



Miniature Hexapod Six-DOF Positioning System

HEX150-125HL

Relentlessly improved. More accessible than ever.

Our HexGen® HEX150-125HL offers numerous improvements and enhancements over other miniature hexapods. Superb peak-to-peak repeatability over a large travel range and industry-leading minimum incremental motion—combined with high speed, compact size and impressive payload-carrying capacity—make this miniature hexapod more capable and reliable than ever. Reduce implementation risk with guaranteed performance specifications and seamless integration with other motion devices, including stages, laser scan heads, gantries and more. Optimized for scalability and cost-effectiveness, HEX150-125HL is easy to acquire and integrate into R&D labs and production lines.

Key Applications

HEX150-125HL is ideal for addressing space-constrained, multiple degree-of-freedom applications requiring fine positioning resolution, including:

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



KEY FEATURES:

- ◆ **COST-EFFECTIVE**, second-generation design with exceptional performance
- ◆ **INDUSTRY-LEADING MINIMUM INCREMENTAL MOTION** to 15 nm
- ◆ **UP TO 12 KG** payload-carrying capacity
- ◆ High speeds up to 30 mm/s & 30 °/s
INCREASE PROCESS THROUGHPUT
- ◆ **EFFICIENT TWO-CABLE DESIGN** simplifies system wiring & integration
- ◆ Ultra-robust design provides **SUPERB RELIABILITY**
- ◆ **EASILY PERFORM COORDINATED MOTION WITH OTHER AXES** (servo, stepper, galvo & more) with Aerotech controls

HEX150-125HL SERIES SPECIFICATIONS

Mechanical Specifications		HEX150-125HL				
Axis	X	Y	Z	A (θ_x)	B (θ_y)	C (θ_z)
Travel ⁽¹⁾	42 mm	44 mm	17 mm	16 deg		42 deg
Resolution (Minimum Incremental Motion)	15 nm			0.04 arc sec		
Bidirectional Repeatability, pk-pk ^(2,3)	$\pm 1.5 \mu\text{m}$		$\pm 0.3 \mu\text{m}$	$\pm 3 \text{ arc sec}$		
Unidirectional Repeatability, pk-pk	$\pm 0.75 \mu\text{m}$		$\pm 0.15 \mu\text{m}$	$\pm 1.5 \text{ arc sec}$		
Maximum Speed ⁽⁴⁾	30 mm/s		8 mm/s	10 deg/s		30 deg/s
Load Capacity, All Positions ⁽⁵⁾	Vertical	12 kg				
	Horizontal	5 kg				
Holding Capacity, De-Energized ⁽⁶⁾	5 kg					
Stage Mass	3 kg					
Material	Anodized Aluminum Platform and Base; Steel Used in Joints and Struts					

Notes:

1. Travels are mutually exclusive. Consult our [HexGen Hexapod Sizer](#) for detailed workspace sizing.
2. Measured with single-axis moves at a height of 50 mm above the moving platform. Results may vary with loading condition and workpoint location.
3. X, Y, Z performance certified as standard.
4. Requires the selection of an appropriate amplifier with sufficient voltage and current.
5. With centered loading—consult load curves. Contact factory for payloads exceeding the published values.
6. With horizontal base plate, centered loading—consult load curves.

Electrical Specifications	HEX150-125HL
Drive System	Precision Ball Screw, Brushless Servomotor
Feedback	Noncontact Incremental Encoder
Maximum Bus Voltage	48 VDC recommended for typical operation; 80 VDC max
Limit Switches	5 V, Normally Closed



HEX150-125HL SERIES ORDERING OPTIONS

Mounting Plate (Optional)

-MP Adapter plate for HEX150-125HL base mounting

Integration (Required)

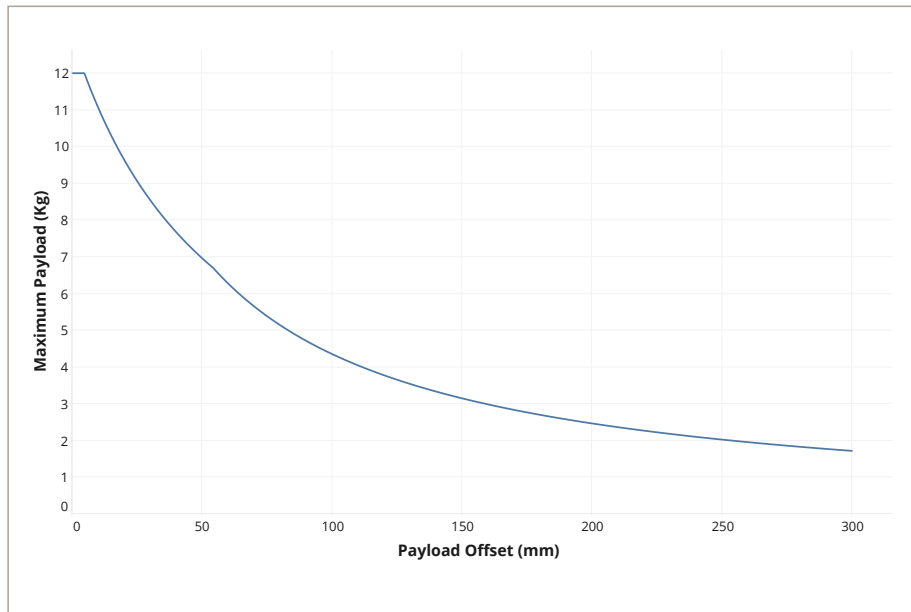
Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

