

# WITTENSTEIN alpha Company & Portfolio



# YOUR WORLD IS OUR DRIVE.

FOR MORE THAN 35 YEARS.



### **PERFORMANCE**

### Performance where it counts:

High torque, outstanding precision and high power density – essential for our products and systems.

## FUTURE PROOF

### We live processes:

Only those who know the exact details of customer processes and requirements are in a position to develop solutions that offer added value in the short and long term.

### SCALABILITY

## You never make compromises:

ASSISTANT

Whatever the performance area – we offer solutions that grow with your requirements.



alpha

It is good to know today what will be needed tomorrow. Applying it is even better. We develop technology that shapes the future – ENGINEERING FUTURE SOLUTIONS.

### **EFFICIENCY**

### We like it "lean":

We offer products and systems that are energy-efficient and require minimal installation space in machines.

### **AVAILABILITY**

### You need reliability:

We have the widest range of products on the market and can implement your application "just in time".

### CONNECTIVITY

### We think in terms of interfaces:

All of our systems can be integrated in a wide range of peripherals.



Service Portal

### WITTENSTEIN alpha...

### ... globally active

With our subsidiaries, agents and manufacturing facilities, we do business across the globe and are the primary point of contact for our customers directly in the field.



### ... Know-how in every sector

Our solutions range from high-precision axes in manufacturing systems to packaging machines that must operate with maximum productivity in the smallest installation space.

You can find a selection of industries here:

Machine tools	Packaging	Automation, Robotik, Handling
Woodworking	Textile	Linear technology
Measurement and Testing technology	Printing	Engineering

### WITTENSTEIN alpha...

... in action

Even though we are extremely passionate about technology and innovation, the success of our customers is our top priority. We have designed our products and services to help you achieve a competitive advantage – through consistently high quality, permanent availability and the best service worldwide.

Drives, controls and positioning devices from WITTENSTEIN alpha are an expression of our pioneering spirit, leadership in technology and application expertise.

Our aim is to provide innovative and future-proof solutions for our customers. Our products are the foundation. Visions are turned into concrete ideas, creating products that give rise to mechatronic drive solutions.





You can find a selection of our customer applications on our website:

alpha.wittenstein.de/en-en/expertise/applications/













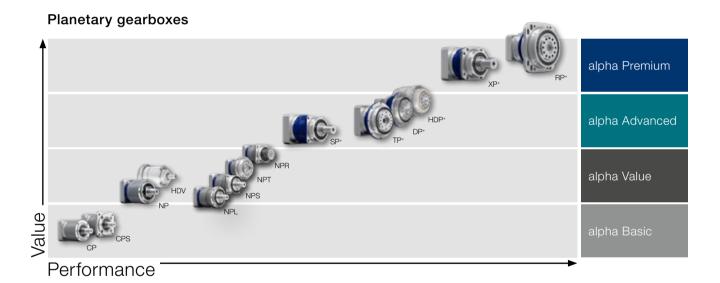


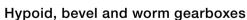
### WITTENSTEIN alpha in all axes

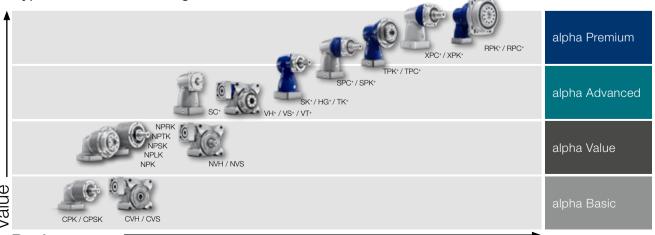
### Complete drive solutions under one roof

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

The diagrams below provide a quick overview of our product portfolio for a wide variety of requirements and applications:



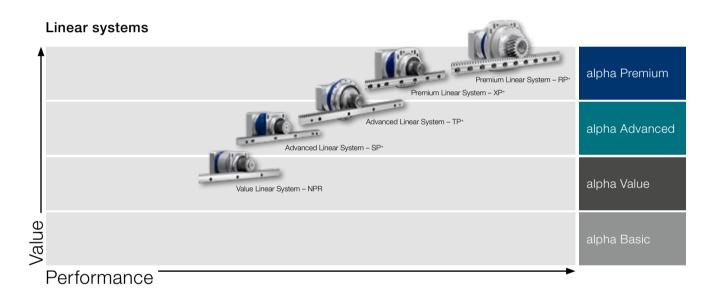




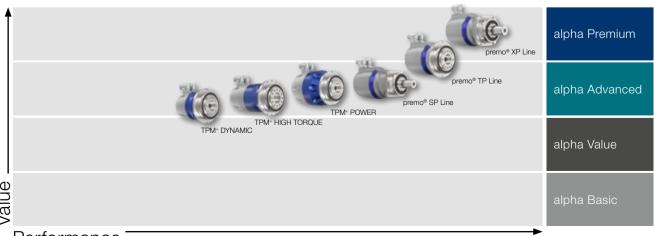
Performance

### WITTENSTEIN alpha product segments:

Our products are divided into the Basic, Value, Advanced and Premium Segments in terms of "Performance" and "Value". We want to make it even easier for our customers to find the right solution from our large portfolio for each specific application.



#### Servo actuators



Performance

### WITTENSTEIN alpha Sizing Tools -

### Several ways to reach your objectives

Our software portfolio helps you choose the right drive

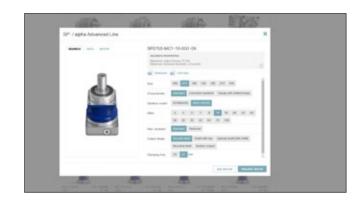
You can conveniently download dimension sheets and CAD data, select the best gearbox quickly and easily design complex kinematic sequences in detail – our software solutions offer various methods of selecting the best, most reliable drive on all axes.



### **CAD POINT**

- Your Smart Catalog
- Performance data, dimension sheets and CAD data for all types of gearboxes
- · Available online without logging in
- Comprehensive documentation of the selection

www.wittenstein-cad-point.com

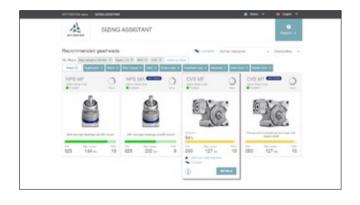




### SIZING ASSISTANT

- Your Gearbox within Seconds
- · Efficient gearbox selection in seconds
- · Available online without logging in
- Access by specifying application or motor
- · Information about price and delivery time
- · Possibility of requesting quotation directly

www.sizing-assistant.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.com





### Low-backlash planetary gearboxes

Our low-backlash planetary gearboxes are designed to meet the most diverse requirements and are the perfect choice whatever the application.

For example, the gearboxes of the alpha Premium and alpha Advanced Line stand for very high torsional rigidity and positioning accuracy. Our alpha Value and alpha Basic Line gearboxes, on the other hand, score with outstanding economic efficiency and flexibility.

## NP / NPL / NPS / NPT / NPR alpha Value Line

- · Ratio 3-100
- Max. backlash ≤ 8 arcmin
- · Max. torque 18-800 Nm
- Further characteristics:
   Flange with slotted holes,
   Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Flange
- System solutions:
   Linear system (rack / pinion)

## SP+ / SP+ HIGH SPEED alpha Advanced Line

- · Ratio 3-100
- · Max. backlash ≤ 1-4 arcmin
- · Max. torque 48-5700 Nm
- Further characteristics:
   Flange with slotted holes, ATEX,
   Food-grade lubrication, Corrosion resistent, Optimized mass inertia
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft
- System solutions:
   Linear system (rack / pinion),
   Servo actuator



### CP / CPS alpha Basic Line

- · Ratio 3-100
- Max. backlash ≤ 12 arcmin
- Max. torque 17-800 Nm
- Further characteristics: Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key







## TP+ / TP+ HIGH TORQUE alpha Advanced Line

- · Ratio 4-302.5
- Max. backlash ≤ 1-3 arcmin
- Max. torque 43-40000 Nm
- Further characteristics:
   Food-grade lubrication, Corrosion resistant, Optimized mass inertia
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion),
   Servo actuator

## XP\* alpha Premium Line

- Ratio 3-100
- Max. backlash ≤ 1-3 arcmin
- · Max. torque 56-3840 Nm
- Further characteristics:
   Flange with slotted holes,
   Food-grade lubrication,
   Optimized mass inertia
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft, System output
- System solutions:
   Linear system (rack / pinion),
   Servo actuator

## RP+ alpha Premium Line

- · Ratio 4-220
- · Max. backlash ≤ 1-3 arcmin
- · Max. torque 352-10450 Nm
- Further characteristics:
   Flange with slotted holes, Food-grade lubrication, Optimized mass inertia
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion),
   Servo actuator

## Planetary gearboxes from WITTENSTEIN alpha impress with:

- Premium quality and optimal reliability
- Smooth running
- High precision and synchronization accuracy
- Simple motor mounting
- Modular mounting position
- Applications in cyclic or continuous operation
- Maximum power density
- · Long lifetime
- Lifelong lubrication
- · Flexible output interfaces

### Low-backlash hypoid gearboxes

Our hypoid gearboxes are particularly characterized by higher torque density and smoother running. The low-backlash hypoid gearboxes of the alpha Premium and alpha Advanced Line are available in several different output configurations and performance categories – the perfect match for your application whenever space is restricted.



