

Insider's Guide to Automate 2019 and Promat

Automate Show Examines the Integration of Robotics, Automation and Machine Vision, while Promat explores the latest in material handling technology

Matthew Jaster, Senior Editor

Technology is turning itself upside down and inside out all in the name of productivity and efficiency. If you don't know how to leverage your artificial intelligence or make use of IIoT on your shop floor, you're not alone. There's a lot going on behind the scenes in motion control, robotics and industrial automation today. Automate 2019 is the biennial trade show that provides the full spectrum of automation technologies and product demonstrations that will help attendees solve today's greatest manufacturing challenges. Here's a brief rundown of what to expect at McCormick Place in Chicago from April 8-11:

Changing Technologies

Mobility, smart manufacturing and energy efficiency are key areas for Automate 2019. Along with the latest and greatest products available to make industrial automation better, there's a strong push to help manufacturers understand how to get started by adding robotics and automation to their operations.

"There are plenty of new technologies launching this year that we didn't see at the show in 2017," said Bob Doyle, vice president of the Association for Advancing Automation (A3). "The biggest emphasis is mobility, specifically mobile robotics utilized in warehousing and on the manufacturing floor. Artificial intelligence is another focal point and how it can be utilized to improve a manufacturers' operation."

Collaborative robots have been around awhile now, but according to Doyle they are entering new markets and providing unique opportunities for small to medium-sized manufacturers



that may have never automated before.

"How do I get started in automation? Where do I begin? These are the questions being asked. We're finding as we work with our member companies that they're still very new to many automation and motion control concepts, but they know that they have to get ahead and prepare their manufacturing floors for these critical advancements. This is why 'Win the Future!' is the tag line for this year's show," Doyle added.

This is why Automate 2019 features system integrators at the front of the exhibition hall. "Manufacturers can come see the system solutions available to the end users right when they walk in," Doyle said. "This is beneficial for companies that have never automated before as well as companies that may have *some* experience with robotics and automation, but will have the benefit of seeing the latest technologies first-hand."

Education First

The paid conference at Automate 2019 includes a full schedule of speakers on a variety of technical subjects includ-

ing "How to Automate," where Doyle said attendees can come for a day and learn the ROI of automation, how to get involved in robotics, machine vision, motion control, etc. All the categories A3 represents. Additional conference tracks are available on automation solutions, collaborative/mobile robots, AI, digitalization, smart manufacturing and more.

There are also educational opportunities available on the exhibit floor free to attendees including topics on robotic integration, investing in automation and workforce development.

"We will be having discussions on workforce development on the last day of the show and what the industry needs to do to prepare the next generation of workers for the future," Doyle said. "It's the same day we invite college and high school students to see the benefits of automation and robotic careers."

A Trend for Robotics in General Manufacturing

In the past, the automotive industry has typically been where the majority

of robotics is being utilized, but lately these figures are starting to change course. Based on statistical input from 2018, robotic sales in general industry—outside of automotive—are starting to catch up.

“You can look at this statistic a couple of ways. Automotive sales for robotics are down. We knew this was going to happen. Since the end of the great recession in 2010/2011, robotic sales in the automotive industry had been going gangbusters. We knew there had to be a slowdown. It’s a very cyclic industry,” Doyle said. “However, with the rise in areas like gripping technologies and collaborative robots, more and more non-traditional industries are seeing the benefits of robotics and automation today including food and beverage, plastics, aerospace and laboratory/bio applications. So when things start to slow down in one industry, we see significant growth in others.”

Smart Growth

Automate 2019 also hopes to help companies answer the question “What does smart manufacturing mean to me?” Industry 4.0, IIoT or whatever the latest buzzword may be really comes down to making your shop more efficient. Doyle believes it’s simply a way to use data to better manage your day-to-day operations.

