HandlingKinematics pick-and-place solution with MOVIPLC®
Already covering factory automation and Industry 4.0 in our publication SA Instrumentation & Control (www.instrumentation.co.za), security in our publication Hi-Tech Security Solutions (www.securitysa.com), and the Internet of Things in our publication Dataweek, it was a logical next step to cover the subject of home automation and security, without diluting the focus of our existing technical publications.

The monthly Smart Home Automation news brief (to be launched in February) will cover product information relating to the hardware and software technologies that enable control and management over appliances and devices within a home.

Areas to be covered:
- Home automation of TV, audio, appliances etc
- Energy and lighting automation/control
- Temperature control
- Fire detection
- CCTV cameras
- Remote viewing of home and family
- Communications with home and security response company
- Alarm control and remote control/communication
- Access control and identification
OUR COVER 11

When a local OEM of concrete brick, block, and paving machinery had the unique opportunity to build a greenfield plant for a longstanding customer in the East London area, it turned to SEW-Eurodrive for its easily configurable HandlingKinematics pick-and-place solution. Read our cover story on page 11 to find out how SEW-Eurodrive’s HandlingKinematics application module allows for machine control at a higher level by means of a lower level Configurable Control Unit (CCU) for carrying out precision path movements.

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Stakeholder capitalism: a new world order

The World Economic Forum has always spotted trends long before they become mainstream, and I have been following with interest. In Davos this year the big news was the swing from shareholder to stakeholder capitalism. Today if companies want to attract serious investors they have to look after their customers, staff, suppliers and communities – not just shareholders. The debates at Davos 2020 showed that “the business of business is now far more than just business”. Shareholders are no longer the priority. A good ESG rating is as important as financial statements. This is an area that South African business has pioneered, a lot of it quietly behind the scenes. In our stories from Motion Control contributors there are many examples.

The jargon comes thick and fast: do we call it IIoT, M2M, Industrie 4.0 or 4IR? Motion Control has tried to standardise on IIoT but sometimes this doesn’t seem to quite fit. After investigating the differences a bit further, this is what I came up with.

Industrial Internet of Things

You can’t control what you can’t measure, and this is where IIoT comes in. It’s about connecting devices on the plant floor and providing new ways to generate and collect useful data. IIoT lets you see the furthest points of the production floor, and into the machine, and can make predictive maintenance and big data analytics possible. It is about connecting devices to improve equipment effectiveness and provide new insights into our businesses, and is resulting in unprecedented levels of efficiency, productivity and performance.

The term Industrial Internet was originally coined by GE in 2012. The adoption and standardisation effort is being led by a US-based alliance known as the Industrial Internet Consortium. Nineteen working groups are in place to develop best practices and standards around IIoT.

Industry 4.0

Industrie 4.0 (the original term) came out of a project in the High Tech Strategy 2020 of the German government and was first presented in 2011 at Hannover Messe. It is a German government led initiative in collaboration with associations, enterprises, academia and trade unions. The goal of the Industrie 4.0 platform is to secure and expand Germany’s leading international position in the manufacturing industry.

Broadly the initiative refers to the intelligent networking of machines and processes in industry and it is coordinating the digital transformation of industry. There are six working groups to develop the basic concepts and to tackle the challenges. The Industrie 4.0 philosophy is about keeping the new generation of manufacturers competitive in a global market.

It is more of a cultural philosophy about how to use increased visibility, flexibility and efficiency in production to be more competitive. On the other hand, IIoT is the enabling force for connecting devices, data, machines and people to benefit company and customers.

Machine to Machine

M2M is direct communication between machines, smartphones and appliances. It connects machines to machines, while IIoT takes machine to machine connectivity, integrates web applications and connects it to a cloud. M2M makes use of isolated systems of sensors to collect and record remotely measured data, while IIoT converges systems to enable new applications. IIoT steps it up by integrating device and sensor data with big data, analytics and other mobile applications in an enterprise.

Fourth Industrial Revolution

The phrase Fourth Industrial Revolution (4IR) was introduced in 2015 by Klaus Schwab, executive chairman of the World Economic Forum, in his book The Fourth Industrial Revolution. The term represents the fourth major industrial era since the first Industrial Revolution of the 18th century. It is described as a fusion of emerging technologies that is blurring the lines between the physical, digital and biological spheres. Breakthroughs include robotics, artificial intelligence, nanotechnology, quantum computing, biotechnology, materials science, energy storage, 5G wireless technologies, additive manufacturing and autonomous vehicles.

4IR is the term that has been adopted by South Africa and there are some impressive initiatives going on in this area. For example in recent issues of Motion Control we have covered how South Africa is responding to 4IR through the impressive Intsimbi Future Production Technologies Initiative. This drive is aimed at changing the face of automation in South Africa in a partnership between government and industry.

As far as I am concerned these terms all say the same thing in a slightly different way. For now I think I will stick with IIoT.
Driving force for the future

Association Objectives

- Raise the professional standards of the pneumatics and hydraulic industries
- Stimulate and promote education and training in the fluid power industry
- Build synergistic rapport between companies within the industry
- To promote, collect, collate, distribute data, ideas and knowledge
- To encourage the growth of the membership base

For more information visit our website www.safpa.org.za
or call +27 (0)11 888 7163

SAFPA membership certificate may be used to support tender applications, members are also welcome to use the SAFPA logo on all their advertising.
Greetings,

I trust all the readers had a pleasant festive season and managed to recharge for 2020, I hope this year will be a prosperous one for you.

The SAFPA subcommittee chaired by Chris Arbour has delivered a draft version of the ‘Guide to pressure equipment in the fluid power industry’ which has been presented to the fluid power committee for review and comment. The pressure vessel legislation pertaining to the OHSACT, Mine Health and Safety Act, and Merchant Shipping Act is overviewed, showing its impact on the following fluid power products: accumulators, hydraulic piping, hydraulic cylinders, pneumatic cylinders, air receivers and manifold blocks. Once the draft version of the ‘Guide to pressure equipment in the fluid power industry’ has been reviewed and edited by the SAFPA committee and a discussion of the changes by the Pressure Vessel Sub committee has been held, the draft will be released to the fluid power industry, and any further comments will be tabled for a later revision, so watch this space.

Regarding the Hose Safety Training course, an external resource has been contracted to update the training material based on the British Fluid Power Association and edited to South African/Metric specifications. This will extend the offering of the training course to a multiple day requirement and offer the learner an extended portfolio of information. The new course dates and venue will be rolled out during the course of 2020.

I wish you a great 2020,

Kind Regards
Dustin Pereira
Nidec extends warranty on Commander drives

Control Techniques has launched a free, five-year warranty for its Commander range of general-purpose drives. Anyone who purchases a drive from the Commander range will now be able to register to extend the products' warranty from two years to five, at no extra cost.

The new offer relates to the Commander C200 and C300 general purpose drives designed for ease of setup and installation. The firm states the move to extend the warranty from two to five years is testimony to the products' exceptional track record for reliability and durability. Users can now buy with confidence, safe in the knowledge that their purchase comes with the security a five-year warranty offers.

Due to an on-board PLC, both series have embedded intelligence – removing the need for an external controller – and the 0.25 kW to 132 kW power range makes the products suitable for lower and high-power applications. Noted for its robust design and resilience to harsh environments, the Commander range has the smallest footprint in its class, making it ideal for machine and original equipment manufacturers. For more complex applications, both models are compatible with Control Techniques' plug-in option modules.

The Commander family of drives was reintroduced to the company's portfolio at the end of 2018. Anthony Pickering, president of Control Techniques said: "To increase the warranty period for our Commander Drives signals our confidence in the product and gives drive users added security. We are particularly proud to be in a position where we can offer this."

For more information contact Jacqui Gradwell, Nidec Industrial Automation Southern Africa, +27 11 462 1740, jacqui.gradwell@mail.nidec.com, www.nidecautomation.com

Stone-Stamcor boosts Cape Town operation

In order to enhance its service to its Western and Eastern Cape customers, Stone-Stamcor has embarked on a business improvement project for its Cape Town branch. The new location of the branch will make it easier for customers to interact with the company while also improving product collection and deliveries in the region.

Stone-Stamcor's head office is located in Edenvale in Gauteng, where its 4000 m² factory and administration facilities support the company's national footprint and manufacturing operations. The full range of Stone-Stamcor products now will be available from the Cape Town branch. In short, this means that products from the electrical and mechanical divisions of the company will be on sale, along with repairs and advice on the whole product range. The Johannesburg office will function in a support role where needed.

The Stone-Stamcor Electrical Division manufactures a comprehensive range of copper and aluminium compression cable connectors (lugs and ferrules) for fitment to cable conductors. Stone-Stamcor has been manufacturing locally for decades and has established its brand as one associated with well designed products which are tested to the SANS IEC 61238-1 standard as well as reliability and customer service. Stone-Stamcor also supplies a full range of compression crimping and cable cutting tools.

The Mechanical Division represents several renowned international companies with high quality brands. It can supply a range of industrial gearboxes, motors, linear motion control products, converting industry products and rotating unions, to name a few.

For more information contact Stone-Stamcor, +27 21 511 8143, info@stonestamcor.co.za, www.stonestamcor.co.za

Local finishing for switchgear

Schneider Electric South Africa has announced that its PIX Easy Air Insulated Switchgear, previously 100% manufactured internationally, will now have a 68% local finishing process, reducing the customer waiting period from 12 to 4 weeks and boosting local manufacturing and empowerment.

"This represents a major step for Schneider Electric South Africa and our Gauteng-based RWW Engineering partner," says vice president of power systems, Taru Madangombe. "Through this partnership, we are able to service our customers quickly, with the knowledge that the local assembly meets the stringent global requirements and standards of Schneider Electric."

"This has been a long and involved design process. Safety is a prime concern with switchgear and PIX Easy is locally made to meet international safety requirements. I believe that this kind of high quality equipment will be well received in the market. Whether one generates, distributes or uses electric power, in today's economic climate one needs an optimised and effective solution that is reliable and easy to use."

The PIX Easy Air Insulated Switchgear adapts to all electrical power distribution requirements up to 17.5 kV. It is an indoor metal enclosed switchgear, intended for medium voltage applications such as those found in HV/ MV or MV/MV substations, buildings and industries.

"PIX Easy is essential for electrical utilities and smart cities. Its applications in buildings include healthcare, hotels, airports, banking and finance. It is utilised in the food and beverage, automotive, water and wastewater, small industries and life sciences," concludes Madangombe.

For more information contact Prisca Mashanda, Schneider Electric, +27 11 254 6400, prisca.mashanda@schneider-electric.com, www.se.com/za
Magnetic levitation technology for the Far East

German construction engineering specialist, Max Bögl, is commissioning a local public transport system based on magnetic levitation in Chengdu, China.

Beginning at Max Bögl’s main factory in Sengenthal, it was transported by air via Frankfurt and Moscow to the People’s Republic, ready for assembly.

The future-oriented Bögl Transport System (BTS) offers solutions for the challenges of urbanisation. Local public transport systems like subways have already reached the limits of what can be achieved in terms of trip timing. Thanks to flexible routing, the BTS can be integrated into existing transport infrastructure in a space-saving, flexible and cost-efficient way. Whether elevated, at ground level or in tunnels, this makes it possible to provide relief for traffic and the collapse of transport in cities.

The system is based on magnetic levitation technology and is propelled by a linear motor and drive. This makes the innovative local transport system quiet, flexible, reliable, space-saving and low-emission. As part of the development process, the vehicle has already completed 125,000 shuttle journeys on the test track in Sengenthal, covering a distance of over 83,000 kilometres.

As a turnkey supplier, Max Bögl is responsible for planning, industrial production of the track and vehicle, and construction measures. This is resource and cost-efficient, which makes it possible for the infrastructure project to be completed quickly.

Training rigs for Coca-Cola bottler

The first on-site Bosch Rexroth pneumatic training rigs have been installed in Africa. The rigs were supplied to Nairobi Bottlers, the base for Coca-Cola Beverages Africa Kenya, by Bosch Rexroth Kenya, in collaboration with Bosch Rexroth South Africa’s training department.

The pneumatic rigs were manufactured and supplied by Bosch Rexroth Germany and assembled at the local Bosch Rexroth plant in Nairobi prior to installation and commissioning at Nairobi Bottlers in August 2019.

The training rigs are now a permanent installation at Nairobi Bottlers and are used to conduct pneumatic training for Coca-Cola Beverages Africa Kenya employees. The first such training was a three-module training course for Coca-Cola East Africa’s technical personnel covering the Theory of Pneumatics; Pneumatic Components; and ‘Designing On/Off Manual Pneumatic Systems to Achieve Given Functions’.

