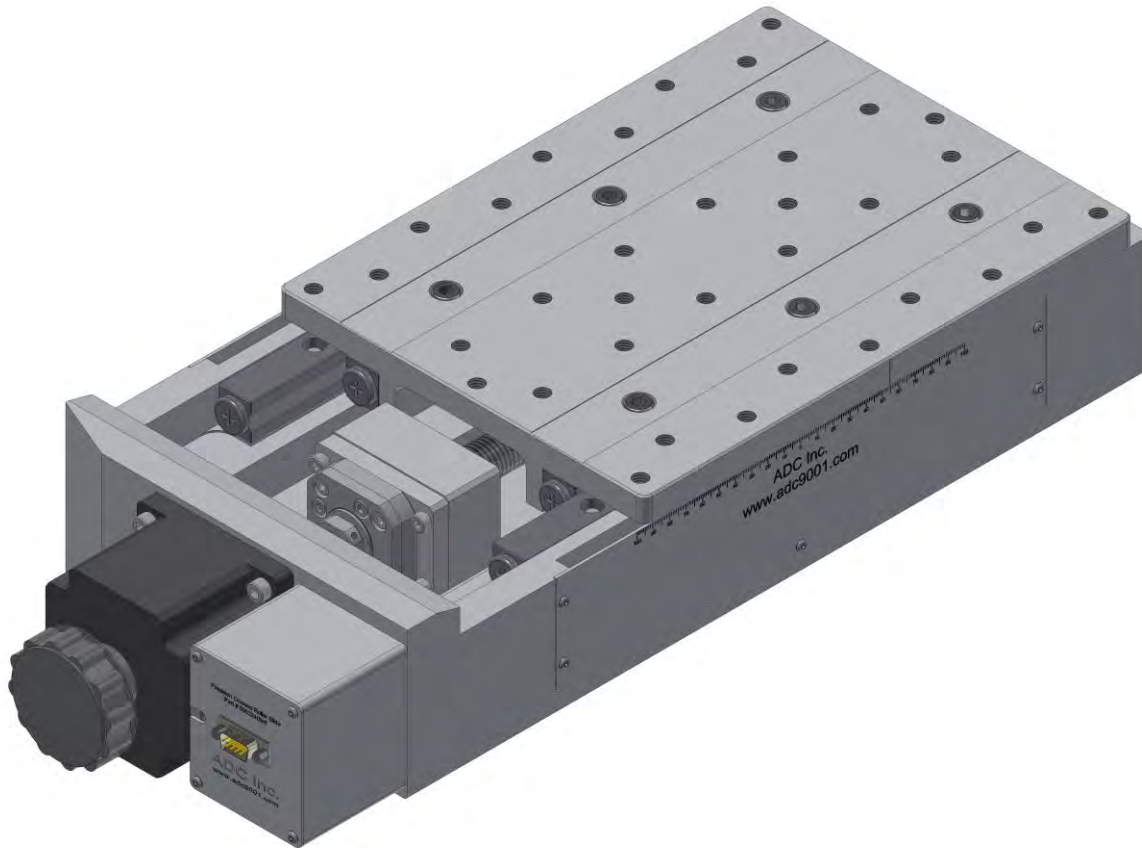


# DS510 Series

Precision Mechanical Linear Stages



**SUBMICRON ACCURACY**

**PRECISION GROUND BALL SCREW**

**PRELOADED CROSSED ROLLER BEARINGS**

**HIGH RESOLUTION AND REPEATABILITY**

126 Ridge Rd, Lansing NY, 14882  
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ADVANCED DESIGN  
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## DS510 SERIES SPECIFICATIONS

The DS510 Series linear slides provide an accurate and rigid platform for use in any positioning system. The rugged anodized aluminum housing features a precision ground base and top plate, each with multiple utility holes for easy integration into the users' system. The stage is driven by a high class preloaded ball screw coupled to a high torque 200 step per revolution stepper motor which can be run in full, half, or micro stepping mode to meet your resolution requirements. Maximum rigidity is assured using preloaded crossed roller linear bearings. Each slide also features two fully adjustable, normally closed limit switches to define the extents of travel.

