Ball screw and toothed belt axes ELGC and mini slides EGSC

When compact dimensions are essential, the linear axes ELGC and mini slide EGSC can be combined into space-optimized handling systems that fit seamlessly into your application. These low-cost axes are the ideal choice for applications in electronics assembly, small parts handling, dispensing, test and inspection, lab automation, and many other desktop applications.

**Highlights**

- Compact, lightweight systems
- Low cost solutions
- Modular axes easily assembled into multi-axis systems
- Protected for cleanrooms or dirty environments
- Standardized accessories for faster design and assembly reduced warehousing
- Flexible motor mounting for optimized installation
- Fast delivery from local stock

**Ball screw and toothed belt axes ELGC**

Designed with a high-quality ball bearing guide inside, these actuators are commonly used as horizontal and vertical axes in Cartesian handling systems.

**Mini slide EGSC**

These high-performance mini slides offer smooth, quiet ball screw operation. They are ideal for integration into multi-axis systems and commonly used as vertical Z-axes.

**Optimized designs**

The ELGC and EGSC have a clean, professional look that is less prone to contamination. They are weight-optimized to minimize moving mass in assembled systems. And the flexible motor position and orientation makes effective use of the available space.

**Effortless assembly**

The ELGC and EGSC axes are easily combined and assembled into 2-axis and 3-axis systems without the need for any special expertise or tools. Build compact 2D and 3D desktop gantries, pick and place solutions, cantilever systems, and more.

www.festo.com
Compact and simple systems at a glance

Single axes and complete handling systems

Single-axis solution
Compact and precise, use the EGSC with parallel motor mounting kit
- Available with axial motor mounting kit
- Commonly used as a vertical Z-axis in 2-axis and 3-axis systems

Pick, rotate and place solution
Compact 2D solution for picking, rotating and placing components
- Directly mount the mini slide EGSC and electric rotary actuator ERMO; no additional adapter plates required
- Also available with parallel motor mounting kits

Linear Z-axis gantry
Handling solutions for precision applications
- Ball screw axes ELGC and EGSC provide excellent repeatability
- Effortlessly assemble space-optimized systems
- Available with parallel motor mounting kits

3-axis precision solutions
Compact 3D systems for precision applications in assembly, dispensing, testing, parts handling, and more
- Ball screw linear axes ELGC for horizontal motion combined with mini slides EGSC for vertical movements
- Sturdy 90° adapter provides added rigidity for higher loads

3-axis dynamic solutions
Compact 3D systems for dynamic applications with larger workspaces
- Ball screw or toothed belt axes ELGC for horizontal and vertical motion
- Toothed belt ELGC actuators available up to 2 m long for large workspaces

3-axis cantilever systems
Installation space optimized 3D handling system for higher loads
- Passive guide ELFC significantly increases the load-carrying capacity of the X-axis
- Use passive guide ELFC with longer Y-axes and higher loads

3D low profile systems
Low profile design to operate in compact machine designs
- The mini H gantry EXCM-30 for XY movements is available for workspaces up to 700 mm x 510 mm
- Mini slide EGSC for vertical movements up to 200 mm

Pick, rotate and place solution
Compact 2D solution for picking, rotating and placing components
- Directly mount the mini slide EGSC and electric rotary actuator ERMO; no additional adapter plates required
- Also available with parallel motor mounting kits

Linear Z-axis gantry
Handling solutions for precision applications
- Ball screw axes ELGC and EGSC provide excellent repeatability
- Effortlessly assemble space-optimized systems
- Available with parallel motor mounting kits

3-axis precision solutions
Compact 3D systems for precision applications in assembly, dispensing, testing, parts handling, and more
- Ball screw linear axes ELGC for horizontal motion combined with mini slides EGSC for vertical movements
- Sturdy 90° adapter provides added rigidity for higher loads

3-axis dynamic solutions
Compact 3D systems for dynamic applications with larger workspaces
- Ball screw or toothed belt axes ELGC for horizontal and vertical motion
- Toothed belt ELGC actuators available up to 2 m long for large workspaces

3-axis cantilever systems
Installation space optimized 3D handling system for higher loads
- Passive guide ELFC significantly increases the load-carrying capacity of the X-axis
- Use passive guide ELFC with longer Y-axes and higher loads

