

Precision Tilt Stages

These tilt stages are based on precision curved guide rails combined with a tangent bar (TS Series) or worm gear drive system (TSW Series) providing fine angular resolution and accuracy. The stages can be paired to provide an orthogonal (X-Y) tilt stage system. All tilt stages come standard with a stepper motor.

Features

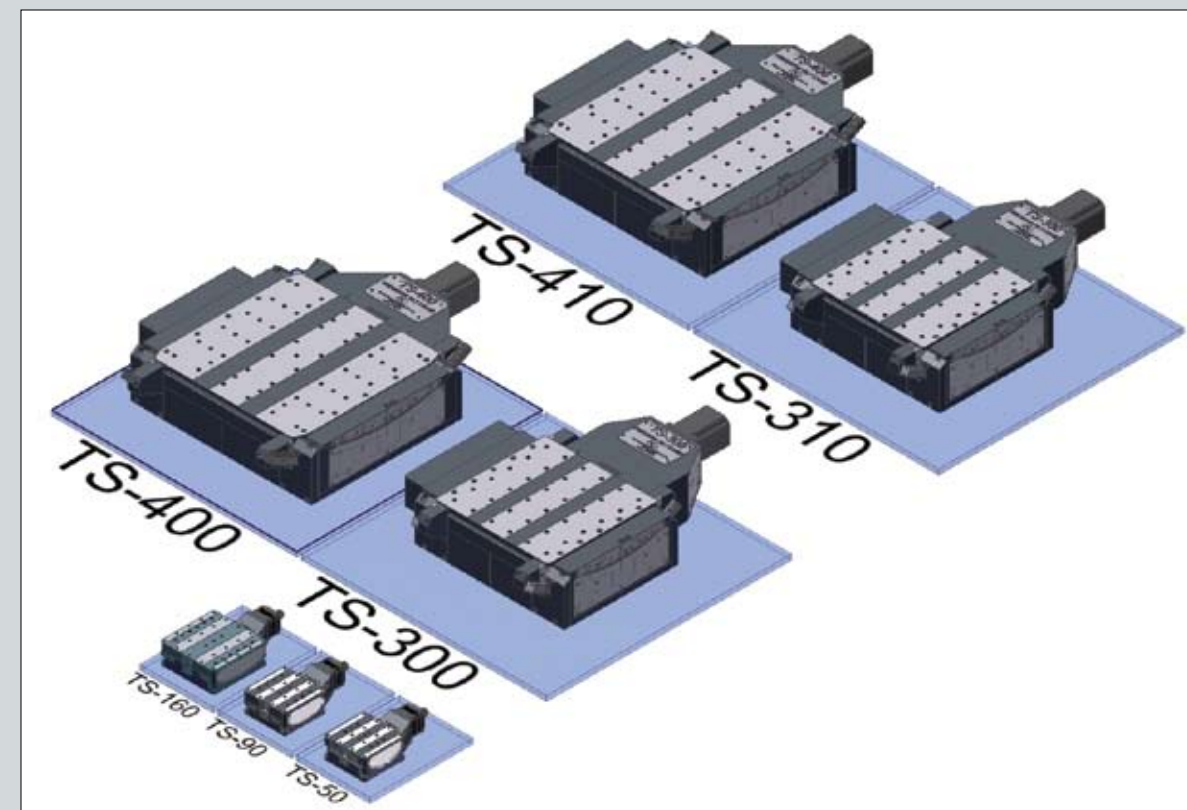
- Optional linear or rotary encoder
- Adjustable limit switches
- Ultra High Vacuum (UHV), High Vacuum (HV), Rough Vacuum (RV) and Air option

Specifications

- Resolution: Better than 0.001 degree
- Repeatability: Better than 0.001 degree

Series	Radius of Curvature mm	Travel ± Degree	Closed Loop Bidirectional Repeatability (°)	Resolution ¹	Static Load Capacity N (kgf)	Dynamic Radial Load Capacity N (kgf)
TS50	50	10	0.000115	0	100 (10)	40 (4)
TS90	90	10	0.000064	0	125 (12.7)	50 (5)
TS160	160	10	0.000036	0	250 (25)	125 (12.7)
TS300	300	8	0.000019	0	5500 (560)	4000 (407)
TSW300-18	300	18	0.000019	0	4000 (407)	2200 (224)
TS400	400	8	0.000014	0	6000 (611)	4500 (458)
TS310	565	8	0.000010	0	5500 (560)	4000 (407)
TS410	700	8	0.000008	0	6000 (611)	4500 (458)

