KNOW+HOW

THE LEADING MAGAZINE FOR MAINTENANCE ENGINEERS FROM **ERIKS**

ISSUE 27

TRENDS TO DIGEST

ERIKS food and beverage industry experts consider developments in the sector

COMPRESSED AIR
Cost and energy savings

CHOCOLATE:
A strategic national asset?

WORLD 1ST FOR HAND HYGIENE
Alcohol-based foam hand sanitiser

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ERIKS

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DON'T MISS OUT

keep up to date with all the latest news from ERIKS

WELCOME TO THE LATEST ISSUE OF KNOW-HOW

Covering the latest news, industry developments and technologies affecting the UK industrial services sector, this issue of Know + How delves deeper into one the nation's largest manufacturing and export markets: food and beverage.

Covering the latest news, industry developments and technologies affecting the UK industrial services sector, this issue of Know + How delves deeper into one the nation's largest manufacturing and export markets: food and beverage.

As a fast, diverse and ultra-competitive industry where just one leak can irreversibly damage a company's reputation, working in the food and beverage manufacturing industry brings with it a wealth of challenges. From strict hygiene laws and innumerable health and safety steps through to delivering efficient production across some of the UK's biggest production facilities, it is an exciting industry that has proved to be a bedrock of the UK economy in recent years.

This issue of Know + How will address some of the key talking points affecting those working across food processing sites and, as ever, we will also hear from a number of experts from across the industry.

In this issue, BM Polyco addresses the debate around gloves – great for health and safety but also a major contamination risk – and how to get the best of both worlds. Festo lift the lid on how curbing compressed air consumption helped the makers of Magnum ice creams improve their production efficiency. Renold are also on hand to discuss the latest developments in lubrication-free roller chains, and how the modern variants can limit contamination risks for food and beverage processing plants.

Finally, what have ARM Holdings, Astra Zenica and Cadbury all got in common? Find out when we round of this issue of Know + How with an intriguing debate on definitions of a strategic national asset in post-Brexit Britain.

As ever, if you have any comments you would like to raise on the topics contained in this issue you can email the editor at: **knowhoweditor@eriks.co.uk** or you can visit Know+How's own website: **www.eriks.co.uk/KnowHow** where you can register for your own personal copy, enquire about the subjects and products discussed or contact one of the contributors.

I look forward to hearing from you.

Mike Ferris
COO Products and Solutions, Editor in Chief

DEBATE!

Is chocolate a strategic national asset?

See page 43

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LATEST NEWS

UK STEEL INDUSTRY GIVEN BOOST FROM MAJOR US DEFENCE CONTACT

Uncertainty in the UK steel industry has been given a welcome boost following the US Navy's selection of Sheffield Forgemasters to build a number of key components for its new fleet of Columbia-class nuclear missile submarines.

Having had faced crisis in early 2016, the contract provides relief to one of the UK's key industries. Forgemasters will also relish the contract, having felt the effects of the oil price collapse on the supply chain for the offshore oil and gas markets.

The manufacturer, which has been in operation for over 200 years, has a long history of supplying castings to the defence industry, having been a long-standing supplier to the Royal Navy, as well as older US ships.

Graham Honeyman, Sheffield Forgemasers' chief executive, said: "These orders provide a boost for our operations as we work towards our business turnaround plan.

"Work has already started on these orders and the first parts will complete this year with another tranche of components anticipated to follow in 2017. These are complex components and require detailed modelling and manufacturing to highly specific tolerances."

BREXIT TRIGGERS REVIEW OF HYGIENE REGULATIONS FOR UK FOOD INDUSTRY

The food industry faces two major challenges as they battle the impact of Brexit and a serious skills shortage, warns the Society of Food Hygiene & Technology (SOFHT).

The review process that the food industry is likely to undertake as a result of the EU referendum will create issues, according to Ian Booth, Chairman of the SOFHT. He believes there will be a focus on reviewing legislative structures as well as any supply issues that may have been created as a result of Brexit.

Booth said: "SOFHT will be focused on supporting members through this transition." He intends to ensure that the main focus of SOFHT is to advance the interests of its members forward and work collectively across the industry. He is determined to ensure SOFHT concentrate on giving support to their members during this challenging transition period.

To address the insufficient number of skilled workers currently entering the industry, SOFHT are surveying their Student Award and working alongside academic institutions to consider a variety of new activities.

MANUFACTURER'S SCEPTICISM OF BANKS PREVENTS GROWTH

A recent report from EEF has revealed that whilst 85% of manufacturers are confident of securing finance, over half of firms would delay or cancel investment if they were unable to fund it themselves.

This confirms that despite an improvement in economic conditions, and interest rates remaining at historic lows, firms' relationships with banks and attitudes towards lending have continued to remain unchanged.

By favouring self-financing methods, manufacturing firms could potentially drive levels of overall manufacturing investment down. The report also revealed a lack of a varied finance base could also cause tighter credit conditions that would further damage the economy.

Furthermore, firms' increasing tendency to hold cash on their balance sheets makes them particularly susceptible to negative interest rates, especially given that a few banks are already considering the possibility of charging customers for credit balances.

Chief economist at EEF, Ms Lee Hopley, stated that the untrusting relationship between manufacturers and the banks is a knock on effect from the credit crunch, from which firms trust in the banks faltered and is yet to recover. Brexit adds further uncertainty and poses a serious risk for growth.

US FIRM BUYS TYRELLS CRISP MAKER FOR £300M

Hertfordshire-based manufacturer of posh crisps, Tyrells, has agreed to be bought by American snacks firm, Amplify, in a deal thought to be worth £300m.

Founded in 2002 by potato farmer William chase, the company specialises in the manufacture of up-market potato and vegetable crisps.

Mr Chase sold the company in 2008 for £40m in order to launch the highly successful spirits company, Chase Distillery. Tyrell's current owners Investcorp have been given the green light to sell the UK crisp manufacturer to US firm Amplify, who are keen to further grow international revenues which accounted for 40% of Tyrells £85m net sales in 2015.

David Milner, Tyrrells' chief executive, said: "As a small, UK farm-based business it is a tremendous achievement to be now part of a US publicly traded company with the international reach to make Tyrrells a global brand."

TOGETHER FOR LIFE

Products, like people, are tending to live longer. And as with people, the older products get the more often they fail, and the more expensive they are to repair.
That's an issue the NHS is still trying to resolve, but which ERIKS is already helping to solve for its customers.

IN-DEPTH

Steve Waugh
CEO, ERIKS UK

As ERIKS UK CEO Steve Waugh said at the launch of the ERIKS Regional Hubs: "We will support our customers throughout the lifecycle of their industrial products… from cradle to grave."

That not only means that every product you buy from ERIKS should last longer and be more efficient throughout its life. It also means that, in the long-run, it will cost you less.

"Genetic" engineering

We hear about scientists looking at engineering genes to create "designer" babies, to suit "parents" specific requirements in the news. As unnatural as this sounds our ERIKS' engineers can already offer a similar service for UK industry.

Through customisation, ERIKS can meet your requirements with products and services that are precisely tailored to what, how, where and when you want them. This can include kitting, sub-assemblies and even complete project management.

We take the same approach for equipment repairs. If we identify an issue which requires a repair, we won't just fix the problem for you, but will look for the root cause of failure and identify how we can engineer it out of the component or application. The result will be the elimination or reduction of the failure, an extended product life, and a reduced Total Cost of Ownership (TCO).

More TLC. Less TCO.

It's not the price tag but the Total Cost of Ownership that is how the most efficient and successful businesses assess their product purchases.

If money saved on the initial purchase is later spent on maintenance, repairs or more frequent replacements (because of a shorter product life), then the savings are soon wiped out.

But if a reliable, sustainable, energy-efficient choice is made, then you can expect a longer and more cost-effective product life. Or in other words, a lower Total Cost of Ownership.

One way to ensure longer product life and lower costs is through monitoring and maintenance. So as well as providing products, ERIKS provides support services to take care of them.

From Condition Monitoring to Predictive, Preventative and On-Site Maintenance, it's a comprehensive menu designed to help you minimise downtime, maximise uptime, reduce repair bills, avoid catastrophic failures – and get the longest possible cost-effective service life from every single component.

Know-how where you need it

Service and support are good in theory. In practice, they're only as good as they are accessible. Which is another strength of the ERIKS Regional Hubs.

By bringing know-how and expertise to your doorstep, the Regional Hubs make sure you can access the support you need, when you need it.

