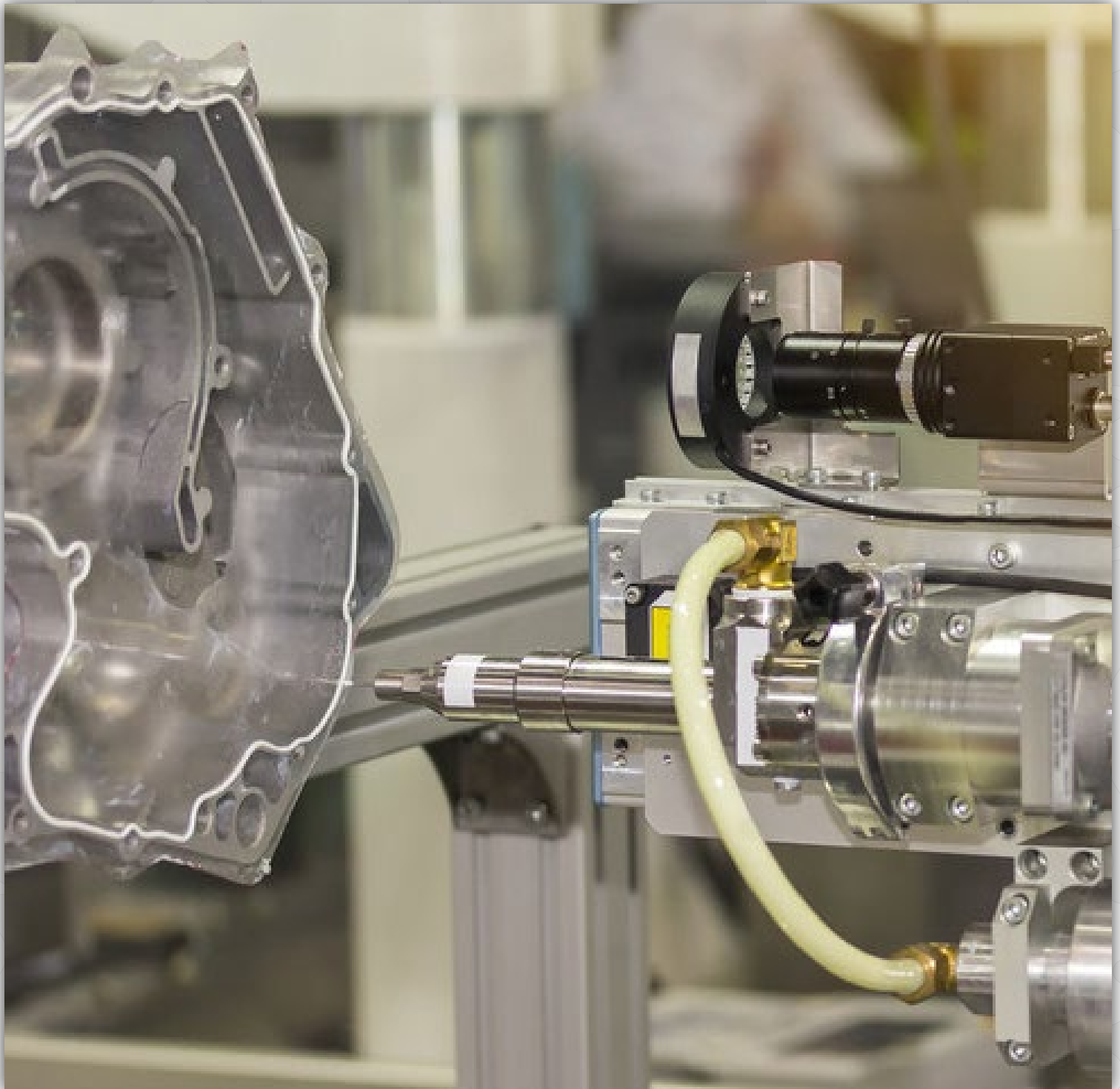


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AUTOMATION CHEMICAL ENGINEERING

Issue 32 2022

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Beckhoff
Plus Many More!
INSIDE...



Introducing our New **Mod-Traks[®]** System



A brand new modular system of gravity roller conveyors








- Designed to combine strength and durability. **Find out more here**
- Dispatched to you within 48 hours of order confirmation
- Built to your specification using our NEW online **"Build Your Own"** function

We're delighted to introduce **Mod-Traks[®]**, our brand new system of gravity roller conveyors that have been specifically developed to meet the increasingly flexible needs of our customers. Designed to combine strength and durability with speed and adaptability, the new system can be flexed to suit and delivered and installed in a matter of days!

With over 250 different combinations of length, width, height and roller type, the system can be easily tailored to suit your requirements using our on-line **"Build Your Own"** function. You can even change the roller position to "sit on" or guided.

All **Mod-Traks[®]** frames are constructed using 304 stainless steel and designed to meet food hygiene standards. Suitable for applications across multiple sectors, **Mod-Traks[®]** is packed with flexibility for your needs...



 <p>MODULAR LENGTHS IN 500mm INCREMENTS</p>	 <p>FOOD GRADE MATERIALS</p>	 <p>50mm ROLLERS MOUNTED ON A 75mm PITCH</p>	 <p>QUICK AVAILABILITY USUALLY 48 HOURS</p>
 <p>2 POSITION ROLLER FRAME CAN WORK AS "SIT ON" OR GUIDED</p>	 <p>DELIVERED FLAT PACKED FOR SPEEDY ON-SITE ASSEMBLY</p>	 <p>HYGENIC NGI ADJUSTABLE FEET FOR EASY CLEANING</p>	 <p>5 HEIGHT OPTIONS BETWEEN 500mm AND 900mm</p>

VISIT OUR NEW MOD-TRAKS[®] WEBSITE TODAY

If you need to speak to us directly, contact us here.

Phone: 01604 882232 | Web: www.arnott-handling.co.uk

Email: sales@arnott-group.co.uk



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AvanStrate launches AvanRhino™ Cover Glass

AvanStrate Inc. (ASI), the global manufacturer of LCD glass substrates, introduces AvanRhino Cover Glass in their latest product portfolio. The new AvanRhino Cover Glass provides consumers with an exceptional drop and scratch performance, and finds versatile application for smartphones, laptops, tablets and automobile monitors.

On the launch, Akarsh Hebbar, Managing Director - AvanStrate Inc. said, "AvanRhino Cover Glass addresses the growing consumer demand for improved durability with its special composition. Also, for every AvanRhino cover glass sold, AvanStrate will contribute towards conservation and protection initiatives of Rhinoceros across the globe."

The AvanRhino cover glass adopts the

Lithium Aluminosilicate family group with a special composition of Boron Oxide and Silica to reach superior performance. The composition with Boron Oxide reduces the softening point (838oC) enabling easier 3D forming for its customers and reduces coefficient of thermal expansion, thereby increasing the thermal shock resistance. The Silica increases the glass transition temperature which results in enhanced ion exchange range and better strength performance. The AvanRhino cover glass achieves a drop performance of 1.2 meters onto rough surfaces. It also has a higher scratch resistance with 75.6 GPa as per Young's Modulus.

Alan Tsai, CEO - AvanStrate Inc., added, "AvanRhino cover glass exhibits extraordinary surface strength and crack resistance. This new foray will position

AvanStrate as a major player in the cover glass market." The superior cover glass, manufactured in AvanStrate's Tainan facility in Taiwan, is suited for mid to mid-high ranging smartphones and is available at competitive prices as compared to its peers.

The manufacturing for the AvanRhino cover glass is an energy-efficient process. A lower softening point enables 3D forming at lower temperatures and the lower high temperature viscosity requires lesser energy than the competitors thereby resulting in an overall lower carbon footprint.

www.avanstrate.com/english/

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Cost-saving eco parts cleaning solutions

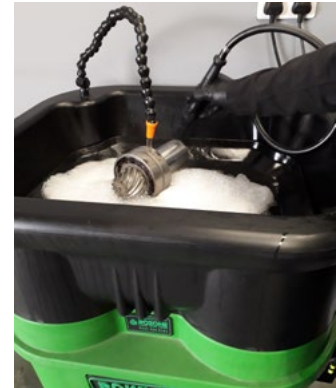
Parts cleaning at the lowest cost to the planet, your technicians and your purse

Sustainability is a core topic for most engineering businesses and meeting market needs and treading carefully on the planet is not always an easy mix, especially with the current backdrop of supply chain issues and high energy prices. Achieving ecological balance in engineering workshops is about challenging the status quo. One area that lends itself perfectly to upending long-held conventions is the cleaning of parts and components. Using oil and grease daily has an obvious environmental and health and safety impact, therefore the industry welcomes with open arms the bioremediating parts cleaning solutions that improve any environmental impact and comply with H&S and ISO14001 regulations.

Rozone's ROWasher is a parts washer that uses the science of Bioremediation to convert toxic oil and grease products (hydrocarbons) into non-toxic, harmless natural gases and water. This is achieved with minimum waste or environmental impact, whilst retaining excellent cleaning credentials. Learn more about the ROWashers features and benefits [here](#).

The pH neutral cleaning process is water-based, using the triad of the ROWasher machine, the ROWash degreaser and microbial filter mat, to achieve what the solvent 'sink on a drum' would accomplish. Except no solvents such as methylated spirits, kerosene or diesel are involved. No waste removal is required nor any regular service contract.

Bioremediating parts washers have been around for decades but the ROWasher is the first UK designed and manufactured machine and is the first sign of innovation on the market in all that time. Find out more about the ROWasher and consumables [here](#). If you would like to learn more about bioremediation and nature cleaning nature, have a look [here](#).



Achieving ecological balance in engineering workshops is about challenging the status quo.



Lowest cost parts cleaning

The cost benefits of the new ROWasher have been put through rigorous tests in controlled laboratory trials and we know that the running costs are the lowest compared to all other parts washers on the market, using 54.5% less energy than our previous machine. The consumable costs of a ROWasher are the lowest on the market. The ROWasher uses the least amount of fluid of all other competitor parts washers and 43% less fluid than Rozone's previous standard parts washer and 33% less than the previous mobile option.

Why is bioremediation essential for workshop cleaning?

Using a bioremediating parts washer means that the best clean becomes possible without any risk to technicians or endangering the planet. Using the ROWasher, oils and grease will not leave pollutants down sinks, on rags, in hazardous waste or washed-off solution.

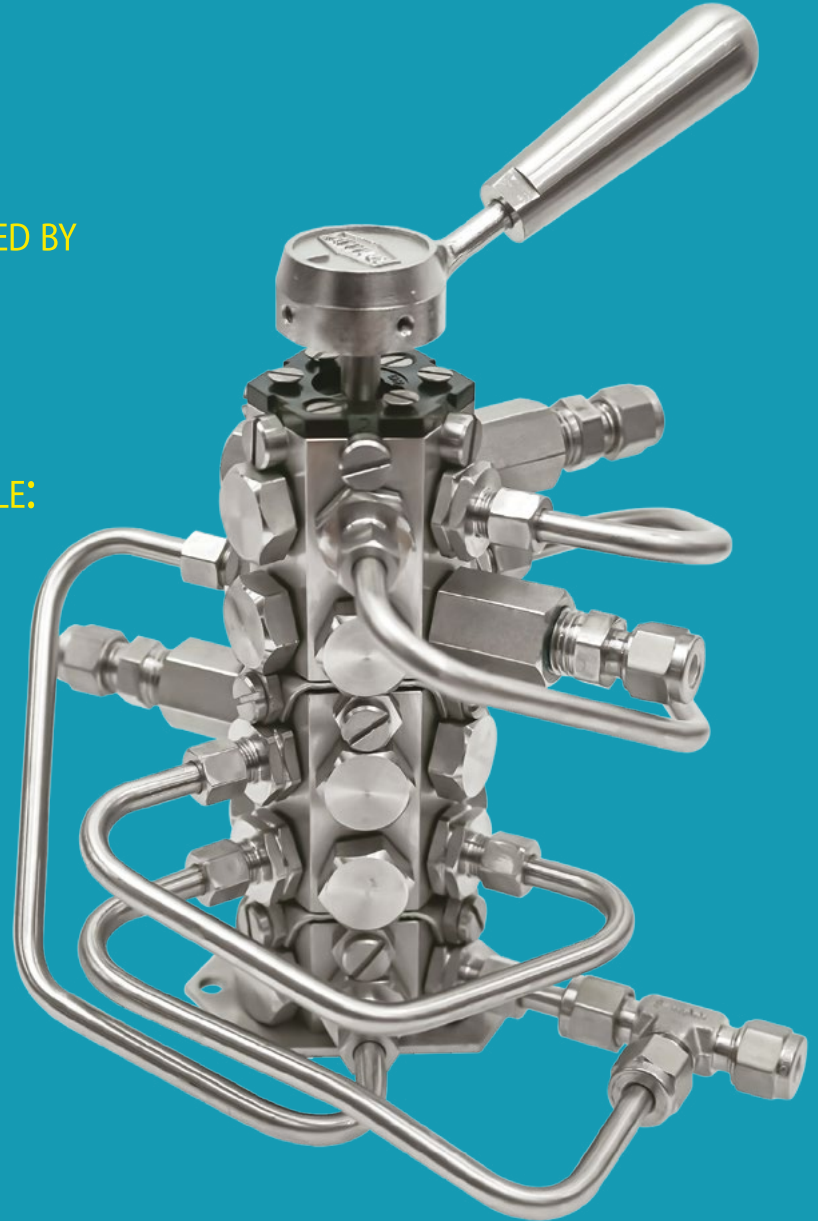
Find out more by calling the Rozone experts on 0121 514 0607. Or contact us here <https://www.rozone.co.uk/contact/> or email info@rozone.co.uk.



