



## ***Z Wedge* Series: Vertical Positioning Stages**

Z Wedge Stages are designed for applications requiring precise vertical positioning. Designed with precision crossed rollers and a high-precision ball screw, Z Wedge Stages provide a high-accuracy platform with high stiffness for a variety of applications.

Z Wedge Stages offer designers unobstructed platform access from all sides of the stage (including the top) allowing easy mounting in conveyor and gantry platforms.



# Z Wedge Series



## Travel & Velocity

Model No.	Travel Range		Maximum Vertical Velocity						Maximum Vertical Force					
			2mm Lead		2.5mm Lead		10mm Lead		2mm Lead		2.5mm Lead		10mm Lead	
			(mm)	(in)	(mm/sec)	(in/sec)	(mm/sec)	(in/sec)	(mm/sec)	(in/sec)	(kgf)	(lbf)	(kgf)	(lbf)
Z100	10	0.39	—	—	12.50	0.49	—	—	—	—	20	44	—	—
Z150	13	0.51	10	0.393	—	—	50	2	40	88	—	—	20	44
Z200	25	0.89	10	0.393	—	—	50	2	56	123	—	—	28	61

## Accuracy Specifications<sup>(1)</sup>

Model No.	Straightness		Pitch & Yaw (arc sec)	Accuracy <sup>(2)</sup>		Repeatability <sup>(2)</sup>		Parallelism	
	(microns/25mm)	(in/in)		(microns)	(in/in)	(microns)	(in)	(microns/25mm)	(in/in)
Z100, Z150 & Z200	± 6	±0.0002	±7.5	±7.5	±0.0003	2	0.0001	± 6	±0.0002

(1) Accuracy is based on stage mounted to a flat granite surface and measured at 25mm above the center of the stage.  
 (2) Accuracy and Repeatability are based on open loop and can be enhanced with linear encoder feedback.  
 Note: For higher precision consult factory

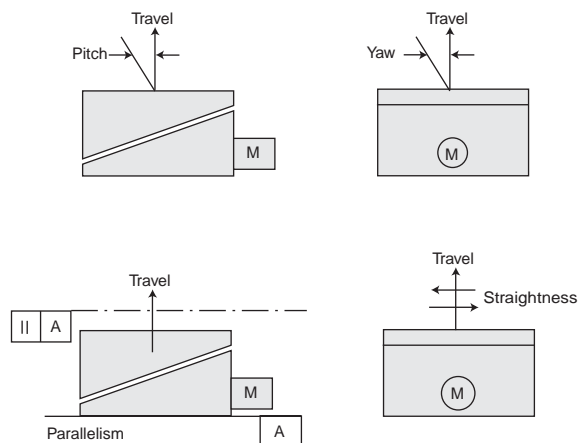
## Resolution (Z100 = 2,000 LPR, Z150/200 = 2500 LPR) for Vertical Position ("D" Version)

Model No.	2mm Lead		2.5mm Lead		10mm Lead	
	(mm/count)	(in/count)	(mm/count)	(in/count)	(mm/count)	(in/count)
Z100	—	—	0.000114	0.0000045	—	—
Z150	0.0000728	0.00000287	—	—	0.000364	0.0000143
Z200	0.0000728	0.00000287	—	—	0.000364	0.0000143

Note: Count represents post quadrature encoder increment.

## Rotary Encoder Specifications ("D" Version)

Resolution	2,000 Line or 2,500 Line
Electrical Input	5 Vdc, 60 ma maximum
Encoder Output	Dual channel quadrature Differential, TTL compatible Frequency Response 125 KHz





## ▶ **Z Wedge Series:** **Precise Vertical Motion**

### **When to Use:**

- ▶ Precision vertical motion
- ▶ Short travel
- ▶ Sub-micron repeatability
- ▶ Smooth motion

### **Applications:**

- ▶ Auto focusing
- ▶ Electronic probing
- ▶ Part insertion
- ▶ Lifting/Leveling platforms
- ▶ Metrology/Part inspection

### **High Accuracy, Vertical Positioning**

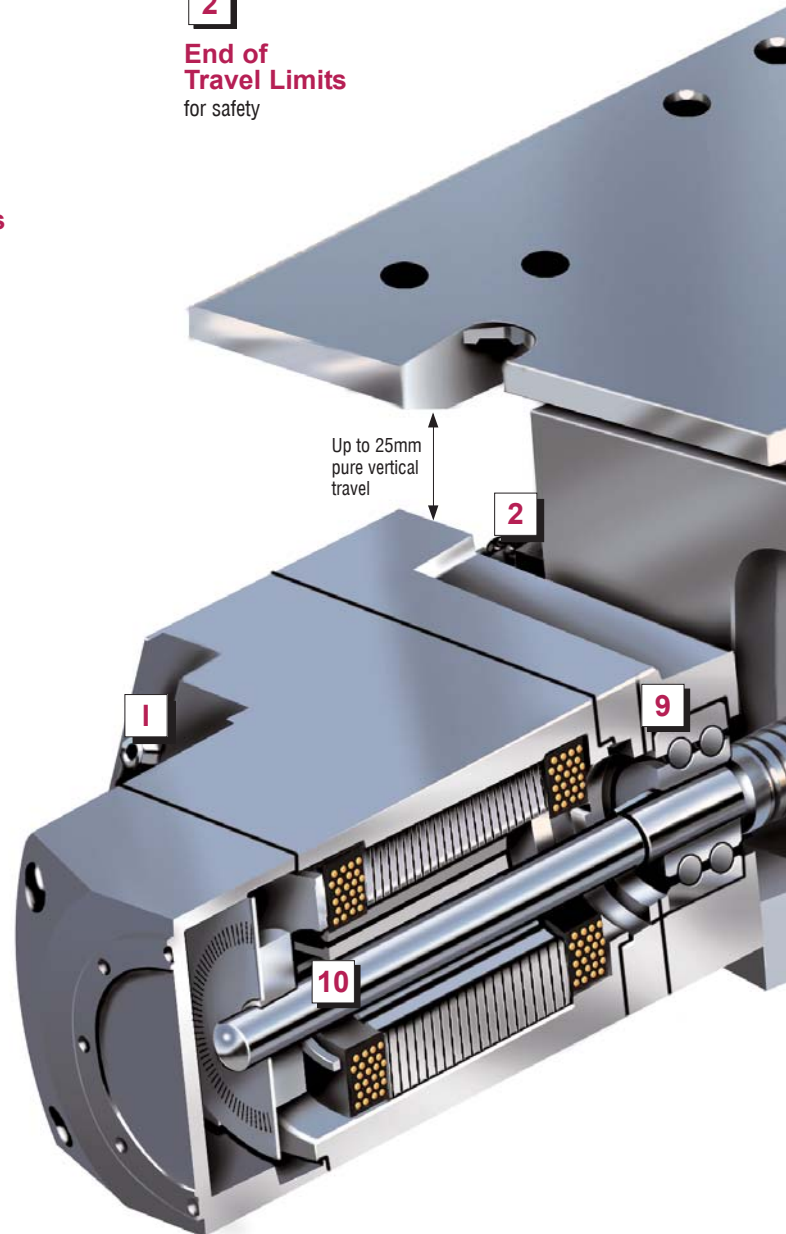
The Z Wedge provides vertical motion by driving the center wedge horizontally. As the center wedge moves, the top plate is actuated straight up and down without any horizontal displacement. Designed using a lightweight aluminum alloy, Z Wedge Stages provide precise movement, any way you need it.

