

Revolvo

ASSISTS IN SEWAGE TREATMENT ON THE RIVER THAMES

The sewage treatment works at Beckton, on the River Thames, is the largest in the UK and has to treat a vast volume of waste water. Part of the treatment process involves a sludge thickener tank, which uses a rotating structure, known as a picket fence. When the bearing that supported the picket fence failed, Thames Water required some expert assistance from Revolvo to ensure the replacement bearing would deliver the required performance.

The picket fence thickener consists of a tank with a central column, to which is fixed a steel structure containing vertical bars and scrapers for the tank floor. The whole structure rotates slowly inside the tank, powered by a motor and gearbox, with the weight of the picket fence supported by a slewing ring.



Waste water is constantly fed into the thickener tanks, which allow the solids to settle to the bottom, where they are pumped to the next process and the clarified liquid is decanted to a secondary treatment process. In this particular case, the thickener tanks are covered to reduce odor pollution, so the level of wastewater in each tank is determined by the limit switches, as any manual, visual check of these levels is very difficult.

The level switches are used to start and stop the pumps that supply the thickener tanks with wastewater for processing. Unfortunately, in this case, they had been disconnected and the liquid level in the tank had risen to a point where it had submerged the slewing ring. Continued operation in this environment proved to be detrimental to the bearing. The first sign of a problem was the noise from the rapidly failing bearing.

On-site engineers soon established the nature of the problem and determined that a new slewing ring would be required, along with some additional engineering to raise the position of the bearing to prevent a similar failure in the future. This type of bearing is not a stock item and required Revolvo to design and manufacture a custom replacement.

The design called for a cross roller slewing ring, over 1,800 mm in diameter, with gear teeth on the outer diameter

to engage with the drive gear. Under normal circumstances such an assembly would require 20 weeks to complete, but the urgency in this case required that the job was completed in 10 weeks. At the same time as the slewing ring was being manufactured, the site engineers worked on installing a steel plinth, which would raise the bearing above the maximum level of liquid.

The engineers also designed and installed a new drive system and a remote lubrication arrangement that would ensure reliable operation of the cross roller bearing without the need for regular servicing by the site maintenance team. Once installed, the picket fence thickener was returned to normal service.

Raj Batra

ELECTED TO NEMA'S BOARD OF GOVERNORS

The National Electrical Manufacturers Association (NEMA) recently voted for **Raj Batra**, president of Digital Factory for Siemens USA, to serve on the Board of Governors during its recent annual meeting in San Diego.

Batra will serve a two-year term expiring in 2016. The Digital Factory division of Siemens offers a comprehensive portfolio of seamlessly integrated hardware, software and technology-based services in order to support manufacturing companies worldwide in enhancing the flexibility and efficiency of their manufacturing processes and reducing the time to market of their products.



"We are pleased to have Raj Batra join the NEMA Board of Governors and work with other leaders in the electroindustry during a period of exciting opportunities," said Kevin J. Cosgriff, NEMA president and CEO. "His experience and insights will contribute greatly in the months and years ahead."

Joining Siemens in 1993, Batra has held a variety of high-level management and sales positions including president of industry automation, vice president and general manager of automation and motion division, and director of automotive and aerospace businesses. Prior to Siemens, Batra worked as a sales engineer and product manager developing automation solutions for discrete manufacturing and process industries. Batra earned a Bachelor of Science in Electrical Engineering from Lawrence Technological University in Michigan and a Master of Business Administration from the University of Michigan.

NEMA is the association of electrical equipment and medical imaging manufacturers, founded in 1926 and headquartered in Rosslyn, Virginia. It's nearly 400 member companies manufacture a diverse set of products including power transmission and distribution equipment, lighting systems, factory automation and control systems, and medical diagnostic imaging systems. Total U.S. shipments for electro-industry products exceed \$100 billion annually.

Aurelio Banda

BECOMES PRESIDENT OF BECKHOFF AUTOMATION

Beckhoff Automation recently announced that Aurelio Banda will become the company's president of North American operations (Beckhoff Automation LLC), effective January 1, 2015. The subsidiary's current president, Graham Harris, will assume a regional management role as part of a planned transition from the leadership role he has held since 2003.

As president, Banda will oversee all operations at the headquarters of Beckhoff Automation LLC in Savage, Minn. where administration, sales and marketing, customer service, and technical services/support are managed. The Savage facility also houses a repair and modification center, customer training area, and the main warehouse for Beckhoff North America.

"Beckhoff Automation has seen tremendous business development and yearly revenue increases in North America under the leadership of Graham Harris," Hans Beckhoff, founder and managing director of Verl, Germany-based Beckhoff Automation GmbH. "He oversaw the continuous expansion of the company in all areas for over a decade, and



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grew the subsidiary's revenue from \$5 million in 2003 by more than 20% each year on average to a projected \$60 million by the end of fiscal year 2014. I thank Graham Harris for his proven track record of success and dedication to serving the machine builders and manufacturers of North America.

