

# ACE

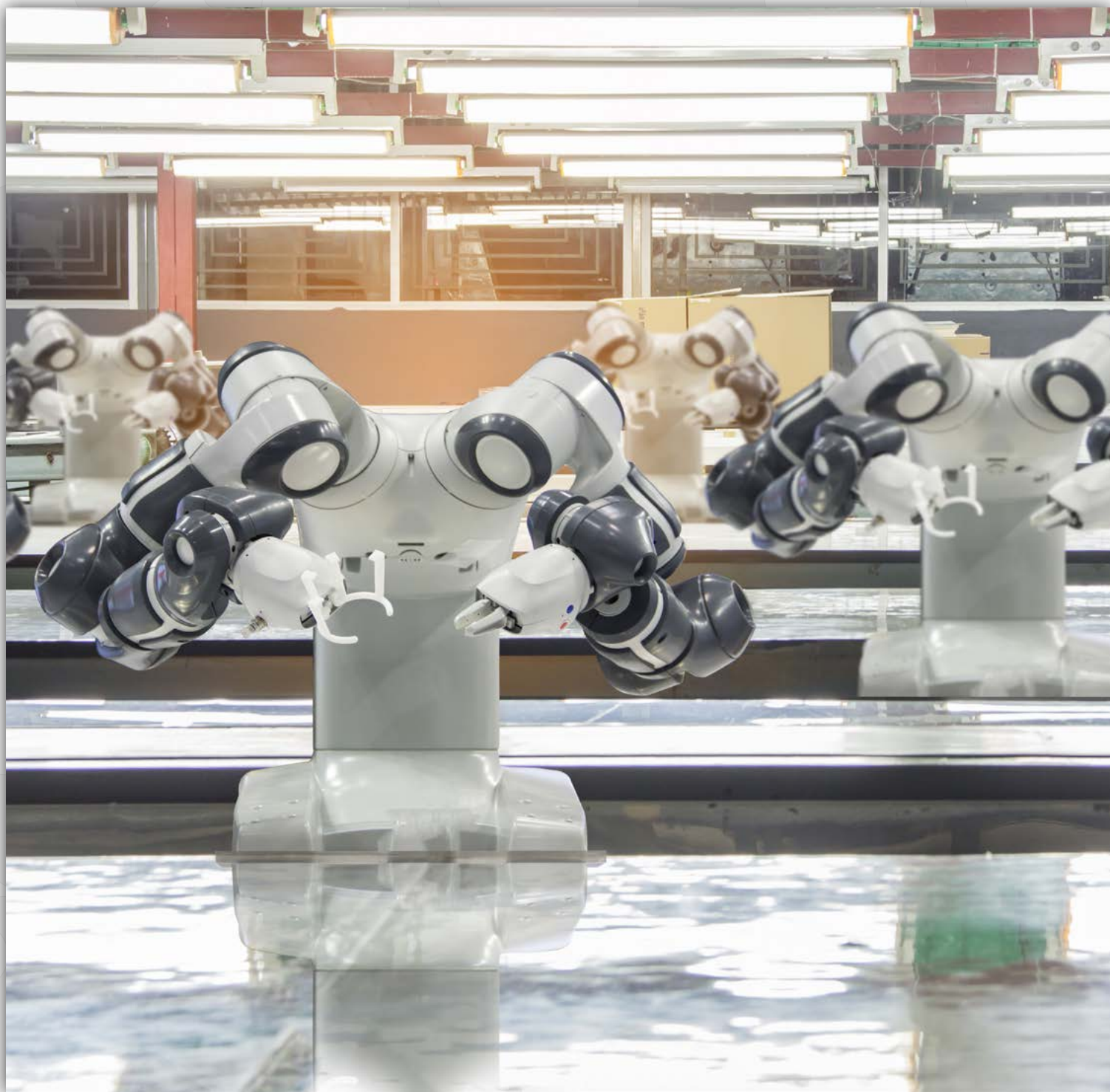
AUTOMATION

CONTROL

ENGINEERING

Issue 25 2019

Sick, Fanuc,  
Fronius  
Plus Many More!  
**INSIDE...**

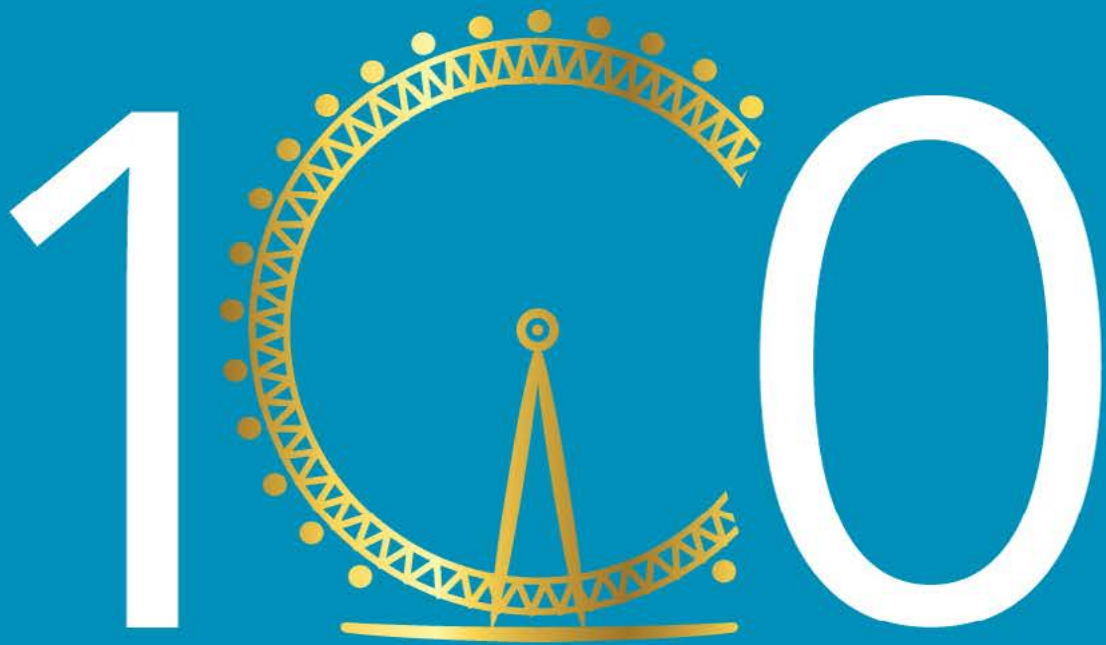


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*Atlas Copco*

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\* 1919 - 2019 \*



years in the **UK**

**Celebrating a century**  
of providing innovative, reliable and  
energy efficient solutions to our  
customers in the UK

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Tel: 01304 806 039  
© MH Media Global

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# Improving quality and efficiency whilst cutting costs with Smart Connected Assembly

In the fast-paced world of manufacturing, ensuring maximum efficiency and profitability by striking the right balance between quality and costs is certainly one of the biggest challenges facing producers, even more so with Brexit looming.

For Atlas Copco Tools & Industrial Assembly Solutions, supporting manufacturers through collaborative partnership is the bedrock of its business, which saw its centenary in the UK in 2019.

A leader in assembly tools and data driven services designed to add value to any production environment, from batch

of one to high volume manufacturing, Atlas Copco continually takes the pulse of its core markets, through ongoing customer engagement.

The company has recently published a whitepaper, which identified that error-proofing in the production process remains a key issue for manufacturers. Based on field research from across Atlas Copco's diverse and global customer base, it was found that manufacturers employing the company's Smart Connected Assembly technology and process were tackling their challenges successfully.

One customer reported a reduction in rework of 15% by utilising Atlas Copco's

'Pick-to-Light' system, which ensures operators pick the right parts at the right time in the assembly process, in order to mitigate production errors and costly line shutdowns.

Titled 'Error-Proofing the Production Process', Atlas Copco's whitepaper introduces a range of measures to improve quality, efficiency and profitability, based around current and future production needs. The publication provides insights on how organisations can implement strategies to boost performance in relation to different levels of complexity in the assembly process. These are based around the principle of 'Basic Needs', 'Complex Needs' and 'Very Complex Needs.'



Detailing Atlas Copco's Seven Steps to Securing Product Quality as part of its Smart Connected Assembly philosophy, its report also illustrates a scalable and flexible roadmap to delivering the best achievable product quality. The sequential process integrates tooling and systems, which deliver both full traceability, as well as error-proofing protection, so that manufacturers have a complete understanding of the effectiveness of every stage of production.

#### Atlas Copco's Seven Steps to Securing Product Quality:

- Step 1: Classify Joints
- Step 2: Introduce Torque Control
- Step 3: Introduce Joint Control and Angle Monitoring
- Step 4: Introduce Process Error-Proofing
- Step 5: Introduce Reject Management and Part Control
- Step 6: Secure Process Reliability
- Step 7: Use of data for continuous improvement

Commenting on its research and whitepaper, Paul Clark, Business Line Manager for Atlas Copco Tools & Industrial Assembly Solutions, said: "Maintaining quality is an essential aspect of the assembly process, as both the direct and indirect cost for product quality issues can be immense.

The demand for error proofing is high. When it comes to brand reputation, all the big manufacturers want to get it right first time, so error-proofing is now a core focus for manufacturers, regardless of their scale or the complexity of products.



Our new whitepaper gives them an informative guide to the value of error-proofing that fits their current and future assembly needs."

#### ADDING VALUE WITH SMART CONNECTED ASSEMBLY

Whilst a clear leader in supporting automotive manufacturing, Atlas Copco's Smart Connected Assembly approach is being adopted by an increasingly diverse number of industries, from white goods and aerospace, to wind energy and agricultural applications.

Customers are seeing increasing complexity in their product mix and demands for higher quality, so the Smart Connected Assembly concept was designed to provide a clear return on investment by blending advanced tooling with data driven services and total customer back-up.

This partnership approach towards zero defect assembly with full traceability enables companies to be more agile in dealing with international competition, globalization and new technologies.

From a product perspective, fully data integrated Low Reaction Tools are a key part of the company's proposition to maximise assembly line productivity and efficiency, whilst reducing human error and ensuring operator safety.

By bringing together its Tools and Industrial Assembly Solutions divisions, Atlas Copco is now best placed to continue its journey as the manufacturing industry's preferred joining partner.

To download Atlas Copco's whitepaper, **click here**

[www.atlascopco.com](http://www.atlascopco.com)

*Atlas Copco*



# Nace: Corrosion costs \$2.5 trillion annually

Every year, corrosion causes an economic damage of more than \$ 2.5 trillion worldwide. Therefore, the prevention of corrosion, is an issue that plays an important role in many areas.

The new MMS® Inspection series that is optimized for corrosion protection reliably supports the inspector in assessing corrosion-exposed components and in jobs that involve checking of corrosion protection.

Corrosion is the deterioration of a metal as a result of chemical reactions between it and the surrounding environment. This leads to a functional impairment of the metallic component over time.

Accordingly, rust formation on a railroad track is not harmful, since the function of the rail is not diminished.

However, a pipe which has become leaky due to pitting corrosion is clearly defective, since the safe transport of liquids is no longer guaranteed.

The same applies to the maritime sector, where material surfaces attacked by corrosion on ship walls can quickly become a safety risk.

There are serious consequences caused by corrosion in engineering structures such as bridges. If the steel structure corrodes without any control, a bridge can quickly become a threat to those who move on it.

Furthermore, there are economic advantages to implementing proper corrosion prevention methods.

In order to protect metallic materials against environmental influences and thus corrosion, in most cases coating with suitable corrosion protection material is sufficient.

The expense for this – passive – corrosion protection is relatively low in relation to the costs caused by corrosion such as loss of value, downtime, dismantling, etc.



MMS® Inspection DPM (Dew Point Meter)

MMS® Inspection SPG (Surface Profile Gauge)

MMS® Inspection DFT (Dry Film Thickness)

For companies and institutions saving on corrosion protection, it usually becomes expensive to repair the damages afterwards.

This is especially so for structures that are very difficult to access after installation, such as offshore wind turbines.

Corrosion protection involves regular inspection and checks for proper functioning.

This means that inspectors and service personnel need to use targeted measurements to inspect if the quality of the corrosion protection coatings still meet specified standards.

With regard to coating thickness gauges used here, both magnetic induction method and eddy-current testing have established themselves as standards worldwide.

1) NACE International, [impact.nace.org](http://impact.nace.org) (2016)

Rusting, the formation of iron oxides, is a well-known example of electrochemical corrosion.

Magnetic induction is the method of choice for measuring the thickness of non-magnetic layers on magnetic base materials, e.g. layers of paint, plastic,

galvanized or hot-dip galvanized layers on steel and iron. The eddy current method is suitable for electrically non-conductive layers on non-ferrous metals, such as e.g. paint, lacquer or plastic on aluminium.

Depending on the version, modern gauges such as the newly developed MMS® Inspection series from Helmut Fischer offer both measuring methods.

Helmut Fischer has made every effort to ensure the convenience of the user. For this reason, international measurement standards such as SSPC PA2 (Level 1-5), IMO PSPC, ISO 19840, Australian AS 3894.3-2002 or Swedish IS 1841 60 are firmly integrated as pre-configured batches or measurement specifications via the software.

The dew point measuring device MMS® Inspection DPM, which belongs to the same series, measures the dew point before the corrosion protection paint is applied.

This helps to ensure that the coating is applied under proper environmental conditions.

If the conditions are not suitable, premature corrosion may occur or the paint may peel off as a result of poor adhesion.

[www.fischergb.co.uk](http://www.fischergb.co.uk)



# Absolutely reliable. Even under harsh conditions.

THE NEW MMS® INSPECTION SERIES



Corrosion protection starts well before the first coat of paint. The corrosion kit MMS® Inspection comprises three devices that are needed before, during and after surface coating. With the SPG, you can reliably measure the surface profile. The DPM provides all the necessary data for determining the dew point. The powerful DFT is your mobile companion for all coating thickness tasks (ferrous and non-ferrous substrates).