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Multiple configurations for a multitude of applications

- ◆ ELIMINATES CROSS PORT LEAKAGE.
- ◆ MULTI-BANKED SWITCHING ELEMENTS.
- ◆ EACH PORT IS A VALVE IN ITSELF, SELECTED BY A "CAM TYPE" SPINDLE.
- ◆ MULTIPLE PERMUTATIONS.
- ◆ DIFFERENT MEDIA PER BANK ARE POSSIBLE:
 - PNEUMATIC (AIR/GAS); FLUIDS.
 - AIR AT PRESSURES OF UP TO 10 BAR
 - CAN BE SUPPLIED CLEAN FOR OXYGEN USE
- ◆ WATERPROOF & EXPLOSION PROOF OPTIONS ARE AVAILABLE.
- ◆ AN ELECTRICAL SWITCH CAN BE INTEGRATED AS A "BANK" IN ITSELF.
- ◆ OFFERS MORE VERSATILITY THAN A MULTI-PORT BALL VALVE.
- ◆ AVAILABLE IN EITHER BRASS AND ST/STL
- ◆ FLUORO ELASTOMER SEALS AND PTFE OR RESIN STEMS.



Permanently Open

Positive Indexing

Operative Connector

Base Entry

Venting Connector

Blanking Connector

50 and out as Bill Graham retires from Alloy Wire International

The ever-present in Alloy Wire International's growth has decided to call it a day after clocking up more than five decades of service.

Bill Graham will retire this month after what has been a roller-coaster career with the world's leading manufacturer of round, flat and profile wire, a career that saw him start as a maintenance engineer before leading an MBO, overseeing a sale and then bringing the company back into his ownership.

The former Machine Tool Engineering apprentice was also instrumental in growing the firm's international presence, travelling the globe to build export sales from nothing to over half of its annual turnover.

He has been Chairman for the last nine years, providing strategic guidance on growth opportunities, industry developments and supporting the management team in the firm's rapid expansion from £8m in 2013 to £13m at the start of 2022.

"When I joined the business in 1972, I never expected to still be involved 50 years later...Alloy Wire International gets you like that," explained Bill, who was born in Paisley in Scotland, but now lives in the Wyre Forest.

"There's just something really special about the business and what we do, especially since we took the decision to be employee-owned. That was really the moment we put the marker in the sand and created the unique culture that has seen AWI become a globally trusted supplier of 60+ strong range of alloys to more than 7000 customers."

He continued: "After five decades of involvement, I felt the time was right to call it a day and focus on retirement. What will that look like? Travelling and spending much more time with my wife Sandra, who I first met at AWI in 1974."

Bill has enjoyed many achievements during his time at Alloy Wire International, but, if you ask him for the pivotal moment, he will always say it was the moment when he implemented his lifelong dream of



Mark Venables, Bill Graham and Tom Mander (all Alloy Wire International)

introducing employee ownership and profit sharing for every member of staff.

This galvanized the workforce and 23 years on is still in place, with new starters offered the opportunity to join the scheme once they have been with the business for two years.

"When you are on a journey you must take your best assets with you. By showing our employees that everything they did would ultimately benefit them, the culture changed overnight, and I can honestly say we are a family now and that is reflected in how we have grown the huge customer satisfaction levels we achieve."

Alloy Wire International has recently promoted Tom Mander to Managing Director, with previous MD Mark Venables moving upstairs to the position of Chairman.

This is an exciting next step in the AWI journey and will accelerate its ambition to increase sales from its current £13m level to £15m by the end of the year, with most orders now coming from clients overseas.

Mark Venables went on to add: "Bill

Graham is Alloy Wire International and has had an unbelievable 50 years with the business.

"I was invited to lead the company in 2010 and have had the honour of guiding it through some major growth and some really difficult times, including the current Covid-19 pandemic.

"As I was always told, we need to protect the core values that make AWI so special, so

we took the decision last year to make Tom Mander, Adam Shaw and Andrew Du Plessis, MD Designate, Finance Director and Technical Director respectively.

"This was paving the way for the next generation to take over and Tom's promotion to MD recently is the next step in that process, meaning I can oversee things from the position of Chairman with Bill continuing to be on hand to offer us his experience and advice when required."

For further information, please visit www.alloywire.com or follow @alloywire on twitter.

Tinytag data loggers monitor heat curing cycles during the production of custom made ocular prostheses

Tinytag Ultra 2 thermocouple data loggers are used to record temperature data during the heat curing of medical grade acrylic at Manchester Royal Eye Hospital.

NHS ophthalmologists working in the Department of Ocular Prosthetics at Manchester Royal Eye Hospital are responsible for fabricating and fitting custom ocular prostheses, cosmetic shells and facial prostheses. Part of the fabrication process is the heat curing cycle, in which the medical grade acrylic which the prosthetic eyes are made out of is exposed to high temperatures so that it hardens and is suitable for wear.

The ophthalmologists use Tinytag Ultra 2 thermocouple data loggers to monitor temperatures during the heat curing cycle to ascertain that the acrylic has been cured at the optimum temperature (a temperature range of 200 C to 130 C for the correct amount of time).

To monitor the heat curing cycle, the data logger's thermocouple probe measures the temperature within the



heat curing tank, while the data logger itself remains outside the tank recording the readings taken by the probe. The data from each cycle is downloaded, viewed and analysed using Tinytag Explorer software. If the temperatures are found to have fallen outside the desired parameters, indicating that the acrylic may have not cured properly, the cycle is repeated to ensure that

the prosthesis is properly cured.

Tinytag Ultra 2 Thermocouple data loggers are compatible with K, J, T and N thermocouple sensors and can measure from -200°C to +1370°C, offering fast response monitoring in high temperature applications.

www.gemini dataloggers.com

Tinytag Data Loggers: Robust Environmental Monitoring Solutions

Data loggers for indoor, outdoor and industrial/process applications

- Rugged and compact
- Easy to use
- Dust, splash or waterproof
- Data downloaded to PC
- Cost-effective

Manufactured in the UK

Accompanying probes are available for monitoring extremes of temperature, and for awkward to reach areas such as pipework.

For sites requiring remote data access, Tinytag Radio and LAN loggers gather data automatically for viewing on a PC, across a LAN, or remotely across the internet.

Tinytag Plus 2



Rugged outdoor/industrial temperature/RH logger
From £95 +VAT

Energy Logger



Non-invasive single & three phase power monitoring
Full kit £995 +VAT

Radio and LAN loggers



Automatic data collection
Bundles – 3 loggers/receiver/
software from £1000 +VAT

Tinytag Ultra 2



Indoor temperature & RH
From £69 +VAT

temperature » humidity » power usage » CO₂ » count » voltage » current

Gemini Data Loggers (UK) Ltd
Scientific House, Terminus Road,
Chichester, West Sussex, PO19 8UJ,
England

Telephone: +44 (0)1243 813000
email: info@tinytag.info
www.gemini dataloggers.com
www.tinytag.info



Gemini
DATA LOGGERS



UK SME manufacturers are struggling with inflation and price rises

Supply chain price changes are negatively impacting the vast majority of UK SME manufacturers, according to the latest Manufacturing Barometer survey. In addition, half of all respondents said their profits had reduced in the last six months.

This quarter's findings reveal that 92% of firms are struggling with inflation. Also highlighted as having a negative impact on business were lead time changes (85%), energy costs (83%), availability of suitably skilled staff (77%), and the ability to pass on rising costs to the customer (75%).

Nick Golding, Managing Director at SWMAS, comments, "Profitability remains a challenge for most firms and is at a similar level to the previous quarter. This indicates trading conditions remain challenging for the manufacturing sector and despite companies keeping a positive outlook, this is not translating into the sales and profits in all cases."



27% of firms said they had increased their staff headcount in the last six months and 30% had increased their investment in capital equipment. This is broadly in line with last quarter's results and is at a historically low level for this Manufacturing Barometer.

In April 2022, 67% predicted that cost changes could be passed to customers, but confidence levels have drastically reduced with only 13% now agreeing this is possible, and 75% saying they are unable to pass price changes on.

When asked how the current economic climate has affected total R&D budget for the next two to three years, only 17% of respondents said it had increased. Despite this, 76% of respondents said they have ideas for new products to be manufactured in the UK, but more than half (51%) said there was something preventing them from bringing the product(s) to market.

Nick says, "A significant number of firms are talking about survival, whilst some are talking about pivoting and pinning future growth prospects on new products or materials. The challenges indicate they are looking for further investment to support their growth and expansion, however they are struggling with energy costs and increasing interest rates. Several firms are looking to reduce the level of borrowing which could also constrain future growth by limiting capital investment plans."

Energy efficiency was the leading area triggering R&D investment, with 40% of respondents increasing their investment in this area.



A significant number of firms are talking about survival, whilst some are talking about pivoting and pinning future growth prospects on new products or materials.

Nick adds, "These issues are well documented, but reiterate the challenges that SME manufacturers are currently facing. The drop in future sales expectations is likely to be the key factor in constraining growth, which is further highlighted by most respondents reporting they are not expecting to see growth, but a decline in future sales. This is a substantial shift of more than 10% of respondents since last quarter's survey.

"In relation to the Growth Plan 2022 announced on 23 September, the majority of firms did not have confidence this was going to help their growth prospects. However, since our Manufacturing Barometer went live, we have experienced further political change, with many policies reversed and a new Prime Minister announcing new measures. It is clear from responses this quarter that many SME manufacturers would welcome further financial support to offset rising costs and help support growth plans."

SWMAS runs its National Manufacturing Barometer on a quarterly basis. To see the full report for the August – October, please visit: www.swmas.co.uk/knowledge/national-2022-q2

To find out more about the South West Manufacturing Advisory Service, please visit: www.swmas.co.uk



The Right Chain Solution

Three Ranges of Roller Chain, One Great Brand

Three ranges of Roller Chain is available from chain manufacturer, Donghua Limited, and the new categorisation helps UK customers identify the right chain solution quickly and easily.

DONGHUA'S ROLLER CHAIN RANGE

Donghua Limited is the UK arm of the Hangzhou Donghua Chain Group which is one of the world's biggest chain manufacturers producing over 40 million metres of chain per year. Donghua Ltd has operated directly in the UK since 2009 and we have categorised our extensive Roller Chain products into three ranges: Standard, Solution and Premium.

The Standard Range features a variety of standard Roller Chain manufactured with precision to suit simple drives with large diameter sprockets or complex drives with multiple sprockets and high load bearings.

Chains within this range include: standard and stainless steel hollow pin bush roller chain; works norm roller chain; cotteder type short pitch roller chain; driving chain; double pitch roller chain; heavy duty roller chain; oil field roller chain and short pitch roller chain.

The Solution Range offers customers a genuine solution to problems with chain wear, chain fatigue, high speed, lubrication, chain length accuracy and chain strength offering optimum performance in extreme conditions.

Chains within this range include: chromized pin (CP) chain, heavy duty chain, self-lubricated roller chain and our new EXL chain.



EXL Chain offers significant benefits over standard Roller Chain. It utilises different materials, material treatments and layer technologies, to offer the best possible quality/price ratio for all applications.

Aimed specifically for the after-market, EXL Chain is designed, manufactured and tested for unbeatable accuracy and performance in arduous conditions, offering enhanced wear and fatigue resistance and greater precision.

The chain is designed with a new hardened, shot-peened wide-waist plate for increased fatigue strength and a seamless cold forged solid bush and roller to give full contact between the pin, bushing and roller for higher durability.

