

# The Future Rests on the River Leine

The biggest day in industrial manufacturing has even bigger expectations

Erik Schmidt, Assistant Editor

**“[Motion, Drive & Automation] at Hannover Messe is the place where the future is determined.”**

That lofty line was delivered by Hartmut Rauhen, the deputy CEO of the German Engineering Federation (VDMA) and the VDMA management board member in charge of power transmission and fluid power – and it certainly bears repeating, if only because such weighty expectations simply can't be carried by one meager sentence.

*The place where the future is determined.*

Not in some mahogany-soaked boardroom of a Fortune 500, mind you. Not at a grand summit of the world's powers in New York City. Not at 1600 Pennsylvania Avenue – but, of all places, Hannover, Germany, the smallish capital of Lower Saxony that rests rather unassumingly on the high bank of the River Leine.

And it's there, at this formerly medieval metropolis of fairs and festivals, where the fate of the world rests, eagerly waiting to be decided. Now, you may be wondering what such a pivotal, momentous event looks like. Imagine, just for a moment, the grandness of 250,000 worldwide visitors descending upon a city of barely over 500,000.

That, in essence, is Hannover Messe: The physical manifestation of humanity's infinite ambition. So ambitious, in fact, that it attempts– and, somehow, succeeds – in delivering 10 different shows in five days to a number of people nearly half the size of Hannover's entire population.

The sheer massiveness, both literally and figuratively, of Hannover Messe is undeniable. But will it really be able to determine the future of mankind in just a few days in April? It's hard to say.

One thing is for sure, though: It's sure as hell going to try.



## What it is

It is fitting that, like all things at Hannover Messe, the show itself began in a factory.

Emerging from the rubble of the humblest of beginnings in an undamaged industrial unit in Laatzen, Germany, Hannover Messe has come a long way since its inception in 1947. Now the world's largest industrial show – an epic, nearly endless conglomeration of over 4,000 of the planet's most well-regarded companies, businesses and organizations – Hannover Messe, for lack of a better word, is *it*.

“Hannover Messe itself is generally a manufacturing technology show,” says Aryan Zandieh, director of industrial events, Deutsche Messe Worldwide. “It's really a horizontal show with a couple of different lineups from various industries.”

With these “various industries” all converging in one location, Hannover Messe proves to be at both times excessively large and uniquely narrow, as spectators are allowed to view the show as a grand, writhing mass of numerous themes and exhibits, as well as hone in on one of the many individual sectors available to them for a more exclusive experience.

The 2015 lineup includes trade fairs for Industrial Automation, Energy, MobilTec, Digital Factory, Motion, Drive & Automation (MDA), Wind, ComVac,



All photos of Hannover Messe 2013 courtesy of Deutsche Messe.

Surface Technology, Industrial Supply and Research & Technology.

“As a single company coming to market with the brands that we have,” said David Brooksbank, director of marketing at Altra Industrial Motion Corp., “the Hannover fair offers us one great opportunity to be able to understand what is going on in the industrial world – because many of the industrial leaders are there – in terms of just production and how our products fit in as we move forward in the next five to 10 years.”

It seems rare – impossible, even – for such a massive enterprise to also come across as intimate, but Hannover manages to deliver a sense of synergy between the copious companies lining the labyrinth-like halls that few other shows can rival, according to R+W America Sales Manager Andy Lechner.

“It’s bigger than any industrial trade show in the Americas, that’s for sure,” he said. “I want to say the number of halls is in the range of 25 to 30. To put it in perspective, I want to say that McCormick Place (Chicago, IL) has like six or seven. It’s very, very diverse and I think pretty well organized.

“If you go to a lot of industry trade shows, even big ones here in the states, you’ll see that except maybe for the major players by the front door the companies are just sort of randomly scattered around and not really well-organized by technology or product. The difference with Hannover is that there will be multiple halls – let’s say two or three – that are dedicated to the areas of manufacturing technology that we’re involved in.

“Motion, Drive & Automation is an important category and that’s where it can be assumed you will find R+W and its competitors.”

Typically, the largest of all the individual trade fairs is MDA, a broad-based event spanning offerings such as antifriction bearings, pumps, motors, gearboxes, drive elements, clutches and brakes. One of the main benefits of the show is that it’s strategically positioned alongside the MobilTec and Wind fairs – whose exhibitors and visitors are among the biggest users of power transmission and control technology – which enables drive technology solutions to flow through into

enhancement areas in keys areas, according to the Hannover Messe official website ([www.hannovermesse.de](http://www.hannovermesse.de)).

“You only have [the MDA fair] in odd years,” said Zandieh. “In even years you don’t have that so the show is generally smaller than in the odd years. We’ve been putting the show on for over 50 years and it’s been consistently growing.”

The numbers for the MDA fair in 2013 were rather robust: 1,200 exhibitors from over 100 different countries, 79,900 visitors and 2,142,000 business contacts made over the five-day period.

Zandieh expects more of the same in 2015.

“We have all the halls sold out,” he said. “It’s hard to predict, but yes, we do expect one of the record shows this year. We’re very, very excited.”

### What to expect

Ah, the excitement – can you feel it?

