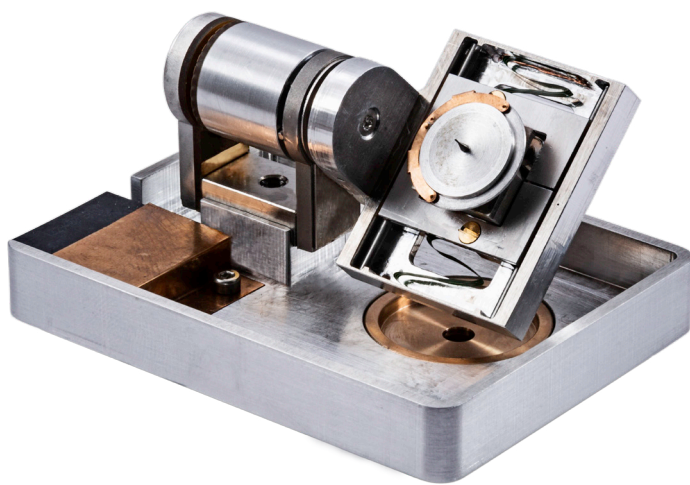


Anti Curtaining Table

The ACT stage is a four-axis positioning tool especially designed to allow rocking a sample while observing it with both the electron and ion beams. It provides an additional tilt axis that is perpendicular to the FIB-SEM's stage's tilt axis.

The system consists of a small three-axis substage mounted on a tilting platform. The substage offers a range of 10 mm in X and 3 mm in the Z direction. Additionally, the rotational axis allows unlimited rotation of the sample through 360 deg.

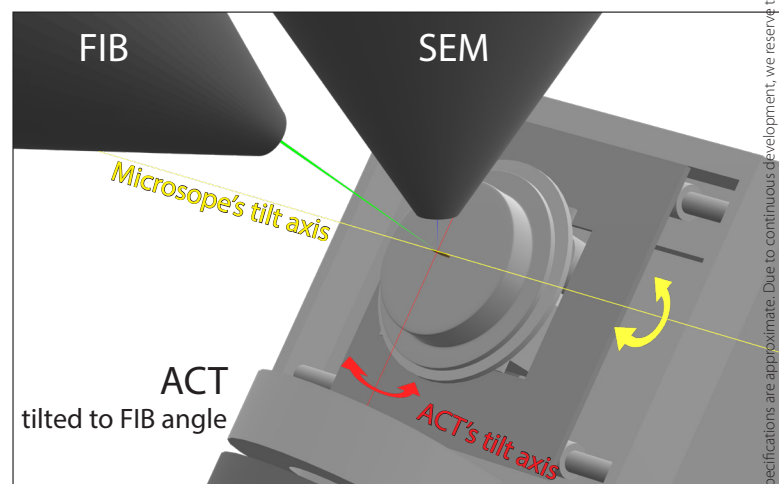
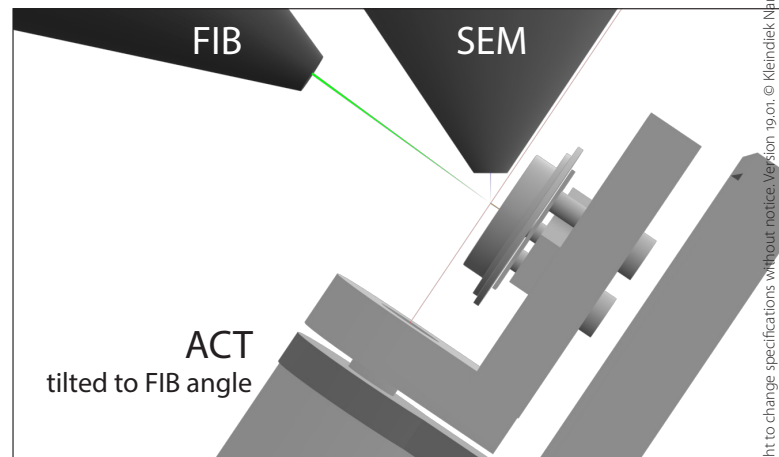
The tilt axis is fitted with a positional encoder with a resolution of 0.1 deg.



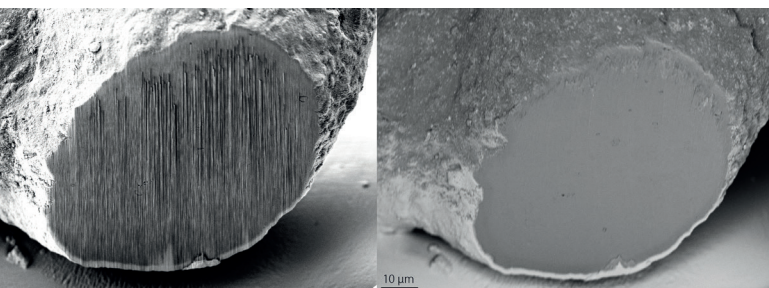
ACTUAL SIZE

With the help of the microscope's stage, the ACT can be positioned and tilted such that its own axis of tilt is placed at the point of beam coincidence and oriented perpendicular to the FIB.

Using the ACT's integrated Z axis, the sample can be positioned at the ACT's eucentric height. The integrated X and rotation axes can be used to position the region of interest under the beams. Motion of the sample in Y can be performed using the microscope's stage by moving the ACT along its tilt axis and thus maintaining eucentricity (i.e. the ACT's tilt axis centered under the beams).