The EXL Chain has optimised cylindrical parts which improve sliding contacts to help increase service life. It also incorporates Donghua's unique 'Easy Break Technology' which enables the EXL Chain to be cut in the field using Donghua's Plate Extractor tools.

To watch our video showing how to cut the EXL Chain using our Plate Extractor tools, visit: <https://youtu.be/UD6rtBEJrkM>

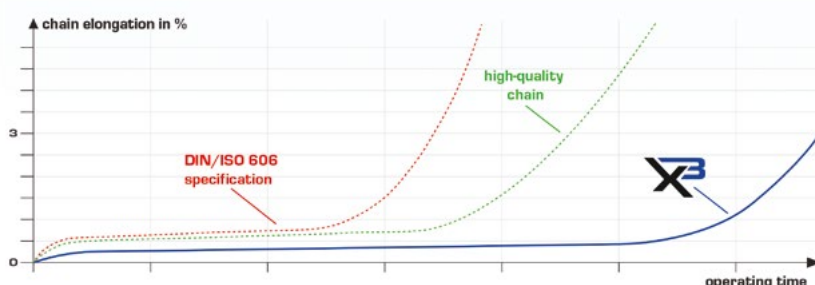
The Premium Range offers our customers a deluxe solution to problems with chain wear, chain fatigue, corrosion, high speed, lubrication, chain length accuracy and chain strength with specific build features designed to enhance durability and withstand a range of arduous environments.

Our new X³ Chain which was launched in the UK in 2022, is exceptional and delivers three times the performance for wear resistance, fatigue resistance and high speed performance for comparable Roller Chain. Its superior quality, durability and outstanding wear and fatigue resistance are realised by the new hardened, shot-blasted plate shape, calibrated pin and bushing holes, special heat-treated and surface coated pins, seamless rollers and bushings and high performance pre-lubrication.

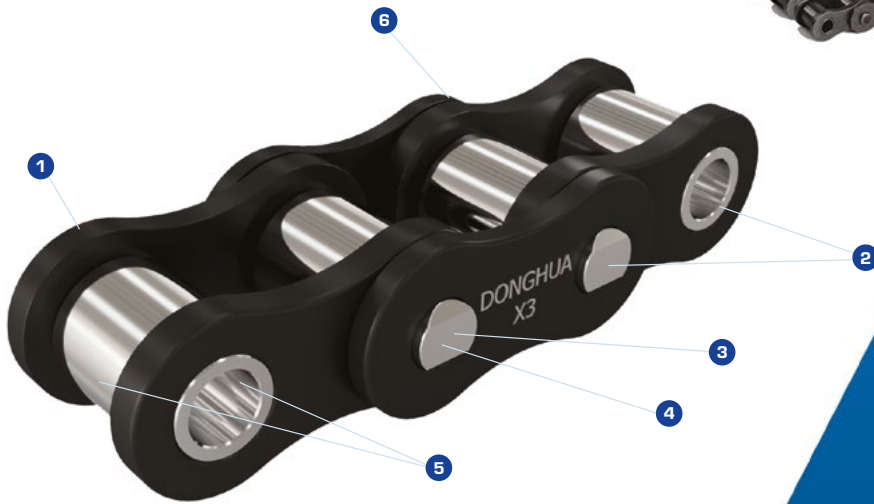
Our X³ Chain is supplied pre-loaded and pre-lubricated as standard and is available in British Standard 06B to 24B in simplex and duplex, ex-stock from our 25,000 sq ft warehouse in the West Midlands.

Manufactured on its own purpose-built production line which encompasses new production techniques and new surface treatments. Designed with a unique pin coating, optimised plate geometry and high precision stamping, X³ offers a new deluxe chain solution and is designed for sectors that use high demand drives such as Timber, Waste & Recycling and Mining & Quarrying.

Wear Life



To download our X³ catalogue visit:
www.donghua.co.uk/X3-chain



A PREMIUM CHAIN SOLUTION FOR HIGH DEMAND DRIVES



- 1 Optimised plate shape
- 2 Calibrated pin and bushing holes
- 3 High press fit to guarantee maximum fatigue strength
- 4 Special heat treatment and surface-coated pins give exceptional wear life
- 5 Seamless bushings & rollers throughout
- 6 High performance pre-lubrication

A new Chain for the UK market offering a premium solution with three times the performance for wear resistance, fatigue resistance and high speed performance of comparable Roller Chain.

Designed with unique pin coating, optimised plate geometry and high precision stamping, the X³ Roller Chain delivers significantly reduced maintenance downtime and longer service life.

Available from Approved Product Partners and Stockists.

Tel: 01902 866200

DOWNLOAD THE NEW X³ CATALOGUE
donghua.co.uk/X3-chain



DFI's "New Smart Factory" Introduces Automated Equipment and Improves Production Capacity by 30%

DFI, the world's leading brand in embedded motherboards and industrial computers, unveiled its new smart factory and invited the media to tour the plant in Taoyuan. DFI's new facility introduces multiple automated equipment. In addition to efficiency and precision, it features more rigorous manufacturing and inspection processes. Control of the manufacturing process has been enhanced, with output increasing by 30%, material mastery reaching 99.9%, and FPYR (First Pass Yield Rate) reaching 99.6%.

The global pandemic and severe labor and material shortages have recently plagued the international supply chain. Corporate automation and smart production have become keys to increasing future competitiveness. DFI has transformed the Taoyuan plant into a high-efficiency, high-quality, and high-material management smart factory by introducing new automation equipment.

Michael Lee, Vice Chairman of DFI, stated, "a wave of new infrastructure

and IoT has swept the global industry in recent years. DFI has accumulated great expertise in the embedded field. We can help customers accelerate their integration of IT and OT to improve the deployment of smart functions to respond to the rapidly changing industrial environment. We will actively face the various impacts of the post-pandemic era and economic changes."

The New Taoyuan Plant Presents Intelligent Achievements

- **Efficiency:** DFI has expanded SMT production to 6 lines and has integrated high-efficiency AS/RS unmanned vehicles with an automated smart warehouse system. Results include improved material turnover efficiency by 20% and output by 30%.
- **Accuracy:** An automated X-ray component counter was introduced to accurately count and calculate the number of parts after mounting. The smart feeder provides two pathways of smart confirmation. A production traceability system provides complete

material and product traceability, increasing mastery of materials and parts to 99.9%.

- **Product quality:** The correctness of finished parts and production quality is ensured by 2D & 3D automated optical inspection (Pre-reflow AOI/ Post-reflow AOI) and X-ray inspection. A wide temperature burn-in chamber conducts aging testing according to customer needs. It can satisfy the tolerability required by various key applications, with an FPYR of 99.6%.

DFI's Taoyuan smart factory has successfully integrated the IT and OT systems. Sufficient production capacity and strong performance will drive the company's implementation of OT smart transformations. DFI will continue to deploy smart manufacturing and become the best partner for corporate OT smartification.

www.dfi.com





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VEGA

SeaShield™ Systems Celebrate 50th Anniversary


SeaShield™ corrosion control systems for jetty piles and marine structures are celebrating their 50th anniversary in 2022. Over the last half century, the brand has continuously evolved, becoming one of parent company Winn & Coales International's best-selling product ranges.



First brought to market in 1972, SeaShield systems offer cost-effective, long-term protection to steel, timber and concrete piles, and marine structures exposed to the challenging and corrosive conditions found in splash zones, inter-tidal and subsea environments. A comprehensive range of solutions providing multiple levels of protection, from light-duty tape wrap systems through to tailored heavy-duty HDPE and GRP jackets. Regular product development, and applications around the world, contribute to the high levels of technical expertise that Winn and Coales International can provide regarding effective pile protection and rehabilitation.

The Winn & Coales International Group of companies has been creating solutions that provide enduring protection against corrosion for over 90 years.

www.denso.net

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Serving the Mining, Quarrying, Water, Metal
Finishing, Process and Marine Industries

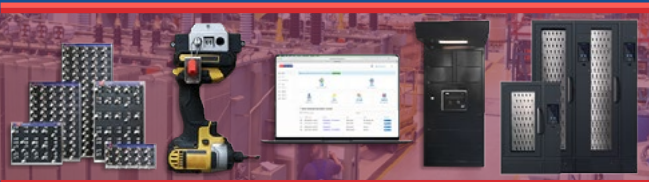


Abrasion and chemical resistant rubber linings for sand washing plant, process vessels and pipework, valves, mixers, filters, storage tanks and shot blasting equipment.

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- Improved efficiency.
- Health & Safety Compliant.
- Fast and easy access for authorised users.
- No more wasted time looking for keys or equipment.

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Southern Manufacturing & Electronics 2023

Southern Manufacturing & Electronics 2023 runs from the 7th to 9th of February at Farnborough International Exhibition Centre in Hampshire.



The show brings together an incredible range of global suppliers including major international machinery and hardware manufacturers, components, production equipment, advanced materials, consumables and every type of subcontract engineering service, from PCB manufacture to precision engineering. Everything you need to operate leaner, greener, faster and smarter can be found at one show. Hundreds of top exhibitors will be waiting in Farnborough to show you ways you can transform your business. There's also a free technical seminar programme.

Entry and parking are free. For tickets, simply visit www.industrysouth.co.uk You can follow all the latest news from the show on Twitter @industry_co_uk #southern23 or #southmanf

www.industrysouth.co.uk

Fluregiene 200™

Protecting your surfaces for longer.

Low friction PTFE based coating containing **BioCote®** antimicrobial technology

Fluregiene 200™ provides protection for hygiene conscious parts and surfaces

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- Durable and easy to clean/wipe down
- Permanently applied to metals, alloys and plastics
- Built-in antimicrobial technology actively reduces microbes on the surface of the coating.
- Reduces fungal growth and surfaces stay fresh longer



Easy cleaning of hygiene conscious parts



Reduces microbial growth



Permanent coating protection



For more information about **Fluregiene 200™** call us now on **+44 01386 425755** or email **info@cwst.co.uk**

**CURTISS -
WRIGHT**

Everlube® Products



Dobot launches Nova collaborative robots for retail automation

Labor shortages and rising costs around the world are two major headwinds to the retail and service sectors, opening up new opportunities of automation transformation. To better capture this newfound demand, Dobot has developed the Nova Series of collaborative robots designed specifically for retail customers to handle tasks such as making coffee, cocktail, ice cream, noodles, fried chicken, and even physical therapy.

The Nova 2 and the Nova 5 are the first two models in the Nova Series with payloads of 2 kg and 5 kg for handling retail and physiotherapy tasks respectively. They can replace workers to help reduce operating expenses and decrease direct human contacts during pandemics.

To better meet the needs of retail branding, the Nova Series contrasts the rigid design philosophy of industrial robots and offers color customization to better fit into retail stores for better customer experiences. The Nova Series is also more compact than comparable industrial cobots and can fit into one meter square of space.



Taking into consideration that most retail stores do not have full time engineers on staff, the Nova Series is designed to be easy to use. With drag to teach and graphical user interface, anyone can easily program a Nova without coding knowledge. Setting up a Nova takes as little time as 10 minutes.

Retail sector robots can have frequent interaction with people, making safety a top priority. The Nova Series has multiple safety features to intelligently sense human movement, and stops operation in 0.01 second upon collision

detection. In case of power outage, Nova automatically freezes in position to ensure safety of others.

Dobot's Nova opens the door of automation for the retail and service sectors. Robot adoption will expand beyond production floors of factories and into our daily lives. Collaborations and interactions between humans and machines will only increase.

<https://en.dobot.cn/>



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Engineering the Highest finish



OMNI CT and ABB to collaborate on innovative waste-to-fuel technology

ABB's automation and electrical technology will enhance operational efficiency of OMNI CT's state-of-the-art waste refining system

Companies will collaborate on a combined offering that turns waste into synthetic gas and other fuels, supporting municipal and industrial companies as they strive for a more sustainable future.

ABB received a Letter of Award from Canadian cleantech company OMNI Conversion Technologies Inc. (OMNI CT) to offer municipalities and industry a fully integrated waste-to-

energy solution. ABB was selected by OMNI CT to provide cutting-edge automation technologies to support their process, including industry-leading distributed control system ABB Ability™ System 800xA and ABB integrated eHouse solutions, ready to operate in the field with minimal installation, commissioning, and start-up time. The ABB Ability™ System 800xA is not only a distributed control system (DCS) it's also an electrical control system, a safety

system, and a collaboration enabler with the capacity to improve engineering efficiency, operator performance and asset utilization.

