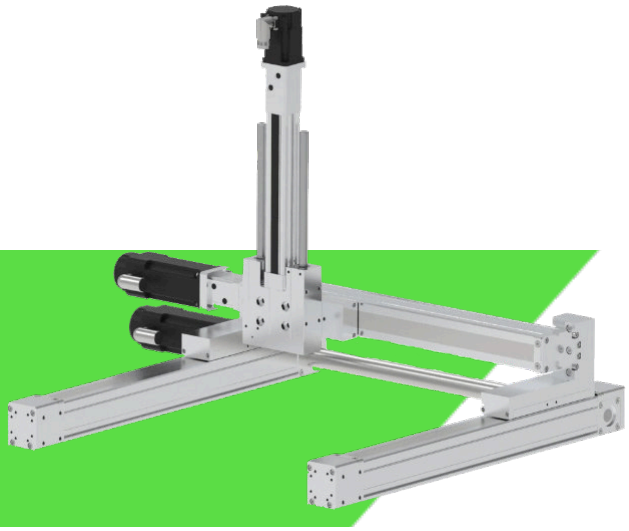
LDA

Solutions for Life

Industrial automatisation



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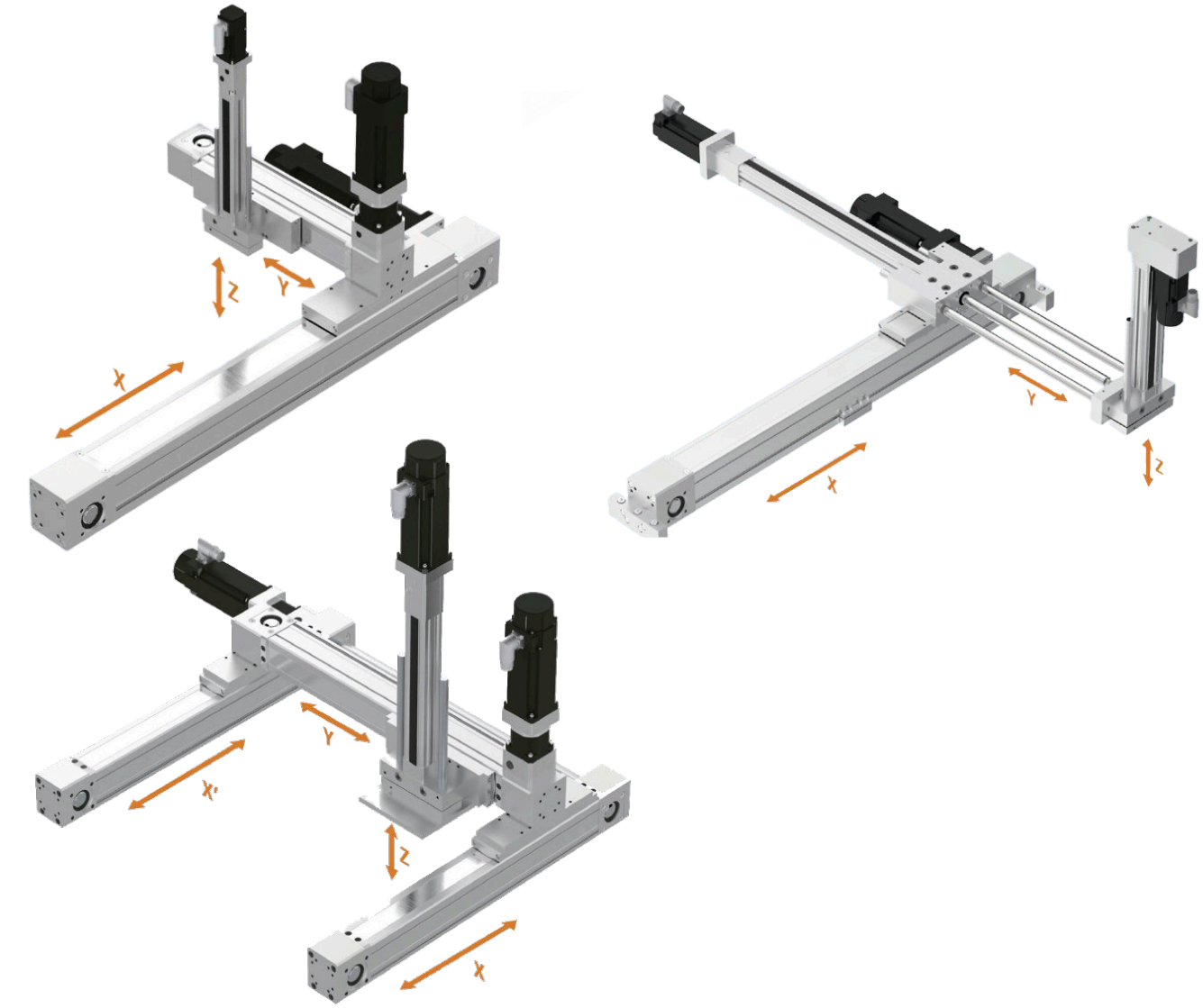
Tolomatic™
EXCELLENCE IN MOTION

Gantry & multi-axis



Robust multi-axis and gantry systems to handle:

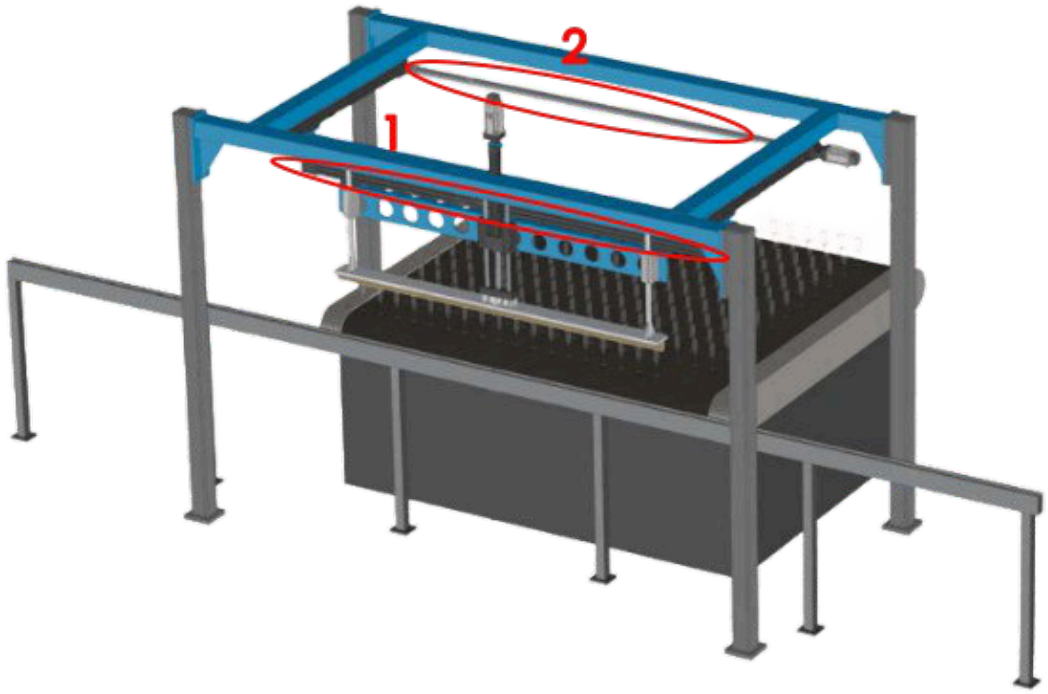
- ·High duty cycle applications
- ·Moving loads of significant mass
- ·Flexibility in design with comprehensive product line of rodless and rod-style actuators

More than just actuators, these additional components & services make up a complete gantry system:

- Cable Track
- Cable Tray
- Transition plates
- Base plates
- Jack Shafts and Couplers
- Framing: Tubular – Steel – Extrusion
- EOAT design: End of Arm Tooling (vacuum, gripper, load cell)
- Customer run-off
- Units can be shipped in kit form or other depending on size
- On-site support

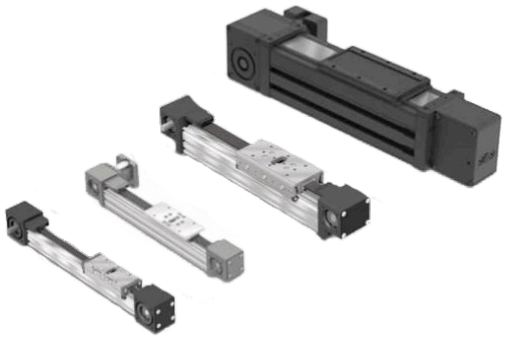
Tolomatic
EXCELLENCE IN MOTION

Gantry & multi-axis



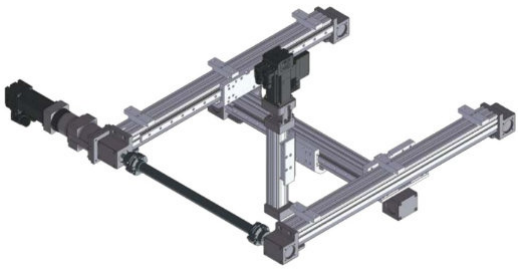
1. LONG STROKES & MULTIPLE CARRIERS

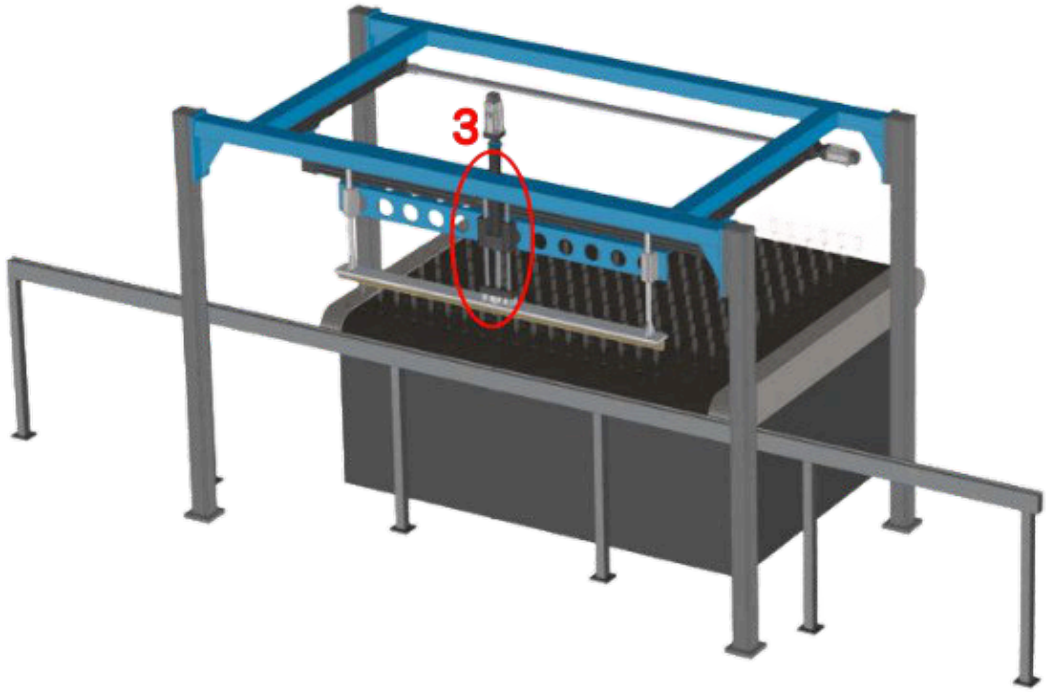
- Greater capacity, more choice Rodless belt-drive actuators can be modified to nearly double stroke length
- Multiple carriers can increase the load carrying capacity and give higher bending moment control capability
- Actuators: MXB-P, MXB-U, MXB-S, B3W