“Smart manufacturing is basically just an extension of the old tried and true formula of a quality board or throughput board hanging in the shop floor that tells you how many pieces went through the factory in the last hour. This is really about using collected data to make your operation better. The only difference in 2019 is that with sensors and monitoring devices there is so much more data available to all of us.”

FANUC has a zero downtime initiative that they launched at General Motors, for example. They have the ability to monitor their equipment

remotely and make sure that everything is functioning optimally. Learn more here: www.fanucamerica.com/products/robots/zdt-zero-down-time. This is where Doyle believes the industry is moving, a connected factory floor that provides greater value in areas like preventative maintenance and condition monitoring.

Promat 2019: Material Handling Solutions

Promat has been a great partner with Automate since 2011. The collocated exhibition offers the latest on manufacturing, distribution and supply chain equipment and systems. It features more than 1,000 solution providers, 100+ show floor seminars and new town hall style sessions on emerging technologies. “The automation solutions we offer and the material handling solutions they offer are a great fit,” Doyle said. “We look forward to continuing the successful partnership in the future.”

Launch Startup Competition

The Launch Startup Competition gives the industry’s most innovative young companies the chance to vie for a \$10,000 cash award and the spotlight at Automate 2019.

“Startups continue to play a critical role in the ongoing development of automation technology, and this competition lets us identify and support them by providing a cash award while getting them in front of industry leaders, potential partners and investors that can help them along the way,” said Jeff Burnstein, president of A3. “If the past is any indication, we expect to see many of these finalists go on to transform the manufacturing and services sectors over the next decade.”

Companies entering the Automate Launch Pad Startup Competition must have launched in the last five years, raised less than \$5 million since creation and not be affiliated with a larger group. Seven finalists will compete for

the top \$10,000 prize at Automate 2019 on April 10 at 3:00 pm, where they will have three minutes to pitch their technology solution to a panel of judges. All finalists will also be awarded 10 ft. x 10 ft. booth space at Automate, giving them the opportunity to engage with over 20,000 expected attendees.

“We really started to see interest in robotic investments around the time we created the Launch Startup Competition in 2015,” Doyle said. “The 2015 winner was a startup company from Boston called Soft Robotics. Since they won the competition the company has grown to 50+ employees and their booth at Automate continues to get bigger at each show.”

The Future of Automate

Doyle says upcoming shows will focus on mobility. “There will be a lot of opportunity for robotic arms on mobile platforms. I also believe we’ll see more opportunity for non-traditional industries to utilize robotics and automation,” Doyle said. “Hopefully, it will be put to rest the idea that robotics and automation take jobs away. We’ve been fighting this fight for a while now and we see it finally turning a corner. This is about how automation and robotics can improve a manufacturing operation and, in turn, increase their success and job growth.”

Doyle believes the show will also start to crossover to residential use in the future. “We will probably start to crossover to the home, service robots for an elderly person, for example. The joke at the moment is that the only successful service robot in the home is the Roomba. This is going to change in the coming years. There’s a great opportunity for expansion, maybe in ten years we’ll see a more general audience interested in a show like Automate.”

For more information:

Automate 2019
Phone: (734) 994-6088
www.automateshow.com

Booth Previews

Heidenhain Corporation

BOOTH #8346

Heidenhain is proud to take part in the Automate 2019 show at McCormick Center in Chicago, IL from April 8th-11th.

Heidenhain will be highlighting its next generation condition monitoring system, ADS Uptime, from the brand Leine and Linde. Encoders with built-in ADS Uptime will enable system monitoring of the most relevant data from rotary



installations and motors. ADS solutions will naturally simplify the move from preventive maintenance, to start practicing proactive maintenance. ADS Uptime will also feature wireless service check-up via Bluetooth. The wireless service check-up will facilitate maintenance, but also drive system management, production planning and operation.

In addition to the Leine and Linde products, Heidenhain will also be featuring products from their other brands like Etel, Renco, and LTN as well

as displaying the newest available rotary and angle encoders from Heidenhain.

