



# Contact

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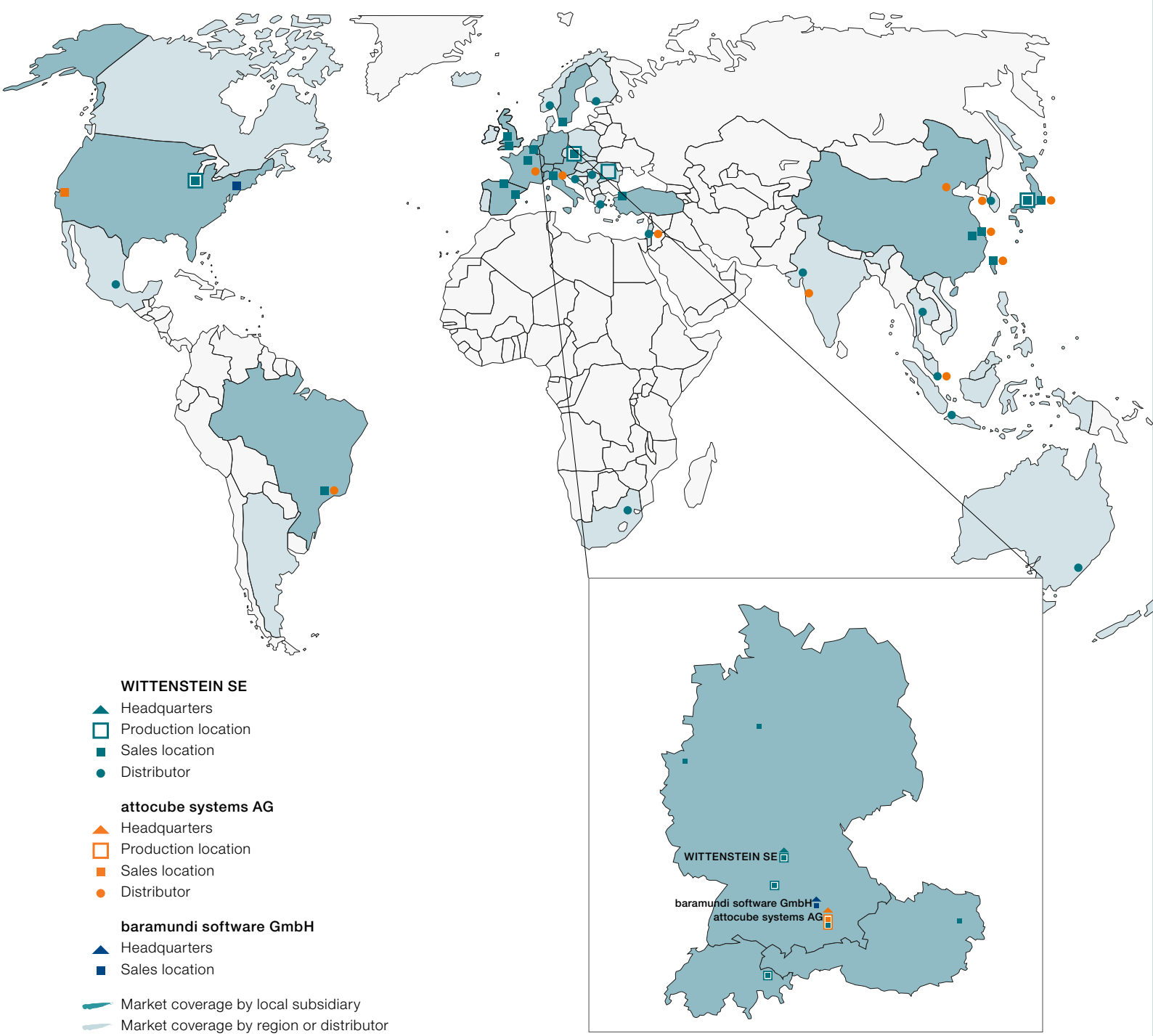


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# WITTENSTEIN

With our subsidiaries, dealerships and production locations, we boast a global presence so that we can offer local support to all our customers.



## Drivers of innovation in cybertronic drive technology

We develop, produce and sell systems and solutions for highly dynamic motion, maximum-precision positioning and intelligent networking in the field of mechatronic and cybertronic drive technology. Our aim is to provide you with innovative, future-proof solutions that will help you to stay ahead of the game. To this end, we have combined strategic business divisions with specific core competencies under one roof.

Our products can be found in industry, in space and underground. We offer products such as high-precision planetary gearboxes, complete electromechanical drive systems as well as AC servo systems and motors. Our areas of application include robotics, machine tools, medical technology and the aerospace industry.



# The WITTENSTEIN group

Strategic business divisions



WITTENSTEIN alpha GmbH  
High-precision servo gearboxes,  
intelligent drive and linear systems



WITTENSTEIN cyber motor GmbH  
Highly dynamic servo motors and drive electronics



WITTENSTEIN galaxie GmbH  
Zero-backlash gearboxes and drive systems



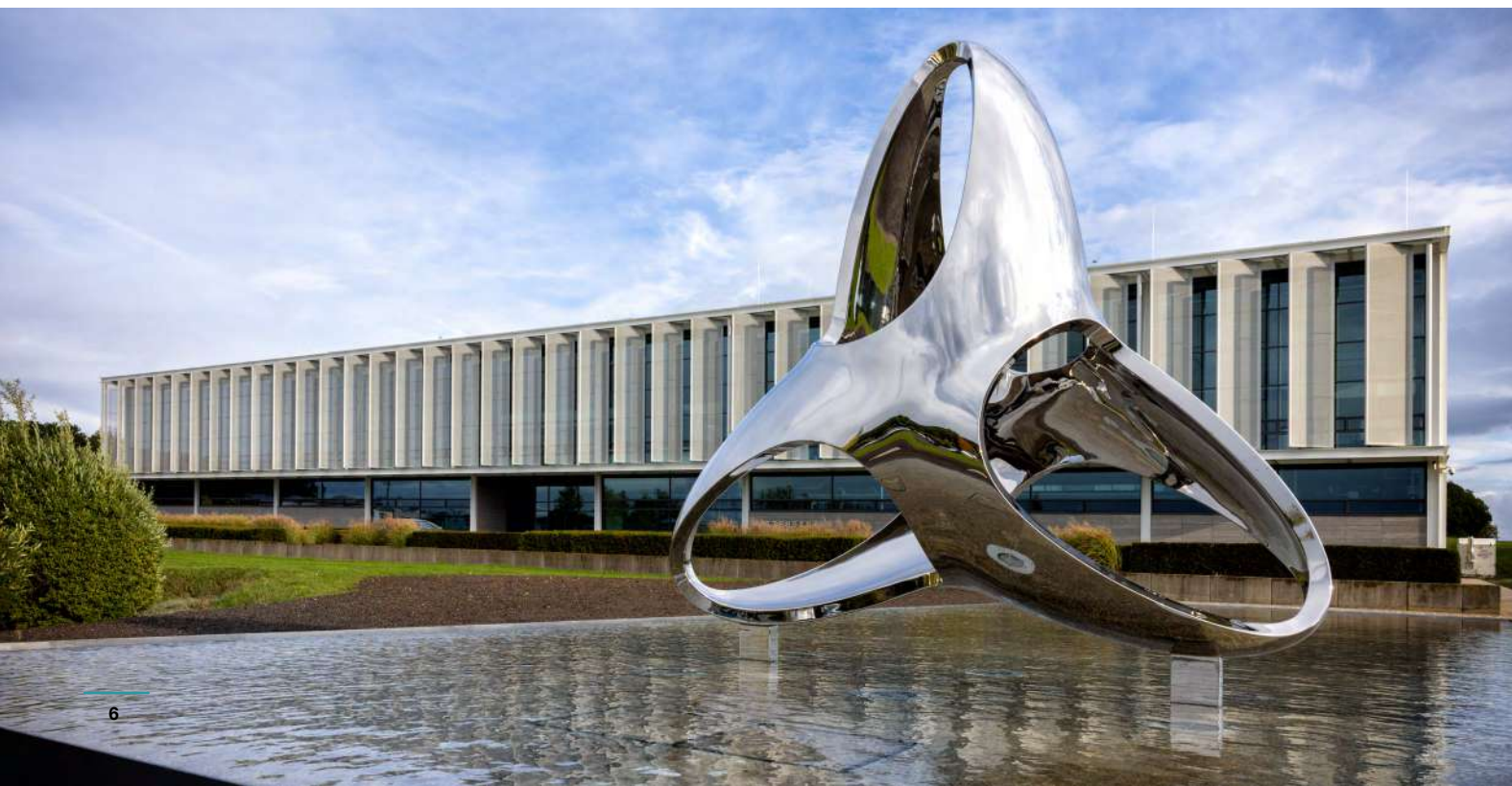
WITTENSTEIN motion control GmbH  
Drive systems for the most extreme environmental requirements



attocube systems GmbH  
Nanoprecision drive and measurement technology solutions



baramundi software GmbH  
Secure management of the IT infrastructure in offices and production



## Facts and figures

As at March 31, 2025

Sales revenues in €

**526.2 million**

Equity ratio

**65.6%**

Employees worldwide

**2,853**

Trainee ratio

**7.0%**



# The WITTENSTEIN Group

## Specialists united under one roof

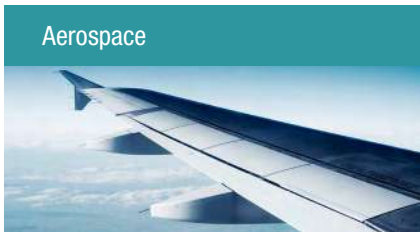
Within the WITTENSTEIN group, six business areas strive to advance their respective disciplines. The ongoing exchange between these areas strengthens their power of innovation and accelerates developments. This gives our customers a valuable edge.

## Areas of expertise

Our outstanding innovative strength, our comprehensive expertise in the field of mechatronic drive technology and our decades of experience are the key factors that allow us to develop pioneering solutions for our customers time and again. Across the various application areas, we help them to gain important competitive advantages in the market and to manufacture their products efficiently and with minimal use of resources.



Excellence in mechanical and plant engineering: With in-depth industry expertise in automation, robotics and handling, food and packaging technology, machine tools, woodworking as well as semiconductor and electronic assembly, we continue to set standards. We also create customer-specific solutions combining efficiency, quality and future viability in plastics and rubber processing as well as in other sectors such as the textile or glass industry.



The aviation industry must develop ever more efficient aircraft, without compromising on safety. Thanks to their excellent power-to-weight ratio and reliability, our mechatronic systems contribute towards achieving and exceeding this objective. Our EASA approval and global service network enables us to offer all services, for our entire product range, to provide system suppliers, aircraft manufacturers and airlines with reliable mechatronic driver capacity for the entire life cycle of an aircraft.



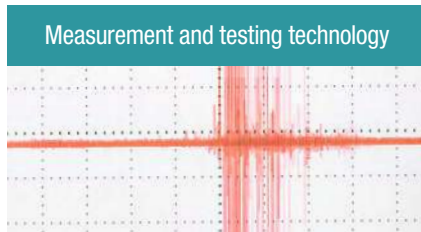
Since 2006, WITTENSTEIN has set benchmarks in power-to-weight ratio, efficiency and intelligence for powertrains of electric and hybrid vehicles. By way of example, we offer traction drives, generators and electric drives for turbochargers and compressors, including intelligent control software. Our unique engineering solutions and serial products are specialized for space-restricted applications with small serial quantities.



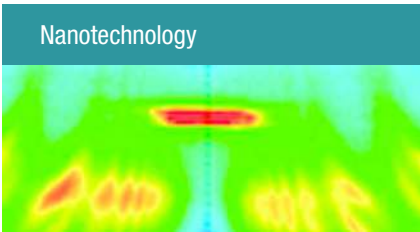
We have long been working successfully with our customers on solutions for energy-efficient drives, new generations of power generators and energy recovery systems for many sectors. Thanks to their extremely high resistance to radioactivity, our radiation-proof rotary servo motors, actuators and generators open up completely new possible applications for nuclear power plant operators. On request, we build products in strict compliance with IEEE guidelines and explosion-proof to ATEX guidelines.



For more than 20 years, WITTENSTEIN has been supporting its customers in the medical technology sector with the most advanced solutions in the field of mechatronics. Reliability and safety are two core values that, combined with extreme compactness and responsiveness, characterize the products developed. The wide range of solutions includes motors, gearboxes, sensors and drive systems that are ideal for many medical and laboratory applications as well as for robotic surgery.



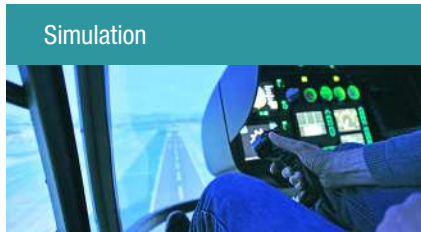
Modern production processes are increasingly complex. To control them accurately and reliably, the measuring and testing technology must be taken to new levels of precision and compactness. Our IDS3010 sensor enables dynamic, nanoprecise measurements in industrial applications for the first time. Our ultra-compact, customized drives simultaneously open up new possibilities for developing systems and equipment – even in extreme environmental conditions.



