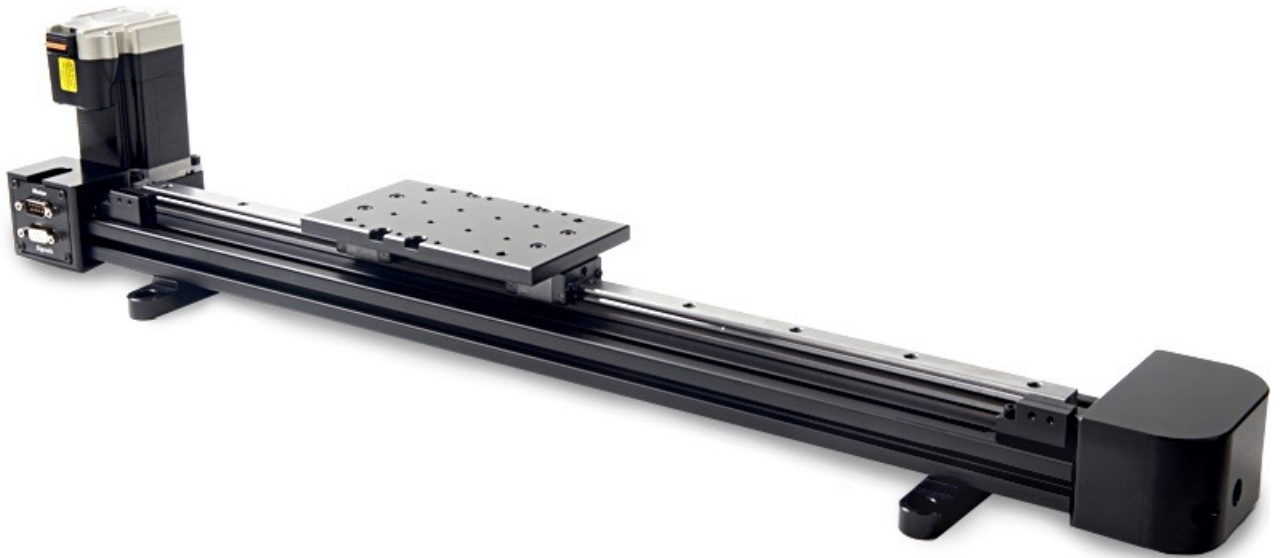


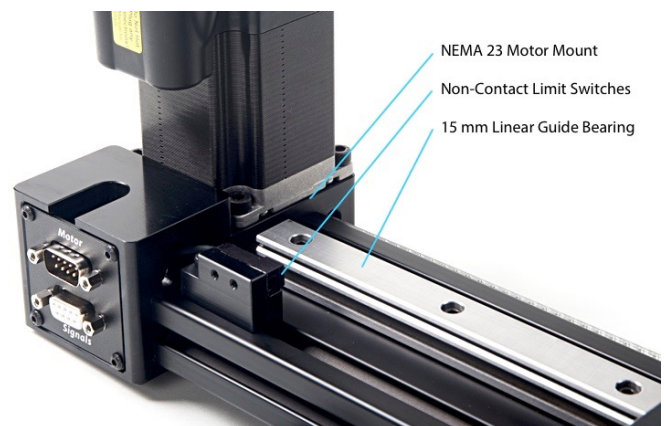
DB SERIES LINEAR STAGE



The DB Series Belt Driven Linear Slide is offered in travel lengths from 400mm to 1500mm. The DB Series comes standard with a high torque NEMA 23 stepper motor or optionally, a MDrive intelligent stepper motor. Both motor options are also available with rotary encoders. An optional 5:1 gearbox is available for applications requiring higher axial force and lower speed. End of travel limit switches come standard on the DB Series linear stage.

The drive system utilizes a 10mm wide, steel reinforced timing belt to move the carriage. The carriage rides on 15mm linear guide bearings bolted to a stiff aluminum extruded chassis.

All DB Series linear slides are machined from 6061 aluminum alloy and black anodized.

