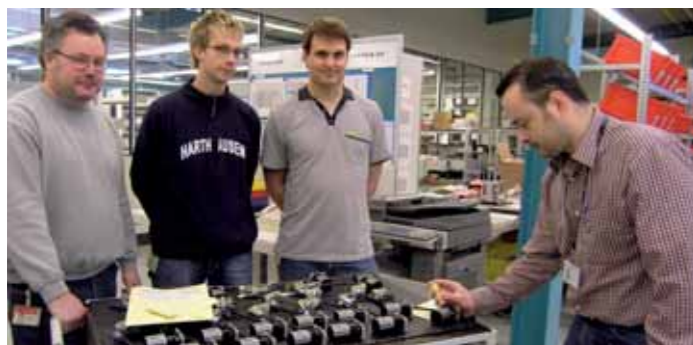


# WITTENSTEIN opens the 1000th door for the super jumbo Airbus

WITTENSTEIN aerospace & simulation GmbH recently burst a sound barrier when the thousandth flight lock actuator – a key component of the electrically driven door system – was delivered for the A380.



Joy among the assembly-team members: Final acceptance of the 1,000th flight lock actuator in the assembly halls of Wittenstein aerospace & simulation in Igersheim-Harthausen (from right): team leader Stefan Zang with Daniel Landwehr, Marcus Michel and Roland Klein. Not in the picture: Edwin Mohr.

The Airbus A380 is the first passenger aircraft to be equipped with electrically driven doors. Together with several other parts manufactured by WITTENSTEIN AG and its subsidiaries, it relieves cabin staff of the chore of having to open and close the sixteen heavy doors by hand. WITTENSTEIN aerospace & simulation

delivers to Diehl Avionik Systeme GmbH, which makes the complete electric door system for the Airbus.

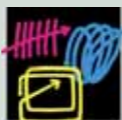
**Almost lighter than air**  
Tipping the scales at just twenty one ounces, the flight lock actuator is not exactly a heavyweight – yet it is responsible for ensuring that the doors stay tightly locked

throughout every flight. If the airborne power supply system fails, the doors are automatically unlocked and can be opened manually. The servo actuators for the door-coupling operating mechanisms essentially consist of a planetary gearhead and a brushless servo motor. Both these components were developed on the basis of products already manufactured by WITTENSTEIN AG and its subsidiaries alpha getriebebau and WITTENSTEIN cyber motor. The door actuator system additionally integrates several electronic components from the WITTENSTEIN stable.

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### Events



**SPS/IPC/Drives:**  
28. – 30.11.2006  
Nuremberg, Germany  
Hall 4, Stand 336  
Exhibitors: alpha, WMC and WCM  
Products: like MOTEK plus TPM+, TPM IQ, SP+ and TP+-large gearheads



**SCS Automation&Control:**  
05. – 08.12.2006  
Paris, France  
Hall 5a, Stand F126  
Exhibitors: alpha réducteurs  
More information:  
www.alpha-reducteurs.fr



**Hannover Messe Industrie "Motion, Drive & Automation"**  
16.–20.04.2007  
Hannover, Germany  
Hall 26  
Exhibitors: alpha, WMC and WCM



alpha riduttori

showroom. The main focus of the exhibition and the practical demonstrations was on the outstanding dynamic performance of TPM and Ternary.

### Responsible for content

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# alphaplanet

The alpha getriebebau GmbH Newsletter  
[www.alphagetriebe.de](http://www.alphagetriebe.de)  
November 2006

WITTENSTEIN on fairs:  
SPS/IPC/Drives Nürnberg  
28. – 30.11., Hall 4, Stand 336  
SCS Automation&Control Paris  
05. – 08.12., Hall 5a, Stand F126

### alphaplanet Newsletter – short & concise



Dear reader,

“Intelligence” is the ability to comprehend relationships and identify the optimum solution to a problem. The term “intelligent drive technology” applies this definition to the world of mechatronic drive systems – bringing the vision of a gearhead that can hear, feel, think and talk a good step closer. The idea of using intelligent drive components to monitor and control processes is as ingenious as it is challenging – a golden opportunity to make production process monitoring extremely precise yet still affordable, guarantee availabilities and stay competitive in the global market. Our goal: to contribute to your success by seizing this opportunity.

