Upgrading the Industrial Workflow

AMMEGA focuses on optimizing belt and belt driven systems

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***From polyurethane timing belts to high-performance power transmission solutions, Megadyne powers industries with innovative belting technology. (*All images: AMMEGA)**

The belt and chain market is heavily driven by intralogistics, automation and infrastructure growth in 2026. Manufacturers are looking at areas like electrification, sustainability and supply chain resilience to meet stricter performance expectations. *PTE* recently sat down with Kyo Oh, vice president and general manager at AMMEGA Group Power Transmission and Fluid Power Solutions, to discuss the U.S. belt market from a power transmission perspective.

Looking at the U.S. market today, Oh said the goal is to leverage the knowledge gained from R&D and manage the AMMEGA portfolio of products to determine what their U.S. customers need in terms of product specification.

"Belt doesn't work by itself. It requires an understanding of the motors, pulleys, and sprockets along with the drives and controllers. Then there's the regulatory requirements that need to be met. We're working with OEMs as well as distributors to hopefully exceed the expectations of our U.S. customers today by focusing on industrial workflow automation," Oh said.

Prior to the energy shortages and the tariff situation, AMMEGA had been focused on bringing a manufacturing renaissance back to the United States.

"We're looking at how we can distribute products and services in the quickest manner and this is really driven by Amazon's fulfillment center model. Do we have the right products at the right place at the right time? Supply chain management is so important today and bringing production closer to our customers from a geography point of view is pivotal for future success," Oh said.

The second thing that drives the supply chain is making sure the equipment is as efficient and reliable as possible. "Our components are designed to be maintained and serviced, and we really need to be flexible in case we need to expand a production line or increase the load on our motors, drives and belts," Oh said.

Product is flying across distribution center conveyors today and you're seeing faster moving parts and varying loads, so the belt drive system needs to be robust enough to handle larger requirements. "The drives, the torque, the horsepower, everything needs to perform at the highest level to maintain operational efficiency," he added.

AMMEGA has developed Quiet Self-Tracking (QST) profile belts, for example, that will automatically correct for any effects of pushing, pulling, side loading, or other actions that may result in mistracking. This results in less belt damage, low noise and reduces maintenance costs.

"The belts, however, can still generate some noise. How do we design drives and belts to achieve a quieter working environment? So, we're developing a profile that tracks to the center and drives the cancellation of tooth-engaging noise to a level that's quiet. And we're introducing softer materials into some of our product portfolios. Our goal is to reduce noise and provide sustainable, energy efficient solutions that meet the environmental needs of our customers today," Oh said.

Because reliability and performance are so imperative, Oh discussed the importance of collaborating with operation managers, engineers and MRO teams before, during and after product installation.

"It's critical to have an eye and an ear on making sure the system is optimized and running efficiently. This is where smart solutions come into play like scanning a QR code and receiving real time data on your smartphone, for example, letting personnel know when the last maintenance was performed on the belt drive," Oh said.

There are sensors everywhere in these environments today, monitoring the overall health and productivity of the power transmission components and providing data to support future maintenance needs.

"It's important to have a quick and easy way to understand the health and state of our belts and belt drives. Is the belt degrading faster than it should be? Why is a particular line no longer running efficiently? There's a lot of integration work that happens behind the scenes. Therefore, we have a clear understanding of the information and knowledge we're passing along to our customers, engineers, supervisors, etc., so everyone has a holistic view of the system," Oh said.

Manufacturing, automation, packaging, and robotics rely on Megadyne for timing belts, v-belts, and specialty drive solutions that enhance productivity.

The service of the belt system starts with asking the right questions. What products are riding on the belt? Why does it need to be replaced? What factors led to the downtime? Has this been an issue since installation?

This brings us back to the challenge of meeting automation demands with less floor space and less energy consumption. Globally, Oh said the industry is seeing a push to make everything more compact and come up with smaller solutions that can function as effectively as larger conveyor systems.

