

# 400XR High Precision Ball screw Driven Tables

Precise multi-axis positioning systems play an integral part in today's semiconductor, computer peripheral, biomedical and electronics industries. The demands for tighter specifications, improved throughput and consistent quality have become increasingly stringent. Because of the complexity associated with these systems, many manufacturers insist on a single source supplier to eliminate multiple vendor design incompatibilities and delivery conflicts.

Machine builders and OEM's turn to Parker for the most advanced, easy to integrate high precision electro-mechanical systems.



## Parker High Precision Systems and Services include:

- Selectable levels of integration that let you pick the product or system which suits your need and fits your capability
- The most comprehensive array of products in the industry
- Advanced product development
- Outstanding system design engineering and manufacturing expertise
- Seamless integration with other Parker components including servo motors, motor drives, controls, interfaces, actuators, pneumatics, and structural components
- Modular construction from standard catalog tables or custom systems designed and built to specification
- Global Parker support network (1-800-C-PARKER)

## High Precision System Features

- Easy, multi-axis connectivity
- Submicron precision
- Velocities up to sixty inches per second
- Clean room and vacuum compatible
- Thorough testing and certification

# The “400XR” Product Family



- ▶ Pre-engineered package
- ▶ Performance matched components
- ▶ Protection from environment
- ▶ Certified precision

### 1. High Strength Aluminum Body

Extruded aluminum housing is precision machined to provide outstanding straightness and flatness.

### 2. Square Rail Linear Bearing

These tables are equipped with square rail carriage support bearings which provide high load carrying capabilities, smooth precise motion and dependable performance.

### 3. High Efficiency Ballscrew Drive

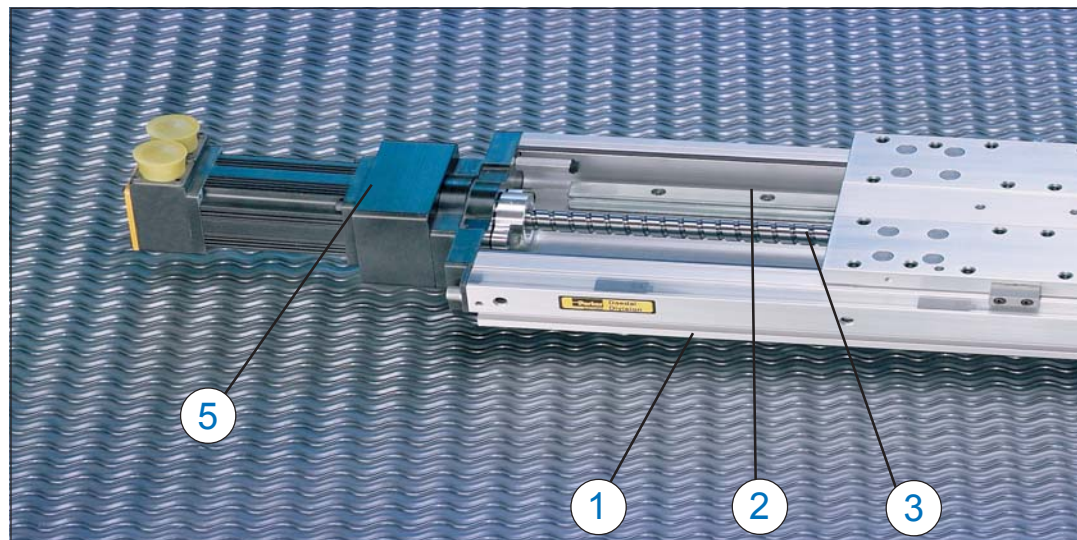
Precision ground, or rolled ballscrew drive (5, 10, 20, 25, 32 mm lead) offers high throughput, efficiency, accuracy and repeatability.

### 4. Limit/Home Sensors Pack

Proximity sensors establish end of travel and “home” location and are easily adjustable over entire length to restrict the travel envelope.

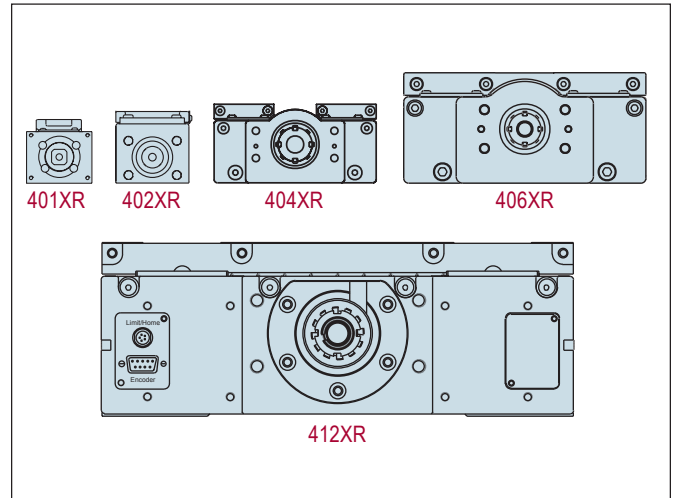
### Clean Room Preparation

Class 10 clean room preparation is a standard option for the 400XR series. For detailed technical information on clean room preparation, contact Daedal’s Application Engineering Department.



The “400XR” precision linear positioners family has achieved global recognition for consistent accuracy, reliable performance, high strength, and unmatched versatility. The XRs have excelled in industries such as life sciences, fiber optics and instrumentation, where the highest degree of precision is demanded. And yet, because of the rugged construction, strength, and sealed design, these units have been used extensively for industrial automation applications (packaging, automotive, etc).

The XR family offers an unrivaled array of features and options which are easily matched to fit any application, from the very basic to the highly complex. Premier performance, modular compatibility, and quick delivery have made these tables the perfect building blocks for cost-effective multi-axis systems.



### Typical Enhancements

- Limit/home position sensors
- Linear encoder feedback
- Clean room preparation
- Multi-axis brackets & adapters
- Selectable motor mounts
- Servo motors and drive
- Programmable controls
- Cable management system

	401XR	402XR	404XR	406XR	412XR
<b>Travel</b>	300 mm	600 mm	600 mm	2000 mm	2000 mm
<b>Load</b>	50 kg	100 kg	170 kg	630 kg	1470 kg
<b>Accel.</b>	20 m/sec <sup>2</sup>	20 m/sec <sup>2</sup>	20 m/sec <sup>2</sup>	20 m/sec <sup>2</sup>	20 m/sec <sup>2</sup>

### 5. Motor Mounts

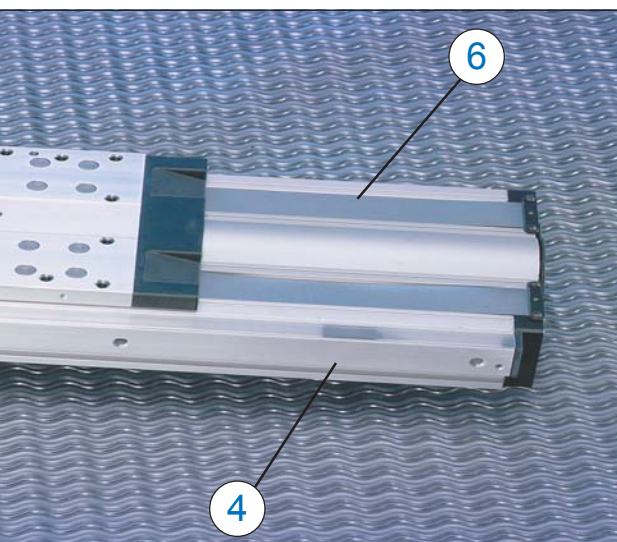
A large selection of servo and stepper motor sizes; plus selectable mounting configurations (in-line, parallel, multi-positional) permit a wide variety of motor mounting possibilities.

### 6. IP30 Rated Strip Seals

An anodized aluminum cover combined with stainless steel strip seals provide IP30 protection to interior components as well as enhance the overall appearance.

### Shaft Brake

The electromagnetic shaft brake option couples directly to the drive screw and is employed primarily on vertical axes to halt carriage motion during a power loss.  
 Not shown



### Encoders

The linear encoder option offers direct positional feedback of the carriage location. The rotary shaft encoder couples directly to the drive shaft to nullify any incurred mechanical error (particularly useful with the parallel motor mount). Not shown

### Convenient Mounting Slots

Continuous slots along the side of the table body provide a convenient means of mounting the table to a work surface as well as mounting accessories to the table.

### Positive Pressure Port

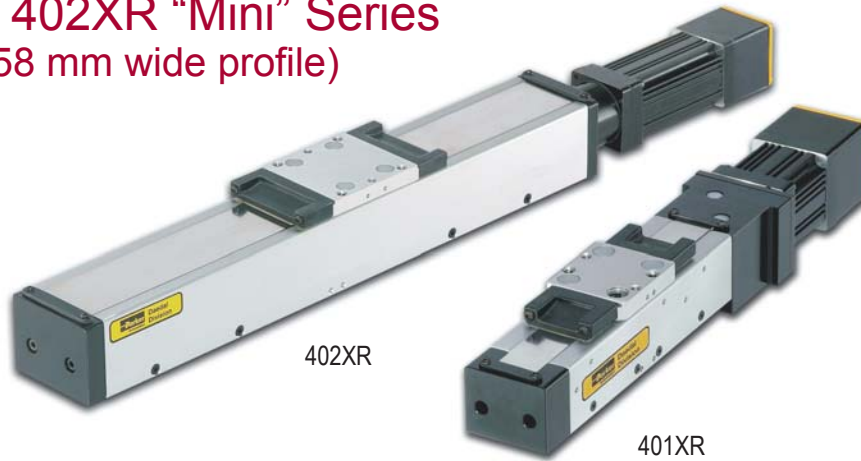
(1/8 NPT) for pressurizing the interior to prevent particle intrusion.

### Easy Lube System

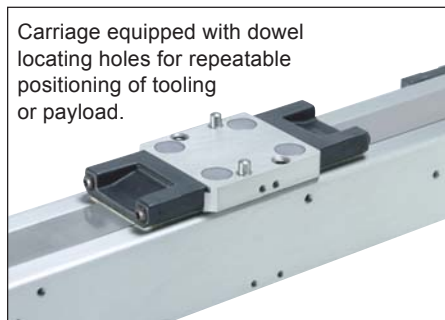
A standard option on some models, enables easy access for ballscrew and bearing lubrication.



## 401XR & 402XR “Mini” Series (41 mm & 58 mm wide profile)



The 401XR and 402XR “Mini” Series positioners enhance the 400XR family of precision linear positioners, addressing applications which involve precise positioning of smaller payloads within a very small space envelope. These ball-screw driven positioners were developed to address the needs of industries such as photonics, life sciences, semi-conductor, and instrumentation, where technology advancements dictate miniaturization of work envelopes.



Carriage equipped with dowel locating holes for repeatable positioning of tooling or payload.

Common Characteristics	Precision Grade*		Standard Grade	
	401XR	402XR	401XR	402XR
<b>Performance</b>				
Bidirectional Repeatability (µm)				
2 mm lead	±1.3	NA	±5	NA
5 or 10 mm lead	±1.3	±1.3	±12	±12
Duty Cycle	100%	100%	100%	100%
Max Acceleration – m/sec <sup>2</sup> (in/sec <sup>2</sup> )	20 (773)	20 (773)	20 (773)	20 (773)
<b>Rated Capacity<sup>(1)</sup></b>				
Normal load – kgf (lbs)	50 (110)	100 (220)	50 (110)	100 (220)
Axial load – kgf (lbs)				
2 mm lead	5.5 (12.1)	NA	5.5 (12.1)	NA
5 or 10 mm lead	15.5 (34.2)	38 (84)	15.5 (34.2)	38 (84)
<b>Motor Sizing</b>				
Drive Screw Efficiency	80%	80%	80%	80%
Max Break-Away Torque – Nm (in-oz)	0.03 (4.2)	0.086 (12.0)	0.03 (4.2)	0.086 (12.0)
Max Running Torque <sup>(2)</sup> – Nm (in-oz)	0.028 (4.0)	0.08 (11.3)	0.028 (4.0)	0.08 (11.3)
Linear Bearing – Coefficient of Friction	0.01	0.01	0.01	0.01
<b>Ball screw Diameter – mm</b>				
2 mm lead	6	NA	6	NA
5 or 10 mm lead	8	12	8	12
Carriage Weight – kgf (lbs)	0.045 (0.1)	0.11 (0.25)	0.045 (0.1)	0.11 (0.25)

\*Requires Linear Encoder Option **E3** or **E4**

(1) Refer to life/load charts found on page B12.

(2) Rated @ 2 rps

### Travel Dependent Characteristics

Travel (mm)	Positional Accuracy (µm)				Straightness & Flatness Accuracy (µm)				Input Inertia 10 <sup>-3</sup> kg-cm <sup>2</sup>				Max Screw Speed (Revs Per Second)		Unit Weight (kg)	
	401		402		401		402		401		402		401	402	401	402
	P*	S	P*	S			2 mm	10 mm	5 mm	10 mm						
50	10	20	–	–	20	–	0.6	–	–	–	100	–	1.0	–		
100	10	20	10	20	20	20	0.9	–	12.0	–	100	90	1.2	2.3		
150	12	20	12	20	20	20	1.1	–	15.0	–	100	90	1.3	2.6		
200	16	30	16	30	25	25	–	4.7	20.0	–	100	90	1.5	2.8		
300	18	40	18	40	25	25	–	5.2	–	25.0	100	90	1.7	3.2		
400	–	–	21	40	–	30	–	–	–	29.0	–	95	–	3.8		
600	–	–	25	50	–	30	–	–	–	39.0	–	50	–	4.8		

\*Accuracy stated is at 20C utilizing slope correction factor provided.

## 404XR Series (95 mm wide profile)



**Parallel Motor Mount-  
(with limit/home sensor pack option)**

The 404XR is a sleek compact positioner (47.3 x 95 mm profile) capable of carrying relatively high loads up to a distance of 600 mm. Its quick and accurate positioning capability can be attributed to a high strength extruded housing, square rail ball bearing system, and precision ground ballscrew drive. With its low profile design the 404XR is ideal for height restricted applications, and its lightweight construction makes it well suited as secondary axes on multi-axis systems. These units offer a wide array of easily adapted options and accessories which permit easy configuration to specific requirements.

### Travel Dependent Characteristics

Travel (mm)	Positional <sup>(4)(5)</sup> Accuracy (µm)		Straightness & Flatness Accuracy (µm)		Input Inertia 10 <sup>-5</sup> kg-m <sup>2</sup>			Max Screw Speed <sup>(6)</sup> (Revs Per Second)		Total Table Weight (kg)
	Prec.	Std.	Prec./Std.		5 mm	10 mm	20 mm	Prec./Std.	Prec./Std.	
50	8	12	6		1.68	1.81	2.34	60	2.8	
100	8	12	6		1.93	2.07	2.60	60	3.0	
150	10	14	9		2.19	2.32	2.85	60	3.3	
200	12	20	10		2.44	2.57	3.11	60	3.6	
250	12	22	12		2.69	2.83	3.36	60	3.9	
300	14	24	13		2.95	3.08	3.61	60	4.2	
350	14	26	15		3.20	3.33	3.87	60	4.5	
400	16	26	16		3.46	3.59	4.12	60	4.8	
450	19	28	18		3.71	3.84	4.37	60	5.1	
500	21	34	19		3.96	4.10	4.63	60	5.4	
550	23	36	21		4.22	4.35	4.88	60	5.7	
600	25	40	22		4.47	4.60	5.14	54	6.0	

(4) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.