[www.fischergb.co.uk](http://www.fischergb.co.uk)

**fischer**®



# PAT to the Future!

**K**ewtech are an industry leading manufacturer of electrical test equipment designed specifically for the UK. The innovative technology in Kewtech's next generation PAT tester's sets the bar in both speed of testing and quality of reporting.

## THE IMPORTANCE OF PAT TESTING

The testing of portable appliances is essential as it is the responsibility of employers and landlords to ensure the safety of their staff and occupants. More people sustain injuries through problems with faulty portable appliances every year than they do fixed installations and with insurance companies looking for any way not to pay out on claims, there is no question of the importance of PAT testing our appliances.

## HOW CAN KEWTECH HELP YOUR BUSINESS?

Kewtech's new PAT system allows those testing to get through their work load faster than ever before. The simplicity of their system has led to many facilities managers to bring their testing in house, saving businesses thousands of pounds on unnecessary PAT testing bills every year. From electricians and PAT testing companies to charity shops, school maintenance teams and business facilities managers, Kewtech have provided the simple, cost-effective solution that works for all needs.

## TEST SMARTER, SAVE TIME AND MONEY

Kewtech's next generation testers are a lightweight, battery-operated range that have been specifically designed to be as user friendly and efficient as possible. The range has large easy-to-read display screens, with a clear green for PASS and red for FAIL. The entry level EZYPAT is IT safe with a low current earth continuity test and 250V insulation test making it an ideal tester for testing in standard office environments. The comprehensive EZYPAT PLUS can perform a run leakage test on 230V and 110V appliances, a unique feature in handheld testers only found within the Kewtech range.

Kewtech's top of the range SMARTPAT is the UK's first Wi-Fi enabled downloading tester to be remotely controlled from your smart phone or tablet, including automatic data logging direct to the FREE KEWPAT App! No more written data collection, truly SMART! This tester is complete with the ability to perform 230V and 110V run leakage tests as well as a portable RCD test without tripping, making it the complete portable appliance tester.

## THE FREE KEWPAT APP

The KEWPAT is the most sophisticated PAT testing app on the market, allowing you to capture and record data, risk assessments, visual inspections and results.

You can even produce professional PDF reports and email them straight to your customer! The App also works manually with all Kewtech testers and is free to download on Android and iOS devices.

And there is no more need for written pass labels either! Kewtech's portable Bluetooth printer, the KEW80L, connects to the KEWPAT to produce professional and bespoke labels for your business in seconds.

Kewtech's revolutionary new PAT system provides the simplest and most efficient way to test yet by combining the highest quality engineering with the latest smartphone technology. With a PAT to suit all testing needs, free data recording software, and label printer, Kewtech have provided the fastest and most cost-effective system that's simple to use and free from written data logging, enabling you to carry out PAT testing in full compliance with the IET Code of Practice.



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**sales@kewtechcorp.com**  
**01494792212**



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- + Controls SMARTPAT

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KEWTECH - INNOVATION AND SUPPORT YOU CAN RELY ON

# Making the numbers add up

*By 123 Insight Ltd, developers of MRP/ERP/CRM solutions*

**T**here are strong arguments for accounting information to be visible within MRP, but should you select a manufacturing system for your business purely because of its financial capabilities?

Most departments will be affected by a new MRP/ERP system, so ensure that it meets the needs of all and involve each department manager in the selection process. However, it's not clear-cut, with many common pitfalls:

## THE BLINKERED CONSULTANT

External consultants often focus on finance and may not understand other departments' needs. One existing 123insight user was told by a consultant to replace it with an ERP system with integrated accounts, which 'would take them to the next level'. One year on and £100,000 later the system still wasn't working. They returned to 123insight, adding an interface to Sage 50 accounts. They could only do this because of 123insight's low monthly subscription.

## THE SAFE BET

Several companies best known for their accounting products also offer manufacturing software. Just because a brand may be a market-leader in one sector it doesn't follow that they will be strong in another.

## THE IMPOSED SYSTEM

During an acquisition the parent company may impose their own accounts or manufacturing systems. Businesses often fail after acquisition – not because enough investment wasn't made or that they were failing anyway, but because they were forced to implement a system that simply could not deliver.

## INTER-DEPARTMENTAL FRICTION

There is often tension between Finance and other departments when implementing a manufacturing system, as the financial aspect is seen as more important. With many systems being



accounts-led there is a risk that Finance will see it as a cure to all their problems and assume the same for everyone.

## WHAT DOES 'INTEGRATED ACCOUNTS' MEAN?

Usually, a vendor that has an MRP/ERP system with accounts as part of the product brand will refer to it as 'integrated'. It may be that the product grew over time, often through acquisition, to include other features, with many horror stories of disjointed interfaces and problems with functionality. 'Integration' does not have to be between two products from the same supplier. Many systems – both MRP and accounts – are designed to allow simple and easy data exchange.

## WHAT 'INTEGRATION' DO I REALLY NEED?

Sales/purchasing departments need credit limits, accounts on stop, outstanding invoices and payments made for customers and suppliers. Staff need to make decisions such as 'can I take this order?'. Despatch may also need visibility of a customer's status. 123insight's accounts connectivity options provides tight integration with popular accounts systems such as Sage 50/Sage 200, Access



Dimensions and Xero, ensuring you can choose the best accounts system without compromising on your manufacturing system.

## SO, HOW DO YOU CHOOSE?

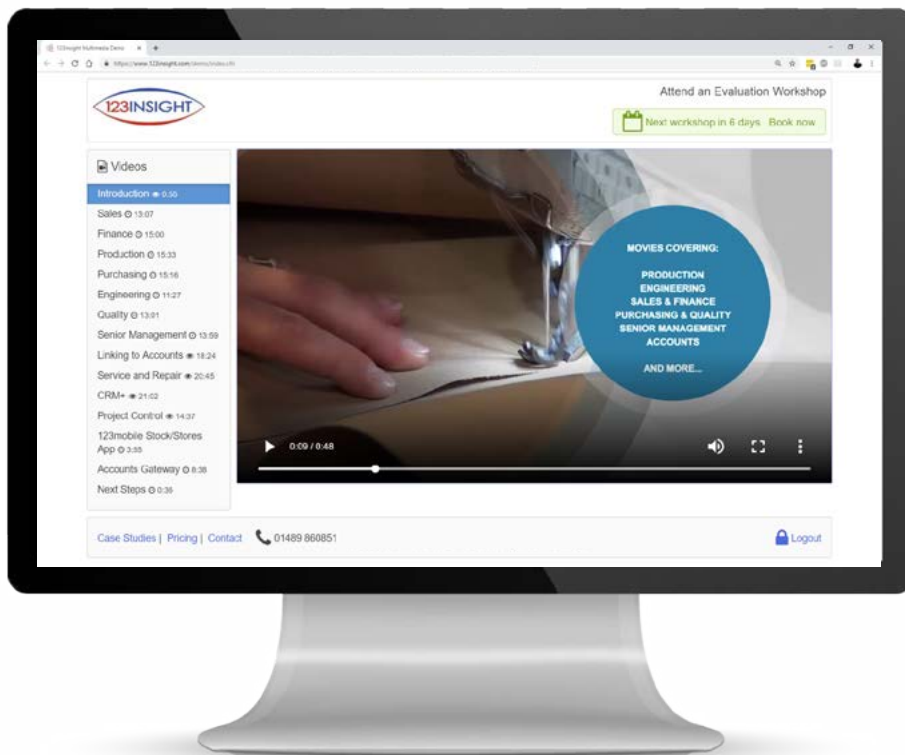
'Best in class' is the best. Choosing a system that ticks all the boxes for some departments but that is mediocre for others is false economy, so select the best manufacturing system to manage stores and production, and the best accounts system to fit with your business requirements.

## SUMMARY

Maybe you are happy with your accounting system and looking to implement MRP for the first time but are wondering if you need something all-encompassing. Or perhaps you've outgrown your accounts software and want to 'think bigger'? 123insight has a range of connectivity options with all major accounting systems. So, select the right accounting tool for the job and choose the level of connectivity required.

**For more information, visit [123insight.com](http://123insight.com) and request access to free online demo videos.**





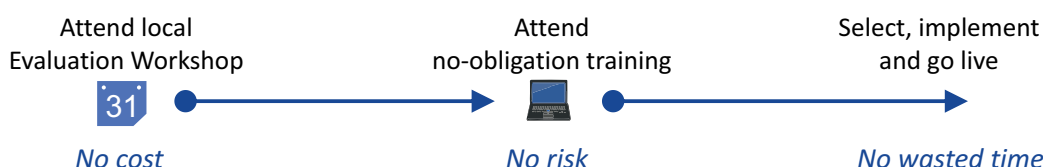
# These (free) online videos could solve all of your MRP woes.

See what a manufacturing system *should* be doing for your business.

Are you struggling with an ageing or poorly-functioning MRP system? Or perhaps you've yet to take the plunge and leave your spreadsheets and databases behind?

123insight is a multi award-winning MRP/ERP system that is often implemented in weeks, not months, and is available on a low monthly subscription. Furthermore, we take away all of the risk traditionally associated with the selection process, starting with our online videos that explain what 123insight will do for each department within your business.

***Request free online access today***



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info@123insight.com www.123insight.com





## The finest metal sawing and storage equipment



**M**anufacture of multi-level industrial warehouses for storing and retrieving bar, tube, sheet and other material automatically, and production of the world's most extensive range of sawing machines for cutting the material accurately, are the two specialisms of the German firm, KASTO Maschinenbau GmbH, which this year is celebrating the 175th anniversary of its formation by Karl Stolzer.

The subsidiary company looking after the UK and Irish markets is KASTO Ltd, Milton Keynes ([www.kasto.com/uk/company/about-us](http://www.kasto.com/uk/company/about-us)). Headed by managing director Ernst Wagner, it is an autonomous business unit that plans and designs storage and sawing systems for factories and stockholding operations. The company is responsible for project management, installation, commissioning, training, service and support, calling on assistance from the German parent company when needed.

KASTO offers the widest possible variety of sawing options to its customers for small to large batch production. The product selection ranges from small



pull-down saws for the job shop to high-performance circular saws and manual, semi-automatic and fully automatic horizontal and vertical bandsaws.

A high degree of automation is possible, both on the input side of the saw, via automated stores, roller conveyors and buffer stations, and on the output side, with systems for cut piece and remnant handling, post processing (deburring, facing, centring, cleaning, marking) and robotic sorting. Over 140,000 saws installed around the world are witness to the satisfaction of customers and the

success of the products.

As regards warehousing of material, KASTO's maxims are 3D and CNC. Three-dimensional, high density storage of bar, tube and other long stock as well as sheet, boxes and pallets takes material off the floor and out of conventional racking, saving space, minimising risk to personnel and reducing the chance of damaging the material.

Computer control of the storage means that material can be called up more quickly and reliably, maximising productivity. Inventory control is also more efficient using built-in functionality in the KASTO controller, with easy connectivity to MRP systems and into the wider Industry 4.0 environment. Storage systems can be interfaced directly with KASTO saws and other types of machine tool. More than 2,200 automated storage systems have been installed worldwide for all types of application, in all sizes, some with integrated saws.

[www.kasto.com](http://www.kasto.com)



# THINK lowest cost per pick

We manufacture the widest range of computer controlled storage and retrieval systems for bar, tube, profile, sheet and other materials.

Systems may be interlinked with saws, including ours, other machine tools, robotic sorting systems, MRP and ERP systems, and more.

If you are running out of space in your warehouse or factory, KASTO has the perfect solution for you. [www.kasto.com](http://www.kasto.com)

## Get to know NEW DIMENSIONS in automated storage

**KASTO Ltd** +44 1908 571590 [sales@uk.kasto.com](mailto:sales@uk.kasto.com)



- ✓ TO 25 M HIGH AS STANDARD, INDOORS OR OUTDOORS
- ✓ HIGHEST UPTIME GUARANTEE
- ✓ SAFEST, MOST EFFICIENT WAY OF STORAGE AND HANDLING
- ✓ HIGHLY PRODUCTIVE WITH INTERFACING CAPABILITIES TO PROCESSING MACHINERY
- ✓ INVENTORY CONTROL VIA YOUR HOST SYSTEM
- ✓ 50% SPACE SAVING MINIMUM VS CONVENTIONAL METHODS



Saws. Storage. And More.

**KASTO®**

# THINK lowest cost per cut

KASTO is the world's leading manufacturer of high productivity sawing machines - manual, semi-automatic and fully automatic.

Horizontal and vertical bandsaws including block and tube saws, circular saws and hack saws are included in our range. Whatever the application, from job shop to mass production with robotic sorting, we have a solution to suit your needs.

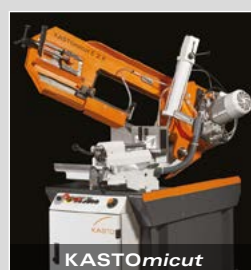
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## Get to know NEW DIMENSIONS in sawing technology

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- ✓ TOP QUALITY GERMAN MACHINE TOOLS
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- ✓ CLEVER TECHNOLOGY AND HIGH INTELLECT IN CONTROLS
- ✓ LOW COST OF OWNERSHIP
- ✓ PRICES TO MATCH YOUR BUDGETS



Saws. Storage. And More.

**KASTO®**



## SICK Shrinks UHF RFID Read/Writing with Smallest Industrial Device

**S**ICK has launched the smallest industrial UHF RFID read/write device of its kind, the RFU610, creating new opportunities to integrate RFID track and trace capability in automated machines and mobile vehicles across production, materials handling, and logistics environments.

