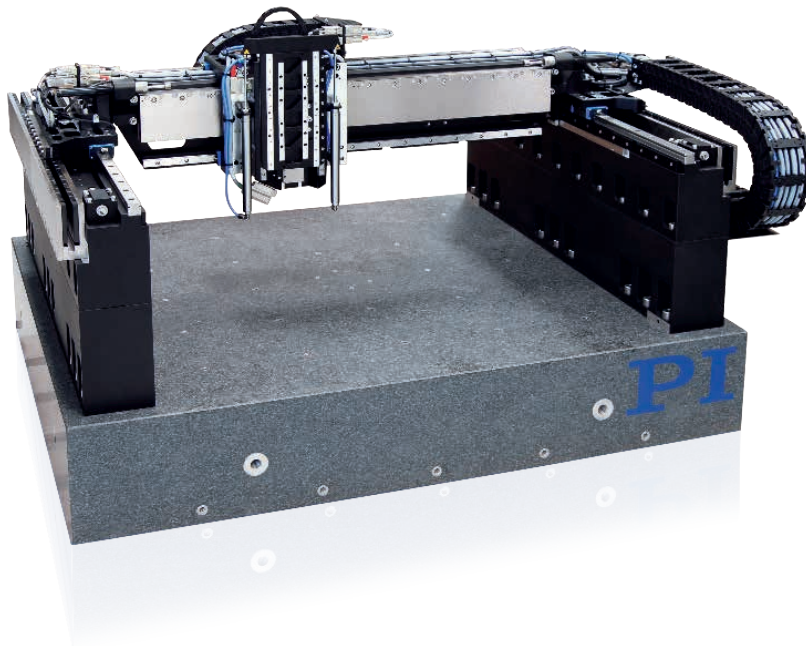


Engineered Precision Motion Systems



Gantry Solutions

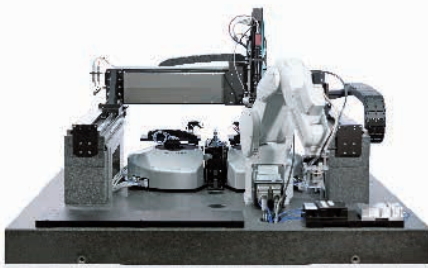
LASER MATERIAL PROCESSING, WAFER INSPECTION AND ELECTRONICS ASSEMBLY

Engineered Motion & Positioning Solutions



Precision components, stable control and a great deal of experience in engineering are essential for high-precision complex motion and positioning solutions. PI is a supplier of technologically sophisticated drive components and high-precision positioners and also offers all levels of integration up to the turnkey solution.

Engineering services have been a part of PI's core business for many years. Complete solutions, fitting seamlessly into existing processes, advance automation in major research installations as well as manufacturing and inspection processes for chip production or photonics packaging.



Complex multi-axis designs and fully integrated systems are available, like this assembly system for photonics packaging

Core Competences

- Application support and consulting for motion and positioning applications
- Reliable and prompt series production even for large quantities
- Economic design
- Commissioning of turnkey solutions
- Complex multi-axis designs and parallel kinematic robotics
- Broad spectrum of technologies: Drive, guide, and sensor technologies
- In-house motion control electronics and software platform
- Customized software integration such as Epics, LabVIEW, Tango, ...

Throughput, Precision and Reliability

Solutions for Motion-Centric Industrial Automation



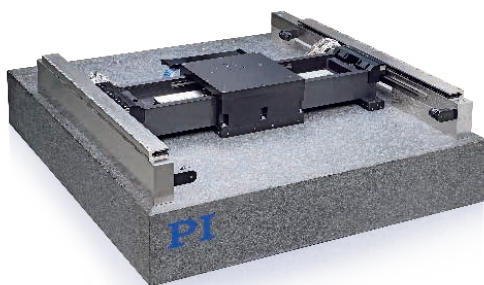
XY and Portal Systems from PI

Positioning and motion tasks in industrial automation such as those in assembly, semiconductor manufacturing, mechanical engineering, laser material processing, inspection systems or in additive manufacturing demand solutions that need to be robust and reliable.

