

microPREP™ PRO

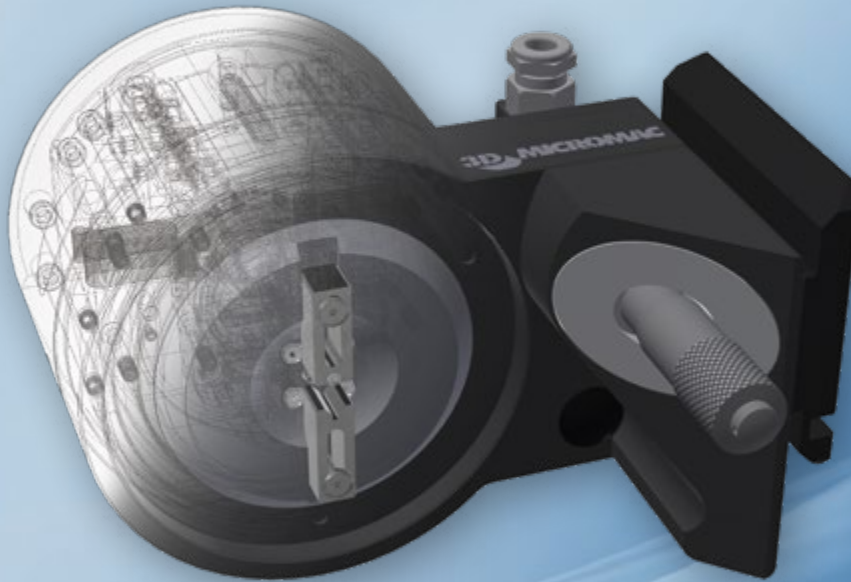
MOTORIZED ROTATION STAGE

The motorized rotation stage is designed for sample preparation processes that are using continuous rotation in closed or open loop mode. One integrated piezo axis for rotation and two piezo axes for translation (x and y direction) assist in finding the area of interest and enable concentric machining. There are two clamps that can be manually adjusted to fix samples from 6 mm to 25.4 mm steplessly and to hold them in place during operation.

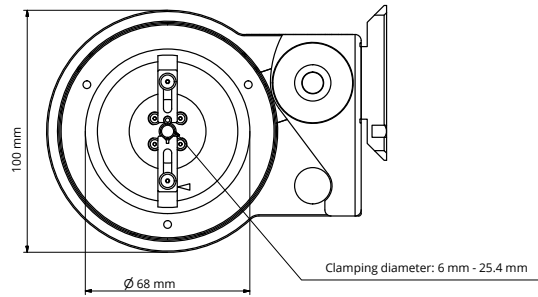
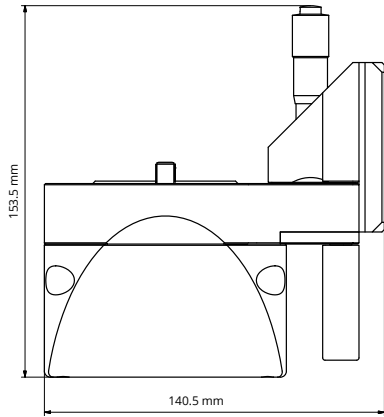
The motorized rotation stage is suitable for rotationally symmetric samples such as pillars and cones without being limited to that.

APPLICATION IDEAS

- Laser turning of samples (diameter up to 3 mm)
- Preparation of nano-CT samples (down to 15 μm)
- Preparation of “wedding cakes” structures



Technical Data



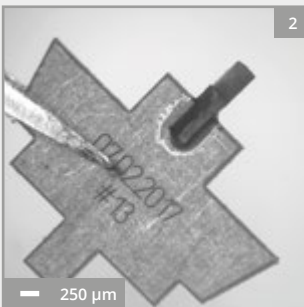
Actuator Type	Piezo electric
Travel Range	X-axis: up to 20 mm Y-axis: up to 20 mm Rotation (closed loop): infinite
Resolution (Piezo)	Linear axis: 4 nm Rotational axis: 1 μ rad (0.00006°)
Repeatability (Piezo)	Bidirectional: \pm 160 nm Rotational: \pm 15 μ rad (0.00086°)
Physical Dimensions	153.5 mm x 140.5 mm x 100 mm (6.04" x 5.53" x 3.94")
Weight	2.01 kg
Possible Sample Sizes	6 mm - 25.4 mm (0.23" - 1")
Max. Load Capacity	Up to 5 N

Application Ideas



The motorized rotation stage has initially been developed to prepare samples for nano-CT applications. For this kind of application we changed the way how the laser interacts with the sample. The software-assisted centering of the sample and the concentric preparation of the requested geometry are the main advantages of this stage.

Any position of your sample can be centered and be prepared concentric. Due to this ability, the motorized rotation stage can also be used for any kind of laser turning. The often used "wedding cake" structures can be easily prepared - even down to a diameter of 15 μ m. The stage can handle any kind of sample that fits into the clamping and the process-camera's field of view, e.g. needles (*image 1*).



Best results can be achieved by combining this stage with the manual or the motorized stage. In combination with these stages, the microPREP™ PRO can show its full functionality. These stages complement the motorized rotation stage with the possibility of direct sample preparation from any kind of specimen. By using laser cuts or even the XL-Chunk workflow, suitable geometries can be prepared directly. Samples can be taken at any position and placed on a suitable bracket. The microPREP™ PRO can even produce these brackets itself. The required cylindrical structure is then turned with the motorized rotation stage (*image 2*).

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