## **HG**<sup>+</sup> alpha Advanced Line

- · Ratio 3-100
- Max. backlash ≤ 4 arcmin
- · Max. torque 20-768 Nm
- Further characteristics:
   ATEX, Food-grade lubrication,
   Corrosion resistant
- Output shape: Hollow shaft interface, Output on both sides



### SK+ / SPK+ alpha Advanced Line

- · Ratio 3-10000
- · Max. backlash ≤ 2-4 arcmin
- · Max. torque 20-5700 Nm
- Further characteristics: ATEX, Food-grade lubrication, Corrosion resistant
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft, Output on both sides
- System solutions:
   Linear system (rack / pinion)





## TK+ / TPK+ / TPK+ HIGH TORQUE alpha Advanced Line

- · Ratio 3-10000
- Max. backlash ≤ 1.3-4 arcmin
- · Max. torque 20-10450 Nm
- Further characteristics:
   ATEX, Food-grade lubrication,
   Corrosion resistant
- Output shape: Flanged hollow shaft, Flange, System output, Output on both sides
- System solutions:
   Linear system (rack / pinion)



## XPK+ / RPK+ alpha Premium Line

- · Ratio 12-5500
- · Max. backlash ≤ 1.3-4 arcmin
- Max. torque 40-10450 Nm
- Further characteristics:
   Flange with slotted holes,
   Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft, Flange, System output
- System solutions:
   Linear system (rack / pinion)

## Hypoid gearboxes from WITTENSTEIN alpha impress with:

- Premium quality and optimal reliability
- · Smoother running
- Higher torque density
- Large range of ratios
- Various output configurations, also rearward
- Maximum performance in a very small space
- Long lifetime
- Lifelong lubrication

### Low-backlash bevel and worm gearboxes

When low ratios are essential in combination with high nominal speeds and torques, our low-backlash bevel gearboxes are the perfect choice.

Together with our servo worm gearboxes, which provide maximum power density in a very small space, they form part of an extensive portfolio meeting the most diverse requirements.

## NPK / NPLK / NPSK / NPTK / NPRK

alpha Value Line

- Ratio 3-100
- Max. backlash
   ≤ 11 arcmin
- · Max. torque 14-700 Nm
- Further characteristics:
   Flange with slotted holes,
   Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Flange
- System solutions:
   Linear system (rack / pinion)

### CVH / CVS alpha Basic Line

- · Ratio 7-40
- Max. backlash
   15 arcmin
- · Max. torque 68-301 Nm
- Further characteristics: Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Hollow shaft interface, Keyed hollow shaft, Output on both sides

### NVH / NVS

alpha Value Line

- · Ratio 4-400
- Max. backlash
   ≤ 6 arcmin
- · Max. torque 74-365 Nm
- Further characteristics: Food-grade lubrication, Corrosion resistant
- Output shape: Smooth shaft, Shaft with key, Hollow shaft interface, Keyed hollow shaft, Output on both sides
- System solutions:
   Linear system (rack / pinion)



## CPK / CPSK alpha Basic Line

- Ratio 3-100
- Max. backlash
   ≤ 13-15 arcmin
- · Max. torque 14-700 Nm
- Further characteristics: Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key







## VH+ / VS+ / VT+ alpha Advanced Line

- · Ratio 4-400
- Max. backlash ≤ 2-3 arcmin
- Max. torque 74-1505 Nm
- Further characteristics: Food-grade lubrication, Corrosion resistant
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Hollow shaft interface, Keyed hollow shaft, Flanged hollow shaft, Output on both sides
- System solutions:
   Linear system (rack / pinion)

## SC+ / SPC+ / TPC+ alpha Advanced Line

- · Ratio 1-20
- Max. backlash ≤ 2-4 arcmin
- · Max. torque 12-2560 Nm
- Further characteristics: Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft, Flange, System output
- System solutions:
   Linear system (rack / pinion)



