LDA

Solutions for Life

Electric components

Tolomatic™ EXCELLENCE IN MOTION — Electric rod style cylinder

ERD Electric Cylinder Actuator

ERD electric cylinder series are the perfect alternative to pneumatic cylinders for automating manual processes.

The ERD is an economical electric cylinder and is compatible with many NEMA & metric mount stepper and servo motors to create a flexible, powerful, yet cost-effective electric cylinder solution over traditional pneumatic cylinders.

Perfect for gating, sorting, diverting and product change overs, ERD electric cylinders offer these features:

- 3 body sizes
- Ball and acme screw choices
- Force/thrust capabilities up to 500 lbf (2.2 kN)
- Stroke lengths up to 24 inches (610 mm)
- Guide and anti-rotate options
- IP67 and IP69K options
- All stainless steel body options

ERD-SS2 Actuators with Integrated Motor

ERD stainless steel electric actuators are IP69k rated and are washdown ready.

The all stainless steel ERD actuator with integrated motor in protective enclosure (ERD-SS2) accommodates both servo (23-frame) and stepper (NEMA 17 and NEMA 23-frame) motors. Combine any ERD-SS2 with the Tolomatic ACS servo or stepper drive and get a complete motion control system with high performance at a very competitive pric

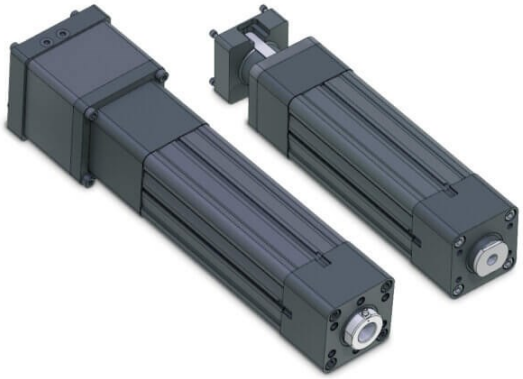
- 3 body sizes
- Ball and acme screw choices
- Force/thrust capabilities up to 2.2 kN
- Stroke lengths up to 610 mm
- Choice of stepper and servo drive/controller and motor solutions
- Clean-in-place compatible
- Simplifies and lowers cost of machine design by eliminating protective guards around standard actuators

Tolomatic EXCELLENCE IN MOTION — Electric rod style cylinder

RSA Electric Linear Actuators

The RSA Electric Linear Rod Actuator combines excellent accuracy with a low-to-high thrust capacity in tough environments

RSA electric linear rod actuators feature accurate and high force performance, making them ideal for replacing pneumatic & hydraulic cylinders. These electric linear actuators feature acme, ball or roller screw selections, with enhanced high thrust bearings and heavy duty internal bumpers. A rigid, strong aluminum housing allows for easy mounting of switches and sensors.



- Stroke lengths up to 60 inches (1,524 mm)
- Forces up to 13,039 lbf (58,001 N)
- Acme, Ball, and Roller Screw options
- IP67 option to protect against dust and water ingress
- Flexible mounting options
- 6 body sizes with built-to-order stroke lengths and mounting options

RSX High Force Linear Actuators

Replace hydraulics to eliminate messy leaks and increase system performance

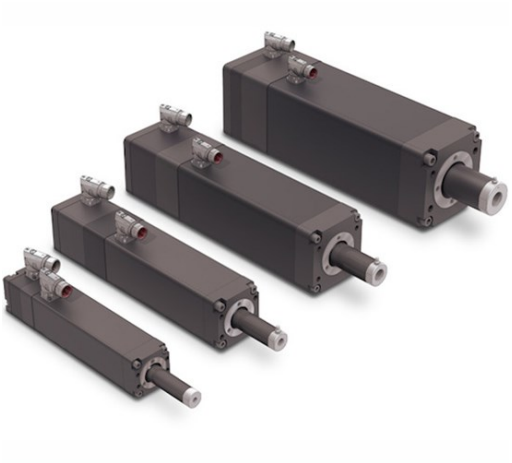
The RSX family of extreme high force electric linear actuators are an excellent alternative to hydraulic cylinders. They're more efficient, more precise and rugged enough to perform in demanding conditions like extreme cold. Their long life and precision is achieved through the use of Tolomatic's high precision planetary roller screws.

RSX extreme high force electric linear actuators offer:

- Type III hard coat anodized aluminum housing to withstand demanding environments
- Standard thrust rod anti-rotation feature
- IP67 option to protect against dust and water ingress
- Compatible with servo motors and gearboxes up to 290mm frame sizes
- Food grade, white epoxy coating and stainless steel thrust rod option
- Oil filled options for high speed / high duty cycle applications

Tolomatic™ EXCELLENCE IN MOTION — Electric rod style cylinder

IMA Linear Servo Actuators



The IMA servo linear actuator has a unique integrated servo motor design.

The IMA linear servo actuator features a unique integrated motor design in a compact, industrial package. Available in both ball and roller screw configurations, the IMA actuators provide forces up to 8,044 lbf (35.8 kN) ideal for high duty cycle applications. Ideal for dynamic applications or when the actuator is exposed to a high level of shock and vibration.

Utilizing Tolomatic's patented re-lubrication design, the IMA heavy duty linear servo actuators can easily be re-lubricated without disassembly for extremely long service life.

Tolomatic's unique integrated linear servo actuator design eliminates:

- Hydraulic systems
- Pneumatic systems
- Contamination from air or oil
- Forced air or water cooling
- Need for multiple vendors
- Motor couplers, adapters, timing belts and gear boxes

RSH Hygienic Electric Actuators

RSH hygienic actuators feature 316 stainless steel construction and IP69K

Tolomatic's line of hygienically designed all stainless steel electric actuators offer up to 7,943 lbf (35.3 kN) and they are the perfect solution for food and beverage applications where higher forces are required for pressing, pumping, cutting or slicing. Use the Tolomatic Your Motor Here® database to select from a wide variety of stainless steel motor manufacturers for a complete all stainless package.

- 3 body sizes with 316 series stainless steel construction
- Ball and roller screw options
- Force/thrust capabilities up to 7,943 lbf (35.3 kN)
- Stroke lengths up to 48 inches (1.2 m) IP69K, clean in place compatible

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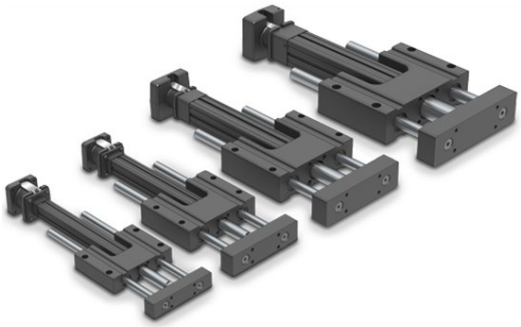
Tolomatic™
EXCELLENCE IN MOTION

Electric rod style slide thruster

GSA Linear Slide Actuators

The GSA linear slide actuator is ideal for medium- to high-thrust applications.

GSA Linear Slide Actuators combine an electric rod actuator with guide rods, mounting blocks and bearings. A complete selection of sizes, options and system components are available. The GSA Linear Slide Actuator offers high performance, dependability and mounting flexibility for pivotal applications.