1)Resolution: 1000 steps/rev; depending on drive, gear box and encoder



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Precision Rotation Stages

ADC's series 100 to 700 rotation stages are designed for use in industrial applications such as measurement systems, vision control, automation, and robotics, and in scientific applications such as synchrotron experiments. The body is fabricated from a high rigidity aluminum alloy. Two industrial high-precision angular contact ball bearings capable of withstanding substantial radial and thrust loads guarantee the highest precision with excellent rigidity. A high-precision wormgear drive provides optimal, quiet, smooth motion.

Features

- Optional linear or rotary encoder
- Adjustable limit switches
- Ultra High Vacuum (UHV), High Vacuum (HV), Rough Vacuum (RV), and Air option

Specifications

- Resolution: Better than 0.001 degree
- Repeatability: Better than 0.001 degree



Series	Runout-Radial and Axial (µm)	Closed Loop Bidirectional Repeatability (°)	Resolution ¹	Dynamic Thrust Load Capacity N (kgf)	Dynamic Radial Load Capacity N (kgf)
RS100	7.5	0.000050	0.00100	100 (10)	1750 (178)
RS200	7.5	0.000038	0.00101	4000 (407)	2200 (224)
RS300	10	0.000025	0.00099	4400 (448)	2420 (246)
RS400	10	0.000019	0.00095	5200 (530)	2860 (291)
RS500	15	0.000016	0.00138	6600 (673)	3630 (370)
RS600	20	0.000014	0.00135	35500 (3619)	13300 (1356)
RS700	20	0.000010	0.00108	39000 (3976)	14600 (1488)