2. DUAL DRIVE FOR JACK-SHAFT

- Keeps actuators synchronized
- No need for 2 motors



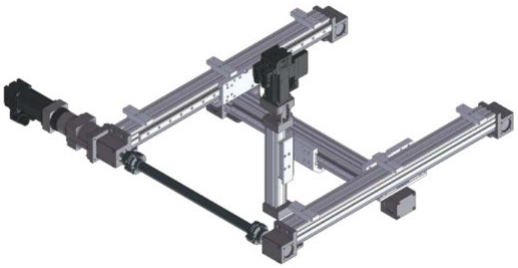


3. CARRIER MOUNTING OF ACTUATOR

- Accommodates longer stroke than rod-style actuators
- Built-in load support and bending moment control

RODLESS BELT-DRIVE, RODLESS SCREW-DRIVE & ROD-STYLE ACTUATORS OPTIONS

- SCREW-DRIVE: Bronze, Acme, Ball, Roller
- BELT-DRIVE: Poly, Steel-belted



Series ESU-RT

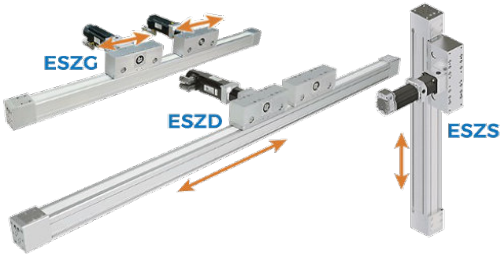
Feature a robust, enclosed design with a high capacity rail bearing system delivering exceptional moment and load capability. Available in three sizes, with travels lengths up to 5,500 mm and speeds to 5,000 mm/s these electric linear actuator can be combined to create virtually any system to meet your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

Features

- Superior belt profile for improved performance
- Travels up to 5500 mm
- Speeds up to 5000 mm/s

Series ESZ Electric cantilever

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



Features

- 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

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

Features

- 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

Unmatched Engineering for Maximum Performance

The PHD 7th Axis is engineered with high-load capacity, rigid aluminum extrusion, and precision guidance to ensure smooth and reliable movement. It is compatible with a wide range of industrial robots, providing manufacturers with the flexibility to integrate it into existing automation systems.

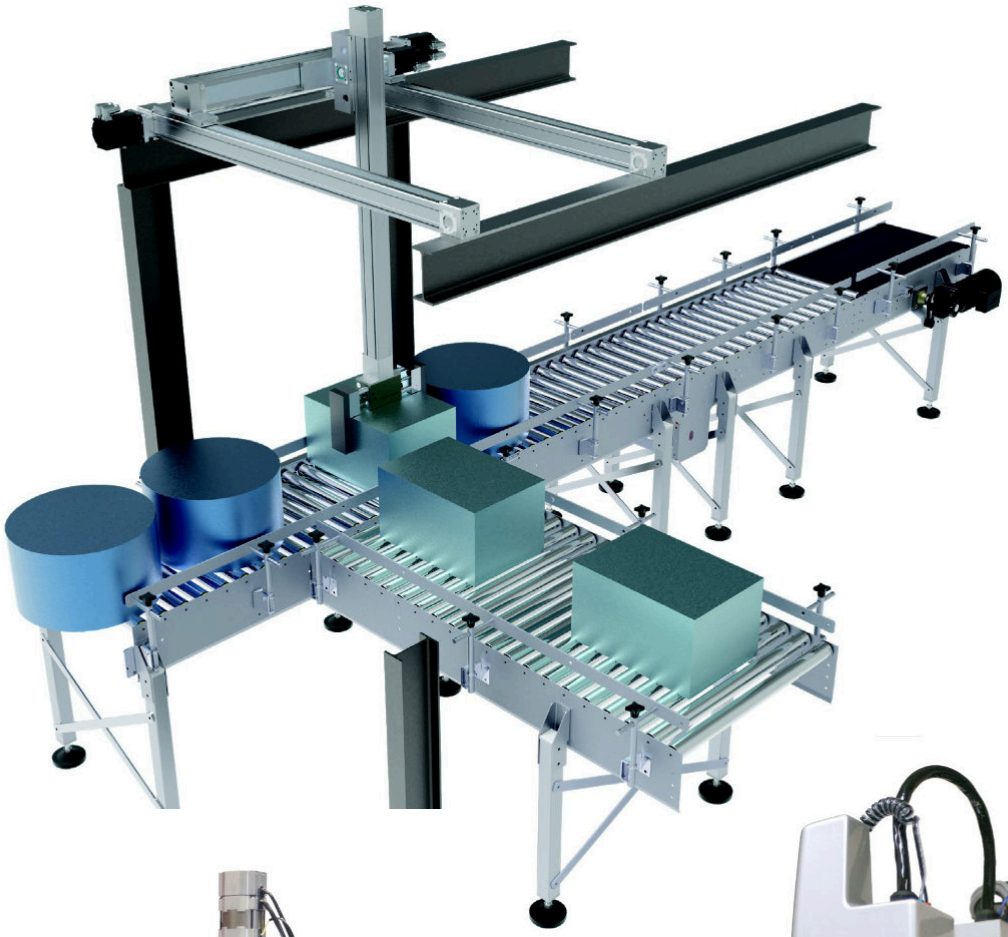
Some key advantages of the PHD 7th Axis include:

- **Extended Reach:** Allows robotic arms to move along a linear path, expanding their working range and eliminating the need for multiple stationary robots.
- **Robust Construction:** Designed for durability with high-strength materials and precision-engineered components.
- **Customizable Options:** Available in various sizes and configurations to match different application needs.
- **Seamless Integration:** Compatible with most industrial robots, making it easy to upgrade automation processes.

The robust design of the Series ESU Electric Belt-Driven Linear Actuator provides a superior RTU (robot transfer unit) to support the robot in various orientations. Wide variety of kits available for ABB, Techman, Fanuc CRX ,Hanwha, Kawasaki and Universal Robots.

Cartesian system

From single actuator solutions to multi-unit systems, PHD can provide total solutions for virtually any application requirement. PHD's array of capabilities, whether pneumatic, electric, robotic, custom designed or standard, allow our automation experts to offer the best solution for your application. The modular capability, variety, and flexibility of PHD actuators simplifies what ordinarily would be complex system design. PHD can provide total solutions for virtually any application requirement. Only PHD offers this kind of flexibility. Let our team of application specialists solve your automation issues with you.



Motion Axes

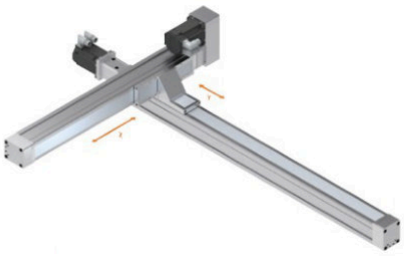
2-Axis Systems (Moves in Two Directions: X & Y)

Dual Slide – Two sliding components moving independently or together.
Arm Moving Body – A robotic arm that moves along a fixed track.

Type 1

Dual slide

Type 2



Arm Moving Body

3-Axis Systems (Adds Vertical Movement: X, Y & Z)

Pole Style – A vertical pole guides motion.
Arm Moving Saddle – A robotic arm moving along a support structure.

Type 3

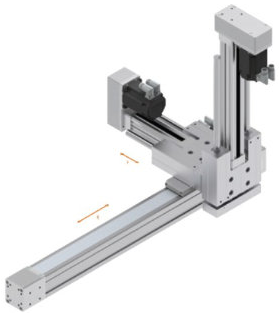
Pole style

Type 4

Arm Moving Saddle

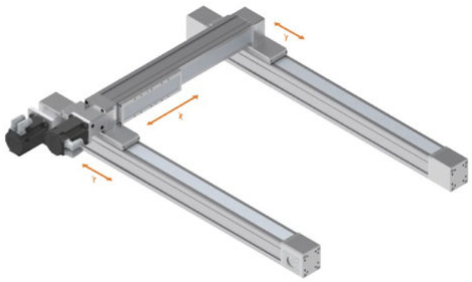
Motion Axes

Type 5



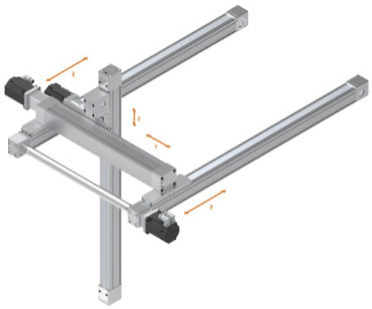
Cantilever
Pick & Place

Type 6



Passive
Base Slide

Type 7



Dual Gantry
With Moving Body
And Vertical Arm

APPLICATION REQUEST DATA

Axis of motion: ☐ 2 ☐ 3 or ☐ 4

Travel: X _____ Y _____ Z _____

Cycle Description: _____

Cycle Time: _____

Payload and thrust: _____

Motors & Controls Platform: _____

If open

Voltage: _____

Communication Type: _____

Cable Length: _____

PHD Supplied Accessoiries: _____

Environment: _____

Air on demand system

Serie ERDP54 Remote Drive

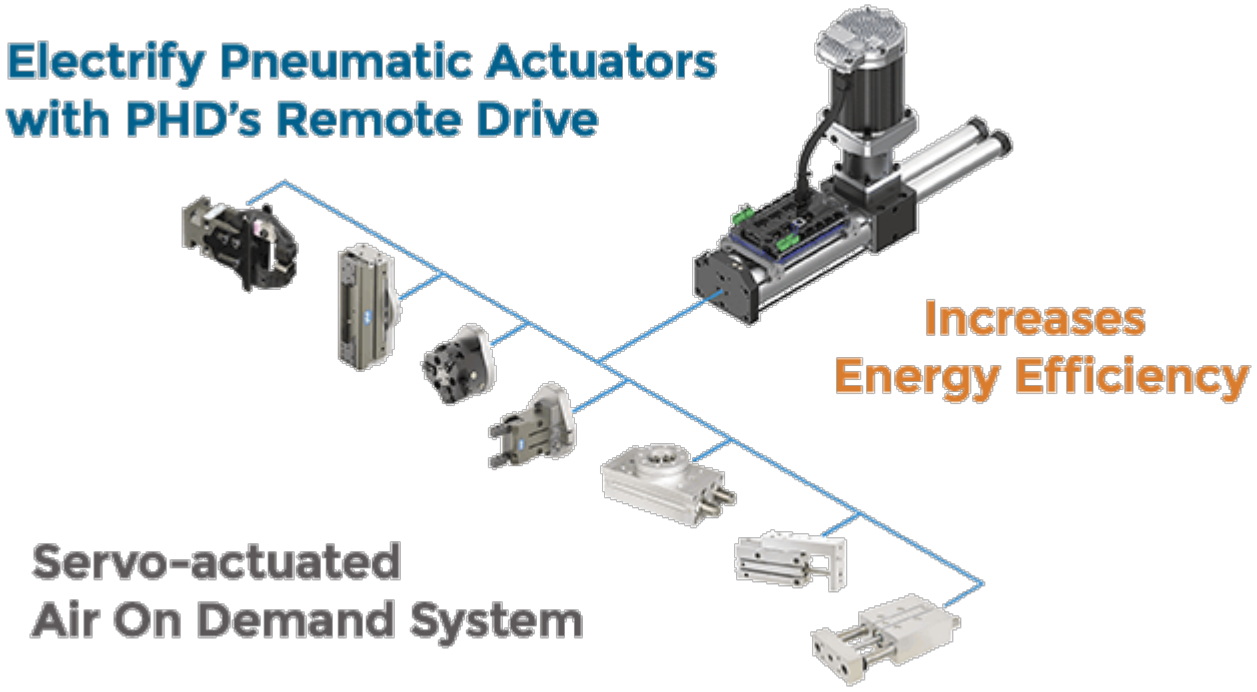
Series ERDP54 Remote Drive electrically powers pneumatic grippers, clamps, and short travel linear actuators, and devices, independent of factory air systems. Unlike a conventional pneumatic system, the remote drive and attached actuator(s) form a closed loop system with no air exhausted during operation.