Etel is an international supplier of direct drive linear and torque motors, motion control components and integrated systems. Their TMB+ torque motor is one of the highest performing direct drive motors on the market providing optimal density with an expansive variety of available sizes.

Renco is a well-known brand focused on providing compact yet powerful rotary encoder solutions. They use the optical scanning principle and offer the greatest possible functionality while featuring the smallest possible dimensions, thanks in large part to their simple and self-centering installation method with the patented slide-lock mechanism. This makes them particularly suitable for operation in electrical drive technology, robotics, medical technology, automation, and building services engineering.

LTN specializes in providing slip ring and resolvers to international machine builders and factory automation industries. Their newest Fiber Optic rotary slip rings are capable of handling 4K transmissions with an extremely low loss rate and are well positioned to handle the next step in video and signal transmissions.

For more information:

Heidenhain Corporation
Phone: (847) 490-1191
www.heidenhain.us

Kawasaki Robotics (USA), Inc.

BOOTH #7340

Kawasaki RS007N and RS007L robots

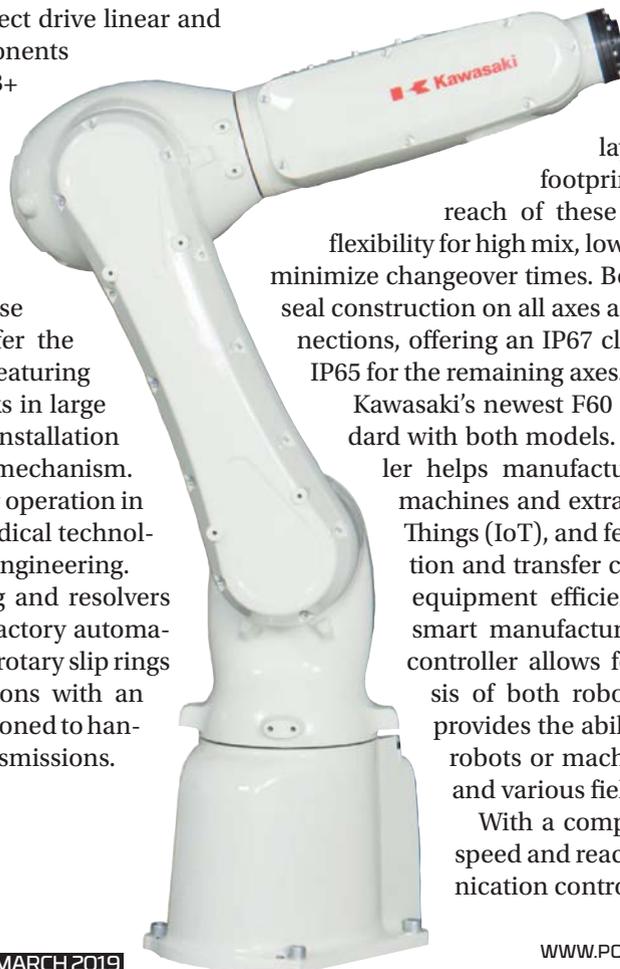
In response to the rising demand for fast, flexible and compact industrial robots in food and other industries, Kawasaki developed two 6-axis vertically articulated robots with a maximum payload capacity of 7 kg and different reach. The RS007N and RS007L models are the latest additions to the company's general-purpose R series line of small-to-medium payload (3-80 kg) robots ideal for a wide range of applications including packing, material handling and machine tending.

The Kawasaki RS007N and RS007L robots continue to offer the operational advantages of the R series robots while incorporating a newly redesigned arm structure and main-unit weight reductions. By redesigning the arm structure and adjusting the acceleration rates in accordance with load weights and robot positioning, the RS007N and RS007L models offer consistently optimized performance by significantly reducing cycle times. These enhancements also result in the fastest operating speeds in these robots' class (12,100 mm/s) along with increased working ranges.