- Forces up to 4,160 lbf (18.5 kN)
- Wide tooling plate for end effector mounting
- Choice of linear ball or composite bearings with internal lubricati-on of guide rods for increased bearing life
- Standard or oversized guide rod diameter for increased rigidity and lower deflection
- Stroke lengths up to 36 in (914 mm)

Series ESK/ESL Electric Thruster Slide

Series ESK/ESL Electric Thruster Slides feature the option of a short or long body and are powered by PHD's ECVA ball screw or lead screw electric cylinders. These cantilever slides provide best in class load carrying capability resulting in smooth operation over longer travels with minimal deflection. Your *Motor, Your Way* provides additional flexibility in motor options and includes both inline and foldback mounting.

Advantages

High performance design while providing user the choice of motor brand and type desired. Cylinder is available in a precision ball screw or lead screw models providing exceptional thrust and speed capability or a lower cost option. Combination of precision ground shafts and ball bushings provide superb support and rigidity of attached loads. Additionally, the lead screw models offer a total of five sizes for a wider range of applications.

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Tolomatic™ EXCELLENCE IN MOTION — Electric rod style cylinder

ServoChoke® SVC Choke Valve Actuator / Operator

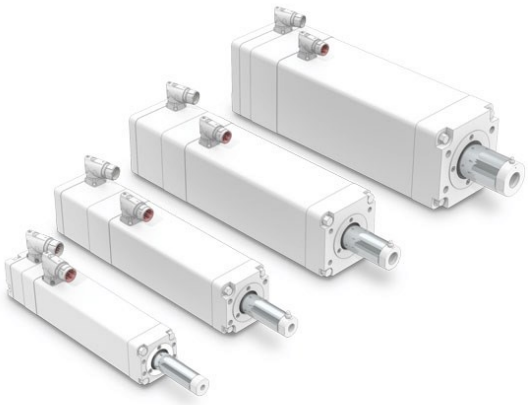
ServoChoke® SVC is a high performance linear integrated electric choke valve actuator that meets the rigorous needs of the oil and gas industry. The SVC provides a more reliable, high-speed, precision electric choke operator in performance drilling applications vs. conventional hydraulics or jack screw assemblies. The ServoChoke SVC is perfect for Managed Pressure Drilling (MPD), Set-point choke control and Choke & Kill for well control applications.

With global certifications for ATEX, IECEx, and Class I Div. 1 together with a temperature rating of -40° C to +60° C, the all steel SVC choke actuator is designed to perform in the harshest environments.

- Globally certified: CID1 • ATEX • IECEx
- Worry-free performance in the most hazardous location environments
- Temperature range: -40° to +60°C (-40° to +140° F)
- Positional repeatability to within 0.08% of span or better
- Planetary roller screw for long life and no maintenance

IMA Food Grade Servo Actuator

The IMA food grade servo linear actuator offers sanitary protection in wash-down applications.



IIMA food grade servo actuators offer a white epoxy food grade coating, food grade grease and are available with stainless-steel fasteners, rod and rod ends. Features a unique integrated motor design in a compact, sanitary package. Available in both ball and roller screw configurations, IMA food grade servo actuators provide forces up to 30.6 kN (6875 lbf) ideal high duty cycle applications.

Tolomatic's integrated motor products (IMA & IMAS) integrate with a wide range manufacturers' servo drives. Check our Drive Integration Resource for supporting documentation and motor files.

Tolomatic IMA food grade servo actuator design eliminates:

- Contamination from air or oil
- Hydraulic systems
- Pneumatic systems
- Forced air or water cooling
- Need for multiple vendors
- Unneeded assembly labor
- Motor couplers, adapters, timing belts and gear boxes

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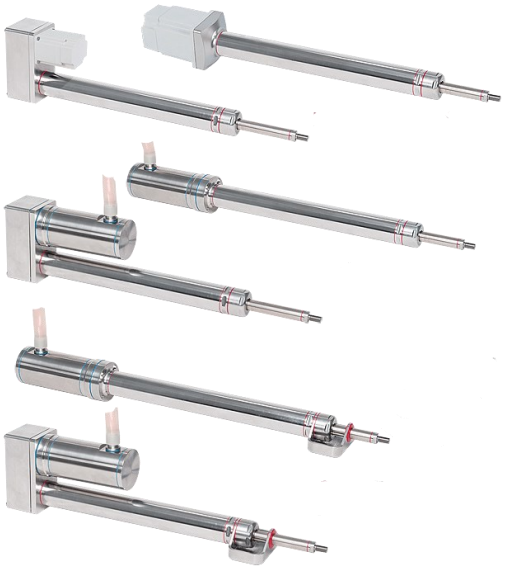
Tolomatic™ EXCELLENCE IN MOTION

Electric rod style cylinder

Series ECP Electric IP69K Cylinders

are available in either ball screw or lead screw (polymer nut) versions, providing a wide range of high thrust or high speed capabilities. These performance electric cylinders are designed for food processing and packaging equipment utilized in high pressure/high temperature washdown and clean-in-place (CIP) environments.



Three models are available:

Base Model

- Designed for applications in high pressureand high temperature washdown enviroments
- 300 grade stainless steel body and rod with aluminum head and motor mount
- Your Motor, Your Way

USDA Certified for Product Splash Zone (-Y8 Option)

- USDA certified for splash zone environments in all orientations
- Designed for food processing industry splash zone and caustic washdown applications
- Limited Your Motor, Your Way with USDA certification*

USDA Certified for Product Contact Zone (-Y91 Option)

- Designed for food processing industry product contact zones requiring caustic washdown

Series ECV Ball Screw

Series ECV Ball Screw and Lead Screw Electric Cylinders are electric rod style actuators with ISO and VDMA mounting interfaces in either ball screw or lead screw models. These performance electric cylinders are available in a variety of sizes with two screw configurations per size, as well as a version with a non-rotating rod. The ball screw models provide high performance and the lead screw models provide lower tier performance at a significant cost savings. Series ECV Cylinders are designed for high performance with superior speeds, thrusts, and travel lengths.

- The lower cost lead screw model is available in five sizes with up to 750 mm travel lengths.
- The ball screw model is available in three sizes and provides high performance with up to 1,000 mm travel lengths.
- Rotating and non-rotating rod versions.
- ISO/VDMA mounting interface for easy

Tolomatic™
EXCELLENCE IN MOTION

Electric rod style cylinder

Hygienic Integrated Stainless Steel Servo Actuators IMA-S

Designed for the most demanding food and beverage applications The IMA-S is a hygienically designed integrated electric servo actuator for the food and beverage processing industry. The IP69K hygienic design features all 316 stainless steel construction and hygienic fasteners/cord grips which allows for open machine designs and effective clean-in-place.

The product line also includes the IMA-SA model which incorporates an internal anti-rotate feature eliminating the need for an external guidance mechanism making it a perfect actuator for applications such as volumetric filling and pumping. Feedback options include multi-turn absolute encoders.

- Provides complete control over speed and position at all times
- Hygienic design to allow for food grade cleaning and sanitizing
- Resists corrosion with 316 stainless steel body
- Provides IP69k wash-down protection with blue seals/o-rings and hygienic fasteners/cord grips
- Improves performance, flexibility and efficiency in comparison to fluid power technologies

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Electric rod style cylinder

SMAC electric cylinders offer life cycle well beyond 100 million cycles and the ability to repeat a move within one millisecond with no stiction. The conventional cylinder actuator shape and multiple mounting points allow the electric cylinders to be directly retrofitted in most cases.

