KNOW+HOW

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

ISSUE 25

CONDITION MONITORING

They say it can't be done

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Less is More with RX® Maintenance Sprays

The new range of RX Maintenance Sprays is a complete line-up of readily available products designed to cover the most common industrial applications.

With an ever-increasing choice of maintenance sprays on the market today, it can be challenging to identify the most compatible solutions for your requirements. Keeping up to date with the latest technology, additives and performance claims can be equally confusing.

It is with this in mind that we have developed the RX Maintenance range, which allows you to source all the core products your workshop needs from a single supplier.

Each product in this series has been handpicked by ERIKS lubrication engineers to cover as wide a range of applications as possible across a variety of industrial sectors, whilst always maintaining the very best in performance and compliance.

Because sometimes less is more.
Order your RX® Maintenance Sprays today.
Call 0800 006 6000 or visit www.eriks.co.uk

know-how makes the difference

ERIKS

WELCOME TO THE LATEST ISSUE OF KNOW+HOW....

As well as unearthing the latest news, developments and technologies affecting the UK's industrial services sector, this edition of Know+How shines a light on one of the most diverse – and often challenging – industrial sectors: materials handling.

When working to its operational potential, a seamless materials handling system can often go under the radar, providing a steady and reliable flow around a manufacturing or processing site. However, given the volume of mechanical parts in operation at any one time, if any aspect of maintenance is overlooked, end-users can quickly find their application grinding to a halt and the prospect of extensive downtime.

In this issue, you'll be able to read up on some of the developments and product launches affecting both the wider industrial services sphere and the materials handling market, as well get the low down on our recent industry report on the current storeroom dilemmas faced by UK manufacturers.

As ever, we also hear from a number of experts from across the materials handling sector. In this issue, NSK will be exploring the relationship between bearing life and production uptime and its associated cost implications for end-users; and Renold delves deeper into the issues surrounding conveyor chain alignment, and how varying wear could quickly lead to serious downtime, if left unchecked.

We are also very pleased to introduce Paul Streatfield, an expert in materials handling at Bosch Rexroth, as our guest contributor. With modern production environments defined by short product cycles and the need for flexible, lean production, Paul explains the impact of any small change to a product or process and what that can mean for the business as a whole.

Finally, the TIG rounds of this issue by addressing the much-dreaded budgeting season, and how moving away from the traditional excel hell might break down barriers within a business, instead of building them.

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.

Richard Ludlam
Marketing Manager,
Editor in Chief

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BRITISH CAR MANUFACTURING CELEBRATES ITS BEST YEAR FOR A DECADE

According to figures from the Society of Motor Manufacturers and Traders (SMMT), car manufacturing in the UK is on a ten-year high for production and exports, having produced 1,595,697 vehicles in 2015, more than any year since 2005.

Despite export volumes falling in both Russia and China, key markets for the sector, demand for British-built cars in Europe increased by 11.3 per cent in 2015, with 77.3 per cent of all cars produced being shipped overseas to foreign markets. The domestic market also saw an increase in demand of 8.1 per cent for British-built cars, with one out of every seven new cars registered in the UK in 2015 being made in Britain.

Commercial vehicle production also saw 2015 end on a positive note, with a production increase of a third in 2015, and over half of the vehicles produced exported to overseas markets.

ERIKS ENGAGES WITH GRUNDFOS AS PART OF THE NEW DISTRIBUTION PARTNERSHIP SCHEME

The partnership aims to align business interests and combine the best in knowledge, competencies and value-added services in order to increase Grundfos' share of the industrial market.

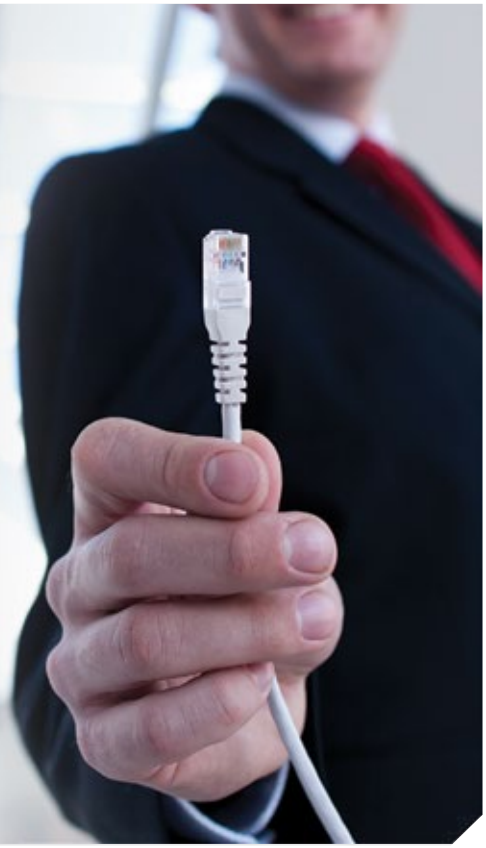
A major focus for industrial solutions is the re-vamped end suction pumps which are suitable for a variety of different applications demanding reliable and cost-efficient supply and are useful for a number of key applications such as:

- Water supply
- Industrial pressure boosting
- Industrial liquid transfer
- Heating/district heating
- Air-conditioning
- Irrigation

The joint venture will also allow the two companies to bring together their business interests in key areas such as strategy, sales, service and general support, working toward intelligent pump performance.

GRUNDFOS®

ROLE OF INDUSTRIAL INTERNET OF THINGS FOR WAREHOUSES



Warehouses and distribution centres are set to adopt the advanced technologies sought after in the vision of the Industrial Internet of Things (IIoT, also known as Industry 4.0 in the manufacturing sector) as part of a shift towards a more efficient and controlled logistics environment.

The use of highly automated technology in the manufacturing process can help to reduce labour cost and increase production output thanks in part, to smart automation including the likes of autonomous fork lifts and electronic management of warehouse stock.

The use of sensors allows for huge amounts of data to be collected and analysed to provide powerful insights into the manufacturing process and ensure it is running at optimum productivity and efficiency.

Automation can also bring increased intelligence into the supply chain with the potential to save huge amounts of time due to improved visibility within the warehouse. This is particularly useful with regards to tracking both stock levels and location of stock. It also allows employees to see which stock is in high demand and therefore needs regular replenishment, helping to gain valuable insights into the market.

LATEST NEWS

REMEDIAL FLOOD WORK SET TO BOOST UK CONSTRUCTION INDUSTRY

The extreme damage caused by the 2015 winter flooding is set to fuel the UK construction industry in 2016, particularly in the first quarter.

The flooding severely affected areas of Northern England and Scotland, causing significant damage and resulting in estimated costs in the region of £5bn, according to analysts. While the initial focus is on repairs to the millions of homes and businesses affected, the long term goal must be to improve flood defences and prevent such devastation from happening again on such a large scale.

The UK government has already pledged £40 million to fix damaged flood defences that were overwhelmed by the recent flooding, however some have already voiced concerns that it may not be enough.