1)Resolution: 1000 steps/rev; depending on drive, gear box and encoder

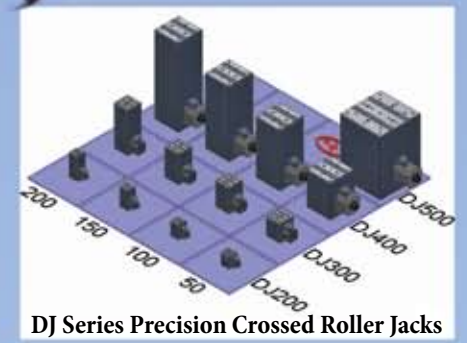
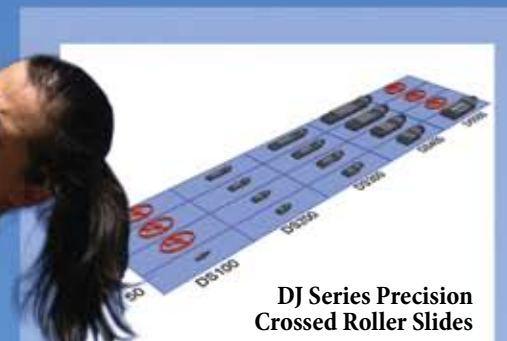
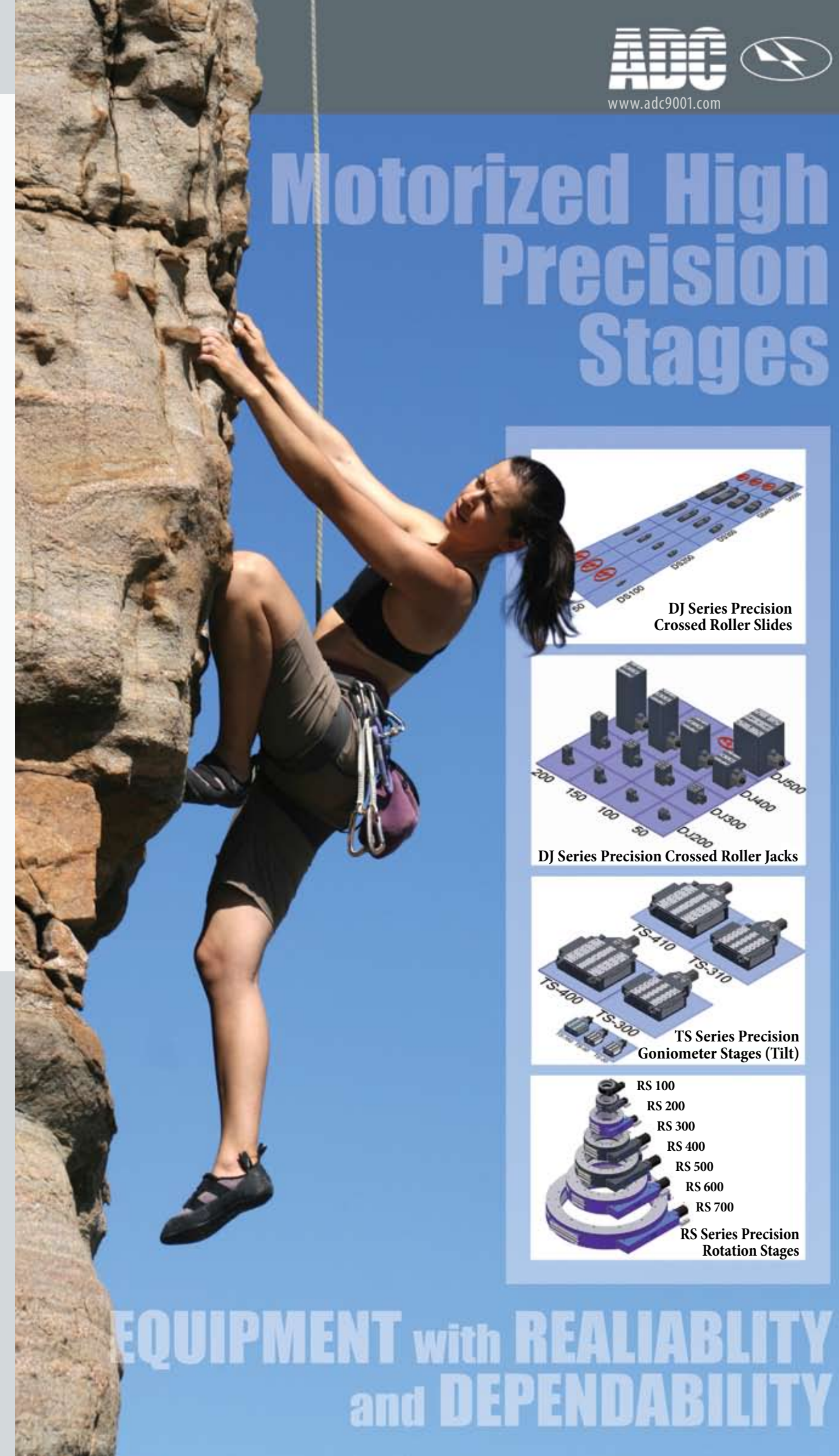


ADC USA, Inc. is a hands-on engineering company with over 15 years of experience. We custom design devices, integrated systems and a broad array of high-precision components and instruments for commercial, academic and government agencies worldwide. Our work covers mechanical design, control instrumentation, control software, manufacturing and assembly, and installation and training.

For more information on the above systems or any of our products contact us at:

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Motorized High Precision Stages



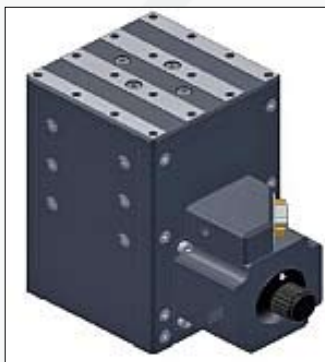
EQUIPMENT with REALIABILITY and DEPENDABILITY

Motorized High Precision Stages

ADC offers a family of high precision stages integrated by OEM motion systems and by leading semiconductor equipment manufacturers for wafer inspection, automations and robotics to motion systems used in astronomy research. These stages include; high-precision slides, vertical stages (Jacks), goniometer (Tilt), rotation, and actuators in different sizes and load capacity. Our stages are driven by high class preloaded ballscrew coupled to a high torque 200 step per revolution stepper motor which can be run in full, half, or microstepping mode to meet your resolution requirements. ADC's precision rotation stages are built upon an industry leading, preloaded, duplexed angular contact bearing set. These stages not only give an exceptionally high running accuracy, but allow for large radial and thrust loads as well. Each stage is driven by a precision ground worm gear set and a high resolution, high torque stepper motor. ADC also offers custom engineered motion systems that are designed and built for system level performance for your application.