Because the services, expertise and inventory of the Regional Hubs are tailored to the industries in the region, you can be sure of support that's relevant, engineers who understand your applications and issues, and the specific products you need – available off the shelf.

Life partners

Having the same supplier or MRO provider for life is not the same as having the same partner for life. And ERIKS aims to be your trusted partner.

We can be involved with your equipment from initial design and specification – if required – through building, installation, commissioning, maintenance and repair, to end of life and replacement. So we will know and understand your equipment in depth, and just as well as you do.

Because we're in it for the long-term, as time goes by and technology, the industry, or legislation changes, we can help you to discover and implement improvements, upgrades and innovations that will help you:

- increase your efficiency
- optimise your productivity
- stay compliant with current rules and regulations
- reduce your Total Cost of Ownership.

It's a very long list of highly desirable aims – but you can rely on ERIKS to bring them all together, for life.

The world's first alcohol-based foam hand sanitiser, formulated to kill 99.999% of many common germs in just 15 seconds, has been launched by Deb Group.

WORLD 1ST FOR HAND HYGIENE

84% of users in an independent survey said they preferred new Deb InstantFOAM® Complete foam format over alcohol-based gels. But pleasant to use doesn't mean pleasant to germs.

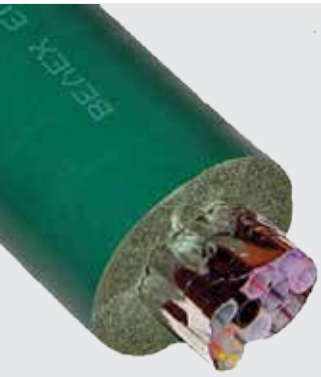
Fully virucidal (to EN14476), bactericidal (EN1500), yeasticidal (EN1650), and mycobactericidal (EN14348), with no risk of antimicrobial resistance, Deb InstantFOAM® Complete meets the highest European microbiological standards.

Part of the Deb Stoko® range, Deb InstantFOAM® Complete is hypoallergenic, and in tests even 48 applications a day for 5 days caused no skin dryness and had no adverse effect on skin conditions.

Designed for use without water, unique perfume- and dye-free Deb InstantFOAM® Complete is available in a range of pump bottles, cartridges and dispensers.

Ideal for sensitive environments such as the food industry, it's non-tainting and won't affect food quality or safety.

TECHNOLOGY UPDATE



PICK UP A PYTHON

When you need a python for a beverage application, AS Rubber has a wide range of BevEx brand pythons, to meet a huge variety of requirements and regulations.

BevEx Standard Pythons meet the requirements of brewers and soft drinks companies, and other applications with soft drinks, water, wine and spirits. The products comply with all relevant regulations, from the FDA code to the EU "Plastic Materials and Articles in Contact with Food" Regulations, and the BBPA QAS3244 for brewers and licensed retailers.

For energy efficiency, the Energy Plus Python provides improved thermal efficiency, making it ideal for super-chilled beverages. It helps maintain a more consistent beverage temperature, appearance and taste, and up to 20% greater energy efficiency than a standard python.

The BevEx Coated Python is anything but standard – offering durability, fire performance and flexibility, with a Class 0 fire-rated surface.

Also performing well in the event of fire is the BevEx Eco Python. With a total absence of toxic material in its foam composition, any fumes given off during a fire are not only transparent but also non-toxic – making it ideal for environments with particular safety requirements, such as ships, airports and sports stadiums.

AS Rubber also manufactures the AS502 PVC Nitrile closed cell sponge. A natural inhibitor of bacterial growth, it is available as a sheet (for greater gasket cutting versatility) and in a continuous roll, strips or gaskets. It has good oil- and weather-resistance, as well as fire resistance conforming to BS476 parts 6 and 7, Class 0. Its temperature range is an impressive -40 to +116°C.

Locked-in safer maintenance from Ambersil

Ambersil's new Food Processing Safe® PERMA-LOCK® system is designed to minimise risk when using maintenance chemicals.

The PERMA-LOCK® dual position spray system does away with the cap entirely, and locks-in the straw to the button. So with no detachable parts, there's nothing that can fall off and contaminate the processing area. In all other aerosol maintenance sprays components can become detached – leading to food contamination, costly batch quarantine or even a market recall.

By eliminating the risk, PERMA-LOCK® also reduces the need for expensive x-ray or metal detection equipment.

Featuring a dual spray – traditional and precision application – the packaging also includes a "catch curb" to prevent liquids getting onto the outside of the can, and a non-slip grip.

The UK launch of the PERMA-LOCK® system on all Ambersil NSF H1 aerosol products coincides with a new look for the product labels.

Find out more at www.ambersil.com, or speak to your usual ERIKS contact.

WHEN A QUICK FIX IS ALL YOU NEED...

...You need the Fenner® QuickFix emergency breakdown drive belt. Designed to fit V- and wedge-belt profiles, and quick and easy to install, it saves time and money – and gets production back up and running, fast.

Instead of carrying extensive, expensive stocks of every type and size of belt, ready to replace a breakage, you can now stock Fenner QuickFix belts. Supplied in convenient five metre rolls which can be cut to length on site by the maintenance team, they will rescue any belt emergency breakdown situation.

The QuickFix has a dual groove profile so it can be used to replace V- and wedge-belts, and is available in SPZ, SPA, SPB and SPC width profiles. It also has a jointed link design, which saves time on installation by minimising strip-down of the unit before fitting.

Enabling a quick, short-term repair, Fenner QuickFix keeps downtime to a minimum. And keeps production going until delivery of a replacement original Fenner rubber belt.

Fenner®
THE MARK OF ENGINEERING EXCELLENCE

For more information on the Fenner QuickFix emergency belt, please visit: www.fptgroup.com

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TRENDS TO DIGEST

ERIKS INDUSTRY EXPERTS CONSIDER DEVELOPMENTS IN THE SECTOR

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IN FOCUS

TRENDS TO DIGEST

ERIKS' FOOD AND BEVERAGE INDUSTRY EXPERTS **MARK FEARN** AND **DARREN JUDD** CONSIDER DEVELOPMENTS IN THE SECTOR.

Mark Fearn
Contracts Director, ERIKS UK

Darren Judd
Contract Support Manager, ERIKS UK

If one sector should be immune to the vagaries of the economy, it's food and beverage. After all, even in a recession people have to eat. However, that doesn't mean that industry trends in general don't affect these producers, or that the sector doesn't face its own unique issues.

No-one's yet invented a food or drink that keeps people young. So not even the food and drink sector can do anything about the ageing engineering workforce, which is leading to real difficulties in recruitment to maintenance teams. This has two effects.

One is that more businesses within the industry are investing in training and apprenticeships for maintenance engineers. The philosophy seems to be: if we can't find the people we need, we'll create them. The other effect is the rise in multi-skilled engineers. A factory might once have had the luxury of mechanical fitters and electricians, but now one person has to tackle both jobs.

However, not all producers in the sector are feeling forced to operate with a reduced workforce. Some are actually embracing the opportunity.

Past the use-by date

The need to reduce maintenance and increase energy efficiency is leading producers to look at equipment with a critical eye. Is it an effective asset, or an ageing one? Are there more innovative solutions, requiring less energy, or less maintenance and fewer maintenance personnel?

And if new purchases are being considered, they're increasingly decided on Total Cost of Ownership (TCO) rather than unit cost. This takes into account not only the initial purchase price, but the running costs, cost of servicing, and length of service life. It means there are no false economies to be made through buying cheap upfront but paying dearly for it over the life of the product.

Consolidating MRO supplies away from OEMs to industrial suppliers is another way to reduce costs. However, quality and specification need to be maintained – especially for items which have direct contact with the food or beverage product. A failure which leads to product contamination and downtime can soon wipe out any savings on the purchase price.

Watching your waste

Reducing wastage of water, air, gas and energy can obviously lead to cost savings. But establishing where waste is occurring is not always easy.

One development which may become even more common is the use of air leak surveys, to identify where compressed air is leaking from the system. Air optimisation is a growing associated trend, where compressed air users utilise systems which ensure compressed air is produced only when it's required, rather than in a continuous – and wasteful – flow.

A thermographic survey is another relatively new option, which will undoubtedly be used more in the future, to help identify not only where heat is being generated (which, in a bearing for example, could indicate a fault) but also where it's being wasted. In the same way a survey with a gas imaging camera can help to save energy, as well as having health and safety benefits by revealing gas leakage.

Product contamination has always been an overriding concern in the sector, and another source of wastage – not to mention financial and reputational damage.