“The training proved highly valuable in improving the trainees’ understanding of how pneumatic components work and how to integrate them to make a functional system,” explains Thomas Mbugua, sales manager or Bosch Rexroth Kenya. All successful candidates were issued with the Bosch Rexroth Certification for Pneumatic Training.

Bosch Rexroth Kenya is currently in the process of registering this pneumatic course with the Engineer’s Board of Kenya, which will accord successful trainees with nationally recognised CPD points.

Lubrication Engineers partners with Umuzi Engineers

Lubrication Engineers (LE) has partnered with Umuzi Engineers to tap the potential in new markets. Colin Ford, managing director at LE South Africa, says that Umuzi Engineers will operate as an independent contractor to LE South Africa, supplying its quality lubricants to clients in eSwatini and South Africa. “We realised synergies existed and started to explore the potential of a relationship,” he adds. “The lubrication industry was unfamiliar to me, but I realised the potential it offers and the value of the products and services Lubrication Engineers provides. I saw an opportunity to build a partnership.”

Menzi Ntshingila, director at Umuzi Engineers, explains that the company is a solutions-based company that aims to help businesses reduce operating costs over the long term. Better lubrication solutions is one way of doing this, and so that’s where we’re focusing first, and then Umuzi Engineers will look to expand into robotics and natural gas at a later stage,” he says. Umuzi Engineers is based in eSwatini, but also services clients in South Africa. The two companies believe that the relationship will help them to enter new markets and geographies, providing
Sasol award for Actom Turbo Machines

Petrochemical giant Sasol has recognised Actom Turbo Machines with one of its top 2019 awards for exceptional service in repair, refurbishment and ongoing maintenance. Actom Turbo Machines is the only large non-OEM business in its service category to win the award to date. Sasol is very OEM-reliant in terms of service backup and parts supply, according to Anton Hamman, Sasol’s principal specialist sourcing mechanical equipment. Actom Turbo Machines has proved itself in service provision for turbo machines, where critical and complex skills are required.

“We view turbo machines as the heart of our operations, so it is absolutely essential that the service provider has all the critical skills needed to ensure that the equipment is maintained to OEM specification,” Hamman says. “If you use a non-OEM company for this work, you must be certain they have the required skills and competencies to perform this work to the correct standard every time and understand the associated risks.”

“This award signifies recognition of the highest order, which we greatly value and cherish;” he says. “It marks an important milestone for us in our ongoing drive to provide the best possible service to industry.”

For more information contact
Marthinusen & Cotts, 27 11 607 1700, support@m&c.co.za, www.mandc.co.za

Consolidation of tooling companies

INDUSTRI Tools & Equipment has recently been launched as part of the Engineering Solutions Group (ESG) of Invicta Holdings. Through the consolidation of six independent tooling companies – Man-Dirk, Tool Quip & Allied, SA Tool, Sibuyile Industrial Supplies, Gem Tool and F&H Machine Tools – INDUSTRI Tools & Equipment is well positioned to improve efficiencies and enhance productivity for a broad customer base.

“The local market will benefit from a unified tools and equipment business, which offers a comprehensive range of quality branded products, through the streamlined procurement of effective tools, via a broader distribution network. This range extends from hand tools for the DIY handyman, to large-scale supply projects into mining, power generation and industrial sectors,” explains managing director, Kriban Govender. “What’s critical for customers is dependable support from a highly experienced team with combined technical skills and expertise. INDUSTRI Tools & Equipment has greater buying power for reduced costs and this, coupled with the fast and effective supply chain, means increased value for customers. The company’s extensive product offering is available from seven specialist divisions – tools and equipment, cutting tools, welding products, lifting equipment, PPE products, locks and machine tools.

The manufacturing division offers workshop repairs and services, as well as the production of a wide range of custom-made industrial materials, including welding screens, strip curtains, fire blankets, spill mats, tarpaulins and dam liners.

For more information contact Kriban Govender, INDUSTRI Tools & Equipment, +27 11 386 5801, kribang@industri.co.za, www.industri.co.za

Hytec Hydraulics Botswana opens service centre

Hytec Hydraulics Botswana recently officially opened its service centre in Gaborone. Tillmann Olsen, CEO for Bosch Rexroth South Africa, said the company is the largest manufacturer and supplier of hydraulic, pneumatic and automation components and systems in sub-Saharan Africa and the new workshop symbolises its ambition to set the highest standards in all areas of business. He added that Hytec Botswana will be supported by the Rexroth HUBB in Johannesburg where there is a concentration of highly skilled employees. “The HUBB’s training facilities will enhance the knowledge of employees across the continent,” he continued.

Charles Siwawa, CEO of the Botswana Chambers of Mines (BCM), said that he was looking forward to sharing product knowledge and expertise. “Development and deployment of the right skills within industry will play a crucial role in the efficient execution of the BCM’s mandate,” he said. Gerald Handke, Bosch Rexroth vice president of service at Mobile Hydraulics Germany, described how Africa’s attractiveness as a mining and minerals market is playing an increasingly important role for Bosch Rexroth. “Africa plays a key role in our global growth strategy,” he said. “Our head office in Germany will be supporting the Botswana branch with training, technical support, auditing and certification.”

Whether it’s a hydraulic cylinder for a mining truck or a conveyor on a diamond mine, Hytec Hydraulics Botswana is committed as a partner in the economic, financial and social development of the nation’s mining and exploration industries.

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**NEWS & EVENTS**

**Appointments**

Hydraulic and Automation Warehouse (HAW) has appointed Siphiwe Nyalungu as Durban branch manager.

Hytec South Africa has appointed Jacques Lombard as new business development manager.

**Bolting systems calibration centre for Ghana**

Bosch Rexroth Ghana has launched a new SPX FLOW Bolting Systems calibration centre to provide local calibration and services for its bolting systems technologies. Located at Bosch Rexroth’s existing Ghana facility in Takoradi, the calibration service centre has installed two dedicated workbenches for the calibration of torque wrenches and pumps. The rigs can test and calibrate bolting systems, tools and equipment with capacities of up to 50,000 Nm.

“There is a great demand for local services and having this facility fits well with the Bosch Rexroth business and is great for local customers,” says Alexander Booth, regional manager for Bosch Rexroth Ghana. West Africa is a recognised hub for minerals mining, and oil and gas exploration and production. Bosch Rexroth and SPX FLOW Bolting Systems have an established and trusted history in the supply of controlled bolting solutions and services in the area. The new calibration centre will offer enhanced local support to customers in West Africa.

The Bosch Rexroth South Africa Group of Companies has been an official distributor of the SPX FLOW Bolting Systems range of products for 35 years and the new calibration centre forms part of its wide distribution and service network in Africa and Bosch Rexroth’s continuing customer service and support.

For more information contact Alexander Booth, Bosch Rexroth Ghana, +233 540 123766, alex.booth@boschrexroth.com, www.hytecgroup.co.za

**Varispeed 2020 and beyond**

Varispeed is a specialist partner in electronic motor control and automation solutions to many local manufacturers and end users in a diverse range of markets. Managing director, Ralph Real knows only too well the challenges facing business in the current economic climate. He says that South Africans are resilient and always find the good, the humorous and the optimistic side of every situation, but 2019 was a trying year for many sectors in the economy.

“Superior value, tough competition and strong differentiation are critical factors for Varispeed South Africa,” he says. “Customers require real value at highly competitive pricing. The market is constantly changing, and remaining dynamic, resilient and agile whilst exceeding our customers’ expectations are key factors for our ongoing success.”

Moving forward into 2020, Ralph believes that stability and reliability of state-owned service delivery will force businesses to adapt in order to remain viable and competitive.

“2020 will be a challenging year as the market struggles to recover. In addition, we need to factor in our ongoing electricity crisis and the negative impact that this has on productivity, job creation and our competitiveness both locally and abroad,” he adds.

The increasing international focus on climate change will spill into local business to provide energy efficient and sustainable solutions. Environmental groups will become more involved and these factors will become part of key performance indicators. Businesses will be held accountable for their part in climate change. “We only need to look at the recent pressure placed on one of our competitors and the Adani Mining project by activists to realise that we can expect an increased level of scrutiny around climate change,” he comments.

“Varispeed’s success in 2020 will be largely underpinned by our proven alternative energy and energy efficient solutions. We are also focusing more of our efforts on the mining sector as well as the manufacturing sector in the sub-Saharan region as we have real value to add to these sectors. Product reliability, performance and dependable expert service are what set us apart. Varispeed remains close to the market and will continue to adapt and develop according to customer requirements to ensure that objectives are met,” he concludes.

For more information contact Chantell van Wyk, Varispeed, +27 11 312 5252, chantell@varispeed.co.za, www.varispeed.co.za
SKF automotive products for race winning performance

SKF is a passionate sponsor of global motorsport. Through its Racing Division, the company is involved in all aspects of technical assistance, design and manufacture for motorsport applications. In the off-road racing circuit, and in particular the Dakar Rally. SKF has been part of numerous podium finishes. Since 2012 the bearing and technology specialist has supported the Dakar, known as one of the world’s most arduous races that tests both driver and vehicle to their limit. “Our stellar eight-year record speaks for itself with a 5th, a 4th, two third and two second places,” says Gary Czapski, who heads up SKF South Africa’s Automotive Division (VSM), and has been instrumental in securing numerous local SKF motorsport sponsorships since 2010.

Czapski stresses that as reliability is essential to a successful racing season, it is imperative to fit only proven superior quality products that are capable of withstanding stringent conditions. This is where SKF’s automotive products take the chequered flag, delivering best-in-class performance and reliability across all motorsport disciplines. These products include differential, gearbox and suspension bearings including even the simplest gear shifter bearings, lip seals and O-rings, as well as grease and lubrication. SKF’s involvement in motorsport sponsorships which has seen the company maintain the longest running technical partnership with Scuderia Ferrari in Formula One, will remain an important aspect of its business activities.

For more information contact Samantha Joubert, SKF South Africa, +27 11 821 3500, samantha.joubert@skf.com, www.skf.com

A new Mechatronics Academy for Industry 4.0

Mechatronics is a combination of mechanics and electronics, comprising a multi-disciplinary engineering field that is a key player in Industry 4.0. It encompasses cyber-physical systems, IIoT, cloud computing and cognitive computing. In order to ensure that local industry has the necessary skillsets to embrace Industry 4.0, ElectroMechanica (EM) has collaborated with Polytech Africa to establish the first Mechatronics Academy to be accredited by merSETA.

The Mechatronics Academy will focus on the NQF Level 2 learnership. This is based on essential aspects of precision mechanical engineering, electronics and computer design systems used to control and automate mechanical products. Here EM plays a vital role, as its specialised products include the Delta industrial automation range. Upon completion of the qualification, certificate holders will be able to gain entry to highly skilled sectors such as mechanical and electrical engineering, pneumatics and hydraulics, robotics, PLCs, CNC, industrial IT, the automotive sector, and precision welding.

“Educational institutions cannot be islands on their own, and require the cooperation of both the government and the private sector,” says Polytech Africa director, AstridStraussner. “This is where EM’s active involvement is so crucial, as it is important that students are exposed to the latest products and developments, especially given the fact that Industry 4.0 and IIoT are a reality in South Africa.” She adds that the Mechatronics Academy will play a vital role in addressing the skills shortage in the automation industry. “While we have a good skills base in South Africa, the main problem is the pipeline of younger people entering the field. We need to enhance the existing skills and develop new ones. This is important to ensure that we are able to cope with the skills requirements of Industry 4.0 throughout the continent.”

The main driver for EM in launching the Mechatronics Academy is to consolidate its training offering into accredited, standardised courses that can be offered out of Polytech Africa. “This will ensure the best quality of training possible for our customers, so they are comfortable working with our automation equipment. In turn, it will allow our staff to focus on their core responsibilities,” concludes EM Director, Andrew Nobbs.

For more information contact Karen Zotter, ElectroMechanica, +27 11 249 5000, karenz@em.co.za, www.em.co.za
Top 5 industrial automation trends in 2020

By Craig Resnick, vice president, ARC Advisory Group.

1. Deploying IIoT edge 2.0 solutions
The edge of IIoT enabled architectures is becoming increasingly important due to their role in digital transformation strategies. Initially focused on delivering data to cloud based applications, the edge is becoming an entirely new ecosystem within enterprise architecture – not only for cloud integration, but also to address manufacturers’ concerns about latency, security and cost containment.

Edge computing applications – particularly high level analytics and artificial intelligence (AI) delivered via machine learning (ML) – allow data to be processed near its source. Recognition of the rising importance of the edge will be reflected in the spike of investments in this space. IT and OT suppliers are introducing new IIoT edge offerings – called Industrial IoT Edge 2.0 – with improvements in ease of use, self-service and turnkey operation, while emphasising business outcomes and application-specific solutions versus pervasive infrastructure.