Features

- Aanzienlijke energiebesparing
- Behoudt de kracht naar de pneumatische actuator
- Verwijdert het gewicht van de motor van de actuator
- Pneumatische actuatoren zijn compact, sneller en sterker

Volgens PHD levert de ERDP Remote Drive aanzienlijke energiebesparingen op in vergelijking met traditionele persluchtsystemen.
Enkele mogelijke toepassingen:

- Geautomatiseerde geleide voertuigen
- Lascellen
- Crossbar robotvoeding
- Robotgereedschap aan het einde van de arm
- Assemblagecellen.



Tolomatic
EXCELLENCE IN MOTION

Electric linear actuator

ERD electric cylinder actuator

The ERD series of electric cylinders is the perfect alternative to pneumatic cylinders for automating manual processes.

The ERD is an energy-efficient electric cylinder and is compatible with many NEMA and metric mounted stepper and servo motors to create a flexible, powerful, yet cost-effective electric cylinder solution compared to traditional pneumatic cylinders. The ERD electric cylinders are perfect for sealing, sorting, diverting, and product changes and have the following

Features

- 3 housing sizes
- Ball and acme screw choices
- Force and pull force up to 2.2 kN (500 lbf)
- Stroke lengths up to 610 mm (24 inches)
- Guide and anti-root options
- IP67 and IP69K options
- All stainless steel housing options

ERD-SS2 actuators with integrated motor

ERD stainless steel electric actuators have an IP69k rating and are dishwasher-safe.

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

Features

- 3 housing sizes
- Ball and acme screw options
- Force/torque up to 2.2 kN
- Stroke lengths up to 610 mm
- Choice of stepper motor and servo controllers/drives and
- Motors Compatible with clean-in-place
- Simplifies and reduces machine design costs by eliminating protective covers around standard actuators

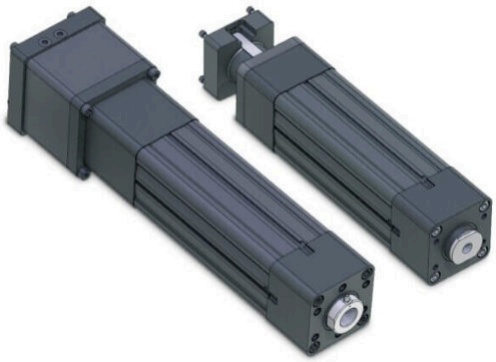
Tolomatic™
EXCELLENCE IN MOTION

Electric linear actuator

RSA electric linear actuators

The RSA electric linear rod actuator combines excellent accuracy with low to high thrust capacity in harsh environments.

RSA electric linear rod actuators offer precise and high force performance, making them ideal for replacing pneumatic and 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.



Features

- Stroke lengths up to 1,524 mm (60 inches)
- Forces up to 58,001 N (13,039 lbf)
- Acme, ball, and roller screw options
- IP67 option for protection against dust and water ingress
- Flexible mounting options
- 6 housing sizes with custom stroke lengths and mounting options

RSX high-force linear actuators

Replace hydraulics to eliminate annoying leaks and improve system performance.

The RSX series of extremely high-force electric linear actuators is an excellent alternative to hydraulic cylinders. They are more efficient, more accurate, and robust enough to perform in demanding conditions such as extreme cold. Their long life and precision are achieved through the use of Tolomatic's high-accuracy planetary roller screws. RSX extreme high force electric linear actuators offer:

Features

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

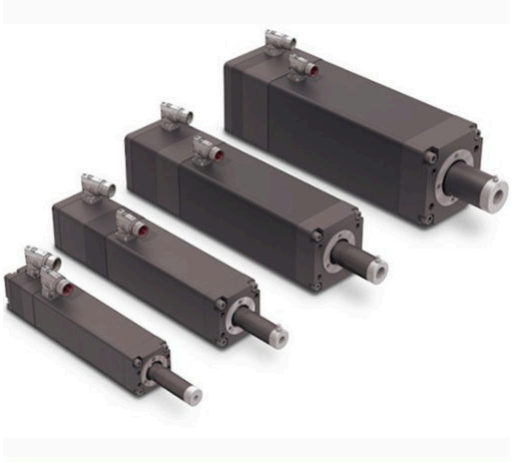
Tolomatic
EXCELLENCE IN MOTION

Electric linear actuator

Linear servo actuators IMA

De IMA servo lineaire actuator heeft een uniek geïntegreerd servo motorontwerp.

The IMA linear servo actuator has a unique integrated motor design in a compact, industrial package. IMA actuators are available in ball screw and roller screw configurations and deliver forces up to 35.8 kN (8,044 lbf), ideal for dynamic applications with high duty cycles or when the actuator is exposed to high levels of shock and vibration. IMA heavy-duty linear servo actuators can be easily relubricated without disassembly for an extremely long service life. Tolomatic's unique integrated linear servo actuator design eliminates:



Features

- Hydraulic systems
- Pneumatic systems
- Contamination from air or oil
- Forced air or water cooling
- Multiple suppliers required
- Motor couplings, adapters, timing belts, and gearboxes

RSH hygienic electric actuators

RSH hygienic actuators feature a 316 stainless steel construction and IP69K

Tolomatic's range of hygienic actuators are all-stainless steel electric actuators. They offer up to 7,943 lbf (35.3 kN) and are the perfect solution for food and beverage applications where higher forces are required for pressing, pumping, cutting, or shearing.

Features

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

ServoChoke® SVC Choke Valve Actuator / Operator

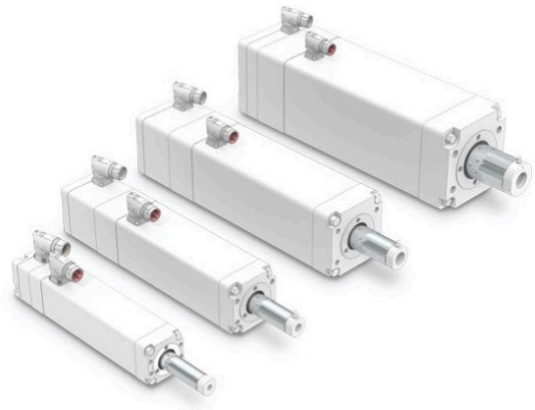
ServoChoke® SVC is a linear integrated electric actuator that meets the stringent requirements of the oil and gas industry. The SVC offers a more reliable electric choke operator in drilling applications compared to conventional hydraulics or jack assemblies. The ServoChoke SVC is perfect for Managed 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, along with a temperature rating of -40°C to +60°C, the all-steel SVC choke actuator is designed to perform under the harshest conditions.

Features

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

Food safety servo motor IMA

The Food safety linear actuator IMA offers sanitary protection in wash-down applications.



IMA servo actuators for are equipped with a white epoxy coating, grease for food safety, and are available with stainless steel fasteners, rods, and rod ends. Available in both ball and roller screw configurations and delivering forces up to 30.6 kN, ideal for applications with a high duty cycle.

Features

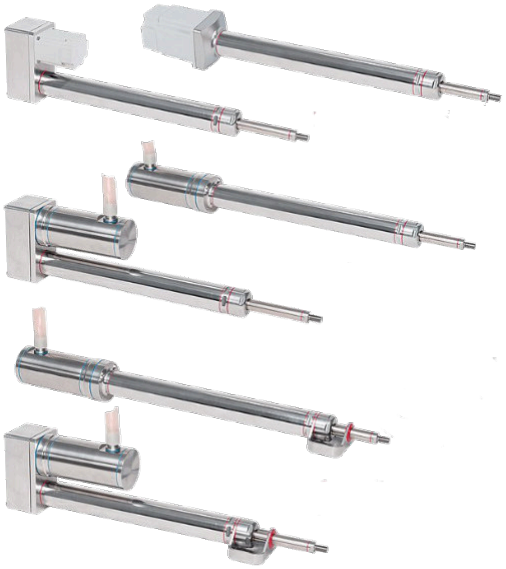
- Contamination by air or oil
- Hydraulic systems
- Pneumatic systems
- Forced air or water cooling
- Need for multiple suppliers
- Unnecessary assembly work
- Motor couplings, adapters, timing belts, and gearboxes

Tolomatic™ EXCELLENCE IN MOTION

Electric linear actuator

ECP Series Electric IP69K Cylinders

These are available in ball screw or lead screw (polymer nut) versions and offer a choice of high thrust or high speed. These powerful electric cylinders are designed for food processing and packaging equipment used in high pressure and high temperature environments. Three models are available:



Basemodel

- Designed for high-pressure, high-temperature washdown applications
- 300 mm stainless steel housing 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
- directions
- Designed for splash zone and caustic wash
- applications in the food processing industry
- Limited Your motor, your way with USDA certification*

USDA certified for product contact zones (-Y91 option)

- Designed for product contact zones in the food industry where caustic washing is required
- All external surfaces are 300-grade stainless steel
- USDA certified for product contact and above product
- Includes external rod wiper and sanitary tray for above product applications
- LimitedMotor, Your Way USDA certification*

ECV Series Ball Screw

These electric rod actuators with ISO and VDMA mounting interfaces are available in ball screw or screw spindle models. Also available in various sizes with two screw configurations per size, as well as a version with a non-rotating rod. The ball screw models offer high performance and the lead screw models offer lower performance at a significant cost saving.

Features

- The ball screw model is available in three sizes and
- delivers high performance with stroke lengths up to 1,000 mm.
- Rotating and non-rotating rod versions.
- ISO/VDMA mounting interface for easy

Hygienic integrated stainless steel servo motor IMA-S

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

The product line also includes the IMA-SA model, which has an internal anti-root function that eliminates the need for an external guide mechanism, making it a perfect actuator for applications such as volumetric filling and pumping. Feedback options include multi-turn absolute encoders.

Features

- Provides complete control over speed and position at all times
- Hygienic design for cleaning and disinfection
- Corrosion resistant with 316 stainless steel housing
- Provides IP69k protection against washdown with blue
- seals/O-rings and hygienic fasteners/cord grips
- Improves performance, flexibility, and efficiency compared to eddy current technologies

Electric linear actuator

SMAC electric cylinders offer a service life of over 100 million cycles and the ability to repeat a movement within a millisecond without friction. Thanks to their conventional cylinder shape and numerous mounting points, the electric cylinders can in most cases be retrofitted directly.