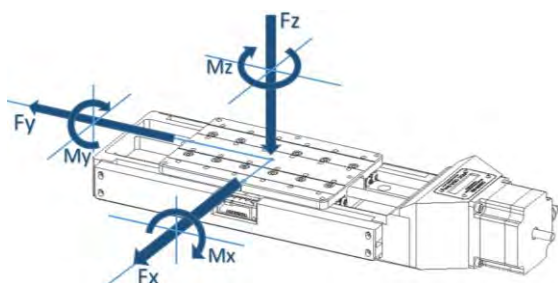
### KEY FEATURES

- Travels 100-300mm
- 1  $\mu\text{m}$  Repeatability
- Various Motor Options
- Load Capacity up to 575 kg
- Ultra-fine Resolution

### LOAD CHARACTERISTICS

Description	Fx (N)	Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)
DS510	9320	5760	10960	3150	3560	3360

\*Loads are not simultaneous



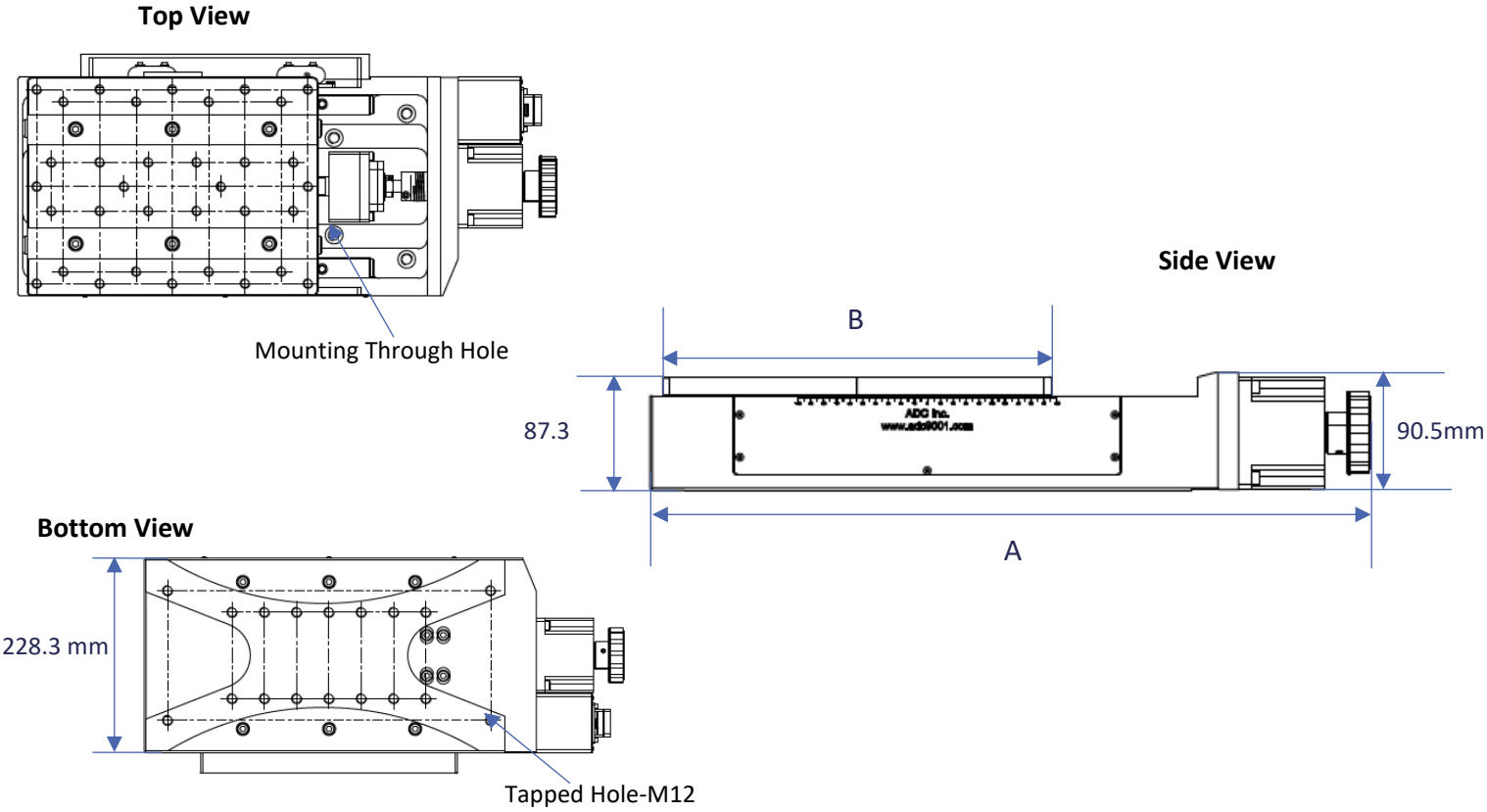
### MECHANICAL

Description	100	300
Travel (mm)	100	300
Optional Linear Encoder	Yes	Yes
Repeatability ( $\mu\text{m}$ RMS)	1	1
Lead Accuracy ( $\mu\text{m}/25\text{mm}$ )	6	6
Trajectory Straightness ( $\mu\text{m}/25\text{mm}$ )	5	5
