Linear Motion Technology
ACME AND TRAPEZOIDAL LEAD SCREWS AND NUTS
Standard and Custom

Helix ACME and Trapezoidal screws and nuts are designed for smooth, clean, and quiet operation. The high strength and inherent lubricity of our proprietary plastic nut material can result in product life that can equal or exceed conventional nut materials. Special high tensile Helix bronze is selected for our smooth running, anti-wedging bronze nuts.

Helix is a worldwide leader in the design and production of custom, precision, miniature screws, nuts and gear nuts.
ELECTRIC CYLINDERS
Ball Screw and Lead Screw Drives

Helix Electric Cylinders feature smooth, clean, and quiet linear positioning. These Electric Cylinders are built with a precision 300 series stainless steel lead screw or ball screw. Lead screw models include a Teflon-coated screw and internally lubricated nut. Helix Electric Cylinders have versatile mounting options and can be built with digital encoders, magnetic sensors and linear potentiometers. Many optional mounts and ends are available.
Helix Profile Rail Linear Actuators offer smooth, clean and quiet linear positioning. The PRA is built with either lead screw or ball screw drives. Lead screws can be coated with Helix H10X™ PTFE to increase the nut life by 10X. The lead screw assembly also incorporates a standard or anti-backlash nut to eliminate axial and radial lash. The PRA linear actuator is built with precision ground profile rails for robust guidance. These pre-assembled linear actuators offer a turn-key solution for linear motion applications and quick deliveries.
Helix Micro Precision Linear Actuators offer smooth, clean and quiet linear motion. Helix manufactures three different models to meet the demands of different linear motion applications. Standard accessories include mounting blocks, limit switches, digital encoders, sensors and high-payload options.
Helix manufactures lead screws ranging in size from 1.5 - 50 mm diameter with a wide variety of nut designs and materials. Helix nuts are available in threaded and flange mounts. Anti-backlash nuts perform with zero backlash, and are self-compensating for wear. Helix nuts are molded from our proprietary internally lubricated Helital™ material. Helix lead screw assemblies guarantee maximum load sharing, minimal torque and long life. Lead screws can be coated with Teflon to provide a dry lubricant and extend nut life by 10X.

LEAD SCREWS
1.5 - 50mm diameter assemblies

Available screw materials include stainless, steel, aluminum, titanium and can be coated with PTFE.
Helix Precision Torque™ Splines are a convenient and efficient product that allows low friction linear motion while transmitting torque. In a Helix PT Spline assembly the high strength composite polymer bushing carries the load between the rotating member (inner race) and the rotating/ translating member (bushing). Helix PT Splines are coated with Helix H10X™ PTFE coating for long life and anti-friction. The PT bushings are offered in a standard freewheeling design and an anti-backlash design. These bushings can be mounted using an external thread or flange mount.

Options include cylinder mount, thread mount and anti-backlash bushings.

MINIATURE PRECISION TORQUE SPLINES
Rotary and linear motion
Building custom solutions is an important part of our business. We combine our standard products with additional high-performance components to build custom lead screw assemblies and linear actuators specifically for your application. Contact us today with your custom design.
Helix External Stepper Motor Actuators feature precision lead screws and nuts to produce accurate and repeatable linear motion. Actuators are manufactured in NEMA sizes 8, 11, 14, 17, 23 and 34. Standard and custom nut designs are available. Optional accessories are connectors, wire harnesses, digital encoders and custom lead screw nuts.
Helix Non-Captive Stepper Motor Actuators are offered in NEMA 8, 11, 14, 17, 23 and 34 frame motors. These stepper motor linear actuators operate with a precision lead screw that translates through the motor housing. The lead screw nut is manufactured from high performance plastic to offer long life and maximum load carrying.
Helix Captive Stepper Motor Actuators feature a precision lead screw, nut and a spline shaft to produce accurate and repeatable linear motion. Actuators are manufactured in NEMA sizes 8, 11, 14, 17, 23 and 34. These captive stepper motor actuators operate with a precision lead screw and spline shaft that translates through the motor housing.

Helix Captive Stepper Linear Actuators with custom machined ends.
Helix Ball Screw Stepper Motor Actuators feature high-precision ball screws and nuts to produce accurate and repeatable linear motion. Actuators are manufactured in NEMA sizes 8, 11, 14, 17, 23 and 34. Standard and custom nut designs are available. Optional accessories are connectors, wire harnesses, digital encoders and custom lead screw nuts.
Helix Series 200 Linear Slides are offered in four different sizes to move 700-1600 lbs. The Series 200 slides are available in fully-supported or end-supported models and are built with ACME screws or metric ball screws. Motors, encoders, sensors, bellows boots and twin-lead screws (RH/LH) can also be incorporated into these systems.

Features/Options
- Choice of end and fully-supported rail guides
- Motor mounts
- Custom carriages
- Anti-backlash nuts
Linear motion applications utilizing a ball screw or an ACME screw require the screw end machining to be matched with precision bearing mounts. Helix Linear offers both end bearing mounts and end machining as a complete assembly. End bearing mounts must be designed to withstand both the radial and the thrust loads generated by the application. EZZE-MOUNT™ bearing mounts are available with integral motor mounts to offer complete motorized systems. Motor mounts are available for standard NEMA mounts (17, 23, 34 and 42), as well as, IEC frames for servo and stepper motor applications.
Helix Telescopic Rails are designed for heavy duty industrial applications which require smooth telescopic slide with no play. The structure of these rails is very simple and compact. Four point bearing contact helps to eliminate displacement during acceleration. Both external rail and internal slider are made of cold-drawn steel and the raceways are induction hardened. As a result, these products offer high wear resistance, heavy load capacity, good stability and are very rigid.
Helix provides a wide choice of sizes and options to build linear, curve motion systems. Components of these modular systems include linear guides, ring guides, bearings. These systems are designed to be easily customized and quickly configured.

Helix hardened steel rails provide high wear resistance and precision ground edges ensure parallelism.
Increase the Reliability and Life of your Linear Motion System

Proper lubrication is the key to continued performance and reliability of linear motion systems. Helix offers specialized lubricants for these demanding applications:

- Medical / Life Science
- Semiconductor / Static Dissipative
- Military and Aerospace
- All-Purpose Precise Motion
- General Industrial