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process control
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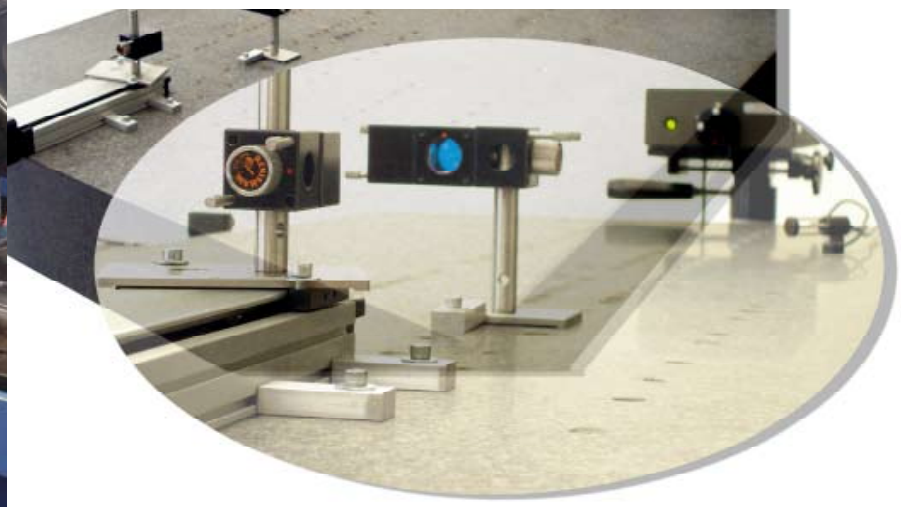
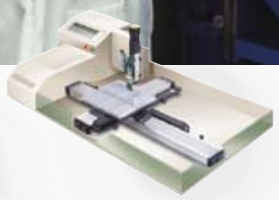
Precision Technology

XR Series Screw Driven Linear Positioners

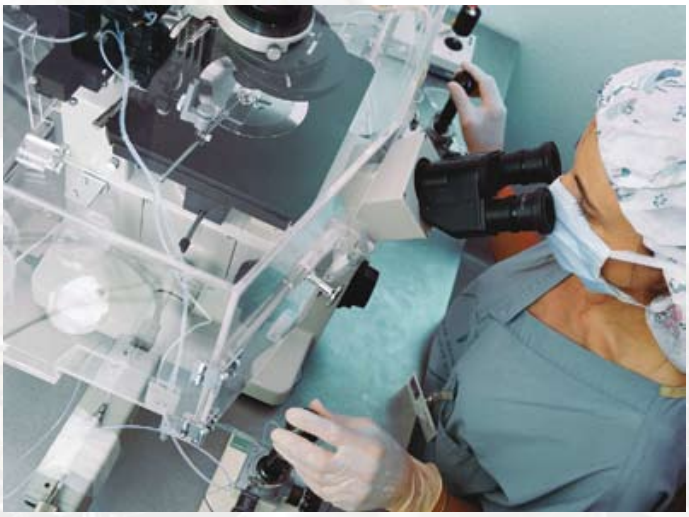
Parker

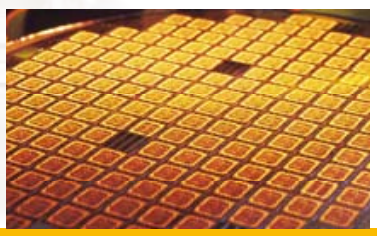
ENGINEERING YOUR SUCCESS.





Parker Facility in Offenburg, Germany
Manufacturing and Service for Precision Components in Europe





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Precision Automation

Applications and industries integrating precision motion control have requirements that exceed most motion product capabilities - levels of accuracy, repeatability, straightness, flatness and orthogonality that demand specialized product designs and manufacturing capabilities. With more than 25 years of product design and manufacturing experience in the most demanding precision motion markets, Parker is ready to provide the products and systems to serve our customers' most challenging needs.

Customization and Services

Unlike many other motion technologies, precision electromechanical applications often require custom solutions. Many solutions are complete one-of-a kind systems.

Our experienced engineers and technicians provide:

- Application advice
- Product sizing and selection, including mechanics, motors, drives and controls
- System design
- System manufacturing including testing and axis alignment
- System commissioning
- System maintenance

Parker Precision Automation customers can receive many optional services such as:

- 3D Custom assembly drawings
- Matches motor control systems
- Life-load diagrams
- Customized cabling systems

Advanced Manufacturing Capabilities

Our advanced manufacturing and assembly process allows us to build quality and consistency into every element of your motion system. Each mechanical system is fully assembled prior to shipment and each component is properly handled to protect finish and appearance. While providing advanced manufacturing capabilities, we also strive to maintain the industry's best lead times for precision motion products.

Performance and specifications are verified with state-of-the-art testing, including

- **Cleanroom-approved versions** - Parker is equipped with in house particulate testing facilties to certify materials for cleanroom ratings.
- **EMI testing** - Parker has an EMI test chamber, which allows us to test equipment to verify levels of electromagnetic interference.
- **Precision Metrology Lab** - When precision is critical to your process, you need validated, proven performance data. Parker certifies all precision-grade positioners using state-of-the-art laser interferometers, and provides reports to validate accuracy and bidirectional repeatability.

Parker Automation Technology Centers

Parker Automation Technology Centers are a network of premier product and service providers who can serve you locally for your automation needs. Each Automation Technology Center is certified to have completed significant product training and has the ability to provide subsystem solutions with local support. Parker Automation Technology Centers are located throughout Europe, and are served by our European manufacturing facility in Offenburg, Germany.

Selectable Levels of Integration

Parker's **Selectable Levels of Integration** is a philosophy of product development and management that allows the machine builder to select an appropriate system, subsystem, or component to meet a specific need. Parker has solutions for machine builders of all types, from those who want a complete integrated system to those who want to build their own system from "best of breed" components.

Systems

Machine builders and OEMs often choose to integrate a complete electromechanical system into their machine. They have confidence in knowing that our knowledge, experience, and support will ensure that their goals are met. Minimal design engineering ensures component compatibility from a single source.

Subsystems and Bundled Products

For a cost-effective and efficient solution, Parker offers bundled or kitted systems. We can combine motors, gearheads, and positioning systems to deliver a configured subsystem ready for installation. Parker configuration and setup software accommodates the rest of the product line, making start-up a snap. Combining this with our custom product modification capabilities gives the machine builder an economical custom-fit solution, with reduced engineering effort, straightforward integration, and modular compatibility.

Component Products

We offer the broadest range of linear and rotary motion products available for automation systems. If you have the capability and experience to develop your own systems, our innovative, easy-to-use products will help you get the job done. Parker provides short lead times, large selection, and proven reliability.

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XR Series

www.parker-eme.com/XR

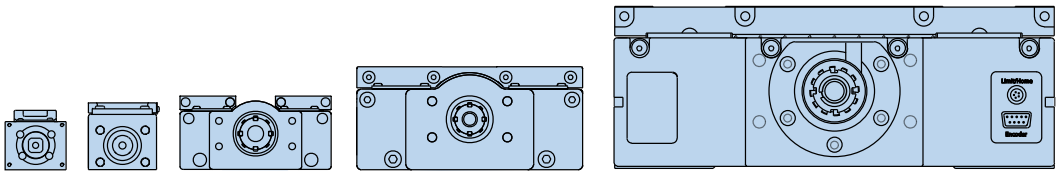
XR Series Features

XR Series Precision Linear Positioners

- Pre-engineered package
- Performance matched components
- Environmental protection
- Laser certified precision

Typical enhancements

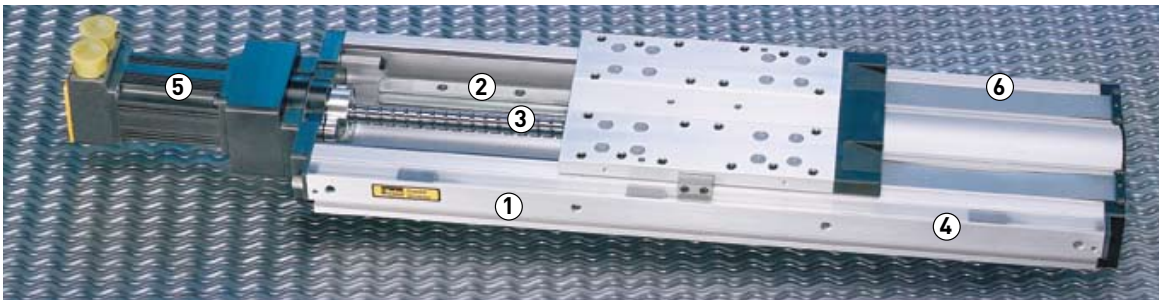
- Limit/home position sensors
- Linear encoder
- Cleanroom prep
- Multi-axis brackets & adapters
- Selectable motor mounts
- Servo motors and drives
- Programmable controls
- Cable management system



Style	Unit	401XR	402XR	404XR	406XR	412XR
Stroke	[mm]	300	600	600	2000	2000
Load	[kg]	50	100	170	630	1470
Acceleration	[m/s^2]	20	20	20	20	20

The „XR“ 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 required. 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 precision multi-axis systems.



404XR

① High strength extruded aluminum body

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

② Rack-and-pinion guiding

These tables are equipped with rack-and-pinion guiding 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 Home/limit sensors

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

⑤ Motor mounts

A large selection of servo and stepper motor sizes plus selectable mounting configurations (in-line, parallel) 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.

Encoders

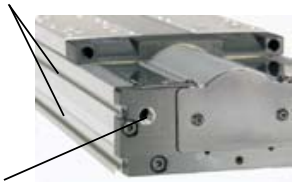
The linear encoder option offers direct positional feedback of the carriage location. The rotary shaft encoder couples directly to the drive shaft to nullify any incurred mechanical error (particularly useful with the parallel motor mount). Not shown.

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.

Convenient mounting slots

A continuous T-slot along the side of the table body provides a convenient means of mounting the table to a work surface as well as mounting accessories to the table.



Positive pressure port

A standard port (1/8 NPT) for pressurizing the interior to prevent particle intrusion. (Standard on 404XR, 406XR, 412XR units).