Everyone who talks about Hannover Messe seems to speak with a little more melody in their voices, like it’s Christmas morning and old Saint Nick just dropped a bounty of packaged prizes down the chimney. In fact, that comparison isn’t all that far off – Hannover Messe is basically industrial manufacturing’s biggest holiday.

And, like Christmas itself, you can expect tons of shiny new toys – from

R+W America (Bensenville, IL), Altra (Braintree, MA) and hundreds of other companies.

“Hannover has always been a really important show for R+W internationally,” said Lechner. “It’s obviously key to show some things that are new. Basically the biggest development that we’ve made that we want to showcase there is a high-torque, high-speed safety coupling.

“R+W has made safety couplings since the ’90s, and about six years ago we introduced a heavy-duty line that basically increased our torque capacity from 2,800 Nm up to 160,000 Nm. Since we’re so involved in high-speed machinery, namely in automotive testing machinery, we came up with a system that handles both high-torques and high-speeds that really kind of hits the power requirements for a lot of people doing E-motor testing in the automotive industry.”

According to Lechner, R+W will be debuting its fully integrated torque coupling at Hannover Messe. It’s a high-torque, high-speed safety coupling that can be fitted with a bellows coupling. That particular configuration is well-suited to automotive testing applications, with the ability to disengage at speeds of over 10,000 rpm, with higher running speeds on request. Disengagement torques are available in the range of thousands of Nm. When



configured with a flexible bellows coupling they offer protection from misalignment and torque overload, while maintaining very smooth and high precision rotary motion with zero backlash. They are also available with flexible disc pack couplings and multiple other custom configurations.

“We’re excited to introduce this new product,” Lechner said, “along with providing our customers and international partners with a better look at our full line of heavy-duty industrial drive couplings through an augmented reality system, which R+W will be bringing to the fair.”

*Excited* – there’s that word again.

It flows through the veins of Hannover, pumping and beating electric lifeblood from the Americas over to Europe, where Brooksbank originally hails from. Now stationed at one of Altra’s U.S. locations in South Beloit, IL, Brooksbank spoke about showcasing Altra’s expansive list of varying brands, including two new ones not seen at the MDA fair during Hannover 2013.

“This will be the third time [we’ve been to Hannover Messe] as Altra,” Brooksbank said. “Every time we’ve been there we’ve represented all our (22) brands on a global basis. Now, two years ago did we have Svendborg Brakes and Guardian Industries? No, but every time we’ve gone we promote every one of our brands because every one of them has a global presence of some range.

“We do, in fact, try to promote the main European brands. Obviously they have a big presence – Stieber being one; Wichita Clutch, Warner Electric, Bauer Gear Motor and Matrix International.

“One of the main things we’re really trying to do this year is promote our Altra couplings brand, which are the Bibby Turboflex, Huco Dynatork, Ameridrives and TB Wood’s brands, as we try to go to market in Europe as one brand.

“Couplings are very big for us, as well as our heavy-duty group with the acquisition of Svendborg.”

Altra will debut its brand new line of custom designed extra small brakes from Warner Electric, which are designed to be light weight and fit into the smallest areas.

Also being showcased by Altra is Stieber’s new torque limiting/load sharing low-speed backstop RDBRE releasable under load – the highest torque capacity for releasable external backstops available in the market today with a torque capacity of 700,000 Nm.

“In the overrunning clutch we have Stieber, Formsprag and Marland, which are formidable brands,” he said. “We have Warner Electric with electromagnetic clutches and brakes, and Warner Linear with the actuators. And then, of course, there’s Bauer as well.

“It just goes on and on – it can become very boring talking about each brand individually.”

The list, indeed, does seem to go on and on when looking at the complete rundown of Hannover’s exhibitors:

According to a recent press release, Parker Hannifin (Cleveland, OH) will be presenting the latest addition to its range of CMS system solutions. This involves a series of new sensors that can measure a variety of parameters, such as the viscosity, density and dielectric properties of hydraulic media, and which eliminate time-consuming calibration processes. The company will also showcase a new measuring technology that simultaneously counts particles and measures relative humidity. In terms of general industry trends, Parker Hannifin points to a move towards integrated CMS solutions.

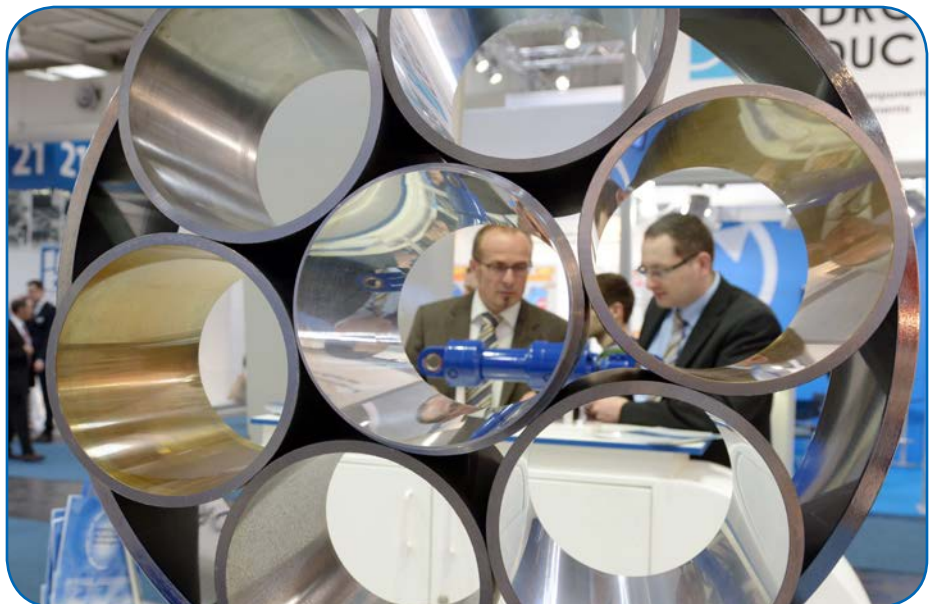
“Customers now want total system health management solutions that

