Press Release

September 12, 2018

Nominated for the Deutscher Zukunftspreis 2018: The WITTENSTEIN Galaxie® gearbox

The team of inventors who have been nominated: Dr. Manfred Wittenstein (Chairman of the Supervisory Board) and Thomas Bayer (Manager Innovation Lab)

WITTENSTEIN SE's Galaxie® gearbox has just been nominated for the Deutscher Zukunftspreis 2018, the Federal President's Award for Innovation in Science and Technology, under the heading "A radically new gearbox class – productivity leaps in the engineering industry". The jury's final decision regarding this year's winner will be revealed on November 28, 2018. German President Frank-Walter Steinmeier will present the Deutscher Zukunftspreis 2018 to the winners that same evening.

During a press conference held earlier today (Wednesday, September 12) at the Deutsches Museum in Munich, the jury announced the three teams who have been shortlisted for this year's award. For WITTENSTEIN, a family run company with its headquarters in Igersheim (Germany), the nomination is a great honor and renewed confirmation of its extraordinary innovation performance. The new gearbox class has already won two prestigious awards: the Hermes Award in 2015 and the Innovation Award of the German Economy in 2016. The team of inventors who have now also been nominated for the Deutscher Zukunftspreis 2018 – Dr. Manfred Wittenstein (Chairman of the Supervisory Board) and Thomas Bayer (Manager Innovation Lab) – were visibly pleased and proud when they heard the news: "Germany's prosperity is built on its engineering skills. The engineering industry is our country's core competency and the biggest industrial employer. It is vital that this marketability be preserved for the future. We believe that our invention makes a significant and valuable contribution here."

Originally unveiled at the Hannover Messe in 2015, the Galaxie® Drive System is not only based on a novel – and meanwhile scientifically proven – gearbox class; it has also been well received in the market and successfully deployed in numerous customer

WITTENSTEIN develops customized products, systems and solutions for highly dynamic motion, maximum-precise positioning and smart networking for mechatronic drive technology.

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applications. Galaxie® thus meets the two key criteria which are a condition of selection for the final round of the Deutscher Zukunftspreis 2018: the award is a tribute to outstanding scientific and technological innovations that also have the potential to create sustainable jobs.

A completely new gearbox concept

The principle of the innovative Galaxie® gearbox is founded on several pillars: forces and torques are transmitted not by rigid gear wheels but by separate teeth which can be moved independently of one another. Rather than rolling against each other, these teeth slide to and fro in a ring gear. Furthermore, a very large number of teeth engage with one another at any given time, leading to full-surface contact because they are designed as a logarithmic spiral. This concept inspired the nominated team of inventors – Thomas Bayer and Dr. Manfred Wittenstein – to develop a completely new gearbox class which was radically different from anything that had gone before. “We weren’t happy with the state of the art at the time. Although we could probably have improved certain aspects, we were convinced that there must be another way,” said Dr. Wittenstein when asked to describe what motivated them to tread totally new paths with Galaxie®.

New opportunities for high performance engineering

Mechatronic drive systems like Galaxie® are employed in all kinds of automated production machinery. From food and packaging through medical devices, vehicles and wind turbines to robots or machine tools – almost all daily commodities are manufactured with the help of motor-gearbox units or make use of similar drive systems. Owing to its novel concept, the Galaxie® gearbox now nominated for the Deutscher Zukunftspreis is superior in all key disciplines, often several times over. This innovation simultaneously requires less material, consumes fewer resources and eases the burden on the environment. It is now up to engineers and designers to completely rethink existing machine concepts and realize genuine developmental leaps, as illustrated by several practical examples: much faster machining operations on lathes, for instance, and a far longer service life for the tools. Unwanted vibration of spline rolling machines has been reduced to a minimum and the machining time is now appreciably shorter. In another application, a new five-axis milling machine was developed with double the usual removal rate.

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The potential with respect to untapped markets, Industry 4.0 and new materials is huge in WITTENSTEIN's view in the medium to long term.

Deutscher Zukunftspreis 2018

The Federal President's Award for Innovation in Science and Technology was instituted and presented for the first time in 1997; the intention is to encourage world-class scientific achievements that are simultaneously marketable and a source of employment. The Deutscher Zukunftspreis is not an award that is applied for, in other words projects must be nominated by one of the institutions entitled to propose worthy candidates. Once a year, a jury comprised of 10 independent experts from academia and industry then selects three teams for the final round. In addition to WITTENSTEIN SE, the finalists for this year's Deutscher Zukunftspreis are the University of Erlangen-Nuremberg FAU (Institute of Chemical Reaction Technology and Institute of Thermal Process Engineering) with a project on hydrogen and AiCuris Anti Infective Cures GmbH with a herpes medication.

The announcement of the winning team will be broadcast as a live stream on ZDF television from 6 p.m. on November 28, 2018. A recording of the event will be shown on regular TV starting at 10:15 p.m.

For all further information, see
- www.wittenstein.de
- www.deutscher-zukunftspreis.de

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The team of inventors nominated for the Deutscher Zukunftspreis 2018 (from left to right): Thomas Bayer (Manager Innovation Lab at WITTENSTEIN SE) and Dr. Manfred Wittenstein (Chairman of the Supervisory Board of WITTENSTEIN SE).

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02-wse-deutscher-zukunftspreis-2018-logo
Official logo: Nominated for the Deutscher Zukunftspreis 2018: the WITTENSTEIN Galaxie® gearbox


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03-wse-deutscher-zukunftspreis-2018-die-nominierten-b
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04-wse-deutscher-zukunftspreis-2018-galaxie-detailaufnahme-a
A completely new gearbox concept: separate teeth instead of rigid gear wheels


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05-wse-deutscher-zukunftspreis-2018-galaxie-detailaufnahme-b
A completely new gearbox concept: separate teeth instead of rigid gear wheels

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06-wse-deutscher-zukunftspreis-2018-galaxie-antriebssystem
The WITTENSTEIN SE Galaxie® Drive System is based on the Galaxie® gearbox class nominated for the Deutscher Zukunftspreis 2018.

Texts and photographs in printable quality can be downloaded from presse.wittenstein.de.

WITTENSTEIN SE – one with the future

With around 2600 employees worldwide and sales of €385 million in 2017/18, WITTENSTEIN SE enjoys an impeccable reputation for innovation, precision and excellence in the field of mechatronic drive technology – not just in Germany but internationally. The group comprises six pacesetting Business Units with separate subsidiaries for servo gearboxes, servo actuator systems, medical technology, miniature servo units, innovative gearing technology, rotary and linear actuator systems, nano technology and electronic and software components for drive technologies. Through its 60 or so subsidiaries and agents in approximately 40 countries, WITTENSTEIN SE (www.wittenstein.de) is additionally represented in all the world's major technology and sales markets.

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