**1**  
**Sub D Connectors**  
for "plug & play"  
operation and  
easy hook-up

**2**  
**End of  
Travel Limits**  
for safety

Up to 25mm  
pure vertical  
travel

**10**  
**Rotary Encoder  
and Integrated  
High-Efficiency  
Brushless  
Servo Motor**  
for precision positioning





3

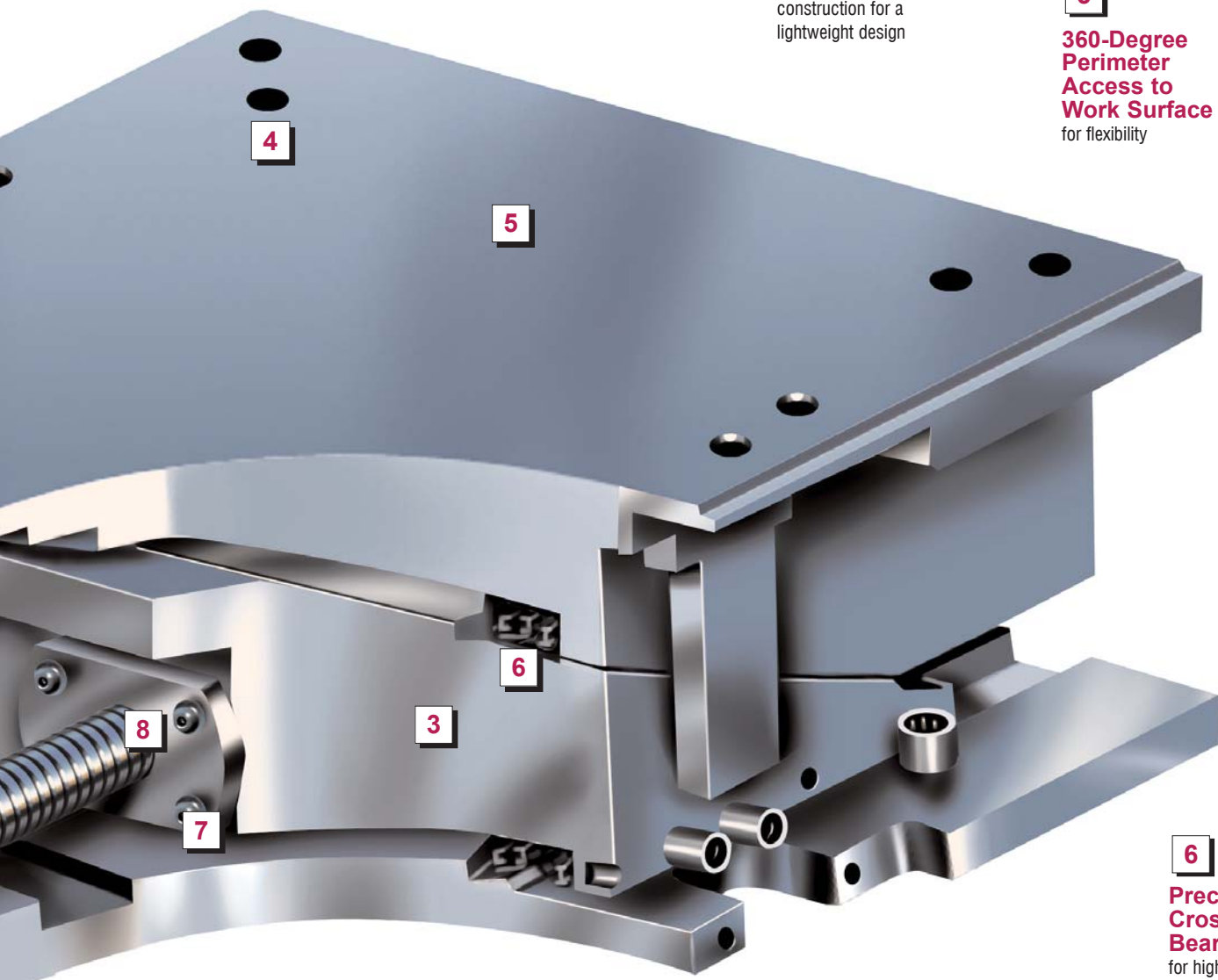
**Center Wedge**  
horizontal drive for pure  
vertical displacement

4

**Top Plate  
Aluminum**  
construction for a  
lightweight design

5

**360-Degree  
Perimeter  
Access to  
Work Surface**  
for flexibility



4

5

6

8

3

7

6

**Precision  
Crossed Roller  
Bearings**  
for high loads, low friction  
and straight line accuracy

9

**Pre-loaded Duplex  
Angular Contact Bearings**  
for ball screw support and high  
rotational speed

8

**C3 Class Precision  
Ground Ball Screw**  
for high accuracy

7

**Single Nut  
Preload**  
for position repeatability

**Linear & Rotary  
Positioning Stages**



# Z Wedge Series

## Motor Specifications Z100 ("D" Version)

KO32 Frameless Motor with:	
Voltage	160V
$K_{EL-L}$ (V/kRPM)	29.2
$K_{TL-L}$ (Nm/amp)	39.5
(oz in/amp)	0.28
$R_{L-L}$ (ohms)	105.7
$L_{L-L}$ (mH)	52.5
Pole	4
Rotor Inertia	0.0064 gm cm sec <sup>2</sup> 0.000089 oz in sec <sup>2</sup>