In order to record, research and further develop the nanotech world, you need instruments that work reliably even in the subatomic range. For over 10 years now, we have been developing and producing nano-precise sensor, actuator and microscopy solutions that push the limits of what is physically and technically possible. This work is interdisciplinary and innovative: We are ready to forge new and highly innovative paths with our customers.



The harsh ambient conditions in the oil and gas industry place stringent demands on machines and systems: Our rotary servo motors and generators are available with and without housing, are highly shock and vibration-resistant and enable stator winding temperatures up to 240°C and ambient pressures up to 2,100 bar. Specifically to enable oil and gas to be processed and extracted on land or below the ocean surface, we offer highly integrated mechatronic systems with extremely robust designs and high-precision calibrations.



Flight simulators enhance air safety significantly. These can be used to provide civilian and military pilots with practical instruction and training. Control Loading Systems are the sensitive human-machine interfaces in such simulators. We offer our customers these systems from a single source, including all the integrated hardware and peripherals as well as the necessary software systems and programming for aircraft-type-specific databases.



More than a stopover: People want to take a short vacation together with their family or friends, looking for more thrills and fun. New parks and resorts worldwide are opening their doors for an epic adventure: More real. More intense. More thrills. An experience like never before. Themes and attractions let visitors plunge into history. Film heroes and mythical creatures come alive while a journey into the future creates a once-in-a-lifetime experience.



The WITTENSTEIN group has been active in the boat electrification sector for over a decade. As a partner, we understand and meet the needs of the marine industry. Our products are extremely compact, efficient and produce very little noise in operation. Our mechatronic products for demanding applications deliver the quality and reliability required for the marine industry.



Maximum throughput with a high level of economic efficiency and flexibility is a key factor in the battery manufacturing industry. These requirements can be met by the extensive product portfolio of the whole WITTENSTEIN group and its professional expertise. We take your application to the next level with our innovative solutions.



Reliable, robust and cost-efficient: These factors are of paramount importance when it comes to agricultural machinery. Thanks to decades of experience in the field of gear technology, we are your perfect partner both for standard applications and customized special solutions and can assist you with our comprehensive technical expertise. WITTENSTEIN drive components are now an integral part of systems for sowing, transplanting, flower processing and milking stations.



WITTENSTEIN develops a wide range of products and solutions for connected production environments in which physical and virtual objects communicate with each other. Using the virtual pool of knowledge which is created in this way, you can optimize processes effectively, reduce your manufacturing costs and make your operations generally more efficient.





# The WITTENSTEIN Group



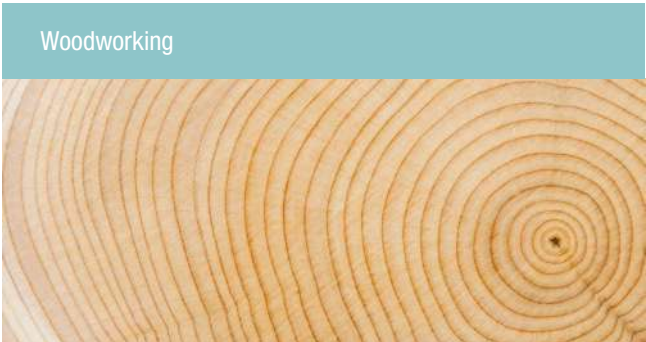
## Mechanical and systems engineering

For decades, we have served as a competent partner to companies involved in the development, design and manufacture of machines for factory and process automation. During this time we have built up unrivaled know-how in a variety of industries.

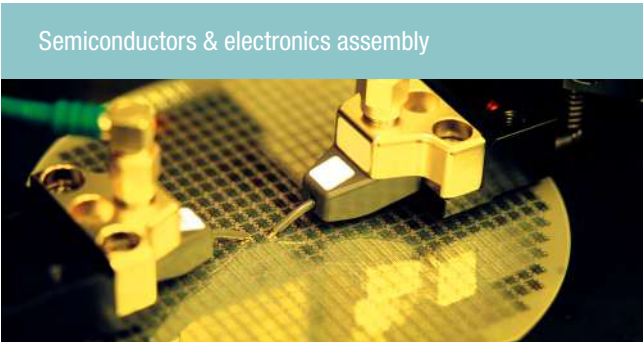
Our customers profit from our outstanding expertise in the following fields:



The degree of automation is constantly increasing – and so is the variety of applications. That is why we offer our customers a portfolio that meets a wide range of requirements. We have more than 10 years of experience in drive technology for delta robots: Our gearbox and actuator solutions in this area are as individual as the applications of our customers. In addition, we also offer small servo motors for the rotary axis. The gearbox and actuator solutions are suitable for use in diverse environments: They include versions for dry areas and for applications with stringent hygiene and resistance requirements. For applications where high throughput is important, we offer a wide range of highly dynamic and precise motors. In the field of intralogistics, our modular servo drive system iTAS® sets standards. All our solutions are characterized by absolute compatibility as well as maximum flexibility and scalability.



In the woodworking industry, the demands on machine flexibility are very high: Trends in the furniture industry are changing rapidly, some products are manufactured in single units and the product range overall is extremely diverse. At the same time, demands regarding production speed, processing quality and manufacturing costs are increasing. Dynamics, precision, efficiency and process reliability are thus of paramount importance. We offer gearboxes, actuators and mechanical linear systems for every need: For applications with high requirements, we have highly dynamic and precise drive systems in our portfolio. With our Basic and Value gearboxes and linear systems, we also have solutions that offer high quality and performance at particularly attractive prices. The cymex® 5 design tool ensures optimum integration of the drive technology into the overall system of the machine. Products can be selected quickly and easily online with our SIZING ASSISTANT.



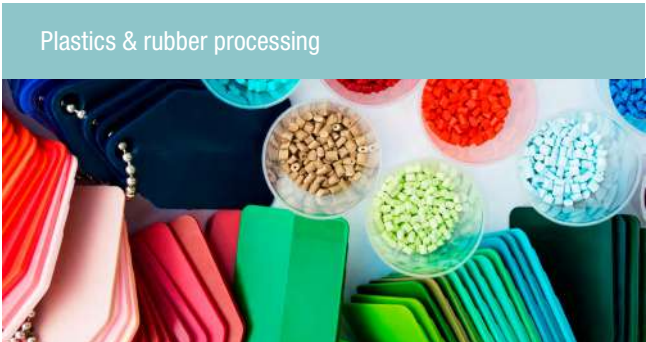
Reliable and high-precision mechatronic drive solutions play a central role in the semiconductor and display manufacturing industries as well as in the electronics assembly sector. WITTENSTEIN is your experienced and innovative partner. Our many years of experience in various industrial sectors enable us to understand your application and your requirements, and thus support you in the best possible way. In all areas – be it wafer production, front-end and back-end processes, electronics assembly and material handling, or display manufacture and automation solutions – WITTENSTEIN offers tailor-made drive solutions for your applications. We leave nothing to be desired!



Machines for the production of food, pharmaceutical or hygiene products are often customer-specific developments. The different motion sequences in the production process require high precision, dynamics and reliability. When extremely high quantities of a product are manufactured, productivity and maximum availability of the system are crucial. When producing several products on a single line, flexible and easy retooling is also essential. Depending on the end product to be packaged and the area of application, packaging machines have a diverse range of requirements. Frequent keywords are productivity, product safety, format change, batch traceability or cleanability, meaning that nearly every packaging machine becomes a customized system concept entailing a wide variety of drive requirements. Our portfolio offers suitable solutions for the entire machine line, from primary to secondary to tertiary packaging. With our decades of experience and extensive process expertise in packaging technology, coupled with product solutions tailored to specific requirements, WITTENSTEIN is the right partner for all aspects of system efficiency, increased productivity, connectivity and hygienic design.



Development times in the industries that use machine tools are becoming ever shorter. The focus is on reducing production costs and increasing the efficiency of the machines. This in turn increases the demands regarding flexibility, precision, repeatability, speed and productivity. Our products are characterized by high precision, outstanding performance and power density as well as exemplary reliability. Our portfolio includes not only low-backlash planetary gearboxes, but also mechanical and mechatronic linear systems, actuators and highly precise customer-specific servo motors. Our revolutionary Galaxie® drive system is far superior to traditional hollow shaft gearboxes in terms of torque and rigidity. Completely new levels of machining quality can thus be achieved. Thanks to our innovative design tools, drive trains for a wide variety of applications can be optimally designed with our products.



The plastics processing industry requires machine concepts with higher productivity and smaller batch sizes. In addition, product quality and energy efficiency are also to be increased. To raise productivity, dynamic drives represent an ideal means of reducing cycle times. A further measure is the use of linear actuators, even for high force ranges. The superior precision of our drive solutions enables maximum product quality. To improve energy efficiency, consistent use of servo technology instead of hydraulics is recommended in many cases. In this case, we offer drives with particularly high power density, which are ideally suited for the limited space conditions of plastics processing machines.



Innovative cutting-edge technology from WITTENSTEIN is also used in many other industries. These include, for example, glass technology, textile processing, printing and paper machines as well as special machines for a wide variety of applications. Whether it is the drive, control or regulation of machines and entire systems – our products set standards worldwide. Among other things, we offer low-backlash planetary gearboxes, high-precision spur and bevel gear sets, gear components for driven tools, linear systems, actuators and complete mechatronic drive systems for a wide range of applications in industrial and extreme application environments. Particularly in the development of customer-specific solutions, we possess a deep understanding and adopt a holistic approach to the requirements of our clients.

# WITTENSTEIN service concept

## PRE-SALES

### Planning



#### Consulting expertise

- Optimum solutions thanks to professional application calculations and drive sizing
- Customized solutions and maximum innovation

#### Customer training and webinars

- Tailored content and specific training programs
- Recordings of WITTENSTEIN webinars to enable familiarization with products and solutions

#### CAD POINT

- Technical data sheets and 3D data – find the right information with just a few clicks

#### cymex® select

- The innovative quick sizing tool
- Efficient and customizable product selection in seconds
- Dimensional drawing and CAD data with a single click

### Investment



#### cymex®

##### Optimization of your drive train

- cymex® – the tried-and-tested software for drive system optimization
- cymex® enables straightforward dimensioning and evaluation of the complete drive train (application + transformation + motor + gearbox)
- Support and extensive design experience

#### speedline® service

- In time-critical situations, our speedline® service ensures your productivity and delivers the time savings that you require
- Coordination of the complete order from request to delivery, including technical clarification
- Individual pick-up and return service for additional time savings

Our services at a glance



## AFTER-SALES

### Usage



#### Professional support for the best possible start

- Assistance with installation and commissioning
- Individual training in commissioning
- Operating manuals with information regarding commissioning and installation
- Optimum integration of the system in your application

#### WITTENSTEIN Service Portal

- Support throughout the entire life cycle of your WITTENSTEIN product
- Instant access to product information
- Quick assembly and commissioning

Find out more about the WITTENSTEIN Service Portal



### Re-investment



#### Maintenance

- Proactive measures to minimize failure risks
- Personal and prompt handling of your time-critical repair requirements
- Tailored repairs combining highest levels of quality and care

#### Application-specific retrofitting

- Professional retrofitting of mechanical drive systems
- Reliable compatibility testing of existing solutions



# WITTENSTEIN SIZING TOOLS



Our software portfolio helps you choose the right drive

You can conveniently download dimension sheets and CAD data, select the best product quickly and easily or design complex kinematic sequences in detail – our software solutions offer various methods of selecting the best, most reliable drive on all axes.

