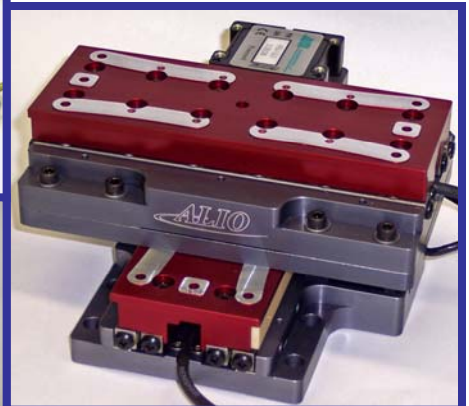
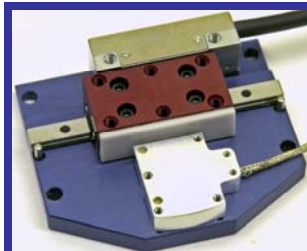


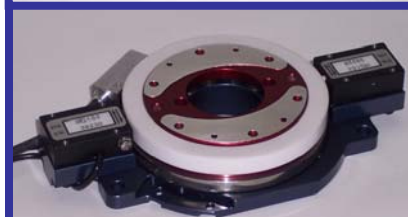
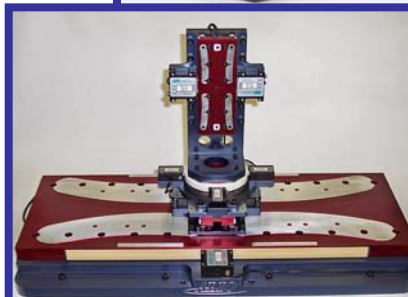
Precision Motion Systems

The ALIO Advantage:

- 1 to 6 DOF Serial Kinematic Motion
- Patented 6 Axis Parallel Kinematic Hexapod Robotic System
- FOCUS on Nano-Precision Motion Platforms
- Interest in Customizing for OEM Applications
- PROVEN Track Record on Nano-Precision Systems
- Large Standard Product Line of Nano-Precision Motion Systems
- UHV Vacuum Compatible

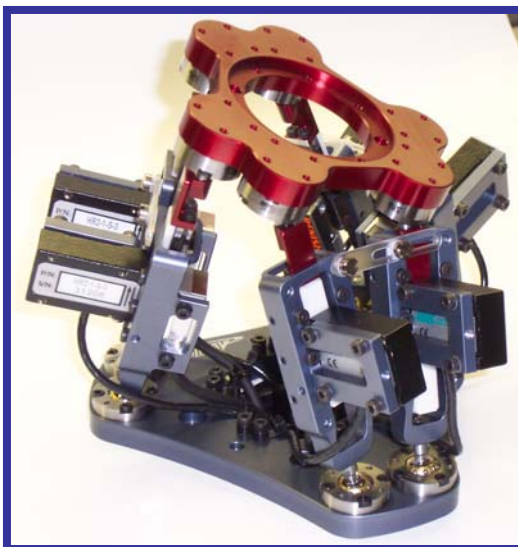


Goniometric Stages

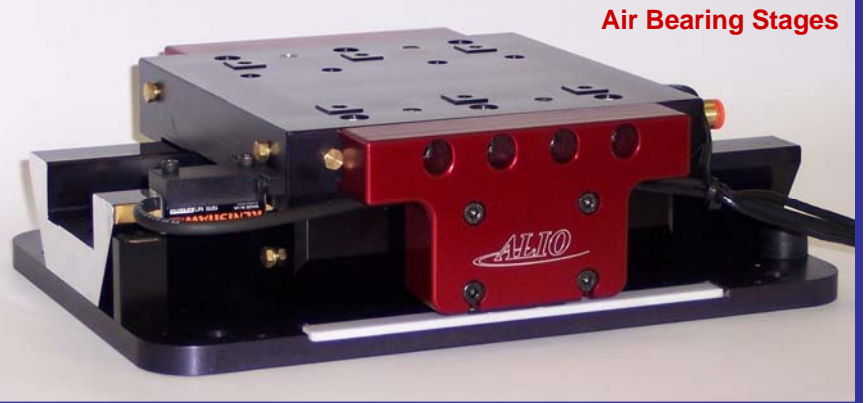


Air Bearing Stages

H
E
X
A
P
O
D
S



AI-HEX-HR2-SS



- Fiber & Waveguide Alignment
- Microscopy
- Micro/Nano Assembly
- Micro/Nano Laser Machining
- Microlithography
- UHV Vacuum Systems
- Semiconductor
- Flat Panel Display
- MEMS Assembly
- Laser Beam Steering
- Medical Applications
- Inspection/Metrology
- Military/Government
- Micro-fabrication and more...