(5) Consult factory for specs with linear encoder.

(6) Consult factory for higher screw speeds.

Common Characteristics	Precision	Standard
<b>Performance</b>		
Bidirectional Repeatability (µm)	±1.3 <sup>(3)</sup>	±3.0
Duty Cycle	100%	100%
Max Acceleration – m/sec <sup>2</sup> (in/sec <sup>2</sup> )	20 (773)	20 (773)
<b>Rated Capacity<sup>(1)</sup></b>		
Normal load – kgf (lbs)	170 (375)	170 (375)
Axial load – kgf (lbs) <sup>(2)</sup>	90 (198)	90 (198)
<b>Motor Sizing</b>		
Drive Screw Efficiency	90%	90%
Max Break-Away Torque – Nm (in-oz)	0.13 (18)	0.18 (26)
Max Running Torque <sup>(3)</sup> – Nm (in-oz)	0.11 (16)	0.17 (24)
Linear Bearing – Coefficient of Friction	0.01	0.01
Ballscrew Diameter (mm)	16	16
Carriage Weight – kg (lbs)	0.70 (1.55)	0.70 (1.55)

(1) Refer to life/load charts found on page B12.

(2) Axial load for parallel mount units with a 20 mm lead = 68kgf (150lb)

(3) Ratings established @ 2 rps

## 406XR Series (150 mm wide profile)



Parallel Motor Mounting (with Sensor Pack)

The 406XR can position high loads (up to 630 kgf) over distances up to two meters. Because of its size and strength (270 Nm, 200 lb-ft. moment load capacity) this durable table is ideal as the base unit in a multi-axis system. From high resolution to high throughput, selectable ballscrew leads (5, 10, 20, 25 mm) make the desired resolution/velocity ratio easy to achieve, and stainless steel seal strips alleviate environmental concerns.

### Travel Dependent Characteristics

Travel (mm)	Positional <sup>(4)(5)</sup> Accuracy (µm)		Straightness & Flatness Accuracy (µm)		Input Inertia 10 <sup>-5</sup> kg-m <sup>2</sup>				Max Screw Speed <sup>(6)</sup> (Revs Per Second)		Total Table Weight (kg)
	Prec.	Std.	Prec./Std.		5 mm	10 mm	20 mm	25 mm	Prec./Std.		Prec./Std.
100	8	12	6		3.34	3.85	5.90	–	60		8.7
200	12	20	10		3.92	4.43	6.48	–	60		10.0
300	14	24	13		4.50	5.01	7.06	–	60		11.3
400	16	26	16		5.08	5.59	7.64	–	60		12.6
500	21	34	19		5.65	6.17	8.22	–	55		13.9
600	25	40	22		6.23	6.75	8.80	–	44		15.2
700	–	92	25		36.51	37.02	–	40.61	47		19.2
800	–	94	29		39.96	40.47	–	44.07	47		20.7
900	–	103	32		43.41	43.93	–	47.52	47		22.2
1000	–	105	35		46.87	47.38	–	50.97	47		23.7
1250	–	118	42		55.50	56.01	–	59.61	35		27.6
1500	–	134	50		64.14	64.65	–	68.24	26		31.4
1750	–	154	57		72.77	73.28	–	76.88	20		35.2
2000	–	159	65		81.40	81.92	–	85.51	16		39.1

(4) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.

(5) Consult factory for specs with linear encoder.

(6) Consult factory for higher screw speeds.

Common Characteristics	Precision	Standard
<b>Performance</b>		
Bidirectional Repeatability (µm)	±1.3	±3.0
Duty Cycle	100%	100%
Max Acceleration – m/sec <sup>2</sup> (in/sec <sup>2</sup> )	20 (773)	20 (773)
<b>Rated Capacity<sup>(1)</sup></b>		
Normal load – kgf (lbs)	630 (1390)	630 (1390)
<b>Axial load – kgf (lbs)<sup>(2)</sup></b>		
0 to 600 mm Travel	90 (198)	90 (198)
700 to 2000 mm Travel	90 (198)	200 (440)
<b>Motor Sizing</b>		
Drive Screw Efficiency	90%	90%
<b>Max Break-Away Torque – Nm (in-oz)</b>		
0 to 600 mm Travel	0.13 (18)	0.18 (26)
700 to 2000 mm Travel	na	0.39 (55)
<b>Max Running Torque<sup>(3)</sup> – Nm (in-oz)</b>		
0 to 600 mm Travel	0.11 (16)	0.17 (24)
700 to 2000 mm Travel	na	0.34 (48)
Linear Bearing – Coefficient of Friction	0.01	0.01
Ballscrew Diameter	refer to chart page B22	
Carriage Weight kg (lbs)	2.7 (5.94)	2.7 (5.94)

(1) Refer to life/load charts found on page B12.

(2) Axial load for parallel mount units with a 20 mm lead = 68kgf (150lb)

Axial load for parallel mount units with a 25 mm lead = 104kgf (230lb)

(3) Ratings established @ 2 rps

## 412XR Series (285 mm wide profile)



The 412XR is a rugged heavy duty linear table (285 mm x 105 mm profile) that enables massive loads (up to 1470 kgf) to be precisely positioned over distances up to two meters. Single point “easy lube” port is standard on carriage assembly for simple servicing and a convenient adapter plate (#100-6784) is available for easy X-Y configuration. An unrivaled array of options combined with mounting compatibility with the smaller 400XR tables makes the 412XR ideal as the base unit for multi-axis positioning of heavier payloads.

### General Table Specifications

#### Common Characteristics

	5, 10, 25 mm	32 mm
<b>Performance</b>		
Bidirectional Repeatability (µm)	±5	±5
Duty Cycle	100%	100%
Max Acceleration – m/sec <sup>2</sup> (in/sec <sup>2</sup> )	20 (773)	20 (773)
<b>Rated Capacity<sup>(1)</sup></b>		
Normal load – kgf (lbs)	1470 (3241)	1470 (3241)
Axial load – kgf (lbs)	200 (441)	460 (1014)
<b>Motor Sizing</b>		
Drive Screw Efficiency	90%	80%
Max Break-Away Torque – Nm (in-oz)	0.61 (86)	0.76 (108)
Max Running Torque <sup>(2)</sup> – Nm (in-oz)	0.55 (78)	0.69 (98)
Linear Bearing – Coefficient of Friction	0.01	0.01
Ballscrew Diameter	25	32
Carriage Weight kg (lbs)	12 (27)	13 (28)

(1) Refer to life/load charts found on page B12.

(2) Ratings established @ 2 rps

### Travel Dependent Characteristics

Travel (mm)	Positional <sup>(4)(5)</sup> Accuracy (µm)	Straightness & Flatness Accuracy (µm)	Input Inertia 10 <sup>-5</sup> kg-m <sup>2</sup>				Max Screw Speed <sup>(6)</sup> (Revs Per Second)		Total Table Weight (kg)	
			5 mm	10 mm	25 mm	32 mm	5,10,25 mm	32 mm	5,10,25 mm	32 mm
150	64	9	27.20	29.45	46.76	98.20	47	42	39.6	41.5
250	66	12	30.21	32.46	49.78	106.28	47	42	42.9	45.0
350	71	15	33.23	35.48	52.79	114.37	47	42	46.2	48.5
650	91	24	42.27	44.52	61.83	138.63	47	42	56.1	59.0
800	94	29	46.79	49.04	66.35	150.76	47	42	61.0	64.2
1000	105	35	52.81	55.06	72.37	166.94	45	42	67.6	71.2
1250	118	42	58.84	61.09	78.40	183.11	34	41	74.2	78.2
1500	134	50	67.87	70.12	87.44	207.38	24	31	84.1	88.7
1750	154	57	75.41	77.66	94.97	227.59	18	24	92.4	97.5
2000	159	65	82.94	85.19	102.50	247.81	15	19	100.6	106.2

(4) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.

(5) Consult factory for specs with linear encoder.

(6) Consult factory for higher screw speeds.

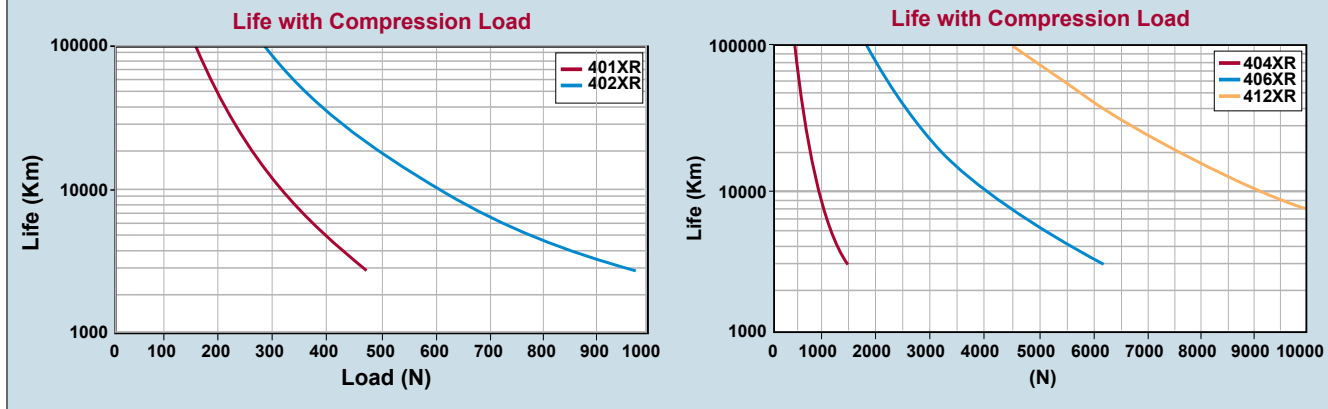
## 400XR Series Engineering Reference

The following performance information is provided as a supplement to the product specifications pages. The following graphs and formulas are used to establish the table life relative to the applied loads. The useful life of a linear table at full catalog specifications is dependent on the forces acting upon it. These forces include both static components resulting from payload weight, and dynamic components due to acceleration/deceleration of the load. In multi-axes applications, the primary positioner at the bottom of the stack usually establishes the load limits for the combined axes. When determining life/load, it is critical to include the weight of all positioning elements that contribute to the load supported by the primary axis.

### Table Life/Load Chart Compression (normal load)

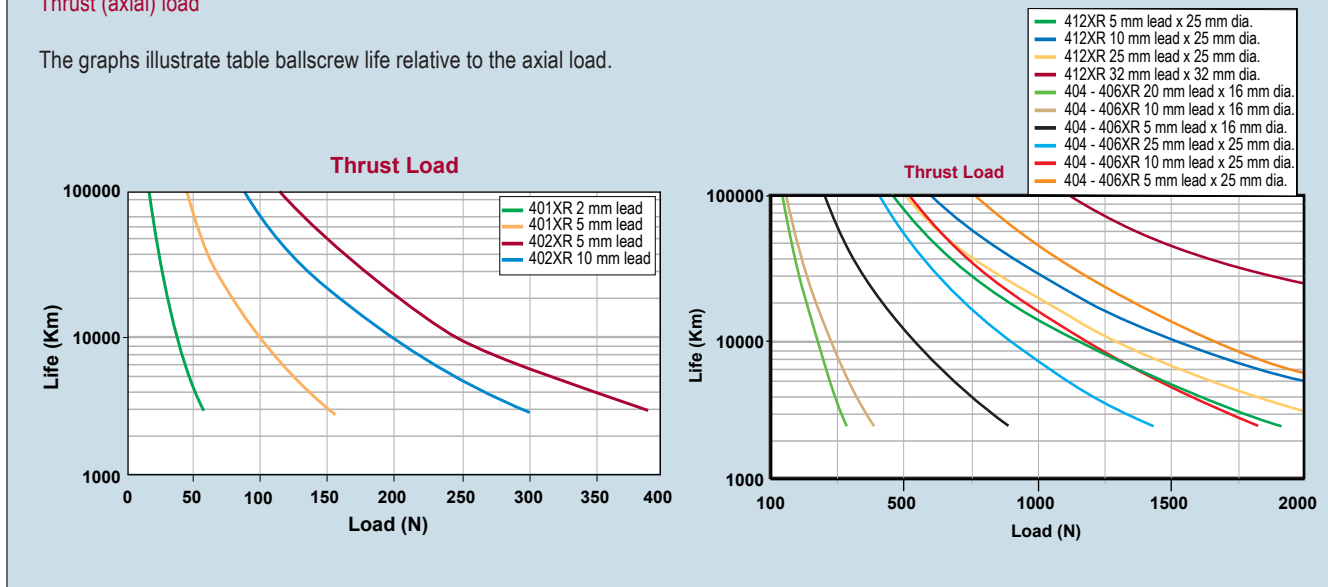
The graphs provide a "rough cut" evaluation of the support bearing life/load characteristics. The curves show the life/load relationship when the applied load is centered on the carriage, normal (perpendicular) to the carriage mounting surface.

For final evaluation of life vs load, including off center, tension, and side loads refer to the charts and formulas found on our web site [www.daedalpositioning.com](http://www.daedalpositioning.com).



### Table Life/Load Chart Thrust (axial) load

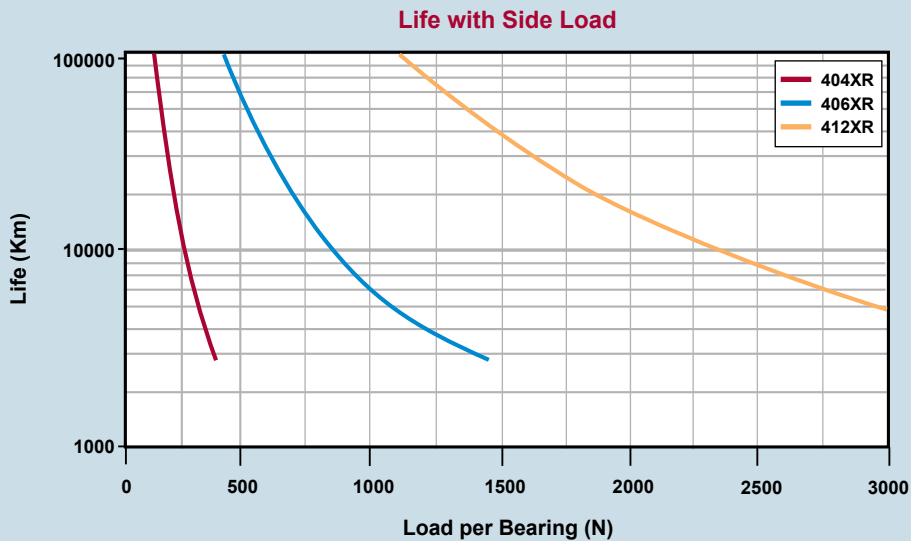
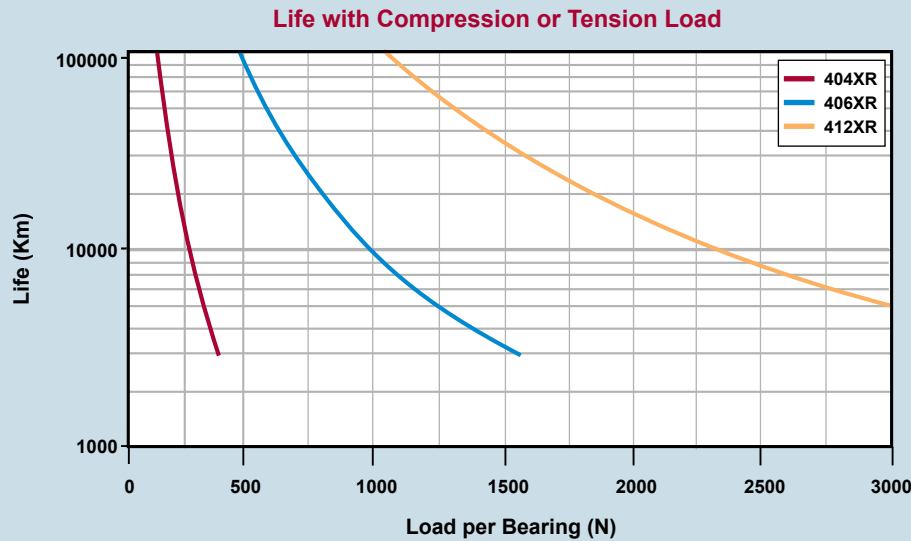
The graphs illustrate table ballscrew life relative to the axial load.





