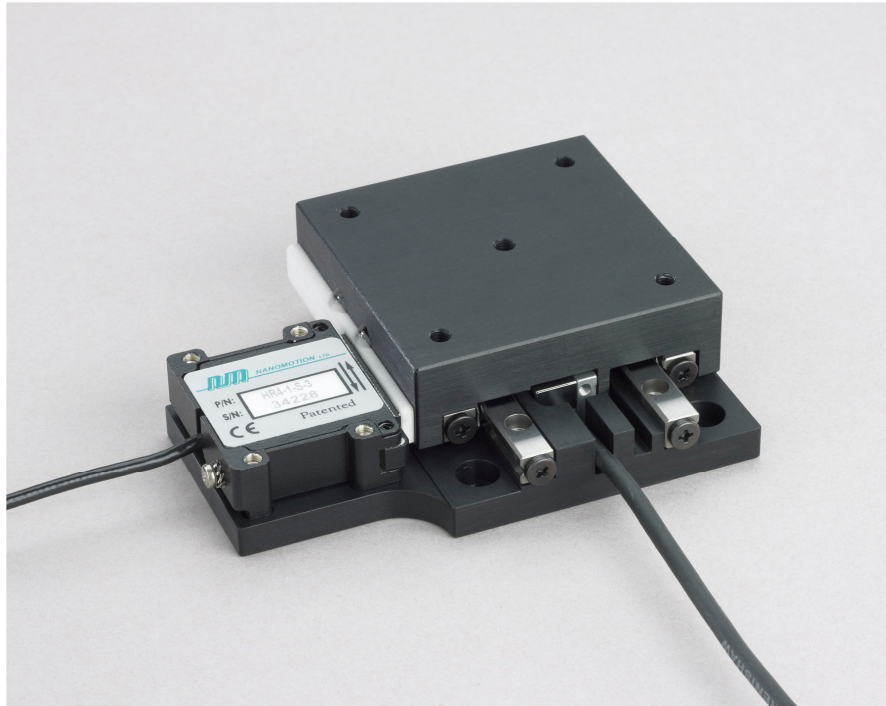


FB Series Linear Stage

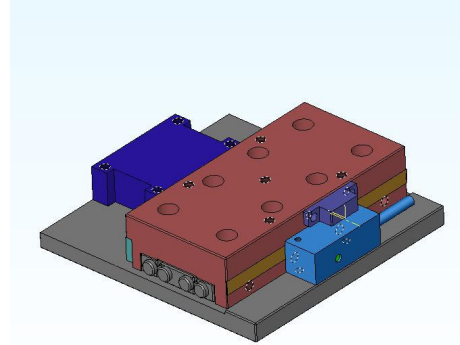


- Compact stage design with low profile
- Direct drive motor with simple, robust construction
- Linear encoder mounted in the center for optimum positioning
- Easily configurable in multi-axis
- Wide range of slide size, travels and motor size



The FB Series product line is a family of standard, modular linear stages available for single and multi-axis applications. The stage configuration consists of crossed roller bearings, a linear optical encoder, and Nanomotion's ceramic servo motors. Nanomotion drivers/amplifiers are not included in this configuration, and are sold separately.

The stages are offered in a wide range of widths and travel lengths and can be combined in X/Y or X/Y/Z or other multi-axis configurations. Encoder resolutions can be varied to achieve a range of performance criteria and there are different size motors for each cross-section to meet necessary force/acceleration requirements.



