

Search

Service

- [>> Catalog Downloads](#)
- [>> Technotes](#)
- [>> Nanoinnovation Grant™](#)
- [>> PI Seminars](#)
- [>> Manuals / Software](#)

News

- [>> Download Nanopositioning Newsletter #37](#)
- [>> Ultra-High-Load Motorized Actuator](#)
- [>> Ultra-Compact Ultrasonic Drive, Piezo-Motor Stage](#)
- [>> PCI-Bus Piezo Nanopositioning Controller a World First](#)
- [>> Nanopositioning Z-Stage with Hybrid Piezo/DC-Motor Drive Features 2 Nanometer Linear Encoder](#)
- [>> Lever-Amplified Piezoelectric Nanopositioners Boast Precision Flexure Guides](#)
- [>> Semi Award for NEXLINE® Nano Drive](#)



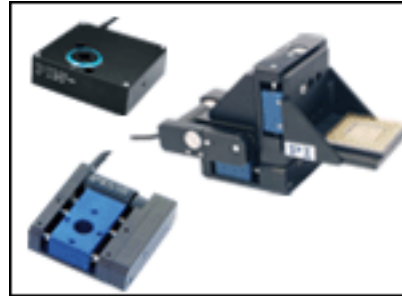
[Download](#) the Precision Miniature Linear Slides Catalog



[>> Get the hardbound, 500 page PI Catalog](#)

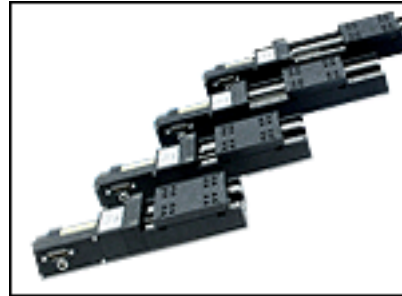
Linear Slides: Precision Piezo & Motorized Micropositioning and Nanopositioning Systems for Motion Control

Miniature Slides w/ Servo / Stepper Motors



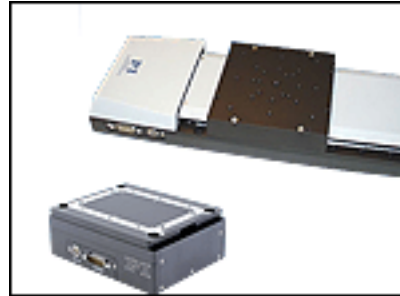
- Miniature Slides
- Lead-/Ball- Screw Drive
- Travel: to 25 mm or 360°

Linear Slides w/ Servo / Stepper Motors



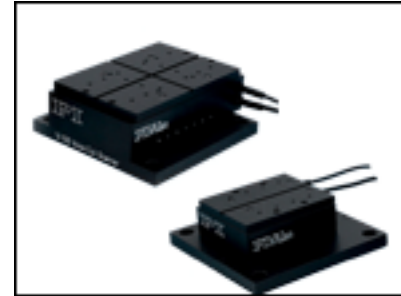
- Travel: to 306 mm (12")
- Forces to 200 N
- Resolution to 50 nm

Hybrid Ultra-Precision Linear Slide



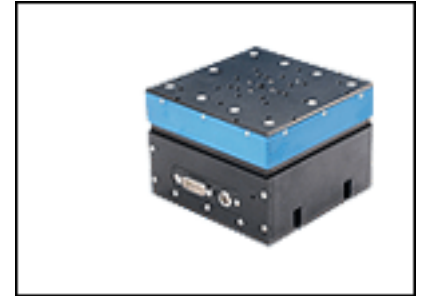
- Forces to 100 kN
- Sub-nm Resolution
- Fast Response

Voice Coil-Driven Linear Slide



- Scanning Freq: 10s of Hz
- Velocity to 270 mm/s
- Travel: 20 mm / 6 mm

Vertical Linear Slide



- Active Servo Motor
- High Speed
- Travel: 1/2" (12.5 mm)

Small PiezoMotor Linear Slides



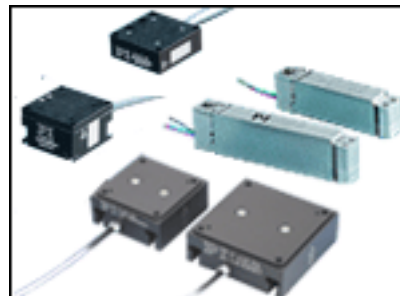
- Fast: to 800 mm/sec
- Acceleration to 20 g
- Self-Locking, Non-Magnetic, Vacuum Compatible

XY Piezo Motor Linear Slide



- 0.1 µm Resolution
- Travel: to 25 x 25 mm
- Low Profile, Compact Dimensions

Piezo Flexure Linear Nanopositioning Slides



- Sub-nm Precision
- Sub-Millisecond Response
- Fast Scanning

Linear Actuators



- Travel: 10 mm-50 mm
- Forces to 600 N
- Resolution to Sub-nm

Servo Controllers



- Servo/Stepper/ Piezomotor Options
- 1-18 Channel Options
- PC-Card, OEM / Rack-mount

PI makes the highest precision linear slides for micro & nanopositioning. In addition to classical motorized linear slides, PI also provides a vast selection of piezoelectric flexure slides for ultra precision motion control applications, and linear motor positioning slides for scientific and industrial applications.

