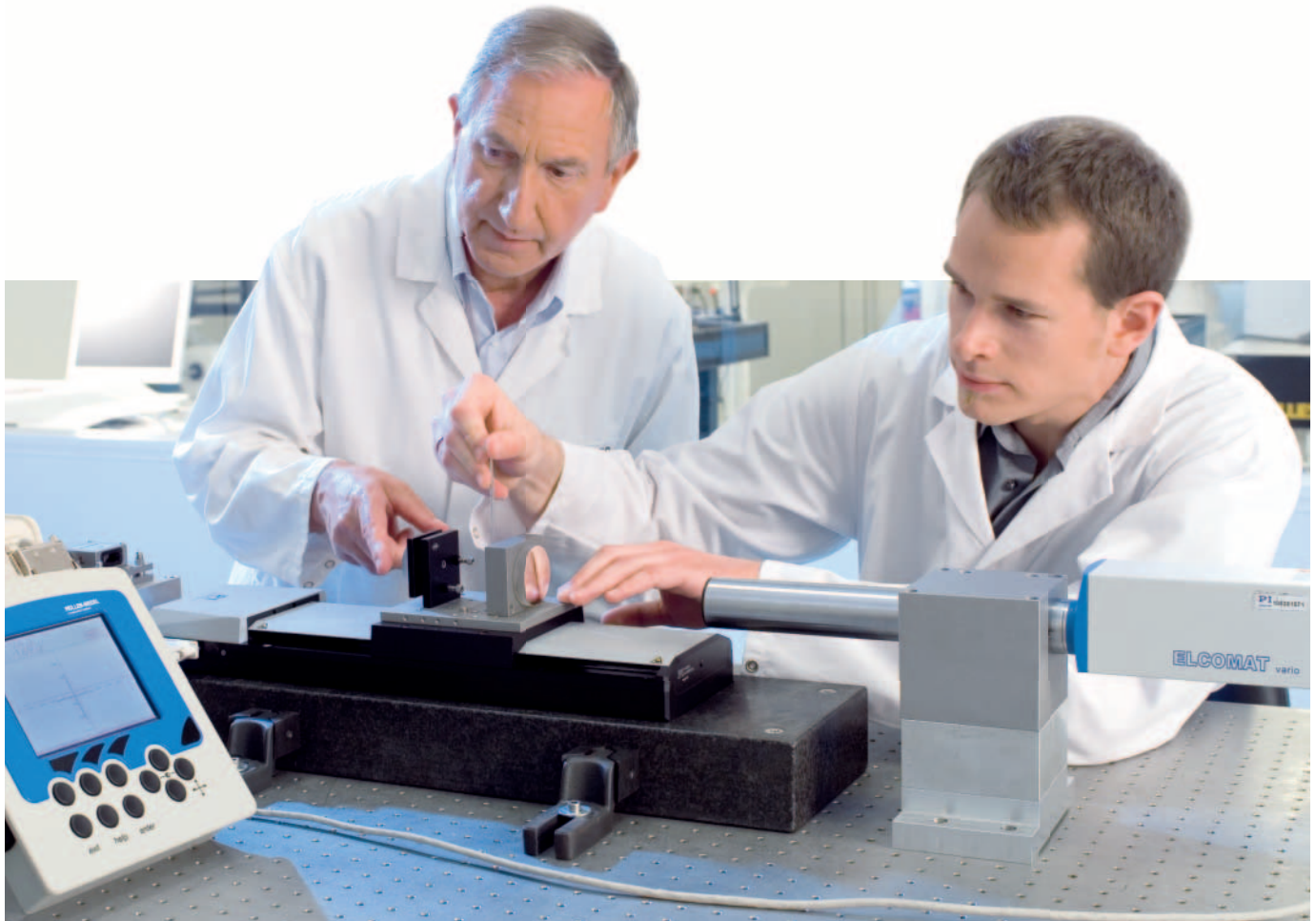


# Custom Motion Systems



## PI Custom Motion Systems

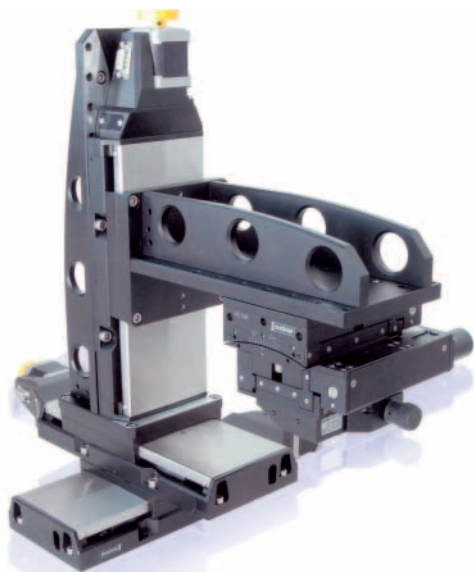
PI Custom Motion Systems is a specialist division of PI, the world leading precision positioning technology company. Providing micron precision multi-axis alignment solutions, the PI Custom Motion Systems group, with our combined electronic and mechanical design experience, offer to customers a breadth of knowledge and technical hands-on advice which is hard to beat. Providing a full service from design through to manufacture, PI Custom Motion Systems will support you every step of the way, adding value and giving you the confidence that your requirements will be met and delivered in a timely manner. PI is a global company employing more than 700 people worldwide with R&D, manufacturing and sales subsidiary offices in all major markets.

## Engineered Excellence

PI Custom Motion Systems can deliver tailored solutions based on a wide range of stage technologies. With a clear focus on providing an efficient first-class service, PI Custom Motion Systems engages with you, the client, in detailed consultations and design studies. As part of the design process we will select the most appropriate components to meet your requirement. Products