400XR Series Engineering Reference

Bearing Life/Load Charts  
 Compression (normal load)



These charts are to be used in conjunction with the corresponding formulas found under Product Information at [www.daedalpositioning.com](http://www.daedalpositioning.com) to establish the life/load for each bearing (4 per table).

Several dimensions, which are specific to each linear positioning table model, and the load geometry are required for these computations. These dimensions are supplied in the catalog information for each positioner. The dimensions are referenced as follows:

- d1** – bearing block center-to-center longitudinal spacing
- d2** – bearing rail center-to-center lateral spacing
- da** – Rail center-to-carriage mounting surface

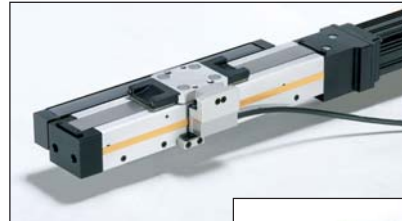
	d1	d2	da
404XR	80	57	28
406XR	114	90.3	42.5
412XR	205	192	43

Refer to Daedal's website [www.daedalpositioning.com](http://www.daedalpositioning.com) for moment loading and other engineering data.

400XR Series Options and Accessories (mm)



401XR Limits and Home Sensor



401XR with Linear Encoder plus Sensor Pack



404XR with Lube Option



404XR with Brake Option



406XR with Limit and Home Sensor Pack



404XR with Air Purge - Standard on all 404XR & 406XR units

Home **H\_** or Limit Sensor **L\_**

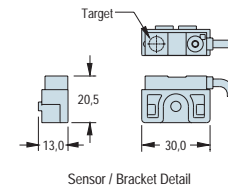
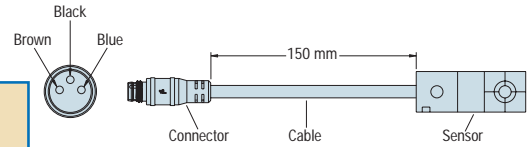
End of Travel and Home Sensors for the 400XR series are available in a variety of styles. The sensors can be ordered as part of the table or as separate components with the associated mounting hardware or in an enclosed sensor pack. A 5 meter "hi-flex" extension cable (Part No. 003-2918-01) is available for use with the 401XR thru 406XR models having the locking connector option.

- NPN (Sinking) or PNP (Sourcing)
- Normally Closed (N.C.) or Normally Open (N.O.)
- Flying Leads or Locking Connector

**Input Power** 5-30VDC, 20mA  
**Output** 100mA max  
**Wire Color Code** (+) Supply: Brown  
 Output: Black  
 (-) Supply: Blue



Order Code	Part No.** (Includes Mounting Bracket)	Switch Type	Logic	Cable Length	Connector Option
H2 or L2	006-1639-01	N.C.	Sinking	2,0 m	Flying Leads
H3 or L3	006-1639-02	N.O.	Sinking	2,0 m	Flying Leads
H4 or L4	006-1639-03	N.C.	Sourcing	2,0 m	Flying Leads
H5 or L5	006-1639-04	N.O.	Sourcing	2,0 m	Flying Leads
H6 or L6	006-1639-09	N.C.	Sinking	150 mm	Locking Connector
H7 or L7	006-1639-08	N.O.	Sinking	150 mm	Locking Connector
H8 or L8	006-1639-11	N.C.	Sourcing	150 mm	Locking Connector
H9 or L9	006-1639-10	N.O.	Sourcing	150 mm	Locking Connector

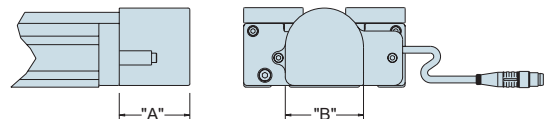


\* Applies to 401XR thru 406XR models. 412XR models have limits and homes internally mounted with a connector termination.  
 \*\* Sensor triggers (targets) ordered separately.

Brake Assembly **B\_**

Electromagnetic brake assembly used to prevent "backdriving" in vertical applications.

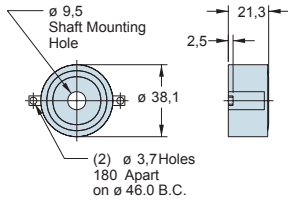
Table Series	Part No.	Input Power	Holding Torque	A Dim.	B Dim.
401/402XR	NA	NA	NA	NA	NA
404XR	006-1627-01	24VDC, 0.46A	2.0 N-m	41,5	46,0
406XR	006-1656-01	24VDC, 0.5A	4.5 N-m	49,9	57,5
412XR	002-1916-01	24VDC, 0.75A	9.0 N-m	54,0	72,0



### 400XR Series Options and Accessories\* (mm)

#### Rotary Encoder E5

Modular rotary encoder couples directly to the drive screw for position feedback.



**Input Power** 5VDC, 135mA  
**Output** A/B quadrature and reference mark, differential line drive output  
**Resolution** 1250 lines/rev equals 5000 counts post quadrature (1µm with 5 mm lead ballscrew)

Table Series	Part No.
401/402XR	NA
404XR	006-1629-01
406XR	006-1657-01
412XR	002-1917-01

Note: Dimensions shown apply to 404XR and 406XR models. Consult factory for 412XR dimensions.

#### Linear Encoder (Tape Scale) E\_

1.0 µm resolution  
0.5 µm resolution  
0.1 µm resolution

A linear position feedback device which mounts directly to the table carriage. (Factory installation required.)



**Input Power** 5VDC, 150mA  
**Output** A/B quadrature and reference mark, differential line drive output  
**Resolution** 1.0, 0.5, 0.1 micron

#### Riser Plate

Used to raise the table base to provide clearance for motors larger than NEMA 23 frame size.

Table Series	Part No.
401XR	002-2063-01
402XR	002-2064-01
404XR	002-3619-01
406XR	002-3625-01
412XR	NA

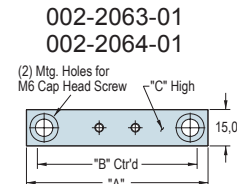
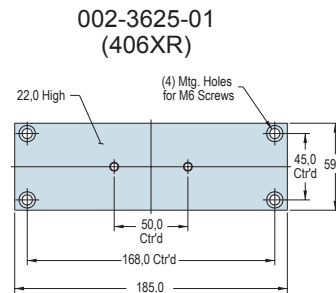
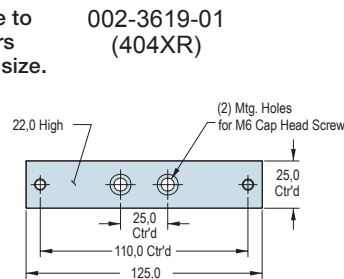


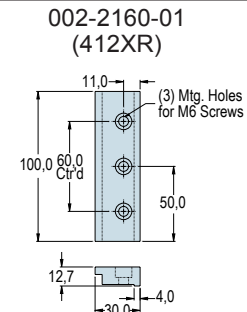
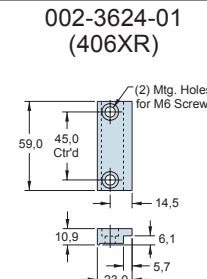
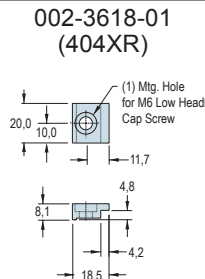
Table Series	"A"	"B"	"C"
401XR	65,0	50,4	17,0
402XR	90,0	75,4	10,0

#### Toe Clamp

Used for convenient outboard mounting of 406XR to a base plate, riser plates, or Z-Axis bracket.

Table Series	Part No.
404XR	002-3618-01*
406XR	002-3624-01*
412XR	002-2160-01

\*All hardware included

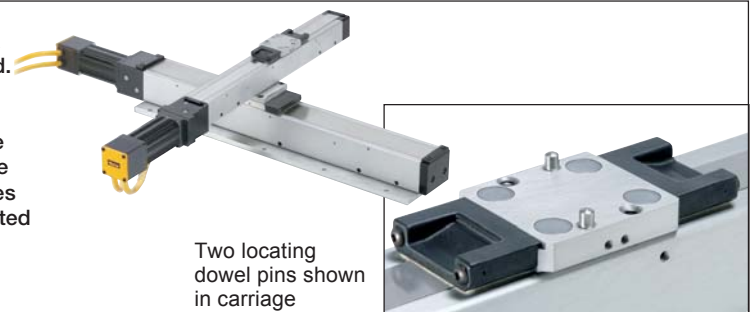


#### Dowel Pinning P\_

Standard dowel pin locating holes are offered on all 400XR units to facilitate repeatable mounting of tooling or payload.

In addition, pinning options (P2 & P3)\* are offered for precise orthogonal mounting of the second axis in a multi-axis system. In this case, the bottom side of the table base is match drilled and reamed to the first axis to provide exact orthogonal location. This convenient option eliminates concerns regarding contamination or damage often associated with machining for locating pins in an assembled unit.

\*Not available with 401XR or 402XR.



Two locating dowel pins shown in carriage



Multi-Axis Configurations

		Second Axis (Y or Z) Models									
		401050XR	401XR >50mm	402XR	404XR	404LXR	406XR	406LXR	412XR/LXR	Wedge	
Base Axis (X) Models	401XR	X-Y	002-2126-01	002-2065-01	-	-	-	-	-	-	
		X-Y Cartesian	002-2123-01	002-2068-01	-	-	-	-	-	-	
		X-Z	-	101-0955-01	-	-	-	-	-	-	
		X-Z Side Mount	002-2123-01	101-0955-01	-	-	-	-	-	-	
		402XR	X-Y	002-2130-01	002-2066-01	002-2066-01	-	-	-	-	
		X-Y Cartesian	002-2069-01	002-2069-01	002-2069-01	-	-	-	-	-	
		X-Z	-	002-2069-01	002-2069-01	-	-	-	-	-	
		X-Z Side Mount	002-2125-01	002-2069-01	002-2069-01	-	-	-	-	-	
		404XR/LXR	X-Y	100-9193-01	100-9193-01	100-9193-01	Direct Mount*	100-9584-01	-	-	100-9274-01
			X-Y	-	-	-	100-3945-01	100-3945-01	-	-	-
			Carriage to Carriage	-	-	-	-	-	-	-	-
			X-Y	002-2162-01	002-2162-01	002-2162-01	-	-	-	-	-
			Cartesian Right Hand	-	-	-	-	-	-	-	-
			X-Y	002-2162-02	002-2162-02	002-2162-02	-	-	-	-	-
			Cartesian Left Hand	-	-	-	-	-	-	-	-
			X-Z	-	-	-	002-1839-01	-	-	-	-
			X-Z Side Mount	-	-	-	002-1840-01	-	-	-	-
		406XR/LXR	X-Y	100-9194-01	100-9194-01	100-9194-01	Direct Mount	Direct Mount	Direct Mount	Direct Mount	-
			X-Y	-	-	-	100-4191-01	100-4191-01	100-4191-01	100-4191-01	-
			Carriage to Carriage	-	-	-	-	-	-	-	-
		X-Y Cartesian	-	-	-	002-2163-01	002-2163-01	-	-	-	
		X-Z	-	-	-	002-1823-01	-	002-1817-01	-	-	
		X-Z Side Mount	-	-	-	002-1824-01	-	002-1818-01	-	-	
	412XR/LXR	X-Y	-	-	-	Direct Mount or Toe Clamp	Direct Mount or Toe Clamp	Direct Mount or Toe Clamp	Direct Mount or Toe Clamp	Direct Mount or Toe Clamp	
		X-Y Cartesian	-	-	-	-	-	002-2164-01	002-2164-01	-	
	Wedge	X-Y	-	-	-	100-9274-01 or Toe Clamp	100-9274-01 or Toe Clamp	100-9274-01	100-9274-01	-	

\* An adaptor plate (100-3945-01) is required whenever the X-axis is a parallel motor mount model.

### 400XR Series Multi Axis Configurations

These diagrams and photographs show the most popular variations of multi-axis configurations. Both standard and custom brackets are available.