Read More ...

- [>> Precision Miniature Linear Slide Catalog](#)
- [>> Hexapod 6-Axis Stage Brochure](#)
- [>> Experience / Custom Systems](#)
- [>> Reasons for Choosing PI](#)
- [>> Test and Quality Control](#)

Linear Slides



M-122 Fast Miniature Linear Slide with Integrated Optical Linear Encoder

- Travel Range 25 mm
- 0.1 µm Optical Linear Encoder for Highest Accuracy & Repeatability
- Min. Incremental Motion to 0.2 µm
- Max. Velocity 20 mm/s
- Cross-Roll Bearings
- Recirculating Ball Screw Drives Provide High Speeds & Long Lifetimes

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M-110 High-Resolution Micro-Linear Slides

- 0.05 Micron Minimum Incremental Motion
- 5, 15 and 25 mm Travel Ranges
- Velocity to 1.5 mm/sec.
- Closed - Loop DC Motors and Stepper Motors
- Integrated Hall - Effect Limit and Reference Switches

[>> Back to Top](#) [>> Parametric Search](#) [Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-110.2 - M-112.2 High-Resolution Micro-Linear Slides with Ballscrew Drive

- 5 to 25 mm Travel Ranges
- 5000 h MTBF
- Very Cost Effective
- 200 Nanometer Minimum Inc. Motion
- Hall - Effect Limit & Reference Switches
- Recirculating Ballscrew for Extended Lifetime

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P-652 PILine® Micro Piezomotor Linear Drive

- Cost-Effective, High-Volume-Production Drive
- Piezo Micro-Motor: 9.0 x 6.5 x 2.4 mm³
- Travel Range 3.2 mm
- Velocity to 80 mm/s
- Self-Locking

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M-661 - M-662 PILine® Miniature Linear Slides with Ultrasonic Piezo Linear Motors

- Smallest Linear Slide with High-Speed Linear Motor Drive
- 20 mm Travel Range
- Velocity to 500 mm/s
- Acceleration to 20 g
- Resolution to 50 Nanometer
- Self-Locking
- XY-Combinations Available
- 20000 h MTBF
- Vacuum Versions to 10⁻⁷ hPa

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M-663 PILine® Miniature Linear Slides with Closed-Loop Ultrasonic Piezo Linear Motors

- Smallest Linear Slide with Closed-Loop Linear Motor Drive and Linear Encoder
- 20 mm Travel Range
- Velocity up to 500 mm/s
- Accelerations up to 20 g
- Resolution to 0.1 Micron
- Integrated Direct-Metrology Linear Encoder
- AutoLock Feature
- XY Combinations Available
- 20,000 h MTBF
- Vacuum Versions Available

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M-664 PILine® Miniature Linear Slides with Closed-Loop Ultrasonic Piezo Linear Motors

- Travel Range 25 mm
- Max. Velocity 400 mm/s
- Ultra-Low Profile, 15 mm
- Direct Metrology Linear Encoder with 0.1 μm Resolution
- High Guiding Accuracy with Crossed Roller Bearings
- Compact XY Combinations
- Piezo Linear Motor with 6 N Drive Force
- Self Locking at Rest

[» Back to Top](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-665 PILine® Low-Profile Linear Slides with Closed-Loop Ultrasonic Piezo Linear Motors

- 50 mm Travel
- Low-Profile, only 26.5 mm
- Velocity to 400 mm/s
- Acceleration to 20 g
- 0.1 Micron Linear Encoder (Direct-Motion Metrology)
- AutoLock Feature
- XY Combinations Available
- 20,000 h MTBF
- Vacuum Versions to 10⁻⁸ hPa Available

[>> Back to Top](#)

[>> Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-682 Compact Closed-Loop Linear Slide with High-Force Piezo Linear Motor

- Integration of the Powerful PILine® RodDrive
- Low Profile, Compact Dimensions
- Max. Velocity 350 mm/s
- Up to 7 N Pushing Force
- Direct Metrology Linear Encoder, 0.1 µm Resolution
- Non-Magnetic and Vacuum-Compatible Versions Available

