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Addressing Evolving Application Challenges with MegaSys MXT Hose

Using materials science and design technologies, Gates' engineers come up with innovative hydraulic hose solutions to help address ever changing needs and challenges.

LUXEMBOURG, Sept. 9, 2019 — Exhibition attendees visit a show because they want to see what's new in their industry and what's going to help them grow. As market leaders that are going to drive technology and improvements in their business, they are looking for innovation. Specifically in the hydraulics sector, these exhibition attendees are interested in reduced downtime, increased reliability, extended service intervals, and ease of use – factors where Gates hydraulic hose and coupling solutions excel. So it's a good bet that the Gates booth (Hall 18, booth D19) is high on the list of the stands they are planning to visit at the upcoming Agritechnica fair in Hannover.

Manufacturing Trends

Mobile fluid power applications have become more complicated as the power output requirements on these systems have increased. At the same time, engine compartments have become more compact. Overall weight has been reduced, despite the addition of new features and systems such as emissions control, climate control and hydrostatic drive lines. The challenge for hydraulic hose manufacturers has been to design better solutions that can perform more efficiently in environments that have become increasingly hostile. A successful result can only be achieved with advancements in composite rubber elastomer, manufacturing processes, and tools for hydraulic assembly applications. Gates is leading the charge to meet emerging challenges head-on with solutions that accelerate our partners' growth and development.

Extensive Experience and Investment in Innovation

As a global manufacturer of highly engineered power transmission and fluid power solutions, Gates has accumulated a wealth of manufacturing expertise through long-term partnerships with Original Equipment Manufacturers (OEMs) across a wide range of industrial sectors. This experience, coupled with the company's continued investment in materials science and the engineering team's extensive standards, industry and applications know-how, allows Gates to drive design standards forward and develop innovative hose solutions that not only satisfy the needs of equipment manufacturers, but also positively influence the overall standards of hose manufacturing by the most recent Gates hose innovations. This impact can be seen in the Gates MegaSys™ MXT™ hose, launched late last year.

A Lighter and More Flexible Hose

Setting new standards for modern fluid power systems, the Gates MEGASys MXT family of hydraulic hoses are the latest example of Gates' commitment to innovation. MXT hoses leverage breakthrough materials science and advanced process engineering to offer customers a lighter and more flexible product that is not only easier-to-handle, but also improves the customer experience. A hose up to 30% lighter than earlier alternatives costs less to ship. The weight reduction also improves the application's fuel efficiency, while greater flexibility makes the hose assemblies more ergonomic to handle. They are easier to route around increasingly tight engine compartments, placing less stress on the mechanics. It also makes for a quicker install reducing downtime, ultimately lowering the overall cost of ownership of capital equipment for end users. Approximately 90% of the wire braid product applications are covered by this cross-functional, multi-spec solution hose solution, making MXT a truly universally applicable product, allowing Gates customers to consolidate inventory and save precious floor space.

"Our customers have been telling us they want lighter, more flexible and easier-to-handle products that address multiple industry standards. They are seeking to enhance the performance



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of their machines, simplify their engineering processes, improve operational efficiencies and streamline inventory with a simplified selection of products that can be used on virtually any original equipment platform,” said Tom Pitstick, CMO and SVP of product line management for Gates. “MXT delivers on these needs and adds value to our customers beyond our premium product performance.”

In summary, Gates is seeing strong demand for this hydraulic hose innovation because MXT hoses deliver:

- More flexibility (up to 35% decreased force-to-bend compared to similar Gates compact products), allowing for faster and more ergonomic installation
- Lighter weight (up to 30% compared to similar Gates compact products), for improved fuel efficiency, easier handling and reduced shipping costs
- A coverage of approximately 90% of the hydraulic wire braid product applications (meeting or exceeding multiple industry standards)
- All the benefits of the Gates MegaSys™ product portfolio: longer lifetime, shorter minimum bend radii, etc.
- Compatibility with Gates MegaCrimp™ (crimp specifications available)

From a hydraulic customer perspective, these are significant advantages – no matter the operating environment or equipment.

Hydraulic Hoses with Global Applications

The significance and importance of hydraulic hose innovations has been, in part, because of changes in international hose standards, which have enabled hose manufactures like Gates to develop products such as MXT for applications across international boundaries.