## Motor Specifications Z150 & Z200 ("D" Version)

KO44 Frameless Motor with:		
Voltage	160V	300V
$K_{EL-L}$ (V/kRPM)	23.5	46.9
$K_{TL-L}$ (Nm/amp)	0.22	0.45
(oz in/amp)	31.7	62.4
$R_{L-L}$ (ohms)	7.7	30.8
$L_{L-L}$ (mH)	8	32
Pole	6	6
Rotor Inertia	0.044 gm cm sec <sup>2</sup> 0.00061 oz in sec <sup>2</sup>	

## Inertia

Model No.	Total Inertia at Input Shaft (Screw, Wedge and Top Plate)					
	2mm Lead		2.5mm Lead		10mm Lead	
	(gm cm sec <sup>2</sup> )	(oz in sec <sup>2</sup> )	(gm cm sec <sup>2</sup> )	(oz in sec <sup>2</sup> )	(gm cm sec <sup>2</sup> )	(oz in sec <sup>2</sup> )
Z100	—	—	0.00469	0.000058	—	—
Z150	0.018	0.000252	—	—	0.051	0.000703
Z200	0.026	0.000362	—	—	0.069	0.000964

## Coupling Inertia ("F" Version)

Model No.	(gm cm sec <sup>2</sup> )	(oz in sec <sup>2</sup> )
Z100, Z150 & Z200	0.0112	0.00016

## Effective Lead for Load

Screw Lead	Effective Load Lead <sup>(1)</sup>	
	(mm)	(in)
2mm	0.728	0.0287
2.5mm	0.91	0.0359
10mm	3.640	0.1433

(1) Vertical Travel per one rotation of screw

## Inertia Calculation with Working Load:

Total Inertia at Input Shaft (From Inertia Table) +  
 Customer Load Inertia as Calculated using Effective Lead Table +  
 Coupling Inertia ("F" Version Only) +  
 Motor Rotor Inertia

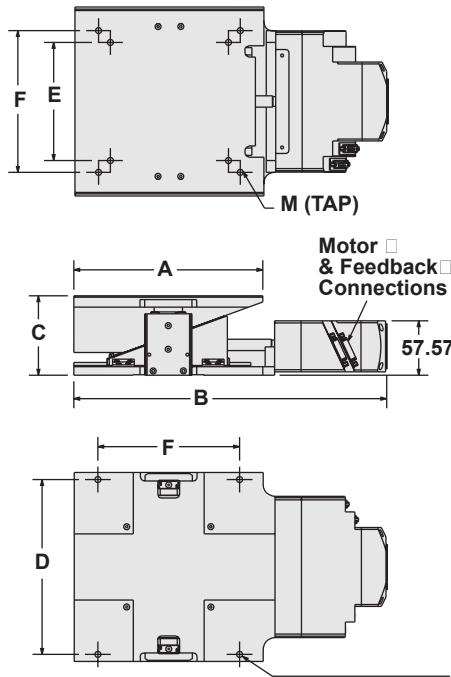
---

= Total System Inertia

# Z Wedge Series: Direct Drive Motor



## Dimensions



Model No.	H			
	Counterbore (mm)	Counterbore (in)	Thru Hole (mm)	Thru Hole (in)
Z100	9.75x5dp	0.38x0.2dp	6	0.24
Z150 & Z200	8x5dp	0.32x0.2dp	5	0.2

Linear & Rotary  
Positioning Stages

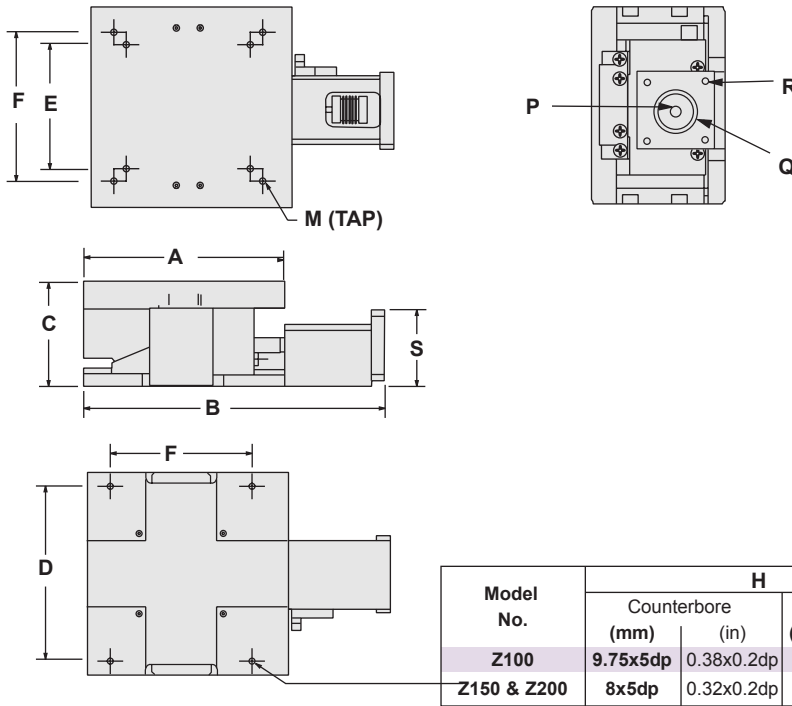
Model No.	A		B		C			
	(mm)	(in)	(mm)	(in)	Maximum Height		Minimum Height	
					(mm)	(in)	(mm)	(in)
Z100D-010	100	3.94	210	8.27	73	2.87	63	2.48
Z150D-013	150	5.90	282	11.10	78	3.07	65	2.55
Z200D-025	200	7.87	332	13.07	96.5	3.79	71.5	2.81

Model No.	D		E		F		M	Stage Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	Tap	(kg)	(lb)
Z100D-010	75	2.95	75	2.95	85	2.95	M4x0.7	2.27	5.0
Z150D-013	130	5.11	100	3.93	125	4.92	M6x1	5.5	12.12
Z200D-025	185	7.28	125	4.92	150	5.90	M6x1	8.0	17.64



