BORA hexapod

High resolution hexapod small size

Symétrie

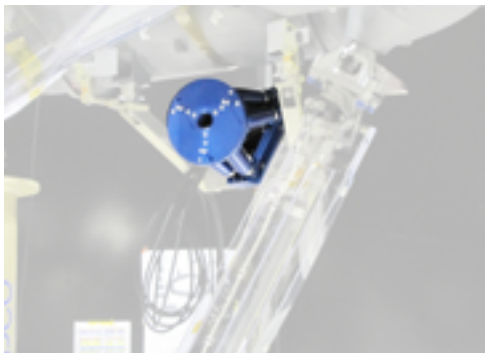
KEY FEATURES

- Payload capacity up to 10 kg
- Linear travel range ± 20 mm
- Angular travel range ± 15 °
- Height in middle position 145 mm
- Resolution Tx, Ty: 0.1 µm

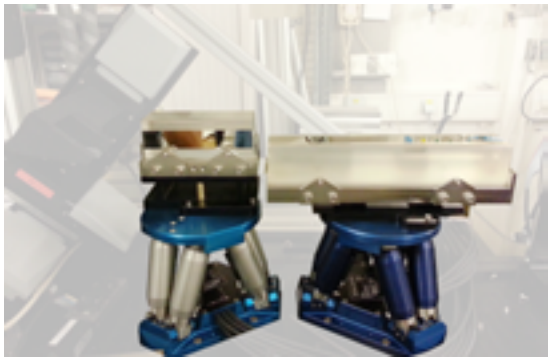
APPLICATIONS

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

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.

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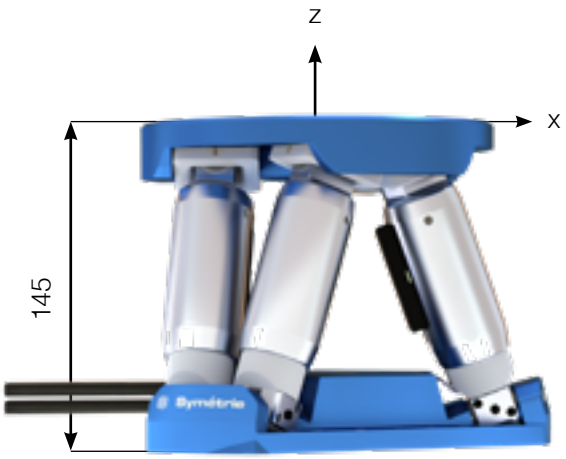
	BORA
Motion and positioning	
Travel range Tx, Ty (mm)	± 20
Travel range Tz (mm)	± 10
Travel range Rx, Ry (deg)	± 10
Travel range Rz (deg)	± 15
Resolution Tx, Ty, Tz (µm)	0.1
Resolution Rx, Ry, Rz (µrad)	2
Repeatability Tx, Ty, Tz (µm)	± 0.4
Repeatability Rx, Ry, Rz (µrad)	± 3.2
Speed Tx, Ty (mm/s)	2
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

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