CBL Series

The latest series of electric actuators from SMAC. Designed to solve problems with conventional devices in the packaging industry. The CBL offers speed, accuracy, and efficiency while remaining competitively priced. Thanks to its superior performance and operating costs, the CBL is an ideal solution for new machine designs and upgrades.

Features

- Competitive price
- Long service life of over 100 million cycles
- Programmable position, speed, and force
- Fast cycle time >2000 CPR
- Soft-Land function for highly accurate detection of
- product location
- Standard 100% data feedback for all operations

CBL Series with built-in controller

An electric cylinder with a built-in controller in a single compact package for easy installation. Ideal for applications with limited space that still require precise control. The electric cylinders offer significantly longer service life, programmability, high speed, accuracy, and energy efficiency while remaining competitively priced.

Features

- Built-in controller
- Programmable position, speed, and force
- Long service life of over 100 million cycles
- Vacuum and silent operation
- Graphical user interface available for easy setup
- Space-saving

Electric linear actuator

An extensive selection of electric linear actuators is offered in a wide range of sizes, styles, and options for automated manufacturing, packaging, assembly applications, and much more. These programmable linear actuators range from units with a stroke length of 10 mm in a compact unit only 8 mm high, to units with a stroke length of 250 mm or a peak force of up to 500 N.

LAL Series

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

Features

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

LCA Series

Developed as a next-generation servo motor based on moving coil technology. SMAC's "Snap-Together" design controls the stacking of close tolerances to ensure high product quality and achieves a competitive price thanks to fewer parts.

The LCA is designed for an extremely long life of over 100 million cycles in high-speed applications. million cycles in high-speed applications. The series starts compact size with a height of 8 mm, ideal for pick-and-place heads for electronics. or force up to 90N for high-speed, high-cycle applications. applications.

Features

- Cost-effective
- Built-in lubrication for a long service life of over 100 million cycles
- Energy-efficient: low power consumption of 1.5 amps peak on average at 24 V or 48 V
- Quiet and clean operation
- Data feedback

SMAC Moving Coil Actuators

Electric linear actuator

LPL Series

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

Features

- The LPL series is compact and has high power for its size.
- Cost-effective alternative to pneumatic and ball screw actuators.
- Programmable positioning, speed, and force.

LDL Series

The LDL series is designed as a cost-competitive alternative to pneumatics, with prices starting at $300. A general trend in industrial automation is that users are looking for electric alternatives for a number of reasons: control, service life, operating costs, and the environment, etc. The LDL has several innovative cost-saving features and is also available with an integrated controller. Like all SMAC actuators, the LDL is fully programmable.

Features

- Competitive pricing, starting at $300.
- Fully programmable in power, position, and speed, adjustable on the fly.
- Built-in controller available.

MLA Series

The MLA is an electric measuring actuator that provides programmable, precision measurement. It ensures consistent measurement replication and improves your process by reducing repeatability and reproducibility (R&R). Repeatable and linear force, regardless of where in the stroke, unlike LVDTs that use pneumatics or springs. It achieves smooth and consistent low friction throughout the entire stroke.

Features

- Much better R&R (repeatability and reproducibility).
- Fully electric solution.
- “Soft-Land” to find a surface, trace the surface.
- Can handle higher side loads than most LVDTs.

Electric linear actuator

MSA Series

The MSA measuring actuator is a simple solution that does not require any additional external modules and allows users to connect directly to their PLC/high-speed counter card. It can handle higher side loads and is much more cost-effective than traditional LVDTs. The MSA8 is the first model in the series and is compact, measuring 95 mm x 28 mm x 8 mm for a stroke of 10 mm.

Features

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

LBL Series

The LBL is competitively priced and designed to replace ball screws and pneumatic cylinders in the packaging industry. The LBL can be stacked for OEM stations with multiple actuators. Stacked actuators are a cost-effective solution for automating multiple axes. They simplify mounting and cabling. The units can be exchanged quickly and easily, reducing downtime.

Starting with strokes from 25 mm to 50 mm, the range will be expanded to 200 mm. The LBL series generates a peak force of 60N and is extremely fast with accelerations of over 50G. The LBL has an expected service life of >100 million cycles.

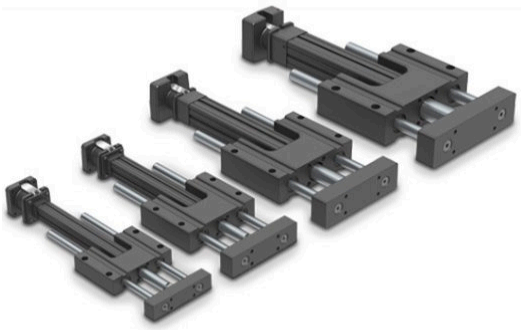
Tolomatic™ EXCELLENCE IN MOTION

Electric linear slides

GSA linear guide rod actuators

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

GSA linear slide actuators combine an electric rod drive with guide rods, mounting blocks, and bearings. A complete selection of sizes, options, and system components is available. The GSA linear slide actuator offers high performance, reliability, and mounting flexibility for rotary applications.



Features

- Forces up to 18.5 kN (4,160 lbf)
- Choice of linear ball bearings or composite bearings with internal lubrication of guide rods for longer bearing life
- Standard or oversized guide rod diameter for greater
- rigidity and less deflection
- Stroke lengths up to 914 mm (36 inches)

Electric guide rod ESK/ESL series

The Series ESK/ESL Electric Bow Slides are available with a short or long body and are powered by PHD's ECVA ball screw or electric cylinders with lead screw. These slides offer the best load capacity in their class, resulting in smooth operation over longer distances with minimal deflection. Your motor, your way offers additional flexibility in motor options and includes both inline and foldback mounting.

Features

High-performance design while allowing the user to choose the desired motor brand and type. Cylinder is available in a model with precision ball screw or lead screw for exceptional thrust and speed or as a lower-cost option. The combination of precision-ground shafts and ball bushings provides excellent support and rigidity for attached loads. In addition, the screw models offer a total of five sizes for a wider range of applications.

Electric rodless actuators

i1 compact inline linear actuator

With a maximum diameter of only 16 mm, the i1 is designed for tight spaces where precision and compactness are essential. Perfect for applications with limited space: ideal for use in inspection robots, navigation lights, and other devices that require efficient performance in confined spaces.

Features

- Maximum load: 50 N
- Maximum speed: 15 mm/s
- Stroke: 20-100 mm
- IP rating: IP65

i2 linear actuator

The i2 is an improved version of the original model and offers advanced features such as internal limit switches with overcurrent protection or Hall sensors. With a compact diameter of 26 mm and a powerful push/pull force of 500 N, the ANT-26N is an ideal solution for applications that require high force in small spaces.

Features

- Maximum load: 500 N
- Maximum speed: 16 mm/s
- Stroke: 20-200 mm
- IP rating: IP67/IP69K

i4 linear actuator

The i4 is a compact yet powerful inline linear actuator that combines exceptional performance with a slim diameter of 35 mm. With a maximum load capacity of 2300 N, it stands out as a versatile and reliable solution for a variety of demanding applications. For added durability in demanding environments, the ANT-35 is available in all stainless steel.

Features

- Maximum load: 2300 N
- Maximum speed: 25 m/s
- Stroke: 20-500 mm
- IP rating: IP66/IP67M

Electric rodless actuators

i5 lineaire actuator

The i5 is an improved version of the i4, now equipped with internal limit switches for precise end stop control. With its improved end stop design, the i5 overcomes the limitations of the i4, ensuring better protection at both ends and providing a straight moving shaft for reliable operation.

Features

- Maximum load: 2300 N
- Maximum speed: 25 mm/s
- Stroke: 20-500 mm
- IP rating: IP66/IP67M

i6 linear actuator

The i6 is specially designed for bioclimatic pergolas, where watertightness, elegant design, and compact size are essential for seamless operation. With a maximum load capacity of 2500 N, adjustable stroke lengths, and forces, the i6 ensures smooth, quiet, and precise operation for different types and sizes of pergolas.

Features

- Maximum load: 2500 N
- Maximum speed: 13 mm/s
- Stroke: 20-400 mm
- IP rating: IP67M/IP69K

i7 linear actuator

230 VAC input power ensures constant speed and smooth operation. Equipped with adjustable limit switches for precise control and flexibility. The slim, in-line design is ideal for installations in confined spaces and offers IP67M waterproof protection for reliable outdoor use.

Features

- Maximum load: 1500 N
- Voltage: 230 V
- Maximum speed: 9 mm/s
- Stroke: 100-600 mm

i8 powerful linear actuator

The i8 is a powerful linear actuator with a maximum load of 6000 N. With its sleek design, high load capacity, IP67M waterproof protection, and synchronous operation, the i8 is perfect for outdoor applications where the actuator is visible.

Features

- Maximum load: 6000 N
- Maximum speed: 88 mm/s
- Stroke: 20-500 mm
- IP rating: IP66/67M

i9 linear actuator

The Antuator trim tab actuator is precisely engineered for quiet operation and combines a non-hydraulic, maintenance-free design. The ANT-63 is equipped with a strong planetary gearbox and guarantees a long service life, even under high loads on the trim tab. Internal limit switches at both ends provide protection and ensure reliable performance. The ANT-63 is completely corrosion-resistant and waterproof (IP67M), eliminating the risk of oil leakage associated with hydraulic trim tabs.

Features

- Maximum load: 2300N
- Maximum speed: 12 mm/s
- Stroke: 20-108 mm
- IP rating: IP67M

Electric linear rotary cylinder

The precision Z-theta movement within a single small actuator enables convenient picking, orienting, and placing. A wide variety of linear rotary actuators are available with direct drive or gearbox units.

The built-in vacuum shaft is available for some models to prevent dust accumulation in the unit. These z-theta actuators can be easily programmed to control force/torque, position, and speed in all axes simultaneously with feedback capability.

LAR Series

Precision Z-theta motion within a single small actuator is offered with direct drive or gearbox-equipped rotary units. The vacuum-sealed shaft rotary motor is available for some models to prevent dust accumulation in the unit. These Z-theta actuators can be easily programmed to control force/torque, position, and speed in all axes simultaneously with feedback capability.

Features

- Equipped with Soft-Land function and precise force/torque control
- Precise positioning
- Built-in vacuum through the shaft
- Option for safety return spring available
- Feedback data

LCR Series

The LCR series is the first linear rotary version of the LCA series. The actuator is available with a brushless servo motor with direct drive. It is designed with built-in lubrication for the linear guide for a long service life. Programmable force and “Soft-Land” capabilities. Absolute control over: force/torque, position, acceleration, and speed.

Features

- Soft land
- Life cycle MTBF 100 million
- Vacuum through the shaft prevents dust accumulation

Electric linear rotary cylinder

LBR Series

The LBR is a slim, stackable linear rotary actuator with a SMAC HT brushless direct drive motor. The LBR offers long life, high linear force, and rotary torque, and is specifically designed for capping, thread inspection, and Smart Screw Driving applications.

Features

- Z-Theta movements in a single unit
- Actuators can be stacked in multi-axis solutions.
- Ethernet/IP communication with M12 connectors optional
- Soft-Land function and precise force/torque control
- IP67 protection
- Built-in control optional

LDR Series

The LDR, a precision linear rotary actuator, features a patented HT motor with low shaft runout (<10 microns) using SMAC's printed coil technology that eliminates motor cogging. The LDR is designed for pick-and-place assembly of electronic components.

