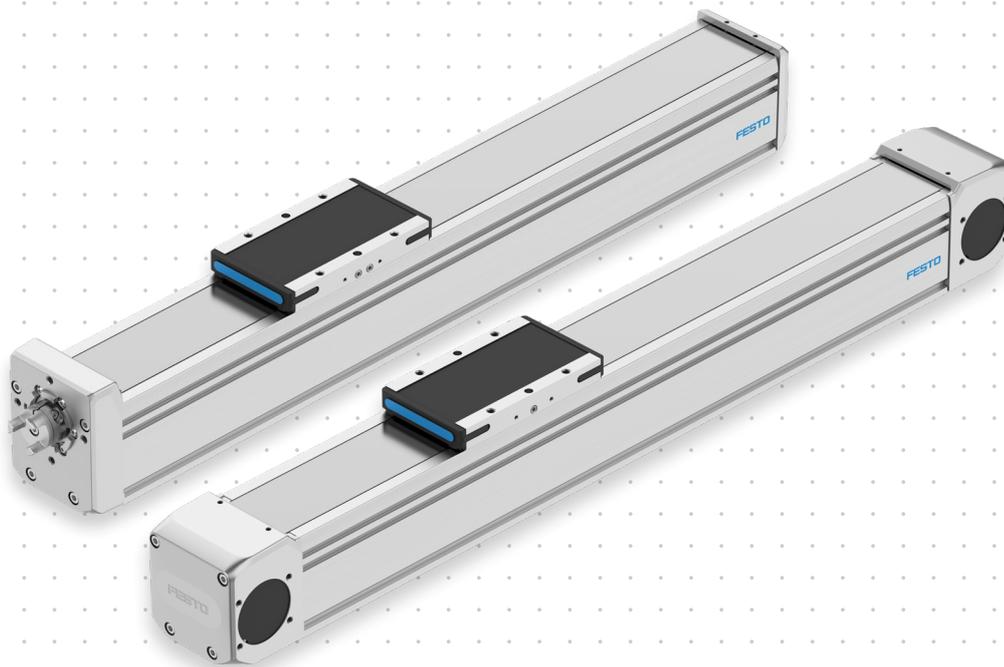




## Ball screw and toothed belt axes ELGD



### Highlights

- Excellent rigidity, large feed forces and a durable guide system
- Innovative guide technology
- Powerful drive elements
- Innovative stainless steel cover strip solution

**The powerful axis series ELGD with the ball screw drive ELGD-BS and toothed belt drive ELGD-TB is perfect for a wide range of electromechanical automation tasks. The comprehensive portfolio with different sizes in both standard and wide versions stands out thanks to its excellent rigidity, large feed forces and a durable guide system.**

#### **Innovative guide technology**

The innovative guiding offers excellent rigidity and load capacity, and also takes up less space within the axis. In addition, less vibration and a smoother slide movement protect sensitive workpieces. High speeds ensure short cycle times and a very long service life minimises downtime.

#### **Powerful drive elements**

Since there is more space inside the mechanical axis, feed forces and acceleration are higher, enabling shorter process times. And a long service life and increased reliability reduce TCO.

#### **Innovative stainless steel cover strip solution**

Abrasion-free and clean surfaces protect workpieces from particles. The minimized number of particles allows use in clean-rooms. Reduced ingress of dirt means it can also be used in very harsh ambient conditions.