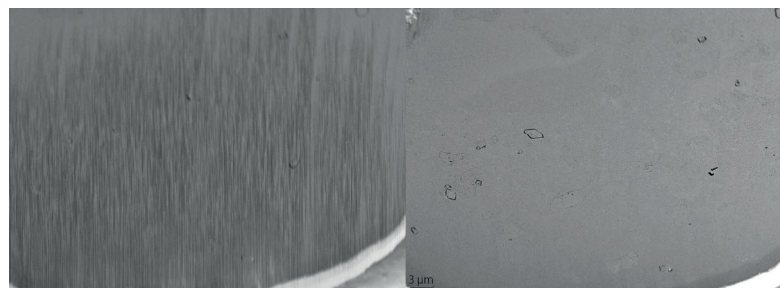


Porous polymer particles show strong curtaining when milled with the FIB. Rocking them by ± 20 deg while milling eliminates the distracting 'curtain' artifacts.



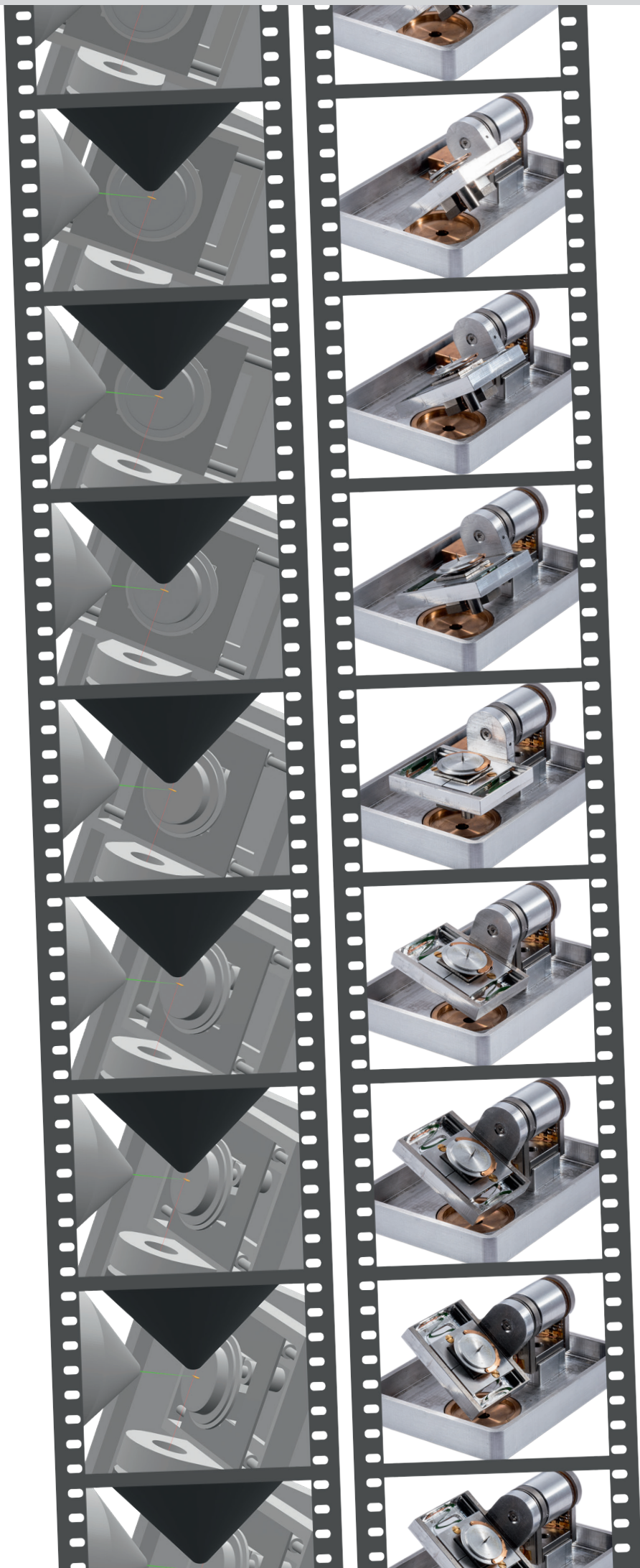
static mill

dynamic mill



static mill

dynamic mill



Applications

- FIB milling smooth cross sections
- Electron Channel Contrast Imaging (ECCI)
- Electron Backscatter Diffraction (EBSD)
- Tomography
- ... any application that requires eucentric repositioning of samples

Technical specifications

- Dimensions
 - Length 72 mm
 - Width 54 mm
 - Height 33 mm
- Travel X 10 mm
- Travel Z 3 mm
- Travel R 360 deg
- Travel T ± 90 deg, with Encoder
- Encoder specifications:
 - Absolute accuracy < 0.2 deg (3×10^{-3} rad)
 - Repeatability < 0.03 deg (4×10^{-4} rad)
- Resolution
 - Linear axes < 0.5 nm
 - Rotational axes $< 6 \times 10^{-6}$ deg (10^{-7} rad)
- Speed up to 1 mm/s, 18 deg/s
- Drift 1.5 nm/min
- Cartesian movement
- No backlash or reversal play
- Coarse and fine displacement in one drive

Further information

- Contact us at info@kleindiek.com
- Find your local agent at www.kleindiek.com