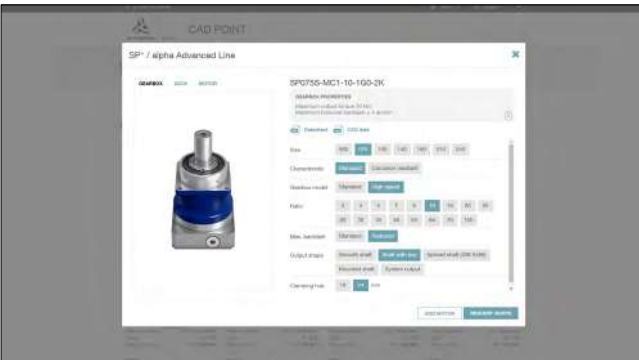


## CAD POINT

YOUR SMART CATALOG

- Performance data, dimension sheets and CAD data for all gearboxes
- Comprehensive documentation for your selection
- Available online, no login required

[www.wittenstein-cad-point.de](http://www.wittenstein-cad-point.de)

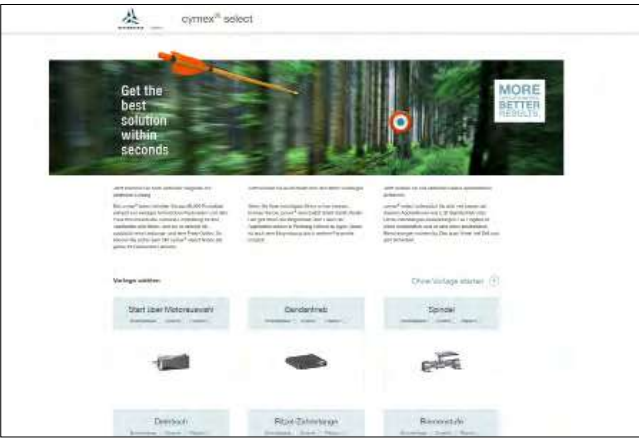


## cymex® select

BEST SOLUTION WITHIN SECONDS

- Efficient and customizable product selection in seconds
- Top three product recommendations for your requirements
- Innovative calculation logic based on performance and price
- Available online, no login required
- Quick and direct quotation requests

[cymex-select.wittenstein-group.com](http://cymex-select.wittenstein-group.com)



## cymex® 5

CALCULATE ON THE BEST

- Detailed calculation of complete drive trains
- Precise simulation of motion and load variables
- Downloadable software for complex designs

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



# Digital partner solutions

Discover more tools for your optimum WITTENSTEIN drive

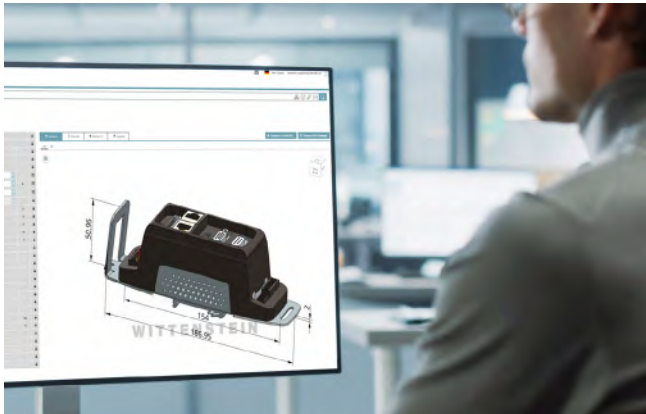
Powerful partner software solutions are available to you for selected WITTENSTEIN products such as servo motors, controllers, actuators and drive systems. These support you efficiently with your selection, sizing and integration – with precise data, high speed and a wide range of variants.



## CADENAS

- Digital product catalog
- 2D, 3D CAD and CAE models as well as dimension and data sheets for all products
- Multi-CAD/CAE: support for approximately 150 native and neutral formats
- Integration in the WITTENSTEIN CAD POINT solution
- For simplicity, speed and choice in the design process

[wittenstein.partcommunity.com](http://wittenstein.partcommunity.com)

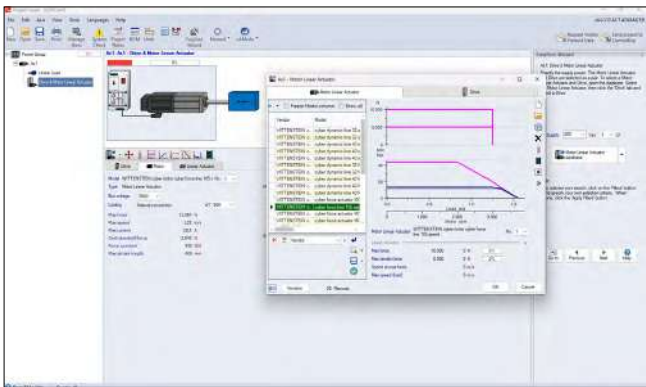


## SERVO SOFT

The Optimal Solution

- Design software
- Fast, efficient and valid modeling of multi-axis servo systems (electrical and mechanical components)
- Optimum interaction between motor, gearbox, servo controller and mechanics
- Reliable calculations for greater design safety
- For simplicity, speed and choice in the engineering process

[controleng.ca/servosoft/](http://controleng.ca/servosoft/)

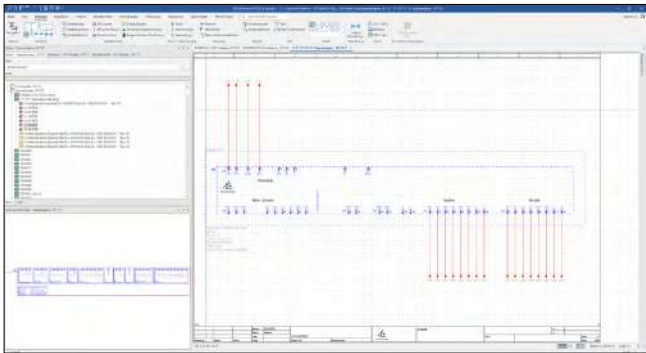


## EPLAN

Data portal catalog

- For reduced project planning work in your electrical design
- Extensive product availability in the EPLAN catalog

[dataportal.eplan.com](http://dataportal.eplan.com)





# cynapse® – It's new. It's connective.

The smart feature

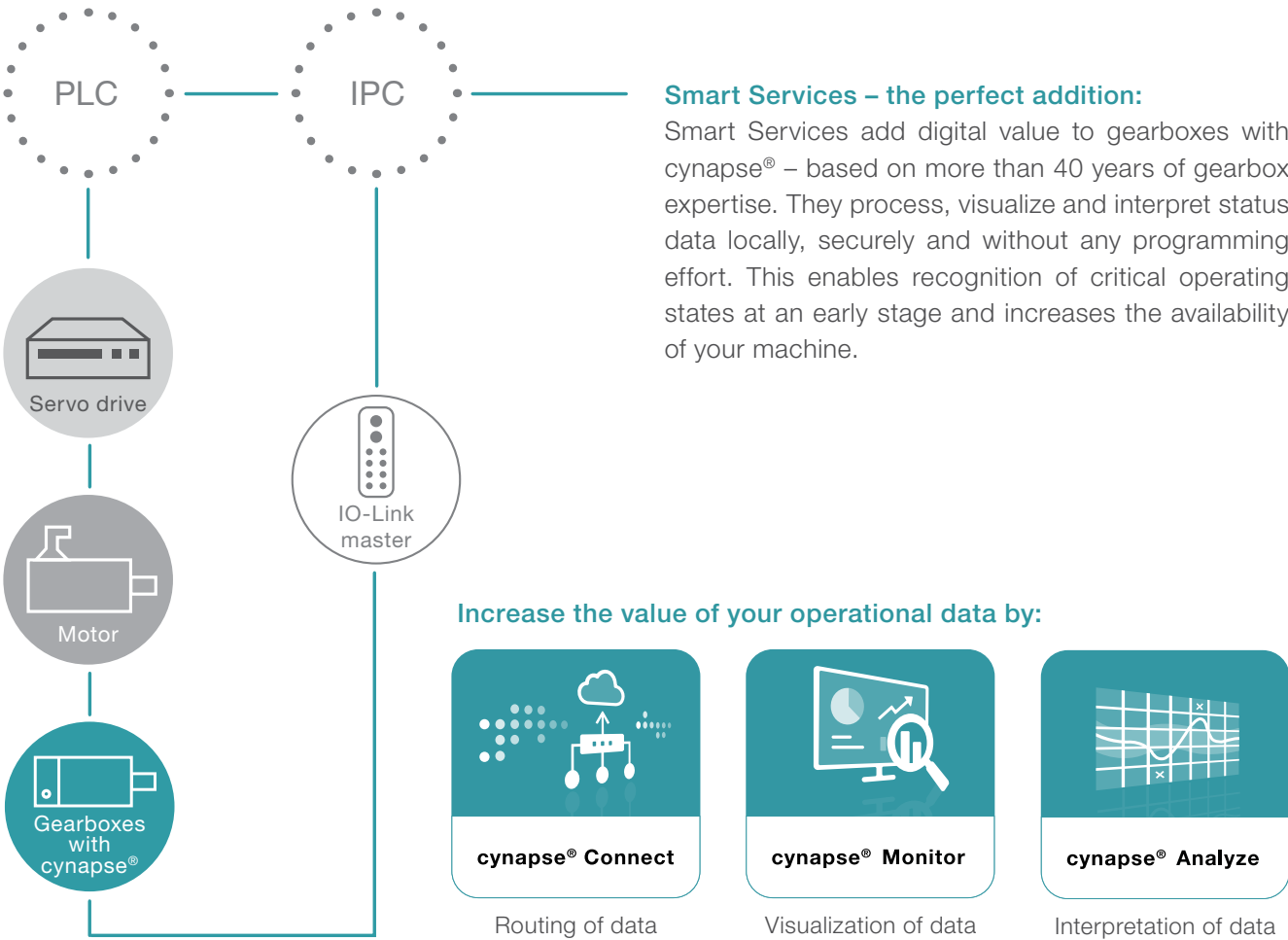
Cybertronic drive systems that can independently acquire and communicate information are an essential prerequisite for IIoT. WITTENSTEIN alpha is the first component manufacturer to offer smart gearboxes as standard – gearboxes with cynapse®. They have an integrated sensor module that makes Industry 4.0 connectivity possible.

## cynapse® – how it works

cynapse® ensures that the gearbox can be easily integrated into the digital world. The cynapse® feature is integrated into the existing installation space and is connected via an IO-Link interface. As a result, measured data such as the gearbox's **temperature, vibration, operating time, and product-specific information** can be accessed.

**cynapse® impresses with:**

- Consistent and short delivery times
- Sensor solution integrated into the installation space
- Simple connection by IO-Link interface
- Gearbox threshold value monitoring
- Quick product identification thanks to digital name plate



# Hygienically safe production

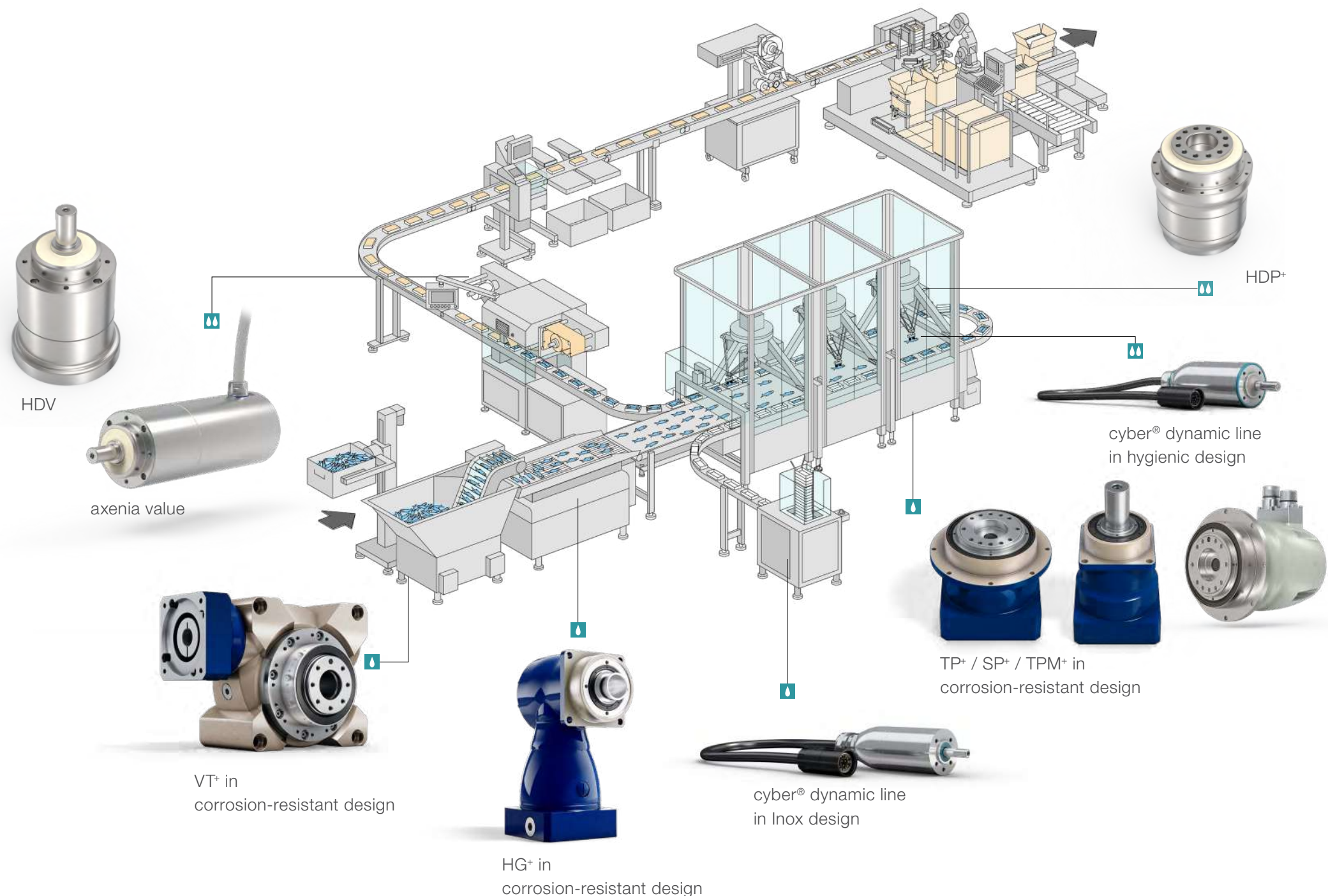
Consistent hygienic design for best possible process integration and reliable cleaning with new design freedom: We offer corrosion-resistant products and holistic solutions in a hygienic design based on our extensive expertise of drive solutions in hygienic systems.