#### **Additional information:**

#### **Product page**

- > [www.festo.com/catalogue/elgd](http://www.festo.com/catalogue/elgd)
- Online Shop
- > [www.festo.com/shop/elgd](http://www.festo.com/shop/elgd)

#### **Engineering tools**

- > [Electric Motion Sizing](#)
- > [Handling Guide Online](#)
- > [Festo Automation Suite](#)





## High-precision: ball screw axis ELGD-BS at a glance

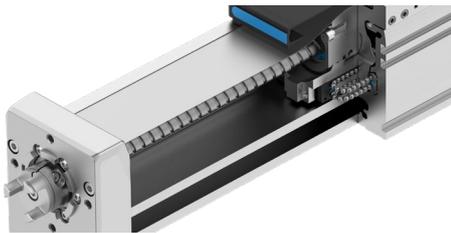
The ball screw axis ELGD-BS with innovative dual recirculating ball bearing guide and ball screw is protected by a stainless steel cover strip with magnetic deflection. The portfolio with 6 standard sizes and 4 versions with a width of 30 to 220 mm is already available now in

the main 60/80/100 WD series. Further sizes will follow later in the year. The axis with a maximum stroke of 2.5 m and two slide lengths can be purchased right now.

1

### Innovative guide technology developed in-house with optimized design for electric axis mechanics

- Excellent rigidity
- Guide has exceptional load bearing capacity
- Lightweight
- Precise and smooth, virtually vibration-free slide movement over the entire stroke range up to 2.5 m
- It is possible to choose a smaller size for lower weight, smaller installation dimensions, reduced costs
- Very long service life



2

### Innovative stainless steel cover strip solution

- Magnetic belt reversal without rubbing components on the outside
- Clean surface, no abrasion on the outside
- Minimized particle emission for use in cleanrooms
- Reduced ingress of dirt in harsh ambient conditions

