

# EMS

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Industrial Cooling Feature

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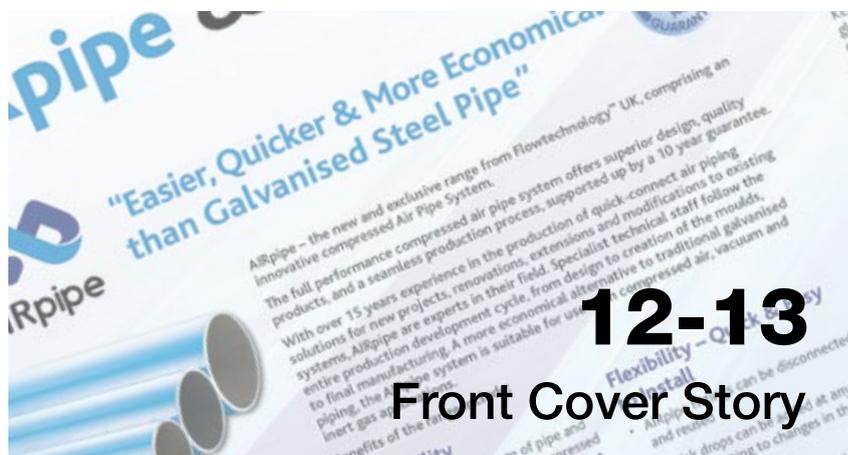


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### Esab Offers Nickel-Based Consumables For All The Major Arc Welding Processes

ESAB provides a comprehensive range of consumables for all the major arc welding processes used with nickel alloys, dissimilar welds, cast iron, cryogenic applications and for nickel alloy cladding.

MMA electrodes, MIG Wires, TIG Rods, SAW Flux-Cored Wire and Strip Cladding Combinations are all available. ESAB has simplified the selection of these global products by making names, classifications, approvals and quality standards the same everywhere.



ESAB's nickel-based range is available under AWS alloy coded product names and the products can also be supplied on request according to the ASME QSC standard. All the consumables are produced in-house and ESAB's commitment to quality, the environment and operator safety is paramount. The company has achieved ISO 9001, ISO 14001 and OHSAS 18001 standards in environmental, health and safety management systems across all its global manufacturing facilities.

The consumables offer a superior surface finish, column strength and controlled cast and helix for trouble-free wire feeding as well as X-ray quality welds. The range includes OK 92.55, the leading MMA electrode for the welding of 9% Ni steel in LNG tank construction. OK Autorod NiCrMo-3 MIG wire is designed for welding high-alloyed heat resistant and corrosion resistant materials. Submerged arc and strip cladding fluxes include the OK Flux range.

For more information, ESAB's Nickel Based Welding consumables brochure is available and there is more information at [www.esab.co.uk](http://www.esab.co.uk) or call 0800 389 3152. Follow ESAB UK on Facebook.

### PCB PIEZOTRONICS OFFERS "ON YOUR DESK IN FIVE DAYS" SERVICE

PCB Piezotronics, a world leader in vibration, acoustic, pressure, force and torque sensors, has announced that its most popular products are now available "on your desk in five days" as part of the company's Total Customer Satisfaction guarantee. In addition, the company now offers all products with a two-year warranty.

Commenting on the new five-day service, Graham Turgoose, Managing Director, PCB Piezotronics Ltd, said: "The company prides itself on being able to deliver products quickly in the UK and we believe this to be our customers' number one priority so we are concentrating on ensuring that the widest possible range of products can be delivered from stock and on the customer's desk within five days."



He continued, "There are currently around 100 of our most popular models maintained at high stock levels in our ready to ship range and covered in the five-day delivery programme. A further 150 stock items are normally available on the same basis, many held in our European distribution centre. The quoted delivery of five days is worst case and an order placed on a Friday will typically be on the customer's desk by Monday with week day orders normally taking three to four days."

He concluded, "Total Customer Satisfaction sets us apart from other suppliers and we believe our new delivery programme will enhance our position in the industry still further. The blanket two-year warranty on all our products is further proof of our intention to continually exceed our customers' expectations."

PCB Piezotronics Ltd.,  
Tel: +44 (0) 1462 429710 | Email: [ukinfo@pcb.com](mailto:ukinfo@pcb.com)

## Breaking New Ground In Gas Detection

### Work on world class new facility for Crowcon Detection Instruments commences at Milton Park, Didcot, UK

Abingdon, UK (December 11, 2013) – Gas detection specialist Crowcon today celebrated the official ground breaking for its new 40,000 square foot facility at the prestigious Milton Park in Didcot, UK.

Having outgrown its current headquarters location in Abingdon, the Milton Park facility will house all existing functions as well as provide extensive customer training and product demonstration facilities, an additional 30% of manufacturing space and a full service calibration laboratory.

As he took charge of the first shovel-load of earth at the site, Mike Ophield, Managing Director of Crowcon, said: "Following two years of planning I am really delighted to see this facility reach the ground breaking stage. I would like to thank the combined team from Crowcon and MEPC for bringing us so smoothly to this exciting first step".

"As we are an international company, we are fortunate

that Milton Park is both a hub for science and innovation and an excellent location with great transport links", Mike continued. "But, in selecting a site, it was also very important for us to find a location where we could retain our highly-valued workforce and continue our commitment to local employment. As Milton Park is only five miles from our current location we are pleased to have achieved this. With this investment we are demonstrating our confidence in the future of the Crowcon gas detection business worldwide."

Andrew Barlow, Commercial Director at MEPC, added: "This is great news for Oxfordshire's growth story. We have worked closely with Crowcon to design a bespoke building which will combine modern production facilities alongside contemporary office accommodation. Together with the first-class setting and amenities on the Park, the new premises will provide an excellent environment for staff and visitors alike. This is part of an exciting development programme already underway on Milton Park's Enterprise Zone land."



Above: Crowcon Directors Mike Ophield (right) and Barry Swift (second left) celebrate with MEPC Directors James Dipple (left) and Andrew Barlow (second right).

Completion and relocation of current staff and equipment is anticipated during the fourth quarter of 2014.

Crowcon Detection Instruments Ltd  
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Abingdon, OX14 1DY, United Kingdom  
Tel: +44 (0)1235 557700  
Fax: +44 (0)1235 557718  
E-mail: [sales@crowcon.com](mailto:sales@crowcon.com)  
Website: [www.crowcon.com](http://www.crowcon.com)

## Gentle And Reliable Pumping Of Delicate Ingredients

The CSF range of progressive cavity pumps is ideal for transferring a wide variety of products and ingredients or those with suspended solids and particles which often occur in the food, brewing, beverage and pharmaceutical industries.

Available from liquids handling specialists PUMP ENGINEERING, the CSF range includes the eccentric screw, positive displacement MAN series of pumps.

CSF MAN hygienic series progressive cavity self-priming pumps are extremely versatile and ideally suited to transferring low viscosity products like soups or sauces, high viscosity products such as jams, creams, pastes and pie fillings or delicate ingredients such as fruits and vegetables, with a gentle pumping action which does not damage these sensitive ingredients. The positive displacement pumping action from the rotor and stator arrangement delivers a consistent flow, without the need for pulsation dampeners or non-return valves.

When used in conjunction with a variable speed drive they can be used for dosing or proportioning applications and where applications involve high viscosity products the pumps can be fitted with a hopper or wide throat inlet.

All wetted parts are manufactured from polished or satin AISI 316L stainless steel and the pump's tie-rod construction allows for quick and simple inspection, cleaning and maintenance. Stators are available in white rubber for food use or other elastomers to suit the application. MAN Series pumps are available with a single mechanical seal as standard with double seals, or packed glands if required.



Further details on CSF pumps are available from: Christopher Newberry, Pump Engineering Ltd, Riverside Estate, Littlehampton, West Sussex, BN17 5DF  
Tel: 01903 730900 | Fax: 01903 730234  
sales@pumpeng.co.uk | www.pumpeng.co.uk

## Winn & Coales International Ltd celebrated their 130th Anniversary with a visit from HRH The Duke of York, KG

Winn & Coales International Ltd, specialist 'Denso' anti-corrosion and sealing product manufacturers based in West Norwood, London, celebrated their 130th Anniversary with a visit on Wednesday 16th October by HRH The Duke of York.

Also in attendance were Deputy Lord Lieutenant Major David Hewer OBE and the Mayor of Lambeth, Councillor Mark Bennett.

During the visit, His Royal Highness unveiled a commemorative plaque specially commissioned for the occasion and congratulated the company on its success over 130 years of trading due to a combination of innovation, commercial nous and sound manufacturing practices, all resulting in continuous growth both in the UK and worldwide.

Deputy Lord Lieutenant, Major David Hewer followed by presenting the company with a Queen's Award for Enterprise: International Trade 2013. This achievement was for the second time running as the company had previously gained the very same Queen's Award in 2010.

Denso' corrosion prevention and sealing products are well known and used all over the world for the protection of steel and concrete and are also manufactured by subsidiaries in the USA, Canada, Australia, New Zealand and South Africa. The company's other well known brands include SeaShield, Protal, Archco-Rigidon, Densostrip and Sylglas.



Winn & Coales (Denso) Ltd, Chapel Road, London, SE27 0TR  
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## Execute the basics of reliability and maintenance well and you will get guaranteed results. Part I

by Christer Idhammar

First I like to tell you about myself and from what perspective I write this article. My world is process industries such as Iron, Steel, Pulp, Power and Wood based industries such as Oriented Strand Board (OSB), medium Density Fiber (MDF), Chemical, Oil and Gas, Food and Beverage etc. In short all industries where a break down of critical equipment assets results in risk for environmental damage, personal injury, lost quality and volume in throughput or high costs for maintenance. I lose some of my important arguments if reliability is not important because then the maintenance organization has no "revenue". If reliability is not important the sense of urgency and importance in the work we do, as a maintenance organization is not there.

### International phenomena

I work on a worldwide arena and observe the same problems, or improvement opportunities, in all countries and all type of industries. If you have worked as a reliability and maintenance professional in many industries and/or countries you also know that this is true. If you only worked in one plant you believe that you are unique and different than all other plants but that is very seldom the case. The reason why maintenance management is so similar between different types of industries and facilities lies in a couple of facts.

- Equipment does not break down, components such as; gears, couplings, control valves, transducers, seals and bearings break down. The whole equipment e.g. a compressor does not break down. These components are the same with some variations in all industrial plants. The environment they operate in is different but if an electric motor is covered by chocolate, saw dust or pulp the consequence is the same: it will overheat and shorten electric life dramatically. Some plants have a more aggressive corrosive atmosphere but again the consequences of corrosion are the same.
- Reliability and maintenance management is driven by the system and processes people work in, not by the physical assets the organization maintain.