Our portfolio for process-integrated application includes numerous variants ranging from planetary gearboxes to compact servo actuators.

As a member of EHEDG (European Hygienic Engineering & Design Group), we are pioneers in this field and develop our products in accordance with EHEDG guidelines. We enable our customers to always meet the highest demands with maximum efficiency with their machines.



Member of EHEDG



## Applications in the food industry



Fish processing



Filling and packaging dairy products



Portioning meat products

- Application in wet and damp environments (spray area) – close to process
- Applications in wet areas, including high-pressure cleaning as well as contact with cleaning agents and chemicals (food sector) – process-integrated

Find out more about hygienic design products >



axenia in use: application at Provisur Technologies >







WITTENSTEIN alpha  
Company & portfolio



# WITTENSTEIN alpha

High-precision servo gearboxes, intelligent drive and linear systems

WITTENSTEIN alpha develops, produces and sells mechanical and mechatronic servo drive systems for sectors that require maximum precision. Our products continue to set new standards around the world.

We offer the best solutions for almost every application. In addition to servo gearboxes, our product portfolio includes a wide range of drive solutions with linear systems and servo actuators. Adapted accessories

such as couplings and shrink discs round off the product range.

Our software portfolio helps you choose the right drive: You can conveniently download dimension sheets and CAD data, select the best product quickly and easily or design complex kinematic sequences in detail – our software solutions offer various methods of selecting the best, most reliable drive on all axes.



## Gearboxes with cynapse® and Smart Services

Collect. Analyze. Visualize.  
Step into the digital world: Gearboxes with cynapse® record operating data independently. Combined with our Smart Services, we provide you with a simple way to analyze and process your machine data.



## Applications and uses

### Digitally monitor packaging processes: With our smart gearboxes and Smart Services

“Is an essential part of my machine about to fail?”  
Being able to answer this question at any time helps to stabilize processes – and this also applies in the packaging industry. That is why constant digital monitoring of relevant performance values is becoming increasingly important. Implementation has already started at Schreyer Sondermaschinen GmbH, with smart gearboxes and Smart Services from WITTENSTEIN alpha.



*“We want to digitally monitor our packaging processes with smart gearboxes and Smart Services from WITTENSTEIN alpha.”*

Julian Schreyer, Managing Director  
Schreyer Sondermaschinen GmbH



## 38% more output: Smart upgrade of the Robopacker



The packaging specialist C-TECH develops high-end automation solutions for the cardboard industry. A bestseller in the company’s portfolio is the ultra-fast Robopacker, which can form and strap any type of corrugated cardboard. Together with WITTENSTEIN, the company has now taken the Robopacker to a new level. With a redesign of the entire machine and the clever use of gearboxes from the alpha Basic Line and alpha Value Line, output was increased from 450 to 620 packages per hour. Our gearbox solutions played a key role in this impressive performance increase – an example of perfect teamwork.

*“The combination of intelligent new designs and WITTENSTEIN alpha gearboxes has not only improved performance, but also reduced costs.”*

Marco van Bekkum, Managing Director  
C-TECH bv



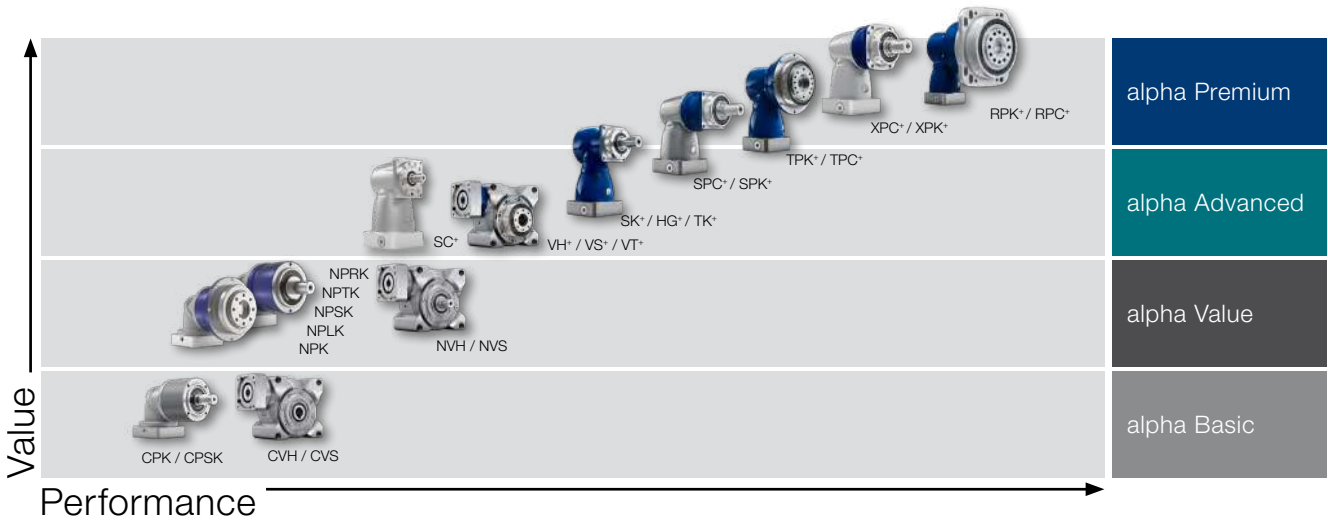
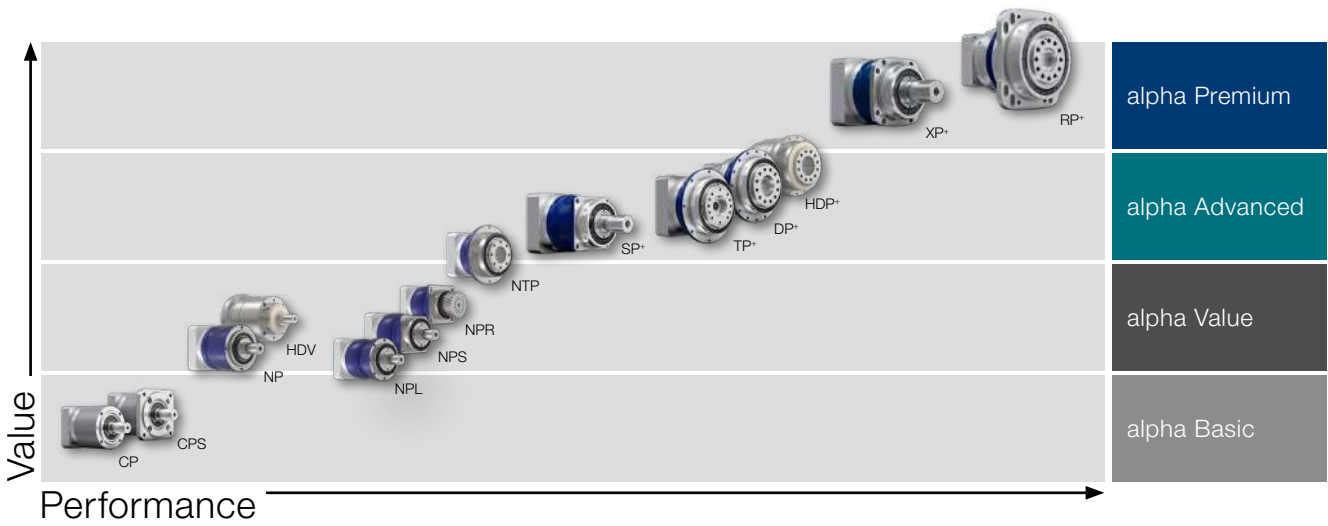


# WITTENSTEIN alpha on all axes

## Servo gearboxes

Maximum precision, dynamics and an above-average torque density are essential requirements of a reliable servo gearbox in practical application.

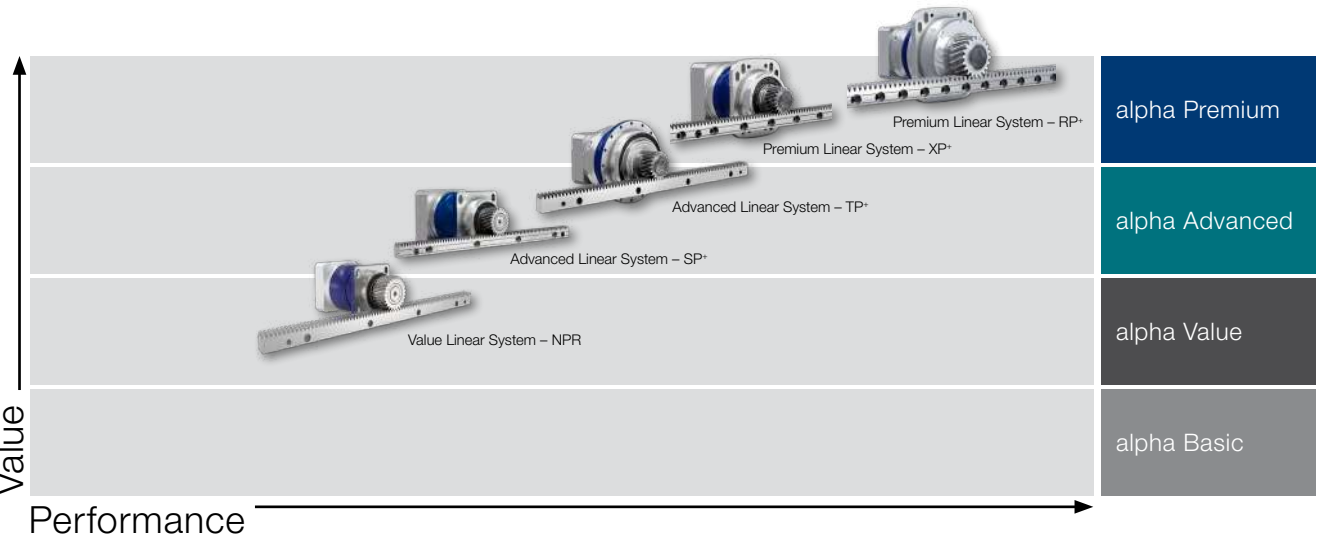
WITTENSTEIN alpha has servo gearboxes for every application and every performance range. Our low-backlash planetary gearboxes and right-angle gearboxes reflect our passion for innovation and maximum precision.



## Linear systems

Our specialist knowledge covers a broad range, from coupling linear-system components, gearboxes, motors, pinions and racks through to outstanding system solutions. In order to meet your specific

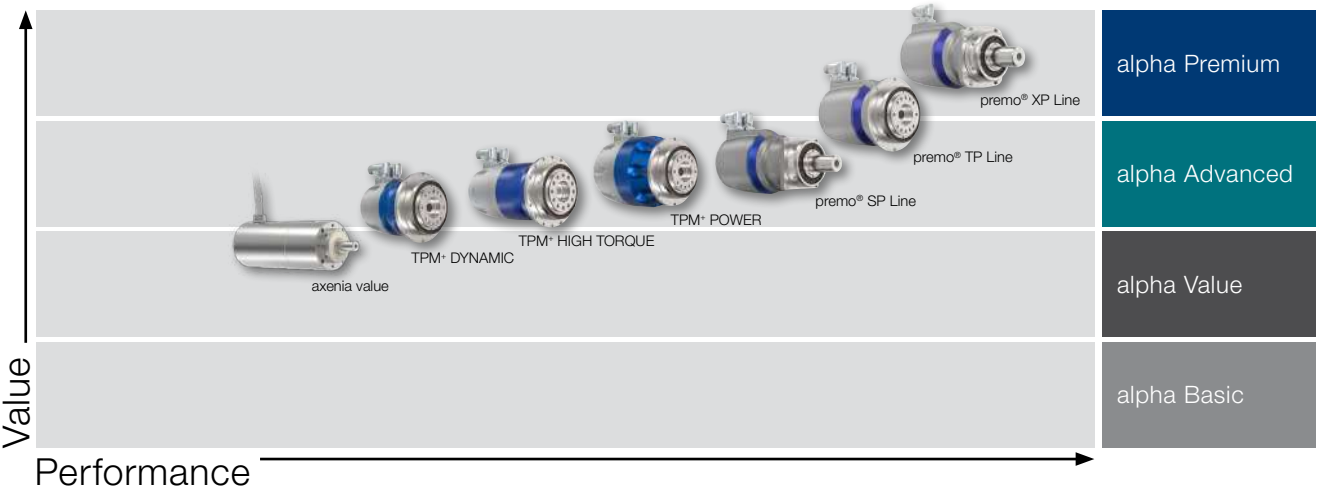
linear drive requirements in terms of smooth running, positioning accuracy and feed force, we offer linear systems that are optimally tailored to your application.