Regards,

Dr. Michael Fiedler  
Managing Director  
alpha getriebebau GmbH

### WITTENSTEIN Company Development

## WITTENSTEIN grows and grows

Good news: the WITTENSTEIN Group can look back on a very successful fiscal year 2005/2006 – in which it welcomed its thousandth employee.

In 2005/2006 the mechatronics specialist was able to boost its sales by 14.8 percent to a record 133 million euros. The workforce has likewise grown continuously since 2004/2005: nearly a hundred new personnel were recruited in the space of just twelve months. The total rose from 908 at the beginning of fiscal 2004/2005, and in the summer of 2006 the WITTENSTEIN Group was able to welcome its 1000th employee. 34 year-old Michael Schwarzbach, a development engineer, joined the WITTENSTEIN motion control team on July 1. To quote a delighted Manfred Wittenstein, President of WITTENSTEIN AG: “The arrival of the thousandth employee marks a milestone in the 57-year history of our company”. And WITTENSTEIN has not stopped growing yet: the sixth production shop on the site of the Group’s head office is due to be completed in January 2007.

### Muscle-packed machines in miniature

Michael Schwarzbach’s work will span a fascinating sphere of activities. Regardless of where the miniaturised, heavy-duty AC servo drives manufactured by WITTENSTEIN cyber motor are used, their job is seldom easy. In the aerospace sector, robot systems, the semiconductor, packaging and woodworking industries, medical technology or pharmaceuticals these mini-

motors meet the most exacting requirements and are usually responsible for the heaviest work.

### Tougher than tough

WCM has developed a new series of high-performance AC servo drives for extreme requirements: motors designed for insulation classes F to C, in other words for temperatures up to 300 °C. And that’s not all: radioactivity and high-vacuum applications too are unlikely to impress these cyber motors lose unduly.



A happy milestone: Chairman of the board, Manfred Wittenstein (right), welcomes the 1,000th employee, Michael Schwarzbach (left).

### WITTENSTEIN motion control

## New product: TPM+

The TPM+, a rotary actuator, is higher in dynamics, shorter and smoother than ever before. TPM stands for superior power density and maximum dynamic response. Thanks to an ingenious concept, the engineers responsible for designing the latest TPM+ generation have succeeded in further reducing the required installation space by as much as

up to 20 percent. The length saving compared to a conventional motor/gearhead combination is now well over half! What’s more, the new TPM+ is exceptionally quiet and vibrates even less than its predecessors!

The TPM+ is a designer product that offers tangible benefits. Not only is its attractive surface practically without edges, it is also less sensitive to dirt.



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### +++ Newsticker +++

WITTENSTEIN cyber motor recently outperformed all rivals in the Baker Hughes supplier evaluation with almost perfect marks: 97.69 out of 100 points. Baker Hughes is one of the world’s top three providers of petroleum services.

+++  
Manfred Wittenstein has been elected to join the Science-Industry Cooperation, an advisory board inaugurated by Federal Research Minister Dr. Annette Schavan. Its goal is to further strengthen cooperation between science, industry and politics at national level.

+++  
New Ternary BLM actuator. The brushless motor rounds off WITTENSTEIN motion control’s all-in-one linear system that merges mechanics with intelligence.

### WITTENSTEIN International

## Room for more quality

Both our Italian subsidiary alpha riduttori and our French subsidiary alpha réducteurs recently took up residence in new premises. They are now able to offer customers better service than ever.