# Z Wedge Series: Flanged for External Motor Drive

## Dimensions



Model No.	A		B		C			
	(mm)	(in)	(mm)	(in)	Maximum Height		Minimum Height	
					(mm)	(in)	(mm)	(in)
Z100F	100	3.94	168	6.61	73	2.87	63	2.48
Z150F	150	5.90	215	8.46	78	3.07	65	2.55
Z200F	200	7.87	265	10.43	96.5	3.79	71.5	2.81

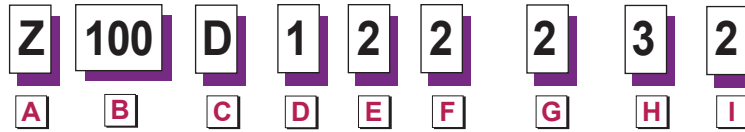
Model No.	D		E		F		M Tap	Stage Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)		(kg)	(lb)
Z100F	75	2.95	75	2.95	85	2.95	M4.07	2.27	5.0
Z150F	130	5.11	100	3.93	125	4.92	M6x1	4.0	8.82
Z200F	185	7.28	125	4.92	150	5.90	M6x1	6.5	14.33

Model No.	Motor	P Coupling I.D.		Q Pilot Diameter		R Hole	R B.C. Diameter	S Flange Height	
		(mm)	(in)	(mm)	(in)			(mm)	(in)
Z100F	NM17	6	0.236	22	0.079	3.5 Thru	43.84	46	1.81
Z150F	NM23	6.35	0.250	38.1	1.50	#8-32	66.67	60	2.36
Z200F	BM60	9.50	0.375	50	1.969	M5	70	60	2.36

# Z Wedge Series: How to Order



Order  
Numbering  
Example:



<b>A</b>	<b>STAGE SERIES</b>
<b>Z</b>	Z Wedge Series

<b>B</b>	<b>METRIC WIDTH OF STAGE</b>
<b>100</b>	100mm
<b>150</b>	150mm
<b>200</b>	200mm

<b>C</b>	<b>MOTOR MOUNTING</b>
<b>D</b>	Direct Drive Motor (All)
<b>F</b>	Flanged for External Motor

<b>D</b>	<b>MOTOR TYPE</b>
<b>1</b>	NEMA 17 Mounting (Z100 Only)
<b>2</b>	NEMA 23 Mounting (Z150 / Z200)
<b>3</b>	BM60 Mounting (Z150 / Z200)
<b>4</b>	Direct Drive 160V, 2,000 LPR (Z100D Only)
<b>5</b>	Direct Drive 160V, 2,500 LPR (Z150D / Z200D)
<b>6</b>	Direct Drive 300V, 2,500 LPR (Z150D / Z200D)

<b>E</b>	<b>TRAVEL</b>
<b>1</b>	13 mm (Z150 only)
<b>2</b>	25 mm (Z200 only)
<b>3</b>	10 mm (Z100 only)

<b>F</b>	<b>LEAD</b>
<b>1</b>	2 mm (Z150 / Z200)
<b>2</b>	10 mm (Z150 / Z200)
<b>3</b>	2.5 mm (Z100)

<b>G</b>	<b>LIMIT SWITCHES</b>
<b>1</b>	None
<b>2</b>	End of Travel

<b>H</b>	<b>ENVIRONMENT</b>
<b>1</b>	Standard
<b>2</b>	Vacuum
<b>3</b>	Clean Room (Class 10,000)
<b>4</b>	Radiation

<b>I</b>	<b>WINDING</b>
<b>1</b>	None (F Series Only)
<b>2</b>	160 V
<b>3</b>	300 V *

\* Not available for Z100

Linear & Rotary  
Positioning Stages

## Cable Options:

### Mating Power Cable

Part Number	Length	Used With
10963018	3 meter	Flying Leads
10963067	8 meter	Flying Leads

### Mating Sensor Cable

Part Number	Length	Used With
10963019	3 meter	Flying Leads
10963137	3 meter	i-Drive
10963066	8 meter	Flying Leads
10963138	8 meter	i-Drive
10963136 <sup>(1)</sup>	—	i-Drive / Controller

(1) NOTE: When an external controller is used in a closed loop mode an additional sensor cable, part number 10963136, is required.

Specifications are subject to change without notice.

## How to Order

Z Wedge are supported by a worldwide network of offices and local distributors.  
Call **1-800-305-4555** for application engineering assistance or for the name of your local distributor.  
Information can also be obtained at [www.baysidemotion.com](http://www.baysidemotion.com).



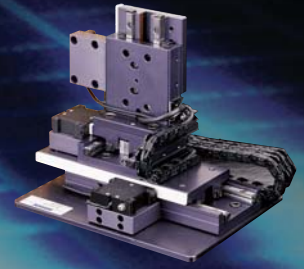
## ► **Nano Series:** **Nanopositioning Stages**

Bayside's Nanopositioning Stages are designed specifically to meet the demanding application requirements of fiber optic alignment, attachment, and component manufacturing processes. Precision linear stages combine bearings in a small stage with a high resolution linear encoder and a unique piezo motor or brushless DC linear servo motors.

The piezo motor combines the ability to achieve resolutions below 50nm, with absolute position stability, and speeds up to 200mm per second all with long travel lengths.



# Nano Series: Applications

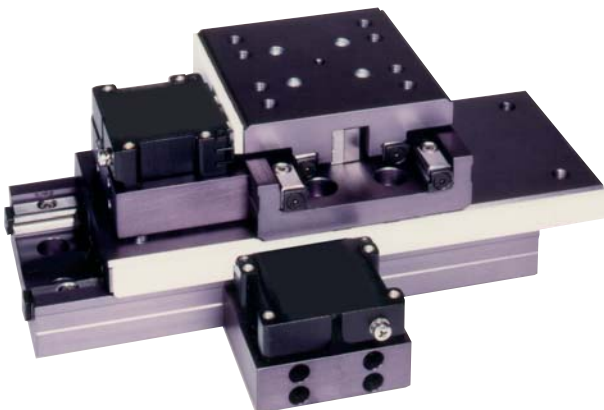


## Fiber Alignment / Laser Diode Test & Assembly / Mirror Calibration

The processes surrounding fiber alignment, to a component, a laser diode, or even another fiber, requires the ability to make extremely small incremental moves, ranging from 50 to 100 nanometers, and ultimately stop and hold a stable position, without dither. After a fiber is moved around to determine a precise alignment, transmitting the maximum light from one element to another element, it must be held in place for an attachment process. Be it laser welding, epoxy, or soldering, the attachment process demands position stability to assure the determined alignment does not move.

