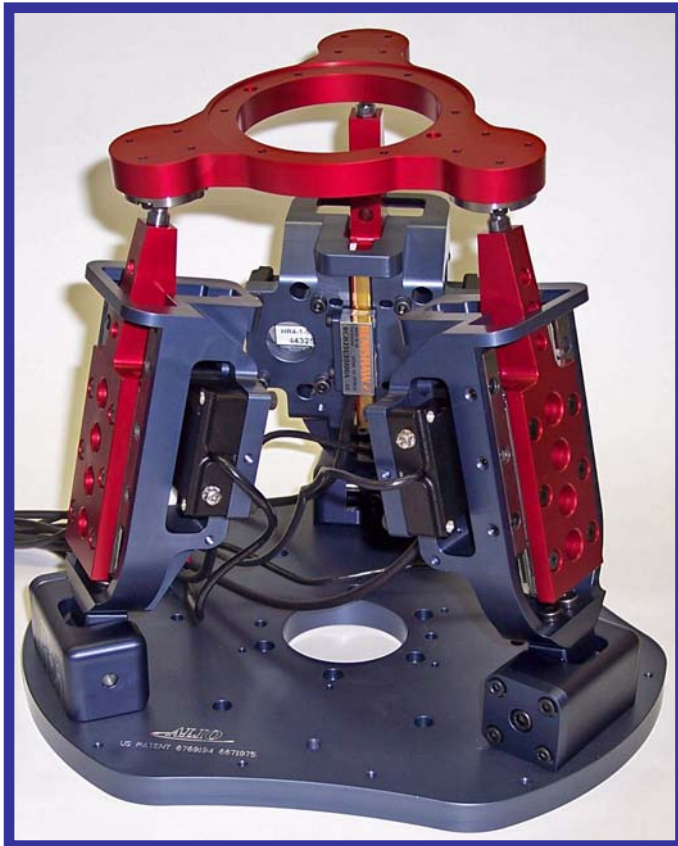


Nano-Precision Motions Systems

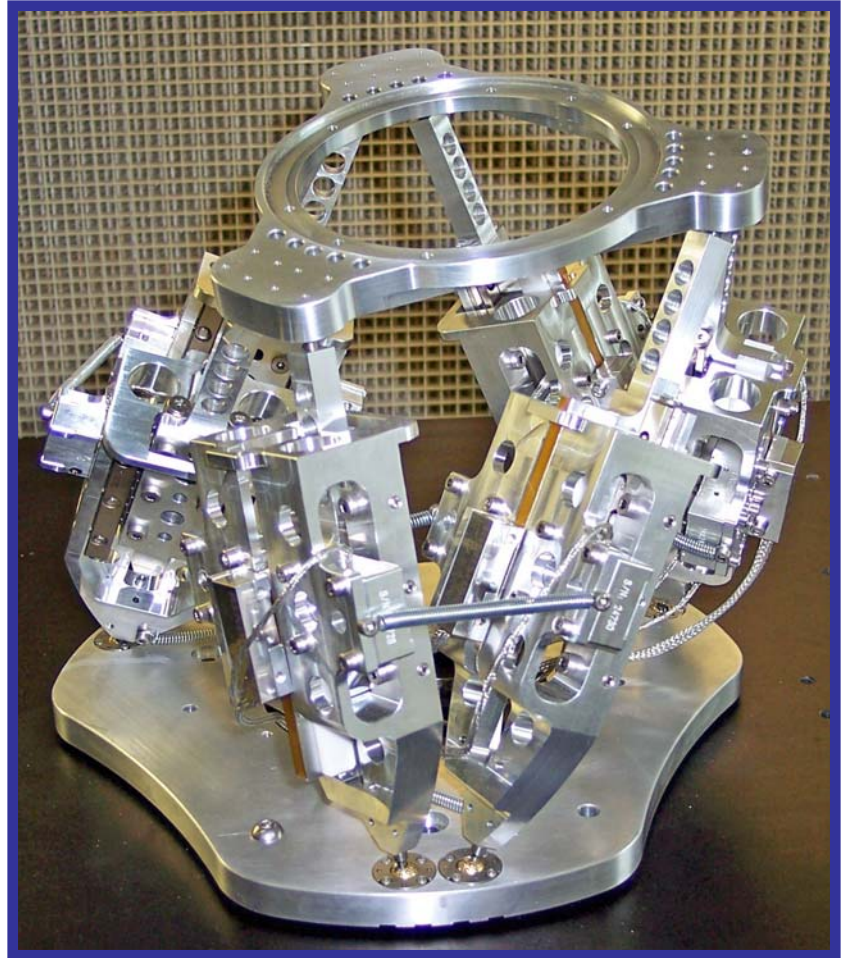
In 2001 ALIO Industries was founded with the focus on building nano-precision motion systems without limits of design, manufacturing or legacy products. ALIO's initial systems were novel patented 6 DOF Hexapods which have evolved into over 200 standard serial and parallel kinematic products as well as many custom designs for our valued customers.

