

PHYSIK INSTRUMENTE

PI / PI USA  
Capabilities

PI

PI

Pushing Boundaries – Together

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Privately Owned  
 Founded in 1970

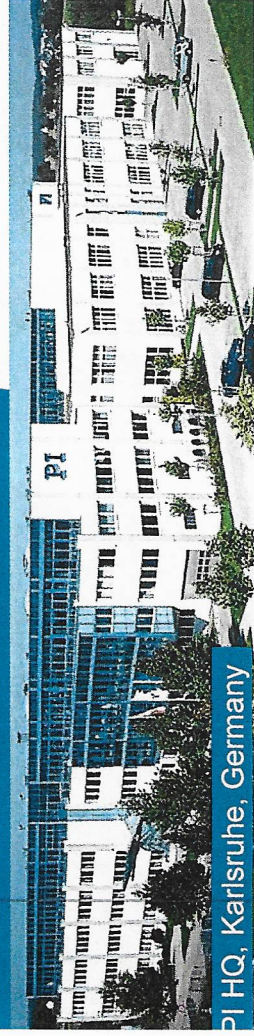
- 1500 Employees in 2022
- \$250M Global Sales
- Design & Manufacturing Centers in Europe, USA, Asia
- Global HQ: Karlsruhe, Germany
- 15 Subsidiaries
- US HQ: Auburn, MA
- 5 Facilities in the USA

PI at a glance

PI

The PI Group  
 Globally Well Positioned for Optimal Customer Service

Americas	Europe	Germany	Israel	Asia
Auburn, MA	PI UK	PI Karlsruhe	ACS ACTION CONTROL	PI Japan
Hopkinton, MA	PI France	PI Ceramic		PI Shanghai
Nashua, NH	PI Italy	PI miCos		PI Singapore
Irvine, CA	miCos Iberia			PI Taiwan
Fremont, CA	PI Benelux			PI Korea
				P-G-W



PI HQ, Karlsruhe, Germany

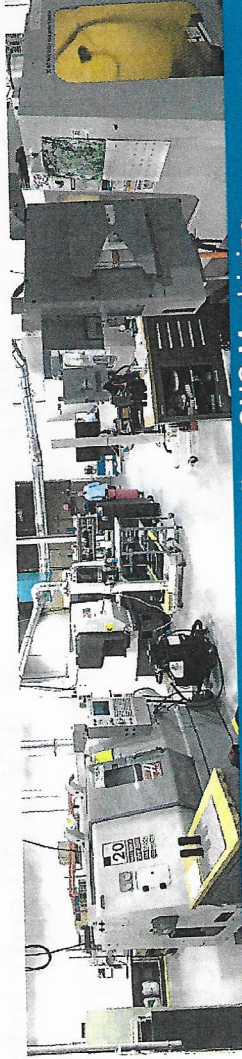
## Our Locations



Freemont: Tech Center & Apps Lab



Irvine: Sales & Support Office



Nashua: Precision Grinding, CNC Machining



Hopkinton: Engineering, Test, Assembly: Piezo, Air Bearings, Motion Systems



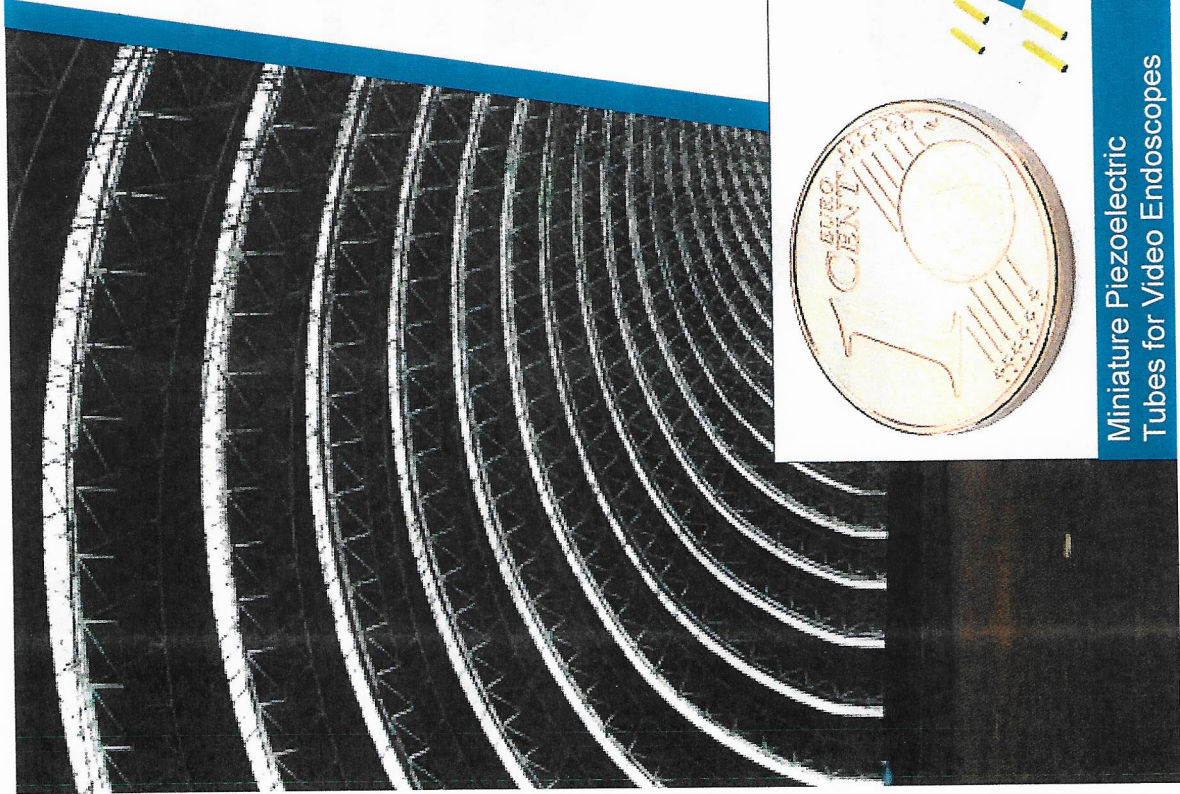
Auburn (HQ): Admin, Sales, Service, Marketing



