MDC’s Multi-Axis Positioning System (MAPS) is an integrated UHV positioner combined with substrate heating. MAPS features tilt, rotation and sample heating capability for a wide variety of substrates.

Sample tilt angle is adjustable from \(-180^\circ\) to \(+180^\circ\) and rotation about the sample normal is continuous. Resolution of both axes of rotation is \(<1.0^\circ\) and speed can vary from 0.2 to 60° per second. Accuracy of positioning is provided with gear reduction in each axis.

Heating from room temperature up to 400°C is standard with an option that can heat samples up to 900°C. MAPS can be operated in any orientation and can be either manually driven or motorized to include motor options on either or both axes of motion with communications link for computer control. Heater controllers with PID feedback and RS232 communications are available.

**Versatile Modular Design**

The MAPS as shown is designed for UHV with tilt and rotation of a 2” x 2” sample and mounted on an 8”CFF flange. The modular design of this unit, allows variations for a wide range of applications —

- The system can be integrated into larger and/or different types of flanges. Sample distance from the flange face can vary from 6 to 18 inches.
- It can be easily scaled to handle much larger substrates.
- Transferable sample holder capability.
- Use as a 5-axis positioner or goniometer when mounted to an XYZ stage.
- Motions can be manually operated or motorized.

**Applications**

Originally developed as a positioner for GLAD (Glancing Angle Deposition) for the growth of thin films in a thermal evaporation coater, the versatility of MDC’s MAPS makes it ideal for any HV or UHV application requiring tilt and rotation. Mounted to a large bore XYZ stage for use as a 5-axis positioning system or goniometer, the MAPS could be used for a variety of surface science (XPS, AES, SEM) applications or other types of deposition systems.
Diagram of Typical MAPS, Multi-Axis Positioning System

For additional details regarding MDC’s new Multi-Axis Positioning System (MAPS) product line, please contact-
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