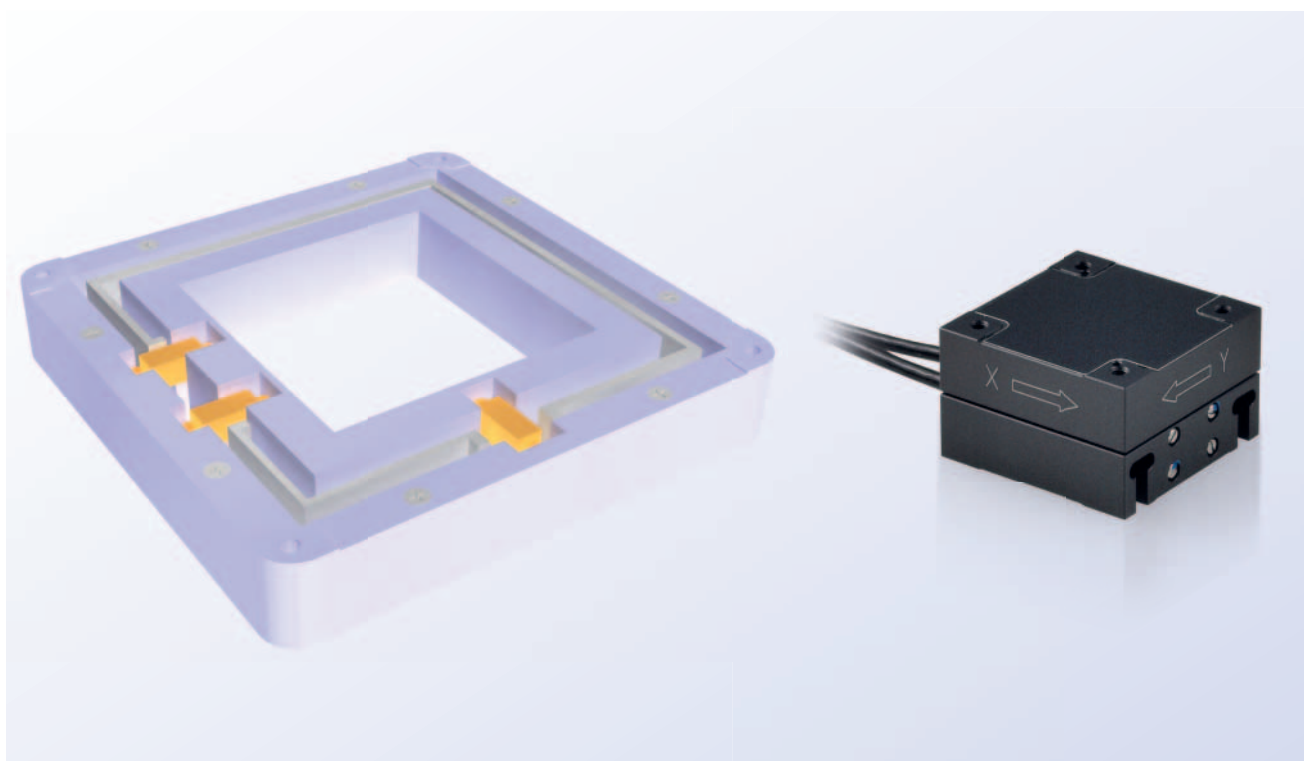


Parallel Kinematics Optimizes Motion in Multiple Axes

In a parallel-kinematic multi-axis system, all actuators act directly on one moving platform. This means that all axes move the same minimized mass and can be designed with identical dynamic properties. Parallel-kinematic systems have additional advantages over

serially stacked or nested systems, including more-compact construction and no cumulative error or weight from the different axes. Parallel-kinematic systems can be operated with up to six degrees of freedom with low inertia and excellent dynamic performance.



In a parallel-kinematic structure, all drives act on the same moving platform so that the individual axes have the same dynamic behavior. Consequently, higher dynamics and higher scanning frequencies, improved guiding accuracy, repeatability and stability can be achieved than with serial axes systems

A serial multi-axis system, whether nested or stacked, assigns exactly one direction of motion to each actuator and each sensor. The stage axes carry the next mounted axis so that the dynamic properties deteriorate and the overall stiffness decreases. Moreover, the runouts of the individual axes add up to a lower accuracy and repeatability. Serial-kinematic systems have a simpler structure and can often be manufactured at lower costs



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