selected can include micropositioning and nanopositioning stages for linear or rotary motion from PI and PI miCos as well as from third parties. Without being tied to any one supplier gives us the flexibility to ensure that the finished system will meet your specification, is fit for purpose and cost effective.

- Briefing
- Consultation
- Design
- 3D Modelling
- Manufacture
- Testing
- Installation

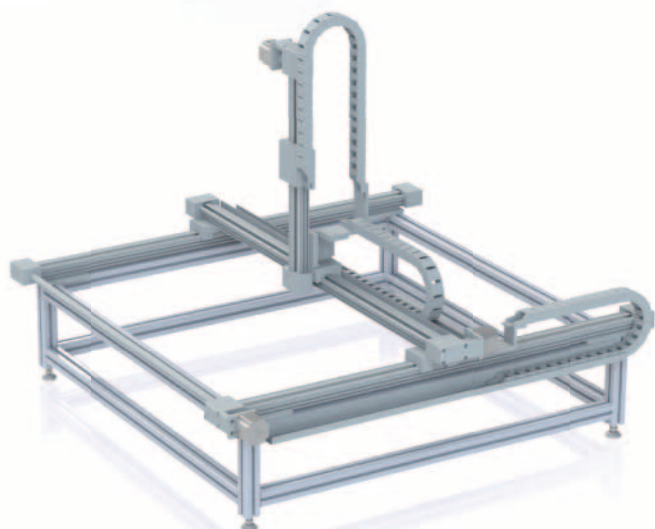




## Rotary and Linear Stages

An extensive range of linear positioners, linear actuators and rotary and goniometer stages driven by a variety of motor types are offered by the PI group.

- Travel from a few mm to >1 m
- Direct metrology option for highest precision
- Traditional and air bearing designs
- Direct drive options for highest speed and precision
- 2 and 5 phase motors, brushed and brushless rotary servomotors, brushless linear servomotors, piezo ultrasonic and step drive motors
- Vacuum and non-magnetic options



## Open-frame and Gantry Structures

Where applications dictate positioning and motion on a larger scale the flexibility of a custom designed open frame positioning system opens up a host of possibilities. Modular extruded aluminium sections can be used to create structures incorporating multiple axis positioning.

