costs quickly wrack up.

## Repair requested

One water customer contacted ERIKS with an enquiry for a routine bearing change on a 37kW motor, but it was quickly realised that this may not necessarily be the most cost-efficient approach to their problem, and substantial savings were waiting to be unlocked.

Upon transporting the large motor to our Southampton workshop, ERIKS engineers noticed that the bearing references on the motor dated back to the 1970s, which due to the nature of the water industry, isn't particularly uncommon.

“ 97% of the total cost of a motor is in those energy costs ”

The water industry is notorious for operating with old machinery - as the old adage goes, things were 'built to last.' But just because build quality was at such a high level, doesn't necessarily mean that they are up to current standards. In fact, many need to be brought up to scratch with 21<sup>st</sup> Century requirements.

## Impartiality unlocking savings

Sticking with our impartial routes, ERIKS were more than happy to proceed with the simple bearing repair, that would have cost the customer approximately £700. But before





would receive annual energy savings of £15,825, which equates to an astonishing lifetime saving – calculated over 20 years – of £257,376. Based on those figures, the payback period for initial investment is a mere 14 months.

“ Reduce their CO<sup>2</sup> emissions by 33.72 tonnes annually ”

In addition, the customer would also reduce their CO<sup>2</sup> emissions by 33.72 tonnes annually, totalling a lifetime reduction – again over 20 years – of 505.80 tonnes.

#### Installing the benefits

The customer's optimisation team got wind of the project and considered an additional conversation, which quickly led to ERIKS being requested to undertake the full project including installation, further increasing the benefits on offer.

For example, it was highlighted that the wiring was so old, that it had no earth cables going to the motors. With ERIKS specialists taking full control, it was ensured that all the latest safety and electrical standards were met, bringing the site into the modern generation.

This entire site revamp not only increased efficiency and productivity, but also improved the health and safety of onsite employees. From the customer's point of view, the long-term benefits significantly outweighed the initial outlay.

“ Annual energy savings of £15,825.12 ”

any work took place, ERIKS representatives opened discussions regarding a switch to more modern, high efficiency motors – ones that would offer excellent energy savings for the lifetime of the motor.

Showcasing the ERIKS TCO Motor Calculator, we were able to create a snapshot of potential savings for the customer, which quickly drew their attention. Let's bear in mind that research has suggested electric motors represent 65% of all energy consumed in industry, and 97% of the total cost of a motor is in those energy costs. So, the fact is that higher-efficiency motors will almost certainly provide the lowest Total Cost of Ownership across a longer period of time.

#### Order, check. Savings, check

Discussions were finalised and the customer opted to scrap plans for the bearing repair and instead, replace not only the one motor at the Southampton workshop, but all eight on site. What should also be pointed out is that seven of the motors were fully functional with no faults. The decision was made solely on energy savings and positive impacts to the environment. This was a proactive decision on behalf of the customer.

Calculations predicted that based on the size of the motors required, the customer



#### No not stopping there

Following the energy and cost savings made by the customer to date, a commitment has been made that will see a full turnkey project get underway, including the purchase and installation of 200 motors across approximately 50 to 100 sites, set to take place over the next two years.

To put this into perspective, many of these large pumping stations operate utilising inlet screw pump motors up to 160kW, four times the size of their initial order. So, you can only begin to imagine the savings that are ready to be uncovered.

Thanks to the many positive benefits for not only the customer, but the environment, this is the next phase in the customer's plan to proactively change their approach to energy usage, which will inevitably lead to reduced carbon footprint.

#### The savings are yours to be had

The ERIKS TCO Motor Calculator is a unique tool which allows inputting of personalised figures for running hours, energy costs, and pricing terms, enabling motor purchasers to accurately compare purchase price with TCO for their specific motor applications.

Just like this water company, why not unlock those potential savings today and discuss your options with one of our specialised motor experts.



To view the ERIKS TCO Calculator for yourself scan the QR code or visit

<https://eriks.co.uk/motor-tco>





**Shaun Heys**  
Marketing Communications Manager



# Water - in depth

There's nothing unusual about an industry focussed on reducing its operational costs and its carbon footprint. Less common, in the face of ever-increasing demand, is the requirement to lower the cost to the customer. And almost unique is the need to keep 64 million consumers supplied, day in, day out, with a 100% safe product. That's why the water industry needs a partner able to meet all its lubrication needs: ensuring the taps keep running, the toilets keep flushing, and the industry keeps its head above water.

As a trusted supplier of lubricants to the water industry, ROCOL® also provides support in depth. That's not only expertise to improve product performance in the sector's demanding operating environments. It's also the sharing of knowledge and experience, through a training scheme which promises to teach participants 'everything [they] need to know about using lubricants in the water industry'.

One of the key things they need to know is how to choose lubricants which meet all the requirements for safe use when in contact with wastewater, clean water and – most importantly – drinking water.

As a UK-based manufacturer of WRAS approved lubricants, ROCOL offers a range of products approved to the highest levels for drinking water facilities. Developed in-house by a team of highly-skilled engineers and chemists, the products are formulated to extend component life and increase lubrication intervals. These features in turn help to deliver reduced downtime, reduced

power draw across a facility, protection against corrosion, lower labour costs and a lower Total Cost of Ownership.

## Water works

A particular challenge for lubricants in the water industry's operating environment is, of course, the way water works on greases and other lubricants.

Water is highly effective at washing out many types of lubricants, including greases, leaving bearings at risk of increased wear and corrosion. Washed-out lubricant can also find its way into the environment, and in the worst case has the potential even to reach the consumer.

A ROCOL PFPE grease such as SAPPHIRE® Endure [see Know+How Issue 40] overcomes all these problems. Approved for drinking water facilities, firstly it's resistant to water (which also makes it highly effective against aggressive washdowns). Secondly, it's inert. And lastly, whilst a conventional grease needs to fill around a third of a bearing for effective lubrication, SAPPHIRE Endure only needs to fill around a fifth.

Less lubricant. Less lubricant loss. Less relubrication. All reduces maintenance time and cost whilst also resulting in less bearing wear from using a higher performance bearing grease, therefore less chance of bearing failure - and a longer bearing service life.

Again, less maintenance time and cost. Increased reliability of components that operate in isolation across various water treatment facilities with long periods of time between being checked.

“ A partner able to meet all lubrication needs ”





“ Safe use in contact with drinking water ”



SAPPHIRE® Aqua-Sil and SAPPHIRE® Aqua-Sil Hi Load are two more ROCOL® WRAS-approved silicone greases ideal for the water industry. Aqua-Sil is designed for lubrication of seals, 'O' rings, slides, slow-speed bearings and other light-to-medium duty applications. With its excellent water resistance, it even keeps completely submerged components protected.

Aqua-Sil Hi Load has the same high-performance properties and – thanks to the addition of molybdenum disulphide – is suitable for long-term bearing lubrication and protecting bearings under heavier loads.

### Real-world results

The drive gearboxes for aeration tanks face challenging operating conditions and are a significant source of energy consumption at waste water facilities. To try to reduce energy use, a major UK water company trialled SAPPHIRE® Hi Torque 320 semi-synthetic gearbox oil on six of these gearboxes for six months.

The result, as reported by the company's Energy Innovation Technologist, was 'a saving of 4% on energy consumption. This amounted to an annual saving of over £19,000.'

Another water company swapped to ROCOL® TUFLUBE® Allweather on penstock screws at a sewage works. The screws had been rusting and seizing, leading to downtime and shortened lubrication intervals. Now the use of this tacky, water-resistant grease – which can even be applied underwater – has reduced pitting, corrosion, and extended the lubrication interval to twelve months.

“ Annual saving of over £19,000 ”



## Best Practice Lubrication training

The ROCOL Water Industry Applications training course has been specifically designed to support users and suppliers of lubricants for the water industry.

As an online course, it's available to be started at any time, and finished whenever you feel you've learnt enough. Once enrolled, access is unlimited for life. So the course can be followed at a pace to suit you. It's also available on all devices you own, so you can learn whenever and wherever you choose.

Find out more [here](#).



“Enrol now!” using this link:

[https://www.rocol.com/knowledge-centre/training\\_course/lubrication-training-water-industry](https://www.rocol.com/knowledge-centre/training_course/lubrication-training-water-industry)



# What goes around, comes around. Usually...



**Jon Whitehouse**  
Commercial Manager, MRO & Safety Equipment  
**ERIKS**

What goes around and around and around, but only ever gets halfway there? There are two and a half thousand answers, and they are all wastewater treatment plant half-bridges. Essential to helping prevent water pollution, these assets are generally ageing and consequently unreliable. But together, H. Varley and ERIKS offer a one-stop shop solution, refurbishing and repairing these for longer asset life and extended Mean Time Between Failure.

Slowly rotating in wastewater treatment tanks, half-bridges stir the wastewater to move grit and other solid pollutants to the centre of the tank for removal. At least they do when all is going well. But a failed half-bridge can result in a serious environmental pollution incident, and a hefty fine for the water company involved.

Normal operation eventually leads to deterioration of the half-bridges through wear and tear in several areas. Budget constraints have meant that many of these assets have been patched-up over the years, when what's needed to ensure reliability is a holistic approach addressing all areas of potential failure.

“ One-stop shop solution ”



## Going round in circles

Most half-bridges run continuously, with wheels running along the cement walls of the treatment tank. Over time, deterioration of the walls can create a bumpy surface for the wheels to travel along, which in turn leads to deterioration of the wheels. Meanwhile, as the wheels travel over the bumps they create vibration, which leads to further damage in other parts of the equipment.