REPAIR OR REPLACE: THE KEY CRITERIA FOR DRIVE DECISION-MAKERS

What should drive your decision when you're deciding whether to repair or replace a drive? Nigel Jones and Simon Whitehouse of ERIKS discuss the issues and outline your options.

Nigel Jones
Sales Manager,
Drives CCC

Simon Whitehouse
Business Unit Manager,
Gearbox Services

DEBATE

CRITERIA #1
Production disruption

If a drive has failed and production is disrupted or completely halted as a result, your focus will be on getting production back up and running as soon as possible. Sometimes an on-the-spot repair will be the quickest solution, but it may be a short-term one. Before long another drive failure – perhaps a catastrophic one – could occur. However, with a very old drive, even a straight swap may not be straightforward, as dimensional differences may have been introduced over time.

THE VERDICT

Repair: if lack of maintenance has caused the failure, and you're prepared to implement a preventive maintenance routine.

Replace: 1) if this is only the latest failure of many, which have been rectified by ad hoc repairs on a number of occasions 2) if failure is a result of hard-running to maximise production. It could be time to upgrade your drive.

CRITERIA #2
Drive / parts availability

You're unlikely to have a standby drive waiting in the wings to take over when one fails. So whether to repair or replace can come down to the time it takes to source new parts compared with a whole new drive. Sometimes – depending on the nature of the failure and therefore the type of parts required – there's very little difference at all.

THE VERDICT

Repair: if replacement parts are readily available.

Replace: if a replacement drive can be sourced more quickly than new parts – which could well be the case if the drive is old or even obsolete.

CRITERIA #3
Energy efficiency

The efficiency of a drive is never a standalone issue. It's always important to look at the bigger picture and consider the efficiency of the motor too. For example, a wormbox is an inherently inefficient design. But if it's performing reliably and the motor that powers it is low-efficiency, it may be more cost-effective to improve energy efficiency by replacing the motor. Before upgrading a drive for the sake of energy efficiency, it is also worth looking at the dimensional differences between the old and proposed new drive. If extensive modifications are required to make the new one fit, energy efficiency savings may take a long time to achieve payback. A feasibility study may be required to identify the best course of action.

THE VERDICT

Repair: if the drive is reliable and if replacement would involve sizeable additional costs. But consider upgrading the motor to realise energy efficiency gains.

Replace: if energy-efficiency gains would make it cost-effective despite any additional works to accommodate dimensional differences. If the gearbox is upgraded, consider upgrading the motor too.

CRITERIA #4
Motor and gearbox availability

Smaller motors – 30Kw and below – are generally readily available as replacements. Availability of gearboxes is not so clear cut. However, a reputable supplier will hold a large stock. For example, ERIKS has motors up to 200kW and geared motors up to 55kW available ex-stock, and has CAD/CAM capability for designing engineered solutions.

THE VERDICT

Repair: if a long lead time makes it unfeasible to wait for a replacement.

Replace: if a new motor or gearbox is readily available with a short lead time.

CRITERIA #5
Spares availability

The availability of spares will depend on a number of factors, including the age of the equipment and whether or not the manufacturer is still supporting it. The older the drive, the less likely it is that spares will be available, and reverse engineering may be required. ERIKS currently works on site with their larger Integrated Solution sites and MRO customers to assess the criticality of their spares, evaluate their spares stock, and put in place a spares management plan and a fast drive replacement process.

THE VERDICT

Repair: if the equipment is still supported and spares are readily available or can be cost-effectively reverse engineered.

Replace: if spares are unavailable and reverse engineering is uneconomic.

CRITERIA #6
Cost

Once all the above criteria have been taken into consideration, your decision will ultimately come down to cost and budget. However it is important to take unbiased advice so that the decision to repair or replace is not influenced by the capabilities of your drives partner.

THE VERDICT

Repair: if this is a cost-effective long-term solution, but not if you will find yourself in the same situation only a few months down the line.

Replace: if energy efficiency and/or productivity gains will deliver payback over a realistic timescale.

CONCLUSION

Every situation is different, and numerous different factors will come into play to influence your decision. However, what should never influence it are the capabilities of your drives supplier. Seek advice from a supplier partner who can meet your requirements whatever your decision, so you can be sure of balanced and impartial advice.

For more information about ERIKS please visit www.eriks.co.uk

SMC FLOW SWITCH OFFERING BECOMES BROADEST ON MARKET

Knowing a gas or liquid's flow rate helps users save energy, isolate problems, and improve system operation. With this in mind, SMC Pneumatics now offers one of the widest ranges of flow switches for liquids and dry inert gases, on the market.

SMC Pneumatics has added PFMB and PFMC switches to its established PFM series to measure air or Nitrogen flow, expanding the range capacity to measure flow rates from 0 to 2000 l/min.

Both new switches have a clear dual colour red/green LCD display, and the PFMC switch is also IP65 rated for difficult environments, offering a two-line display to show either total flow or the peak flow rate.

For measuring liquid flow rates, the PF3W series covers 0.5 l/min up to 250 l/min for water or ethylene glycol solutions. All models in the range feature a two-line rotatable display in addition to the red/green flow rate in order to display accumulated flow, and maximum or minimum flow.

Available with a temperature sensor, the switch can measure both temperature and flow with one device and then send a continuous analogue output to the control system.

The series is also available with a remote display so it can be panel mounted in a convenient position with no loss of functionality, idea for where there is inaccessible pipework. In addition, when measuring the flow of DI water or low viscosity chemicals, the PF3W series can be specified with PVC piping connections and FKM seals.

For more information, please visit **www.eriks.co.uk**

VITAL CHAIN IN THE LINK

A valuable part of ERIKS' services is the supply of chain to its customers, from ERIKS Service Centres. These Service Centres are themselves, in turn, linked to Tomax – an ERIKS company and a leading provider of industrial chain.

Based in the Midlands, Tomax provides a 24/7 nationwide service, supplying transmission and roller chain and leaf chain for forklift trucks. All these types of chain are held in stock, for faster fulfilment of orders. For urgent requirements, both next day and same day delivery are available.

A wide range of chain sizes and pitches is stocked, from small 8mm pitch to 1½" pitch. Any of these chains can be cut and packed to suit customer requirements.

For customers with a specialist requirement – for chain suitable for aggressive environments – Tomax also offers an anti-corrosion product in a range of sizes and pitches.

In addition, ERIKS On-Site Solutions based at the Ford Motor Company depends on Tomax as its main supplier of replacement fork lift spare parts and chain for all their fork lift requirements.

tomax

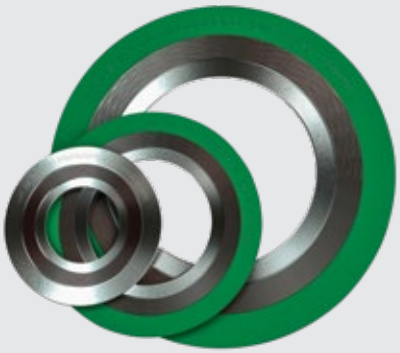
SEALTEC METALLIC - NEW GASKET RANGE EXCLUSIVE TO ERIKS

At the forefront of fluid sealing and gasket manufacture for over 100 years, Leader Gasket Technologies has launched the SealTEC Metallic range, exclusively for ERIKS.