capture and rapidly analyze all the relevant data,” Parker Hannifin’s Sales Manager of Hydraulic & Engine Filtration, Stefan Nilgen, said in the press release.

Condition monitoring will also be a key theme at the stand of Festo Corporation (Esslingen am Neckar, Germany), according to a press release. The company will be showcasing its CPX valve terminal – an automation module that connects pneumatic and electrical systems. The terminal has a modular design with integrated condition monitoring functionality, diagnostics and electrical and pneumatic safety functions. The Festo stand will once again feature a new bionics study that provides a fresh perspective on a range of topics, including condition monitoring and diagnostics, the press release said.

Fluid-power specialist Argo-Hytos (Zug, Switzerland) will be using MDA to showcase a range of hardware-based CMS solutions for hydraulic systems, according to a press release. It will also be presenting its “CMS Systems & Services” package – a suite of turnkey measurement solutions that includes installation, calibration and monitoring services.

“The data captured by condition monitoring systems provide the basis for plant integration and optimization in the sense of Industry 4.0,” Christian Kienzle, CEO of the Argo-Hytos Group, said in the press release. “New digital





integration and information processing solutions are opening the way for the optimization of ever more complex processes and systems. To harness the full potential of CM solutions, we are increasingly using intelligent CM components, which we tailor to our customer's individual applications."

Bachmann Monitoring (Bonn, Germany) is going present a CMS solution for end-to-end wind turbine drivetrain monitoring. According to Bachmann, one of the key technology trends in the wind energy sector is the development of integrated solutions that can monitor entire turbines, from rotor blade to tower foundation.

Prüftechnik AG's (Ismaning, Germany) showcase will also center on wind turbine technology, according to a press release. The company will be presenting Vibguard XP, a new version of its Vibguard online condition monitoring system that was specifically developed for the wind energy industry. Vibguard XP captures and analyzes signals on up to 20 channels simultaneously. It can pick up irregular vibrations in the drivetrain and tower and can even detect the formation of ice on the rotor blades, the press release said.

And remember: These are just a few of over 1,000 companies from the world of motion, drives and automation appearing at Hannover.

Are you beginning to get the picture yet? Hint: it's big.

### What to learn

By this point you've probably gathered there's plenty to see at Hannover Messe. Even with a set of the world's strongest binoculars and an operational time machine you couldn't possibly see everything in the five-day window.

But more important than seeing what Hannover Messe has to offer is *learning* its secrets.

"The lead topic of this year's show is Integrated Industry," Zandieh said. "So anything that has to deal with Industry 4.0."

This may be news to you, but the world is currently square in the middle of the fourth industrial revolution – which is not an insurgency of metal and fire, but one of hypertext, file sharing and social networking – and Hannover Messe is aiming to educate the masses.

Defined as Industry 4.0, this "massive upheaval of the industrial sector" will be the main topic of discussion during Hannover's forum, according to Zandieh.

"Microsoft is going to be giving a presentation of Industry 4.0," he said. "They have a huge presence at the show this year and will be making some new announcements. Also at the MDA forum we will cover energy ef-

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iciency and sustainability, industrial automation, smart factory and condition monitoring systems."

Heralding itself as the "trailblazer of Industry 4.0," Hannover Messe will feature the reports from three public task forces for the Industry 4.0 platform: "Norms & Standards," "Security" and "Research & Innovation." The report will come during the Industrial IT forum, which is jointly organized by the Industry 4.0 platform and VDMA and the German Electrical and Electronic Manufacturers' Association.

And if the future is in fact going to be determined at Hannover Messe, the forum on Industry 4.0 might just be the catalyst.

"Power transmission and fluid power technology are fast becoming key components of Industry 4.0," said Rauen in a press release. "Intelligent actuator units and actuator CPS modules for instance are currently being used to capture, understand and interpret actuator motion and function data and wear parameters. To that extent, condition monitoring systems are already being put to work to create viable business models."

According to IT reports on Hannover Messe's website, the importance of Industry 4.0 at present time is "moderate," but within five years it will rise to "great" or "very great."

Five years? You don't have to be Doc Brown to know that's most definitely the future.

It begins off the shores of the River Leine on April 13. **PTE**

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