Piecemeal patch-ups may seem to solve the problem, but often simply lead to more issues. For example, if the wall is patched with metal plates it will still be less smooth than it should be, so there's more wear on the wheels and more transmitted vibration. In the same way, if the wheels are replaced but the wall isn't repaired, the whole process simply repeats itself.



## “ Long-lasting, reliable repair or refurbishment ”

But by working together, looking at the whole asset as one, and using the latest and most advanced components, materials and techniques, H. Varley and ERIKS can ensure a long-lasting, reliable repair or refurbishment.

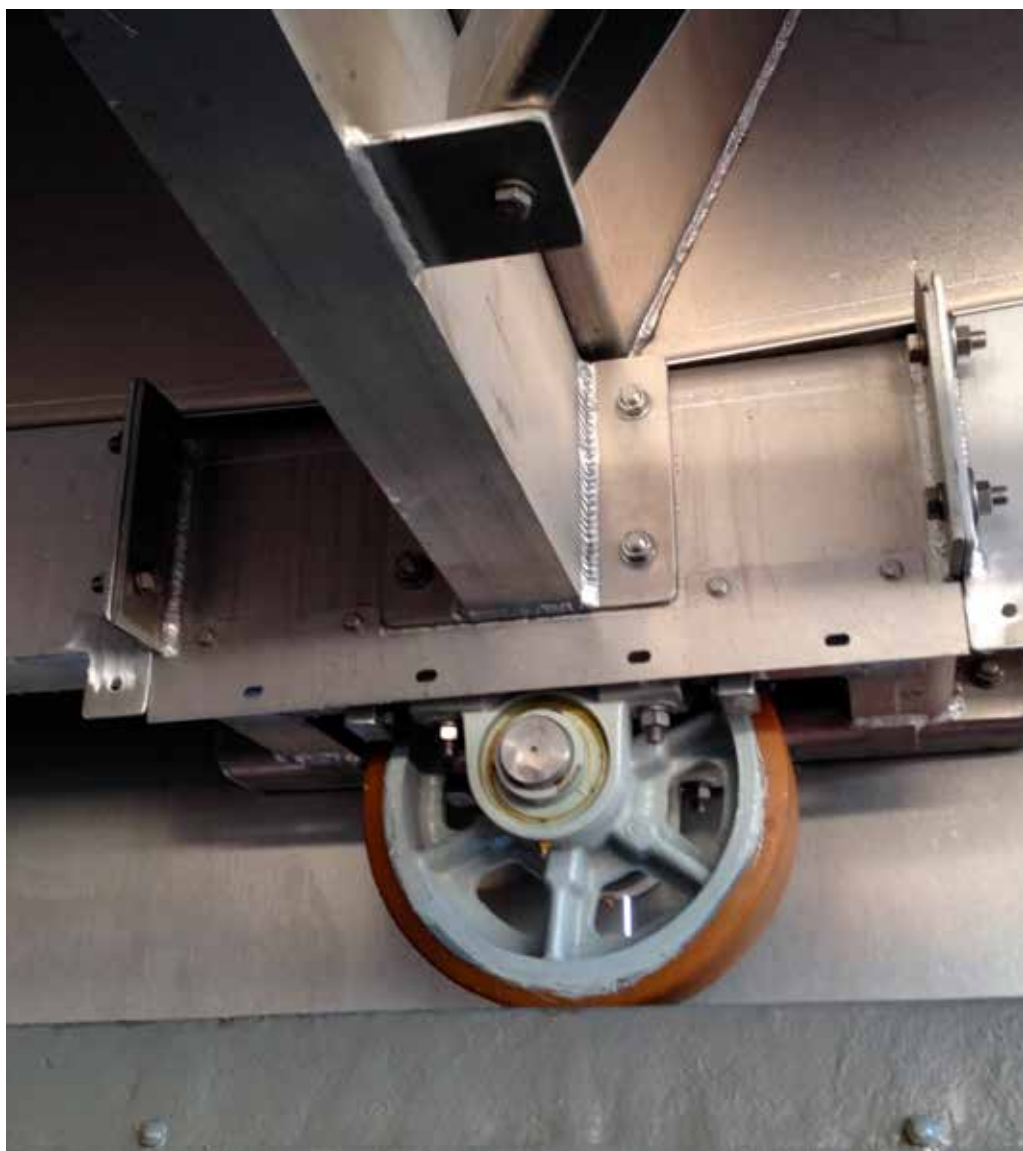
### The wheel deal

H. Varley tyres for half-bridge wheels use a specialist tyre polymer called Vulkollan®.

One of the most powerful elastomers available, Vulkollan offers the highest mechanical load-bearing characteristics, dynamic load-bearing capacity, high tensile strength and tear resistance. It's also highly resistant to UV radiation, ozone, greases, and oils. This combination makes it ideal for the half-bridge application and the treatment plant environment.

However, if the operating environment is even more challenging – such as in coastal areas – then the wheels can be treated with Colturiet naval grade paint to prevent corrosion.

Wheels can be re-tyred in 7-10 days, and replacement wheels – even bespoke Imperial sizes – can be manufactured and supplied in the same timeframe.



Slewing rings which enable the rotation of the half bridge can also be supplied. These bearings can be prematurely worn by the vibration from wheels running on a poor tank wall surface.

A survey will advise whether a straight replacement will provide the required reliability and longevity, or whether an upgrade to a more robust and efficient new design will be more effective.

However even a new slewing ring and new tyres or wheels won't ensure reliability if the tank wall or other components remain in poor repair.

### Wall-to-wall service

As part of the holistic approach to repair and maintenance, ERIKS uses the latest Belzona polymer resins. These adhere to the treatment tanks' concrete walls to create long-lasting repairs and a smooth track for the wheels to run on.

Different specialist Belzona polymers are used for the expansion joints.

## “ Water industry experience ”

ERIKS can also repair the damage from vibrational wear and tear, with refurbishment, replacement and fabrication services for the running train (chain or direct drive and gearbox), trailing arm, drive motor, scrapers, anti-slip walkways and handrails.

An initial site survey and report will define your asset status, establish the extent of the repairs or refurbishment required, and provide you with a quotation for repair or upgrade. A lubrication and preventative maintenance service is also available if required.

In fact, H. Varley and ERIKS together have the products, expertise and water industry

# Talking the torque



**Dave Johnson**  
Application Engineer, Power Transmission  
**ERIKS**

Can you remember the reasoning behind decisions you made 30 years ago? A leading supplier of building cement couldn't. Which is why they needed to talk to someone about torque.



## “ Time to take action ”

As a key part of their process, the cement manufacturer uses a large mechanical rake to traverse an area of conveyor and pull small rocks off the belt into a hopper. For 30 years, the raking application relied on an industrial gear unit (IGU) with a shrink disc output hub, and a 22kW close-coupled motor. The gear unit was then connected to a custom shaft, which was in turn linked to the rake.

### So far, so sensible.

However, the unit also incorporated a bespoke torque limiter. No-one was quite sure why. No-one involved in the commissioning three decades earlier was still available to ask. And it was causing more problems than it might ever have been meant to solve.

Acting as an overload device between the motor and gearbox, the torque limiter disengaged the two whenever there was a torque overload. But to re-engage, the set-up needed a time-consuming partial strip-down every time. Not only that, but after 30 years in operation in an aggressive operating environment, where cement dust is ever-present, the sealing arrangements were degraded and ineffective.

After 12 months of repeated breakdowns, extensive downtime for repairs, and costly lost production, the customer decided it was time to take action.

### Turning to the experts

ERIKS already had an on-site presence supplying, fitting and maintaining bearings, filters and hydraulics. So they were the customer's natural first choice to talk to. And those on-site engineers could call on the expertise and experience of ERIKS' Rotating Equipment Product Business Unit.



## “ ERIKS turned detectives ”

Firstly, ERIKS turned detectives. They quickly established that the unit was obsolete, meaning spare parts were no longer available. And no-one had a clue to the origin of the torque limiter.

In the past, the customer had undertaken several rebuilds and workarounds to try to overcome the spares problem, but these had only helped in the short-term. In fact in some cases they caused even more problems. The use of different materials from those of the original parts led to changes in the torque parameters to unknown values.

A unit rebuild and a torque limiter refurbishment were clearly economically unviable, impractical and undesirable. It was time for less talk and more action.

### Simply better

The ERIKS Project Team designed a new solution that was not only simpler but also more efficient, and easily fitted into the existing application.

A Fenner 'P' series IGU was close-coupled with an overload clutch from MAYR – an ERIKS partner supplier. The close-coupling eliminates any potential alignment issues, while the overload clutch is a more effective and practical replacement for the torque limiter. In the event of torque overload, the clutch automatically disengages until the problem is resolved. Then all that's needed to start the rake operating again is one revolution of the drive to re-engage the clutch.

No stripping down. Far less downtime. Minimal lost production.

As the application had been operating for 30 years, the motor was almost certainly not the one originally installed. It was also budget choice, from the days before efficiency ratings. ERIKS swapped it for a WEG high-

efficiency IE3 electric motor, offering a 5-6% energy-efficiency improvement, and predicted reliability and service life benefits.

The new shrink disc output hub is fitted with a bespoke shaft to suit the existing sprocket and bearing arrangement. This helped to minimise the amount of new engineering and new components required.