CBL Series

The latest series of SMAC electric actuators. Designed to overcome problems with conventional devices in the packaging industry. The CBL offers speed, accuracy and efficiency while remaining competitive on price. Superior performance and operational costs, the CBL is an ideal solution for new machine designs and upgrades.

Features

- Cost competitive
- Long life expectancy over 100 million cycles
- Programmable position, velocity and force
- Fast cycle time >2000 CPR
- Soft-Land function gives extremely accurate sensing of product location
- 100% data feedback for all operations as a standard feature

CBL Series with build-in-Controller

An electric cylinder with a built-in controller in a single, compact package for simple installation. Ideal for applications with limited space but requiring accurate control. The electric cylinders provide significantly longer life, programmability, high speed, accuracy, and energy efficiency while remaining price-competitive.

Features

- Built-in controller
- Programmable position, velocity and force
- Long life expectancy over 100 million cycles
- Airless and quiet operation
- Graphical User Interface is available for simple set-up
- Space saving

Electric rod style cylinder

A comprehensive selection of electric linear actuators are offered in a wide range of sizes, styles, and options for automated manufacturing, packaging, assembly applications, and more.

These programmable linear actuators range from units with 10mm stroke in a compact unit only 8mm in height, to units with 250mm of stroke length or up to 500N peak force

LAL Series

SMAC's original series of linear actuators with stroke 5mm to 150mm. Standard resolution is 5µm with 1µm, 0.5µm and 0.1µm options available on most models.

Features

- Programmable speeds, positions and forces
- Soft-Land capability and precise force control
- High cycle
- Data feedback
- Airless & clean operation
- Spring and vacuum option available

LCA Series

Developed as next generation servo motor based on moving coil technology. SMAC's "Snap-Together" design controls tight tolerance stack-up to assure high product quality and achieves competitive price due to fewer parts.

The LCA is designed to offer extremely long life cycle well over 100 million cycles at high speed applications. The range starting compact size with 8mm in height, ideal for electronics pick and place head, or force up to 90N for high speed and high cycle applications. .

Features

- Cost Effective
- Built-in lubrication for long life over 100 million cycle
- Energy efficient: low power consumption of average 1.5 amps
- peak at 24V or 48V
- Quiet & clean operation
- Data feedback

Electric rod style cylinder

LPL Series

LPL series, low-profile, electric linear actuators are designed an alternative to pneumatic devices with superior performance and competitive price. The LPL has high force and is fully programmable in speed, position and force with real-time feedback capability.

Features

- LPL series are compact and high force for the size.
- Cost competitive alternative to pnuematic and ball screw actuators.
- Programmable positioning, speed and force.
- Ability to 'Soft-Land' on a surface and then perform work and provide real-time feedback.

LDL Series

LDL series has been designed as a cost-competitive alternative to pneumatics, prices starting at $300. A common trend in industrial automation is that users are looking for electric alternatives for a number of reasons: control, cycle life, operating cost and environment, etc. The LDL features several innovative cost reduction elements and is also offered with an integrated controller. As with all SMAC actuators, the LDL is fully programmable in force, acceleration, position and velocity. It allows you to change product profiles on the fly. Click here for LDL series with built-in controller models.

- Cost competitive, starting at $300.
- Fully programmable in force, position and velocity, on the fly change capability.
- **Built in controller possible**

MLA Series

The MLA is an electric gauge actuator that provides programmable, precision measurement. It achieves consistent measurement replications and improve your process by reducing gauge repeatability and reproducibility (R&R) variation. Repeatable & linearity of force no matter where it is operating in the stroke unlike LVDTs that utilize pneumatics or springs. It achieves smooth and consistent low friction over the entire stroke.

- Far better Gage R&R (Repeatability and Reproducibility).
- All electric solution.
- "Soft-Land" to find a surface, trace the surface.
- It can handle higher side-loads than most LVDTs.
- More cost effective than most LVDTs.

Electric rod style cylinder

MSA Series

The MSA gauge actuator is a simple solution that does not require additional module(s) externally, and allows users to go directly to their PLC / high speed counter card. It can handle higher side-loads and it is far more cost effective than traditional LVDTs. The MSA8 is the first model in the series and compact measuring 95mm x 28mm x 8mm for 10mm stroke.

Features

- Encoder resolutions: 1 micron
- IP54 protection standard, IP65 optional
- It can operate on 5-15 VDC

LBL Series

The LBL is price competitive and designed to replace ball screw and pneumatic cylinders in the Packaging Industry. The LBL can be stacked for OEM multi-actuator stations. Stack actuators are a cost-effective solution for automating multiple axes. They simplify mounting and reduce cabling. It allows easy, quick exchange of units, which reduces down time.

Starting with strokes from 25mm to 50mm, the range will extend up to 200mm. The LBL series generates a peak force of 60N and is extremely fast with accelerations in excess of 50G. The LBL gives >100 million cycle expected life.

Electric linear rotary cylinder

The precision Z-theta motion within one small actuator, providing a convenient pick, orient and place. A wide variety of linear rotary actuators are offered with either direct drive or gearbox equipped rotary units.

The vacuum-built-in shaft through the rotary motor is available for some models to prevent dust build-up in the unit. These z-theta actuators can easily be programmed to control force/torque, position and velocity in all axes at the same time with feedback capability. SMAC's unique, patented "Soft-Land" function enables the unit to gently land on a delicate component with a controlled force to avoid damage of both the component and the actuator.

LAR Series

The precision Z-theta motion within one small actuator, providing a convenient pick, orient and place. A wide variety of linear rotary actuators are offered with either direct drive or gearbox equipped rotary units.

The vacuum-built-in shaft through the rotary motor is available for some models to prevent dust build-up in the unit. These z-theta actuators can easily be programmed to control force/torque, position and velocity in all axes at the same time with feedback capability. SMAC's unique, patented "Soft-Land" function enables the unit to gently land on a delicate component with a controlled force to avoid damage of both the component and the actuator.

Features

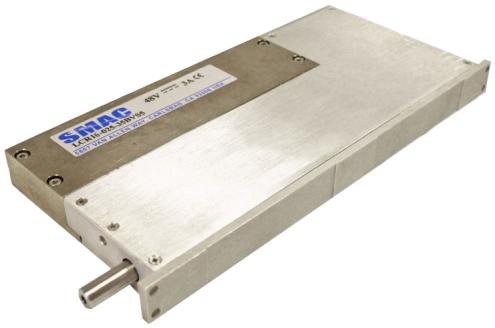
- Features Soft-Land function and precise force/torque control
- Precision Positioning
- Vacuum built-in through the shaft
- Safty return spring option available
- Data Feedback

LCR Series

The LCR series is the first linear rotary versions of the LCA series. The actuator is available with direct drive brush-less servo motor. It's designed with linear guide built-in lubrication to offer long life cycle. Programmable force and "Soft-Land" capabilities. Absolute control over: force/torque, position, acceleration and velocity.