### XPC+ / RPC+ alpha Premium Line

- · Ratio 4-55
- Max. backlash ≤ 1.3-4 arcmin
- · Max. torque 48-7535 Nm
- Further characteristics: Flange with slotted holes, Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), Blind hollow shaft, Flange, System output
- System solutions:
   Linear system (rack / pinion)

## Bevel and worm gearboxes from WITTENSTEIN alpha impress with:

- Premium quality and optimal reliability
- Low ratios at high nominal speeds and torques
- · High overload capacity
- Maximum power density in a very small space
- Various output configurations
- Applications in cyclic or continuous operation

### Servo actuators

Our servo actuators are the perfect fusion of our low-backlash gearboxes and servo motors in a unit that is flexible in use.

Maximum power density coupled with functional design. A servo actuator with a low moment of inertia and an extremely rigid drive train provide for maximum precision and power – a decisive increase in productivity.



## **TPM+ DYNAMIC** alpha Advanced Line

- · Ratio 16-91
- Max. backlash ≤ 1-3 arcmin
- Max. torque 30-1300 Nm
- Further characteristics: Food-grade lubrication, Corrosion resistant
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion)



## TPM+ HIGH TORQUE alpha Advanced Line

- · Ratio 22-220
- Max. backlash ≤ 1 arcmin
- Max. torque 230-3100 Nm
- Further characteristics: Food-grade lubrication, Corrosion resistant
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion)



## TPM+ POWER alpha Advanced Line

- · Ratio 4-100
- Max. backlash ≤ 1-3 arcmin
- · Max. torque 15-1600 Nm
- Further characteristics: Food-grade lubrication, Corrosion resistant
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion)









## premo® SP Line alpha Advanced Line

- · Ratio 16-100
- Max. backlash ≤ 3-5 arcmin
- · Max. torque 32-315 Nm
- Further characteristics: Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480)
- System solutions:
   Linear system (rack / pinion)



- · Ratio 16-100
- · Max. backlash ≤ 1-3 arcmin
- · Max. torque 35-380 Nm
- Further characteristics: Food-grade lubrication
- Output shape:
   Flange, System output
- System solutions:
   Linear system (rack / pinion)

### premo® XP Line alpha Premium Line

- · Ratio 16-100
- Max. backlash ≤ 2-4 arcmin
- · Max. torque 35-450 Nm
- Further characteristics: Flange with slotted holes, Food-grade lubrication
- Output shape: Smooth shaft, Shaft with key, Splined shaft (DIN 5480), System output
- System solutions:
   Linear system (rack / pinion)

## Servo actuators from WITTENSTEIN alpha impress with:

- Perfect combination of a gearbox and a servo motor
- Flexible in use
- Maximum power density
- Functional design
- Low moment of inertia
- High rigidity
- Maximum precision and power

### System solutions

#### The full array of linear systems

Our unique knowledge extends from the coupling of gearboxes, motors, pinions and racks to outstanding system solutions.

In addition to the standard planetary gearboxes, the respective servo worm and servo right-angle gearboxes are also available for our linear systems. The integrated TPM+, RPM+ and premo servo actuators round off the portfolio.

Our preferred linear systems are always comprised of the perfect combination of gearbox, pinion, rack and lubrication system.

The systems are optimized with focus on the degree

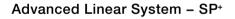
of utilization of the individual components, feed force, feed speed and rigidity.

Benefit from maximum performance across the board:

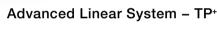
- · Maximum precision
- · Highest dynamics
- · Optimum rigidity
- · Maximum lifetime







- Adapted to applications with average to high demands in terms of smooth running, positioning accuracy and feed force
- Available with innovative rack assembly INIRA®



- Adapted to applications with average to high demands in terms of smooth running, positioning accuracy and feed force
- Available with innovative rack assembly INIRA®



### Value Linear System - NPR

Adapted to linear applications in the Value Segment with comparatively low requirements in terms of smooth running, positioning accuracy and feed force





### Premium Linear System - XP+

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

### Premium Linear System - RP+

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

INIRA®: The revolution in rack assembly
Find out everything about INIRA® at:
www.wittenstein-alpha.com/INIRA

## System solutions from WITTENSTEIN alpha impress with:

- Precision alignment of components
- Maximum efficiency and power density
- Exceptional linear system rigidity for even greater dynamics and precision
- Simple assembly and perfect integration in the drive train
- Available in different sizes, power categories and segments

### Application-specific solutions

### The right solution for all requirements

Varying customer requirements create major challenges for Delta robots and require continuous further development of the drives. For more than ten years, WITTENSTEIN has been developing and manufacturing gearbox and servo actuator solutions for Delta robots that are just as individual as the applications of our customers. With unique engineering experience, recognized methodological competencies and software expertise as well as a high-performance product portfolio, we offer our customers the security of a technically and economically refined drive design for highly dynamic, multidimensional movement profiles.