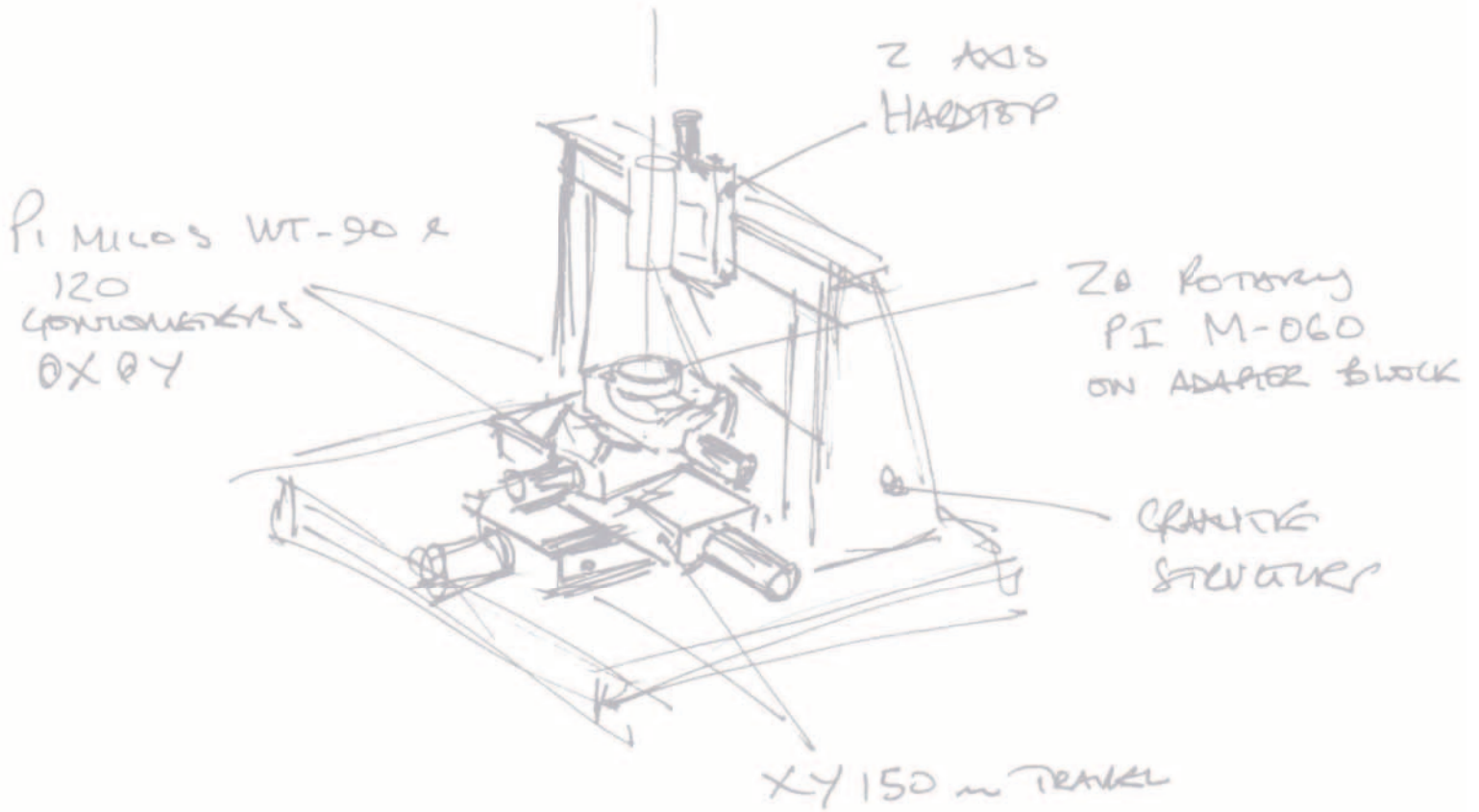
- Many metres of travel possible
- Ballscrew, toothed belt or linear motor drive technologies
- Co-ordinated multi axis control