Features

- Soft-Land
- MTBF 100 million life cycle
- Vacuum through shaft prevents dust accumulation



Electric linear rotary cylinder

LBR Series

The LBR is a slim, stackable linear rotary actuator with a SMAC HT direct drive brushless motor. The LBR provides a long life cycle, high linear force and rotary torque, and is specifically designed for Capping, Thread Inspection, and Smart Screw Driving applications.

Features

- Z-Theta motions in one unit
- Actuators can be stacked in multi-axis solutions.
- Ethernet/IP communications with M12 connectors optional
- Soft-Land function and precise force/torque control
- IP67 Protection
- Built-in controller optional

LDR Series

The LDR, precise, lower-cost linear rotary actuator, features patented low shaft runout (<10 microns) HT motor with SMAC's printed coil technology that eliminates motor cogging. The LDR is designed for pick-and-place electronic component assembly. Other applications include silicon wafer brushing, small-cap assembly, and small-screw assembly driver. A combination of improved design, the rotary motor's laser manufacturing and printed coil technology, SMAC in-house manufactured encoders and U.S. manufacturing contribute to the lower price.

Moving coil actuators

Linear Slide Actuators

SMAC's linear slide actuators are designed based on linear actuators and their performance characteristics are largely the same. SMAC offers electric linear slides ranging from compact to the units with long travels with precision positioning to fulfill a wide variety of automation system applications.

LAS Series

The LAS series is designed based on the LAL series linear actuator. Stroke ranging from 10mm to 150mm, peak force up to approx. 200N.

Features

- Soft-Land capability and precise force control, ideal for handling fragile components/materials Ideal for precise positioning

LSC Series

The LCS series is designed based on the LCA series.

These electric slide are available in a wide range of style and options with stroke from 10mm to 250mm, peak force up to 90N. High or low speed and precise positioning with high repeatability make them ideal for applications such as parts feeding, scanning, esting, and measuring in wide range of industries.

Features

- Force, Position and Velocity Control
- Soft-Land capability

SLA Series Linear Slide Actuators

Designed for precision movement applications. A very light moving mass results in high accelerations with no backlash. The SLA incorporates precision Cross Roller Guides with anti-creep protection for increased stiffness and lower friction. The Moving Coil drive is centered between Cross Rollers thus eliminating moment effects from the drive. The SLA is available with encoder resolution down to 50 nm.

Features

- Ideal for precision movements/scanning
- Programmable speeds, positions and forces

Moving coil actuators

LDS Series

The LDS series is designed based on the LDL series. The LDS is compact and a cost-competitive linear slide with stroke 10mm, encoder resolution 5 micron. Longer stroke and built-in controller are available upon request.

Features

- Cost competitive
- Fully programmable in force, position and velocity, on the fly change capability.
- Ideal for precision movements/scanning
- Ability to feed-back in real time

LBS Series

The compact and quiet LBS linear slide actuator was designed for scanning and lens focusing, as a cost-effective alternative to ball-screw/servo/stepper motor solutions. The LBS series offers long life, better performance (i.e., speed, accuracy, and ultra-smooth motion), down to NM resolutions.

Features

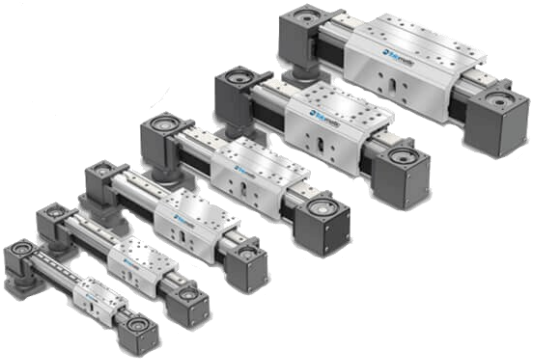
- Scanning
- Lens Focusing
- Positioning

Electric belt driven actuators

MXE-P heavy duty linear actuators

The MXE-S electric linear screw actuator with a solid bearing design reduces stress concentration for optimal performance.

The MXE-S electric linear screw actuator is designed for applications requiring moderate load carrying and guidance. The MXE-S actuator utilizes two field replaceable solid bearings that optimize stress distribution for optimal performance.



- Large bearing surface contact area optimizes stress distribution on bearing for long service life
- Large carrier mounting pattern for more load stability and compatibility
- Engineered bearing material does not require additional lubrication
- Field replaceable bearings

MXB-U Belt Driven Actuators

MXB-U belt driven actuators are designed for applications where loads are externally guided and supported.

The MXB-U belt driven actuator is a compact linear belt solution for use in applications where higher speeds are desired but loads are supported by existing guides & supports.

- High speed and acceleration capabilities up to 1200 in/sec2 (30.5 mm/sec2)
- 6 body sizes accommodate a wide range of forces and loads
- Polyurethane belt with steel members resists stretching
- Excellent repeatability, high duty cycle performance
- Choose MXB belt drive for longer strokes than screw drive actuators

Electric belt driven actuators

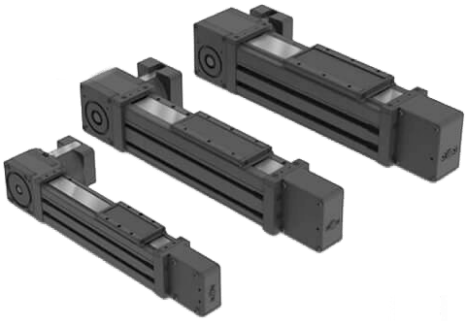
MXB-S actuators

MXB-S linear belt drive actuators provide optimal performance, rigidity and life.

The MXB-S is a compact belt drive linear actuator for use in applications requiring light to moderate load carrying and guidance. The bearing system of the MXB-S linear belt drive utilizes two field-replaceable solid bearings that optimize performance, rigidity and life. Featuring a trapezoidal, self-cleaning bearing system, the MXB -s linear belt drive a good choice for applications in paper production or sawmills. This low-cost, economical belt drive actuator features speeds up to 100 in/sec (2540 mm/sec) and thrusts up to 418 lbf (1860 N). All MXB-S linear belt drive actuators are built-to-order in stroke lengths up to 414 inches (10,516 mm).

- 6 body sizes
- Oversized pulley bearings for longer life
- High-power polyurethan belt resists stretching
- Easy access belt tensioning system with no disassembly required
- Field replaceable bearings for extended service life

B3W Belt Driven Actuators



The B3W linear belt drive actuator is capable of accommodating heavy loads and handling high bending moments with consistent, smooth operation. B3W linear belt drive actuators incorporate an enclosed recirculating bearing system eliminating the need for external load guidance. The B3W linear belt drive actuator delivers repeatability and 100% duty cycle with long service life.

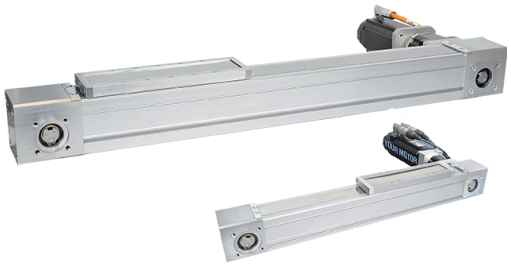
- 3 body sizes
- Wide urethane-steel belt delivers greater thrust with no stretch
- Load carrying capacities up to 35.7 kN (8,032 lbf)
- Strokes up to 574 in (14,579 mm)

Electric belt driven actuators

Series ESU-RT

Series ESU Electric Belt-Driven Linear Actuators

feature a robust, enclosed design with a high capacity rail bearing system delivering exceptional moment and load capability. Available in three sizes, with travels lengths up to 5,500 mm and speeds to 5,000 mm/s these electric linear actuator can be combined to create virtually any system to meet your Cartesian robot needs.