## Servo actuators

Our servo actuators are characterized by their high power density, low mass moment of inertia, high rigidity and low backlash. With these outstanding technical properties, the servo actuators can make a significant

contribution to increased productivity and reduced energy usage.



# Low-backlash planetary gearboxes



**CP**  
alpha Basic



- Ratio: 3-100
- Max. backlash:  $\leq 12$  arcmin
- Max. torque: 17-800 Nm
- Additional features:  
Food-grade lubrication

**CPS**  
alpha Basic



- Ratio: 3-100
- Max. backlash:  $\leq 12$  arcmin
- Max. torque: 48-272 Nm
- Additional features:  
Food-grade lubrication

**LPB+**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 37-305 Nm
- Additional features:  
Food-grade lubrication

**NPS**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 51-800 Nm
- Additional features:  
Flange with slotted holes  
(standard),  
food-grade lubrication

**NPT**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 18-700 Nm
- Additional features:  
Food-grade lubrication

**NPR**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 51-800 Nm
- Additional features:  
Flange with slotted holes  
(standard),  
food-grade lubrication

**NP**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 18-800 Nm
- Additional features:  
Food-grade lubrication

**HDV**  
alpha Value



- Ratio: 4-100
- Max. backlash:  $\leq 10$  arcmin
- Max. torque: 46-320 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant

**NPL**  
alpha Value



- Ratio: 3-100
- Max. backlash:  $\leq 8$  arcmin
- Max. torque: 51-800 Nm
- Additional features:  
Food-grade lubrication

**NTP**  
alpha Value



- Ratio: 4-100
- Max. backlash:  $\leq 5$  arcmin
- Max. torque: 56-800 Nm
- Additional features:  
Food-grade lubrication





# Low-backlash planetary gearboxes



## SP+ alpha Advanced



- Ratio: 3-100
- Max. backlash:  $\leq 1-4$  arcmin
- Max. torque: 48-5700 Nm
- Additional features:  
Flange with slotted holes,  
ATEX (2014/34/EU), food-grade  
lubrication, corrosion-resistant,  
optimized mass inertia

## DP+ alpha Advanced



- Ratio: 16-55
- Max. backlash:  $\leq 1-3$  arcmin
- Max. torque: 50-1402 Nm
- Additional features:  
Food-grade lubrica-  
tion, corrosion-resistant,  
optimized mass inertia

## TP+ alpha Advanced



- Ratio: 4-302.5
- Max. backlash:  $\leq 1-3$  arcmin
- Max. torque: 43-22,000 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant,  
optimized mass inertia

## XP+ alpha Premium



- Ratio: 3-100
- Max. backlash:  $\leq 1-4$  arcmin
- Max. torque: 56-3840 Nm
- Additional features:  
Flange with slotted holes,  
food-grade lubrication,  
optimized mass inertia

## HDP+ alpha Advanced



- Ratio: 22-55
- Max. backlash:  $\leq 1$  arcmin
- Max. torque: 252-1121 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant,  
optimized mass inertia

## RP+ alpha Premium



- Ratio: 4-220
- Max. backlash:  $\leq 1-3$  arcmin
- Max. torque: 352-10,450 Nm
- Additional features:  
Flange with slotted holes  
(standard), food-grade lubrication,  
optimized mass inertia

# FAST LANE: Proven products – rapid availability

With our FAST LANE product program, you are always one step ahead. With its rapid worldwide availability, FAST LANE enables you to plan your projects optimally even in uncertain times. Benefit from a comprehensive portfolio for your application areas with proven reliability and quality.

## Three ways to find your FAST LANE product:

1. Use our configuration tools for product selection and requesting a quotation.
2. Select from the product overview. Use the contact form to submit your quotation request.
3. Contact your sales representative.



## Our promise:

- Consistent and short delivery times
- Greater responsiveness and efficiency
- thanks to fast order fulfillment on all sides; reduction of delivery times for your customers too

## Reliable delivery times

- Stable supply chain even in difficult market phases
- Design efficient and lean storage levels

## Proven products:

The FAST LANE product program consists of proven products of the highest quality. Fast and long-term availability.

## Broad portfolio

The FAST LANE product program is being successively expanded to include all product lines and thus covers the majority of your applications and axles.



More information  
about FAST LANE



# Right-angle gearboxes



**CPK**  
alpha Basic



- Ratio: 3-100
- Max. backlash: ≤ 15 arcmin
- Max. torque: 14-700 Nm
- Additional features:  
Food-grade lubrication

**CPSK**  
alpha Basic



- Ratio: 3-100
- Max. backlash: ≤ 15 arcmin
- Max. torque: 33-272 Nm
- Additional features:  
Food-grade lubrication

**NPK**  
alpha Value



- Ratio: 3-100
- Max. backlash: ≤ 11 arcmin
- Max. torque: 14-700 Nm
- Additional features:  
Food-grade lubrication

**NPLK**  
alpha Value



- Ratio: 3-100
- Max. backlash: ≤ 11 arcmin
- Max. torque: 33-700 Nm
- Additional features:  
Food-grade lubrication

**NPTK**  
alpha Value



- Ratio: 3-100
- Max. backlash: ≤ 11 arcmin
- Max. torque: 14-700 Nm
- Additional features:  
Food-grade lubrication

**NPSK / NPRK**  
alpha Value



- Ratio: 3-100
- Max. backlash: ≤ 11 arcmin
- Max. torque: 33-700 Nm
- Additional features:  
Food-grade lubrication
- Additional features (NPRK):  
Flange with slotted holes (standard)

**SC+**  
alpha Advanced



- Ratio: 1-2
- Max. backlash: ≤ 4 arcmin
- Max. torque: 12-378 Nm
- Additional features:  
Food-grade lubrication

**SK+ / HG+ / TK+**  
alpha Advanced



- Ratio: 3-100
- Max. backlash: ≤ 4 arcmin
- Max. torque: 20-768 Nm
- Additional features:  
ATEX (2014/34/EU), food-grade lubrication, corrosion-resistant

**SPC+**  
alpha Advanced



- Ratio: 4-20
- Max. backlash: ≤ 2-4 arcmin
- Max. torque: 48-1936 Nm
- Additional features:  
Food-grade lubrication

**SPK+**  
alpha Advanced



- Ratio: 12-1000
- Max. backlash: ≤ 2-4 arcmin
- Max. torque: 80-5700 Nm
- Additional features:  
Food-grade lubrication, corrosion-resistant

**TPC+**  
alpha Advanced



- Ratio: 4-20
- Max. backlash: ≤ 2-4 arcmin
- Max. torque: 48-2560 Nm
- Additional features:  
Food-grade lubrication

**TPK+**  
alpha Advanced



- Ratio: 12-5500
- Max. backlash: ≤ 1.3 arcmin
- Max. torque: 80-10,450 Nm
- Additional features:  
Food-grade lubrication, corrosion-resistant





# Right-angle gearboxes



**XPC+**  
alpha Premium



- Ratio: 4-20
- Max. backlash:  $\leq 2\text{-}4$  arcmin
- Max. torque: 48-2646 Nm
- Additional features:  
Flange with slotted holes,  
food-grade lubrication

**XPK+**  
alpha Premium



- Ratio: 12-1000
- Max. backlash:  $\leq 2\text{-}4$  arcmin
- Max. torque: 40-2520 Nm
- Additional features:  
Flange with slotted holes,  
food-grade lubrication

**RPC+**  
alpha Premium



- Ratio: 22-55
- Max. backlash:  $\leq 1.3$  arcmin
- Max. torque: 1402-7535 Nm
- Additional features:  
Flange with slotted holes (standard),  
food-grade lubrication

**RPK+**  
alpha Premium



- Ratio: 48-5500
- Max. backlash:  $\leq 1.3$  arcmin
- Max. torque: 1100-10,450 Nm
- Additional features: flange  
with slotted holes (standard),  
food-grade lubrication

# Worm gearboxes



**CVH / CVS**  
alpha Basic



- Ratio: 7-40
- Max. backlash:  $\leq 15$  arcmin
- Max. torque: 68-301 Nm
- Additional features:  
Food-grade lubrication

**NVH / NVS**  
alpha Value



- Ratio: 4-400
- Max. backlash:  $\leq 6$  arcmin
- Max. torque: 74-365 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant

**VT+**  
alpha Advanced



- Ratio: 4-400
- Max. backlash:  $\leq 2$  arcmin
- Max. torque: 165-1505 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant

**VS+**  
alpha Advanced



- Ratio: 4-400
- Max. backlash:  $\leq 2$  arcmin
- Max. torque: 165-1505 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant

**VH+**  
alpha Advanced



- Ratio: 4-400
- Max. backlash:  $\leq 2$  arcmin
- Max. torque: 74-1505 Nm
- Additional features:  
Food-grade lubrication,  
corrosion-resistant

# Linear systems

## Value Linear Systems alpha Value



- Adapted to linear applications with comparatively low demands in terms of smooth running, positioning accuracy and feed force

## Advanced Linear Systems alpha Advanced



- Adapted to linear applications with moderate to high demands in terms of smooth running, positioning accuracy and feed force
- Available with the innovative INIRA® rack installation

## Premium Linear Systems alpha Premium



- Adapted specifically to applications with extremely high demands in terms of smooth running, positioning accuracy and feed force
- Available with the innovative INIRA® rack installation

## Lubrication system



- Ready-to-install solutions for centralized and decentralized lubrication of open toothing and linear guides
- Durable lubrication pinions for continuous lubricant supply
- Distribution systems for implementing complete lubrication solutions

## Racks



- Various versions up to 2 m long available
- Tailored to the Value, Advanced and Premium Linear Systems
- Revolutionary INIRA® installation method

## Pinion



- Pinion optimally tailored to the gearbox and racks
- Wide range available
- Factory-fitted pinions available



# WITTENSTEIN alpha on all axes – even with 2-meter racks

We offer complete drive solutions for every axis from a single source, Gearbox, pinion and rack. Depending on the application, you have the choice: 2 x 1 m or 1 x 2 m.  
We would be happy to help you choose the optimum rack for your application!



## Our new 2 meter racks

- Quick and efficient installation without transition in short axes
- Optionally with INIRA® clamping, pinning and adjusting
- Easy handling with short machine beds
- High feed forces

### Example applications:

- Y axes in laser cutting machines
- Lifting axes in gantry robots
- Plasma and water jet cutting machines
- Telescopic axes, e.g. in Cartesian robots
- Tool changers
- 7th axis in robotics
- Existing axes with 2 m racks in use

## Our proven 1 meter racks

- Quick and efficient installation with INIRA® clamping, adjusting and pinning
- Easy transport, storage (standardization) and handling
- Improved axis accuracy thanks to higher rack segment precision – precise adjustment of the rack transition with INIRA® adjusting
- Highest feed forces with case-hardened racks (downsizing potential)

Find out more about  
alpha Linear Systems



# Servo actuators



## axenia value

alpha Value



- Ratio: 10-25
- Max. backlash:  $\leq 15$  arcmin
- Max. torque: 200 Nm
- With optional analog or digital encoders and brake

## SPM+ / TPM+ endurance

alpha Advanced



- Ratio: 3-220
- Max. backlash:  $\leq 4$  arcmin
- Max. torque: 260-10,000 Nm
- With optional encoder and brake
- With optional water cooling

## TPM+ DYNAMIC

alpha Advanced



- Ratio: 16-91
- Max. backlash:  $\leq 1$  arcmin
- Max. torque: 30-1300 Nm
- Additional features: food-grade lubrication, corrosion-resistant

## TPM+ HIGH TORQUE

alpha Advanced



- Ratio: 22-220
- Max. backlash:  $\leq 1$  arcmin
- Max. torque: 230-950 Nm
- Additional features: food-grade lubrication, corrosion-resistant

## TPM+ POWER

alpha Advanced



- Ratio: 4-100
- Max. backlash:  $\leq 1$  arcmin
- Max. torque: 15-750 Nm
- Additional features: food-grade lubrication, corrosion-resistant

# precision meets motion

## premo<sup>®</sup> – rotary servo actuators

## premo<sup>®</sup> SP Line

alpha Advanced



- Ratio: 16-100
- Max. backlash:  $\leq 3$  arcmin
- Max. torque: 32-315 Nm
- Additional features: Food-grade lubrication

## premo<sup>®</sup> TP Line

alpha Advanced



- Ratio: 16-100
- Max. backlash:  $\leq 1$  arcmin
- Max. torque: 35-380 Nm
- Additional features: Food-grade lubrication

## premo<sup>®</sup> XP Line

alpha Premium



- Ratio: 16-100
- Max. backlash:  $\leq 2$  arcmin
- Max. torque: 35-450 Nm
- Additional features: Flange with slotted holes, food-grade lubrication

## Encoder

- Resolver (standard version)
- Encoder (optional) with EnDat 2.1, EnDat 2.2, HIPERFACE<sup>®</sup>, HIPERFACE DSL<sup>®</sup>, DRIVE-CLiQ