-TAS Integration - Test as system

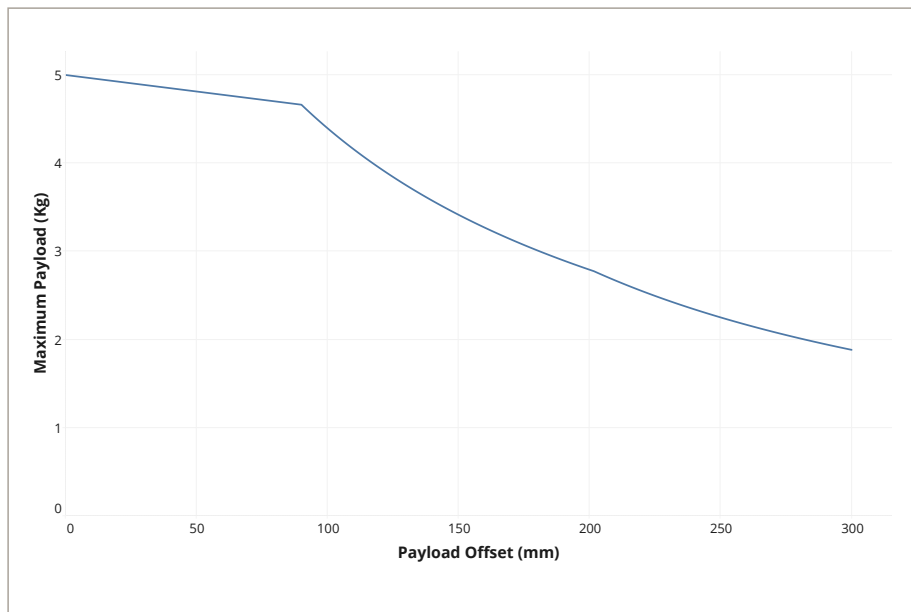
Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller and stage). This includes parameter file generation, system tuning and documentation of the system configuration.



HEX150-125HL SERIES PERFORMANCE

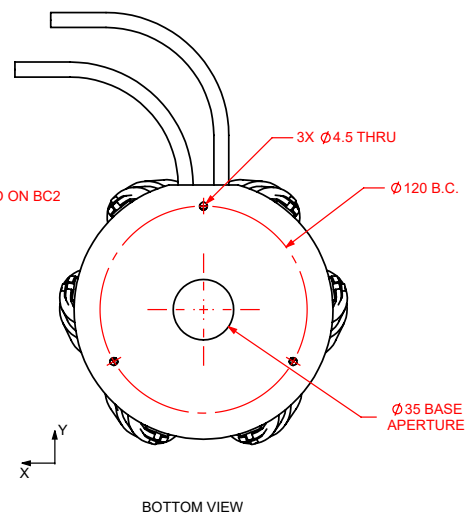
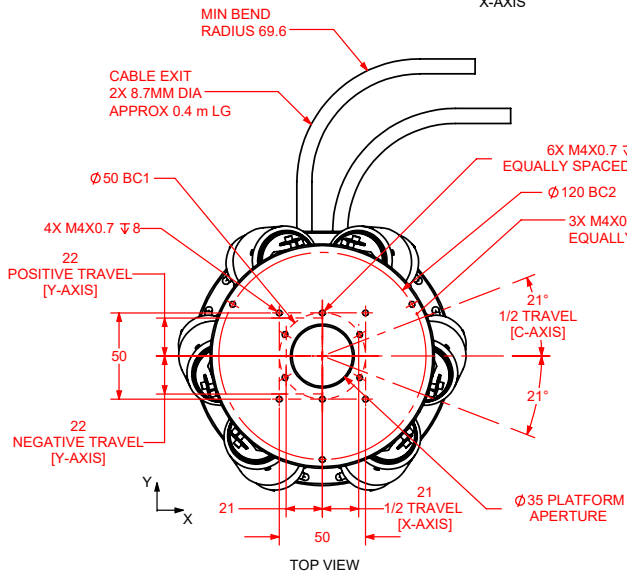
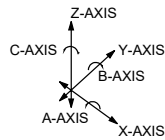
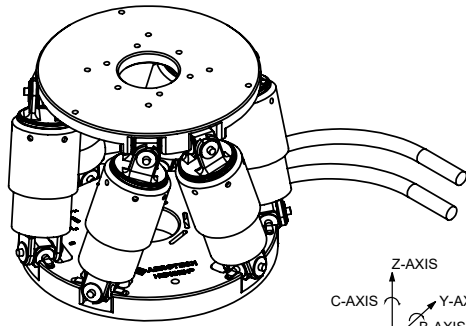