3D low profile systems
Low profile design to operate in compact machine designs
- The mini H gantry EXCM-30 for XY movements is available for workspaces up to 700 mm x 510 mm
- Mini slide EGSC for vertical movements up to 200 mm
Compact and simple systems at a glance

Modular systems for effortless expansion

Integrated coupling
- Highly compact double-bearing design requires less space for motor mounting
- Integrated coupling reduces motor coupling length

Flexible motor mounting for toothed belt axes
- Modify motor orientation at any time
- Axial kit provides 4 x 90° motor orientations

Flexible motor mounting for ball screw axes and mini slide
- Modify motor position and orientation at any time
- Axial kit provides 4 x 90° motor orientations
- Parallel kit provides 3 x 90° mounting directions and 3 x 90° motor orientations

Modular systems for effortless expansion

Low-cost sensor brackets and sensors
- Use for homing routine
- Use as limit switches to prevent overtravel
- Sensors are triggered by magnets built into the axes

Angle kit
- Sturdy bracket for direct mounting of vertical axes
- Combine base axis with next smallest size axis as Z-axis
- Supports as Z-axes linear axes ELGC, passive guide ELFC, and mini slide EGSC

Compact handling systems
- Optimized design provides very space-efficient solutions
- Maximized workspaces, especially with motor mounted in parallel configuration
- Meets installation requirements for applications in the electronics industry

Universal mounting accessories
- Same mounting accessories for ball screw and toothed belt ELGC and mini slide EGSC, simplifying machine design and inventory requirements
- Mount anywhere along the actuator profile

Yoke plate on mini slide EGSC
- Standardized interface for electric rotary actuator ERMO means no adapter plate is required
- Reduced cost and assembly time
- Minimized installation space
Ball screw and toothed belt axes ELGC at a glance

The benefits of a modular system – Use as a low-cost stand-alone axis or as a complete solution

Ball screw axis ELGC-BS-KF
- Four actuator sizes with speeds up to 1 m/s and a maximum length of 1,000 mm
- Precision, high-quality ball screw for excellent repeatability
- Guide and ball screw are protected by a stainless steel cover band
- Delivered fast from local stock

Toothed belt axis ELGC-TB-KF
- Three actuator sizes with speeds up to 1.5 m/s and a maximum length of 2,000 mm
- Toothed belt for dynamic movements
- Guide and toothed belt are protected by a stainless steel cover band
- Delivered fast from local stock

Guide axis ELFC-KF
- Four actuator sizes with speeds up to 1.5 m/s and a maximum length of 2,000 mm
- No drive mechanism with recirculating ball bearing guide and freely moveable carriage
- Use in multi-axis systems to increase torsional resistance and reduce vibration during dynamic movements
- Delivered fast from local stock

- Stainless steel cover band
  - To protect the interior guide and toothed belt
  - Tight seal thanks to magnetic strips
  - No sagging with inverted installation

- Recirculating ball bearing guide
  - Integrated recirculating ball bearing guide with long service life
  - Rigid precision guide rail to absorb high guide forces

- Magnet for homing sensor and limit switches
  - Magnet on both sides in carriage
  - Standard with ball screw and toothed belt axes
  - For simple, low-cost proximity switch SMT-8M

Integrated coupling with compact double bearing
- Compact coupling integrated into the ball screw axis to reduce cost and installation time
- High-performance double ball bearing to absorb motor forces and minimize motor installation space
- Easily assemble with parallel or axial motor mounting kit

Clean look design
- Easy to clean profile and less prone to contamination
- Professional appearance your customers will appreciate

Breathing port
- Standard: closed to seal the axis and reduce particle emissions
- Optional: connect a standard fitting and apply pressurized air to keep dirt out or apply vacuum for use in cleanrooms

Flexible motor mounting
- Modify motor position and orientation at any time
- Parallel and axial kits for the ELGC-BS provide even greater flexibility for motor position

Carriage mounting
- Mount directly to the carriage on the base axis
- Easily mount linear axes ELGC, passive guides ELFC, or mini slides EGSC
- Mount next size down axis without adapter plate

Integrated coupling
- Compact coupling integrated into the toothed belt axis to reduce cost and installation time
- Minimizes motor footprint
- Easy motor mounting
- Easily assemble with parallel or axial motor mounting kit
Mini slide EGSC-BS at a glance

The benefits of a modular system – Use as a low-cost standalone axis or as a complete solution

