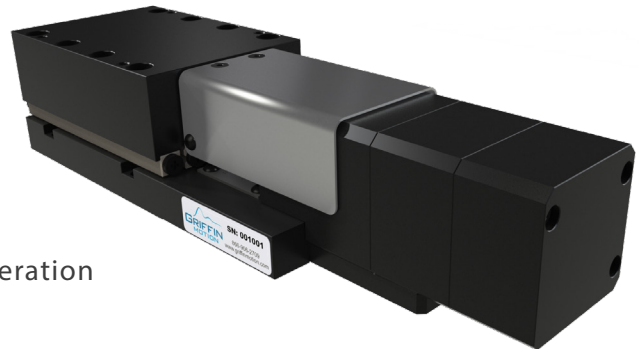


MCS-050 Datasheet

50mm Screw Driven Linear Stage

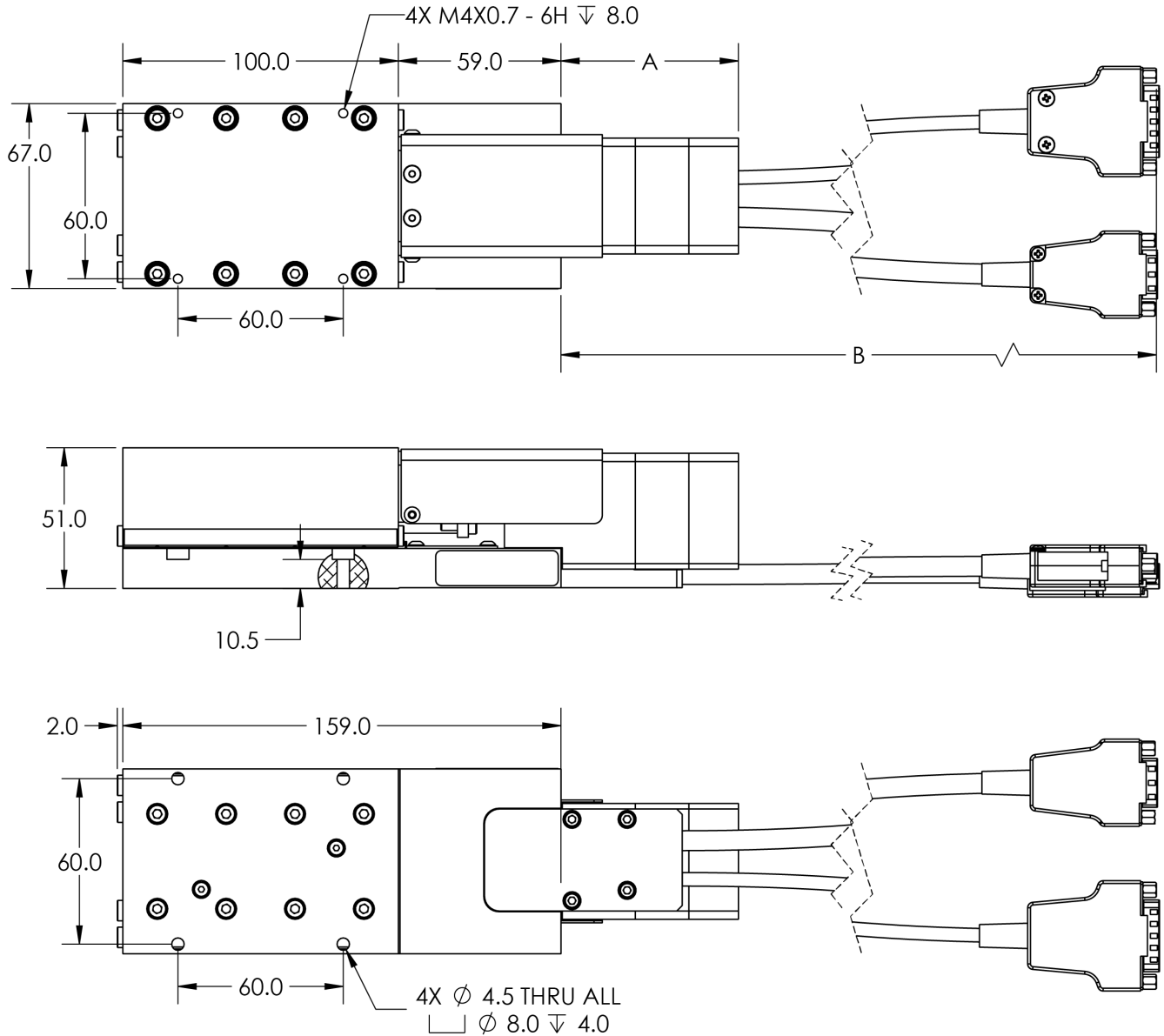
FEATURES

- 50mm Travel
- Zero-Backlash Precision-Ground Ballscrew Drive
- Optical Limit Switches and Home Markers
- Variety of Feedback Options
- Narrow Profile Design
- Crossed Roller Bearings
- Integrated frameless servo motors
- Power-Off Brake Available for Vertical Operation



The MCS is a high-precision linear stage designed for applications where space is tight but performance can't be compromised. Its compact center-drive design, paired with crossed roller bearings and a precision-ground ballscrew, delivers exceptional stiffness and accuracy in a narrow package. An optional power-off brake makes the MCS an ideal solution for vertical configurations in microscopy, inspection, and laser processing. With a choice of linear or rotary encoder feedback, it offers the right balance of accuracy and repeatability for each application without unnecessary complexity and costs.

MCS-050 Dimensions



Configuration Dependent Dimensions		
Feedback/Brake Configuration	A (mm)	B (mm)
Linear Encoder, No Brake	45.0	350
Linear Encoder, Brake	78.25	
Rotary Encoder, No Brake	64.4	
Rotary Encoder, Brake	97.7	



1040 CLASSIC ROAD | APEX, NC 27539
P: 866.906.2709
www.griffinmotion.com

MCS Ordering Options

MCS Ordering Options	
Product Series	MCS: Ballscrew Side-Drive Linear Stage
Stage Travel (mm)	50
Drive Type	BS: 2 mm/rev Precision-Ground Ballscrew
Motor Code	A: NEMA17 BLDC, 24V Winding T: NEMA17 BLDC, 170V Winding