Easy lube system

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

Cleanroom prep

Class 10 cleanroom preparation is a standard option for the XR series.

For Multi axes combinations see Applications

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XR Series Technical Data

401XR and 402XR Technical Data

www.parker-eme.com/401-402XR

401XR (41 mm wide profile)

402XR series (58 mm wide profile)

The 401XR and 402XR Series positioners enhance the XR family of precision linear positioners, addressing applications which involve precise positioning of smaller payloads within a very small space envelope. These ballscrew driven positioners were developed to address the needs of industries such as photonics, life sciences, semiconductor, 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

Style	Unit	Precision*		Standard	
		401XR	402XR	401XR	402XR
Bidirectional repeatability 2 mm lead 5 or 10 mm lead	[µm]	 ±1.3 ±1.3	 - ±1.3	 ±5 ±12	 - ±12
Duty cycle	[%]	100	100	100	100
Maximum acceleration	[m/s^2]	20	20	20	20
Normal force (1)	[N]	490	980	490	980
Axial force (1) 2 mm lead 5 or 10 mm lead	[N]	 54 152	 - 372	 54 152	 - 372
Drive screw efficiency	[%]	80	80	80	80
Maximum breakaway torque	[Nm]	0.03	0.086	0.03	0.086
Maximum running torque (2)	[Nm]	0.028	0.08	0.028	0.08
Linear bearing friction coefficient	-	0.01	0.01	0.01	0.01
Ballscrew diameter 2 mm lead 5 or 10 mm lead	[mm]	 6 8	 - 12	 6 8	 - 12
Weight of carriage	[kg]	0.045	0.11	0.045	0.11

* Requires linear encoder option E3 or E4. (1) see life load charts. (2) Ratings established at a screw speed of 2 s^{-1}.

Travel dependent specifications

Travel [mm]	Positional accuracy* [µm]				Straightness & flatness [µm]		Input moment of inertia [10^{-7}kgm^2]				Max screw speed [s^{-1}]		Weight [kg]	
	401XR		402XR		401XR	402XR	401XR		402XR		401XR	402XR	401XR	402XR
	Precision	Standard	Precision	Standard			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

* Values established at 20 °C ambient temperature utilizing slope correction factor provided.

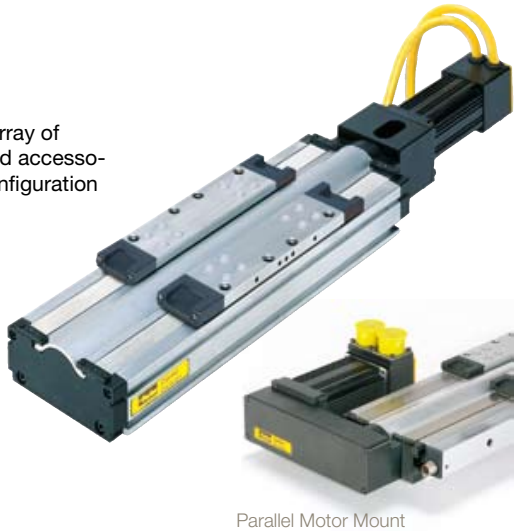
404XR Technical Data

www.parker-eme.com/404-412XR

404XR (95 mm wide profile)

The 404XR is a slim, compact positioning stage (47.3 x 95 mm) able to transport payloads up to 170 kg over a travel of 700 mm. Its fast and precise positioning properties are due to the extremely robust extruded profile, the ball bearings and the precision-ground rack-and-pinion 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.



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

Common characteristics

Type 404XR	Unit	Precision	Standard
Bidirectional repeatability (5)	[µm]	±1.3	±3
Duty cycle Ballscrew	[%]	100	100
Maximum acceleration	[m/s²]	20	20
Normal force (1)	[N]	1667	1667
Axial force (2) Ballscrew	[N]	882	882
Drive screw efficiency Ballscrew	[%]	90	90
Maximum breakaway torque	[Nm]	0.13	0.18
Maximum running torque (3)	[Nm]	0.11	0.17
Linear bearing friction coefficient	-	0.01	0.01
Ballscrew diameter	[mm]	16	16
Weight of carriage	[kg]	0.70	0.70

(1) see life load charts.
(2) Axial load for parallel mount is limited by a maximum input torque of 25 Nm.
(3) Ratings established at a screw speed of 2 s^{-1}.
(4) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.
(5) Consult factory for specifications with linear encoder.
(6) Consult factory for higher screw speeds.

Travel dependent specifications

Travel [mm]	Positional accuracy (4) (5)* [µm]		Straightness & flatness [µm]	Input moment of inertia [10^{-5}kgm²]			Max screw speed (6) [s^{-1}]	Weight [kg]
	Precision	Standard		5 mm	10 mm	20 mm		
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

* Values established at 20 °C ambient temperature utilizing slope correction factor provided.

406XR Technical Data

www.parker-eme.com/404-412XR

406XR (150 mm wide profile)

The 406XR can position high loads (up to 6.2 kN) over distances up to two meters. Because of its size and strength (270 Nm moment load capacity) this 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.

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

Common characteristics

Type 406XR	Unit	Precision	Standard
Bidirectional repeatability (5)	[µm]	±1.3	±3
Duty cycle	[%]	100	100
Maximum acceleration	[m/s²]	20	20
Normal force (1)	[N]	6178	6178
Axial force (2) 0 to 600 mm travel 700 to 2000 mm travel	[N]	882 –	882 1961
Drive screw efficiency	[%]	90	90
Maximum breakaway torque 0 to 600 mm travel 700 to 2000 mm travel	[Nm]	0.13 (18) –	0.18 0.39
Maximum running torque (3) 0 to 600 mm travel 700 to 2000 mm travel	[Nm]	0.11 –	0.17 0.34
Linear bearing friction coefficient	-	0.01	0.01
Ballscrew diameter 0 to 600 mm travel 700 to 2000 mm travel	[mm]	16 -	16 25
Weight of carriage	[kg]	2.7	2.7

(1) see life load charts.
(2) Axial load for parallel mount is limited to: 63.5 kg for the 5, 10 and 20 mm lead drives: 104 kg for 25 mm lead drives
(3) Ratings established at a screw speed of 2 s^{-1}.
(4) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.
(5) Consult factory for specifications with linear encoder.
(6) Consult factory for higher screw speeds.

Travel dependent specifications

Travel [mm]	Positional accuracy (4) (5)* [µm]		Straightness & flatness [µm]	Input moment of inertia [10^{-5}kgm²]				Max screw speed (6) [s^{-1}]	Weight [kg]
	Präzision	Standard		5 mm	10 mm	20 mm	25 mm		
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

* Values established at 20 °C ambient temperature utilizing slope correction factor provided.

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412XR Technical Data

www.parker-eme.com/404-412XR

412XR (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 14.4 kN) to be precisely positioned over distances up to two meters. The lubricating hole for easy maintenance is a standard feature of the carriage. The easy to mount adaptor plate (Art. No. 100-6784-01) for simple X-Y configuration is available as an accessory.

An unrivaled array of options combined with mounting compatibility with the smaller XR tables makes the 412XR ideal as the base unit for multi-axis positioning of heavier payloads.

Common Characteristics

Type 412XR	Unit	Standard	
Screw Lead	[mm]	5, 10, 25	32
Bidirectional repeatability (4)	[µm]	±5	±5
Duty cycle	[%]	100	100
Maximum acceleration	[m/s²]	20	20
Normal force (1)	[kN]	14.4	14.4
Axial force	[kN]	1.96	4.51
Drive screw efficiency	[%]	90	80
Maximum breakaway torque	[Nm]	0.61	0.76
Maximum running torque (2)	[Nm]	0.55	0.69
Linear bearing friction coefficient	-	0.01	0.01
Ballscrew diameter	[mm]	25	32
Weight of carriage	[kg]	12	13

(1) See life load charts.
(2) Ratings established at a screw speed of 2 s^{-1}.
(3) Positional accuracy applies to in-line motor configurations only. Contact factory for parallel motor specifications.
(4) Consult factory for specifications with linear encoder.
(5) Consult factory for higher screw speeds.

Travel Dependent Specifications

Travel [mm]	Positional-accuracy (3) (4)* [µm]	Straightness & flatness [µm]	Input moment of inertia [10^{-5}kgm²]				Max screw speed (5) [s^{-1}]		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

* Values established at 20 °C ambient temperature utilizing slope correction factor provided.

XR Series Life / Load Diagrams

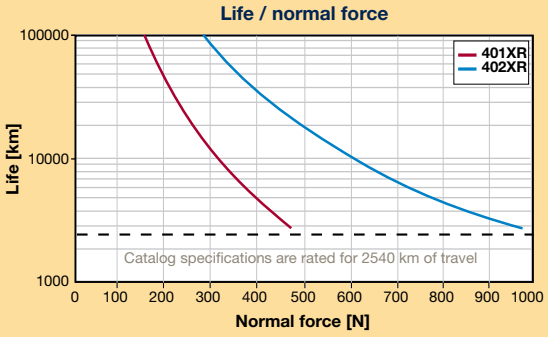
XR Series Life / force

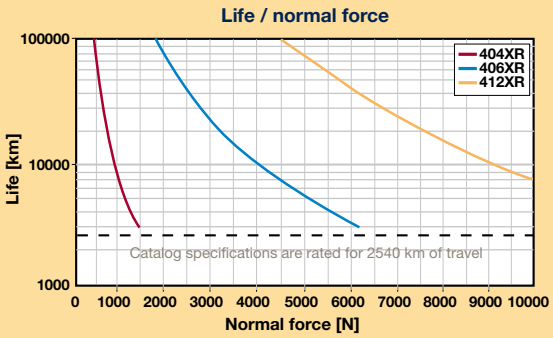
The following performance information is provided as a supplement to the product specification pages. The following graphs are used to establish the table life relative to the applied loads. The useful life of a linear table at full catalog specifications is dependent on the forces acting upon it. These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

Catalog load specifications are rated for 2540 km of travel.

