

Belt & Chain Technology

Edited by Matthew Jaster, Senior Editor

The following article examines some of the recent product and industry news items on belts and chains featured on the PTE website—news from Continental, Gates, Igus and Tsubaki. Be sure to check out additional information in our Pack Expo coverage on page 56.

Continental

EXPANDS PRODUCTION AND RUBBER-PROCESSING CAPABILITIES

Continental is continuously expanding its production site in the Harburg district of Hamburg, Germany, into a tech campus with a range of business units. Products such as air spring systems that enhance ride comfort on the Hamburger Hochbahn (Hamburg's largest public transport company), the establishment of a new training institute for semi-skilled and unskilled employees, a center for innovation and digitalization and a state-of-the-art center of competence for plastics are examples of this transformation.

“Thanks to continuous investment and a future-oriented approach, the plant has developed from a former rubber processing site to a location where solutions for the mobility of the future both on and off the road are designed and produced,” explains Dr. Peter Scholtissek, who heads the Harburg location.



The company sees itself as a collaborative partner and reliable player in Hamburg's corporate network, whose work is closely linked to Hamburg as a business location and center of science and research, in particular to the knowledge and technology transfer company Tutech, the Hamburg University of Technology (TUHH) and other universities throughout Germany. In this context, the technology company offers students the opportunity to investigate the potential and feasibility of concepts for future-oriented developments and trends together with experts from Continental in what is called the Makers' Garage. These projects enable young engineers and software developers to put theoretical

knowledge into practice, work in international teams and establish contacts with startup companies, thereby also offering them a springboard to starting a career at Continental.

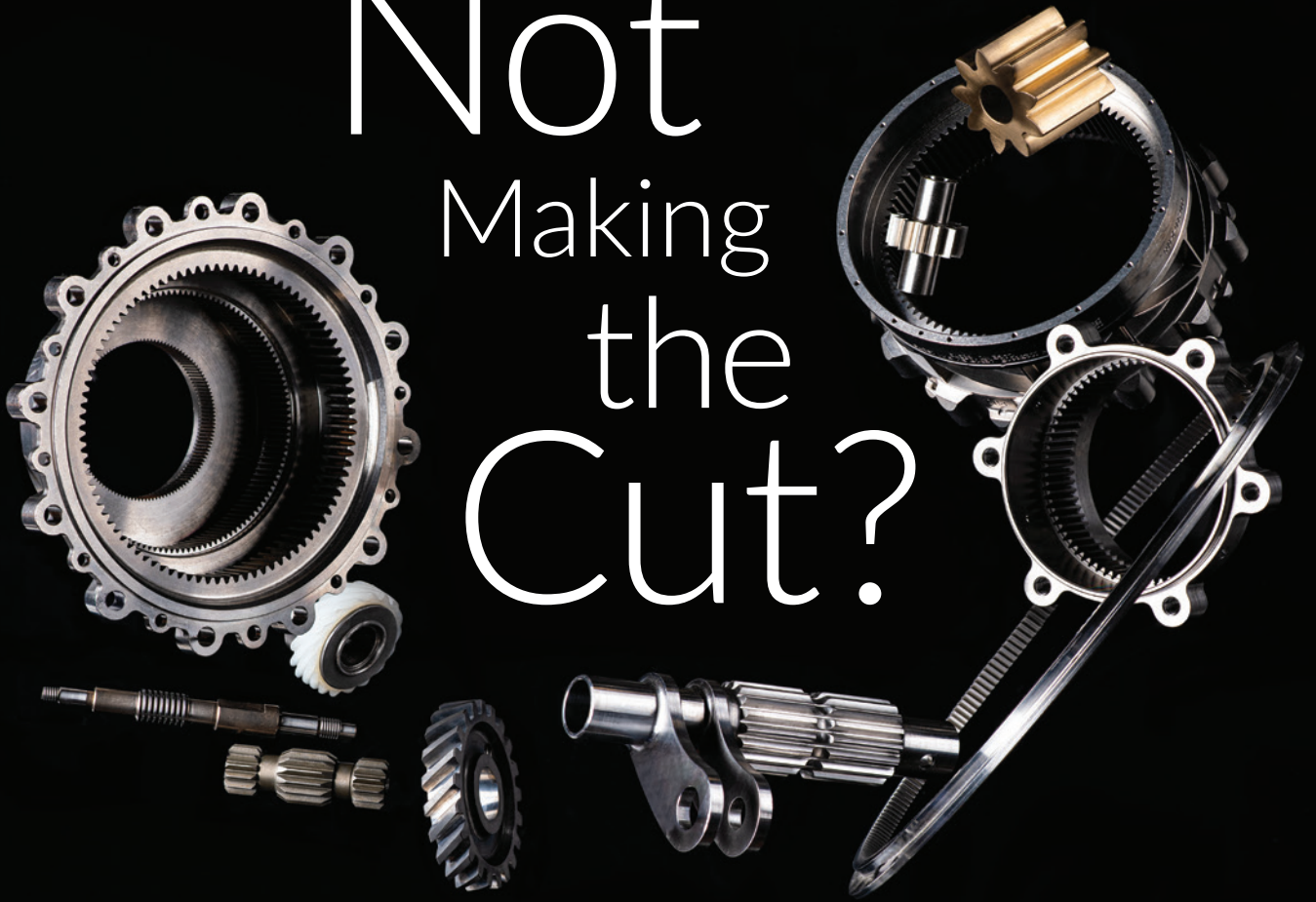
This new area supports Continental's industrial business in the planning and implementation of digital “smart” projects – with a particular focus on applications in the fields of Internet of Things and cloud-based app development. The aim is to develop solutions that add a digital component to the existing range of rubber and plastic-based products, creating the basis for new digital business models. In the future, all global innovation and digitalization activities of the ContiTech business area will be coordinated by the new Innovation Center in Hamburg.