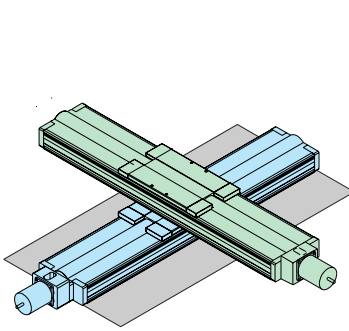


Figure 1  
Two Axis (X-Y)  
Horizontal Mounting

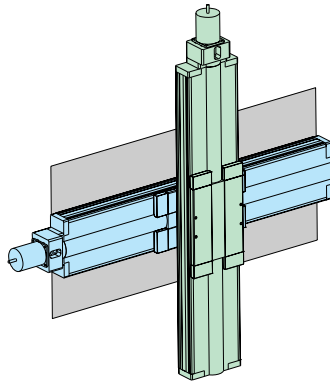


Figure 2  
Two Axis (X-Y)  
Vertical Mounting

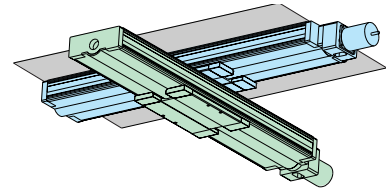


Figure 3  
Two Axis (X-Y)  
Inverted Mounting

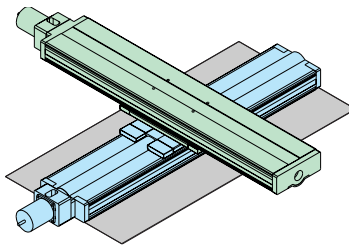


Figure 4  
Two Axis-Carriage to Carriage  
(Y Axis Inverted)

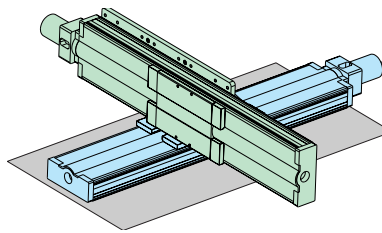


Figure 5  
Two Axis Cartesian  
Horizontal Mounting

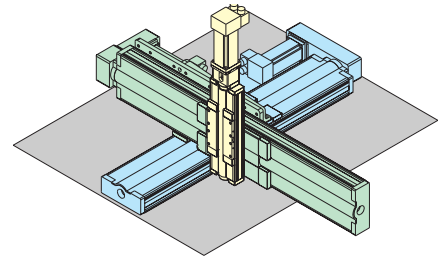


Figure 6  
Three Axis Cartesian  
Horizontal Mounting

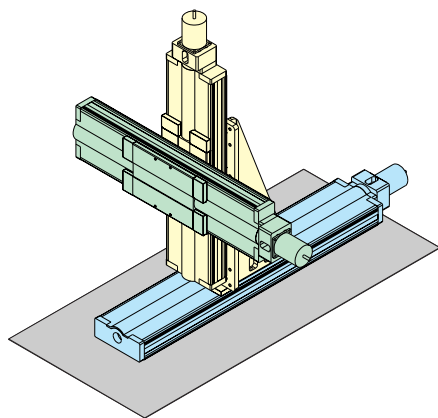


Figure 7  
Three Axis (X-Z-Y)  
Horizontal Mounting

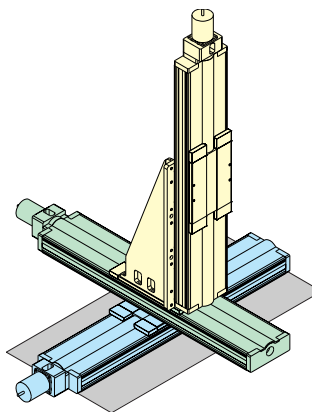


Figure 8  
Three Axis (X-Y-Z)  
Horizontal Mounting

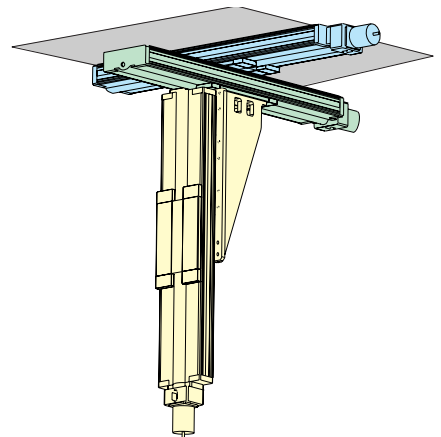
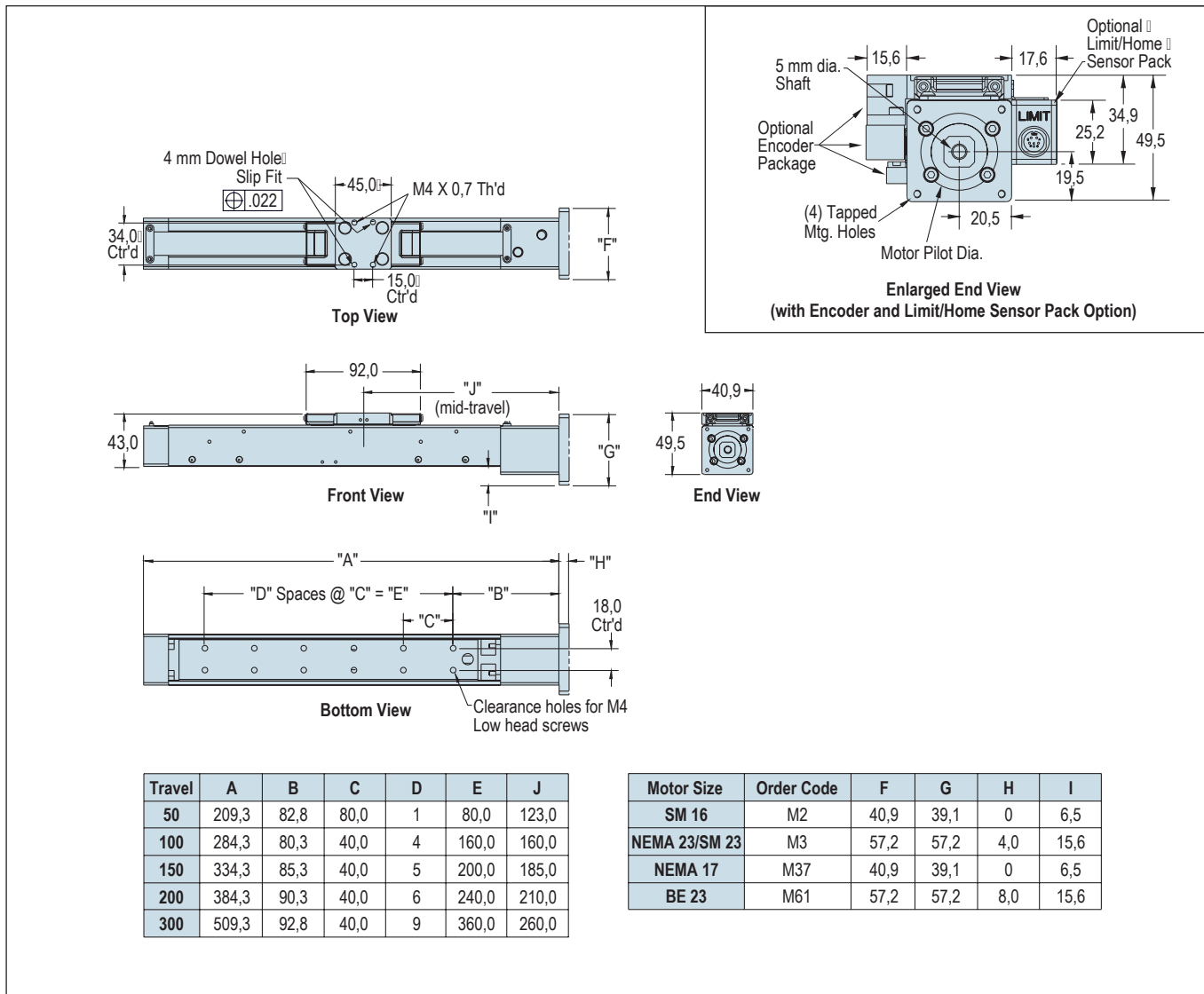


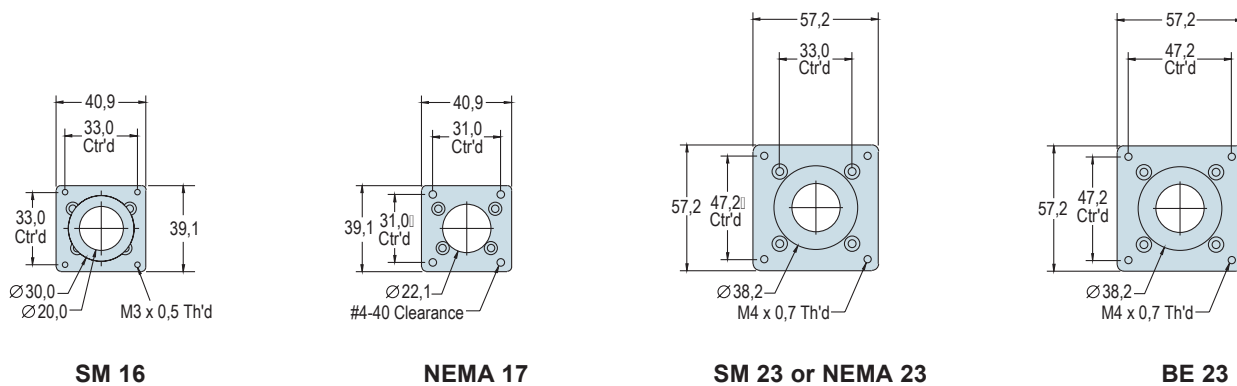
Figure 9  
Three Axis (X-Y-Z)  
Inverted Mounting

**401XR Series Dimensions (mm)**

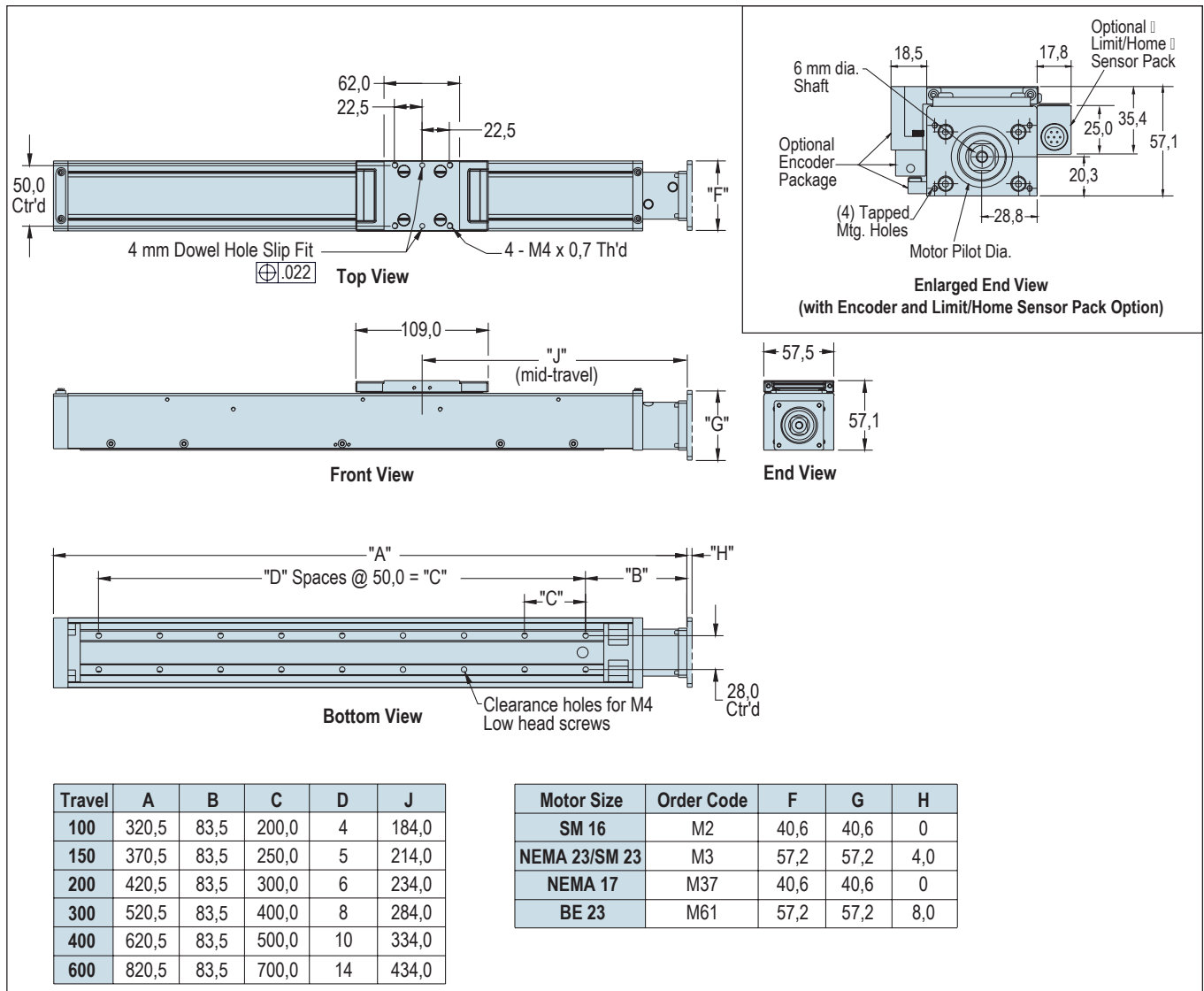


**In-Line Motor Adapters**

Used to easily accommodate the mounting of different servo or stepper motors.

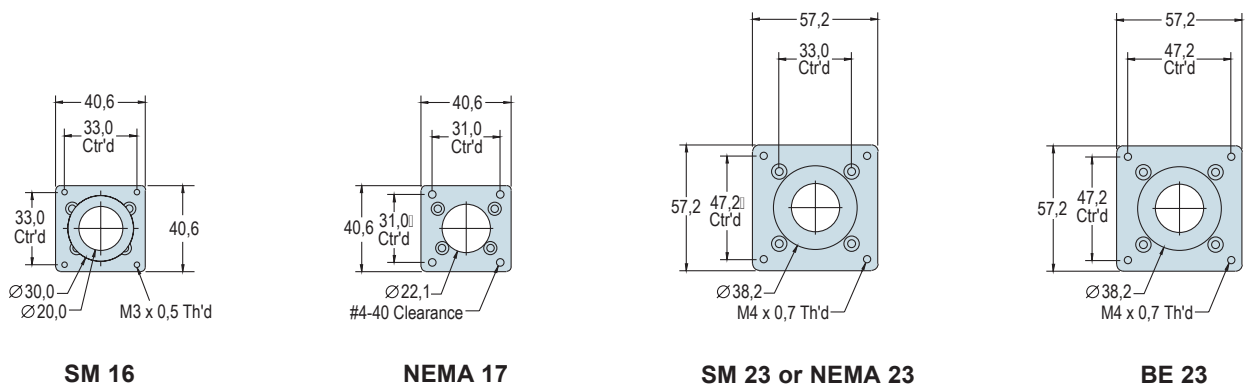


**402XR Series Dimensions (mm)**



**In-Line Motor Adapters**

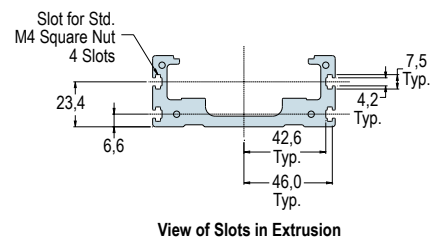
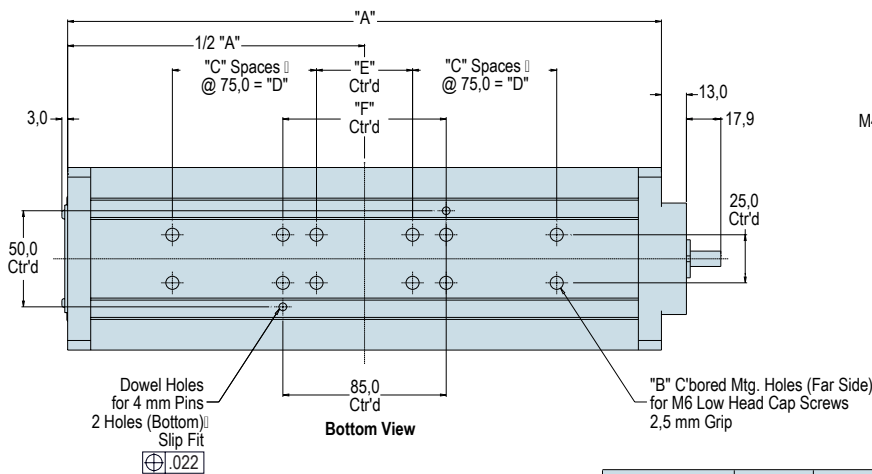
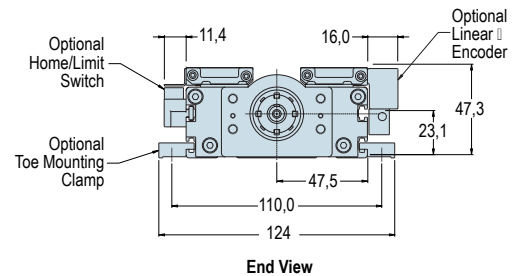
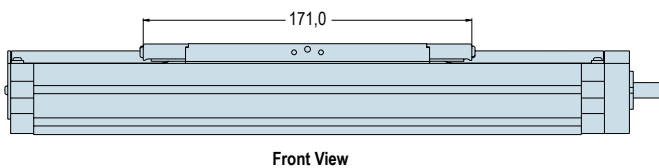
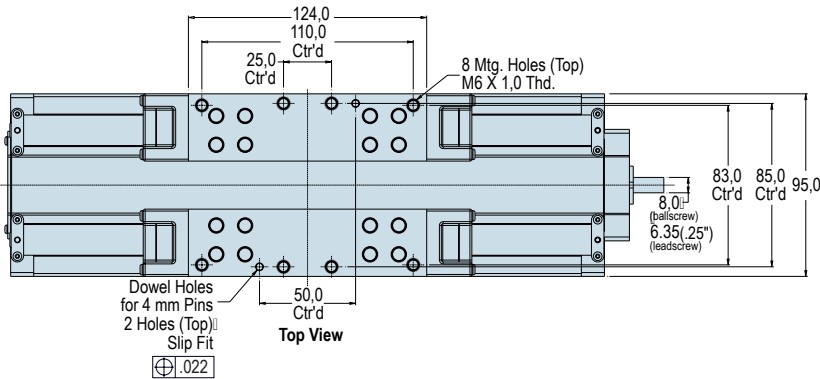
Used to easily accommodate the mounting of different servo or stepper motors.



