

## Precision Linear Motion Platform

### FEATURES

- High capacity
- 250mm Travel
- Zero backlash, precision ground ball screws
- Optical limit switches with home
- Stepper motor drive
- Recirculating ball linear ways



The HDS-BS Series stages are designed for high loading capacities and long travels in a variety of applications. This ball screw stage is built for high duty cycles and long life and can attain high velocities for factory automation and semiconductor processing equipment. Recirculating ball linear ways and a precision ground ball screw offer extremely smooth operation and velocity control. The HDS-BS series stages can be stacked to create X, Y, and Z motion. An optional brake can be added for safety.



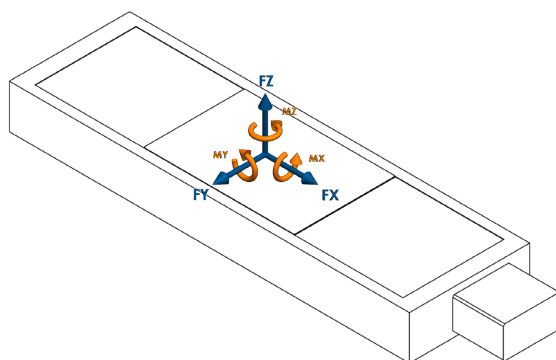
PO BOX 1298 | HOLLY SPRINGS, NC 27540  
P: 866.906.2709 | F: 919.882.1430  
www.griffinmotion.com

HDS-250-BS-B-N-S-E-00

## Motion Specifications

## Product Specifications

|                                            |      |
|--------------------------------------------|------|
| Force X (N)                                | 150  |
| Force Y (N)                                | 500  |
| Force Z (N)                                | 1000 |
| Flatness ( $\mu\text{m}$ )                 | 8    |
| Height (mm)                                | 55   |
| Length (mm)                                | 549  |
| Limit Switches                             | Yes  |
| Linear Accuracy ( $\mu\text{m}$ )          | 25   |
| Linear Repeatability ( $\mu\text{m}$ )     | 3    |
| Linear Velocity (mm/s)                     | 25   |
| Moment X (N-m)                             | 200  |
| Moment Y (N-m)                             | 300  |
| Moment Z (N-m)                             | 100  |
| Moving Mass X (kg)                         | 1.71 |
| Pitch +/- (arc-sec)                        | 14   |
| Screw Lead (mm)                            | 2    |
| Stage Mass (kg)                            | 7.42 |
| Stepper Motor Resolution (Whole Steps/rev) | 400  |
| Straightness ( $\mu\text{m}$ )             | 8    |
| Width (mm)                                 | 150  |
| Yaw +/- (arc-sec)                          | 14   |



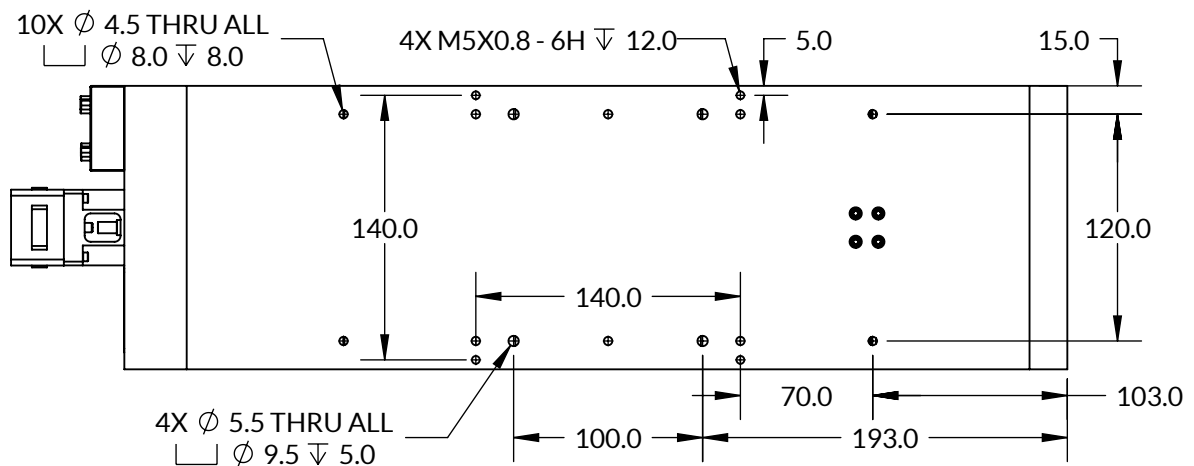
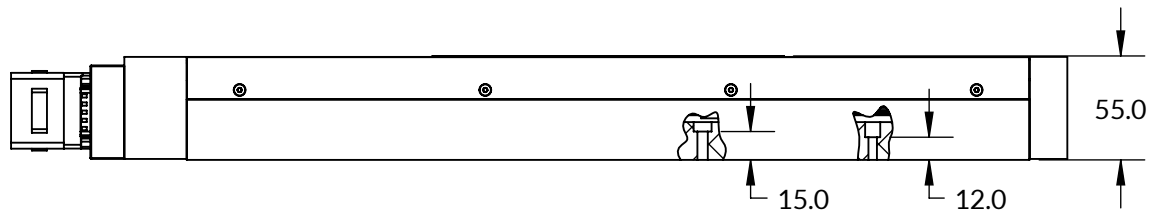
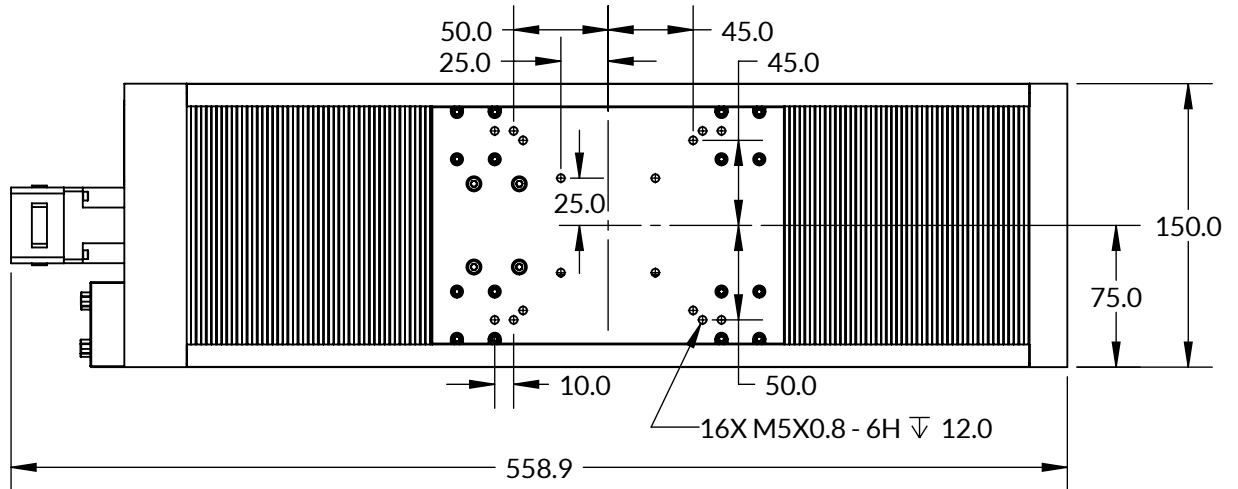
LOAD DIRECTIONS