3

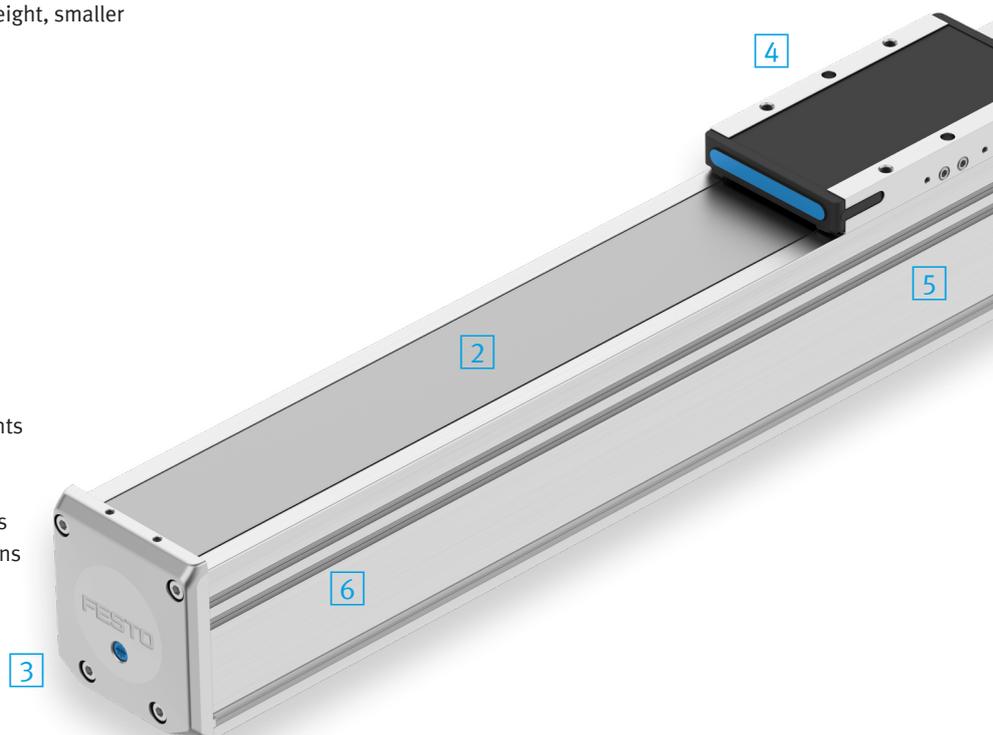
### Two profile variants

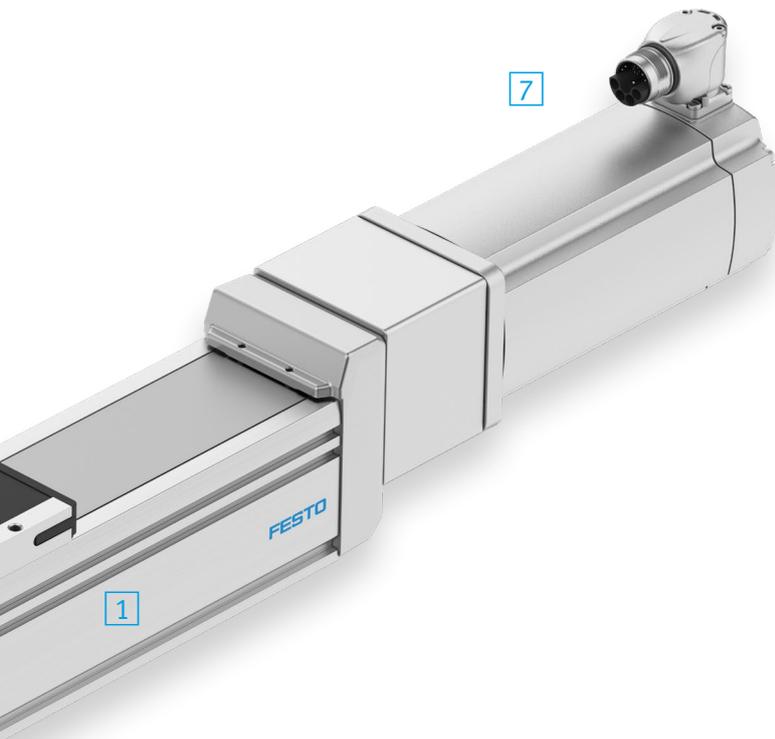
- Standard: square profile cross-section with optimized design
- Wide: reduced profile height for smaller installation dimensions and more compact handling systems
  - High torsional rigidity with lower weight and reduced costs
  - 30 % lighter, while rigidity and load capacity are still similar to the axis with normal profile width
  - Overall height reduced by 30 %, yet feed forces are similar to the axis with a standard profile height

4

### Various slide options

- Long slide and freely movable second slide
- For higher axial and lateral forces and higher loads
- Additional mounting options
- Longer service life thanks to a second slide that allows the guide load to be distributed





1

7

5

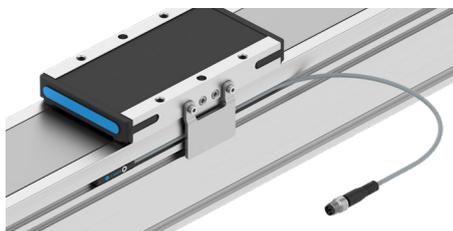
#### Optimized profile design for the best force flow and torque absorption

- Very high rigidity
- Long strokes up to max. 2.5 m

6

#### Optional sensing for greater reliability

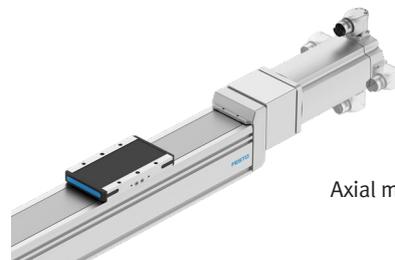
- Inductive proximity sensor SIES-8M as N/C or N/O with switching output PNP and NPN and degree of protection IP67
- Easy to mount up to 2 sensors in the profile slot without needing additional mounting materials
- Flush mounting without interfering edges outside the drive cross-section
- Sensors can easily be added or repositioned at a later date