Available in a wide range of styles and materials the new range encompasses Spiral Wound Gaskets for use in all industry flanges; Camprofile gaskets as a high quality, low emission solution – ideally suited to difficult sealing environments and the ElastaGraph Gasket offering excellent sealability over traditional corrugated designs and the most economical way of meeting low emissions requirements.

For the oil and gas, petrochemical and offshore industries, requiring high pressure and high temperature solutions, the range also now includes Ring Type Joints fully approved to API 6A and B16.20.

For further information please visit **www.eriks.co.uk/gaskets**



TECHNOLOGY

TAKING CONTROL OF COST AND INVENTORY IN AN ACCOUNTABLE WAY

The benefits of vending machines are widely known but thanks to a new solution, now available from ERIKS, organisations can not only take greater control of cost and inventory, but also increase accountability and security on site.

Featuring state-of-the-art hardware and cloud-based information management and reporting, the latest vending solutions can help reduce product consumption by as much as 40 per cent where no existing system is in place. The two solutions currently featured are the Apex "Edge 5000" and the Supply Point "Rotopoint".

The Edge 5000 is a "Coil" machine for single item dispensing of up to 60 different SKUs in flexible configurations and supporting a wide range User ID & Reporting options.

The Rotopoint offers reconfigurable compartments and is available in six different sizes, with the ability to support low or high volume transactions and offering a secure product return capability.

In addition, each machine has the potential for expansion and can support the management of large and difficult to store items which have traditionally been difficult to control.

Depending on the needs of the organisation, there is a comprehensive range of machines available which can handle the most demanding stock management requirements.

Unveiling a GREAT future with the GREAT products you know

Introducing IMI Precision Engineering - Norgren's New Look!

IMI
Precision Engineering

IN FOCUS:

MATERIALS HANDLING

MATERIALS HANDLING MADE EASY

Paul Streatfield
Industry Sector Manager
Bosch Rexroth

Modern production environments are defined by short product cycles and the need for flexible, lean production. But it is often the case that even small changes to a product or process can mean big change for the materials handling element. Paul Streatfield, an expert in materials handling at Bosch Rexroth, outlines the problems and looks at potential solutions.

The modern factory often appears to be in a constant state of restless rapid change. Short production life cycles mean that new products need to be introduced quickly and easily. There is constant pressure to further automate in order to reduce costs and increase efficiency.

However, all-too-often the materials handling element of production is the most resistant to change. For example, the simple change in the size of a box or the position of a component that needs to be picked up by a gripper, can mean a complete software re-programme which can be both time consuming and costly.

Similarly, the integration of a new automation system to take out a manual handling element of production encompasses tasks that appear like a simple step in reality, feel like a major undertaking.

One of the key issues is reprogramming which is no simple task. This is particularly true if the current materials handling solution is a PLC programme controlling the pick and place movements with pure sequencing and logic which, under the new system, requires motion control.

The step from PLC and logic into the motion control world is a big one for PLC programmers and many are reluctant to try and learn the new skills which will bridge the gap. The only alternative is to go to a systems integrator which increases the size of the task and the costs still further.

However, programming is only one part of the problem. The entire process of planning, assembly, commissioning and start-up of a new or merely reconfigured materials handling system, can be a major issue. Naturally many production engineers recognise the need for increased efficiency but don't want to stray too far from the current solution.

The good news is that there are a number of modular materials handling solutions in the UK market that can facilitate the easy planning of a new system and cut installation times. Many are capable of being scaled up or down depending on production requirements and, crucially can be easily programmed.

The Rexroth EasyHandling system, for example, will deliver to the customer a complete drive and control system in one kit, with all the mechanical and electrical elements included along with the engineering software. This kit crucially includes a ready-to-go programming interface, pre-written screens and a procedural programming language which can be set-up in as little as one single afternoon.

A key component is a simple HMI screen to enable the easy integration of pre-configured motion logic, making use of pre-defined functions, speeding up the configuration process and eliminating the need for extensive programming. The controller manages coordinated point-to-point motion and smoothing, as well as optimising handling paths to avoid unnecessary movement or the potential for collisions.

The number of commands that need to be programmed are minimal and there are a wide range of functions, from commands for single and multi-axis, through to event-based cancelling of movement and pre-defined travelling speeds, along with acceleration and conditional jumps.

All of this makes programming significantly easier. For example, one application I was recently involved with required 54 combinations of carton positioning with all the positions dynamically changing based on the carton size. The individual cartons were removed from a conveyor and placed on one of six separate stations with variations needing to be programmed including carton height on the Z-axis.

It was also important that the carton was rotated 180 degrees to ensure the barcode label was always projected to the outer surface of the pallet matrix, and that the gripper position and carton were matched at the carton pick position.
All in all a complex materials handling solution was completely installed in less than six days.

Modular systems with the ability to easily programme the motion control element can offer enormous benefits to end users of materials handling systems. At Bosch Rexroth, our estimation is that circa 80% of the engineering effort associated with a new or expanded materials handling system can be avoided using a modular 'kit' system. All of which makes the process of changing a materials handling application much less time-consuming than in the past.

For more information about Bosch Rexroth and its service solutions contact your local ERIKS Service Centre on **0845 006 6000**

Rexroth
Bosch Group

Whichever area of materials handling you're involved in – as a system builder or as an end user – you can rely on ERIKS' expertise to take care of every aspect of your needs.

EXPERTLY HANDLED

ERIKS' know-how covers not one but three main areas of the materials handling market:

- system manufacturers component supply
- monitoring and maintenance of installed systems, and
- replacement and spare parts supply.

Within each of these areas ERIKS adds value, to increase cost-effectiveness and efficiency, and optimise reliability, productivity and profitability, for customers of all kinds.

Complete, comprehensive, component supply

To enhance cost-effectiveness for system builders, we can provide component parts not only individually, but also as kits compiled from your bill of materials or build instructions. The kits can contain customised parts, built-to-order sub-assemblies packed in a way to help to reduce assembly time and increase efficiency during production.

Components and kits are available across the core industry areas served by ERIKS, from pneumatic, hygienic, pick and place systems for delicate operations in the food and beverage market, to heavy duty conveyors for the mining and quarrying industry shifting thousands of tonnes every day.

Monitoring and maintenance

Once a system is installed, ERIKS' expertise can ensure optimum efficiency and reliability, and longer service life.

Using the most up-to-date Condition Monitoring techniques, ERIKS can ensure any system always operates at its optimum, and can identify problems and undertake predictive maintenance before issues lead to unplanned downtime or catastrophic failure. A highly efficient logistics supply chain also ensures that parts and people are there when you need them, to keep your systems working.