Almost half the size of SICK's next-level, mid-range RFU620 reader, the RFU610 needs an installation space of just 80 x 92 x 38 mm and achieves an impressive scanning range of  $\leq 0.5$  metres.

The SICK RFU610 is ideal for short-range auto-ident applications such as tracking of smaller parts, sub-assemblies

and electronic components, materials handling in e-Kanban processes, automating validation of correct tool set-up on industrial machines, as well as monitoring consignment transfers onto smaller Automated Guided Vehicles and Carts.



The innovative design of the SICK RFU610 combines antenna, intelligent control and connectivity into a single, rugged, IP67 aluminium housing. Compact and economic integration into tight spaces is therefore assured because there is no need for a separate connection box, and cabling is minimised. The RFU610's in-built antenna monitors a focused reading zone that avoids misreading of unwanted tags in the vicinity, while still reliably mastering bulk tag identification, a significant advantage when handling small components at short ranges.

Says John Charlesworth, SICK UK Auto-Ident Product Specialist: "The current global trend towards using UHF is set to ensure the scalability of RFID equipment across supply chains in future. The SICK RFU610 offers a much-needed solution to upgrading older RFID technologies, such as LF and HF which have typically been deployed previously at shorter ranges.

"The ultra-compact SICK RFU 610 adds to SICK's family of UHF read/write devices and completes a fully-scalable SICK UHF scanning capability right up to 10 metres. It therefore lays the foundations for seamless track and trace transparency across entire production and logistics workflows as part of Industry 4.0."



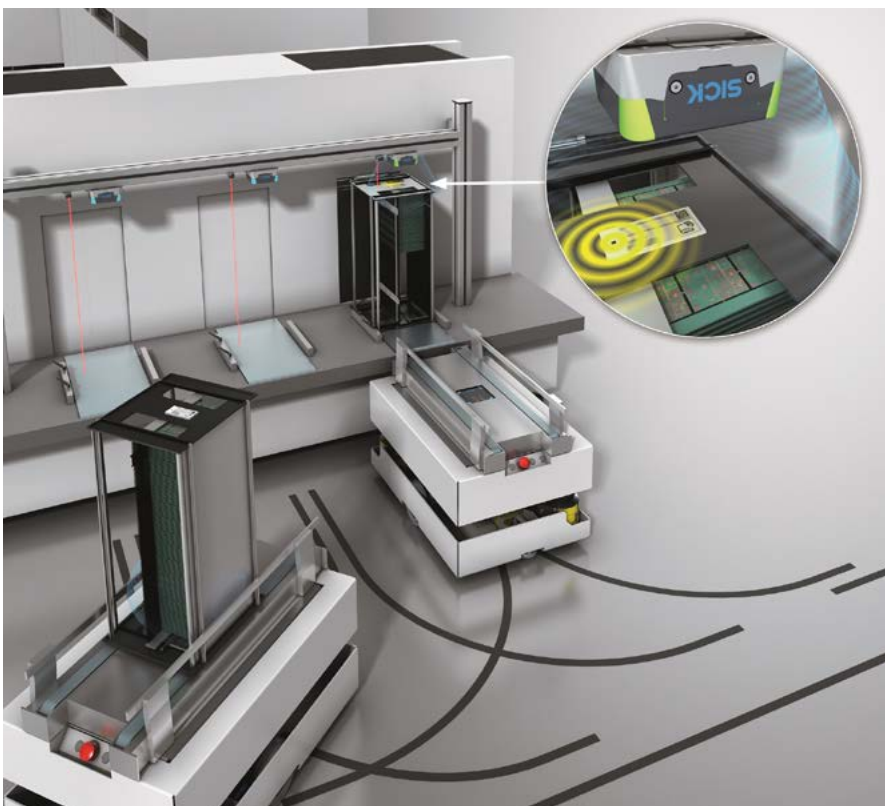
The SICK RFU610 offers highly-versatile connectivity, offering both separate cable connections for power and Ethernet, as well as a single-cable Power-over-Ethernet connection. Compatible with Ethernet/IP and PROFINET protocols, the RFU610 can be integrated into most mainstream

PLCs. It also offers the opportunity for direct communication with enterprise IT systems and the Cloud.

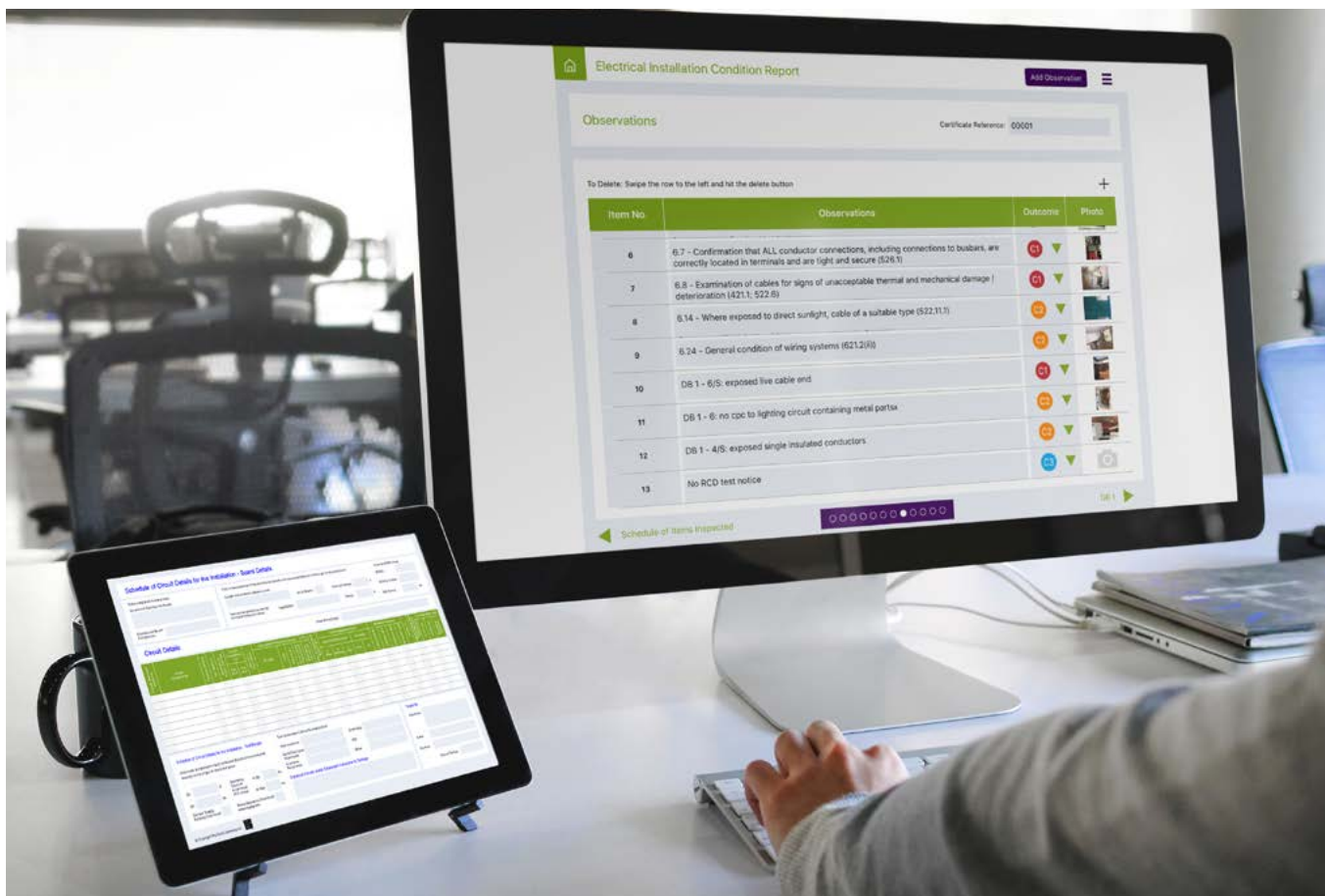
The RFU610 has a port to allow the direct connection of a trigger sensor, if required, to initiate the RFID device to read or write to the detected transponder. Rapid installation and commissioning are assured using a web server and SICK's easy-to-use SOPAS software tool.

The RFU610's on-board LED-indicator can be set up to confirm good reads in real time on the device, or to indicate, for example, the presence of the wrong part during an assembly process. Maintenance and diagnostic functions, as well as rapid parameter cloning are enabled via microSD card or USB interface.

Software developers or system integrators wishing to adapt the RFU 610 read/write capability to develop custom applications, can use the SICK AppSpace software platform to programme the device for individual tasks.



For more information please contact Andrea Hornby on 01727 831121 or email [andrea.hornby@sick.co.uk](mailto:andrea.hornby@sick.co.uk). [www.sick.co.uk](http://www.sick.co.uk)



# Brand new Electrical Testing & Certification App “Pro Certs” hits the app stores

**P**ro Certs, the brand new revolutionary electrical testing, inspecting & certification software for 2019 from Pro Certs Software. Produce professional electrical certificates on iPad, Windows 10 and Android. Produce professional electrical installation certificates and condition reports out in the field or in the office.

Produce PDF documents, edit and email directly to client:

EIC - Electrical Installation Certificates  
 D-EIC - Domestic Electrical Installation Certificates  
 EICR - Electrical Installation Condition Reports  
 D-EICR - Domestic Electrical Installation Condition Reports  
 MW - Minor Electrical Works Certificates  
 This new intuitive electrical software is designed with the user in mind to ease the burden of form filling, saving valuable time and energy.

You can email the completed report or electrical certificate directly from the app before you leave site.

Input your data while carrying out the testing removing the need to spend hours in the office inputting data or neatly handwriting out reports.

Continue to the bottom of this page for the app download links.

## TIME SAVING

The app has some great built-in time saving features such as automatically adding C1's, C2's, C3's and FI's selected from the drop down list on the schedule of items inspected to the list of observations removing the need to manually input them.

Input your data as you go, saving time from sitting in the office inputting your handwritten notes into PC based software.

## AUTOMATION

There are some great automated features programmed into the app to ease the flow and speed up the time it takes to complete an electrical certificate, in turn saving precious time.

One of the automation features is the automatic inputting of the maximum Zs values for protective devices.

## BLANK ELECTRICAL CERTIFICATES

You can also print blank electrical certificates and condition reports onto plain paper if you prefer to hand write your certificates or would rather input your data at a later date. If you select an existing client and installation address this will be added to the associated fields on the blank paperwork.

## CLIENT FRIENDLY REPORTS

Most clients do not understand an electrical installation condition report (EICR) other than enquiring if it has passed or failed the electrical inspection.





To help with this we have utilised a traffic light system for the coding of observations, C1 = Red, C2 = Amber, F1 = Amber, C3 = Blue, N/A or LIM = Black, Pass = Green. We have also applied this logic to the schedule of items inspected checklist section of the report.

### PDF ELECTRICAL FORMS - DRAFT AND MASTER DOCUMENTS

This electrical testing inspecting software produces PDF electrical certificates and condition reports in 'Draft' or 'Master' format. The draft version puts a 'Draft Document' water mark over the certificate.

### ADD PHOTOGRAPHIC EVIDENCE

One of the many great features of this software is the ability to photograph and append them to the electrical installation condition report with the photograph being allocated the observation number for which it relates to.

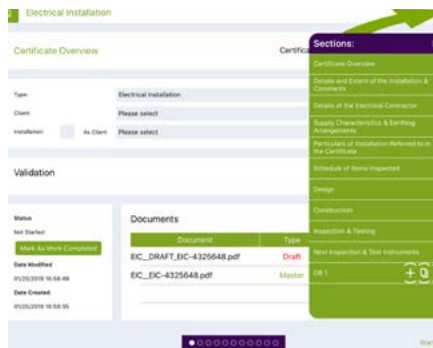
### ADDING OBSERVATIONS AND NON-COMPLIANCE'S

You can add an observation or non-compliance from every section of the app with the dedicated 'Add Observation' button.

You can also add an observation from the circuit details page by clicking on the + button of the corresponding circuit, the circuit number or reference will then be automatically added to your observational notes. From here you can also click on the Add photo button to also include a photograph related to the current observation.

### COMPREHENSIVE DATABASE

Add multiple clients, installation address, engineers and contractors to the built-in database. You can associate a selection of installation addresses to a particular client and associate an engineer/electrician to a particular set of test instruments.



Once you have added your clients, installation addresses, engineers and company details (see the initial setup guide) it's as easy as selecting them from the drop down list when producing your report or installation certificate.

### MULTIPLE ELECTRICAL CONTRACTORS - SUB-CONTRACTING OPPORTUNITIES

This app has the facility to add multiple contractors should you carry out testing and inspecting for other contractors on their behalf or as a sub-contractor, this feature opens up the opportunity to be able to offer an extra service to other electrical companies to produce the electrical certificate under their company details (with their consent) meaning you can provide the complete package under their banner creating an opportunity of additional income for completing and issuing the paperwork for the main contractor.

### INITIAL SETUP

Follow the initial setup guide or watch the initial setup guide video to guide you through the setup process as quick as possible.

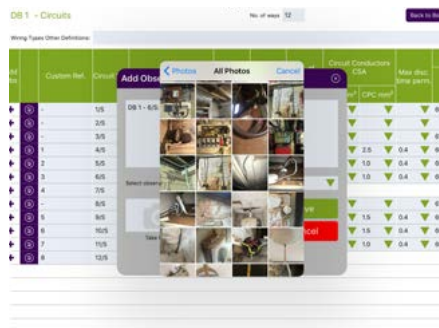
The initial setup guide and video can be found on our support page.

When following the initial setup guide it will also show you how to add your company logo and engineers signatures.