There's no possibility it will become any less important in the future. In fact, major customers of the sector – the supermarkets – are becoming even more stringent in their audits, not less, so manufacturers will have to take even greater care.

Relying on reputable repairers is one valuable principle worth applying, as some quality audits now include checking repairs on equipment which has contact with food and beverage products.

Food for thought

Some changes and developments in the food and beverage sector are already in train. Others may be slower in coming, harder to predict, or even impossible to foresee.

But the need for overall equipment efficiency, for improving uptime, and for lowering the total cost of ownership – all with a reduced workforce and without affecting product quality – is already clear. And the most efficient and effective producers in the sector are already taking steps to achieve it.

Shortage of maintenance engineers

The importance of TCO

Even stricter audits

IMPROVED **CLEANLINESS,** LOWER **DOWNTIME**

How long would it take your business to recover from a product recall? Probably longer than you think. Research shows that a product recall due to contamination can slash sales by at least 25% in the two months following.

And how big a fine or how long a prison sentence could you be facing as a result? Under new sentencing guidelines effective from 1st February, an unlimited fine and/or two years' custody if health and safety guidelines have been breached.

Add in contaminated product disposal, lost production, brand and reputational damage and loss of goodwill, and the repercussions – and costs – just go on mounting. Yet one global cereal manufacturer avoided all these issues for just a few hundred pounds.

Leaks, spills and seepage

Oil leaks are a major cause of product contamination and motor failure. In fact 90% of geared motor failures are the result of oil leaking into the motor.

This was a particular problem for the cereal manufacturer, as most of their geared motors were direct mounted onto the gearbox.

With the gearbox sealing often being less than 100% reliable, gearbox oil was able to splash around the seal on the motor. This eventually degraded enough for oil to seep into the motor windings, and once the motor was contaminated, premature, unpredictable failure was inevitable.

But that was only the start.

Oil was also leaking onto the floor, causing serious health and safety issues. And replacing a failed motor meant separating it from the gearbox in situ – without causing even more oil spillage. That was a real challenge, often leading to lengthy downtime.

More than motors at stake

Though an oil-contaminated motor is a problem, it's much easier to deal with than an oil-contaminated food stream.

If any oil from the gearbox had leaked into an area where products could be affected, it could easily have led to:

- product recall
- damaged brand reputation
- fines or imprisonment
- lost revenue in the short- and long-term.

So as part of their Continuous Improvement programme – which included improving the cleanliness of production areas – the manufacturer contacted ERIKS for advice on reducing oil leaks from their geared motors.

ERIKS' Drive Specialists were able to suggest standardising to a Fenner® geared motor range, which offered a number of benefits, including:

- dry fitting
- standard IEC frame
- stock reduction.

Double-sealed for protection

The Fenner geared motors they proposed incorporate a "dry fit" adaptor between gearbox and motor. This houses not one but two seals, which means:

1. The gearbox doesn't need a motor attached to prevent oil escaping while in stock. So instead of stocking gearbox and motor, the customer could just stock the gearbox.
2. If a motor failed, it could be removed and replaced in situ simply by undoing four screws, with no risk of the gearbox oil escaping. This significantly reduced downtime for the customer.
3. Less risk of oil leakage during operation, ensuring a greatly extended gearbox life.
4. Less risk of oil seeping into the motor (past three seals, including the motor's own), extending motor life too.

The Fenner range also has a standard IEC frame and footprint, matching that of geared motors from many leading European manufacturers. So the customer could fit any motor manufactured to the IEC standard. Several geared motor manufacturers use non-standard flange and shaft dimensions, limiting the customer's procurement options and availability of replacements – and putting a premium on the cost of replacement. In addition we are also able to provide them with special food grade paint and stainless steel motors for extra protection against washdown.

By standardising their geared motors to the Fenner range, the customer now has a cleaner production area, less production downtime, and has been able to save money and space by rationalising geared motor stocks.

If you'd like to find out how you could benefit from the same standardisation, simply contact your local ERIKS Service Centre here <link>.

AUTOMATION WITHOUT CONTAMINATION

Automation and contamination don't have to go hand-in-hand in the food industry, says David Oliver, Food and Beverage Segment Manager at SKF.

Just because food products are edible doesn't make them that different from any other manufactured items. They still have to be made quickly, efficiently and within budget. Which naturally demands automation, which in turn demands machines to be lubricated.

Where food differs from others products is that lubrication brings with it a risk which is one of the industry's biggest headaches: contamination by machine oil or lubricant. However, there's not one but three ways around the problem, to ensure machinery can be lubricated and food produced without risk of contamination.

Firstly, you can use food-grade grease. Secondly, you can seal components so tightly that leakage is almost impossible. And thirdly – in some cases – you can remove lubricant from the process altogether.

David Oliver
Food and Beverage Segment Manager, SKF

Oven-ready lubrication

Wafer baking ovens are used by confectionery producers for high volume production. Conditions for the process are punishing, and in a typical application one manufacturer had to relubricate the oven's deep groove ball bearings with high temperature grease every 16 weeks.

This meant costly planned maintenance, a limit on output because of the oven-temperature restrictions of grease-lubricated bearings, and – not least – the ever-present risk of grease leakage affecting food safety.

To solve all three problems in one, SKF installed high temperature wafer units, incorporating graphite-based lubrication for continuous lubrication of the bearing. These boosted cost effectiveness and productivity by:

- eliminating re-lubrication. The wafer units ran for four years round the clock
- eliminating the cost of high-temperature grease
- saving 150 labour-hours annually, and 26 hours of planned downtime every 16 weeks
- increasing output, as graphite lubrication enables a higher process temperature

Tightly sealed

If water, detergents and contaminants penetrate seals during washdowns, bearings can fail in as little as six months. So another way of mitigating the risk of contamination is to tightly seal away the bearing and lubricant.

SKF Food Line Y-bearing units, for example, are re-lubrication-free, and designed for the wet, humid environments of food and beverage processing. Featuring the industry-proven 2RF seal, they keep out high pressure water during washdowns, as well as other sources of moisture and process contaminants.

With no need to purge water and contaminants by re-lubricating after washdowns, bearing lifecycles are increased, and downtime, maintenance costs and environmental impact minimised. With excess lubricant kept out of plant wastewater streams, wastewater treatment costs are reduced too.

SKF Food Line Y-bearing units have a well-radiused, non-porous, cavity-free surface, for easier cleaning and reduced risk of bacteria accumulation. Several housing shapes are available, in corrosion-resistant composite material or stainless steel. Composite housings are up to 60% lighter than their cast iron equivalents, and resistant to substances such as citric acid. Stainless steel housings are suitable for applications with heavy or shock loads.

A poultry processing plant swapped hundreds of their nickel-plated cast iron bearing units for SKF composite Y-bearing units.

The old bearings had needed replacing every few months due to grease washout and corrosion. But SKF units – with stainless steel bearing inserts and a special multi-lip seal to prevent grease displacement and water ingress – increased bearing service life by four times

Solid performance

Another way of preventing grease leakage is to change the form of the lubricant.

SKF bearings with Solid Oil are designed to be re-lubrication-free, and suitable for wet environments. Solid Oil is a polymer matrix that remains trapped within the bearing and – unlike semi-solid lubricants – can't be washed out by high-pressure washdowns.

One customer found that even sealed, greased for life stainless steel deep groove ball bearings were suffering water penetration and grease leakage, because the seals were deflecting during washdown.

Lubricating the bearings with food-grade Solid Oil immediately increased bearing service life from 12 weeks to two years, slashed maintenance costs, and virtually eliminated lubricant leakage.

The challenge of balancing high output with high standards of hygiene is a continuing one for food processors. Keeping control of bearing lubricant can tip the balance in the processors' favour.

12x
longer lubrication interval

4x
longer service life

Lubricant leakage eliminated

BRADY
WHEN PERFORMANCE MATTERS MOST™

Food Safety
Starts with Workplace Safety

Brady understands the need to maintain a clean, safe, and visually instructive working environment, and so focuses on providing products that are designed specifically for this market:

- LINK360™ Safety Procedure Software
- Signage
- ToughStripe® Floor Marking
- Lockout / Tagout
- Procedure-writing Services
- Pipe Marking
- Toughwash™ Washdown Labels

www.brady.co.uk

GETTING A GRIP ON CONTAMINATION

James Arrowsmith
Head of Customer Solutions, BM Polyco

On the one hand, gloves provide a solution for hygiene issues in the food and beverage industry. But on the other, they can be a source of contamination. So the ideal glove needs to be effective in two ways. And if it can protect the planet at the same time, it's a win-win-win situation.