OMNI CT's patented OMNI200™ Gasification & Plasma Refining System can take virtually any energetic solid material – from black-bagged municipal garbage to industrial and commercial waste, to residual biomass – and turn it into synthetic gas (syngas) through a



The collaboration underlines a shared focus on reducing carbon emissions and driving decarbonization.

and end-to-end solutions, including our # 1 distributed control system, software, and lifecycle services, industry-specific products as well as measurement and analytics, and marine offerings. As the global #2 in the market, we build on our deep domain expertise, diverse team and global footprint, and are dedicated to helping our customers increase competitiveness, improve their return on investment and run safe, smart, and sustainable operations.

ABB (ABBN: SIX Swiss Ex) is a leading global technology company that energizes the transformation of society and industry to achieve a more productive, sustainable future. By connecting software to its electrification, robotics, automation and motion portfolio, ABB pushes the boundaries of technology to drive performance to new levels. With a history of excellence stretching back more than 130 years, ABB's success is driven by about 105,000 talented employees in over 100 countries.

thermal conversion process. Syngas can be used as a substitute for natural gas or can be converted to hydrogen, synthetic natural gas, chemicals, liquid fuels, or electricity for use in a wide range of industries.

OMNI CT's technology will be fortified by ABB's experience in integrated electrical and automation solutions for energy industries.

"The Omni200™ technology, proven at industrial scale, is a completely integrated system, delivered to site and installed by OMNI. This system processes 200 tons of feedstock per day into clean consistent syngas," said Marc Bacon, President and COO, OMNI Conversion Technologies Inc. "We selected ABB based on their engineering capabilities, their local and global support network and innovative solution. ABB's unique portfolio of integrated automation, electrical and digital solutions ensure

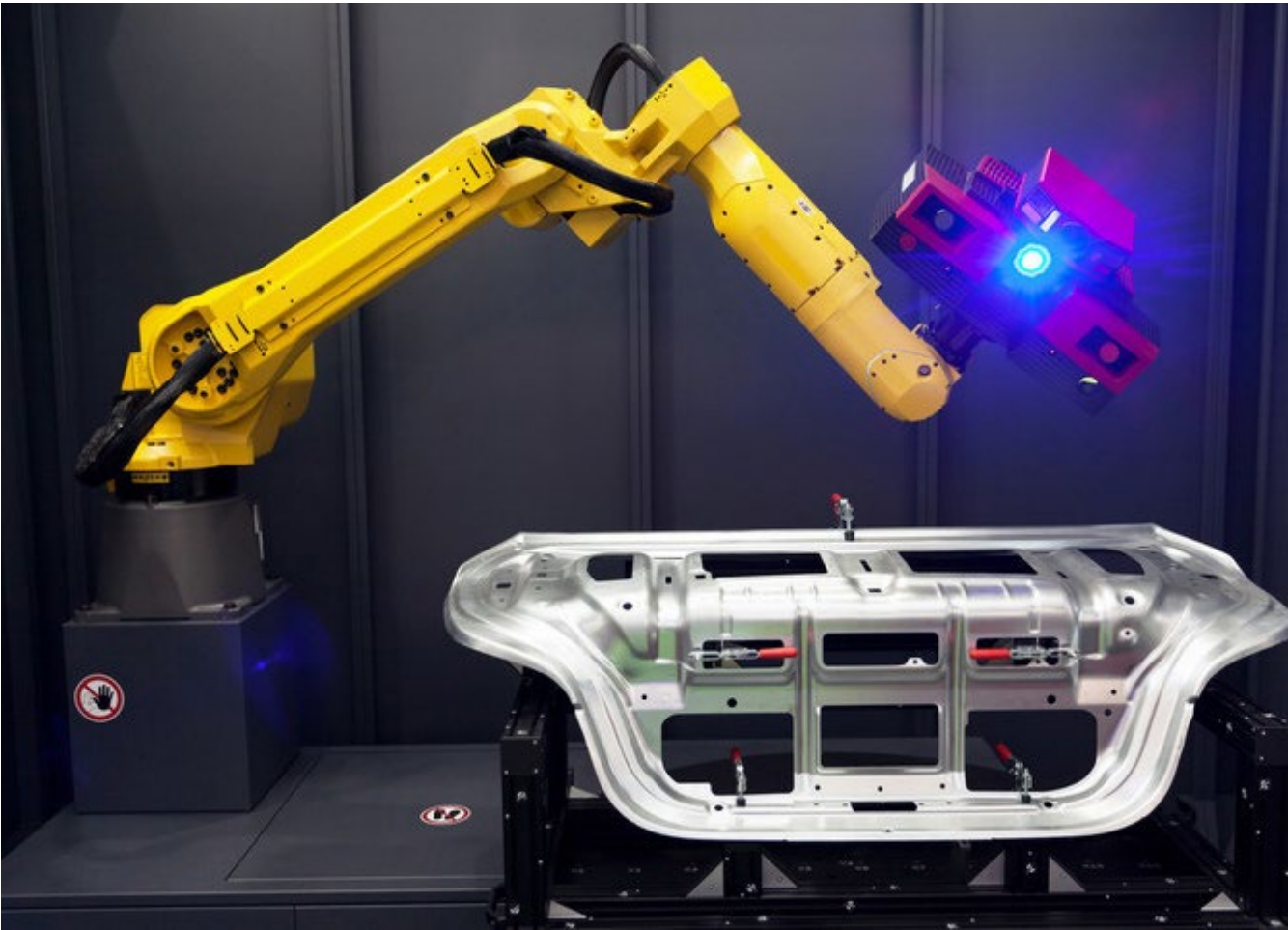
a secure, reliable, and steady electrical power supply to our system."

"The collaboration underlines a shared focus on reducing carbon emissions and driving decarbonization. We are thrilled that OMNI CT selected ABB as their supplier of choice for integrated electrical and automation solutions for their Omni200™ product," said Ben Venter, Vice President, ABB Energy Industries, Canada. "Sustainability is embedded in everything we do at ABB. We are excited to partner with OMNI CT to advance clean energy technology. Apart from customers becoming more sustainable, our technology will also help them to continually improve productivity and run safer operations."

ABB's Process Automation business is a leader in automation, electrification and digitalization for the process and hybrid industries. We serve our customers with a broad portfolio of products, systems,

OMNI Conversion Technologies is a Canadian based company that offers a disruptive technology for global waste and clean fuel markets. The Company's patented thermal chemical conversion technology Omni200™ allows OMNI to utilize a wide variety of feedstocks for conversion, including MSW, biomass, agricultural crops, and food processing waste into a conditioned syngas ready for use as a substitute for natural gas, upgrade to low carbon intensity hydrogen, renewable natural gas for input into pipelines, or further process through Fischer Tropsch to produce SAF or renewable diesel. Its compact size and zero emissions profile allows OMNI facilities to be in urban areas where waste is produced.

go.abb/processautomation
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www.OmniCT.com



The global robot-based metrology market will reach \$396.2 million by 2026

Frost & Sullivan's recent analysis finds that the evolution of automated manufacturing is leading to a paradigm shift away from manual metrology solutions to automated metrology solutions. With the integration of inspections into shop-floor processes, there is a need to perform measurements without human intervention to minimize errors and reduce the time required for inspections. This triggers the demand for robot-based metrology tools across industries. The buoyant global robot-based metrology market will likely reach \$396.2 million by 2026 from \$189.9 million in 2021, registering an impressive expansion at a compound annual growth rate (CAGR) of 15.8%.

With Industry 4.0, automated manufacturing is evolving and further paving the way for automated measurements," said Shruti Bapusahab Yewale, Industrial Research Analyst at Frost & Sullivan. "Additionally, it will be critical for industries to integrate measurement and closed-loop control

“
With Industry 4.0,
automated manufacturing
is evolving and further
paving the way for
automated measurements.

with automated manufacturing processes in the next five years.”

Yewale added: “As manufacturers ramp up production and focus on maximizing product quality, the demand for engineers with the right skillsets will surge. However, the shortage of such technicians will further compel companies to adopt automation through robotics in metrology, particularly in North America and Europe.”

To capitalize on the growth opportunities, robot-based metrology

system providers should:

- Work closely with automobile manufacturers to enable product innovation and ensure safety and manufacturing standards compliance.
- Develop systems that allow factory simulation to stay in sync with the physical space to realize end-to-end factory visibility.
- Invest in expanding their product portfolio with advanced software capabilities.

Global Robot-based Metrology Growth Opportunities is the latest addition to Frost & Sullivan's Industrial research and analyses available through the Frost & Sullivan Leadership Council, which helps organizations identify a continuous flow of growth opportunities to succeed in an unpredictable future.

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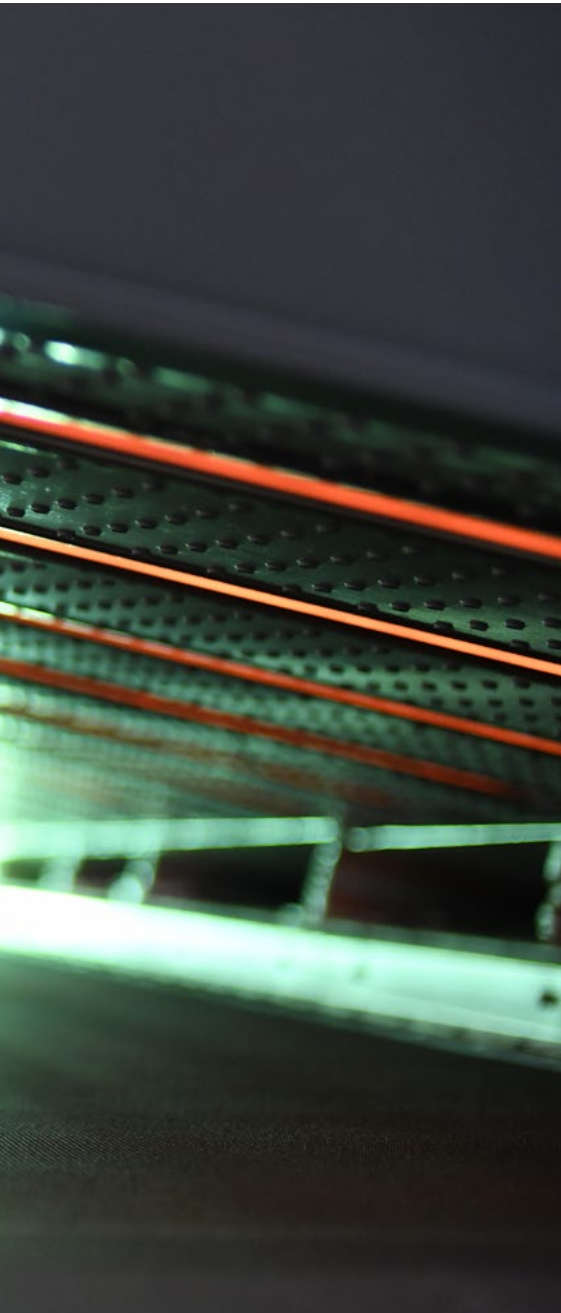
Natgraph's Intelligent Energy Saving Drying and Curing Solutions

Natgraph Ltd is the global leader in advanced drying and curing equipment for a myriad of industrial market sectors such as medical, security, print finishing and renewable energy, to name only a few. Here Hannah Vasey, Marketing Manager at Natgraph Ltd, explains the role of intelligent energy-saving technology in drying and curing process equipment and how it will increase profitability and lower energy costs for companies.

Sustainability, specifically energy-saving, is currently a hot topic in the industry. Market research shows that 84% of consumers state sustainability is important to them when making purchase decisions, but 47% say it costs too much to purchase sustainable products. Natgraph is here to change this. We have developed an energy-saving solution which in typical cases, can pay for itself within a year.

Natgraph's solution, Intelligent Energy Control System (IECS) considers how we can make our drying and curing machinery more energy-efficient by drastically reducing energy consumption during machine downtime.

Tests conducted with a varied selection of Natgraph's customers proved that in normal operation a conveyerised dryer will only be drying printed substrates for between 45 and 65%



of its operational time. This information prompted Natgraph's team of engineers to develop a system for their already energy-efficient range of machinery which aligns dryer energy consumption with process activity. This same technology can be utilised in industries away from the print industry which would see similar times of downtime/non-productive hours. This can be done using sheet sensors or using ready signals from external machinery.

The Intelligent Energy Control System recognises when the printing press is in standby condition and will automatically switch the complete dryer into a standby state with minimal power usage, whilst maintaining a controlled internal environment ready to re-start production on-demand.

The benefits of IECS are clear - we have seen energy savings of over 30% in our customers' processes which over 12 months is the equivalent amount of energy as driving around 166,000 miles or 6.6 times around the equator in an electric vehicle.

In a world where sustainability and energy efficiency are becoming paramount due to increased energy prices, a key consideration for companies looking to upgrade their current drying and curing processes should be Natgraph's Intelligent Energy Control System.