"Banda, the new president of Beckhoff Automation LLC, is a well-known automation expert who is well-equipped to continue the positive business development we have grown accustomed to in North America."

Hans Beckhoff's positive outlook on the North American automation market has led him to expect the regional subsidiary to increase its growth by continuing to promote the company's "New Automation Technology" philosophy, based on PC Control, TwinCAT automation software, a comprehensive portfolio I/O solutions, and high performance motor and drive technologies.

Summarizing over a decade of leadership, Graham Harris stated, "After 11 exciting years serving as president of Beckhoff North America, I will transition into a regional management role based in the southeast U.S. In my new, regionally-focused role, I look forward to continue promoting the most advanced automation technologies in the industry while collaborating with a highly-skilled team of colleagues and innovative customers."

Numerous milestones in a history of success in automation technology and business signal a strong future for Beckhoff North America.

"I am honored by this opportunity to lead Beckhoff's North American business, and I see even brighter developments in our future," Aurelio Banda, the subsidiary's incoming president, added. "Since the company's inception, Beckhoff Automation has led the convergence of automation technology (AT) and IT standards, resulting in great success for customers who embrace PC-based control as their foundation. Today this has only accelerated, with the full integration of computer science programming standards in TwinCAT 3 automation software, and with full support of OPC UA as the communications standard for Industry 4.0 and the Internet of Things. This creates unique competitive advantages for our North American customers.

Voith

SENDS 1,000TH TPKL FLUID COUPLING TO DATONG COAL MINING GROUP

Voith recently manufactured their 1,000th fluid coupling type TPKL. The coupling will go to the DaTong Coal Mining Group in China. The fill-controlled fluid couplings will be used in a 6.4 MW belt conveyor drive. The 3,160 meter long underground belt conveyor is driven by four 1,600 kW motors, with a planned capacity of 4,000 tons per hour. The belt conveyor will transport coal uphill at a 14 degree angle.

"We are very happy to use fill-controlled couplings from Voith running in our belt conveyors," said DaTong's Manager of the Mechanical and Electrical Department.

Voith started the production of the TPKL coupling series in 1997. This fluid coupling type was especially developed for demanding belt conveyor applications in mining. The coupling type provides torque limitation for a smooth start-up of the belt conveyor. It allows active load sharing with multi-motor drives.

DaTong Coal Mining Group Co., Ltd. is located in DaTong City, a province Shanxi, China. It is one of the top three coal groups in China, with a coal production capacity of 152 million tons per year. The coal group operates a large number of coal mines across the country. Many of them use Voith fluid couplings in diverse underground applications like AFCs, belt conveyors, stage loaders and crushers.

Altra

DESIGNS OVERLOAD PROTECTION SOLUTION FOR METAL SHREDDER

An international metals recycler was suffering from recurring damage to the motors and universal joints caused by torque overload when the shredder rotors jammed because of an un-shreddable obstruction.

During each jam, the torque generated was so excessive that damage was being caused to the components within the drive train, such as the universal joint bearings and even the motor itself. In this instance not only could the repair



bill be costly, but the downtime could be considerable while the obstruction was cleared and the drive train repaired or replaced. In total, up to 48 hours of downtime was required each time the rotors jammed.

In an effort to save on maintenance costs and reduce downtime, the site manager turned to Ameridrives, a division of Altra Couplings, to see if its engineers could design a solution. As a manufacturer of industrial couplings, Altra Couplings develops custom solutions for most industries which incorporate reliability with reduced operation costs.

Having assessed the application, Altra's engineers designed an overload protection solution into the universal joints which would protect the components within the drive train in the event of a jam. An Americarden U3440 universal joint was modified to incorporate a shear pin overload device. When a rotor jam occurs, and torque reaches in excess of 533,000 Nm, the pins shear, disengaging the driven end of the universal joint from the driving end and protecting the components from damage.

The solution also meant that, after clearing the jam, a maintenance crew can replace the pins and have the shredder operational in less than four hours - reducing downtime by over 95 percent.

Dan Jones

RECEIVES EMERF AWARD FOR 'OUTSTANDING CONTRIBUTIONS'

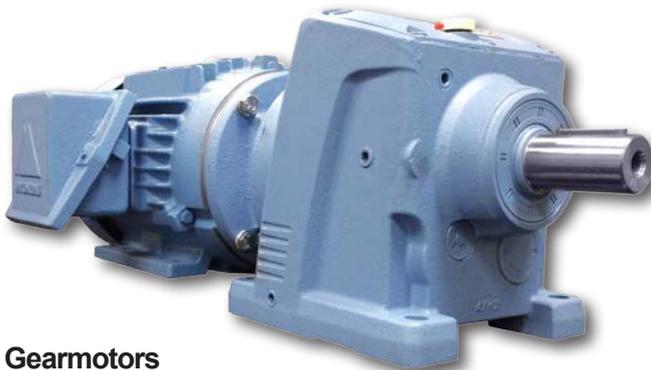
Dan Jones, president and owner of Incremotion Associates, recently received the EMERF 2014 award for "Outstanding Contributions to the Electric Machines Industry."