Sesto San Giovanni (not far from Milan): for alpha riduttori, the move means extra space, a more attractive building and even stronger motivation. Our Italian colleagues finally have ample room to present and explain the WITTENSTEIN philosophy and products to company visitors.



alpha réducteurs

Our French subsidiary also has cause to celebrate: the new 900 m<sup>2</sup> facility in Eaubonne (Val d Oise) is big enough to accommodate a workshop, a warehouse, offices, conference rooms and showrooms. alpha réducteurs will in future be in a position to make fuller use of its considerable potentials and respond even more flexibly to customer demands, for example by shortening the time for repairs to just two hours. At the taping ceremony the alpha subsidiary proudly displayed its extensive range of gearhead and servo drive products in the new

## Complete solutions from alpha: the optimum coupling for any servo application



New: alpha now offers mechanical system solutions for rack-and-pinions, coupling connections and spindles.

Building the perfect solution: every customer can now assemble a module that is exactly tailored to their individual needs from the deep pool of alpha technology.

### System driven success

This principle is aptly illustrated by our couplings: alpha supplies a complete range of metal bellows and safety couplings for torques up to 10,000 Nm and 1.500 Nm respectively.

They all share the same impressive strengths: zero backlash, torsional stiffness and freedom from maintenance. They are additionally united by a large offset with low resetting forces. In short: alpha develops the optimum solution for any servo application.

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### Rack & pinion solutions at a glance

Weight and space-saving mounting method through compact design with integrated pinion

Flexible rack mounting options because all contact surfaces are ground to tight tolerance

Optimised smooth running and low noise level due to pre-assembled gearhead pinion units with helical teeth and high concentricity (RTP version < 10 µm)

High reliability because of wear-resistant surface treatment and individually deburred gear teeth

Compact design with low mass moments of inertia results in maximum possible feed dynamics with short acceleration times

Maximum precision for lifting axes through positive connection of the pinion

Maximum operating reliability because of high torque reserves

Quality 5 (AGMA-11) thanks to permanent checks according to DIN 9001

Ultra-high linear accuracy because of minimum cumulative pitch error (12 µm/500 mm)

### WITTENSTEIN Training

## "New opportunities for both sides"

WITTENSTEIN needs sales engineers – with a specially devised training course at the nearby Mosbach/Bad Mergentheim University of Cooperative Education, the company aims to meet its own demand for specialised staff by offering young people a unique chance to gain the ideal qualification.

At times when the economy is generally sluggish, sales are particularly important. Yet despite predictive personnel planning, WITTENSTEIN still has numerous sales vacancies. Dr. Michael Geier, Manager Human Resources, sums up: "We have a lack of qualified people in almost every area. Unfortunately, there simply aren't enough sales engineers on the market. We were faced with no alternative but to take the matter into our own hands". Starting in September 2007, the company will sponsor fifteen study places in "Business Administration and Engineering/International Technical Sales Management" at the local University of Cooperative Education. Dr. Geier is convinced: "This will create new opportunities for both sides".

### A unique combination

The training will be provided in a joint venture with Bad Mergent-

heim University of Cooperative Education. Engineering, business administration and languages with a strong sales orientation will be blended in this dual study course lasting three years. Manfred Wittenstein: "After completing their training, our graduate sales engineers will be optimally equipped to confront the challenges of the global economy".

**Opportunities for young people** Training has always been a top priority at WITTENSTEIN: a hundred young people are currently preparing for a career in 21 different trainee professions and study courses.

More information:  
www.wittenstein-jobs.de

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### alpha Products

## Hypoid gearhead family now complete

The introduction of SPK<sup>+</sup> and TPK<sup>+</sup> completes alpha's successful hypoid gearhead family. These gearheads are capable of mastering even the most challenging servo applications.

The right-angle gearheads have a hypoid gearset at the input and a low-backlash planetary gearhead at the output. This combination of a hypoid and a planetary gearhead is the key to several practical new features. The HG<sup>+</sup>, SK<sup>+</sup> und TK<sup>+</sup> gearhead types are equipped with a hypoid stage at the output, facilitating an especially space-saving design. This model diversity – HG<sup>+</sup> with hollow shaft, TK<sup>+</sup> with flange and hollow shaft,

SK<sup>+</sup> with solid shaft – results in a unique breadth of novel solutions. For the very first time, HG<sup>+</sup> in right-angle design achieves the same level of performance as a planetary gearhead.