ALIO Parallel Kinematic Advantage:

- 3 or 6 DOF parallel kinematic motion
- Nanometer repeatability
- 1 nanometer step size capable
- No Servo Dither
- No Hysteresis
- No Backlash
- Forward and Inverse Equations
- Tool Center Point Programming
- 5 nm encoder resolution
- Up to 20 kg payloads
- Over 36 Parallel Kinematic Products



AI-TRI-HR4



AI-HEX-HR2-HV High Vacuum (10^{-7} TORR)



NIST Traceable Laser
Calibrated Performance

ALIO's passion has built a reputation for unmatched quality and performance with our nano-precision motion systems. ALIO's world leading performance is backed by our NIST referenced ML10 laser interferometer system from Renishaw. ALIO has been delivering "nano" performance for six years unlike others who are just starting to talk about "nano".

Nano-Precision Planar Air Bearing Systems



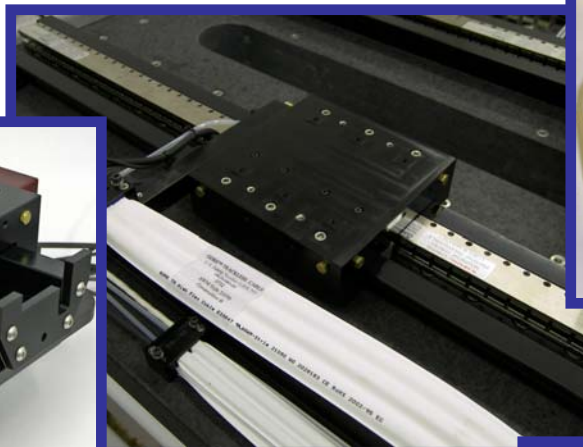
XY Planar Air Bearing with Rotary



Open Center XY Planar Air Bearing

Planar Air Bearing Advantages:

- Planar Air Bearing for Superior Flatness
- High Force Linear Motors or Ceramic Servo Motor
- Decoupled Thermal Influences
- Travel Options up to 3 Meters
- Sub Micron Accuracy
- Sub Arc Second Pitch/Yaw/Roll
- Willing to Customize for OEM Applications
- Resolution: 5nm Standard
- 38 picometer with Laser Interferometer
- XY Planar Systems from 200 mm to 3 meters travel



Linear DC Servo Dovetail



Stacked Dovetail



Air Bearing Spindle



Linear + Rotary Assembly

ALIO Air Bearing Advantages:

- Custom OEM Designs
- Nano-Precision Specifications
- Travel ranges from 50 mm to 3 meters

“ALIO is delivering nano while others are just talking about it.”
- Planar Air Bearing Customer

Nano-Precision Vacuum Motion Systems

Standard Products for HV (10^{-7} TORR) or UHV (10^{-10} TORR)
Extremely Low Outgassing