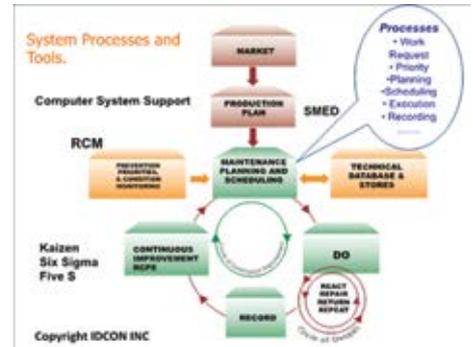
There are some differences that make implementation and execution of best reliability and

maintenance practices more or less difficult. These are more cultural differences and it is important to know and understand these. They include but are not limited to:

- Political Systems make a difference in e.g. how profits are calculated.
- Taxation rules make a difference in how life cycle costs are calculated.
- Living standards are different between countries. In many countries with high living standard I often find a culture of entitlements and complacency and less of a desire to improve than in other countries where people are eager to learn and improve their performance.
- Labor laws, working hours and employee benefits and unionization are very different between countries.
- Some industrial plants have many short and long shut downs others have no scheduled shut downs. This fact only changes the way you plan and schedule work that requires equipment to be down to do work. If your plant has scheduled shutdowns you must plan work before you schedule work to be efficient. If your plant has no scheduled shut downs, or if it is easy to shut down and start up again, then you should focus more on planning and execute planned work when the opportunity to access physical asset can be done safely at best opportunity from manufacturing point of view.

But the system, processes and practices used to manage reliability and maintenance are not different. Nor have they changed in the last fifty or more years. What has changed and improved dramatically is technology including much better and more affordable computer systems and tools for condition monitoring. We have much better and more affordable equipment for measurements and analysis of component condition such as:

- Infrared cameras.
- Wear Particle Analysis.
- Vibration Analysis.
- Acoustic Emission
- Alignment of components.
- Stroboscopes.
- Ultrasonic methodologies.



Above: figure 1

### Do the Basics better and better

My advice is to never forget to improve execution of the basics of maintenance. This was true 50 years ago and it is still true. Too often we complicate things beyond what is necessary. In the field of reliability and maintenance many tend to give new names on what in the end anyway comes down to the basics. TPM, RBM, VDM, QCC, RCM and many other acronyms only lead to confusion in the message you need to send to your employees in the maintenance organization. They will start talking about the "Program of the month" and lose faith in you as a leader.

Anyone who have attended any conference including conferences covering the subject of Reliability and Maintenance have heard several speakers referring to Albert Einstein's definition of insanity:

"To do the same thing over and over and expecting different results"

This hold true if you do the wrong thing. However if you do the right things better and better over a long period of time you will generate substantial results.

I know from a very long experience in industry that guaranteed results will be achieved by executing the basics of reliability and maintenance (the right things) better and better forever.

The basics are perhaps not as glorious to talk about as many would like them to be but I find them very interesting and challenging because I am still interested in people and equipment and the fantastic results that can be achieved when an organization execute these well. Results can even be life changing for some people. Organizations today

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# J D Neuhaus Hoists Help Build World's Largest Observation Wheel

Three J D Neuhaus air operated hoists, each providing a 50 tonne lifting capacity have been utilised in the construction of the world's largest observation wheel located at The Linq, Caesars Entertainment's \$550 million outdoor retail, dining and entertainment district located in the heart of the Las Vegas Strip.

The wheel, which tops out at a height of 550 feet, provides an impressive view for both daytime and nighttime skylines of this unique resort destination. The structure, known as the Las Vegas High Roller, comprises 28 viewing cabins with a total 1,120 passenger capacity. The impressive height exceeds other Great Wheels of the world such as the Singapore Flyer at 541 feet (28 cabins with 784 passenger capacity) and the UK's London Eye at 443 feet (32 cabins with 800 passenger capacity).

The air operated hoists were located at a temporary chain fall platform suspended below the wheel central hub, and utilised their 280ft of cable fall to lift equipment from the ground level. These lifts included 18 temporary radial struts, each being 40 tons in weight, together with transfer trusses of similar weights and all the individual outer rim segments of the completed wheel, together with a total of 112 cable locking assemblies initially assembled at 50 percent tension loads. The temporary radial struts were installed to provide the accurate spacing of the individual wheel rim segments from the central hub unit during initial build assembly. These

were then sequentially replaced by the cable locking assemblies, which when fully tensioned provided the radial spokes of the completed wheel assembly.

The JDN hoists were selected from their rugged and compact Profi T1 range which have a long established reputation for reliability, performance and durability. They operate from a six (6) bar compressed air supply, with a total of 19 separate models in the range offering lift capacities from 0.25 metric tonnes up to an impressive 100 tonnes. They incorporate a patented vane motor-brake system for low-maintenance operation with little wear. One hundred percent duty ratings with unlimited duty cycles are provided, with insensitivity to outdoor operations involving dust, humidity and temperatures ranging from -20°C to +70°C. Although a normal lift height of 10ft is available with standard models, special lift requirements such as the 280 feet specified for the Las Vegas Observation Wheel was no problem. The impressive lifting and lowering speeds of these hoists, even under full load capacities, are coupled to sensitive, infinitely variable speed controls for the precise positioning of loads.



The wheel structure incorporates 3.5 million pounds of steel, with the 112 cables forming the tensioned spokes of the structure having a combined total length of 25,256 feet, with each cable having a breaking force of 550 tons. The individual viewing cabins incorporate dynamic video and music while their 300 ft<sup>2</sup> of glass will provide exciting, unparalleled views of the Las Vegas Strip, with an approximate 30 minutes undertaken for each revolution of the wheel structure, travelling at one foot per second.

Further information is available on request to:  
 J D Neuhaus GmbH & Co. KG, 58449, Witten-Heven, Germany  
 Telephone: +49 2302 208-219  
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 e-mail: info@jdnngroup.com  
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## Environmental Award for Wanner International

Following independent assessment, Wanner International Ltd., a global leader in the supply of seal-less positive displacement pumps, has been awarded ISO 14001 certification.

ISO 14001:2004 is the only internationally-recognized standard for environmental management.

"We have always been proud of our environmental stance and pledge to minimize our carbon footprint," said a delighted Paul Davis, Managing Director. "ISO 14001 is an international certification that clearly demonstrates our achievements to date and our continued commitment to reduce the impact of our operation on the environment."

This award is in addition to the ISO 9001:2000 awarded to Wanner International Ltd., and highlights Company as one of the few in its field to hold both accreditations.

"Our Hydra-Cell pumps are environmentally friendly," continued Davis. "Being seal-less they prevent leaks of potentially harmful chemicals and their outstanding efficiency helps reduce energy usage."

It's nice to think that having helped others to achieve ISO 14001, Wanner International itself has gained international environmental recognition.

Nick Herrington, Wanner International.  
Tel +44 (0)1252 816847 | Email: NHerrington@wannerint.com  
Website: www.hydra-cell.eu



## South Staffs Water Choose Denso Steelcoat Protection

Winn & Coales Denso Steelcoat 100/400/700 system was recently chosen by South Staffs Water to give long-term protection to a pipebridge over the river Stour near Stourbridge, West Midlands.

The specialist contractors for the project were Deborah Services Ltd, Industrial Services Division, head office in Wakefield. Following hand preparation to ST2 standard using scrapers, wire brushes and emery cloth of the 30 metre pipebridge to remove the residue of previous paint coatings, the water pipe was then protected with Denso Steelcoat 100 and 400 Tape Wrap systems. The Denso Steelcoat 400 consisted of: Hi-Tack Primer, Denso Profiling Mastic, Hi-Tack Tape, Ultraseal Tape, followed by a final two coats of acrylic topcoat.

The steelwork on the main structure of the water bridge was protected using Denso Steelcoat 700 system. This consists of Denso ST Epoxy followed by a top coat of Denso Weathershield.



Winn & Coales (Denso) Ltd, Chapel Road, London, SE27 0TR  
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## Accurate Energy and Environmental Monitoring

Tinytag data loggers reliably monitor temperature, humidity, power usage, CO2 and other environmental parameters.



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Designed for energy efficiency applications, the Tinytag Energy Logger is a safe and non-invasive tool for monitoring single and three phase power usage of entire premises or individual high-consumption equipment. This portable, self-configuring device can be used for spot-checks or for longer term recording for an overall assessment of energy efficiency.

Gemini Data Loggers (UK) Ltd, Scientific House, Terminus Road,  
Chichester, PO19 8UJ  
+44 (0)1243 813000 | info@tinytag.info | www.tinytag.info

## Alphatemp Technology launch www.enviromon.co.uk

A new web shop dedicated to data logging currently we are offering discounts on all items.

Alphatemp are exclusive distributors in to the EnviroMon range from Pico Technology. EnviroMon is a data recording and logging system designed to run 24/7 365 days a year for temperature, humidity, current and other parameters. For shorter term data logging the entire range of PC based data logging equipment from Pico are also available.



A range of hand held loggers are also available. Alphatemp also manufactures a full range of temperature sensors suitable for all kinds of instrumentation.

Amr Ziko - Technical Sales Manager  
Alphatemp Technology Ltd, Network House, 300-302 Crossing Road  
Braintree, Essex CM7 3PG  
Tel: +44 (0) 1376 344679 | Fax: +44 (0) 1376 348976  
Mob: +44 (0) 07585 228134

# 4 Ways to Train Smarter—Not Harder

Even though training happens in every organization, there are often gaps in how effective it is.

Many times companies approach training as a one-off exercise and then fail to see the results they anticipated for the business. Experience shows that companies must think more strategically and focus on long-term competency development in order to truly create a team set to drive improvements, transformation and innovation. When building your training development plan, here are four critical points to consider that will help improve your investment and the long-term future of the business.

## 1. Focus on solving problems, not the tools

The ability to solve problems is synonymous with success. As society, technology and organizations have evolved, so have the methods, tools and techniques used to improve operations. No matter the approach you are using (Lean, TQM or Six Sigma etc.), you need to have a range of capabilities to meet the changing needs and problems of the business. So rather than focusing on developing one core set of tools, instead focus on developing key competencies for problem solving that are agile and reactive. That way you're not only building flexible skills to react quickly to short-term problems, but also to deliver on the changing needs of the future organization.

## 2. Leverage different learning platforms

In-person courses are a great way to learn essential skills, methods and tools with the physical presence of a master instructor; however, the realities of restricted travel budgets and time constraints make classroom training often unfeasible. eLearning or blended learning approaches can be an affordable option for those who need flexibility but don't want to sacrifice quality, offering a customizable way for individuals and teams to gain essential training and certification. Successful training programs today often include a mixture of classroom and online learning.

## 3. Tap into everyone's creativity

No doubt creativity and innovation are critical to the growth of the business but many organizations still fail to capitalize on the resources to deliver on these goals. Questions arise, such as: Are some people born more creative than others? Can creativity be learned or taught? How can you find people with that special talent for innovation? The truth is, creativity is not a special gift endowed only upon a lucky

few—all of us are born creative in our own ways. The key to tapping into this creativity is understanding that everyone's approach to creativity differs in terms of level and style. By understanding these different styles and learning how to apply some key how-to aspects, you can unleash the creative potential of everyone on your team.