## Temperature sensor

PTC/PT1000

## Holding brake

Suitable permanent magnet holding brake

## Electrical connection

- Straight or right-angled version
- Single-cable connection for DSL protocol and EnDat 2.2

## Pin assignment

Special pin assignments for power and signal

## Operating voltage:

320 and 560 V<sub>DC</sub>



Find out more about premo<sup>®</sup>







## WITTENSTEIN cyber motor Company & portfolio





# WITTENSTEIN cyber motor

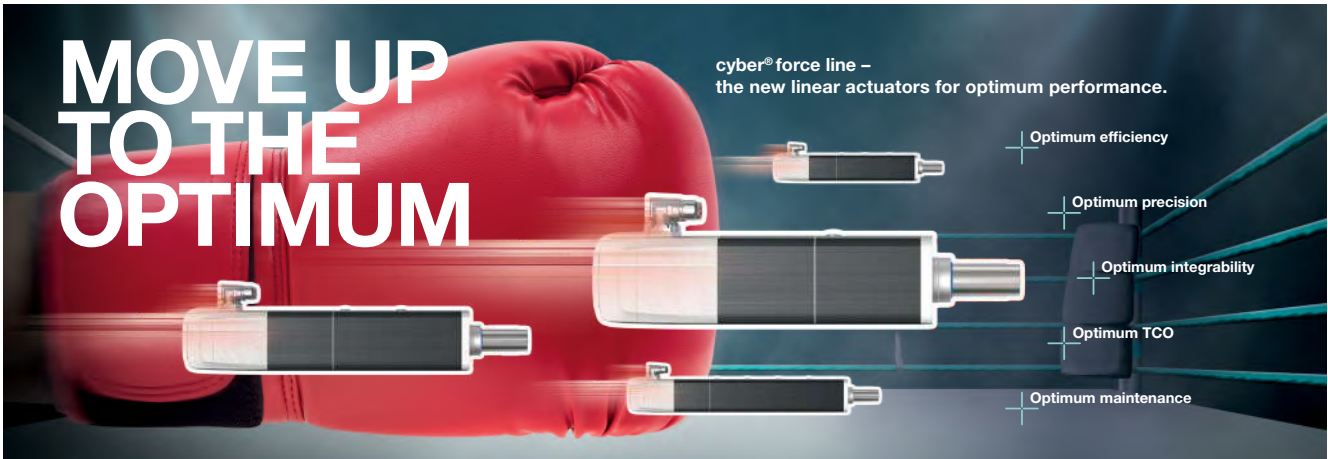
Highly dynamic servo motors and drive electronics

WITTENSTEIN cyber motor develops, produces and sells technologically advanced servo motors with sophisticated drive electronics as well as complete mechatronic drive systems with maximum power density. Our particular expertise lies in specialized motors for ultra-high vacuums, radioactive environments and high temperatures.

We collaborate closely with our customers on individual projects. During the development process, we share knowledge, learn from one another and develop new ideas together. The resulting solutions help differentiate our customers from their competitors.



## New linear actuator series for optimum performance



The new electromechanical linear actuators of the cyber® force line are the ideal solution for applications that require high precision, force and speed. The drives impress with their high efficiency and maximum power density. They also ensure fast and precise throughput rates in the production process. The compact linear actuators enable simplified integration and flexibility within the machine design. All this ensures a significant reduction in overall operating costs and represents an advantageous alternative to pneumatic and hydraulic drive solutions.

Typical areas of application for linear actuators include forming machine tools, plastics and rubber processing and applications in the food and packaging industries.

More information about cyber® force line

>

# WITTENSTEIN cyber motor

Applications and uses

## Our small servo drive systems dose liquids precisely

It was a complex challenge: Liquids of varying viscosity needed to be dosed into pads efficiently and precisely in a dishwasher pad forming machine at Harro Höfliger GmbH – up to six million times a day. Harro Höfliger’s developers put their trust in small servo drive systems from WITTENSTEIN cyber motor, which are made from 100% stainless steel and hence resistant to corrosion. The compact, lightweight design also impressed the customer thanks to the significant space savings. The fact that the motor and the servo drive are supplied from a single source guarantees technically optimal solutions at all times with no interface risks.



*“Repeatable dosing precision is enormously important, both in the interests of a reliable process and to ensure uniform product quality.”*

Hubert Rypalla  
Project Manager at Harro Höfliger



## Two process steps in one – our frameless servo motors make it possible



Screwing and sealing of closures in a single work step, while being fully hygienic and offering better protection against recontamination of products and higher process reliability – these are the benefits of the new InduTwist induction sealer from IMAGINE Engineering. This innovative screw cap applicator is equipped with compact and highly dynamic frameless servo motors from the cyber® kit line developed by WITTENSTEIN cyber motor.

*“For the new screw cap applicator, we chose the frameless servo motors of the cyber® kit line due to their function as compact, highly dynamic motors.”*

Dipl.-Ing Klaus Baltes  
Managing Director IMAGINE Engineering GmbH





# Servo motors & actuators

Servo solutions



## cyber® dynamic motor



- Rotative synchronous motors
- Size: 17-60 mm
- DC bus voltage: 48 V<sub>DC</sub>
- Max. torque: 0.035-21 Nm
- Max. speed: 5000-21,000 rpm
- Optional: absolute encoder, brake, planetary gearbox or 100% stainless steel design

## cyber® dynamic actuator R



- Rotative servo actuators
- Size: 17-40 mm (coming soon: 60 mm)
- DC bus voltage: 48 V<sub>DC</sub>
- Max. torque: 0.1-22 Nm
- Max. speed: 56-2500 rpm
- Optional: absolute encoder, brake, 100% stainless steel design

## cyber® dynamic actuator L



- Linear actuators
- Size: 17-40 mm
- DC bus voltage: 48 V<sub>DC</sub>
- Max. force: 200-2000 N
- Max. linear velocity: 300-900 mm/s
- Optional: stroke lengths, 100% stainless steel design, encoder interfaces, holding brake

## cyber® force line



- Linear actuators
- Size: 105 mm
- DC bus voltage: 750 V<sub>DC</sub>
- Max. force: 10-25 kN
- Max. linear velocity: 500-1250 mm/s
- Optional: Stroke lengths 100 mm, 200 mm, 300 mm and 400 mm

# Servo motors

Servo solutions



## cyber® kit line small



- Rotative synchronous motors (frameless)
- Size: 50-85 mm
- DC bus voltage: 48 V<sub>DC</sub> and 560 V<sub>DC</sub>
- Max. torque: 1-30 Nm
- Max. speed: up to 10,000 rpm

## cyber® kit line medium



- Rotative synchronous motors (frameless)
- Size: 130-155 mm
- DC bus voltage: 48 V<sub>DC</sub> and 750 V<sub>DC</sub>
- Max. torque: 16-90 Nm
- Max. speed: up to 3600 rpm

## cyber® kit line large



- Rotative synchronous motors (frameless)
- Size: 290-530 mm
- DC bus voltage: 560 V<sub>DC</sub>
- Max. torque: 580-9000 Nm
- Max. speed: up to 250 rpm

# Servo motors & actuators

Customized servo solutions



## cyber® power motor



- Rotative synchronous motors
- Size: 19-440 mm
- Max. torque: 0.02-1000 Nm
- Max. speed: 4000-25,000 rpm
- Optional: holding brake, hollow shaft, liquid cooling

## cyber® power motor AF/AFW (compact)



- Rotative synchronous motors
- Size: 90-180 mm
- Max. torque: 12.3-556 Nm
- Max. speed: up to 5500 rpm
- Optional: Holding brake, fan or liquid cooling, hollow shaft, mechanical interfaces, etc.

## cyber® power motor AM/AML/AMW (dynamic)



- Rotative synchronous motors
- Size: 44-210 mm
- Max. torque: 1-430 Nm
- Max. speed: up to 10,000 rpm
- Optional: Holding brake, fan or liquid cooling, hollow shaft, mechanical interfaces, etc.

## cyber® force actuator



- Linear actuators
- Size: 40-270 mm
- Max. force: 0.5-750 kN
- Max. linear velocity: 290-2300 mm/s
- Optional: screw type, hollow shaft, guidance with anti-rotation

## cyber® force actuator MA/MG



- Linear actuators
- Size: 44-180 mm
- Max. force: up to 170 kN
- Max. linear velocity: up to 500 mm/s
- Stroke: max. up to 550 mm
- Optional: Holding brake, fan or liquid cooling, mechanical interface, reinforced ball screws, etc.

### Note:

The images and technical data shown are examples of customized servo solutions.

We will be happy to develop a solution for you that is tailored to your drive task. Take advantage of our wealth of experience, our highly skilled staff and our comprehensive services.

Contact us:  
info@wittenstein-cyber-motor.de

# Servo motors

Customized servo solutions



## cyber® linear motor



- Linear synchronous motors
- Max. force: 100 N
- Max. linear velocity: 5 m/s
- Max. acceleration: 500 m/s<sup>2</sup>
- Optional: linear guidance, encoder

## cyber® linear motor L3S/L3SK (iron core)



- Linear synchronous motors
- Max. force: 15.7 kN
- Max. linear velocity: 20 m/s
- Optional: Liquid cooling, mechanical interfaces and cable outlet positioning, etc.

## cyber® linear motor LNS (ironless)



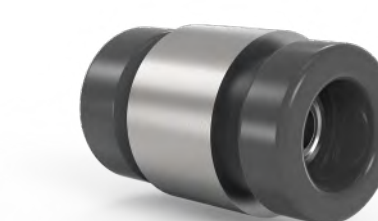
- Linear synchronous motors
- Max. force: 1280 N
- Max. linear velocity: 40 m/s

## cyber® kit motor



- Rotative synchronous motors (frameless)
- Size: 19-440 mm
- Max. torque: 0.02-1700 Nm
- Max. speed: 2000-25,000 rpm
- Optional: winding adjustment, Hall sensor

## cyber® kit motor AFE/AME



- Rotative synchronous motors (frameless)
- Size: 44-180 mm
- Max. torque: 1-405 Nm
- Max. speed: up to 20,000 rpm
- DC bus voltage: up to 700 V<sub>DC</sub>

## cyber® torque motor



- Rotative synchronous motors
- Size: 50-540 mm
- Max. torque: 0.02-1700 Nm
- Max. speed: 0-4000 rpm
- Optional: holding brake, hollow shaft, liquid cooling



# Special motors

Customized servo solutions

## cyber® cleanroom motor



- Motors for cleanroom environments
- Use in cleanrooms up to class ISO3
- Maximum particle purity

## cyber® hygienic motor



- Hygienic motors
- Optimal sealing properties: up to IP69X
- Direct contact with food allowed
- Optional: gearbox, holding brake

## cyber® ex motor



- Explosion-proof motors
- Explosive zones 1 & 21
- Up to temperature class T4 / T130 °C
- Optional: Gearbox, holding brake, resolver and encoder

## cyber® vacuum motor



- Motors for vacuum environments
- Pressure: up to 10<sup>-6</sup> mbar
- Ambient temperatures: up to 40°C
- Low outgassing
- Optional: gearbox, holding brake

## cyber® radhard motor



- Motors for radiation environments
- Radiation levels up to 5 MGy
- Ambient temperatures: up to 60°C
- Optional: Gearbox

## cyber® hightemp motor



- High-temperature motors
- Ambient temperatures: up to 205°C
- Pressure: up to 2100 bar
- Optional: Gearbox, linear actuator

**Note:** The images and technical data shown are examples of customized servo solutions.

# Customized drives

WITTENSTEIN cyber motor GmbH develops drives that are tailor-made to specific customer requirements. This enables our customers to differentiate themselves from the competition and maximize their individual benefits.

## Individual drive configuration

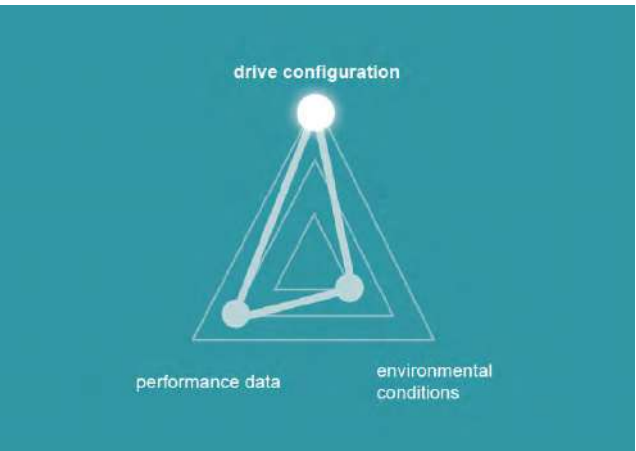
- Frameless motors
- Complete drive
- Linear motor
- Linear actuator
- System/Module

## Individual performance data

- High speed
- High torque
- High dynamic
- High efficiency

## Individual adaptation to environmental conditions

- High and low temperatures
- Hygienic design
- Explosion-proof
- Radiation-resistant
- Vacuum-compatible



When designing new plant and machinery or retrofitting existing equipment, special requirements often have to be met in terms of performance, installation space or environmental conditions. Thanks to a high level of vertical integration, WITTENSTEIN cyber motor provides numerous options for individual adaptation. All specifications are realized in close cooperation with the customer, leading to a drive that is optimally tailored to each client's application.