For critical assets such as motors, drives, and conveyor belts, ERIKS also offers a design and build service, to ensure you have the most efficient and reliable equipment for your particular application and operating environment whilst complying with safety regulations.

Spares with a difference

ERIKS' replacement and spares service goes further than simply efficient and timely supply.

Many manufacturers use their own special part numbers, relevant only to their OEM spares. Parts can also become obsolete, making it hard to find replacements. ERIKS' parts conversion capability can identify standard alternatives to replace OEM parts – helping to reduce costs and/or lead times, and to keep older systems operational.

ERIKS' know-how can also identify – or re-engineer or refurbish – replacement parts to upgrade performance or productivity, energy-efficiency or reliability, as required.

A safe solution

Materials handing increasingly means careful handling not simply for the materials but for the operators and other personnel working in and around the system. ERIKS' automation and control engineers have seen an increase in the demand for control and safety systems that can help to mitigate or even eradicate risks, and create the optimum balance between performance and safety.

To bring it all together, our engineering teams can undertake a complete design and build service, together with project management, for materials handling systems bringing together modular system in an integrated solution for most applications.

In fact, no-one handles materials handling more comprehensively, more effectively or more expertly.

THEY SAY IT CAN'T BE DONE...

David Manning-Ohren
Business Unit Manager,
Condition Monitoring

The most commonly heard comment about condition monitoring of Materials Handling equipment is that "it can't be done". But with know-how correctly applied, it not only can be – it has been.

Materials handling equipment is used mostly for short duration, repetitive operations, with shock loads. All of which, many people believe, make it impossible to take meaningful vibration or thermographic readings.

But that's simply not true.

All it requires is the knowledge and experience to identify what and where to monitor. The understanding and insight to decide the correct parameters to monitor. And the expertise to extrapolate the data, to provide useful results.

The bigger picture

ERIKS faced this kind of challenge when a customer needed to identify the cause of failure on part of a large, PLC-controlled, materials handling system.

The section in question operated only for a few seconds at a time, with repeated variable shock loads. So traditional vibration monitoring of the section wouldn't work. But that didn't mean data couldn't be gathered. The solution was to monitor not just the required section, but the whole system.

Data from the PLC could then be used to identify where within the system each vibration event occurred. By programming the PLC with the required vibration parameters, and setting it up to create a time stamp whenever they were exceeded, it was possible to cross-reference the time with the positioning data, to identify exactly where within the system the problems were arising.

Cool solutions

It's another common misconception that temperature monitoring isn't possible for equipment that operates intermittently, for short periods. But again,know-how makes it possible.

The solution is to monitor the control panel, where changes in cable temperatures can be detected even after just a few minutes' operation. It's then a case of interpreting and extrapolating the data, based on experience, to detect any issues.

For example, an ERIKS customer was experiencing repeated failures of small motors used for materials handling operations, and couldn't find out why.

ERIKS carried out thermographic monitoring of the control panel, which revealed a change in temperature in a cable. Experience suggested this could be an indication of a poor connection – which proved to be correct. And this poor connection had been causing intermittent severe voltage drop, which in turn caused the motor failures. Once the root cause was detected and the connection repaired, the failures stopped.

So it's true that condition monitoring of materials handling equipment is difficult. But it's certainly not impossible. All it needs is an understanding of how and why machines fail, applied to deciding what, where and how to monitor machine condition.

They say it can't be done.
ERIKS says it can.

HOW TO CATCH THE THAT GET AWAY

Making customer-specific conveyor systems is the speciality of the Czech company I.A.N. Technic spol s.r.o. So when a customer wanted a label-checking system to maximise precision handling and minimise product waste on a new production line for fish delicacies, they didn't believe it would be a problem to find one.

However, after several weeks of searching the market for a standard solution, they realised the system component they wanted simply didn't exist. Which meant their next search was for a capable and reputable supplier to create one. Fortunately they found Festo.

Fishing for faults

The customer's production facility incorporates a number of different production lines, but this line in question is where fish products are canned and the cans labelled, at a rate of two hundred a minute.

The labels are fixed to the can bodies and lids, and once the cans reach the end of the line they are printed with a "Best before" date.

The labels have two important functions. Obviously the first is to clearly identify the product and brand. But the second is to provide important nutritional information – particularly in the light of EU legislation on allergens in food. To carry out both of these tasks and meet retailers' demands for uniform presentation on-shelf, the labels need to be flawless. That means correct and consistent positioning, without creasing, firmly fixed, and legibly printed with the correct "Best before" date in the right place on the label.

These are not only aesthetic requirements. The EU regulations on providing food information to consumers – which came into place in December 2014 – lay down how labels should present information on allergens, including the legibility of the information, and requires food labels to be clear and understandable.

But it doesn't matter how well a label is designed to meet these requirements. It still won't comply if it creases, folds, or falls off when it is fixed to the can.

Reducing the waste line

Being able to spot and eject faulty cans immediately – long before they have a chance to get away, leave the factory, and reach a sales outlet or consumer – means expensive waste is quickly and efficiently avoided. It also helps to protect and preserve the brand's reputation.

So it's essential for the canning and labelling machine operator to be alerted if there are any errors at all in labelling, and to be able to remove any cans with sub-standard packaging. But maintaining high standards demands a highly effective visual checking system.

With a suitable standard solution unavailable, I.A.N. Technic spol s.r.o. decided to look for a collaborator to help develop a tailor-made product specifically for their application.

Product plus...

The manufacturer wanted more than just a product, and more than just a basic design and manufacturing collaboration.

As Aleš Novák, Executive Head I.A.N. Technic spol s.r.o. explained, he was looking for "the right products, backed by good technical advice and excellent support during the operational phase and a good reputation. They're all important factors for the selection of a strategic partner."

The company found what they needed from Festo. A standard industrial vision sensor was already available off the shelf, and Festo's expertise enabled it to be upgraded to cope with the particular conditions prevailing in the customer's canning area.

Festo already "has a good reputation in our company," says Novák, "and is known for its comprehensive customer service and high standards. And then there is the fact that they have the right products for our needs, backed by technical advice and support, both before and after sales."

E ONES

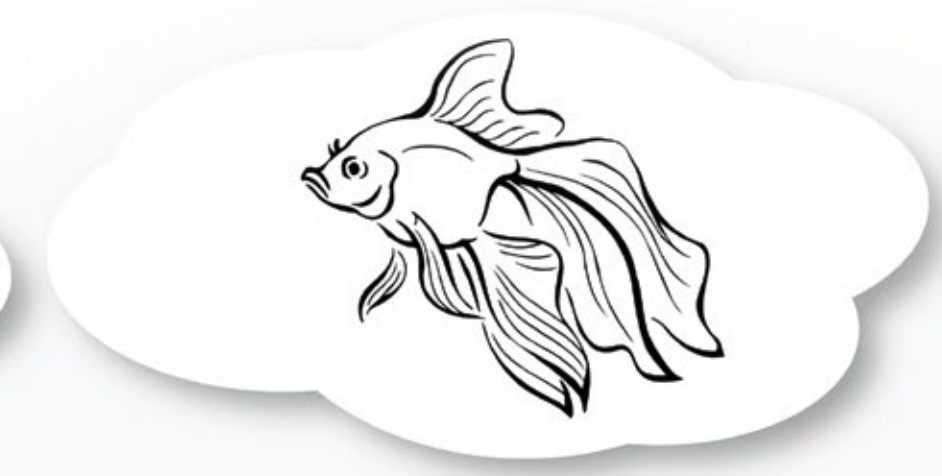
Collaboration for quality

The test station had to meet some high-performance specifications, as well as be capable of integrating seamlessly into the planned production line. Not only that, but it had to be suitable for use in food zones.