2. Increasing use of cyber-physical systems
While manufacturers ramp up to meet demand for the growing smart product market, they are facing challenges developing and manufacturing new and more complex products and systems. These require tight integration between the computational (virtual) and the physical (continuous) worlds. To meet these complexity and integration requirements, there will be more cyber-physical systems deployed using advanced simulation platforms that cover model-based mechatronic systems engineering, embedded system design integration, and simulation models that validate product and system design in the physical world.

A cyber-physical system is an engineered system or mechanism that is controlled or monitored by computer-based algorithms and is tightly integrated with both the Internet and its users. In cyber-physical systems, physical and software components are deeply intertwined and get much of their intelligence from the use of AI and ML. Factory production lines, process plants for energy and utilities, and smart cities will depend on cyber-physical systems to self-monitor, optimise and even run infrastructure, transportation and buildings autonomously.

In the future, cyber-physical systems will rely less on human control and more on the intelligence embedded in the AI-enabled core processors. These will run the devices, products and systems that will be a pervasive part of the industrial world that produces them.

3. Accelerating development of open process automation systems
Advances in hardware, software, networking and security, along with increasing global competition and cybersecurity risks, will accelerate the development of open process automation systems, driven by the collaboration of users, such as ExxonMobil, BASF, ConocoPhillips, Dow Chemical, Georgia-Pacific and Linde. These companies are members of the Open Process Automation Forum (OPAF), established by The Open Group for identifying and selecting standards to be used for technology and systems. The goal is to accelerate creation of a standards-based, open, interoperable and secure automation architecture that addresses both technical and commercial challenges of current systems.

4. The shift from digitisation to digitalisation technologies
Digital transformation is pivoting from digitisation to digitalisation technologies. Digitisation focuses on technology and infrastructure, and involves creating digital versions of previously analogue data, such as replacing paper based work orders with digital work orders. It involves replacing legacy analogue technology with digital technology.

Digitalisation involves using digital data and technologies to improve business or work processes. Examples are using data from a digital work order to improve maintenance work processes and execution, or using digital twins to improve asset information and engineering processes. Digitalisation uses digital technologies and data to improve the way people work, collaborate and get things done within a plant, across a company or the value chain by using, for example, augmented reality (AR) for assembly and maintenance, and virtual reality (VR) for training and simulation.

Digitisation makes it easier to capture, organise and manage a variety of data. Digitalisation makes it possible to gain more value from all data, focusing on multi-process disruptive change and how to implement these changes throughout an organisation. It engages an entire company and its people, rather than just processes and data.

5. Applying systems engineering practices to industrial cybersecurity
Ensuring the cybersecurity of information systems and associated networks has always been challenging. Serious vulnerabilities are identified on a regular basis and new threats continue to emerge. Industrial systems share many of the same vulnerabilities and are subject to the same threats. However, the consequences may be very different and, in some cases, more severe. This makes cybersecurity an imperative for the asset owner, who ultimately must bear the consequences of an adverse event.

For more information contact Craig Resnick, ARC Advisory Group, www.arcweb.com/analysts/craig-resnick
When a local Original Equipment Manufacturer (OEM) of concrete brick, block, and paving machinery had the unique opportunity to build a greenfield plant for a longstanding customer in the East London area, it turned to SEW-Eurodrive for its easily configurable HandlingKinematics pick-and-place solution.

The HandlingKinematics application module allows for machine control at a higher level by means of a lower level Configurable Control Unit (CCU) for carrying out precision path movements. During startup, all the end-user is required to do is enter the relevant mechanical data for the initial configuration of the motion parameters.

During production, the trajectory positions necessary for commencing movement are simply transferred to the CCU, which coordinates the path movement in real time. It even allows for ‘wait’ points to be defined in the trajectory. The system is so flexible that, during palletising and stacking, the target position can be adapted immediately during the runtime by the CCU, without higher level controller intervention.

Even greater flexibility can be allowed for by incorporating the freely-programmable MOVI-PLC in the HandlingKinematics application module. This provides for exactly the same functionality and completely repeatable configuration. While the hardware is the same, the only extra element needed is a different memory card for the programmable MultiMotion software, which ensures unlimited consistency.

MAXOLUTION engineer, Dylan Enslin explains that the pick-and-place solution from SEW-Eurodrive is essential for bricks or concrete blocks to be palletised in cube-sized packages for easy transport. Bricks or blocks are manufactured, compacted on a vibrating screen, placed on steel or wooden boards, and stacked in a curing chamber for three days, during which time a high humidity is maintained to crystallise the cement.

Thereafter a destacker feeds the boards onto a conveyor belt, which is where the pick-and-place application comes into play. Shaving even a single second from this process can translate into a massive increase in the daily production rate. The actual pick-and-place machine itself is robotic, which is not supplied by SEW-Eurodrive as an off-the-shelf unit.

Instead, it supplies a retrofit kit that includes geared motors, cables, inverter, variable speed drives and the software.

Pick-and-place robotics is based on kinematics, a mathematical model used to control and coordinate multiple axes. The machine developed by the OEM is essentially an automated gantry system, with an upper level controller to send the relevant coordinate data. The distance involved during the pick-and-place process is about 4 m, with a 2 m to 3 m lift. The rotation and clamping of the gripper is controlled by a combination of pneumatics and servo motors.

SEW-Eurodrive has been working intensively with the OEM for about two years to refine its latest upgraded equipment. A specific recommendation, for example, was to use a combination of high-flex and standard cabling, as the cabling is subjected to a lot of bending. This saves on costs, as well as increasing the durability of the system. Other factors that had to be taken into account were the motor mountings, as the oil levels had to be correct and all the necessary oil seals in place.

“From the initial designs, we actually ended up with a unit smaller than envisaged initially, due to us refining the calculations provided by the client. The smaller the unit, the more cost-effective it is,” Enslin explains. Such has been the close working relationship established with the OEM that SEW-Eurodrive has already collaborated on an improved vibrating screen.

“There are global companies manufacturing similar equipment, but it wanted to design and build its own unique version compatible with local operating conditions and requirements. A standout feature of the OEM’s equipment is the application of servo technology. The fact that we have been able to supply it with the latest advances in this field positions us firmly as a complete solutions provider for our customers in a range of industries,” Enslin concludes.

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Production boost for glass manufacturers

A pair of 5 MW standby power systems from Cummins are providing extra protection at two glass manufacturing facilities in Lahore, Pakistan that are growing their businesses, allowing production lines to always be on, and operations to continue seamlessly, even in the event of a power outage.

In both cases, Cummins offered a quality, reliable product at a price that the competition could not beat. Cummins authorised distributor Orient Energy Systems (OES) to provide the project engineering and sales support, with technical expertise from the engineering team.

Ghani Glass is nearly doubling its production capacity at its Model Town Extension plant, from 300 tons/day to 550 tons/day. Five Cummins C1400D5 gensets will provide 5 MW of standby power for the facility, which is being renovated and expanded.

It manufactures float glass, used widely in construction and consumer products such as windows, doors, furniture, and mirrors, along with glass containers for pharmaceuticals, food and beverage. It is the number one glass brand in Pakistan, and exports to over 26 countries.

Whereas glass tableware is the cornerstone of Tariq Glass Industries, the company launched its float-glass division five years ago. Tariq Glass is increasing the capacity of its Lahore Sheikhpura Road, Sheikhpura location, where it is building a new float-glass plant.

As a new customer, Tariq Glass noted the brand reputation of Cummins, along with strong customer service from the OES team, as its main reasons for entering into this partnership, which will assure reliable power at the new float-glass division for years down the road.

New app supports predictive services for drive systems

With Predictive Services for Drive Systems, Siemens makes maintenance more efficient for Sinamics drive systems and/or Simotics motors in the low voltage range. With its new service portfolio including Mindsphere app, Siemens is focusing on the operative demands of machine users, who are looking for full transparency for spare parts and servicing. Thanks to digital support via this app, Siemens can offer customers optimised service cycles, increased service efficiency, easy and streamlined documentation, plus full transparency for historical service activities.

Predictive Services for Drive Systems comprises a comprehensive service package that supports customers continuously by providing an overview of assets and service triggers, for example defined KPIs and operating hours based on predictive analytics. The app also offers transparency and detailed information for spare parts, depending on the configuration of the drive system and for recommended and pending service work. In addition, it includes an assistant for planning, implementing and documenting maintenance activities and offers an easy ordering function via the Siemens ServiceMall and the Global Service Platform (GSP).

Customers benefit from increased productivity and reduced downtime for their machines and plants. With support from the associated Mindsphere app, they can also enjoy full transparency for spare parts and maintenance activities to reduce risk through simple weak-point analysis. In addition, the app makes maintenance more efficient and streamlines the ordering process.

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Complete Process Control Solutions and Services Provider
With electric motors consuming almost 70% of industry’s energy, companies are always looking for better motor efficiencies. For many years, motor efficiency has been well defined; however, when driven by a variable speed drive (VSD), the VSD efficiency and the total efficiency of the VSD and the motor have not been well understood. Choosing the right product combination can also be more difficult as manufacturers’ data is not always easily comparable. According to global motor and VSD manufacturer, WEG this is where the international IEC61800-9 standard comes to the rescue.

The IEC61800-9 standard – based heavily on the previous EN 50598 standard – gives manufacturers a clear framework for grading a complete motor system. End-users can compare the overall efficiency of a manufacturer’s products, irrespective of design and component selection.

The IEC61800-9 standard uses the Extended Product (EP) approach. This considers the efficiency of the motor system, which is comprised of the motor, the basic drive module (BDM) and the complete drive module (CDM). Together, these make up the power drives system (PDS), which also includes any switchgear and controls.

This terminology sounds confusing but is just a technical way to say: Switchgear + VSD + Motor. The efficiency levels are defined by considering eight different operating points covering low to high speed and torque. The user can easily compare his application load and speed requirements to the motor system defined speed and torque points.

The EP approach employs a semi-analytical model to calculate the efficiency of each of the components at the operating points of the driven equipment. The calculations are also based on tested and verified values. This results in the most efficient component selection for the application.

Using this standard, the user may be assured that:
- A motor complies with the defined motor efficiency levels of IE1, IE2, IE3, IE4 or IE5.
- A VSD complies with VSD efficiency IE0, IE1 or IE2.
- The manufacturer’s motor and VSD used in combination will meet or exceed a system energy standard of IES0, IES1 or IES2.

Using this EP approach, the European Commission expects the increasing use of more efficient systems to help achieve its targets for CO₂ reduction. In line with these efforts, WEG VSDs and IE2 motors in combination achieve IES2. And significantly, WEG’s VSDs and IE3 efficient motors exceed the highest system levels of efficiency. Additionally, WEG has product lines that exceed even IE4 and IES classifications.

Recognising that global population growth and economic development is driving up energy demand around the world, the European Union has set stringent targets to reduce CO₂ emissions. These aim to cut emissions by 40% by the year 2030. This means creating more renewable energy sources, and also increasing the energy efficiency of industrial systems. Studies suggest that almost half of global energy consumption comes from industry – followed by commercial and residential use.

The EC’s regulation 640/2009 already requires that all electric motors operated from a variable speed drive or inverter must adhere to a minimum of IE2 to be eligible for sale. Fixed speed applications must meet a minimum of IE3 to comply.

Where a motor does not operate at its nominal torque and speed, the variable speed drive represents a significant opportunity for energy optimisation. In addition, the greater range of speed variation results in a greater PDS efficiency. Using WEG’s IE2 motors with any WEG variable speed drive can achieve an efficiency classification of IES2. However, using other WEG lines of motors with the right drive, much better levels of efficiency can be reached.

WEG has a complete line of variable speed drives which exceed the IE2 requirements outlined in the IEC61800-9 standard. When combined with its robust and reliable motor line, the products create an integrated solution for all applications.

For more information contact Zest WEG Group Africa, +27 11 723 6000, info@zestweg.com, www.zestweg.com
Modernised irrigation control system

As a preferred supplier to the agricultural industry due to proven reliability and performance, Varispeed designs, manufactures and distributes constant pressure solutions. With a good knowledge of the industry, it has insight into the system challenges and their unique requirements.

Agricultural irrigation systems require precise pressure control in the distribution of water systems to ensure constant pressure; this constant pressure also ensures energy savings. Varispeed’s irrigation solutions are specifically designed to protect electrical motors, pumps and piping systems from damage, overloads or pressure surges, all whilst keeping the need for constant pressure, system reliability and energy efficiency top-of-mind.

How it works
Three 55 kW 400 VAC dual VSD modernised pressure control panels are used to control six pumps that pump water from the river into two holding dams. The system on the first dam distributes water onwards via eight single VSD panels which in turn control eight pumps, pumping the water out to irrigation blocks at 6-13 bar water pressure, user selectable based on the farmers’ requirements.