- Sub - Micron precision
- Encoder option
- Ultra High Vacuum (UHV), High Vacuum (HV) and Rough Vacuum (RV) option
- Customized to Customer Specifications; travel, load bearing, etc.

For more information on ADC's motorized high precision stages visit our web site at http://www.adc9001.com/products/show_list/id/104



Precision Crossed Roller Jacks



Precision Goniometer Stages (Tilt)



Utility Jacks



Precision Crossed Roller Slides



Precision Rotation Stages



High Performance, Precision Motorized Actuator

Precision Crossed Roller Vertical Stages

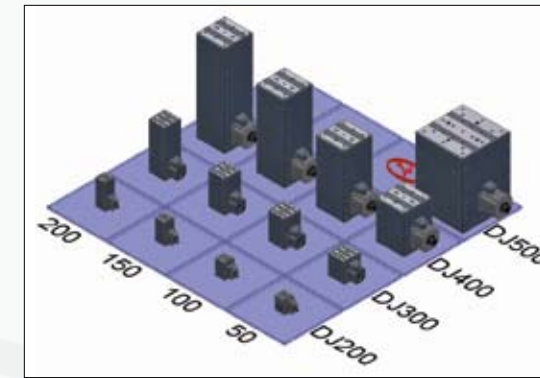
ADC's precision vertical stage features stepper motor actuation, crossed-roller bearings, ballscrew, black anodized aluminum structure, stainless steel hardware, and up and down limit switches. Crossed-roller bearings guarantee maximum rigidity and straightness of trajectory.

Features

- Optional linear or rotary encoder
- Adjustable limit switches
- Very stable
- Ultra High Vacuum (UHV), High Vacuum (HV), Rough Vacuum (RV), and Air option

Specifications

- Accuracy: ± 0.5 microns /25 mm
- Repeatability: Better than 0.5 micron
- Vertical Trajectory Straightness: ± 1 microns /25 mm



Series	Travel mm	Trajectory Straightness ($\mu\text{m}/25\text{mm}$)	Closed Loop Bidirectional Repeatability (μm)	Lead Accuracy ($\mu\text{m}/25\text{mm}$)	Static Load Capacity N (kgf)	Dynamic Load Capacity N (kgf)
DJ200	12 to 50	2.5	0.1	2.5	450 (45)	270 (27)
DJ300	50 to 200	5	0.1	3	900 (91)	450 (45)
DJ400	50 to 200	5	0.1	4	2100 (214)	1200 (122)
DJ500	50 to 300	6	0.1	5	3400 (346)	2000 (204)

High Load Capacity Utility Jacks

ADC's high precision utility jacks provide an accurate and rigid platform for use where high load requirements exist. The rugged black anodized aluminum housing features a precision ground base and top plate, each with multiple utility holes for easy integration into the users' system. The vertical stage is driven by a high class preloaded ballscrew coupled to a high torque 200 step per revolution stepper motor which can be run in full, half, or microstepping mode to meet your resolution requirements. Maximum rigidity is assured through the use of preloaded crossed roller linear bearings. Each jack also features two adjustable, normally closed limit switches at the end of travel.

Features

- Optional linear or rotary encoder
- Adjustable limit switches
- Very stable
- Ultra High Vacuum (UHV), High Vacuum (HV), Rough Vacuum (RV), and Air option

Specifications

- Accuracy: ± 0.5 microns /25 mm
- Repeatability: Better than 0.5 micron
- Vertical Trajectory Straightness: ± 1 microns /25 mm



Series	Travel mm	Trajectory Straightness ($\mu\text{m}/25\text{mm}$)	Closed Loop Bidirectional Repeatability (μm)	Lead Accuracy ($\mu\text{m}/25\text{mm}$)	Static Load Capacity N (kgf)	Dynamic Load Capacity N (kgf)
UJ100	100	10	0.1	8	7500 (764)	5000 (509)
UJ250	250	10	0.1	8	7500 (764)	5000 (509)
UJ1000	100	10	0.1	8	20000 (2039)	15000 (1529)
UJ2500	250	10	0.1	8	20000 (2039)	15000 (1529)

