Schaeffler

DOUBLES DOWN ON INNOVATION AND PRODUCT DEVELOPMENT IN NORTH AMERICA

Schaeffler Group USA Inc.'s latest $36.5 million capital investment to its Fort Mill, South Carolina campus included the expansion of one of the site's manufacturing plants, the construction of a new administrative building and a reworked plant entrance. In the U.S., Schaeffler employs approximately 6,000 people at eight factories and three technology centers spread throughout South Carolina, Ohio, Missouri, Michigan and Connecticut.

PTE recently sat down with David Thompson, president of Schaeffler's Industrial division in the Americas, to discuss these investments as well as global competition, bearing technology, condition monitoring, workforce challenges and the future of industrial manufacturing.

The North American Market

"As we started talking more about today's price pressure, we began discussing what value we're really bringing to our customers in 2017," said Thompson. "The goal was to provide flexibility, enhanced communication and get our products faster — and more efficiently — to the North American market."

This includes focusing on both customizable products and standard catalog offerings. It also means reinforcing the company's commitment to do what it does best: Produce quality bearings at a competitive price point. Investments like the Fort Mill expansion project (which created 100+ new jobs in South Carolina) certainly help this effort.

Global Competition

Flexibility is so important in today's market, according to Thompson. "You have to provide more than just a component, you need to look at the system as a whole and determine what solution best fits the customers' needs.

The competition is getting better at what they do, so we need to focus on our product strengths when designing new and innovative products. This includes examining surface hardness and the surface treatment of bearings, for example, and looking at areas such as power density."

Condition Monitoring

One area that has seen improvements is condition monitoring. Thompson says Schaeffler's VarioSense bearings make it possible to monitor central machine and process parameters much more easily. The sensor is integrated right into the bearing, which allows a module to be equipped with several different sensors at the same time. Measurements can include speed, temperature, displacement, angle, load, direction of rotation and vibration/acceleration.

SmartCheck, an advanced condition monitoring system that can fit in the palm of your hand, is another add-on product that helps engineers understand the loads and predict failures. "We're using this technology on wind turbines to determine predictive maintenance intervals," Thompson said. "This helps us schedule the right maintenance operations at the right time."

Look Toward Other Market Segments

Regarding power density, Thompson plans to lean heavily on the automotive side, where reducing the carbon footprint and producing efficient transmissions have driven the company towards digitalization.

"We have different power densities in the industrial world, it's a little more challenging, but it's becoming more important," Thompson said. "We need to focus on the data that

we're generating from our industrial components, and determine the best way to utilize this data to bring value to the end user."

Thompson notes that the automotive industry has gone through some dramatic changes, and the result is much more integration with its suppliers. "We have to follow a similar path to be successful in the industrial segments," Thompson said.

Engineering Pedigree

Challenges remain in replacing skilled workers who are getting ready to retire with years of mechanical engineering experience. There's a war on talent, but Schaeffler continues to actively pursue solutions.

The company's apprenticeship programs, for example, were highlighted in a recent White House roundtable discussion on vocational training programs and continuing education in the United States with President Donald Trump and German Chancellor Angela Merkel.

"I've often thought we should consider rotating some of our engineers around with our customers and vice-versa," Thompson said. "The more our engineering staff can speak the same language with our broad customer base, the better."

What Comes Next?

"Obviously, the Industrial Internet of Things (IIoT), digital manufacturing and mechatronics will continue to accelerate for both our industrial and automotive segments," Thompson said.

The company would like to take some of these new technologies on the low-volume side and work directly with its suppliers to leverage these advancements.

"We're seeing this in aerospace, for example, where our team is constantly looking at ways to make bearings quieter, more flexible and much more efficient. This technology can be utilized in other industrial markets, and I think we're going to have to focus on areas like that to really progress."

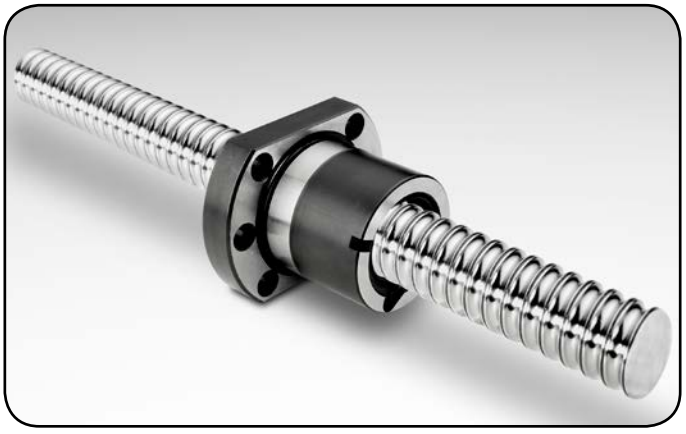
(*www.schaeffler.us*)

Thomson Industries

COLLABORATES WITH RESEARCH TEAM TO DEVELOP NEW TESLA COIL DESIGNS

Thomson Industries has donated a high-precision ball screw assembly to The Geek Group National Science Institute in Grand Rapids, Michigan, to help develop revolutionary designs of Tesla Coils (TC). An ambitious R&D program has been initiated there to discover new uses for the TC with help from a new automated process for winding coils.