DP+ corrosion resistant, painted



DP\* corrosion resistant, unpainted



### Hygienically safe drive

Our products with Hygienic Design are specially developed for challenging food processing applications, made of highly resistant stainless steel and ideal for cleaning with aggressive cleaning agents and disinfectants.

Direct process integration allows new freedom in design and an open machine concept without encasings.

The HDV is the world's first planetary gearbox with EHEDG certification and meets the strict hygiene requirements of production and packaging facilities.

The HDP⁺ is our planetary gearbox with an output flange in Hygienic Design.



HDP<sup>+</sup>



HDV







TYPE EL - CLASS I

For more information, see:
www.wittenstein.de/en-en/hygienic-design

## Application-specific solutions from WITTENSTEIN alpha impress with:

- Minimal backlash and extreme torsional rigidity ensure maximum positioning accuracy
- Extremely reliable gearboxes prevent cost-intensive machine breakdowns
- Consistently high performance
- New freedom in design through direct process integration of Hygienic Design products

### Accessories

In addition to gearboxes, servo actuators, and linear systems, we offer our customers an extensive portfolio of matching accessories. In perfect match with the gearbox, they meet the expectations of customers.

#### Shrink discs

Shrink discs are frictional hub-shaft connections. Together with our hollow shaft or blind hollow shaft gearboxes for direct mounting to load shafts, machine designs with a minimal installation space can be realized.

#### The benefits:

- · Simple assembly and disassembly
- · Corrosion-resistant stainless steel version
- Maximum safety during the transmission of the emergency stop torques

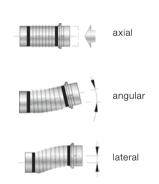


### Couplings

Our innovative couplings, which are used in various drive technology sectors, ensure efficiency and process reliability in the applications.

The couplings have the following properties:

- Completely backlash-free torque transmission
- · Maintenance free
- · Durable
- Compensation of shaft misalignments (axial, angular, lateral)





### cynapse - It's new. It's connective. The smart gearbox.

Mechatronic drive systems that can independently acquire and communicate information are an essential precondition for IIoT. WITTENSTEIN alpha is the first component manufacturer to offer smart gearboxes as standard – gearboxes with cynapse. They have an integrated sensor module which enables industry 4.0 connectivity.

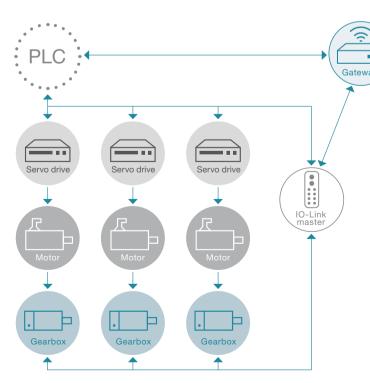


### cynapse - how it works

cynapse ensures that the gearbox can be easily integrated into the digital world in future. A sensor module is fitted in the existing installation space and is connected via an IO-Link interface, thus providing access to performance data such as the gearbox's temperature, vibration, operating time, acceleration and product-specific information.

### cynapse wins customers over with:

- Sensor module integrated into the installation space
- Simple connection by IO-Link interface
- · Gearbox threshold monitoring
- Quick product identification thanks to digital name plate



### **Connectivity 4.0**

cynapse generates an electronic "fingerprint" with specific requirements for performance, efficiency, transparency and availability. Because the smart gearbox can identify and measure parameters directly from the process and application environment and pass them on to the machine control system. In addition, gearboxes can use cynapse to exchange information with the applications on IloT platforms and, thanks to its integrated, intelligent logic functions, can perform sophisticated monitoring tasks independently.

### Support at each interaction stage

With the WITTENSTEIN alpha service concept, we are also setting new standards in the field of customer support.

### DESIGN



We offer the right sizing methodology for every requirement. Whether easy downloading of CAD data, quick and easy calculation, or precise sizing of the drive train.