Other applications include silicon wafer brushing, small cap assembly, and driving assemblies with small screws. A combination of an improved design, laser fabrication of the rotary motor and printed coil technology, SMAC in-house manufactured encoders, and US manufacturing contribute to the lower price.

Actuators with moving coil

Actuators with moving coil

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 large units with long strokes and precise positioning for a wide variety of applications in automation systems.

LAS Series

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

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 slides are available in a wide range of designs and options with strokes from 0.4 in to 10 in and peak forces up to 90 N. High or low speed and accurate positioning with high repeatability make them ideal for applications such as parts feeding, scanning, testing, and measuring in a wide range of industries.

Features

- Power, position, and speed control
- Smooth land power
- Long service life

SLA Series Linear Slide Actuators

Designed for applications requiring precision movements. A very light moving mass results in high accelerations without backlash. The SLA contains precision rollers with anti-creep protection for greater rigidity and less friction. The drive of the moving coil is centered between the cross rollers, eliminating torque effects from the drive. The SLA is available with encoder resolution up to 50 nm.

Features

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

LDS Series

The LDS series is based on the LDL series. The LDS is a compact and affordable linear slide with a stroke of 10 mm and an encoder resolution of 5 microns. A longer stroke and a built-in controller are available on request.

Features

- Fully programmable in force, position, and speed, changeable in an instant.
- Ideal for precision movements/scanning
- Real-time feedback capability

LBS Series

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

Features

- Scanning
- Lens focusing
- Positioning

Electric belt driven actuators

MXB-S actuators

MXB-S linear belt driven actuators offer optimal performance, rigidity, and service life.

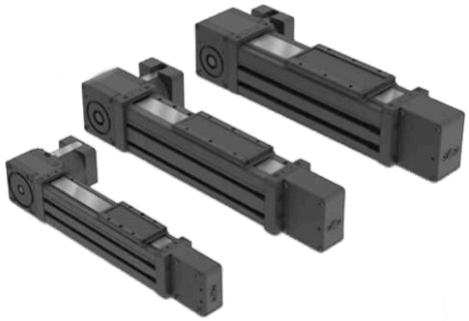
The MXB-S is a compact linear belt drive for use in applications requiring light to medium loads and guidance. The bearing system of the MXB-S linear belt drive uses two replaceable solid bearings.

Features

- 6 housing sizes
- Extra-large pulley bearings for longer service life
- Powerful polyurethane belt that does not stretch
- Easily accessible belt tensioning system without disassembly
- Field-replaceable bearings for longer service life

BW actuators

Tolomatic's B3W is a series of linear, belt-driven rodless actuators with a closed bearing design that offers long life and high load capacity. The bearings and belt are protected by a stainless steel dust cover that provides an IP44 rating against dust and dirt. The B3W is the ideal choice for demanding environments, particularly those with high particle levels and where long service life is required.



Features

- 3 housing sizes
- Maximum load capacity up to 8,032 lbf (3,642 kg)
- Stroke lengths up to 574 inches (15.6 m)

MXB-U belt driven actuators

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 and supports.

Features

- High speed and acceleration up to 1200 in/sec² (30.5 mm/sec²)
- 6 sizes for a wide range of forces and loads
- Polyurethane belt with steel parts does not stretch
- Excellent repeatability, high duty cycle performance

Electric belt driven actuators

Series ESU-RT

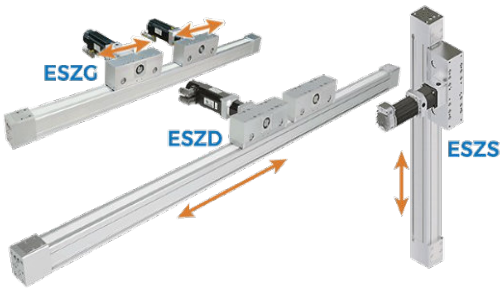
The ESU series of electric belt-driven linear actuators feature a robust, enclosed design with a high-capacity rail bearing system that delivers exceptional torque and load capacity. These electric linear actuators are available in three sizes. They can be combined to create virtually any system to meet your Cartesian robot needs. Your Motor, Your Way offers flexibility in motor and control options, or complete solutions are available with the motor installed by PHD.

Features

- Superior belt profile for better performance
- Reach up to 5500 mm Speeds up to 5000 mm/s
- Exceptional torque and load capacity
- Your motor, your way enables motor and control flexibility at no extra cost

Series ESZ

The ESZ series of electric, belt-driven linear cantilever actuators features a robust, enclosed design with a high-capacity rail bearing system for unmatched speed, thrust, and precision. These electric linear actuators are available in two sizes. They can be combined with the ESU series and other PHD actuators to create virtually any Cartesian system that meets your robotic needs.



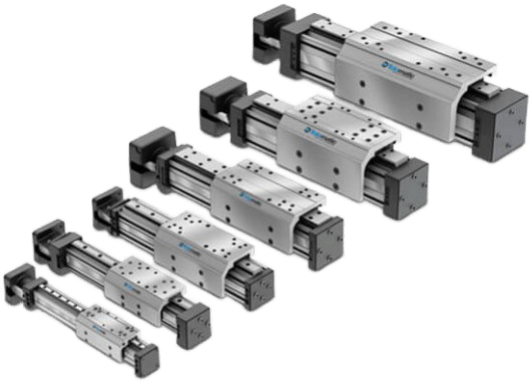
Features

- Offers robust “Z”-axis vertical cantilever or horizontal fixed-based solutions for robotic systems
- Delivers unmatched speed, thrust, and precision
- Independently driven dual saddles available for a wide range of applications
- Dual saddles available for increased load and moment load

Electric screw driven actuators

MXE-P linear actuators

The MXE-P has a profiled rail that guides the carrier over the entire extrusion for high load capacity.



The MXE is Tolomatic's most advanced series with screw drive. The profiled rail carrier offers the highest load capacity and rigidity of the MXB series. The linear guides with recirculating ball bearings ensure a long service life, easy maintenance, and high speeds.

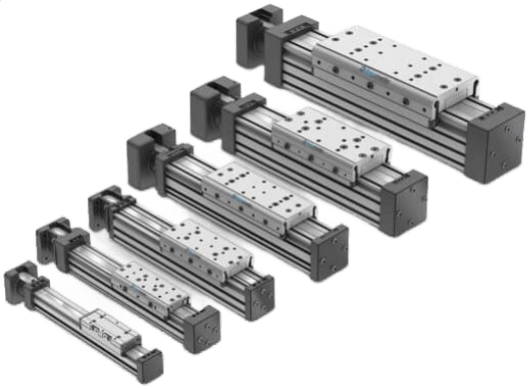
Features

- 6 housing sizes
- Maximum load capacity up to 1,171 kg
- Stroke lengths up to 134 inches (3.4 m)

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 and guidance. The MXE-S actuator uses two field-replaceable solid bearings that distribute the stress



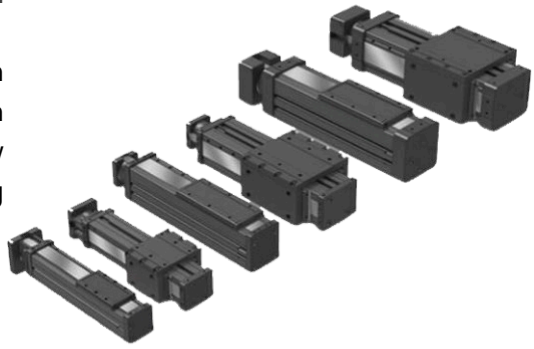
Features

- The large contact surface of the bearings optimizes the distribution of stress on the bearings for a long service life.
- Large mounting pattern of the carrier for greater load stability and compatibility.
- Advanced bearing material requires no additional lubrication.
- Field-replaceable bearings.

Electric screw driven actuators

B3S Linear screw driven actuators

B3S actuators feature a sealed ball bearing design that can handle heavy loads and high bending moments.



The B3S linear screw actuator is suitable for heavy loads and high bending moments with smooth operation. The B3S series has an enclosed recirculating ball bearing system. The linear ball screw actuator offers repeatability and a 100% duty cycle with a long service life.

Features

- 3 housing sizes
- Choice of ball or acme screw
- Load capacities up to 8032 lbf (35.7 kN)
- Stroke up to 179 inches (4,547 mm) depending on screw

TRS double profile rail Precision XY

Phases

The TRS XY linear actuator with dual profile rail features a closed design built for precision, accuracy, and high rigidity. This linear stage is designed to minimize the overall footprint of the machine and is configurable to maximize the design flexibility of the motion table.

Features

- Strokes up to 2,200 mm
- Travel speeds up to 1,270 mm/s
- Load capacity up to 1,960 kg .

ESU-RB Series Electric Ball Screw

The ESU-RB series of electric linear ball screw drives features a closed design with a high-capacity rail bearing system for exceptional torque and loads. Together with the ESU-RT belt drives, they can be combined to meet virtually any system requirement for your Cartesian robot needs.

Features

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

Electric screw driven actuators

Linear actuators TKS

The TKS linear precision actuators feature a double-profile rail and a wide, low-profile base, ideal for XY tables/stages and XYZ systems.

The TKS linear precision actuator is designed for medium-load applications that require high precision in parameters such as flatness, straightness, and accuracy. XY or XYZ tables/systems Two parallel profiled rails with four linear ball recirculation guides ensure consistent and accurate performance.

Features

- Choice of acme or ball nuts
- Load capacities up to 90 kg (200 lb) 2 metric screw/nut combinations
- Stroke in any incremental length up to 2438 mm (96 in)

BCS Linear Actuators

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

The BCS screw actuator guidance system uses a patented adjustable carrier bracket that transfers the load to the cylinder housing instead of the screw for good tracking, superior load support, and controlled minimal friction load. The spindle actuator's patented band attachment system forms a tight metal-to-metal seal and keeps debris out.

Features

- 3 sizes of actuator housings
- Maximum loads range from 27 to 272 kg (60 to 600 lbs) depending on the selected load carrier
- Same housing size as the B3S series electric screw driven cylinder 12 metric screw/nut combinations
- Stroke is available in any incremental length up to 3048 mm (120 in) depending on screw selection

Electric grippers

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

MGR Series

The MGR is a lightweight micro gripper designed for the assembly of small, fragile parts. The MGR enables operating forces of 10 grams or less. The light moving mass reduces the impact force when placing small products.

Features

- Compact and lightweight
- Light force of 10 g or less
- Soft-Land capability for picking up and placing delicate and fragile parts
- Each jaw can be independently controlled in force, position, and speed
- Standard 5-micron linear encoder, optional 1-micron

GRP Series

The GRP series gripper offers a peak force of up to 45N and a stroke of up to 30 mm. The built-in linear encoder provides 0.1 micron precision.