Installation was timetabled for a period of scheduled downtime, and was completed in around 1½ weeks. This included changing an anchor point no longer in the right place for the new set-up.

Using a standard motor and clutch from well-known manufacturers ensures ready availability of spares. And improvements in sealing over the last 30 years mean that – even in such an aggressive environment – a standard sealing arrangement can be used.



Lastly, the IGU, motor, output hub, clutch and shaft had been repaired and replaced piecemeal over many years. Wholesale replacement allowed ERIKS' engineers to 'restore' the unit to materials with known torque values, making it possible to set operational parameters to accurately predict failures.

The success of the solution has not only ensured reliability and enhanced efficiency and productivity for the customer. It's also firmly cemented their relationship with ERIKS.

# Increase uptime and reduce maintenance on your bearings



**David Oliver**  
Channel and Platform Manager



Mining, mineral processing, and cement making operations face some of the toughest and often remote working conditions on earth. With heat, contaminants, vibration, heavy loads, and extreme production demands prevalent and where lost days can be very costly, you need machinery that you can trust.

The typical operating environment for conveyor pulleys and idler shafts often leads to premature bearing failure, with the ingress of abrasive contaminants into the bearing virtually impossible to stop unless the correct measures are taken. In fact, research has shown that conveyor reliability in these industries is below 87%.

Meeting these challenges head on will achieve uptime that you can rely on, while reducing maintenance costs and safety risks.

“Conveyor reliability in these industries is below 87%”

SKF has a strong focus on bulk handling machinery and has developed a new range of sealed spherical roller bearings for harsh environments. The development, in close co-operation with SKF industry teams, has resulted in the SKF conveyor unit three-barrier solution.

#### **In a nutshell**

The effectiveness of the SKF three-barrier solution is in its simplicity, protecting the bearing enclosure during assembly and operation, through the introduction of SKF L or S type housing seals, a housing grease fill and bearing with integral seals.

The result is an environmentally friendly, cost-effective solution that can extend bearing service life without complex and expensive sealing arrangements. So, let's consider the individual components and explore the unrivalled benefits.

#### **Explorer sealed bearings**

Spherical roller bearings frequently operate in applications exposed to high demands on load, misalignment, lubrication, and contamination exclusion. But SKF Explorer sealed spherical roller bearings are specifically designed to withstand such conditions.

These bearings enable simplified maintenance, safer operation, fewer stops, and reduced grease consumption, cutting maintenance costs and contributing to a cleaner environment.

The majority of SKF sealed spherical roller bearings have the same internal geometry as corresponding open bearings, as well as the same basic load ratings. A small number of these bearing do have a width greater than ISO standard to accommodate the seals. The width of all remaining bearings, as well as all other principal dimensions are as standard.



## Lubrication

SKF sealed spherical roller bearings have W33 feature as standard, with bearings in the lower size range coming with the lubrication groove and holes covered by a unique polymer band. Depending on your choice of lubrication mode, there are two alternatives available in handling the band.

- Greased-for-life bearings: no action needed, retain or remove the band
- Bearing to be relubricated: Band must be removed before mounting in the housing.
- For general applications bearings are 25-45% filled with a high quality EP grease SKF LGEP 2. This lubricant is designed to operate up to 110 °C.

## Misalignment

The design of sealed SKF spherical roller bearings is such that they are inherently self-aligning, meaning that the bearings can accommodate angular misalignment of the shaft relative to the housing without negative effect.

For most misalignment types, sealed SKF spherical roller bearings can accommodate angular misalignment of the shaft relative to the housing of up to 0.5°, but where misalignment is not constant with respect to the bearing outer ring, the bearing friction increases and the misalignment of the inner ring relative to the outer should not exceed a few tenths of a degree.

“ Operating temperatures up to +200 °C ”

## SNL Housings

It's not only the sealing arrangement in the SKF three-barrier solution that needs to be of high quality. To utilise all potential with this innovative solution, the housing itself is vitally important.



High quality SKF SNL housings are designed with smooth stiffness to avoid locally overloading the bearing, have excellent thermal conductivity, and secure axial movement of the non-locating bearing. These features contribute to unrivalled bearing reliability.

## Sealing efficiency

The efficiency of integral seals has been confirmed by field trials and long-running, demanding laboratory tests. Whilst sealing efficiency in wet environments is higher than single-lip seals used in other bearings, sealed spherical roller bearings should not be exposed to direct water as the seal surface can corrode reducing function.

SKF's recommendation is that integral seals should be employed as secondary seals, ensuring that the properties of these bearings are used most efficiently.

## Labyrinth seals

For high speed and/or high temperature applications, SKF recommends using a labyrinth type seal. The standard labyrinth seal is named a labyrinth ring, which consists of a metal ring with two steps arranged radially, a silicone rubber cord supplied with the seal holds the ring in place on the shaft.

Standard labyrinth seals can accommodate approximately 0.3° of angular misalignment and operating temperatures up to +200 °C.

## Taconite heavy-duty seals

For bearing arrangements which operate under arduous conditions, labyrinth seals with a re-lubrication function are recommended as the grease enhances its sealing properties.



With Taconite heavy-duty seals, angular misalignments of the shaft up to 0.5° are possible.

## Four-lip seals

With shaft speeds continuously increasing, SKF have developed a robust, easy-to-mount four-lip seal allowing peripheral speeds up to 13m/s. The permissible angular misalignment for shaft diameters ≤ 100mm is 1° and 0.5° for larger shafts.

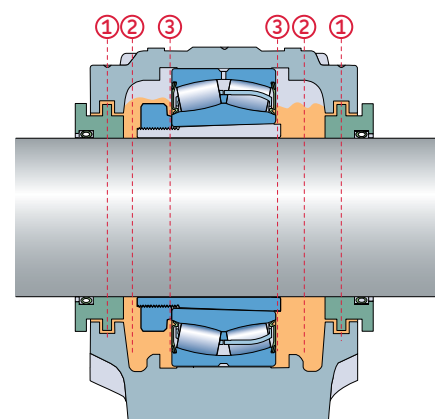
## Savings all around

By introducing the upgraded SKF three-barrier solution, you can receive an average lifetime three times longer than traditional open bearings.

The overall result is fewer conveyor pulley bearing breakdowns and longer maintenance intervals – delivering up to 92% availability. This allows for scheduled maintenance of your conveyor pulleys to be timed with lagging replacement.

The SKF three-barrier solution also means that regreasing is only required twice a year, instead of once a week, saving you up to 90% of the time of greasing, while increasing safety for your maintenance workers. Win Win Win.

“ Saving 90% of the time of greasing ”



# Prolong bearing life. Maximise plant availability.



**Martin Ryan**  
Industrial Distribution – Director  
**SCHAEFFLER**

In aggressive environments such as those in the cement and mining industries, maximising plant and machinery availability is vital. Choosing the right rolling bearings for heavy machinery, as well as suitable condition monitoring systems and automatic lubricators, can prolong bearing life and maximise plant availability.

As you will know, bearings for heavy machinery such as vibratory screens, crushers and cement mills are subjected to the most severe stresses. The bearings not only need to support high loads and high speeds, but also accelerations and centrifugal forces.

In many cases, these applications involve adverse conditions such as contaminated environments and excessive moisture. In particular, the cages of the rolling bearings are subjected to stresses arising from high radial accelerations and in some cases, are also overlaid by axial accelerations. The rotating imbalance generates rotating shaft deflection and additional sliding motion within the bearings. This increases the friction and therefore the operating temperature of the bearings.

Schaeffler's range of spherical roller bearings [designated T41A or T41D] for vibratory machinery are matched to the operating conditions and have proved highly successful in cement and mining applications.

Very high load carrying capacity is achieved through optimum use of the bearing cross-section. The bearings can support high dynamic angular misalignments of up to 0.15 degrees. As standard, a range of bearing sizes can be supplied with a cylindrical bore

“ Extending the nominal rating life by 60% ”

coated with Schaeffler's Durotect CK, a hard chromium coating with a special surface structure and characteristics that contribute to reducing friction, helping to prevent fretting corrosion between the bearing bore diameter and the shaft over a long period of operation. The benefits for vibratory machinery are higher operational reliability, prevention of damage to shafts, and a reduction in repair costs.

For heavy vibratory machines in cement and mining applications, Schaeffler also offers its 241 series of spherical roller bearings in X-life quality. This volume-production bearing solution (for bore diameters of 500mm and above) has profiled rollers and is optimised for the wear mechanisms that occur in these aggressive environments.

The load ratings of this range exceed the previous series by 15%. They extend the nominal rating life by 60% when proper



lubrication, without contamination. Should the bearings become contaminated with hard particles, their rolling element profiling significantly delays the onset of 'edge loading'. Reducing downtime as the bearing and the entire cement mill can continue to operate for a much longer period of time. For plants with extremely high levels of bearing wear, Schaeffler can offer sealed bearings as an additional feature.

### Profiled rollers

For heavy vibratory machines in cement and mining applications, Schaeffler also offers its 241 series of spherical roller bearings in





X-life quality (for bore diameters of 500mm and above). The design process for these bearings takes into account the typical wear mechanisms that occur in the cement and mining industries. The result of these design modifications is an increase in load rating and, due to the logarithmic rolling element profiling, a significant increase in operating life when contamination with hard and abrasive particles from production occurs.