Stage Configurations

| Series | Width | Motor Options | Standard Travels |
|---------------|--------------|----------------------|--------------------------|
| FB050 | 50mm wide | HR2 or HR4 | 20mm, 50mm, 75mm |
| FB075 | 75mm wide | HR4 or HR8 | 40mm, 60mm, 100mm, 150mm |
| FB100 | 100mm wide | HR4 or HR8 | 60mm, 100mm, 150mm |
| FB150 | 150mm wide | HR4 or HR8 | 100mm, 150mm, 200mm |

Encoders

- Standard encoder resolution is 0.1 μ m
- Optional resolutions: 1 μ m, 0.5 μ m, 50nm, 10nm
- All standard stages include limit and home sensors (FB050 is home only)

Available Mountings

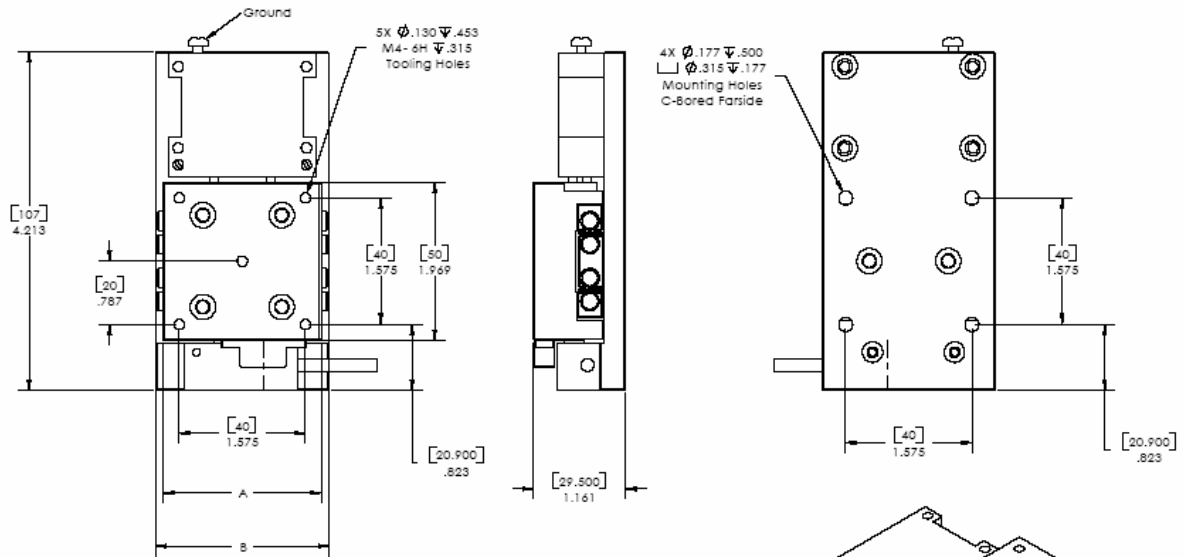
- X/Y
- X/Z using angle bracket
- X/Y/Z using angle bracket



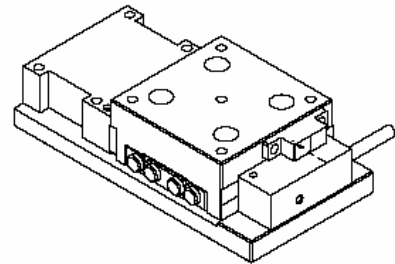
Performance Specifications

| | FB050 | FB075 | FB100 | FB150 |
|----------------------------|-------------------|-------------------|-----------------|-------------------|
| Straightness & Flatness | 2.5µm/25mm Travel | 2.5µm/25mm Travel | 2µm/25mm Travel | 1.5µm/25mm Travel |
| Max Load Capacity (in kg) | | | | |
| 20mm Travel | 2 | 5 | | |
| 40mm Travel | 5 | | | |
| 50mm Travel | | 5 | 10 | |
| 60mm Travel | 7 | | | |
| 75mm Travel | | 7 | 12 | 20 |
| 100mm Travel | | 10 | 12 | 25 |
| 150mm Travel | | | | 25 |
| 200mm Travel | | | | |
| Driving Force (in N) | | | | |
| HR2 | 8 | | | |
| HR4 | 16 | 16 | 16 | 16 |
| HR8 | | 30 | 30 | 30 |
| Static Holding Force(in N) | | | | |
| HR2 | 3.5 | | | |
| HR4 | 12 | 12 | 12 | 12 |
| HR8 | | 25 | 25 | 25 |
| Position Repeatability | | | | |
| 0.1µm Standard | ±0.5µm | | | |
| 10nm optional | ±50nm | | | |
| 50nm optional | ±200nm | | | |
| 0.5µm optional | ±2µm | | | |
| 1.0µm optional | ±3µm | | | |