Pumping water from the second dam are eight Dual 55 kW 400 VAC VSD panels that control sixteen pumps. The system distributes water into irrigation blocks at 5-16 bar. This configuration is made up of eight sets of two pumps in series that incorporate Varispeed’s simple and reliable suction and pressure control software solution, embedded directly into the VSDs thus eliminating the need for costly additional controllers.

Modernised software for a modern problem
Varispeed was approached to provide a reliable irrigation pumping scheme that supplies constant water pressure to grow table grapes. Based on this brief, it was able to produce a system that exceeded all the reliability and performance expectations.

The company designed a modernised control panel to replace the antiquated individual dial setting type systems, in favour of a more precise, user-friendly settable pressure system. The modernised system has improved the efficiency of the irrigation solution and the manner in which they can be controlled.

“Our team was able to offer the customer a complete engineered solution that exceeded the performance and reliability requirements they required,” concluded Varispeed managing director, Ralph Real.

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Cam clutches for bulk handling

New to BMG’s extensive range of Tsubaki cam clutches is the BS-F series, designed for high speed inclined and long overland belt conveyors and bucket elevators used in the mining and bulk handling sectors. Tsubaki backstop cam clutches are designed to prevent reverse rotation of drive shafts, offering a simple and cost-effective means to protect capital equipment and enhance safety. The new high-torque, high-speed Tsubaki BS-F series, with a narrow width I-beam torque arm, is a drop-in replacement for conventional anti-rollback devices. This allows for quick and easy on-site installation.

Important features include a non-rollover cam and roller design, which offers higher backstop torque capacities and lower running temperatures than conventional anti-rollback devices. A flexible labyrinth seal mechanism prevents the ingress of dust and water in abrasive conditions and the double lip oil seal and multi-temperature grease enable safe operation at a wide ambient temperature range, from -40 to 65°C.

The cam and roller cage orbit at low speed, continually conveying grease internally from the bottom to the top of the mechanism. The constant circulation of grease minimises internal friction and reduces operating temperature for dependable operation. Maintenance intervals are between 7500 and 8000 hours.

Apart from the mining sector, BMG’s cam clutches are used for belt conveyors for materials handling, metals, timber, pulp and wood chip, as well as for bucket elevators for cement and grain. These units are also installed to enhance performance of large drift conveyors and screw pumps.

For more information contact Carlo Beukes, BMG, +27 11 620 7558, carlob@bmgworld.net, www.bmgworld.net

New automated drive analyser

Fluke’s MDA-500 Series is designed to help users easily test and troubleshoot typical problems on three-phase and single-phase inverter type motor-drive systems. The on-screen information, and step-by-step setup guidance allow easy configuration of the analyser, delivering the drive measurements needed to make better, faster maintenance decisions. From power input to the installed motor, the MDA-500 provides the measurement capability for the fastest motor-drive troubleshooting.

The units save time and eliminate the hassle of setting up complex measurements, while simplifying the troubleshooting process. Users simply select a test and the step-by-step guided measurements show where to make voltage and current connections, while the preset measurement profiles ensure the capture of all the data needed for each critical motor-drive section – from the input to the output, the DC bus, and the motor itself. From basic to advanced measurements, the MDA-500 Series has it all covered, and with a built-in report generator, users can quickly and easily generate ‘as-found’, and ‘as-left’ reports with confidence.

The MDA-510 and MDA-550 are ideal portable motor-drive analysis test tools, to safely locate and troubleshoot typical problems on inverter type motor-drive systems. They can measure key motor-drive parameters, perform extended harmonics measurements, conduct guided measurements for motor-drive input and create reports quickly and easily.

The MDA-500 Series uses guided test measurements for analysis of drive input voltage and current unbalance, extended harmonic measurements, DC bus and drive output.

For more information contact Comtest, +27 10 595 1821, sales@comtest.co.za, www.comtest.co.za
Maximised precision and speed

Due to the outstanding quality characteristics of its beam, the fibre laser has become the technology of choice in the fine cutting of metal sheets. It delivers highly precise cuts with very narrow kerfs and operates with outstanding contouring speed. In order to deliver these features, Polish manufacturer Power-Tech employs fibre lasers in its laser cutting machines and relies on powerful automation technology from Beckhoff for machine control.

Eagle laser cutters can cut virtually any shape out of metal sheets. They use fibre lasers as a light source, which ensure burr-free edges on sheets of varying thicknesses as well as precise and narrow kerfs. Power-Tech makes three variants of laser cutting machines. All cutters feature easy operation, high reliability and compact dimensions. Equipped with special high performance Eagle laser heads, they cut through sheets with thicknesses of up to 60 mm. Customers can select the laser power that best fits their needs – the higher the power, the faster the cutting speed.

Speeds of up to 150 metres per minute

"With the Inspire 1530 developed in 2018, we have introduced a laser cutter with a top performance of 15 kW that makes dynamic cutting processes with a speed of 150 m/min possible," says Power-Tech managing director, Janusz Marcin Ejma. "We work constantly on making our lasers more powerful, because these improvements have such a decisive impact on a cutter's productivity. A machine with 15 kW cuts out four times as many shapes per hour as a machine with 4 kW, which reduces the manufacturing costs per work piece dramatically." To achieve the necessary machine parameters in terms of motion speed and accuracy, Power-Tech employs powerful control and data communication systems.

PC- and EtherCAT-based control as integrated control platform

Power-Tech has worked with Beckhoff since 2010. "After a careful analysis of the market we picked Beckhoff as our control system supplier," says Marcin Masternak, who is in charge of CNC/PLC systems at Power-Tech. "The deciding factor was EtherCAT. The high speed fieldbus system, which Beckhoff introduced in 2003, has become a global standard because of its performance. Many suppliers of other components used in our machines also use on EtherCAT, which gives us great flexibility in component selection." Furthermore, Power-Tech uses a Beckhoff Industrial PC and TwinCAT automation software as the standard control platform in all its machines. "The openness and modularity of the PC-based control system allow us to expand each machine's functionalities with great flexibility, for example by integrating the CNC interpolation. We can also integrate our own solutions, such as the visualisation system, which is based on our own proprietary solution," explains Masternak.

The Inspire 1530 laser cutter uses a C6930 industrial cabinet PC equipped with an Intel Core i7 processor as its control platform. To control the axes via three AX5000 EtherCAT servo drives (single- and dual-channel), the X-, Y- and Z-axes are linked via CNC interpolation (the X-axis is implemented as part of the gantry system). Various machine modules such as the laser beam source, cutting head and vacuum suction system are integrated via analog and digital EtherCAT I/O modules with IP20 and IP67 ratings. Process and machine parameters are processed in real time, with data exchange taking only microseconds.

The integrated safety solution was also implemented with Beckhoff components. "With EtherCAT we are able to meet the high requirements regarding the high-speed exchange of large data volumes during laser cutting at speeds of up to 150 m/min. We were able to achieve a single-axis positioning speed of 4 m/s and a speed of 5.6 m/s for all axes simultaneously. Our fastest machines feature an acceleration rate of 6 g, which is top of the line in the laser cutting industry," adds Masternak.

Trouble-free loading and unloading system integration

The laser cutters are optionally equipped with semi-automatic or fully automatic loading and unloading systems. The Crane Master, a fully automatic and fully integrated system, picks up the sheets via a loading frame and places them on the cutter's pallet changer while the cut parts are removed with a comb conveyor. The loading and unloading system is connected to the cutter's controller via the EK1100 EtherCAT Coupler, which simplifies data communication.

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840 soccer pitches of glass

Horn Glass manufactures glass melting machines and equipment. The technology supplier has recently concluded the biggest project in the company’s history with the completion of the largest glassworks in Central Asia. Horn opted for Siemens process control, communications and power supply technology for the container and float glass line. This ensures end-to-end automation which allows continuous operation, consistently high product quality and low plant costs.

The sheer size of it is impressive: The new glassworks in Turkmenistan meets nearly all the container glass demand for the country’s food and pharmaceutical industries. The plants have an appropriately high output, producing nearly six million square metres of different types of glass a year, including laminated glass and transparent glass. This is the equivalent of more than 840 soccer pitches. In order to achieve this level of output, production must be smoothly and reliably automated and the plants have to be perfectly coordinated with each other. To this end, all supplied machines and plants are already fitted with compatible Siemens interfaces and components.

Keeping operations, quality and costs under control

“We use every part of the Siemens product range in the fields of process control, automation and drive technology as well as process instrumentation, switching technology and power supply in our projects,” explains Horn project director, Markus Frank; and this is also the case in Turkmenistan. The brains of the glassworks is a Simatic PCS 7 process control system which is used throughout the container and float glass line (flat glass line). This user-friendly system ensures continuous operation, high product quality, low plant costs and energy-efficient production with low emissions. Siemens technology has also been installed on the inert gas mixing station as well as on these lines. Here, Siemens Calomat thermal conductivity analysers measure the water and nitrogen content. By measuring the thermal conductivity in a gas mixture sample, it is possible to calculate the concentration of nitrogen and hydrogen in the mixture.

Automation solution from a single source

Sivacon S8 switchboards were installed and communication is via the industrial Ethernet standard Profinet while standard Profibus is used for fieldbus communication. Simatic PCS 7-410H controls regulate the operations on the direct process level. In order to ensure a simple and efficient cabling design, Horn uses an ET 200IS distributed I/O which is the best choice for the potentially explosive atmosphere. The modular peripheral is flexible and reliable and requires little engineering. The end-to-end Siemens solution in Turkmenistan is rounded off with field instrumentation from the Sitrans range, Sirius switchgear, redundant power supplies, and drive technology with Sinamics G120 and Sinamics G150 frequency converters.

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New functions for Sinamics V90 servo converter

New functions are being added to the proven Sinamics V90 servo drive system with the V1.11 version of the Sinamics firmware. The Fast PTI mode is now available for the drive system, increasing Pulse Train Input (PTI) performance by 70 percent. This improves the reaction time from the Pulse Train Input command to the activation of the motor. The improved reaction time opens up new application areas for the Sinamics V90 which require higher dynamic performance such as high speed labelling as well as in the field of LED production (LED pick and place).

The Sinamics V90 servo converter can be quickly and easily commissioned using the Sinamics V-Assistant engineering tool and can be connected to the Simatic S7 series of controllers without any problems. The Sinamics V90 includes an integrated safe-torque-off safety function and is also suitable for harsh environments. The auto-tuning function under Fast PTI mode is also optimised in order to ensure extremely dynamic performance in smooth operation.

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Axiom Hydraulics has been awarded the agency for the Eckerle range of high pressure hydraulic pumps. The Eckerle product line comprises gap compensated internal gear pumps for industrial, mobile and automotive markets. Applications include lifting, lowering, steering, bending, cooling, energy recovery and braking in forklift trucks, truck tail gates, plastic injection moulding machines, press brakes and shearing machines.

Eckerle is a world leader in the design, development and manufacture of these pumps. The company has licensing and supply agreements with international players such as Linde, Bosch Rexroth, Bucher and Voith. Besides its range of standard pumps, Eckerle offers custom made solutions designed specifically to meet unique customer needs. This has given rise to over 300 variations in a host of different industries. All are manufactured to rigorous quality standards in Eckerle's state-of-the-art factory using the latest manufacturing, measurement and testing technology.

Eckerle high pressure internal gear pumps combine unparalleled efficiency with the best possible price/performance ratio. The key is the innovative design in which the drive gear runs eccentrically inside the internal gear. The hydraulic oil is pumped through the spaces between the cogs of both gears, with the split crescent acting as a seal.

Other benefits include high volumetric efficiency at low speed, low pulsation and a long service life. In addition the optimised design makes them quick and easy to install. There is no need for a valve block for valve integration or for a pressure filter, and fewer hoses are needed.

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Hydraulic and Automation Warehouse (HAW) recently expanded its range of Intertraco hydraulic hose with the addition of three new wire spiral hydraulic hoses. The additions to the range consist of the Intertraco 4ST and 4ST+, each with a four wire spiral, and the 6ST which consists of a six wire spiral. The 4ST is designed for high pressure hydraulic systems, for use with mineral and biological hydraulic oils, polyglycol base oils, water-oil emulsions and water. Both the 4ST+ and 6ST variants have the same features, but for high pressure hydraulic systems with extreme high pressure peaks. Used mainly on earth moving machines and underground mining machines, all three hoses have a hydraulic oil temperature range of -40 to 121°C, with occasional peaks up to 125°C.

The hoses are made of synthetic rubber tube, either four or six wire spirals as denoted by the hose name, and an abrasion-resistant synthetic rubber cover which is MSHA flame retardant approved. Internal hose diameter on the 4ST range is from 16 to 50 mm with working pressure ranging from 250 to 350 bar and bend radius from 100 to 315 mm. The 4ST+ has internal hose diameter ranging from 10 to 30 mm, working pressure varying from 400 to 450 psi and bend radius from 80 to 250 mm. Internal hose diameter on the 6ST measures from 30 to 50 mm, working pressure is from 400 to 450 bar, while the bend radius is from 260 to 395 mm.