In spherical roller bearings, abrasive wear caused by hard particles causes the maximum pressure to shift from the rolling element centre to the rolling element ends, a phenomenon that is known as 'edge running'. Logarithmic profiling of the roller ends that has been specially adapted to this abrasive wear means that edge running does not occur until a much later point in time. Wear to the bearing can therefore take place over a longer period.

The load ratings of the 241 series exceed the previous series by 15%, extending the nominal rating life by 60% when proper lubrication without contamination is ensured.

“ Proved highly successful in cement and mining applications ”

Should the bearings become contaminated with hard particles, their rolling element profiling significantly delays the onset of 'edge loading', allowing the bearing and cement mill to operate for a longer period.

In addition sealed bearings can be provided. The seal prevents the ingress of foreign particles into the bearing to the greatest extent possible. The seal is integrated into the bearing envelope unchanged. This means that spherical roller bearings in high pressure grinding rolls – where a high level of wear is detected – can easily be replaced by the equivalent sealed version.

“ The seal prevents the ingress of foreign particles ”





# Personal protection doesn't have to be complicated



**Tracey Winspear**

Application Engineer – 3M Powered and Supplied Air



Recent world events have certainly magnified the importance of employee health and safety. But for those that operate in dangerous and aggressive environments, personal protection has always remained a strong area of focus.

Aggressive working environments come in all shapes and sizes. The challenges thrown out by a high temperature environment are different to ones where employees are exposed to aggressive chemicals. But what we must understand is that they all pose potential catastrophic consequences to health and wellbeing.

To ensure that your employees are protected, as a business you are obligated to provide them with protection that's ergonomic,

flexible, safe, and convenient. Protection that, in a hazardous environment, will enable them to breathe correctly, while remaining productive – and a Powered Air Respirator System could be just the answer.

**Designed for comfort. Inspired by innovation.**

Understanding that uncomfortable environments are part of the job, 3M have developed the 3M™ Versaflo™ series of Powered Air Purifying Respirator Systems

“Obligated to provide protection that's ergonomic, flexible, safe”



[PAPRS], enabling your workers to experience even greater comfort when working using the PPE needed to reduce the risks of workplace injury, while meeting HSE's stringent regulations.

From heavy industrial applications to highly precise healthcare uses – and everywhere in between - Versaflo™ PAPRS' offer an integrated system that can be easily customised to suit the individual end user.

## “ Not all PPE is built the same ”

### Convenience and versatility in one bundle

But we would like to point out that they don't have to be complicated. In fact, you can ensure optimal protection in three core parts.

- **Headtop and breathing tube:** From the durable helmets of the 3M Versaflo Headtops M-Series, the versatile 3M Versaflo S-Series hoods and headcovers, or the convenience of your existing tight-fitting 3M facepieces, Versaflo Powered Air Respirator Systems offer a wide range of compatible options
- **Turbo:** Providing filtered air to your workers is the next step. To make your choice, consider whether you need protection from particulates or gases/vapours, and whether you need intrinsic safety or submersible cleaning
- **Filter:** Another important part of your safety toolkit, filters help protect workers from particulates and certain gases and vapours

### Integrated safety and comfort

3M Versaflo Powered Air Respirator System don't only offer just respiratory protection, but they also feature integrated head, eye, face, hearing, and skin protection, ensuring that all protective elements are compatible and comfortable to wear, resulting in better compliance.



The longer the shift, the longer the user requires comfortable protection, and with the Versaflo your employees can now enjoy the same refreshing airflow throughout the day as the turbo automatically adjusts to compensate for battery discharge or filter loading.

The lightweight, slim, ergonomic design provides operators with more comfort when working in tight spaces, while offering full control by enabling the selection of various airflow speeds, as well as how the air is delivered (in certain headtops).

### Make the right, complete choice

This may sound obvious, but not all PPE is built the same. If your safety glasses, helmet, respirator, and ear protection aren't designed or selected to work together, you may not be maximising your comfort, compatibility and, most importantly, overall hazard protection.

3M's Versaflo system has been specifically designed to combat this issue, with full integration at its core, ensuring that you get the best, most convenient PPE for the job, designed to enhance each other.

For example, certain headtops can accommodate different earmuffs for added hearing protection or eye and face protection. Different fabrics and shrouds can be chosen to provide either splash or chemical protection for your head, neck and shoulders. This level of interchangeability will ensure that at even given moment, in any given environment, you receive maximum protection.

### Fit for the test

Fit-testing is essential for ensuring that not only are you fully protected, but that your equipment is fit for purpose – oh, and it's required by national legislation.

The Versaflo Powered Air Respirator System is compatible with loose-fitting headgear, eliminating the need for fit-testing, reducing time, thus increasing productivity.

Previously, employees with facial hair may have had to shave to maintain the highest level of protection, or on the other hand, those that require prescription safety glasses may have had to remove them, limiting the

level of protection. But now, with a Versaflo loose-fitting headtop, both problems are accommodated, keeping employees happy and safe, and employers compliant with Health and Safety legislation.

### Making it easy

According to 3M 'your job is complicated enough.' Understanding the complexity of the varied roles and environments, taking into consideration all the critical elements that you face every day, 3M have specifically designed the Versaflo so that it's both easy to operate and maintain, taking the pressure off your shoulders.

The user-friendly interface enables you to monitor the status of your filter, the charge of your battery, and airflow settings at a glance. Built with intuitive interactivity, the colour indicated touchpoints of the system allow for easy identification, while the audible and visual alarm alerts inform you when to filter load or low battery is present. In addition, the Versaflo TR-600 comes equipped with vibratory alarms for those louder industrial environments.

Finally, for environments requiring decontamination or heavy cleaning, the battery and turbo of the TR-600 and TR-800 models has the capability to be fully submerged and easily cleaned having an IP67 rating (when used with the decontamination kit).


## “ 40 years of safety and a proven record of innovation ”

### Versatile and interchangeable

With a comprehensive portfolio of approved accessories, you can now standardise your respiratory platform to suit the requirements of a wide range of hazardous environments. So, whether you're operating in a rugged metalworking setting, a spray paint booth, or a biohazardous room in which the product, process and personnel need protecting, 3M has you covered.

With 40 years of safety leadership and a proven track record of innovation, 3M's filters can be counted on to give you the versatility you need to help handle the variety of challenges posed by aggressive environments.

If you require help on making the right selection for a specific operating environment, please don't hesitate to contact your local ERIKS Industrial MRO & Safety Equipment professional who will be happy to talk you through the process and ensure you're fully protected next time you step into a hazardous environment.

A dramatic image showing two hands in heavy, dark work gloves clashing together. The impact creates a bright, intense burst of orange and yellow light, with sparks and small flames flying outwards. The background is a dark, smoky grey, suggesting a high-temperature industrial environment.

# Protecting your assets: The best way to fight off external attack



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

Wear, abrasion, erosion, chemical attack, and corrosion are some of the most common causes of failure in process equipment, magnified even further in harsher industrial environments.



Often, this type of equipment is very expensive, therefore repairing and protecting these assets comes at a significant cost. However, traditional repair methods such as hard metal spraying or flame spraying are also costly and are limited to relatively small surface areas.

But what if we told you there was a more cost-effective, reliable, and flexible alternative?

The application of LOCTITE® protective coatings and compounds can be effortlessly applied on any surface – irrespective of size.

“ Selecting the right product for the application is always the most crucial decision ”

Yes, you heard us right, no matter the size, LOCTITE is the solution. There's no risk of heat stress during the application process, and they also provide the extra benefit of corrosion protection.

Typical applications include the treatment of air ducts, pumps, heat exchangers, centrifuges, impellers, fan blades, cyclones, pipes, tanks, and retention areas.

The compound formulations of LOCTITE's innovative portfolio include ceramic fillers that provide excellent adhesion and wear resistance. The key advantage of this product range is the ability to create a sacrificial and renewable working surface that protects the structural integrity of the original substrate.

These compounds are complemented by protective coatings that are primarily designed to protect against corrosion and chemicals, and as they do not contain ceramic fillers, they can be applied by a wide variety of methods to create that smooth surface required.

In short, collectively, these products have the ability to restore worn surfaces, extend the lifecycles of both new and old components, increase efficiency, and minimise downtime. The application of such products will save you money by considerably reducing the need for part replacement and associated spare-part inventories.

### Choosing the right product

Selecting the right product for the application is always the most crucial decision, and the first consideration you must make is particle size. In order to improve abrasion resistance, particle size of the abrasive material, and that in the protective compound, should be identified and matched similarly to the LOCTITE range, which offers grades from fine to coarse.



LOCTITE products are also suitable for a range of operating temperatures from -30°C to +120°C, with some grades capable of up to 230°C; but please note, that these special grades require post curing to achieve their ultimate high temperature performance.

Thanks to their special epoxy matrix, the products are resistant to most types of chemical aggression, and offer good protection against fresh and sea water, ammonium sulphate and sodium hydroxide, with many other special chemical requirements also being accommodated.

### Preparing the surface

Following particle size identification, your next consideration is correct surface preparation. This process is vital to the successful application of LOCTITE products.

Similarly, to preparing a surface ready for painting, correct surface preparation will improve the compound or coating's adhesion to the component, preventing unwanted and problematic corrosion between layers, thus extending maintenance intervals.

So, before treatment, the surface must be clean, free of debris, and dry without any corrosion or internal chemical pollution. We can't stress enough the importance of this process. A minimum surface profile of 75 µm is recommended with a blast profile of class 2.5.