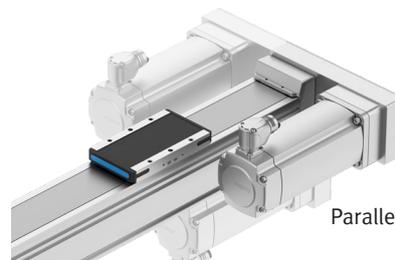
7

#### Freely selectable motor positions

- Motor mounting options: axial or parallel
- Axial: the motor can be mounted rotated 4x 90° around its own axis during mounting
- Parallel: the mounting kit can be fitted at 3x 90° and the motor can be rotated 3x 90° around its own axis
- The axis can be ordered with motor mounting on the right (MR) or left (ML) (MR/ML defines the position of the motor in relation to the central lubrication connections on the slide)



Axial mounting kit



Parallel mounting kit



## The highly dynamic toothed belt axis ELGD-TB at a glance

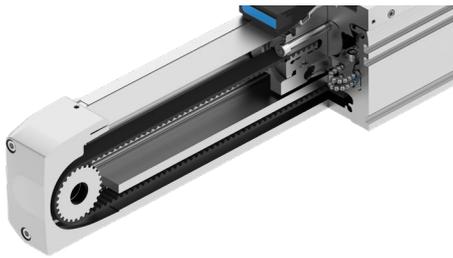
The toothed belt axis ELGD-TB with innovative dual recirculating ball bearing guide and toothed belt drive is protected by a stainless steel cover strip with magnetic deflection. The portfolio with 6 standard sizes and 4 versions with a width of 30 to 220 mm is already available

now in the main 60/80/100 WD series. Further sizes will follow later in the year. The axis with a maximum stroke of 8.5 m and different slide options can be purchased right now.

1

### Innovative guide technology developed in-house with optimized design for electric axis mechanics

- Excellent rigidity
- Guide has exceptional load bearing capacity
- Lightweight
- It is possible to choose a smaller size for lower weight, smaller installation dimensions, reduced costs
- Virtually vibration-free and very smooth slide movement
- High speeds over the entire stroke range up to 8.5 m
- Very long service life



2

### Innovative stainless steel cover strip solution

- Magnetic belt reversal without rubbing components on the outside
- Clean surface, no abrasion on the outside
- Minimized particle emission for use in cleanrooms
- Reduced ingress of dirt in harsh ambient conditions