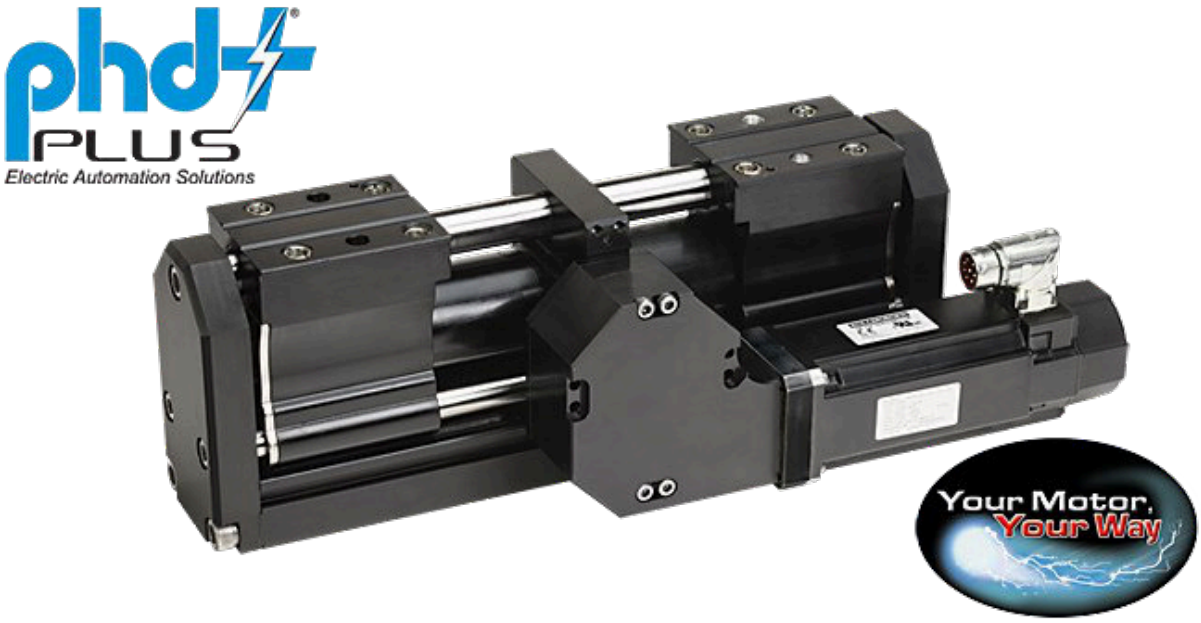
Features

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

Series EGRR High High-capacity electric parallel grippers

The electric version is built on the proven GRR chassis and offers many of the same advantages as the pneumatic version with the design and flexibility of Your Motor, Your Way. **The EGRR offers high gripping force, long gripping strokes, and high gripping loads.**

The robust design and jaw construction of this heavy-duty end effector can withstand high impact and shock loads. EGRR series grippers are designed for gripping large objects in demanding industrial applications.



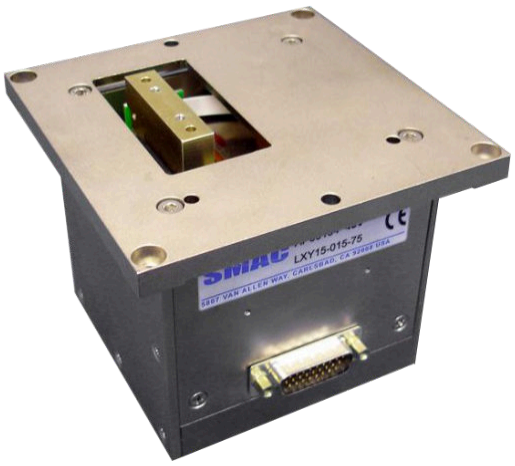
Advantages

Narrow width, long jaw movements, high gripping force, high torque capacity, robust design, truly parallel jaw movement, with servo motor control for jaw acceleration, speed, and position feedback.

- Servo motor control provides feedback on acceleration, speed, and position.
- Compact design with high gripping force, high torque capacities, long jaw stroke, and low
- overall weight for applications with limited space.
- Robust construction withstands high impact and shock loads in demanding industrial
- environments.
- Your motor, your way offers flexibility in motor and control at no additional cost.
- The optional Kollmorgen® motor supplied by PHD matches the performance of the popular Series GRR Guardian® pneumatic gripper.

XY-Frame LXY series

SMAC offers high-speed XY-shaped precision tables.



SMAC offers the advantages of a direct-drive, backlash-free system that can be controlled with high precision and repeatability. SMAC XY machines are equipped with a 5 µm encoder as standard, with options up to 50 nm encoder resolution for ultra-precise positioning and scanning for industries such as life sciences, medical, and photonics.

They are also used for quality measurements in the automotive industry and other industrial automation applications. The ability to control the speed, acceleration, positioning, and force of each axis individually provides you with a flexible and accurate tool.

Features

- No backlash, no cogging
- Control the speed, acceleration, positioning, and force of each axis individually
- High repeatability
- Collect accurate positioning data

Electric regulator

VLC-1-EIP-07-RJ

Single-axis Ethernet/IP servo motor controller/driver

The VLC-1-EIP-07-RJ is a single-axis servo drive with ODVA-compliant Ethernet/IP connectivity and is based on SMAC's VLC integrated controller/driver for a single axis.

Features

- Position, speed, torque 4x opto-isolated digital input with common (5V to max. 24V)
- 4x solid-state relay output with common, 200 mA current and tolerant up to 60 V

VLCI-CAN-07

Single-axis CANopen servo controller/servo drive

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

Features

- CANopen servo drive/controller
- 4x opto-isolated digital inputs with common:
  - 24 V Level input
- 4x Solid-state relay outputs with common:
  - Compatible up to 60 V

VLC-ETC regulator

Single-axis EtherCAT servo drive

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

Features

- EtherCAT servo drive
  4x opto-isolated digital inputs with common:
  24 V Level input
- 4x Solid-state relay outputs with common:
  200 mA current
  Tolerant up to 60 V

SMAC
Moving Coil Actuators

Electric regulator

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

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

Features

- Position, speed, torque (based on voltage and current)
- 8x opto-isolated digital inputs with Commo
- 24 V level input

VLCI-X1

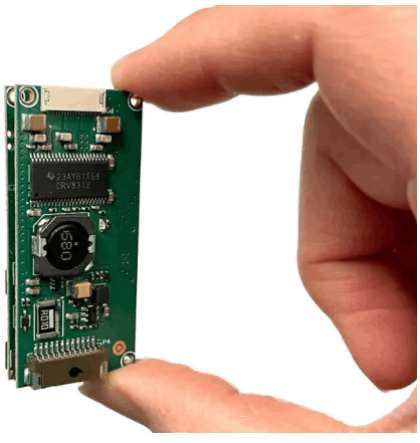
VLCI-X1 is a single-axis, stand-alone integrated controller/servo drive for industrial linear actuators and motors with or without brushes.

Features

- Position, speed, torque
- 4x opto-isolated digital inputs with common connection:
  - 24V level input
- 4x SSR outputs (solid-state relays) with common connection:
  - 200mA current
  - Tolerant up to 60V

VLCI-R3

The VLCI-R3 is a VLC series of stand-alone integrated single-axis controllers/servo drives. The VLCI-R3 is compact and can be integrated into actuators to eliminate cabling for easy installation. The VLCI R3 is equipped with STO (Safe Torque Off), 4 pairs of opto-isolated digital I/Os, and a pair of analog I/Os.



Features

- 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 regulator

VLC-2-EIP

Ethernet/IP 2-axis servo motor control/driver.

The VLC-2-EIP is a 2-axis servo drive with ODVA-compliant 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 lower cost and with reduced installation complexity.

Features

- Position, speed, torque
  4x opto-isolated digital inputs, 5V to max. 24 V
  4x opto-isolated digital outputs, 60 V, 200 mA max.

VLC-25-07 / VLC-25-13

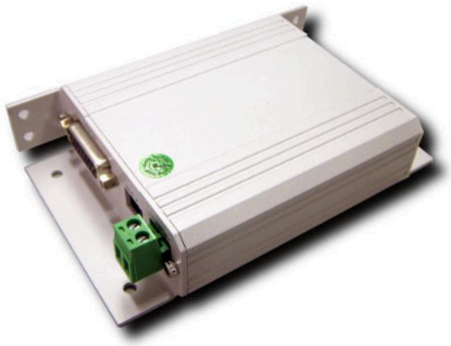
Two-axis controller/servo drive.The VLC ("Very Low Cost") series two-axis brushed/brushless controller/driver, designed and manufactured by SMAC.

Features

- Brushed (I-phase) and brushless (3-phase) axis control
  6 arms continuous, 7.8 arms peak (VLC-25-07)
  10 arms continuous, 13 arms peak for high current (VLC-25-13)
- 2x STO inputs and 1x STO output
  12T protection
- Protection against excessive driver temperature

MIOE-8/8 Expansion Module

16-channel 1/0 expansion module, 8 inputs, 8 outputs, opto-isolated 1/0 for general purposes. If more 1/0 channels are required, the MIO can be connected to the LACI, LAC25, and LAC-45 controllers to obtain 16 1/0 channels.



Features

- 24-48 VDC
- 8 opto-isolated inputs/outputs

Miniature, small cross-section linear encoder

The SMAC LL linear encoder is a miniature contactless, high-resolution incremental encoder. It provides two counting channels in quadrature RS422 output signals. This series is available with a resolution of 1 and 5 microns.

Features

- Light sensor: Optical ASIC
- Resolution after quadrature: 5 and 1 micron

Miniature, small cross-section linear encoder

The SMAC LL linear encoder is a miniature contactless, high-resolution incremental encoder. It provides two counting channels in quadrature RS422 output signals. This series is available with a resolution of 1 and 5 microns.

Features

- Light-emitting diode
- Light sensor: Optical ASIC
- Resolution after quadrature: 5 and 1 micron

Linear encoder series SLE-LI

The SLE-LI series linear encoder can be considered a drop-in replacement for the JENA LIK linear encoder. This model is a miniature, high-resolution, contactless incremental linear encoder that provides two quadrature counting channels (labeled A and B) as output signals. The two output waves are 90 degrees out of phase and indicate both the position and the direction of movement.

Features

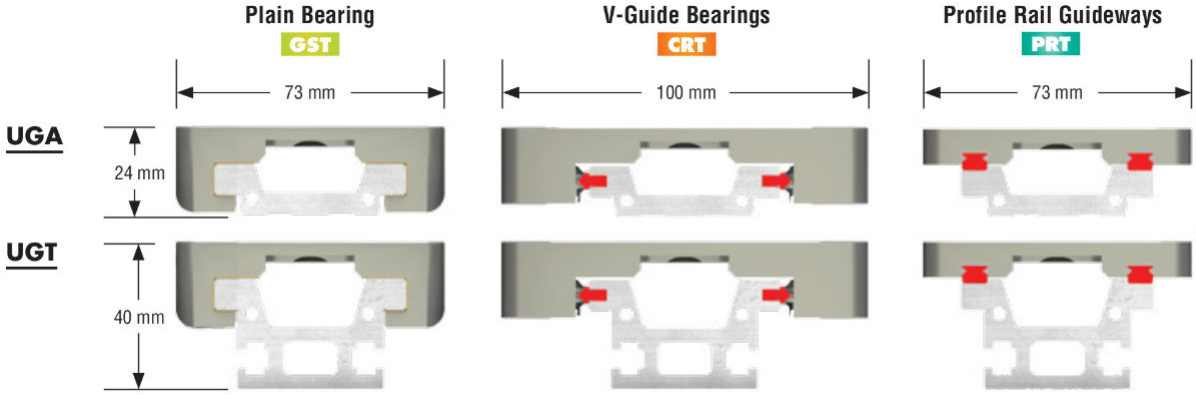
- Resolution after quadrature
- Quadrature spec.: 90° ±22° at maximum conditions
- Rise and fall time: 1µs max. in 1000 pF load
-

PBC Linear SIMO series compact actuators

Three bearing systems are available for the SIMO series plain bearings, V-guides, and profile rail guides. Choose the bearing system that best meets the application requirements.