PI offers a broad range of in-house drive and motion control technologies such as EtherCAT-based industrial controllers by ACS, where PI holds the major shares, or air bearing technology for optimized guiding accuracy. System engineering for customization and a global service and training network are added-value offers. PI is therefore the ideal partner for motion-centric industrial solutions.

Smarter Motion & Positioning

ACS is a worldwide leading developer and manufacturer of modular motion controllers for multi-axis drive systems. The partnership with ACS has put PI into a position to supply customized complete systems for industrial applications with the highest demands on precision and dynamics and also to add its extensive experience in high-end projects for industrial applications intended to combine precision, productivity, and reliability all over the world.



A-322 Piglide XY stage with ironless linear motors and air bearing technology

Air bearing technology provides

- Frictionless high-precision positioning
- Excellent velocity stability
- Excellent guiding accuracy up to 5 μ rad/100 mm
- Optional active yaw control for gantries
- Direct drive linear & torque motors for smooth, high speed scanning

Experience with matters for OEMs. PI is building on over 200 man-years of in-house air bearing experience and offers comprehensive precision air bearing motion control and positioning products and systems.

Stitching-Free Wide-Field Laser Scanning

High Accuracy and Ultimate Throughput

Together with SCANLAB and ACS, PI offers a motion control solution for laser material processing, which combines the laser beam scanner and sample scanner, provides the ability to mark and process large pieces with very high precision and an ultimate throughput.

Key Advantages

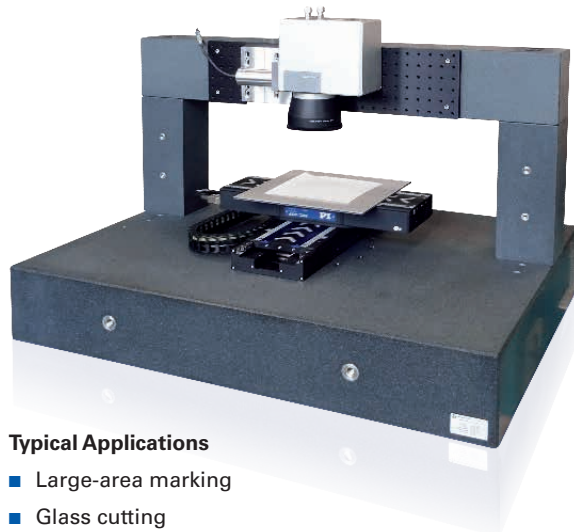
- Large field of view, wide range of XY stages
- Significantly increased throughput (up to 41% compared with conventional systems)
- No stitching errors
- Higher precision
- Smooth processing with high dynamics and no stage vibrations high speed scanning



Stitching motion



Simultaneous movement



Typical Applications

- Large-area marking
- Glass cutting
- Drilling of large-area PCBs

No Stitching Errors

Piecewise processing (stitching) of large workpieces is prone to marking displacement near the edges of adjacent fields. By combining the motion of the scan head with the motion of the XY stage, stitching errors are eliminated and in addition the process time is shortened significantly (image by SCANLAB).

Powered by ACS and SCANLAB

The jointly developed syncAXIS control software enables simultaneous control of a 2D scan head and a 2D scanning stage equipped with high-dynamic magnetic linear drives. The combined system substantially increases the image field size for wide-area marking, and in addition provides superior capabilities for cutting of glass, drilling of large PCBs and laser micro-machining. Unlike tiled processing, this innovative laser processing system with an extended image field can significantly slash process times, thereby delivering enhanced productivity and cost reduction in manufacturing.



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Well-Positioned All Over the World

The PI Group is present in all key technology regions world-wide. Its local representations around the globe are more than just sales agencies. Customers benefit from this in many ways:

- Service facilities for diagnosis and repair as well as metrology equipment for tests, system calibration and quality assurance
- R&D departments, which are able to react promptly to the demands of the local markets and ensure a direct dialog with the customers
- Sample and prototype construction – in close contact with development departments and customers
- Sales and application engineers – experts for the entire product portfolio of the PI Group and your contact for customized developments – from the initial consultation to the delivery
- Market and business development experts who listen to what customers in specific market segments want and enable the PI Group to develop products that fulfill these requirements.

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