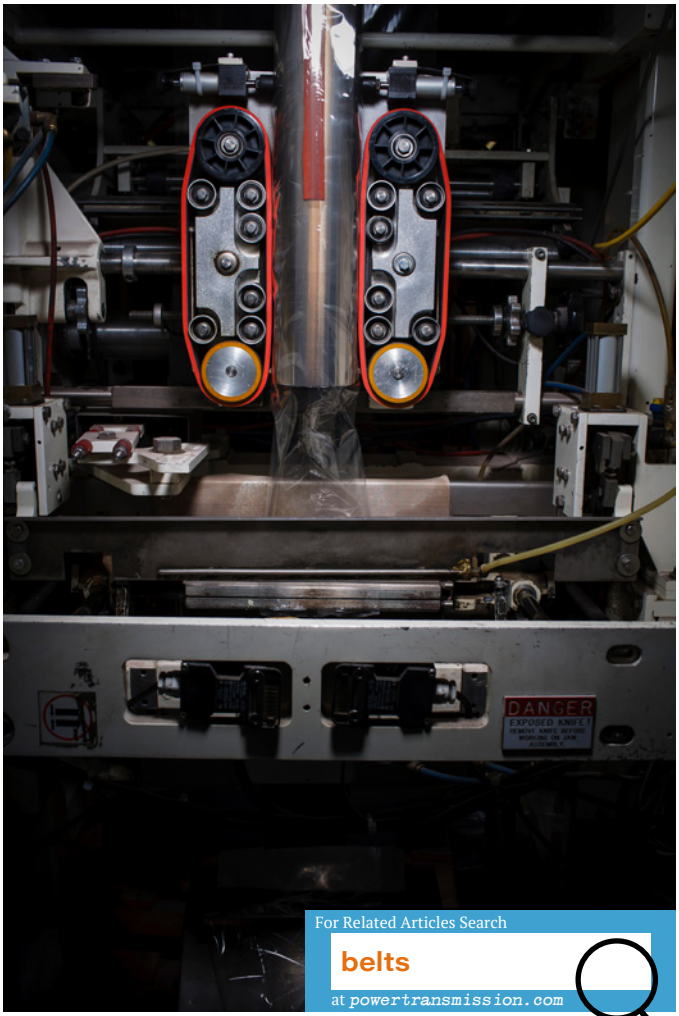
"If you look at Europe as an example, you're seeing fulfillment and distribution centers closer to where we all work and live and consume, right? So, you'll see a fulfillment center that was on the outskirts of the city is now downsizing to a smaller facility right in the city and the idea here is to get closer to customers and optimize production," Oh said.

Productivity in the belt market equals less downtime. This is the end game for power transmission components in the years to come. The objective is to design faster systems, provide not only predictive maintenance solutions but prescriptive solutions as well. Do you have the right personnel in place to accomplish these goals?

AI will play a large role in the coming years to sort through data and analytics and provide the customer with a blueprint for success.

"Time is of the essence and having the right product delivered to the factory floor in hours versus a few days will certainly move the needle," Oh said. "We'll see AI assist with crunching numbers, collecting data, etc., but it will also optimize the automation workflow. It will help MRO teams decrease downtime and allow them to focus on other work assignments. We're not too far off from a day when the belt will communicate directly with the customer, letting them know they're not functioning correctly, and they need to be replaced. Those days are coming."

Belting technologies in conveyors and power transmission will optimize performance across a wide variety of industries for years to come. Sustainability will not be



Megadyne belts resist wear, handle high torque, and maintain peak performance under intense conditions.

treated as a standalone initiative but integrated into the company's initiatives to reduce its environmental footprint, advance circular product design and strengthen responsible sourcing practices. AI and smart manufacturing will let customers know what products need to be maintained and provide the most efficient workflow system to get it done. These are just a few of the changes taking place in belt and belt drives in 2026.

Oh added that belts appear in such a diverse range of applications with technology that has been around for centuries and yet the industry continues to adapt to the changing needs of the customers.

"It's quite remarkable when you think about the innovation that has taken place throughout mechanical power transmission. We'll continue to adapt in the foreseeable future, all the things we talked about today including AI, smart factories, prescriptive maintenance, etc., it's amazing to step back and think about these belting solutions that are being adapted in new and exciting ways and the limit has yet to be achieved."

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