Ball Screw Lead (mm)	3	3
Maximum Speed (mm/sec)	60	60
Load Capacity (kg)	575	575
Mass (kg)	20.5	47.4

### ELECTRICAL

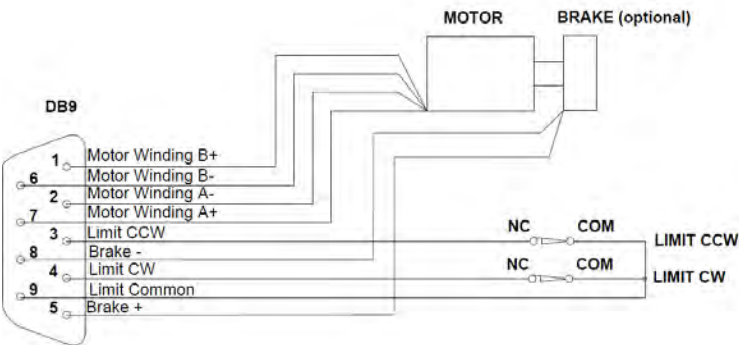
Description	
Motor	2-Phase, 5-Phase Stepper; DC
Limit Switches	Mechanical, Normally Closed
Optical Encoder Type	Renishaw Tonic ( <a href="http://www.renishaw.com">http://www.renishaw.com</a> )
2-Phase Current (Amps/Phase)	4.2

DS510 SERIES DIMENSIONS AND INFORMATION



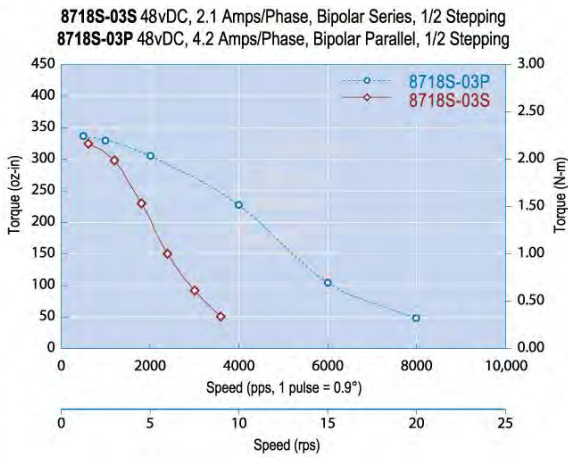
Model	100	300
A- Total Length (mm)	556.6	1065.4
B- Stage Length (mm)	300	600

ELECTRICAL CONNECTOR



ADC uses a standard male DB-9 Connector for both the motor and limit switches.

