

# Manipulator

CreaTec manufactures a large variety of manipulators according to customers' specifications in a pressure range between ambient pressure and UHV. The manipulators are designed for different types of sample holders and various substrate sizes. Temperatures up to 1200 °C are standard. Special manipulators reaching higher temperatures (up to 1700 °C) are available on request, as well as cooling stages for liquid nitrogen and liquid helium. Different linear and rotational degrees of freedom allow the precise adjustment of the sample in the MBE system. Continuous manual activated sample rotation is standard, motorized drive is optional. All mechanical motions are driven from air side. The manipulator fits the sample transfer system of the customers' facility. An extra main shutter is used to protect the sample before and after epitaxial growth.

## Options

- LN2, LHe or water cooling
- Additional cradle for mask
- Sample biasing
- Integrated main shutter
- Additional cradle for measurement
- Manipulator head with non magnetic material
- Sample cooling during azimuthal rotation
- Motorized operation of all axis including sensing
- cVac software control
- Power supply for heating stage including PID controller devices, remote control and RS232 interface

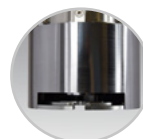
| TYPE                 | MA  |
|----------------------|---|
| SAMPLE HOLDER DESIGN | as specified  |
| SAMPLE SIZE          | as specified  |
| HEATING SYSTEM       | radiation heating    self supported wire filament<br>e-beam heating    lamp heating    SiC heating  |
| THERMOCOUPLE         | type K   type C   |
| TEMPERATURE RANGE    | up to 1200 °C    e-beam: up to 1700 °C  |
| BAKE-OUT TEMPERATURE | 200 °C  |
| FLANGE SIZE          | DN 63 CF   100   160   200  |
| AXIS                 | up to 6 axis<br>x, y:                    up to ± 25 mm<br>z:                        up to 600 mm<br>azimuthal rotation: continuous<br>polar rotation:      ± 180° (0 - 360°)<br>tilt:                     up to ± 85° |
| MOUNTING ORIENTATION | horizontal<br>vertical  |
| PRESSURE RANGE       | ambient to 10 <sup>-11</sup> mbar   |
| UHV LENGTH           | as specified  |



Manipulator with LN2 cooling



Manipulator head with integrated main shutter, continuous rotation and heating system



Manipulator head with shielding and cutout for sample transfer