For many food processors, a disposable glove seems like the safest choice for food contact. However it's an expensive option, and the environment pays the price through more waste to landfill.

But now there's a glove which meets the European Standard for food contact (EN 1186), which can be safely re-used, and which uses a more sustainable manufacturing process.

Safe, comfortable, sustainable

As its name suggests, Polyco's ground-breaking Polyflex® Aqua glove is manufactured using a water-based polyurethane, involving no harmful solvents.

Coating the palm instead with a lightweight, water-based PU also makes the glove more comfortable for the wearer. Unlike a solvent-based PU, the coating sits on the liner rather than integrating into it, resulting in better perspiration absorption.

Tested and approved in accordance with food contact standard EN 1186, the Polyflex® Aqua protects food from contamination, keeps the wearer comfortable, and – as a reusable glove with a more sustainable production process – protects the environment too.

Made tougher to wear longer

Tougher environments and more challenging tasks need a tougher glove to take them on. But re-use can still be an option.

Thicker than a standard disposable, the Finite® Blue HD Long Cuff has exceptional resistance to tears and punctures, and its tougher construction makes it suitable for re-use on lightweight tasks. Being powder- and latex-free, the nitrile Finite® Blue HD minimises the risk of particulate contamination, and is EN 1186 compliant – so it's ideal for food manufacturing, processing and preparation.

For the wearer, the glove's diamond surface pattern ensures excellent grip, and protection is enhanced by a beaded cuff 31cm long. And for the planet, this is another environmentally-friendlier option, as it reduces waste to landfill.

Cut and dried

In wet or oily working environments, keeping a grip can be harder than ever. So the super-lightweight, cut-resistant, Dyflex Blue features a microfoam nitrile palm coating that helps channel liquids away from the glove's surface.

And the Polyflex® MAX PC features a similar lightweight nitrile coating, but infused with cushioning air bubbles to enhance grip. Highly resistant to tears and abrasions, it's tested to EN 1186 for food contact.

So when you're looking for an effective food contact approved solution that minimises contamination risk, maximises grip, and helps the environment, you can be sure that Polyco will have a product that fits like, well… a glove.

EN 1186
food contact tested

Less
waste to landfill

Sustainable
manufacturing process

FACE-TO-FACE WITH OBSOLESCENCE

Of the many things that give maintenance engineers nightmares, at the top of the list must be component failure. Hard on its heels would be discovering the failed component is now obsolete. So good news from ERIKS about a valve that's crucial to the food and beverage industry will be a maintenance engineer's dream come true.

Every engineer working in the food and beverage sector will have encountered the Realm Butterfly Valve. Realm began manufacturing hygienic equipment such as stainless steel valves in the late 1950s, and was the first British manufacturer to introduce stainless steel hygienic butterfly valves. These valves are used for a wide range of applications within the industry, either as open/close or simple regulating valves.

For 20-30 years the Realm Butterfly Valve was one of the most widely-used in the sector, supplied to many major food producers and blue-chip companies.

However, in 2006 Realm integrated with another of leading valve specialist – Inoxpa Valves – to form Inoxpa Realm: a specialist supplier to the food, beverage and pharmaceutical industries.

Over time, many Realm products – including the butterfly valve – became obsolete. And also over time – as the valves begin to fail – maintenance engineers are beginning to find their nightmare becoming reality.

Gap in the market

The problem of the obsolescence of the Realm Butterfly Valve is only made worse by the valve's non-standard dimensions.

The valve is located between two lengths of pipework requiring a face-to-face connection. The standard gap between the two pipe ends is 50mm. However the Realm Butterfly Valve takes up 100mm.

No standard valve will fit the space. The Realm Butterfly Valve is obsolete. No replacement is available. Modification of the pipework would require a lengthy shutdown and associated loss of production and costs, not to mention the certification implications of carrying out major work on, and installing a completely new component into, a hygienic process.

Suddenly the problem of component failure becomes a crisis.

Go with the flow

ERIKS Flow Control is an Inoxpa UK partner and leading UK supplier of Inoxpa valves. But with not even Inoxpa offering a direct replacement for the Realm Butterfly Valve, ERIKS turned to the Flow Control Projects team to devise a solution.

Through ERIKS' partnership with Inoxpa, the Projects team had the design and dimensional knowledge to create a perfect like-for-like replacement for the valve. The team also used their industry experience, expertise and know-how to develop a replacement which not only fits the non-standard gap but also meets the high standards established by the Realm valve, and maintained with all Inoxpa valves ever since.

This cost-effective and direct replacement for the Realm Butterfly Valve means that failure of the original component is no longer such a nightmare. Instead of trying to source a one-off re-engineered valve from a small manufacturer prepared to take on the task – with all the associated risks of poor quality, at who-knows-what-cost, taking who-knows-how-long to produce – maintenance engineers now have a reliable, reputable source of a high-quality valve.

Better still, the ERIKS Butterfly Valve can be manufactured with a fast turnaround when required, to meet customer needs.

Collecting Butterflies

As an Inoxpa UK supplier partner, ERIKS can also supply a wide range of other Inoxpa butterfly valves in a variety of lining materials. The choice of materials enables their use in applications ranging from non-aggressive media such as water or air, through to chemicals and corrosive media. Options include:

- High Performance Butterfly Valves
  - carbon steel and stainless steel from stock
  - aluminium-bronze and special alloys available to order
  - 2"-24"
  - ANSI 150 to 300 (other classes available)
  - wafer, lugged and flanged
  - Firesafe certified
  - Double and triple offset disc
  - Soft and metal seated
- Resilient Seated Butterfly Valves
  - cast iron from stock
  - carbon steel, bronze, stainless and special alloys available
  - 2" - 60"
  - PN6 - PN16, ANSI versions available
  - Bonded and replaceable liners
  - Liners in Nitrile, EPDM, Viton and PTFE (others available)

Most widely-used valve

Fast turn-around capability

Reliable, reputable source

THE ICING ON THE ICE CREAM

The makers of Magnum ice cream wanted to maintain their high-volume production levels, but at the same time reduce their compressed air consumption. However, part of the problem was not knowing just what that consumption was.

Alexander Hemmerich
Automation Engineer,
Unilever plant, Germany

Until Festo were involved, Unilever had never known how much compressed air any one of their Magnum production lines consumed. However, with each of the five lines at the Heppenheim, Germany plant extruding one Magnum core per second, and over 20,000 of the ice creams on a stick being produced every hour, the guess was that consumption would be high.

500€
savings p.a.

Easier
leak location

Electricity and compressed air play an important role in the Magnum production process, for everything from mixing and extruding the ingredients (milk, chocolate, sugar and vanilla beans), to deep-freezing to -25°C, dipping in chocolate, and final packaging. But without knowing how much compressed air was being used, it was difficult to know where and how to make savings.

So Unilever and Festo began working together to produce a prototype energy-efficiency compressed air module that could not only measure but also help reduce consumption.

Invisible consumption

Highly aware of the need to cut their energy use, Unilever have a Sustainable Living plan in place which – since 2008 – has saved more than 150 million euros in energy costs across the global business, through efficiency improvements in the production process.

Initiatives at the Heppenheim plant have included replacing energy-intensive geared motors with more efficient models (reducing energy use by 60%), and installing frequency converters with variable torque loads for the 18kW ventilators in the cooling tunnels – eliminating continuous operation and cutting energy consumption by around 40%.

However the difference between these areas and compressed air, is that: “Air is not visible, so it is not immediately obvious if consumption is too high”, as Alexander Hemmerich – Automation Engineer at Heppenheim – pointed out.

So an essential part of the specification for any Festo solution was to make information on compressed air usage fully visible.

Coldly calculated

Festo and Unilever collaborated closely on developing the first prototype of the Festo MSE6-E2M energy-efficiency module.

Unilever’s requirements were for a device which can be incorporated into new systems and retrofitted into existing systems, not only to automatically regulate the compressed air supply but also to measure leaks and provide a continuous stream of process-relevant data.

The first version of the module, field-tested at Heppenheim, proved highly effective, but the final production model has been improved to incorporate a Profibus interface for reporting, a pressure and flow sensor, shut-off valve and fieldbus node – and all in the smallest possible footprint (around half the size of the prototype).

Energy freeze

With the help of the MSE6-E2M energy-efficiency module, Unilever have achieved significant compressed air and energy use reductions.