I.A.N. Technic spol s.r.o. briefed Festo on the requirements, then the two companies worked together to arrive at a suitable solution.

The end result incorporated the Festo Vision Sensor SBSI: an all-in-one optics, lighting, evaluation and communication system. Housing this high-quality vision sensing device in a sturdy food-safe IP7-rated outer casing, made it suitable for ambient temperatures from 0-50°C, and able to survive the aggressive washdown regime of a food and beverage production environment.

FESTO



With its optics offering a working distance of 6mm to infinite or 30mm to infinite, and a field of vision of 5 (min) x 4mm or 8 (min) x 6mm, it has a resolution of 736 x 480 pixels (Wide VGA) and a 50 frames/ sec frame rate.

In a footprint of just 45 x 45 x 76.7 mm, the vision sensor SBSI offered the perfect solution for carrying out simple quality checks, position sensing, completeness checks and presence/absence checks on the customer's production line.

In the can

This highly efficient and effective label checking test station now enables the customer to ensure total packaging quality, with precision labelling for every can which rolls off the production line – and far less product wastage.

In addition, I.A.N. Technic spol s.r.o. can offer their customer the reassurance of a speedy and effective resolution of any issues which might arise, thanks to the comprehensive aftersales service provided by Festo.

A high-quality solution? Check.
Perfectly labelled cans? Check.
A satisfied customer? Check.

Get moving quicker with Renold's same day despatch

BS Conveyor Chain

Renold is proud to offer a range of BS Conveyor Chain available for same day despatch from our UK Chain Service Centre!

- *Chains Available with 3,000 – 30,000lb Breaking Loads*
- *1.5" – 6" Pitch*
- *Hollow or solid pin variants available*
- *Full range of connecting links and cast iron sprockets*

In addition to the standard range, Renold is also able to supply conveyor chain with integral K attachments on a fast turnaround. ***For more details, contact ERIKS.***

RENOLD

www.renold.com

PITCH PERFECT

High-quality, precision chain is essential in many materials handling applications. Often, the chain is critical to precise positioning – for filling, labelling or sealing. And it may have to run as matched and paired strands, with perfectly aligned attachments.

With constraints like these, expert help and advice can be crucial to finding the perfect solution.

Perfect alignment of attachments is relatively easy to achieve with new chain. But to maintain that alignment throughout its working life, each strand of the chain has to wear at exactly the same rate. If it doesn't, production could be affected, product damaged, and costly downtime incurred.

And for manufacturers who may cost-out their downtime at up to £50K an hour, choosing anything less than premium quality chain is clearly a risk not worth taking.

A weighty problem

When a leading manufacturer of fire retardant panels and cladding needed a new conveyor system, they contacted the Renold Technical Team for expert advice.

The conveyor was needed to carry wet boards weighing 280kg each, in trays weighing 80kg, into an oven heated to 180°C. So it was obvious that a bespoke solution was required.

The Technical Team designed two strands of six-inch pitch, solid-pin conveyor chain, with special K2 attachments on each pitch. The two strands of chain run parallel to each other, perfectly aligned so that each pitch matches its counterpart on the other chain, at all times. A series of wickets – one on each pitch – is attached to either side of the twin stranded chain conveyor, to support the metal trays.

There are 284 wickets in total, and the total weight of the chain plus the wet board is 1,837kg/m. But after the board has been oven-dried, the total weight drops to 656kg/m.

To cope with the high temperature in the oven, a special graphite lubricant also has to be used.

The tension mounts

To carry the trays correctly, the pitches with the wickets must stay exactly opposite each other at all times. This means chain wear has to be identical on both sides, along the whole 43m conveyor.

The expansion and contraction of the metal components as they pass into and out of the hot oven means that a sophisticated chain tensioner has had to be incorporated into the design. This also takes chain wear into account, and is designed so that the chain is replaced when wear to each pitch reaches 1.25mm.

This kind of precision conveyor and transmission chain from Renold is found in a huge range of materials handling applications, with a wide variety of attachments, performing countless different functions. So whether you're operating production machinery and equipment, or conveying applications to move goods around, you can be sure Renold chain will give you the reliability, low maintenance and high performance you're looking for. Pitch perfect every time.

If you were asked to identify one of the most critical factors in maintaining efficient and cost-effective materials handling equipment, what would your first answer be? Probably not the service life of the bearings. But the direct relationship between the life of a bearing and production uptime means it can have significant cost implications – as a large UK confectionery manufacturer discovered.

SAVE THE DAY – REDUCE COSTS BY €80,000 PER YEAR.

The manufacturer was facing rapidly rising costs from repeated failures of their dip tank conveyor nose roller. Occurring roughly every seven weeks, the failure was causing frequent unplanned machine downtime, together with extended maintenance requirements. The resulting lost production amounted to eight hours annually, together with additional manpower costs for maintenance, and the cost of replacing the failed bearing sets.

This was clearly unsustainable, so the company asked NSK to look for a viable solution.

Sealed for life

The first step was for NSK to carry out an application review, which led to two recommendations.

The first was a switch to NSK's own range of "sealed for life" deep groove ball bearings. These incorporate two important features: a closure positioned on each side of the bearing, and the high-performance NSK DDU contact seal design which has a total of three sealing lips:

Seal 1 : forming a contact with the side face of the inner ring groove

Seal 2 and Seal 3 : forming a tight, non-contact constriction on either side of the contact sealing lip

This triple-lip DDU seal on the NSK deep groove ball bearings not only protects against dust and water contamination. The axial sealing lip also significantly reduces grease leakage compared with standard seals, particularly when used in rotating outer ring applications.

The results – well-proven in the field – are an operating life that's typically an 80% improvement.

But a longer operating life isn't the end of the story. NSK deep groove ball bearings also have numerous technical features, that offer significant benefits in virtually all industrial applications.

The use of high-grade balls provides quieter, more consistent operation at high speeds.

NSK deep groove ball bearings are available in pressed steel, machined brass or moulded polyamide cages, and in outer diameters of up to 2,500mm, with DDU seals as standard on all bearings above 10mm diameter bore.

This established industry practice allows two or more bearings to be flush-mounted, even when they're not designed for this use. The solution provides separation, avoids axial preloading, and facilitates better load-sharing during operation.