Normal force

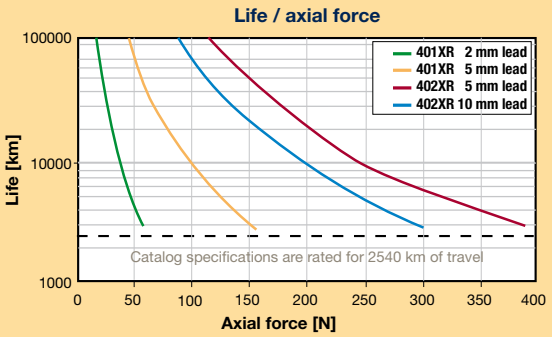
These graphs provide a „rough cut“ evaluation of the support bearing life/load characteristics. The curves show the life/load relationship when the applied load is centered on the carriage, normal (perpendicular) to the carriage mounting surface .

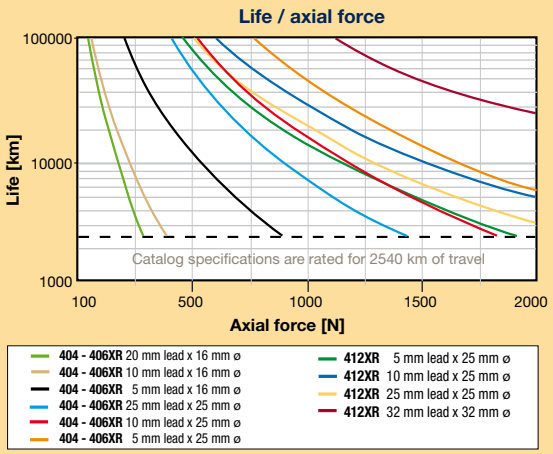




Axial force (thrust force)

These graphs illustrate table ballscrew life relative to the axial force.





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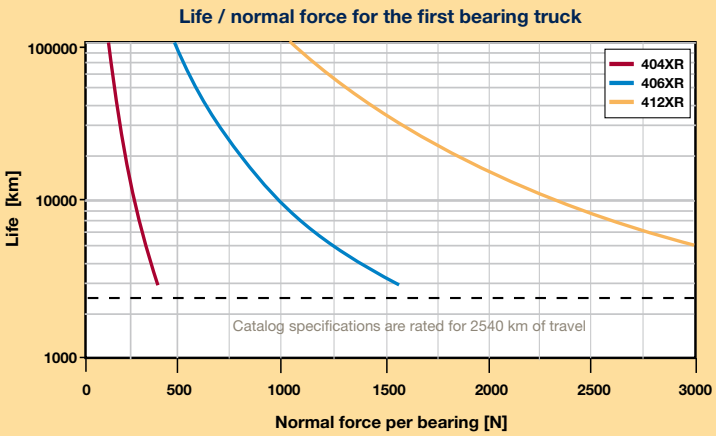
XR Series bearing life / force

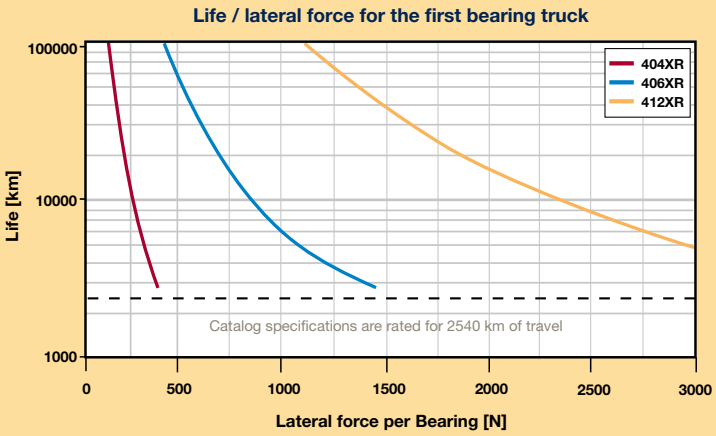
These charts are to be used in conjunction with the corresponding formulas found in the product manuals at www.parker-eme.com/xr to establish the life/force for each bearing (4 per table).

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 manual 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
	[mm]		
404XR	80	57	28
406XR	114	90.3	42.5
412XR	205	192	43





Refer to Parker's website
www.parker-eme.com/xr

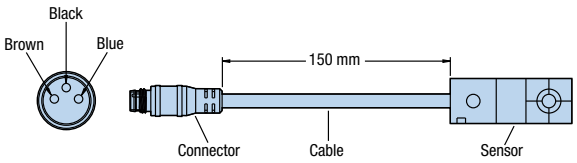
XR Series Options

Home and limit sensor options

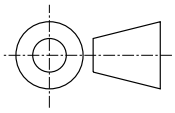
End of Travel and Home Sensors for the XR series are available in a variety of styles. The sensors can be ordered as part of the table or as separate components with the associated mounting hardware or in a sensor pack. A 5 m high-flex extension cable for models 401XR to 406XR with locking connector option comes with the device.

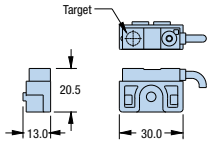
- NPN (Sinking) or PNP (Sourcing)
- Normally closed contact or normally open contact
- Flying Leads or Locking Connector

401XR Limits and Home Sensor



Technical data	
Power input	5-30 VDC, 20 mA
Output	100 mA max
Wire color	(+) Supply: brown
Decoder	(–) Supply: blue normally open: black normally closed: white





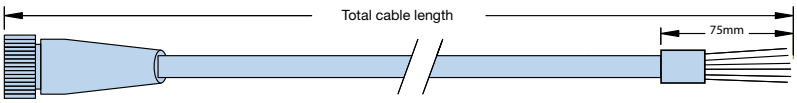
Sensor / Bracket Detail

Order code	Part No.*	Switch type	Logic	Cable length	Connector option
H2 or L2	006-1639-01	N.C.	NPN (sinking)	3.0 m	Flying leads
H3 or L3	006-1639-02	N.O.	NPN (sinking)	3.0 m	Flying leads
H4 or L4	006-1639-03	N.C.	PNP (sourcing)	3.0 m	Flying leads
H5 or L5	006-1639-04	N.O.	PNP (sourcing)	3.0 m	Flying leads
H6 or L6	006-1639-09	N.C.	NPN (sinking)	150 mm	Locking connector
H7 or L7	006-1639-08	N.O.	NPN (sinking)	150 mm	Locking connector
H8 or L8	006-1639-11	N.C.	PNP (sourcing)	150 mm	Locking connector
H9 or L9	006-1639-10	N.O.	PNP (sourcing)	150 mm	Locking connector
H11 or L11	Contact factory	N.C.	NPN (sinking)	Contact factory	Sensor pack
H12 or L12	Contact factory	N.O.	NPN (sinking)	Contact factory	Sensor pack
H13 or L13	Contact factory	N.C.	PNP (sourcing)	Contact factory	Sensor pack
H14 or L14	Contact factory	N.O.	PNP (sourcing)	Contact factory	Sensor pack

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

Sensor pack cable

406XR with Limit and Home Sensor Pack



Description	Part number
3 m	006-1742-01
7.5 m	006-1742-02

Wire color	Function	Pin number
Red	+5 to +24 VDC	A
Blue	Limit 1 (LXR –)	B
Orange	Limit 2 (LXR +)	C
Green	Home	D
Black	Ground	E
Green/Yellow	Shield	Shield case

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Linear encoder (tape scale) option

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

- 1.0 µm resolution
- 0.5 µm resolution
- 0.1 µm resolution

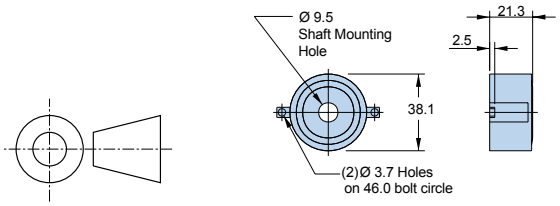
Technical data	
Power input	5 VDC, 150 mA
Output	A/B quadrature and reference marks, differential line drive output
Resolution	1.0, 0.5, 0.1 µm
Cable length	3 m

401XR with Linear Encoder plus Sensor Pack

Rotary encoder option

Modular rotary encoder couples directly to the drive screw for position feedback and is easily field installed.
The rotary encoder cannot be installed with the brake assembly option.

- 5000 counts/rev



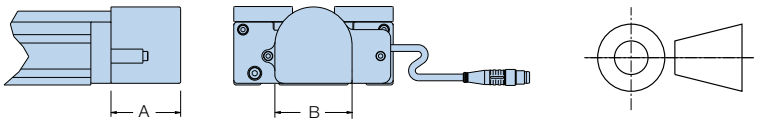
Note: Dimensions shown apply to 404XR and 406XR models.
Consult factory for 412XR dimensions.

Technical data	
Power input	5 VDC, 135 mA
Output	A/B quadrature and reference marks, differential line drive output
Resolution	1250 lines/rev equals 5000 counts post quadrature (1 µm with 5 mm lead ballscrew)
Cable length	150 mm

Brake assembly option

An electromagnetic brake assembly prevents backdriving in vertical applications. It is furnished with a 5 m connection cable. The brake option is easily field installed. The brake option can however not be installed with the rotary encoder option.

404XR with Brake Option



Frame size	Part number	Power input	Holding torque	Dimensions [mm]	
				A	B
401XR/402XR	—	—	—	—	—
404XR	006-1627-01	24 VDC, 0.46 A	2.0 Nm	41.5	46.0
406XR	006-1656-01	24 VDC, 0.5 A	4.5 Nm	49.9	57.5
412XR	002-1916-01	24 VDC, 0.75 A	9.0 Nm	54.0	72.0

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Dowel pinning options*

Standard dowel pin locating holes are offered on most XR units to facilitate repeatable mounting of tooling or payload.*
In addition, pinning options 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.

Two locating dowel pins shown in carriage

* Not available with 401XR or 402XR or 50 mm travel 404XR.

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XR Series Accessories

Riser plate accessory

Used to raise the table base to provide clearance for motors.