One example of such developments is Fleetmatch, which has also been supported by Continental's Hamburg-based digital experts. This web and app-based solution connects qualified professional drivers and fleet operators and gives drivers a strong voice by enabling them to evaluate loading docks easily and quickly. This means Fleetmatch addresses two challenges of the logistics industry: the shortage of professional drivers on the market and the widespread lack of appreciation for this professional group.

In addition to its newly-created capacities, Continental is investing in further materials-related expertise alongside rubber processing. 2.2 million euro was invested in the Plastics Competence Center in Hamburg-Harburg, where high-performance hose lines for electric vehicles are developed and tested. There is growing demand in the automotive industry for high-performance technical materials such as plastics. Hose lines are required in modern vehicles for thermal management, i.e. the targeted heating and cooling of components such as batteries or electric motors. Efficiency and range can thus be significantly increased. In this function, Continental's Hamburg location is responsible for central product development for all of the company's production plants worldwide.

But the mobility of the future doesn't just mean moving by road: passenger transport by rail will also become increasingly important in the future. The Hamburger Hochbahn's DT5 trains are fitted with air spring systems from Continental. The auxiliary spring, a relevant component of the air spring system, is produced at the Hamburg location – the rubber compound for it is also produced at this traditional hanseatic site. In addition, the spring systems can also be refurbished at the company's own maintenance center at the customer's

Not Making the Cut?



We're Here to Help.

Quick-turn, High-precision, World-class, Cut Teeth Only Gears



AGMA | WBENC | ISO 9001 | AS9100 | ISO 13485 | ITAR Certified

Spur • Helical • Spline • Worm • Worm Gear • Sprockets
Ratchets • Threads • Ball Screw • Keyways • Face Gears

forestcitygear.com

815.623.2168

request. A new machine was purchased in 2019 to prepare the metal-rubber elements. It combines multiple production steps into one system and thus increases efficiency and competitiveness.