## 404XR Series Dimensions (mm)



CAD Files...  
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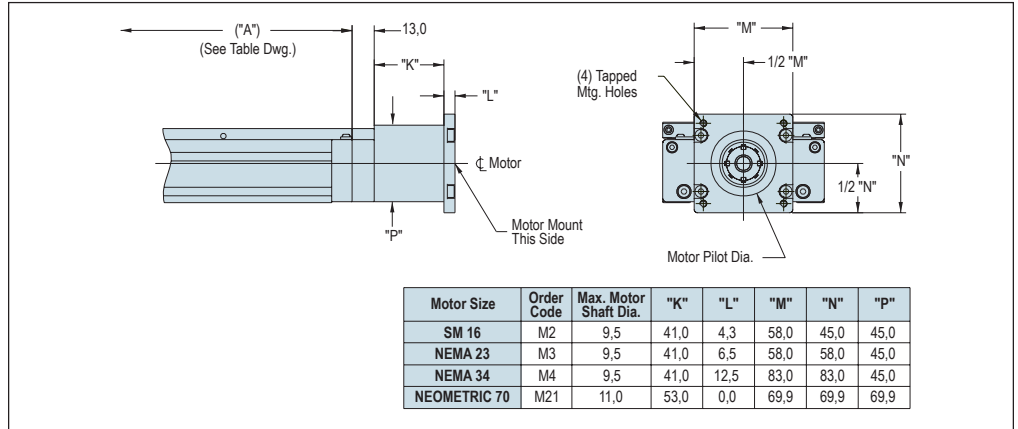
Model	Travel	A	B	C	D	E	F
404050XR	50	259	4	ñ	ñ	150,0	ñ
404100XR	100	309	12	1	75,0	50,0	85,0
404150XR	150	359	12	1	75,0	50,0	85,0
404200XR	200	409	12	1	75,0	50,0	85,0
404250XR	250	459	16	2	150,0	50,0	85,0
404300XR	300	509	16	2	150,0	50,0	85,0
404350XR	350	559	16	2	150,0	50,0	85,0
404400XR	400	609	20	3	225,0	50,0	85,0
404450XR	450	659	20	3	225,0	50,0	85,0
404500XR	500	709	20	3	225,0	50,0	85,0
404550XR	550	759	24	4	300,0	50,0	85,0
404600XR	600	809	24	4	300,0	50,0	85,0



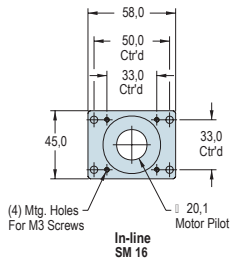
404XR Series Motor Mount Dimensions (mm)

In-line motor mounting allows the motor to be mounted directly to the drive screw via the selected motor coupling.

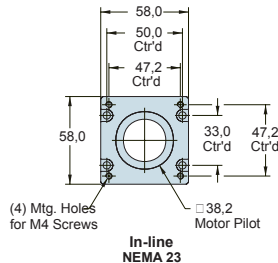
Used to easily accommodate the mounting of different frame sizes. These adapter plates can be ordered separately by part number below.



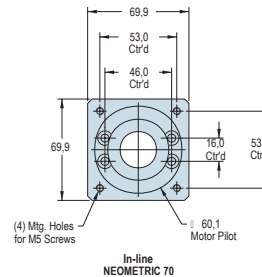
Part No. 002-3614-01  
SM 16



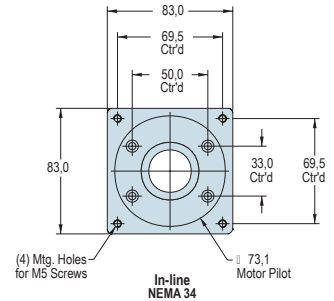
Part No. 002-3615-01  
NEMA 23



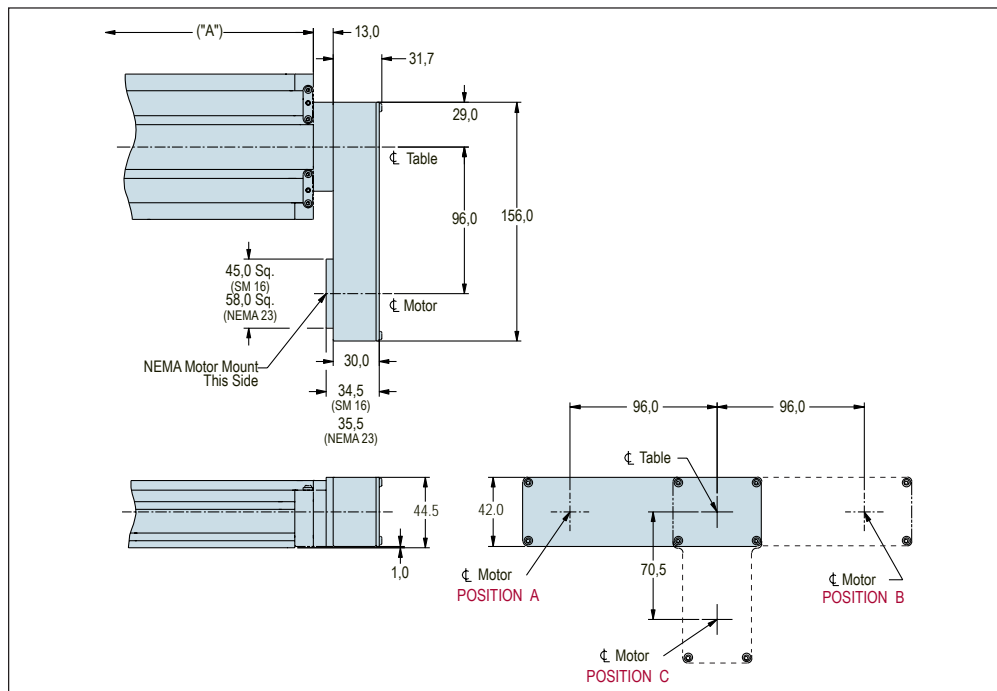
Part No. 002-3616-01  
NEOMETRIC 70



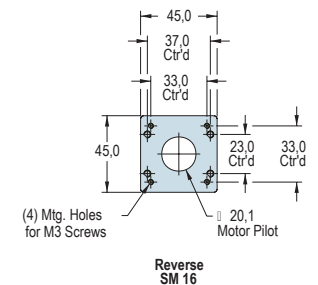
Part No. 002-3617-01  
NEMA 34



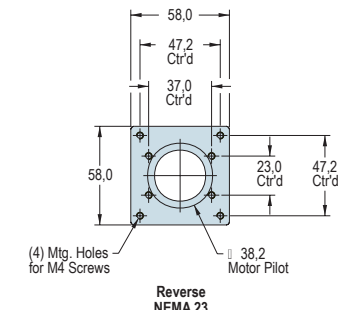
Parallel motor mounting is employed whenever a shorter overall unit length is needed. The motor is positioned along the sides or bottom of the table as designated by position A, B, or C. (No coupling required)



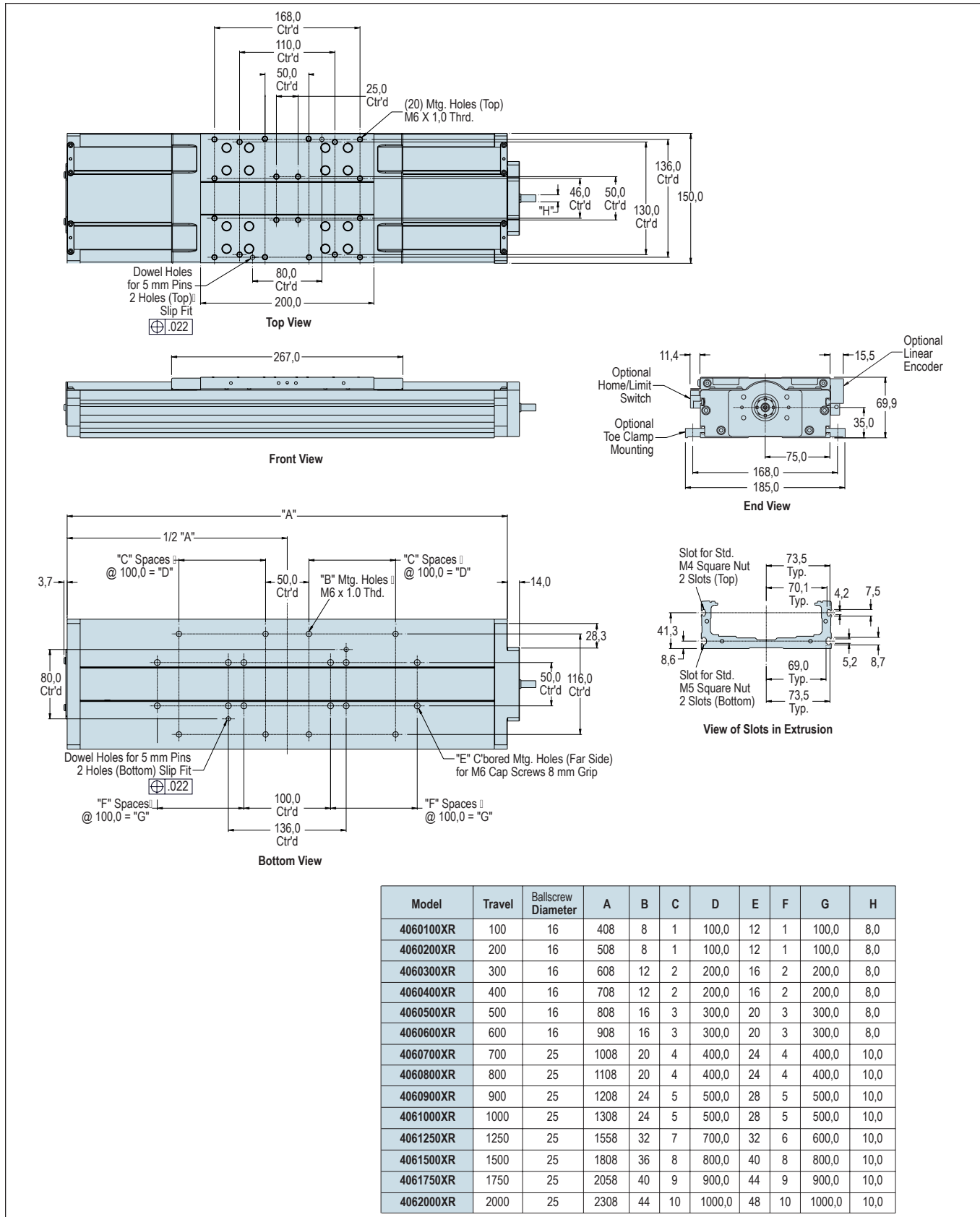
SM 16



NEMA 23



## 406XR Series Dimensions (mm)

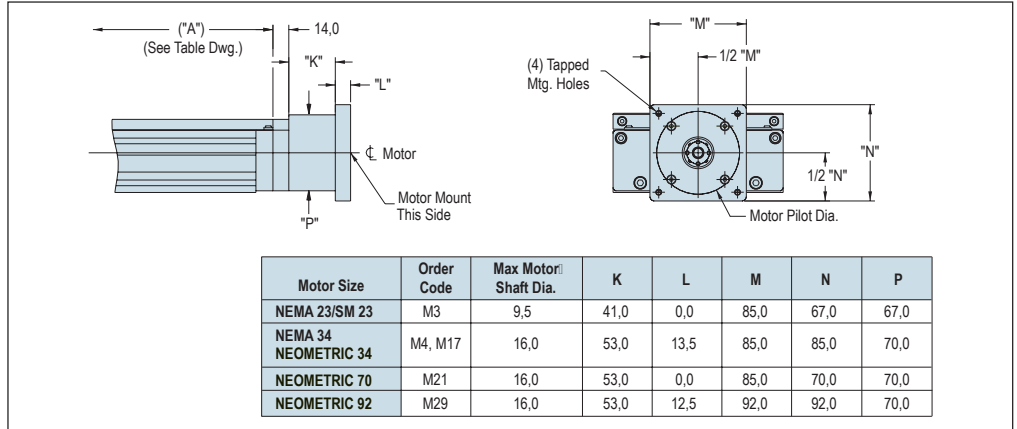


Model	Travel	Ballscrew Diameter	A	B	C	D	E	F	G	H
4060100XR	100	16	408	8	1	100,0	12	1	100,0	8,0
4060200XR	200	16	508	8	1	100,0	12	1	100,0	8,0
4060300XR	300	16	608	12	2	200,0	16	2	200,0	8,0
4060400XR	400	16	708	12	2	200,0	16	2	200,0	8,0
4060500XR	500	16	808	16	3	300,0	20	3	300,0	8,0
4060600XR	600	16	908	16	3	300,0	20	3	300,0	8,0
4060700XR	700	25	1008	20	4	400,0	24	4	400,0	10,0
4060800XR	800	25	1108	20	4	400,0	24	4	400,0	10,0
4060900XR	900	25	1208	24	5	500,0	28	5	500,0	10,0
4061000XR	1000	25	1308	24	5	500,0	28	5	500,0	10,0
4061250XR	1250	25	1558	32	7	700,0	32	6	600,0	10,0
4061500XR	1500	25	1808	36	8	800,0	40	8	800,0	10,0
4061750XR	1750	25	2058	40	9	900,0	44	9	900,0	10,0
4062000XR	2000	25	2308	44	10	1000,0	48	10	1000,0	10,0

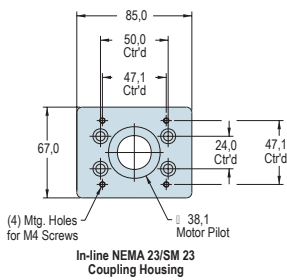
**406XR Series Motor Mount Dimensions (mm)**

In-line motor mounting allows the motor to be mounted directly to the drive screw via the selected motor coupling.