## Really customized



## instead of customized



# Servo drives

Servo solutions

## cyber® simco® drive 2



- Supply voltage: 12-60 V<sub>DC</sub>
- Max. current: 15-200 A<sub>eff</sub>
- Max. power: 750-10.000 W
- Protection class: IP20/IP65

Customized servo solutions

## cyber® power drive



- Supply voltage: 100-800 V<sub>DC</sub>
- Max. current: 300-500 A<sub>eff</sub>
- Max. power: 150-250 kVA



# Servo systems

Servo solutions

## cyber® dynamic system



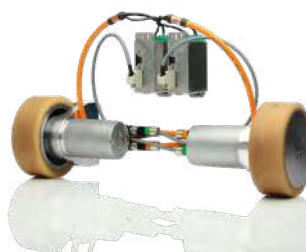
- Size: 40 mm (motor)
- DC bus voltage: 12-60 V<sub>DC</sub>
- Max. torque: 1-22 Nm
- Max. speed: up to 5000 rpm
- Optional: Absolute encoder (single-turn & multiturn) and gearbox or ball screw

## cyber® iTAS® system 2



- Size: 085
- DC bus voltage: 48 V<sub>DC</sub>
- Max. torque: 200 Nm
- Nominal speed: up to 2.5 m/s
- Integrated: safety encoder, brake, wheel

## cyber® iTAS® system



- Size: 004-050
- DC bus voltage: 24-48 V<sub>DC</sub>
- Max. feed force: 380-5200 N
- Nominal speed: up to 2.6 m/s
- Optional: dynamic brake, additional encoder for speed control, wheel

# Accessories for drive systems

## cyber® power supply



- Version: single-phase and three-phase power supplies
- Input: AC 100-240 V / AC 380-480 V
- Output: 24-48 V DC
- Power: 120-960 W

## cyber® distribution box



- Supply voltage: 12-60 V<sub>DC</sub>
- Input power supply: 1 (max. current: 45 A)
- Outputs power supply: 6 (max. current: 30 A)
- Inputs/outputs fieldbus interface: 2/2 (Ethernet)





WITTENSTEIN galaxie  
Company & portfolio



# WITTENSTEIN galaxie

Superior gearboxes and drive systems

WITTENSTEIN galaxie develops, produces and sells disruptively innovative gearboxes and drive systems, whose functional superiority is based on an entirely new operating principle. Our vision: to make machines and robots more precise, productive and safe with Galaxie® solutions.

Our innovations enable our customers to implement their machines and systems with previously unattainable performance parameters. This allows them to enhance their market position in the long term. Moreover, our solutions allow products to be manufactured in an efficient way that conserves resources.



## WITTENSTEIN Galaxie®

The compact precision gearbox with the largest hollow shaft

With Galaxie®, we have fundamentally rethought the functional principle. The result: innovative kinematics enabling virtually full surface contact during power transmission – with an extremely compact footprint. Thanks to this unique concept, Galaxie® performs significantly better than established gearbox types with the same diameter in almost all performance dimensions. It combines the highest levels of rigidity, torque density and overload capacity with a very large hollow shaft and maintains zero backlash throughout its entire service life.



The combination of the technical properties of the disruptive Galaxie® technology – zero backlash, torsional rigidity, torque density and hollow shaft – results in our award-winning gearbox system.

# WITTENSTEIN galaxie

Applications and uses

## Performance boost in INDEX ABC turning machine

In terms of the machine concept, working area, footprint, part times and machining quality, the newly enhanced Index ABC offers all the familiar characteristics of its predecessor – more than 3000 of which have been delivered to customers. One revolutionary aspect, however, is the new upper revolver. Based on the Galaxie® gearbox GS 190 from WITTENSTEIN's new accuracy line, it offers new interpolated machining options for components, which greatly increases the range of parts that can be processed with the turning machine.



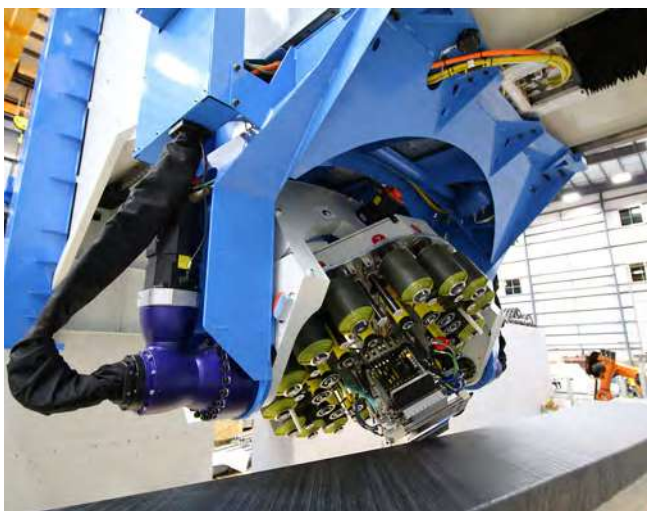
*“The outstanding properties result in a highly torsionally rigid and thus extremely precise gearbox solution in the upper turret.”*

Jakob Friedrich  
Development engineer at  
INDEX-Werke GmbH & Co. KG Hahn & Tessky



## Extreme dynamics and rotation

Electroimpact is an established global market leader in the development and manufacture of tools and automation systems for the aerospace industry. Working closely with Electroimpact, the WITTENSTEIN engineers developed a revised AFP machine design in the form of the Galaxie® gearbox. Increased productivity, reduced load on the machine components and improved positioning accuracy makes it possible to manufacture large parts such as spars and the shell of aircraft wings in one piece.



*“The performance of these machines marks a quantum leap over our previous work. The great thing about it is that we don't have to demand as much from the process.”*

Todd Rudberg  
Director of AFP, Electroimpact





# WITTENSTEIN galaxie

Applications and uses

## Galaxie® in high-precision robotics



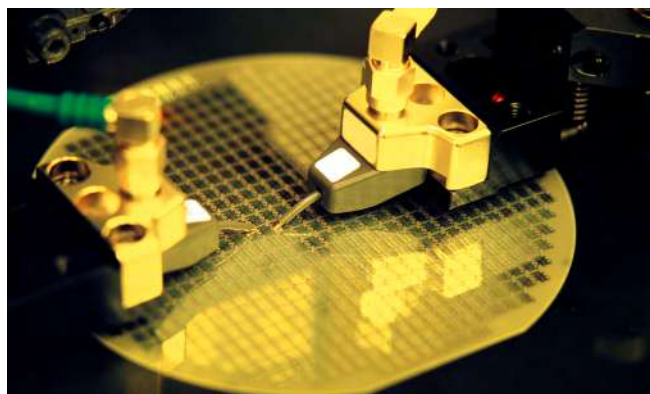
- **Extremely high rigidity:** High precision in medical or industrial robots
- **High torque and overload capacity** for safety purposes and high system robustness
- **Low space requirement:** Flexibility of the entire system
- **Easy replacement of** existing strain wave gears due to compatibility of the output interface

## Galaxie® in antenna technology

- **Highest stability:** For a stable antenna – even in strong wind gusts
- **Maximum precision** in positioning the satellite tracking system
- **Lightweight and compact solution** for antenna mobility



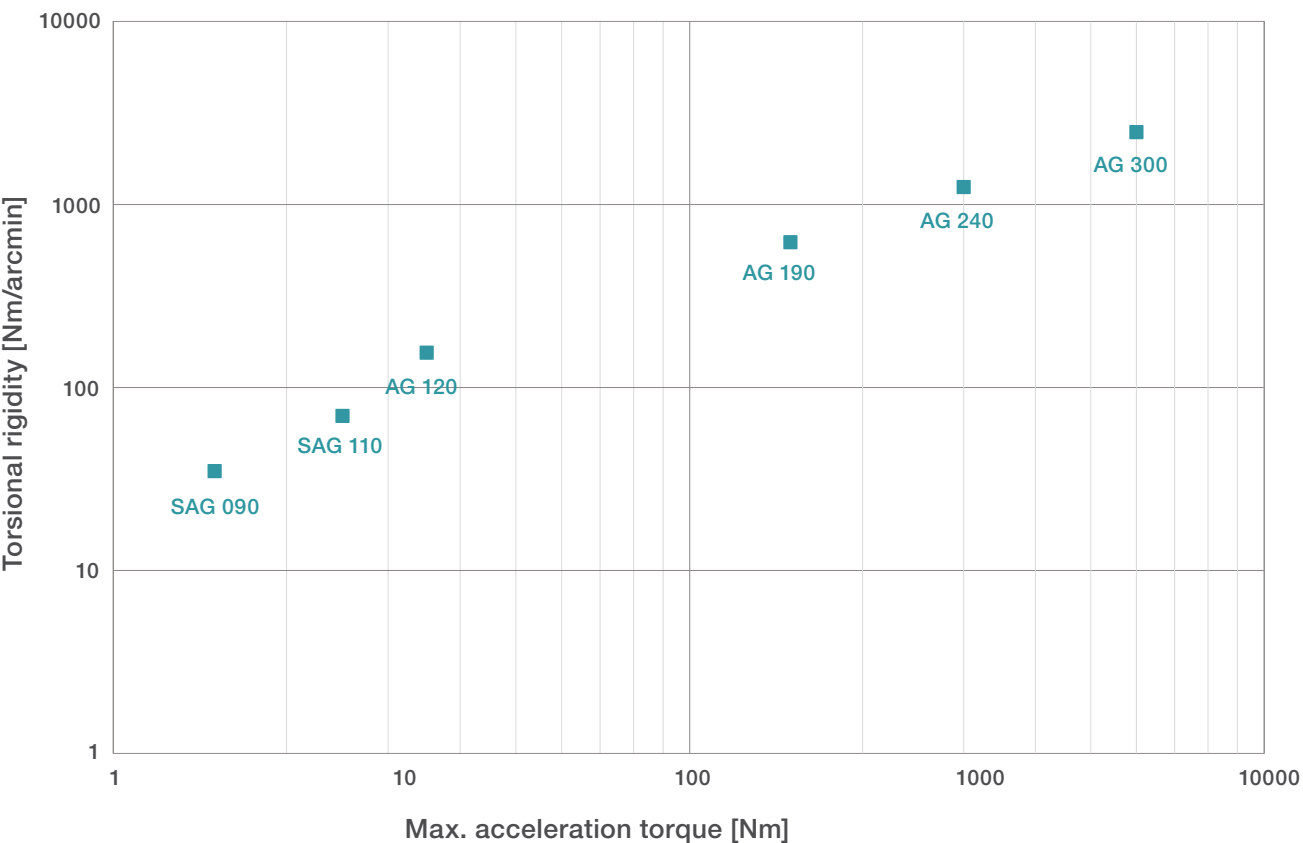
## Galaxie® in the semiconductor industry



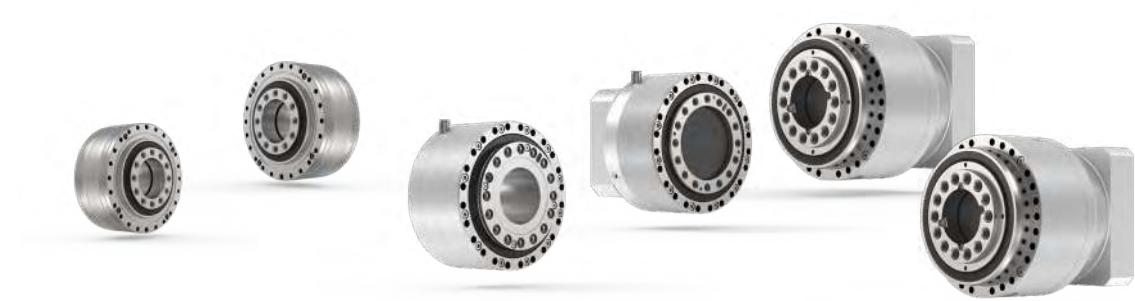
- **Productivity and reliability:** Extremely high torsional rigidity in combination with absolute zero backlash enables higher accelerations and reduces vibrations in the system
- **Quality:** Highest precision for highly automated production systems with extremely tight tolerances
- **Hollow shaft:** Operating resources, media or additional machine elements such as axes and shafts can be accommodated in the hollow shaft or use the existing workspace as a channel

# Galaxie® portfolio – Galaxie® accuracy line

Six sizes with maximum torsional rigidity and torque density



Sizes:	SAG 090	SAG 110	AG 120	AG 190	AG 240	AG 300
Max. torque:	150 Nm	250 Nm	375 Nm	1500 Nm	3000 Nm	6000 Nm
Ratio (i):	60	61	31	31	31	31
Rigidity:	35 Nm/arcmin	70 Nm/arcmin	165 Nm/arcmin	625 Nm/arcmin	1250 Nm/arcmin	2500 Nm/arcmin
Weight:	1.5 kg	2.3 kg	5.9 kg	15.5 kg	31.5 kg	62.0 kg
Length:	55.5 mm	59.6 mm	73 mm	116.5 mm	147 mm	185 mm