The module incorporates on-board intelligence – similar to the start-stop system in a car – which, when it detects a standby mode in the equipment it's supplying, automatically shuts off the compressed air supply. This has the additional benefit of making it possible to see how quickly the system empties when individual consumers are switched off, making it easier to locate leaks.

The MSE6-E2M reports immediately to the system controller if there is an unusually fast drop in pressure. It also reports continually on flow, pressure and consumption – in effect making compressed air visible.

Although the module offers full automation, Unilever opted to operate the MSE6-E2M via the system controller, to enable all information to be merged centrally.

Alexander Hemmerich describes the results: "We've been able to reduce compressed air consumption on the Magnum production system step by step, with the energy efficiency module from Festo. And the Profibus connection has the advantage that we didn't have to add any more cables when converting our existing systems."

Converted into cold, hard cash, the Festo MSE6-E2M energy-efficiency module saved Unilever more than 500€ per annum on one production line alone. Which for the makers of Magnum ice creams, is energy efficiency that can't be licked.

Making consumption visible

When there is NO TIME for DOWNTIME...
Rely on Panduit

Food and beverage manufacturers are faced with countless product safety, quality and manufacturing challenges. Whether your production line is down due to equipment malfunction or a changeover is taking place – downtime can quickly add up.

Panduit backs all products with world class customer service and technical support to ensure a seamless process from order inquiry to installation.

Comprehensive Panduit Food and Beverage Solutions include everything necessary to bundle, identify, route, protect and terminate wire/cables, supporting the most demanding application requirements and delivering customer benefits:

PANDUIT™

PRODUCTIVITY • RELIABILITY • SAFETY
electrical systems at the lowest total cost

- Reduced installation time
- Decreased operator error
- Lower total installed costs
- Adherence to industry standards
- Promoting safer working conditions
- Minimized operator fatigue

For more information on the Food and Beverage Solutions, visit www.panduit.com

LASTS LONGER THAN LONG-LIFE MILK

How do you ensure as long a life as possible for a bearing? That's simple: with lubrication. But what if the bearings are located in an inaccessible area of your plant, and lubrication is impossible? Not so simple. That was the problem faced by a UK-based milk processor, who asked NSK to deliver a solution to their doorstep.

Because bearings on one of the plant's principal conveyors were inaccessible, they failed repeatedly and regularly, through lack of lubrication. The result was a change of several bearings and replacement of the shaft – with three hours of costly downtime – every ten weeks.

In an attempt to reduce the costs of lost production and bearing replacement, the customer asked NSK to suggest a solution.

Two-in-one solution

The NSK asset improvement program (AIP) has been proven with customers across a wide range of industries. The programme combines the customer's own knowledge of their working environment, culture, processes and problems, with the engineering expertise and innovation of NSK.

As part of the AIP for this customer, NSK's engineers carefully evaluated the issues, before proposing a cost-effective two-in-one solution.

Firstly, they recommended stainless steel bearing inserts fitted with Molded-Oil – NSK's proprietary oil-impregnated solid material.

The oil slowly seeps from the grease-free material to lubricate the bearing, providing an extended service life without relubrication.

And as well as protecting the bearing, Molded-Oil helps maintain a cleaner working environment.

£10,000
annual savings

LUBRICATION
for life

CLEANER
working environment

The second recommendation, to extend service life and reduce Total Cost of Ownership, was to employ Silver-Lube® corrosion-resistant polymer housings. These are ideal for applications in the food and beverage industry, where frequent wash-downs and optimum hygiene standards are required.

Made from PBT thermoplastic resin, the paint-free housings won't chip or flake, which helps to reduce the risk of process contamination. NSF-approved Silver-Lube® housings feature nitrile rubber seals, are suitable for working temperatures from -20°C to +90°C, and are available in four different geometries.

Lubed for life

The NSK Life-Lube® series conveniently combines Silver-Lube® corrosion-resistant housings and Molded-Oil sealing and lubrication inserts, in a single, longer life unit, which never needs relubrication.

Purpose-designed for applications where contact with process fluids is unavoidable, Life-Lube® units are available in 20-40mm bore sizes, and in pillow block, two- and four-bolt flanges, and take-up unit housings. When Life-Lube® units were trialled on the conveyor at the milk processing plant, bearing life was extended from ten weeks to over a year. And even when the time did come to replace the bearings, there was no need to change the shaft.

By eliminating the labour costs of two maintenance fitters, and the lost production, the milk processor is achieving annual savings of over £10,000 – and feels like the cat that got the cream!

By eliminating the labour costs of two maintenance fitters, and the lost production, the milk processor is achieving annual savings of over £10,000 – and feels like the cat that got the cream!

THE X FAC

Dr Steve Lacey
Schaeffler Technology
Centre Manager

High performance is the elusive "X factor" engineers are always looking for in their rotating machinery. Now it's available in a new range of track rollers, that offer longer operating times, increased efficiency and even greater reliability, says Dr Steve Lacey, Schaeffler Technology Centre Manager

Straight to Number 1

The redesigned LR52 and LR53 series of X-life track rollers from Schaeffler are not simply the highest-performing track rollers in the X-life family. They're actually the number one performing track rollers currently available anywhere on the market.

Track rollers are self-retaining double-row units with particularly thick-walled outer rings. In addition to supporting high radial forces, these bearings can also support axial forces in both directions.

The outer rings have a crowned or cylindrical outside surface. The crowned surface is an advantage where the outer rings are inclined in relation to the mating track, because it ensures reduced edge loading if misalignment occurs.

These latest additions to the X-life product family offer significantly higher load-carrying capacity than their predecessors, with a longer rating life too. And with an increased dynamic load rating of 15% compared to competitors' products, together with a sizeable speed limit increase, it's hardly surprising that they top the performance charts.

X-life Top Ten

Here's a rundown of the Top Ten advantages of the new X-life LR52 and LR53 track roller:

1. **15% higher dynamic load rating**
2. **10% higher static load rating**
3. **Improved contamination protection**
4. **Large grease reservoir**
5. **Low bearing temperatures**
6. **Less strain on the lubricant**
7. **Downsizing capability**
8. **Unchanged external dimensions**
9. **Choice of seals**
10. **Choice of cages**

Halal and Kosher compliant

Standard on food-use bearings

NSF H1 certified

Increased dynamic and static load ratings

Same dimensions – no installation issues

New design features

The X x Y factor

Although there have been major improvements made to the internal design of the bearing, the external dimensions of both series have been kept the same as their predecessors.

This means customers can simply make a straight swap of their existing track rollers for the LR52 and LR53 X-life track rollers, with no installation issues, and no modifications required to their application. So they can start benefitting from the improved performance straightaway.

The internal modifications to the LR52 and LR53 series have introduced a range of new design features. Together, these have achieved a dynamic load rating increase of up to 15%, and a static load rating increase of up to 10%. There's also been a significant increase in the bearing rating life.

Both series are offered with DEHP-free HRS seals as standard, with the option of steel Z sealing shields.

The sealing performance of both types of seal has been improved over previous versions. The HRS seal has an innovative lip contact design, creating axial contact between the inner ring and the seal lip. This helps to keep grease in the bearing whilst keeping out contamination at the same time. The Z seal has a labyrinth sealing function, and makes a wider operating temperature range possible, when it's used in combination with a steel cage (rather than the optimised polyamide option) and adapted greasing.

The unwanted ingredient

Lubrication is an essential aspect of maintenance for any rotating equipment. However, for food and beverage producers, it brings the added complication of ensuring lubricating oils and greases don't transfer from the processing equipment to contaminate the product.

That's why, from now on, all Schaeffler corrosion-resistant deep groove ball bearings and radial insert ball bearings – used increasingly in the food industry – will use new FAG Arcanol FOOD2 as standard.

FAG Arcanol FOOD2 rolling bearing grease is registered to category H1 with the American National Sanitation Foundation, which applies to all greases and lubricating oils which occasionally come into direct contact with food. In addition, the new grease is certified for use in both Halal and Kosher food processing environments, where Jewish and Muslim food laws apply not only to the food or beverages themselves, but also to the machines and environments in which they are processed.

Schaeffler also offers a range of other lubricants, designed for specific bearing applications.

The Arcanol series of rolling bearing greases offers better properties than standard greases and – depending on the lubricant chosen – is suitable for extremely high temperatures, heavy loads and high-speed production environments.

SAFETY GETS THE LIME-GREEN LIGHT

The new bright lime green accumulation chain from Rexnord provides extra protection for your operators and your packs. But that's not all. It also helps reduce your energy costs, and the Total Cost of Ownership of your conveyor system.