Bayside accomplishes this motion requirement with a stage that uses precision crossed roller bearings that provide exceptional stiffness with smooth rolling action, a linear encoder mounted down the center (to minimize the effects of angular error), and a piezo linear motor, which can drive both linear and rotary stages. The piezo motor acts as a friction drive, as it is pressed against an opposing ceramic surface. While the motor can operate in the 5 nanometers range, the encoder resolution will determine the smallest incremental move under closed loop servo operation. Standard positioning systems support 50 nanometers encoder resolution and ZERO servo dither when the desired position is achieved.

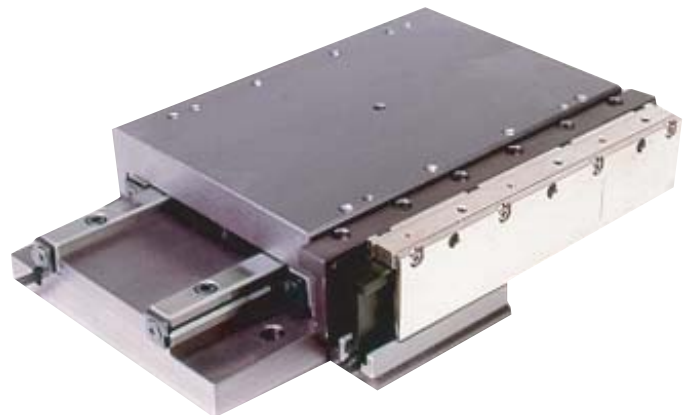
Whether the process is to calibrate a mirror assembly, align and test a laser diode, or align a fiber to a component, each process requires sensing the strength of light and setting a position. The technology built into Bayside's photonics stages combines the benefits of high resolution motion with the ability to achieve high speeds and long travels. In one compact package Bayside can address load/unload positions, rapid moves (200mm/sec), and the critical motion characteristics for fiber processes.



## Inspection / Scanning

As fiber optic manufacturing processes vary, so do the motion requirements. Contrary to the high position stability requirements during alignment and test, there are several applications that involve the melting of glass fibers, scanning and inspection. Such applications need constant motion with extremely low velocity ripple. These applications also require high resolution, but not because of dither, rather for constant velocity.

Constant velocity at speeds of 50 microns per second requires an exceptionally smooth bearing structure with good accuracy, high resolution and accuracy from the linear encoder, and a smooth, non-cogging drive mechanism. Bayside has addressed this need with a low profile, hollow crossed roller stage that rivals air bearing performance. The stage has a linear encoder and brushless DC linear servo motor mounted on its side. This stage features constant velocity of better than 0.5% with speeds down to 50 microns per second, well suited for fiber attach on the fly and other scanning applications.



Linear & Rotary  
Positioning Stages



# Nano Series: Nanopositioning Stages

## Piezo Linear Motor Stages Performance Specifications

### High Force Drive

(100 nanometer step size)

4 Element Motor	
Maximum Velocity	200 mm/sec (7.87 in/sec)
Static Holding Force	14 N (3.2 lb)
Nominal Life	20,000 hours (2)
Maximum Voltage	270 Vrms, 39.6 KHz, sine
Max Current Consumption	320 ma <sub>rms</sub>
Max Power Consumption	15 W
Operating Temperature	0 to 50 °C (32 to 122 °F)
Typical Accuracy (1)	± 0.5µm/25 (±0.00002 in/in)
Typical Repeatability	0.25µm (0.00001 in)
8 Element Motor	
Maximum Velocity	200 mm/sec (7.87 in/sec)
Static Holding Force	28 N (6.3 lb)
Nominal Life	20,000 hours (2)
Maximum Voltage	270 Vrms, 39.6 KHz, sine
Max Current Consumption	600 ma <sub>rms</sub>
Max Power Consumption	30 W
Operating Temperature	0 to 50 °C (32 to 122 °F)
Typical Accuracy (1)	± 0.5µm/25 (±0.00002 in/in)
Typical Repeatability	0.25µm (0.00001 in)

### High Precision Drive

(50 nanometer step size)

4 Element Motor	
Maximum Velocity	20 mm/sec (0.787 in/sec)
Static Holding Force	4 N (0.9 lb)
Nominal Life	20,000 hours (2)
Maximum Voltage	125 Vrms, 39.6 KHz, sine
Max Current Consumption	130 ma <sub>rms</sub>
Max. Power Consumption	3 W
Operating Temperature	0 to 50 °C (32 to 122 °F)
Typical Accuracy (1)	± 0.25µm/25 (±0.00001in/in)
Typical Repeatability	0.125µm (0.000005in)
8 Element Motor	
Maximum Velocity	20 mm/sec 0.787 in/sec)
Static Holding Force	8 N (1.8 lb)
Nominal Life	20,000 hours (2)
Maximum Voltage	125 Vrms, 39.6 KHz, sine
Max. Current Consumption	250 ma <sub>rms</sub>
Max Power Consumption	6 W
Operating Temperature	0 to 50 °C(32 to 122 °F)
Typical Accuracy (1)	± 0.25µm/25 (±0.00001in/in)
Typical Repeatability	0.125µm (0.000005in)

(1) Typical Accuracy and Repeatability specifications tested while the stage is mounted to a granite surface and calibrated with a laser interferometer. Performances may vary based on testing methods and servo parameters.

(2) Estimated Life

## Brushless DC Linear Motor Stages

Peak Force	$F_p$	66.8 N (15 lb)
Continuous Force	$F_c$	22.2 N (5 lb)
Motor Constant	$K_m$	4 N / $\sqrt{W}$ (0.9 lb / $\sqrt{W}$ )
Max. Continuous Power Dissipation	$P_c$	31 W
Peak Current	$I_p$	7 amps RMS
Continuous Current	$I_c$	2.5 amps RMS
Thermal Resistance	$R_{th}$	0.4 °C / W
Resistance	$R_{L-L}$	3.8 ohms
Inductance	$L_{L-L}$	1 mH
Back EMF Constant	$K_E$	V <sub>peak</sub> /mm/sec L-L 9.84 V <sub>peak</sub> /in/sec L-L 0.25
Force Constant	$K_f$	8.9 N / A <sub>rms</sub> (2.0 lb / A <sub>rms</sub> )
Typical Accuracy (1)		±1mm / 25mm
Typical Repeatability (1)		0.25mm

(1) Typical Accuracy and Repeatability specifications tested while the stage is mounted to a granite surface and calibrated with a laser interferometer. Performances may vary based on testing methods and servo parameters.