Feedback Code	H: Rotary Encoder, RS422, 16,000 cts/rev, Limits, Index, and Home L: Linear Encoder, 1Vpp, 25 periods/mm, Limits and Index M: Linear Encoder, RS422, 10,000 cts/mm, Limits and Index
Precision Grade	S: Standard Precision
Additional Options	0: No Additional Options D: Power-Off Safety Brake
Customizations	00: Standard Product 01-99: Custom Stage, Customer Specific ¹
Example Part Number	MCS-050-BS-A-H-S-D-02
Notes	1: Common customizations include: custom hole patterns, cable length and cleanroom preparation

MCS-050 Performance Specifications

MCS-050 Specifications		
Feedback Code	H	L/M
Mechanical Accuracy ($\pm\mu\text{m}$) ¹	10.0	5.0
Calibrated Accuracy ($\pm\mu\text{m}$) ³	4.0	2.0
Bi-Directional Repeatability (μm) ¹	2.0	1.0
Straightness (μm) ⁴	4.0	
Flatness (μm) ⁴		
Pitch ($\pm\text{arc-sec}$) ¹	15.0	
Yaw ($\pm\text{arc-sec}$) ¹		
Maximum Velocity (mm/s)	50	
Continuous Motor Force (Fx) (N)	125	
Y Load Capacity (Fy) (N)	75	
Z Load Capacity (Fz) (N)	75	
Moment Load Capacity (Mx) (Nm)	2.0	
Moment Load Capacity (My) (Nm)		
Moment Load Capacity (Mz) (Nm)		
Moving Mass (kg)	0.64	
Stage Mass (kg)	1.75	
Notes: 1. Specification is verified via laser interferometer on every stage 2. Slope correction may be required to compensate for linear scaling errors in the screws. Correction factor will be provided to the customer 3. In order to have a stage calibrated and verified, Griffin Motion must perform the controls configuration 4. Specification may be verified by laser interferometer upon request		