The problem with traditional Low Backline Pressure (LBP) chains is a serious gap in safety. It occurs at the transfer point between conveyors, where the chain opens and closes. As it does so, a gap forms between the rollers on the chain links, creating a potential trapping hazard for fingers and clothing.

OEMs and end users take necessary precautions, of course, by installing physical safety measures. But that's an additional cost and an additional element to design, install and maintain. Whereas the new Rexnord 1005 XLBP Series MatTop® accumulation chain solves the problem more efficiently.

Permanent stop gap

The design of the new Rexnord Chain reduces the gap between rollers by 50% at the transfer point. So there's far less chance of anything getting caught between them.

But that's not the only improvement the Rexnord 1005 XLBP Series MatTop® Chain offers.

The most obvious difference between the Rexnord solution and traditional LBP chains is the colour. It may be a simple development, but manufacturing the chain in bright lime green greatly increases the visibility of the moving parts on the conveyor, making it another useful safety feature.

Less obvious at first glance, but just as effective, is the lighter rotation of the rollers on the shaft.

Roll on savings

Many end users of other LBP conveyor chains complain that the plastic rollers don't rotate easily, and over time can even get completely stuck. This can cause a dramatic increase in backline pressure on the packs during accumulation. This, in turn, can lead to damaged packs in the short-term, increased energy use in the medium-term, and a higher Total Cost of Ownership of the conveyor line in the long term.

So the Rexnord 1005 XLBP Series MatTop® Chain solves all these problems by combining a 30% lighter rotation on the shaft with less opportunity for contamination to end up in the rollers, or between the rollers and the chain module.

The result is the lowest backline pressure on the packs, and minimal energy consumption.

Lighter chain, lighter bills

Conveyors can be heavy energy users. Packaging areas with long distances for packs to travel from packers to palletisers may need numerous conveyor drives, and each one consumes power.

Just how much power is consumed can be calculated from the total weight of the chain and packs, multiplied by friction factors and conveyor speed. But since – in the medium-term at least – pack weight and conveyor speed are fixed, chain weight and friction are the only areas where energy-saving solutions can be found.

So the new Rexnord 1005 XLBP Series MatTop® Chain has found them.

The chain is just 40% of the weight of traditional modular LBP chains. At the same time, there's 30% less friction between packs and the Rexnord chain during accumulation. The result is lower power consumption by the conveyor drives, which means significantly smaller energy bills.

Power consumption and costs can potentially be reduced even further, because the chain allows conveyor lengths to be extended, to minimise the number of drives required.

Back to the packs

Safety and energy saving are major benefits of the new Rexnord chain. But in the end, it all has to come back to the packs. Are they optimally handled and is the risk of damage as low as it can be?

As packs get lighter, and more delicate packaging materials are used, these are major considerations.

However, the Rexnord 1005 XLBP Series MatTop® Chain doesn't make compromises. So you can still be sure your packs will be carefully conveyed with minimal risk of damage, even as you increase operator safety and reduce your energy bills.

Rexnord has engineered safety, sustainability, lower energy consumption and a lower Total Cost of Ownership into the 1005 XLBP Series MatTop® Chain. It's an innovative solution, and another example of the kind of thinking which has been setting industry standards for almost 80 years.

The chain may be green, but the engineers behind it certainly aren't.

50%
smaller roller gap

40%
lighter chain

30%
lower friction and lighter rotation

GIVING FOOD PRODUCTION A CLEAN SHEET

Finding faster, more sustainable ways to assemble, bond, seal and repair equipment parts is always a challenge. It's especially tough in the food and beverage industry, where the regulations are strictest, and constantly changing. However, even as the rules multiply and grow ever-more demanding, one manufacturer of machinery products has found a solution.

Adhesives and sealants are a high strength, reliable and cost-saving way to deal with many of the tasks machine builders and maintenance engineers face on a daily basis. These can include:

- assembling and sealing machinery covers, inspection windows and bolted joints
- bonding small parts, wipers and rubber seals
- creating chemical and airtight assemblies and
- carrying out repairs.

But the regulations which apply to all mechanical parts that handle consumable products in the food and drink industry also apply to adhesives and sealants. This can mean they need to carry risk warnings, hazard symbols or safety phrases, may need to undergo costly and time-consuming COSHH

assessment, and must meet the recently introduced Classification, Labelling and Packaging regulations.

These CLP regulations are the latest burden on the food and beverage industry, and are even more strict than the Dangerous Preparations Directive. Applying to any product produced after June 2015, they require them to carry the latest hazard symbols and text, and can mean that some products which escaped earlier legislation will now need to carry a hazard symbol, and some which already have one will now need two.

With so much regulation to comply with, a selection of LOCTITE® products from Henkel which not only saves time and money in equipment manufacturing processes, but also avoids the need for warnings, safety markings and more paperwork, can only be good news.

Whiter than white

LOCTITE® "white label" products comprise structural and flexible adhesives and sealants, instant adhesives, threadlockers, retainers and liquid gaskets, and not only offer a quick and effective solution for many applications, but also one which comes with a "white" material safety data sheet.

In other words, users can be confident that these selected products are fully tested and approved to contain no hazardous ingredients which require COSHH assessments, or hazard labelling.

These LOCTITE® machinery products are also WRAS-approved, so can be safely used throughout the food and beverage industry, provided there's no direct or indirect contact with food or potable water.

Stick – fast

With the freedom and flexibility to use these LOCTITE® adhesives and sealants throughout the industry, food and beverage equipment manufactures and maintenance engineers can work faster and more cost-effectively.

For example, joints can be made more quickly, and locked and sealed more effectively, preventing any ingress of foreign matter. And when LOCTITE® adhesives and sealants are used, there's no danger of nuts and bolts working loose through vibration, of hydraulic parts leaking, gaskets seeping or bearings fretting. So production is less likely to be disrupted, productivity and efficiency can be maintained, and the life of equipment can be lengthened.

LOCTITE® white label products can also be used to repair parts which might otherwise be considered non-serviceable.

If a seized bearing has been spinning on the shaft or within a housing, for example, in the past it would have required a complete replacement. But using LOCTITE® products, the machinery can be put back into action using a new bearing together with the original worn parts.

And not only will it be back up and running quickly, but the repaired machinery will also be more efficient and with an extended life.

Staying healthy and safe

As health and safety regulations are updated and changed, some products fall foul and can no longer be used – no matter how useful they may have been.

The LOCTITE® range of white label adhesives and sealants avoids this problem through continual development.

When regulations change, LOCTITE® products are modified as required to keep them in line with the changed requirements, and to maintain their "white label" classification. So once you choose LOCTITE® white label products, and discover how useful they are, you can stick with them always.

SAFE for use throughout the food and beverage industry

NO hazardous ingredients

HIGH strength, reliable and cost-saving

Find out more from your usual ERIKS contact, or at www.loctite.co.uk

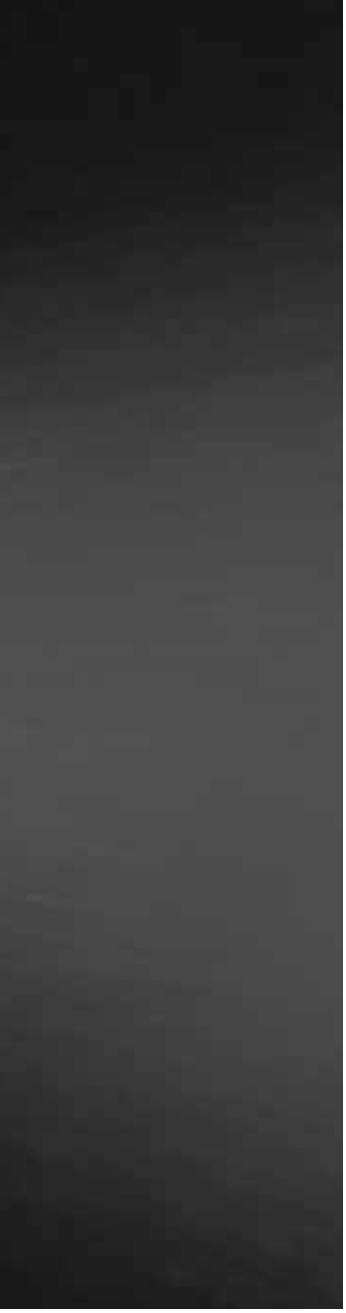
CAN YOU CAN THE CAN ?