SIMO SERIES BASIC COMBINATIONS

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



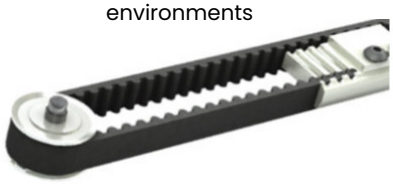
Drive options

Propeller - LOW COST

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

BELT DRIVE - HIGH SPEED

- Suitable for long stroke applications
- Withstands contaminated environments



BALL SCREW - HIGH RIGIDITY AND PRECISION

- Multiple accuracy classes
- Rigid preloaded nut design

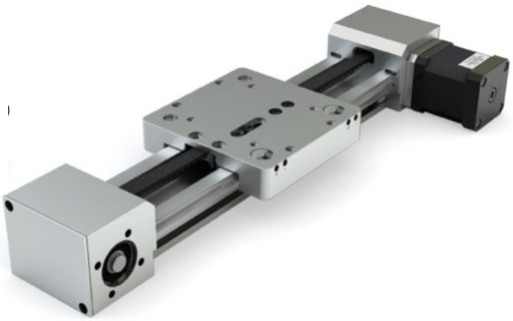
Propeller-driven system

- Uses a self-lubricating and maintenance-free nut
- Standard fixed nut or Constant Force anti-splash 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 cables available - consult the factory
- Ideal for a wide range of applications, such as kiosks, assembly, automation, medical, and laboratory

Belt drive - horizontal motor mounting

Features

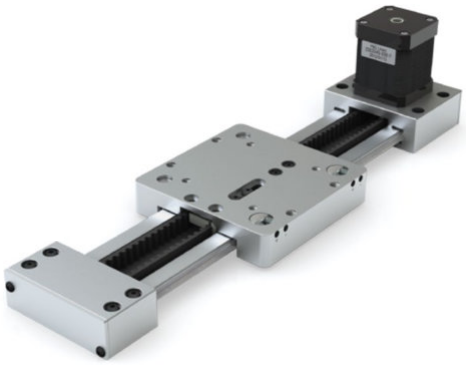
- Horizontal motor mounting only available in high profile (UGT)
- Ideal for applications with higher speeds and high duty cycles
- Belt material: nylon coated, glass fiber reinforced, neoprene
- Temperature range: 0° C to +80° C (32° F to 176° F)
- Rounded GT®2 tooth design provides better connection to the pulley, resulting in greater torque transfer, less vibration, and longer service life



Belt drive - vertical motor mounting

Features

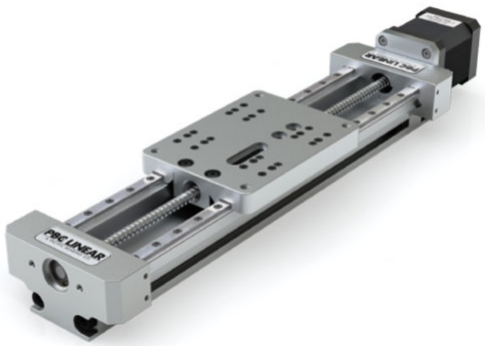
- Vertical motor mounting provides high-speed performance in low-profile (UGA) rail
- Consult factory for (UGT) high rail with vertical motor mounting
- Belt material: nylon-coated, fiberglass-reinforced, neoprene
- Temperature range: 0°C to +80°C (-32°F to +176°F)
- Rounded GT®2 tooth design provides better connection to the pulley, resulting in greater torque transfer, less vibration, and longer life.



Ball screw system

Features

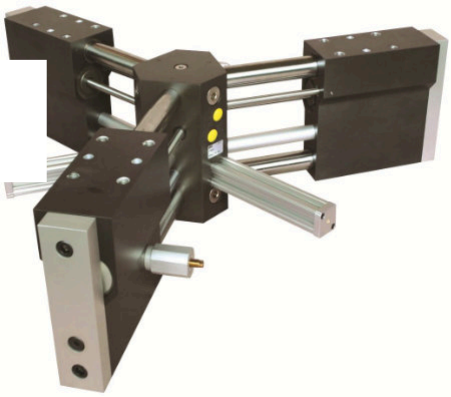
- Uses a self-lubricating and maintenance-free nut
- Standard fixed nut or Constant Force anti-recoil nut available
- Lead screw material: 10 mm diameter 300 series stainless steel with PTFE coating 1, 2, 5, 10, 16 mm leads most common



End of arm tooling grippers

3-Jaw Heavy Duty Rim Gripper

- Handles 14-24" rims
- 300 mm diametral travel
- Rugged design withstands high impact and shock

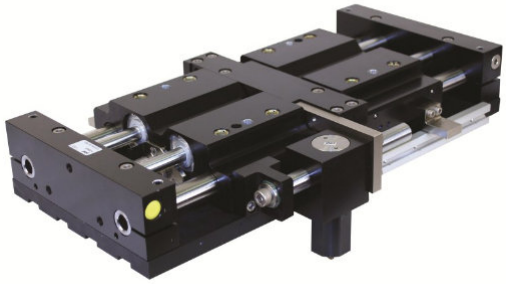


Heavy Duty Long Jaw Travel Gripper

- Designed for gripping large, round parts that vary in size
- Incorporates direct mounting to a robot without transition plates
- Rugged jaw and body construction to withstand high impact and shock loads

Low Profile Gripper

- Compact ontwerp
- Hoge grijpkracht en grote momentcapaciteiten
- Robuust ontwerp is bestand tegen hoge impact en schokbelasting



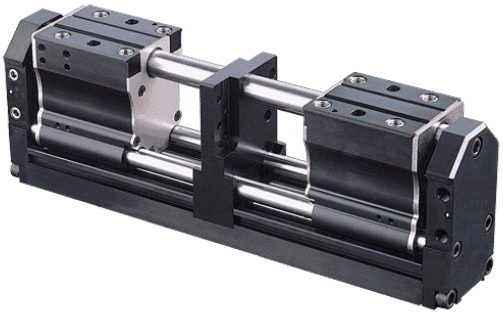
End of arm tooling grippers

FLEXION: Series FG-gripper

- Multiple joints perform as a human finger
- Operating pressure allows for a wide working range of usable force, providing industrial strength
- For demanding applications or a delicate touch for soft and sensitive product handling.

Series GRR Guardian® High Capacity Parallel Gripper

- Robust design provides high grip force and large moment capacities
- Designed to withstand high impact and shock loads
- Double acting for internal and external gripping



Series GRA Parallel Pneumatic Micro Grippers

- Four sizes in metric design
- Standard H7 tolerance dowel holes
- Switch ready for use with PHD single or two position teachable switches
- Optional manifold porting, mounting flange, and cleanroom lubrication

End of arm tooling grippers

Series GRK parallel pneumatic heavy duty grippers

- Available in 8 sizes, the compact, low profile, rugged design provides high grip force and moment capacities with low overall weight while providing a long operating life.
- True parallel jaw motion simplifies jaw tooling and is ideal for centering parts of various sizes.
- Ultra-rigid, wear-compensating jaw guide system eliminates jaw “free-play” and dramatically reduces jaw deflection when gripping or moving loads over life of unit.
-

- Three jaw design provides self-centering and maximum contact between part and jaw tooling.
- Available in eight sizes (imperial and metric), Series GRT offers a low profile to grip force and jaw travel ratios.
- Jaw motion is true parallel and synchronous for easy design of jaw tooling. Male and female keys are standard on jaws providing precision positioning of jaw tooling.

Series GRV parallel pneumatic micro grippers

- Precision dowel pin holes ensure accurate alignment of tooling and gripper mounting.
- Standard internal speed control with no external flow control required.
- "Switch-ready" for easy integration of optional magnetic position sensing switches.
- A teachable two-position switch to allow multiple positions on small grippers within the profile of the gripper.

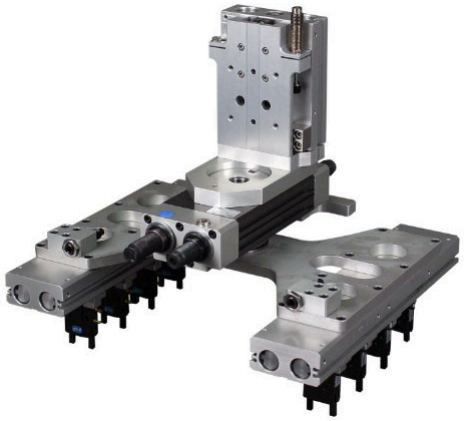
End of arm tooling grippers

Modular Device - ML309749

- Two grip and rotate devices incorporated into one assembly
- Mounting configuration designed to adapt direct to robot

Modular Device - ML311181

- Unique mounting plate configuration mounts to other components
- Flexibility on changing part pick up points with precision



Multiple Part Handling Actuator

- 75° jaw rotation
- Designed for end-of-arm robotic tooling
- Can mount 6-pick grippers
- Increased cycle speeds

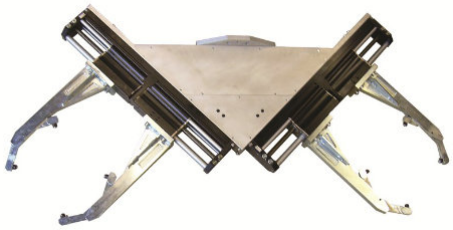
End of arm tooling grippers

Series RI high force pneumatic rotary actuator

- High torque
- High axial and radial bearing load
- Thru hole shaft for built-in air communication ports

Unique adaptors - ML308857

- Modular device consisting of two Series GRR grippers mounted to a bracket 90° from each other
- Bracket mounts directly to end of robot



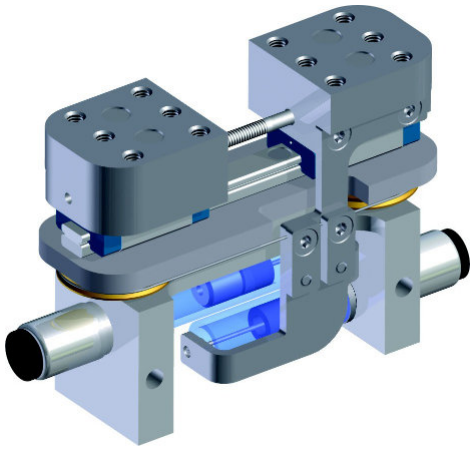
Series RA high load pneumatic rotary actuator

- High axial and radial bearing loads
- Zero backlash at ends of rotation
- Wide variety of options and accessories

Gramforce grippers

With the sleek, new GramForce gripper, you'll find all the features you'd expect to find in Airpot's family of Accurate Force Pneumatic products—and then some. At every turn, expect minute friction levels that assure uncompromising force accuracy. With wide operating temperature ranges. And repeatability you can depend on, time after time, for millions of cycles. Lubrication? Never! It's prelubricated for life, so it never needs maintenance.