### ELECTRICAL COMPETENT PERSON SELF-CERTIFICATION SCHEME (CPS)

Electrical competent person self-certification schemes such as the NICEIC or Elecsa etc, these logos are already in the app, just select who you are registered with from the drop down list.

If you are not registered with a competent person self-certification scheme then you can leave this section blank.



### PART P COMPATIBLE

For domestic electrical installation works we have included a section to input the registration number you receive when you register the notifiable electrical works via your scheme provider. (domestic electrical certificates)

### DEDICATED SUPPORT TEAM

Should you find any bugs or wish to offer an improvement suggestion you can email our dedicated support team at support@pro-certs.com

### MULTIPLE PLATFORMS

This new electrical certification software is available to download on the following platforms:-

- Android Tablets
- iOS iPad
- Windows 10 Tablets
- Windows 10 PC

### APP STORE DOWNLOAD LINKS

Click on the download links below to view the Pro Certs app in the corresponding app store.

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For more information visit [www.procertssoftware.com/pro-certs](http://www.procertssoftware.com/pro-certs)

### OTHER ELECTRICAL APPS

Pro Certs Software have been designing and developing electrical applications since 2011, in that time they have released a comprehensive suite of electrical apps, these apps include:-

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- Cable Calc
- kVA Calculator
- Electrical Tools & Reference
- + many more...

To view our suite of electrical apps visit [www.procertssoftware.com](http://www.procertssoftware.com)

# Proeon Systems Limited Celebrates 15 years providing complex and critical control systems

Proeon Systems, started with two entrepreneurial engineers, who had the vision to offer cutting edge automation solutions to the Oil & Gas market. Now, celebrating their 15th year, what started in a garden shed is now a multi-million-pound business, employing around 50 highly skilled engineers.

Proeon's staff operate across the globe for many well-known household names within diverse industry sectors including; Nuclear, Oil & Gas, Offshore Wind, National Infrastructure and many more.

What makes it so special? Proeon has kept true to its original ethos focusing on complex and critical control solutions, providing high levels of specialist knowledge and expertise.

At their facilities within the Hethel Engineering Centre, just outside



L to R Kevin Magee – Director, Richard Miller MD, Eddie Pond – Director

Norwich, Proeon has built up the business to engineer, procure, construct, install, commission and service entire control suites for some of the most critical and demanding applications, keeping industry working and energy coming to our homes, whilst ensuring people keep safe at work.

“We’re really excited to have come this far with Proeon, the future is really looking bright for us, and our clients agree” said Director and founding member Kevin Magee.

“With a 50 strong workforce and the scale of projects increasing, we’re now planning our next 15 years where we will grow and expand into our own facilities” said Richard Miller MD.

Proeon has maintained their presence at the forefront of control solutions with a specific focus on offering solutions to clients with aging, legacy infrastructure, often obsolete/unsupportable and bringing it up to state of the art.

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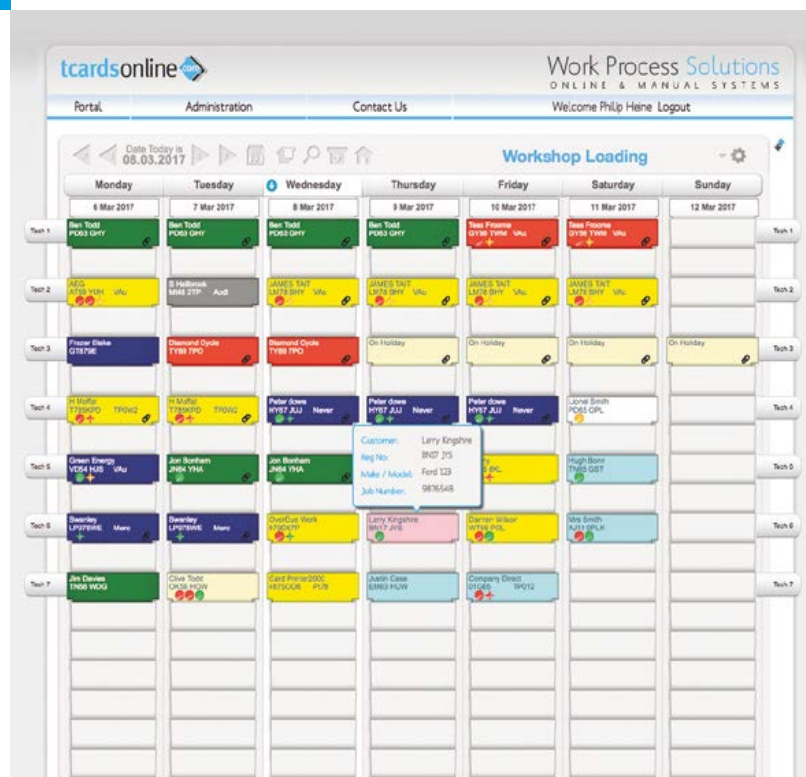
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3D printed concept vehicle chassis with carbon fibre seat made from 3D printed tool. In the background, robot 3D printer.

## Cost point for low volume automotive production is now well within reach

**S**caled Ltd have developed an in-house 3D printing system based on robotics. Over the course of a weekend in August, Scaled printed an entire concept vehicle chassis to demonstrate how 3D printing could be used for vehicle applications. 3D printing in thermoplastic composite materials is now a viable manufacturing technique for structural applications, fast-make tooling for composite prototype and large-scale jigs. And the cost point for low volume automotive production is now well within reach.

The chassis build has far-reaching implications. Today, the world is facing competing pressures: high rates of consumption of fossil fuels is affecting the climate and levels of pollution; At the same time, standards of living are going up across the globe. More and more people are earning enough to demand the benefits of powered transportation. One solution to these competing pressures is electric vehicles. But electric vehicles have failed to answer a

*CAD representation of the concept vehicle*



fundamental question: is it necessary to use a 4-tonne van to transport a payload of 150 kg?

The best solution is a vehicle only as heavy as is needed for its task. A last-mile delivery vehicle that weighs 150kg saves significant energy when compared with a 4-tonne alternative (however it is powered).

To produce vehicles that exactly meet the needs of their task you need a flexible manufacturing technology such as Scaled's robotic 3D printing system. A famous Henry Ford quote is

"Any customer can have a car painted any colour that he wants so long as it is black". But with Scaled's 3D printing the ambition is quite different: "Any customer can have a vehicle of any design that they desire."

Robot arms used in car plants are automated for one repeatable task. For Scaled, the robot is programmed for different pathways over and over again automatically, producing new 3D printed parts each day.

This is production using a completely flexible production system, in theory able to produce hundreds of variants of vehicle from the same small digital factory, with variants' design changes unconstrained by tools, jigs or core manufacturing processes.

Watch out for more developments and a rolling vehicle.

[www.scal3d.com](http://www.scal3d.com)





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**G**arment Graphixs Ltd. is a family-run business based in Belfast, Northern Ireland. In the beginning the company started off with one single head embroidery machine and overtime have developed to two self-sufficient production departments, which include embroidery and print. As more customers from the U.K have been reaching out to Garment Graphixs about their products and services, we believe it is the perfect time to increase our presence on social media and tell more people about what we do.

For more than twenty-five years, Garment Graphixs has been supplying quality printed embroidered workwear, promotional leisurewear and sportswear for all industry sectors. The company believes that a powerful way of building your brand and standing out from the competition is through bespoke uniforms and clothing.



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Branded clothing can have a big impact on any type of business as it unites your team members, it plays an important role in the safety of your staff, and it is a free marketing tool for your business. Garment Graphix's provides a number of corporate businesses with high quality workwear and safety gear on a daily basis. Although it may be appealing to go for the initial saving of unbranded uniform, the benefits of branded uniform will be worth your investment. We believe that investing in quality clothing will be the best option for any business!

Garment Graphixs have produced branded workwear and safety gear for a variety of different clients including contractors, builders, universities, sports teams, management and security

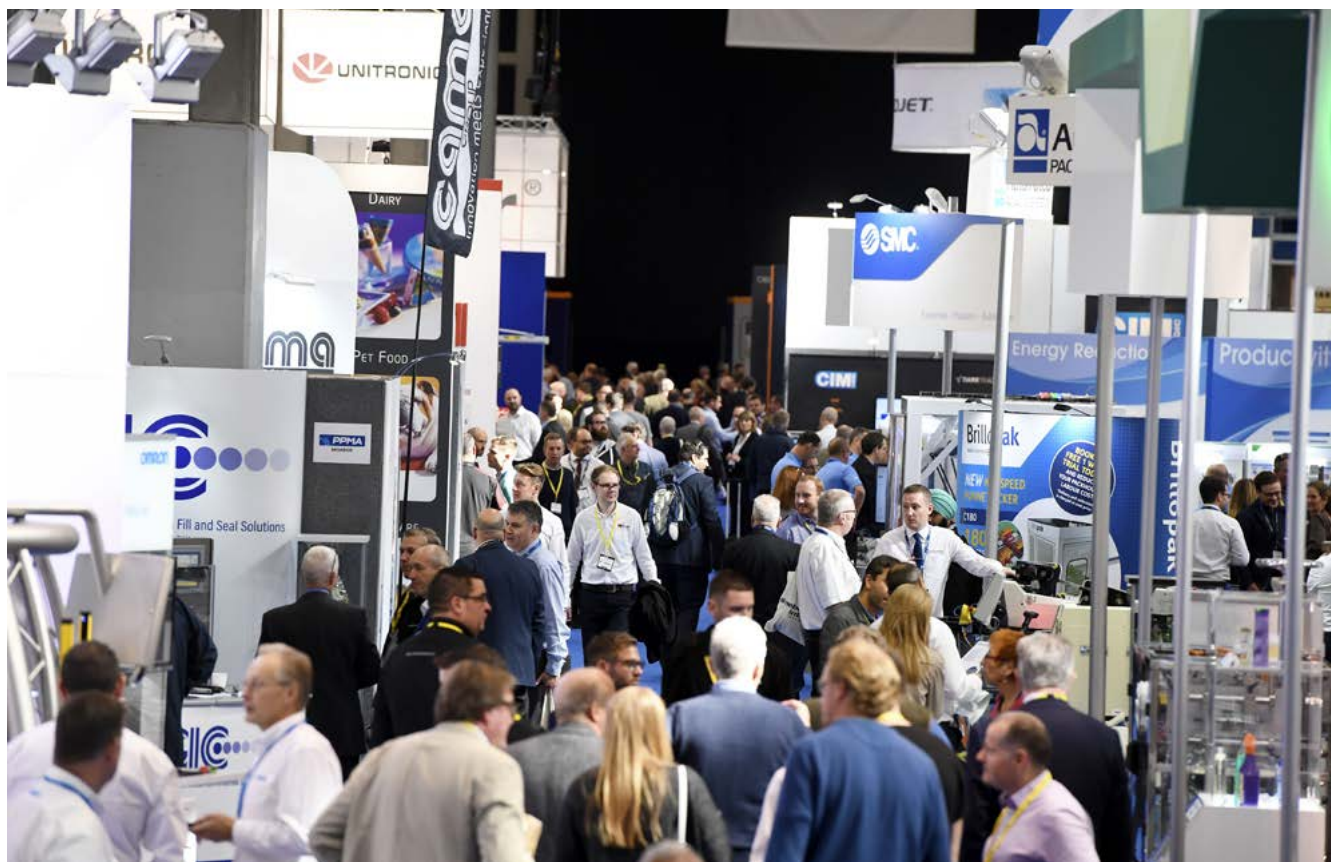


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# PPMA Total Show 2019 to host the latest sustainable developments and industry insights in packaging and processing

**P**PPMA Total Show 2019 will open its doors at the NEC, Birmingham, from 1 – 3 October for what will be the most comprehensive production line event in the UK.

During the three days, visitors will have access to 450 exhibitors and approximately 2,500 brands, showcasing the latest innovations in smart manufacturing, processing equipment and packaging solutions for the following sectors: food and beverage, pharmaceutical, household products and toiletries, building materials and supplies, pet care, micro-brewery and distilleries, FMCG and contract packing.

Leading players exhibiting at PPMA Total Show 2019 include: Hewlett Packard, KUKA, Mettler Toledo, Cama, Bizerba, Ishida, Ulma, Schneider Electric, Barry-Wehmler, Bosch Packaging and Pester – to name a few.

This gathering of industry leading manufacturers will deliver the latest solutions in processing equipment and packaging machinery, with real-time demonstrations of advanced technologies and innovative solutions. Other areas of interest include artificial intelligence and the integration of vision equipment and robotics into existing production lines.

Renowned by the industry as a platform for launching new products, the 2019 show will be no exception, with multiple exhibitors announcing plans ahead of the show:

- Detectamet Detectable Products will unveil their new innovative detectable temperature digital probe (stand D01). An industry-first, this detectable thermometer minimises the risk of foreign body contamination
- IBIS Packaging Solutions (stand C92), UK distributor for the Robotize GoPal

mobile robot, is launching the new GoPal 800 – a self-driving mobile robot designed for the automated transport of pallets

- Endline Machinery (stand H120) is launching a brand new, high speed, fully automated, three-in-one erecting, packaging and sealing system
- Fortress Technology (stand B01), having already announced its recent acquisition of long-term partner Sparc Systems, will debut the Interceptor DF, its latest metal detector, which is designed to inspect high-value, low profile foods vertically and horizontally concurrently
- Smart cable manufacturer icotek (stand A36) will be showing its latest cable entry plate
- Interroll (stand G12) is introducing a modular platform, based on its Modular Conveyor Platform, for driven pallet conveyance, offering reliable and efficient pallet handling
- Multipix Imaging Components, recipient





of the prestigious Vision Award, is showcasing its latest revolutionary 3D camera technology, the Photoneo MotionCam 3D (stand A85)

- Leuze Electronics (stand J70) is launching several new products, including the LCAM 408i industrial IP camera, and a new safety laser scanner, the RSL 400 PROFIsafe with PROFINET interface
- UK packaging solutions provider, Hazel 4D, has added a new void fill system to its range to help businesses use less plastic (stand C54)

## ENTERPRISE ZONE

The Enterprise Zone at PPMA Total Show 2019 will offer visitors a focal point for knowledge and expertise to educate and inform visitors with a free to attend, issues-led conference programme set to support business growth and development.

