



Miniature Hexapod Six-DOF Positioning System **HEX150-140HL**



Precise 6-DOF Motion in a Compact Platform

Our HEX150-140HL provides consistent and reliable six degree-of-freedom (DOF) motion in a compact yet stiff platform. You'll benefit from ultra-fine positioning resolution, ample payload capacity, high process throughput and more. HEX150-140HL offers flexible integration and intuitive operation with our powerful motion controllers, making it the perfect choice for applications that require complex multi-DOF motion when available space is limited.

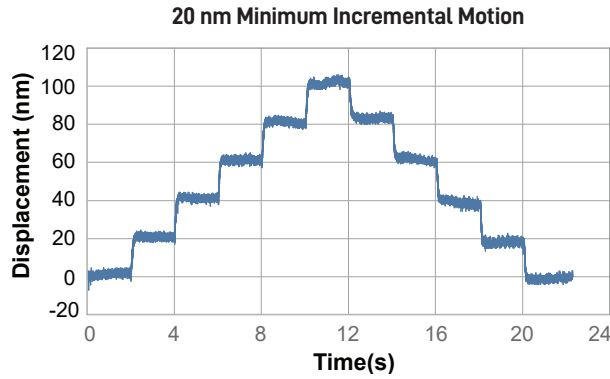
Key Applications

HEX150-140HL is ideal for addressing space-constrained, multiple degree-of-freedom applications requiring fine positioning resolution, including:

- Photonic device manipulation, alignment & packaging
- Optics inspection & alignment
- Optical wafer probing
- Aerospace & satellite sensor testing
- Synchrotron & beamline sample manipulation

Key Features:

- ◆ Offers **COMPACT SIZE & AMPLE RANGE OF MOTION** for simple integration into complex applications
- ◆ **SUPPORTS HIGH PAYLOADS** to 7.5 kg & resists backdriving to 100 N
- ◆ Delivers **INDUSTRY-LEADING MINIMUM INCREMENTAL MOTION** to 20 nm in XYZ & 0.2 μ rad in $\theta_x \theta_y \theta_z$
- ◆ **COORDINATES WITH OTHER MOTION AXES** (servo, stepper, piezo & more) using our controllers
- ◆ Provides **EASY, CONVENIENT PIVOT-POINT ADJUSTMENT**
- ◆ Pairs with **POWERFUL CONTROLS & VISUALIZATION SOFTWARE**



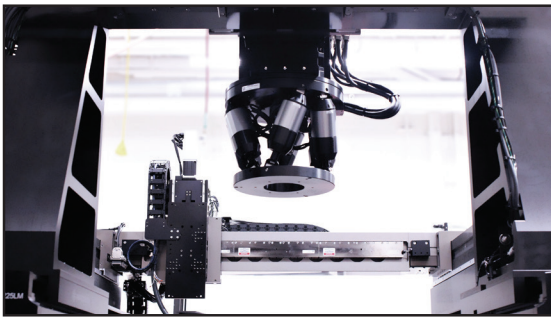
Advanced Structural Design

The HEX150-140HL is actuated with six high-resolution struts built with precision bearings, ball screws and drive components. Each strut is driven by a specially engineered brushless servomotor that is directly coupled to the ball screw. This advanced structural design allows our hexapods to offer increased drive stiffness, superior minimum incremental motion, higher speeds and payload capacity, and a considerably longer device lifetime with consistent, reliable performance.



User-friendly precision motion control

Our Automation1 platform is the most user-friendly interface available for precision motion control. Tools like our Machine Setup wizard greatly simplify the servo-tuning process and help you to quickly and effortlessly optimize the motion your process demands.



Flexible Integration

With its compact size, HEX150-140HL offers effortless integration in even the most constricted operational environments. It is equally well-suited for both laboratory use and large-scale production operations. As with all Aerotech hexapods, HEX150-140HL coordinates seamlessly with other motion axes and devices on the Aerotech controller network and is easy to set up and program with Aerotech's user-friendly interface.

HEX150-140HL SERIES SPECIFICATIONS

Mechanical Specifications		HEX150-140HL					
Axis		X	Y	Z	A (θ_x)	B (θ_y)	C (θ_z)
Travel ⁽¹⁾		40 mm	40 mm	16 mm	16 deg	16 deg	40 deg
Resolution (Minimum Incremental Motion)		20 nm	20 nm	20 nm	0.04 arc sec	0.04 arc sec	0.04 arc sec
Bidirectional Repeatability, pk-pk ^(2,3)		$\pm 1.5 \mu\text{m}$	$\pm 1.5 \mu\text{m}$	$\pm 0.4 \mu\text{m}$	± 3 arc sec	± 3 arc sec	± 3 arc sec
Unidirectional Repeatability, pk-pk		$\pm 0.75 \mu\text{m}$	$\pm 0.75 \mu\text{m}$	$\pm 0.15 \mu\text{m}$	± 1.5 arc sec	± 1.5 arc sec	± 1.5 arc sec
Maximum Speed ⁽⁴⁾		20 mm/s	20 mm/s	8 mm/s	10 deg/s	10 deg/s	30 deg/s
Load Capacity, All Positions ⁽⁵⁾	Vertical	7.5 kg					
	Horizontal	2 kg					



Reference our HEX150-140HL data sheet for full specifications and note details by using the QR code or visiting us at:

AEROTECH.COM