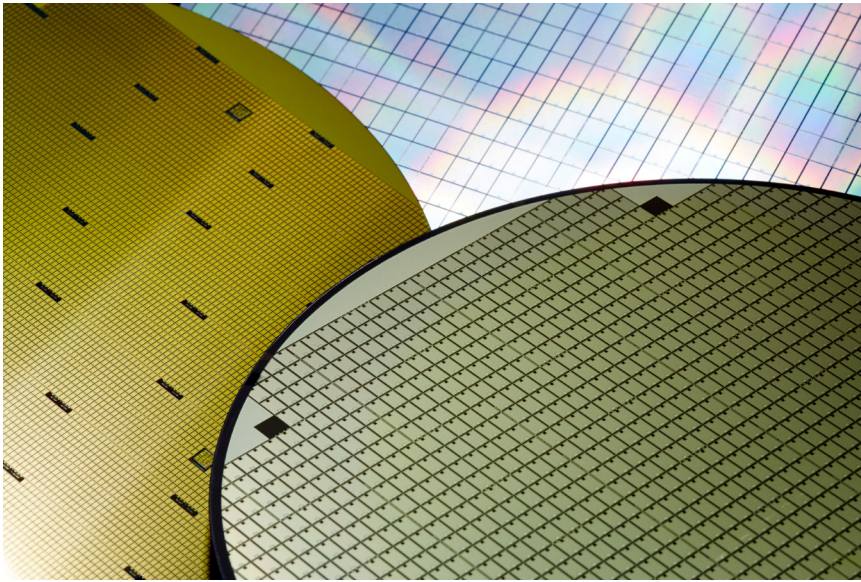




primatics

**Automation for Semiconductor,
Solar & Photovoltaic Manufacturing**



**Motion Devices
for Complex
Systems**

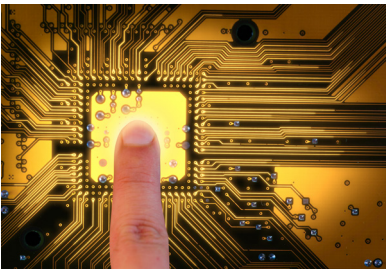
Inspection • Assembly • Microscopy • Surface Profiling • Wafer Processing

Semiconductor

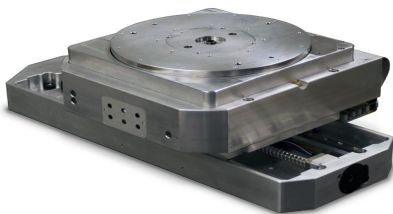
Industry Expertise

Primatics has been in the precision motion industry since 1997 and is a recognized leader in the manufacture of motion devices for integration into Semiconductor and Photovoltaic processing equipment.

Primatics has a long history designing, engineering and building high precision motion products and systems, however, the most important thing they build is trust. With a strong team of Application Engineers and world-class technical staff, Primatics provides its customers with effective and practical “best of class” solutions.



Whether a custom built motion system is required, or an in stock, standard product is recommended, Primatics will deliver technical innovation and industry experience to your application.



High Vacuum Rated X,Y,Z,Θ stage for thin film metrology

Innovative Solutions

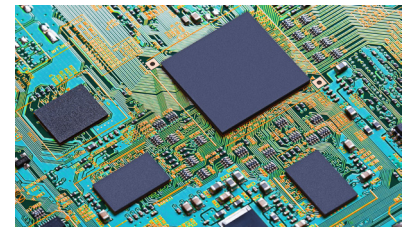
With a record of performance, reliability and support, Primatics has long provided innovative solutions for OEM's, Integrators and Users for many applications and markets including:

- **Wafer processing, production, handling, analysis, testing and inspection**
- **Semiconductor assembly**
- **Thin film technologies**
- **(SEM) Scanning electron microscopy**
- **Vacuum systems and cleanroom applications**
- **Photovoltaic production processes**
- **Thermal management**
- **Crystalline Panel Production**
- **Lithography**
- **Laser micro-machining and metrology**
- **Surface profiling and preparation**
- **Pick-and-Place sorting**
- **Silicon machining**
- **Solar cell processing**
- **Metalization, coating and finishes**
- **Wet processing systems**
- **Clean assembly and bake-out**

Cleanroom Environments

Automation in cleanrooms is used in many applications for semiconductor equipment, thin film technologies, and photovoltaic processes. Primatics offers options to prepare many standard product stages for operation in cleanrooms to ISO 5 and better. Many custom mechanisms have been developed specifically for ISO 4 and better.

Components and materials such as lubricants are specifically selected for cleanroom compatibility. Special assembly processes and packaging assure the mechanisms are clean and ready for use upon arrival.



Vacuum Environments

Automation in vacuum can be more demanding than cleanroom design. Outgassing of specific compounds, even in very small quantities, must be avoided. Heat management and pump-down time must be evaluated.

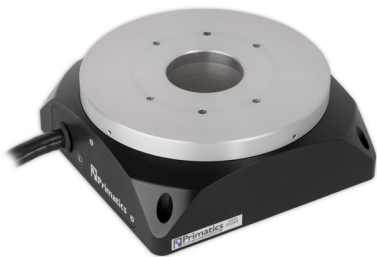
Primatics has invested in the specialized equipment to prepare and evaluate component and products for medium to ultra high vacuum environments.



primatics

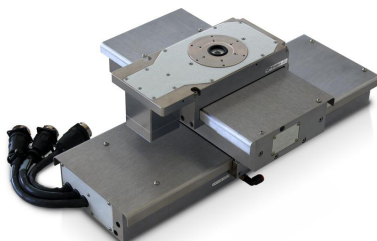
Material Handling & Alignment

Automated material handling is at the core of all semiconductor processes. This can range from bulk material transport to fine positioning and alignment of a wafer for inspection. This may occur in a cleanroom or a vacuum chamber or transition between the two.