If you would like to speak with our engineers to see how much energy you could save by installing IECS, follow the link on our QR code below.



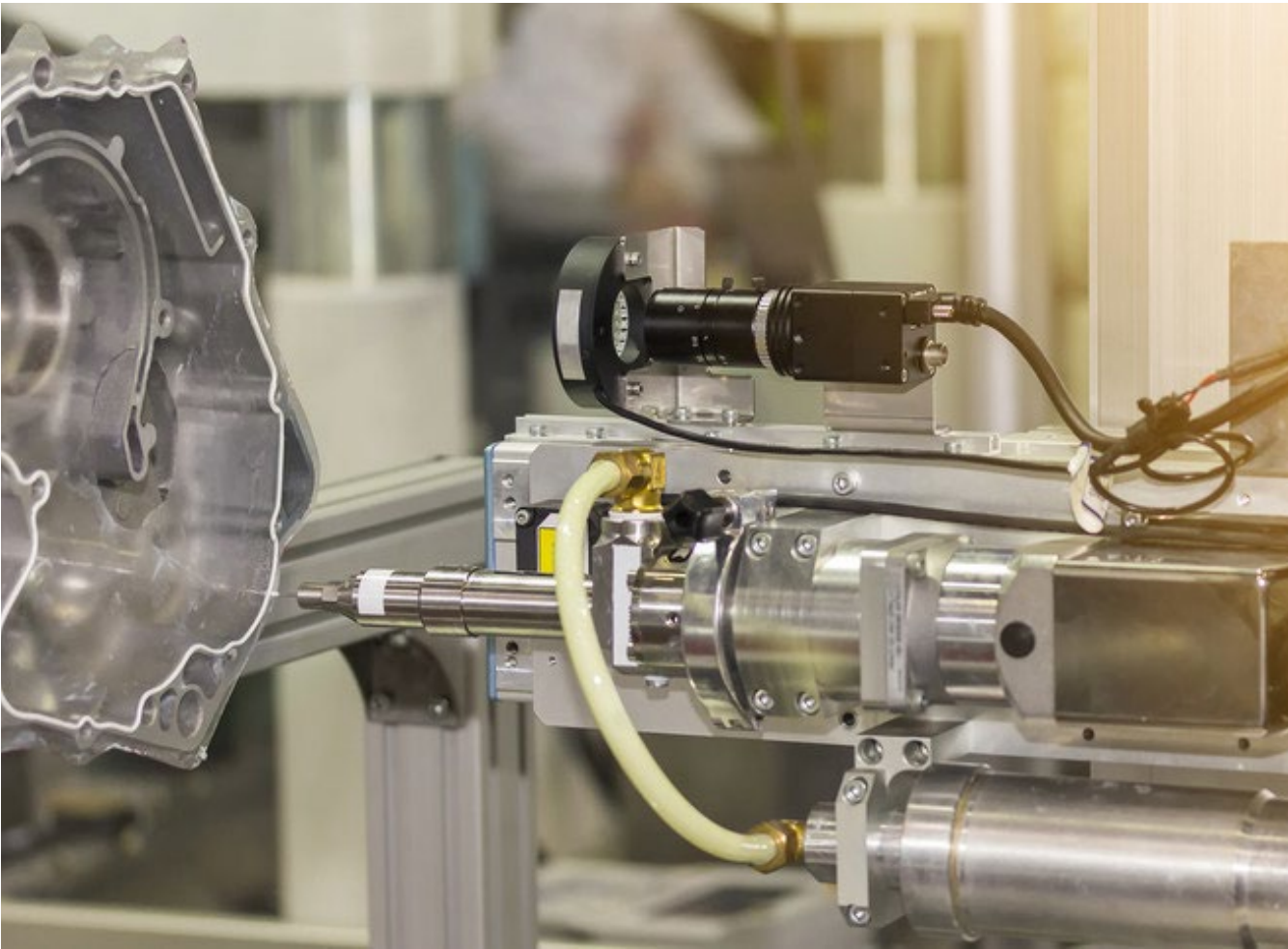
For further information, please visit www.natgraph.co.uk or follow us on LinkedIn and Instagram.



Market research shows that 84% of consumers state sustainability is important to them when making purchase decisions, but 47% say it costs too much to purchase sustainable products.



Hannah Vasey, Marketing Manager at Natgraph



Advantages of Hot Melt Adhesives (HMAs) Drive the Industry's Growth

The global HMAs market is expected to garner \$13.81 billion in revenue by 2028, registering growth at a CAGR of 6.3%, says Frost & Sullivan

The market for hot melt adhesives (HMAs) will rise by 2028 due to its multiple advantages to customers across industries, finds Frost & Sullivan's recent analysis, Global Hot Melt Adhesives Growth Opportunities. HMAs have several benefits over other adhesive formulations, such as faster drying and setting, cost-effectiveness, and low volatile organic compound (VOC) emissions. The global HMAs market is expected to garner \$13.81 billion in revenue by 2028 from \$9.03 billion in 2021, growing at a compound annual growth rate (CAGR) of 6.3%.

"The rise of sustainability as a Mega Trend poses a challenge for HMA product development," said Ganesh Dabholkar, Chemicals, Materials & Nutrition Research Analyst at Frost & Sullivan. "However, HMA manufacturers' commit-

ment to developing bio-based chemistries in the next two to three years will reduce the carbon footprint and promote sustainability without compromising the efficiency of the production process."

Dabholkar added: "HMAs market participants move to address a range of customer demands, such as bio-based formulations and heat-resistant products, and encourage them to expand their product portfolios or enter new markets. It will help them establish long-term pricing contracts and exclusive partnerships with local and regional distributors, ensuring import security, supply chain efficiency, and local inventory management for raw materials."

To tap into the growth prospects of the lucrative HMAs sector, market players should:

- Invest in research and development (R&D) efforts and develop products that can effectively resist the negative

impact of high operating temperatures on bond strength.

- Develop solutions and chemistries that enable the recycling of bonded products, such as furniture or packaging, and promote the circular economy.

- Make strategic acquisitions to quickly develop a new business/product segment and enter a new market by leveraging an established regional distribution network through an inorganic growth strategy.

Global Hot Melt Adhesives Growth Opportunities is the latest addition to Frost & Sullivan's Chemicals, Materials & Nutrition research and analyses available through the Frost & Sullivan Leadership Council, which helps organizations identify a continuous flow of growth opportunities to succeed in an unpredictable future.

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Digital twins are a win-win at IChemE Global Awards

UK nuclear giant Sellafield Ltd and the National Nuclear Laboratory scooped the Outstanding Achievement in Chemical and Process Engineering Award, sponsored by ExxonMobil, at the Institution of Chemical Engineers (IChemE) Global Awards, held tonight at the Mercure Manchester Piccadilly Hotel, Manchester, UK.

The collaborative project which utilises digital twinning technology to optimise the facility used to treat radioactive effluent from nuclear decommissioning and operational facilities won the Water Award earlier in the evening, and the judges were so impressed that they crowned Sellafield and the National Nuclear Laboratory overall winners of the IChemE Global Awards 2022.

By accurately replicating the behaviour of a treatment plant, the project enables the optimisation of plant control and performance. The model has been internationally recognised as best practice for nuclear facilities and has been identified as business critical to the UK Government.

Head Judge, Keith Batchelor said:

“In the midst of 14 worthy winners across different fields of engineering, this project stood out because it supports almost all UK nuclear activities which are set to become increasingly important as we grapple with current energy issues and the need to safely increase nuclear contribution as we move towards net zero. Most critically, it protects local and international populations from the significant impact of effluent discharged to sea. Well done to Sellafield and the National Nuclear Laboratory.”

Sellafield were also awarded the Process Safety Award for their work to safely remove highly hazardous waste from the 1960s-built Magnox Swarf Storage Silo (MSSS) on their site.

The evening, hosted by television and radio host Reverend Richard Coles, saw 12 winning teams and two individual

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In the midst of 14 worthy winners across different fields of engineering, this project stood out because it supports almost all UK nuclear activities which are set to become increasingly important as we grapple with current energy issues.

winners take home 18 coveted trophies from the most prestigious awards in the chemical engineering profession.

A joint project from the Department of Sewage Treatment Plants and Networks, Dubai Municipality, and Alserkal Group (Enviro), UAE, won the Sustainability Award for their integrated recycling programme that processes about 18 million gallons of fat, oil and gas (FOG) waste from thousands of hotels and restaurants annually. This initiative has reduced greenhouse gas emissions and sea pollution, improved public health, and lowered the costs of sewer infrastructure for the region. This project was also Highly Commended in the Public Engagement category.

The health supplement that won TRU-MK7 the Innovative Product Award was created by company founder Dr Aydin Berenjian to bring his mother relief from joint discomfort. The New Zealand start-up developed an efficient and environmentally- friendly fermentation process for the health supplement Menaquinone-7 (MK7) which supports joint health. After almost a decade of research the product is now protected by provisional patents and was successfully launched in the New Zealand market in 2021.

The Chemical Engineering Research Society (CERS) of the University of New

South Wales, Australia, scooped the Public Engagement Award for their work to empower research students and create a collaborative, diverse and inclusive place for the chemical engineering research community. Within their inaugural year, they connected more than 250 members, established relationships with over 40 companies and raised more than AU\$18,000 to support events.

The Research Project Award went to North Carolina State University, USA, Norwegian University of Science & Technology and SINTEF Industry, Norway for a unique advancement in membrane technology that allowed them to engineer ultra-selective CO₂-separation membranes which help remove CO₂ from fossil fuels.

Emma Claxton, Process Engineer at PM Group, UK, took home the Young Industrialist Award. Emma was praised for her technical competence and enhancement of safety standards, plus her work in robotics is making labour-intensive drug therapies more freely accessible. Emma is also driving positive change for women in chemical engineering and inspiring young women into STEM roles.

The Young Researcher Award saw Dr. Thomas Heenan from University College London, UK, was recognised for making substantial contributions to research and enterprise. To date, Heenan has published over 60 articles with more than 1,800 citations. He strongly believes that the translation of fundamental research into real-world tangible applications is important and advocates for open-source publishing. He has established several data archives that are freely available.

In other award categories there was global representation with winners and highly commended finalists from Norway, South Africa, Serbia, Germany, Saudi Arabia and Malaysia.

IChemE President David Bogle said:

“The IChemE Global Awards provides an opportunity to recognise the best of our profession and it gave me great pleasure to welcome our finalists and guests for



All IChemE Global Award 2022 winners on stage at the Awards.

what was a fantastic evening celebrating chemical engineering in IChemE's centenary year.

"I particularly welcomed the focus on sustainability across the award categories, which clearly demonstrates how chemical engineers are already contributing to addressing some of society's major challenges due to their knowledge, innovation and commitment. Congratulations to all our winners. We hope their achievements inspire companies, teams and individuals to make further advances as chemical engineers will be critical to delivering solutions in the future.

"Thank you to everyone who entered, our sponsors, and to our committed and knowledgeable volunteer judges who embraced the monumental task of reviewing each finalist's submission and selecting the winners."