3

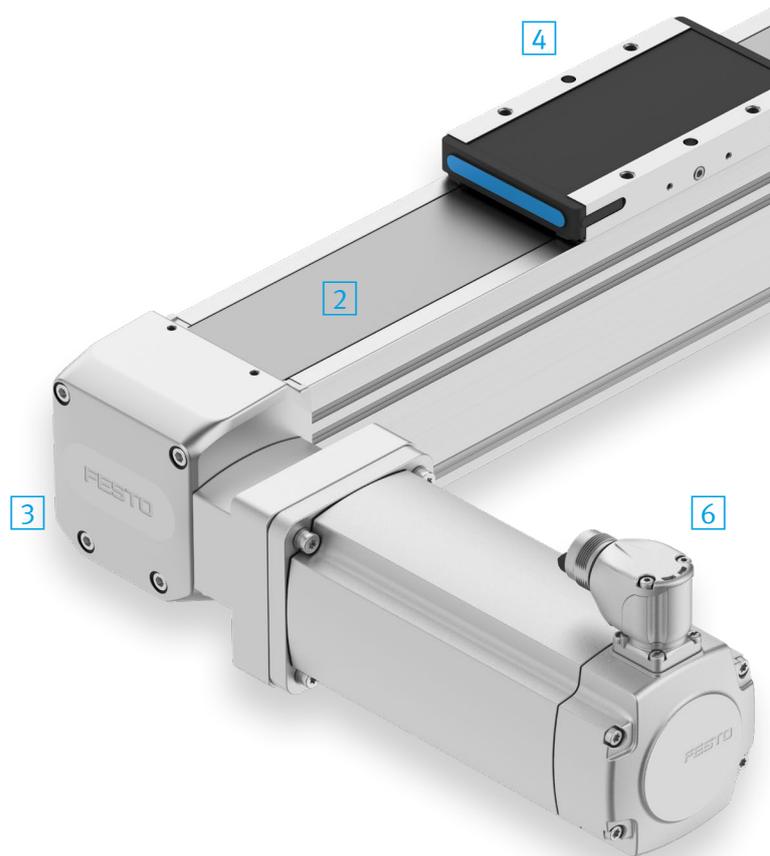
### Two profile variants

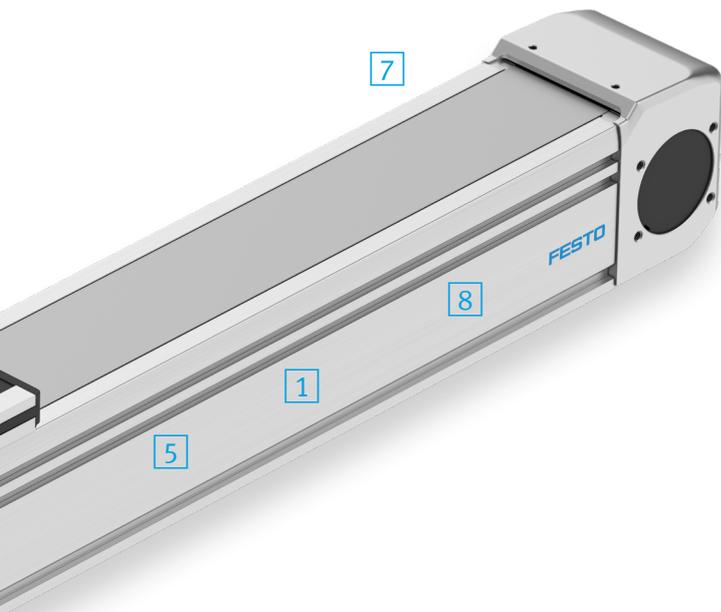
- Standard: square profile cross-section with optimized design
- Wide: reduced profile height for smaller installation dimensions and more compact handling systems
  - High torsional rigidity with lower weight and reduced costs
  - 30 % lighter, while rigidity and load capacity are still similar to the axis with normal profile width
  - Overall height reduced by 30 %, yet feed forces are similar to the axis with a standard profile height

4

### Various slide options

- Long slide and freely movable second slide
- For higher axial and lateral forces and higher loads
- Additional mounting options
- Longer service life thanks to a second slide that allows the guide load to be distributed





5

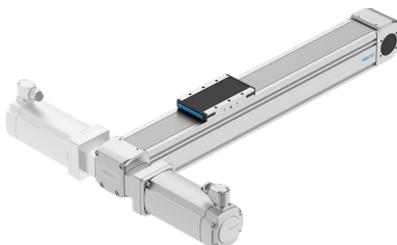
**Optimized profile design**

- Optimized force flow and torque absorption
- Very high rigidity
- Long strokes up to max. 8.5 m

6

**Freely selectable motor positions**

- Freely selectable at two positions at the end of the axis
- Motor with cable connection can be mounted 4x 90° around its own axis
- Position can be changed at any time
- Define a standard attachment version with a part number and change the position as and when needed



7

**Different toothed belt materials**

- Polyurethane (PU2) with fabric coating for long service life and greater resistance to cooling and lubricating fluids. Steel cord tension members enable high forces to be transmitted and also allow the axis to be dynamically controlled
- Polyurethane (PU1) without coating, but with a steel cord tension member for applications in the food zone

8

**Optional sensing for greater reliability**

- Inductive proximity sensor SIES-8M as N/C or N/O with switching output PNP and NPN and degree of protection IP67
- Easy to mount up to 2 sensors in the profile slot without needing additional mounting materials
- Flush mounting without interfering edges outside the drive cross-section
- Sensors can easily be added or repositioned at a later date





## Compact and powerful servo drive controllers, servo and stepper motors

### Servo drive CMMT-AS



The price- and size-optimized, compact servo drive CMMT-AS (low-voltage drive) is suitable for point-to-point and interpolating movements. The servo drive is suitable for different Ethernet-based bus systems and can be seamlessly integrated into the controller environments of various manufacturers.