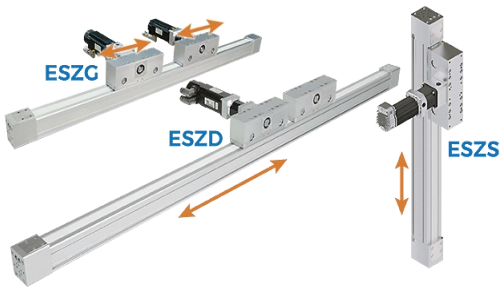
Other key features include: optional dual saddle version, proven magnetic band seal providing IP54 protection, and HTD8 belt for superior performance. Your Motor, Your Way allows motor and controls flexibility or complete solutions are available with the motor installed by PHD. These capabilities establish the Series ESU actuators as the optimal solution for the most demanding automation applications.

Advantages

- Superior belt profile for improved performance
- Travels up to 5500 mm
- Speeds up to 5000 mm/s
- Exceptional moment and load capability
- Your Motor, Your Way allows motor and

Series ESZ Electric

Series ESZ Electric Belt-Driven Linear Cantilever Actuators feature a robust, enclosed design with a high-capacity rail bearing system delivering unparalleled speed, thrust, and precision. Available in two sizes, with travel lengths up to 5,500 mm and speeds to 5,000 mm/s, these electric linear actuators can be combined with the Series ESU and other PHD actuators to create virtually any Cartesian system to meet your robotic needs. The choice of saddle combinations, single, dual, and independently driven dual saddles, makes it ideal for a multitude of vertical and horizontal applications.



Benefits:

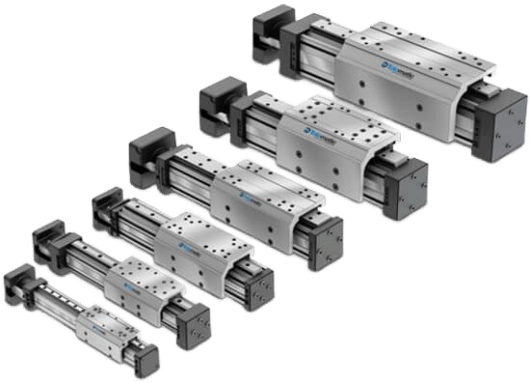
- Provides a robust “Z” axis vertical cantilever or horizontal fixed based solutions for robotic systems
- Delivers unparalleled speed, thrust, and precision, making it ideal for a multitude of vertical and horizontal applications
- Independently powered dual saddles available for a wide range of uses
- Dual saddles available for increased load and moment loading

Electric screw actuators

MXE-P screw actuator

The MXE-P screw driven actuators with profiled rail bearing offers high load and bending moment capacities in a low profile package

The MXE-P screw driven actuator is designed for applications requiring moderate to heavy load carrying and guidance. MXE-P screw driven actuators features a profiled rail system with recirculating ball linear guides for optimal performance.

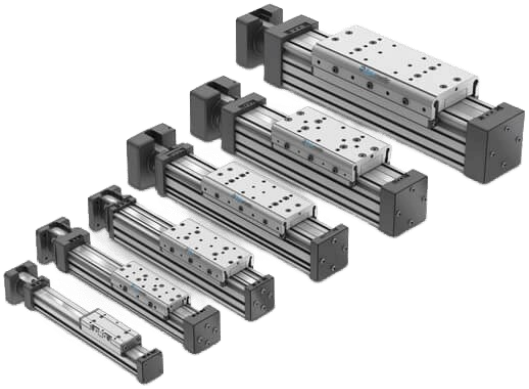


- Recirculating ball bearings with reduced friction for reliable long life
- High load and bending moment capacities
- Low profile to fit your application
- High precision bearings feature smooth, low breakaway motion

MXE-S screw actuators

The MXE-S electric linear screw actuator with a solid bearing design reduces stress concentration for optimal performance.

The MXE-S electric linear screw actuator is designed for applications requiring moderate load carrying and guidance. The MXE-S actuator utilizes two field replaceable solid bearings that optimize stress distribution for optimal performance.

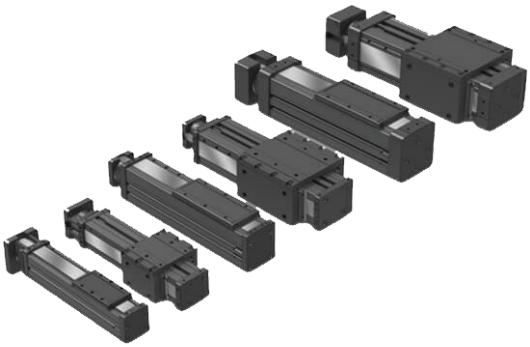


- Large bearing surface contact area optimizes stress distribution on bearing for long service life
- Large carrier mounting pattern for increased load stability and compatibility
- Engineered bearing material does not require additional lubrication
- Field replaceable bearings

Electric screw actuators

B3S Linear Actuators

B3S ball screw linear actuators have an enclosed ball bearing design that accomodates heavy loads, high bending moments and delivers long service life.



The B3S ball screw linear actuator is capable of accommodating heavy loads and handling high bending moments with consistent, smooth operation. B3S ball screw actuators incorporate an enclosed recirculating ball bearing system that eliminates the need for external load guidance. The B3S ball screw linear actuator delivers repeatability and 100% duty cycle with long service life.

- 3 body sizes
- Ball or acme screw choices
- Load carrying capacities up to 8032 lbf (35.7 kN)
- Strokes up to 179 inches (4,547mm) depending on screw selections
- US customary (standard) and metric (optional) construction
- Mount your motor of choice with Tolomatic's Your Motor Here®

TRS Twin Profile Rail Precision XY Stages

The TRS twin profile rail XY linear stage actuator has an enclosed design built for precision, accuracy and high rigidity. This linear stage is designed to minimize overall machine footprint and is stroke configurable to maximize motion table design flexibility. Available in 100, 165, & 225 sizes and capable of handling loads up to 4,320lb (1,960 kg).

- Strokes up to 86.6in (2,200mm)
- Travel speeds up to 50in/s (1,270 mm/s)
- Load carrying capacities up to 4,320lb (1,960 kg).
- Roller Nut Lead Accuracy: ± 0.0004in/ft (± 0.0102mm/300mm)
- Ball Nut Lead Accuracy: ± 0.004in/ft (± 0.100 mm/300mm)

Electric screw actuators

TKS Linear Actuators

TKS precision linear actuators offer a dual profile rail with wide, low profile base ideal for XY tables/stages and XYZ systems.

The TKS precision linear actuator is designed for applications carrying moderate load and requiring high precision in parameters such as flatness, straightness and accuracy. XY or XYZ tables/stages can easily be created using TKS precision linear actuators. Two parallel profiled rails with four recirculating ball linear guides provide consistent and precise performance.