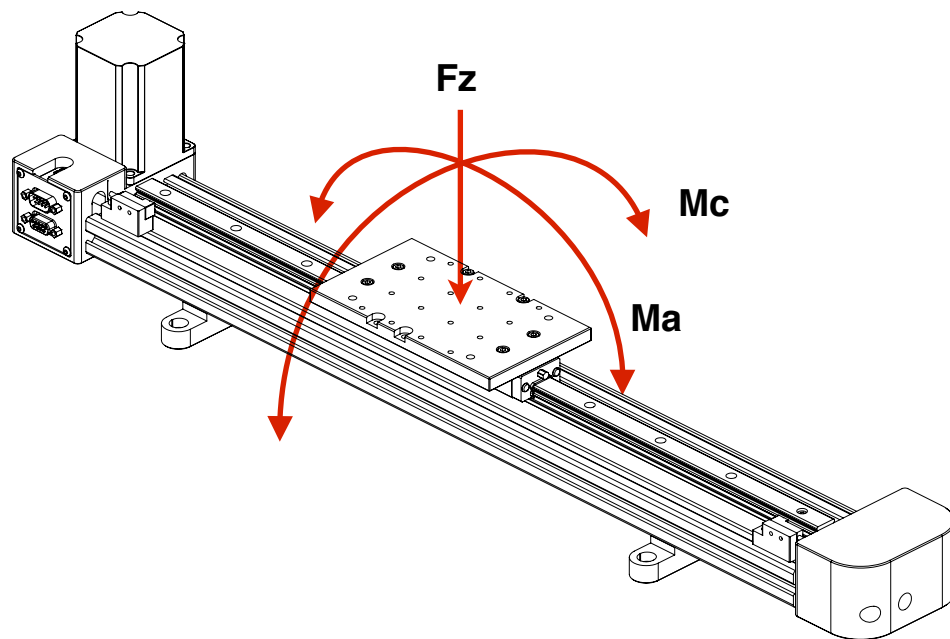


Specifications

Travel Range	400 mm, 600 mm, 800 mm, 1000 mm, 1500 mm
Motor Resolution	4 μm @ 125 microsteps 0.8 μm w/ 5:1 gear
Encoder Resolution	Optical rotary encoder mounted to read of motor, 4000 CPR with index
Linear Travel per Pulley Revolution	100.53096 mm/rev
Uni-directional Repeatability	10 μm
Bi-directional Repeatability	75 μm
Max. Speed	1000 mm/sec 300 mm/sec w/ 5:1 gear head
Gearbox	Optional Size 23, 5:1 gear ratio, standard system does not include gearbox
Maximum Payload	22.6 kg (50 lbs)
Limit Switches	Inductive end of travel limit switches
Stage Weight	DB-400: 5 kg (11 lbs), DB-600: 5.9 kg (13 lbs) DB-800: 6.8 kg (15 lbs), DB-1000: 7.5 kg (16.5 lbs), DB-1500: 9.5 kg (21 lbs)
Material	Aluminum Alloy Construction
Finish	Black Anodize