### PC 7255 in action

One of the top performers in the protective compound range is LOCTITE PC 7255 – a low-friction epoxy that is sprayed directly onto the substrate that is especially effective for coating large surface areas and complex structures.

Creating an ultra-smooth finish that is resistant to both acids and alkalis, PC 7255 strongly protects against abrasion, corrosion, and in particular, chemical attack.

ERIKS' application of this product to the cover dome of a pelletiser gave a lifetime extension to the asset which plays a critical role at the start of the production process. With no spare machine as back-up, or any spare components to replace those that were damaged or worn, the LOCTITE compound was successfully utilised to repair the surface, to the highest standards and ensure production could continue, providing the perfect interim solution. Then, during a routine maintenance shutdown, the machine was restored to full working order.

### Good enough for our customers, good enough for us

The durability of this ceramic-enforced, epoxy sprayable coating has also been demonstrated at Henkel's very own manufacturing facility in Germany.

After more than five years, the usually detrimental effects of acid, corrosion, and intense heat have had minimal impact on a flue gas, whose inside surface was coated with PC 7255 to protect against aggressive sulphur and nitrogen compounds, as well as condensation water.

Prior to the application of LOCTITE PC 7255, it was common practice to shield the flue gas duct with sandwich panels – a method that was intricate, complicated, and costly. The process of rubberising the surface was time-consuming and very expensive as the material needed to be adapted to suit the design of that specific duct.

This is precisely where the benefits of this innovative protective compound are found, proving to be extremely efficient, effective, and user-friendly.

It can be sprayed on quickly and easily to create a sacrificial layer that prevents wear and tear on the base material, delivering exceptional advantages. In Henkel's case, maintenance engineers have expressed their delight in data that has shown that even with long-term exposure to extreme corrosion, the thickness of the coating, and its shore hardness, had changed only minimally over a sustained period of time.

For more information on LOCTITE PC 7255 or Henkel's well-balanced and diversified portfolio of specialist coatings, please contact your local ERIKS representative, who will be happy to discuss the best options for your requirements.

“ Suitable for a range of operating temperatures from -30°C to +120°C ”



# Rugged, reliable and ready

to challenge any  
aggressive environment



**Sinneli Jayampathy**  
Marketing Executive



Compressed air is widely used across industry, from building cars to opening doors, from food processing to mining and excavation. You name an industry; compressed air usage is present.



To meet the ever-increasing needs of what are known as 'aggressive environments,' Norgren has extended its industry leading Excelon Plus air preparation range with the addition of the new Excelon Plus TR Series.

Ideally suited for specification within industries such as mining, cement, glass, steel, rail [with special rail certified versions available], industrial automation and energy – the Excelon Plus TR Series includes filters, regulators, shut-off valves, lubricators and complete boxsets – providing you with everything you need to tackle the rigors of a harsh environment.

“ Specifically designed for use in extreme temperatures ”

Matching the outstanding performance standards set by the Excelon Plus range, the TR Series offers the added benefit of withstanding extended temperature ranges and demanding operating conditions. It is specifically designed for use in extreme temperatures, ranging from -40°C to +80°C, and in the wet or dry conditions that are a challenge to many FRL solutions in the market.



The TR Series also includes the latest safety features and performance standards of the existing Excelon Plus range and is suitable for applications with a primary pressure up to 20 bar.

“ Suitable for applications with a primary pressure up to 20 bar ”

#### For rough and tough applications

Created to ensure guaranteed operational performance in harsh work settings, the TR Series utilises a robust metal construction with filters and filter/regulators benefitting from a full metal body compared to the standard Excelon Plus range.

The regulators and filter/regulators offer a choice of three spring ranges [4, 10 & 17 bar] in both relieving and non-relieving diaphragms, a metal bonnet with a T-bar adjustment, and a metal gauge adapter option. From top to bottom, it's an air preparation range built to perform in arduous environments and the challenging operating conditions found across industry.

#### Good looks. Better performance

The design of the Excelon Plus TR Series may look good, but it performs even better. The body, bowl and bonnet are made from die cast aluminium, and the T-bar from zinc-plated steel, making it resistant to harsh weather conditions and corrosion.

As with the standard Excelon Plus range, the TR Series is a silicone-free product with different elastomers made from low temperature nitrile, allowing it to withstand both extreme high and low temperatures.

Other great design features from the standard Excelon Plus 82/84 Series' have been carried over, with the TR Series providing Class 8 water extraction to ISO 8573-1 [particles: Class 7, 6, 1 and 0], in-built tamper-proof options such as a double safety lock on the bowl, and a lockable rotating safety shut-off valve enabling easy isolation of the system, if required, and reduced clearance for filter maintenance.

“ May look good, but it performs even better ”

Finally, it is a full flow 1/2" product which can be over ported to 3/4" and under ported to 3/8", and is available in standard ISO G and PTF thread forms.

# All in a hard day's work



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



Bearings are among industry's most challenged components. Having to facilitate reliable, high-performance rotation over a long service life is demanding enough, but introduce the factors such as elevated temperatures, high loads, and contamination, the potential for failure rises dramatically. However, this doesn't have to be the case, as not all bearings are made equal.

For machines, systems and equipment operating in sectors such as steelmaking, construction, mining, quarrying, and papermaking, the challenges of aggressive environments can prove beyond the capabilities of many bearings.

As many will understand, the cost implications of premature failures are considerable, with production downtime, maintenance and labour, replacement components and additional lubrication requirements adding to what can be an unavoidable list.

## Taking the heat off

High-temperature environments present a particularly aggressive and challenging environment for bearings. When operating

in temperatures exceeding +100°C, standard bearings are subject to dimensional changes that cause the bearing ring to rotate slowly in relation to its seating, resulting in issues such as scoring, wear, vibration, noise and, ultimately, premature bearing failure.

“ Can endure temperatures up to 180°C ”

A further problem is the rapid degradation of seals and lubricant at higher temperatures. Approximately 110 °C is the maximum that

standard nitrile rubber seals in deep groove bearings and mounted bearing units can withstand before feeling the effect of deterioration. Standard lubricant greases are also often restricted to the same temperature limit.

Today, among the solutions is NSK's RHP Self-Lube® mounted units, comprising of two elements: the insert and the housing.

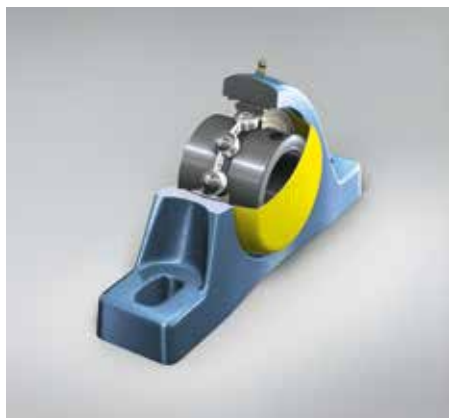
Notably, HLT inserts provide opportunities to reduce maintenance, downtime, and replacement costs when operating at higher temperatures. These inserts feature a steel cage, high-performance grease and effective seals that can endure temperatures up to 180°C.



Verifying the effectiveness of this solution was one ore preparation plant, who was experiencing up to three catastrophic failures each year on a bearing fitted to a rotary coal valve. NSK intervened and carried out an application review, which identified that the current bearing design was inadequate for such high temperatures.

In its place, the plant adopted a customised RHP HLT bearing insert within a Self-Lube® cast-iron FC housing and a special heat-isolating spacer. Trials displayed successful operation for more than 12 months with zero bearing failures.

In addition, there was no longer a requirement for cooling via compressed air which, alongside savings in downtime, maintenance costs and replacement bearings, saw the facility recover an astonishing €292,927 per year.



“ 25% higher than other variants ”

#### Lightening the load

Where high radial loads are causing reduced operating life, spherical roller bearings often provide the answer. NSKHPS [High Performance Standard] spherical roller bearings adopt state-of-the-art material technology that provides suitability for applications necessitating high loads.

This bearing type is, in fact, NSK's highest load-rated spherical roller bearing, 25% higher than other variants. NSKHPS bearings can also support moderate axial loads, while offering up to 20% higher limiting speed and up to twice the operating life compared to the industry standard.

“ Saving €4,538,304 per annum ”



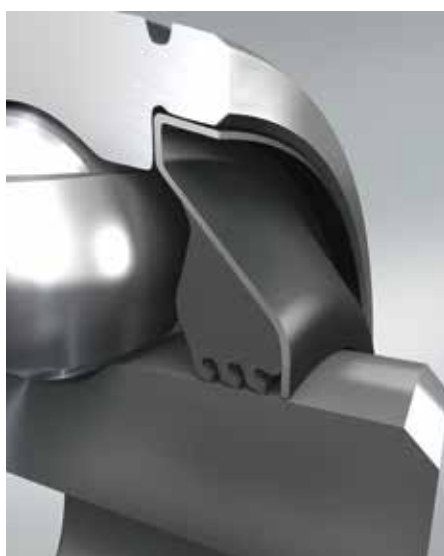
In addition, as well as resisting seizure and wear from factors such as loads, vibration and misalignment, NSKHPS spherical roller bearings are particularly adept at maintaining dimensional stability.

