

BORA hexapod

High resolution hexapod small size



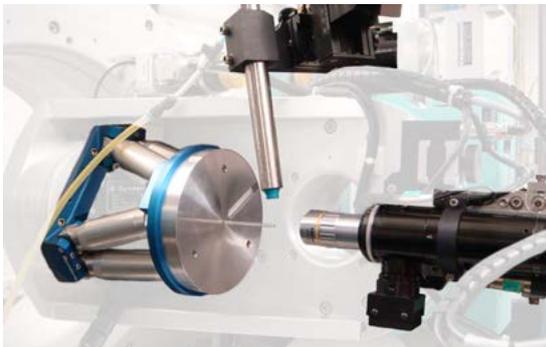
KEY FEATURES

- Payload capacity up to 10 kg
- Linear travel range ± 20 mm
- Angular travel range $\pm 15^\circ$
- Height in middle position 145 mm

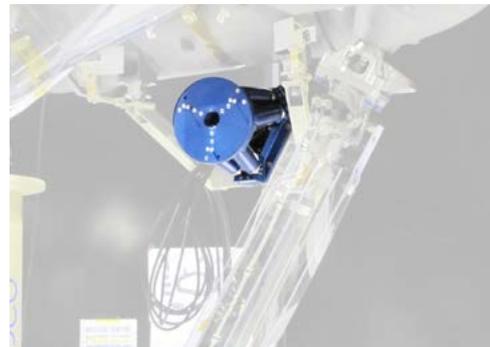


APPLICATIONS

- Instrumentation
- Optics
- Testing laboratories
- Synchrotrons
- Aeronautics and spatial
- Metrology
- Semiconductors



This hexapod places a sample at the centre of two large rotation stages. With this installation, hexapod mounting orientation varies between 0° and 90° . Advantages of the hexapod are: high stability, stiffness and repeatability of the sample position with respect to the rotation stages independently of their orientations.



Alignment of a mirror with high precision on a space telescope. When the hexapod has correctly positioned the mirror, the user fixes the mirror and takes the hexapod off the structure.



Two BORA hexapods position Kirkpatrick-Baez (KB) mirrors with high stability and resolution to improve the beam quality on a synchrotron beamline.

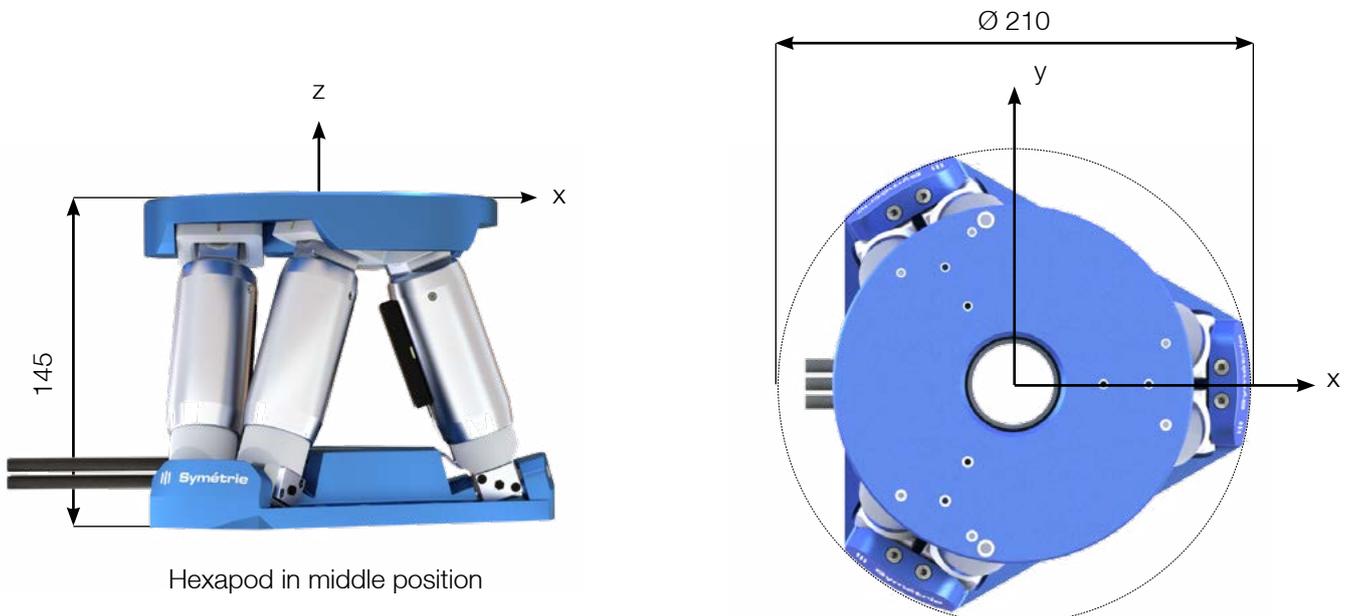


Some HV BORA hexapods are positioning the high reflectivity mirrors of a Fabry-Perot cavity in order to optimize their alignment and thereby the cavity finesse.

BORA	
Motion and positioning	
Travel range Tx, Ty (mm)	± 20
Travel range Tz (mm)	± 10
Travel range Rx, Ry (deg)	± 10
Travel range Rz (deg)	± 15
Resolution Tx, Ty, Tz (µm)	0.1
Resolution Rx, Ry, Rz (µrad)	2
Repeatability Tx, Ty, Tz (µm)	± 0.4
Repeatability Rx, Ry, Rz (µrad)	± 3.2
Speed Tx, Ty (mm/s)	2
Speed Tz (mm/s)	1
Speed Rx, Ry (deg/s)	1
Speed Rz (deg/s)	2
Mechanical properties	
Stiffness X, Y (N/µm)	1
Stiffness Z (N/µm)	10
Payload capacity (kg) (vertical orientation / horizontal orientation)	10 / 5
Motor type	DC motor, gearhead
Miscellaneous	
Operating temperature range (°C)	0 to + 50
Materials	Aluminum, steel, stainless steel
Size mobile platform (mm)	Ø 160
Central aperture (mm)	Ø 43 for mobile platform ; Ø 36 for fixed platform
Height in middle position (mm)	145
Mass (kg)	4.3
Cable length (m)	3
Options	Clean room compatibility Vacuum compatibility Low temperature compatibility down to -40°C Virtual homing Hand-held control unit
Controller	
Controller type	NAOS or ALPHA+ if cable length > 20 m or temperature < 0°C
Interface	Ethernet
Power supply	110-240 VAC / 50-60 Hz

Datasheet subject to change without notice. All data are superseded by any new release. R230418

The performances are specified for single axis motions, with all other axes at midrange and for a rotation center in the middle of the mobile platform.



Hexapod in middle position