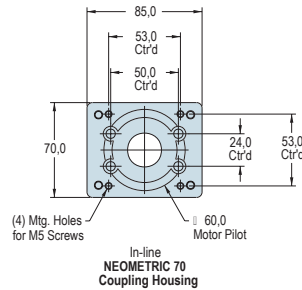
Used to easily accommodate the mounting of different frame sizes. These adapter plates can be ordered separately by part number below.



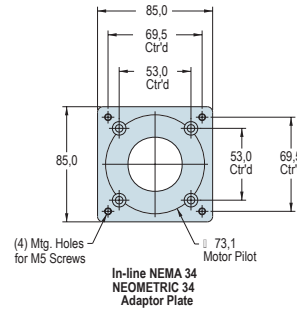
Part No. 002-3620-01  
 NEMA 23 or SM 23



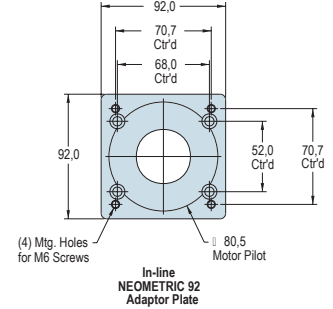
Part No. 002-3621-01  
 NEO 70



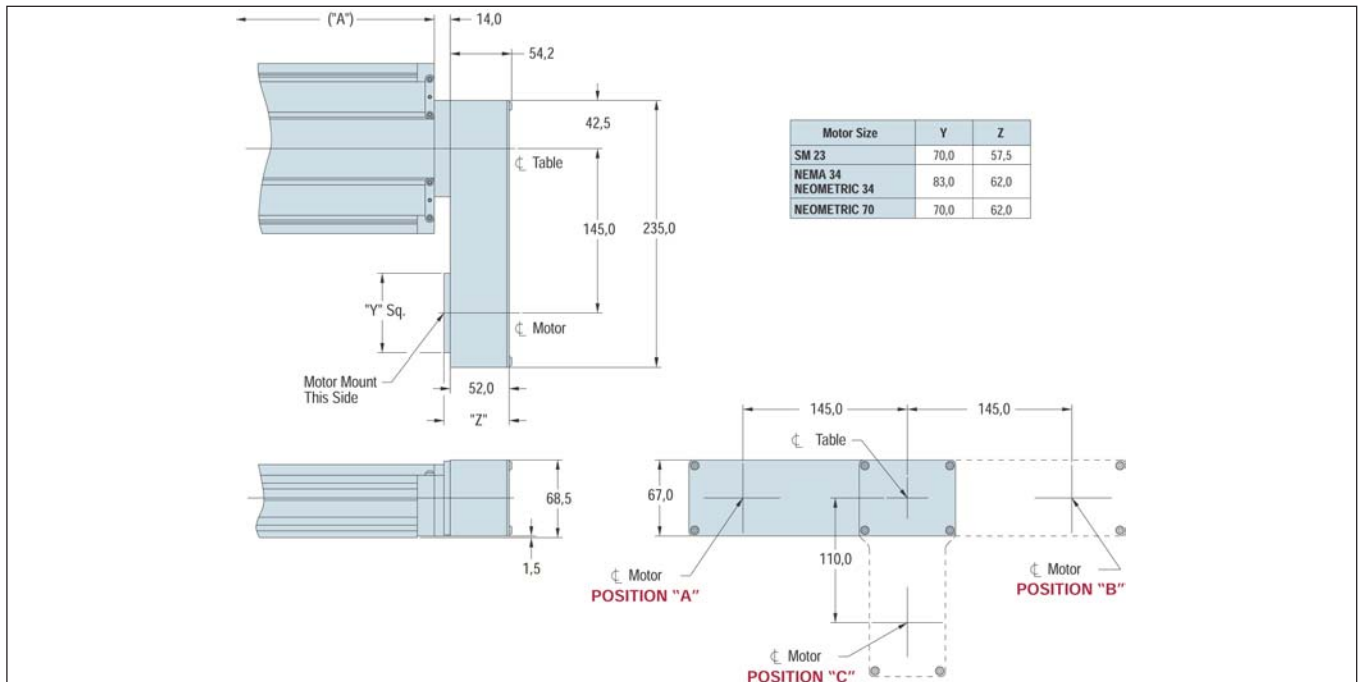
Part No. 002-3622-01  
 NEMA 34 or NEO 34



Part No. 002-3623-01  
 APEX 603 or NEO 92



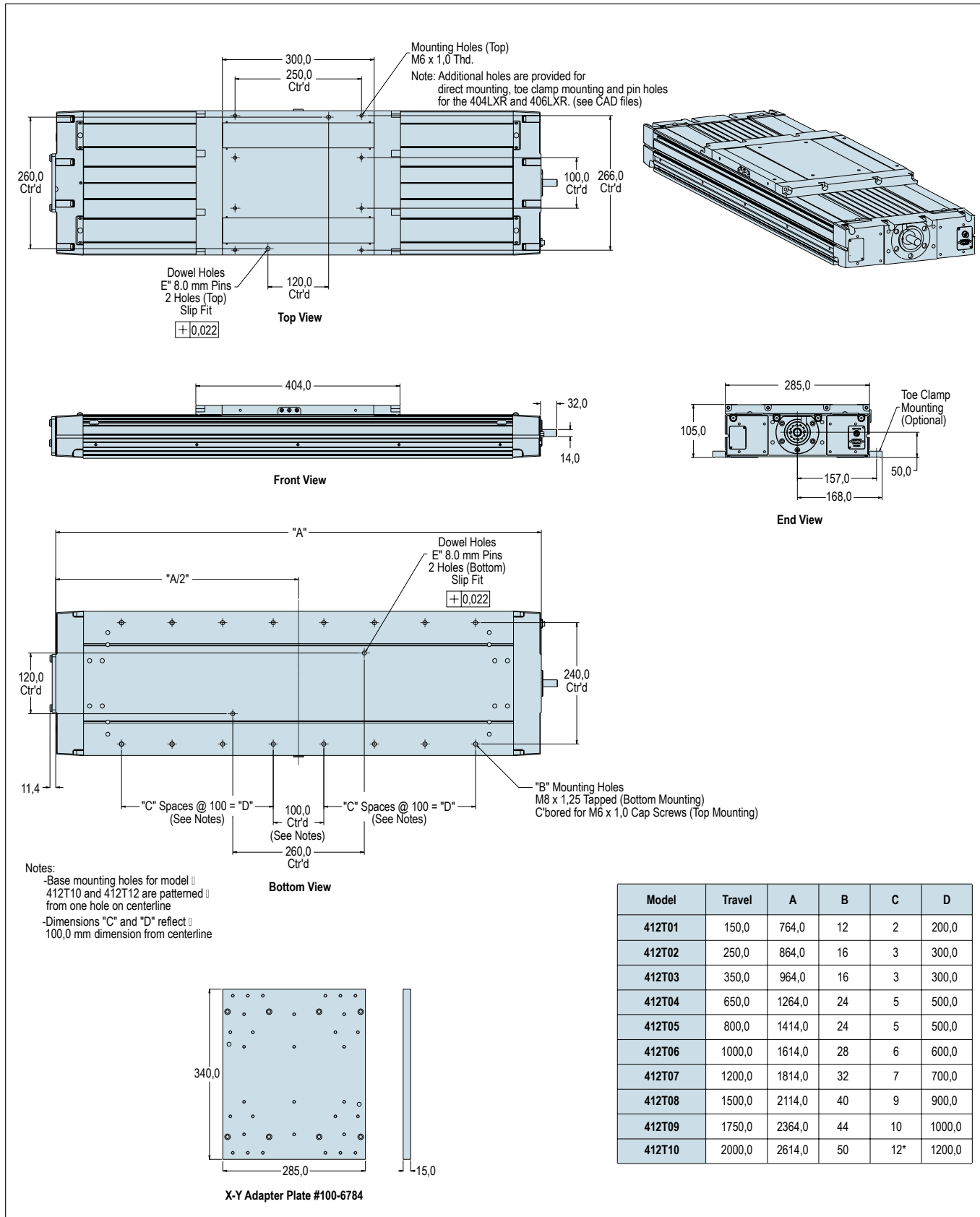
Parallel motor mounting is employed whenever a shorter overall unit length is needed. The motor is positioned along the sides or bottom of the table as designated by position A, B, or C. (No coupling required.)



## 412XR Series Dimensions (mm)



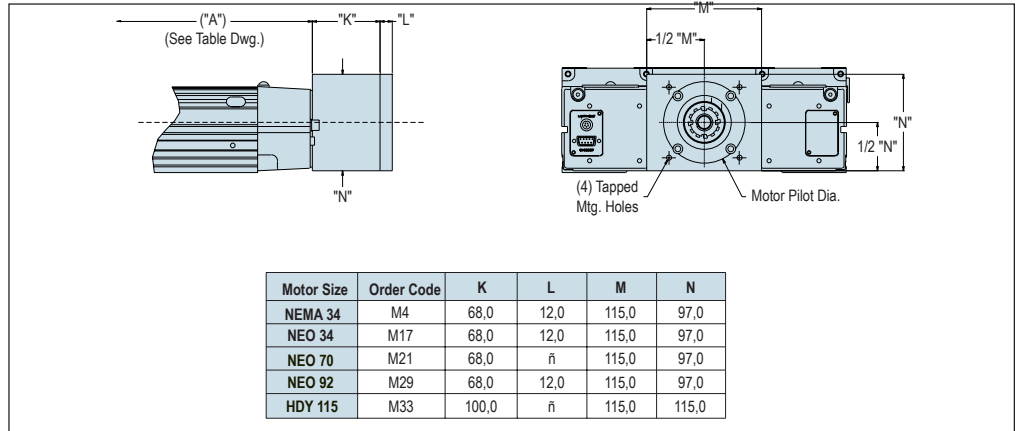
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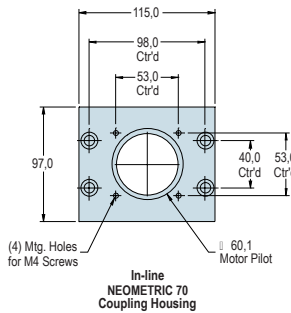
**412XR Series Motor Mount Dimensions (mm)**

In-line motor mounting allows the motor to be mounted directly to the drive screw via the selected motor coupling.

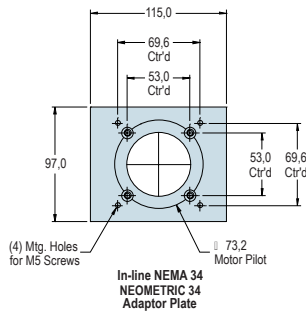
Used to easily accommodate the mounting of different frame sizes. These adapter plates can be ordered separately by part number below.



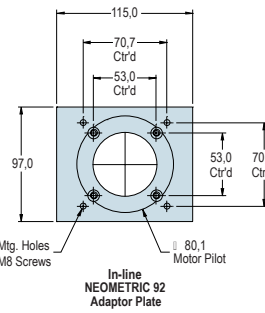
Part No. 002-1907-01  
 NEO 70



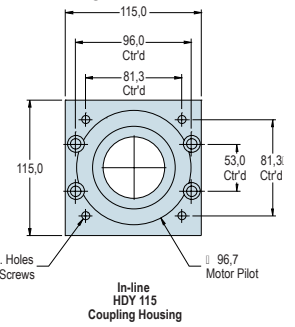
Part No. 002-1907-02  
 NEMA 34 or NEO 34