HEX150-125HL vertical load capacity

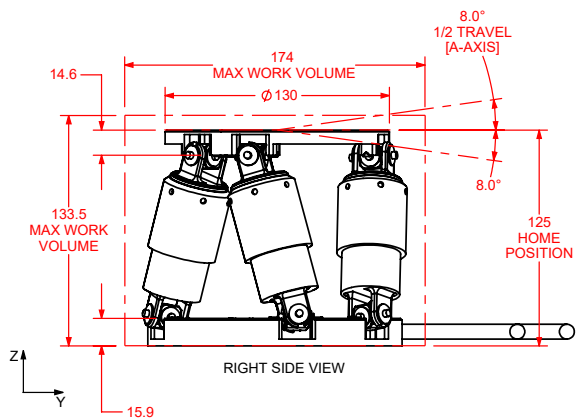
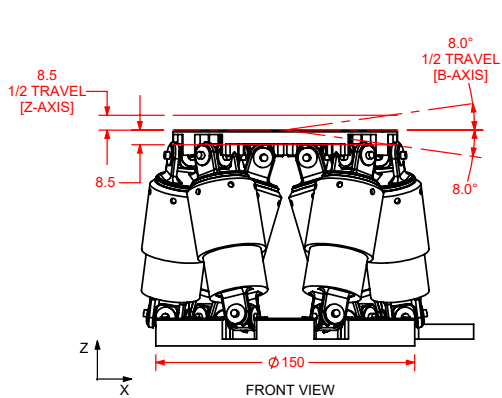


HEX150-125HL horizontal load capacity

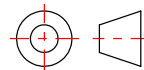
HEX150-125HL SERIES DIMENSIONS



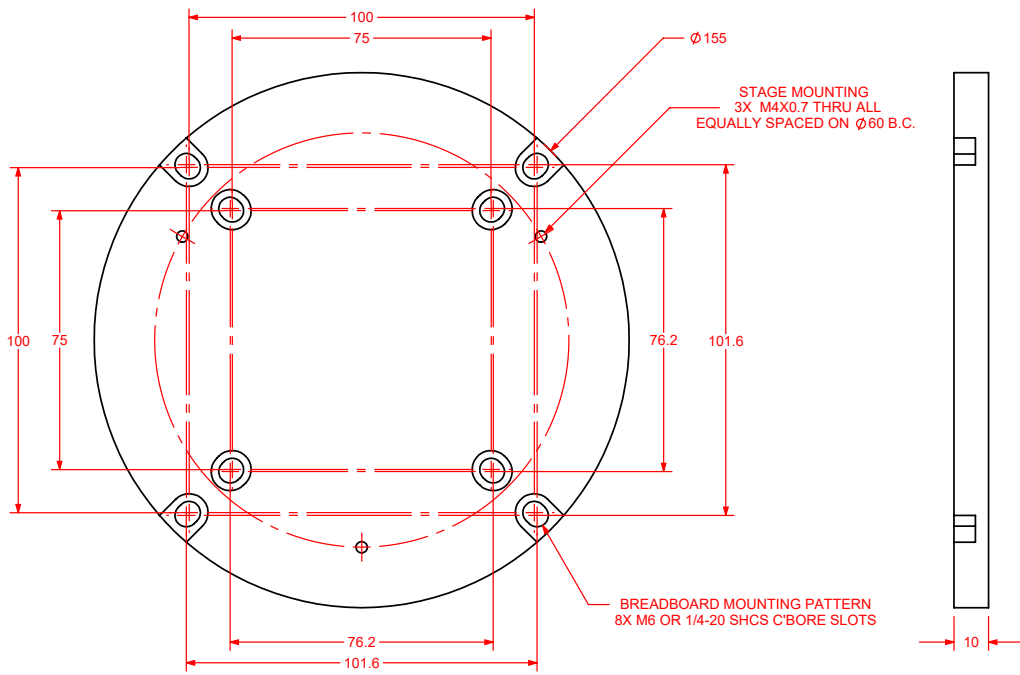
NOTE: ALL TRAVEL SPECIFIED AS SINGLE-AXIS MOVES FROM HOME POSITIONS



DIMENSIONS: MILLIMETERS



HEX150-125HL SERIES DIMENSIONS



DIMENSIONS: MILLIMETERS