The RS007N robot features a 730 mm reach and the RS007L a 930 mm reach for greater flexibility in production facility layouts. The small installation footprint and greater speed and reach of these robots provide automation flexibility for high mix, low volume production, and can minimize changeover times. Both models feature a double-seal construction on all axes and waterproof electrical connections, offering an IP67 classification for the wrist and IP65 for the remaining axes.

Kawasaki's newest F60 robot controller comes standard with both models. This state-of-the-art controller helps manufacturers digitally connect their machines and extract value from the Internet of Things (IoT), and features enhanced data collection and transfer capabilities to support overall equipment efficiency (OEE) calculations and smart manufacturing. The Bluetooth enabled controller allows for the collection and analysis of both robot and production data and provides the ability to link to the cloud, other robots or machines, tablets, vision cameras and various fieldbuses.

With a compact design, industry leading speed and reach, and an enhanced communication controller, the RS007N and RS007L



robots meet the demand for smart and flexible manufacturing, enabling efficient small batch production and minimizing changeover times.

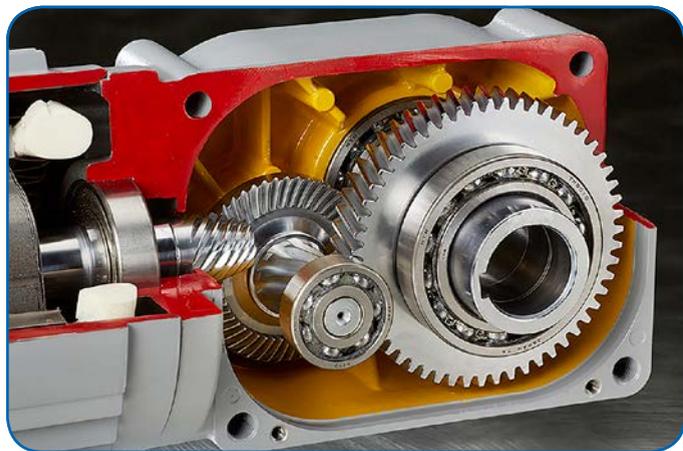
For more information:

Kawasaki Robotics
Phone: (248) 446-4100
www.kawasakirobotics.com

Brother Gearmotors

BOOTH #N6219 (PROMAT)

Brother Gearmotors, a division of Brother International Corporation that offers a wide range of ultra-reliable, sub-fractional AC gearmotors and reducers for the food & beverage, packaging and material handling industries, will use Promat 2019 as the opportunity to introduce a best-in-class five-year warranty for all standard products. The lengthy guarantee solidifies Brother's commitment to producing only the highest quality gearmotors and reducers and represents the longest, most comprehensive warranty in the industry. The five-year warranty shows Brother Gearmotors' confidence in the



effectiveness and durability of its wide range of products. In the U.S., Brother Gearmotors parts are distributed and serviced from its centrally-located plant in Bartlett, TN. In addition to offering quick delivery, the state-of-the-art facility features on-site technology that not only provides expedited shipping, but also offers accessorizing and customizing for gearmotors such as sprockets, pulleys, connectors, extension cables and custom labeling.

For more information:

Brother Gearmotors
Phone: (866) 523-6283
www.brothergearmotors.com

Promess, Inc.

BOOTH #9219

Promess, Inc. manufactures turnkey monitoring and motion sensing systems for precision assembly and test applications based on a series of standard hardware components synchronized, controlled and monitored with sophisticated programmable electronics and specialized proprietary software. They will exhibit four system "building block" technologies in Booth 9219 at Automate 2019 in Chicago April 8-11.

On display will be the new Promess PRO-Bot2x two-axis part-positioning arm with Joined Axis technology, the Promess Electro-Mechanical Assembly Press (EMAP), the Promess TorquePRO Torque Assembly System and the Promess Rotational Electro-Mechanical Assembly Press (REMAP). These four products may be used individually to perform discrete assembly functions, or combined into sophisticated, multi-function assembly and test systems.