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BMG’s Fluid Technology division supplies and supports an extensive range of components for fluid technology systems and general industrial applications. These products include valves, hydraulic hoses and fittings, accumulators, cylinders, heat exchangers, hydraulic motors and hydraulic plumbing, as well as pumps and reservoir accessories.

Important valves in BMG’s portfolio include InterApp Bianca and Desponia butterfly valves, which are recommended for high efficiency and safe use in demanding industrial flow control applications. “Robust butterfly valves are designed for dependable shut-off and control of corrosive fluids, as well as high purity applications,” says business unit manager, Willie Lamprecht. “Compact butterfly valves, with good flow characteristics and low maintenance requirements, are extremely versatile and ensure dependable operation, even in the toughest environments.

“Unlike a ball valve, the discs of butterfly valves are always present in the passageway within the flow. This means a pressure drop is induced in the flow, regardless of the position of the valve. Ball valves should only be used for isolation, whereas butterfly valves can be safely used for isolation and control of flow. “An advantage of using quarter turn butterfly valves rather than any other type of valve, is the simple, wafer-shaped design, with fewer parts, for easy repair and minimal maintenance.”

BMG’s InterApp Bianca centric butterfly valves, with durable PTFE liners, are built for long service life and are suitable for aggressive and corrosive fluids and for applications where absolute purity is essential. These high performance valves, which are available in sizes between DN 32 and DN 900, are manufactured with a ductile iron, carbon steel or stainless steel body. Bianca valves with PFA-coated discs and PTFE liners are recommended for use in highly corrosive, chemical applications. Valves in this range, with specially selected conductive disc and liner materials, also conform with the explosion protection directive ATEX 94/9EG, ensuring safe operation in explosive environments.

Notable features of the Bianca series include a high liner collar, a PFA disc over-moulding on the shaft, as well as a life-time preloaded safety shaft sealing, ensure reliable primary and longlasting secondary shaft sealing, even for demanding operating cycles and at high temperatures.

The chambered liner prevents cold flow at the flange sealing surface for increased service life and the PTFE liner, in combination with the PFA-overmoulded disc, ensures low friction, thus longer life of the system. Other features include an external shaft sealing mechanism to protect the valve neck hole and a robust self-lubricating and maintenance-free bushing. A stainless steel valve label enables full traceability.

Typical applications for Bianca butterfly valves are in mining and slurries for the extraction of acids and solvents, for the processing of additives in the oil and gas sector and for highly corrosive processes in the steel industry. This series is also suitable for use in water treatment where the smallest impurities need to be avoided.

BMG’s multipurpose InterApp Desponia and Desponia Plus centric butterfly valves, with a tough body and robust elastomer liners, are designed for safe and reliable regulation of liquids and gases in diverse sectors.

Desponia valves, which are available in sizes from DN 25 to DN 1600 and pressures up to 16 bar, are suitable for various industrial applications. This range can be supplied with a cast iron and ductile iron body.

The Desponia Plus range comes in sizes between DN 25 and DN 600, with high pressure applications up to 20 bar and is suitable for high temperature or vacuum applications, as well as process automation. This range is available with a body made of ductile iron, cast iron or stainless steel.

The liners and discs of this series play a crucial role in elastomer-lined butterfly valves, as they are the only two parts that are in contact with the fluid. Flucast liners are suitable for abrasive applications and also meet FDA and EU regulations.

Notable features of this range include an external shaft sealing mechanism which protects the valve neck hole and a long neck design that allows pipe insulation. A retaining washer offers blow-out protection and O-rings that are built in the shaft passage form part of the reliable shaft sealing system.

Sealing lips on the flange face offer perfect tightness and the optimised liner shape ensures a precise grip to the body. The square driven disc offers effective and durable torque transmission and polished disc edges minimise friction.

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One of the ways it is possible to exceed customer expectations is to produce effective and innovative solutions to the challenges that they contend with. When Rand-Air business development manager, Henry Fourie was faced with a dusty and demanding challenge, he needed to come up with a solution which would address the problem effectively.

The problem was that the customer manufactures an industrial mineral, and in so doing produces a very fine but exceptionally abrasive dust. This would get into equipment such as compressors and forklifts and clog them up in a very short space of time. What prompted the request from the manufacturer was the fact that it was upgrading and doubling the size of its plant. This new plant would produce an even finer product. However, the plant was already experiencing downtime with its two existing compressors, which were essential for its operation as it operates 24/7. Faced with ongoing downtime, the manufacturer approached Rand-Air for a solution.

Fourie and his colleagues put their heads together and devised a plan. Although this specific solution was a first for Rand-Air, the team was prepared to develop the solution specifically to address this particular customer’s challenge. The answer to the abrasive dust problem lay in placing the compressor into a specially designed, hermetically sealed housing, somewhat like a shipping container. This sealed housing was fitted with special filtered air intakes to make sure that none of external dust reached the compressor.

Air filtration is not a particular speciality of Rand-Air; however, to provide an effective solution in this instance, the Rand-Air team tested various air filtration solutions and came up with one that was optimal. “We put this proposal and the pricing structure to our customer, who was very pleased with the idea and accepted it,” says Fourie. In October 2018, Rand-Air commissioned the construction of the compressor housing and its special filtration arrangement. “We had everything ready for delivery to site on December 21,” he explains.

The compressor that was supplied for this hire is an electrically-driven Atlas Copco GA132FF full-feature unit. To source the housing for this compressor, Rand-Air contracted a manufacturer of portable, insulated cold rooms and refrigerated truck bodies to build the housing for the GA132FF. This housing has special doors built into it to allow for the removal and replacement of the compressor if necessary. The container walls are constructed of a robust, waterproof aluminium board which has an interior filled with polystyrene foam. While it is designed to keep out fine silica quartz dust, it also protects the compressor against severe weather conditions and prevents unauthorised people gaining access to the compressor. “In summer months, the insulation in the container walls will also protect the compressor against overheating,” adds Fourie.

The fineness of the dust was an issue that Rand-Air had to deal with. “First of all, we installed two high-density filters which we believed would cope with the incoming particles. However, these filters clogged up very quickly; and to get around this, we installed lower density filters which, as part of our service to the customer, we change frequently. On the housing, there is an inlet for filtered air, and there is an outlet opposite it to help dissipate heat. Over and above that, we have two extra filters on the container as well as an extraction fan.”

Asked about feedback, Fourie explains that the customer is very happy with the uninterrupted supply of compressed air.”At Rand-Air, we are constantly aware that we are in a very competitive market and, to keep ahead, we have to be extremely innovative and ahead of the market. By doing this, we will continue to successfully differentiate ourselves in the eyes of our valued customers,” he concludes.

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Berntel is expanding its footprint by offering its extensive range of pneumatic products through the Bearings International (BI) branch network. Acquired in 2014 as a complementary company to pneumatic and hydraulic automation solutions provider Ernest Lowe, Berntel expands the Hudaco Group’s industrial offering in pneumatic, hydraulic, vacuum, process and automation solutions. It also manufactures its own pneumatic cylinders, as well as designing, building, and commissioning control systems, including PLC programming.

In addition, Berntel represents a range of well-known brands, such as JELPC, JORC Industrial (condensate drain management), VMECA (water-free units), Belef (actuation), Ober (air tools, air motors, and automation), Piab (vacuum technology), and BOGE (compressors and dryers). Target markets are food and beverage, automotive, general industry, sugar, pulp and paper, OEMs, machine builders, and agriculture.

Looking to 2020 GM, Neil Champion reveals that Berntel will introduce its latest Ober agency, an Italian designer and manufacturer of portable pneumatic tools, motors, automated machinery, and systems for drilling, tapping, threading and screwing, including power screwdrivers with electronic torque control. Another new agency is BOGE, a German producer of compressors for over 110 years. The Piab agency has also extended Berntel’s offering into smart vacuum solutions. BI’s smart solutions range from the efficient generation of clean, dry compressed air to condensate drain management, pneumatic, vacuum, process, and industrial components, and designing and programming control systems with PLC integration. Being part of the broader Hudaco Group allows BI to leverage synergies across a broad range of companies, meaning it can offer a complete product basket through its extensive branch network countrywide.

For more information contact Bearings International,
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Sonic imager for leak detection

Fluke’s new ii900 is a handheld sonic industrial imager that enables maintenance teams to quickly and accurately locate air, steam, gas and vacuum leaks in compressed air systems. The straightforward, intuitive interface allows technicians to isolate the sound frequency of the leak to filter out background noise. In a matter of hours, the team can inspect an entire plant, even during peak operations. Leak identification is simple and it is easy to scan a large area quickly and even identify leaks from a distance. The ii900 enables users to ensure proper air pressure in pneumatic equipment, lower energy costs, reduce leak detection time and improve reliability on the production line. It can also delay the capital expense of purchasing an additional compressor.

With application in a wide range of industries, the Fluke ii900 makes leak detection part of a typical maintenance routine. For example the training of a maintenance team is possible in a matter of minutes and provides for the validation of repairs. It is specifically designed for industrial maintenance teams, plant maintenance managers and plant operations managers, who rely on compressed air, gas or vacuum in their routine operations. With minimal training, technicians can begin checking for air leaks as part of their typical maintenance routine. This offers a better, quicker, simpler way to check compressed air leaks, and at the same time conduct gas and vacuum leak identification.

For more information contact Comtest, +27 10 595 1821, sales@comtest.co.za, www.comtest.co.za

Proximity sensors for pneumatic and electronic actuation

Parker Hannifin has introduced a new family of proximity sensors for use with pneumatic or electric actuators in a wide range of automation and motion control applications. P8S magnetic cylinder sensors enable quick, precise and contactless sensing of a piston’s position in cylinders. The sensors provide an elegant and cost-effective solution in automated systems and are optimised to be especially easy to mount and incorporate in designs.

The sensor is designed to fit all standard 5 mm T-slots, regardless of cylinder profile or brand. This provides a simple, direct solution versus turn-in or slide-in concepts, plus a significant reduction in installation time.

Mounting is simplified further due to retaining ribs on each side of the sensor body. As a result, the sensor holds its position even before the locating screw is tightened. Quick and easy fixing of the sensor also means rapid replacement. As well as compatibility with all standard 5 mm T-slots, adaptors can be deployed to allow P8S proximity sensors to fit round-rod and tie-rod cylinders, along with cylinders featuring dovetail grooves.

Options for P8S proximity sensors include electronic PNP, NPN or electric Reed outputs; normally closed or open functions; two or three wires in 0,3, 3 or 10 m lengths; and M8R knurled nut connectors or flying leads. An LED indicates the output state, while the enclosure has an IP67 rating. ATEX-rated versions are also available for use in potentially explosive atmospheres.

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Enhancements to Parker’s valve portfolio

Parker Hannifin has added an expanded range of features and capabilities to its H Series ISO valve platform with flow ranging from Qn 540 to 5900 Nl/min. Designed with a new universal manifold, the H Series ISO valves provide the opportunity to mix ISO 02, 01, 1 and 2 valve sizes on one common manifold without transition blocks. This ability allows right sizing in the field and the ISO design supports easy interchangeability for additions or changes to the valve and manifold assembly.

In addition, the H Universal manifold’s design allows the user to zone supply or pilot pressure easily, allowing for a mix of different pressures, the addition of vacuum or the ability to isolate the entire supply pressure or just the pilot pressure. Zoning and pressure isolation allow the user to disconnect supply pressure quickly for safety reasons and maintenance of the machine. This zoning flexibility is made possible with a unique design that allows main and pilot supply/exhaust to be added anywhere throughout the valve manifold.

A full range of connectivity options is offered. Users can enjoy important benefits due to its robust design, connectivity options, supply pressure zoning, ability to mix sizes on the manifold and an easy means of controlling flow within the valve. The H Series ISO valve offers very high flow rates, covers a broad range of industrial applications and is easy to install with the availability of new patented mounting hardware.

For more information contact Lisa de Beer, Parker Hannifin SA, +27 11 961 0700, lisa.debeer@parker.com, www.parker.com/za

Compressed air management made easy

Compressed air management is an expensive form of energy. A 160 kW air compressor working 24/7/365 costs over R1,25 million a year to operate. It is essential to know the compressed air consumption in any factory. Information on compressed air flow, air pressure and power consumption makes it easy to see areas of power wastage and make key decisions that will reduce power consumption and carbon emissions.

The SUTO iTEC S331 universal display and data logger measures, displays and records air flow consumption, dew point, pressure, temperature, power consumption and compressor availability. In addition it can measure compressor cooling water flow rates. It is a simple cost-effective display that allows for 16 sensors to connect and pass information to the 13 cm touch screen and data logger.