- Ethernet-based communication via multi-protocol: 1 servo drive for many field-buses – easy to integrate into automation solutions with controllers from e.g. Siemens, Rockwell, Beckhoff, and others
- Operating panel CDSB: Simple full-text diagnostics and setting of the drive on site
- Compact design: all connections and the operating panel CDSB are at the front and on top of the drive.
- Motor connection: the motor connection of the servo motor EMMT-AS uses a one-cable solution (OCP); other servo motors are connected using separate cables
- Configure standard safety functions – STO, SS1 and SBC – without software

### Servo drive CMMT-ST



The extra-low voltage servo drive CMMT-ST is perfect for highly economical positioning tasks and motion solutions with low power requirements up to 300 W. It is even more compact and significantly less expensive than its big brother, the CMMT-AS, while the connection and communication concept, function blocks and standard safety remain the same.

- Ethernet-based communication via multi-protocol: 1 servo drive for many field-buses – easy to integrate into automation solutions with controllers from e.g. Siemens, Rockwell, Beckhoff, and others
- Suitable for point-to-point and interpolating movements
- Motor connection: the stepper motors EMMT-ST and EMMB-ST are connected using a single-cable solution (OCP); other stepper motors are connected using separate cables
- Configure standard safety functions – STO and SS1 – without software

### Major advantage of the entire CMMT series:

Quick and error-free commissioning in just a few minutes and

in just a few steps with the Festo Automation Suite



### Servo motor EMMT-AS

- Single-turn or multi-turn absolute encoder
- Complete housing with connection technology in degree of protection IP67
- Connection via one-cable solution (OCP)



### Servo motor EMMB-AS

- Digital single-turn encoder, multi-turn optional
- Optimised connection with cables suitable for energy chains



### Stepper motor EMMT-ST

- Single- oder Multi-Turn Absolut-Encoder
- High-performance in IP65
- Rotatable plug (290°)
- Connection via one-cable solution (OCP)

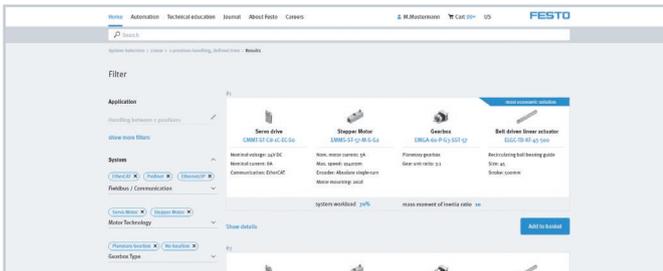
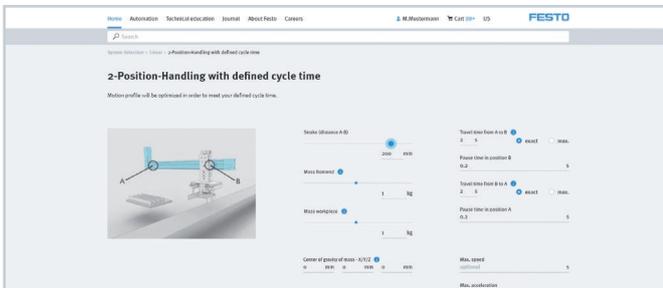
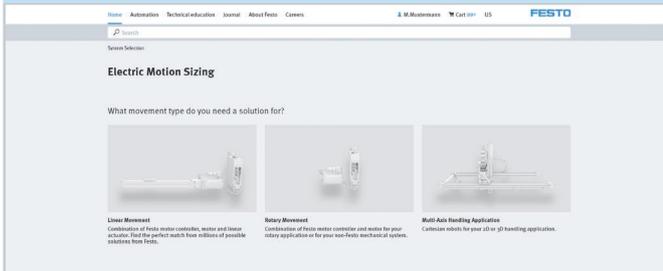