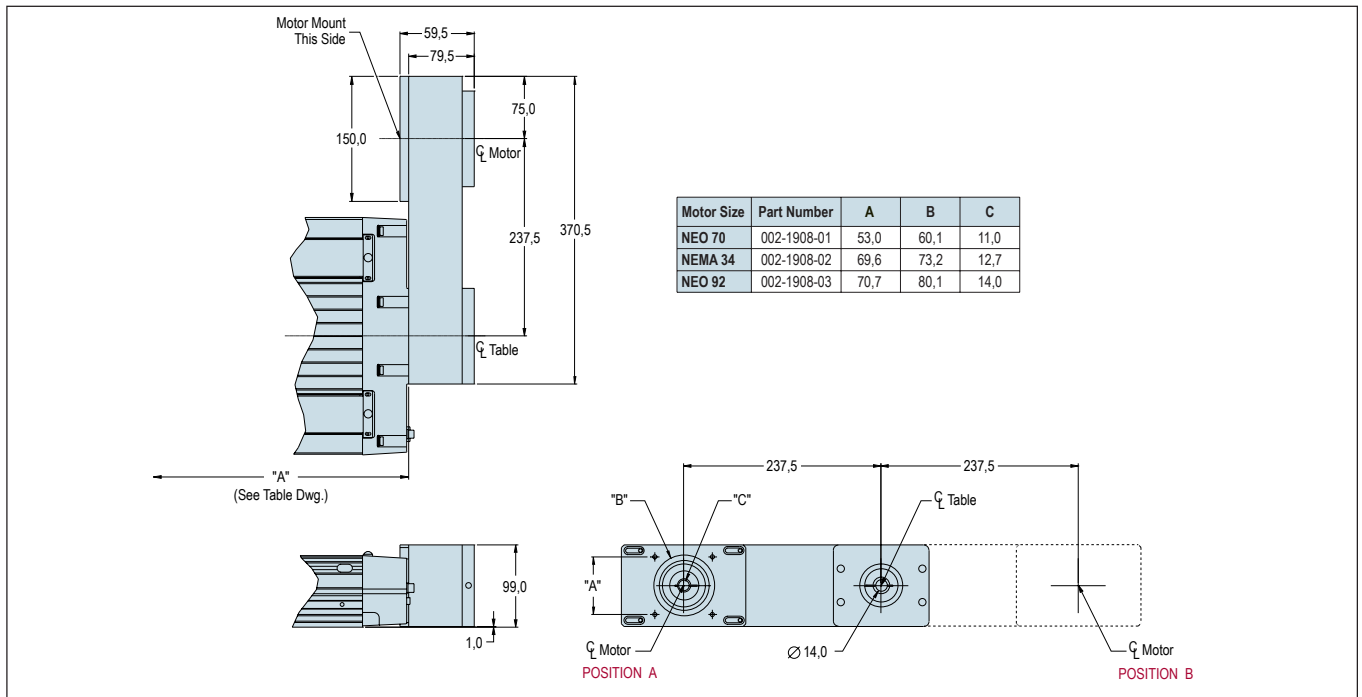
Part No. 002-1907-03  
 NEO 92



Part No. 002-1907-04  
 HDY 115

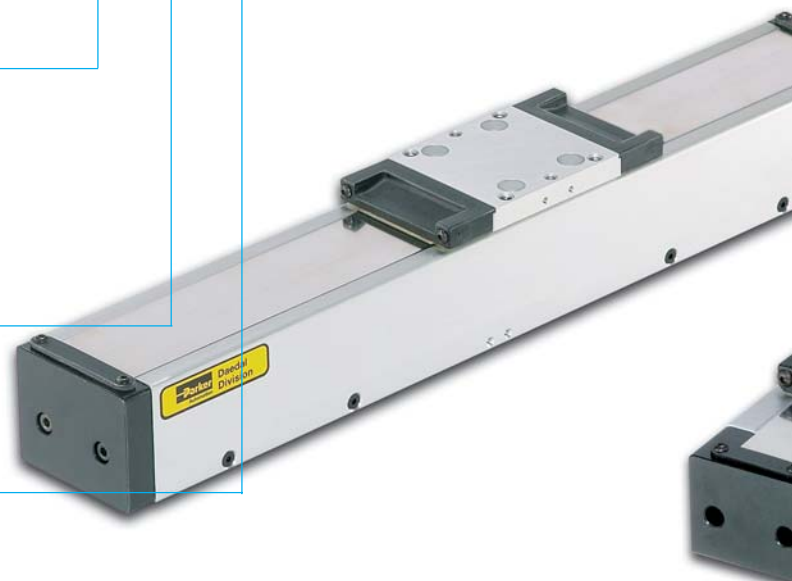


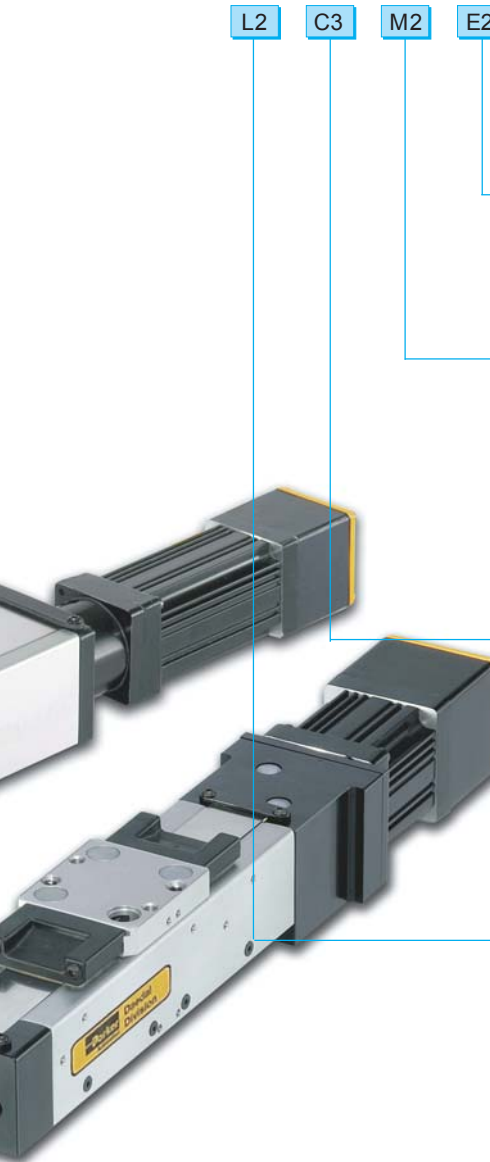
Parallel motor mounting is employed whenever a shorter overall unit length is needed. The motor is positioned along the sides or bottom of the table as designated by position A, B, or C. (No coupling required.)



**401/402XR How to Order**

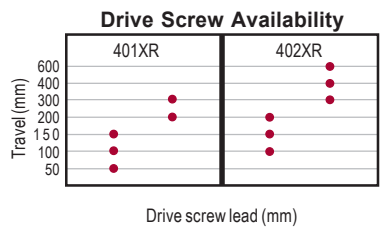
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<input type="checkbox"/> Series .....		401						
		402						
<input type="checkbox"/> Travel (mm) .....			100					
50 .....			050					
100 .....			100					
150 .....			150					
200 .....			200					
300 .....			300					
400 .....			400					
600 .....			600					
<input type="checkbox"/> Model .....				XR				
<input type="checkbox"/> Mounting (metric) .....					M			
<input type="checkbox"/> Grade .....						S		
Standard .....						S		
Precision (E3 or E4 encoder option required) .....						P		
<input type="checkbox"/> Drive Screw .....							D9	
5 mm Lead .....							D2	
10 mm Lead .....							D3	
2 mm Lead .....							D9	
<input type="checkbox"/> Home Sensor .....								H3
No sensor .....								H1
N.C. current sinking flying leads .....								H2
N.O. current sinking flying leads .....								H3
N.C. current sourcing flying leads .....								H4
N.O. current sourcing flying leads .....								H5
N.C. current sinking locking connector .....								H6
N.O. current sinking locking connector .....								H7
N.C. current sourcing locking connector .....								H8
N.O. current sourcing locking connector .....								H9
N.C. current sinking-sensor pack .....								H11
N.O. current sinking-sensor pack .....								H12
N.C. current sourcing-sensor pack .....								H13
N.O. current sourcing-sensor pack .....								H14





L2 C3 M2 E2 R1

- R1** Required Designator
- Encoder Option
- E1** No encoder
- E2** 1  $\mu$ m resolution linear
- E3** 0.5  $\mu$ m resolution linear
- E4** 0.1  $\mu$ m resolution linear
- Motor Mount
- M2** SM16 - Inline mounting
- M3** NEMA23 - Inline mounting
- M37** NEMA17 - Inline mounting
- M61** BE23 - Inline mounting
- Motor Coupling
- C1** No coupling
- C2** 6,3 mm (.25 in) bore Oldham
- C3** 6,3 mm (.25 in) bore Bellows
- C4** 9,5 mm (.38 in) bore Oldham (402XR only)\*
- C5** 9,5 mm (.38 in) bore Bellows\*
- C24** 5 mm (.20 in) bore Oldham
- C25** 5 mm (.20 in) bore Bellows
- \*NEMA 23 frame size only (M3, M61)
- Limit Sensors
- L1** No sensor
- L2** N.C. current sinking flying leads
- L3** N.O. current sinking flying leads
- L4** N.C. current sourcing flying leads
- L5** N.O. current sourcing flying leads
- L6** N.C. current sinking locking connector
- L7** N.O. current sinking locking connector
- L8** N.C. current sourcing locking connector
- L9** N.O. current sourcing locking connector
- L11** N.C. current sinking-sensor pack
- L12** N.O. current sinking-sensor pack
- L13** N.C. current sourcing-sensor pack
- L14** N.O. current sourcing-sensor pack

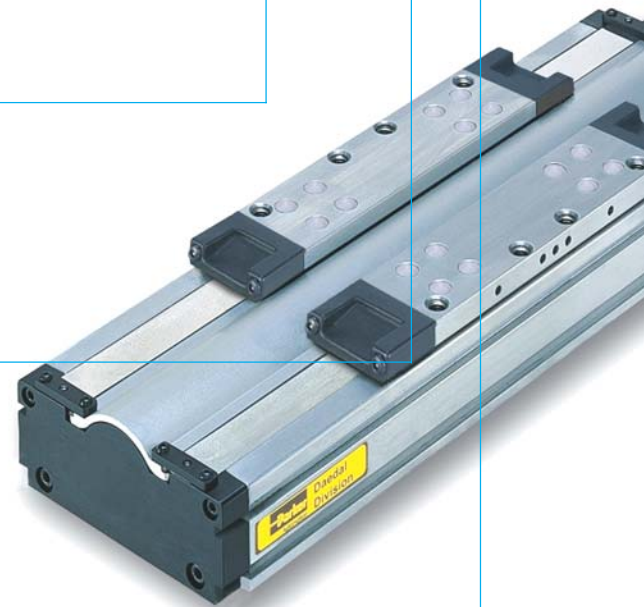


## 404XR Series How to Order

### Order Example

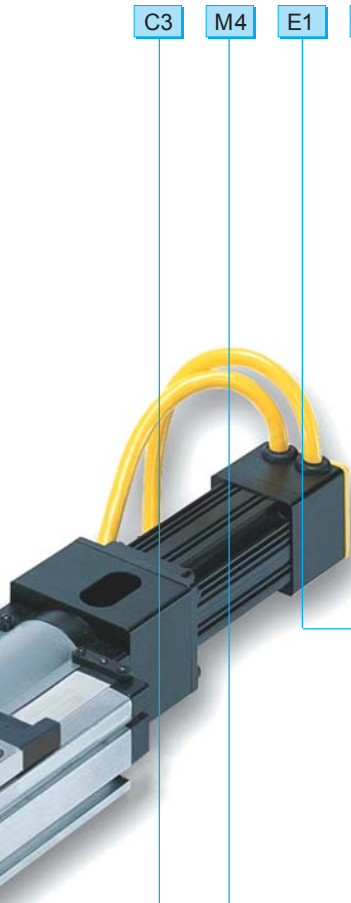
404 450 XR M P - D33 - H4 L2

- Model Series** ..... 404
- Table Travel**
  - 50 mm ..... 50      350 mm ..... 350
  - 100 mm ..... 100      400 mm ..... 400
  - 150 mm ..... 150      450 mm ..... 450
  - 200 mm ..... 200      500 mm ..... 500
  - 250 mm ..... 250      550 mm ..... 550
  - 300 mm ..... 300      600 mm ..... 600
- Table Style** ..... XR
- Mounting (Metric)** ..... M
- Grade**
  - Precision grade ..... P
  - Standard grade ..... S
- Drive Screw**
  - Free travel ..... D1      1 mm V thread leadscrew ..... D31
  - 5 mm ballscrew ..... D2      2 mm V thread leadscrew ..... D32
  - 10 mm ballscrew ..... D3      5 mm V thread leadscrew ..... D33
  - 20 mm ballscrew ..... .10" V thread leadscrew ..... D34
  - (standard grade only) D4      .10" acme thread leadscrew ..... D35
- Home Sensor Assembly (one sensor)**
  - No home sensor ..... H1
  - N.C. current sinking, flying leads ..... H2
  - N.O. current sinking, flying leads ..... H3
  - N.C. current sourcing, flying leads ..... H4
  - N.O. current sourcing, flying leads ..... H5
  - N.C. current sinking, w/locking connector ..... H6
  - N.O. current sinking, w/locking connector ..... H7
  - N.C. current sourcing, w/locking connector ..... H8
  - N.O. current sourcing, w/locking connector ..... H9
  - N.C. current sinking-sensor pack ..... H11
  - N.O. current sinking-sensor pack ..... H12
  - N.C. current sourcing-sensor pack ..... H13
  - N.O. current sourcing-sensor pack ..... H14
- Travel Limit Sensor Assembly (two sensors)**
  - No limit sensors ..... L1
  - N.C. current sinking, flying leads ..... L2
  - N.O. current sinking, flying leads ..... L3
  - N.C. current sourcing, flying leads ..... L4
  - N.O. current sourcing, flying leads ..... L5
  - N.C. current sinking, w/locking connector ..... L6
  - N.O. current sinking, w/locking connector ..... L7
  - N.C. current sourcing, w/locking connector ..... L8
  - N.O. current sourcing, w/locking connector ..... L9
  - N.C. current sinking-sensor pack ..... L11
  - N.O. current sourcing-sensor pack ..... L14



Note: Sensors with locking connector include 5 m extension cable.





C3 M4 E1 B1 R1 P1

**Pinning Option**

- P1** No multi-axis pinning
- P2** X axis transfer pinning to Y or Z axis - 30 arc seconds
- P3** Y axis transfer pinning to X axis - 30 arc seconds
- P4** Z axis transfer pinning to X axis - 30 arc seconds
- P5** X axis standard pinning to Y axis - 125 arc seconds
- P6** Y axis standard pinning to X axis - 125 arc seconds

**Clean Room Preparation**

- R1** Class 1000 compatible (standard)      **R5** Class 1000 (Std.) with easy lube system
- R2** Class 10 compatible (consult factory for details)

**Brake Option**

- B1** No brake
  - B2** Shaft brake\*\*
- \*\*Brake option cannot be used in conjunction with Rotary encoder option. Refer to holding torque chart (page B14) to confirm maximum load.

**Encoder Option**

- E1** No encoder
- E2** Linear encoder (tape scale) 1 micron
- E3** Linear encoder (tape scale) 0.5 micron
- E4** Linear encoder (tape scale) 0.1 micron
- E5** Rotary shaft encoder\*\*

**Motor Mount\*\*\*\***

- M1** No motor mount
- M2** SM 16 - In-line mounting
- M3** NEMA 23 & SM 23 - In-line mounting
- M4** NEMA 34 - In-line mounting
- M5** SM16 - Parallel mounting, "A" location
- M6** SM16 - Parallel mounting, "B" location
- M7** SM16 - Parallel mounting, "C" location
- M8** NEMA 23 - Parallel mounting, "A" location
- M9** NEMA 23 - Parallel mounting, "B" location
- M10** NEMA 23 - Parallel mounting, "C" location
- M11** SM23 - Parallel mounting, "A" location
- M12** SM23 - Parallel mounting, "B" location
- M13** SM23 - Parallel mounting, "C" location
- M21** Neometric 70 - In-line mounting
- M37** NEMA 17 - In-line mounting
- M49** Handcrank/no read out
- M50** Handcrank w/ read out (0,10 or 1mm leads only)
- M51** HDY55 - In-line mounting
- M61** BE23 - In-line mounting
- M62** BE23 - Parallel mounting, "A" location
- M63** BE23 - Parallel mounting, "B" location
- M64** BE23 - Parallel mounting, "C" location
- M71** SGM01 - In-line mounting
- M72** SGM01 - Parallel mounting, "A" location
- M73** SGM01 - Parallel mounting, "B" location
- M74** SGM01 - Parallel mounting, "C" location
- M75** SGM02 - In-line mounting

\*\*\* See page B21 for maximum allowable motor shaft diameter.