## Part Number Description

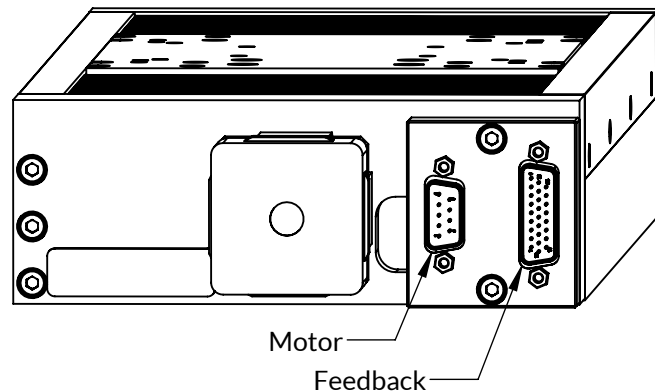
|     |                                      |
|-----|--------------------------------------|
| HDS | HDS Series                           |
| 250 | 250mm Travel                         |
| BS  | Ball Screw Drive                     |
| B   | Stepper Motor                        |
| N   | Limit and Home Switch Only           |
| S   | Standard Precision                   |
| E   | Bellows                              |
| 00  | Standar Product<br>(Call for custom) |

HDS-250-BS-B-N-S-E-00

## Mechanical Specifications



| Feedback Connector (DSUB26HD MALE) |      |
|------------------------------------|------|
| PIN                                | NAME |
| 1                                  | +5V  |
| 2                                  | *    |
| 3                                  | *    |
| 4                                  | *    |
| 5                                  | LIM+ |
| 6                                  | *    |
| 7                                  | *    |
| 8                                  | *    |
| 9                                  | *    |
| 10                                 | *    |
| 11                                 | *    |
| 12                                 | *    |
| 13                                 | *    |
| 14                                 | LIM- |
| 15                                 | *    |
| 16                                 | *    |
| 17                                 | *    |
| 18                                 | *    |
| 19                                 | GND  |
| 20                                 | *    |
| 21                                 | *    |
| 22                                 | *    |
| 23                                 | HOME |
| 24                                 | *    |
| 25                                 | *    |
| 26                                 | *    |
| * Reserved                         |      |



| Motor Connector (DSUB9 MALE) |          |
|------------------------------|----------|
| PIN                          | NAME     |
| 1                            | *        |
| 2                            | *        |
| 3                            | *        |
| 4                            | *        |
| 5                            | *        |
| 6                            | PHASE A+ |
| 7                            | PHASE A- |
| 8                            | PHASE B+ |
| 9                            | PHASE B- |
| * Reserved                   |          |



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## Electrical Specifications

| Motor Specifications          |                 |
|-------------------------------|-----------------|
| Motor Type                    | Bipolar Stepper |
| Current/phase (A)             | 0.8             |
| Resistance/phase ( $\Omega$ ) | 10.0            |
| Induction/phase(mH)           | 6.9             |

| Feedback Specifications          |                |
|----------------------------------|----------------|
| Supply Voltage (V)               | 5.0 $\pm$ 10%  |
| Supply Current (mA)              | 250            |
| Encoder Feedback                 | No             |
| Limit Switches                   | Yes            |
| Limit Switch Output Type         | Open-collector |
| Limit Switch Output current (mA) | -20.0          |
| Home Switch                      | Yes            |
| Home Switch Output Type          | Open-collector |
| Home Switch Output current (mA)  | -20.0          |

A home switch is provided near center mechanical travel and a limit switch at each end of travel. The limit switches will be pulled low throughout the travel range of the stage. The output will swing to high-impedance at the end of travel and remain high-impedance until the mechanical limit is reached.