## Linear Encoder

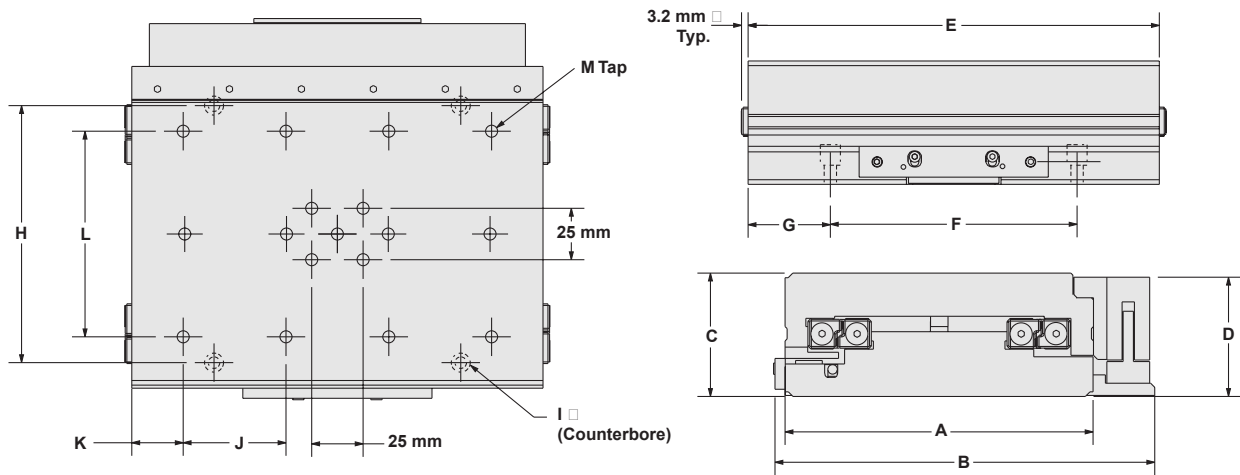
All stages are provided with a noncontact, optical linear encoder. Each encoder is supplied with an external interface box. Available resolutions are 1.0, 0.5, 0.1 micron, and 50 nanometers.

Encoder Power Supply	5 Vdc ± 5%
Operating Temperature	0 to 55 °C
Output Signal	Square wave differential line driver, after external multiplier

# Nano Series: FL150 mm Linear Motor Drive



## Dimensions



Linear & Rotary  
Positioning Stages

## Constant Velocity Stage Dimensions

Model No.	Travel		A		B		C		D		E		F	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
FL150	100	3.94	150	5.91	185	7.28	60	2.36	58	2.28	200	7.87	150	5.91

Model No.	G		H		I	J		K		L		M
	(mm)	(in)	(mm)	(in)	Tap	(mm)	(in)	(mm)	(in)	(mm)	(in)	Tap
FL150	25	0.98	125	4.92	M6	50x3	1.97x0.12	25	0.98	100	3.94	M6

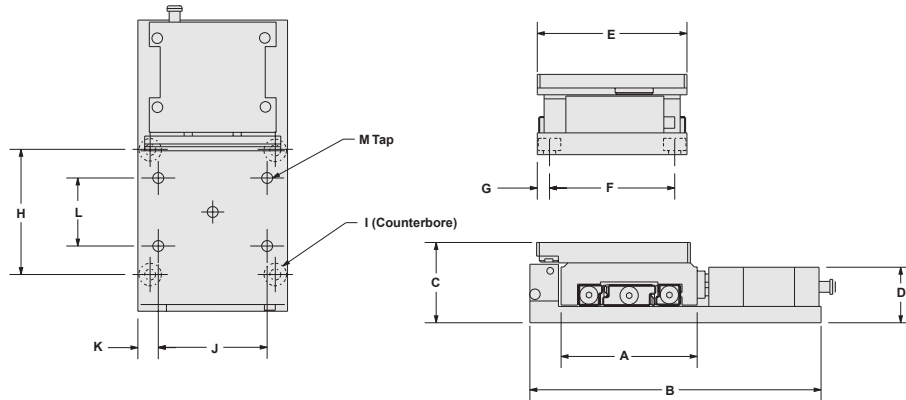
Specifications are subject to change without notice.



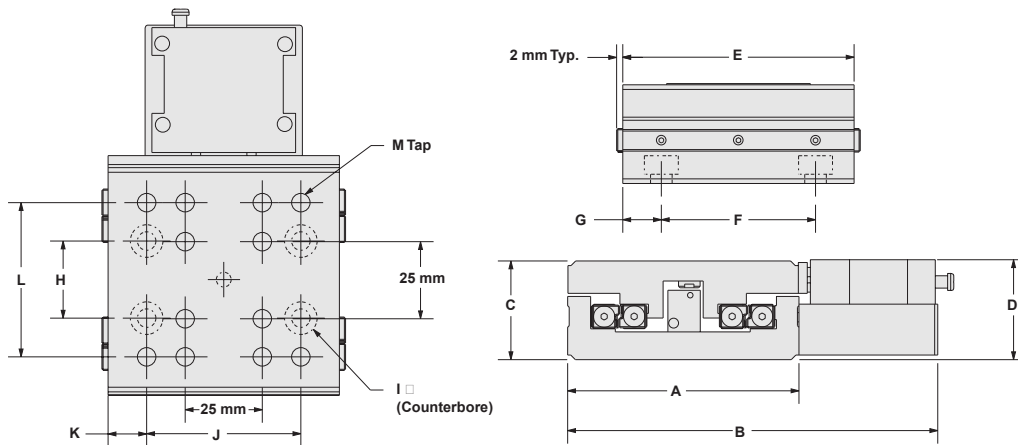
# Nano Series: FL50 & FL75 mm Piezo Motor Drive