A FOOD INDUSTRY GUIDE TO LUBRICATION-FREE CHAIN

David Compton
Global Product Lead - Chain, Renold Chain

What do manufacturers really mean by lubrication-free chain, and what are the latest options available to suit the very specific requirements of the food industry? David Compton of Renold Chain untangles the lubrication-free roller chain story.

Precision roller chain is the technology of choice in a wide range of applications. It combines high efficiency with dependable durability, for a long-lasting, cost-effective mechanical power transmission solution. A correctly specified chain, appropriately lubricated, will almost certainly be the best all-round performer with the longest working life.



The most significant element of chain wear occurs at the load-bearing surfaces in-between the pin and bush components. Wear causes elongation of the chain, which is accelerated by high or highly dynamic loads, or if lubrication is inadequate. Chain tensioners or regular adjustments will work for a while, but sooner or later the chain needs to be replaced. And the more basic the chain's design and manufacture, and the poorer the lubrication regime, it's sooner rather than later.

The problem is that in some applications, keeping the chain adequately lubricated may be difficult or undesirable. It could be because access for maintenance is difficult, or it could be the lubricant itself that's the problem, because of the risk of contamination.

In these circumstances – as OEMs and end users are discovering – a lubrication-free chain could be the answer.

Lubricant – not lubrication

It's important to be clear that lubrication-free chain isn't chain without a lubricant. It's just chain that doesn't need a lubrication regime, because it's lubricated for life.

The most common type, suitable for the widest range of applications, is of carbon alloy steel construction, with an oil-impregnated sintered bush. Lubricant is released from the bush onto the bearing surfaces during operation, but always remains inside the chain.

This type of chain normally needs little or no maintenance during normal service life. It's also interchangeable with the same size of standard chain – with no need to change the existing sprockets.

In any application, these precision roller chains reduce the maintenance required, eliminate the need for – and cost of – drip guards and automatic lubrication systems, and also save on the cost of lubricant itself. In food industry applications in particular, there's the additional important benefit of eliminating the risk of oil contamination of the end product or other parts of the process. And with the higher cost of food grade lubricant, the savings on lubricant are even more impressive.

Say "yes" to Syno

The latest generation of lubrication-free chains benefits from advances in materials technology, surface treatment expertise and manufacturing processes.

Even lubricants have developed and improved, and now have the exact properties required to maximise the benefits of the advanced chain design.

Renold first introduced lubrication-free chains in the 1950s. The latest version – known as Syno – is the most advanced so far, designed specifically to meet the requirements of applications often found in food manufacture (and occasionally elsewhere).

Syno NP is made using a custom-developed nickel plating process, with excellent anti-corrosion properties. The chain incorporates a food grade lubricant in the sintered bush, and a unique food industry-approved treatment process is applied to the roller surfaces. Dimensionally interchangeable with standard chain, and featuring ISO standard pin diameters, it can be supplied with standard attachments on the outer links.

Syno PC is a lightweight, corrosion resistant poly-steel chain, designed with polymer inner links and high-grade stainless steel pins and outer plates. Eliminating metal from the bush and roller components means no lubrication is required, so it can be used for a much wider range of lower power applications – and can even be run underwater. The outer plates accept all standard attachments.

Lastly, for heavier-duty applications, Syno PB polymer bush chain provides greater wear- and fatigue-resistance. Its specially developed polymer sleeve is located between the pin and the bush – eliminating metal-on-metal contact in this critical area. Available with a corrosion- resistant surface treatment, it brings lubrication-free operation to more – and more arduous – applications than previously possible.

With such a choice of chain options, lubrication-free precision roller chain is an increasingly realistic and achievable upgrade from standard chain, for an ever-expanding list of applications. So now you can can the can, for the chain that can.

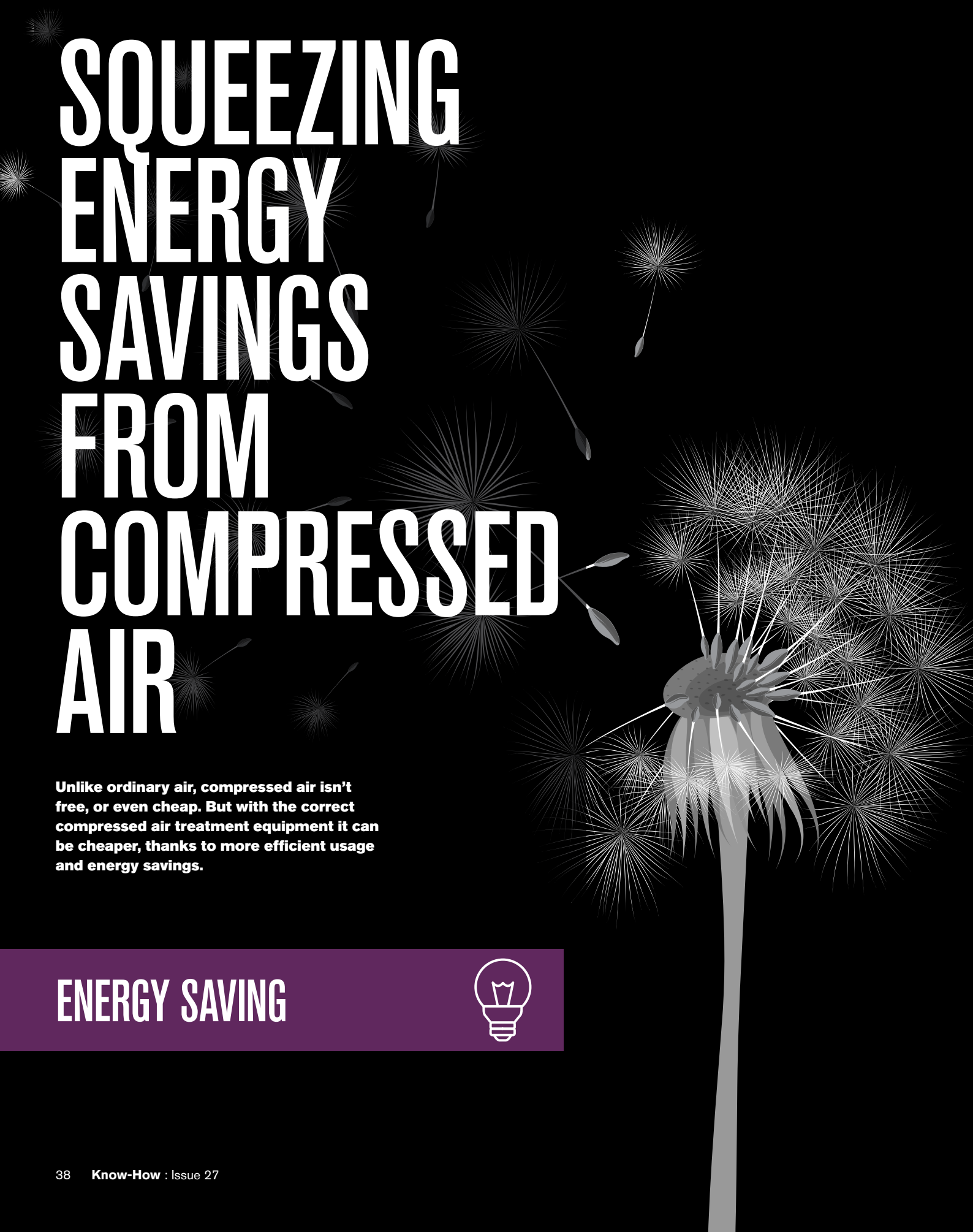
Eliminating the risk of oil contamination

Dimensionally interchangeable with standard chain

All-round performance – longer working life

SQUEEZING ENERGY SAVINGS FROM COMPRESSED AIR

Unlike ordinary air, compressed air isn't free, or even cheap. But with the correct compressed air treatment equipment it can be cheaper, thanks to more efficient usage and energy savings.



ENERGY SAVING

Leakage typically wastes
20%
of compressed air generated

£12,000
disappearing into thin air

Using compressed air as a power source wastes money

Energy represents 75% of the lifetime total cost of buying and running a compressor, with a typical 1800m³/hr (1,00cfm) compressed air installation consuming £40,000 of electricity in a year. Yet independent studies confirm that inefficient compressed air systems waste around 30% of the compressed air they generate for industry – the equivalent to £12,000 in that typical installation.

So the tips below on minimising wastage by system improvements can't come a moment too soon. Follow them all, and your energy bills for compressed air should be significantly deflated.