Frame size	Art. no.
401XR	002-2063-01
402XR	002-2064-01
404XR	002-3619-01
406XR	002-3625-01
412XR	-

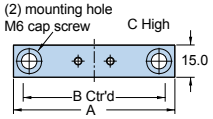
Toe clamp accessory

Used for convenient mounting of table to a base plate, riser plates, Z-axis bracket, or other XR table. All hardware is included.

Frame size	Art. no.
404XR	002-3618-01
406XR	002-3624-01
412XR	002-2160-01

401XR / 402XR

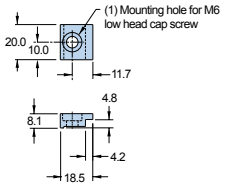
Art. no.: 002-2063-01/ 002-2064-01



Frame Size	Dimensions [mm]		
	A	B	C
401XR	65.0	50.4	17.0
402XR	90.0	75.4	10.0

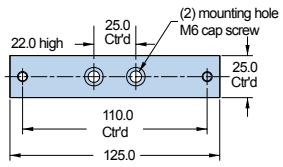
404XR

Art. no.: 002-3618-01



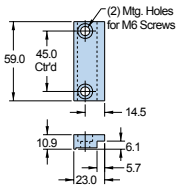
404XR

Art. no.: 002-3619-01



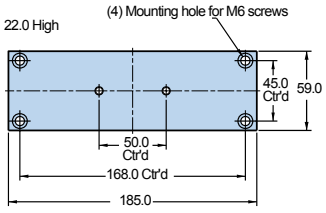
406XR

Art. no.: 002-3624-01



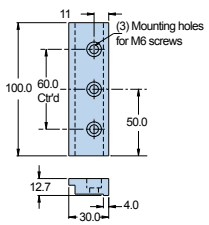
406XR

Art. no.: 002-3625-01



412XR

Art. no.: 002-2160-01



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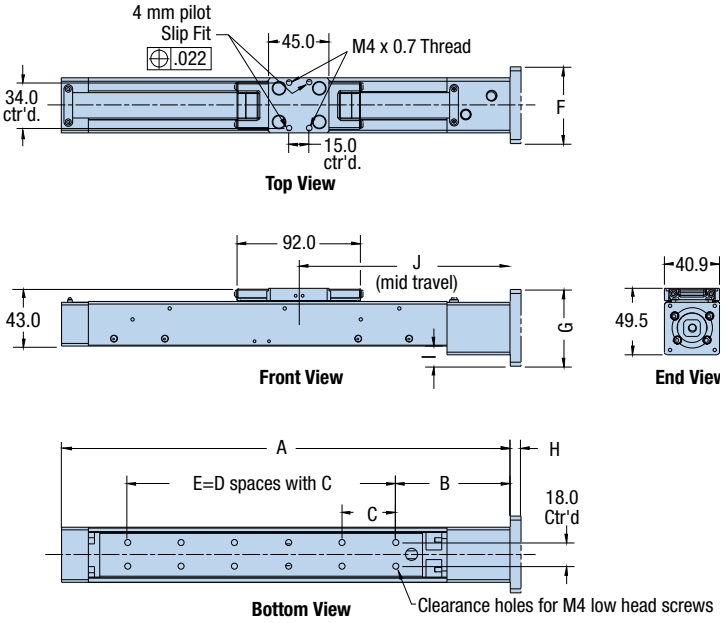
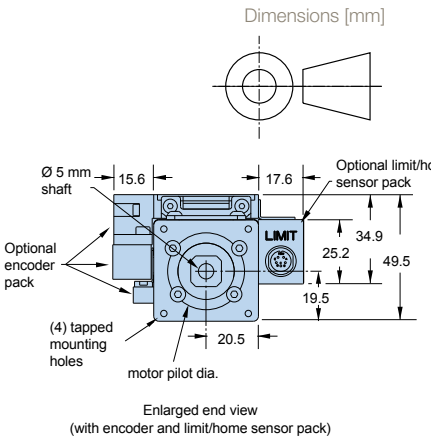
XR Series Dimensions

401XR Dimensions



Dimensions [mm]



Enlarged end view
(with encoder and limit/home sensor pack)

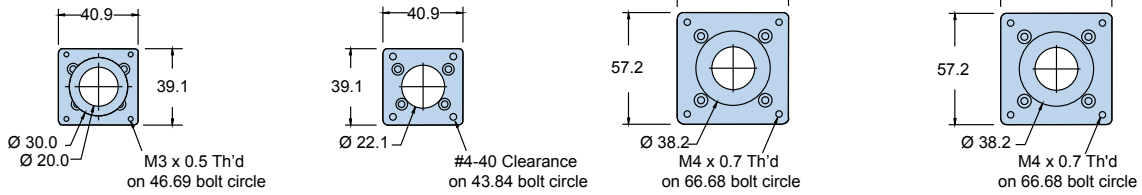
Frame Size	Stroke [mm]	Dimensions [mm]					
		A	B	C	D*	E	J
401050XR	50	209.3	82.8	80.0	1	80.0	123.0
401100XR	100	284.3	80.3	40.0	4	160.0	160.0
401150XR	150	334.3	85.3	40.0	5	200.0	185.0
401200XR	200	384.3	90.3	40.0	6	240.0	210.0
401300XR	300	509.3	92.8	40.0	9	360.0	260.0

Order code	Motor size	Dimensions [mm]			
		F	G	H	I
M2	SM16	40.9	39.1	–	6.5
M3	NEMA 23/ SM23	57.2	57.2	4.0	15.6
M37	NEMA 17	40.9	39.1	–	6.5
M61	BE23	57.2	57.2	8.0	15.6

* D = Number of spaces

In-line motor adapters

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



SM16 NEMA 17 SM23 / NEMA 23 BE23

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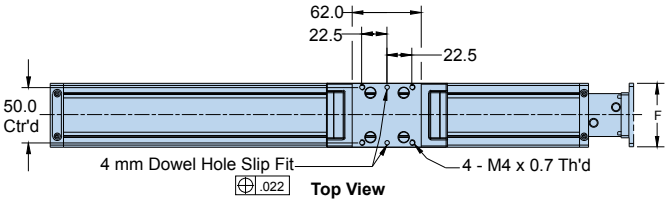
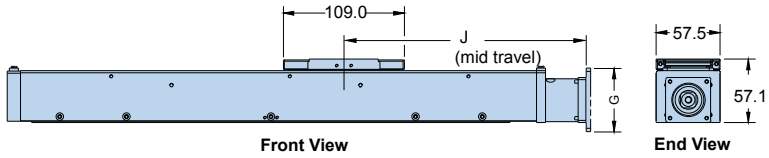
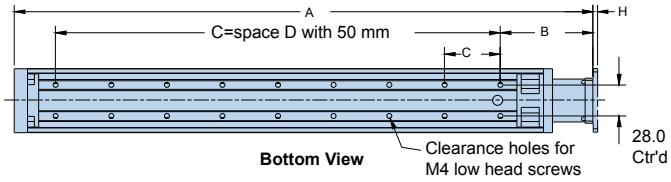
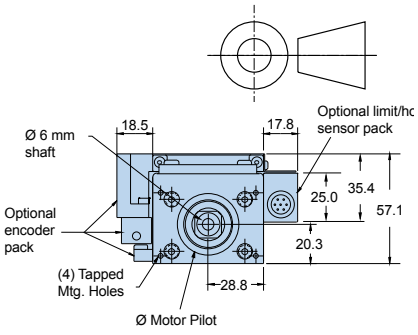
402XR Dimensions

Dimensions [mm]









Enlarged end view
(with encoder and limit/home sensor pack)

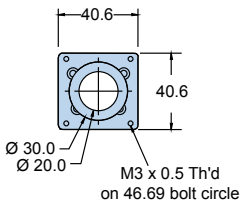
Frame size	Stroke [mm]	Dimension [mm]				
		A	B	C	D*	J
402100XR	100	320.5	83.5	200	4	184
402150XR	150	370.5	83.5	250	5	214
402200XR	200	420.5	83.5	300	6	234
402300XR	300	520.5	83.5	400	8	284
402400XR	400	620.5	83.5	500	10	334
402600XR	600	820.5	83.5	700	14	434

* D = Number of spaces

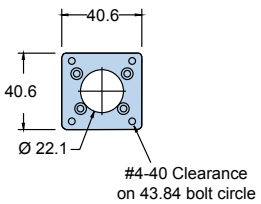
Order Code	Motor size	Dimensions [mm]		
		F	G	H
M2	**SM16**	40.6	40.6	–
M3	**NEMA 23/ SM23**	57.2	57.2	4
M37	**NEMA 17**	40.6	40.6	–
M61	**BE23**	57.2	57.2	8

In-line motor adaptors

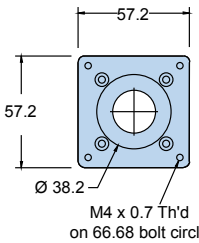
Used to easily accommodate the mounting of different servo or stepper motors.