## 4. Connect your training efforts with your business strategy

Your business strategy guides your organization from where it is today to where you want to be tomorrow. Investing in strategic thinking, project management skills, Lean and Six Sigma tools, innovation and robust change management is critical to providing your workforce with the knowledge needed to effectively develop and execute your strategic plan. With the right training mix, you'll not only increase engagement levels, but also ensure that projects are carefully selected, aligned and prioritized to deliver on your goals. Training is an important partner for your business strategy, ensuring the development of long-term competency that can deliver on both your short-term and long-term objectives.

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The exhibition is **free** to attend, **free** to park and easy to get to. Doors open at 9.30am on Wednesday 12th February.

Pre-register online now for your free entry badge and show preview at [www.industrysouth.co.uk](http://www.industrysouth.co.uk)

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# Plug & Play Dryers Feature HPSA Technology

A range of skid-mounted heatless pressure swing adsorption (HPSA) dryers designed for compressed air/nitrogen applications can now be supplied by Hi-line Industries Ltd.

These are manufactured in their Burton-on-Trent factory, to comply with EU engineering regulations with a standard range of these products offered on next-day delivery.

Bespoke versions to suit specific applications can also be supplied to order, including private label dryers where required for OEM customers.

A total of 14 ex-stock products can be supplied covering flow capacities from 80 to 1400 scfm (136 to 2380 Nm<sup>3</sup>/h) when operating at standard up to 11Barg and 35°C process conditions. All dryers are offered as plug-and-play products, incorporating built-in filtration packages providing both pre and after process product filtration as standard. They also feature positively driven valves and full-flow non-return check valves, rather than the inferior 'shuttle valves' utilised on some manufacturers' products.

Products in the HPSA range have been designed for long-life, fully automatic and trouble-free operation, utilising Dri-Zorb 27 desiccant media delivering constant low dewpoints of -20 to

-40°C as standard, while only using the minimum possible amount of regeneration air. They incorporate programmable logic controllers featuring a digital control panel with LED

display. Digital dewpoint display and dewpoint control can also be provided if required. Communication with most BMS systems and compressors for automatic stop/start or timed duty operation is also offered as standard. The process media maximum operating temperature is 50°C, within ambient temperatures of 4 - 50°C and a process media pressure range of 4 - 16 Barg. Power supplies of 230V/115V ac/50 - 60Hz, together with 24V dc or pneumatic operation can be accommodated with an approximate 100 W power consumption.

The pressure vessels are EU standard coded, with pressure gauges, silencers and IP65 protection and dryer safety valves also incorporated as standard. Optional features include Automatic Energy Management System (AEMS) with control air filter and providing digital dewpoint readout, high humidity alarm together with set and demand desiccant regeneration. A dewpoint minimum of -70°C can also be accommodated.

All Hi-line products are supported by a nationwide network of Hi-line trained engineers for the service and maintenance of air dryers of any manufacture, both adsorption and refrigeration.



Further information is available from: Hi-line Industries Ltd, 5 Crown Industrial Estate, Oxford Street, Burton on Trent, Staffordshire DE14 3PG  
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www.hilineindustries.com




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# UK Maintenance Stores are Scoring Badly when Compared to World Class!

Lean Engineering and Training Consultancy MCP reports that its spare parts and materials' management audits show average scores of around 55% when compared to world the class benchmark of at least 75%!

'You can think of your MRO (maintenance, repair and operations) stores as a goldmine waiting to be tapped. Typically a large company with an inventory of £1 million, an inventory time of 4 years and annual issues of £250,000 should see a reduction in expenditure of parts of £200-300,000 in just three years, reports MCP's MD, Peter Gagg. Through better management of stock levels and setting appropriate maximum and minimum levels.

'Typically stock turns are around three to five years, when they should be nearer one. On completion of a parts and stores audit a company is also likely to see a one-off windfall of around 10-15% of total stock value by selling duplicate, redundant and obsolete stock, as we nearly always find that stock levels are almost always too high!'

A full audit will cover 4 days on-site with a one day strategy and briefing workshop with managers



and personnel and is designed to assess the gap between current status and best practice. Amongst the benefits accruing from the spare parts and materials' audit will be improved cost performance, reduction in inventory-replenishment purchase by up to 60% and lower storeroom inventories of at least 30%.

	After Audit & improvement	Annual Issues Value	Average Stock turn
Before Audit	£1 million	£250K	4 Years
After Audit & improvement	£250-350K	£250k	1-2 Years

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# AIRpipe & KELM™ ...the



**“Easier, Quicker & More Economical than Galvanised Steel Pipe”**



AIRpipe – the new and exclusive range from Flowtechnology™ UK, comprising an innovative compressed Air Pipe System.

The full performance compressed air pipe system offers superior design, quality products, and a seamless production process, supported up by a 10 year guarantee.

With over 15 years experience in the production of quick-connect air piping solutions for new projects, renovations, extensions and modifications to existing systems, AIRpipe are experts in their field. Specialist technical staff follow the entire production development cycle, from design to creation of the moulds, to final manufacturing. A more economical alternative to traditional galvanised piping, the AIRpipe system is suitable for use with compressed air, vacuum and inert gas applications.

Benefits of the range include:

## Adaptability

- AIRpipe's extensive range of pipe and fittings enables a bespoke compressed air system to be built which can meet specific production needs

## Corrosion Resistance: Low Pressure Drop

- High quality, smooth inner surface will never rust. It ensures a constant flow of clean compressed air and guarantees safety at the point of use
- The high performance 'O' ring system ensures a leak free seal
- Low friction inner surface eliminates airflow restriction, reducing the pressure drop and saving energy

## Durability & Resistance

- AIRpipe is corrosion, vibration and heat resistant; the air quality is preserved throughout the whole system up to the point of use, protecting the downstream equipment and the manufacturing process

## Flexibility – Quick & Easy to Install

- AIRpipe fittings can be disconnected and reused
- Quick drops can be added at any time, adapting to changes in the production line
- As the connections are made from the side, the risk of condensate waste is eradicated
- The pipe and the joints can be assembled quickly due to their push-in style design (up to 80mm). Sizes 100-200mm will need to be preformed by a pipe lugging machine
- No detailed technical training required
- Lightweight, easy to cut pipes: easy to handle on site

## Seamless Compatibility

- AIRpipe can connect seamlessly to the female thread, male thread and flange joints
- Total flux design on the valve allows quick installation and saves energy

***“...we are positive that the AIRpipe range will provide a significant benefit to ring main users in the Fluid Power Industry...”***



# Perfect 'In-line' Partnership



## "KELM... the Perfect Partner for AIRpipe"



KELM™ is a renowned and rapidly growing global manufacturer of exceptional quality pneumatic control products related to the Fluid Power Industry.

The KELM name is synonymous with world-class quality: all products are designed and manufactured to exceptionally high standards. With a philosophy of exceeding 'Enhanced Quality Performance', KELM continually strives to raise expectations throughout the industry.

With the utilisation of only the most innovative technology, superior components and leading manufacturing processes, linked to KELM's design, rigorous testing and best-practice lean manufacturing techniques, customers can be assured they will receive a consistently reliable product. In addition, KELM's Research and Development teams are resolute in providing solutions to obstacles in the Fluid Power Industry.

KELM's air preparation products are ideal for use in industries where compressed air is required. Filters, Regulators and Lubricators are available with automatic, semi-automatic and manual drainage options. Fully automatic drains expel condensate, thus eliminating the need for manual operation. KELM's FRLs and polyurethane tubing assemblies will connect seamlessly with AIRpipe providing a perfect partnership; thus making FTUK a one-stop ring main solution.

### Filter, Regulator & Lubricator benefits:

- Manual, semi-automatic and automatic drainage options (automatic versions only available on 300, 400 & 600 series)
- Comparatively enhanced flow rates
- Cost effective filtration solution: all units supplied with mounting bracket and flat face gauge as standard
- For added safety, soft start valves can be added to any of the FRL units
- OSHA approved lockable shut off valves can be added to all FRLs for added safety during maintenance work
- Installation is quick and reliable
- Pressure adjustment is reliable and accurate
- Self-locking mechanism prevents accidental adjustment
- Unique diversion structure effectively separates liquid from gas and filters out solids
- Filtration: 40 micron as standard, 5 micron optional
- Robust packaging protects the product



### Coil Hose & Assembly benefits:

- Metric Polyurethane Coil Assemblies complete with swivel BSPT ends
- Nylon Metric and Imperial Coil Assemblies complete with swivel BSPT fittings
- Blow Guns & Polyurethane Coil Assemblies: red, BSPT
- Polyurethane Recoil Twin Hose

Paul Watson, Managing Director for FTUK commented:

*"Although a new addition to the FTUK product offering, we are positive that the AIRpipe range will provide a significant benefit to ring main users in the Fluid Power Industry. Adaptable, flexible and seamlessly compatible, the AIRpipe range is perfectly complemented by the current KELM range of pneumatic components, and we are confident that 2014 will see the firm establishment of the brand within the industry".*

### The KELM product range includes:

- Air Preparation • Manual & Mechanical Valves • Pilot, Logic & Specialist Valves • Solenoid Valves • ISO6432 Mini Cylinders • ISO15552 Cylinders • Compact Cylinders • Accessories • Push-in Fittings • Tubing • Actuation



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# The Cold Light of Day

By Carl Webb  
Director of Andrews Chiller Hire

Occasions occur when there is a requirement to bring increased cooling to manufacturing plants to either reduce or maintain processing fluid temperatures or to achieve recommended temperatures for product storage.

There are two distinct type of chillers - air-cooled and water cooled

Air cooled chillers are the favoured HIRE unit both by the hire companies and the customer since they require less maintenance and more importantly they eliminate the need for a cooling tower. Air cooled chillers absorb the heat from process water, which is transferred to the surrounding air, the water is then recirculated back into process. As a means of providing temporary chilling this design minimises the installation work involved allowing the chiller to become operational more quickly.

Water-cooled chillers absorb heat from process water and transfer it to a separate water source such as a cooling tower, river, pond, etc. This design may be a viable alternative when a cooling tower is already in place. Water cooled chillers require water treatment to eliminate mineral build-up, such deposits create poor heat transfer situations thus reducing the efficiency of the unit. For hire companies this design of chiller can be a burden since it requires increased service between contracts to ensure any residual mineral build up is removed.

## The Favoured Chiller

Air-cooled chillers are generally available for hire in sizes up to 750kW, where a higher rating is required these units can be connected in parallel.

Their make-up incorporates a heat exchanger, condenser, control system, compressor and a circulating pump. The water connection on the supply and return pipework connection is normally achieved with quick-release couplings.

