



## Linear technology from WITTENSTEIN alpha reaches new levels of performance

**Higher meshing torques, better system rigidity, higher power density and more feeding force – WITTENSTEIN alpha GmbH has accomplished a remarkable technological (r)evolution with its new High Performance Linear Systems. The key benefits offered by the new rack-and-pinion systems to users are the significantly higher controllable and usable feeding forces as well as the option of downsizing the complete drive train. Added to this is an innovative and intelligent assembly concept. The linear system will be on show at the Hanover Fair 2011 in Hall 15, Stand F 08.**

WITTENSTEIN alpha's combined expertise in transmission engineering, gearing technology and sizing of complete drive trains "all from a single supplier" is united in this mechatronic system solution, which is the only one of its kind in the world. It opens up new potential for enhancing the performance of a wide range of equipment and machinery such as grinding, turning, portal milling, boring, laser, punching and pipe bending machines, water jet cutters or machining centres for wood-plastics compounds.

### Unprecedented positioning accuracy and easy assembly

The new rack-and-pinion system solution allows custom-configurable packages to be put together and optimized for different performance classes. The individual components – gearhead, pinion and rack – are characterized by a compact design and high power density. Their interaction lifts the technology to incredible levels of performance, creating a host of new options for the design and sizing of machinery and equipment. The permissible torques of the new gearhead have been increased by 140%, for example, enabling the high forces that are produced when the teeth of the rack and pinion are meshed to be controlled more effectively. As a result, the complete system has

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High-tech products made by **WITTENSTEIN** fly into space and win Formula One races. Intelligent drive systems – from the world's smallest high-performance servo drive to the latest state of the art in medical technology – are developed, produced and marketed by a team of around 1.400 employees. With a blend of dedication and enthusiasm, we set benchmarks – every day – worldwide.



Revolution in linear drive technology: the new High Performance Linear Systems from WITTENSTEIN alpha

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#### WITTENSTEIN AG

Walter-Wittenstein-Straße 1  
97999 Igersheim · Germany

**Contact: Sabine Maier**  
Press Officer  
Tel. +49 7931 493-10399  
Fax +49 7931 493-10301  
E-Mail: [sabine.maier@wittenstein.de](mailto:sabine.maier@wittenstein.de)  
[www.wittenstein.de](http://www.wittenstein.de)

much better rigidity – which in turn has a positive influence on positioning accuracy. The unusual ease of assembly is a further convincing feature of the design concept: the modified alpheno® interface provided on the gearhead only has eight fixing holes instead of the traditional 32, so that the assembly task is greatly simplified. The same applies to the adjustment device, which is fully integrated into the gearhead case. This not only considerably shortens the time needed to design the connection, it also speeds up the assembly process and makes it more reliable.

### **Innovative pinion connection for very high feeding forces**

Various modules and numbers of teeth, which are mounted at the factory prior to shipping, can be supplied as the gearhead's output pinion. WITTENSTEIN alpha uses a welding method that has already worked successfully for several years for this purpose. Even small pinions can be connected without any problems and the screwed connection of the output pinion, which is extremely critical with high tilting moments and feeding forces, can be dispensed with. Feeding forces up to 112 kN per drive are now possible, depending on the gearhead version.

### **Enhanced performance creates opportunities for downsizing**

Compared to other linear drive solutions, the new High Performance Linear System sets fresh benchmarks in terms of positioning accuracy, system rigidity, power density and feeding force. Put another way, the same feeding forces are now achieved with smaller gearheads, pinions and racks. The opportunities for downsizing that are opened up by the new system without having to compromise on power mean users can design much more compact and economical drive solutions than in the past. If the customer prefers not to

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**Contact: Sabine Maier**  
Press Officer  
Tel. +49 7931 493-10399  
Fax +49 7931 493-10301  
E-Mail: [sabine.maier@wittenstein.de](mailto:sabine.maier@wittenstein.de)  
[www.wittenstein.de](http://www.wittenstein.de)

downsize, the High Performance Linear System offers far better system rigidity than servo gearheads of a similar size.

### **WITTENSTEIN linear technology made to measure**

WITTENSTEIN alpha is the only manufacturer of linear and rotary actuator systems in the world to unite all three core competencies

- Transmission engineering,
- Gearing technology, and
- Sizing of complete drive trains

under one roof, control them reliably, harmonize them perfectly and optimize them systematically. As a one-stop supplier, WITTENSTEIN can not only offer its customers individually crafted, made to measure drive solutions; based on the information submitted and the agreed specifications, it also warrants the optimal functionality of the solution as well as the reliable achievement of, and compliance with, defined performance characteristics with a comprehensive system guarantee.

#### Photo:

Revolution in linear drive technology: the new High Performance Linear Systems from WITTENSTEIN alpha

Texts and photographs in printable quality can be downloaded from [www.presse.wittenstein.de](http://www.presse.wittenstein.de) or [www.press.wittenstein.de](http://www.press.wittenstein.de).

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Press Officer  
Tel. +49 7931 493-10399  
Fax +49 7931 493-10301  
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[www.wittenstein.de](http://www.wittenstein.de)

**WITTENSTEIN group: Being one with the future**

With around 1400 employees worldwide, WITTENSTEIN AG enjoys an impeccable reputation for innovation, precision and excellence in the field of mechatronic drive technology – not just in Germany but also internationally. The Group comprises eight pacesetting Business Units with separate subsidiaries: for servo gearheads, servo drive systems, medical technology, miniature servo units, innovative gearing technology, rotary and linear actuator systems, electronic and software components for drive technologies as well as nanopositioning devices. Moreover, WITTENSTEIN is a new partner for efficient electromobility with its electrical gear systems. Through its approximately 60 subsidiaries and agents in about 40 countries, WITTENSTEIN is additionally represented in all the world's major technology and sales markets.

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[www.wittenstein.de](http://www.wittenstein.de)