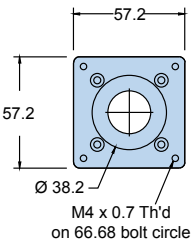
SM16



NEMA 17



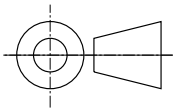
SM23 / NEMA 23

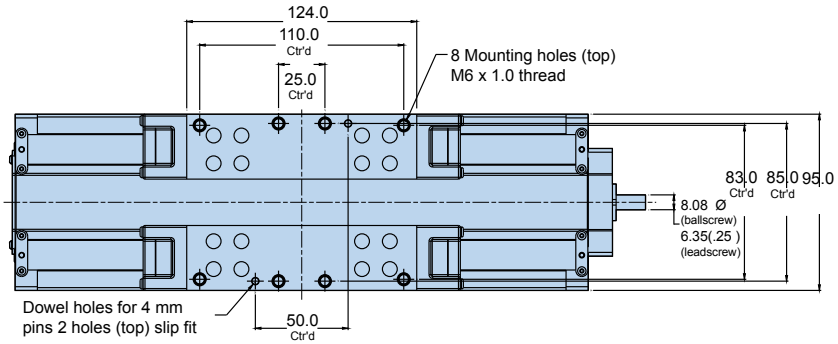


BE23

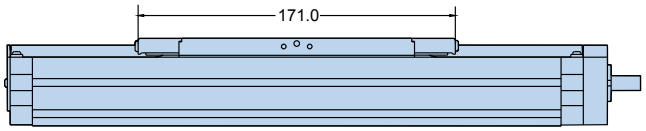
404XR Dimensions

Dimensions [mm]

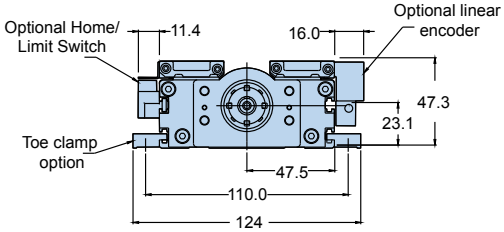




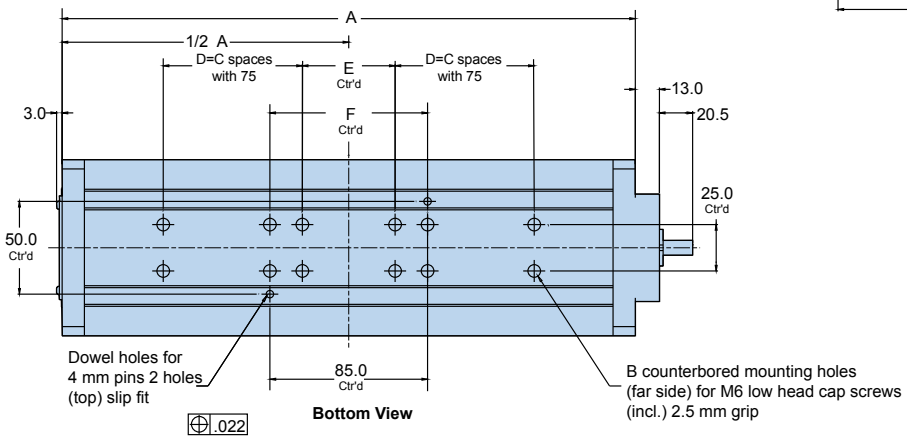
Top View



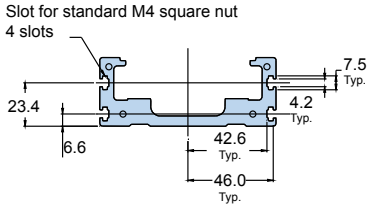
Front View



End View



Bottom View



View: Slots in extruded profile

Frame size	Stroke [mm]	Dimensions [mm]					
		A	B	C*	D	E	F
404050XR	50	259	4	–	–	–	–
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

* C = Number of spaces to the left or to the right

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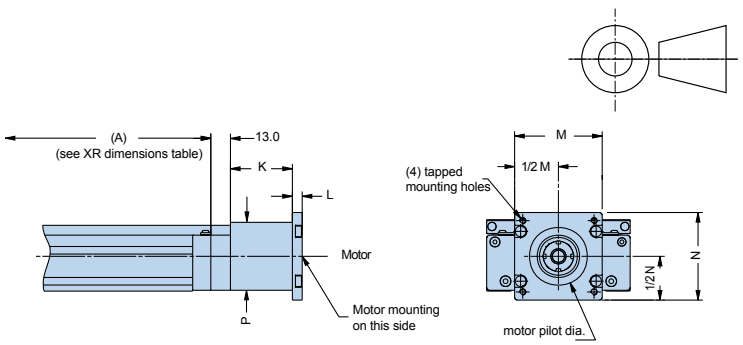
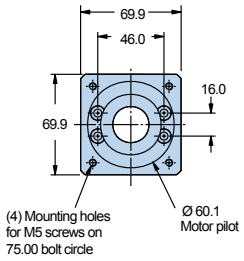
404XR In-line motor mounting

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. Adaptor plates for additional motors on request.

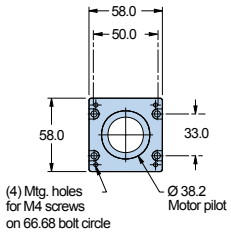
Dimensions [mm]



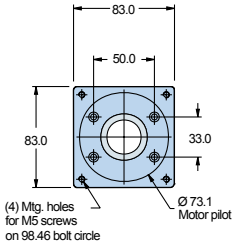
Motor flange Order No.	Flange / motor size	Dimensions [mm]					
		max. Motor shaft Ø	K	L	M	N	P
M51	SMH60B8/9	9.0	44.5	0.0	58.0	55.0	55.0
M21	SMH60B5/11/ Neometric70	11.0	53.0	0.0	69.9	69.9	69.9
M4	NEMA 34	9.5	41.0	12.5	83.0	83.0	45.0
M3	NEMA 23	9.5	41.0	6.5	83.0	58.0	45.0



SMH60 B5



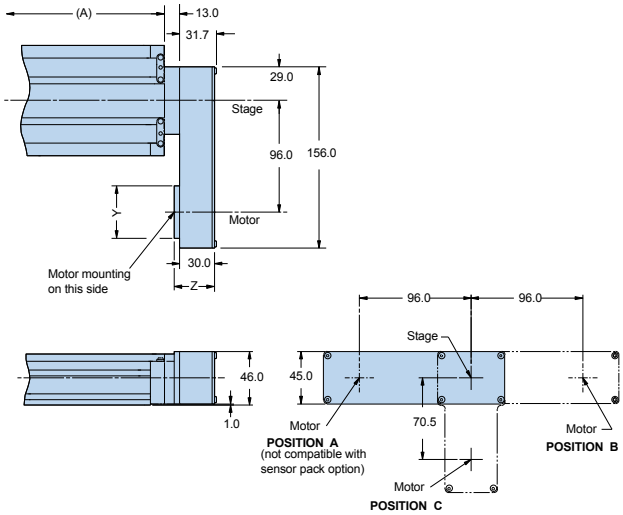
NEMA 23

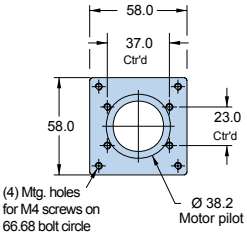


NEMA 34

404XR parallel motor mounting

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)



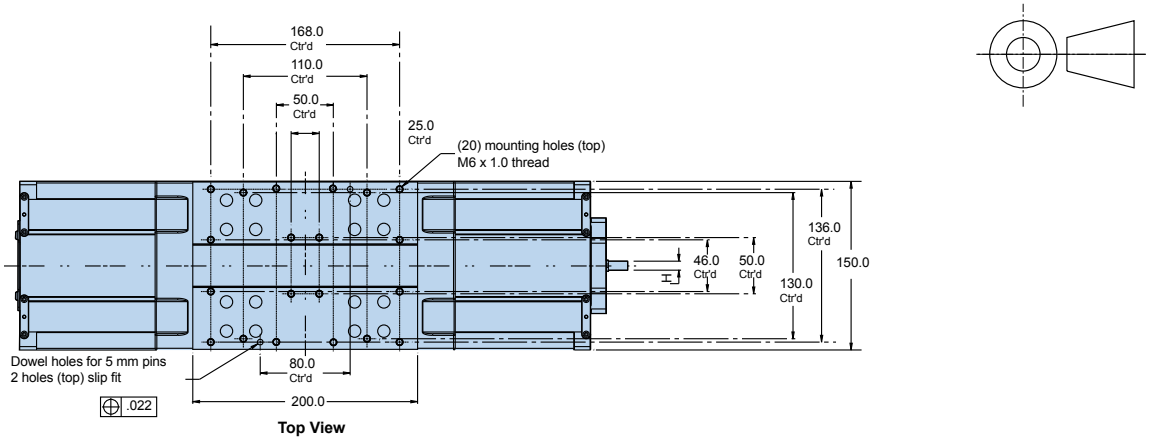


NEMA 23

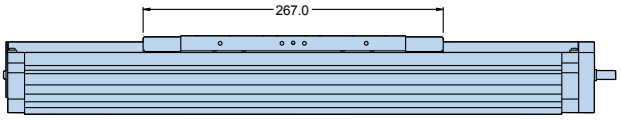
Motor flange Order No.			Flange / Motor size	Dimensions [mm]		
Pos. A	Pos. B	Pos. C		Motor shaft Ø	Y	Z
M52	M53	M54	SMH60B8/9	9.0	55.0	37.0
M8	M9	M10	NEMA 23	12.7	58	34.5

406XR Dimensions

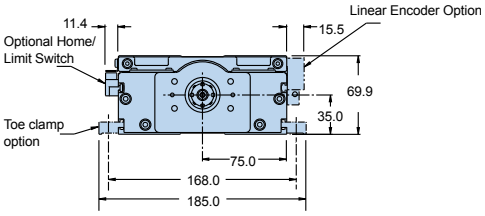
Dimensions [mm]



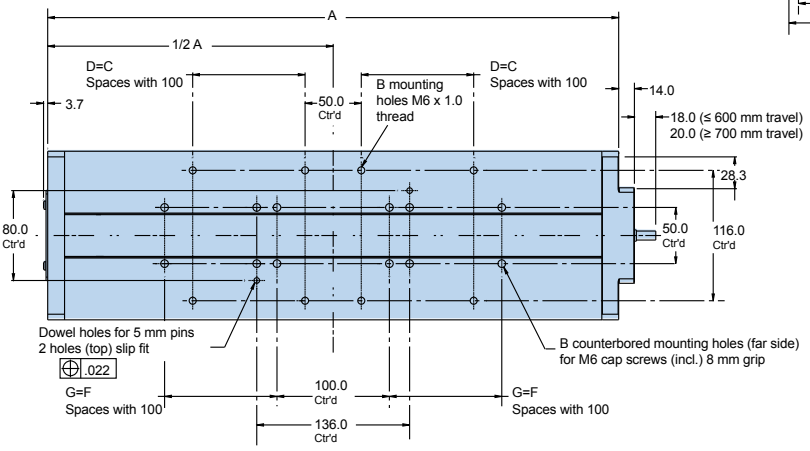
Top View



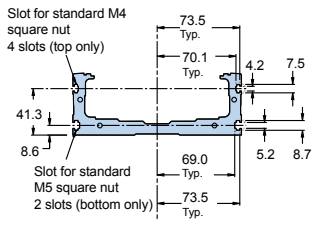
Front View



End View



Bottom View



View: Slots in extruded profile

Frame size	Stroke [mm]	Dimensions [mm]								
		Ballscrew Ø	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	2050	25	2308	44	10	1000.0	48	10	1000.0	10.0