Featuring high-profile and respected experts from IKEA, DS Smith, The British Plastics Federation and The Sunday Times, this year's first-class, industry-responsive conference programme will focus on some of the key issues facing modern manufacturing, including Brexit, serialisation, artificial intelligence, plastic packaging, food waste, and sustainability and the circular economy. Case studies and presentations will also give visitors real examples of best practice manufacturing and excellence in processing and

packaging production, aiming to motivate and inspire visitors to improve their businesses.

Richard Little, Show Director for the PPMA Group of Associations, said: "This year's PPMA Total Show is topical for a number of reasons. Not only will it be the biggest PPMA show in the Association's history, it's only taking place in the same month that the UK is scheduled to leave the European Union. As a result, it's encouraging more businesses to think laterally about investing in new machinery and equipment to ensure they maintain a competitive edge.

"New technology, working machinery and live demonstrations are always a big draw for visitors to our shows, and this year's Total Show will be no exception. Pre-registration is again up year-on-year, which proves that, despite the global economic slowdown, demand remains high for PPMA shows and there's a real appetite for companies wanting to exhibit to grow their customer-base.

"The environmental agenda is also continuing to push the boundaries of our industry; particularly waste reduction and the use of plastic, so sustainability and waste reduction are topical themes for PPMA Total Show 2019. This is supported by a first-class speaker programme, with two prominent keynote presenters, who will look to impart their knowledge on

the circular economy and political climate across Europe respectively.

"It's an important time for the processing and packaging industry. We're entering a phase where political changes are set to impact our business dealings internationally. I'm very confident, though, that this year's PPMA Total Show will again provide visitors and exhibitors alike with new ideas, solutions and networking opportunities to help drive their businesses forward," he added.

In addition to a rich seminar programme and thriving Enterprise Zone, PPMA Total Show will also house a full-scale model of the 135,000 bhp, rocket powered supersonic car, Bloodhound, which is aiming to break the land speed record in the next two years.

Visitors will have the opportunity to learn more about one of the most advanced aerodynamic and advanced engineering projects of the 21st century and how Bloodhound Education is inspiring a generation to study science, technology, engineering and mathematics (STEM). In a bid to inspire more young people to take up a career in engineering, this year's event will again house an education hub that will offer guidance about apprenticeships and how companies and visiting students can potentially gain access to funding through the PPMA's charitable arm, BEST (Business, Education, Skills and Training).

## PPMA Group Industry Awards 2019

The PPMA Group Industry Awards 2019 will be held at the National Conference Centre in Birmingham on the evening of the first day of the Show. Now in its eighth year, the Awards ceremony brings together more than 300 industry professionals from the world of processing and packaging machinery and recognises the finest examples of innovation, smart manufacturing and entrepreneurship. For further information on the Awards, visit: <https://www.ppmatotalshow.co.uk/awards/ppma-group-industry-awards>.

## Free visitor registration

Registration for the PPMA Total Show 2019 is now open.

To register for your FREE visitor badge, visit the PPMA Total Show website at: [www.ppmatotalshow.co.uk](http://www.ppmatotalshow.co.uk)

# OEM AUTOMATIC TO return to PPMA



OEM Automatic, a leading supplier of components for industrial automation, are set to return to PPMA and will be showcasing the latest and most comprehensive range of cable management solutions from three of Europe's leading manufacturers.

Conta-Clip produces a revolutionary range of cable entry systems; AGRO, manufacture an extensive selection of high quality cable glands; German market leader Flexa, OEM's newest partner and producer of flexible cable conduits.

"Cable management is an area where we're seeing sustained growth. The continued automation of industrial processes means components require more connections than ever before. With more automation often comes the required management of hoses, air pipes and conduits.



We're very excited about showcasing all three of our partnerships at once.

What sets OEM apart from other component suppliers is our industry expertise and ability to provide complete solutions. By adding AGRO

and Flexa to our product range, I feel like we're now in a position to offer a complete cable management solution, no matter the application," Anthony Wrighton, Business Area Manager, Panel.

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## The Future of Injection Moulding

**E**chternach – FANUC is responding to market demands with new ROBOSHOT technical solutions for future-oriented injection moulding. The company will demonstrate several premieres in their product portfolio on FANUC's K 2019 stand A 60 in hall 14. Apart from implementing industry-specific know-how FANUC's products are well known for their low power consumption, no hydraulic oil involved, low carbon footprint, low scrap rate and more. Furthermore, technical progress with ecological benefits leads to commercial advantages – short downtime i.e. long uptime, better product unit cost/price, high-end production quality and prevention of rejects and – last but not least – longevity of the ROBOSHOT injection moulding machine. FANUC has now released an injection

moulding machine specifically for the medical and pharmaceutical markets: the ROBOSHOT α-S150iA Medical Package. ROBOSHOT meets stringent user requirements for low energy consumption and flawless injection moulding quality combined with stability, repeatability and process reliability. The ROBOSHOT α-S150iA Medical Package, which has now been presented for the first time, also has Class 7 cleanroom approval. This has been achieved through design features such as tie-bars without bearing bushes, Cr-coated linear guides, NI-coated plates, specially approved lubricants and an unpainted, brushed stainless steel cover. In the 32-cavity mould, needle caps made of PP are produced. Like all FANUC injection moulding machines, the “Medical Package” also operates with these processing features: efficient energy recovery control

function, reliable torque plasticise control – Precise Metering Control (PMC) 2&3 – as well as backflow monitor and highly efficient AI mould / ejector protection. The results are high-end process performance and product quality.

A new larger injection unit specially developed for high injection pressures and volumes has been developed. FANUC thus extends the performance of its largest precision injection moulding machine to date – the all-electric ROBOSHOT α-S450iA – by a further step. More cavities on larger moulds require larger platens, which in turn require a larger/stronger machine with higher clamping forces and powerful injection units. Beyond the automotive industry, medical and pharmaceutical markets, as well





as other precision parts industries, are demanding more precise, faster output and higher production rates than ever before. What's more, complex geometries require absolute precision – especially in terms of surface quality, contour accuracy, weight stability and reproducibility. FANUC was aware of this when the company decided to develop a larger machine with the same reliability as the previous six models with clamping forces between 150 and 3000 kN. Now we have 4500 kN clamping force, 920 mm x 920 mm tie bar spacing, a clamping stroke of 900 mm, 1300 mm x 1300 mm platens and a mould height of up to 1000 mm. The α-S450iA shows its impressive productivity potential: for lawn mowers, Polypropylene covers measuring 330 x 570 mm are produced in less than one minute cycle time: shot weight 725m<sup>3</sup>. A FANUC Robot M-20iA, mounted on the IMM's fixed platen, takes care of demoulding and depositing the hoods.

For products that need to be tightly protected against environmental influences, FANUC presents its proprietary liquid silicone processing cell. The ROBOSHOT α-S50iA - 500kN clamping

force - works with a FANUC Robot LR Mate 200iD/7. It takes four rectangular (length approx. 8 mm) LSR electrical connector seals from the four-cavity mould and deposits them on a conveyor belt. The core of the system is the D18mm LSR screw/cylinder unit developed by FANUC. Here, a Robot system called QSSR (Quick and Simple Start-up of Robotization) has been implemented.

FANUC now offers a further development in multi-component injection moulding: a rotary table with one of the most reliable servo drives on the market. A production cell of ROBOSHOT α-S150iA + vertical type 2nd injection unit SI-20A is automated with a FANUC Robot LR Mate - also via QSSR. Useful during the cold season: the FANUC Robot deposits two-colour ice scrapers moulded in a special hard PC/ABS blend combined with a soft TPE handle on the conveyor belt. Visitors are invited to take the product home.

#### ROBONANO DEMONSTRATION

At a demonstration station, mould makers can discuss real precision with FANUC experts. ROBONANO is the company's solution in the sector of finishing quality

optical surfaces. ROBONANO's typical applications are the finishing of tool inserts for injection moulding machines when form accuracy and surface finish requirements are strict, for instance in the production of high quality optical components. ROBONANO features a high positioning accuracy with the programming command resolution of 0.1 nanometre (0.1nm is equal to 10-10 meters or 1 Angstrom, the unit of length used to measure the size of molecules and atoms) which is required to achieve optical quality surface finish. You can meet a perfect showcase of FANUC state of the art technology. In Japan ROBONANO has been contributing for about two decades to the success of FANUC's customers serving information and communication technology, automotive, medical and other industries. A video shows this new machine tool in its ability to produce highly precise, repeatable and stable optical quality surface finishing on high-precision mould inserts.

# Gripple Automation: Driving production in the smartest factories

You may have heard of world-leading manufacturer of wire joining systems, Gripple, but you might not know Gripple Automation, its sister company that makes the machines powering some of the smartest factories there are.

Since the 1980s, customers have demanded more products at a competitive price from Sheffield-based Gripple, which meant using the best of the best in automation was a must.

Embracing robotics defined the firm as an award-winning British manufacturer that made quality products at pace. This also saw its automation department grow and gain its own identity. Gripple Automation Ltd now operates as an entirely separate entity, using its knowledge and experience to manufacture bespoke automation systems to customers across sectors and the globe, from the automotive industry to fast-moving consumer goods (FMCG).

A flood of orders meant Gripple Automation has outgrown its current home and will move to a new purpose built 26,500sq ft factory on Foley Street at the start of next year, where Gripple Automation will use 16,500sq ft and Gripple will utilise the remaining space.

## A STRONG GRIP

"We have been making machines for Gripple for a number of years," says managing director at Gripple Automation, Darren Beardsmore. "In 2012, Gripple Automation became its own business."

He says the last few years has seen the business continue to grow and Beardsmore credits the team for this progress. "We put a strategy in place for growth and then carried it out, it was let's really look at what we need to do to grow our automation business."

"Originally our plan was just to supply Gripple, and so it was reactive rather than proactive," he says. "Now, because of the growth and our other customers, we have to be much more proactive."



## THE ROBOTS RISE

One of the firm's recent machines – image courtesy of Gripple Automation.

"We don't just build machines and then wave goodbye to them," Beardsmore tells me. "We install them onsite and we have to live and breathe those machines for their entire lifespan."

He explains that it is not just the warranty label on the machine that is important to the team, but the entire lifecycle of the machine instead.

With the surge of robotics in UK manufacturing showing no signs of slowing, Gripple Automation expect to be busy.

"Gripple are growing and so their automation requirements are growing too. We will need to continue to grow just to support Gripple let alone our increasing customer base," he says.

"One of the things we do is identify companies similar to Gripple, more strategic firms who are prepared to share their production requirements for the future, so we support them in the same way we do Gripple."

## THE MORE THE MERRIER

"It is hugely important to us to make machines that do mundane tasks and upskill the workforce, so they work alongside them rather than act as replacements."

Many people think that when the team at Gripple Automation work with a business, they are there to replace them and reduce headcount, but Beardsmore stresses that's not the case.

"Some businesses do want to do that, but we are not interested. We want to make machinery that upskills the workforce and does the tasks that are giving people RSI and things, we want to focus on projects like that," he says.

"The UK is only at the start of its automation-led future," he says. "I think there is a lot more to come. But it will be more focused around collaborative spaces rather than cobots, because then machines can work at their maximum speed and drive up productivity."

[www.grippleautomation.com/](http://www.grippleautomation.com/)



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*Robotic injection moulding machine tending, and mould tool insert loading for JLR spoilers.*

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We take ideas from concept stage to reality, starting from our CAD department to machining centre, electrical controls and finally to our installation team which includes experienced robot and PLC programmers.

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# Automation and the changing world of manufacturing

By Simon Kampa, CEO and founder of Senseye

**P**roven in the heavily regulated aerospace and defence industries over 30 years ago, condition monitoring is finally a reality for manufacturers of all shapes, sizes and sectors thanks to advances with Industry 4.0, automation and A.I. technology.

In the past, condition monitoring was an exhausting, manual exercise in pattern recognition, which relied on experts in data analysis to take readings from the machines, review the information they gathered and spot the crucial signs that a known fault might occur again in the future. Industry 4.0 and cloud computing now allow condition monitoring to take place automatically on a much greater scale. Software analyses vast quantities of data taken from existing machine sensors and data-lakes to automatically diagnose failures and provide the Remaining Useful Life (RUL) of machinery.

Much like the gathering of machine data, this analysis would have once been a highly manual endeavour, involving teams of expensive data scientists. More recently, however, organisations such as Senseye have developed intelligent software to automate this activity.

Our data scientists have developed a series of generic algorithms that can be applied to any machine from any manufacturer, and look at the data that is already being produced. The algorithms analyse basic diagnostics data from machine sensors to spot small but significant variations in vibration, pressure, temperature, torque, electrical current and other sources that indicate deterioration in machine health. The A.I. then teaches itself to become smarter and more predictive, fine-tuning its own performance for each monitored asset as it learns how each machine's characteristics and failure mods show up in the data. Currently, the number of assets one person can monitor is likely to vary from between 50-100 a day.

With increasing automation, the number of assets monitored can grow into the thousands.

By automating 90% of the analytic tasks that the diagnostic system engineer performs, companies are able to address changes in the levels of critical assets within their organisation, without requiring a tenfold increase in their labour costs.

