



## Compact and highly dynamic: industrial grade small servo motors with an integrated screw

A new series of small servo motors with an integrated screw was recently launched in the market by WITTENSTEIN cyber motor GmbH for use in highly dynamic positioning axes, especially when the machine has to be installed in a confined space. It is the screw drive, fully integrated in the actuator housing, that makes this series so unique: the servo motor, spindle drive, linear guide rail and encoder system form a closed, highly integrated and ready-to-mount unit. The series is offered in four sizes, each with two different screw pitches and two stroke lengths for short or long-stroke applications. When combined with the servo regulators in the WITTENSTEIN simco drive series, these motors can be configured as complete small servo axes with multiple fieldbus interfaces for maximum connectivity to the automation environment.

The small servo motors have an integrated screw and are permanently lubricated, so that no maintenance is required; they make a perfect complement to the existing portfolio of rotary servo motors and actuators in the cyber dynamic line family. They are used, for instance, for positioning, joining, bending, gripping and dispensing in reshaping and handling applications, the semiconductor industry, packaging machinery or assembly automation. The 100% stainless steel design with IP65 protection also creates numerous interesting applications for the new, integrated linear actuator in food and beverage plants, such as in highly precise bottling lines.

### High power density in an industrial design

With their high power density and dynamics, the new small servo motors with an integrated screw are particularly impressive in action. Each of the four sizes (outside diameter 17 mm, 22 mm, 32 mm or 40 mm) achieves excellent acceleration values, cycle rates and machine throughputs in a very small space. This is due to the compact design, which results in much lower mass inertia than is possible, for instance, if the screw is simply attached to the servo motor. The strictly industrial design was another top priority. The complete

November 23, 2016

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 2000 employees. With a blend of dedication and enthusiasm, we set benchmarks – every day – worldwide.



The servo motor, spindle drive, linear guide rail and encoder system in single-cable technology are fully integrated in the actuator housing.

---

#### WITTENSTEIN SE

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)

actuator is accommodated in a robust stainless steel housing with IP54 protection and can be mounted in any position. The screw itself is maintenance-free with an anti-rotation mechanism and fits inside a closed thrust tube. The spindle drive and reinforced bearings allow both a tensile and a compressive force to be applied. An absolute single-turn encoder system with 12-bit resolution is available for all sizes. If the 32 or 40 size is installed, the functionalities of what is currently the smallest integrated multiturn encoder in the market can additionally be implemented as an option. All sizes are moreover designed using EMC shielded single-cable technology which is suitable for cable carriers. Thanks to these innovative features, the actuators are perfect for industrial applications.

### **More reliable and more energy efficient than pneumatics**

Unlike pneumatic cylinders, the new linear actuators permit precise and flexible position control regardless of the application without any retooling on the machine. They are thus ideal whenever frequent format changes are required. The servo technology offers better controllability by design; together with the easy connection to a higher-level controller, this facilitates reproducible processes which can be either stroke or force optimized. The actuators are leakproof and far more energy efficient in normal operation – after all, compressed air is not only expensive to produce but a significant share of it is lost. Finally, servo technology is virtually maintenance-free and also quieter – two further benefits compared to pneumatics.

### **Impressive connectivity in the system**

The new small servo motors with an integrated screw can be configured with simco drive servo regulators to form high-performance small servo axes. Multiple connection options are available for these solutions, which can be integrated in a higher-level controller via CanOpen, EtherCAT, Profinet RT/IRT or EtherNet/IP. At the same time, this single-source system solution entails absolutely no interface risks and has an electronic identification plate that reduces the time for commissioning. As another software feature to simplify start-up, the end positions are automatically limited, preventing the actuator's mechanical stops from being approached dynamically. By selecting the electronic homing mode, the machine operator can define any zero position and home to it freely.

---

#### **WITTENSTEIN SE**

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)

These small servo motors with an integrated screw in the cyber dynamic line series are ideal whenever a strictly industrial design, high compactness and dynamics, multiple interfaces, optimal energy efficiency and permanent freedom from maintenance are called for.

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

Photos:

1. The new small servo motors with an integrated screw form a closed, highly integrated and ready-to-mount unit comprised of a servo motor, spindle drive, linear guide rail and encoder system.
2. The new small servo motors with an integrated screw are offered in four sizes, each with two different screw pitches and two stroke lengths for short or long-stroke applications.
3. The small servo motors with integrated screw make a perfect complement to the existing portfolio of rotary servo motors and actuators in the cyber dynamic line family.
4. What makes these small servo motors with an integrated screw so unique is that the servo motor, spindle drive, linear guide rail and encoder system in single-cable technology are fully integrated in the ready-to-mount actuator housing.
5. When combined with the servo regulators in the WITTENSTEIN simco drive series, the small servo motors with an integrated screw can be configured as complete small servo axes.

**WITTENSTEIN SE – one with the future**

With around 2000 employees worldwide and sales of €302 million in 2015/16, 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 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 SE ([www.wittenstein.de](http://www.wittenstein.de)) is additionally represented in all the world's major technology and sales markets.

---

**WITTENSTEIN SE**

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)