PDR160B for semiconductor wafer inspection, high speed laser machining, and precision metrology.

Primatics produces a variety of linear positioning stages with sub-micron precision. These can be combined with sub-arc-second resolution rotary stages into many configurations. Many of these can be prepared for cleanroom or vacuum use. Several products exist for precision vertical motion or very flat XY travel often required for inspection.

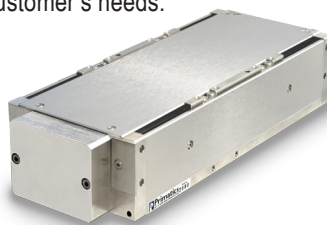


XY-Theta with internal cable management



Specialized Processes

As the customer is developing new and specialized processes, the equipment for automation may not exist. A custom developed solution should be considered. Custom projects are tailored to optimize performance and features for price. Primatics uses its experience and expertise to design and manufacture a solution for the customer's needs.



PLG110 with custom electroless nickel finish

Primatics has developed a variety of custom mechanisms for the semiconductor markets. These include small single axis linear stages to fit within an existing machine, to long travel transport stages for high-speed, clean operation. Multi-axis designs are often used for inspection systems requiring precision linear and rotary motion.

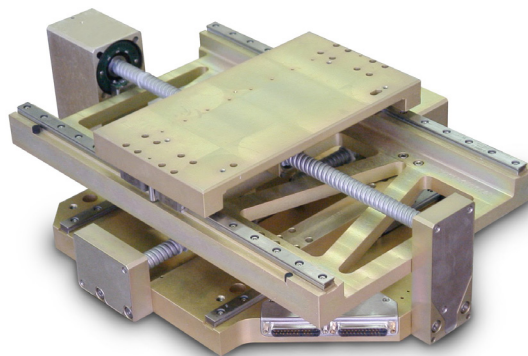
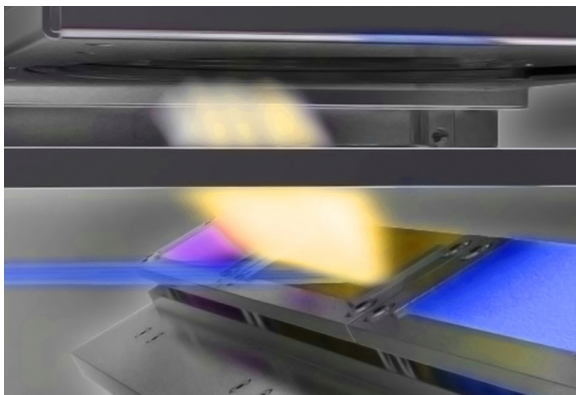
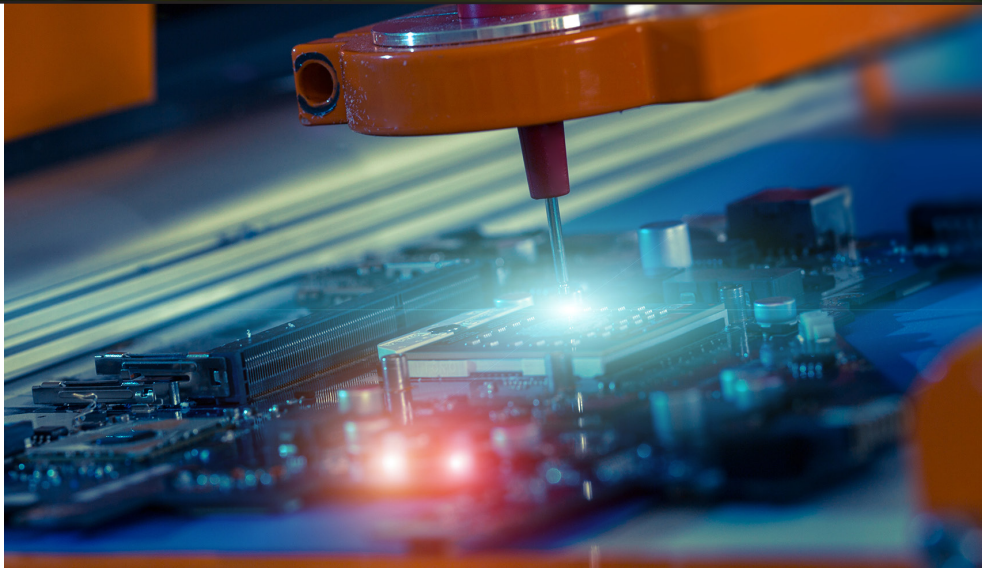
Photovoltaic and Solar Cell Processing

Primatics has been providing precision stages for system integration for decades. Using experience successfully demonstrated in the semiconductor industry, Primatics also manufactures innovative motion devices used in solar and PV manufacturing and testing.

Primatics is poised to broaden its scope to other, similar emerging technologies as market and manufacturing needs evolve. In order to meet the growing marketplace demands of the future, Primatics is helping process equipment manufacturers increase efficiencies, reduce cost, improve manufacturing yield,



PXL33 and PXL43 XY configuration for use in applications for precision assembly and inspection



XY for high vacuum environment



primatics

primatics.com

CORPORATE HEADQUARTERS
PRIMATICS, INC.
32114 MALLARD AVE.,
PO BOX 409
TANGENT, OR 97389-0409
Phone: 541.791.9678
Fax: 541.791.9410
email: info@primatics.com