Official winners of the IChemE Global Awards 2022

Outstanding Achievement in Chemical and Process Engineering Award sponsored by Exxon Mobil

Winner: Sellafield Ltd and National Nuclear Laboratory, UK – Process Flow Smoothing Optimisation of Nationally Critical Nuclear Infrastructure

Best Consultancy Award

Winner: Wood Plc, UK – Wood Consulting: Shaping a Sustainable

Future

Highly commended:

Gexcon, Norway – Process Safety in the Energy Transition

WSP Environment and Infrastructure Solutions, UK – Yanbu City Water Re-use

Business Start-up Award

Sponsored by Sellafield Ltd

Winner: Metcelerate, UK – Metcelerate: Professional Formation for Minerals Engineers

Highly commended:

Kagera AI, Serbia – PySAFETY

TRU-MK7, New Zealand – New Generation of Joint Supplement

Diversity and Inclusion Award

Sponsored by Bouygues Energies & Services

Winner: WSP, UK – WSP: Diversity and Inclusion Award

Highly commended:

Loughborough University, UK – The Invisible Leaky Pipelines

Rolls-Royce, UK – Engineering is for Everyone

Energy Award

Sponsored by Rolls-Royce

Winner: C-Capture, UK – Innovative Carbon Capture Solvent Technology

Highly commended:

Birmingham Centre for Energy Storage (BCES); University of Birmingham and The Boro' Foundry, UK – Industrial Waste Valorisation for Waste-Heat-Recovery

Johnson Matthey, UK – HyCOgen TM Technology Development

Industry Project Award

Winner: Dow Inc. and University of Illinois - Urbana Champaign, USA – Sustainable Processing of Quantum Confined Materials

Highly commended:

Descon Oxychem, Pakistan – ENERCON (Energy Conservation) Project

Rolls-Royce, UK – Submarines Integrated Plant and Site Justification

Innovative Product Award

Winner: TRU-MK7, New Zealand – New Generation of Joint Supplement

Highly commended:

Axiom Engineering Associates, UK – Axea: Your Asset Lifecycle Digital Tool

Naturbeads, UK – Cellulose Solutions for a Green Planet

Oil and Gas Award

Sponsored by IChemE Oil & Natural Gas Special Interest Group

Winner: University College London, UK – Methane to Valuable Chemicals

Highly commended:

National Energy Technology Laboratory,

Energy and Environmental Research Center (EERC), North Dakota Industrial Commission Oil and Gas Research Program (NDIC OGRP) and Nuverra Environmental Solutions, USA – Produced Water Management Through GHCR

North Carolina State University, USA, Norwegian University of Science & Technology and SINTEF Industry, Norway – 2nd-Generation Carbon-capture Polymer Membranes

Process Automation and Digitalisation Award

Sponsored by PM Group

Winner: BP International, UK and Veolia WTS, Germany – Anti-fouling Treatment with Dynamic Predictive Modelling

Highly commended:

BP International, UK and Nalco Water, USA – CDU Overhead Process Control and Automation

Saudi Aramco, Saudi Arabia – Saudi Aramco's Digital Oil Hub

Process Safety Award

Sponsored by PM Group

Winner: Sellafield Ltd, UK – MSSS - The Beginning of the End

Highly commended:

BP International, UK – Ultra-low Naphthalene 3-in-1 Fuel Additive

National Yunlin University of Science and Technology, Taiwan – Hidden Process Hazard by Weather Factor

Public Engagement Award

Sponsored by The Chemical Engineer

Winner: Chemical Engineering Research Society (CERS); University of New South Wales (UNSW), Australia – The Inaugural Year of CERS UNSW

Highly commended:

Department of Sewage Treatment Plants and Networks; Dubai Municipality and Alserkal Group (Enviro!), UAE – Implementation of FOG Recycling Program

Optimal Systems Engineering, Malaysia – COPE-BEST

Research Project Award

Sponsored by Chemical Engineering Research and Design journal

Winner: North Carolina State University,



The evening, hosted by television and radio host Reverend Richard Coles, saw 12 winning teams and two individual winners take home 18 coveted trophies from the most prestigious awards in the chemical engineering profession.

USA, Norwegian University of Science & Technology and SINTEF Industry, Norway – 2nd-Generation Carbon-capture Polymer Membranes

Highly commended:

Reactor Technology Research Group; University of KwaZulu-Natal, South Africa – Hetero-coagulants for Water Treatment

Sellafield Ltd, Gamechangers and Sensor Driven, UK – SMART Sensors for Can Monitoring

Sustainability Award

Sponsored by IChemE Sustainability Hub

Winner: Department of Sewage Treatment Plants and Networks; Dubai Municipality and Alserkal Group (Enviro!), UAE – Implementation of FOG Recycling Program

Highly commended: Naturbeads, UK – Cellulose Solutions for a Green Planet

Johnson Matthey, UK – HyCOgen™ Technology Development

Team Award

Sponsored by BakerHicks

Winner: Sellafield Ltd and Loughborough University, UK – Collaborating to Develop Nuclear Chemical Engineering Skills

Highly commended:

Johnson Matthey, UK and Virent, USA – Introducing the BioForming Process Technology

Sellafield Ltd and Frazer-Nash, UK – To

Retrieve or not to Retrieve

Training and Development Award

Sponsored by The Chemical Engineer

Winner: Harbour Energy, UK – Fostering Process Safety Culture Through Innovation

Highly commended:

Metcelerate, UK – Metcelerate: Professional Formation for Minerals Engineers

United Utilities, UK – UU Graduate Scheme

Water Award

Sponsored by IChemE Water Special Interest Group

Winner: Sellafield Ltd and National Nuclear Laboratory, UK – Process Flow Smoothing Optimisation of Nationally Critical Nuclear Infrastructure

Highly commended:

EPOC Enviro, Australia and Envytech Solutions, Sweden – Remediation of PFAS - Contaminated Water Streams

Hydroxsys, New Zealand – Smarter Filtration for a Cleaner World

Young Industrialist Award

Sponsored by BES

Winner: Emma Claxton – PM Group, UK

Highly commended:

Alex Varvaris – Aurecon and University of Adelaide, Australia

Chelsea Cormack – GSK, UK

Young Researcher Award

Sponsored by Johnson Matthey

Winner: Thomas Heenan – University College London, UK

Highly commended:

Neil Robinson – The University of Western Australia

Vasileios Charitopoulos – University College London, UK

For more information on the IChemE Global Awards visit www.icheme.org/globalawards.



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For decades, well-known clients from all over the world have come to rely on LAUDA measuring instruments, which bring together precision, reliability, and longevity, along with extensive experience in sales and service to provide the very best levels of product support.

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applications in research & design, pilot plant or full-scale production. From bench-top laboratory chillers for use with condensers or rotary evaporators during the food research stage, through to large process thermostats for use with fermenters in the brewing industry, LAUDA has a solution for you.

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LAUDA.LIVE Digital product

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LyondellBasell Makes Decision to Progress Advanced Recycling Plant in Wesseling, Germany

LyondellBasell has announced it has made a decision to move forward with engineering to build an advanced recycling plant at its Wesseling, Germany, site. Using LyondellBasell's proprietary MoReTec technology, this commercial scale advanced recycling plant would convert pre-treated plastic waste into feedstock for new plastic production. The final investment decision is targeted for the end of 2023.

The previously announced German Joint Venture Source One Plastics will provide plastic waste feedstock to the plant. Source One Plastics is planning to build a facility designed to recycle the amount of plastic packaging waste generated by approximately 1.3 million German citizens per year. This plastic waste will consist of materials such as multi-layered food packaging items or mixed plastic containers that are typically not recycled today.

"We are actively working to move the circular economy forward. Progressing our MoReTec technology represents another step LyondellBasell is making to accelerate the development and implementation of scalable sustainable and circular technology," said Yvonne van der Laan, LyondellBasell Executive Vice President, Circular and Low Carbon Solutions. "This high yield, differential technology will allow us to convert plastic waste into pyrolysis oil and pyrolysis gas for use in our crackers as feedstock leading to the production of new plastic materials. Solid process residues can be re-used or consumed in other applications, making this technology an energy efficient, zero waste process for the recycling of plastic waste".

The start-up of the MoReTec advanced recycling plant is planned for end of 2025 with a capacity of 50,000 tonnes per year. The feedstock produced will be converted at the LyondellBasell Wesseling site into new CirculenRevive polymers for use in applications such



We are actively working to move the circular economy forward. Progressing our MoReTec technology represents another step LyondellBasell is making to accelerate the development and implementation of scalable sustainable and circular technology.

as food packaging and healthcare products.

MoReTec - A story of innovation

In 2018, LyondellBasell began conducting base research in the chemical recycling of plastic waste together with the Karlsruhe Institute of Technology (KIT) in Germany, which proved the efficiency of the MoReTec technology at laboratory scale. In October 2019, the company announced

the construction of a chemical recycling pilot plant at its Ferrara, Italy, site, which began operation in August 2020. With the operation of the pilot plant, research work improved the efficiency of the recycling process, identified a commercial catalyst and made further progress in the characterization of the waste feedstock stream. The MoReTec plant capability was further expanded converting the pilot plant to a small scale industrial facility in 2021.

Today, the MoReTec technology allows for the recycling of most types of plastic materials such as multi-layered food packaging items or mixed plastic containers. Polyolefin-based plastic waste is decomposed in a proprietary reactor unit, resulting in high-quality feedstock usable for the production of new plastic materials at the LyondellBasell polymer plants.

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For more information, please visit www.lyondellbasell.com or follow @LyondellBasell on LinkedIn.



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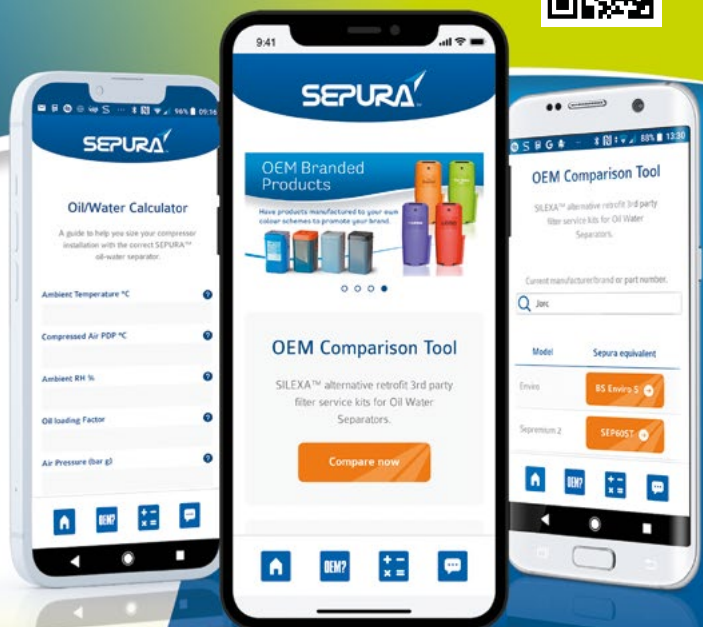
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Material processing solutions since 1926

John King is a family-owned manufacturing company founded in 1926.

The fifth generation of the family are now working in the business; both qualified and committed to take it forward and achieve greater success.

The enterprise began by producing plain pedestal bearings for coal mining pit tubs. Expansion came with the rapid mechanisation of the collieries and an increasing demand for chain conveying equipment. In the early days it was supply to one industry in one region of the United Kingdom.

The Company has enjoyed unrivalled success and expansion in the last decade. Today exporting mechanical handling equipment to over 60 countries. This achievement was recognised in 2020 when the Company won the Queens Awards for Enterprise – International Trade

PRESENT DAY FOCUS

The business is now focused on provision of a total supply package for materials handling; comprising chains and sprockets to conveyor systems and their eventual installation and maintenance.

John King Laser was established in 2007 primarily to service the mechanical handling division. It was well understood that the available capacity surpassed that of in-house requirements and the business model from the outset was to sell laser cut and fabricated parts to customers producing a wide range of machinery and equipment.



John King main factory in Yorkshire with an original pit tub in the foreground. Above right, Installation of new laser.

More recently John King Laser has been able to support John King's site service division where bespoke fabrications have been required. A good recent example would be the survey, technical drawing, production and installation of major fabricated structures within an EFW plant (Energy from waste).

The Laser division has remained autonomous from the start in having to achieve individual levels of sales and profitability whilst critically benefitting as part of a Group structure in investing in new technology to give the division a distinct advantage in efficiency and quality of products produced. The current installation of the newest and probably best laser capacity in the country is testament to that particularly in considering the present challenges within the economy as a result of the pandemic. It is our strong opinion that in the future John King Laser will be perfectly prepared to deliver as the economy emerges from a challenging period.

MANUFACTURING CAPABILITIES

The 2020s business is a lean and profitable enterprise working from a modern manufacturing facility employing best production techniques



Fibre laser technology, plasma for thicker material sections, CNC machining and Robotics. Group structure provides the internal resource to implement production management systems that ensures highest quality, consistent and competitive products produced in a safe environment. All manufacturing is conducted within the dictates of ISO9000 to the latest 2015 standard to ensure quality objectives are monitored and maintained.

OUR PEOPLE

Our people are at the heart of the Kingdom, constantly driving the business forward whilst showing unrivalled commitment to make us the success we are. Together we search for continuous improvement and product innovation.

As a family enterprise we are proud of what we have achieved. To be working and succeeding in manufacturing is a privilege. To operate in a process led sector where we turn raw material into a wide variety of products by using machinery and manpower is challenging and eminently rewarding. As a result of unceasing advances in technology and machinery Engineering is one of the fastest developing sectors internationally. The UK engineering sector generates more than 27% of the UK's GDP and it is clear that the industry is driving productivity whilst having a positive impact on other areas of the UK economy. For every new job in engineering, two more are created outside of the sector. The UK's Engineering sector is the real wealth creator and it is my hope that post Brexit the Government will realise the opportunity we have to put UK Engineering at the forefront.