# PI

## 2023 Expansion / Marlborough, MA

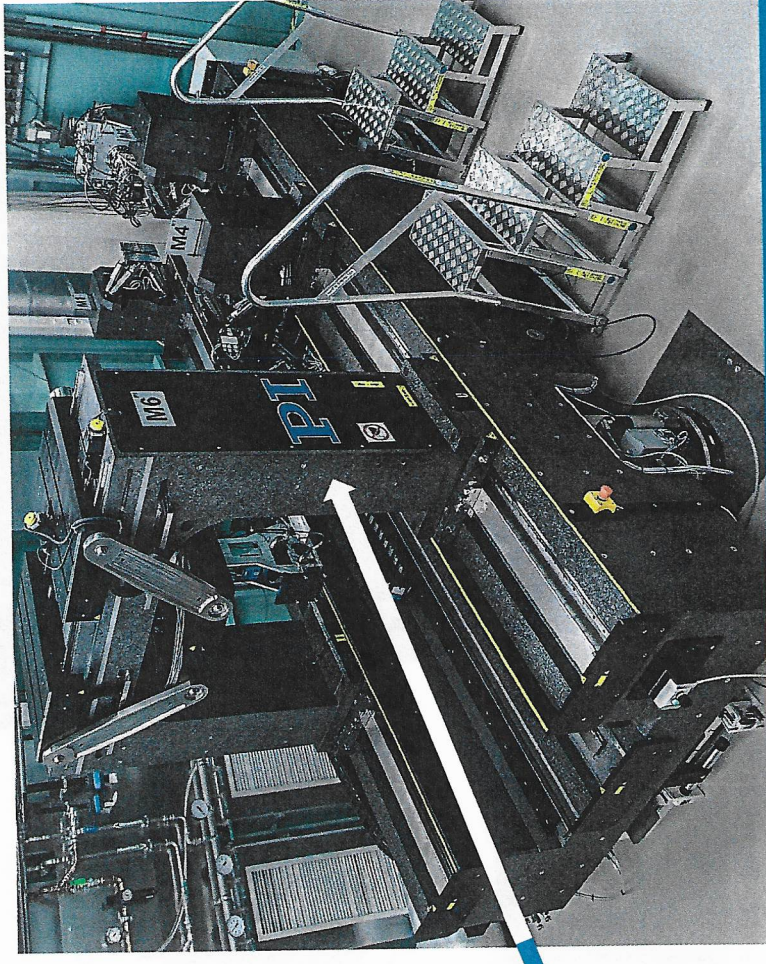
- 100,000 sqft total
- 55,000 sqft Production
- 300% Production Increase
- Also Doubling our Machining and Grinding Capacity at our Nashua, NH Facility



Miniature Piezoelectric Tubes for Video Endoscopes

# PI

Huge Spectrum of Technologies and Capabilities  
Miniature Piezoelectric Components to Granite Based Motion Systems