The **advantage** of ALIO Industries' linear, rotary, goniometric and parallel kinematic stages is their dither-free, hysteresis-free, backlash-free precision nano resolution motion. The superior smooth motion of ALIO's stages will not cause servo oscillation feedback through precise motion systems during positioning like traditional DC servo or linear motors can. ALIO's low profile, high resonance frequency stages also offer quick settling times to help reduce cycle times. These added benefits lead to improved motion profiles for our customers' complex needs.

Parallel Kinematic Robotic Stages



The ALIO Advantage offers the ultimate solution for 6 DOF motion with our Parallel Kinematic nano-resolution hexapods.

Part Number	AI-HEX-HR2-SS	AI-HEX-HR2	AI-HEX-HR4-SS	AI-HEX-HR4	AI-HEX-HR8-SS	AI-HEX-HR8
Stroke (X,Y,Z)	15mm cube	28mm cube	28mm cube	28mm cube	35mm cube	60mm cube
Theta (X,Y,Z)	+/- 20 deg	+/- 18 deg	+/- 20 deg	+/- 18 deg	+/- 20 deg	+/- 20 deg
Stroke Z	25mm	50mm	48mm	55mm	60mm	105mm
Force, std	48 N	96 N	96 N	192 N	192 N	384 N
Speed	200mm/sec	200mm/sec	200mm/sec	200mm/sec	200mm/sec	200mm/sec
Resolution	5nm / leg	5nm / leg	5nm / leg	5nm / leg	5nm / leg	5nm / leg
Repeatability	below 50nm	below 50nm	below 50nm	below 50nm	below 50nm	below 50nm
Stage Base	Ø165mm	Ø295mm	Ø265mm	Ø330mm	Ø295mm	Ø475mm
Stage Height (mid stroke)	129mm	210mm	204mm	217mm	220mm	393mm

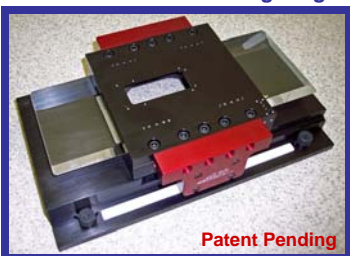
Please consult the factory for application specific loading requirements.

Serial Kinematic Robotic Stages

Stage	1200E	2500E	5000E	GONI-064	GONI-090	GONI-116	40R	80R
Type	Linear	Linear	Linear	Goniometric	Goniometric	Goniometric	Rotary	Rotary
Stroke	12mm	25mm	50mm	+/- 5 deg 64mm Radius	+/- 5 deg 90mm Radius	+/- 5 deg 116mm Radius	360 deg	360 deg
Motors	1 or 2	1 or 2	1 or 2	1	1	1	1 or 2	1, 2 or 4
Force	up to 8 N	up to 64 N	up to 64 N	8 N	8 N	8 N	up to 0.3 N-m	up to 1 N-m
Speed	250mm/s	250mm/s	250mm/s	180 deg/s	130 deg/s	110 deg/s	360°/sec	280°/sec
Resolution	from 5nm	from 5nm	from 5nm	0.02 arc-sec	0.02 arc-sec	0.02 arc-sec	0.03 arc-sec	0.02 arc-sec
Repeatability	±5nm	±5nm	±5nm	+/-0.02 arc-sec	+/-0.02 arc-sec	+/-0.02 arc-sec	±.03 arc-sec	±0.02 arc-sec
Step Size	from 1nm	from 1nm	from 1nm	0.02 arc-sec	0.02 arc-sec	0.02 arc-sec	0.03 arc-sec	0.02 arc-sec
Stage Width	90mm	114mm	114mm	136mm	136mm	136mm	142mm	182mm
Stage Length	65mm	88mm	100mm	114mm	114mm	114mm	88mm	182mm
Stage Height	25mm	32.5mm	34mm	38mm	38mm	38mm	35mm	30mm
Manual w/ Encoder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Automated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



Custom Glass Air Bearing Stages



Patent Pending

Scaling new heights in photonics



Larger Stages and Longer Travels Available

- Linear Travels: 12mm to 400mm with CR Bearings
50mm to over 2 meters with Dovetail Air Bearings
- Forces: 1.3 N to 64N Standard, 128 N Capable.
- Higher forces and speeds available with linear motors.
- Please consult the factory for application specific loads.
- Speeds: 10 nm/sec to >1,000 mm/sec



Made in the U.S.A.

07/07/06

Custom Products - Dual 80R Gimbal