- Choice of either acme or ball nuts
- System payloads up to 90 kg (200 lb)
- 2 metric body size screw/nut combinations
- Strokes in any incremental length up to 2438 mm (96 in)

BCS Linear Actuators

BCS rodless screw actuators are designed for carrying light to moderate loads at a low price.

The BCS rodless screw actuator guidance system uses a patented adjustable carrier bracket that transmits the load to the cylinder body instead of the screw for good tracking, superior load support and controlled minimum friction load. The screw actuator's patented band retention system forms a tight metal-to-metal seal keeping contaminants out.

- 3 actuator body sizes
- Maximum loads range from 27 to 272 kg (60 to 600 lbs) depending on load carrying selection
- Same envelope size as the B3S Series Screw Drive electric cylinder
- 12 U.S. dimensional screw/nut combinations
- 12 metric screw/nut combinations
- Strokes are available in any incremental length up to 3048 mm (120 in) depending on screw selections

Series ESU-RB Electric Ball Screw

Series ESU-RB Electric Ball Screw Linear Actuators feature a robust, enclosed design with a high capacity rail bearing system delivering exceptional moment and load capability. Available in three sizes, with travels lengths up to 1,000 mm and speeds to 3,200 mm/s these, along with the ESU-RT Belt-Driven actuators, can be combined to create virtually any system to meet your Cartesian robot needs. Other key features include: optional dual saddle version, proven magnetic band seal providing IP54 protection, and precision ball screw assembly providing superior performance.

- Precision ball screw assemblies with long service life and superior performance
- Travels up to 1,000 mm
- Speeds up to 3,200 mm/s, acceleration 20 m/s2

Electric grippers

SMAC electric grippers incorporate programmable speeds, positions and forces with data feedback. The ability to independently control each jaw allows precise force control, measurement and positioning. This makes them ideal for a wide range of positioning, measuring, and inspection applications, particularly where 100% verification is required.

MGR Series

A lightweight micro gripper, the MGR was designed for small, fragile part assembly. The MGR brings operation force 10 gram or less capability into range. Light moving mass reduces impact force during small product placement.

Features

- Compact and lightweight
- Light force capability 10g or less
- Soft-Land capability for pick and place of delicate and fragile parts
- Each jaw can be independently controlled in force, position and velocity

GRP Series

The GRP Series gripper offers a peak force up to 45N, and a working stroke up to 30mm. The built-in linear encoder delivers 0.1 micron precision.

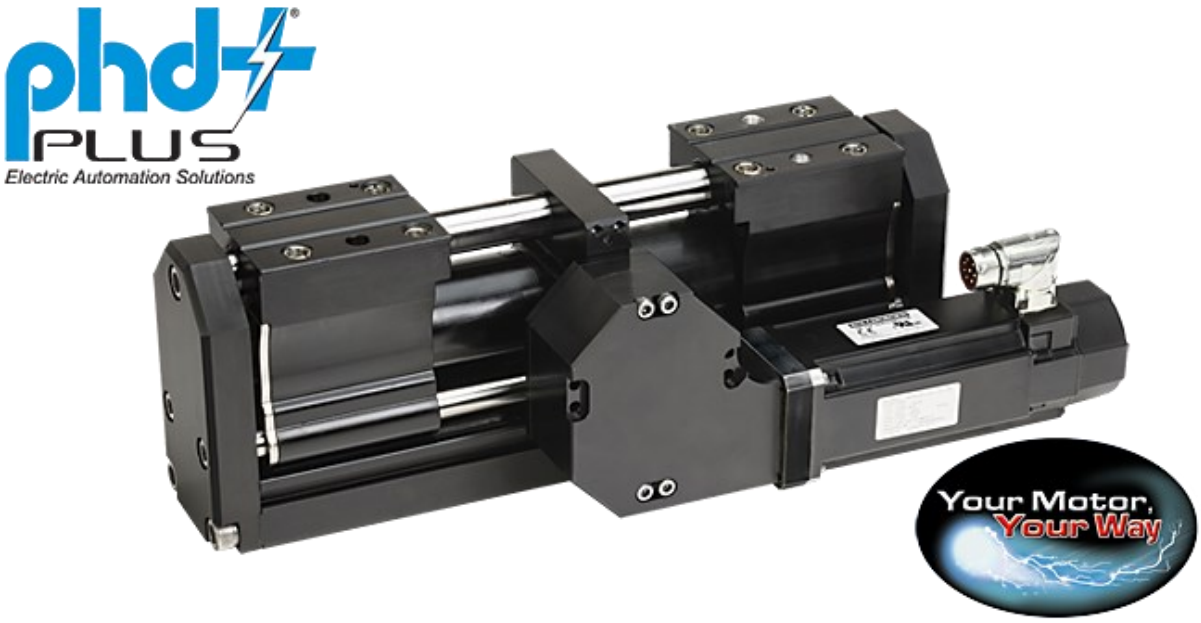
Features

- Precision positioning ideal for measurements
- Soft-Land capability for sensing product location and dimensions
- Data feedback

Series EGRR High Capacity Electric Parallel Grippers

Built on the field proven Series GRR chassis, the electric version offers many of the same benefits as the pneumatic with the design and flexibility of Your Motor, Your Way. **The EGRR provides high grip force, long jaw travels, and high jaw loads.**

This heavy duty end effector's rugged design and jaw construction can withstand high impact and shock loads. Series EGRR Grippers are designed for gripping large objects in demanding industrial applications.



Advantages

Narrow width, long jaw travels, high grip force, large moment capacity, rugged design, true parallel jaw motion, with servomotor control on jaw acceleration, velocity, and position feedback.

Benefits

- Servomotor control provides acceleration, velocity, and position feedback.
- Compact design provides high grip force, large moment capacities, long jaw travel, and low overall weight for applications with limited space.
- Rugged construction withstands high impact and shock loads in demanding industrial environments.
- Your Motor, Your Way allows motor and controls flexibility at no additional cost.
- Optional PHD-supplied Kollmorgen® motor matches performance of popular pneumatic Series GRR Guardian® Gripper.

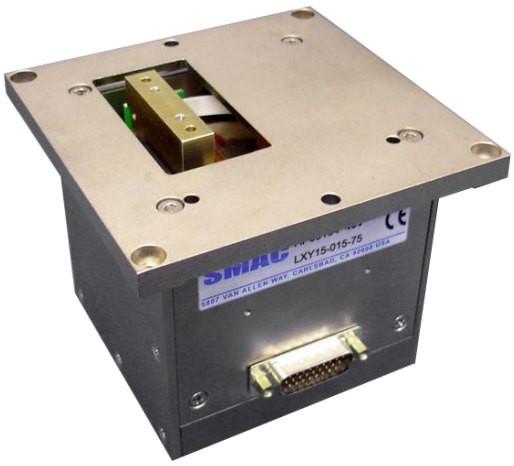
SMAC Moving Coil Actuators

Electric positioning stage

XY Stage LXY series

SMAC offers high-speed precision XY stages.

SMAC virtues of a direct drive zero backlash system, which can be controlled with great accuracy and repeatability.