There is no doubt that the likes of Senseye have hugely broadened the capabilities of condition monitoring by automating the process of data collection and analysis, and providing usable information to the engineers on the shop floor.

The new possibilities presented by these technologies are now being realised.

Web: [www.senseye.io/](http://www.senseye.io/)  
Email: [hello@senseye.io](mailto:hello@senseye.io)  
Tel (UK): +44 (0) 845 838 8615





## “Now is the time to optimise your control systems potential” advise steam experts

**P**rocess managers could be making improvements to increase efficiency and product quality by paying closer attention to the specification of controls systems used within their facilities – that’s the current message from Spirax Sarco’s National Controls Specialist, Darren Silverthorn.

The latest quarterly Confederation of British Industry (CBI) Industrial Trends Survey suggests that output volumes will be broadly flat in the coming three months (-2%)<sup>1</sup>. While it is estimated that average unit costs will grow (+31%) in that same period<sup>2</sup>.

As such, Spirax Sarco advocates reviewing control systems as this is one area that could have a positive impact on future budgets. By upskilling staff in controls systems alongside identifying improvements in controls systems technology, manufacturers could reduce costs and improve efficiencies in the absence of increased sales.

Over the coming months, Spirax Sarco will be identifying the key tell-tale signs of inefficient control systems along with significant gains process managers can make to optimise their potential. Ultimately aiming to mitigate the risk of downtime and product spoilage, while also aiding process productivity.

Darren Silverthorn, National Controls and Metering Specialist explains: “A lot of the time, early warning signs related to potential equipment failure can go unnoticed. Control systems ultimately enable safety, stability and accuracy throughout a process. If they are not maintained appropriately, or are not specified correctly prior to initial installation, then any of these things can be jeopardised.”

Darren continues: “Reducing downtime and improving productivity must begin with a more robust specification. When it comes to control systems and control valves in particular, quality issues can arise due to poor specification, either

poorly specified or more commonly due to a lack of information being provided during the specification stage.”

Darren concludes: “We know our customers’ roles are becoming more demanding by the day and that operating a steam system is not always forefront of mind. We are therefore on a journey to help educate those responsible for steam systems on control system strategies that can be put in place, or simply offer additional expertise and resource where it may be limited in-house.”

Spirax Sarco’s campaign will cover the full spectrum of improvements that can be implemented within a steam system to help make the lives of plant managers, process engineers, production managers and the like that little bit easier.

For more information on optimising your control system’s potential, visit: [www.spiraxsarco.com/global/uk/Products/Pages/control-valves.aspx](http://www.spiraxsarco.com/global/uk/Products/Pages/control-valves.aspx)



## Fronius UK returns to Robotics and Automation exhibition

**A**fter two successful years, Fronius UK's welding experts are returning to Robotics and Automation on 29th & 30th October.

Having grown since the first show back in 2017, the specialist trade show has moved to a larger venue, the Ricoh Arena, and brings together industry leading robotic and automation technologies that optimise operation processes.

The welding technology specialists at Fronius will be exposing their capabilities within the fields of welding automation and robotic welding.

As a systems supplier, Fronius have been creating cost-effective, customer specific and complete solutions for mechanised arc welding for seventy years.

Mechanised welding systems for optimum welding results and maximum return on investment.

Fronius expertly combines the world's most innovative welding technology with mechanised components, resulting in outstanding welding results and significant competitive advantages making Fronius the unique partner for mechanised welding.





The welding of components can be challenging and complex and often modules with the widest range of component geometries must be welded precisely in the same production cycle. This is made possible thanks to intelligent welding systems that accurately control and constantly monitor each individual welding process.

Fronius Automation experts will be on hand to talk about the extensive portfolio of products that range from welding carriages to cladding cells, orbital welding systems to complete turnkey solutions. Fronius has also developed a mechanised application for TIG welding called ArcTig. The process achieves a high level of efficiency, with faster welding speeds



than conventional TIG welding, without compromising on the quality of the weld seam, reducing the need for preparatory work and rework.

Robotic Welding for defined quality Industrial series production has its own rules: defined quality, defined process times, defined costs and in theory, boundless reproducibility. In reality, operating faults and variations in the quality of the material or the effects of thermal deformation during the welding process can all increase reject rates and downtimes, impacting on the profitability of the production operation.

If a fault is not discovered and rectified immediately, the robot will reproduce it all along the assembly line. The issue here is that the robot must be able to think in order to evaluate a problem for itself. In developing the TPS/i for robotics, Fronius have built an intelligent welding power source that, in conjunction with the Fronius SpeedNet data transfer, continuously analyses data which is sent back from the arc at over 10,000 times per second. The welding power source then makes adjustments where necessary within set parameters, effectively “evaluating” and “thinking” for itself. The result is unsurpassed quality, highest efficiency and maximum

reliability. In other words, profitable welding processes for all automated series production lines.

To meet the challenge of increasingly quicker production processes yet with simultaneously high expectations regarding quality in robotic welding, Fronius offers the LaserHybrid welding process, which combines the advantages of MIG and laser-beam welding processes coupled with the power of the intelligent TPS/i platform.

Documenting, visualising and analysing welding data are becoming increasingly important in many production operations. With the WeldCube data management system, Fronius is making it possible to record, analyse and evaluate welding data across multiple power sources. This helps the user to identify potential areas for optimisation in welding production lines.

To find out how Fronius can help you to dramatically increase the cost effectiveness of your production process, visit them at stand 222 of Robotics and Automation 2019 at Ricoh Arena, Coventry on the 29th and 30th October.

[www.fronius.com/en](http://www.fronius.com/en)

# Keeping pace with high volume and consumer demand with Stäubli's TP80 FAST Picker robot system

Unlike physically larger mass produced products such as vehicles, which can have a lifespan of several years before facelifts are required, the world of consumer goods is one of an ever changing environment, where both the products and the packaging are regularly updated.

The constant demand by consumers for something new or better, means that manufacturers of FMCG (fast moving consumer goods) products need both the highest levels of flexibility within their production facilities, and the capability to respond quickly to changing demands.

The evolution of high speed robots, such as Stäubli's TP80 FAST picker, now makes it possible for manufacturers to keep pace with high volume production and the ever changing requirements of the FMCG sector.

Dedicated automation was once the preferred solution to high volume pick and place or product handling applications. These systems tended to be configured around a relatively narrow application requirement, and whilst highly effective for the product for which they were designed, they offered little scope for adapting to changes in product type or design. By comparison, robots have always been capable of offering the highest levels of flexibility in any manufacturing environment, however their only real limitation, when initially considering many consumer goods applications, was that of speed.

Today Stäubli's TP80 is the latest innovation in picker technology, with the capability to handle product at a continuous rate of 200 units per minute.

This positions the FAST picker as an ideal solution for pick and place and assembly applications across a variety of FMCG industry sectors such as food, pharmaceutical, photovoltaic and healthcare.



Although there are a number of robots from different manufacturers competing in this space, the TP80 offers a number of distinct advantages in addition to its high speed. The TP80's wall mountable configuration does not require a large mounting plinth such as those needed for Delta robots.

This means that the robot does not have to be mounted directly over the product, which offers many benefits when considering the integration of the robot and subsequent maintenance etc. There is also much less opportunity for product contamination when the robot is mounted in this way. The TP80 also has a fully enclosed rigid structure with all cables and lines running through the inside of the arm, and a larger working envelope with higher repeatability throughout its working range than other robots in this class.

Not only is the TP80 the world's fastest picker, in its HE guise, which is based on EHEDG recommendations, it is fully designed for hygienic packaging and processing. Its unique design makes this robot completely airtight to work in humid environments.

Stäubli spokesperson Craig Forrester comments: "The TP80 is specifically designed for any application requiring high speed pick and place of small items. Both end users and integrators are already praising this new technology confirming that it is; easier to integrate, has fewer moving parts, which means higher reliability and is competitively priced when compared to Delta robots.

In addition, as it's not installed directly over the conveyor or production line, integration is simpler and there is easy access in the event of service needing to be done. The HE version of the TP80 FAST Picker has also opened up a broad range of new applications within the food sector."

Specifications for the TP80 FAST picker robot include a working payload of up to 1kg, nominal payload 0.5kg, repeatability  $\pm 0.05\text{mm}$  and a cycle time of between 170ppm at 1kg rising to 200ppm at 0.1kg.

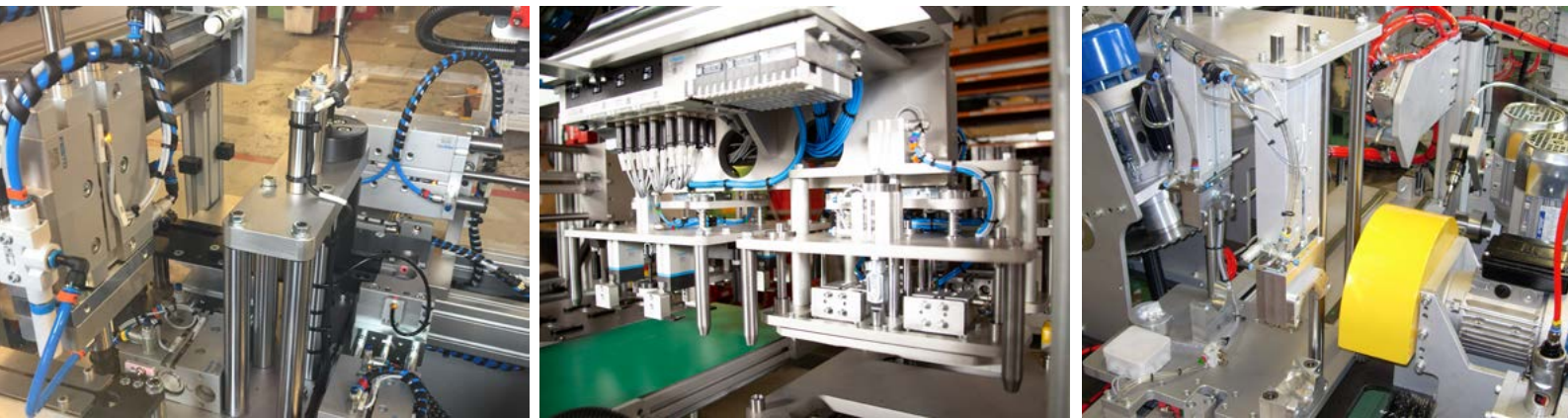
[www.staubli.com](http://www.staubli.com)





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TF Automation design, engineer and manufacture process automation solutions, ranging from full manufacturing units to specialist components all engineered to integrate fully with existing production lines. With over 40 years' experience, we support a wide range of manufacturing industries, providing special purpose machinery designed to clients' bespoke requirements.

Our engineering and design expertise is extensive and we offer the latest technology across a wide range of disciplines, with all projects carried out in-house, from concept design created in Solidworks 3D CAD to commissioning and installation.

### Services

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### Expertise

- Assembly & testing • Process automation • Robotics & product handling
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### Industries



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Automotive



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Food/Drink



Heating



Medical



Packaging



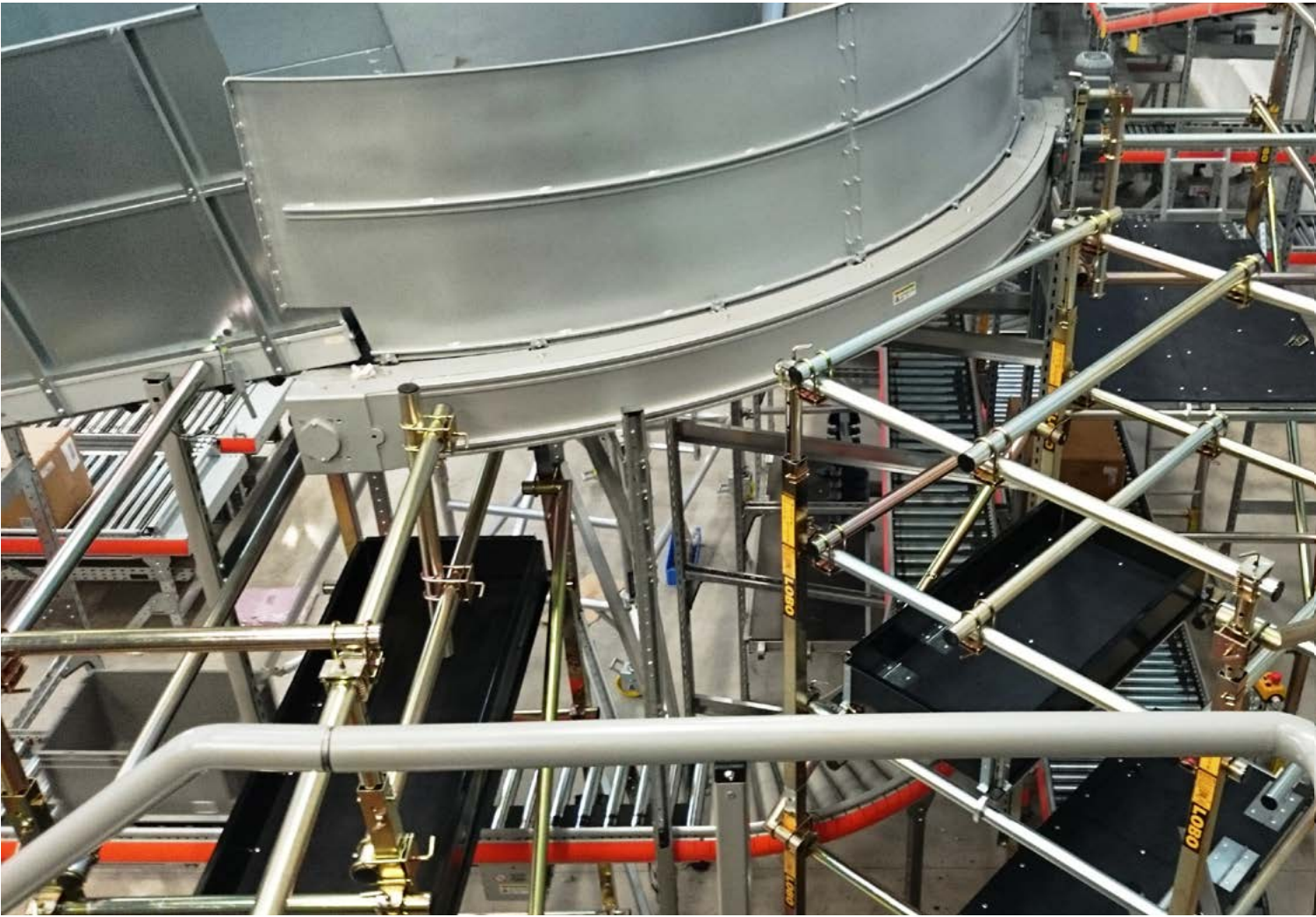
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## Application - Distribution and Logistics



### KEY PROBLEMS

Warehouse logistics and material handling system solutions require planned and reactive maintenance programs, often in elevated areas.