More sensors can be connected using a Modbus system. Different sensors can be recorded individually or in groups on the crystal clear screen. The touch screen shows the data logger’s history. This means operators and supervisors can view records quickly and simply. The S331 logs up to 100 million values and can be linked to a PC or the factory’s monitoring system. Other brands of sensors may be added and monitored on the display.

The correct pressure or dew point of the compressed air may be critical for a production line and advance warning of a problem before it stops production may be essential.

In addition to its other features, the S331 can trigger an alarm system.

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FOOD & BEVERAGE

Food grade belts for pristine hygiene applications

Ammeraal Beltech’s Rapplon folder gluer belts, which meet FDA and EC standards for contact with dry foodstuffs, form part of BMG’s extensive range of food grade belts for pristine hygiene applications.

“Rapplon folder gluer belts are now fitted with abrasion-resistant, non-glazing food grade covers for safe use in food, liquid and pharmaceutical packaging industries,” explains business unit manager, Ryan Forsyth. “There are many applications in the food processing sector, where standard conveyor belts cannot be used. It is critical in modern food processes that only high quality coating materials suitable for direct contact with foodstuffs are used to ensure hygienic and safe processing and efficient logistics.”

The new construction of Rapplon Food Grade folder gluer belts ensure reduced energy consumption and also offer extended service life and fewer maintenance stops. They fit most folder gluer machines, and provide a firm grip on all types of board for accurate carton blank movement during folding, gluing and packing production.

This range is available in QuickSplice and Classic designs. The QuickSplice design offers lower noise pollution and reduced energy consumption of up to 14%. This system ensures safe and easy belt tracking, even at speeds of up to 700 m/min. QuickSplice belts, which are suitable for running in both directions, are perfectly aligned with a quick finger splice for fast belt replacement.

The Classic design has high edge stability to prevent the edge of the belt from fraying and can be safely used in applications up to 80°C.

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Geared servo motors for food and beverage project

SEW-Eurodrive supplied 64 Movigear geared servo motors to a major local OEM. Based in Paarl, H.G. Molenaar in turn designed, manufactured and supplied a weighing conveyor system to a leading German company in the frozen fish and vegetable packing sector.

The system comprises a central conveyor fed by eight smaller weighing conveyors, each containing the various frozen food products to be mixed according to specification. Each conveyor has a separate loadcell to determine the exact weight of the component products. Meanwhile, the overall speed, precision and quality of the entire process is controlled by a master PLC.

The Movigear solution is ideal for this application due to its 200:1 speed range, together with the fact that these units are designed specifically for the strict hygiene requirements of the food and beverage industry. Panel space was a definite consideration with this project, which meant there was no space for centralised, bulky speed controllers. Hence the compact modularity of the Movigear units was ideal. Another feature is onboard input/output controls that interact directly with the Movigear electronics, meaning no additional wiring to the master PLC. Thus, all control is via the SBUS protocol directly from the master PLC daisy-chained to the drives themselves.

In addition, the turnkey solution provided by SEW-Eurodrive had to contend with an extreme temperature range from -25 to 25°C. A special oil for food and beverage applications was also required to protect against any harm caused in the unlikely event of any leaks developing.

For more information contact Jana Klut, SEW-Eurodrive, +27 11 248 7000, jklut@sew.co.za, www.sew-eurodrive.co.za
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- TC line, from frame 80 to frame 355, is with cast iron frame.
- IEC 60034-30-01 standard defines IE (International Efficiency) classes of single speed three phase cage induction motors. 50Hz and 60Hz; 2, 4, 6, 8, pole; rated voltage up to 1000V; S1 duty in the new standard.

IE1 - Standard efficiency
IE2 - High Efficiency from 0.12 to 375 kW
IE3 - Premium efficiency from 0.12 to 375 kW
IE4 - Super premium efficiency from 0.12 to 375 kW

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FOOD & BEVERAGE

Food grade chain hoists

New to Becker’s range of Kito hoists are food grade electric chain hoists, designed for safe lifting applications in contaminant controlled and corrosive processing environments, where pristine cleanliness is critical. “Kito food grade ER2 series electric chain hoists, with capacities between 0,5 and 2 tons, meet the highest quality, hygiene and safety standards for lifting equipment used in food, beverage and pharmaceutical processing,” says senior general manager, Rick Jacobs.

Food grade lubricants used on the Kito food grade load chain and in the gearbox are NSF H1 compliant for safe use in any facility where incidental contact with products is a concern.

Standard features of the Kito food grade ER2 series include white epoxy paint, stainless steel and nickel-plated hardware, nickel-plated load chain, food grade oil and grease, a fail-safe brake and an extreme duty TEFC fan cooled motor. Other standard features are Grade 80 case hardened chain, an IP55 rating and compliance with stringent global electrical, safety performance and environmental standards. These hoists are available as single speed units or with adjustable 2-speed and dual speed selection. Specially designed accessories for added convenience and enhanced performance consist of stainless steel, fabric and plastic chain containers, as well as protective silicone pendant covers.

Mounting options include hook to hook, motorised trolley, plain trolley or geared trolley for smooth, precise and easy traversing and positioning. A single and dual-speed motorised trolley for improved load control and fixing perpendicular as standard, or parallel to the beam for operation in tight spaces.

For more information contact Rick Jacobs, Becker Mining South Africa, +27 11 617 6300, info@za.becker-mining.com, www.za.becker-mining.com

Chain for bakery ovens and provers

Bearings International (BI) offers KOBO prover chain for specific applications such as bakery ovens and provers. In South Africa, standard prover chain is a 100 mm pitch chain with custom-dimensioned rollers and inner hollow pin diameter. BI can customise its prover chains, however, and offers state-of-the-art solutions from KOBO, such as maintenance-free, acid-resistant or stainless steel chains.

KOBO specifically supplies chain products and technology for the bakery, meat, vegetable and grain processing industries, as well as for beverage producers.

The secret to the high quality of the KOBO range is the combination of quality metals and heat treatment to optimise the strength and wear resistance of the chain in operation. Its prover chain design includes an anti-twist safeguard in the plates and on the pin and bush arrangement to ensure no turning in the plates for maximum efficiency. The heat treatment is specific to the temperature and humidity requirements of the application, as well as the consistency of tolerances between the working parts, so as to ensure smooth running and correct alignment between parallel running chains.

KOBO has also designed higher capacity chains based on a range of alternate materials and heat treatment processes, thereby nearly doubling the chain capacity. National product manager, Frikkie Ras concludes that the advent of a plethora of smaller players in the bakery industry is creating new growth opportunities for BI to continue to supply and service this burgeoning sector.

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Alfred Ritter, better known as Ritter Sport, has been producing chocolate since 1912 and now exports it to over 100 countries. The company not only insists on high quality raw materials, production and products, but also regards sustainability as a major priority. It was awarded the Sustainability Award for its work in this area in 2018. In order to provide optimum monitoring of its own cogeneration plant and therefore to reduce its overall energy consumption, Ritter Sport has installed Siemens energy management solutions. The aim is to use this to reduce energy consumption by 1.5 percent per year.

At Ritter Sport, the subject of ecology is part of the company’s daily philosophy. The business cultivates its own cocoa beans in Nicaragua and is particularly concerned with sustainable production along the whole value chain. It is therefore no surprise that electricity comes from environmentally friendly, in-house sources – such as the cogeneration plant put into operation in 2002. Following modernisation in 2016, the cogeneration plant now supplies 9.9 million kilowatt hours. Ritter Sport therefore covers a good third of its energy demands and 70 percent of its heat requirement. The chocolate manufacturer is now using the Siemens Simatic Energy Manager Pro energy management software to reduce its energy consumption year on year and to meet the requirements of ISO 50001 (the standard for the development of systematic energy management).

The company insists on high quality raw materials production and products in its manufacturing facilities as well as sustainability along the whole value chain.

Reducing consumption year on year
Eberhard Pfeifer, workforce manager at Ritter Sport, explains the company’s ambitious plans: “We want to reduce our energy consumption by 1.5 percent, year on year. This system is the first step in knowing exactly how much energy is required to produce each individual chocolate bar.” Simatic Energy Manager Pro captures all the manufacturing and energy data from the building management system and provides a detailed display of the information. In future, this will be provided by a Simatic S7-1200 controller and S7-1500 controllers as well as Simatic AI Energy Meter for Simatic ET 200SP. The solution can be extended on a modular basis and is intuitive and easy to operate. Ritter Sport also plans to install Sentron PAC measuring devices in order to connect even more measurement points to the system.

Less expense – significant effect
The Simatic Energy Manager Pro software was installed on site within four days and Siemens trained the employees at the same time. The energy management system allows Ritter Sport to integrate and link data from a range of sources such as production, building technology and energy production. The company is thus able to correlate consumption and production data and to understand how much energy is required by which process. This is the only way to detect potential savings. The information is available via both stationary and mobile devices and can be quickly retrieved. Benjamin Flaig, energy manager at Ritter Sport, provides a positive summary: “I have a motto – energy efficiency means being smart with minimum effort. The Simatic Energy Manager fits this perfectly as a great deal can be gained here with very little expense.”

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Technology investments in the industrial and manufacturing sector are set to skyrocket, jumping from $59 billion in 2019 to $375 billion in 2030. Including hardware revenues, that figure climbs to over US$1 trillion, according to data from global tech market advisory firm, ABI Research.

Manufacturing is in the midst of a major digital revolution and is investing in Industrial Internet of Things (IIoT) technologies like Artificial Intelligence (AI), Augmented Reality (AR), robotics (AGVs, AMRs) and cloud-based simulation and modelling. “The transformative shift toward Industry 4.0 technologies and the broader field of software-defined manufacturing (SDM) presents a massive opportunity for a wide range of technology providers and implementers,” says Ryan Martin, principal analyst at ABI Research.

Intelligently connected hardware represents the largest share of revenue, growing from $200 billion in 2019 to a staggering $800 billion in 2030, but will diminish in proportion as associated software and services take hold. After hardware, data and analytic services is the fastest-growing segment in terms of revenue generation, reaching more than $185 billion in 2030, up from just $11 billion in 2019. “As the amount of custom code required to deploy new solutions on the factory floor drops, data and analytic service revenue growth in smart manufacturing will accelerate,” Martin explains.

Machine tools, asset tracking and connected PLCs will experience the most growth in terms of connected service revenue over the next 10 years. By 2030, machine tools such as 3D printers, computer numerical control (CNC) machines, lathes, mills and industrial drills, will grow in revenues to $134 billion; asset tracking will reach $78 billion, and Connected Programmable Logic Controllers (PLCs) will hit $40 billion. According to Martin, “Industry 4.0 is creating millions of new end points that need to be interconnected. However, the existing infrastructure can’t support it, which is creating an opportunity for connectivity experts and providers to step in.”

Currently, there are 260 million digital factory connections, with 230 million of those connections made via a fixed line. But, by 2023, a vast number of the 5.5 billion digital factory connections will be wireless. “This is driven by the rise in newly connected endpoints, including sensors, mobile robots (AGVs, AMRs), advanced asset tracking (RTLS), condition-based monitoring, and predictive maintenance applications,” says Martin.

The leading industries driving these revenues overall include automotive, heavy machinery, food, beverage, tobacco products and electronics. And, although Industry 4.0 is a global phenomenon, roughly half of the global revenue opportunities will be concentrated in China and the United States, followed by Germany and Japan. Furthermore, the United States leads the way in most industries such as automotive, while China leads in nonmetallic machinery.

“There is a long and compelling list of digital transformation technologies and pilot projects that are now graduating to the factory floor. The companies and production environments embracing these opportunities have quickly seen the benefits and want to scale, rather than risk falling behind,” concludes Martin.

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HoloLens, mobile phones, 3D printing and smart glasses – the gadgets that captured the public imagination in the blockbuster movie ‘Back to the Future’ over 30 years ago have now become a reality, all thanks to digitalisation. Industry 4.0 is rapidly automating the modern working world and helping the machine and system building sector reach new heights.

“At Festo, we support our customers with digital solutions at every step of the value chain and thus also guide them along their digital customer journey,” emphasises Kershia Beharie, head of market management at Festo South Africa. “We also make a coherent software infrastructure available for customers, thus reducing their process costs.”

Designing software à la carte

Examples of these intelligent software solutions are the Handling Guide Online for fast design and ordering of axis systems, the Festo Design Tool 3D for combining individual components into pneumatic modules, the product key for the clear identification of each component and use as a digital twin, and the app-based products such as the Festo Motion Terminal.

FluidDraw 365 enables designers to build up circuit diagrams more efficiently to document machines and installations fast, and easily conforming to standards. Via an annual subscription, users always have access to the latest version available on the Festo App World.