Mini slide EGSC-BS
- Four highly compact actuator sizes with speeds up to 600 mm/s and a maximum length of 200 mm
- Precision, high-quality ball screw for excellent repeatability and long service life
- Recirculating ball bearing guide for yoke slide with high load bearing capacity
- Delivered fast from local stock

Mini slide EGSC-BS at a glance

Integrated linear guide
- The precision linear guide and the durable ball bearing guide are integrated into the housing
- Rigid precision guide rail to absorb lateral forces
- Improved protection against rotation at high torques
- Enhanced rigidity of the mini slide

Ball screw
- High grade, low-friction ball screw for very smooth movements
- Low friction minimizes the no-load torque to allow use of smaller motors
- Using smaller motors reduces the size, weight, and power consumption of the axis

Ring magnet for homing sensor and limit switches
- Magnet built into the ball screw nut
- Standard with mini slide EGSC
- For simple, low-cost proximity switch SMT-8M

Integrated coupling
- Highly compact coupling integrated into the mini slide
- Minimizes motor footprint
- Easy motor mounting
- Easily assemble with parallel or axial motor mounting kit

Yoke plate
- Standardized interface for electric rotary actuator ERMO means no adapter plate is required
- Reduced cost and assembly time
- Minimized installation space

Compact double bearing:
- High-performance double ball bearing to absorb motor forces and minimize motor installation space
- No additional bearing required in parallel kits making them more compact
- Smaller dimensions for more compact handling systems

Flexible motor mounting
- Modify motor position and orientation at any time
- Parallel and axial kits for the ELGC-BS provide even greater flexibility for motor position

Breathing port
- Standard: sintered plate screwed in port
- Optional: connect a standard fitting and apply pressurized air to keep dirt out or apply vacuum for use in cleanrooms
Compact 2-axis mini planar surface gantry EXCM-30

- Highly functional, extremely compact and with maximum workspace coverage
- The EXCM-30 is a planar surface gantry that uses the H-bot kinematic concept to maximize dynamic response in a compact form factor
- Workspaces up to 700 mm x 510 mm
- Integrated recirculating ball bearing guide for long service life
- Available with or without motor/drive package

Ball screw and toothed belt axes ELGC and mini slides EGSC – Subject to change – 2018/01

PLC control protocols
- Digital I/O for simple control of up to 31 position sets
- CANopen and Ethernet TCP/IP control for unlimited positioning sets
- 2-axis drive CMXH coordinates the XY movements of the carriage

Additional options
- Universal flange adapter for connection of Z-axes, including mini slide EGSC
- Flexible 3D energy chain for professional-looking tubing and cable management

High performance AC servo and ServoLite drives

AC servo motor drive CMMP-AS-M0/M3
- Highly functional servo drives for position, torque, and speed control
- Wide range of control protocols make it easy to integrate into your machine, including EtherCAT, digital I/O, analog I/O, Modbus TCP, CANopen, and more
- Single-phase drives from 500 W to 1 kW
- Three-phase drives from 3 kW to 9 kW
- Safe Torque Off (STO) up to category 4, PLe
- Optional SD card to store FW and parameters for drive replication or field replacement
- Fast delivery from local stock

ServoLite drives CMMO-ST

ServoLite drives offer servo performance with a stepper motor and closed-loop encoder
- Control position, speed, and torque
- Change motion profiles on the fly to meet your application needs
- Sophisticated sequencing between position, speed, and force tasks
- Fast delivery from local stock

AC Servo motors EMMS/E-AS
- Optional multi-turn absolute encoder to eliminate homing routine
- IP65 protection for connectors and motor housing
- Use with ServoLite drives for positioning, torque, and speed tasks

Electromechanical axis sizing and selection made easy with PositioningDrives

PositioningDrives software for easy selection of Festo actuator, motor and drive
- Input your application requirements and PositioningDrives provides valid combinations of actuator, motor, and drive to meet your needs
- Properly size axes to minimize costs
- Save time when selecting electromechanical axes
- Create a bill of materials effortlessly and export it to your Online Shop basket for easy ordering
Maximum productivity is a question of ambition
Do you share this attitude? We will be glad to help you achieve this goal – through our four outstanding qualities:
• Security • Efficiency • Simplicity • Competency

We are the engineers of productivity.

Discover new dimensions for your company:
→ www.festo.com/whyfesto