Professional chiller hire organisations providing the very best solutions to dissipate that increased or unwanted heat will have carried out a site survey, not only to understand the customer's problem but identify good positioning for the unit with easy access to power and away from closed spaces to ensure optimum performance with the smallest possible unit.



The situation could arise as a result of plant failure in which case it obviously becomes an emergency or as part of a planned scheduled maintenance. There is also a third reason, where there is need to create additional, short-term chilled storage facilities to support increased production output at seasonal peaks. Whatever the reasons the most practical and economical solution is Chiller Hire.

Within a processing and manufacturing plant one of the main reasons for chiller hire is the protection it provides to the actual machine – cooling hot injection moulding machine, removing heat generated by the printing rollers, keep machinery at ambient temperature during a cutting process as well as cooling the modern-day high powered electronics in control cabinets. The whole purpose of a chiller is heat removal to create constant workable temperatures.

A chiller commonly represents a small fraction of the cost of the processing equipment, yet it provides

solid protection of your investment, 24-hours-a-day, 7 days-a-week for years and years to come. When the in-plant system fails it can be catastrophic, production slows or at worst stops and, unnoticed it could result in an increase in rejected parts.

The decision to hire is unquestionably the right answer, and for maintenance engineers and production managers they will turn to specialist hire companies such as Andrews Chiller Hire to advise them on the type of chiller best suited for their plant, water or air cooled, the size of chiller and where it is best sighted.

Most leading hire organisations provide 24/7, 365 day access to specialist engineering staff and have a nationwide network of depots in order to respond promptly as in an emergency situation the customer faces the possibility of losing many thousands of pounds through machine downtime or waste product.

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**Byworth Boilers, the country's leading independent manufacturer of steam and hot water boiler services, was one of the first companies to recognise the potential of providing a boiler hire service.**



That was over 30 years ago. Today Byworth has a fleet of over 100 modern mobile, de-mountable, static and containerised boilers available for long or short term hire.

According to managing director, Peter Baldwin, an on-going development programme is key to the success of this service. He said, "We are committed to offering our customers a modern hire boiler fleet and this commitment has seen us invest £500k per annum in new units over the last few years. It is an investment we intend to continue, for it has paid dividends in a number of ways."

One of these ways has seen Byworth's boiler hire market share increase significantly due primarily

to the reliability and fuel efficiency of the fleet. For example, the company has evidence that the latest Yorkshireman 2 boiler can save up to £100 K on an annual fuel bill.

Another result of the investment programme has seen more and more customers commit to long term hire instead of investing in new plant. The obvious advantage of this policy is that it reduces the need to find large amounts of capital and provides companies with much greater flexibility in terms of boiler output requirements and pressure on site facilities. All the servicing, maintenance and statutory inspections are taken care of by Byworth. This applies not just in the short term but also in the medium and long term.

The company has seen the increased popularity of long term hire taken up by a diverse range of industry users all over the UK from the Devon coast to Morayshire in Scotland. These include food manufacturers, petro-chemical plants, energy providers, feed mills, and hospital projects.

All Byworth's new hire boilers and equipment are designed and built in the company's own Keighley factory where the very latest manufacturing techniques are combined with time-honoured boiler making skills to ensure quality control is of the very highest standard.

Byworth's mobile hire boilers can be transported quickly and easily and be up and running on site within hours. Trailerised or containerised boilers are ideal for long term hire with the containerised units being perfect where space is tight and when security is an issue. The de-mountable fleet is designed for the smaller user looking for speedy delivery. In addition Byworth also offers fuel tanks, steam hoses, and pressure reducing stations.

A new product now being offered by Byworth Hire is a special steam meter which can be hired on a weekly basis. The use of temporary steam metering has been instrumental in helping end users to make quick decisions for both new boiler sales and long term hire boiler sizing.

Byworth understands that production continuity and reliability are vital to all steam users and that prolonged down-time can be extremely costly. That is why they offer a complete boiler service which, as well as hire, covers in-house design, manufacture and full installation, lease, training, maintenance, repair and replacement parts services.

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# FULL STEAM AHEAD

The large number of industrial process heating applications that require steam means that system requirements can vary greatly from one to the next. Rob Brown, technical manager for industrial boiler plants at Bosch Commercial and Industrial Heating, explains the need for a complete bespoke steam boiler system design, and the highlights the benefits of working with a multi-appliance manufacturer.



CO2 emissions can also be kept to a minimum. For those keen to establish favourable environmental credentials meanwhile, a completely neutral CO2 level is possible through the use of bio-oils or bio-gases for steam generation.



“When it comes to industrial plant applications, the heating provision should always be considered in its own right, as the requirements of the building, the application, and the end-user will always differ from case to case. That said, the steam boiler technology available to stakeholders in the industrial sector, is capable of providing a very efficient means of meeting process heating delivery requirements. The requirements of the application will ultimately determine how the system needs to be designed, and the fact that steam boiler systems are not procured in an ‘off the shelf’ manner, means bespoke system design is a necessity.

“The requirement for steam in industrial applications ranges greatly. From power stations through to food and drink manufacturing, the demand for steam spans across both the private and public sectors. What was once associated with locomotives and the industrial revolution, is still an essential product for a number of sophisticated modern technologies.

“In simple terms, a steam boiler consists of a pressure vessel with an integrated flame tube, reversing chambers and gas flues – all of which are surrounded by boiler water. The feed water is supplied through a water level controller which is fed by a duty/standby pump or external ring main system, independent of the heating. The steam escapes from the water level surface, through a crown valve, and is transported to its relevant application.

“When it comes to the physical delivery of steam to its point of use, the range of boilers available means different temperature and pressure requirements can be catered for. Using a steam boiler with three pass technology, it is possible to deliver saturated steam up to 235°C in temperature, at a pressure of up to 30 bar. This is ideal for applications that have medium to high output requirements such as hospitals, power stations and also process facilities that require a high transfer of heat.

“The introduction of steam boilers equipped with flame/smoke tubes, allow a greater recovery of heat contained in the flue gases. This increases the energy efficiency of the boiler by up to seven per cent in dry running operation, and up to fifteen per cent in condensing operations. By coupling this heat recovery capability with the latest burner technology,

“Like any other market within the heating industry, there will continue to be product innovations which create new opportunities to maximise process heating efficiency. The key to maximising this is to work with a multi-appliance manufacturer which can design a bespoke system to meet the needs of the end user, whilst ensuring compliance with legislation requirements.

“It is important to bear in mind the fact that there is never such a thing as ‘one solution fits all’ when it comes to industrial process heating installations.”

For more information on Bosch Commercial and Industrial Heating and its range of steam boilers, visit [www.bosch-industrial.co.uk](http://www.bosch-industrial.co.uk) or call 0330 123 3004.

# G.P. Burners Provide The Fire Power For Bumble Hole Foods

G.P. Burners has provided a custom built oil/gas burner for the new boiler house installation at Bumble Hole Foods of Bromsgrove, Worcestershire.

The burner is an integral part of the new steam boiler that has been provided by CFB Boilers of Clacton-On-Sea who are specialists in cost and carbon reduction solutions that cover the whole spectrum of industry, commerce and government establishments.

Radek Jaworowski, who has the dual purpose task of Production and Process Manager for Bumble Hole states: "We are undergoing a £5 million extension and upgrade to our present 40 acre site. All this is being undertaken whilst maintaining our present output of 5.5 million eggs per week into pasteurised liquid form and 800,000 boiled eggs for mayonnaised filling, etc. So its no surprise that steam is a prime utility in our production system.

The new steam boiler plant is already operational dealing with a heavy four hours fluctuation demand providing steam upto 3,690 kg/hr @ 10 BAR.

At present, the G.P. Burner is running on Red Diesel Oil with a turndown ratio of 4-1. However, oil will become

our standby fuel and natural gas will be our main fuel.

The burner can then achieve a turndown ratio of 10-1. This linked with the newly introduced G.P. Microprocessor controller will achieve the greatest efficiency in fuel saving available at the present time."

G.P. Burners, who are part of the Unigas S.p.a. Group, design, manufacture, install and maintain a range that covers: 21 KW to 13,000 KW in their 'Packaged' range and from 7 MW to 67 MW in their large industrial range. They also carry a large stock of components from well known manufacturing suppliers associated with the trade.

The fuels that can be fired by G.P. Burners include: Biogas, Syngas, waste gasses and Natural Gas plus all grades of oil and most combustible waste fluids. Jim Spearing, Managing Director for G.P. Burners advocates that with the introduction of our new "Touch Screen Control System" known as the TSI5000 we are able to provide the boiler house attendant



Radek Jaworowski of Bumble Hole Foods inspects their new G.P. Burner system.

with everything he needs to know about the burner performance (as installed at Bumble Hole Foods). The unit itself will make the necessary constant adjustment that will keep the burner in trim and yield the highest efficiency and reliability achievable. In the event of a fault the unit will text the duty engineer.

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# Modernise To Make The Most Of Steam

Think you know how to get the most out of your steam systems? The latest developments in steam trapping could make you think again.

As an essential component of any efficient steam distribution system, steam traps are long established, dependably removing condensed liquid from steam lines to maintain optimum performance. Yet even these workhorses of the engineering world can sometimes offer room for improvement in terms of reduced maintenance and improved control and energy efficiency.

The tried and trusted mechanisms at the heart of today's steam traps have proved to be the best option for a wide range of applications, so these days it's often innovations in the surrounding installations that can help boost overall performance. Meanwhile, new working practices and new control technologies can also provide opportunities to increase efficiency.

### All-in-one solutions

The growing popularity of steam trapping stations is a great example. That's because steam traps are not installed in isolation. With factors such as future maintenance and safety requirements in mind, they typically need to be installed alongside peripheral equipment such as isolation valves, strainers and connectors. In a conventional set up, all these components must be specified and installed separately. This time-consuming specification and installation process creates opportunities for human error to creep in, and every connection is a potential leak path.

In contrast, a steam trapping station includes all the necessary equipment within a single body. Only the steam trap itself needs to be specified, saving considerable time and effort in selection and installation. Installation benefits can be improved still further if a 'quick-fit' connection system is used to fit the station into the steam line.

For users looking to adopt this approach, it's important to ensure that the internal components, such as the ball valves, check valve and strainer screen can all be replaced easily later on. Lockable handles on the isolation valves are a good idea to minimise the possibility of accidental operation during maintenance, thereby improving safety.

### Glorious isolation

Safety and speedy maintenance are also the key drivers behind the use of double block and bleed valves in steam systems. These isolate steam traps or other components so maintenance can be carried out safely without having to shut down the entire system.

The most compact double block and bleed valve offers the same face-to-face dimensions as a single isolation valve. This makes it easy to retrofit double block and bleed valves without pipe cutting or welding. Better still, each valve takes up only a third of the pipeline length compared with

conventional safety isolation installations fabricated on-site. In other words, they can be installed in spaces where it would be an impossible squeeze for equivalent safety systems.