### INSTALLATION



Our service experts are happy to support you in the installation and startup of complex mechatronic systems, guaranteeing maximum availability of your plant.

### **MAINTENANCE**



WITTENSTEIN alpha guarantees fast repairs of the highest quality and precision.

In addition, we will provide you with information about various measurements, material analyses, and condition monitoring inspections.

#### Consultation

- · Personal contact on site
- · Competent application calculations and drive sizing

### **Engineering**

### Catalog gearboxes:

- · Advanced software tools for accurate calculation, simulation, and analysis of the drive train
- Optimization of your productivity

#### Special gearboxes:

- · Development and production of customized gearboxes
- · Gearing design and development
- · Inquiries: sondergetriebe@wittenstein.de





SIZING ASSISTANT YOUR GEARBOX WITHIN SECONDS





### speedline® delivery

Tel. +49 7931 493-10444

- · Delivery of standard product range in 24 or 48 hours ex works\*
- · Fast deliveries at short notice

#### Installation on site

- · Professional installation
- · Optimal application integration
- · Introduction to the operation of the drive

### Operating and installation instructions

- · Detail description of how to use the product
- · Installation and motor mounting videos
- \* Non-binding delivery time depending on part availability



### WITTENSTEIN Service Portal

One gate. All support.

#### **WITTENSTEIN Service Portal**

- · Instant Access to Product Information
- · Quick Installation and Commissioning for example Tutorial-Videos

### Pick-up & return service

- · Minimization of downtimes
- · Professional logistics organization
- · Reduction of transport risks

#### 24 h service hotline

Tel. +49 7931 493-12900

#### Maintenance and inspection

- · Documentation regarding condition and expected service life
- · Customer-specific maintenance schedules

- · Repair to nominal condition
- · Immediate response in time-critical situations

#### cymex® statistics

- · Systematic field data acquisition
- · Reliability calculations (MTBF)



### **WITTENSTEIN Service Portal**

One gate. All support.

### **WITTENSTEIN Service Portal**

- · Fast Processing of Replacement Products
- · The Right Contact for Queries
- Tailor-Made Maintenance Services

#### Modernization

- · Professional retrofitting
- · Reliable compatibility testing of existing solutions



### Individual training without limits

All delivered products are perfectly matched to your application environment and immediately 100 % operational.

Our service experts support you in the commissioning of complex mechatronic systems, guaranteeing maximum availability of your plant.

#### Product training

Greater knowledge enables greater achievement. We will be pleased to share our expert knowledge with you: Profit from our many years of experience and learn more about the product portfolio of WITTENSTEIN alpha.

### Sizing training

Become a design expert! We will provide you with training courses on our design software, adapted to your requirements. Whether for beginners or experts, for occasional or regular users – we adapt our training course to your wishes and requirements.

#### Installation training

We offer you individual training courses on-site for your system application of selected linear axes as well as professional installation.

### Service training

Participation in a service training course is a prerequisite for sourcing spare parts at the parts list level. We offer you training courses at our premises or on-site at your plant. Moreover, we regularly host maintenance workshops at which the participants are instructed in safe handling during mounting of the motor to the gearbox as well as the independent replacement of wearing parts and gearbox assemblies.

## Global presence. Personal consultation.

No matter where you need us:

A comprehensive sales and service network provides quick availability and competent support worldwide.

24 h service hotline: +49 7931 493-12900



alpha

WITTENSTEIN alpha GmbH Walter-Wittenstein-Straße 1 97999 Igersheim Germany Tel. +49 7931 493-0 24h-Service-Hotline: Tel. +49 7931 493-12900 speedline®: Tel. +49 7931 493-10444 info@wittenstein-alpha.com

### WITTENSTEIN alpha - Intelligent drive system

### www.wittenstein-alpha.com

The entire world of drive technology – Catalogs available on request or online at www.wittenstein-alpha.com/catalogs





**alpha Premium Line.** Einzigartige, individuelle Lösungen mit unvergleichbarer Leistungsstärke.





**alpha Advanced Line.** Maximum power density and outstanding positioning accuracy for complex applications.





**alpha Basic Line & alpha Value Line.** Reliable, flexible and economical solutions for a wide range of applications.





**alpha Linear Systems.** Precise, dynamic system solutions for every requirement.





**alpha Mechatronic Systems.** Energy-efficient, versatile and flexible mechatronic drive systems.





**alpha Accessories.** Flexibilität ohne Grenzen. Smarte Ergänzung an Effizienz und intelligenter Performance.