SMAC XY stages are equipped as standard with 5µm encoder with options down to 50nm encoder resolution for ultra precise positioning and scanning for industries such as bio-science, medical and photonics.

They are also used for quality measurement in automotive, and other industrial automation applications. The capability of controlling the velocity, acceleration, positioning and force of each axis independently, gives you a flexible and accurate tool.

Features

- No backlash, no cogging
- Control speed, acceleration, positioning and force of each axis independently
- High repeatability
- Collect precise positioning data

Electric controllers

VLC-1-EIP-07-RJ

Single Axis Ethernet/IP Servo Motor Controller/Driver

The VLC-1-EIP-07-RJ is a single servo drive with an ODVA-conformant Ethernet/IP connectivity, and is based on SMAC's VLC single axis integrated controller/driver. "07-RJ" indicates the output current rating (3.5 A continuous, 6.5 A peak) and the type of Ethernet connectors (RJ45) that are used.

Feature

- Position, Velocity, Torque
- 4x Opto-Isolated Digital Input with Common (5V to 24V Max.)
- 4x Solid-State Relay Output with Common, 200 mA Current and Tolerant to 60V

VLCI-CAN-07

Single Axis CANopen Servo Controller/Servo Drive

The VLCI-CAN-07 is a CANopen servo drive that is based on SMAC's VLC, which is a 1-axis integrated controller/driver and an additional layer that provides the CANopen connectivity.

- CANopen Servo Drive/ Controller
- 4x Opto-isolated Digital Inputs w/ common:
  24 V Level Input
- 4x Solid-state Relay Outputs w/ common:
  200 mA Current
  Tolerant to 60 V

VLC-ETC controller

Single Axis EtherCAT Servo Drive

The VLC-ETC is an EtherCAT servo drive that is based on SMAC's VLC 1-axis integrated controller/driver and an additional layer that provides the EtherCAT connectivity. The VLC part is pre-programmed with system macros to accommodate control and monitoring functionalities of the servo drive.

- EtherCAT servo drive
- 4x Opto-isolated Digital Inputs w/ common:
  24 V Level Input
- 4x Solid-state Relay Outputs w/ common:
  200 mA Current
  Tolerant to 60 V

SMAC Moving Coil Actuators

Electric controllers

VLC-1-07 / VLC-1-13LAC

Single Axis DC Brushed/Brushless Controller

The VLC-1-07 and VLC-1-13 controllers are a standalone integrated controller/servo drive that is used for the control of brushed/brushless industrial linear actuators and motors. The VLC-1-07 and VLC-1-13 implement a mnemonic type command instruction set via a standard serial (UART) communication interface. These commands can be executed directly or used to create programs that can be stored in the on-board flash memory.

- Position, Velocity, Torque (voltage- and current- based)
- 8x Opto-isolated Digital Inputs w/Commo
- 24 V Level Input

VLCI-X1

Single Axis DC Brushed/Brushless Controller

VLCI-X1 is a single-axis standalone integrated controller/servo drive for brushed/brushless industrial linear actuators and motors.

- Position, Velocity, Torque
- 4x Opto-isolated digital inputs with common:

  24V Level input
- 4x SSR (solid-state relay) outputs with common:

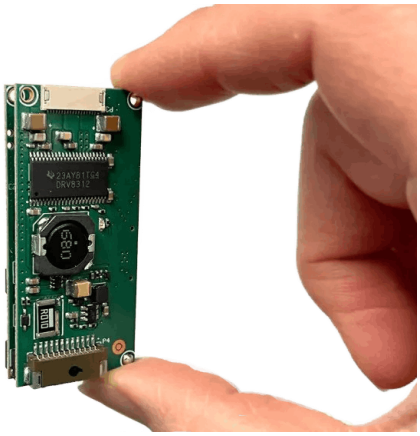
  200mA curren

  Tolerant to 60V

VLCI-R3

Single-Axis Controller/Servo Drive

The VLCI-R3 is a VLC series of standalone integrated single-axis controller/servo drive.The VLCI-R3 is compact and can be integrated into actuators to eliminate cabling for a simple installation. The VLCI-R3 is equipped with STO (Safe Torque Off), 4 pairs of opto-isolated digital I/O's and a pair of analog I/O.



- Position, Velocity, Torque
- 4x Opto-isolated Digital Inputs w/Common:

  24 V Level Input
- 4x Solid-state Relay Outputs w/Common:

  200 mA Current

  Tolerant to 60 V

Electric controllers

VLC-2-EIP

Ethernet/IP 2-Axis Servo Motor Controller/Driver

The VLC-2-EIP is a 2-axis servo drive with an ODVA-conformant Ethernet/IP connectivity. The VLC-2-EIP is based on SMAC's VLC-25-07 2-axis integrated controller/driver and a single VLC-2-EIP can control 2-axis systems such as SMAC's linear rotary actuators at a lower cost and a lower installation complexity.

- Position, Velocity, Torque
- 4x opto-isolated digital inputs, 5V to 24 V max
- 4x opto-isolated digital outputs, 60V, 200 mA max

VLC-25-07 / VLC-25-13

Dual Axis Controller/Servo Drive

The VLC ("Very Low Cost") series dual axis brushed/brushless controller/driver, designed and manufactured by SMAC.

- Brushed (1-phase) and Brushless (3-phase) axis operations
- 6 Arms cont., 7.8 Arms peak (VLC-25-07)
- 10 Arms cont., 13 Arms peak for high current (VLC-25-13)
- 2x STO inputs and 1x STO output
- I2T protection
- Driver overtemperature protection

MIOE-8/8 Expansion Module

16 Channel I/O Expansion Module, 8 input, 8 output, Opto-isolated general purpose I/O. If more I/O channels are required, then the MIO can be linked to either the LAC1, LAC25 and LAC-45 controllers to give 16 I/O channels.

Features

- 24-48VDC
- 8 opto-isolated input/output

Precision encoders

Miniature, Small Cross-Section Linear Encoder

The SMAC LL linear encoder is a miniature non-contacting, high-resolution incremental linear encoder. It delivers two count channels in quadrature RS422 output signals. This series is available in 1 and 5 micron resolution.

- Light Source: Light Emitting Diode;
- Light Sensor: Optical ASIC
- Resolution after quadrature: 5 and 1 micron

SLE-35 Series Linear Encoder

The SMAC SLE-35 high resolution linear encoder is similar in mounting to other industry standard enclosed linear encoders. This model is a miniature non-contacting high-resolution incremental linear encoder, which delivers two count channels in quadrature (called A and B) as output signals.