Condition monitoring in the cloud at the press of a button

With the CPX-IoT gateway, Festo is paving the way for a secure cloud solution, which will enable machine builders and end customers to improve their overall equipment effectiveness. The IoT gateway CPX-IOT connects components and modules from the field level, such as the valve terminal CPX/MPA, the energy monitoring module MSE6-E2M or handling systems, to the Festo Cloud via their OPC UA interface.

The cloud makes it possible to process and monitor the data, which, in turn, enables trend analysis and early warning systems with automatic notifications set up in the event of incidents. The IoT gateway connects the cloud to a controller and ensures that the relevant information is communicated in the right format at the right time.

With the IoT gateway CPX-IoT, it is possible to have preconfigured dashboards for each Festo component – with additional customisation. The dashboard is viewed in a Web browser and includes diagrams and traffic lights. Specific widgets – user interface components and graphs for energy monitoring and preventive maintenance, as well as key performance indicators for the process and the improvement of overall equipment effectiveness – provide clarity. The condition monitoring solution improves error diagnostics and fault identification, creates transparency regarding energy consumption, delivers clear information in graphical format and offers historical data.

Digital maintenance management

Predictive plant maintenance is a time-consuming process, which, for the most part, is still documented using pen and paper. With Smartenance, the Festo digital maintenance manager, this process becomes easier, faster and safer. The software enables precise scheduling and analysis of plant maintenance. Therefore, it provides quick and easy access to digital maintenance for production managers and system operators, available for download as an app. Smartenance is the first purely digital product from Festo. It is available to download as a mobile app for smartphones and tablets in the Apple and Google app stores.

The dashboard for production managers is conveniently available in a Web browser. Smartenance enables end customers to schedule, monitor and evaluate system maintenance. A digital maintenance schedule makes maintenance easier, quicker and more reliable. Reciprocal checking by system operators and production managers provides more excellent reliability and eliminates many processes and the need for coordination.

Smart products

With smart digital solutions, Festo has combined its extensive knowledge of industrial applications with the latest developments in information technology to realise online applications for industrial automation practice. Festo is also using digital communication to support its customers throughout their digital journey. This digital journey guides customers reliably and comprehensively through the Festo portfolio, from information procurement and configuration through ordering and delivery to commissioning and maintenance, or even to the technical training offered by Festo Didactic.

For more information contact Kershia Beharie, Festo, 086 003 3786, kershia.beharie@festo.com, www.festo.co.za
For the first time we bring together our core global motion control technologies in a single unifying force. Through insight, intelligence and innovation we provide solutions to meet the increasingly complex demands.
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Exports are a key indicator of the economic performance of any industrialised country. With an export volume of USD 1.44 trillion, Germany ranked third behind the USA (USD 1.54 trillion) and China (USD 2.26 trillion) in a global comparison in 2017. To ensure that the German economy does not lose out in the long term, new concepts are needed to optimise the efficiency of industrial production. In view of the progress made in automation and artificial intelligence, a well-established and improved interaction between man and machine could help to ensure high economic standards and productivity. A promising model for the new harmony on the factory floor is based on intelligent, integrated and interactive design of tomorrow’s manufacturing processes.

Many still believe that man and robots can only work against each other or, if need be, side by side; moreover, there is still a fear that machines will replace human workers. However, the coexistence of human workers and automated machine solutions and robots has become commonplace in more and more companies.

But that’s not all: digitalisation provides companies in the manufacturing industry with an enormous inventory of technological options for implementing the factory of the future. Smart networking using artificial intelligence offers the opportunity to convert manufacturing data into strategic information. It also enables the smooth integration of high precision robotics technologies that work at high speed, supplemented by methodically safe and simple interaction between man and machine.

New era of intelligent, integrated and interactive production
Increase efficiency, reduce costs, strengthen competitiveness – what is necessary to secure your market position in competitive global markets can be implemented with innovative solutions for flexible and efficient production. An impressive example of the potential of a technology that can revolutionise the factory floor of the future, while promoting harmony between human and machine, is a new collaborative robot that emerged from the partnership between Omron and Techman.

It offers an innovative solution for the simple automation of applications that have traditionally been carried out by humans and where automation has so far been very difficult. The robot can be seamlessly integrated into an autonomous mobile robot and also enables the automation of complex tasks using a 3D camera.

One example of a futuristic solution is bin picking. The robot quickly and precisely sorts different articles and deposits them where they are needed. The 3D camera locates the items and sends their coordinates to the robot, while the software, supported by AI algorithms, performs the advanced calculations required for optimised goods picking, for example for customised orders. Meanwhile, a mobile robot is responsible for the subsequent transportation of the goods. In this respect, the efficient combination of different production processes forms the basis for particularly flexible and reliable production and material handling. It also gives a foretaste of what will be possible in the future with factory harmony, where integrated, mobile and collaborative robots work in harmony with humans, to ensure flexible manufacturing and customisation.
Systematically avoiding malfunctions and breakdowns
Operational excellence is an important basis for investment security, especially in view of the current changes in the industrial production organisation. Changing consumer behaviours are forcing manufacturers to flexibly produce smaller quantities in a larger number of variants, saving as much time as possible. The factory of the future must therefore become more flexible and be able to convert production more quickly and produce smaller runs. The ultimate goal is to be able to deliver personalised products from an agile and networked production line. In an automation model that meets this requirement, all devices, machines and solutions should operate in an integrated manner.

Effective quality control is essential in all production and packaging lines. Those who can identify defective products before they leave the factory, or even before they are produced, benefit from considerable time and cost savings and avoid costly product recalls, loss of productions and possible damage to brand reputation.

Equally important is the quality control of packaging for products such as food or medicines. An illegible barcode or a wrong expiration date can lead to the need to dispose of faultless products. In addition, there is a trend towards stricter legislation, which gives top priority to unambiguous labelling for all types of products. For example, the EU has introduced new regulations in 2019, requiring production lines to meet even higher quality control standards.

As a result of the increasing degree of automation in production lines, the need for automated processes in quality control has also been amplified. Among other things, this pays off if the machines are able to collect data in order to optimise predictive maintenance. The more data is collected and processed, the more intelligent the machine can be to help extend production life, reduce downtime and increase productivity. For example, Omron’s Sysmac AI controller includes a predictive maintenance library based on AI and collects, analyses and uses data on Edge devices to extend their life, detect anomalies and prevent failures. No internet connection is required. Users are no longer dependent on cloud computing and can leverage the AI potential for their business advantage.

Image processing supports error detection
An increasingly important factor in quality control on production lines is smart image processing, technically implemented either as a completely new solution or by partially retrofitting an existing system. Very compact image processing systems monitor production in real time and react immediately to any error. The data transmitted by an image processing system is processed on site and made available centrally via the cloud for detailed analyses so that suitable measures can be taken.

In order for an inspection system to make intelligent decisions, data must be captured by a sensor, such as a camera, for image processing. These cameras can be set up to monitor various aspects of a product, such as detecting defects or checking labels for printing errors or missing information. The data is then analysed with high computing power to compare the process with the actual and target results. When problems are detected, the system responds according to programmed rules. Sometimes it can automatically correct the errors, but even then, the operator is always informed to ensure correct processes and in case additional action is required.

Since this system is fully networked, it provides a better link between the machines on a production line, resulting in both more precise quality control and greater efficiency. When an error is detected, the system can often automatically compensate for it and production is not affected. Intelligent automation solutions of the latest generation work fast, offer high computing power, are easy to operate and thus ensure transparent quality control in the factory of tomorrow.

Flexibility is the engine for customer satisfaction and business success
Since customer and business requirements are constantly changing, the factory floor must also be more flexible in the future. Flexibility in the organisation and arrangement of production resources is one of the key success factors for efficient production. This includes on one hand the mobility of the robots used and on the other hand their adaptability to concrete requirements in practical use. This is another advantage of an effective quality control and process management system.

By combining image processing, motion, control, functional safety and robotics in a single management system, production lines can be more easily adapted to short production runs and changing market requirements. The line layout can be quickly redesigned and the recognition pattern for quality control can be easily updated in the software. This ensures that different product variants or even different products are produced and packaged flawlessly. In addition, such a system brings the benefits of future-proof orientation, because it can be easily adapted to new regulations. As a result, manufacturers do not have to worry about changing their production lines but can simply initiate a firmware update for the existing solution if necessary.

The networking of humans and machines is more than just a trend towards the efficient organisation of processes and the distribution of tasks in manufacturing plants. The tangible benefits of tomorrow’s high performance factory are already showing how the systematic harmonisation of human and machine based capabilities is revolutionising production with the help of artificial intelligence and robotics and is breaking new ground for the production methods of the future.

For more information contact Omron Electronics, +27 11 579 2600, info.za@eu.omron.com, www.industrial.omron.co.za
The global Industrial IIoT business is arriving at a tipping point, with the industry reaching a connectivity milestone next year that will pave the way for market-changing events like the proliferation of cloud-based technologies. These developments will help propel annual IIoT node shipments to 224 million units in 2023, a 100 million unit increase from 124 million in 2018, according to IHS Markit | Technology, now a part of Informa Tech.

However, despite the industry’s progress, about half of all IIoT deployments are failing. All too often, these deployments are being hamstrung by planning breakdowns, including the failure to set reasonable objectives and to gather support and cooperation from critical personnel within organisations. Without addressing these issues, the global IIoT market could face major challenges in reaching its growth potential.

The connection inflection
Industrial assets have traditionally employed fieldbus for connecting to the industrial network, and while Ethernet solutions have been in place for a couple of decades, their adoption has been slow. However, after years of making progress in the market, Ethernet is set to displace Fieldbus as the primary network medium for the first time in 2020. Ethernet will account for 43 percent of IIoT node shipments next year, compared to 41 percent for Fieldbus.

“There are now more than 1 billion connected devices on factory floors around the world,” said Alex West, senior principal analyst, industrial technology, at IHS Markit | Technology. “This massive installed base is about to reach a tipping point, with Ethernet overtaking Fieldbus in 2020.

The proliferation of Ethernet is enabling the transmission of larger volumes of data. This will ultimately bring in technologies like the cloud that are going to supercharge the IIoT business.”

Connecting to reduce downtime
The arrival of a faster connectivity solution will allow manufacturers to utilise cloud-based solutions to reduce downtime. “One of the really significant challenges faced by industrial companies is unplanned downtime,” West said. “Just to quantify that challenge, it’s estimated in the automotive industry that $20 000 to $30 000 per minute is lost through unplanned downtime. New applications enabled through IIoT, maintenance and asset-health monitoring, are really helping overcome these challenges. We’ve estimated around a 30 percent average saving or reduction in unplanned downtime can be achieved through IIoT solutions.”

Monitoring assets
The benefits of IIoT solutions facilitated by enabled devices can be realised across the entire lifecycle of production, from product design, to monitoring inventory levels in the supply chain. For example, Harley Davidson a few years ago was facing business challenges in terms of fulfilling customer requirements. By improving the connectivity of its plant, the company was able to reduce the time to meet new orders filled from 21 days down to six hours.

Addressing IIoT deployment fails
While faster connectivity holds great promise for expanding the IIoT market, the reality is that current deployments are failing as often as they succeed. “At the proof-of-concept phase, about half of IIoT projects are failing, which is acceptable for companies attempting to be agile and trial new applications,” West said. “However, there is a similar failure rate when companies move to the deployment stage. This means companies are investing enormous sums in these projects but aren’t getting the payback they expected.”

The failure of a project is defined as not meeting the customer’s expected payback. Many times, the high failure rate can be attributed to inflated expectations. A total of 50 percent of companies expect to see payback within one year, although many of these projects can take much longer to generate returns.

IHS Markit | Technology recommends manufacturers take the following steps to increase their chances of IIoT success:

• Specify the project by determining in advance which exact challenges you want IIoT to address.
• Start small with some pilot projects of concepts to see how the technology can be utilised.
• Go right to the top, with senior level management support for projects.
• Get the urge to converge, by ensuring support from all relevant functional groups.
• Leverage your people power by getting staff involved with deploying the technology and encouraging them to view IIoT not as a threat, but as an augmentation to their job capabilities.

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How real is augmented reality?

The early morning air was cold when we arrived at the mine for an underground visit. Our hosts were keen to show us the practical challenges of the drilling and blasting operation, and the many ways in which rock fragments containing ore are removed to the surface for processing. At the rock face the drilling process was an eye opener – hot, uncomfortable and hazardous. Knowing where to drill to optimise the blast pattern is a skilled operation. It was apparent that drilling was a manual operation, and there was a lot that could go wrong.