Precision Crossed Roller Slides

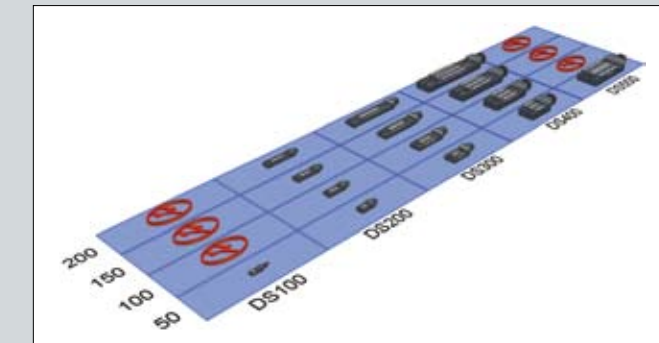
Our standard slide features stepper motor actuation, crossed roller bearings, ballscrew drive, black anodized aluminum structure, stainless steel hardware, and in and out limit switches. Ballscrews incorporate recirculating ball bearings in the nut assembly. This greatly reduces friction and wear resulting in improved efficiency of the drive assembly (30% for leadscrews vs. 90% for ballscrews) and a duty cycle rating of 100%. This increase in efficiency enables the ballscrew to deliver more thrust with less input torque and, since the load is applied to rolling elements instead of sliding elements, wear is greatly reduced. For more accurate positioning where closed-loop operation is required, the slide can be supplied with a linear encoder.

Features

- Optional linear or rotary encoder
- Adjustable limit switches
- Ultra High Vacuum (UHV), High Vacuum (HV), Rough Vacuum (RV), and Air option

Specifications

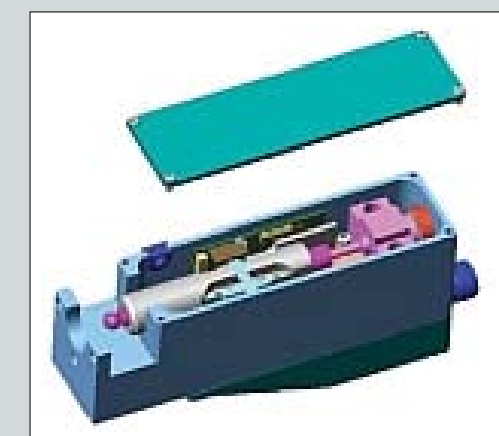
- Accuracy: ± 0.5 microns /25 mm
- Repeatability: Better than 0.5 micron
- Horizontal Trajectory Straightness: ± 1 microns/25 mm



Series	Travel mm	Trajectory Straightness ($\mu\text{m}/25\text{mm}$)	Closed Loop Bidirectional Repeatability (μm)	Lead Accuracy ($\mu\text{m}/25\text{mm}$)	Static Load Capacity N (kgf)	Dynamic Load Capacity N (kgf)
DS100	50 to 200	2	0.1	2.5	450 (45)	112 (11)
DS200	50 to 200	2.5	0.1	2.5	725 (73)	450 (45)
DS300	50 to 200	4	0.1	5	1200 (122)	850 (86)
DS400	50 to 200	5	0.1	6	3800 (387)	2250 (229)
DS500	50 to 200	5	0.1	6	11000 (1121)	8900 (907)

Ultra Precision Motorized Actuator

The PMA-100 high performance motorized linear actuator features a precision preloaded ballscrew, mounted concentric with the non-rotating output and perpendicular to the mounting surface of its rugged housing. This configuration makes it equally adept at push-only or push-pull type applications at significantly higher loads than competitive offerings. There are no reflected loads to the preloaded linear slide that provides guidance. Therefore, the accuracy potential of its microstepping motor and high precision linear encoder are met throughout its loading envelope. Optical switches indicate travel limits and zero position. A non-traversing tapered connection attaches to your shaft for pull-push mode, or a steel tooling ball is mounted for push-only mode. A manual knob allows sensitive touch-off zero confirmation in push mode applications.



Model Number: PMA-100