Detailed Dimensions FB050 Series



| Model | Travel | A | B |
|-----------|----------|-----------|-----------|
| FB050-020 | 20/.787 | 50/1.969 | 55/2.165 |
| FB050-050 | 50/1.969 | 75/2.953 | 80/3.150 |
| FB050-075 | 75/2.953 | 100/3.937 | 105/4.134 |



Model Number

FB050-020-0.1M2
 FB050-020-0.1M4
 FB050-050-0.1M2
 FB050-050-0.1M4
 FB050-075-0.1M4

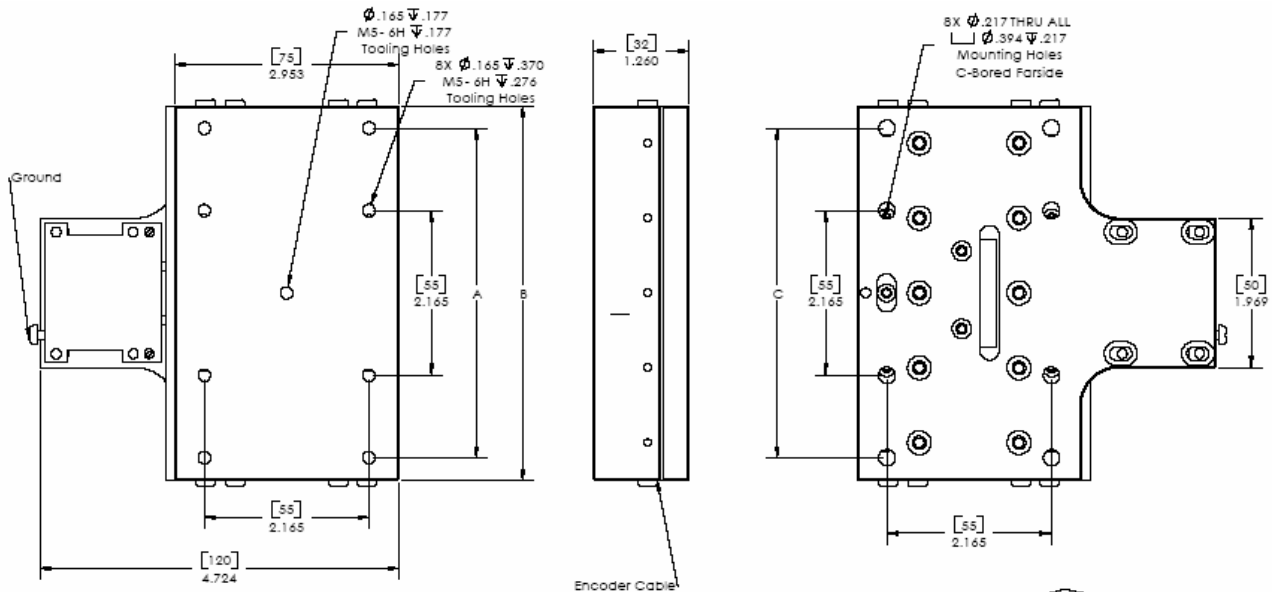
Description

20mm travel, .1 micron resolution, HR2 motor
 20mm travel, .1 micron resolution, HR4 motor
 50mm travel, .1 micron resolution, HR2 motor
 50mm travel, .1 micron resolution, HR4 motor
 75mm travel, .1 micron resolution, HR4 motor