### Listen and learn

For steam users responsible for major installations, one of the most challenging aspects of maintaining peak performance comes from looking after a big population of traps spread across the entire site. The emergence of wireless technology could point the way forward. New developments include systems specifically designed for this purpose.

Engineers could be alerted to any trap failures, whether they've failed open or closed and how much steam they're losing as a result. They can also see if a trap is not working at peak efficiency and investigate why. Blockages and leaks will be easier to spot. Crucially, all this could be observed across the entire operation from a single point of access.

Remote monitoring of a wide variety of equipment is well established in many industrial applications. Low-power, standards-based wireless communication devices such as ZigBee are already installed in millions of pieces of kit worldwide. In the case of steam traps, the techniques for recognising when a trap is underperforming will involve 'listening' to the sound frequencies generated through the equipment and comparing the acoustic performance with the expected sound profile to give a reliable assessment of the condition of the trap.

### Cool possibilities

Of course, installation and maintenance are not the only possible areas for steam system improvement. Energy efficiency is a critical consideration. Steam traps must be properly specified and maintained to perform properly, but there are other ways in which they can be used to optimise energy usage, such as enabling users to extract more energy before returning condensate to the boiler.

The process works by reducing the temperature and pressure at which steam traps remove the condensate from the steam line, often by changing the type or rating of the traps.

However, there is a major caveat with this process because you can't get something for nothing when it comes to energy. In this case, the cooled condensate will be at a lower temperature when it eventually returns to the boiler feed, so any benefit might be undone by the need to augment feed water heating in the boiler room. In addition, it may not be practical because production quality or throughput might depend on delivering the maximum steam temperatures, or



water logging may present a danger of corrosion or water hammer.

On the other hand, this advanced condensate control can often improve the plant's overall steam balance by, for example, eliminating excess flash steam and dealing with choking problems.

With multiple factors to consider, it can be a tricky balance to get right and many users would be well advised to seek expert support if they're trying to decide if this extraction is right for their application.

In fact, specifying steam traps in the first place is not always straightforward, so expert advice is often a good idea.

There is no 'one-size-fits-all' solution. Some suppliers promote orifice traps as a universal, maintenance-free solution, but these traps only function well under pretty constant loads and pressures, while a tiny orifice can become blocked. Mechanical and thermodynamic alternatives provide a more adaptable and reliable alternative in the long run.

**For advice on how to get the most out of modern steam systems, contact Spirax Sarco.**

Paul Mayoh  
Spirax Sarco, Cirencester Road,  
Cheltenham, Gloucestershire, GL53 8ER  
Telephone: 01242 521361

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## King's Boiler Hire 'Fly' To Heathrow

When facilities management company, Inviron, needed emergency hot water boilers during a system upgrade at Terminal 1, Heathrow Airport they called upon King's Boiler Hire.

The requirements were for two temporary 8MW hot water boilers and a 41,000litre capacity bunded fuel storage tank, all of which King's could supply from stock.



With over 191,000 passengers arriving and departing Heathrow each day, transportation and security arrangements were understandably a high priority. Airport restrictions during one of the airport's busiest periods made it necessary for King's Boiler Hire to transport their temporary boilerplant to Terminal 1 after midnight. Working through the night, King's staff manoeuvred the boilers and tank into position ready for installation by Inviron, after which King's engineers commissioned the boilers ready to take the load during the 8-10 week system upgrade.

The ability of King's Boiler Hire to offer a wide range of temporary boiler units at short notice and react promptly and efficiently to planned or emergency situations is what sets them apart – ensuring clients return to King's for all their boiler needs.

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# Interfuse Specifies Fulton Thermal Fluid System for Rapid Curing Process

Established in 1965 with plants at Syston and Gainsborough, Interfuse is a family-run business specialising in the manufacture of precast masonry blocks, which are distributed throughout the country through builders' merchants.

The company's plants, which are amongst the most advanced facilities of their kind in the UK, are capable of producing around 21 million dense and lightweight blocks per year in a range of sizes; with solid, cellular and hollow formats; and with standard and close textured finishes.

The manufacturing process for the concrete and lightweight building blocks uses a press to precast the products and a series of kilns to provide heat for rapid curing. At its Gainsborough site, Interfuse has recently installed a Fulton FT-C vertical coil thermal fluid heater to replace a live steam system that was proving too expensive to operate.

Fulton's highly-efficient FT-C thermal fluid boiler offers a compact, fuel-fired, 4-pass heater design capable of operating at temperatures up to 345°C. The system is designed to provide high-fluid velocities and low-film temperatures for improved longevity. The system's compact footprint also



means it could be skid-mounted, accommodating ancillaries such as circulating pump, expansion tank and related pipework, to minimise the floor space required for installation.

Commenting on the installation, Interfuse works manager Len Parks says: "Using live steam for the curing process at Gainsborough was costing the company in the region of £20,000 per month in fuel costs alone, so although the change to the Fulton FT-C thermal fluid boiler proved to be a significant investment, especially during the downturn in the building and construction market, the thermal fluid system's operating costs are about a tenth of those for the steam system, so are expecting to achieve payback in three to four years."

Whilst the decision to change to thermal fluid was based on the company's positive experience over a number of years with a German-manufacturer boiler at its Syston facility, Interfuse decided that UK-based service and support was essential for the new boiler. "Fulton's UK base was a big incentive when choosing the replacement," says Len.

Highlighting other significant reasons for the change, Len confirms that thermal fluid is much cleaner than the original steam installation and the maintenance costs are significantly lower because no annual strip-down is required. In addition, there are no associated costs for mains water, water softeners or chemicals to run the system, nor are there pressure regulations to adhere to.

Each of the twelve kilns at the Gainsborough site is capable of rapidly curing approximately 2,800 100mm blocks which, during an average shift using up to ten kilns simultaneously, allows the site to



produce an average of 30,000 blocks per day.

Interfuse produces up to forty different masonry products, including its Interlyte, Optilyte and Intercrete blocks and foundation units. Applications typically including retail, industrial, healthcare and educational buildings as well as newbuild and refurbished residential projects.

Commenting on the choice between steam or thermal systems, Fulton's sales and marketing manager Carl Knight explains that the decision is determined by the requirements of the process and its temperature range.

"If the process requires a temperature above 0°C and below 180°C, steam is usually the first choice," he says: "However, if the required process temperature is below 0°C or above 180°C, thermal fluid is often the better solution."

For further information on its thermal fluid systems, including the FT-C vertical coil, FT-N vertical electric and FT-HC horizontal coil heaters, call Fulton on: 0117 972 3322 email: [uk.sales.office@fulton.com](mailto:uk.sales.office@fulton.com) or visit Fulton's new-look website at: [www.fulton.co.uk](http://www.fulton.co.uk).

# Even More To Discover At Southern Manufacturing 2014

Southern Manufacturing & Electronics returns to FIVE, Farnborough, on February 12th and 13th 2014. As one of the UK's most successful and enduring engineering shows, Southern Manufacturing 2014 looks set for another record-breaking year.

Those not really acquainted with the Southern Manufacturing show may very well ponder precisely why such a large number of companies appear to be so eager to journey appreciable distances to take part in what is apparently a regional show. The reason is that, despite the impression offered by its name, Southern Manufacturing has grown to become a manufacturing show of national - and increasingly world-wide - relevance. The show is in fact three events in one; Manufacturing, Electronics and the specialist aerospace/automotive portion, Auto-Aero. With so much on offer in a single setting, the show has tremendous appeal and for that reason attracts an equally broad range of participants from every part of the UK, from all over continental Europe and even further afield. With a total exhibition area of 17,000 square meters, the show is actually larger than five of the halls at the NEC, and massive enough to pull-in the kind of companies that you'd usually have to journey to Birmingham or mainland Europe to see.

Southern Manufacturing & Electronics is amongst the most important market places for all varieties of production and maintenance hardware, covering virtually every possible engineering undertaking from electronics and automation to metrology and fabrication. One of the big new exhibitors for 2014 is Olympus, which will be showcasing its wide range of industrial endoscopy equipment. They will be joining many

familiar faces from prior shows including Monitran, igus UK, Faro, Nikon, Bowers Metrology, Yaplex, Scaglia Indeva, Clean Air, Trumpf and literally hundreds of others. Also of note is Austrian welding equipment manufacturer Fronius. With the legal requirements for CE marking of fabrications coming into force this year, the firm's array of EN-1090-certificated welding systems are certain to invite a lot of curiosity.

Supplementing the tooling and production is a galaxy of suppliers addressing just about everything conceivable, from advanced adhesives, engineering plastics, CAD/CAM, 3D Printers, components, labelling & marking systems, clean room contractors - even business services like certification, finance and marketing. The list of companies participating is simply amazing, making Southern Manufacturing & Electronics one of the very few annual events in the UK where it's possible to get in touch with such a wide variety of suppliers in a single visit.

The show's ever-popular free technical seminar programme provides yet another compelling reason to mark February 12th and 13th in your diary. A total of 23 sessions over both days of the show cover a wide selection of technical and business topics. Highlights of the programme include Manufacturing Insights' look at Best Practice and World Class Manufacturing, Mike Harrison's Supply Chain & SC21, plus



many other sessions covering Lean, CE Marking, Product Development and many others. A full programme and the all-important pre-registration form is available at [www.industrysouth.co.uk](http://www.industrysouth.co.uk).

FIVE, Farnborough is easily accessible by road and public transport. On site car parking is also free, and a free shuttle bus service operates daily between the show and both North Camp and Farnborough Main railway stations. Visitors can keep up with all the latest news on the show blog site, <http://blog.industrysouth.co.uk> or by joining the Southern Manufacturing & Electronics LinkedIn group at <http://linkedin.industrysouth.co.uk>.

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# Lanemark Process Gas Burner Systems Help JCB Optimise Manufacturing Quality

Gas process air burner technology from Lanemark International is now playing a key role in the heating of two painting lines installed at JCB Heavy Products in Uttoxeter, where the company manufactures tracked and wheeled excavators from 11 to 46 tonnes.



The 'Attachment' and 'Revolver' process lines, designed and installed by Lichfield-based George Koch (Europe) Limited, include air handling units and post curing ovens, each fitted with Lanemark high performance burner systems. The air handling units for each of the twin paint spray booths raises the air flow from an external temperature as low as -10°C to 21°C using Lanemark Midco direct fired duct burner systems.

"The Attachment line processes manufactured parts through a series of application stages," comments Keith Taylor, Sales & Marketing Manager at George Koch. "These include a shot blasting station followed by paint primer application, a flash-off facility, top coat painting and a final curing oven."

The primer and top coat facilities are heated by a George Koch air handling system which delivers air volume at a rate of more than 62 m<sup>3</sup> per second. Air movement is centred on a ducting arrangement that separates the air flow into the two process zones.

The Attachment line is a 2.5 MW rated heating installation which utilises 16 x 12" Midco burner

sections, configured as a straight assembly, and operates under a negative air pressure of 175 Pa. This is provided by a centrifugal air fan located downstream of the burner. The adjacent Revolver line features a similar arrangement with a 2.0 MW burner system operating in an air flow of 52 m<sup>3</sup> per second.