The customer chose to set up a trial with the new bearing sets and the spacer shims in place, and the result was an immediate improvement in conveyor uptime, thanks to a significant extension of bearing life. Roller service intervals were also extended to a whole year, which reduced maintenance requirements and costs.

Sharing the load

The analysis of the confectionery manufacturer's conveyor nose roller also revealed another problem, which led to NSK's second recommendation.

The inspection of the equipment exposed a bearing arrangement comprising three bearing units assembled together flush, with one set on each side of the roller. However, not being designed to operate in this type of configuration, the bearings failed to equally share the load and were also being affected by axial preload.

To overcome these shortcomings, NSK proposed a redesign involving a spacer shim placed between each bearing.

In fact, when reduced downtime and labour costs were taken into account, together with the savings from purchasing fewer replacement bearings, the customer's annual savings amounted to in excess of €80k.

The A-Z of VV-ZZ

The deep groove ball bearing that solved this customer's problem is the world's most widely used type of bearing.

Deployed in many kinds of application, it's particularly effective where high speeds and low power loss are required. Easy to install in a range of different configurations, NSK deep groove ball bearings can handle not only radial forces, but also moderate axial loads in both directions.

As well as the DDU contact seals employed so effectively by the confectionery manufacturer, NSK offers non-contact ZZ metal shields: essentially the most basic type of bearing closure.

Treated with a special anti-corrosion zinc coating, these shields help to retain grease within the bearing, and protect the bearing from large contaminants. They have no speed restriction, so they're commonly used in high-speed applications such as motors.

For small electric motors, on the other hand, the NSK VV seal is an ideal solution.

A non-contact rubber seal, the VV is moulded so that its sealing lip sits tightly in a unique groove, which is present on the inner ring of all standard NSK deep groove ball bearings of 10mm diameter bore and upwards. This creates a very fine clearance labyrinth, resulting in zero seal drag, low starting torque and no reduction in bearing limiting speed. These properties help to satisfy requirements for energy efficiency and low power loss, which are important in applications such as small electric motors.

Shield and seal comparisons

	ZZ	VV	DDU
Dust resistance	Normal	Good	Excellent
Water resistance	Unsuitable	Unsuitable	Excellent
Torque	Very low	Very low	Normal
Speed	High	High	Normal
Grease retention	Normal	Good	Excellent

Choose your bearing

The table [above] compares the available shield and seal options, allowing selection of the most effective deep groove ball bearing for any application. Together with advice and assistance from the NSK team, these solutions have delivered significant cost savings and downtime reductions for many ERIKS MRO customers.

If you have a nose for similar benefits, you should contact your usual ERIKS Service Centre

INVISIBLE, INDISPENSABLE – AND INHERENTLY RISKY?

Almost all automation processes are potentially dangerous. So the key to creating a safe working environment for operators – and anyone else who comes into contact with a process – is to be aware of the potential dangers, and to take all feasible steps to eliminate, protect against, or provide warnings about them. Even when the danger comes from the most unexpected sources.

Compressed air is one of the most versatile and safe media for use in automation processes. Used correctly it's efficient, adaptable, economical and clean. Like most other media in this context, it's also generally safe – unless, that is, it's used or handled incorrectly.

IMI Precision Engineering have been manufacturers of pneumatic systems since the earliest days of machine automation. So they have the knowledge, experience and solutions to ensure that compressed air is an effective answer in automation processes, and a safe one.

In addition, the company has more than half a century of experience in creating specific product solutions for use in safety applications, to help keep compressed air as safe as it's indispensable.

Simply safe?

An automation process machine or system doesn't have to be complex to make it potentially hazardous. So when safety is under consideration, it's important not to overlook even the simplest installations and applications.

For example, the failure of even a simple flexible hose installation could create a safety risk. So it's worth fitting anti-flay devices. In the same situation, incorporating system pressure limiters can have a double benefit: not only helping with safety, but also keeping pressure limited to its optimum, which helps to maintain energy efficiency.

But whether or not the system is simple, many safety solutions can be.

Air exhausting from a system often results in noise which – if it's loud, or continuous – can at best make working conditions uncomfortable for the operator, and at worst actually be a health risk. It can also create a "mask" of background noise which hides other sounds, causing safety problems for operators.

A simple solution is the installation of efficient exhaust port silencers, such as the IMI Norgren range of Quietaire heavy duty units. Available with male or female threads, they can easily be connected to most pneumatic devices, to reduce the noise without affecting system performance.

Keeping control

Local and global legislation – such as the European DIN EN ISO13849 – sets many safety requirements which must be met by machine designers and machine users: from safety valves with self-monitoring functions, to machine validation and relevant documentation.

It's also important for an operator to know that when an emergency situation does arise, the machine elements are at least under controlled conditions. This means that the emergency situation can be investigated and corrected safely, before re-starting the equipment.

To establish the controlled conditions, there are two key issues.

Firstly, the air supply must be quickly and effectively evacuated. And secondly, maintenance operatives must be kept safe during remedial work.

To evacuate the air from a complex machine system to make it safe during an emergency, a dual cross monitored dump valve is essential. This will "dump" – or exhaust – downstream air in the shortest possible time. IMI Norgren offers two versions, including one with an integrated variable soft start function, for equipment which requires a controlled re-start of the air supply. Pneumatic monitoring of the valves ensure they meet all the requirements of current safety legislation, without the need for additional electronics.

Ensuring the safety of maintenance operatives requires maintenance and repair to be carried out under "LOTO" (lock out tag out), conditions, which means dangerous machines are properly shut off and can't be accidentally re-started.

Pressure to be safe

Even simple blow guns – as used throughout industry – are affected by health and safety guidelines, which specify a maximum air pressure of 2 bar. The most effective way to comply is to have the pressure pre-set and have the device secured so it cannot be adjusted by the operator.

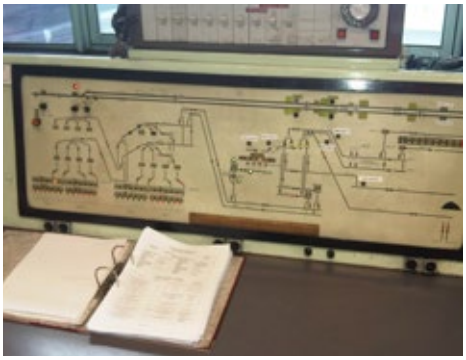
IMI Norgren offers a pre-set tamper-proof regulator from their R16 range. The unit is factory set to the required pressure, and locked prior to despatch. For an additional level of safety in applications using flexible hoses, the unit should be used in conjunction with an air fuse.

With the correct equipment correctly installed, used in the correct way for the application it's designed for, automation process equipment presents no more risk than most industrial equipment. Compressed air is no exception. However, as with all such equipment, it is essential that operators are fully trained in its use, and if personal protection equipment is required, it must be provided and it must be worn.

Follow these basic rules, and compressed air can continue to be an integral, valued, versatile and safe element of your automation processes. You can't see it, but you can't see yourself working without it.