“ High performance triple lip seals ”

#### Doing the dirty work

Dirt, dust, debris, and particles are known to penetrate incorrectly or poorly specified bearings, in turn, affecting their rotation, thus compromising service life. Furthermore, many types of contaminants are abrasive, leading to defects such as the pitting of rollers, races, and bearing surfaces.

Driving innovation in material, sealing, lubrication and bearing design, NSK's bearings are specifically made to resist spalling, wear, flaking, and seizure. Over the years they have developed an extensive range of sealing and material technologies including DDU seal technology for deep groove ball bearings, a triple-lip seal for RHP Self-Lube® units, and Hi-tough steel for spherical roller bearings.



#### Seal of approval

For application with a high degree of contamination, the specially developed triple-lip seal for RHP Self-Lube® units consists of a one-piece moulded nitrile seal with three sealing lips. This innovative moulded seal bonds to a pressed steel shield that secures strongly in the outer ring, creating a super-effective sealing arrangement. Furthermore, the seal provides high performance for lubricant that sits between the lips.

As an example, one quarrying company was experiencing bearing failures every four months on its conveyor tail drum take-up unit. Following a switch to RHP Self-Lube® with triple-lip seals, they are now achieving service life of over one year.

This simple change has averted the previous problems of water and grit entering the bearings, and based on former costs associated with lost production, maintenance and replacement components, the company is now saving €6272 per year.



#### When the going gets tough

For applications featuring high-loads, the extra durability of NSK's Hi-TF bearings pays dividends. The use of proprietary high-strength steel ensures enhanced service life and superior resistance against wear in high-load applications, as well as up to 20% more seizure prevention where excessive contamination is present and a constant threat.

To exemplify the use of such bearings, another quarrying company was experiencing bearing failures, every 18 months, on each side of its conveyor head pulley courtesy of contamination. However, by introducing Hi-TF bearings, the company is now enjoying a service life of six years.

Based on prior experienced downtime and the maintenance costs associated with replacing the failed bearings, the company is now saving an impressive €4,538,304 per annum.

# The safe way to verify the absence of voltage



**Glen Bate**  
Territory Account Manager IEI products



Industrial environments pose many threats to employee health and safety, and electrical current is one of those right at the top of the list. It goes without saying that exposure to electricity can have catastrophic consequences, so protecting your team against such dangers is vital.

So, would you like the reassurance that your onsite personnel are safely entering panels without the risk of voltage still being present? We know the answer... of course you would.

When servicing electrical equipment, engineers must comply with safety regulations that require a voltage verification test to validate the absence of voltage. This process includes a number of stages that can be complex and time-consuming when using handheld portable test instruments.

“ Procedure has been simplified ”

Previously, engineers would be required to: select the tester, test the tester, test for voltage, and retest the tester before performing the task at hand. But now, thanks to the VeriSafe™ from Panduit, this frustrating procedure has been simplified by automating the voltage verification process.

“ A simple button push enables workers to verify the absence of voltage ”

### At the push of a button

Once installed, a simple push of a button enables workers to verify the absence of voltage and see an active indication when the absence of voltage is confirmed. This provides a new and innovative way to safely, reliably, and efficiently verify the absence of voltage before accessing potentially dangerous electrical equipment in a fraction of the time compared to traditional handheld test instruments.

By automating the process, through an externally mounted tester that provides a visual indication of the absence of voltage prior to access, VeriSafe™:

- Reduces the risk of exposure of electrical hazards for improved worker safety
- Reduces testing procedure time and complexity to improve productivity
- Supports compliance when used to verify the electrical lockout/tagout process as described in NFPA 70E

### Put to the test

Recently, Panduit and ERIKS engaged in the first onsite demonstration of the VeriSafe Absence of Voltage Tester at one large interior lining systems manufacturer, and they haven't looked back since.

Utilising ERIKS' onsite relationship with the customer, what began as a simple one-to-one demonstration quickly evolved into a group format, as more and more engineers joined the discussion to uncover how this innovative product could drive both safety and efficiency benefits.

During the open forum, a number of technical challenges were proposed, and an agreement for a two-site trial was presented. Since the initial engagement, the customer has installed a large number of VeriSafe™ across multiple sites and has widely acknowledged that its introduction has increased safety in the isolation of electrical panels.

A representative of the customer commented: *“From the initial demonstration through to implementation of the Panduit VeriSafe™ into the onsite isolation standard, I am proud to say that we have not only increased safety but have also been able to demonstrate efficiency cost savings to justify the investment in rolling out the VeriSafe™ product across multiple locations.”*



“ Increased safety in the isolation of electrical panels ”



# Survival guide for cable ties



**Glen Bate**  
Territory Account Manager IEI products

It's strange to think that something such as a cable tie, a regularly used household item, can play such an important health and safety role in industrial environments. But it does not, they do. And incorrect selection could have drastic consequences.

Cable ties boast multiple uses in industrial environments, from fixing cable bundles, to reducing fire and trip hazards from dangling loose wires, they really do play an essential role. But to ensure long life and dependable service, there are many factors that must be considered when selecting the correct cable tie material for a specific application.

“Selecting the wrong material can lead to premature ageing”

It may sound obvious but selecting the wrong material can lead to premature ageing, which will ultimately lead to perishing and catastrophic failure, particularly in aggressive environments, where changing conditions such as temperature and humidity can be very dramatic. It is therefore essential to select the correct cable tie material that meets all the aggressive environmental requirements of the final application.

In addition to the likelihood of cable tie breakages, there are additional costs that will likely be encountered should an incorrect material be chosen. This simple and regular mistake will lead to unnecessary downtime, essential maintenance, and repair work, and most importantly, an increase in health and safety risks.

## A right first time, fit and forget solution

A leading global producer of cable ties, Panduit's exceptional portfolio offers the most complete selection of sizes, styles, and materials to meet even the most demanding of environments.

From high temperature and moisture applications, to radiation, chemical and highly flammable settings, there is a correct choice to be made, one that has been specifically engineered to withstand ever-changing demands of aggressive environments.

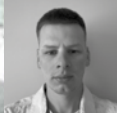
In summary, the cost of installing an incorrect cable tie in an aggressive industrial setting is not only unnecessary costs and excess downtime, but also increased risk to employee health and safety.

To find out more about Panduit's extensive range of cable ties to suit your application and operating environment, please contact your local ERIKS Service Centre to discuss your options.

“There is a correct choice to be made”



# Don't just throw away. Think, Recover and Repair!



**Tom Pettigrew**  
Company Director & Head of Technical Sales



You'd be astounded at how many millions industry throws away each year in the way of broken, corroded and eroded plant machinery due to aggressive environments. But by taking a step back, re-evaluating your options, you'll soon notice that a major amount can actually be recovered or repaired.

In the case of pumps, over time it's inevitable that they will suffer some degree of abrasive wear, particularly when operating in an aggressive setting. The extent of wear will depend on the fluid being pumped and the concentration of aggressive and abrasive medium, however, it is also the case that even relatively clean fluids can also degrade your equipment, even though more gradually.

When a pump is first specified for any application, efficiency is of course considered. But over time, whether long or short, the wetted parts of a pump will encounter wear and damage caused by abrasive products. It's just the nature of the application.

But you must consider that this will affect the operating cost as a whole. Not just power consumption but in other ownership elements such as wearable parts including bearings, sealing devices and motors etc. Therefore, it makes perfect sense for pump owners to identify any areas where they can translate to lower operating costs and increased profits.

Historically, the focus has seen engineers upgrade elements such as sealing devices and bearing protection, but one area that is often not considered is upgrading the surface area that the fluid passes over. Where fluids experience turbulence due to damaged surfaces, mechanical seal and bearing life will be affected, therefore it would be a mistake to ignore.

### Not so smooth

The unevenness of any surface exposed to a pumped product will decrease its efficiency, thus increasing costs in power required to operate the application. An increase in turbulence in fluid flow will also further aggravate the damage caused.

“ It would be a mistake to ignore ”





## “ Damage caused by the fluid is only a symptom ”

In many cases, the damage caused can be so excessive that parts will need to be changed out, however, the damage caused by the fluid is only a symptom - meaning that even the new part will still be subjected to the same damage unless action is taken to limit the deterioration.

### Smoothing out the cracks

So now you may be asking, how can I maximise the operating life of my pumps and associated equipment that suffers from the effects of operating in an aggressive environment? Well, it's quite simple... invest in a Unique Polymer Systems (UPS) ceramic carbide engineering grade product.

All pumps would benefit from enhanced reliability and increased service life by introducing one of UPS' engineering grade ceramic carbide solutions. For example, by introducing UPS 200 EG Engineering Grade Ceramic Carbide Paste to a severely damaged pump, the damaged voids can be filled and unit re-profiled, enabling the application of a ceramic carbide coating of your choice.

Providing that the surface preparation, a process that can be carried out in-house, has been undertaken correctly, extended service life and subsequent benefits will be achieved, essentially saving you money in maintenance, investment in expensive replacement parts, and many other associated costs.

### So, which ceramic engineering grade should I use?

UPS' portfolio is extensive, offering a wide range of options suitable for many applications, processes and environments, starting with UPS 200 EG which can be used to repair any damage prior to coating.

The most commonly used product to help prevent surface wear through general service and abrasive applications, as well effective efficiency is UPS 205 FG, while UPS 2010 CR will provide better efficiency particularly in critical clean fluid flow applications.