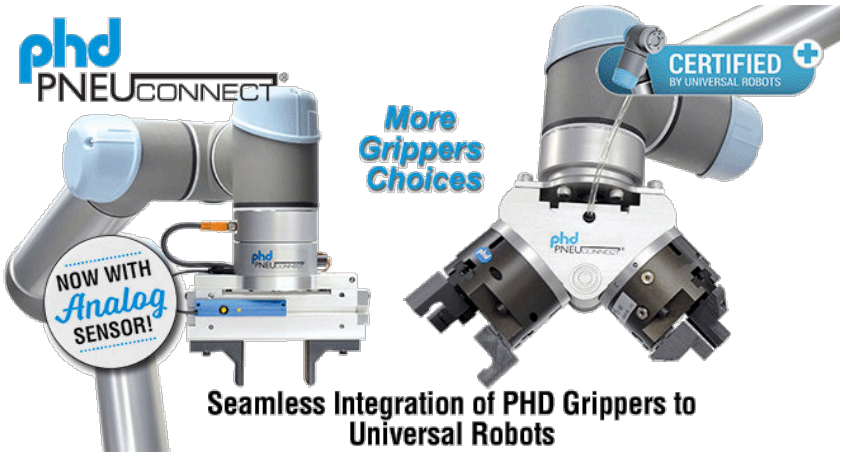
The small size and a mere 205 grams total mass keep this gripper light on its feet. Its stainless steel mounting blocks accommodate finger lengths up to 75 mm. And combined with its synchronous and parallel design, it is counterbalanced to provide unchanging gripping force in any mounting orientation: It's a versatile gripper like no other. So, in short, we've gone to great lengths to design the GramForce gripper for your most exacting applications— powerfully tough on the inside, but with a grip as gentle as the flutter of a butterfly's wings.



What's it good for?

- Precise Force Control: Handles delicate components with forces from 0.25 N to 8.6 N.
- Low Friction: Ensures accuracy and repeatability with pneumatic Airpot actuators.
- Compact & Lightweight: Weighs ~205g, ideal for tight spaces.
- Easy Mounting: Stainless steel blocks support up to 75mm finger lengths.

Airpot Pneu-connect



Pneu-Connect

PHD Pneu-Connect®a cost-effective system providing seamless pneumatic end-effector integration for Universal Robots.

Pneu-Connect® features embedded directional control valves for control of an end-effector through the robot's tool port. The system easily attaches to the robot arm and is intuitively operated from the Universal Robot interface via the Pneu-Connect® URCap software package.

Additionally, an analog sensor choice is now available for the Series GRH kits. The analog sensor provides jaw position feedback for increased programming functionality

Series GRA-5 20x13-L11-UB99

series GRL12-5-16x26 -LII-UB99-GR9

series GRL12-5-16x26-L11-UB99-GR9

Series GRL12-5-16x26-LII-UB99-GR9

Series GRV-5-20x40-LII-UB99-GR9

Dual-serie GRH Parallel Lang jaw

Series GRH Long Jaw Travel and a serie GRT 3-Jaw gripper

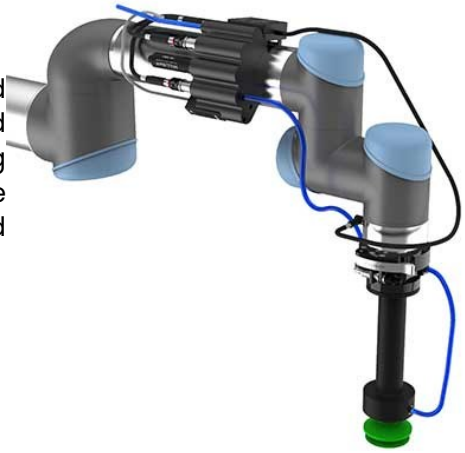
Dual Series GRT Parallel Pneumatic 3-Jaw Grippers

MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling

End of Arm Tooling

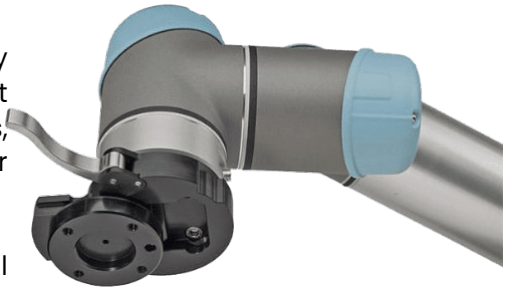
End of Arm Tooling, or, EOAT is also often referred to as robot end effectors. Millibar offers-engineered robot end effectorsdesigned end effectorsmeet your material handling challenges. Their pre-engineered robot end effectors include a line ofMounted Manifolds,Harnesses,Extensions, andCup Mountsare field proven and allow rapid robot deployment.



Manual Tool Changers Fast and Easy

The Millibar Manual Tool Changerallows operators to effortlessly change tools for high mix, low volume production applications. Without any tools, quickly switch between adaptive grippers, vacuum grippers, camera calibration stylus, and more. Simply release the locking lever and slide a new tool into place.

Even if your facility has a variety of robot brands, the Millibar Manual Tool Changer ecosystem allows tools to be moved between robots.



Utility series

MTC-50
MTC-40
MTC-315
MTC-M8
MTC-M6
MTC—FG
MTC— BP

Low-profile serie

MTCAE-50
MTCAE-40
MTCAE-315
MTCAE-M8
MTCAE-M6
MTCAE-FG
MTCAE-BP

Sanitary series

MTCFH-40
MTCFH-315
MTCFH-20
MTCFH-M8
MTCFH-M6
MTCFH-BP

MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling

TO-M6 tool organizer

- Securely stores end-of-arm tools using (2) M6 and (2) M8 socket head cap screws
- Mounts horizontally or vertically to accommodate different workspace setups
- Constructed from durable black acetal for long-lasting performance
-

Wrist extension

- Extends robot reach for accessing deep containers like boxes or totes
- Available in multiple lengths (25mm to 150mm) and flange sizes: 31.5mm, 40mm, and 50mm
- Features matching flanges on both ends for easy tool attachment and seamless integration

DGRM

- Directly mounts to robots with 31.5, 40 and 50mm ISO mounting patterns
- Select a tool mounting flange for each side from three common ISO mounting patterns: 31.5, 40 and 50mm plus blank
- Ideal for loading and unloading machine tools

SCM-3456-D-U6F

- Designed to attach a suction cup to a robot
- Mounts to robot wrist patterns with 31.5, 40, 50 and 63 mm ISO patterns
- Suction port is a universal (G and NPT) 3/8" female thread
- Two vacuum supply ports, push to connect, accept 6 and 10 mm O.D. tubing.

MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling

Suction Cups and Suction Pads

Millibar suction cups offer a cost-effective material handling solution. You may be interested in oursuction cup mounts, which allow you to easily and quickly add suction cups to your robot wrist.

- Flat, cleated, single bellows and multi-bellows options
- Available in a wide array of materials and durometers
- Sizes from 1 to 600mm

CBC suction cups

CFC suction cups

VPG suction cups

VSA suction cups

VSAG suction cups

RTA-A

- Allows attachment of End of Arm Tools (EOAT) with different mounting patterns than the robot flange
- Interfaces with four common bolt hole patterns: 31.5mm, 40mm, 50mm, and 63mm
- Select the adapter that matches the EOAT's bolt circle, with the other three patterns available for flexibility

RPA-3456-A

- Designed to fit T-Slot aluminum extrusion accepts M6 or M8 SHCS
- Pre-engineered to mount to robots with 31.5, 40 and 50mm ISO patterns
- Ideal for DIY EOAT designers

MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling components

CHM8-8-VVS cable harness

- Provides seamless connection between solenoid valves, vacuum switch, and the 8-pin wrist connector on all UR robot models
- Enables easy control of solenoid valves for venturi vacuum pumps and pneumatic grippers
- Features an 8-pin 90° connector for UR robots, (2) 3-pin connectors for solenoid valves, and a 4-pin connector for a digital display vacuum switch with dual outputs

LC60-8-G6F-HD

- Designed to fit T-Slot aluminum extrusion accepts 6mm and 8mm SHCS
- Distributes vacuum through 3, G3/8 female ports
- Configurable ports can “daisy chain” vacuum

Venturi vacuum pumps

Millibar offers an extensive line of venturi vacuum pumps to cover a wide range of applications from handling small parts to large parts and evacuating small volumes to large volumes. EachMillibar pump has a removable vacuum cartridgethat generates the vacuum.The cartridge is the central element of our dirt-tolerant, modular venturi vacuum pumps.

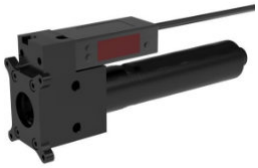
- Many pump body sizes with features including integral valves, switches, manifolds and blow off.
- Instant response using integral MAC™ Valve technology to generatevacuum in under 12 ms.
- Ideal applications include robotic gripping, material handling,conveying,packaging, palletizing and process control.

P10 Series

P14 Series

P19 Series

P19SL Series



Teflon Series

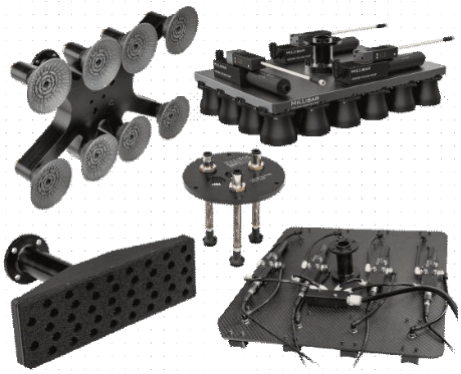
MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling components

Speedy development

Starting with aninventory of pre-engineered end of arm components that fit together effortlessly gives us a big head start in custom design.has in-house manufacturing resources, wide variety of vacuum product design and production capabilities, they can develop and produce an energy efficient solution very quickly.

- Carbon Fiber 3D Printing
- Laser production equipment
- Multi-axis production equipment



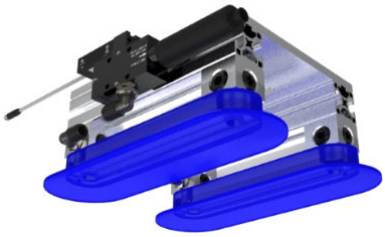
More custom EOAT examples

Custom vacuum gripper with manifold mounted venturi vacuum pump, .24 kg

Handling packaged hypodermic needles for in-the-box packaging

Dual head vacuum gripper for grinding flash from molded silicone parts. Weight: .46 kg

Custom foam gripper for placing paper labels onto the inside curved surface of automotive body panels for identification.



Heavy duty end of arm tool for lifting cartons containg 1 gallon water bottles

MILLIBAR ROBOTICS
EOAT INNOVATION

End of Arm Tooling accessories

CDF: Adjustable Air Amplifier

- Versatile design with micrometer-like adjustable performance allows accurate and repeatable settings.
- High exhaust flows will cool and dry components using very little energy.
- Up to 40:1 amplification ratio's for high vacuum and

Venturi-vacuum cartidges

- Integrate into custom manifolds, saving space, reducing components, and minimizing potential leaks.
- Threaded design means easy manifold machining and fast, no-tools-required assembly.
- Performance options with vacuum levels up to 28 "Hg (950 mbar) and vacuum flows up to 10 SCFM (280 lpm)

Material Conveying Pumps

- Anodized aluminum construction standard, other materials quoted upon request
- Transfer speeds are controlled by input pressure.
- Sizes range from 6mm (.25") to 50mm (2") ID bores, larger ID's quoted upon request

Variable Vacuum Pumps

- These venturis achieve a maximum vacuum level of 85% vacuum.
- Ideal for material handling applications of very dusty product such as construction materials including drywall, wood, concrete blocks, bricks, corrugated paper, etc.

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