Find out more about the Galaxie® portfolio >

# Galaxie® gearbox solutions

Gearbox product portfolio

## Miniaturized Galaxie®



- Zero-backlash hollow shaft gearbox
- Size: 90 and 110 mm
- Max. torque: 150 and 250 Nm
- Hollow shaft diameter: up to 41 mm
- Optional compatibility with all common servo motors

## Galaxie® G



- Zero-backlash compact gearbox
- Size: 120 to 300 mm
- Max. torque: 375 to 6000 Nm
- Ratios up to  $i = 301$
- Compatible with all common servo motors

## Galaxie® GS



- Zero-backlash hollow shaft gearbox
- Size: 120 to 300 mm
- Max. torque: 375 to 6000 Nm
- Hollow shaft diameter: up to 117 mm

## Galaxie® GH



- High-performance right-angle gearbox
- Size: 120 to 300 mm
- Max. torque: 375 to 6000 Nm
- Ratios up to  $i = 2400$
- Optional hollow shaft possible



# Galaxie® gearbox solution

Technical superiority

## Space compatibility

- Rapid integration
- Compatible with existing systems
- Simple connection

## Extremely high rigidity

- Permits higher acceleration rates
- Reduces vibrations in the system
- Enables faster and more accurate positioning
- Increases precision, e.g. of medical robots

## Absolute zero backlash and maintenance-free over the entire service life

- Enhances product quality
- Enables greater precision in the application



## Largest hollow shaft

- Minimizes the risk of cable breakage
- Enables integration of media or components

## High torque density

- Enables downsizing in the drive train or upgrading with the same installation space
- Reduces the weight in the drive train
- Offers significant safety reserves in case of overload



Larger hollow shaft using the example of SAG090

Find out more about the miniaturized Galaxie®





# Galaxie® drive solutions

Actuator product portfolio

## Miniaturized Galaxie® actuator



- Zero-backlash hollow shaft actuator
- Size: 90 and 110 mm
- Max. torque: 150 and 250 Nm
- Hollow shaft diameter: up to 41 mm
- Compatible with all common converters
- Optional holding brake possible

## Galaxie® D



- Zero-backlash hollow shaft actuator
- Size: 120 to 300 mm
- Max. torque: 375 to 6000 Nm
- Hollow shaft diameter: up to 117 mm
- Compatible with all common converters
- Optional holding brake possible



Find out more about the Galaxie® gearbox



# Galaxie® drive system – all in one

**Configurable complete solution**  
for different encoder-brake cooling systems

**Energy efficiency**  
Up to 50% lower energy consumption through downsizing

**Configurable**  
Perfectly adapted drive system to your application without any compromises

**TCO**  
Increase in productivity by up to 40% through the use of disruptive technology

**Damping properties**  
Hydrodynamic lubricating film on the teeth provides damping properties

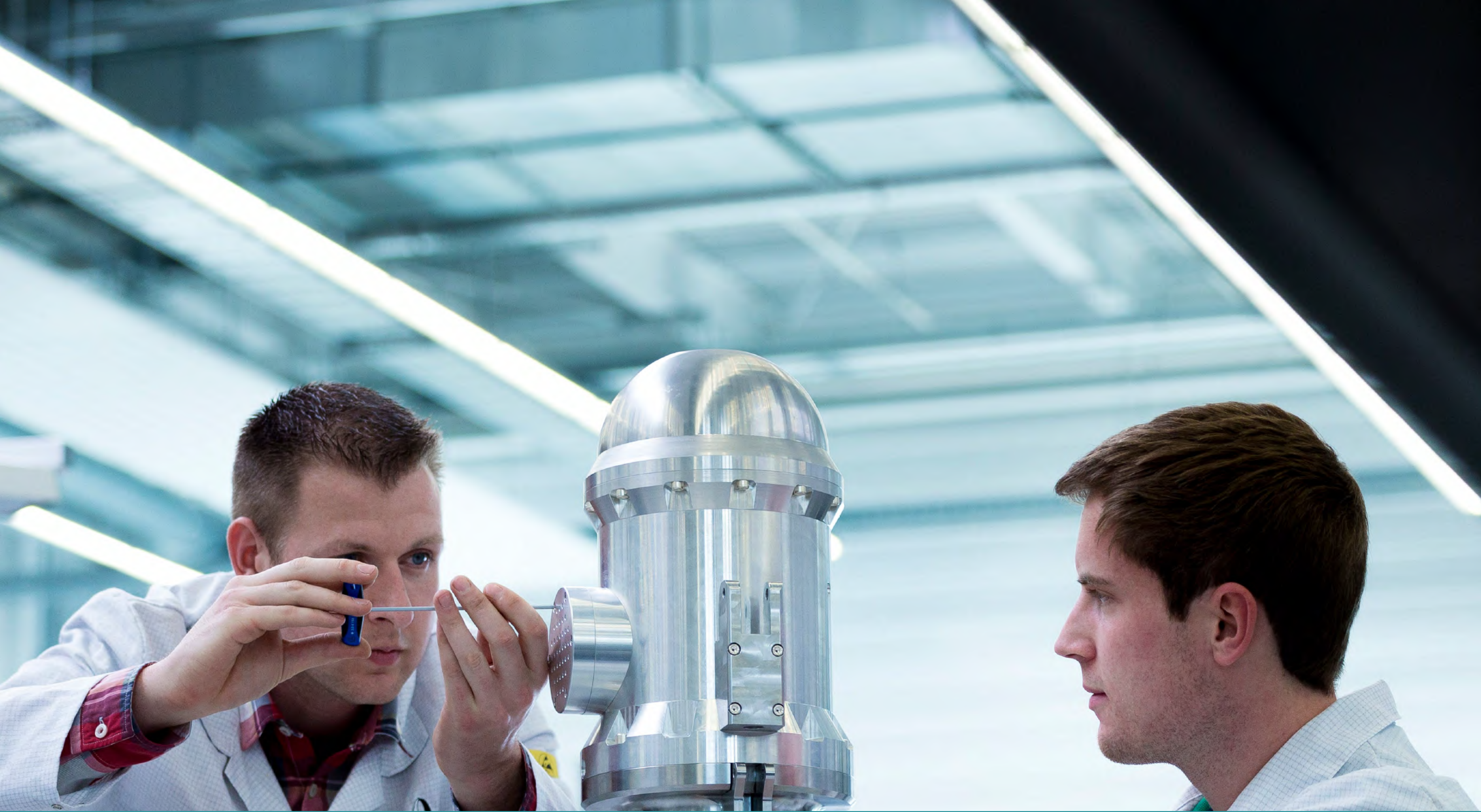
**Overload capacity**  
Surface contact of the teeth enables triple overload of the maximum torque



Whitepaper on the Galaxie® gearbox







WITTENSTEIN motion control  
Company & portfolio



# WITTENSTEIN motion control

Systems designed to meet the toughest demands of our planet... and beyond

WITTENSTEIN motion control stands for mechatronic high-end drive systems that function reliably under the most extreme conditions worldwide. Our solutions are used wherever precision, robustness and innovation are required. With comprehensive expertise and a clear focus on customer needs, we develop customized systems that meet the highest requirements in terms of dynamics, safety and efficiency.

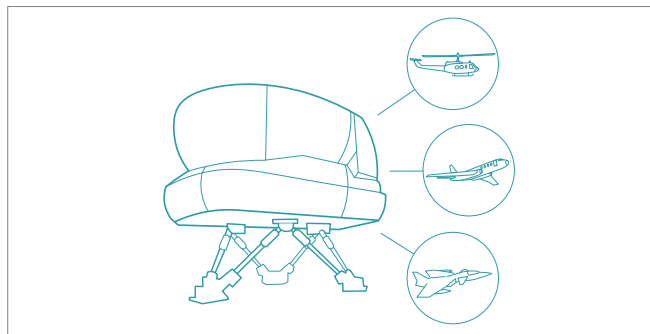


## Application areas



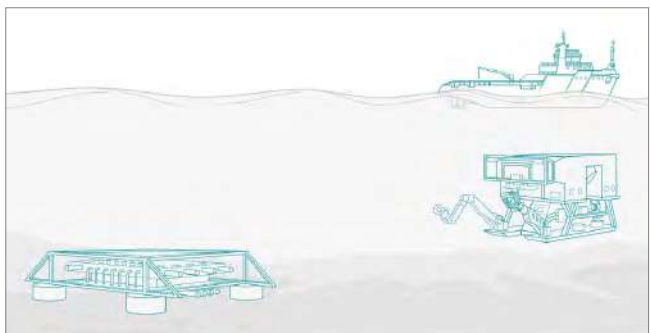
### Aerospace

Increasing environmental requirements and safety standards demand more efficient and reliable aircraft. Our mechatronic systems impress with their low power-to-weight ratio, high reliability and EASA approval. With global service, we support customers throughout the entire life cycle.



### Simulation

Flight simulators are an indispensable part of modern pilot training. They enable intensive, practical training under realistic conditions and make a decisive contribution to flight safety. Our systems not only provide realistic control feedback, but also an immersive flight experience that meets the requirements of a wide variety of aircraft types.



### Subsea

Dive into the world of state-of-the-art subsea drive systems and electric actuators that work reliably even at extreme depths of up to 4,000 meters. Our technology sets new standards in reliability, durability and precision – designed to meet the most demanding challenges of subsea exploration, processing and production.

# WITTENSTEIN motion control

Applications and uses

## Fly-by-wire for the next generation

AEROSPACE: In cooperation with Diehl Aviation, WITTENSTEIN motion control is developing a fully electric control system for the next generation of aviation – from the sidestick to actuator. The solution is based on an integrated fly-by-wire architecture, which is completely hydraulic-free and features integrated sensor technology, power electronics and diagnostic functions.

The system is lighter, customizable and meets the highest requirements for safety and certifiability. It enables precise, reliable control while reducing maintenance work and operating costs – a true step forward for modern aviation platforms.



WITTENSTEIN motion control and Diehl Aviation at the Paris Airshow 2025



Subsea actuator SSEAC®

*This development is not only a technological achievement, but also proof of successful cooperation.*

Steffen Haack  
Chief Executive Officer, Bosch Rexroth Ltd

## Joint innovation under water

SUBSEA: Bosch Rexroth and WITTENSTEIN motion control are combining their strengths in an innovative partnership: Joint development of a electromechanical subsea actuator for demanding applications – from green hydrogen generation to CO<sub>2</sub> storage to oil and gas exploration.

WITTENSTEIN motion control contributes in-depth understanding of gearbox technology, while Bosch Rexroth provides its expertise in electronics.

The result is reliable, efficient systems with real added value for our customers. The new actuator regulates the flow of gases and liquids at depths of up to 4,000 m – without any hydraulic lines. The 24 V supply reduces both investment and operating costs, in particular energy consumption, when compared to conventional hydraulic systems.

# Aerospace

Drive solutions and control systems for aviation



## Active sidestick



- Real-time force feedback
- Precise control commands
- Electronic coupling between cockpit workstations

## Smart actuator



- Compact solution for aerospace
- Control of slat motor and flaps (Active Differential Gearbox)

## Cargo loading system



- A380 power drive unit (PDU)
- Installed in the A380 cargo hold
- Moves air freight pallets and containers

# Simulation

Control loading systems for flight simulators (Level D certifiable)



## In-line solution



- Electromechanical actuators for realistic control movement
- Mechanical linkage for connection to pilot controls

## Drop-in solution (rotary wing)



- Re-configurable Helicopter Mission Trainer (RHMT)
- Cyclic & collective stick with flight-pattern-specific handles and pedals
- Compact and configurable for easy integration

## Drop-in solution (fixed wing)



- Re-configurable Aircraft Mission Trainer (RAMT)
- Combination of sidestick, center stick, throttle (linear/rotary), rudder pedals and other components
- Modular and adaptable to aircraft type and training target

# Subsea

Drive systems for deep-sea applications



## Actuator system



- Electric subsea actuator SSEAC<sup>NF</sup>®
- Operation in oil for pressure compensation
- Redundant AC servo drive

## Servo system



- Designed for the oil and gas industry
- Redundant motor-gearbox combination
- High reliability under extreme conditions

## Control and power electronics



- Redundant motor control
- Shock and impact-resistant
- Application in the oil and gas industry

### Note:

The images and technical data shown are examples of customized solutions.

We will be happy to develop a solution for you that is tailored to your drive task – even under extreme environmental conditions. Take advantage of our wealth of experience, our highly skilled staff and our comprehensive services.

### Contact us:

[info@wittenstein-motion-control.de](mailto:info@wittenstein-motion-control.de)





## Notes

## Contact

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**WITTENSTEIN – one with the future**

**[www.wittenstein.com](http://www.wittenstein.com)**