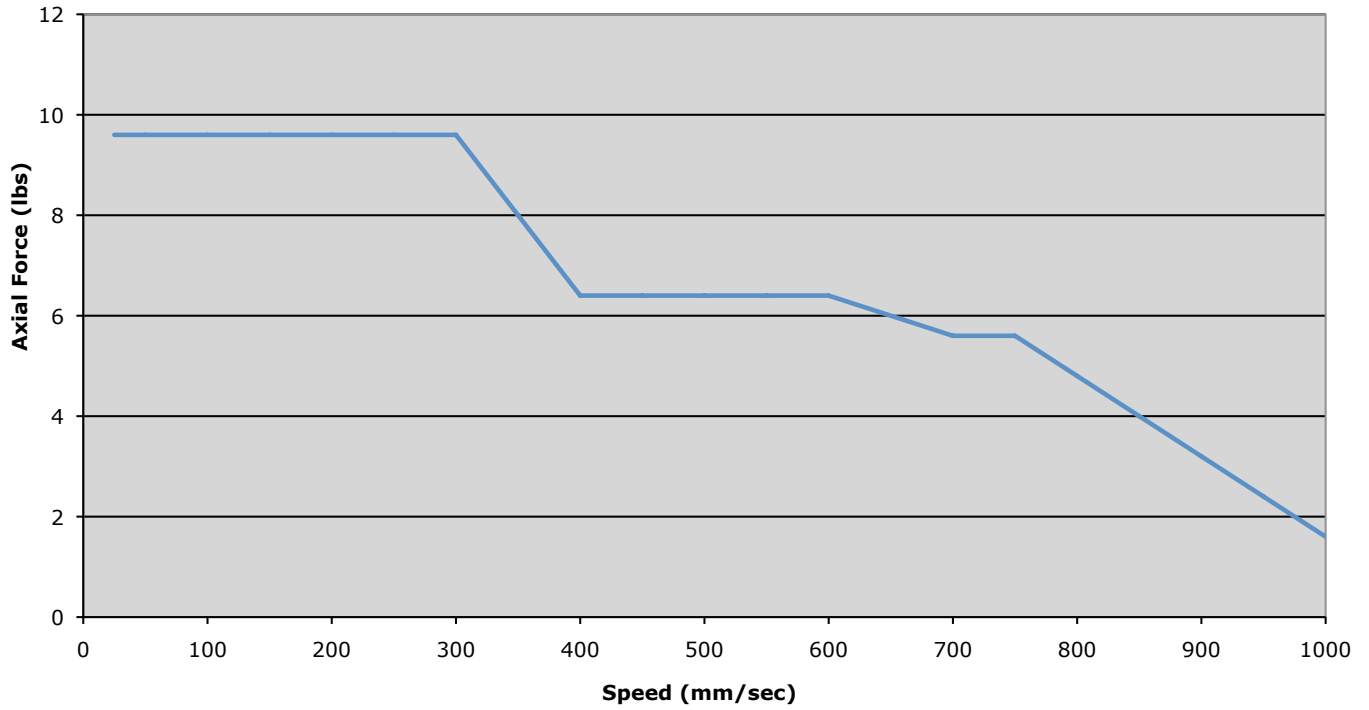
Load Characteristics

Normal Load F_z	22.7 kg (50 lbs)
Moment Load M_a	112 Nm (83 lb-ft)
Moment Load M_c	32 Nm (24 lb-ft)