## Dimensions

### 50mm Position Stability Stage



### 75mm Position Stability Stage



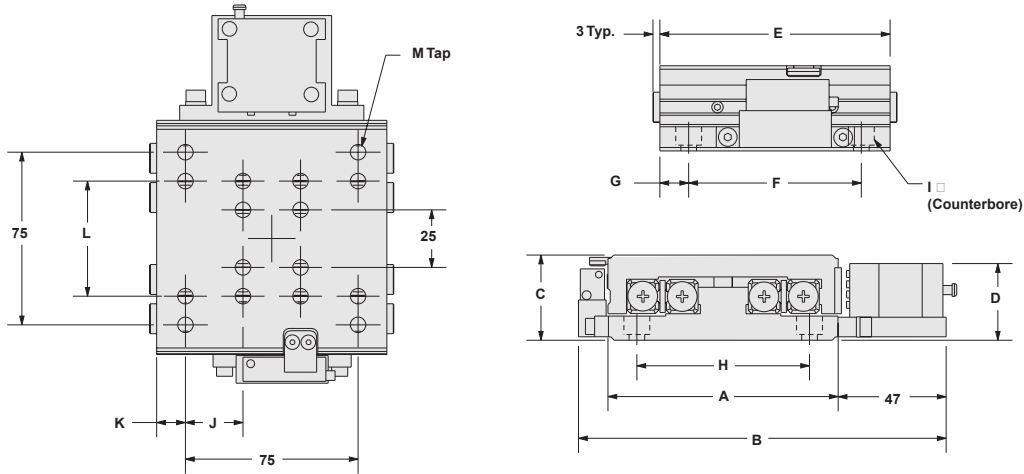
## Position Stability Stage Dimensions

Model No.	Travel		A		B		C		D		E		F		G		H		I Tap	J		K		L		M Tap
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)		(mm)	(in)	(mm)	(in)	(mm)	(in)	
FL050	015	0.59	50	1.97	107	4.2	29.5	1.16	20.5	0.81	55	2.16	46	1.81	4.5	0.177	46	1.81	M4	40	1.57	7.5	0.295	25	0.984	M4
FL075	040	1.57	75	2.95	120	4.72	32	1.26	32.4	1.28	75	2.95	50	1.97	12.5	0.492	25	0.984	M6	50	1.97	12.5	0.492	50	1.97	M6
FL075	060	2.36	75	2.95	120	4.72	32	1.26	32.4	1.28	100	3.94	75	2.95	12.5	0.492	25	0.984	M6	50	1.97	25.0	0.492	50	1.97	M6
FL075	080	3.15	75	2.95	120	4.72	32	1.26	32.4	1.28	125	4.92	100	3.94	12.5	0.492	25	0.984	M6	50x2	1.97	12.5	0.492	50	1.97	M6
FL075	110	4.33	75	2.95	120	4.72	32	1.26	32.4	1.28	150	5.91	125	4.92	12.5	0.492	25	0.984	M6	50x2	1.97	25.0	0.492	50	1.97	M6
FL075	130	5.12	75	2.95	120	4.72	32	1.26	32.4	1.28	175	6.89	150	5.91	12.5	0.492	25	0.984	M6	50x3	1.97	12.5	0.492	50	1.97	M6
FL075	160	6.3	75	2.95	120	4.72	32	1.26	32.4	1.28	200	7.87	175	6.89	12.5	0.492	25	0.984	M6	50x3	1.97	25.0	0.984	50	1.97	M6

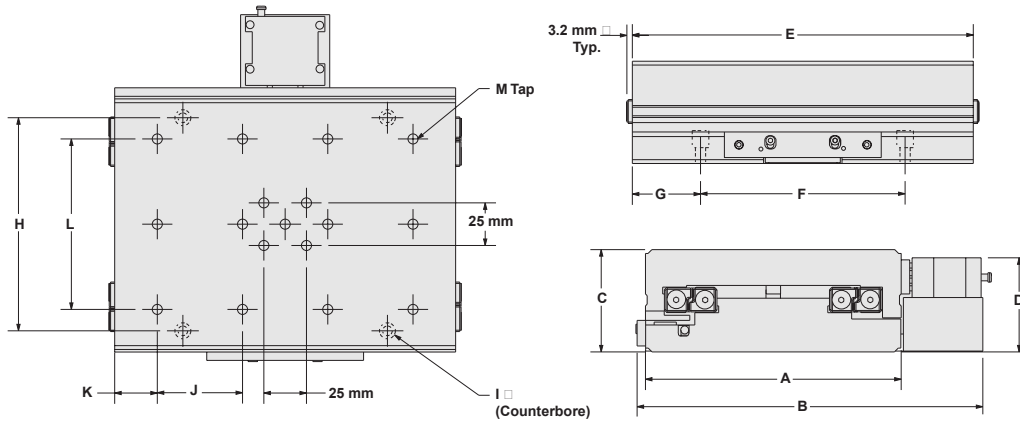
# Nano Series: FL100 & FL150 mm Piezo Motor Drive



## 100mm Position Stability Stage



## 150mm Position Stability Stage



Linear & Rotary  
Positioning Stages

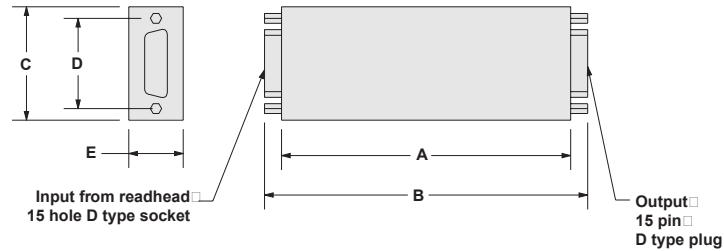
## Position Stability Stage Dimensions

Model No.	Travel		A		B		C		D		E		F		G		H		I Tap	J		K		L		M Tap
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)		(mm)	(in)	(mm)	(in)	(mm)	(in)	
FL100	060	2.36	100	3.94	160	6.3	37	1.46	33.3	1.31	100	3.94	75	2.95	12.5	0.492	75	2.95	M6	25x3	0.984	12.5	0.492	50	1.97	M6
FL100	100	3.94	100	3.94	160	6.3	37	1.46	33.3	1.31	150	5.91	75	2.95	37.5	1.48	75	2.95	M6	25x5	0.984	12.5	0.492	50	1.97	M6
FL100	160	6.3	100	3.94	160	6.3	37	1.46	33.3	1.31	200	7.87	100	3.94	50.0	1.97	75	2.95	M6	25x7	0.984	12.5	0.492	50	1.97	M6
FL150	100	3.94	150	5.91	197	7.76	50	1.97	42	1.65	150	5.91	150	4.92	12.5	0.492	125	4.92	M6	50x2	1.97	25	0.98	100	3.94	M6
FL150	145	5.70	150	5.91	197	7.76	50	1.97	42	1.65	200	7.87	150	5.91	37.5	1.48	125	4.92	M6	50x3	1.97	25	0.98	100	3.94	M6