The focus of hose manufacturing standards is also shifting. Originally concerned with hose construction attributes such as spiral or braid reinforcement, number of reinforcement layers and dimensions, the emphasis has switched towards hose performance. Traditional hose standards do not allow manufacturers to capitalise on advanced processes, new materials, or improved hose designs, so this shift toward hose performance ratings is opening up possibilities for further innovation in hydraulics. Hose manufacturers like Gates are now free to introduce innovative hydraulic solutions like MXT into the market.

Furthermore, international standards bodies recommend using only matched hydraulic hose and coupling systems (hose and couplings from the same manufacturer), which reduces the reliance on construction and dimensional controls for coupling compatibility. This is completely in line with Gates’ Integrated System Approach: all hydraulic products are specifically designed, tested and validated together to produce pre-tested and validated hose/coupling combinations that perform beyond any international standard. This unique approach is how Gates ensures full compliance with the European Machinery Directive and the reason why Gates is known as the world’s most trusted hydraulic hose assembly manufacturer. Of course, the MXT hose is compatible with the MegaCrimp™ couplings programme to assure leak-free solutions.

Hose Construction, Performance and Selection

With an inexperienced eye, hydraulic hoses look similar, but each is constructed using a combination of highly engineered elastomer composites, made to exact specifications. Apart from a tube to carry the fluid, reinforcement for strength and a cover to protect both, hose materials must work together in order to provide an optimal balance between working pressures and flexibility.



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Gates' investment in the materials science approach allows engineers to use a variety of materials in new, exciting ways to enhance overall hose performance. Consequently, the latest tube elastomers are compatible with a wider range of petroleum-based and synthetic hydraulic fluids at higher temperatures. The wire braid reinforcement used in MXT, for example, combines new, high-strength steels with advanced braiding methods to produce a higher-density wire pack to meet the same hydraulics system pressures in a more compact design.

"We have been focused on enhancing our product development and manufacturing capabilities, and MXT is a great example of how these investments are starting to pay off," said Ivo Jurek, CEO of Gates. "This innovative new product further demonstrates our ongoing dedication to push the boundaries of applied materials science and manufacturing processes to deliver solutions that meet the evolving needs of our customers."

As the market changes, Gates' materials science expertise evolves. Modern hose-cover materials take advantage of advanced compounding technologies and leading-edge materials science to enhance abrasion and temperature resistance without sacrificing ozone resistance, flexibility, or any other practical performance parameters. Gates' materials portfolio far extends beyond rubber compounds and has led to increased product performance. Additionally, innovations in manufacturing processes deliver reliable products that meet evolving challenges head-on with solutions that accelerate Gates' partners' growth and development. From performance upgrades to operations improvements to green technologies, Gates is driven by possibility.

MXT Hose is an Essential Ingredient in Landoll's Successes

A fast-growing number of businesses are now discovering the benefits of MegaSys MXT but equipment manufacturer Landoll Corporation was the first company in the world to upgrade to MXT in several of their products. Each day, 2.4 kilometers of MXT hose is used in the manufacturing of trailers, farm equipment, forklifts and military products. Chairman Don Landoll confirms the importance of this essential component: "We build about 16 or 17 different machines a day, and all of them have hoses on them."

Just like Gates, Landoll Corporation has a passion for quality and works with only the best components available. And that's exactly why the equipment manufacturer selected MXT: the hydraulic hose solution not only guarantees performance above industry standards but it offers toughness, light weight, and incredible flexibility.

Landoll employees agree that MXT hoses are a lot easier to handle, being up to 30% lighter and more compact than traditional hoses. Assembler Lora Porting, for instance, feels the difference every day. "I'm not nearly as tired or sore", she says decidedly.

About Gates

Gates is a global manufacturer of innovative, highly engineered power transmission and fluid power solutions. Gates offers a broad portfolio of products to diverse replacement channel customers and to original equipment ("first-fit") manufacturers as specified components. Gates participates in many sectors of the industrial and consumer markets. Gates products play essential roles in a diverse range of applications across a wide variety of end markets ranging from harsh and hazardous industries such as agriculture, construction, manufacturing and energy, to everyday consumer applications such as printers, power washers, automatic doors and vacuum cleaners, and virtually every form of transportation. Gates products are sold in 128



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countries across four commercial regions: the Americas; Europe, Middle East and Africa; Greater China; and East Asia and India. More about Gates can be found at www.gates.com.

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