### Stepper motor EMMB-ST

- Single- oder Multi-Turn Absolut-Encoder
- Basic performance in IP20
- Convertible plug outlet direction to the front or rear
- Connection via one-cable solution (OCP)

## Electric Motion Sizing and Festo Automation Suite

### Electric Motion Sizing tool



### Online tool for sizing servo drive packages

Electric Motion Sizing, the online sizing and simulation tool for electric drives and electromechanical drive solutions, supports you throughout the process. You only need to enter a few application parameters, for example mass, stroke/travel distance, cycle time, and Electric Motion Sizing calculates more than 3 million possible product combinations for you.

The suggestion you will receive presents the most economical solution from Festo that meets your requirements for the application, including additional alternatives, Electric Motion Sizing also provides the parameterisation data for download into the Festo Automation Suite, and simplifies commissioning too.

### The benefits to you

- User-friendly interface for quick, easy and reliable calculation of the right electromechanical drive solution
- Freely available online tool, no registration, no software download and no installation required
- The proposed solution combines the best price and availability
- Registered users can simulate a selected solution and then receive further information, such as an analysis of the overshoot behaviour.

→ [www.festo.com/ems](http://www.festo.com/ems)

### Commissioning software Festo Automation Suite



The PC-based software Festo Automation Suite combines the parameterisation, programming and maintenance of Festo components in one program. It enables the entire drive package to be commissioned, from the mechanical system to the controller. The commissioning software is available free of charge and already contains the basic functionalities of all Festo components.

Plug-ins or add-ons can be installed directly via the

program. In addition, device information, manuals and application descriptions can also be downloaded directly from the software without having to open a web browser.

### Intelligent connectivity

With the integrated commissioning wizard, it only takes five steps to reliably configure a fully operational drive system. And with just two clicks, the servo drive CMMT-AS is integrated into the controller program of CPX-E. Optionally, the CODESYS exten-

sion also enables the motion control and robotics functions of CPX-E to be programmed.



Free download of the software at  
→ [www.festo.com/AutomationSuite](http://www.festo.com/AutomationSuite)



## Examples of the perfect application for the ELGD

### Cantilever systems and pick-and-place solutions for small parts handling:

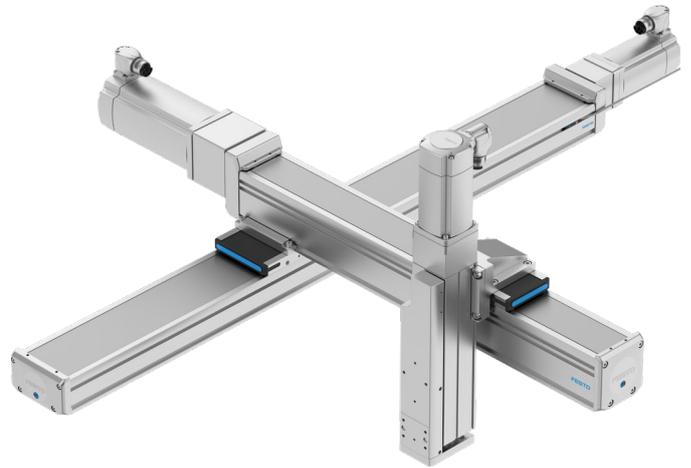
Short cycle times, high precision and repeatability

### Handling systems for top loaders:

Great cost/performance ratio, high travel speed, especially with long strokes

### Automation solutions for 3D printing and additive manufacturing:

Virtually vibration-free, very dynamic movement and resistant to harsh ambient conditions



### Application example with a second slide

- Simple and flexible double pick-and-place solution
- Very compact design with two independently moving Z-axes
- Long Z-axis guide for high rigidity, even at high speeds and loads