Promess PRO-Bot2x

The PRO-Bot2x is a precision part-positioning arm which can position parts for safely loading and unloading. The Pro-Bot2x can handle up to 500kN of load when it is not moving. It is designed to bridge the gap between manual and fully automated operations in press applications by providing accurate movement between manual or robotic load/unload stations and multiple press locations utilizing Joined Axis technology. A single Promess UltraPRO controller can be used to control both the PRO-Bot2x and the press operations to simplify operational integration.

Promess EMAP

The EMAP is a fully electric, servo driven ball screw press with integrated motion control and monitoring for force, position and other application parameters as required for in-process verification and monitoring. Promess EMAPs are available with capacities from less than one ounce to more than 200,000 pounds.

Promess TorquePRO

The TorquePRO is a fully electric, servo driven unit that electronically monitors up to 15,000 Nm of torque and angular position in real-time using a closed-loop feedback system. The TorquePRO can move to an angle, move to a pre-



set torque, move to multiple positions and/or torques, and hold a constant torque all using completely programmable parameters

Promess REMAP

The REMAP combines precise, fully programmable control of linear and rotary motion in a single unit using built-in force and torque sensors. It is programmable for position, velocity, acceleration, angle, angular velocity and angular acceleration using both relative and absolute limits. Applications include pressing to position, pressing to a programmed force, turning to an angle and turning to a pre-determined torque all with real-time feedback.

For more information:

Promess, Inc.
Phone: (810) 229-9334
www.promessinc.com

Beckhoff Automation

BOOTH #S-4512 (PROMAT)

Beckhoff Automation will show multiple new technologies that bolster material handling and logistics operations at Promat 2019 in Chicago. The North American product debuts include the ultra-compact CX7000 embedded controller and a preview of EtherCAT G gigabit industrial Ethernet technology. The trade show will also find the latest innovations in space-saving distributed servo drive technology and flexible TwinCAT 3 automation software at the Beckhoff booth.

Expanded EtherCAT offerings on display will include the EK1000 EtherCAT TSN Coupler and innovative EtherCAT G offerings. The EtherCAT TSN approach will assist distribution centers in the implementation of real-time systems. Ideal for new installations or retrofits, this flexible technology will keep pace with rapidly evolving networking methodologies in the material handling industry. Furthering this goal, Beckhoff also recently announced EtherCAT G and EtherCAT G10, which will provide communication at 1 Gbit/s and 10 Gbit/s, respectively, in conformance with the IEEE 802.3 Ethernet standard. An innovative branch controller model will enable the parallel operation of standard 100 Mbit/s segments with EtherCAT G or G10 as the main trunk, or vice versa, to provide the fast communication needed in today's distribution centers.

Scalable PC Control automates today's distribution centers

The recently introduced Beckhoff CX7000 embedded controller presents a compact yet powerful EtherCAT controller, boasting a single-core, 400 MHz ARM Cortex-M7 processor. The DIN rail-mountable controller maintains minimum footprint with dimensions of just 49×100×72 mm. Along with the ability to directly connect to the full range of Beck-

hoff EtherCAT I/O modules via a backplane, it has eight 24 V digital inputs and four outputs built into the device. With a low price point and the ability to leverage feature-filled TwinCAT 3 automation software, the CX7000 extends the range of Beckhoff controllers to include both ultra-compact controllers that can act as distributed control devices on the EtherCAT network across distribution centers all the way up to powerful many-core controllers capable of controlling entire warehouses.

Also appearing at Promat will be compact multicore automation solutions such as the C6015 Industrial PC (IPC) with an Intel Atom processor and the C6030 IPC available with Intel Core i-series processors. These are ideal for mid-range to complex machine control, but they can also be used for other functions such as edge computing and IoT gateway devices to connect existing systems to major cloud platforms, such as Microsoft Azure, Amazon Web Services (AWS) and SAP HANA. Both IPCs are among the fast-growing assortment of Microsoft Azure Certified industrial devices from Beckhoff.