## “ A wide range of options suitable for many applications ”

For applications where high temperature fluid is being pumped then UPS 225 HT is the best option, capable of operating with fluids up to 70 °C, but for high acid content then UPS 226 HAC will provide the protection you need.

Finally, if you're encountering severe damage caused by cavitation, UPS 236 TUC is the most suitable option. With all ceramic parts from the 236 containing an epoxy resin base, it has a toughened polyurethane base offering a better solution for the specific problem of the implosion of bubbles created by the pumping application.

It's also worth noting that, previous layers can be recoated with a flexible ceramic carbide to help your equipment in the future by reducing the effect of the cavitation.

As previously pointed out, don't ignore your options, particularly with so many available.

So, what we advise is, take a moment to reflect and reassess next time you think about simply throwing away your corroded plant machinery. There is more often than not a more cost-effective solution at your disposal.



## Help your pump stay productive for longer

Contact your local ERIKS Service Centre for a quote on upgrading your pumps to engineering grade ceramic carbide coatings.

For Technical Support visit:  
[www.uniquepolymersystems.com](http://www.uniquepolymersystems.com)



### Not sure what product to use?

Download the Unique Polymer Systems APP today and help will be on its way. Search from your app store:  
**uniquepolymersystems**



**Ian Hodkinson**  
 Technical Sales Office Manager  


# The suction cup with super powers

Picking and packing forms a huge part of a production line. Across many industries, products need moving from one place to another or carefully packed ready to deliver to end consumers. But due to the varied nature of products on these lines, a one-size-fits-all suction cup option hasn't been available... until now!

Thanks to Piab's continual innovation, long gone are the days where you need to change gripper or suction cup for each individual product. You now have access to one suction cup that will deliver increased productivity, speed, and energy savings. What more could you ask for?

Developed by Piab engineers as a universal suction cup, the MX boasts excellent gripping properties on many different surfaces, materials, and geometries, making it ideal for applications such as bin picking, order fulfilment, box depalletizing, and parcel sorting.

“ Up to 50% less vacuum flow ”

## The #1 picker – for many reasons

The MX Suction Cup is the perfect fit for small capacity vacuum systems such as piCOBOT® or for vacuum systems with capacity issues, for example due to fluctuations in compressed air pressure or extreme variations in system leakage normally caused by varying product surfaces.

The soft ultra-thin lip gives exceptional vacuum sealing capabilities, while the sturdy but easy folding bellows offer level compensation, both designed to generate the best practice grip and all contributing to maximising high speed operations. The firm neck creates a safe and robust interface towards a variety of fitting options including aluminium clamp fittings.







### Low wrinkle impact

Taking advantage of a low vacuum level design – ideally at 30-40 -kPa – 9-12 -inHg for best grip – the MX suction cup range offers the advantage that wrinkles or bulges on the surfaces being held, such as film packaging, are avoided. This way, products arrive flawlessly at the end consumer.

To round of its exceptional benefits, MX Suction Cups are available in five different sizes – 35, 42, 50, 57 and 65mm in diameter – and are compatible with all attachments and functions of the proven piGRIP® suction cup family, allowing for fitting options that are tailored to your specific requirements.

### ‘Super Cup’ – the verdict

According to one world-renowned robotics customer, the latest vacuum suction cup from Piab has earned its nickname because it can simply lift anything – whether it is a roll-on deodorant, shampoo bottle, loose pot sponges, biscuits packs, plaster boxes, mustard tubes, disposable razors wrapped in foil, gummy bears, mouth-nose masks, or ice-scrapers, the MX suction cup “picks up everything, regardless of what you put in front of it.”

### Durability in its name

Manufactured from robust DURAFLEX®, Piab’s extreme longevity material, which has tested positively for more than 750,000 cycles, this material features the elasticity of rubber, combined with the outstanding wear resistance of polyurethane, while unrivalled elastic memory and ‘mark-free’ capabilities add to the wide range of benefits.

### Gripping those energy savings one cup at a time

Thanks to its exceptional sealing properties, the MX Suction Cup can safely handle even the most difficult products with low vacuum power. The excellent sealing reduces the leakage rate and thus the need for large vacuum flows. It is therefore perfect for small vacuum systems such as those used with cobots, for example in connection with Piab’s Mini Cobot gripper (MCG).

The MX suction cup has the ability to create a hard seal when using low-vacuum flow, contributing to a more sustainable energy output. The fantastic sealing performance allows for up to 50% less vacuum flow, while still offering a safe and sturdy grip.

“ Safely handle even the most difficult products ”

“ Tested positively for more than 750,000 cycles ”

Introducing this ‘all-rounder’ to their current Smart-Picking concept, as it is ideal for many of the complex products handled by eCommerce and manufacturing customers, it was quickly realised that the MX cup was the missing link in the chain of their solution.

The Smart-Picking concept is based on a vision system and AI-controlled software, that decides independently which object to take out of a box from the randomly assembled contents. The camera then recognises the position and the gripping points of the object without requiring any training. This makes it particularly easy for commissioning and use, especially for users who may not have specific robotics or IT know-how.

Recently confronted with a new request to process and sort returns from a retail chain that had expanded its online business due to the COVID-19 pandemic, the customer contacted Piab to overcome a troublesome bottleneck issue, and the MX Suction Cup quickly emerged as the missing link.



## A representative of the customer commented:

*“It has exceeded all of our expectations. No matter whether it is a roll-on deodorant, shampoo bottle, loose pot sponges, packets of biscuits, disposable razors wrapped in foil, mouth-nose masks, or ice scrapers, it wasn’t a problem.”*

*“That is why the MX Suction Cup has been nicknamed ‘Super Cup’ by us. It’s just great because it picks up everything, regardless of what you put in front of it. We have already worked with various suction cup manufacturers, but the Piab suction cups are just unbeatable.”*

*And although suction cups look so inconspicuous at first glance, we know their innovative strength and expertise behind the development. That is why Piab are now our exclusive Tech Alliance partner for vacuum technology products.”*

# Untapped productivity in your plant – a moving story



**Hilton Campbell**  
UK Managing Director



If you sometimes feel your customers want to have their cake and eat it, in several different flavours and delivered next day... you'd be right. They want more diverse products. Delivered more quickly. In smaller quantities. And at lower prices. But in the highly competitive, ever-accelerating manufacturing sector, your only option is to keep pace and keep your customers satisfied. So an untapped source of increased productivity in your plant could help.

As production machines near their optimum viable output performance, manufacturers need to find other ways to enhance levels of production. Optimising and accelerating the flow of materials is one possibility.

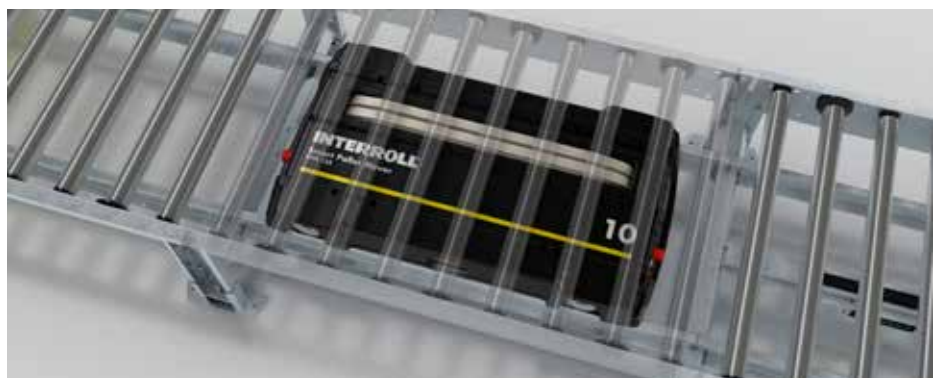
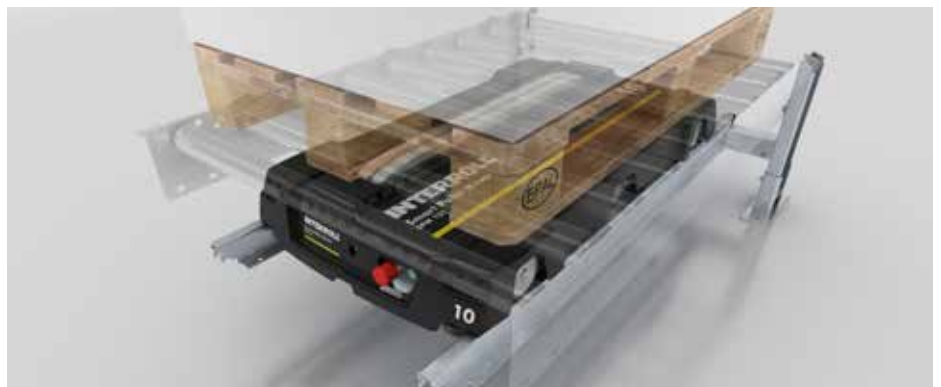
A possibility which the new Smart Pallet Mover from Interroll is designed to make reality.

## Your smartest move

By focussing efforts on automating work processes in front of machine production, you can benefit in two ways.

Not only are you able to increase productivity, through exploiting the potential of an area of your plant which is generally too little considered. But you are also able to improve workplace safety, by reducing or eliminating manual activities in safety-critical areas.

“Accelerating the  
flow of materials”







## “ Increase productivity by up to 30% ”

Both these advantages are a result of utilising the Interroll Smart Pallet Mover for manufacturing logistics. And as its name suggests, it's not just a smart move for you, but a smart piece of equipment too.