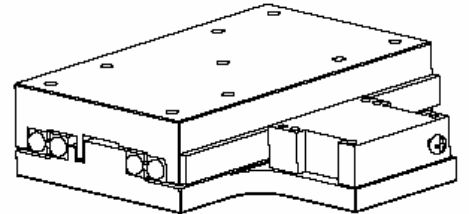
Encoder Options

0.1M .1µm Standard
 1.0M 1µm optional
 0.5M .5µm optional
 50N 50nm optional
 10N 10nm optional

Detailed Dimensions FB075 Series



| Model | Travel | A | B | C |
|-----------|-----------|-----------|-----------|-----------|
| FB075-040 | 40/1.575 | N/A | 75/2.953 | N/A |
| FB075-060 | 60/2.362 | N/A | 100/3.937 | N/A |
| FB075-100 | 100/3.937 | 110/4.331 | 125/4.921 | 110/4.331 |
| FB075-150 | 150/5.906 | 160/6.299 | 175/6.890 | 160/6.299 |



Model Number

FB075-040-0.1M4
 FB075-040-0.1M8
 FB075-060-0.1M4
 FB075-060-0.1M8
 FB075-100-0.1M4
 FB075-100-0.1M8
 FB075-150-0.1M4
 FB075-150-0.1M8 1

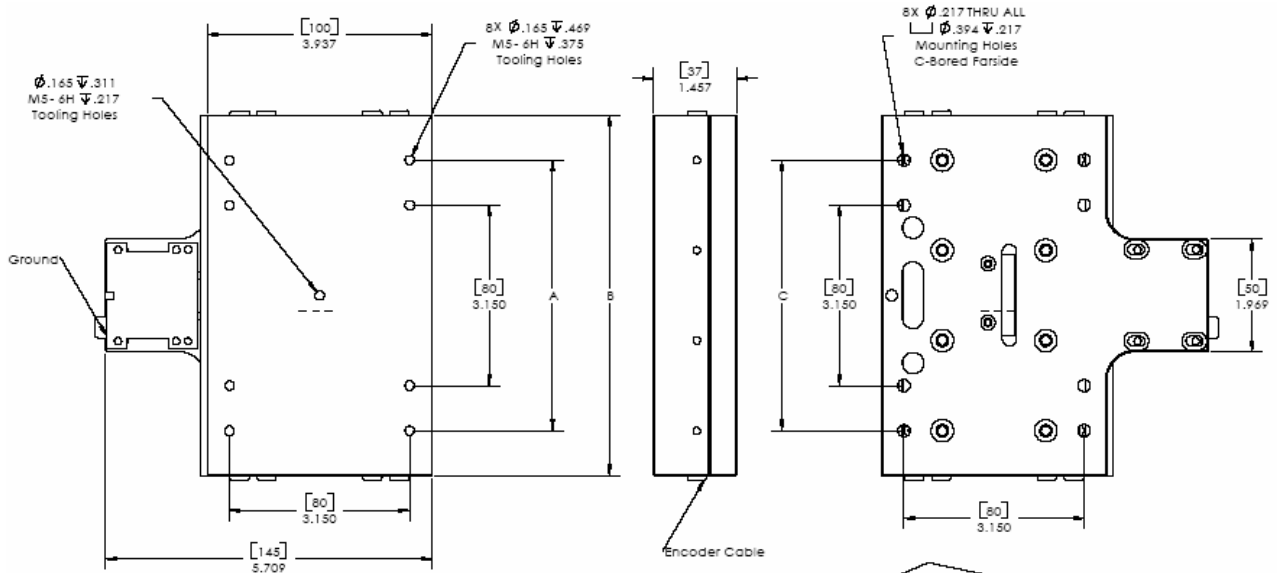
Description

40mm travel, .1 micron resolution, HR4 motor
 40mm travel, .1 micron resolution, HR8 motor
 60mm travel, .1 micron resolution, HR4 motor
 60mm travel, .1 micron resolution, HR8 motor
 100mm travel, .1 micron resolution, HR4 motor
 100mm travel, .1 micron resolution, HR8 motor
 150mm travel, .1 micron resolution, HR4 motor
 50mm travel, .1 micron resolution, HR8 motor