David Wadsworth Managing Director



For further information, please visit www.johnkingchains.com



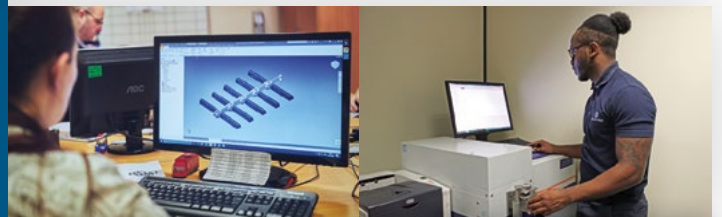
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www.johnkinglaser.co.uk

Manufacturing Growth Programme supports winner of 'Aldi's Next Big Thing' to boost production capacity

A family-run Hertfordshire business has sealed a major supermarket deal after impressing buyers during a primetime Channel 4 TV show.

The Greek Farmer, which was started by Tony Charalambides when he moved into Langley Hill Farm in Hitchin, will supply over 15,000 packs of its cured meat to Aldi stores in the UK after it impressed on 'Aldi's Next Big Thing' due to be aired later this year.

Faced with a massive surge of orders, the business turned to the Manufacturing Growth Programme (MGP) for grants that would help it part-fund new packing machinery and a meat preparation area – critical if it was going to meet the retailer's lead times.

Several new jobs have already been created because of the landmark order and marks what has been a whirlwind four years for the company after it transformed a disused metal grain silo into a walk-in smokehouse.

Tony Charalambides, Director of The Greek Farmer, commented: "After many months and a lot of hard work, we found ourselves pitching at Aldi HQ as part of a TV series that airs later in the year. Our pitch went down a treat and we got through to the finals.

"And then, beyond our wildest dreams, our product impressed the buyers and we won! Then the hard work really started, and we had to consider how we would go about slicing and packing 15,000 packs of cured meat to supply Aldi!! Investing in new machinery was the only way this would be feasible, but we needed assistance to make this happen."

Amanda Freeland, Manufacturing Growth Manager for MGP, met with The Greek Farmer to discuss its requirements and rapidly arranged for capital grant funding towards the cost

of its new equipment.

This meant the company was able to meet the tight production timescales for the huge order, as well as building up significant capacity to support the future growth aspirations of the management team.

Tony went on to add: "The MGP support was a huge relief both for scalability and cashflow. It meant we could scale in the short space of time we had by investing in the machinery we needed. This, in turn, ensured we were in Aldi stores on time.



Tony Charalambides (2nd from the left) with members of The Greek Farmer team

“

The MGP support was a huge relief both for scalability and cashflow. It meant we could scale in the short space of time we had by investing in the machinery we needed. This, in turn, ensured we were in Aldi stores on time.

“Our Growth Manager was very helpful, professional, and made the process extremely straightforward. I look forward to working with her again in the future.”

The Manufacturing Growth Programme is currently the UK’s largest and leading business support programme for SME manufacturers.

The initiative, which is designed and delivered by Oxford Innovation Advice and funded by the European Regional Development Fund (ERDF), has secured more than £13.5million in grants for 4300 companies over the last three years, creating and safeguarding over 10,000 jobs in the process.



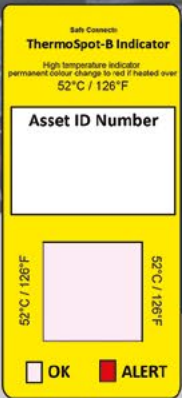
With ERDF funds being phased out, MGP is due to end in early 2023 unless the ‘essential lifeline for small to medium-sized manufacturers’ can be incorporated into the Shared Prosperity Fund.

Amanda Freeland, Manufacturing Growth Manager, added her support: “It is amazing that this small company, which only began fully trading in December 2021, was able to make such a hit with the Managing Director of Buying at Aldi.

“This was all down to the quality and consistency of its smoked cured meat products, and the family business will now gain recognition for this by being stocked in every Aldi store across the UK.

“It’s an incredible achievement, a great success story. I am genuinely delighted that MGP has been able to help it gear up to meet the growth challenge by supporting it with a grant for faster manufacturing equipment. The story is a genuine inspiration!”

For further information, please visit www.thegreekfarmer.com or www.manufacturinggrowthprogramme.co.uk



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ThermoSpot
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Safe-Connect Series

Thermochromic Science for Electrical Reliability

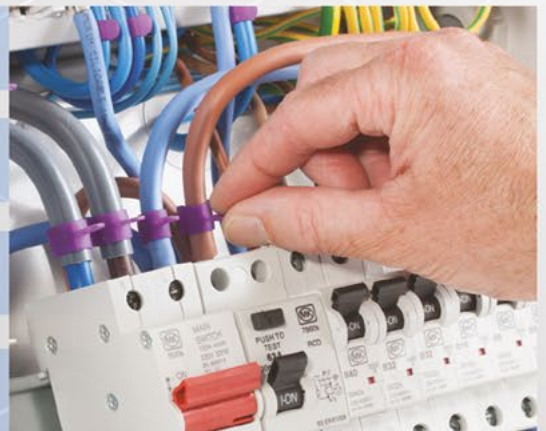
Thermochromic components in these products causes a color change based on temperature ranges, providing 24/7 safety monitoring to give a predictive warning on overheated equipment. The permanent quality of the change is able to highlight issues in straight and non-continuous load applications, protecting against electrical fire or equipment failure.

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Using a patented
 Thermochromic technology,
 these easily-installed
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 visual indicator that work in
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 windows from IRISS as part of
 the visual component in the
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 and between infrared and
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OK	ALERT

Alfa Laval Launches New Multipurpose Membrane Filtration System

With sterling volatility affecting SME pharmaceutical and food manufacturer costs around raw materials and ingredients, a prominent processing equipment supplier is highlighting the importance of flexibility in production lines.

The current weakness of the pound, combined with the rising cost of energy has put pressure on stakeholders in both sectors to optimise processes. In response to this demand, Alfa Laval has launched the MultiSystem, the latest development in its lab and plant equipment range.

A new cross-flow skid-mounted membrane filtration system that can be seamlessly connected to both up and downstream operations, it increases flexibility across a range of process applications. This includes the purification of proteins, sugar and starch, concentration of peptides and amino acid streams and recovery of water from condensates, as Ian Forrester, Business Unit Manager for Separation Systems at Alfa Laval, explains.

He said: "Until recently, membrane filtration systems would be designed bespoke to the needs of each operation, which can prove not only costly, but time-consuming and difficult to integrate into the wider process. At a time when bills are rising and raw materials and ingredients from abroad are rising with the falling pound, these inefficiencies can place SMEs under significant strain.

"For this reason, we have developed our new MultiSystem as a standardised offering for food, beverage and pharmaceutical applications. The launch of the MultiSystem marks the completion of our lab and plant equipment range, meaning businesses of all shapes and sizes are now able to benefit from membrane filtration technology."

As the largest of the lab and plant equipment range, the MultiSystem has a test processing capacity from 100l/h to 6m⁻³/h, and testing volume ranging from 500l/h up to several m³.

Crucially, the MultiSystem can test all filtration processes, including microfiltration, ultrafiltration, nanofiltration and reverse osmosis in batch, semi-batch and continuous modes. Diafiltration mode is also available as standard.

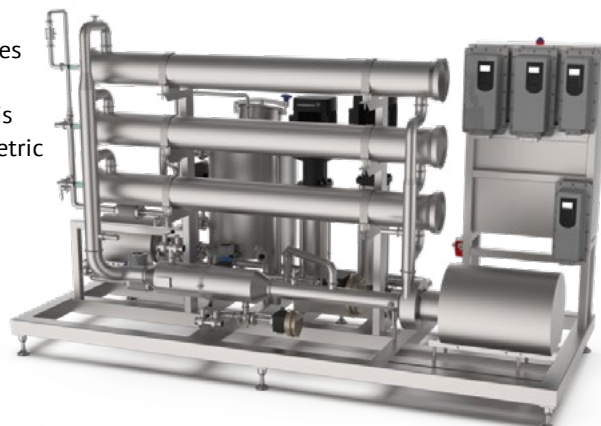
The module is also compatible with Alfa Laval's entire range of 8.0" spiral membranes, which can be quickly and easily interchanged, and features a PLC-based control system also enables automatic control of production sequences. This includes flow, VCF (volumetric concentration factor), temperature, tank level, pressure and diafiltration volume or ratio control.

Ian concluded: "The development process for the MultiSystem was undertaken with small and medium sized production lines in mind. The plant is capable of performing all of the key functions demanded of a filtration system, and can easily transition between these thanks its interchangeable membranes."

"Adopting a more flexible, standardised approach to the design of process equipment will allow manufacturers to diversify their offerings and increase efficiency without the need to invest in multiple pieces of technology, facilitating not only cost saving, but an improved workflow."

“

Crucially, the MultiSystem can test all filtration processes, including microfiltration, ultrafiltration, nanofiltration and reverse osmosis in batch, semi-batch and continuous modes.



For more information on the Alfa Laval MultiSystem, visit: <https://www.alfalaval.co.uk/products/separation/membranes/membrane-filtration-systems/multisystem/>

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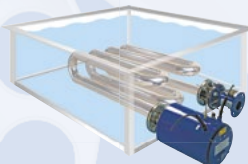
FD-E low cost high turndown oven/dryer air heating burners.



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Midco HMA high efficiency, high turndown, air replacement or "make-up" air heating burners.



TX high efficiency small diameter immersion tube tank heating systems.

Lanemark gas burner systems offer users reliable, high efficiency, process heating solutions.

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- Heat Input Range: 15 kW (1½") - 1150 kW (8")

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COMMANDER S & MARSHAL

NEW MICRO DRIVE FROM CONTROL TECHNIQUES BREAKS FRESH GROUND IN INNOVATION AND TECHNOLOGY

Control Techniques, part of the Nidec group of companies, has launched the newest member of its Commander family. Commander S is the latest generation of micro drive that has its own revolutionary app interface named Marshal.

Commander S provides a unique solution for applications that require plug-and-play control convenience straight from the box. Its many on-board features make it easy to install, easy to use, reliable and cost-effective.

Commander S is the first drive to come with an app interface as a standard. Marshal reforms how the user interfaces with the drive making commissioning, monitoring, diagnostics, and getting support so easy. It's a game-changer in today's crowded micro drives market.

Powered by NFC technology, using Marshal the drive can be commissioned with the power on or even when the drive is still in the box with the power off. Parameters can be easily transferred from one drive to another by simply tapping the mobile phone to as many drives as necessary. Marshal has guided diagnostics, offering step-by-step guidance if needed. Drive configurations and wiring diagrams generated in the app can be easily saved and shared via email or any other messaging platforms.

Every drive is fitted with an NFC chip that allows configurations to be transmitted between the drive and the app instantly. The simple set-up routines within Marshal allow configuration of the drive in under 60 seconds, it's never been faster and the time-saving benefits are clear.

Commander S is the drive for the future, every detail of the design has been thoroughly thought through making it guaranteed to keep running, no matter what. In fact, it is so reliable Control Techniques are confident enough to supply it with a free five-year warranty.

Finally, a micro drive on the market that you can buy with confidence. Commander S and Marshal, what are you waiting for?

Interested?- controltechniques.com/commander-s

COMMANDER S AC DRIVE
0.18 kW to 4 kW
1ph 100V & 200V, 3ph 200V & 400V



*Warranty terms and conditions apply.

NFC is in all our lives, for example, we use it to make payments at shops. We knew this was the technology to go for. It's disruptive for the industry and changes the whole customer experience. We are bringing innovation to the market with our constant development of products and surrounding services. We are proud of what we've achieved with this new drive.

Commander S gives you fast installation and programming, gets the job done, and it's green! This colour takes us back to our heritage, Control Techniques were known as the green drive company. And, as part of our ongoing development, we believe our heritage is important; what we take to the future is what we've learned in the past, and making it green is a mark that shows we've recognised all that knowledge and development over the years.

Anthony Pickering,
President of Control Techniques



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Powering through

Moulding SME preps for energy manufacturing crisis

At least a quarter of British SMEs polled by a recent YouGov survey suggests that for at least a quarter of them power bills will become unsustainable within the next few months. The fallout could be huge, particularly among the SME plastic processing community. With manufacturing insolvencies soaring by 63 percent in the last 12 months according to Mazars, Surrey-based technical moulder and SME Broanmain Plastics has proactively powered through in its approach to tackle the spiralling energy costs. Here's how.

This energy crisis is a worry for every individual and enterprise. Not least manufacturing SMEs that are utterly reliant on power to make parts. Despite the welcome six month reprisal, as we hurtle into winter, even capping the costs at less than half the market rate is still a cost pressure that is hard for the most energy efficient business to absorb.