* C = Number of spaces to the left or to the right

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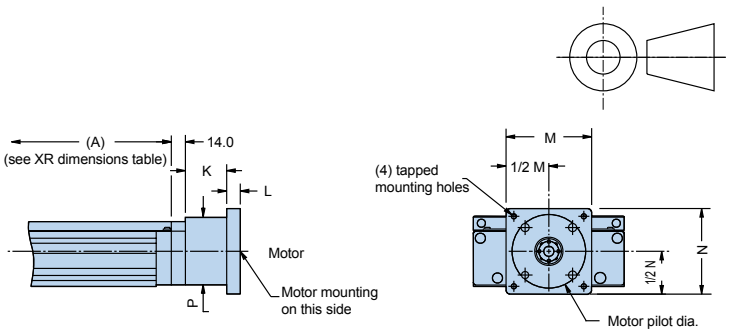
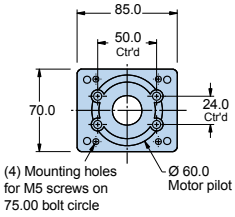
406XR In-line motor mounting

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. Adaptor plates for additional motors on request.

Dimensions [mm]



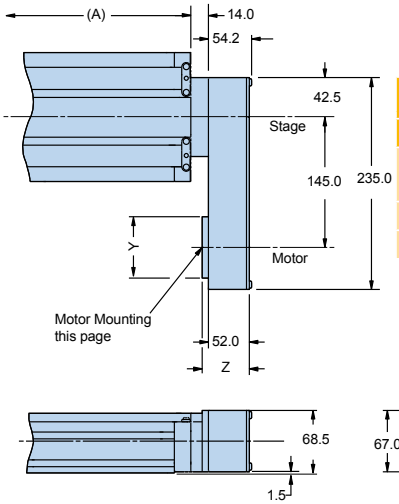


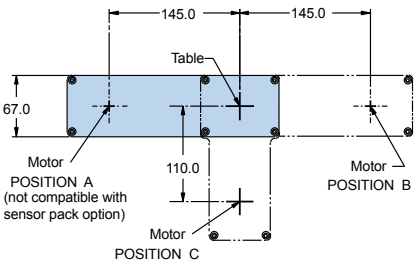
SMH60B5

Motor flange Order No.	Flange / motor size	Dimensions [mm]					
		max. Motor shaft Ø	K	L	M	N	P
M29	SMH82/B8/14/ Neometric92	14.0	53.0	12.5	92.0	92.0	70.0
M21	SMH60B5/11/ Neometric70	11.0	53.0	0.0	69.9	69.9	69.9
M17	Neometric34	16	53.0	13.5	85.0	85.0	70.0
M4	NEMA 34	16	53.0	13.5	85.0	85.0	70.0
M3	NEMA 23	9.5	41.0	-	85.0	67.0	67.0

406XR parallel motor mounting

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)





Motor flange order No.			Flange / Motor size	Dimensions [mm]		
Pos. A	Pos. B	Pos. C		Motor shaft Ø	Y	Z
M22	M23	M24	SMH60B5/11/ Neometric70	9.0	70.0	60.0
M18	M19	M20	Neometric34	12.7	83.0	62.0
M14	M15	M16	NEMA 34	9.5	83.0	62.0

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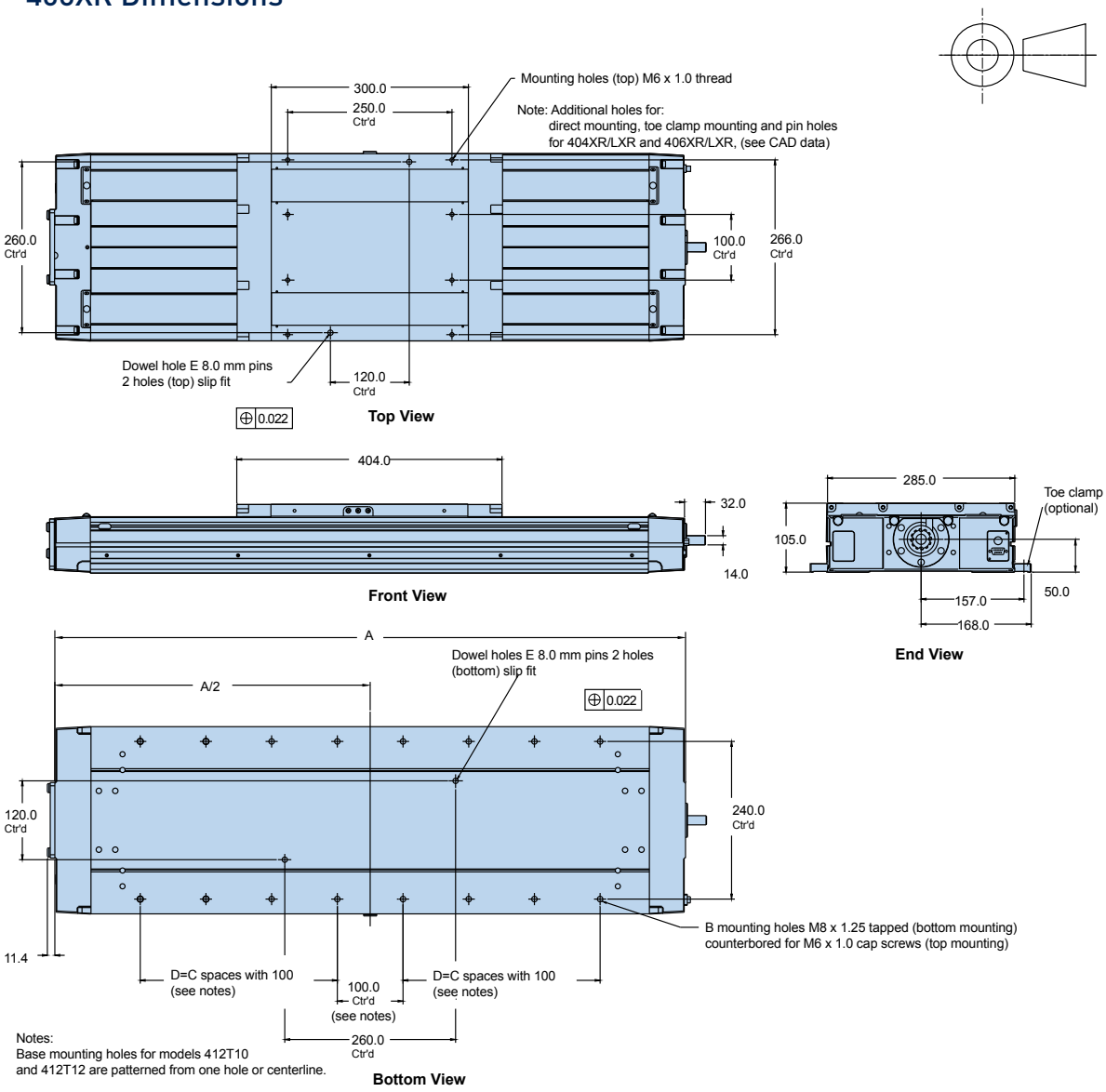
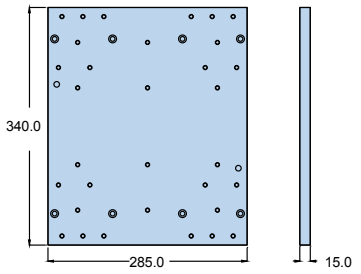
406XR Dimensions

Dimensions [mm]





X-Y adaptor plate Art. No. 100-6784
(for mounting of all 404XR, 406XR or 412XR with toe

Frame size	Stroke [mm]	Dimensions [mm]			
		A	B	C*	D
412T01	150	764	12	2	200
412T02	250	864	16	3	300
412T03	350	964	16	3	300
412T04	650	1264	24	5	500
412T05	800	1414	24	5	500
412T06	1000	1614	28	6	600
412T07	1200	1814	32	7	700
412T08	1500	2114	40	9	900
412T09	1750	2364	44	10	1000
412T10	2000	2614	50	12	1200

* C = Number of spaces to the left or to the right

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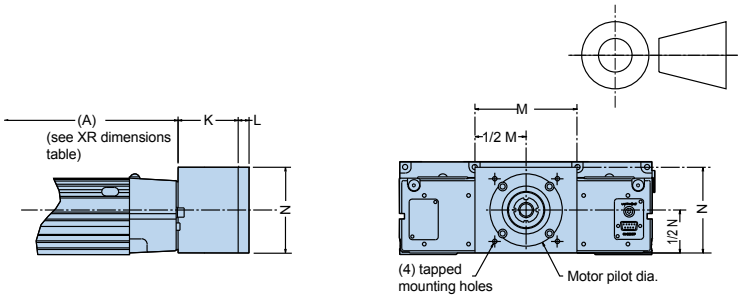
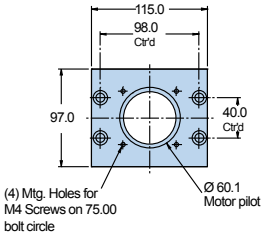
412XR In-line motor mounting

In-line motor mounting allows the motor to be mounted directly to the drive screw via theselected motor coupling.
Used to easily accommodate the mounting of different frame sizes. These adaptor plates can be ordered separately by part number below. Adaptor plates for additional motors on request.

