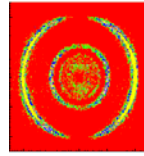


The **RoentDek** Steibulator5D



RoentDek
Handels GmbH
Supersonic Gas Jets
Detection Techniques
Data Acquisition Systems
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The **RoentDek Steibulator5D** is a compact light-weight manipulator optimized for small sample and mirror mountings for ultra-high vacuum applications. The sample/mirror holder is movable in 3d with five degrees of freedom (3d position and two tilt angles) by manually adjusting a set of five micrometer screws on the air side of a DN100CF flange (see left picture).

The right picture shows the mounting of a one-inch diameter focusing mirror in vacuum as a typical application. Two of the micrometer set screws tilt the mirror surface along the two angular dimensions (θ , ϕ). The other three micrometer set screws allow linear movement in three dimensions.



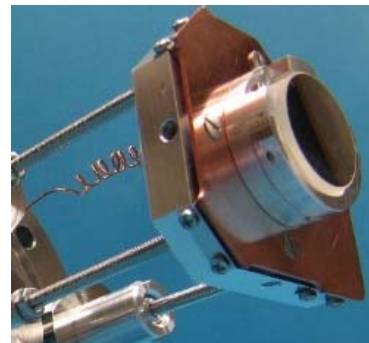
The compact design results in a functional entanglement of the set screws. Usually, several screws must be turned to achieve linear movement along a certain coordinate, i.e. moving the mirror back and forth (in z-direction) requires turning of all three linear set screws by the same amount. Independent turning of these screws results mainly in a left/right shift or up/down shift, but both the tilt angle and z-position are slightly altered, too. This can be corrected by minor adjustments of the other set screws following correction tables or by arranging for visual feedback (e.g. with a laser pointer).

A position indicator (metallic pin) on air side helps tracking the in-vacuum motion. The indicator shows the longitudinal and lateral positions of the mirror (not the tilt angle) for coarse orientation and prevents out-of-bounds movement.

An integrated MHV-feedthrough allows biasing of a sample or a shielding electrode with up to 1 kV with an external high voltage supply (not included). For use as mirror holder the **Steibulator5D** is equipped with a support for standard one-inch mirrors and an insulated copper front shield. The same can be used as base for mounting a biased sample (Figure below: mounting of a biased mirror).

Specs of the **Steibulator5D** manipulator:

- +/- 10° tilt (θ , ϕ)
- +/- 10 mm shift (x, y, z)
- 316 LN stainless steel
- 3.8 kg
- 150 °C bakeable*



*Air-side set screws must be kept at < 80 °C, e.g. with a fan.