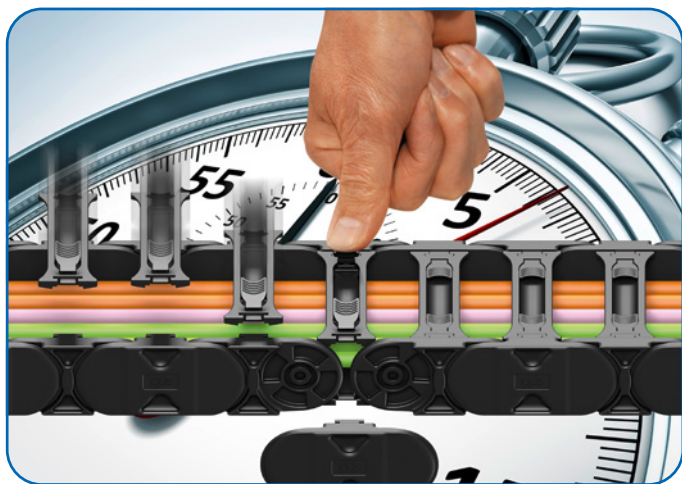
At the Hamburg location, Continental is investing not only in machinery, but also in people: The technology company is offering its semi-skilled and unskilled employees a step-by-step qualification for the state-recognized vocational qualification of process mechanic for plastics and rubber technology. This continuing education and training opportunity from the “Continental Institute of Technology and Transformation” (CITT), founded in 2019, completes the location’s package for employee qualifications, which also includes measures to integrate the long-term unemployed and provide career orientation for young people.

For more information:

Continental
Phone: (888) 899-6354
www.contitech.us

Igus

INTRODUCES LIGHTWEIGHT E4Q E-CHAIN



Igus recently introduced its E4Q energy chain, which offers a smooth, contoured design and a completely new crossbar concept with weight-reducing locking straps. The new design ensures that the e-chain can be opened and closed in seconds without tools.

The energy chain has been specifically developed for the special requirements of unsupported lengths. High unsupported lengths and long travels with large fill weight create extreme stress on energy chains. The igus developers have designed the E4Q e-chain intended for such application scenarios. Based on the robust energy chain standard E4.1 from igus, the new series brings along a long service life and a high degree of modularity.

In order to optimize material and therefore the weight of the energy chain, shapes inspired by nature are used. The smooth, contoured design can be found on the outside of the chain links as well as on the stop-dogs. Despite material recesses, the new development has a high strength and stability comparable to the E4.1 series.

Tool-free and quick installation with new crossbars

Another special feature of the E4Q are the crossbars. These can be opened and closed without tools. On the top of the crossbar, there are two hollows for the fingers, by which the locking hooks can be easily pulled up. Unlocked on both sides, the crossbar can be removed with little effort. This allows the easy opening and closing of the chain even in a guide trough and accelerates the filling of the e-chain by up to 40 percent.

Another advantage is the new crossbar has significantly higher pull-out forces than its counterparts in the locked state thanks to its innovative type.

New optional additional noise dampening

Due to its special design, the e-chain is in movement. However, if the user desires additional noise reduction, igus has integrated an optional system in the inner horizontal stop-dog for the E4Q. These are two connected balls that dampen the impact during the radius and extension stop. The balls are made of a new noise-optimized and soft material that further reduces the sound level without restricting the stability of the stop-dogs.

For more information:

Igus Inc.
Phone: (800) 521-2747
www.igus.com

Tsubaki

OFFERS NEW CHAIN TECHNOLOGIES

Tsubaki’s latest innovation, the Tsubaki Titan Chain, is designed to offer previously unobtainable wear life in harsh applications, like in abrasive and dusty conditions, such as those found in timber mills, stone sawyers or brickworks.

Created by the company’s global research and development team in Japan, Tsubaki Titan Chain combines the best features of the existing premium GT4 Winner chain with new specifications designed to deliver the ultimate in wear performance.