From automating pallet transport around manufacturing machines, to production-related picking and sequencing processes, the capabilities of the Smart Pallet Mover help to automate, accelerate and optimise your production process.

Designed to transport, sort, buffer and sequence pallets and boxes weighing up to 1,000kg, The Smart Pallet Mover efficiently manages your pallet workflow. The result is significantly reduced machine downtime, and increased efficiency of machine production lines or cells.

In fact, by eliminating costly production interruptions of material supply, the Smart Pallet Mover solution has been shown to increase productivity by up to 30% compared to manual operation.

### Modular to meet your needs

The modular construction of the Smart Pallet Mover helps to make it flexible and scalable. So you can easily adapt it to suit the particular requirements of your production processes.

At the heart of the solution is the battery-operated SM1000 Mover mobile unit, which runs underneath non-driven conveyor sections to move the pallets lying on them. Working alongside this unit is the SM2000 Transfer Car, which travels on a rail to transport pallets between parallel conveyor sections.

To prevent collisions with people and objects, the Mover unit is fitted with no fewer than 60 sensors.

The Smart Pallet mover solution is plug-and-play, and easy to install, operate and maintain. Height-adjustable supports mean it can be installed even on uneven floors. And if the needs of your production process change, both modules can easily be reconfigured.

A user-friendly 3D online tool not only helps with configuration of the system, but also simulates planned operation, to make it easy to achieve the most efficient and productive set-up in the least possible time. The solution is fully networkable, using global data standards for maximum compatibility, so it can seamlessly integrate into existing IT environments.

Together, all these features combine to ensure downtime for installation or reconfiguration is always kept to a minimum.

## “ Red Dot Award, Product Design 2021 ”

### Proven and prizewinning

A key element of the Smart Pallet Mover's construction are the rollers. These are tried and tested components proven for robustness and durability over many years.

And though the solution itself is brand-new, it has already been doubly awarded.

First, it won the internationally-renowned Red Dot Award, Product Design 2021, for its exceptional design quality and degree of innovation. Second, it was chosen by the International Intralogistics and Forklift Truck of the Year Awards as a 2021 Finalist.

But the real rewards come in the manufacturing plant. This is where you can expect to see the Interroll Smart Pallet Mover boost the performance of manufacturing logistics, enhance workplace safety, and increase the level of manufacturing automation: a key factor in optimising efficiency and productivity.

Volatile markets. Products with a high degree of individualisation. Short product lifecycles. Constantly increasing product diversity. Order complexity. Together they're conspiring to drag your production lines into the slow lane.

But by automating movement of materials, you can get production moving again – and faster than ever. That's a moving story, with a very happy ending.

# How to choose your next pump



**Matthew Hill**  
Managing Director



Choosing the perfect pump for your application is not as simple as comparing price tags. Not if you want the best performance, greatest efficiency, and best value for money. As the supplier of Tsurumi submersible pumps to ERIKS, we understand the difference between price and cost, and can help you to find your perfect next pump.



Tsurumi UK's first piece of advice is to think about the design and engineering factors that define the pump you need. The more accurate and specific you can be, the easier it will be to choose precisely the right pump for the job.

You won't pay for engineering or features you don't need, or miss out on those you do and pay the price later.

## “ The difference between price and cost ”

### The perfect pump?

What are some of the most important considerations when choosing your next pump? You should think about:

- Pump duty e.g. what is the required head and flow required?
- What sort of medium will it be pumping e.g. abrasive?
- Does the pump need to be transportable? An aluminium pump will be lighter, but a heavier cast iron pump will be more durable for abrasive applications.
- Once installed, will the pump be easily accessible? This will be important if the pump requires frequent servicing or maintenance.
- Is uptime critical? If so, reliability and a performance 'reserve' may be crucial.
- Utilisation e.g. will it be operating 24/7?

Once you have defined the requirements of your next pump, you can narrow the choice further by looking at the Total Cost of Ownership.



### Price versus cost

The price at the bottom of the invoice is not the same as the cost at the end of the pump's service life. That's why you need to think about additional costs over the lifetime of the pump, such as:

- Maintenance
- Repairs
- Upgrades or improvements
- Training

Taking these into consideration should help you to find a pump which meets your requirements not only in your application, but also on your balance sheet.

## “ Helping you make the right choice ”

One factor typically difficult to quantify is quality. However Tsurumi UK have identified a set of quality criteria to help you make the right choice for your next pump purchase.

### A definition of quality

Look for the following quality indicators. These include:

- Lifetime of pump components
- Innovative design
- Fulfilment of engineering standards
- Durability
- Service
- Length of guarantee

For example, Tsurumi pumps are engineered to be challenged. So they are manufactured with a high performance reserve.

They also include anti-wicking protection, a dual internal mechanical seal, and a Tsurumi-designed oil lifter. This oil lifter ensures constant lubrication and cooling of the upper mechanical seal, enabling vertical and horizontal installation, a dry run capability, and a lengthy 'snooze' condition.

Pumps without an oil lifter will be susceptible to faster seal failure and total loss of pump operation. Tsurumi pumps are guaranteed for three years.

### Durability is another consideration.

The durability of the pump's mechanical seals, for example, largely depends on the hardness of the rotating surfaces and the temperatures they can withstand.

Tsurumi pumps are fitted with silicon carbide faced mechanical seals that are highly resistant to water containing abrasive particles and can withstand temperatures of up to 2000°C. A pump from a manufacturer aiming for cost efficiency rather than durability may use materials that have a low abrasion resistance and only capable of withstanding temperatures up to 200°C. Repair despair

A less durable pump is likely to require more frequent repairs, often with higher repair costs. These costs can be higher still if spare parts are only available as repair kits, or on long lead times.

Repair 'kits', rather than spares sold separately, leave you with the expense of paying for parts you may not need or want. Even if you can order separate parts, if they are on a long lead time then you suffer extended downtime and lost production.

Lastly, it's worth investigating whether the pump manufacturer offers an optional specification upgrade, to help lengthen the pump's service life. For example, a standard Tsurumi pump has a nitrile rubber casing and wear plate, but an optional upgrade replaces these with polyurethane equivalents, and a hardened fixing plate.

## “ Quality indicators ”

Clearly, if you want your next pump to be reliable, efficient, and to have a long service life, you need to look beyond the price tag and take numerous other factors into consideration.

Or you could just look for the manufacturer's nameplate, and check that it says 'Tsurumi'.

# Are we ready for the reshoring revolution?

The reshoring debate has been going on for some years and as early as 2014, the coalition Government announced what turned out to be a short-lived initiative to bring production back to the UK, a quick Google search reveals a series of national press stories over recent years along the lines of, as The Mirror reported in 2017, 'Britain being back in business'.

At the end of 2020 the Guardian reported that the manufacture of £4.8 billion of retail goods could be returned to the UK, with The Engineer adding that 'reshoring is now being seen as an increasingly important in terms of bolstering UK manufacturing resilience and ensuring that its manufacturing supply chains are fit for an uncertain future'.

Although Covid and Brexit have without doubt accelerated the move towards reshoring, there are other long-standing factors. For example, the move from mass production to mass customisation, with manufacturing taking place at or close to the point of consumption, plus the pressure to minimise the environmental footprint of each product are all key commercial drivers.

The good news for the UK, as the magazine Production Engineering Solutions recently reported, is that a growing number of major organisations have taken the decision to reshore their operations to the UK, from Eastern Europe and the Far East. These include Alexander Dennis, the leading manufacturer of buses, and the automotive parts manufacturer Albert Jagger. Interestingly, the latter produces fastening components, which are generally seen as low-cost parts; despite this, the company has managed to make significant cost savings of up to 50% by reshoring from China to the UK.

Clearly there is a growing trend towards reshoring. However, after years of under-investment in manufacturing and the

industrial supply chain, we need to consider if we will be able to cope with a resurgence in production capability. Manufacturers have long complained about the difficulty of recruiting skilled labour; Government industrial strategies and apprenticeship schemes have come and gone leaving a confused and fragmented legacy; funding for growth or new equipment is frequently based on an expectation of short-term financial reward – something that manufacturing is often unable to deliver; and levels of productivity have traditionally been among the lowest in the G7 countries.

None of these problems are insurmountable and the UK manufacturing and supply chain sectors are nothing if not resourceful and innovative.

There is also the possibility of a better planned and delivered long-term industrial strategy – the Plan for Growth – which is linked to investment in skills and infrastructure in a post-pandemic economy. Additionally, we have commitments such as the 2050 net-zero targets, the potential of post-Brexit trade deals and a resurgence in consumer and business interest in products that are made – not just assembled – in Britain. All of these factors should help to drive the manufacturing sector forward.

We predict that exciting times lay ahead and are gearing our business to help customers throughout industry seize the opportunities for growth and success.



Download our whitepaper on  
**Manufacturing Supply Chains**

“ Major organisations have taken the decision to reshore their operations to the UK ”





# Improve availability

Pulley  
bearing damage  
**#1**  
cause of reliability  
issues\*

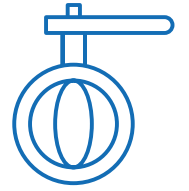
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Find out more at [skf.com/mining](https://skf.com/mining)

\*Maintenance records over 2 years at iron ore mine in Sweden



# Pump Services repair, replace or upgrade? It's your choice...

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We can also offer auditing, reverse engineering, design and installation, to help minimise costs and downtime.

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