20 Ton, 56 Axis Precision Motion System for Beamline Instrumentation

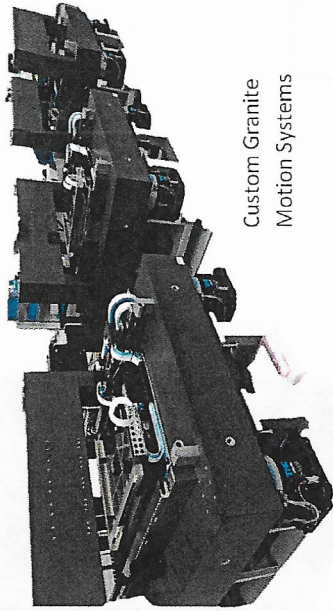


**PI**

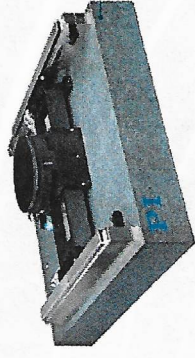
## Air Bearing Technology

### From Passive Bearings to Complex Multi-Axis Motion Systems

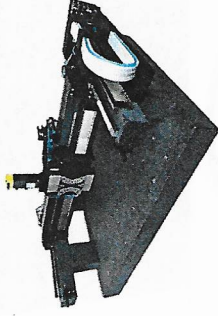
- Linear, Rotary, Multi-Axis, Stages, Gantries
- 300 man-years of in-house air bearing experience
- Motorized and non-motorized systems



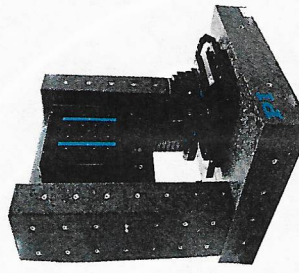
Custom Granite Motion Systems



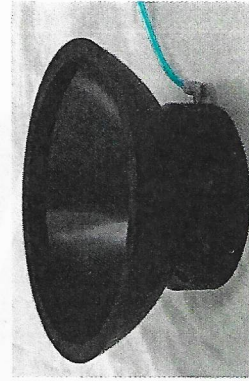
XY / Rotary Air Bearing Stage



Hybrid 3-Axis Gantry System



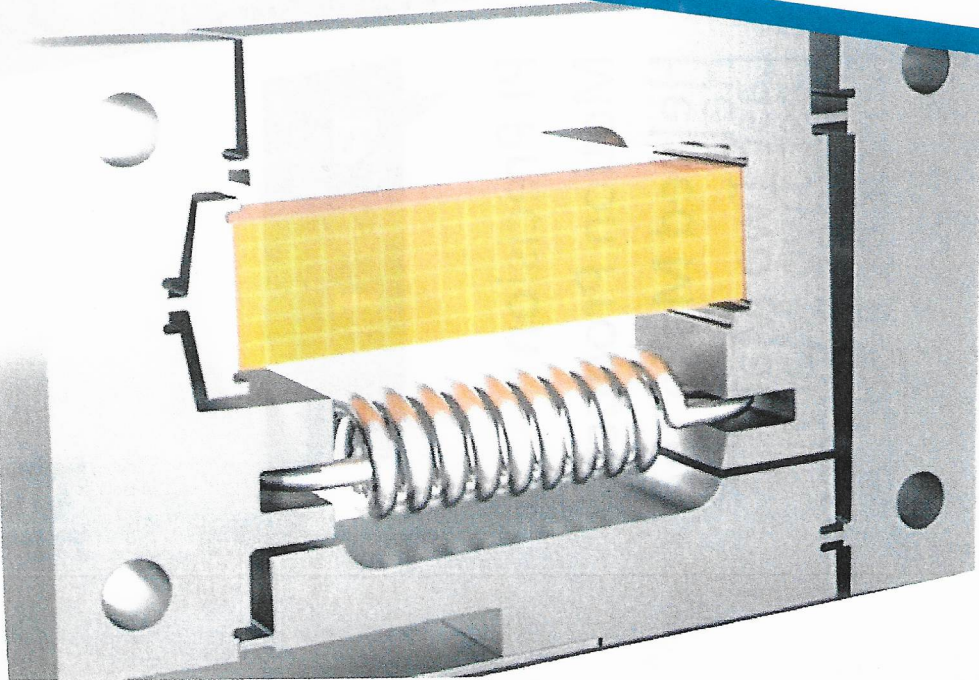
Multi-Axis Systems for Laser Micro-Machining



Spherical Air Bearing – 3-DOF



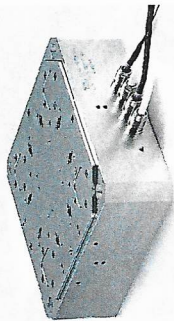
Low profile motorized rotary air bearing



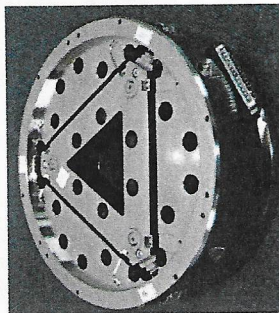
# PI

## Piezo / Nano-Positioning Systems / Flexure Actuators High Dynamics – kHz/Sub-msec Response – and Sub-nm Resolution

- Friction-free, wear-free flexure guides
- Mars-Rover tested PICMA® piezo actuators
- Capacitive and PRS nano-measuring sensors
- Advanced control electronics, algorithms and software