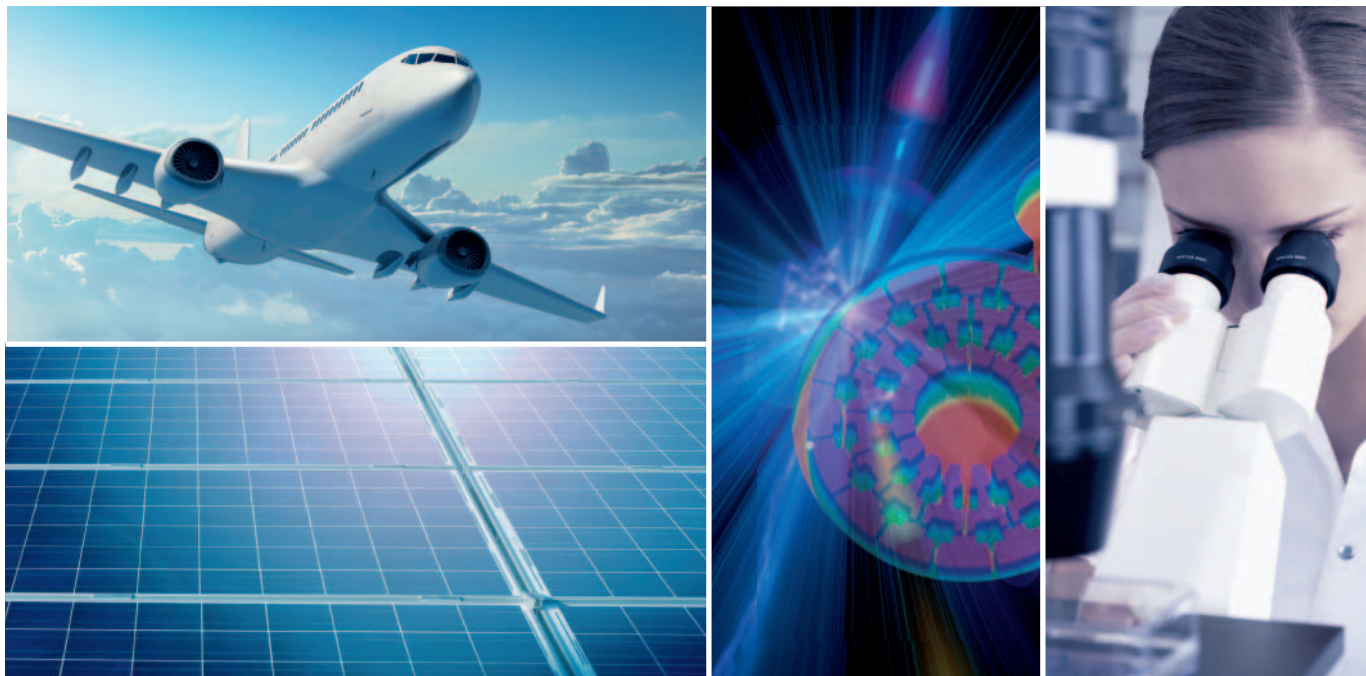


## Controller and Drive Technology

Motion and precise positioning is nothing without control. PI Custom Motion Systems have developed a new multi-axis control platform, the Quartz, enabling leading edge digital servo control and drive of a range of motor technologies.

- Brushed and brushless servos, 2 and 5 phase stepper motors, all in one package.
- Low to high power motors for an array of torque and speed capabilities
- Up to 8 axes controlled simultaneously
- Standalone or host, based on common industrial platforms
- Ethernet, Serial, USB and PCI interfaces.





## Markets and Applications

Custom motion systems are a requirement across industrial and scientific markets. Over three decades the PI group has gained technical and commercial experience across all of the following market sectors. As a consequence the organisation has access to a wide knowledge base that is invaluable when applying motion technology to a specific market or market sector. PI Custom Motion Systems provides a flexible approach to multi-axis alignment applications. We specialise in micron and sub-micron precision assemblies with millimetres to metres of travel.

### **Aerospace & Defence**

Typical applications are in areas of optical assembly and test. Solutions encompass multi-axis rigs with micron precision and include open frame designs offering many meters of travel. The handling of substantial mechanical parts is within the company's capability.

### **Energy**

Custom motion systems are required for automated component handling and measurement in industries such as Solar, Nuclear and Wind.

### **Photonics**

The measurement and fabrication of MEMS and photonics devices requires precise and automated multi-axis alignment. Samples and optical components, both small and large can be aligned or scanned using PI technology.

### **Medical / Pharmaceutical**

Increasing precision and throughput speed in the manufacture and testing of medical devices and pharmaceuticals requires specialist positioning equipment. A flexible approach to the positioner configuration, as offered by the PI Custom Motion Systems group, is needed in order to balance the needs of the application.

### **Research & Development**

Metrology instruments based on photonics will require the sample or optics to be aligned or scanned in multiple axes. Our comprehensive motion control platform with trajectory profiling is an ideal platform for such applications.

## PI Manufacturing and Subsidiary Offices

- Karlsruhe, Germany
- Lederhose, Germany
- Freiburg, Germany
- Auburn, USA (East)
- Irvine, USA (West)
- Tokyo, Japan
- Osaka, Japan
- Shanghai, China
- Beijing, China
- Montrouge, France
- Bresso, Italy
- Singapore
- Seoul, Korea

## Contact

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