2-PHASE MOTOR TORQUE GRAPH



## DS510 ORDERING INFORMATION

DS510	-100	-A	-N	-B	-2PH	-G
Series	Model	Air Type	Encoder	Brake	Motor	Gearbox
	-100	-A	-E	-B	-2PH	3:1
	-300	-HV	-N	-N	-5PH	to
					-DC	100:1
						ratio

### Travel Options

-100	100mm Stage Travel
-300	300mm Stage Travel

### Air Preparation Options

-A	Standard Air Stage
-HV	High Vacuum Air Stage, $10^{-7}$ torr

### Optical Encoder Options

-E	With Optical Encoder
-N	Without Optical Encoder

### Brake Options

-B	With Brake, 24VDC
-N	Without Brake

### Motor Options

-2PH	Standard 2 Phase Bi-Polar Stepper Motor
-5PH	5 Phase Stepper Motor
-DC	DC Motor

### Gearbox Option

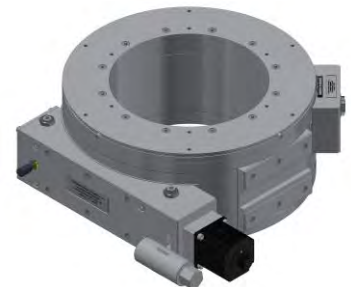
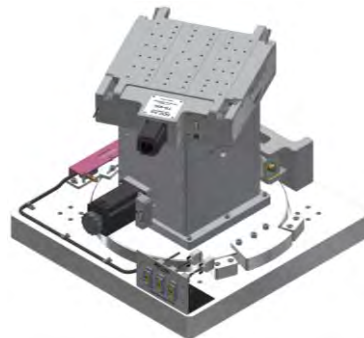
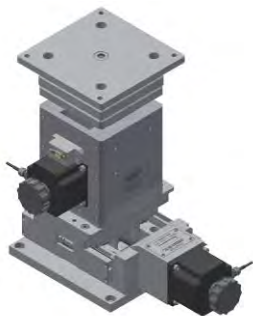
Available from 3:1 to 100:1 ratios

### Example Order

#### DS510-100-A-N-B-2PH

This is an order for a DS510 Precision Crossed Roller Slide with 100 mm travel, in air, with no encoder, with a brake, and a 2-phase motor.

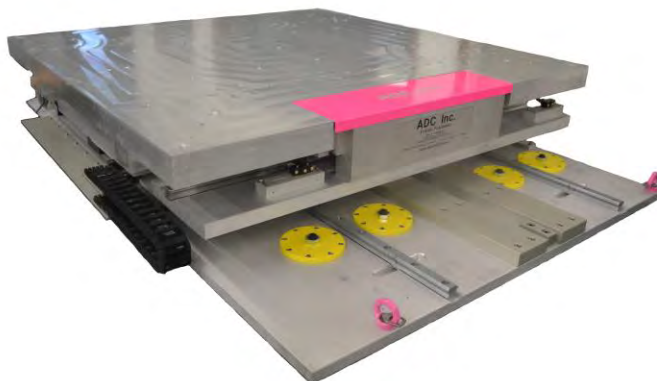
## Similar ADC Products



Linear Stages	Lift Stages
DS210	DJ210
DS310	DJ310
DS410	DJ410
DS510 (Shown)	
Tilt Stages/Goniometer	Rotation Stages
TS-50	RS-100
TS-90	RS-200
TS-160	RS-300
TS-300	RS-400
TS-400	RS-500
Mounting Brackets	Big Jacks
MB200	BJ25-50
MB300	BJ25-100
MB400	BJ25-150
	BJ25-200

## Custom Complex Motion Systems

For custom complex motion systems, contact ADC at [adc@adc9001.com](mailto:adc@adc9001.com) or visit our website [www.adc9001.com](http://www.adc9001.com)



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