# Nano Series: Encoder Interface & Options

## Linear Encoder Interface



## Dimensions (used with all Models)

Model No.	A		B		C		D		E	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
0.05 $\mu$ m	130	2.12	144	5.7	41	1.6	32	1.3	16	0.63
0.1 $\mu$ m	100	3.94	114	5.7	41	1.6	32	1.3	16	0.63
0.5 $\mu$ m	100	3.94	114	5.7	41	1.6	32	1.3	16	0.63
1.0 $\mu$ m	100	3.94	114	5.7	41	1.6	32	1.3	16	0.63

## Options:

### Calibration Option

Bayside provides laser calibrated and/or matched roller options to optimize your stage for the most demanding applications.

### P.A.C.T.

Prevents crossed roller bearing creep in vertical and/or high speed applications.

### Special Environment Option

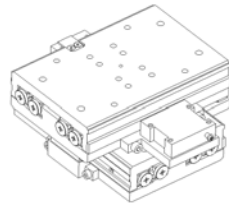
Bayside can prepare your stage for a variety of environments including:

- ▶ Vacuum
- ▶ Clean Room
- ▶ Radiation
- ▶ Food Grade

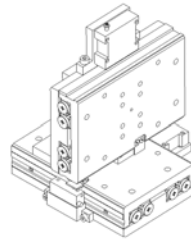
### Special Lubricants

Dry lubricant suitable for environments that need a dry, permanent lubrication (e.g. vacuum rated applications).

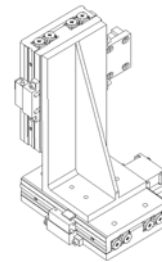
## Suggested Orientations:



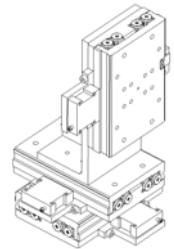
Option 1



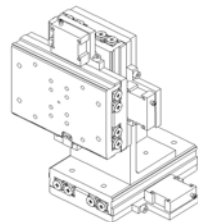
Option 2



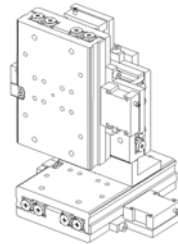
Option 3



Option 4



Option 5



Option 6

## X / Y

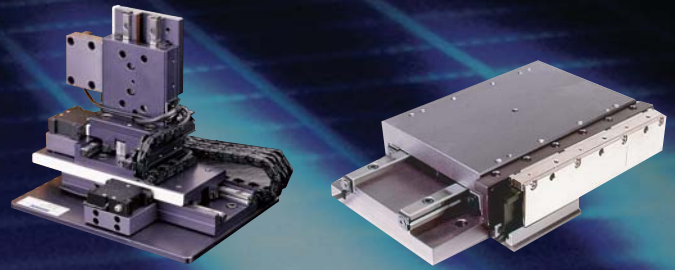
Any X / Y configuration can be achieved by a simple mounting of two standard axes together. Standard travels and stage widths can be varied to create the most appropriate configuration for any particular application.

## X / Y / Z

A wide variety of X / Y / Z configurations can be achieved with standard axes and angle brackets. The Z platform can face in any direction, relative to the X / Y motion and travels and stage widths can easily be varied.

Stage mounting can be centered or off center, depending on requirements and a Z axis work surface can be created with standard brackets.

# Nano Series: How to Order



Order  
Numbering  
Example:

**FL**  
A

**075**  
B

**060**  
C

**2**  
D

**1**  
E

**2**  
F

<b>A</b>	<b>STAGE SERIES</b>
<b>FL</b>	Nanopositioning Series

<b>B</b>	<b>METRIC WIDTH OF STAGE</b>
<b>050</b>	50 mm
<b>075</b>	75 mm
<b>100</b>	100 mm
<b>150</b>	150 mm

<b>C</b>	<b>TRAVEL</b>	<b>Width</b>		
	050	075	100	150
	<b>015</b>	<b>040</b>	<b>060</b>	<b>100</b>
	—	<b>060</b>	<b>100</b>	<b>145</b>
	—	<b>080</b>	<b>160</b>	—
	—	<b>110</b>	—	—
	—	<b>130</b>	—	—
	—	<b>160</b>	—	—

<b>D</b>	<b>DRIVES</b>
<b>1</b>	4 Element motor High Force
<b>2</b>	4 Element motor High Precision
<b>3</b>	8 Element motor High Force (2)
<b>4</b>	8 Element motor High Precision (2)
<b>5</b>	Brushless DC motor (1,3)

<b>E</b>	<b>LIMITS</b>
<b>1</b>	Home
<b>2</b>	End of Travel
<b>3</b>	End of Travel and Home (3)
<b>4</b>	None

<b>F</b>	<b>LINEAR ENCODER (4)</b>	<b>Width</b>			
		<b>050</b>	<b>075</b>	<b>100</b>	<b>150</b>
	<b>1</b>	0.05 $\mu$ m	0.05 $\mu$ m	0.05 $\mu$ m	—
	<b>2</b>	0.10 $\mu$ m	0.10 $\mu$ m	0.10 $\mu$ m	0.10 $\mu$ m
	<b>3</b>	0.50 $\mu$ m	0.50 $\mu$ m	0.50 $\mu$ m	0.50 $\mu$ m
	<b>4</b>	1.00 $\mu$ m	1.00 $\mu$ m	1.00 $\mu$ m	1.00 $\mu$ m

## NOTES:

- (1) Only available in 100mm travel
- (2) Only available in 100 & 150mm width
- (3) Only available on 150 width
- (4) All encoders come with separate interface box

Linear & Rotary  
Positioning Stages

Specifications are subject to change without notice.

## How to Order

Bayside's Photonic Series positioning stages are supported by a worldwide network of offices and local distributors. Call **1-800-305-4555** for application engineering assistance or for the name of your local distributor. Information can also be obtained at [www.baysidemotion.com](http://www.baysidemotion.com).