Control solutions for every material handling application

Beckhoff will showcase many other exciting automation technologies at Promat for the first time. Increasing its IoT and smart factory offerings, Beckhoff will also display the latest solutions from TwinCAT Analytics and HTML5-enabled TwinCAT HMI software for industrial displays and mobile devices. In addition, surprise announcements are planned at Promat regarding updates to TwinCAT 3.

Other smart factory innovations will include the AMP8000 distributed servo drive system with One Cable Automation. Combining a servo drive and servomotor in one space-



saving device enables enclosure-free motion control architectures. The system minimizes machine and equipment footprint while increasing cost effectiveness by integrating STO and SS1 motion safety functions. Additional savings are achieved through reductions in electronics, mechanical hardware and cabling through the EtherCAT P One Cable Automation solution available in AMP8000 and a wide range of Beckhoff I/O devices.

“With the unstoppable growth of e-commerce as driven by the continuing shift in consumer purchasing behavior, material handling and logistics operations have extra pressure to become faster and more reliable, and their

automation systems must support throughput and reliability improvements,” said Doug Schuchart, material handling and logistics vertical market manager, Beckhoff Automation LLC. “From the new CX7000 controller to the sophisticated motion control of the AMP8000 to EtherCAT G and TSN-ready I/O solutions, the technologies Beckhoff will present at Promat are truly cutting edge. These, along with enhanced TwinCAT software capabilities, can boost competitiveness at any distribution center.”

For more information:

Beckhoff Automation
Phone: (952) 890-0000
www.beckhoffautomation.com

Nord Gear Corporation

BOOTH #S-2088 (PROMAT)

At Promat 2019, Nord will display new drive technology for conveyor and warehousing systems, increasing productivity and return on investment.

Nord’s LogiDrive technology is ideal for intralogistics applications. It provides complete drive solution flexibility; increased energy efficiencies; and reduced variants to improve ROI.

Nord Gear Corporation brings automated drive technologies to Chicago April 8-11, 2019 at Promat – the biggest warehousing, material handling and logistics trade show in North America.

Nord will showcase its integrated and energy efficient drive solutions for manufacturing and material handling to nearly 45,000 supply chain professionals at the event. The intralogistics industry is one of Nord’s fastest-growing markets.

According to Torsten Schultz, Nord president, one advantage is the company’s global integration. “Three of the world’s top five material handling suppliers use Nord drive technology, and we have long-term supply agreements with two of the suppliers.”

He added that Nord provides global sales, engineering and customer support. “We support customers and drive systems in 98 countries – wherever their operations are located.”

Nord engineers will be at Promat to discuss its complete range of drive solutions for logistics needs at Booth S-2088, including:

The LogiDrive solution delivers integrated drive technologies for manufacturing and warehousing: high efficiency gearboxes; IE4 permanent magnet synchronous motors; and decentralized variable frequency drives (VFDs). In turn, the VFDs and IE4 motors support large speed ranges through gearboxes, to deliver automation for stacker cranes, automated guided vehicles, chain conveyors and roller conveyors, etc. Nord VFDs are capable of operating with all common field bus networks, offer free PLC integration, and provide simple commissioning with plug-in parameter boxes or Nord’s free programming software tool, NordCon. Efficient operation at partial load and low speeds make LogiDrive the solution for high-volume warehousing, manufacturing and packaging systems.

Right-angle worm, helical in-line and two-stage helical bevel gear units – Nord’s innovative distributed control AC vector drives and motor controllers operate near or directly mounted on motors and reduce load on the higher level control system. Plus, Nord’s decentralized VFDs can be freely configured and adapted to hundreds of applications: conveying, lifts, pumps, etc. As result, customers obtain an optimum drive solution and reduce installation and operating costs. **PTE**

For more information:

Nord Gear Corporation
Phone: (608) 849-7300
www.nord.com

For Related Articles Search

Automation

at www.powertransmission.com