The movement of goods in a distribution or manufacturing operation requires sophisticated automation systems. The higher the volume of movement the greater level of complexity required.

Material flow solutions, using pallet or case conveyors, AGVs and monorails are a highly effective means of moving goods between work areas. They offer real time tracking of goods and added value tasks; for example, wrapping, weighing and the sorting of goods.

Maintenance is key to an efficient process; many areas are awkward and therefore difficult to reach; each task often being different from the last. Working at height must be accomplished safely and traditionally outsourced scaffolding companies and fixed aluminium tower systems have been deployed. Outsourced scaffolding labour is expensive and not available 24/7, aluminium frame systems are cumbersome, inflexible, difficult to transport and will not adjust to fit into awkward areas.

### THE SOLUTION

Using a LOBO System solution can dramatically improve logistics system operation by reducing scaffolding labour costs, which in turn improves service levels and increases operator productivity.





The LOBO System can be assembled quickly, easily and safely around, through or above conveyors and restricted access areas – by your own in-house maintenance crew.

This means out-sourced scaffolding labour costs can be reduced without compromising safety.

Areas previously considered difficult to get to can now be accessed with ease for maintenance and cleaning purposes. In addition, it is available 24/7 therefore puts you in control of what and when you schedule your maintenance tasks.

#### PRODUCT BENEFITS

a) LOBO is scalable, adaptable and adjustable to meet your on-going and changing requirements. Simply add more components or alter your existing configuration to satisfy the demands of the next task. Protect your initial investment with a product that will meet all your access needs safely!



b) LOBO is a rigid and stable product, which meets or exceeds current safety regulations. Handrails can be fitted in seconds, at any point in the erection process.

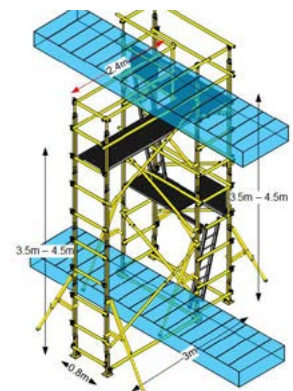
c) LOBO's steel structure ensures many years of product life cycle and a system that will not shake or rattle. The system also includes a slider lifting beam kit and a Towerstore storage unit.

d) LOBO's modular approach means components fully integrate and can be hand carried. Fully constructed systems can also be made mobile by the addition of wheels.

#### COST BENEFITS

Experience shows that deploying the LOBO system reduces the costs associated with hiring scaffolding and constructing bespoke access systems. By reducing your reliance on out-sourced scaffolding and engineering companies cost savings will be achieved – easily in a 12-month period.

With this quantifiable reduction in costs comes the added savings associated with reduced down time and greater productivity from your maintenance department



Available 24/7, quick to erect – and above all safe – it is immediately adjustable for your next job with no staff waiting time while new fixed-frame structures are built.

Re-configurable, again and again, this product comes with no disposal costs and minimal replacement and on-going training costs.



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[sales@lobosystems.com](mailto:sales@lobosystems.com)

# Ball screws with interchangeable nut-shaft combinations

NSK is releasing a new series of ball screws in which the nut and shaft can be freely combined. This design makes it easier for both dealers and end users to stock or purchase high quality ball screws in small batches.

The new ball screw does not require using an individually matched nut-shaft combination. Instead, the nut and shaft can be freely interchanged, following the principle of random matching.

Available in accuracy class C7, the ball screws come in shaft diameters from 15 to 32 mm, with pitches from 5 to 20 mm. Thanks to their inherent design, the units are shipped with very little axial play as standard. If necessary, a desired preload can be generated by changing the size of the balls at a NSK dealer or directly at NSK.



The new series is ideal for applications that include pick-and-place systems, as well as automated transfer units for assembly, handling and internal transport.

Many other uses are also possible.

For users, the free interchange of nut and shaft has the advantage that the required ball screw can simply be taken or ordered from stock, and then cut to length either in-house or by an authorised NSK dealer.

[www.nsk.com](http://www.nsk.com)



RMIG is the world's largest manufacturer and supplier of perforated metal and its related products.

We know our customers' requirements for price and quality and meet their demands with uncompromising service.

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With a continued investment in the latest equipment and a network of professional partners we are able to produce prime quality products and solutions – from a simple perforated sheet to the fully formed and coated custom made part.

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We can cut and shape perforated sheet to meet the needs of your final application.

## Levelling

For some applications a high degree of flatness is required, we have processes in place to ensure our perforated coils and sheets meet with your most demanding requirements.

## Rolling and forming

We can roll, bend and form perforated sheets to match your design.

## Aesthetic finishes and protective coating

We can offer powder coating and hot dip galvanizing solutions to meet your specifications.

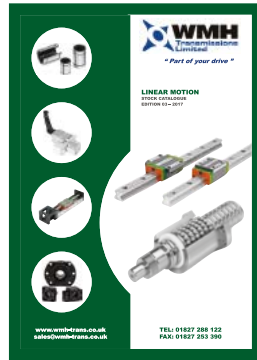
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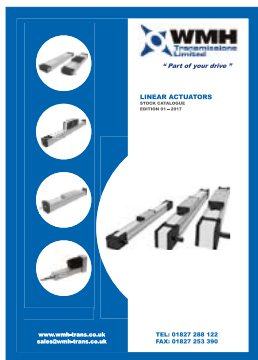




## SCREW JACKS



## HIWIN LINEAR MOTION



## LINEAR MODULES



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***"Part of your drive"***

## PUTTING PRODUCT QUALITY & CUSTOMER SERVICE ABOVE ALL

Apex Transmissions Ltd is a leading supplier of precision planetary gearboxes and Bosch Rexroth linear motion components in the UK market.

Having a passion for providing customers with only the highest quality goods and a strong drive to offer an unrivalled customer service, Apex Transmissions Ltd has earned a reputation as a trusted supplier right across the UK and beyond.

Originally founded as the official UK agent for Apex Dynamics products, and with a team of experienced staff with a thorough understanding of the specific requirements of the UK market, Apex Transmissions Ltd were able to offer customers exceptionally short lead times on gearboxes from stock at the Apex UK head office facility located centrally in Tamworth, Staffordshire.

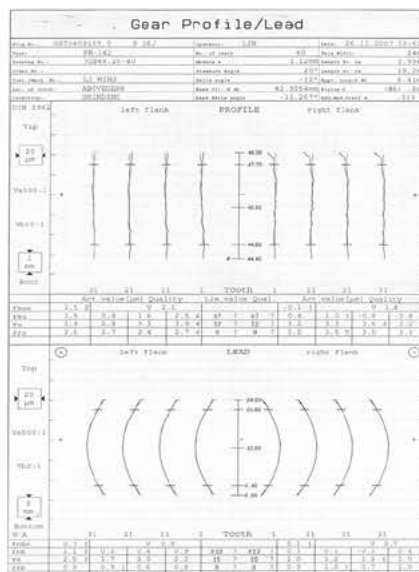
This helped many companies across the UK struggling with excessively long delivery times from other leading gearbox manufacturers to finish their projects on time and under budget, reinforcing the reputation of Apex Transmissions for customer service and earning customers' trust.

Soon, the reputation of excellent customer service and an in depth product knowledge and market understanding earned the attention of Bosch Rexroth UK. After some discussion between the two, Apex Transmissions Ltd began to stock, process and distribute Rexroth linear motion products into the UK market.



In house machining and processing facilities were developed and specifically tailored to offer their customers exceptionally short lead times on Rexroth linear motion products from the stock held at their UK factory.

To this day, Apex Transmissions Ltd continues to develop and improve upon their range of Bosch Rexroth linear motion products and services. Their current portfolio focuses on machined ballscrew and nut assemblies, finished linear ball, roller, stainless ball and miniature guideways and linear ball bushes.

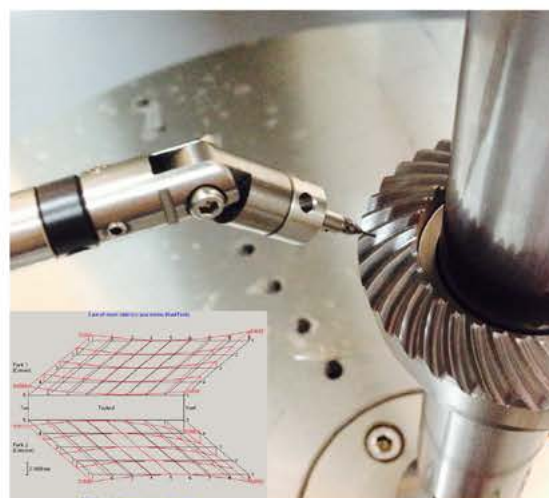


## CHANGING DIRECTION

For 2019, Apex Transmissions Ltd are proud to offer their new range of precision planetary, spiral bevel and hypoid gearboxes. Featuring improved quality and solid, robust construction, their new gearbox range reflects their commitment to the market to continuously improve product quality and the service provided.

The new range offers full helical gearing across the range for smoother, quieter operation and higher torque density compared to a gearbox with straight gearing. As well as this, all gears are case hardened and ground to further improve the torque capacity, speed and service life of the unit.

Apex Transmissions Ltd offer full design support service for all of their products. A fully equipped, in-house technical department features the latest 3D CAD software and a team of qualified, experienced engineers can offer free calculations to support your machine design process no matter the scale or complexity of build.



From the substantial stock supply at their midlands based facility, Apex Transmissions Ltd offers an exceptional production process and with fast delivery times. This helps to reduce the construction time of customer machine builds and the express delivery service also reduces productivity losses to production companies as a result of gearbox breakdowns.

The range of gearboxes offered by Apex Transmissions Ltd includes drop in replacements for the vast majority of established gearbox manufacturers and so offering an alternative to the long lead times.

Apex Transmissions Ltd are proud to offer their service and products for distribution throughout Europe.



## PLANETARY GEARBOXES



## BOSCH REXROTH LINEAR MOTION



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MODEL: SD150-0047-L32		(Backlash: PS)	
Serial NO.: M412R034			
A. (visual)		FINISHED	
1. axial contact	YES		
2. no. damage	YES		
B. (dimension)		measured	provided
1. IDA of input shaft	YES		
2. input DIA. of motor plate	YES		
3. IDA of output shaft	YES		
C. (performance)		measured	provided
1. forward running test 1000RPM	YES		
2. backlash	51	provided	YES
3. noise	55dB	YES	
D. (accessory & sample)		FINISHED	
1. accessories checking	YES		
2. sample checking	YES		
3. noise checking	YES		
(confirmation: APPROVED)		(Inspector: [Signature])	

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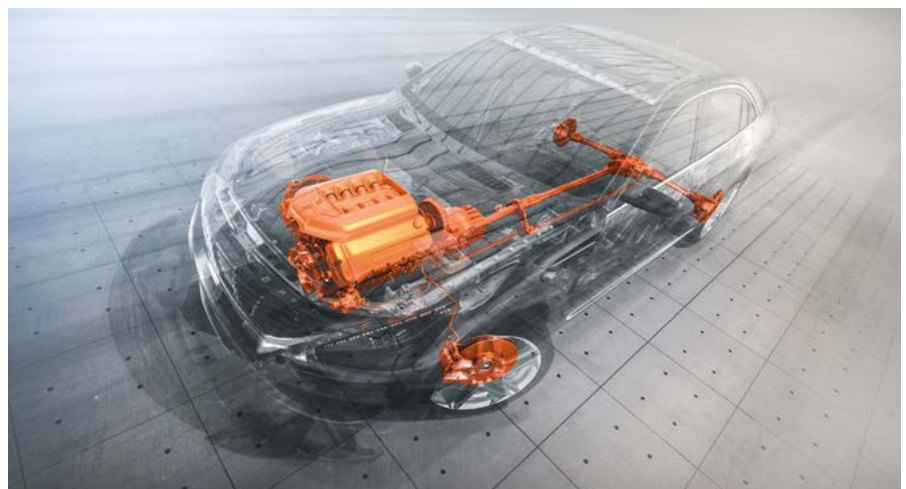


# DOSCH DESIGN – Your innovative partner for a successful 3D-experience

Since 1995 DOSCH DESIGN has been a fixture in quality CG products by staying on the cutting edge in 3D-design, animation, architectural visualizations, print publishing, motion design, etc. With its well-diversified product range DOSCH DESIGN supports CG artists in their daily work.

Especially in the field of Mechanical Engineering, tool making or the automotive industry, 3D-Design has become an indispensable element. Photography can afford incredible, but it also has its limits. This is not least known in mechanical engineering, where custom-made products and often also very large objects are commonplace. In addition, machines are usually moved in assembly halls, which are not suitable as an environment for good photographs. That's why many companies choose 3D-Design to perfectly showcase their products and services.