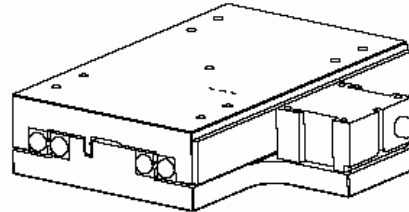
Encoder Options

0.1M .1 μ m Standard
 1.0M 1 μ m optional
 0.5M .5 μ m optional
 50N 50nm optional
 10N 10nm optional

Detailed Dimensions FB100 Series



| Model | Travel | A | B | C |
|-----------|-----------|-----------|-----------|-----------|
| FB100-060 | 60/2.362 | N/A | 120/4.724 | N/A |
| FB100-100 | 100/3.937 | 120/4.724 | 160/6.299 | 120/4.724 |
| FB100-150 | 150/5.906 | 160/6.299 | 200/7.874 | 160/6.299 |



Model Number

FB100-060-0.1M4
 FB100-060-0.1M8
 FB100-100-0.1M4
 FB100-100-0.1M8
 FB100-150-0.1M8

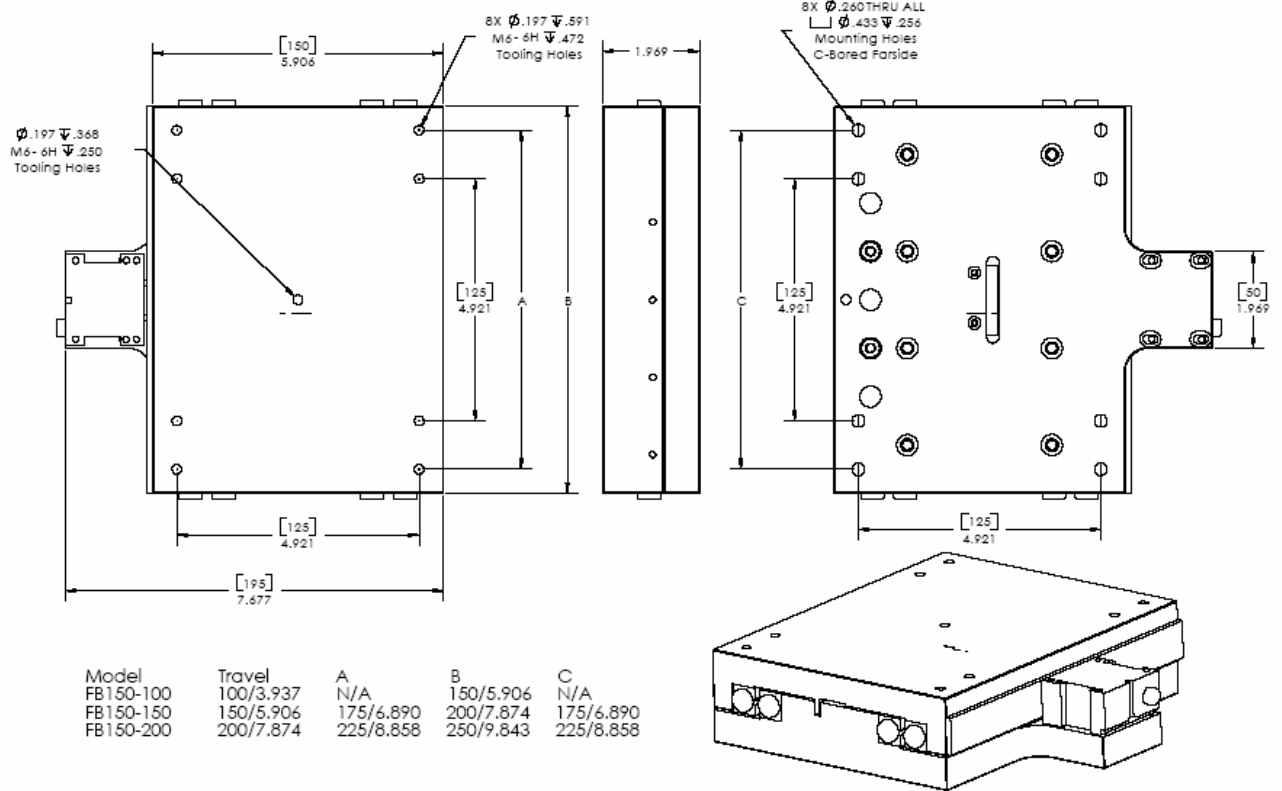
Description

60mm travel, .1 micron resolution, HR4 motor
 60mm travel, .1 micron resolution, HR8 motor
 100mm travel, .1 micron resolution, HR4 motor
 100mm travel, .1 micron resolution, HR8 motor
 150mm travel, .1 micron resolution, HR8 motor

Encoder Options

0.1M .1 μ m Standard
 1.0M 1 μ m optional
 0.5M .5 μ m optional
 50N 50nm optional
 10N 10nm optional

Detailed Dimensions
FB150 Series



Model Number

FB150-100-0.1M8
 FB150-150-0.1M8
 FB150-200-0.1M8

Description

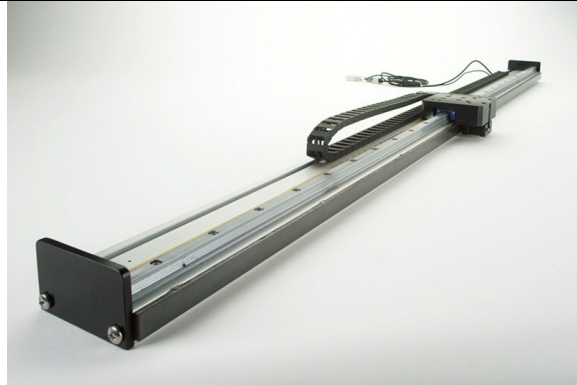
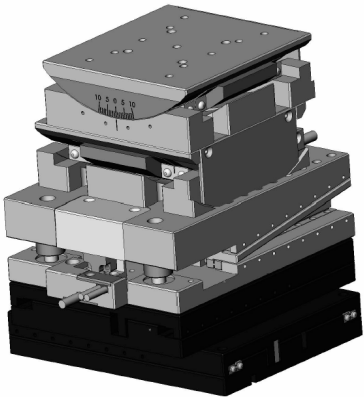
100mm travel, .1 micron resolution, HR8 motor
 150mm travel, .1 micron resolution, HR8 motor
 200mm travel, .1 micron resolution, HR8 motor

Encoder Options

0.1M .1 μ m Standard
 1.0M 1 μ m optional
 0.5M .5 μ m optional
 50N 50nm optional
 10N 10nm optional

Special Motion Platforms

In addition to the FB Series of standard stages, Nanomotion can provide a wide range of customized motion systems for various application requirements. These products are designed for specific performance requirements using standard components, making them cost effective and competitive.

| | |
|--|---|
|  | <p>Long Travel stages utilizing recirculating linear guides are easily constructed with Nanomotion motors. Nanomotion offers drive strips up to 4m lengths.</p> <p>Stages can be configured in a variety of widths with multiple axes for creating a range of Cartesian systems</p> |
| <p>Nanomotion's motor technology is exceptionally well suited to driving rotary motion (eliminating worm gears or belts & pulleys). Using a wide range of standard ring diameters, open & closed frame rotary stages are available with a very low profile and high resolution encoders.</p> |  |
|  | <p>Individual axes can be combined for multiple degrees of freedom. This 5 axis system provides X & Y motion from low profile stages. Z motion is provided from a wedge style stage and tip & tilt are created from standard goniometers.</p> |