Thomson was selected because of their top-notch application engineering support and breadth of product offerings, which enabled delivery of an optimal complete ball screw assembly. That Thomson ball screw assembly will help The Geek Group's high-energy engineering team convert from typical manual winding to a much faster, more accurate automated process for winding thousands of coils required to conduct their experiments.



A Thomson customer support engineer guided The Geek Group engineering team in selecting the exact configuration to best match their needs. The product selected was a quick-install ball screw assembly that avoids any precision problems that may result from assembling components on site. The final configuration consisted of a Thomson FSI Style ball nut along with an eight-foot-long ball screw just under an inch in diameter.

"We set our IRC team on the task of finding the best linear motion technology in the industry," said Chris Boden, CEO of The Geek Group. "The team, composed of a couple hundred experts from many science and technology disciplines, analyzed about a dozen different products and concluded that only the Thomson drive could do exactly what we needed and exactly how we wanted to do it".

The TC production program has already begun, and The Geek Group has plans for experimenting with larger coils in the future. (*www.thomsonlinear.com*)

Motion Industries

OPENS NEW DALLAS DISTRIBUTION CENTER

Motion Industries, Inc. recently announced the successful move to its newly built distribution center (DC) at 200 W. Trinity Boulevard, Grand Prairie, Texas — in the center of the DFW Metroplex. Managed by Dan Krska, the new facility is less than a half mile off of a major highway, close to LTL carriers, and close to both of the area's major airports.

"The increase in square footage allows for a deeper and broader array of product offering for our customers. In addition, the state-of-the art material handling equipment will ensure timely and accurate order processing," said Joe Limbaugh, Motion Industries vice president, operations/distribution/properties. "In addition to being efficient, the new distribution center is simply beautiful. It showcases the Mi Workplace commercial design standards in the offices, conversion shop and warehouse."

Krska added, "Our relocation weekend was a great success due to the preparation, leadership, and execution of the game plan. The folks really grasped the concept and embraced the task. I was truly humbled to watch 150 Motion employees, with the help of contracted labor, all work together to finish ahead of schedule. Once again, it proves why I am proud of this company."

The new DC officially started operation on Sunday, March 5, at the end of the relocation weekend. Brand new hanging and roller conveyor lines as well as a bevy of forklifts efficiently move product orders throughout the warehouse portion of the 156,000 sq. ft. facility, which nets the company almost 50,000 square feet over the previous location. The increased number of shelves and docks within this expanded footage allows for greater inventory breadth and depth, as well as faster picking and delivery to customers. This DC houses approximately 50,000 SKUs.

"In addition to the availability of more product, the Motion Industries branches will have access to a facility that is designed for on-site customer interaction. Spacious conference rooms, Red Zone tour paths and a Motion Experience Center are part of the design," said Limbaugh.

(*www.motionindustries.com*)

SKF

REMANUFACTURING SERVICES PROVIDE TIMELY AND COST-EFFECTIVE SOLUTIONS

SKF remanufacturing services for industrial gearboxes provide cost-effective solutions to refurbish and/or upgrade obsolete or damaged systems and quickly return them to service. A systems approach is applied to diagnose root causes of gearbox failure and prescribe technical remedies to implement proper fixes. This process further engages proprietary modeling and simulation software combined with engineering expertise to enable performance upgrades. All types and brands of gearboxes represent candidates for SKF remanufacturing services implemented at dedicated SKF gearbox repair centers.

The process begins with on-site inspection and initial diagnosis before a gearbox is sent to one of SKF's repair centers. SKF service engineers at the repair center then disassemble, clean, inspect, and analyze critical components such as gears, bearings, shafts, and seals. Root cause analysis pinpoints why a gearbox has failed or experienced unplanned stops. Refurbishment is carried out as a complete machine renovation involving the replacement and/or reworking of parts and housings.

Refurbishment presents an opportune time to upgrade with value-added design, engineering, components, and/or precision machining for enhanced gearbox system operation. Upgrades can focus on increased power and output torque, higher service factors, and extended MTBF (Mean Time Between Failures), among other parameters.

After all work is completed, SKF performs final testing and installs the gearbox for a return to full productivity and efficiency.

Cost-benefit analysis has shown that significant cost savings may be achieved by remanufacturing a gearbox, which is typically 40% less expensive than a new unit and can be delivered much more quickly—especially important for large, purpose-built industrial gearboxes.

Gearbox remanufacturing conducted by skilled specialists employing advanced engineering and world-class components ultimately can contribute to reduced total life cycle costs, fully exploited service life, cost savings, improved uptime from increased machine availability, reduced environmental impact in terms of less energy and less scrap, and enhanced asset reliability. (*www.skfusa.com*)