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M-686 Low-Profile XY Open-Frame Piezomotor Stage with Linear Encoders

- Integrated Closed-Loop Piezo Linear Motors Provide High Speed to 100 mm/s
- 25 x 25 mm Travel Ranges
- Integrated Linear Encoders with 0.1 µm Resolution
- Compact Design; 27 mm Profile Height, 150 x 150 mm Footprint
- Large Clear Aperture 78 x 78 mm, 66 x 66 mm in Extreme Position
- Self-Locking at Rest
- Compatible with PI Piezo Nanopositioning / Scanning stages

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M-311 – M-318 Miniature Linear Slide

- Extremely Compact
- All-Stainless-Steel Construction
- X, XY and XYZ Versions
- Optional PiezoMike for Nanometer Resolution
- 4 mm Clear Aperture
- Linear Ball Bearings

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M-011 Ultra-High-Precision, Side-Drive Stage with Magnetic-Kinematic Bearings

- Travel Range to 15 mm
- Compact Side Drive
- Straightness/Flatness ≤ 0.2 Micron
- PZT Drive for Scanning and Tracking Applications
- 0.1 Micron Resolution with Closed-Loop DC Motor
- 5 Nanometer Resolution with Closed-Loop PZT Drive

[>> Back to Top](#)

[>> Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-014 Ultra-High-Precision, Side-Drive Stage with Magnetic-Kinematic Bearings

- Travel Range 25 mm
- Compact Side Drive
- Straightness/Flatness ≤ 0.3 Micron
- PZT Drive for Scanning and Tracking Applications
- 0.1 Micron Resolution with Closed-Loop DC Motor
- 5 Nanometer Resolution with Closed-Loop PZT Drive
- 30 mm \varnothing Clear Aperture

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M-126 Translation Stage with Crossed Roller Bearings

- To 25 mm Travel Range
- Manual, DC-Servo and Stepper-Motor Drives
- ActiveDrive™ Option
- Compatible with Leading Industrial Motion Controllers
- Crossed Roller Bearings
- < 0.1 Micron Resolution
- XY and XYZ Combinations
- Direction-Sensing Origin Switch
- Non-Contact Limit Switches

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M-403, M-404, M-413, M-414 High-Resolution Linear Slide with Stepper and DC Motor Drives

- Cost-Effective Design
- Modular System with 4 Series: M-403, M-404, M-413, M-414
- Preloaded Leadscrews or Recirculating Ball Screws
- Travel Ranges from 25 to 300 mm
- Stress-Relieved Aluminum Base 80 and 120 mm Width
- Minimum Incremental Motion to 0.1 Micron
- Resolution to 0.017 Micron

[>> Back to Top](#)

[>> Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-400 Series High-Precision Linear Slides with Crossed Roller Bearings

- Travel Ranges to 150 mm
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Crossed Roller Bearings
- Manual, DC-Servo and Stepper-Motor Drives, ActiveDrive™ Option
- Compatible with Leading Industrial Motion Controllers
- Manual Knob for Convenient Position Adjustment
- Non-Contact Direction-Sensing Origin Switch
- Non-Contact Limit Switches

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M-605 Ultra-Compact, High-Accuracy Linear Slide

- Integrated Linear-Scale Encoders for Highest Accuracy
- Travel Ranges 25 mm (1") and 50 mm (2")
- Velocity up to 50 mm/sec.
- Active Drive™ Motors
- Compatible with Leading Industrial Motion Controllers
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Zero-Backlash Recirculating Ballscrews
- Non-Contact, Direction-Sensing Origin Switch
- Non-Contact Limit Switches
- Load Capacity 20 kg
- $> 20,000$ Hours MTBF

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M-505 Low-Profile Linear Slides with Ballscrew Drives

- Travel Ranges to 150 mm (6 inches)
- Velocity up to 50 mm/sec.
- ActiveDrive™ Motors
- Compatible with Leading Industrial Motion Controllers
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Zero-Backlash Recirculating Ballscrews
- Non-Contact Direction-Sensing Origin Switch
- Non-Contact Limit Switches
- Load Capacity 100 kg
- > 20,000 Hours MTBF

[>> Back to Top](#)

[>> Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-511 · M-521 · M-531 Low-Profile, High-Load Linear Slides with Ballscrew Drives