IMI Precision Engineering

Bulk materials handling operations at the Fiddlers Ferry power coal plant have traditionally been carried out from a control desk linked to a mimic panel: a physical display with a pictorial representation of the coal plant, with indicators showing whether the status of the plant is running, stopped, isolated or fault.



WHEN CUTTING 2,500 WIRES IMPROVED EFFICIENCY

This requires thousands of wires to provide connectivity to the PLCs of coal-carrying conveyors, blenders and other equipment. But the system is now more reliable and more efficient, and almost all the wiring has been eliminated – thanks to virtualisation.

SSE plc and Hargreaves – the coal plant's operators – approached ERIKS to find a way to replace the obsolete mimic, and rationalise and improve the efficiency of their control system. An upgrade was needed for a number of reasons. The sheer quantity of wiring in the existing system made it very difficult to track faults. If changes were required they involved installing controls, monitors or gauges, which meant physically adapting the control desk. And incorporating new or additional functionality meant adding yet more wiring, which added yet more complexity.

The solution proposed by the ERIKS' team – led by Electronics Business Unit Manager Victor Harris BSc MIET CMSE® – was to install a virtual system capitalising on cutting-edge Industry 4.0 thinking.

Simply efficient

Taking advantage of the latest developments in interoperability, real-time data collection and virtualisation, the new desk provides all the functions and features of the old one, but virtually rather than physically.

So all controls, gauges, meters and alarms on the new desk are virtual, displayed on giant monitors.

This means that if functions need to be changed or added, it's a simple matter to open up the design of the SCADA system and make whatever modifications are required. There's no new wiring to install, and no physical changes need to be made to the desk.

A rail track interface, with animated trains, was also added, together with an interface for the large area pylon lighting

Although the control system is completely new, it's a virtual copy of the old physical system – which meant that the operators needed almost no additional training before they could use it. However, the virtualisation has helped to increase operator efficiency, not least because the redesign created an opportunity for ergonomics specialists to consider the design of the physical desk, the positioning of the monitors, the operator seating and so on.

Seamless switchover

The Ethernet connectivity of the new system enabled it to be set up and run in parallel, with no disruption to operations.

This meant the old system could be kept on standby for a month in case of any hitches, and when the complete switchover took place there was no downtime involved.

State-of-the-art Gamatronic double conversion uninterruptible power supplies were also added for all the new systems, to filter the mains and provide a reliable backup power supply

Once the change had been successfully made, the old system was decommissioned and 2,500 redundant wires were painstakingly removed (one at a time!).

Now if additional functions need adding or upgrades are required in the future, it can be done in minimal time with no noticeable disruption to operations – and not a single new wire required.

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RX® Dyneema® Safe3
Seamless knitted Dyneema® glove with polyurethane coating.

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RX® Nitri-4-grip
Seamless knitted nylon glove with light porous breathable foam nitrile coating.

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know-how makes the difference

ERIKS

HOW POOR STOREROOM MANAGEMENT IS HAMPERING UK INDUSTRIAL OUTPUT

TWO STEPS FORWARD, ONE STEP BACK:

The UK has become synonymous with industrial excellence, driving forward a vast array of market sectors since the dawn of the industrial revolution nearly 250 years ago. Yet despite the UK's industrial pedigree, a number of basic errors are creeping in, at crucial points in the supply chain, particularly when it comes to the state of the nation's storerooms.

In light of the findings from a new report on the subject, Andy Silver, Customer Services Director, at ERIKS UK, discusses some of the biggest issues affecting storeroom management across the UK industrial sector.

State of the nation

Nobody can deny that UK industry is now amongst the most efficient in the world. A tight focus on cost-down measures has produced lean, competitive industries capable of competing, and winning, in globalised markets.

This mentality has filtered down the supply chain, with suppliers at all levels capable of delivering raw materials and components, just-in-time to be fed immediately onto the production line or into a process, reducing stock and working capital to a minimum.

TIME SAVING

* Results from the Engineering & Technology (E&T) UK Industry Stock Management Survey conducted amongst 150 maintenance and storeroom personnel between 1st July and 1st August 2015.

However, even in the biggest and best industries, just away from the factory floor more often than not there is a room, or series of rooms, which is cluttered, seemingly badly managed (or not managed at all) and overloaded with stock.

The storeroom or 'factory stores' is all-too-often a black hole which sucks in stock, and is seemingly incapable of satisfying the demands of its stakeholders in other parts of the business.

Engineers, who should be on the factory floor fixing machinery, are reduced to leafing through catalogues, trying to find exactly what they need to repair vital equipment.

Procurement are pre-occupied with the often significant monthly expenditure on 'spares and consumables', but do not have the technical knowledge to ask difficult questions or put into operation an alternative which satisfies the demands of engineering.

In the middle of it all, sits the 'Storeroom Manager' desperately fighting a losing battle and expected, in turn, to manage suppliers, provide technical support, manage inventory, perform stock takes and serve behind a counter.

Man in the middle

However, this 'Storeroom Manager' can often take the form of a number of individuals, many of whom have multiple responsibilities above and beyond the storeroom, and herein lies one of the chief issues affecting the smooth-running of the UK's industrial stores: mixed, or minimal responsibility.

ERIKS' recent report on the state of the nation's stores, *Factory stores: manufacturing's necessary evil – Balancing productivity, inventory and management responsibility in UK factory storerooms'** found that less than a quarter (24%) of stores were managed by maintenance departments, whilst 30% declared that responsibility was split between production, maintenance and facilities management and a further 12% stated that no-one took charge of the storeroom.

As such, nearly half (42%) of those surveyed identified that the responsibility of their storeroom was not attributable to one department, let alone one individual 'Storeroom Manager'.

Taking stock of the situation

Given half (50.4%) of those surveyed had stock worth in excess of £250,000, worryingly, only 16% said they conducted a monthly stock-take. Raising even more cause for concern, over a third (38.5%) either did not know when their last stock take took place, or admitted to never taking one. Not knowing what's in your storeroom is one of the biggest drains on maintenance budgets, as this will lead to many items either becoming obsolete or duplicated.

A lack of consistency among stock-take procedures understandably links to another significant finding within the report: that over a third (36%) of respondents admitted it took over 30 minutes to find a part within their stores. Given the added time it would take to potentially stop a process, remove a faulty part and replace it with a new one, and then re-start the application, a minimum of 30 minutes extra downtime per part sourced is a significant drain on resource and detrimental to the overall productivity of the site.

Whilst the report also goes on to highlight worrying inconsistencies amongst the ordering and sourcing of replacement parts and stock, responsibility of restocking, and levels of storeroom access, there is a familiar theme which recurs: storerooms are rarely the responsibility of one department or individual, and as such, corners are being cut and bad practice is becoming commonplace.

The necessary evil

I often call factory stores a 'necessary evil'. In an ideal world, machines would never break down and parts would never be required. The reality, of course, is very different, and as evidenced by the report demonstrates that factory stores are not fully supporting the site's engineers.