DOSCH DESIGN has developed a lot of helpful visualization tools that make life easier for designers and have become an integral part of many users' creative arsenal. The company places great importance on depicting 3D models realistically - no matter whether these relate to manufacturing, engineering, vehicles, buildings, industry, nature or garden, to name but just a few. However, DOSCH DESIGN doesn't just leave it at the



mere creation of an individual object; instead, they pay great attention to the many little details around the product. For instance, car models include detailed depictions of brakes, wheels, bumpers, doors, seats and the electronics. These details are an important part of marketing for supply companies and manufacturers who want to visualize processes for publications, animations or instruction manuals.

DOSCH DESIGN's extensive product range is divided into the following categories:

## DOSCH 3D

offers completely textured 3D-models for all popular 3D-applications. Users can select from over 100 products in different

areas, like environments, nature, factory and production, people or vehicles.

## DOSCH TEXTURES

Seamlessly tileable multi-layer textures for 3D-design, animation, CAD or print applications. Each product provides around 100 depictions which can be applied to 3D models.

## DOSCH HDRI

allow users to incorporate highly realistic, complex and stunning lighting in their 3D-scenes.

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# Meeting the automation challenges of smart manufacturing

It is worth stating that implementing smart manufacturing is a very worthwhile exercise, successfully applying a level of smart manufacturing will bring greater efficiencies and flexibility to any given production process. It is also a significant step toward 'futureproofing' a production enterprise.

That "forward thinking" mind-set is essential when implementing smart manufacturing projects where intelligent machines, systems and networks are capable of independently exchanging and responding to information to manage industrial production processes.

A smart manufacturing project should incorporate a holistic view of the enterprise from customer demand and order processing, control of raw materials and ingredients to flexible and efficient plant production, whilst minimising waste, energy usage and downtime. Achieving this ultimate goal may need a staged approach and will often be achieved by taking small initial steps. Understanding the manufacturing plant's goals and their current "pinch points" is essential to finding quick wins and building confidence in the smart manufacturing process.

Technology exists today to implement smart manufacturing and it would be perfectly feasible to design new manufacturing plants or production facilities from the start in line with a smart manufacturing concept. However, in many cases the reality is not a new plant but an existing plant that will need to be upgraded to meet the requirements and reap the benefits of implementing smart manufacturing.

"Smart" in its simplest form is about gathering data from the manufacturing process, turning that data into information and then acting on that information. What is needed is "intelligent data" from the plant in order to make decisions that improve productivity and efficiency while minimising waste, energy usage and downtime. Intelligent data has to come from the "sharp end" of the process. Current sensor and actuator technology



allows these devices to deliver self-determination and advanced error checking, as well as the usual process information for both control, production analysis and preventative maintenance.

Traditionally a production plant may have consisted of "islands of automation" but in order to maximise the data gathering potential, existing or new infrastructures must be utilised to create an architecture for data collection and management. It is possible to overlay a "data gathering layer" on top of the existing automation control layer to communicate with and extract data from these disparate systems. It is helpful therefore to ensure automation hardware is compatible with a flexible open network strategy that can interface with many different network protocols.

When plant assets are controlled by automation controllers such as a programmable logic controllers (PLCs) much of the data vital to deliver the smart manufacturing concept often already exists; even if this data is not currently being transferred to the higher level systems. The new data gathering layer can then be used to marshal this vital production and maintenance data and pass it on to higher level systems for analysis and decision making. Productivity and efficiency improvements come from knowing exactly how the plant is

performing and delivering intelligent plant data via a reliable infrastructure (coupled with the convergence of business level systems with the production facility).

This data gathering layer is now referred to as the "edge computing" layer and advancements in technology in this area will provide the facility to perform data analysis and deploy Artificial Intelligence (AI) to rationalise the data being collected from the plant. This will minimise the data that needs to be transferred to the higher level systems which can be a costly exercise to process at that level.

The investment required to deliver a smart manufacturing plant will depend on the current infrastructure and age of the automation equipment but a survey of what is already on plant may lead to some "low hanging fruit" on the road to a smart manufacturing end goal.

Once achieved, smart manufacturing affords many benefits including the flexibility to react to customer demand, maximising plant productivity by efficient scheduling, achieving minimum downtime when changing from one product to another and from preventative maintenance - all of which should lead to greater profitability.

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# AC-DC Battery Backed Power System

## 1U 19" Rack Mounting up to 300 Watts

The PFD Series is a no break system to provide constant DC power without interruption in the event of an AC mains failure. Available in 150W and 300W versions and nominal DC outputs of 12V, 24V or 48V



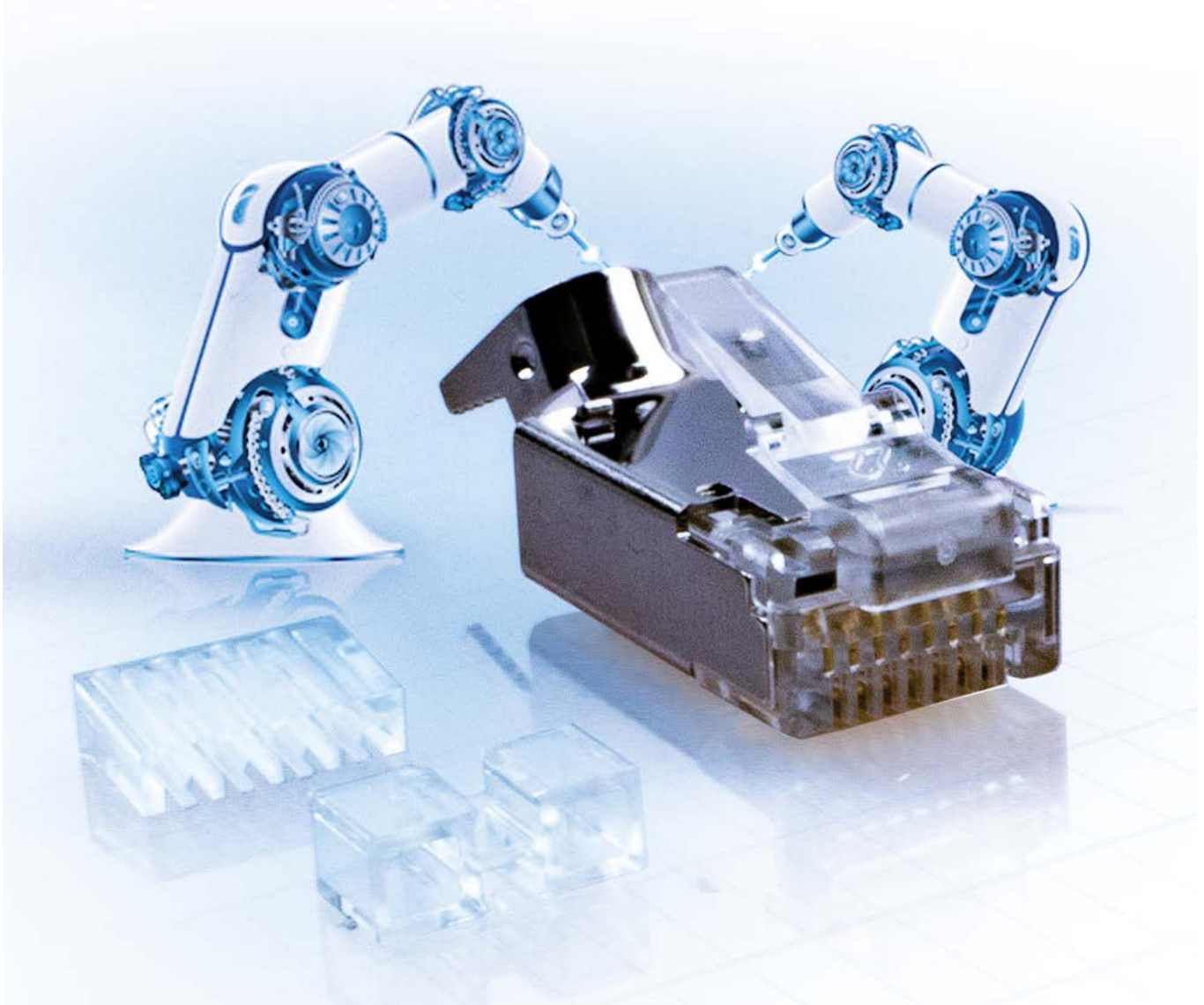
### Features

- AC Input 180-264VAC 50/60Hz
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- Can power your load and charge batteries simultaneously
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# New connector for 10 Gigabit Data Transmission

**T**he new Y-ConPlug CAT6A is a 10Gbit RJ45 cable connector which widens up the range of the Yamaichi plug series for Gigabit and can be used with all of the Y-Con components.

The CAT6A RJ45 connector supports 10 Gigabit data transmission according to the ISO/IEC 11801 standard. The development was necessary due to higher data transmission demands in the industrial area. Gigabit Ethernet is required by more and more applications.

The RJ45 cable connector is designed with integrated cable guide, EMC

shielding made of nickel-plated brass and a rectangular cable crimp that prevents cable rotation. The tested life is more than 1,000 mating cycles and the operating temperatures range from -40°C to +120°C for extreme operating conditions in the field or the plant.

Within the Y-ConRJ45 series, the described component can additionally be protected against external mechanical environmental influences according to the protection classes IP69K, IP68, IP67 and IP20. Reliable protective covers made of high-grade materials such as PBT or zinc die-cast are part of the series. This gives the customer the

flexibility to choose the right component for different applications.

Like all Yamaichi products, it is also RoHS compliant.

## Characteristics

- CAT6A acc. ISO/IEC 11801 standard
- Contact area: 30µ" Au
- Wire connection: piercing contacts
- Durability: 1,500 mating cycles
- AWG 24-26
- Square crimp over cable shield

[www.yamaichi.eu](http://www.yamaichi.eu)



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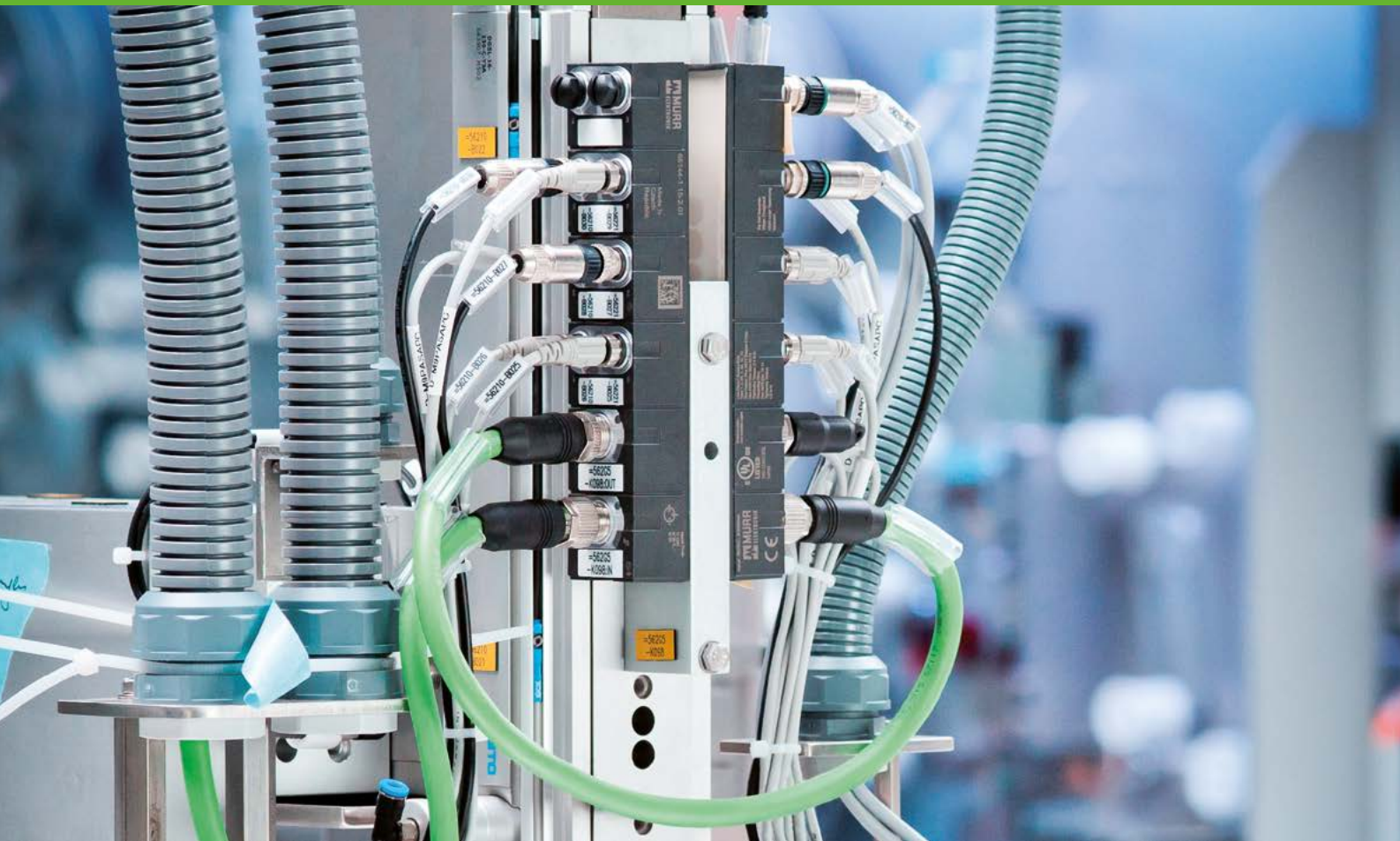
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