



Driving in a hygienically clean environment

Hygienic Design gearheads, brushless DC motors and servo actuators made by WITTENSTEIN currently on show at IFFA

IFFA, the leading international trade fair focusing on the subject of meat, is taking place in Frankfurt from May 7 to 12. The WITTENSTEIN Group's exhibit there centres around corrosion resistant gearhead and drive solutions with a hygienic design. The HDV Hygienic Design series by WITTENSTEIN alpha GmbH are currently the only planetary gearheads of their kind with EHEDG certification. Customers seeking hygienic servo actuators made of full stainless steel as complete motor / gearhead units from a single supplier can choose WITTENSTEIN motion control GmbH's axenia value series as a complete, optimally interacting system conforming to EHEDG design guidelines. premo – the new, scalable servo actuator platform, also by WITTENSTEIN motion control – is offered with an industry-specific "food" package as a corrosion resistant, hygienic solution for the food processing, bottling and packaging industries. Finally, the Hygienic Design version of the cyber dynamic line family was developed by WITTENSTEIN cyber motor as a brushless DC motor to facilitate hygienic drive automation for production and packaging machines in the meat processing and packaging industry, for example.

The WITTENSTEIN Group has responded to the growing popularity of hygienic drive technology in the food, meat and packaging industries by developing specific expertise in hygienic design. One reason for this increased demand for automation components with a hygienic design is that changing consumer habits are already leading to a steadily expanding array of individually wrapped or single-serving food products such as sliced meats. The issue is also being hyped by the industry: more and more machines for manufacturing and processing meat and sausage products nowadays have an open design, i.e. with as little encapsulation or enclosure of individual components as possible. These components must not only have a hygienic design but must also be easy to integrate and maintain. As a member of the EHEDG (European Hygienic Engineering & Design Group), WITTENSTEIN is familiar with the legal and technical requirements applicable to hygienically designed gearheads, servo

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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 1900 employees. With a blend of dedication and enthusiasm, we set benchmarks – every day – worldwide.



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motors and servo actuators, which are implemented in various product portfolios.

HDP and HDV: Hygienic Design gearheads assure maximum productivity and availability

Germ-free, aseptic, extremely dynamic and compact – as currently the only planetary gearhead with EHEDG certification, the HDV Hygienic Design series by WITTENSTEIN alpha meets the requirements of hygienic production and packaging machines in every respect. The new HDP Hygienic Design with an output flange is the only planetary gearhead of its kind in the world, setting new benchmarks in terms of positioning accuracy and power density as well as cleanability and process reliability. With a torsional backlash of less than 1 arcmin and a maximum acceleration torque of 760 Nm, the HDP series is perfect for highly dynamic and compact applications, for example in delta robotics. Like the HDV with output shaft, the HDP was also designed for use in the sterile and wet areas of production and packaging lines, e.g. in food and meat processing applications. Due to its optimized design and materials, germs no longer stand a chance. The plug & play concept makes it a simple matter for manufacturers to integrate the drive units hygienically into an open machine architecture. Their customers profit from the highest possible protection against product and process contamination risks because these easy-to-clean gearheads assure maximum performance, productivity and availability.

axenia value: Servo actuators in an EHEDG compliant system design

The motor and gearhead as a single unit with IP69K protection, a complete system conforming strictly to EHEDG design guidelines, precision actuators providing exceptionally high power density and availability – these characteristics are united in the axenia value servo actuator series from WITTENSTEIN motion control. The actuators comprise a compact, high performance motor with a precision planetary gearhead that is directly mounted, i.e. without a coupling in order to save space. This power dense type of construction is shared by all axenia value variants, as is the strict adherence to hygienic design requirements. Machine manufacturers no longer need to adopt cost-intensive measures in the fight against germs, microorganisms and dirt traps – such as enclosures or encapsulations for complete, non-hygienic actuators as protection

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against wet cleaning or disinfection. Instead of extra costs axenia value provides increased design freedom, for instance for space optimized equipment with a smaller footprint. The single-cable technology which is available as an option moreover reduces the amount of wiring required and halves the risk of liquid ingress. The owner of the machine acquires a servo actuator with a higher power density, leading to more performance. The high reliability simultaneously improves the overall equipment effectiveness (OEE). The enhanced process reliability and product safety is a further advantage because the elimination of protective canopies and actuator covers means there are no hidden corners where dirt, corrosion or leaks can occur unnoticed.