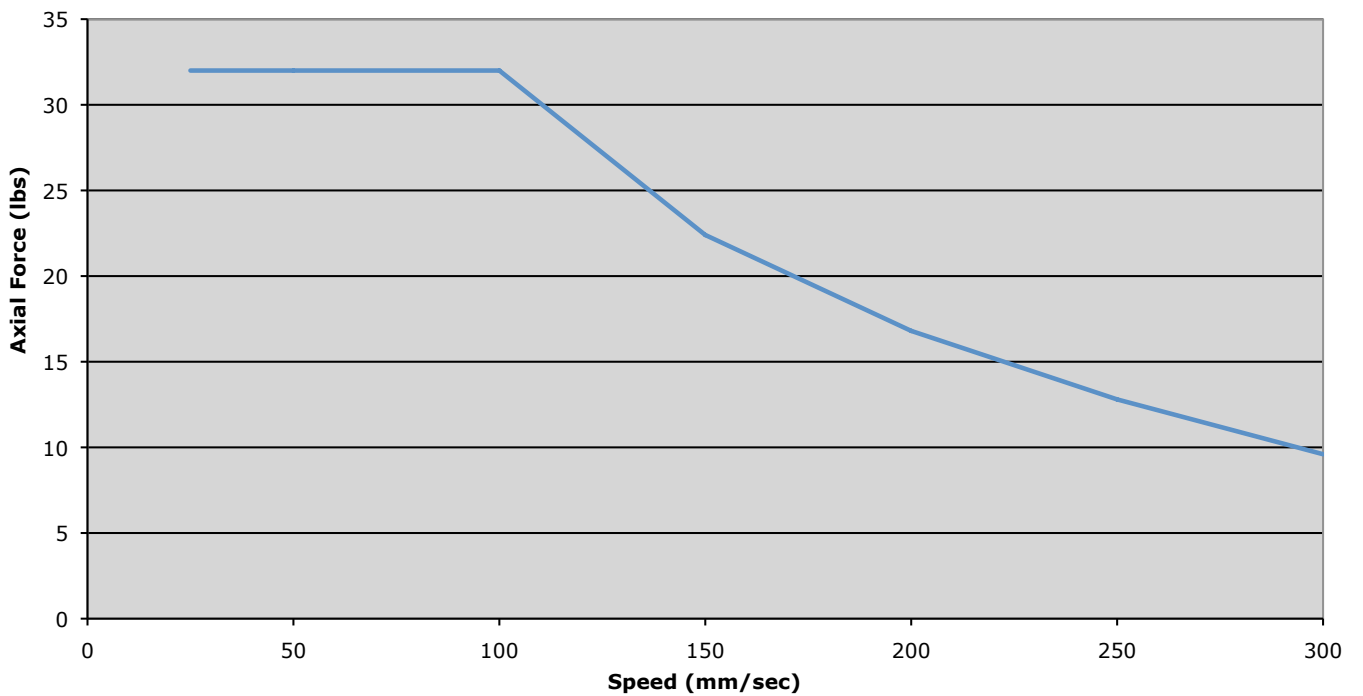


Axial Force

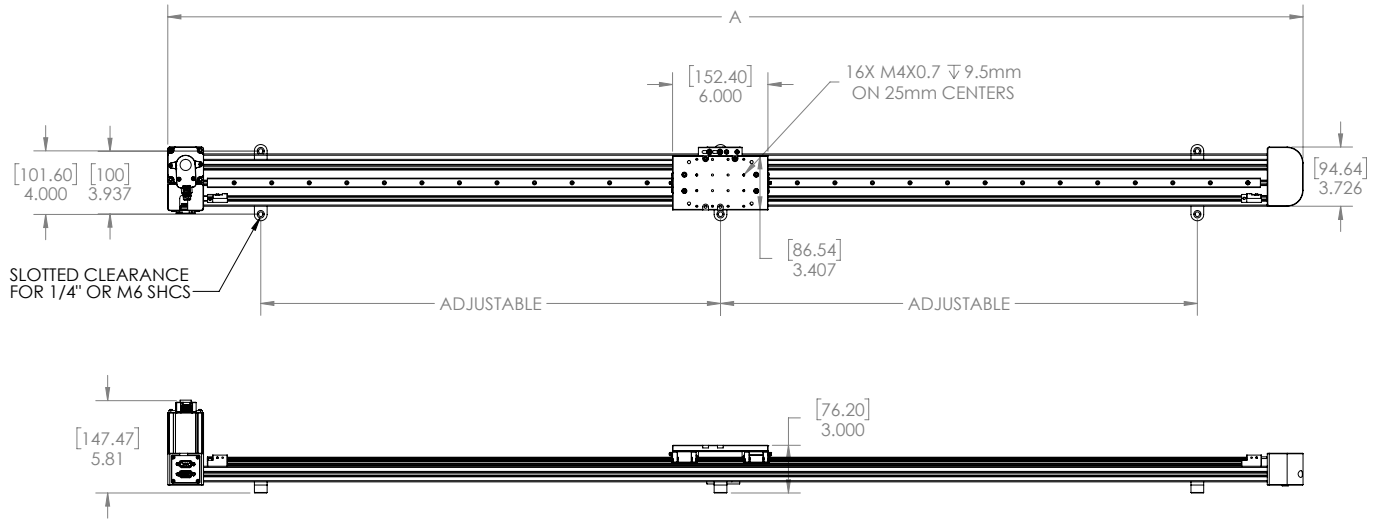
Force vs Speed Curve No Gearbox



Force vs Speed Curve 5:1 Gearbox



Dimensions



TRAVEL	400mm	600mm	800mm	1000mm	1500mm
DIMENSION [mm] A in	$\frac{[714.3]}{28.12}$	$\frac{[914.3]}{36.00}$	$\frac{[1114.3]}{43.87}$	$\frac{[1314.3]}{51.75}$	$\frac{[1814.3]}{71.5}$

Standard Stepper Motor Version

Motor

DB-9 Male	Description
1.	Phase A
2.	Phase A'
3.	Phase B
4.	Phase B'

Motor Specifications

Step Size: 1.8°/step

Amps/Phase: 2.8

Resistance: 1.1 Ohm/Phase

Inductance: 3.8 mH/Phase

Signals (Encoder Option)

DB-9 Female	Description
1.	+ Limit Switch
2.	- Limit Switch (motor side)
3.	Ground
4.	N.C.
5.	+5V

Limit switch wired normally closed

Signals (Encoder Option)

HD-15 Female	Description
1.	+ Limit Switch
2.	- Limit Switch
3.	Limit Switch Ground
4.	Encoder Ground
5.	+5V Encoder Power
6.	Ch. A
7.	Ch. A-
8.	Ch. B
9.	Ch. B-
10.	Index +
11.	Index -

Limit switch wired normally closed

Pin Assignment

MDrive Stepper Motor Version

Motor Connector

DB-9 Male	Description
1.	+24 VDC
2.	Power Ground

Signals Connector

DB-9 Female	Description
1	I/O 3
2	I/O 4
3	GND
4	Analog Input

RS-422 Communications

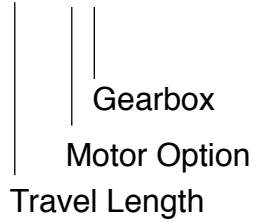
10-Pin IDC	Description
1	TX+
2	TX-
3	RX+
4	RX-
5	Aux-Logic
6	RX+
7	RX-
8	TX-
9	TX+
10	COMM GND

The forward limit switch is connected to I/O 1.
The reverse limit switch is connected to I/O 2.
Limit switches are wired normally closed.

Ordering Information

Part Number Configuration

DB-XXXX-XX



Travel Length

- 400 mm
- 600 mm
- 800 mm
- 1000 mm
- 1500 mm

Motor Options

- 1 Stepper Motor
- 2 Stepper Motor with Encoder
- 3 MDrive Motor with Encoder

Gearbox Option

- leave blank for no gearbox
- G 5:1 Ratio

Motion Controllers

The following Newmark Systems, Inc. controllers are compatible with the DB Stage.

[NCS-A1 Series](#) | [NSC-G Series](#)