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### alpha online

## alphira®: planetary gearheads at the click of a mouse

Successful online launch: the world's first Internet shop for low-backlash planetary gearheads has stood the test with flying colours. The "New sales channel for a new product" concept has proved equally effective.

In March 2006 alpha getriebebau broke new ground with the latest in an impressive line of low-backlash planetary gearheads. alphira® is the name of the youngest offspring in the alpha product family. It combines precision with high torques for simple servo applications. Packaged in a lightweight aluminium case, power-dense and maintenance-free, alphira® coincided with the launch of an innovative new service: a direct, Internet based sales channel.

### Fast, flexible, efficient

Customers can place online orders for alphira® around the clock at [www.shop.alphagetriebe.de](http://www.shop.alphagetriebe.de) – in four sizes with five reduction ratios. alphira® is delivered to the required destination in a maximum of five working days.

### Sights on Europe

So far, orders can only be accepted from within Germany. However, Internet Shop Product Manager

Christine Gundermann has also observed a sharp rise in the number of visits by interested shoppers from other European countries. There are plans to offer the same concept Europe-wide in the near future. And providing demand remains steady, it won't be long before more alpha products and the speedline® service package are likewise available online.

### WITTENSTEIN Supplier Award

## Steinmetzer's excellence honoured

Steinmetzer CNC Dreh- und Frästechnik, a manufacturer of turning and milling technology, was proclaimed Best Value Creation Partner by WITTENSTEIN AG at the Supplier Day 2006.

Based in Steinheim am Albuch, the company has been a supplier of components to WITTENSTEIN and alpha for more than ten years. Thomas Hein, Head of Supply Chain Management at WITTENSTEIN AG, explains

the reasons for the panel's decision: "Steinmetzer is an exceptionally reliable and innovative high-performance partner". In future, the presentation of the Supplier Award will be an annual event.

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### alpha Service

## alpha speedline® puts on speed Europe-wide

### alpha speedline® at a glance:

Just 24 hours to manufacture each gearhead

Designers need not be bothered with tracking the order status and are free to concentrate on other tasks

Every speedline® gearhead undergoes a 100% inspection before it leaves the factory. Our proven product quality is guaranteed

24-hour hotline with permanent availability:  
Phone: +49(0) 79 31 / 4 93 - 4 44 or - 3 33  
e-mail: [speedline@alphagetriebe.de](mailto:speedline@alphagetriebe.de)

Cooperation with carefully selected forwarding agents who plan the optimum route to any customer destination

48-hour service on very reasonable terms for orders that are not quite as urgent

speedline® has already enjoyed immense popularity in Germany over the last two years. The same service concept will in future help customers all over Europe operate faster and more flexibly than ever while simultaneously cutting warehouse costs: dispatch of all SP<sup>+</sup>, TP<sup>+</sup> and LP<sup>+</sup> gearheads from our factory is now guaranteed in just 24 hours.

Everyone profits: this innovative service is offered at attractive terms and in line with each customer's specific requirements. As a first-time entrant for the "German Service Award 2006", speedline® reached the final. The jury was particularly impressed

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by the optimised process control. Sales and order processing have been merged into one; a separate team has been set up to deal exclusively with speedline® orders, which are consequently processed efficiently and in record time – from the initial purchase order through mounting to the final dispatch.



### alphira® at a glance

4 sizes (40, 60, 80, 115)

5 reduction ratios (1-stage 5, 10 / 2-stage 25, 50, 100)

Aluminium case, unvarnished

Lightweight (approx. 2.5 – 3 kg)

High efficiency up to 97%

Low noise level

Designed for cyclic and continuous operation

Very simple motor mounting

Service life: 20,000 h

Lifelong lubrication

### Contact

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