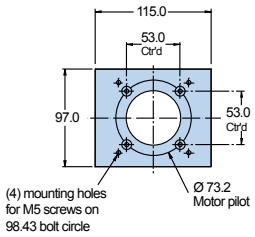
Dimensions [mm]



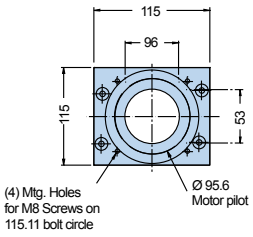
Motor flange Order No.	Flange / motor size	Dimensions [mm]				
		max. Motor shaft Ø	K	L	M	N
M29	SMH82B8/14/ Neometric92	14.0	53.0	12.5	92.0	92.0
M33	SMH82/B5/19/ MH105/B5/19/ HDY115	19,0	100	0,0	115	115
M21	SMH60B5/11/ Neometric70	11.0	53.0	0.0	69.9	69.9
M17	Neometric34	16	68.0	12.0	115.0	97.0
M4	NEMA 34	16	68.0	12.0	115.0	97.0



SMH60B5



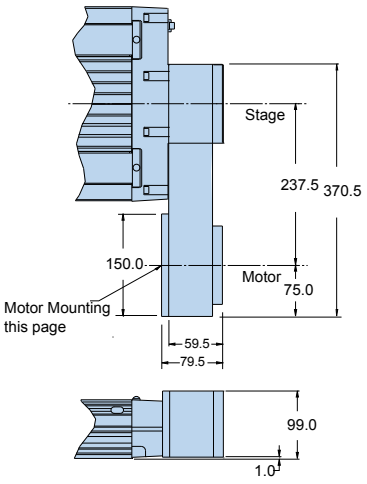
NEMA 34 / NEO34



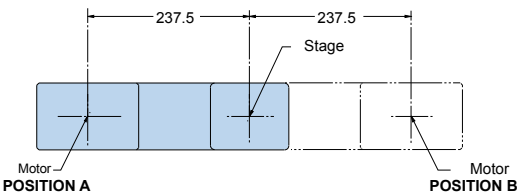
SMH82/B5/19 / MH105/B5/19 / HDY115

412XR parallel motor mounting

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)



Motor flange Order No.		Flange / motor size	Dimensions [mm]		
Pos. A	Pos. B		Motor shaft Ø	Y	Z
M30	M31	SMH60B8/14/ Neometric92	14.0	150.0	79.5
M22	M23	SMH60B5/11/ Neometric70	9.0	150.0	79.5
M18	M19	Neometric34	12.7	150.0	79.5
M14	M15	NEMA 34	9.5	150.0	79.5



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XR Series Ordering Information

401XR Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

	1	2	3	4	5	6	7	8	9	10	11	12
Order example	**401**	**100**	**XR**	**M**	**S**	**D9**	**H3**	**L2**	**C3**	**M2**	**E2**	**R1**

1 Frame size *

401

2 Travel – mm *

050 50
100 100
150 150
200 200
300 300

3 Model

XR Linear table

4 Mounting

M Metric

5 Grade

S Standard
P Precision (only available with E3 or E4 encoder option)

6 Drive screw *

D3 10 mm lead
D9 2 mm lead

7 Home sensor **

H1 without
H2 N.C. sinking, flying leads
H3 N.O. sinking, flying leads
H4 N.C. sourcing, flying leads
H5 N.O. sourcing, flying leads
H6 N.C. sinking, locking connector
H7 N.O. sinking, locking connector
H8 N.C. sourcing, locking connector
H9 N.O. sourcing, locking connector
H11 N.C. sinking, sensor pack
H12 N.O. sinking, sensor pack
H13 N.C. sourcing, sensor pack
H14 N.O. sourcing, sensor pack

*** available screw leads**

Stroke [mm]	401XR	
	2 mm	10 mm
50	√	-
100	√	-
150	√	-
200	-	√
300	-	√

** 50 mm stroke on the 401XR do only allow for 2 sensors (sensor pack).

8 Limit sensor **

L1 without
L2 N.C. sinking, flying leads
L3 N.O. sinking, flying leads
L4 N.C. sourcing, flying leads
L5 N.O. sourcing, flying leads
L6 N.C. sinking, locking connector
L7 N.O. sinking, locking connector
L8 N.C. sourcing, locking connector
L9 N.O. sourcing locking connector
L11 N.C. sinking sensor pack
L12 N.O. sinking sensor pack
L13 N.C. sourcing sensor pack
L14 N.O. sourcing sensor pack

9 Motor coupling

C1 No coupling
C2 6.3 mm bore Oldham
C3 6.3 mm bore Bellows
C5 9.5 mm bore Bellows
C24 5 mm bore Oldham
C25 5 mm bore Bellows

10 Motor Mounts

M1 No motor adapter
In-line motor mount
M2 prepared for SM16
M3 prepared for NEMA23
M37 prepared for NEMA17
M61 prepared for BE23

11 Encoder option

E1 without
E2 1.0 µm resolution
E3 0.50 µm resolution
E4 1.0 µm resolution

12 R1

required designation

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402XR Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

	1	2	3	4	5	6	7	8	9	10	11	12
Order example	**402**	**100**	**XR**	**M**	**S**	**D3**	**H3**	**L2**	**C3**	**M2**	**E2**	**R1**

1 Frame size *

402

2 Travel – mm *

100 100
150 150
200 200
300 300
400 400
600 600

3 Model

XR Linear table

4 Mounting

M Metric

5 Grade

S Standard
P Precision (only available with E3 or E4 encoder option)

6 Drive screw *

D2 5 mm lead
D3 10 mm lead

7 Home sensor

H1 without
H2 N.C. sinking, flying leads
H3 N.O. sinking, flying leads
H4 N.C. sourcing, flying leads
H5 N.O. sourcing, flying leads
H6 N.C. sinking, locking connector
H7 N.O. sinking, locking connector
H8 N.C. sourcing, locking connector
H9 N.O. sourcing locking connector
H11 N.C. sinking sensor pack
H12 N.O. sinking sensor pack
H13 N.C. sourcing sensor pack
H14 N.O. sourcing sensor pack

*** available screw leads**

Stroke [mm]	402XR	
	5 mm	10 mm
100	√	-
150	√	-
200	√	-
300	-	√
400	-	√
600	-	√

8 Travel limit sensors

L1 without
L2 N.C. sinking, flying leads
L3 N.O. sinking, flying leads
L4 N.C. sourcing, flying leads
L5 N.O. sourcing, flying leads
L6 N.C. sinking, locking connector
L7 N.O. sinking, locking connector
L8 N.C. sourcing, locking connector
L9 N.O. sourcing, locking connector
L11 N.C. sinking, sensor pack
L12 N.O. sinking, sensor pack
L13 N.C. sourcing, sensor pack
L14 N.O. sourcing, sensor pack

9 Motor coupling

C1 No coupling
C2 6.3 mm Oldham
C3 6.3 mm Bellow
C4 9.5 mm Oldham*
C5 9.5 mm Bellows
C24 5 mm Oldham
C25 5 mm Bellows

* NEMA 23 frame size only (M3, M61)

10 Motor adapter options

M1 No motor adaptor

In-line motor mount

M2 prepared for SM16
M3 prepared for NEMA23
M37 prepared for NEMA17
M61 prepared for BE23

11 Encoder option

E1 without
E2 1.0 µm resolution
E3 0.5 µm resolution
E4 0.1 µm resolution

12 R1

required designation

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404XR Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Order example	**404**	**450**	**XR**	**M**	**S**	**D33**	**H4**	**L2**	**C3**	**M4**	**E1**	**B1**	**R1**	**P1**

1 Frame size

404

2 Travel – mm *

050	50 (no pinning available)
100	100
150	150
200	200
250	250
300	300
350	350
400	400
450	450
500	500
550	550
600	600

3 Model

XR	Linear table

4 Mounting

M	Metric

5 Grade

S	Standard
P	Precision (only available with D2, D3, D4 drive screws)

6 Drive screw

D1	without screw (free travel) on request
D2	5 mm ballscrew
D3	10 mm ballscrew
D4	20 mm ballscrew (standard grade only)

7 Home sensor assembly (one sensor)

H1	without
H2	N.C. sinking, flying leads
H3	N.O. sinking, flying leads
H4	N.C. sourcing, flying leads
H5	N.O. sourcing, flying leads
H6	N.C. sinking, locking connector*
H7	N.O. sinking,locking connector*
H8	N.C. sourcing, locking connector*
H9	N.O. sourcing, locking connector*
H11	N.C. sinking sensor pack**
H12	N.O. sinking sensor pack**
H13	N.C. sourcing, sensor pack**
H14	N.O. sourcing, sensor pack**

8 Travel limit sensor assembly (two sensors)

L1	without
L2	N.C. sinking, flying leads
L3	N.O. sinking, flying leads
L4	N.C. sourcing, flying leads
L5	N.O. sourcing, flying leads
L6	N.C. sinking, locking connector*
L7	N.O. sinking, locking connector*
L8	N.C. sourcing, locking connector*
L9	N.O. sourcing, locking connector*
L11	N.C. sinking, sensor pack**
L12	N.O. sinking, sensor pack**
L13	N.C. sourcing, sensor pack**
L14	N.O. sourcing, sensor pack**

9 Motor coupling

C1	No coupling (required for parallel mounting)
C2	6.3 mm Oldham
C3	6.3 mm Bellows (required for precision grade)
C4	9.5 mm Oldham
C5	9.5 mm Bellows (required for precision grade)
C6	11 mm Oldham
C7	11 mm Bellows (required for precision grade)
C10	14 mm Oldham
C11	14 mm Bellows
C22	9 mm Oldham
C23	9 mm Bellows

* Sensors with locking connector include 5 m extension cable.