premo “food”: Scalable servo actuators in corrosion resistant, food safe design

Individual flexibility thanks to an ingenious modular toolkit, double the usual power density in a very small space, more productivity and an industry-specific “food” feature option: premo – WITTENSTEIN motion control’s fully scalable actuator platform – creates new opportunities for the mechatronic drive technology in food processing, bottling and packaging machines. The painted, corrosion resistant housing has neither gaps, depressions, undercuts and dead spaces nor visible screw heads that could provide a breeding ground for bacteria and microorganisms. The smooth, rounded edges and the lack of horizontal surfaces ensure that any liquids are drained off completely. The sealing concept achieves IP65 (“splash-proof”) protection while the lubricant has food grade certification. The premo “food” version satisfies the additional criteria for hygienic design: amongst other things, the paint conforms to the requirements of the FDA (U.S. Food & Drug Administration). The optional single-cable technology, which reduces the amount of wiring and halves the risk of liquid ingress, is likewise available for the “food” industry package.

cyber dynamic line: Corrosion resistant or hygienic brushless DC motors for production and packaging machines

The Hygienic Design version of the brushless DC motors in the cyber dynamic line family covers the output range up to 335 watts and was designed to facilitate hygienic drive automation for production and packaging machines in the meat processing and packaging industry, for example. The motors are strictly in conformity with EHEDG guidelines and therefore ideal for all production and packaging tasks

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where absolute cleanliness is a must. The biggest advantage when these compact servo motors are integrated is that they no longer have to be provided with complex encapsulation or concealed in the plinth of the machine; instead they can be directly connected to the axes of a pick & place robot, for example, without any additional mechanical elements. This generates cost and flexibility benefits for the machine design, avoids the heat problems that tend to be associated with encapsulation and makes an attractive alternative to solutions based on complicated pneumatic drives. Hygienic Design solutions from WITTENSTEIN cyber motor are easier to clean and service as well as being less sensitive to dirt, and at the same time they offer more reliable operation.

WITTENSTEIN cyber motor can also supply an IP66/67 variant of the cyber dynamic line for applications with no direct product contact, where a robust drive and optimal sealing are stipulated. These servo motors are likewise made entirely of stainless steel but are not designed in accordance with hygienic guidelines. Owing to their high IP protection, they can be used wherever high pressure water jets are essential for cleaning but a strictly hygienic design is not imperative. Furthermore, the brushless DC motors can be combined with the (also integrally welded) one to three-stage version of a planetary gearhead. The motor / gearhead units built by WITTENSTEIN cyber motor are highly integrated and open up almost unlimited possibilities.

The servo amplifiers in the WITTENSTEIN motion control simco drive series enable systematic solutions. Not only are they perfectly matched to the power output of the cyber dynamic line; they can also be installed at distributed locations in the field, i.e. directly adjacent to the actuators in the production and packaging environment, in the version with IP65 protection. This means less wiring compared to cabinet-mounted amplifiers and allows the entire drive solution to be flexibly integrated into the architecture of a wide range of machines.

Hygienic design by WITTENSTEIN – cutting-edge, EHEDG compliant gearheads, servo motors and servo actuators.

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Photos:

1. The HDV Hygienic Design series by WITTENSTEIN alpha are currently the only planetary gearheads of their kind with EHEDG certification.
2. HDP Hygienic Design gearheads from WITTENSTEIN alpha: the perfect solution for highly dynamic and compact applications such as delta robots
3. WITTENSTEIN motion control's axenia value series of hygienic servo actuators made of full stainless steel are ideal for use in the food processing and packaging industries.
4. In combination with the industry-specific "food" option, premo – the first fully scalable actuator platform from WITTENSTEIN motion control – provides a range of servo actuators specifically designed for use in environments with cyclic cleaning processes and indirect food contact.
5. The Hygienic Design version of the cyber dynamic line (at the back in the photo) was developed by WITTENSTEIN cyber motor as an industry-standard brushless DC motor to facilitate hygienic drive automation in production and packaging machines. The corrosion resistant variant of the cyber dynamic line (front) is made of full stainless steel and is therefore predestined for applications with no direct product contact, where a robust drive and optimal sealing are stipulated.

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

WITTENSTEIN AG – one with the future

With around 1900 employees worldwide and sales of approximately €300* million in 2015/16 (*provisional figure), 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) is additionally represented in all the world's major technology and sales markets.

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