AI-HEX-HR2-HV

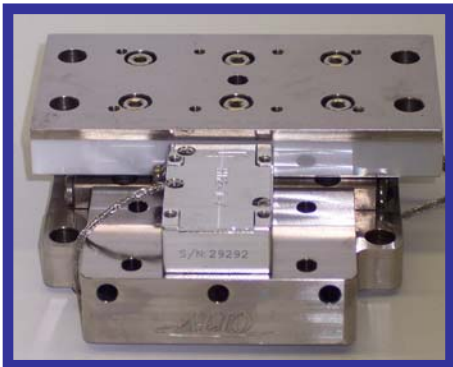


AI-HR4-15000E-150-XY-HV

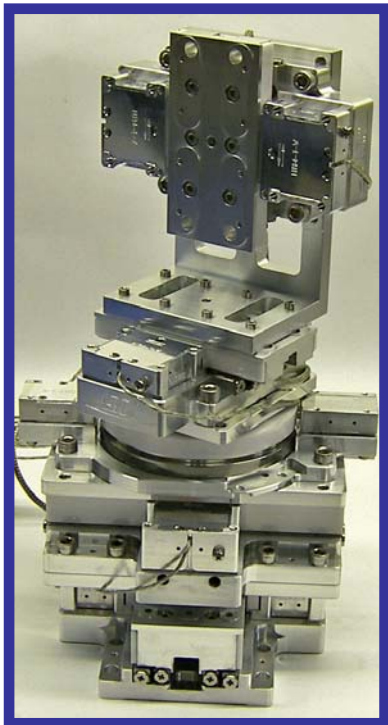
Synchrotron Applications



AI-HEX-HR2-SS-HV



AI-HR2-5000E-HV



6-Axis HV System



AI-40R-D-HV

Semiconductor Applications

E-Beam Applications

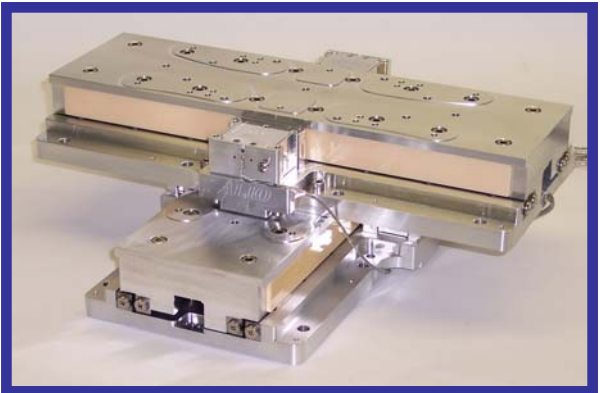


Vacuum Connectors



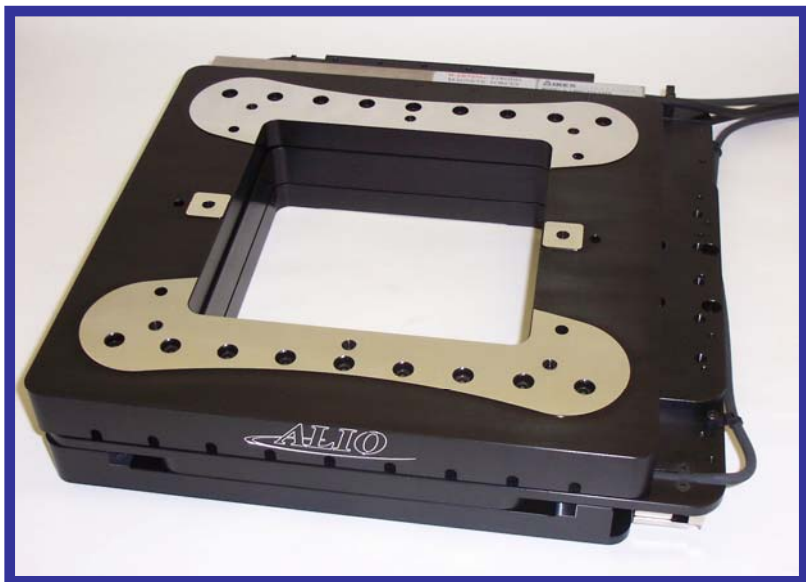
Miniature HV Goni Stack

World Renown
Vacuum Systems
Expertise



AI-D8-20000E-HV XY Stack

Nano-Precision Linear and Rotary Systems



Nano-Precision Microscope Stages



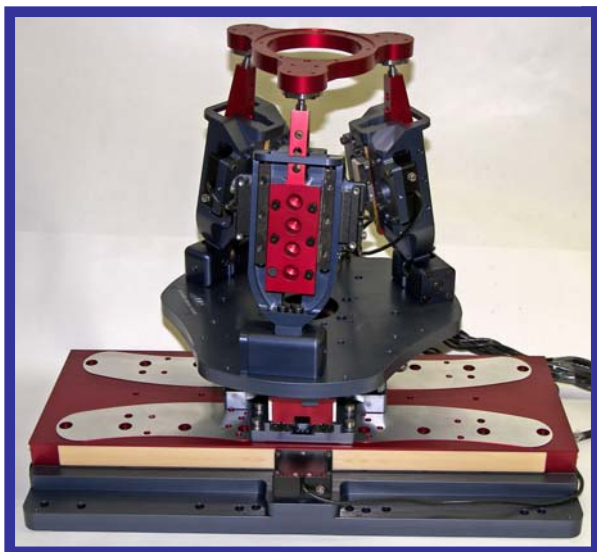
- Ceramic or Ironless Core Servo Motors
- **Non Contact Linear Optical Encoders**
- Ultra High Precision Crossed Roller Bearings
- **Near Air Bearing Flatness and Straightness!**
- Engineered for Nano-Precision Motion Applications
- **Custom OEM Stages**
- Aluminum or Stainless Steel Structures Standard



AI-80R-D Precision Rotary



Nano-Precision Linear Motor Stages



5 Axis Motion System



AI-HR4-10000E Stack

**Interferometer
Calibration Available**