The BPF's Energy Management in Plastics Processing guide indicates that energy usage and costs can be reduced by over 30 percent through better management, capital investment and maintenance actions. Although there's not a single 'megawatt' energy saving solution – moulding technical components requires power after all – Broanmain's new Maintenance Engineer Steven Romano has taken the lead (and a leaf out of the BPF book) and introduced a number of process and site improvements to help cushion the financial shock.

SITE IMPROVEMENTS

A planned maintenance regime might not sound like a Eureka! energy saving scheme, yet as part of a continual improvement programme can deliver surprising and quick results. As testament, Steven has spent the past six months examining Broanmain's entire fleet of machinery and created a modified iPlan maintenance schedule that red flags more pressing maintenance tasks to reduce machine downtime.



Maintenance Engineer Steven Romano has helped Broanmain to introduce a number of process and site improvements to help cushion the financial shock of energy price rises.

Aligned to the company's material waste reduction and First Time True quality culture, he explains: "Having this schedule keeps our technologies running as cleanly and efficiently as possible, cutting our production carbon footprint even further."

Having worked in maintenance for more than 30 years, from his experience Steven estimates that an effective maintenance regime can reduce unplanned machine breakdowns by as much as 60 percent.

Another simple routine to introduce is monthly air and water filter changes, states Steven. Cleaner water protects tools. Less rust also reduces system contaminations, preventing component defects and material waste. Plus significantly improves heater efficiency.

LIVE DASHBOARD DATA

Tapping into energy supply data over the Wi-Fi, the team can now view exactly what it is costing by the hour to run the company's fleet of 11 injection moulding machines, plus all ancillary,

finishing and tool making equipment. Even slight modifications, e.g. barrel insulation to contain heat, has already resulted in visible energy saving improvements.

FIX COMPRESSED AIR LEAKS

Experts estimate between 20 and 40 percent of generated compressed air is lost due to leaks. Broanmain has addressed this by putting in two isolation valves and shutting them off for the building and compressor, as well as incorporating a routine inspection and reporting system for air leaks. These actions, along with a new timer controller on the compressor, is saving the company in the region of £17,000 yearly.

Double shifts slashes power-up costs
Given that the most energy intensive process in injection moulding is heating material up, to limit machine start-ups, Broanmain has moved virtually all production to one site and now operates two overlapping day and night shifts Monday to Thursday.

Combined with carefully-considered production sequences, fewer machine shut offs, tool changeovers and restarts, is proving to be more productive and cost efficient, and increases



Broanmain's modified iPlan maintenance schedule red flags more pressing maintenance tasks to reduce machine downtime.

“

The BPF's Energy Management in Plastics Processing guide indicates that energy usage and costs can be reduced by over 30 percent through better management, capital investment and maintenance actions.

Broanmain's manufacturing capacity even further.

DRIVE UPGRADES

Several years ago Broanmain invested in an all-electric IntELECT featuring all-electric drive technology from Sumitomo (SHI) Demag. However, the remainder of its injection moulding machinery park is a blend of hydraulic and hybrid technology.

In order to optimise investments while simultaneously improving efficiency, the firm is currently exploring the benefit of upgrading to variable speed drives

to save energy use during the curing time. To benchmark the savings, this will initially be rolled out on the company's largest hybrid machine.

POWER TO ITS PEOPLE

An energy efficient and robust production plan and maintenance programme is only as good as the data sourced, measured and benchmarked. However, it's the small actions taken by the entire workforce through better engagement and communication that can make the biggest dent in energy bills.

Commenting that energy consumption is not purely about machinery assets, but equally the actions taken by staff, Steven expands: "It's a refreshing change to see workforce suggestions roll out so swiftly. It feels like everyone across the firm is thinking like a process optimisation and energy custodian."

Since joining the moulding firm in May 2022, Steven has shared with the entire workforce and management a toolbox of tricks and tips to curtail energy consumption. This includes seeking feedback on future actions. One staff suggestion put forward and currently being instigated includes designing a machine shut-off traffic light system. Providing clear unsupervised visual instructions and flagging when guidance should be sought by production managers.

Managing Director Jo Davis concludes: "Achieving a sustainable and viable energy reduction plan is reliant on the input and commitment of every single person. Not only does this engagement and the introduction of lower emitting technology promote best practice, it creates process improvement champions where everyone can feel confident playing their part."

As a direct result of these energy savings, Broanmain has been able to pull forward pay increases to support its workforce with the cost of living crisis, as well as introduce new flexible working arrangements, including an early Friday finish, to nurture a better work/life balance.

www.broanmainplastics.co.uk

Why low accuracy chemical dosing is money down the drain

By Adeel Hassan, Product Manager at Watson-Marlow Fluid Technology Solutions

Companies in the process industries sector – from wastewater treatment providers to metal and mining or pulp and paper plants – face an extremely challenging operating climate in 2022 and beyond. Around the world, authorities are tightening the environmental regulations which govern chemical usage and disposal in process and wastewater treatment. Energy consumption is also in the spotlight as businesses strive to meet sustainability goals and simultaneously tackle a serious energy crisis.

Against a backdrop of increasing economic uncertainty, cost control is key. Now more than ever, chemical and energy savings can help make the difference when it comes to staying competitive in a global market. But when you factor in the pressure to modernise and increase capacity, it is hard for operators to know where to focus to meet obligations and make the necessary efficiencies.

Exploring the impact of the challenges that lie ahead is key to understanding the important role accurate chemical dosing can play in optimising and driving efficiencies in the use of both energy and expensive treatment chemicals.

How can accuracy and reliability help businesses in the process industries sector keep their competitive edge in response to such challenging market conditions?

Chemical use up close

As wastewater treatment facilities in both the municipal and industrial sectors look to upgrade equipment to meet rising demands, European Council Directive 91/271/EEC on urban wastewater treatment, is also set to change in the months ahead. It is expected that the revised directive will impose stricter discharge limits resulting in a need for increased treatment in industrial and municipal facilities.

Regulations aside, we are all now acutely aware of the impact of climate change. Society needs to reduce waste in all its forms, and it is incumbent on operators and suppliers like Watson-Marlow to prevent the waste of chemicals.

A common metal and mining or pulp



and paper plant has a capacity of around 500m³/hr and consumes around 0.5% chemicals in the form of flocculants and coagulants. In the municipal sector, average capacity is 5000 m³/hr or even higher. Thousands of litres of chemicals are used each day across these facilities. Inaccurate dosing can cost an operator tens of thousands of Euros in wastage and fines – not to mention irreparable damage to the environment and their reputation.

Accuracy and repeatability of chemical dosing pumps is therefore critical. An unfortunate fact is that dosing pumps' accuracy is still unregulated, but the incoming EU regulations should be accompanied by a strong push from the industry to change that, perhaps in line with the European Measurement Instrument Directives.

Long-term tests conducted at a state-of-the-art research facility in Europe show that a peristaltic pump like those in Watson-Marlow's Qdos range can be trusted to offer 1% accuracy with an excellent 0.5% repeatability in dosing. Results like this demonstrate that selecting the right pump can make a huge difference when it comes to chemical savings.

Energy in crisis

In parallel with changes to regulation, the European energy crisis linked to the Ukraine conflict which is driving the highly inflated energy prices we see at present is having a big effect on the cost of the industrial plant operation. Naturally, companies in the process industries sector are looking to make energy savings in response to both. Peristaltic pumps like those in the Qdos range, established in the market for a

decade, are low maintenance, have a long product life and do not require pulsation dampeners, degassing valves, backpressure valves and float switches. All these elements help operators to save on not only capital expenditure and maintenance, but also energy costs.

Furthermore, high accuracy enables the use of more concentrated chemicals and smaller, more efficient dosing systems – which in turn reduce both energy and transport costs.

With sustainability front of mind, we are planning a study which will help us partner with customers and calculate the amount of CO₂ they can save just by choosing the right pump for their application.

Efficiency gains through accuracy

Putting this into context, the installation of a Qdos 120 peristaltic dosing pump has demonstrated that the deployment of accurate chemical dosing technologies at paper mills can deliver a significant reduction in energy usage and greenhouse gas emissions. Trials which took place at the Netherlands-based research facility of a global leader in food and drink packaging led to a 3% reduction in gas consumption and 3% reduction in greenhouse gas emissions.

And in wastewater treatment, a plant serving the town of Hessisch-Lichtenau in Germany was able to meet strict environmental discharge limits through accurate and reliable ferric chloride sulphate dosing. With the help of the Qdos Conveying Wave Technology (CWT) pump, the Fürstentagen plant achieved a 97.5% reduction in phosphorus load over the course of a year.

The challenges of meeting regulatory standards, striving for sustainability in the face of climate change and navigating economic uncertainty are complex and many. However, accurate chemical dosing can help companies in the process industries sector meet these challenges head on. The chemical and energy savings to be made by choosing the right pump should not be underestimated and will help businesses to run their operations with greater precision, efficiency and cost control.

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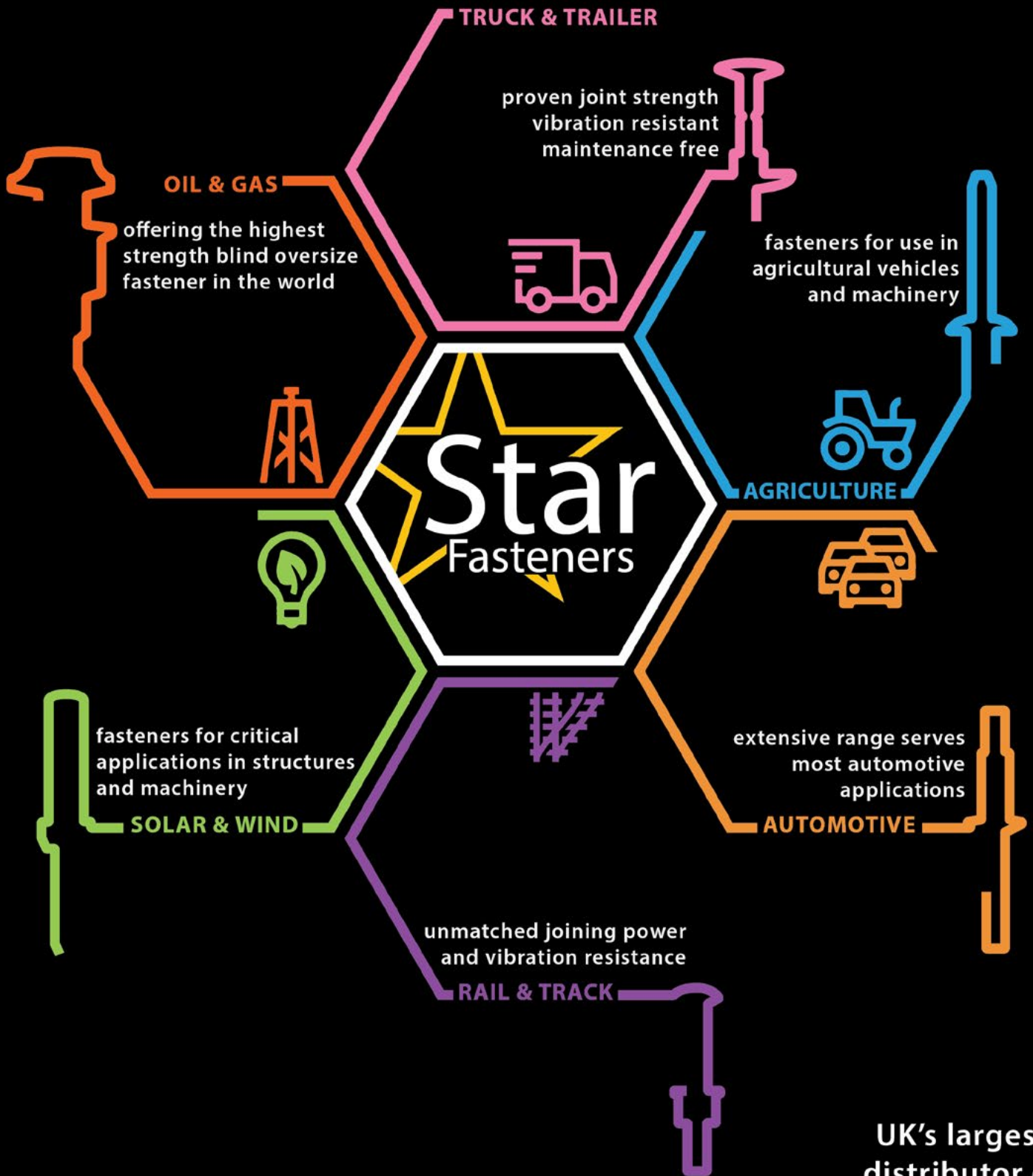
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