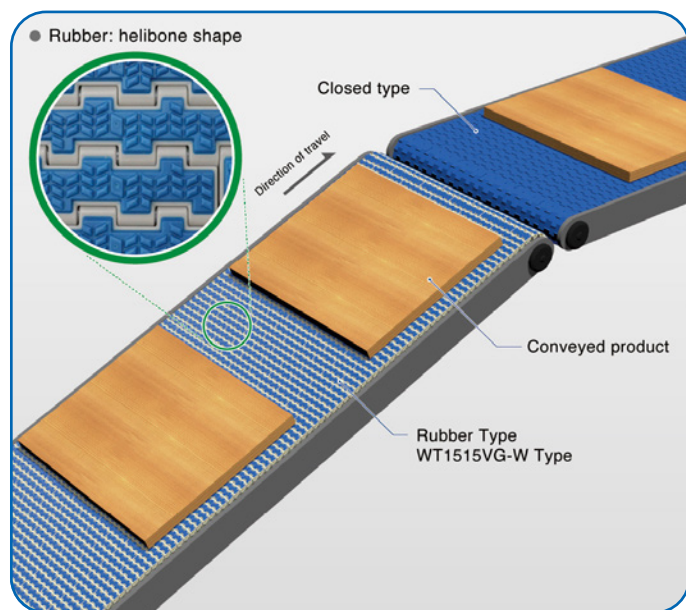


Perhaps the most obvious feature of Tsubaki Titan chain is the use of seamless bushes that incorporate Lube Grooves. The bushes are precision made and perfectly cylindrical, to ensure the smoothest possible operation which in itself will help minimize wear. Enhancing this, the special Lube Grooves ensure oil is retained at the very point of contact — where the chain needs it most. This limits the wear between pin and bush, significantly improving the wear life as a result.

The pins have a special coating that provides an extra hard yet low friction surface, thus helping increase wear life further. As a result of these innovations, maintenance cost and downtime are reduced to a minimum. These factors, plus the reduced frequency of swapping out old chain for new, add up to a significant reduction in the Total Cost of Ownership.

The development team have specified corrosion resistant nickel-plated outer link plates for the Tsubaki Titan Chain, which combined with black oxide inner link plates provide an extra layer of protection against corrosion. Tsubaki has also incorporated its unique process of Ring Coining the connecting links, which ensures that the chain can be specified up to its full load capacity.

As standard, Tsubaki Titan Chain is available in sizes 12B to 32B. Additional sizes, multi-strand and attachment options will be available upon request. It was developed in Japan at the company's Kyotanabe Technical Centre with input from Tsubakimoto Europe B.V. It is seen as part of the Tsubaki Group's commitment to conserve the environment and reduce the impact of its products and operations by helping customers reduce energy consumption and save cost.



In addition, Tsubaki recently released a the WT1510 Series rubber type plastic modular chain. This chain offers suppressing slippage of conveyed products and reliable vertical transportation options. Herringbone-shaped rubber is attached to the surface of the chain by double injection molding. It is a suitable replacement for a belt conveyor.

Compared to WTM2535G-M type (magnet type) and WT1515F-W type (flight type), WT1515VG-W type (rubber type) can transfer conveyed products smoothly to the next process, owing to an inline layout without using transfer plate between conveyors. The chains of their width 50 mm and 100 mm adopt a slit pin with integrated plug system. The series offers easy maintenance and partial repair.

For more information:

U.S. Tsubaki
Phone: (800) 323-7790
www.ustsubaki.com

Gates

OFFERS HIGH-PERFORMANCE BANDED V-BELT

Earlier this year, Gates introduced the world's first wrapped V-Belt technology using Ethylene Elastomer (EE) compounds for original equipment manufacturers (OEMs) in the agriculture, forestry and heavy industrial markets. The launch of the Xtreme V-Force Mega banded V-belt platform leverages Gates' materials science and manufacturing process expertise to produce unique EE-based solutions that provide customers with increased performance and uptime, and extended operating temperatures.



"At Gates, transforming our industrial belt platforms using Ethylene Elastomer compounds is a priority," said Tom Pitstick, CMO and senior vice president of product line management for Gates. "With the development of our PowerGrip GT4 synchronous belts, G-Force RedLine CVT power sports belts and the new Xtreme V-Force EE banded belt family, we are leading the way in advanced materials development in our industry."

The new Gates Xtreme V-Force Mega belt offers a number of benefits vs. currently available products on the market, including:

- An extended operating temperature range from -40°C to 130°C;
- A 30% increase in load capacity and durability, which enables:
- Performance in even more demanding applications;
- The ability to design higher-load drives without increasing the design footprint on today's high-powered equipment
- Improved flex for higher-speed drives;
- The elimination of chlorinated polymers, which improves the overall environmental impact of these products.

Ethylene Elastomers, which involve complex processing technology, help enable a number of the performance advantages of this new belt platform. Gates' continued focus on the intersection of materials science and process engineering is what has enabled the company to bring these and other Ethylene-based products to market. **PTE**

For more information:

Gates Corporation
Phone: (303) 744-5800
www.gates.com/xtreme

For Related Articles Search

at www.powertransmission.com