** The sensor pack includes 3 m cable.

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10 Motor adaptor options

M1 No motor mounts

In-line motor mount

M51 prepared for SMH60B8/9

M21 prepared for SMH60B5/11 / Neometric70

M4 prepared for NEMA 34

M3 prepared for NEMA 23

Parallel position A

M52 prepared for SMH60B8/9

M8 prepared for NEMA 23

Paralell position B

M53 prepared for SMH60B8/9

M9 prepared for NEMA 23

Parallel position C

M54 prepared for SMH60B8/9

M10 prepared for NEMA 23

11 Encoder option

E1 without

E2 1.0 µm resolution linear encoder (tape scale)

E3 0.50 µm resolution linear encoder (tape scale)

E4 0.1 µm resolution linear encoder (tape scale)

E5 Rotary shaft encoder (not available with brake)

12 Brake option

B1 without

B2 Shaft brake (Refer to 404XR holding torque specifications to confirm maximum load. Not available with rotary encoder)

13 Cleanroom prep

R1 Class 1000 compatible

R2 Class 10 compatible (consult factory))

R5 Class 1000 with easy lube system

R8 Class 10 with easy lube system

14 Pinning option *

P1 No multi-axis pinning

P2 X axis transfer pinning to Y or Z axis - 30 arcsec **

P3 Y axis transfer pinning to X axis - 30 arcsec

P4 Z axis transfer pinning to X axis - 30 arcsec

P5 X axis transfer pinning to Y axis - 125 arcsec

P6 Y axis transfer pinning to X axis - 125 arcsec

* Pinning option is for pinning to other 404XR and 406XR tables. Transfer pinning is not available on some XR to LXR models. Contact factory for more information. Pinning XY orientation standard with Y motor at 3 o'clock position.

** Z pinning with bracket (consult factory for details).

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406XR Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Order example	**406**	**900**	**XR**	**M**	**S**	**D3**	**H4**	**L1**	**C7**	**M4**	**E1**	**B1**	**R1**	**P1**

1 Frame size

406

2 Travel - mm *

100 100
200 200
300 300
400 400
500 500
600 600
700 700
800 800
900 900
1000 1000
1250 1250
1500 1500
1750 1750
2000 2000

3 Model

XR Linear table

4 Mounting

M Metric

5 Grade *

S Standard
P Precision

6 Drive screw *

D1 without screw (free travel)
D2 5 mm ballscrew
D3 10 mm ballscrew
D4 20 mm ballscrew
D5 25 mm ballscrew

7 Home sensor assembly (one sensor)

H1 without
H2 N.C. sinking, flying leads
H3 N.O. sinking, flying leads
H4 N.C. sourcing, flying leads
H5 N.O. sourcing, flying leads
H6 N.C. sinking, locking connector**
H7 N.O. sinking, locking connector**
H8 N.C. sourcing, locking connector**
H9 N.O. sourcing, locking connector**
H11 N.C. sinking, sensor pack***
H12 N.O. sinking sensor pack***
H13 N.C. sourcing sensor pack***
H14 N.O. sourcing sensor pack***

8 Travel limit sensor assembly (two sensors)

L1 without
L2 N.C. sinking, flying leads
L3 N.O. sinking, flying leads
L4 N.C. sourcing, flying leads
L5 N.O. sourcing, flying leads
L6 N.C. sinking, locking connector**
L7 N.O. sinking, locking connector**
L8 N.C. sourcing, locking connector**
L9 N.O. sourcing, locking connector**
L11 N.C. sinking, sensor pack***
L12 N.O. sinking, sensor pack***
L13 N.C. sourcing, sensor pack***
L14 N.O. sourcing, sensor pack***

9 Motor coupling

C1 No coupling (required for parallel mounting)
C2 6.3 mm Oldham
C3 6.3 mm Bellows (required for precision grade)
C4 9.5 mm Oldham
C5 9.5 mm Bellows (required for precision grade)
C6 11 mm Oldham
C7 11 mm Bellows (required for precision grade)
C8 12.7 mm Oldham
C9 12.7 mm Bellows (required for precision grade)
C10 14 mm Oldham
C11 14 mm Bellows (required for precision grade)

*** available screw leads**

Stroke [mm]	Precision grade		Standard grade			
	5 mm	10 mm	5 mm	10 mm	20 mm	25 mm
100	√	√	√	√	√	-
200	√	√	√	√	√	-
400	√	√	√	√	√	-
400	√	√	√	√	√	-
500	√	√	√	√	√	-
600	√	√	√	√	√	-
700	-	-	√	√	-	√
800	-	-	√	√	-	√
900	-	-	√	√	-	√
1000	-	-	√	√	-	√
1250	-	-	√	√	-	√
1500	-	-	√	√	-	√
1750	-	-	√	√	-	√
2000	-	-	√	√	-	√

** Sensors with locking connector include 5 m extension cable.
*** The sensor pack includes 3 m cable.

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10 Motor adaptor options

M1 No motor adaptor

In-line motor mount

M29 prepared for SMH82B8/14 / Neometric92

M21 prepared for SMH60B5/11 / Neometric70

M17 prepared for Neomatric34

M4 prepared for NEMA 34

M3 prepared for NEMA 23

Parallel position A

M22 prepared for SMH60B5/11 / Neometric70

M18 prepared for Neomatric34

M14 prepared for NEMA 34

Paralell position B

M23 prepared for SMH60B5/11 / Neometric70

M19 prepared for Neomatric34

M15 prepared for NEMA 34

Parallel position C

M24 prepared for SMH60B5/11 / Neometric70

M20 prepared for Neomatric34

M16 prepared for NEMA 34

11 Encoder option

E1 without

E2 1.0 µm resolution linear encoder (tape scale)

E3 0.50 µm resolution linear encoder (tape scale)

E4 0.1 µm resolution linear encoder (tape scale)

E5 Rotary shaft encoder (not available with brake)

12 Brake option

B1 without

B2 Shaft Brake (Refer to 406XR holding torque specifications to confirm maximum load. Not available with rotary encoder)

13 Cleanroom prep

R1 Class 1000 Compatible

R2 Class 10 Compatible (consult factory)

R5 Class 1000 with Easy Lube System

R8 Class 10 with Easy Lube System

14 Pinning Option *

P1 No multi-axis pinning

P2 X axis transfer pinning to Y or Z axis - 30 arcsec **

P3 Y axis transfer pinning to X axis - 30 arcsec

P4 Z axis transfer pinning to X axis - 30 arcsec

P5 X axis transfer pinning to Y axis - 125 arcsec

P6 Y axis transfer pinning to X axis - 125 arcsec

* Pinning option is for pinning to other 404XR and 406XR tables. Transfer pinning is not available on some XR to LXR models. Contact factory for more information. Pinning XY orientation standard with Y motor at 3 o'clock position.

** Z pinning with bracket (consult factory for details)

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412XR Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Order example	**412**	**T03**	**XR**	**M**	**S**	**D2**	**H3**	**L3**	**C15**	**M4**	**E3**	**B1**	**R1**	**P1**

1 Frame size

412

2 Travel – mm

T01	150
T02	250
T03	350
T04	650
T05	800
T06	1000
T07	1200
T08	1500
T09	1750
T10	2000

3 Model

XR	Linear table

4 Mounting

M	Metric

5 Grade *

S	Standard

6 Drive Screw

D1	without screw (free travel)
D2	5 mm lead screw
D3	10 mm lead screw
D5	25 mm lead screw
D6	32 mm lead screw

7 Home sensor *

H1	without
H2	N.C. sinking, flying leads
H3	N.O. sinking, flying leads
H4	N.C. sourcing, flying leads
H5	N.O. sourcing, flying leads

* Includes a 3 m extension cable with flying lead termination. A 7.5 m extension cable can be ordered separately.

8 Travel limit sensor *

L1	without
L2	N.C. sinking, flying leads
L3	N.O. sinking, flying leads
L4	N.C. sourcing, flying leads
L5	N.O. sourcing, flying leads

* Includes a 3 m extension cable with flying lead termination. A 7.5 m extension cable can be ordered separately.

9 Motor coupling

C1	No coupling
C4	9.5 mm Oldham
C5	9.5 mm Bellows
C6	11 mm Oldham
C7	11 mm Bellows
C8	12.7 mm Oldham
C9	12.7 mm Bellows
C10	14 mm Oldham
C11	14 mm Bellows
C12	16 mm Oldham
C13	16 mm Bellows
C14	19 mm Oldham
C15	19 mm Bellows

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

10 Motor adapter options

M1 **No motor adapter**

In-line motor mount

M29 prepared for SMH82B8/14 / Neometric92

M33 prepared for SMH82/B5/19/MH105/B5/19/ HDY115

M21 prepared for SMH60B5/11 / Neometric70

M17 prepared for Neomatric34

M4 prepared for NEMA 34

Parallel position A

M30 prepared for SMH82B8/14 / Neometric92

M22 prepared for SMH60B5/11 / Neometric70

M18 prepared for Neomatric34

M14 prepared for NEMA 34

Parallel position B

M31 prepared for SMH82B8/14 / Neometric92

M23 prepared for SMH60B5/11 / Neometric70

M19 prepared for Neometric34

M15 prepared for NEMA 34

11 Encoder option

E1 without

E2 1.0 µm resolution linear encoder (tape scale)

E3 0.50 µm resolution linear encoder (tape scale)

E4 0.1 µm resolution linear encoder (tape scale)

E5 5.0 µm resolution linear encoder (tape scale)

E6 Rotary shaft encoder (not available with brake)

E7 Sine encoder

12 Brake option

B1 without

B2 Shaft Brake (Refer to 412XR holding torque specifications to confirm maximum load. Not available with rotary encoder)

13 Cleanroom prep

R1 Class 1000 with strip seals

R2 Class 100 without strip seals

14 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 arcsec (includes a required 15 mm thick adapter)

P4 Z axis transfer pinning to X axis - 30 arc seconds

* Pinning option is for pinning to other 404XR and 406XR tables. Transfer pinning is not available on some XR to LXR models. Contact factory for more information. Pinning XY orientation standard with Y motor at 3 o'clock position.

** Z pinning with bracket (consult factory for details).

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

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Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe,
Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Etoy
Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CL – Chile, Santiago
Tel: +56 2 623 1216

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +(81) 3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NL – The Netherlands,
Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom,
Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa,
Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

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European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, ES, FI, FR, IE, IT, NL, NO, PL, PT, RU, SE, UK, ZA)

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Parker Hannifin GmbH
Electromechanical Automation
Robert-Bosch-Straße 22
D-77656 Offenburg, Germany
+49 (0)781 / 509-0
+49 (0)781 / 509-98176
sales.automation@parker.com
www.parker-eme.com

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark