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Engineering MAINTENANCE solutions

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The Strategic Edge: Turning Tariff Pressures into Opportunity with CMMS

Tariffs

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The Strategic Edge: Turning Tariff Pressures Into Opportunity With CMMS

Recent global trade tariff changes have impacted manufacturers worldwide, forcing organisations to re-evaluate operational efficiency, cost management, and supply chain resilience. Tariffs on imported goods often lead to unavoidable price increases, with costs cascading through complex supply chains. Manufacturers are under pressure to absorb these rising costs while maintaining competitiveness.

Higher expenses for raw materials, spare parts, and equipment translate into longer lead times, reduced production flexibility, and increased risk of costly downtime. To safeguard operations and profit margins, manufacturers must adopt proactive strategies.

How Can CMMS Software Mitigate Tariff Impacts?

CMMS (Computerised Maintenance Management System) software, such as PEMAC ASSETS, transforms maintenance from reactive firefighting to a proactive, predictive, and strategic function. This data-driven approach enhances asset reliability, optimises performance, and helps manage the pressures imposed by tariffs.

Asset Reliability and Downtime Reduction

With tariff-driven increases in spare part costs and delivery times, unplanned downtime is more disruptive than ever. A CMMS supports preventive and predictive maintenance, using real-time and historical data to reduce unplanned downtime by up to 30%, keeping production running smoothly.

Inventory Management Optimisation

As material costs rise, efficient inventory management becomes critical. CMMS software provides real-time stock visibility, enabling manufacturers to reduce spare parts inventory by around 20%, cutting capital and storage costs.

Engineer Productivity Gains

CMMS streamlines maintenance scheduling, task management, and reporting, often via mobile access, reducing admin workloads and increasing productive maintenance time. This helps absorb rising operational costs without compromising service levels.

Cost Transparency and Maintenance Savings

Financial tracking within CMMS software highlights high-cost assets and informs better repair or replacement decisions. Many companies report maintenance savings of up to 25%, driven by better planning and fewer emergency repairs.

Compliance and Safety Improvements

Even amidst tariff disruptions, compliance and safety remain vital. CMMS platforms ensure consistent records, audit readiness, and adherence to safety protocols, helping businesses avoid fines and shutdowns.
Enhanced Strategic Decision-Making

In volatile trade conditions, agility is key. CMMS solutions like PEMAC ASSETS deliver analytics that enable proactive operational and procurement adjustments, strengthening resilience and competitiveness.

Supplier Relationship Management

As tariffs disrupt sourcing, CMMS tools monitor supplier performance, pricing, and reliability. This supports stronger partnerships, better negotiations, and supply chain diversification to minimise risks.
Looking Ahead

Global trade uncertainties and shifting tariffs will continue to challenge manufacturers. However, proactive maintenance and operational control through CMMS platforms offer a robust response. With software and services not currently subject to tariffs, now is the ideal time to invest in solutions like PEMAC ASSETS.

By reducing downtime, optimising inventory, improving productivity, and enabling strategic agility, CMMS software helps businesses stay competitive and protect profitability in an unpredictable market. Embracing a data-driven, proactive maintenance strategy is essential for mitigating tariff impacts and preparing for future economic fluctuations.

Exploring Resilience Through Smarter Maintenance

Tariff pressures continue to shape global supply chains and operational priorities. By adopting a data-driven maintenance approach, organisations can enhance efficiency, maintain cost competitiveness, and safeguard production continuity.

Visit www.pemac.com or email marketing@pemac.com to discover how CMMS software, like PEMAC ASSETS, can support these goals and help build long-term resilience.

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Maintec 2025: Shaping The Future Of Maintenance

Returning to the NEC Birmingham from 4-5 June as part of Smart Manufacturing Week, Maintec 2025 continues to be the definitive event for professionals focused on reliability, asset management, and predictive maintenance.

As IIOT, machine learning and to some extent AI are playing an increasing role in maintenance eco-systems, this year's show promises to be especially forward-looking, with a strong focus on innovative developments in AI, machine learning, and the emerging vision of Industry 5.0; the next stage in industrial evolution.



Among the exhibitors driving innovation is Sparrow Networks, returning for its third year to talk about its cloud-based service for spares pooling, the optimising of inventory and data cleaning for industrial spare parts using big data and AI.

Similarly, Chris Hansford of Hansford Sensors says, "Whether we term it Industry 5.0 or not, the direction of travel is to use more sensors, be that vibration, flow, temperature pressure or whatever and to automatically gather the data and use that to make decisions. It's something that has been very high profile in Germany and we are starting to see more of that here."

This all falls under the banner of Smart Maintenance, one of Maintec's three central themes. But there's also plenty to discover within the equally vital areas of Maintenance Products and Maintenance Services. Certas Lubricants, for instance, is bringing a fresh approach to distribution, using an advanced network to hold large volumes of stock and deliver oils and lubricants with zero risk of contamination.

On the services side, Service Geeni will be showcasing its all-in-one field service platform that helps companies manage customers, engineers, and equipment more efficiently. Meanwhile, IFS Ultimo offers insight into their Enterprise Asset Management maturity model, designed to help organisations assess and improve their maintenance practices and chart a clear path to operational excellence.

Fluke will be on hand exhibiting a wide range of portable test instruments, including the ii900Sonic Industrial Imager, which enables



maintenance teams to quickly and accurately locate air, steam, gas and vacuum leaks in compressed air systems.

And for manufacturers looking to streamline their stores and focus on production, Rubix will be showcasing its industrial spare parts distribution offering as well as its InSite stores management service - where the company takes over the management of the MRO stores allowing manufacturers to focus on what they do best – manufacturing products.

For visitors to Maintec, the Maintenance Solutions Theatre will be a key hub for information and education, with sessions including a headline keynote from BMW's Nick Evans, Applying New Maintenance Methods and Technologies to Existing Production Systems which will explore integrating advanced maintenance technologies, and a headline panel Transforming Maintenance Strategies:

From Reactive to Proactive in Smart Manufacturing featuring AETC's Ruth Rollings exploring the shift from reactive to proactive strategies in smart manufacturing.

Whatever your sector, your goals, or your starting point, Maintec offers the tools, insights, and connections to help you move forward, from exploring the latest maintenance technologies and applications to new suppliers of the most traditional but necessary products. As ever it's the essential gathering place for anyone and everyone looking to be part of the conversation about smarter, more efficient maintenance.

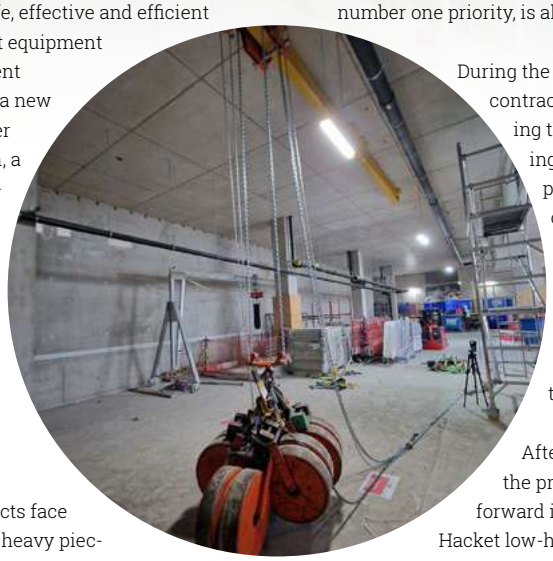
For more information visit:
https://www.smartmanufacturingweek.com/





Construction Project Presses Home The Advantage Of Using Hoist & Winch

To ensure the safe, effective and efficient transfer of plant equipment into the basement energy room of a new residential tower block in London, a major construction project leveraged the advantages of appointing Hoist & Winch Ltd as its supplier of turnkey lifting equipment. Tasked with meeting the requirements of a technically challenging brief, Hoist & Winch demonstrated why it has become the nation's go-to solution provider of high-quality lifting systems.



Many new tower block development projects face a common challenge: how to install large, heavy pieces of equipment into the building's energy centre, typically located in the basement. Specifying the optimal hoists is paramount to project success. Fortunately, the subcontractor supplying and installing the energy room's plant for this particular project knew where to turn for a turnkey lifting solution: Hoist & Winch Ltd.

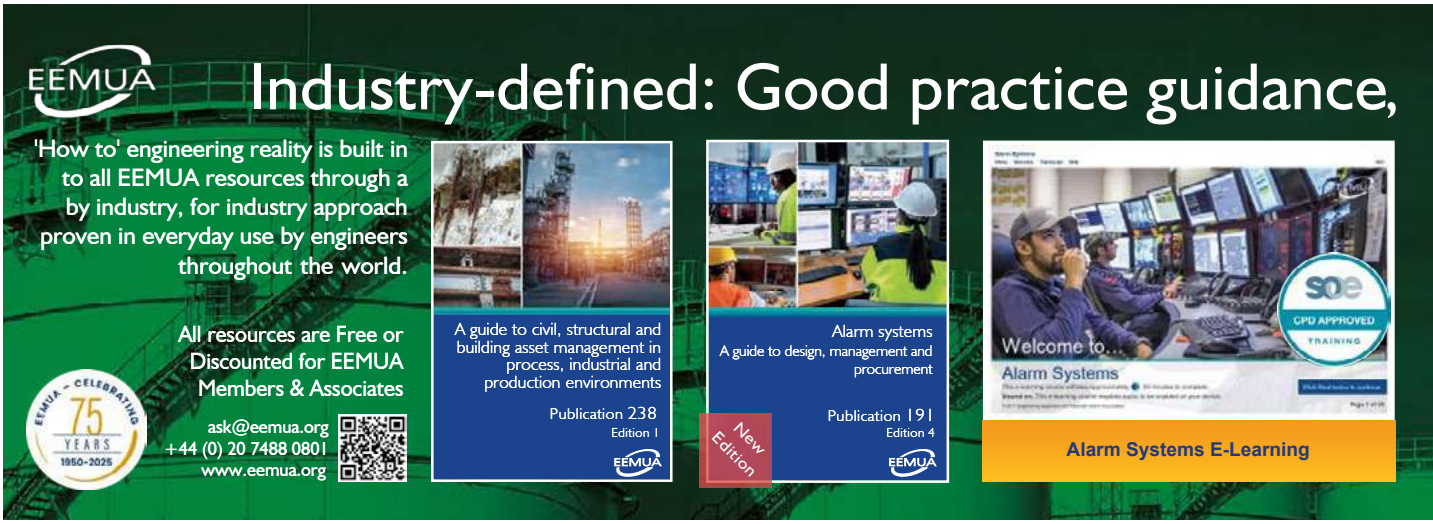
Hoist & Winch has extensive experience in all kinds of construction and industrial lifting applications. The company offers sales, installation, service, inspection, repair and hire services, with a special emphasis on project work. Supplying the optimal solution, with safety as the number one priority, is always the objective.

During the design phase, after formal tender and contract award, Hoist & Winch set about identifying the optimal solution by carefully assessing the specific lifting requirements. The project required the installation of hoists on both the upper and lower ground floor levels to ensure the successful lifting and transfer of large energy plant. It was clear from the outset that the solution would need to overcome the issue of very tight headroom clearances due to the size of the equipment.

After thoroughly considering all aspects of the project, Hoist & Winch Ltd was able to put forward its proposal, recommending two William Hacket low-headroom manual hoists, both with a hand-geared trolley. Offering a safe working load (SWL) of 2.5t each, the hoists provide 8m of lifting height and run on beam lengths of 8.5m and 7.0m.

Hoist & Winch duly submitted its design proposal, including drawings and structural calculations, for approval by engineers at the main contractor. Following approval, the company commenced manufacture before delivery to site.

During the installation phase, Hoist & Winch tested the installation



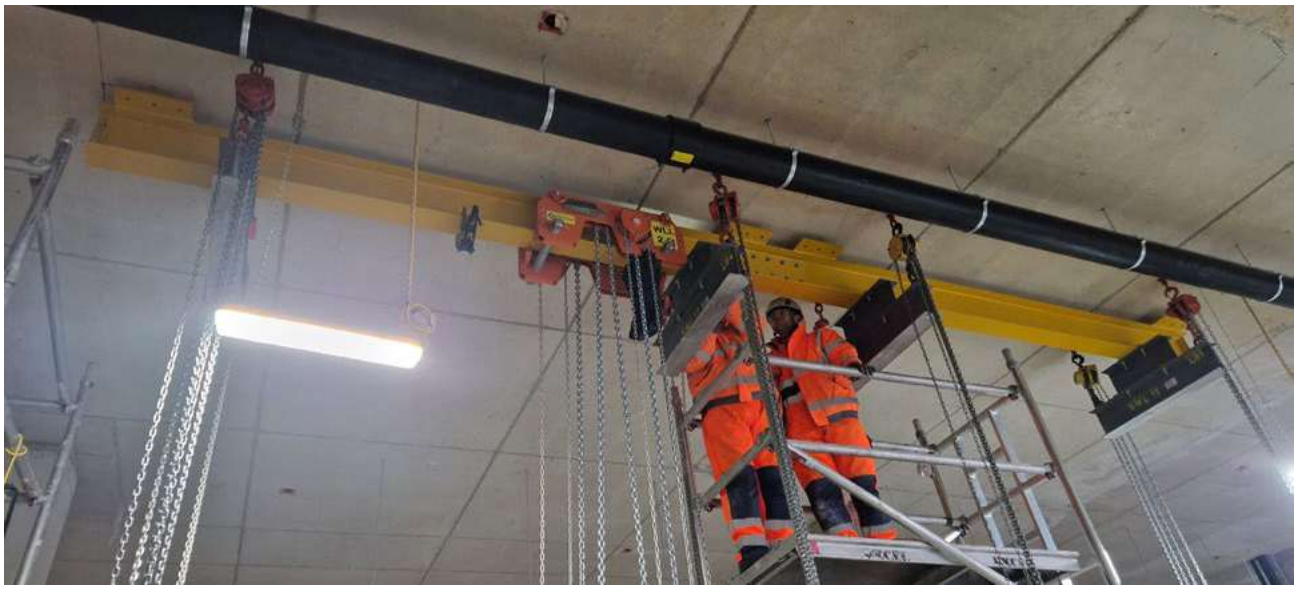
anchor points to 1t before raising each beam into position using hand chain blocks. Elevating the beams to full height and clamping them hard against the concrete ceiling ready for drilling required the use of special lifting rigs. Once in position, the company proceeded with drilling operations and resin anchor installation for all ceiling anchor points after meticulously cleaning each hole with a special heavy-duty internal brush and suction pump. Following the specified resin curing time, Hoist & Winch tightened each anchor bolt to the required torque levels.

LOLER (Lifting Operations and Lifting Equipment Regulations) inspection of the lifting beams and manual chain hoist units was the final operation. This activity included dynamic load testing of both beam lengths with a 2.5t skid-mounted test load followed by 125% static proof load test in accordance with BS 2853 2011. As a point of note, following customer handover, the hoists were to remain in place for use by the on-site maintenance team.

"We provided the client with a comprehensive project records and documentation package upon completion of works, which is standard practice," says Hoist & Winch Director Andy Allen. "We then went through the handover process to ensure total peace of mind for our client. At Hoist & Winch, our focus is on ensuring customers benefit from our exceptionally knowledgeable team who never fail to deliver on their promise of providing a detailed and proficient approach to every project."

Visit www.hoistandwinch.co.uk for further information and to view recent case studies.







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Enerpac Refreshes Nut Splitter Line For Efficiency, Durability And Ergonomic Design

Hydraulic Nut Splitters from Enerpac are ideal for removing seized and corroded nuts, eradicating the need for unsafe grinding and flame cutting. With 21 tools in all, the efficiency, durability, and ergonomic design of the nut splitters gives maintenance engineers the ability to remove the toughest seized nuts.

The Enerpac nut splitter portfolio includes: NC Series Nut Cutter, NSH Series Nut Splitter and NSPH Series Nut Splitter Power Head tools. When it comes to efficiency, the tools have an optimised cutting head geometry ideal for the industry application. For example, the Enerpac NSH and NSPH Series tools are designed for the oil and gas market and the cutting heads specially designed to tackle bolted pipeline flange joints. Another efficient feature is the dual blade design found on several models. As nuts can be split from two sides in one action, this saves the operator valuable time.



For enhanced durability, the tools are heat treated and shock resistant to withstand minor impacts without damage. Durability includes features such as heavy duty, steel chisels that can be reground as needed, models with a drop-tested revolving anchor point, and models that can tackle nuts with up to a max HRC 44 hardness.

Operators will appreciate the ergonomic design. An angled head and ergonomically designed and positioned handle makes the tool easy to work with and manoeuvre. Several models also feature an easy-to-use compact design.

To learn more about the latest Enerpac Nut Splitting tools, visit www.enerpac.com.



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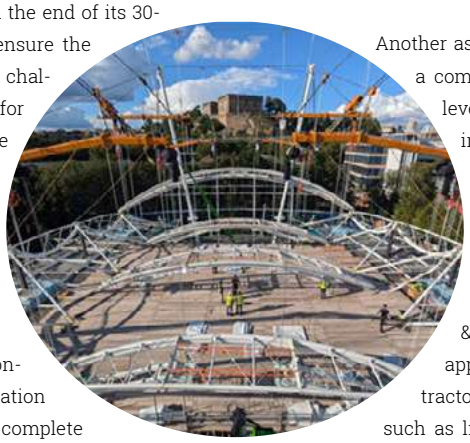
Hoist & Winch Performance Reaches New Heights In Roof Replacement Project

When a landmark building in Nottingham required the replacement of its fabric tensile roof covering, the subcontractor tasked with this critical work turned to the expertise of Hoist & Winch Ltd for the roof lowering and lifting solution. The eye-catching building, a former HMRC complex similar in design to London's O2 Arena, is today part of Nottingham University's Castle Meadow Campus.

The leaking tensile roof covering had reached the end of its 30-year lifespan and required replacement. To ensure the optimal solution to this technically complex challenge, the specialist subcontract responsible for the job approached Hoist & Winch. The objective for Hoist & Winch was to specify and supply a complete hoisting solution that would enable safe, even lowering of the original fabric roof to ground level and raising of the replacement fabric roof to its final installation height.



Following a number of site meetings and consultations with both designers and roof installation personnel, Hoist & Winch was able to propose a complete package of equipment and technical support.

At the centre of the proposal were 12 Yale/CM Lodestar electric chain hoists. These 2t swl (safe working load), 110V top-hook suspension hoists were coupled with correctly sized 30m long power feed/control cables. The idea was to operate the hoists simultaneously in sets of four while suspended from the customer's specially designed lifting beams. Hoist & Winch also provided three separate single free-standing control stations of bespoke design to manage hoist unit motion, either individually or in sets of four, during lowering of the original fabric roof and lifting of its replacement.

Another aspect of the project saw Hoist & Winch supply a combination of 15t and 6.3t swl William Hackett lever hoists to assist with de-tensioning the original fabric roof prior to lowering operations and re-tensioning the new fabric once lifted into its final position.

As always, technical consultancy proved a core element of the overall package from Hoist & Winch. The company's highly professional approach ensured the specialist roofing subcontractor received guidance on project-critical factors such as lifting equipment legislation, lifting operation

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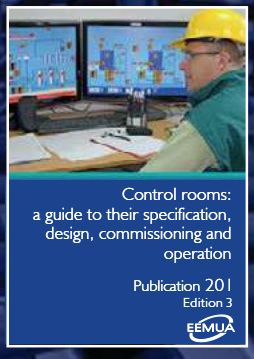

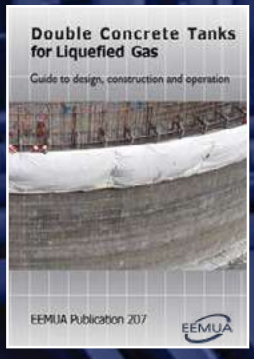



planning and management, overall design and sizing of two bespoke portable electrical transformers, electronic load cell selection, selecting loose lifting tackle, and site examination and testing procedures prior to the commencement of lifting operations.



"The outcome was the safe and successful removal of the original fabric roof and the installation of its replacement as part of a finely controlled, smooth process," reports Hoist & Winch Director Andy Allen. "The customer was delighted with the professionalism of our expert team and the solutions we proposed. Taking projects like this from concept to fruition is where we excel, ensuring our customers meet all of their objectives in a safe, competent and timely manner."

Such was the impression made on the specialist roofing subcontractor that it subsequently engaged Hoist & Winch in further work to adapt the already acquired lifting system and used the knowledge gained from the Nottingham project to bid successfully for another multi-point lifting project in Copenhagen.

Visit www.hoistandwinch.co.uk for further information and to view recent case studies.



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Enhancing Transformer Performance And Sustainability With Cork

Cork composites solutions can play a vital role in transformer design and maintenance. With unique properties such as resilience, compressibility, and load-to-seal capability, cork effectively addresses several challenges encountered in the operation of transformers. The versatility of cork solutions can be a game-changer in ensuring efficiency, reliability and longevity.

One of the primary applications of cork in transformers is the use of gaskets for flanges. These gaskets are crucial for creating secure seals between flanges and covers, areas that require materials that can endure mechanical stress, thermal expansion, and the presence of transformer oils. By combining cork with rubber, flexibility and resistance are enhanced, resulting in a dependable solution that minimizes leaks and ensures long-term structural integrity.

Another key application is the use of cork as sealants around bushings and valves. These critical points of connection and operation require effective sealing to maintain insulation integrity and prevent unwanted leaks. Cork composite solutions are ideally suited for these areas, as they adapt to irregular surfaces and withstand pressure variations, ensuring reliable performance under challenging conditions.

Additionally, cork's natural damping properties make it ideal for use in pads for vibration and noise control. Transformers often experience vibrations from the magnetic flux and load cycles, which can lead to wear and tear or even structural damage over time. By absorbing and dissipating vibrational energy, cork reduces noise and extends the lifespan of key components, contributing to smoother operation and lower maintenance costs.

Why choose Amorim T&D cork composite solutions?

Amorim T&D is a range of cork composite solutions, developed by Amorim Cork Solutions, especially for the power industry. These solutions not only perform well in these specific applications but also offer environmental advantages. As a natural and renewable material, cork aligns with sustainability goals while delivering high performance in demanding industrial contexts.

For instance, a sheet of Amorim T&D VC2100 has a carbon footprint of -20.31 KgCO2eq, meaning it captures more CO2 than it produces. This calculation is based on a cradle-to-gate study conducted using a tool developed by KPMG in collaboration with Amorim Cork Solutions. By combining high performance with a negative carbon footprint, Amorim T&D is helping drive the industry's transition toward more sustainable practices.

For those looking to optimize transformer design or improve overall performance, Amorim T&D offers innovative solutions that elevate the effectiveness and sustainability of transformer systems.

www.amorimcorksolutions.com



Greener Aluminium Manufacture with Smart Transporter

A commitment to reducing the environmental impact of Aluminium production has led one manufacturer to replace a pair of diesel-powered, forklift trucks with a single battery-powered, AGV transporter from Madrid-based, DTA by Enerpac. Using a pre-programmed guide path, the Automatic Guided Vehicle's (AGV) array of sensors ensure the safe movement of coils within the busy factory environment.

The AGV 15 transporter carries newly rolled 15T aluminium coils to an on-site storage facility. Working 24/7, the AGV replaces two diesel forklift trucks operating three shifts per day. On average the transporter will move 90 aluminium coils daily, over a total distance of 108 kms.

Safety is critical to the transporter's operation. The AGV 15 features an array of sensors to ensure safe movement within the factory. These include LIDAR sensors providing the transporter with a 360º full field of view together with forward laser scanning, preventing the AGV from hitting objects in the guide path. It also has a safety bumper designed to detect contact of an object as well as 3D obstacle detection cameras.

"A DTA by Enerpac AGV is a fully automated solution to the movement of materials and components within a factory or production plant," says Gonzalo Sebastien, sales director, DTA by Enerpac. "As well as the environmental benefit of replacing two diesel-powered forklift trucks, the transporter's automated operation will provide on-going productivity and efficiency gains at the aluminium plant."

For more information on the DTA by Enerpac AGV vehicles visit www.enerpac.com.



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From Speedor Storm, The Largest Speedor Available, Hart Door Systems Has Now Revealed Speedor Smart, The Smallest Speedor Available.

Nick Hart, Hart's managing director, says the development of Speedor Smart was very much driven by demand from global airports. "We have experience in delivering door solutions for very many international airports so we welcomed the opportunity to demonstrate our Speedor skills in the area of automated baggage handling.

"This is a great achievement. We have been able to increase the range of solutions offered by the Speedor brand, in this case by delivering a secure, automatic, door to work repeatedly with conveyor belts, Speedor Smart.

"Overall this strengthens our skills in an important area for airports be it baggage check in, conveyor separation or equipment automatic high speed access doors to the tarmac. There is increasing sophistication in the process at a time when airports are becoming busier. Being able to interface and automate, reliably over millions of operations is key."

Hart has a considerable range of assets for airports from a range of fire/security shutters capable of delivering protection from smoke and fire threats in a frequent operations environment to roller shutters for Storage/Access areas in airports to high-speed doors up to 6m wide x 8m high. This includes roller shutters tested to 5000pascals pressure. Upper-most is the ability of Hart to deliver high quality solutions across a very wide range of industries not just in the UK but abroad.

Airport customers, for example, come to Hart for solutions and high-quality ones at that which comply with UK, EU and US international standards confirming the end-product achieves a standard which complies with the expectations of our customers and any applicable contractual and legislative requirements. Hart can be relied on to deliver the results and one that understands how airport projects are managed.

Hart has the proven track record of British engineering and service excellence on nearly 40 international airports. These include Heathrow, where Hart installed forty eight check-in desks with a unique design, developed specifically for Heathrow in combination with an international conveyor manufacturer, combining features from other Hart products namely fire, security and high speed, automatic, operation.

Based in Newcastle upon Tyne, UK, Hart Door Systems is oldest British manufacturer of high-speed doors and shutters. Founded in 1946, Hart has consistently brought generations of engineering experience and pioneering product expertise together for the benefit of customers worldwide.

Hart's innovative products, problem-solving approach and practical experience help companies to maintain quality working conditions as well as containing noise, odour and environmental contaminants. This spirit of innovation is embedded in in the philosophy of continually evolving product range of Speedor high-speed doors, fire shutters, Terror Screen security rated shutters and specialist doors such as ATEX compliant high-speed doors and shutters.

Hart's products are manufactured to international standards such as the ISO9001:2015 Quality Assurance scheme and LPS 1056 and LPS 1271, Loss Prevention Council Standards for Fire and security doors third party tested to international standards.

Hart offers consultancy, design, manufacture, shipping, installation, maintenance, servicing and training from a single source. This approach to project management, helps clients save on resources and reduces administrative burden.

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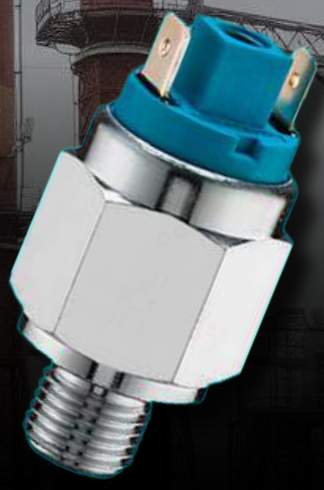

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In the last five years, we have successfully supplied over five million Model 41 and Model 31 Euroswitch Switches to customers across the hydraulic, pneumatic, and processing industries. This is a testament to our commitment to quality and reliability. - *Lorenzo Fumaneri - Export Sales Manager Euroswitch*

Model 41 Pressure Switch

The Model 41 is a highly functional diaphragm pressure switch designed for versatility. It offers a choice between normally open or normally closed contacts and has an adjustable switching pressure range of up to 50 bar. With its Viton diaphragm, it ensures durability and reliability. It's available in various materials: zinc-plated steel, brass, or stainless steel, accommodating different operational needs, all while handling a maximum working pressure of 150 bar.

Model 31 Pressure Switch

The Model 31 Pressure Switch is engineered for switching pressure ranges of up to 50 bar. It also provides options for normally open or normally closed contacts (SPST) and a range of adjustment settings: 0.1 – 1 bar, 0.2 – 2 bar, 1 – 5 bar, 1 – 10 bar, 10 – 20 bar, or 20 – 50 bar. With the ability to withstand a maximum working pressure of 150 bar and an overpressure limit of 300 bar, this switch is both robust and adaptable. It has a maximum switching voltage of 250 volts, an operating temperature range of -10°C to 120°C, and offers a Viton diaphragm as a standard option, although other diaphragm materials are available.

Customers can choose from zinc-plated steel, brass, or stainless steel to fit their requirements.

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EEMUA releases new edition of its globally renowned guidance on above ground storage tanks – EEMUA 159

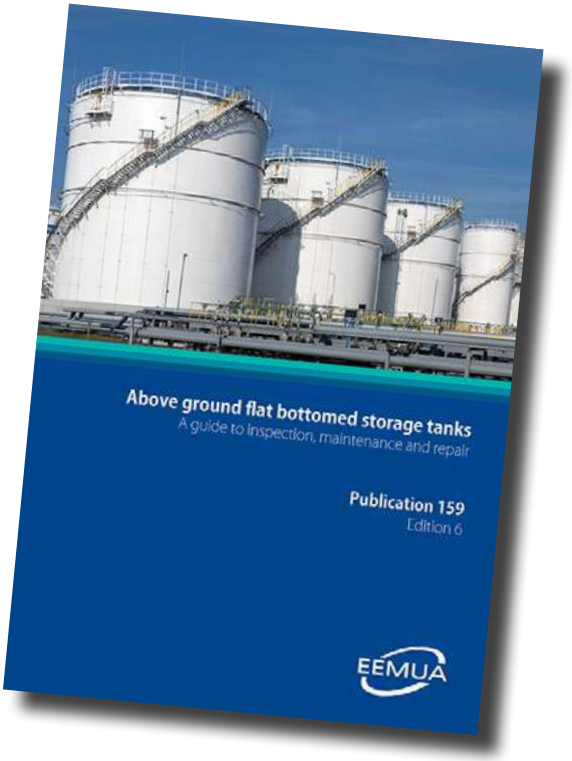
EEMUA has published Edition 6 of its highly respected guidance EEMUA Publication 159, 'Above ground flat bottomed storage tanks – a guide to inspection, maintenance and repair'.

EEMUA 159 is considered to be the most comprehensive users' guide available on above ground vertical cylindrical, steel storage tanks. It is also used worldwide by regulators as an example of what good practice looks like.

EEMUA 159 is intended to assist in the establishment of essential inspection and maintenance requirements in order to minimise in-service problems and extend the useful life of these storage tanks. It offers guidance on tanks built to BS, EN or API standards for the storage of petroleum and chemical feedstocks and products and refrigerated gases.

These standards include BS 2654, API 620 and API 650, DIN 4119-1 and -2, CODRES, G0801 and EN 14015. In addition, since EEMUA 159 contains information on many topics that are not covered in API 653, the EEMUA publication can be considered complementary to the API standard.
The publication sets out key features for planning and executing inspection, maintenance and repair works. It includes descriptions of the key tank components that require inspection and maintenance, degradation mechanisms and common inspection techniques, and details on tank lifting. Appendices offer guidance on how to perform assessment calculations on tank components, illustrated by means of sample calculations, as well as on repair methods.

The newly released Edition 6 includes three integrity assessment levels of increasing complexity. The use of integrity assessment levels helps to understand that different kind of rejection limits can exist for the same component. There are revised chapters on tanks and their components, degradation mechanisms and failure modes, general inspection techniques and interpretation of inspection data, tank foundations and hydrotesting. Revised flowcharts for assessing the fit-for-purpose of the tank bottom, shell and roof are now available.
The new edition also contains guidelines on change of service and guidance on new inspection methods and technologies including robotics and drones. It provides increased guidance on settlement assessment and a new chapter on stainless and duplex steel tanks. The guidelines for hydrotest exemption for major repairs and the remaining life calculations for bottom pitting have also been updated.





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Motion Amplification, Thermography, Oil, Balancing, Laser Alignment, Ultrasonic and Motor Analysis. Our partnership with industry OEM's highlights the commitment we make to showcasing innovative technologies. One such example is RDI Technologies. Their revolutionary technology, Motion Amplification, is a video-processing product and software package that detects subtle motion and amplifies it to a level visible with the naked eye. RMS is also a UK approved distributor of Emerson/CSi Machinery Health Manager products and solutions.

The Reliability Training Institute is a UK & Ireland accredited Training Organisation for both Mobius Institute (MIBoC) and The British Institute of Non-destructive Testing (BINDT). Professional training courses in Vibration Analysis, Ultrasound and Asset Reliability prepare students to take the ISO certified examination. We use the very latest computer-based simulations and animations to help make even the most complex subjects understandable. Study options include Onsite, Hotelbased, Hybrid, Virtual Instructor-led and Self-paced courses."

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When Is The Right Time To Switch Your CMMS Software?



For a growing number of manufacturers, the Computerised Maintenance Management System (CMMS) has become the backbone of maintenance & asset management, work order tracking, and overall operational efficiency. However, as technology evolves and business needs change, the CMMS that once served your organisation may no longer be fit for purpose.

If you're considering switching your CMMS, there's never been a better time to do so – here are some of the top reasons to take the plunge, and what to look for in a new solution.

1. Your Current Provider Has Announced End-of-Life or Platform Mergers

One of the most compelling reasons to consider a CMMS switch is if your current provider announces an end-of-life (EOL) plan for your existing system. Many providers are consolidating their platforms, often merging users onto new systems, sometimes under the umbrella of an entirely different company. While this may seem like a seamless transition, it can come with significant risks.

Disruption to Operations: Migrating to a new platform often involves downtime, data migration challenges, and potential loss of customisations.

Unfamiliar Interfaces: The new system may have a completely different user interface, requiring extensive retraining for your team.
Uncertain Roadmap: The new platform may not align with your long-term maintenance strategy or operational goals.
End of Support: Without ongoing support, security updates and bug fixes will cease, leaving your organisation vulnerable to inefficiencies and potential cybersecurity risks.
Vendors may claim a seamless transition, but in reality, you may face hidden costs, licensing changes, or limitations in customisation. Proactively moving to a modern CMMS that aligns with your operational needs can save time and prevent unnecessary complications.

If your provider has announced an EOL or merger, it's a clear signal to evaluate alternatives.

2. Your Current System Lacks Scalability and Flexibility

As your organisation grows, so do your maintenance needs. A CMMS that worked perfectly for a small team or a single site may struggle to handle the complexities of a larger, multi-site operation. Scalability and flexibility are critical factors to consider.

Inability to Handle Increased Data: Older systems may not support the volume of data generated by a growing asset base or additional sites.
Limited Integration Capabilities: Modern CMMS platforms should integrate seamlessly with other enterprise systems, such as ERP, IoT devices, and predictive maintenance tools. If your current system can't keep up, it's time to explore alternatives.
Rigid Workflows: A lack of customisable workflows can hinder efficiency, especially if your maintenance processes are unique or evolving.
When evaluating a new CMMS, prioritise systems that offer scalability, robust integration options, and the ability to adapt to your organisation's changing needs.

3. Outdated Technology, Lack of Innovation, and On-Premise Limitations

Technology is evolving rapidly, and your CMMS should evolve with it. If your current system feels outdated or lacks modern capabilities, it could be limiting your organisation's efficiency, scalability, and ability to adopt new innovations.

No Mobile or Cloud Capabilities: Technicians need real-time access to work orders, asset histories, and manuals from the field. If your CMMS is on-premise or lacks a mobile-friendly interface, it's creating unnecessary bottlenecks.

Limited Analytics and Reporting: Modern CMMS platforms leverage cloud computing to offer advanced analytics, dashboards, and predictive insights. If your system only provides basic reporting, you're missing out on opportunities to optimise maintenance strategies.
No Support for IoT, AI, or SaaS Integrations: The future of maintenance lies in predictive and prescriptive maintenance, powered by IoT sensors, AI-driven insights, and seamless SaaS integrations. If your CMMS doesn't support these technologies or lacks open APIs for easy

integration, your organisation risks falling behind.
Migrating to a modern, cloud-based SaaS CMMS can future-proof your maintenance operations, ensuring scalability, real-time data access, and seamless integration with emerging technologies. By embracing innovation, you can reduce downtime, improve asset reliability, and operate more efficiently.

4. Poor User Experience and Low Adoption Rates

If your engineers and technicians find the system cumbersome, outdated, or slow, it can lead to poor compliance, inaccurate data entry, and operational inefficiencies. Complaints about usability, reliance on external spreadsheets, and new hires struggling to get up to speed are all signs that your CMMS is not meeting user needs

Complex Interfaces: Overly complicated systems can frustrate users, leading to errors and resistance to adoption.

Lack of Training and Support: Even the best CMMS requires proper training and ongoing support. If your provider falls short in this area, it's a red flag.

Low Engagement: A system that doesn't engage users, through features like gamification, easy reporting, or mobile access will struggle to deliver its full potential.

When considering a new CMMS look for systems with intuitive interfaces, robust training programmes, and features that encourage engagement and adoption.

5. Rising Costs and Poor Return on Investment (ROI)

Cost is always a consideration, but it's not just about the upfront price of the CMMS. If your current system is becoming increasingly expensive to maintain, upgrade, or customise, it may no longer offer a good ROI.

Hidden Costs: Licensing fees, mandatory upgrades, and additional modules can quickly add up.

Inefficient Processes: A system that doesn't streamline your maintenance processes can lead to higher labour costs and increased downtime.

Lack of ROI: If your CMMS isn't delivering measurable improvements in efficiency, asset lifespan, or cost savings, it's time to explore alternatives.

When evaluating a new CMMS, consider the total cost of ownership (TCO) and the potential ROI. Look for systems that offer transparent pricing, flexible licensing, and a track record of delivering value.

Making the Decision to Switch CMMS Software

Switching your CMMS is a significant decision, but one that can deliver substantial benefits.

When evaluating potential CMMS providers, consider the following:

Stability and Reputation: Choose a provider with a strong track record and a clear roadmap for the future.
Customer Support: Look for providers that offer comprehensive training, onboarding, and ongoing support.
Customisation and Integration: Ensure the system can be tailored to your specific needs and integrates seamlessly with your existing tools.
Future-Proofing: Opt for a platform that embraces emerging technologies like IoT, AI, and mobile capabilities.
By addressing the pain points of your current system and embracing a modern, scalable, and user-friendly solution, you can transform your maintenance operations.

Considering a CMMS Switch – Talk to PEMAC Today

PEMAC simplifies the process of switching CMMS for companies through several key features and strategies:

Easy Data Migration: PEMAC facilitates the smooth transfer of existing maintenance data from one CMMS to another. Our tools are designed to help businesses migrate asset, work order, and maintenance history without data loss, ensuring minimal disruption during the transition.
User-Friendly Interface: The PEMAC ASSETS platform has an intuitive user interface. Whether employees are familiar with CMMS software or not, the design makes it easy for teams to get up to speed quickly.

Customisation: PEMAC ASSETS allows businesses to tailor the system to meet their needs, making it easier to match workflows and processes when transitioning from another CMMS. This helps maintain continuity and adapt without major overhauls in operations.

Integration Capabilities: PEMAC ASSETS CMMS is designed to integrate with existing enterprise resource planning (ERP) software, inventory systems, and other tools, reducing the complexity of managing multiple systems during your switch.

Training and Support: PEMAC offers strong customer support and training to help employees understand the new CMMS, ensuring that the switch is as smooth as possible.

Scalability: As businesses grow, PEMAC ASSETS CMMS can scale with them, which means you can switch without worrying about outgrowing the new system.

Cloud-Based Access: PEMAC ASSETS is a cloud-based solution (SaaS) with no need for complex on-site installations or server management. Companies can access the solution from anywhere, simplifying the switch for businesses with multiple locations or remote teams.

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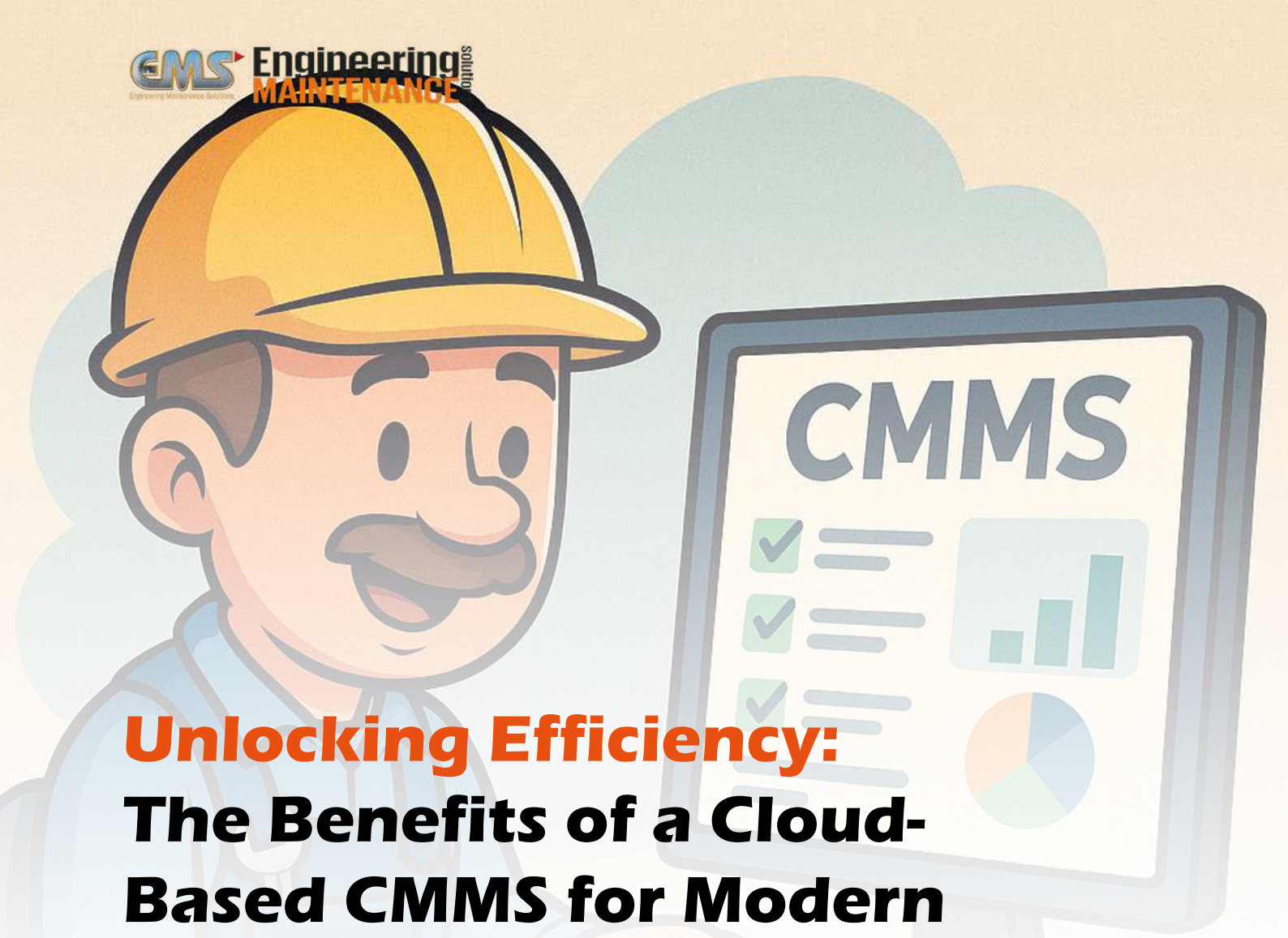

Unlocking Efficiency: The Benefits of a Cloud-Based CMMS for Modern Maintenance Teams

In an era where digital transformation is reshaping industry standards, maintenance engineering is no exception. Cloud-based maintenance management systems—also known as Computerized Maintenance Management Systems (CMMS)—are fast becoming essential tools for engineering teams striving for efficiency, transparency, and scalability in their operations.

This article dives into the practical and strategic benefits of adopting a cloud-based CMMS, especially within environments that demand consistent asset uptime, tight compliance, and effective preventive maintenance.

What Is a CMMS?

At its core, a CMMS is a software platform designed to centralize, organize, and automate maintenance activities. These systems enable engineers to:

Plan and schedule maintenance tasks

Track work orders and asset history

Manage spare parts inventory

Generate reports and monitor KPIs

Facilitate audits and regulatory compliance

Unlike traditional on-premise systems, a cloud-based CMMS is hosted on secure remote servers and accessed via the internet. This provides immediate accessibility from any device—desktop, tablet, or smartphone—regardless of physical location, allowing maintenance teams to stay connected and responsive around the clock.

Enhancing Preventive Maintenance Programs

Preventive maintenance (PM) is no longer a "nice to have"—it's a frontline defense against costly downtime and asset failure. A cloud-based CMMS reinforces PM strategies by:

Automating PM schedules based on calendar dates, usage hours, or

condition monitoring inputs

Triggering alerts and reminders to ensure no maintenance task is overlooked

Providing technicians with digital work orders, step-by-step instructions, and safety protocols

Tracking technician performance and maintenance completion rates

Compiling historical data for each asset, which is invaluable for root cause analysis, failure prediction, and continuous improvement

For industries like food processing, pharmaceuticals, or utilities—where regulatory compliance and traceability are critical—a CMMS ensures maintenance is not only performed, but thoroughly documented and auditable.

Advantages of Moving to the Cloud

1. Real-Time Access and Collaboration
Cloud-based systems remove geographical barriers. Maintenance leaders, engineers, and contractors can access the same platform simultaneously—from the plant floor, corporate office, or remote site. This ensures that decisions are made with the most current information at hand.

2. Scalability and Flexibility
Cloud solutions grow with your organization. Whether you're managing a single site or a multi-national operation, the system can be scaled to meet evolving needs without the constraints of physical infrastructure or additional IT overhead.

3. Lower Upfront Costs and IT Burden
No need for costly servers, internal hosting, or on-site technical support. Vendors manage hosting, updates, security patches, and backups—allowing maintenance teams to focus on what they do best.

4. Seamless Updates and Integration
Cloud platforms often receive automatic updates, giving users access to the latest features, bug fixes, and integrations with IoT sensors, enterprise systems, or mobile apps—without disruption to operations.

5. Enhanced Data Security and Disaster Recovery
Reputable cloud providers offer robust encryption, multi-factor authentication, and backup redundancy. While data security remains a common concern, most cloud CMMS providers exceed the security capabilities of in-house IT setups.

Considerations Before Implementation

Despite its advantages, transitioning to the cloud isn't a one-size-fits-all decision. Some organizations, particularly those dealing with sensitive or proprietary information, may require greater control over data residency and access. In such cases, a hybrid model—where mission-critical data remains on-premise while leveraging cloud for reporting and collaboration—might offer the best of both worlds.

It's also crucial to:

Perform a thorough vendor assessment (support, SLA, data portability)

Train staff on new workflows

Establish internal governance for user access, audit trails, and data input standards

Final Thoughts

For maintenance engineers and plant managers aiming to streamline operations, improve equipment reliability, and future-proof their maintenance strategy, a cloud-based CMMS offers a powerful, agile solution. As maintenance continues to evolve from reactive firefighting to predictive performance management, embracing cloud technology is less of an option—and more of a competitive necessity.

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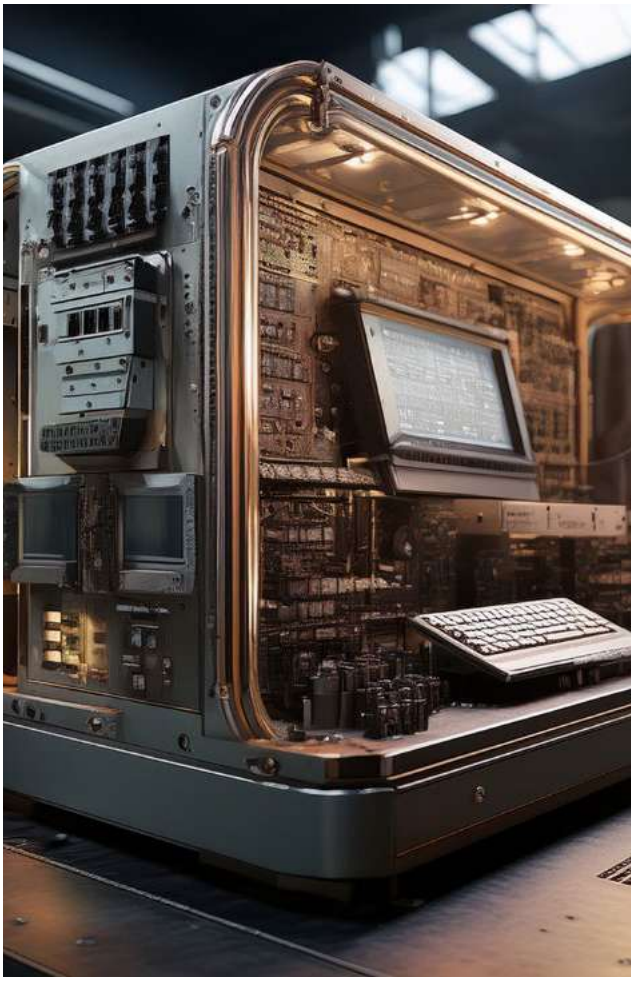

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Proactive Maintenance: What You Really Ought To Be Doing

Condition Based Maintenance (CBM), using tools such as vibration analysis, thermal imaging and oil analysis, is now clearly recognised as being the key to running an effective maintenance program. By comparison, planned periodic maintenance, or worse still breakdown (reactive) maintenance, are not only unnecessarily expensive and unreliable, but potentially fraught with danger!

But why is CBM the answer? Firstly, when using CBM tools, service and maintenance personnel potentially bring another very valuable asset to the job – they can use their eyes, ears and noses! For example, by spotting things like oil leaks or worn drive belts, breakdowns can be avoided through timely intervention. To assist with this process, software tools are now available to lead even a novice user through the process of carrying out inspections to produce clear and fully documented reports, which can automatically generate email alerts and workflow tasks.

Additionally, CBM brings with it the opportunity for **Proactive Maintenance**, essentially the process of "closing the loop" by identifying the root cause of a fault and correcting it. For example, vibration analysis might indicate a badly worn bearing that has failed after only a few months, well within the manufacturer's specified MTBF. Without identifying the root cause of the premature failure, the bearing might simply be changed only to rapidly wear out again.

It is generally agreed that the three main causes of premature bearing failure in rotating equipment are:

- Out of balance
- Misalignment
- Lack of lubrication

Fortunately, thanks to modern technology, all these conditions can be detected very easily using extremely affordable, simple to use handheld vibration analysers. Once diagnosed, all these faults can very easily be remedied in-house using affordable easy-to-use tools such as in-situ rotor balancers, laser alignment tools or even a simple grease gun!

Not so long ago CBM tools used to be considered expensive and difficult to use. But thanks to modern technology, these tools are now not only extremely affordable, they are also very easy to use. For example, the TPI 9070 (pictured) is a simple to use, incredibly low-cost vibration analyser that records, analyses and displays vibration at the push of a button. The TPI 9070 displays colour coded alarm levels based on internationally agreed (ISO) vibration values and bearing condition. It also incorporates a fully zoomable vibration frequency spectrum (FFT) display with cursor, and diagnoses out of balance, misalignment, looseness and bearing faults.

Test Products International (TPI) manufactures a complete range of low cost, high performance, and easy to use vibration analysis tools for maintenance engineers, from the simple one-button-to-press TPI 9070 to top-of-the-range CBM tools that include machine balancing and inspection software.

The TPI 9085 (with **ATEX/IECEx/North America** Zone 0 certified version also available) is one of the latest in TPI's line of easy-to-use high specification CBM tools. The TPI 9085 offers high level functionality and capability, **including instantaneous bearing temperature measurement**, at extremely low cost. The TPI 9085 can automatically download machine routes (as simple lists) that can be followed by even the lowest skilled operative to collect and store vibration and temperature readings for automatic upload to the included, free-to-use, C-Trend II trending software. This powerful but highly intuitive windows-based software, with its ability to automatically generate reports and email alerts, allows faults to be identified well BEFORE they become a problem that could result in unexpected breakdowns.

For more information, please contact TPI Europe on +44 1293 530196 or www.tpieurope.com or email cbmsales@tpieurope.com







Navigating The Shift: The Evolution From Route-Based To Online Vibration Monitoring

The industrial maintenance landscape is experiencing a seismic shift, driven by a convergence of technological advancements and workforce realities. Lower sensor costs, improved sensor quality, and increasingly capable vibration analysis platforms have made wireless online vibration monitoring more accessible than ever. Simultaneously, the declining availability of skilled vibration analysts is pushing many facilities to adopt remote monitoring solutions as a practical necessity.

Yet, while both route-based and online vibration monitoring methods can be highly effective, each comes with distinct challenges that organizations must anticipate and manage.

The Experience Behind the Analysis

Early tools included vibration data collectors and a healthy skepticism toward data without context. Over time, engineers have learned that sensors alone don't keep a plant safe—it's the combination of quality data, seasoned judgment, and direct observation that truly protects assets.

The Allure and Limitations of Online Monitoring

A common misconception is that online vibration monitoring systems inherently prevent downtime. It's a compelling narrative—especially to those outside the maintenance world—but it's not the full story. In reality, many failures attributed to missed detections by route-based programs often stem from a lack of follow-up on known issues. Online systems do offer continuous data collection and visibility, but they don't eliminate the need for human insight.

Online monitoring can certainly detect changes that go unnoticed in monthly routes, especially transient events. However, it also creates distance between the analyst and the equipment—literally and figuratively. Without visual inspections during data collection, subtle mechanical issues may slip through undetected.

Case Study: The Gearbox That "Winked"

In one early example, a critical issue with a calendar machine gearbox—powered by six shafts and five gear sets—through nothing more than a subtle, intermittent oil line shift was identified. The vibration data at the time showed no significant changes. Yet, on-site observation, aided by visual cues and instinct, revealed a key slowly walking out of a gear, eventually machining a groove in the gearbox casing.

Today, a wireless sensor could collect similar vibration data, but without a technician visually inspecting the equipment, that "wink" might go unnoticed. This example illustrates why visual inspections must be intentionally incorporated into remote monitoring programs.

Tools of the Trade: Then and Now

Route-Based Monitoring Kit:

Flashlight, strobe light

Paint markers and notepad

Feeler gauges and pliers

Spare sensors and cables

Digital/phone camera

IR thermometer

Remote Monitoring Setup:

Laptop with software dashboards

Calculator, machine specs

Reference materials

Communication tools (Teams, Slack, Email)

Remote monitoring allows broader coverage and rapid anomaly detection. But without boots on the ground, we lose that "fifth sense" of field experience—the human capacity to notice what machines don't measure.

Communication: The Hidden Linchpin

One of the biggest hurdles in remote analysis is inconsistent communication. In one notable incident, engineers tracked a temperature spike remotely and alerted the site through multiple channels. Despite repeated outreach, no response came—until the sensor went silent in a fire caused by the very failure engineers were warning about.

Successful remote programs hinge on responsive, well-trained on-site teams. Facilities transitioning from route-based to online systems must invest in communication protocols, education, and clear responsibilities for inspections that analysts can no longer perform firsthand.

Diagnosing from Afar: Inspections Still Matter

Many fault types—bearing looseness, structural cracks, coupling damage—benefit from direct inspection. While vibration patterns can hint at problems, confirming root causes still requires someone physically at the machine.

Examples:

Coupling issues (e.g., LoveJoy, wrap-flex, Omega) often present as harmonics at 3x, 5x, or 6x running speed. Confirming requires visual checks or strobing.

Bearing looseness can be tracked using shaft paint marks and strobe inspections.

Weld failures and missing bolts are rarely evident in vibration spectra alone but are obvious to a trained eye on site.

The takeaway? Every remote program must be supported by an on-site inspection protocol. Analysts can guide what to check—technicians must be empowered and equipped to follow through.

Building a Smarter Hybrid Strategy

The best programs leverage the strengths of both approaches:

Online monitoring offers 24/7 coverage, helping detect issues during process changes, transient failures, and thermal events.

Route-based analysis enables real-time judgment, visual checks, and tactile sensing.

Hybrid systems—with periodic in-person inspections supplementing online systems—often yield the best long-term reliability outcomes.

For example, online data might reveal a spike in vibration at 2x running speed. Knowing whether this is due to misalignment or impeller recirculation depends on component-level data and process conditions—information a local team can verify quickly if they're engaged.

Final Thoughts: Set Expectations Early

Whether transitioning to or starting with online vibration monitoring, success depends on planning. Develop a communication strategy. Schedule regular visual inspections.

Maintain accurate machine component data. Most importantly, invest in educating your teams—both analysts and operators—about their roles in the program's success.

Continuous monitoring doesn't replace the human element. It augments it. And when both work together, the result is not only reduced downtime—but a smarter, more responsive maintenance operation.

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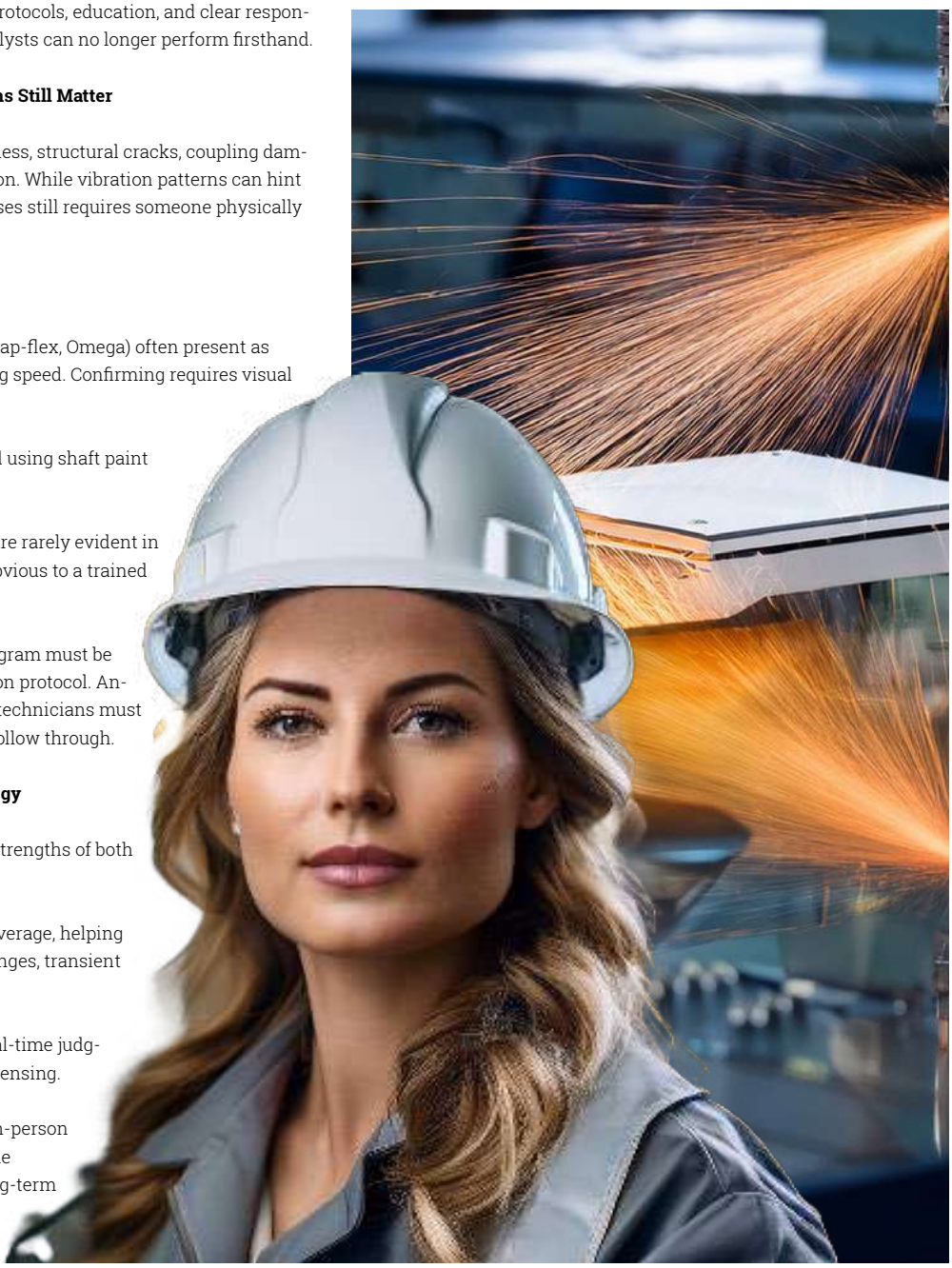

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From Chaos To Clarity:



Dr Ali Al-Badri
Contact:
alialbadri987@gmail.com

Fractal-Dimension-Based Proactive Fault Detection in Modern Machinery (Part 1) - *By Adam Dean and Dr. Ali Al-Badri | April 2025*

This article explores the application of fractal dimension (FD) analysis to detect early-stage mechanical faults in complex machinery using sensor signal data. By analyzing signal complexity through Box-Counting and Higuchi methods, subtle deviations can be flagged as anomalies before failure occurs. These changes, measured in FD values, correlate with known stress locations and estimated fatigue life reductions, making this technique an effective tool for predictive maintenance.

Understanding Fractal Dimensions in Condition Monitoring

Modern machines are equipped with sensors that generate vast quantities of time-series data. Traditional indicators, such as peak amplitudes or spectral energy, may miss early-stage faults that subtly alter the underlying complexity of these signals. Fractal Dimension (FD) analysis provides a mathematical approach to capture such changes.

FD values typically range from 1 to 2, reflecting the signal's complexity. Higher FD values indicate irregular, jagged signals, while lower values reflect smoother behavior. Two main FD methods—Box-Counting and Higuchi—are used to quantify these properties:

• **Box-Counting FD** evaluates the space-filling nature of a signal curve across scales.

• **Higuchi FD** measures signal roughness by analyzing its length across time intervals.

Together, these methods capture fine-grained changes in sensor behavior that could indicate incipient mechanical faults.

Methodology Overview

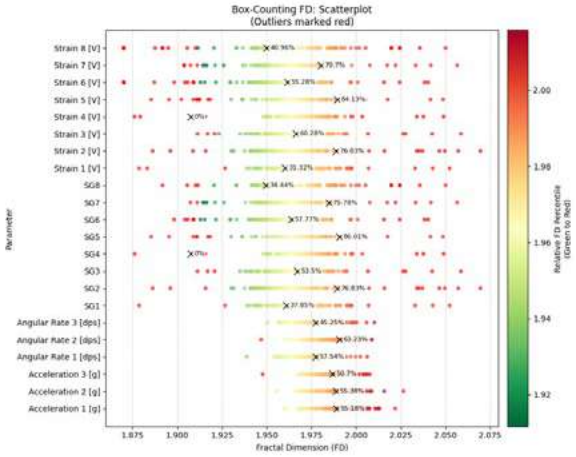


Figure 1: FD scatter plot using Box-Counting method.

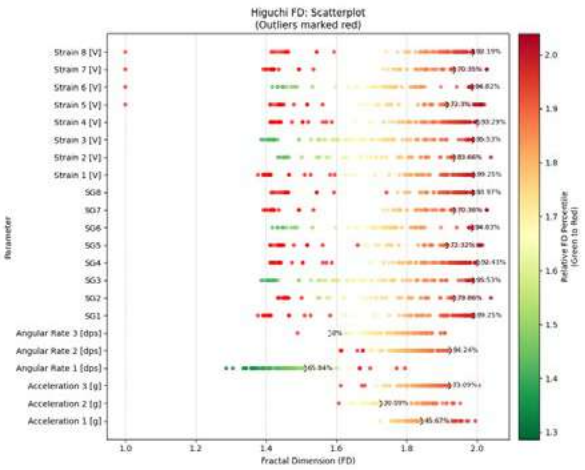


Figure 2: FD scatter plot using Higuchi method.

Sensor data from 134 escalators was analyzed using strain, acceleration, and angular velocity readings. Signals were preprocessed to remove noise and isolate steady-state segments. FD values were computed for each sensor using custom Box-Counting and Higuchi functions.

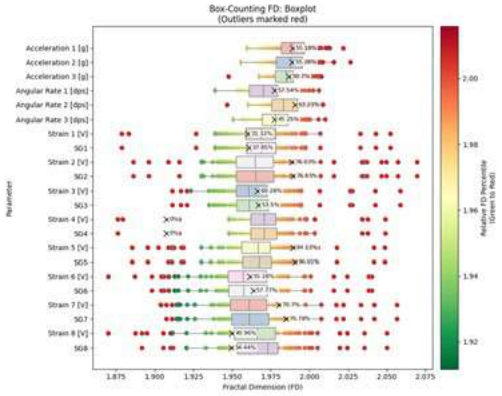


Figure 3: FD boxplot using Box-Counting method.

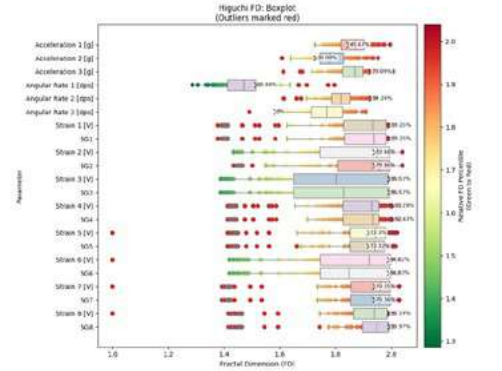
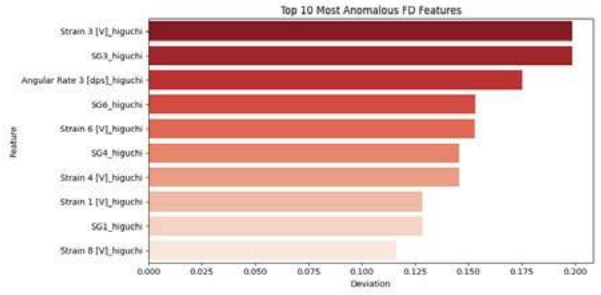


Figure 4: FD boxplot using Higuchi method.



Anomalies were detected by comparing test FD values to healthy baseline distributions using:

• **IQR-Based Outlier Detection:** FD values outside 1.5x IQR bounds were flagged.

• **Percentile Scoring:** Deviations from median values were scored for severity.

• **Isolation Forest:** A machine learning model trained on baseline FD data assessed the overall anomaly level of each test sample.

Results

Boxplots and scatter plots of FD values revealed that while most sensor outputs remained within expected bounds, a few—particularly Strain 3 and Strain 5—showed clear deviations, with FD increases exceeding the 0.15 threshold. These sensors corresponded to components known to experience high cyclic loads.

Fatigue life estimates based on FD deviations indicated reduced lifespan (5-30%) in affected components. Importantly, FD anomalies remained localized, providing a focused direction for further inspection.

Discussion

Fractal dimension analysis enables early detection of mechanical changes not visible through conventional metrics. A deviation of just 0.15 in FD can be meaningful, capturing complexity shifts before stress thresholds are exceeded. Using both FD methods improves robustness, as signals flagged by both metrics are more likely to indicate real issues. The Isolation Forest model added a multivariate perspective, confirming that anomalies in Strain 3 and 5 were not part of a wider systemic fault.

Advantages of FD Analysis:

• Captures subtle signal pattern changes

• Lightweight computation for real-time use

• Effective with unlabeled data

• Suitable for a wide range of machines

Challenges and Considerations:

• Sensitive to operational variation

• Threshold tuning is critical

• FD changes suggest anomalies but don't pinpoint failure types

Conclusion

Fractal dimension analysis offers a valuable addition to predictive maintenance strategies. By quantifying signal complexity, it highlights incipient mechanical degradation even when traditional parameters appear normal. The combination of FD metrics, statistical comparison, and machine learning allows proactive fault detection in complex machinery. This study confirms FD as a viable, scalable tool for early anomaly detection. Future work may include combining FD with other nonlinear metrics or expanding analysis into multi-dimensional data such as thermal imagery or vibration state-space maps.

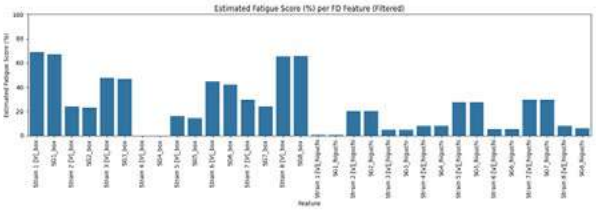


Figure 6: Estimated remaining fatigue life (in %) based on FD values.

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Vacuum Flash Tower Corrosion Mitigation At Crossbridge Energy Fredericia Refinery

Crossbridge Energy's Fredericia Refinery in Denmark, one of the most energy-efficient refineries in the world, experienced integrity concerns in its vacuum flash tower in the visbreaker unit. Excessive fouling had led to accelerated sulphidic corrosion in a section of the vacuum flash tower, which needed to be mitigated.

The visbreaker unit converts long residue, which is the bottom product from atmospheric distillation into lighter and more valuable products such as gasoil, kerosene and naphtha. The Fredericia refinery produces fuels such as heavy marine fuels, light and heavy gasoil, diesel, gasoline and LPG, and the facility is integrated into the local district heating network producing hot water to the grid. It is the ambition of the refinery to become CO2 neutral by 2035.

Challenge

The vacuum flash tower was experiencing several issues:

1. Fouling of stacked PAL/RACHID rings leading to irregular flow patterns

2. High-temperature sulphidation corrosion as a result of turbulent flow

3.vInternal corrosion and erosion damage in the original SS 410 material

4. Pitting in the top section despite being above the dewpoint

5. Need for structural integrity improvements through localized welding





Technical Assessment

The visbreaker unit, also known as a thermal gasoil unit, involves:

• Long residue cracking and distillation
• Gasoil distillation and drying
• Kerosine distillation
• Vacuum distillation
• Heat recovery in the form of hot water to the domestic grid, as opposed to using air coolers.

Well known corrosion mechanisms in this type of unit are:

• Sulphidation, sulphidic corrosion
• Naphthenic acid corrosion
• Aqueous acidic overhead corrosion
• Sour water corrosion

In this case, sulphidation was the problem. This degradation mode usually produced an iron sulphide scale on the corroding surface limiting the corrosion rate somewhat. Low alloy chromium and chromium nickel steels produce more tenacious, protective sulphide scales on the surface that result in enhanced resistance to sulphidic corrosion. At high flow velocity this scale can be broken down continuously, leading to increased corrosion. In this particular column a AISI 400 grade steel was believed to offer sufficient corrosion protection at the operating temperatures between 180 and 350°C. However, the increased fouling in a section of the column caused preferential flow along the column wall, leading to breakdown of the protective sulphide scale and consequential increased corrosion.

In addition, increased pitting corrosion was found in an area immediately above the cladded section. This corrosion is believed to be from acidic sour water corrosion.

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HVTS was technically approved with the following specifications:
• Internal alloy upgrade covering approximately 30 m² of surface area
• Complete cladding scope was then extended to 55 m² due to additional corrosion identified at the start of the project
• Implementation during a planned outage window starting September 2nd, 2024

Project Execution

The project was carefully planned with several key considerations:

• Timeline: 8 shifts total, operating 2 shifts per day over 4 days
• Resource allocation: IGS increased resources to meet the extended scope needs while not increasing critical path time
• Coordination with other maintenance activities, particularly flare repair work

• Integration with regular 6-month inspection and cleaning cycle

Results

The implementation proved successful with multiple positive outcomes:

• Zero safety incidents during execution
• Reduced operational expenses (OPEX)
• Lower life cycle costs (LCC)
• Improved equipment reliability
• Integration with existing contractor qualification system (aligned with Shell standards)



Testimonial

"IGS's HVTS® solution proved to be an ideal solution for our vacuum flash tower. The technical execution was impeccable, completing the work well within our outage window with zero safety incidents. The importance of executing on time during a very busy turnaround is key to success. IGS kept their promises and finished on time despite a scope increase going from 30m2 to 55m2."

- Lars Jung, Senior Materials & Corrosion Engineer at Crossbridge Energy Fredericia Refinery.

This case study demonstrates the successful implementation of modern corrosion protection technology in a critical refinery operation, balancing technical requirements with operational constraints while maintaining high safety standards and efficiency goals.

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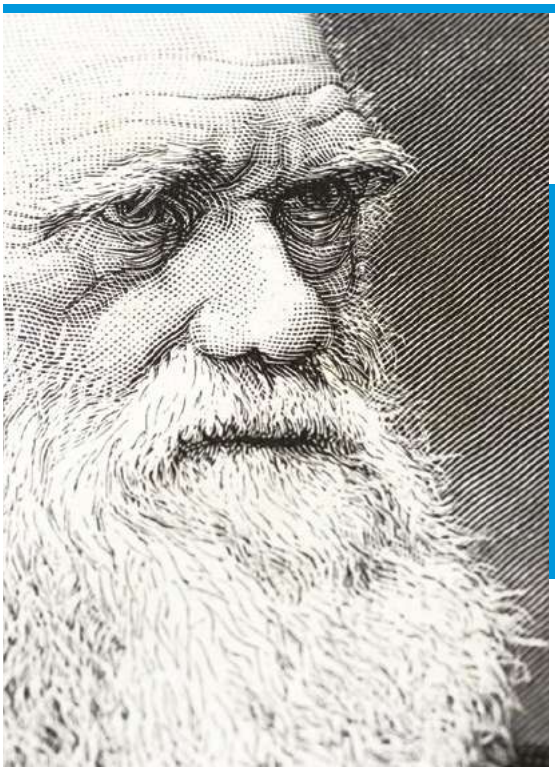

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Babcock Wanson Proud To Be A Founding Member Of Electrify Industry

Industrial process heating equipment and solutions specialist Babcock Wanson UK is pleased to be a founding member of Electrify Industry, a new body representing businesses seeking to decarbonise the UK's industrial base through electrification.

Electrify Industry, powered by Make UK – the manufacturers' organisation - is working with innovators to create a voice to ensure that the right policy is developed for electrification, which is considered by many to be the most efficient option to decarbonise the UK industrial sector and enable it to continue to grow. Electrify Industry's report, A programme for growth in the 21st century, states: "UK industry needs a healthy mix of decarbonisation options to make net zero work – presently this is far from reality. A healthy energy market that embraces electrification and facilitates real decarbonisation technology choices is necessary."

A founding member of Electrify Industry and a leading light in developing decarbonised products and services for boiler houses, Babcock Wanson is well placed to contribute to Electrify Industry's campaigning work. Babcock Wanson Group has developed a comprehensive range of electric powered industrial process heating systems, including steam generators and thermal fluid heaters. It recently announced the building of a substantial new plant in Nérac, France, which will not only enable the Group to increase overall production capacity, but also the ability to respond to the growing demands for decarbonised solutions through the development and expansion of electric and electrode boilers, oxy-combustion, and hydrogen-designed boilers.

At the 14th European Conference on Industrial Furnaces & Boilers this year, Cecilia Sebastiani, Product Technology & Innovation Manager at Babcock Wanson Group, outlined the obstacles and challenges for decarbonising industrial thermal engineering. "Whilst it is comparatively easier to mitigate CO2 emissions from light industry due to lower temperature requirements" she stated, "cost and infrastructure are the main barriers to electrification. However, heavy industry is far more challenging to decarbonise as low carbon technologies for many high temperature processes are still under development or are too expensive, plus industrial assets have long lifetimes and are infrequently replaced." In line with Electrify Industry, she stresses the need for policy support to promote the electrification of processes in heavy industry.

Launched in March 2025 at the Houses of Parlement, Electrify Industry has presented a set of six starting recommendations to move the country towards electrification, which include reducing electricity costs and provision for capital outlay, optimising and growing grid connectivity, grow the supply chain around electrification, invest in skills and R&D.

For information on Electrify Industry, go to www.makeuk.org/insights/reports/electrify-industry. For more information on Babcock Wanson, please visit www.babcock-wanson.com, or contact the company on 020 8953 7111 or info@babcock-wanson.com.









Bigger And Better – WJA Trade Show 2025 Is On Track For Success

Interest in WJA Trade Show 2025, the primary exhibition for the UK water jetting industry, is strong with nearly half of stands already booked six months before the event.

The Water Jetting Association is holding its exhibition – again free to attend – at StoneX Stadium, North London, on Thursday 11th September, with interest guaranteed for a wide variety of sectors, including industrial cleaning and petrochemicals.



The event promises to present 'The World of Water Jetting in One Place' and follows the success of the inaugural WJA Trade Show at the same venue in 2024.

WJA Chairman Lee O'Callaghan said: "We're delighted with demand for stands at WJA Trade Show 2025. Interest is firmly in line with the positive feedback we received about the first exhibition.
"As with last year, we are planning to have a wide mix of exhibitors from across the UK water jetting industry at WJA Trade Show 2025, many of them WJA members.

"It will also have a strong international flavour, with non-UK companies also taking stands, knowing it will be a valuable opportunity to meet prospective new UK clients and partners in one location."
WJA Trade Show 2025 is offering a third more stands than 12 months ago, including two outdoor display areas for large equipment instead of just one last year.

Returning to the Olympic Hall at the home of Premiership rugby club Saracens, the WJA plans to recreate the "buzz" enjoyed by both exhibitors and visitors at last year's event.

WJA Director Leanne Smith said: "We expect to attract substantially more visitors to WJA Trade Show 2025. We learned a lot last year, and we're confident this year's event will be even better, as well as bigger.
"All forms of water jetting will be represented, with contractors, manufacturers, hire and sales specialists and training providers already booked in as exhibitors.

"Equipment for all sectors that use water jetting, including drainage and water utilities, petrochemicals, oil and gas, construction, and cleaning, will also be on show.

"It's the one day of the year that all aspects of water jetting, plus all the experts, will be in one place together, so it's an ideal event for equipment and services sellers and buyers, alike."

The WJA is also offering four organisations the opportunity to be WJA Trade Show 2025 sponsors, with two already taken. Sponsors will have additional marketing opportunities before, during and after the event.

Exhibitors were unanimously positive about last year's exhibition.

David Beckington, Vice-President International Sales, NLB Corporation, said: "This is an amazing event. For the first year, the amount of people here, the way it has been organised, all of it is top notch."

David Ma, Director of nozzle manufacturer Fluid Water Jetting, said: "I knew this was a good opportunity for our company. We could meet a lot of potential customers. For the first show, it's fantastic."

Gavin Beedle, Managing Director of hire, sales and service specialist AQ Rent/ Doornbos Equipment UK, said: "It's a great networking event. Everyone is here, and there's everything high pressure and safety related."

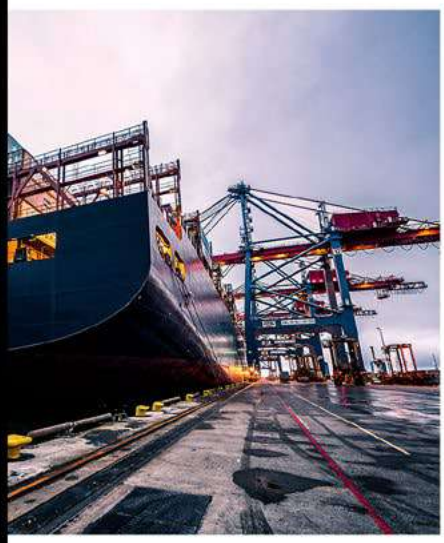
Steve Smith, Managing Director of Flowplant Group, and a member of the WJA Board, said: "It's been amazing. We've had a really good show. The reaction from visitors has been really, really good."

Mark Malsom, Sales Manager at nozzle manufacturer ENZ, described attending WJA Trade Show 2024 as "a very smart decision", adding: "It's turned out to be very worthwhile. We've closed some deals."

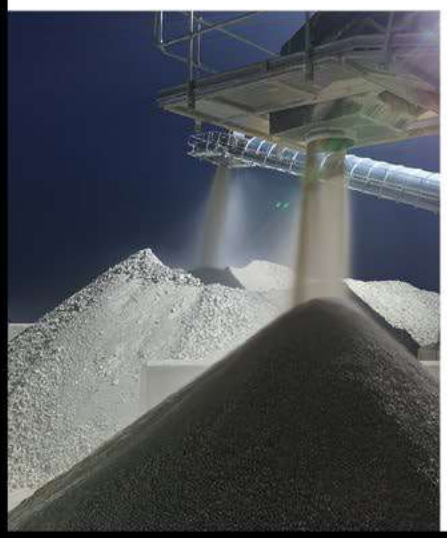
The Water Jetting Association is the member body for the UK water jetting industry. WJA Trade Show 2025 will take place the day after the WJA's annual general meeting, which is being held at the same venue. Book free tickets or enquire about exhibiting: www.wjatradeshow.org.uk











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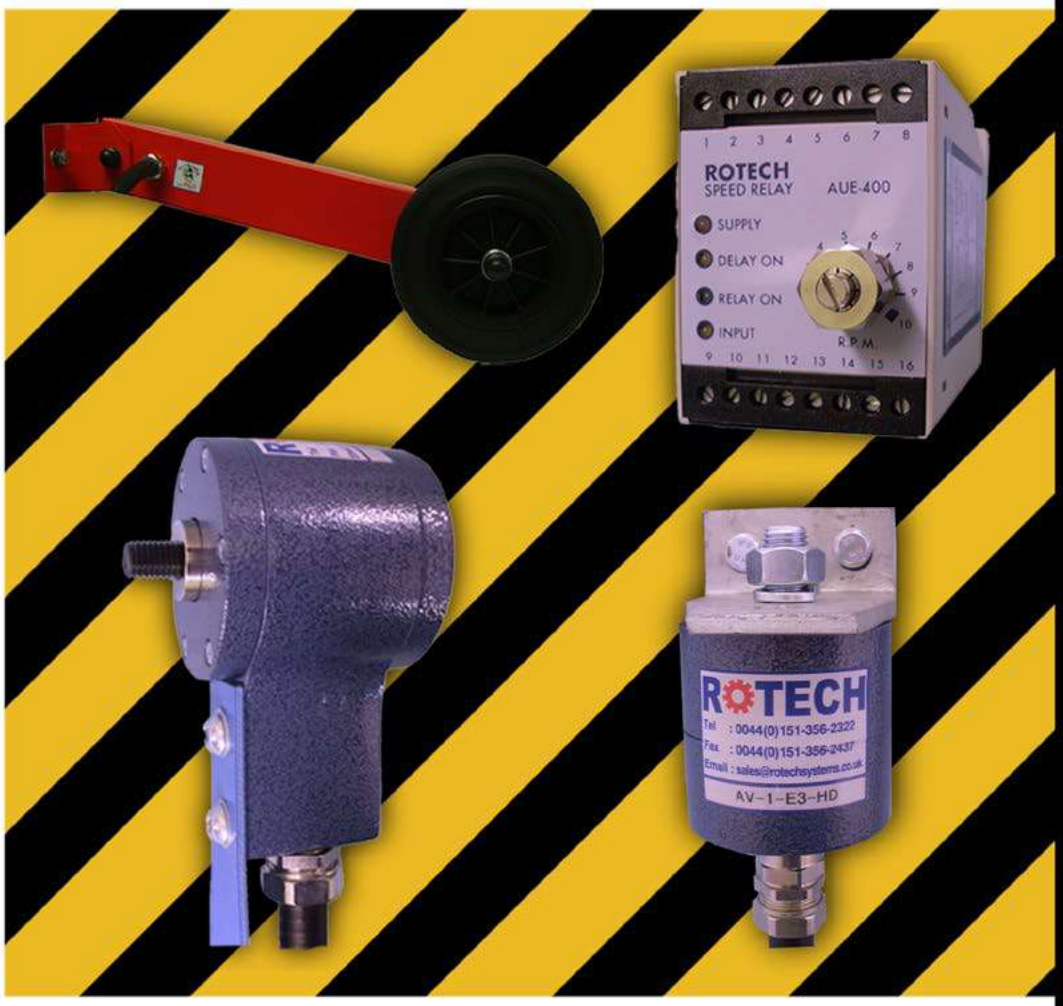

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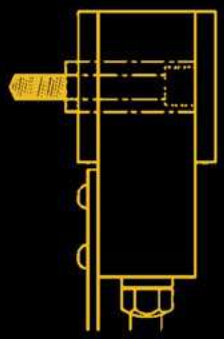

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Bringing Through-Life Service Via Embedded Workshop With Product Specialists

In the dynamic landscape of the oil and gas industry, the downstream sector faces numerous challenges. These include navigating global economic uncertainties, mitigating supply chain costs and disruptions, adhering to increasingly stringent environmental regulations, and striving for cost-effective production.

Given this complex environment, downstream plant operators are actively seeking suppliers that can partner with them to enhance operational efficiency and sustainability. This article explores how Trillium Flow Technologies provides service solutions that help operators improve their refining and processing operations in response to today's challenges.

For the past 12 years, engineers from Trillium's Termomeccanica Pompe legacy brand have been stationed at a customer's petrochemical plant, with a full workshop that provides ongoing support for a comprehensive range of rotating equipment. This includes centrifugal, gear, and screw pumps, screw and reciprocating compressors, agitators, blowers, electric motors, and valves. Over the years, this on-site presence has led to a wide range of requests and services for Trillium's engineers, ranging from spare parts to maintenance, as well as engineered solutions such as upgrades, re-rates, and retrofits.

Operational Symbiosis

Trillium's partnership with a European-based chemical plant has yielded numerous benefits. The plant specializes in producing polymers and lubricating oils for high-tech applications. It covers approximately 4 km² and employs over 1,500 people. Around 800 m² of the site is dedicated to a permanent workshop that houses more than 20 Trillium Flow Technology employees. This workshop is fully equipped with tooling and machinery and can expand to accommodate up to 70 Trillium engineers during the annual shutdown, tripling its productivity.

The contract for housing dedicated engineers on-site began in 2013 and was recently extended to 2027. Initially brought in to perform essential maintenance on the equipment Trillium had installed, the team has since expanded their role to utilize their skills across the entire plant. Throughout their 12-year tenure, Trillium engineers have provided comprehensive support to the customer, repairing and maintaining a wide range of equipment, including centrifugal and gear pumps, screw and reciprocating compressors, agitators, blowers, electric motors, and valves (including the revision and calibration of pressure safety valves). The service offering has gradually expanded to include the provision of spare parts, reverse engineering of discontinued components, retrofitting units for changes in service and efficiency improvements, and even conducting complete unit redesigns based on a 3D anthropomorphic arm measurement.

Notably, Trillium engineers have redesigned a series of vacuum pumps, which they now service and supply with spare parts, significantly extending their operational lifespan for the customer.

Conclusion

The challenges faced by the oil and gas industry underscore the vital importance of collaborative partnerships between plant operators and their suppliers. These partnerships are essential for the continued success of all involved. By working closely with expert suppliers like Trillium Flow Technologies, operators can leverage specialized knowledge and resources to optimize operational efficiency, ensure safety and reliability, and achieve long-term sustainability objectives in a rapidly evolving industry landscape.



Best Practices For Installing And Aligning Marine Pumps And Valves

Proper installation and alignment of marine pumps and valves are essential for ensuring long-term reliability, optimal performance, and safety at sea. Below is a structured overview of each critical phase in the process.

1. Site Preparation

Before installation begins, conduct a thorough inspection of the mounting site. Check the foundation, baseplate, piping, and flanges for signs of damage, warping, corrosion, or misalignment. Ensure the area is free from debris, grease, or contaminants, and confirm adequate clearance for tools and personnel. It's vital to verify that all pump and valve specifications align with the system's design parameters and operating conditions.

2. Mounting Equipment

Install the pump and valve onto the prepared baseplate or foundation using manufacturer-recommended hardware. Bolts should be tightened in a cross-pattern sequence to evenly distribute load and prevent distortion. Care must be taken to avoid over-stressing components during lifting and placement. Inspect for visible damage or leaks before proceeding.

3. Alignment

Accurate alignment reduces vibration, minimizes mechanical wear, and ensures energy-efficient operation. Shaft, coupling, and flange alignment must meet the tolerances specified by the equipment manufacturer. Use precision tools such as dial indicators, laser alignment systems, or computer-assisted instruments. Alignment should be rechecked after initial thermal cycles and load application.

4. Piping Connection

Connect the pump and valve to the piping system using compatible fittings and ensure proper gasket selection. Clean all piping before installation to prevent contamination. Avoid introducing strain through misaligned or unsupported pipework. Use flexible joints or expansion bellows to accommodate thermal growth and prevent transmission of vibration or pipe stress to the pump and valve.

5. Testing

Before commissioning, carry out a series of performance and integrity checks. Assess flow rate, pressure, temperature, power draw, and vibration levels under various load conditions. Monitor for leaks, abnormal noises, or performance deviations. Compare results against system design criteria and document all findings as part of the commissioning report.

6. Maintenance Planning

Routine maintenance is essential for maximising operational lifespan. Follow a structured schedule based on manufacturer guidance and actual operating conditions. Tasks should include lubrication, seal inspection, wear part replacement, and system cleanliness checks. Maintain detailed service records and use condition monitoring data to pre-empt failures.

7. Additional Considerations

Environmental conditions (saltwater exposure, vibration from adjacent equipment, temperature extremes) and accessibility for future maintenance should be factored into installation planning. Where applicable, consider the use of corrosion-resistant materials and protective coatings. Also, engage in cross-discipline collaboration—mechanical, electrical, and control systems—to ensure a cohesive installation.





Sparta's Biogas Yields Soar With New Digester Mixing System

A wastewater treatment plant (WWTP) in Wisconsin has increased the biogas yield at its AD plant by 25%, thanks to the installation of a new digester mixing system.

Instead of capacity decreasing because of rags, grit and debris steadily accumulating at the bottom of two digesters (334,000 gallons (1,264m3) and 183,000 gallons (693m3) respectively), the tanks' contents at the city of Sparta (situated between Milwaukee and Minneapolis) are now comprehensively mixed by Landia's GasMix system.



A simple, yet highly effective design, comprising the proven Landia Chopper Pump (invented by Landia in 1950), and strategically-angled venturi nozzles, all mechanical equipment can be accessed on the outside of the digesters for easy maintenance.

Sparta's Wastewater Treatment Plant Manager, Ed Hanson, commented:
"Our old, basic mixing system just blew air upwards in the digesters, which wasn't very efficient. Also, we couldn't get to it to carry out maintenance or make repairs without draining the tanks down. This can take you offline for a long time, which nobody wants when trying to produce biogas.



"Eventually, the old mixing system was failing; just providing some minor recirculation, with very little actual mixing taking place. When it became time to drain down the first digester and install the Landia GasMix, we found a huge amount of debris inside."

Built in the 1950s, Sparta's wastewater treatment plant serves 10,000 people in what is known as the 'Bicycling Capital of America'. In addition to domestic wastewater, the WWTP also receives effluent from a large food processing plant, a major dairy, plus leachate from the county's landfill, and septage brought in from hauliers. Although the WWTP has some screening, there is very little pre-treatment in place before it reaches the inlet.

"The Landia GasMix installation went very well," continued Sparta's Ed Hanson. "Landia were here to help every step of the way, especially as this was a tight and tricky challenge with very limited space for the new mixing set-up. We had to move some of our recirculation pumps.

'Grabbing the gas'

"At the start-up of the new system, we could see immediately that the Landia GasMix created plenty of turbulence and did a great job grabbing the gas from the top of the digester. Everything went smoothly, so six months later, we went ahead with installing another Landia GasMix for our second digester. Although it was a challenge with the space restrictions we have on this part of the plant; everything slotted into place, and the new mixing system has been working just fine, with no issues at all."

Heat produced from the AD process is now utilized for heating the digesters to their optimum temperatures, with the Landia GasMix ensuring that sludge is mixed comprehensively to significantly enhance the destruction of volatile solids and boost biogas yields.

'Far more methane is being produced'

"We've certainly seen that our gas bills are not as much as they were the year before, and we're much more eco-friendly now," added Ed Hanson. "We have long cold winters here, so with the old mixing system, you could see everything drop back down to nothing as temperatures dropped, but since our upgrade, the gas holds much, much longer. We can see that far more methane is being produced, and faster."

Unlike the previous mixing system where all mixing components were trapped inside the digesters, Ed and his team of four colleagues can now carry out visual and audio checks on the externally-mounted pumps, making any adjustments as necessary.

'Good digestate product'

"Maintenance is easy, and we also have a good digestate product at the end of the process," continued Ed.
"This provides very useful nitrogen for farms in the county as a fertilizer, and saves them money, which is always a positive thing. We're now looking at how we can improve consistency, so that there's less water and more product. We're working on getting the compaction levels just right so that it is easier for farmers to apply to land.

"The new mixing system was a long time coming, but it has been well worth the wait. We're now producing biogas as we should be, because the digester sludge is being mixed comprehensively by the Landia GasMix."

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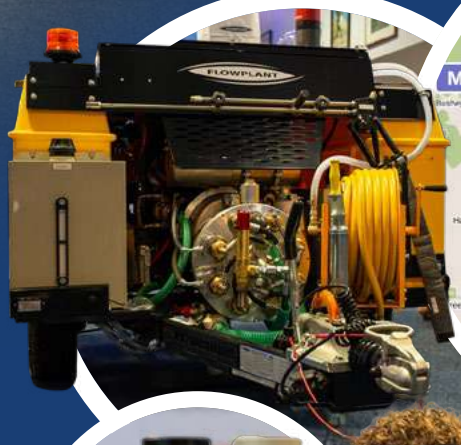







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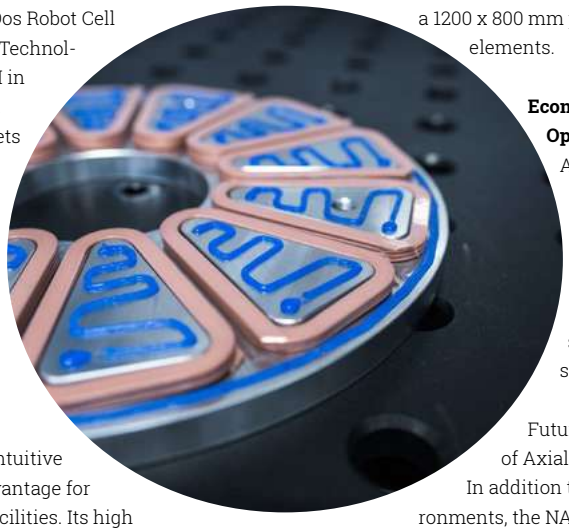
Let's shape the future of water jetting together

NaDos Robot Cell: Flexibility And Precision For Adhesive Technology

The new NaDos Robot Cell from Nagel Technologies GmbH in Nuertingen, Germany, sets new benchmarks in automated dispensing technology. This system integrates a UR 10e six-axis robot with cutting-edge features such as plasma pretreatment, calibration sensors, and simulation tools for robotic path planning. The innovative path planning tool allows for quick and intuitive programming of robotic paths—a key advantage for development departments and testing facilities. Its high flexibility makes it an ideal solution for industrial adhesive applications, particularly in e-mobility, where precision and reproducibility are essential.



Plasma Pretreatment for Optimal Adhesion

One of the core functions of the NaDos Robot Cell is plasma pretreatment, provided by Plasmatreat and integrated by Nagel. "By activating the surface, we significantly improve wettability and, consequently, the adhesion of the adhesive," explains Philipp Schuh, Advanced Robotic Solutions at Nagel Technologies GmbH. "This ensures reproducible quality without the need for rework or cleaning steps."

High Process Reliability Through Intelligent Sensor Technology
Integrated calibration using a TCP sensor (Tool Center Point of the robot) ensures precise tool positioning. An additional precision scale enables exact dosing and calibration of the applied adhesive. Depending on the application, various dispenser sizes are available. The dosing rates range from 0.01 to 1,092 ml/min. Additionally, dispensers can be configured for two-component applications with different mixing ratios.

Flexibility as a Unique Selling Point: Tool Changing and Simulation Software

A standout feature of the NaDos Robot Cell is its flexibility. The tool change system allows for the integration of additional dispensers, grippers, screwdrivers, or camera systems. "Our customers appreciate the simple and quick reconfiguration, particularly in testing environments," emphasizes Philipp Schuh. "With minimal effort, various adhesives and processes can be tested without requiring extensive modifications." The newly developed simulation tool enables users to digitally plan robotic paths in advance and avoid collisions. By simply setting points, the system automatically generates the optimal path and simulates the entire motion sequence.

Broad Application Spectrum and Industrial Use

The NaDos Robot Cell is particularly suited for adhesive applications in e-mobility, such as bonding stators in axial flux motors. Thanks to its six-axis kinematics, it can process both 2D and 3D contours, even in difficult angles or overhead applications. The working area features a 1200 x 800 mm perforated table with variable clamping elements.

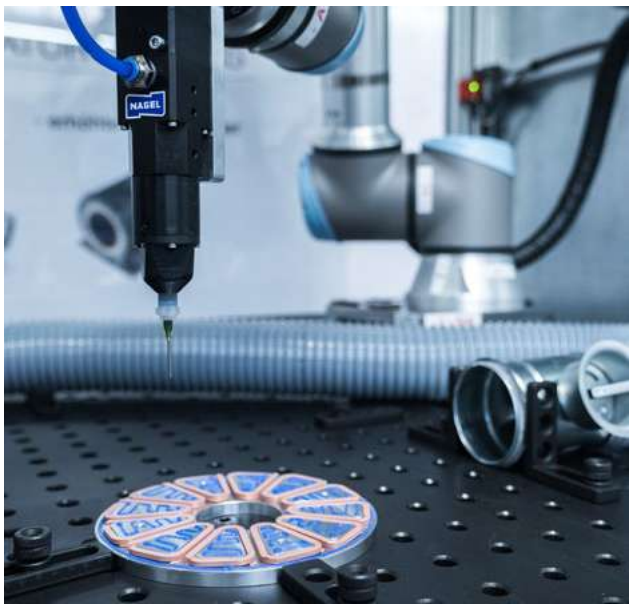
Economic Benefits: Automation and Intuitive Operation

Another key advantage of the NaDos Robot Cell is its ease of operation. The intelligent process control system allows productive results to be achieved quickly, even without extensive programming knowledge. This not only saves time but also simplifies operation significantly.

Future-Proof Solution for Series Production of Axial Flux Motors
In addition to use in testing and development environments, the NAGEL Group also provides solutions for the series production of axial flux motors with a complete manufacturing process. Customers benefit from a strong partner network: for instance, Wafios AG supplies equipment for coil bending, while Nagel's sister company Gehring Technologies GmbH + Co. KG contributes its expertise in production line integration, welding, and trickle impregnation. Lambda Resins supports the process with its expertise in resin encapsulation. This close collaboration ensures that customers receive a fully optimized, highly automated manufacturing solution—from individual components to full-scale serial production.
With the NaDos Robot Cell, Nagel offers a highly flexible and precise automation solution that unlocks new possibilities, particularly in e-mobility. The combination of plasma pretreatment, intelligent sensor technology, simulation software, and modular expandability makes it an ideal tool for companies seeking reproducible quality and future-proof manufacturing.

Meet us at Coiltech! Nagel Technologies will present the NaDos Robot Cell at Coiltech – the International Coil Winding Exhibition, Booth 2-F16, on March 26-27, 2025, in Augsburg in Germany.

Written by Yvonne Nagel



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