**Motor Coupling**

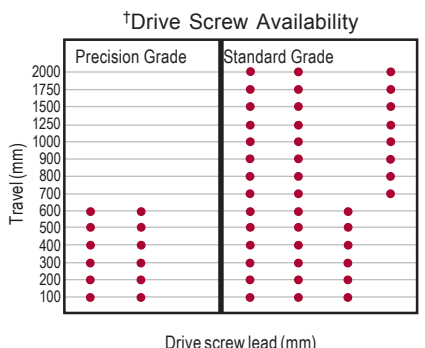
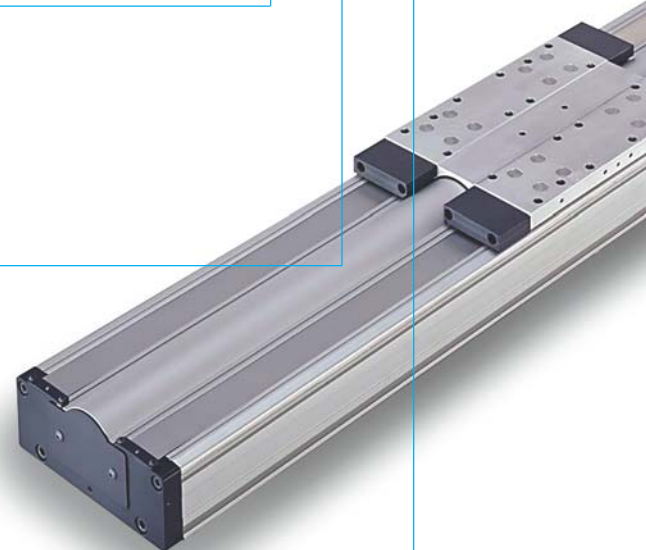
- C1** No coupling (req. for parallel mounting)
  - C2** 6,3 mm (0.25") Oldham
  - C3** 6,3 mm (0.25") Bellows (req. for prec. grade)
  - C4** 9,5 mm (0.375") Oldham
  - C5** 9,5 mm (0.375") Bellows (req. for prec. grade)
  - C6** 11 mm (0.43") Oldham
  - C7** 11 mm (0.43") Bellows (req. for prec. grade)
  - C10** 14 mm Oldham (M75 motor option)
  - C11** 14 mm Bellows (M75 motor option)
  - C22** 9 mm (0.35") Oldham
  - C23** 9 mm (0.35") Bellows
  - C24** 5 mm Oldham (M37 NEMA 17 w/ 5mm shaft)
  - C25** 5 mm Bellows (M37 NEMA 17 w/ 5mm shaft)
  - C26** 8 mm Oldham (M71 NEMA motor option)
  - C27** 8 mm (0.19") Bellows (M71 motor option)
  - C28** 0.19" Oldham (M37 NEMA 17 w/ 0.19" shaft)
  - C29** 0.19" Bellows (M37 NEMA 17 w/ 0.19" shaft)
  - C30** 0.25" to 0.25" Oldham †
  - C31** 0.25" to 0.25" Bellows †
  - C32** 0.25" to 0.38" Oldham †
  - C33** 0.25" to 0.38" Bellows †
  - C34** 0.25" to 9mm Bellows †
- † Couplings for leadscrew drive

406XR Series How to Order

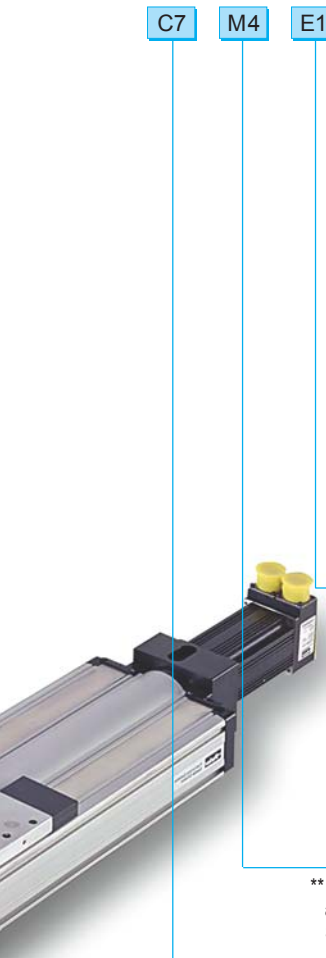
Order Example

406 900 XR M P - D3 H4 L1

- Model Series** ..... 406
- Table Travel**
  - 100 mm ..... 100      800 mm ..... 800
  - 200 mm ..... 200      900 mm ..... 900
  - 300 mm ..... 300      1000 mm ..... 1000
  - 400 mm ..... 400      1250 mm ..... 1250
  - 500 mm ..... 500      1500 mm ..... 1500
  - 600 mm ..... 600      1750 mm ..... 1750
  - 700 mm ..... 700      2000 mm ..... 2000
- Table Style** ..... XR
- Mounting (Metric)** ..... M
- Grade**
  - Precision grade (max travel 600 mm) ..... P
  - Standard grade (max travel 2000 mm) ..... S
- Drive Screw†**
  - Free travel ..... D1
  - 5 mm ballscrew ..... D2
  - 10 mm ballscrew ..... D3
  - 20 mm ballscrew ..... D4
  - 25 mm ballscrew ..... D5
- Home Sensor Assembly (one sensor)**
  - No home sensor ..... H1
  - N.C. current sinking, flying leads ..... H2
  - N.O. current sinking, flying leads ..... H3
  - N.C. current sourcing, flying leads ..... H4
  - N.O. current sourcing, flying leads ..... H5
  - N.C. current sinking, w/locking connector ..... H6
  - N.O. current sinking, w/locking connector ..... H7
  - N.C. current sourcing, w/locking connector ..... H8
  - N.O. current sourcing, w/locking connector ..... H9
  - N.C. current sinking-sensor pack ..... H11
  - N.O. current sinking-sensor pack ..... H12
  - N.C. current sourcing-sensor pack ..... H13
  - N.O. current sourcing-sensor pack ..... H14
- Travel Limit Sensor Assembly (two sensors)**
  - No limit sensors ..... L1
  - N.C. current sinking, flying leads ..... L2
  - N.O. current sinking, flying leads ..... L3
  - N.C. current sourcing, flying leads ..... L4
  - N.O. current sourcing, flying leads ..... L5
  - N.C. current sinking, w/locking connector ..... L6
  - N.O. current sinking, w/locking connector ..... L7
  - N.C. current sourcing, w/locking connector ..... L8
  - N.O. current sourcing, w/locking connector ..... L9
  - N.C. current sinking-sensor pack ..... L11
  - N.O. current sourcing-sensor pack ..... L14



Note: Sensors with locking connector include 5 m extension cable.



\*\* See page B23 for maximum allowable motor shaft diameter. SM23 motor requires long shaft option.

Pinning Option

- P1 No multi-axis pinning
- P2 X axis transfer pinning to Y or Z axis - 30 arc seconds
- P3 Y axis transfer pinning to X axis - 30 arc seconds
- P4 Z axis transfer pinning to X axis - 30 arc seconds

Clean Room Preparation

- R1 Class 1000 compatible (standard)
- R2 Class 10 compatible (consult factory for details)

Brake Option

- B1 No brake
- B2 Shaft brake\*\*

\*\*Brake option cannot be used in conjunction with Rotary encoder option. Refer to holding torque chart (page B14) to confirm maximum load.

Encoder Option

- E1 No encoder
- E2 Linear encoder (tape scale) 1 micron
- E3 Linear encoder (tape scale) 0.5 micron
- E4 Linear encoder (tape scale) 0.1 micron
- E5 Rotary shaft encoder\*\*

Motor Mount\*\*\*

- |  |   |
|--|---|
| <input type="checkbox"/> M1 No motor mount                             | <input type="checkbox"/> M17 Neometric 34 - In-line mounting                |
| <input type="checkbox"/> M3 NEMA 23 & SM23 - In-line mounting          | <input type="checkbox"/> M18 Neometric 34 - Parallel mounting, "A" location |
| <input type="checkbox"/> M4 NEMA 34 In-line mounting                   | <input type="checkbox"/> M19 Neometric 34 - Parallel mounting, "B" location |
| <input type="checkbox"/> M11 SM23 - Parallel mounting, "A" location**  | <input type="checkbox"/> M20 Neometric 34 - Parallel mounting, "C" location |
| <input type="checkbox"/> M12 SM23 - Parallel mounting, "B" location**  | <input type="checkbox"/> M21 Neometric 70 - In-line mounting                |
| <input type="checkbox"/> M13 SM23 - Parallel mounting, "C" location**  | <input type="checkbox"/> M22 Neometric 70 - Parallel mounting, "A" location |
| <input type="checkbox"/> M14 NEMA 34 - Parallel mounting, "A" location | <input type="checkbox"/> M23 Neometric 70 - Parallel mounting, "B" location |
| <input type="checkbox"/> M15 NEMA 34 - Parallel mounting, "B" position | <input type="checkbox"/> M24 Neometric 70 - Parallel mounting, "C" location |
| <input type="checkbox"/> M16 NEMA 34 - Parallel mounting, "C" position | <input type="checkbox"/> M29 Neometric 92 - In-line mounting                |
|  | <input type="checkbox"/> M61 BE23 - In-line mounting                        |

Motor Coupling

- C1 No coupling (required for parallel mounting)
- C2 6,3 mm (0.25") Oldham
- C3 6,3 mm (0.25") Bellows (required for precision grade)
- C4 9,5 mm (0.375") Oldham
- C5 9,5 mm (0.375") Bellows (required for precision grade)
- C6 11,0 mm (0.43") Oldham
- C7 11,0 mm (0.43") Bellows (required for precision grade)
- C8 12,7 mm (0.50") Oldham
- C9 12,7 mm (0.50") Bellows (required for precision grade)
- C10 14,0 mm (0.55") Oldham
- C11 14,0 mm (0.55") Bellows (required for precision grade)

412XR Series How to Order

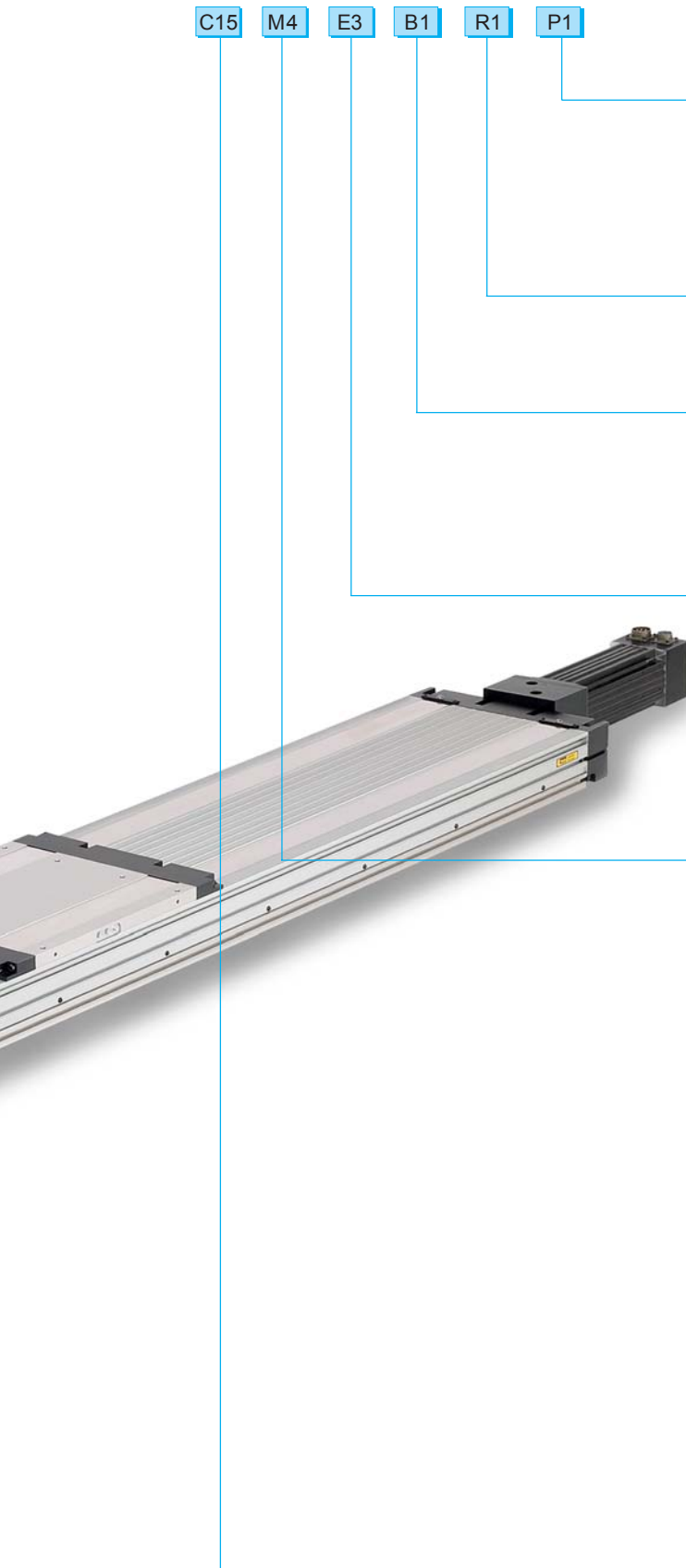
Order Example

412 T03 XR M S - D2 H3 L3

- Model Series** ..... 412
- Table Travel (mm)**
  - 150 ..... T01
  - 250 ..... T02
  - 350 ..... T03
  - 650 ..... T04
  - 800 ..... T05
  - 1000 ..... T06
  - 1200 ..... T07
  - 1500 ..... T08
  - 1750 ..... T09
  - 2000 ..... T10
- Table Style** ..... XR
- Mounting (Metric)** ..... M
- Grade**
  - Standard grade ..... S
- Drive Screw**
  - Free travel ..... D1
  - 5 mm lead ..... D2
  - 10 mm lead ..... D3
  - 25 mm lead ..... D5
  - 32 mm lead ..... D6
- Home Sensor\***
  - No home sensor ..... H1
  - N.C. current sinking ..... H2
  - N.O. current sinking ..... H3
  - N.C. current sourcing ..... H4
  - N.O. current sourcing ..... H5
- Travel Limit Sensor\***
  - No limit sensor ..... L1
  - N.C. current sinking ..... L2
  - N.O. current sinking ..... L3
  - N.C. current sourcing ..... L4
  - N.O. current sourcing ..... L5



\* Includes a 3 meter extension cable with flying lead termination.  
 A 7,5 meter extension cable can be ordered separately.



**Pinning Option**

- P1** No multi-axis pinning
- P2** X axis transfer pinning to Y or Z axis - 30 arc seconds
- P3** Y axis transfer pinning to X axis - 30 arc seconds\* \* P3 option includes a required 15 mm thick adapter.
- P4** Z axis transfer pinning to X axis - 30 arc seconds

**Clean Room Preparation**

- R1** Class 1000, strip seals
- R2** Class 100, no strip seals

**Brake Option**

- B1** No brake
  - B2** Shaft brake\*\*
- \*\*Brake option cannot be used in conjunction with Rotary encoder option. Refer to holding torque chart (page B14) to confirm maximum load.

**Encoder Option**

- E1** No encoder
- E2** 1 µm resolution linear
- E3** 0,5 µm resolution linear
- E4** 0,1 µm resolution linear
- E5** 5 µm resolution linear
- E6** Rotary encoder\*\*
- E7** Sine encoder

**Motor Mount**

- M1** No motor mount
- M4** NEMA 34 - In-line mounting
- M14** NEMA 34 - Parallel mounting, "A" position
- M15** NEMA 34 - Parallel mounting, "B" position
- M17** Neometric 34 - In-line mounting
- M18** Neometric 34 - Parallel mounting, "A" position
- M19** Neometric 34 - Parallel mounting, "B" position
- M21** Neometric 70 - In-line mounting
- M22** Neometric 70 - Parallel mounting, "A" position
- M23** Neometric 70 - Parallel mounting, "B" position
- M29** Neometric 92 - In-line mounting
- M30** Neometric 92 - Parallel mounting, "A" position
- M31** Neometric 92 - Parallel mounting, "B" position
- M33** HDY 115 - In-line mounting

**Motor Coupling**

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| <b>C1</b> No coupling                 | <b>C8</b> 12,7 mm (0.50") Oldham   |
| <b>C4</b> 9,5 mm (0.38") bore Oldham  | <b>C9</b> 12,7 mm (0.50") Bellows  |
| <b>C5</b> 9,5 mm (0.38") bore Bellows | <b>C10</b> 14,0 mm (0.55") Oldham  |
| <b>C6</b> 11,0 mm (0.43") Oldham      | <b>C11</b> 14,0 mm (0.55") Bellows |
| <b>C7</b> 11,0 mm (0.43") Bellows     | <b>C14</b> 19,0 mm (0.75") Oldham  |
|                                       | <b>C15</b> 19,0 mm (0.75") Bellows |