However, it would be wrong to point the finger solely at the stores, without acknowledging the exceptionally difficult circumstances in which they operate. As mentioned, storerooms and inventory are all-too-often overlooked and not given the right tools, in terms of IT equipment for example, or external MRO supplier support, to do the job properly.

The vital link between engineering and stores is too often disrupted, which results in poor stores management and inventory control, with inevitable out of control spending on spares and wasted time – often due to engineers not knowing what is in the stores in the first place or not willing to wait around for what they need.

Final thoughts

When I speak to senior managers, procurement people and engineers about stores management, they universally agree on the need to take control. But it is not so clear whether they want to take control of MRO stores themselves, the stock, the expenditure or the suppliers?

The truth is, to take control, you need to grip all four of them. UK manufacturers have to recognise that spares and parts sourcing is a complex job, which needs specialist skills and resource allocated to it. If those skills are not available in-house, then industry should consider outsourcing. What is striking about the results in this report is how few of our respondents' companies have undertaken this option. The desire to maintain control is trumping the desire for change.

The answer lies in better linkage between engineering and stores, in order that stores can become the engineer's toolbox and, in the words of one respondent, can be in a position to "predict the requirements of production."

The ability to 'predict' is central to store's operations. Factory stores should be dynamic, constantly assessing the needs and requirements of their engineering 'partners' and working to an agreed strategy. Only in this way can factory stores stop being a drain on resources, both financial and engineering, and truly support the wider business.

'Factory stores: manufacturing's necessary evil – Balancing productivity, inventory and management responsibility in UK factory storerooms' can be downloaded from **http://knowhow.eriks.co.uk/eriks_iet_research_download.**

For more information on ERIKS UK, please visit www.eriks.co.uk

WHY DO WE STAND FOR IT?

WHAT'S AFOOT?

Everyone knows that standing up for long periods is tiring. But for workers who stand all day, every day, for an eight-hour shift, it can be more than tiring. It can cause physical pain, long-term physical damage, and have a knock-on effect on their safety and productivity.

When a person is standing still, their muscles constrict, and their blood doesn't flow around the body as much as when they are moving. This can cause pain in the muscles and joints, as well as being the start of varicose veins. Eventually it can lead to flat feet – which is painful – and which in turn can lead to the more serious condition of plantar fasciitis. This is an inflammation of the ligament on the bottom of the foot, and it causes a searing pain along the foot. This is worse in the mornings, but remains as a dull ache all day long.

Any of these aches and pains will cause fatigue, which can make workers lose concentration, be less productive and, ultimately, lose morale, make mistakes and care less about quality. This can mean more defective goods and higher production costs, even before the cost of sickness days is taken into account.

Of course every employer wants their employees to be safe and pain-free. But are the side-effects of standing really that big – and that costly – a problem? One company decided to find out.

Slipping attendance, sliding productivity

A manufacturer of commercial ovens wanted to know the hard facts and figures behind the perceived problems of standing. What, they wondered, were these problems doing to their absenteeism and productivity rates?

To get to the answers, they carried out a 12-month study amongst their 175 employees engaged in manufacturing or assembly.

At the start of the study – despite being a highly-rated employer in terms of wages and benefits – it had a high injury rate and a high absenteeism rate. Injuries amongst their standing workers were running at more than three a month, and absenteeism was at 5.2% – though as high as 10% on Monday mornings.

With these baseline figures established, the company installed anti-fatigue matting for their employees to stand on. This counteracts the effects of standing on a hard surface, and many companies use it as part of their safety programs but without any evidence of its effect on productivity or the bottom line. This survey was intended to change that.

Outstanding success

Once the anti-fatigue matting had been installed, employees were asked to fill in a questionnaire every month for a year, reporting how tired they felt and how their legs and feet felt before and after their shift.

The results were clear. The workers felt less tired, and their legs, feet and lower back had

less discomfort too.
But it wasn't just perceptions which proved the success of the matting. The figures too showed that the mats made a difference.

The injury rate dropped to less than one reported incident a month – a fall of 70% from before the matting was used. Absenteeism dropped from 5.2% to 4%, which represented a 23% reduction. At the same time, productivity was estimated to have increased by 2.2% because of the lower injury and absenteeism rates, and there was a near £42,000 reduction in insurance premiums.

In total, over the 12 months of the study, the insurance premium reduction and the increased productivity meant a total cost saving of just over a quarter of a million pounds.

A good foundation

So the figures prove that anti-fatigue matting of the kind available from Wearwell (makers of the number-one-selling industrial mat of all time) does more than make your employees more comfortable.

It makes them safer (less likely to have an accident due to fatigue or loss of concentration), reduces their absenteeism, and makes them more productive. All of which means lower costs for you, their employer.

With so many benefits from something so simple, clearly this is not time to stand still. It's time to get moving and install anti-fatigue matting for your standing employees

BEST PRACTICE

ERIKS

THE TIG

IT'S BUDGET SEASON (GROAN!)

It's budget season. If you've already been through it because your company's year-end was 31st December you've probably needed all of the Christmas break to recover. If your year end is 31st March and you are deep in budgeting mode, you have my sympathies.

Why do we all hate budget season? Well, how many budget meetings have you been in which went like this?...

Senior management (SM):

"We want 15."

Divisional management (DM):

"We can't do 15."

SM:

"It's a growth market, we need 15."

DM:

"Yes it's a growth market, but we're in a price war which is hurting margins. The best we can do is 10."

It goes on like this until somebody puts everyone out of their misery by saying: "Let's split the difference. How about 12.5."

Of course, that's not really the end of it. Senior management, with responsibilities to shareholders, feel that the division has been trying to keep its numbers deliberately low.

Division, on the other hand, feels that senior management is too far removed from the market to make accurate calls and is making unreasonable demands.

The end result is that everyone gets fed-up, and that's not the only problem. How many conversations have you had which went like this during budget season?

Team member (TM):

"Sorry to bother, have you looked at that report I put on your desk."

Team leader (TL):

"What report?"

TM:

"The one for our biggest customer which I put on your desk three weeks ago."

TL:

"Sorry, I've not had chance. I'm up to my eyeballs with budgets. We're already on draft six of the OPEX spreadsheet."

Which brings us to the heart of the problem, namely that, all-too-often, budgeting and financial planning for next year, gets in the way of actually delivering for this year.

What I'd really like to see in budget season is not yet another CAPEX spreadsheet, but a statistical analysis of budget season's impact on productivity, sales and, most importantly, morale.

Because, let's face it, that divisional team I referred to earlier could probably have made the extra five that senior management wanted, if its sales force hadn't been in the office for all of November filling in Excel spreadsheets.

What is needed is a financial planning approach which is flexible, realistic and, crucially, doesn't take months to negotiate.

In fact, we could get rid of the idea of budget season altogether. At GE for example, senior and divisional management get together to agree an 'operating plan' which takes into account market performance, competitor activity and team strengths and weaknesses.

The end result is a team which is motivated to leap into the new financial year, not a team which wants a lie down in a darkened room.

How much better does that sound?

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