Fix leaks

Leakage is the major source of air and energy loss in compressed air systems – wasting up to 20% in a typical plant. Fixing poorly connected pipe joints, fittings, couplings etc., and introducing planned maintenance, can produce substantial savings.

Eliminate misuse

Using compressed air as a power source is the second largest source of wastage. Look for better alternatives for moving, drying or cleaning products, and if compressed air must be used, remember nozzles, control circuits and other equipment can minimise wastage.

Lower the pressure

Using devices at the minimum pressure required for the application – rather than at the full line pressure – can reduce wastage and lengthen equipment life. Simple use of pressure regulators offers very fast payback.

Prevent pressure drop

Blocked filter elements and undersized pipework can result in pressure starvation at the end of compressed air lines.

Save energy safely

Components fitted for safety reasons, such as pre-set regulators and shut-off valves, can also help energy saving. Check in BS EN 983 for more information.

Choose carefully, maintain regularly

Selecting the correct control equipment in set-ups with several compressors, paying attention to inlet cooling, and after-treatment of the compressed air can all help realise energy savings. Regular and correct maintenance of compressors, filters and dryers is also vital.

Clean efficiently

Large pressure drops caused by undersized, inappropriate filters and compressed air treatment equipment are a prime cause of high energy and maintenance costs, and system downtimes. Always use the correct grades and sizes of particulate and coalescing filters, dryers and condensate management. Always place them in the correct location in the distribution system. And choose your products carefully, based on the volume of air flow at each stage.

Remove liquid oil and water

General purpose filters (water separators) protect downstream particulate and coalescing filters by removing liquid bulk condensate contamination (water and liquid oil). They do not remove water or oil in aerosol or vapour phases. The filters use centrifugal action to optimise separation efficiency and reduce running costs.

Remove solid particles

General purpose filters also remove solid particle contamination originating from the atmosphere, compressor wear, compressed air pipework and the air receiver. Their replacement filter element has a micron rating adequate for removing solid particles, and which also acts as a pre-filter for the high-efficiency coalescing filters downstream.

Remove oil aerosol

Coalescing filters remove small and submicron particles, water mists and oil mist aerosols. They are usually installed in pre-filter and after-filter combinations, and each has its own automatic drain to discharge liquid emulsions to a condensate management system. IMI Norgren coalescing filters have a unique filter housing design and construction. Their replacement filter elements with a sub-micron filter rating have high dirt-holding capacity, low pressure drop and a long service life.

Remove oil vapour

Installed downstream of coalescing filters, IMI Norgren activated carbon filters remove hydrocarbons, oil vapours and odours from the compressed air. The activated carbon granules in the filter media have a high surface area available for adsorption.

BEST PRACTICE

WHEN THE GOING GETS TOUGH...

...the tough go shopping, as the carrier bag slogan has it. But never mind what the tough do. What the really clever do is switch to eProcurement. Research shows it delivers the kind of ROI that needs a wheelbarrow to take it away, not just a carrier bag.

Figures from an Aberdeen Group study in 2014 show that companies which shift their sourcing, ordering, payment and management of procurement to electronic processes via the internet, experience a huge range of benefits.

These not only include cost savings on purchases and reduced prices for spend brought back onto contract, but also requisition-to-order cycles and requisition-to-order costs both cut at least in half.

The time savings and efficiency improvements realised with eProcurement can even have effects on the factory floor. Almost a quarter of the companies surveyed by the Aberdeen Group reported that they had made the move to eProcurement to help them lower their actual production costs.

Shop 'til you drop

One reason for these efficiencies across the board is that eProcurement makes the best use of people's time.

ERIKS' figures show that – using traditional procurement methods – as much as 65% of resource can be dedicated to controlling just 10% of all purchases.

Similarly, half of an engineer's time can be wasted on non-core tasks – which include trying to get hold of the parts they need.

The possibilities for "maverick" ordering with traditional procurement methods can mean shortages of essential MRO parts, while overstocks of parts nobody needs and obsolete items pile up the storage costs.

However, changing to eProcurement can make purchasing quicker, easier, more efficient and more accurate.

Around a third of businesses that took part in a survey on the "Impact of B2B E-procurement Systems" by academics at the Universities of North Carolina and Illinois[1], reported that purchasing errors were reduced by almost half, and there was a similar-sized reduction in maverick purchases. eProcurement not only helps ensure product purchasing is firmly under the control of the right people. It's also a quicker and easier way to source supplies, so it gives those people more time to concentrate on finding the right products for the job at the right price – instead of wasting time on processes and paperwork.

Reduce purchasing errors

From product to purchase to payment

The respected materialsmanagement.info website put together the table below, showing the time differences at every step of the procurement process.

Process Step	Manual/EDI (Minutes)	eProcurement (Minutes)
Product Selection	**3**	**20**
Availability/Price Check	**10**	**1**
Requisition Creation	**11**	**2**
Requisition Approval	**21**	**3**
PO Generation	**11**	**0**
PO Approval	**3**	**0**
Send PO to Vendor	**14**	**0**
PO Confirmation	**4**	**0**
Status Check	**11**	**1**
Receive Shipment	**12**	**2**
Match Invoice, Receipt, etc.	**8**	**5**
Process Exceptions	**8**	**3**
Payment Approval	**4**	**3**
Payment Generation	**8**	**5**
Process Returns	**5**	**3**
Total Minutes/ Purchasing Cycle	**133**	**48**
Cost/Cycle Time (Avg. £0.16/minute) based on £10/hour rate	**£21.28**	**£7.68**
		64% saving

As you can see, less time is spent on product selection using manual or EDI processes. If you know there's a mountain of paperwork and other tasks ahead of you, you're going to selects as quickly as you can. Which might explain the high error rate of purchases.

However, from then on throughout the entire process, every single step is faster using eProcurement – and in many cases significantly so.

The end result, based on a £10/hour rate for the personnel involved in the procurement process, is staggering. For a typical product purchase, eProcurement provides a massive cost/cycle time saving of £16.32 – a 78% reduction over the manual process. When preferred vendor discounts are also taken into account (because a typical eProcurement system greatly increases preferred vendor transactions), there are even more cost savings to be had.

All of which means that, if you're still using traditional procurement methods, it could be time to shop around for an eProcurement solution

1. Chandrasekar Subramaniam, University of North Carolina at Charlotte; William Qualls and Michael J. Shaw, University of Illinois at Urbana-Champaign

Lower production costs

65%
resource controlling 10% of purchases

IS CHOCOLATE A STRATEGIC NATIONAL ASSET?

Amongst all the political turbulence in the UK at the moment there was one announcement that slipped out under the radar that could have enormous implications for business.

In the early days of the new Theresa May administration, the Prime Minister took advantage of the takeover of FTSE 100 Tech firm, ARM Holdings, by a Japanese IT company, to announce that going forward overseas takeovers of British assets would be subject to a national interest test.

Now, there is nothing new in this idea. Vince Cable, when he was Business Secretary, first aired the view that not all overseas takeovers of UK companies are a good thing and that just because a company is listed on the Stock Exchange it doesn't have to be sold to anyone who has some spare cash lying around.

There are some who will regard this anti-free trade and protectionist but, in my opinion, the UK has been enormously accommodating over the past few decades and now it is time to put in place such a test.

It's not as if other countries tolerate losing their companies to overseas takeovers. When Dubai Ports tried to take over six major Eastern Seaboard ports, including Baltimore, New York and New Jersey, the United States government said 'no'.

Famously, when Nestle tried to take over Danone the French government declared yoghurt to be a strategic national asset and blocked the deal.

My only regret is that the national interest test wasn't in place when British Energy was sold for a knockdown price, which leaves the UK unable to build its own power stations, leaving us reliant on the capabilities of overseas companies and investors to build Hinckley Point.

Mercifully, the deal for Astra Zeneca, jewel in the crown of the UK's pharmaceutical assets, fell through over doubts about the company making the offer. Of course what the buyer wanted was not the manufacturing assets, impressive though they are. No, what they really wanted was the pipeline of new drugs and medicines due to be launched over the coming years. The danger was that all of this R&D capability and intellectual capital would have been spirited out of the country never to be seen again.

So, whilst it may be too late to save Cadbury and I will personally forever regret the fact that we were denied the opportunity of watching the Prime Minister declare Dairy Milk bars to be a strategic national asset (a vote winner if there ever was one), perhaps our leaders have belatedly come round to the fact that not everything has to have a gigantic 'For Sale' sign hanging over it.

About time too.

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