- Resolution after quadrature: 0.1um or 0.05um
- Output Format: Differential RS422 line driver output.
- Quadrature spec.: 90° ±45° at maximum conditions;
- Rise and Fall Time: 1µs max. into 1000 pF load;

SLE-LI Series Linear Encoder

The SLE-LI series linear encoder can be considered as a drop-in replacement for the JENA LIK Linear encoder. This model is a miniature non-contacting high-resolution incremental linear encoder, which delivers two count channels in quadrature (called A and B) as output signals. The two output waveforms are 90 degrees out of phase and indicate both the position and the movement direction

- Resolution after quadrature
- Output Format: Differential RS422 line driver output. Two count channels A and B in quadrature with an optional ZR output;
- Quadrature spec.: 90° ±22° at maximum conditions;
- Rise and Fall Time: 1µs max. into 1000 pF load;

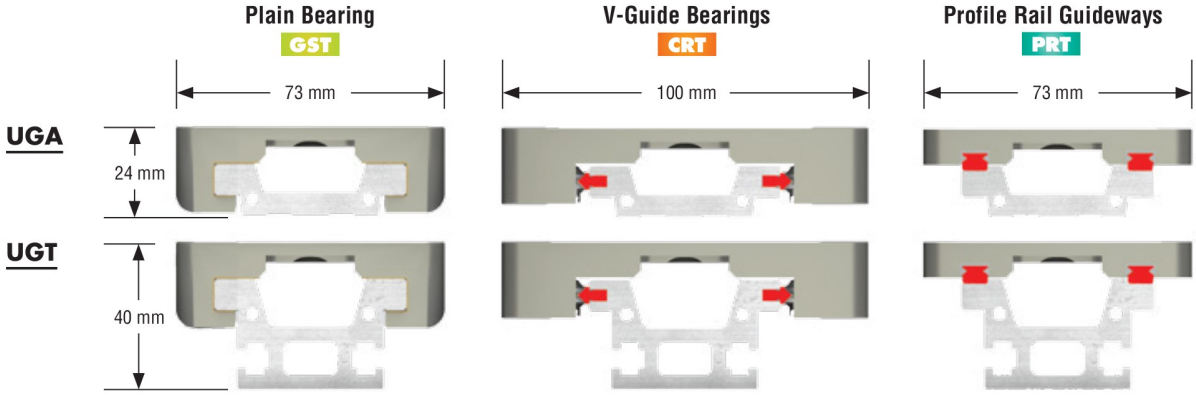
PBC Linear SIMO-series-compact actuators

Three bearing system options are available with SIMO Series: Plain Bearing, V-Guide Bearings and Profile Rail Guideways.

Choose the bearing system that best supports the application requirements

SIMO SERIES BASE COMBINATIONS

A choice of bearing systems within the same base linear motion platform



Drive Options

Lead Screw — LOW Cost

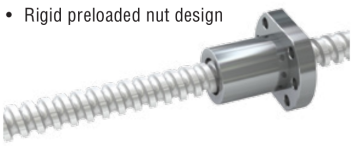
- Standard fixed or anti-backlash nut options
- Good rigidity and vibration dampening
- Self-lubricating and maintenance free

Belt Drive - High speed

- Good for long stroke applications
- Tolerates contamin ed environments

Ball Screw — High Rigidity and Precision

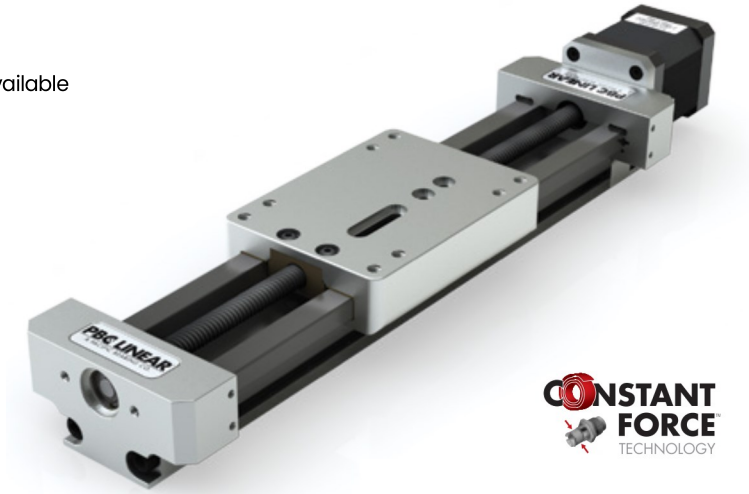
- Multiple accuracy classes available
- Rigid preloaded nut design



Lead Screw Driven System

OVERVIEW

- Utilizes a self-lubricating and maintenance free nut
- Standard fixed nut or Constant Force anti-backlash nut available
- Lead screw material:
- 10 mm diameter
- 300 series stainless steel with PTFE coating
- 1, 2, 5, 10, 16 mm leads most common
- Other leads available — consult factory
- Ideal for a broad range of applications such as kiosks, assembly, automation, medical, and laboratory



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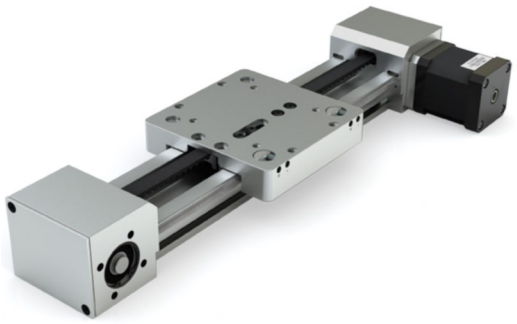
PBC Linear SIMO-series-compact actuators

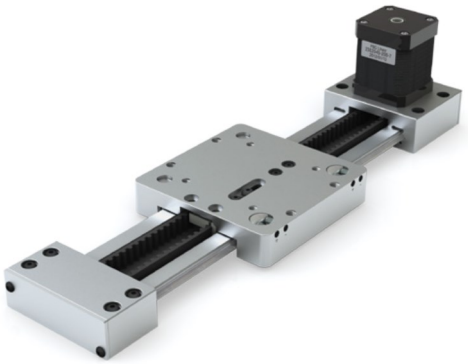
Belt Drive System - Horizontal Motor



OVERVIEW

- Utilizes a self-lubricating and maintenance free nut
- Standard fixed nut or Constant Force anti-backlash nut available
- Lead screw material:
- 10 mm diameter
- 300 series stainless steel with PTFE coating
- 1, 2, 5, 10, 16 mm leads most common
- Other leads available
- consult factory

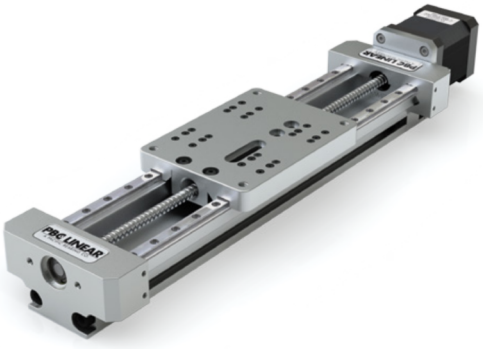
Belt Drive System - Vertical Motor Mount



OVERVIEW

- Horizontal motor mount available in the tall profile (UGT) only
- Ideal for higher speed, high duty cycle applications
- Belt material: nylon covered, fiberglass reinforced, neoprene
- Temperature range: 0° C to +80° C (32° F to 176° F)
- Rounded GT®2 tooth design creates better engagement with the pulley resulting in greater torque transfer, reduced vibration, and extended life

Ball Screw System



OVERVIEW

- Vertical motor mount allows for high speed performance in the (UGA) low profile rail
- Consult factory for (UGT) tall rail with vertical motor mount
- Belt material: nylon covered, fiberglass reinforced, neoprene
- Temperature range: 0° C to +80° C (-32° F to +176° F)
- Rounded GT®2 tooth design creates better engagement with the pulley resulting in greater torque transfer, reduced vibration, and extended life

LDA

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