"We worked closely with George Koch to make full use of our DB calculation software to set minimum design criteria for the system configuration for each of the two air handling unit installations," comments Lanemark's General Manager Adrian Langford. "The software calculates the optimum duct dimensions, the burner rating and the air speed and pressure across the burner to achieve a facility which produces highly effective results and is extremely energy efficient. As well as providing the correct heat input under winter operating conditions, the burner systems are capable of a 'turndown' which is able to deliver an air temperature rise of only 1 – 2 °C when the outside air temperature is 19 – 20 °C."

Three Lanemark Forced Draught (FD) oven heating burner systems have also been specified by George

Koch within the painting facilities. The first provides process air heating for the flash-off oven within the Attachment line, while on the Revolver line, two separate FD installations supply process air heat for both the flash-off and the curing oven facilities.

Installed as part of JCB Heavy Products' move from former premises in the centre of Uttoxeter, the painting lines have provided both extra capacity and increased process control. "The latter is a key area in which our burner designs can make a significant contribution to the provision of accurate temperature control," adds Adrian Langford.

"The decision to opt for direct fired gas heating was centred on a number of key benefits that it offers as an energy medium," adds Keith Taylor at George Koch. "It is highly flexible, cost effective and offers the opportunity for extremely accurate control. The Lanemark designs made the most of these factors whilst fulfilling the technical compliance parameters that were defined for the installation."

As one of the major manufacturers worldwide in its field, JCB has a leading reputation for production facilities that reflect both its design capability and the quality of its extensive range of construction equipment. The decision to build the purpose-designed facility on the outskirts of Uttoxeter is testimony to this commitment, and the use of high quality Lanemark burner systems – linked to the process engineering capability of George Koch – has played a key role in maximising the productivity and the success of the plant to date.

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# Despite The Difficult Business Environment 2013 Has Seen A Year Of Steady Progress For Cochran Ltd, The Uk's Largest Industrial Boiler Manufacturer.

The Annan, SW Scotland based, company will report increased turnover by over 15%.



To meet this increased demand the company has continued to recruit, including engineering and trade apprentices; there are now 25 apprentices at various stages of their training. This is over 10% of the workforce and it is encouraging that there is enough confidence to continue to recruit and for these youngsters to see a career and a future in this most traditional of industries.

Tom Ritchie, Group Managing Director, said "We are pleased at the progress made in 2013 and the Board is delighted that the business has continued to grow and recruit in a tough market place. Our success in 2013 has been driven by blue chip multinational companies investing in larger scale projects and coming to Cochran for the added value we provide. We are the only UK boilermaker with a complete range of boiler designs and manufacturing capability for single units up to 40 t/h of steam and with our experienced engineering and project management teams we assist our customers in designing and managing their complete installation. They are also comforted by the support they can receive from our 40 directly employed commissioning and service engineers. It is fair to say that conditions at the smaller end of the market have been much tougher with many of our private sector customers lacking the confidence to make major

capital investment."

The company has undertaken a number of large significant projects in UK during 2013 including the 6 boiler energy centre at a large medical research establishment, the turnkey installation of 3 off 22 t/h boilers at a large Brewery, 2 off 25 t/h boilers for a new CHP plant consisting of 1 off 25 t/hr twin furnace and 1 off 25 t/hr waste heat recovery unit with supplementary firing, photo attached and are currently completing 2 off 27 t/h boilers for DS Smith.

To expand it's presence in the UK heat recovery market Cochran has developed a range of competitive smaller steam and hot water heat recovery boilers. Combined with the UK manufacture and extensive local support this has attracted new customers who were previously buying imported boilers. During 2013 the Cochran hire fleet has also developed standard package heat recovery modules which are rented alongside engines to give customers requiring temporary power solutions the benefits of a CHP solution. The first units are now successfully working out in the field and the company sees a lot of potential for this to develop during 2014.

Historically Cochran has been a significant exporter and 2013 has been no exception with approximately

a third of the factory output going overseas, predominantly to Asia and the Middle East. The company has taken significant steps in 2013 to reinforce and develop this situation. In territory regional managers in America and SE Asia have been recruited to supplement the existing Cochran offices in Hong Kong and Shanghai, marketing materials and websites have been launched in Russian, Chinese, Spanish and Portuguese. The Annan factory has also been audited by ASME, the Chinese and Russian authorities during 2013 to renew their manufacturing licences for these markets.

Although the UK SME private sector market for new boilers has been tough, Cochran has seen a spin off benefit in the growth of its repairs and service business. Customers who maybe would have bought a new boiler have opted to get existing plant repaired and upgraded and to ensure performance is optimised by taking out Cochran service and training packages. The number of customers with Cochran service contracts has increased by 10% during the year and the company has responded by recruiting an additional service manager and several new directly employed engineers. As the original equipment manufacturer we can engineer the retrofit equipment to match the boiler with accuracy ensuring minimum risk to future operations.

The Cochran e-commerce business has expanded during the year by signing an agreement with Siemens to be an official "Solution Partner. " This enables Cochran to supply Siemens building technology products to a network of end users that may not be traditional customers.

The Cochran business has continued to develop during 2013 and with the apparent gradual improvement in the general economy is looking forward to continued growth in 2014.



For further information on how Cochran can provide a solution to your energy needs please visit [www.cochran.co.uk](http://www.cochran.co.uk) or contact [enquiries@cochran.co.uk](mailto:enquiries@cochran.co.uk)

# Messier-Bugatti-Dowty Takes Off with Three Year Planned Maintenance Service Contract from ICS Cool Energy Ltd

Safran, an international high-technology group, operates worldwide with more than 60,000 employees.

Messier-Bugatti-Dowty is an integral part of the Safran group's landing systems integration capability and is a world leader in the design, manufacture and support of landing gear systems. Combining advanced engineering with integrated systems technology, enables innovative solutions for a diverse range of aircraft to be provided both in the commercial and military sectors. The company's focus has always been to provide landing gear systems which are not only reliable and robust, but also efficient and environmentally responsible.

Messier-Bugatti-Dowty's Gloucester site undergoes a 24-hour operation with a number of tooling

machines and over 40 chillers running continuously. The chillers are used to cool the machine tool hydraulic oils, the high speed spindles on critical routing machines. Previously in the event of a breakdown, Messier-Bugatti-Dowty would either call upon the services of local service companies for maintenance or in-house maintenance personnel would undertake repairs. At that time Messier-Bugatti-Dowty had no overall provision for service and breakdown cover for machine tool chillers. Facilities Team Leader Mr Wayne Evans proposed to streamline the process to ensure the site was working at maximum efficiency. The brand of chillers used on-site varied but the most reliable were

supplied by ICS Cool Energy Ltd. Wayne contacted ICS Service, the service support division of ICS Cool Energy Ltd, to obtain information on their service support, maintenance and back-up support systems.

ICS Service suggested a tailor-made planned maintenance service contract to cover the full range of ICS branded and non-branded chillers. The contract would run for a year and include two annual maintenance visits (one in the summer and one in the winter), 24/7 emergency breakdown and technical support, discounted parts and labour and a log book with each chiller to show servicing and maintenance history.

Following a review of the service provision at the end of year one, Mr Evans commented "Our history was that we had continual breakdowns which affected production. By putting the chillers under a single service contract our call outs were greatly reduced and our machine up-time improved, thus showing the benefits of regular maintenance and service. We have been very happy with the support provided this year and it was particularly reassuring having a dedicated and familiar Engineer who could be shown the set-up once and then for future visits be left to carry out the work giving greater continuity - a simple yet effective time saver from my perspective. Now that the contract is up for renewal I will definitely be committing to a three year service contract. ICS are now our preferred option on new and replacement chillers due to service continuity and spares support".

ICS Service has over 3,500 units nationwide on contract ranging from 1,500kW chillers to -40 °C clean room freezers and is conversant with virtually every industry sector. ICS Service is constantly striving to improve procedures and has recently invested in back office systems to ensure efficient scheduling, electronic data transfer and automated parts allocation.



Photo courtesy of Messier-Bugatti-Dowty

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Cooling with water may also be considered from an energy saving perspective. Air/water heat exchangers supplied with the eComfort controller incorporate the Eco-Mode control functionality. This employs an intelligent strategy to effectively target the use of energy by disabling the internal fan when the temperature inside the enclosure falls to a predetermined level below the setpoint. The fan is then pulsed periodically to ensure the accuracy of the sensed temperature before being permanently enabled when the temperature rises above the predetermined level.

Although the capital cost of a cooling system incorporating multiple air-to-water heat exchangers and a single water chiller may be greater than that of an equivalent number of refrigerant based cooling units, energy savings are typically in the region of 40 per cent. Efficiency of water cooling systems may be further improved, particularly in the climate of the United Kingdom, by locating water chillers externally and integrating dry air coolers to take advantage of free cooling.

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## Cooling Down In Saudi: IsoCool Complete Landmark Installation For Extruder

IsoCool, the Essex-based process cooling specialist, has provided a turnkey solution to Neproplast, a plastic extrusion company which is part of the IKK Group, the largest construction group in the Middle East.

The project involved a complete upgrade of the existing extrusion and mixing process cooling system at Neproplast's Jeddah plant, and used British and Italian manufactured equipment, as well as skilled labour from local engineers.

Neproplast is the Gulf's market leader in PVC plastic pipes and fittings. Yet despite this established position, the company has experienced rapid growth over the past few years and is forecast to increase its material mixing and pipe production output from 70,000 to over 100,000 tonnes by 2015. To future-proof the plant's cooling system, which currently supports more than 31 extrusion lines, Peter Fox, Maintenance Manager at Neproplast consulted IsoCool.

"From a Neproplast perspective it is vital that the plant continues to achieve the highest levels of performance and efficiency as it grows, and

this forward-thinking approach is something we were keen to find in a supplier," he said. "IsoCool didn't disappoint, delivering a fully designed and engineered proposal which catered for our present and future needs."

IsoCool's solution included: five packaged air cooled water chillers (used in addition to the existing chiller plant to provide a combined future cooling capacity of 5MW); a bespoke water recirculation and filtration system comprising plate heat exchanger skid, chiller circulation pump skid, and process and hot water circulation pump skids (all manufactured by IsoCool in Essex), self-cleaning filtration systems, and a system control panel.

An example of IsoCool's progressive approach to the project can be seen in the chiller design. IsoCool specified that the five new Eurochiller NAX V-A-920 air cooled water chillers were built with fin



coil protection to counteract the corrosive effects of the coastal location, and tropicalized to maintain performance in ambient temperatures of up to 50°C. The cooling system components were shipped to Jeddah from Essex and Italy, arriving in time for a planned system shutdown period over Haj. The installation process went smoothly and involved close collaboration between local skilled workers and IsoCool.