- Travel Ranges to 306 mm (12")
- Velocity up to 125 mm/sec.
- ActiveDrive™ Motors
- Compatible with Leading Industrial Motion Controllers
- Linear-Scale Encoders for Highest Accuracy
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Zero-Backlash Recirculating Ballscrews
- Non-Contacting Origin and Limit Switches
- PIIntelliStage™ Version with Integrated Controller
- Load Capacity 100 kg
- >20000 Hours MTBF

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M-511.HD Long-Travel, High-Speed Nanopositioning Systems

- Hybrid System Combines Advantages of Piezoelectrics and Electromagnetic Drives
- 4 Nanometer Linear Encoder Resolution
- 100 mm Travel
- Velocities to 125 mm/sec
- Active Compensation of Stick/Slip During Startup and Settling
- Active Backlash Compensation
- Excellent Velocity Control
- Millisecond Settling to Nanometer Accuracy
- Reliable Execution of Minimal Increments
- High Drive and Holding Forces with Minimal Power

[>> Back to Top](#)

[>> Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)

Voice Coil Scanning Stage



V-106 Long-Travel, High-Dynamics Scanning System with Voice Coil Drives

- Fast Scanning and Positioning
- Scanning Frequency 10s of Hz
- Travel Ranges of 20 mm and 6 mm
- Velocity up to 270 mm/s
- 0.1 Micron Linear Encoder
- Available PCI-Card Controller with On-Board Amplifiers

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)

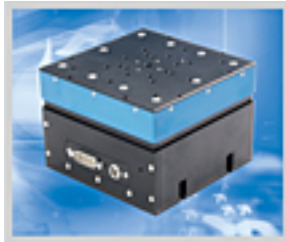
Vertical Translation Stages



P-620.Z · P-621.Z · P-622.Z PIHera® Piezo-Z Nanopositioning Stages with Direct Metrology

- Z-Axis Travel to 400 Micron
- Low Profile
- Resolution <1 Nanometer
- Frictionless Precision Flexure Guiding System
- PICMA® High-Performance Multilayer Piezo Drives
- Direct Metrology with Capacitive Sensors for Highest Precision
- 0.02% Position Accuracy
- X, XY, Z, XYZ Versions
- Vacuum-Compatible Versions

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-501 Vertical Micropositioning Stage

- Travel Range 12.5 mm (1/2")
- Ultra-High-Resolution Encoder
- ActiveDrive™ Motor
- Compatible with Leading Industrial Motion Controllers
- Stress-Relieved Aluminum Stage Base for Highest Stability
- Zero-Backlash Recirculating Ballscrews
- Non-Contact Origin and Limit Switches
- >20,000 Hours MTBF

[➤ Back to Top](#)

[➤ Parametric Search](#)

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)



M-451 High-Load Vertical Micropositioning Stage

- 3 Nanometer Design Resolution
- 12 kg Load Capacity, High Stiffness
- <100 Nanometer Minimum Incremental Motion
- 12.5 mm (1/2") Travel Range
- ActiveDrive™ Motor
- Compatible with Leading Industrial Motion Controllers
- Non-Contact Origin and Limit Switches
- Mounting Platform for P-500 and PIMars™ Piezo- Nanopositioning Systems
- Self Locking

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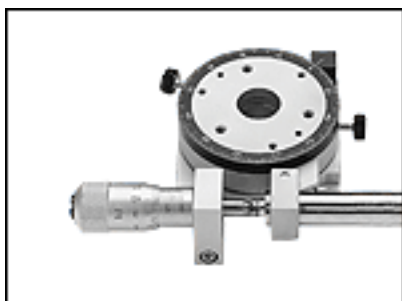


M-714 Hybrid Piezo/DC-Motor Nanopositioning Z-Stage

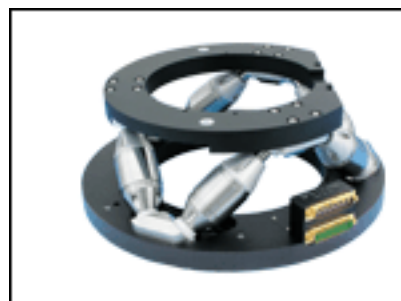
- Hybrid System Combines Advantages of Piezoelectrics and Electromagnetic Drives
- 2 Nanometer Linear Encoder Resolution
- High Holding Forces with Minimum Power Consumption, without Counterbalancing the Load
- Active Compensation of Stick/Slip During Startup and Settling
- Active Backlash Compensation
- Excellent Velocity Control
- Millisecond Settling to Nanometer Accuracy
- Reliable Execution of Minimal Increments

[Product Description](#) | [Specs / Drawings](#) | [Ordering Info](#) | [PDF](#)

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[Hexapod](#)



[Flexure PiezoStages](#)



[Nanopositioning
Controllers](#)



[Nanofocusing Scanning
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