Positioning systems with motion in up to 6 degrees of freedom



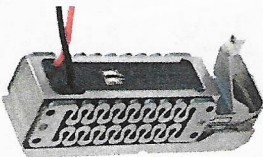
Large Piezo Image Stabilization Sy: for Astronomy



Linear Stages for Interferometry



Miniature XY Flexure Scanning Stage



Amplified piezo actuators



Fast nano-focus for microscopy / metrology

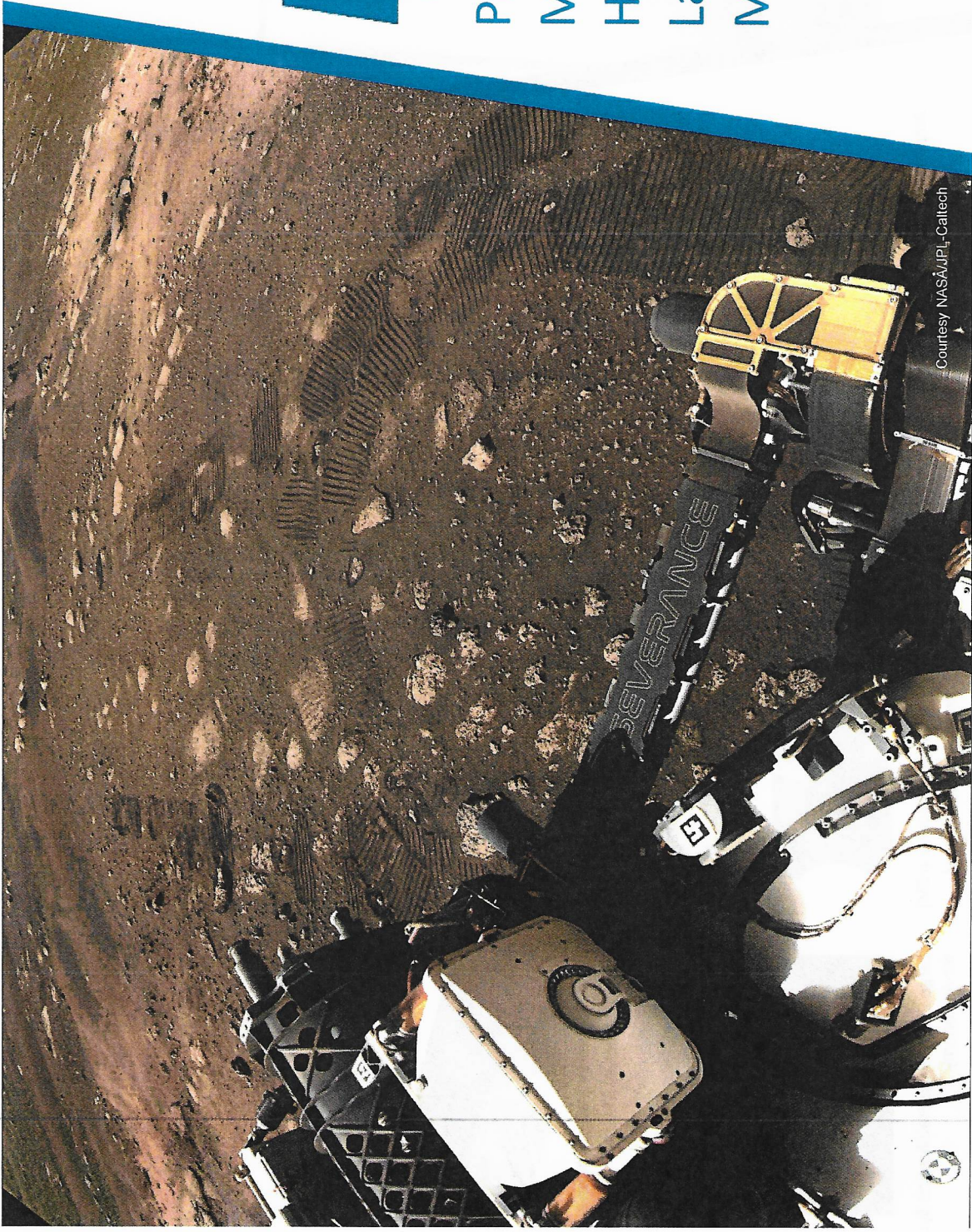


Fast Steering Mirror (FSM) for laser beam control

# PI

IT'S  
**POSSIBLE**

PI Precision  
Motion Products  
Helped Make the  
Last Two Mars  
Missions a Success



Courtesy NASA/JPL-Caltech