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# When the Heat is On

Out of sight to many yet so vital to manufacturing industry, the life blood of an organisation is the boiler, providing essential hot water and steam for many manufacturing processes as well as the heat source for heating the actual building.



It is therefore essential that boiler performance is managed well and fully operational at all times. Industrial boilers are used extensively in industrial and manufacturing plants with many technical processes being made possible through heat, for example, cooking, boiling and cleaning operations in the food and drink industry. Also boilers are used widely in paper, building, chemical and textile industries, the motor industry as well as government buildings, hospitals, schools, universities and banks. As such a universal and essential piece of plant, should the inevitable happen with complete boiler failure, have adequate contingency plans be formulated? Have discussions already taken place with a dedicated specialist boiler hire company and have they been invited to survey the site and boiler function?

The reality is that any boiler can suddenly develop a fault or even fail altogether. In difficult trading times organisations may delay servicing their boiler, creating a situation which could result in long-term boiler shut-down - a false economy. When business

is booming with longer working hours there is less time for boiler repair/routine maintenance to be undertaken, this can have an adverse effect on boiler efficiency or result in total breakdown.

For such eventualities, it is worthwhile organisations establishing a working relationship with a major boiler hire company that has extensive specialist knowledge and can respond promptly to such emergencies. A contingency plan could save many thousands of pounds in lost production.

## Why contingency planning is the answer

With a carefully formulated contingency plan, maintenance engineers can enjoy peace of mind knowing that if the unthinkable happens, and there is a fixed boiler system failure at any time, a specialist boiler rental company such as Andrews Boiler Hire (part of the Andrews Sykes group) operates a 24/7, all-year-round call-out service that is just a phone call away.

By Carl Webb  
Director of Andrews Boiler Hire

A contingency plan can be put in place following a full site survey enabling the boiler hire specialist to assess the site and recommend suitable temporary equipment. This would include assessing power supplies, demand for process heating and hot water, size of the premises and heat requirements. Once a contingency plan is signed, boiler hire specialist such as Andrews Boilers Hire will guarantee equipment for that client, so they can rest assured that their unique boiler requirements will only be a few hours away from restoring a normal heating and hot water service, should they experience boiler failure.

## Contingency plans - what is involved?

When supplying hired boilers to different premises, the two main challenges a specialist boiler rental company will face are:

Assessing the client's exact requirements and getting into the site quickly (careful planning between the client and the specialist's transport department and service engineers is crucial in ensuring the delivery goes as planned). These challenges can be easily overcome by the boiler hire specialist performing a survey at the site. It is always a great help to them if the site manager has key details at hand on the day, (e.g. required temperatures and flow requirements, access to premises and plant rooms etc.) to make the survey/assessment as site-specific as possible.

Hiring a boiler from a boiler hire specialist such as Andrews Boiler Hire can prove the ideal solution, whether rented for schedule maintenance or in an emergency. They have well-stocked depots strategically positioned across the country; a dedicated team providing 24/7, 365 service meaning response times will always be extremely fast.

Having a contingency plan in place brings peace of mind to the maintenance engineer, production director and facilities management since it is the best way to avoid short or long-term interruption to the heat source.

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# Thermal Imaging – More Applications, Better Payback

Cutting carbon emissions and minimising energy loss go hand in hand.



The optimal choice of motors and boilers, the installation of process heat recovery systems and energy saving lighting are all playing their part. Companies are also taking a much more pro-active approach to plant maintenance not only to minimise production losses but also to ensure systems are as energy efficient as possible.

Thermal imaging is appropriate to all these initiatives. It is now the industry standard method of identifying electro-mechanical faults before they cause failure. But increasingly its use for predictive maintenance is being complemented by its capacity to spot the causes of energy loss in the fabric of industrial buildings. Indeed by combining both fields of application, the speed of payback for many factories is proving a powerful incentive for investment.

The ability to scan a large area in a single pass is an important benefit of thermal imaging. Critical evidence - such as air leakage and areas with insufficient insulation or showing water ingress - is clearly visible. The camera allows temperature measurements to be taken across an entire image. Even low end models can provide 6,400 infrared measurement points and with a top of the range camera this increases to 307,200 from a 640 x 480 detector.

The larger the detector, the greater the image quality and this also allows the camera user to see thermal details over a distance. These factors make the technology a particularly good choice for inspecting hard to access areas and also those which pose a personal safety risk. Software features such as radiometric image stitching extend inspection efficiency even more.

Quite simply there is no technology that can match thermal imaging for its application scope and the speed at which building inspection can be accomplished with such a high degree of accuracy and repeatability. It minimizes the need for building disassembly, saving time and labour costs. And importantly thermal imaging also provides verification of a successful repair.

### Typical applications

Air leaks are common throughout a building envelope and these can lead to higher energy consumption, ventilation and condensation resulting in a poor indoor climate. To detect air leaks with a thermal imaging camera, a temperature and pressure difference over the construction is needed.

The air leak itself is invisible but the camera will provide evidence of the characteristic patterns that occur when there is cold air ingress through a structure that causes surfaces to cool down in its path.

Thermal imaging is also ideal for identifying potential sites for condensation build-up which is important as moisture damage is the most common cause of structural deterioration. Air leakage can cause condensation to form on walls, floors or ceilings and as wet insulation takes a long time to dry it becomes the prime location for mould and fungi.

Scanning with a thermal imaging camera can easily locate this moisture that may be invisible to the naked eye. By elevating the temperature in that area, materials that are damp will be clearly visible as they change temperature at a much slower rate than dry materials.

A thermal imaging camera is also an excellent tool for spotting thermal bridges, areas with less insulation caused by the incorporation of a metal fastener, concrete beam, slab or column. Heat will flow from the heated space to the outside along the path of least resistance and 'short circuit' across the thermal bridge which has a much higher level of conductivity than surrounding, energy conserving material.

The common effects of these thermal bridges are cold areas, increased heat losses and lower interior surface temperatures that can lead to condensation problems, particularly at the corners of the room.

Another great use for thermal imaging is inspection of pipe work. It can easily detect any build-up of deposits in pipes or radiators that may be causing inefficiency. And it is also ideal for tracing leaks. It makes the process quick and easy, eliminating the labour costs and disruption involved in invasive inspection.

For the same reason thermal imaging is good for pinpointing roofing problems. Commonly, the extent of dampness on a flat roof is established by removing material. As well as being invasive it can invalidate a builder's guarantee and rarely is this type of investigation comprehensive. As water retains heat longer than roofing material, areas where drainage is poor are clearly visible through a thermal imaging camera.

Thermal imaging cameras are becoming increasingly smart, ever more affordable and their scope for application is unparalleled. And the more tasks added to the list, the quicker the payback.



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# More Firms Are Turning To Condition Monitoring To Avoid Costly Breakdowns

By Deborah Haisman, Industrial Business Development Manager, The IMC Group ([www.the-imcgroup.com](http://www.the-imcgroup.com) / [sales@the-imcgroup.com](mailto:sales@the-imcgroup.com) / 01462 688070)



Condition-based monitoring (CBM) is playing an increasingly important role in supporting maintenance programmes.

It's not hard to see why, when the investment required to implement a CBM solution is compared with the potentially huge costs associated with repairing or replacing machinery that has been damaged.

With heavy demands on manufacturing and engineering teams, manual checking procedures are not always a high priority and when they are missed, hidden problems can arise. Additionally, not all potential problems are even detectable by a worker, whereas monitoring technology can pick up the smallest inconsistencies.

The IMC Group has recently begun a project to introduce vibration and shock monitoring technology to a series of CNC milling machines which are used to produce aluminium parts for the aerospace industry. The unexpected failure of the machines had left the owners of the facility facing significant costs and loss of customer confidence.

Central to the effective running of the machine are its spindles and bearings, which are subjected to extraordinary force during operation. The new CBM system will record vibration and shock levels using

advanced tri-axial piezo electric accelerometer technology, transmitting data wirelessly in real time to a central server.

Benchmarking was carried out in advance to establish the shock and vibration levels associated with both healthy and damaged machines. This helped define the settings of a 'traffic light system', which provides alerts visually, audibly and via email when agreed parameters are breached. This helps machine operators easily identify problems, without needing specific training.

A traditional problem with CBM systems has been the huge volumes of data produced, which takes significant time and expertise to analyse. The system developed by The IMC Group incorporates user-friendly software that automatically identifies potentially dangerous data trends and delivers an alert.

Spindles which are subjected to excessive vibration or jarring may be damaged beyond repair, necessitating an expensive replacement part. If problems are not detected early, a malfunctioning spindle can damage the machine more broadly, which can send costs spiralling.

The aim of the monitoring initiative is to increase the lifespan of the spindles by reducing the incidence

of damage, optimising machine performance, promoting best practice among operators and reducing machine downtime and loss of production associated with breakdowns, as well as proving accurate data, where necessary, to support warranty claims.

Excessive vibration can be a symptom of problems, and the data provided by CBM enables immediate predictive maintenance, as well as the reduction of pre-scheduled preventative maintenance which may be unnecessary – further reducing maintenance costs.

The technology works alongside the company's existing SEIKI system, adding an additional layer of performance optimisation.

Similar CBM technology from the IMC Group is also currently deployed on the top drives of oil rigs and on cranes within a steel facility.

The IMC Group provides the heritage, healthcare, industrial and food sectors with tailored monitoring technology that delivers vital data, ranging from environmental parameters such as temperature and humidity through to the condition of goods and infrastructure during operation, storage and transportation. The Group was formed from a series of mergers and acquisitions which began in 2007 and brings together over 100 years of combined expertise. It recently consolidated its operating companies into the Group, a change that is supported by the launch of a comprehensive new website ([www.the-imcgroup.com](http://www.the-imcgroup.com)). The Group's key brands include Hanwell, IceSpy and ShockLog.

# New Fluke infrared cameras with LaserSharp™ Auto Focus deliver in-focus images for the best imaging accuracy

Advanced wireless connectivity and the new SmartView® Mobile app maximises productivity in the field



Fluke has introduced the Fluke® Ti200, Ti300 and Ti400 infrared cameras with advanced connectivity and accuracy to maximise technicians' productivity in the field. The new infrared cameras feature LaserSharp™ Auto Focus, using a laser to pinpoint exactly where the camera should focus for precisely focused images every time - see video at [www.fluke.co.uk/lasersharp](http://www.fluke.co.uk/lasersharp)

The rugged Fluke Ti200, Ti300 and Ti400 will soon be able to connect to the Fluke CNX™ Wireless system, allowing them to be used as a main unit to view live measurements from up to five wireless modules (e.g. AC current or voltage modules) on its screen, and integrate the data into the infrared image. This functionality will be provided by a

firmware update.

The infrared cameras feature wireless connectivity to easily transfer images from the cameras directly to PCs, an Apple® iPad® or iPhone® which can then be imported into Fluke SmartView® software, a professional suite of analysis and reporting tools for optimising and analysing infrared images and producing professional reports.