The aim of our visit was to see how augmented reality (AR) might be used to improve the drilling procedures, while enhancing safety. Could an AR display be used to help analyse and superimpose the most efficient layout of the drilling pattern on the rock face for marking the holes? Could a virtual device such as Google glass or Microsoft Hololens be practically used in such a harsh environment? Since then there have been many important developments in AR technologies, and innovations in heads-up displays now make many suitable for use in industrial environments. These displays, together with artificial intelligence and cognitive technologies, promise to be a game changer in the way operators will work in future.

What is augmented reality?
AR is the augmentation of the physical world with context aware visual information that can be used to help operators make better decisions, or help guide their actions. The visual information is usually text, a 2D drawing or a 3D model, object or hologram, which is overlaid onto the physical world. In the control room environment, AR can be seen as an evolution of the human machine interface (HMI). With new augmented reality technologies, we can now move out of the control room and support field operators and maintenance technicians with real-time process information in the field.

The same design considerations that apply to good control room HMI also apply to AR systems. The goal is to provide additional information to improve decision making, not replace human judgement or take away responsibility for decisions or actions taken.

Practical applications
In industrial manufacturing, there are many practical examples of AR applications. The business goal is to reduce costs, improve productivity and enhance safety.

In complex assembly or maintenance procedures, augmented reality can help with a visualisation of the right way to assemble or disassemble a piece of equipment. The display can provide quick access to visualisations of the task at hand based on 3D models that provide a technician with step by step instructions.

AR technologies can be used to inspect items of equipment in the field for quality control purposes. The actual item can be compared with a reference image and AI techniques used to indicate a pass/fail when any defects are detected.

Human experts can remotely assist field technicians with complex tasks by monitoring the work being done through a camera and providing guidance on complex procedures. This can be particularly useful where expert skills are scarce and not located on site.

AR systems can identify elevated safety risk to warn people working in the field. This can be determined by a visual analysis combined with data from the DCS/scada and IIoT devices and the maintenance/work permit systems.

The location of people can be tracked through IIoT devices and this information presented on an AR display to improve coordination and productivity of teams in the field. This could be particularly useful in highly regulated or hazardous plants, as well as for supporting rescue operations.

The HMI dilemma
Since the system as a whole needs to take into account human behaviour and this can introduce several design challenges. There is a real risk of a human placing too much reliance/trust in the system and not paying sufficient attention to the whole environment. The system ideally needs to recommend rather than instruct the operator.

In closure
The growth of AR technologies will result in more and more industrial manufacturing applications becoming mainstream. Areas such as expert support and complex assembly/maintenance are the most likely to see early adoption of systems, particularly where there are many identical repetitive but complex tasks to be performed.

Caution is advisable, as with any emerging technology. Start by becoming familiar with exactly what technology is available and find out what the vendors are working on. Look for practical case studies in your industry that can guide you away from making expensive mistakes. In deciding on AR investments, always be led by the business priorities and do not get carried away by hype.

Gavin Halse.

For more information contact Gavin Halse, Absolute Perspectives, +27 83 274 7180, gavin@gavinhalse.com, www.absoluteperspectives.com
Bearing speeds up product development

SKF has released the world’s first commercial load sensing bearing based on its proprietary fibre optic sensing technology. This streamlines the creation of rotating products such as pumps, using angular contact ball bearings, and enables real-time measurement of bearing loads using fibre optic sensing.

The load sensing bearing for pumps and compressors takes the guesswork out of product development, helping to speed up the design and verification process by giving instant access to a variety of bearing data. This includes axial vs. radial loads, polar lots of the bearing’s internal strain field, strain spectra, load directions, speed of rotations and temperature.

The bearings, which are interchangeable with conventional bearings, offer several benefits to designers and test engineers, including optimised design, lower development costs, shorter design cycle and the ability to digitalise the design and verification process.

OEMs and end-users can use the tool when testing and installing new equipment, to check that the correct load and lubrication requirements have been defined and are not exceeded in the real installation. The load sensing bearing gives access to data that has been very difficult to access so far because it takes accurate strain measurements directly within the bearing.

The new sensing bearings are safe to use in hazardous environments as signal data is transferred at high speeds by low power in optical fibres rather than as electrical signals, making the system also immune to electromagnetic fields. It also enables robust remote monitoring where wireless technology cannot be used as the optical fibres can transmit signals over very long distances.

For more information contact Samantha Joubert, SKF South Africa,
+27 11 821 3500, samantha.joubert@skf.com, www.skf.com

Switched interlocked socket range

Powermite’s range of plastic switched interlocked sockets form part of a new series of cutting edge Gen 2 plastic industrial plugs and connectors which are poised to raise the bar for efficiency, versatility and reliability. The Gen 2 plastic range is forged from Polyamide 6 and PC/ABS. These virgin grade plastic materials give the range several important advantages such as impact resistance combined with high robustness; high thermal stability (self-extinguishing); great insulating qualities; high disruptive strength; UV resistance according to ISO 4892-2; and high abrasion and weather resistance. Furthermore, the material delivers exceptional resistance to a variety of chemicals and is free from cadmium and halogen.

Taking a zero compromise approach to quality, the complete Gen 2 plastic range is internationally standardised by the International Electrotechnical Commission, the world organisation for international standardisation of electrical equipment: IEC 60309-1 and IEC 60309-2 equivalent to the European Norms EN 60309 part 1 and EN 60309 part 2, in even the most arduous applications.

The Gen 2 switched interlocked socket series, available from 16 A to 125 A, in 3 to 5 poles, comprises thirteen compact plastic models. Electric, mechanical and electromechanical interlocks complete the socket range. The mechanical interlock ensures that after plugging and switching on, the plug is locked and after switching off and unplugging, the switch is locked.

The range is available in IP44 splashproof and IP67 watertight rated versions as well as in nickel plated or brass with lam band contacts. The compact and stable design of these switched interlocked sockets facilitates fitment even in confined spaces.

For more information contact Donovan Marks, Powermite,
+27 11 271 0000, donovan@powermite.co.za, www.powermite.co.za

Portable differential pressure measurement with internal sensor

Kobold’s highly precise pressure measuring devices HND-P121/P231 to HND-P127 come with integrated pressure sensors. They have two pressure measurement inputs on the top of the housing that are connected to the measuring points by means of a stable metal connection and plastic hoses, available as accessories.

Numerous measuring ranges in the overpressure and underpressure range are available for various measurement tasks, such as differential pressure measurement. In addition to pressure display, these first-rate, compact, universally applicable measuring units offer additional functions such as minimum/maximum value memory, a hold function, tare function, automatic self-shut-off, or zero point offset. The devices with an expanded spectrum of functions also have a logger function, a peak value memory, minimum/maximum alarm, an adjustable measuring cycle, and averaging.

Key features include:
• Integrated pressure sensor.
• Differential pressure measurement.
• Two hose connections.
• Serial interface.
• Extensive additional functions.
• Relative pressure sensors.

Areas of application are chemical, pharmaceutical and food industries, machine and apparatus construction as well as piping and container construction.

For more information contact Instrotech,
+27 10 595 1831, sales@instrotech.co.za, www.instrotech.co.za
Bearing report was produced by NSK to verify the improved characteristics, detailing the enhanced bending stiffness of the shaft and extended operating life from three months to over a year.

When comparing the costs from before and after the adoption of NSK bearings, the savings are clear to see. Today, the steel mill no longer has to endure four production stops a year, while the costs for the replacement spindle assemblies and motors have also been eliminated. Taking these factors into account, it has been calculated that the plant is saving €35,600 per annum.

For more information contact Geraldene Govender, NSK South Africa, +27 11 458 3600, nsk-sa@nsk.com, www.nsk.com

Universal industrial Ethernet absolute encoder

Do you use different protocols on your machines or carry out repairs and don’t always know what to expect? With Vepac’s WDGA universal IE encoder you are completely flexible. You do not have to worry about the correct protocol or the correct resolution and number of rotations while placing your order. Through the website linked to the encoder you have the option of importing the required protocol at any time, without tools or programming adaptors. All you need is a PC with a network card whose IP address you can set yourself and a web browser of your choice. It takes less than five minutes to install the protocol.

Extremely high bearing loads guarantee long service life and operating time. In addition to the outstanding mechanical properties, the latest electronic components and the latest communication and encoder profiles are used. Due to the latest high precision and highly dynamic technologies, these very robust absolute encoders with magnetic sensor allow use in areas where previously only absolute encoders with optical principle could be used.

For more information contact Vepac Electronics, +27 11 454 8053, sales@vepac.co.za, www.vepac.co.za
Protecting with lubrication
Proper lubrication is essential to the correct functioning of mechanical equipment and ensures its longevity.

“Even over-lubricating is problematic as it causes grease churning and overheating, which can eventually damage a machine’s motor coils or windings,” says Callum Ford, national marketing manager at Lubrication Engineers (LE). “We advise customers to use the minimum quantity lubrication at the correct interval to protect equipment, minimise costs and ultimately optimise their businesses.”

LE’s Xport battery powered grease gun with clear grease tube is especially useful for lubricating hard to reach areas or equipment that requires frequent or large scale lubrication. “We estimate that 60 to 80 percent of bearing failures are lubricant related, including problems caused by grease cross-contamination;”, says Ford. “The grease gun allows for easy and 100% accurate visual identification, eliminates cross-contamination and enhances existing lubrication reliability programmes.”

For larger scale applications, Ford suggests LE’s single point lubrication systems, which are essentially microcomputer lubricators. “With our range of top-quality Xport Perma single point applicators, customers can ensure they deliver precise, timed lubrication without the need for time-consuming manual lubricant application,” he says. “The exact greasing quantity and regreasing intervals for each bearing can be easily calculated and managed by the MQL schedule. In addition, the RFID system helps customers to track, monitor and fix lubrication-related issues during routine inspections, thus simplifying and improving their plant maintenance.”

Single point lubricators remove the uncertainty in greasing intervals and grease volumes on each bearing, as well as ensuring no lubrication point is missed during inspection. They enable easy tracking of bearing problems and ultimately reduce maintenance costs.

Diagnostic videoscope for maintenance
Industrial inspections require a powerful, high resolution videoscope that clearly displays the condition of internal equipment components. High resolution videoscopes allow industrial maintenance teams to identify equipment issues quickly and schedule preventive maintenance measures to avoid costly unplanned shutdowns.

Comtest’s diagnostic videoscopes are built for industrial maintenance troubleshooting and quality assurance testing, and are designed to stand up to the challenges of a rugged environment. Features include:

• High definition probes with dual-view cameras, allowing the videoscope to take images and video either forward or to the side to capture the images in difficult or hard to reach locations.
• IP68 rated probe (imager) for protection against dust and water projected from a nozzle.
• Engineered to withstand a two metre drop.

These rugged videoscopes are designed for a variety of industrial applications. These include production (inspection of bearing surfaces and lubrication, gear helix inspection); aircraft maintenance (blade inspection, engine hot section contamination); automotive quality assurance (testing of casting goods, inspection for cracks, chips and contamination in HP chambers); and heavy duty maintenance (inspection of clogged pipelines, corrosion in rotors and stators).

Model DS703FC offers wireless syncing of images directly from the videoscope to the Fluke Connect system. They are then attached to an asset record or work order. Live images or videos can also be streamed from the scope to a smartphone or PC.

Comprehensive range of quality fasteners
Almost every bearing or power transmission application requires fasteners. In order to be able to offer a complete solution to its customers, Bearings International (BI) now stocks and supplies a comprehensive range of quality fasteners, including blind rivets, self-drilling screws, hexagonal nuts, bolts, and washers from FTS Boltworld.

Ancillary products include anchors, grease nipples and roof sheeting fasteners, as well as specialised fasteners such as hook and straining eye bolts, u-bolts and gutter bolts, BI Offer Marketing Manager Victor Strobel explains. “The main benefit for our customers is point-of-sale convenience. BI can now offer them the full basket of products required for all their construction and maintenance needs, making us a favourable one-stop shop,” Strobel highlights.

Due to it being a popular consumable product used in most customer applications, across all industries and markets, the FTS Boltworld offering will be available across BI’s 48-branch network countrywide. “Our market research indicated a gap at our point-of-sale, where we can grow revenue sustainably and innovatively, as well as satisfy customers’ needs more holistically,” Strobel points out.

The latest offering also extends BI’s synergy with the broader Hudaco Group. Boltworld was acquired by group company FTS, with the new entity now known as FTS Boltworld. It recently relocated into the same building as group company Rutherford in City Deep, Johannesburg, a distributor of Makita power tools, Mercury engines, and survey instrumentation.

For more information contact Bearings International, +27 11 899 0000, info@bearings.co.za, www.bearings.co.za

For more information contact Comtest, +27 10 595 1821, sales@comtest.co.za, www.comtest.co.za

For more information contact Callum Ford, Lubrication Engineers, +27 11 464 1735, callum@lubricationengineers.co.za, www.lubricationengineers.co.za
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