



## WITTENSTEIN: Always a "wing beat" ahead with the swing servo motor

**It can be retrofitted or dismantled at any time for maintenance and is designed to withstand even the harshest operating conditions – the WITTENSTEIN cyber motor "wing" motor. Due to be unveiled at the forthcoming SPS/IPC/DRIVES 2011 exhibition, this hollow-shaft direct drive with two swinging stator halves features an innovative mounting concept for unorthodox integration and operating scenarios where axial installation and removal in or from a machine are no longer possible.**

The wing motor – which works on the principle of a permanently excited synchronous motor – was developed in the framework of a customer project as a direct drive. The chief dictates of this application were the ability to mount the drive to the already installed roll and easy disassembly in order to carry out essential maintenance work. In addition, the drive solution had to be fully integratable into the existing geometry without extending the roll periphery. Finally, account had to be taken of the application's thermal requirements without compromising the high standards of power density, dynamics and reliability for which WITTENSTEIN is renowned.

### **An idea is born: the split drive**

Since axial mounting and removal were not an option, WITTENSTEIN cyber motor came up with the idea of a split stator with two parallel, three-phase systems based on a hollow-shaft direct drive. What's more, each stator half has an integrated water-cooling pipe system made from stainless steel that prevents damage to the drive due to the intense heat prevailing at the roll and in the operating environment, so that rotor temperatures up to 200°C are not a problem.

The drive is mounted to the calender by attaching the two stator halves to fixing lugs, allowing the wings to be joined together around the roll precisely and in a controlled way. Thanks to this innovative mounting concept, the drive can be disassembled easily for servicing. When the motor is swung in, it has an outer diameter of 543 mm and a hollow shaft diameter of 365 mm. The small installation dimensions achieved with this compact drive design meant that there was no need to modify the layout of the customer's machine.

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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.



The new wing motor made by WITTENSTEIN

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The wing motor operates in the same way as a classic, one-piece direct drive – with similarly impressive performance. It boasts in industry standard conditions a maximum output of 99 kW, a maximum torque of 1.900 Nm and a maximum speed of 1.750 rpm. In short, the motor has a very high efficiency no matter how demanding the environment – and is consequently very low on energy.

### **Engineering expertise and creativity "lend wings" to customized solutions**

The new mounting concept for the swing servo motor was developed by WITTENSTEIN cyber motor. A company of the WITTENSTEIN Group, WCM specializes in application oriented solutions with miniaturized, highly dynamic AC servo motors and drive systems. Its special-purpose motors also perform excellently under extreme operating conditions – vacuum, radioactive environments and high-temperature applications.

The new swing servo motor concept offers a renewed demonstration of WITTENSTEIN cyber motor's innovative vitality and creativity when it comes to customized solutions for servo drive technology. WITTENSTEIN's high level of technical consulting expertise lays the foundation for novel drives tailored to individual specifications and backed up by comprehensive engineering all from one supplier – from the initial product idea to the final motion solution.

### **Bildtext**

Always a wing beat ahead thanks to the innovative mounting concept: the new swing servo motor from WITTENSTEIN cyber motor

Texts and photographs in printable quality can be downloaded from <http://www.wittenstein.de/presse.html>.

### **WITTENSTEIN AG: Being one with the future**

With around 1400 employees worldwide and sales of € 197 million in 2010/11, WITTENSTEIN AG 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 eight pacesetting Business Units with separate subsidiaries for servo gearheads, 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 ([www.wittenstein.de](http://www.wittenstein.de)) is additionally represented in all the world's major technology and sales markets.

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