Jones, an electric motor and generator design engineer, was presented the lifetime achievement award from EMERF (Electric Motor Education and Research Foundation) and SM-MA-Motors and Motion Association, during their annual fall conference awards dinner last month.

Jones has worked in the motion control industry for over 54 years. He has had his own consulting company, Incremotion Associates, for over 32 years, where he has specialized in designing high-torque and high-power density brushless PM and brush PM motors, as well as high-efficiency AC induction motors and generators. His motors range from 2 watts to 500 kilowatts. Jones has written and presented over 265 articles and papers on various elements in motion control in the U.S. Europe and Asia.



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ITAMCO

GETS INVITE TO GRID CELL PROGRAM

Indiana Technology and Manufacturing Companies (ITAMCO) was recently invited to display their technology products at the Advanced Materials and Composites Grid Cell in Ann Arbor, MI.

On display will be ITAMCO's MTConnect Glassware app for Google Glass and their iBlue product. The Google Glass application is an award-winning MTConnect Challenge project that gathers and shares machine data provided by MTConnect. iBlue is the first handheld bluetooth transmitter that collects production data and sends it to bluetooth-enabled smartphones, tablets and computers with iOS, Android, Windows, Blackberry, and Linux operating systems. iBlue can wirelessly transmit temperature readings, metal hardness readings, and USB HID input from a keyboard, micrometer, caliper, barcode scanner or any other USB HID-enabled device that's free of proprietary hardware interface or software.

ITAMCO initially presented the two products at the Digital Manufacturing Revolution 2014 conference that was hosted by the National Center for Manufacturing Sciences (NCMS). The NCMS then asked ITAMCO to participate in the Grid Cell program. A Grid Cell is an innovation center where manufacturers get hands-on experience and training with digital manufacturing tools. Grid Cells were developed by



the NCMS — a non-profit group member-based consortium — whose objective is to drive the global competitiveness of North American manufacturers through collaboration, innovation, and advanced technologies. Grid Cells will provide businesses with a virtualized approach to manufacturing that combines high performance modeling, simulation and analysis (MS&A), data mining tools, and the digitization of processes to optimize speed, reliability, and efficiency.

"We're really excited about this concept," said Joel Neidig, an engineer and leader of the technology product development team at ITAMCO. "It's a great way for machine shop personnel to get hands-on experience with digital technology. I like that you can walk in and Grid Cell staff will show you around and explain the technology on display."

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Bill Mills

NAMED VICE PRESIDENT OF SALES AND MARKETING FOR DAYTON LAMINA

Dayton Lamina recently added **Bill Mills** to the executive management team in the position of vice president of sales and marketing. Working from the Dayton Headquarters, Mills has responsibility for all U.S. sales and marketing functions for the company's varied divisions including Dayton Progress, Lamina, Danly, IEM, and Lemppo.



Mills joins Dayton Lamina from Davis Standard Company. Prior to that he was with GE Plastics, and later its current owner Azdel, Inc., where he held several sales and marketing management positions of increasing responsibility.

"We're excited to add Bill to the Dayton Lamina team," said Dayton Lamina President Alan Shaffer. "His strong experience in industrial sales and marketing will come to bear as Bill leads the recently combined sales and marketing team of Dayton Progress and Anchor Lamina, which merged in February 2014. Customers and sales channel partners will appreciate Bill's professionalism, work ethic, positive outlook and the results that we can achieve by working together."

Power Transmission/ Motion Control Industry

ANTICIPATES CONTINUED GROWTH IN 2015

The *PTDA Business Index* for 4Q2014 indicates slowing but continued positive growth. However, manufacturers reported more positive growth in new orders, employment, supplier deliveries and inventories for 4Q2014 than distributors, a notable change from 2Q and 3Q 2014. Despite this upward swing, the overall 4Q2014 *PTDA Business Index* reading of 66.5 was slightly lower than the previous quarter's reading of 67.5. Both distributors and manufacturers anticipate 2015 to be another year of positive growth.

[Note: The index reading indicates the rate of change compared with the previous period. For example, a reading of 50 indicates no change from the prior period while readings above 50 indicate growth and below 50 indicate contraction. The further the index is above or below 50 suggests a faster or slower rate of change.]

The entire 4Q2014 *PTDA Business Index* report is available through PTDA's website at ptda.org/index. It includes distributor and manufacturer breakout data in addition to historical data. The *PTDA Business Index* is modeled after the widely respected Purchasing Managers Index and tracks change in business activity, new orders, employment, supplier deliveries, inventories, prices and backlog in the PT/MC industry to arrive at an overall index.

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