## New SmartView® Mobile app

The cameras integrate wirelessly with the new Fluke SmartView Mobile app for iPhone and iPad. Like the desktop version, the SmartView Mobile app allows users to transfer images wirelessly for

additional image optimisation and analysis and to create professional reports, but now they can share information without returning to the office to create and send reports to clients or management. With the SmartView Mobile app, users can get approval for additional work needed or next steps immediately, increasing efficiency and profitability. And unlike many other apps, SmartView Mobile is optimised for both the iPhone and iPad, maximising the productivity no matter which device is used.

## Other advanced features

Only Fluke infrared cameras feature patented IR-Fusion® technology, which merges the infrared and visual images into a single view to better discover, diagnose, and communicate problems. With IR-Fusion technology, images can be viewed from full infrared to blended views to a full visible image, to precisely document problem areas.

The infrared cameras are Bluetooth-ready and include wireless connectivity to PCs, GPS positioning and recording, streaming video, a ruggedised capacitive touch screen for quick menu navigation, IR-PhotoNotes™ Photo Annotation System, field-changeable rechargeable smart batteries with charge level indicators, and high temperature measurements up to 1200°C (Ti400 model only).

## Availability

The Fluke Ti200, Ti300, and Ti400 infrared cameras are available now. Some features mentioned may be available at a later time as free upgrades: users will be notified via SmartView software when available. For more information, visit: [www.fluke.co.uk/lasersharp](http://www.fluke.co.uk/lasersharp).

More information about all Fluke products can be obtained via the Fluke web site at [www.fluke.co.uk](http://www.fluke.co.uk).

are spending way too much time on other more complex initiatives and therefore forget where the true improvement potential lies. The basic elements of reliability and maintenance are:

- Maintenance Prevention
- Inspect
- Prioritize
- Plan work
- Schedule work
- Execute work

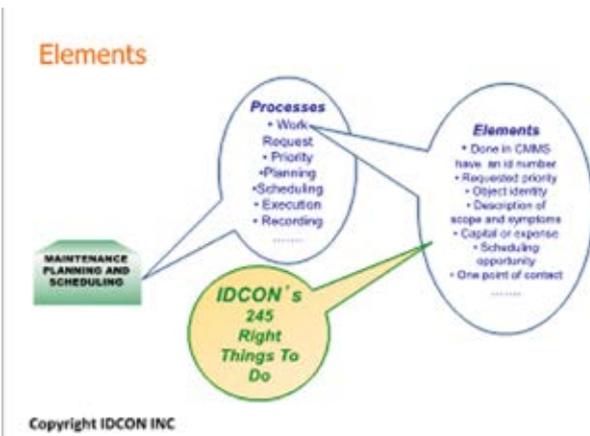
If you do not Execute these things very well you will never have time to do what you know you need to do to become as reliable and low cost as you can be. I stress the word Execute because most organizations know what they need to do. So many strategies and improvement plans are developed and so little Execution of the very basic elements of reliability and maintenance occur. These next steps are:

- Root Cause Problem Elimination
- Apply Life Cycle Cost when specifying equipment
- Design for Reliability and Maintainability in early equipment design
- Use tools such as 5S, Single Minute Exchange of Dice (SMED), Reliability Centered Maintenance methodology (RCM), to enhance performance of work within the processes that build the whole reliability and maintenance system

A holistic overview of the reliability and maintenance management system, processes, elements and tools can be described in the models per figure 1 and figure 2.

Figure 1. The System. The market drives the production plan and all maintenance work requiring

Below: figure 2

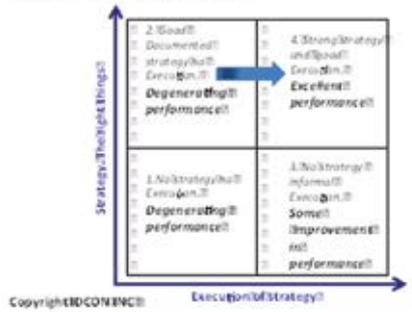


shut down of equipment must be coordinated with production plan for best time to be executed. When maintenance work is planned and then scheduled you have set the process people work in right so they can execute work much safer and more cost effective. To plan work efficiently you must have access to an up to date technical database including Bills Of Materials (BOM) and other information. After work is completed it should be recorded as to what was completed, parts and material used, update information to BOM and other valid information. The recorded information shall be used to continuously improve using Root Cause Problem Elimination (RCPE). However, most organizations do not work in this "Circle of Continuous Improvement" they work more in the "Circle of Despair". This means that they React, Repair with low quality because of the reactive mode and therefore will have to Return to rework and the circle Repeat itself. To get out of this "Circle of Despair" you must set up the processes for Prevention, Condition Monitoring, Prioritization, Planning of work, and Scheduling of work, Execution of Work, Recording of executed work and how to do RCPE.

The Processes. An example of a process is Planning and Scheduling, or Work Management Process. It contains several steps and starts with Work Request then Priority of Request etc. as seen in figure one. The Tools. The tools are used to enable and enhance how well you can execute the processes. It is very important that Processes and Tools are not mixed up. To be successful you must have a very well established system including its processes. Tools are good and very useful when used in the right environment. Implementation of only a tool will only result in temporary improvements. The system and processes must be in place to support sustainability and continuous improvement.

Figure 2. Within the process called Planning and Scheduling each step consists of a number of elements. E.g. best practice within the work request process is that the request is not a work order and shall be done using the Computerized Maintenance Management System (CMMS), the requested priority shall be done according to a priority guideline agreed to between operations and maintenance, The object identity shall be clearly described verbally and with equipment number, etc. per figure 2. These elements are what we call the right things to do. The structures of system, processes and elements described above are what we call Current Best Practices (CBP) for reliability and maintenance. If you do an audit it is on the level of elements

## Strategy and Execution



Above: figure 3

that you evaluate and discover improvement potential and the gap between how good your organization can become.

A good advice is to only focus on the right things to do and not discuss how you can do these things. That comes as the next step. The reason for this is that the first step must be to agree on the right things to do. Because they are all common sense your organization will agree. They might not agree to how you are going to implement these things. As a leader you must show what your beliefs are and give your organization a direction that is what you do here. Then you bring your organization with you to help execute your strategy. You can say that the well described 245 elements comprises a very well documented reliability and maintenance strategy and if this strategy is not executed you have wasted money and time to develop it. Figure 3 shows what we often find in many organizations.

Figure 3. Many organizations are spending much time to develop and document a reliability and maintenance strategy and not much time to implement and execute this strategy. Many will even change the strategy when a new key manager arrives. This is not uncommon. It is quite obvious that a strategy must be executed otherwise it served no other purpose than to keep people busy developing it. Best organizations execute a well defined, documented and continuously communicated strategy and strategy is long term and does not change when new key managers are employed.



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# Armaflex System Accessories For The Professional Installation Of Elastomeric Insulation Materials

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By choosing a thermal insulation system with a fully co-ordinated range of adhesives, paints and tapes, the long-term protection against condensation, and a high energy efficiency over the maximum service life of an installation can be achieved.

As an established manufacturer of high performance engineered thermal and acoustic foam insulation materials, Armacell have recently launched a completely new generation of adhesives, to simplify the installation process and ensure that their Armaflex product can be specified for major projects even where the highest environmental and health requirements apply.

The full range of Armaflex accessories; incorporating adhesives, cleaners, paints and self-adhesive tapes perform important functions to increase the reliability, efficiency and service life of technical insulation installations. They have been developed specifically for the range of Armaflex insulation tubes and flat sheet materials, with all products being subjected to extensive internal and external testing. This is complemented with continuous quality inspections throughout manufacture to ensure the necessary long-term performance and high energy efficiency demanded of Armacell insulation systems. On the contrary, the use of non-approved adhesives, cleaners and paints can cause

damage to the insulation materials and lead to sub-standard applications.

Armaflex insulation materials not only have good technical properties, they are also particularly user friendly because of their high flexibility. However, it is crucial that elastomeric materials are glued professionally. The choice of adhesive depends on the Armaflex materials used, and the specific requirements of the project in question. Alongside the tried-and-tested standard adhesives, Armacell now offers completely new products including the thixotropic, gel-like non-drip Armaflex RS850 high-performance adhesive. This adhesive has been developed to be applied more quickly and neatly than standard adhesives, and releases minimal amounts of solvents when idle, helping to meet the higher requirements of green building schemes. Furthermore, unlike standard contact adhesives, there is no danger of combustion or explosion, so they are not subject to transport restrictions.

The Armaflex Ultima, synthetic rubber insulation materials based on the innovative Armaprene technology for reduced smoke density and fire safety, require the use of adhesives that have been specially formulated for this new type of foam. For these



materials too, Armacell offers (in addition to the standard Armaflex Ultima 700 adhesive), a gel-like, non-drip Armaflex Ultima RS850 adhesive.

To enhance reliability and quality in technical insulation, Armacell has been investing in application and installation training for decades, and in Northern Europe alone the company trains around 1,200 professional thermal insulation contractors in the installation of its products every year. When the skills of these professional craftsmen are combined with a fully integrated Armacell insulation system and accessories, then the highest reliability and maximum performance of installations can be achieved.

Further information is available on request to:  
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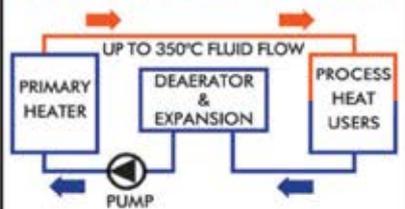
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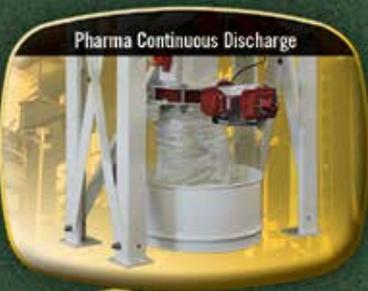
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# Looks Like a Safe Because It's **BUILT LIKE A SAFE™**

## DUST PROBLEMS SOLVED



Bag-in Bag-out Filter Change



Easy Filter Change-Out

- Reduce Workplace Slips & Falls
- Easy Filter Change Out
- Prolong Equipment Life
- Air Quality
- Worker Safety
- ATEX Compliant
- And More!



User Friendly, Automated Controls

Equipment Protection  
Combustible Dust



Sprinkler System, Fire-Retardant Filters



Inspection/Access Window



**HEMIPLAT**  
SAVING YOU MONEY

Keep your facility in compliance with current air quality requirements. The Camfil APC Farr Gold Series® is the most rugged, reliable, easy to maintain dust collector on the market—**GUARANTEED!**

Call us about ATEX explosive dust compliance issues.



**Gold Series**  
FARR

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# camfil

AIR POLLUTION CONTROL

[www.camfilapc.com/europe](http://www.camfilapc.com/europe)

Follow. Connect. Watch. Learn.



Video: Take a virtual flight through our dust extractor