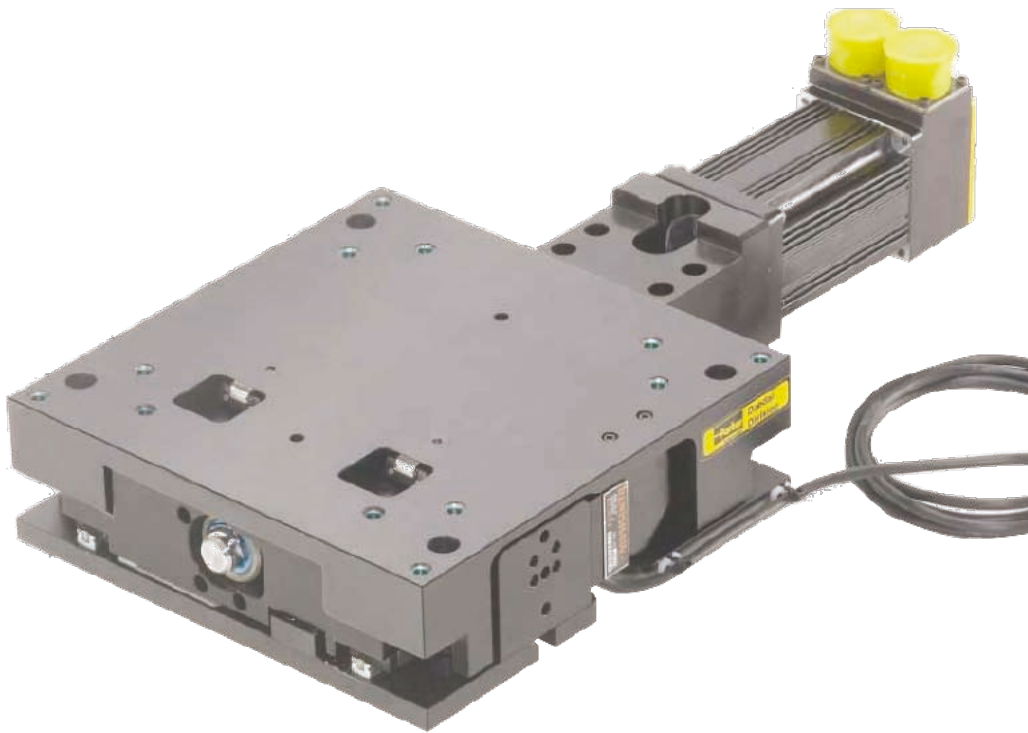


aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding

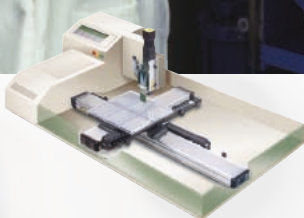
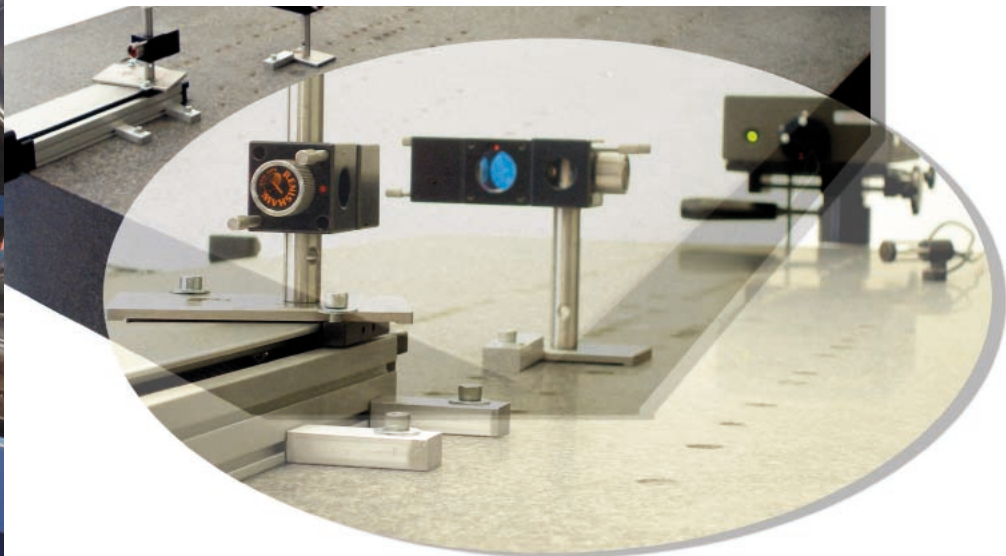


## Precision Technology

ZP200 Series Screw Driven Lifting Table

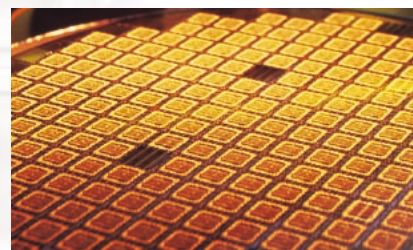


ENGINEERING YOUR SUCCESS.



### **Parker Facility in Offenburg, Germany**

Manufacturing and Service for Precision Components in Europe



# 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 facilities 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.

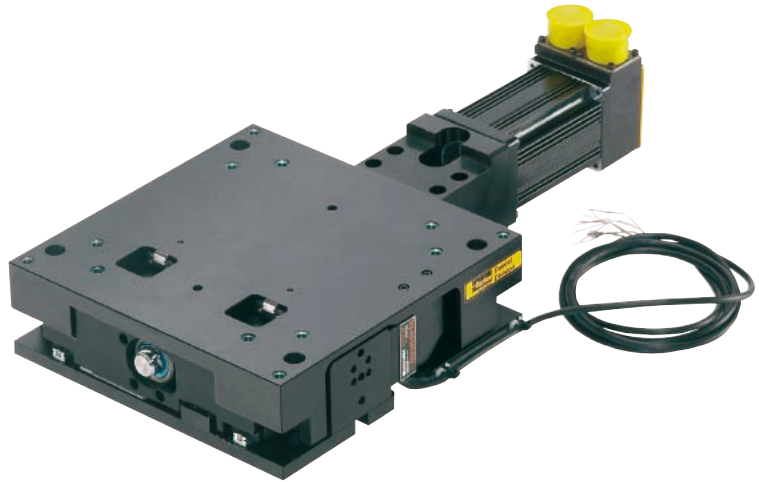
# ZP200 Series

[www.parker-eme.com/zp200](http://www.parker-eme.com/zp200)

## ZP200 Series Features

### ZP200 Series Precision Lifting Table

- Precision platform for vertical (Z-axis) positioning
- 100 % duty cycle – high dynamics
- Very precise straightness ( $\pm 5$  arcsec) throughout range of motion
- Precision ground ballscrew drive - 5, 10, or 20 mm lead
- Multi-axis compatibility with XR and LXR tables
- Laser tested and certified with calibrated lead value

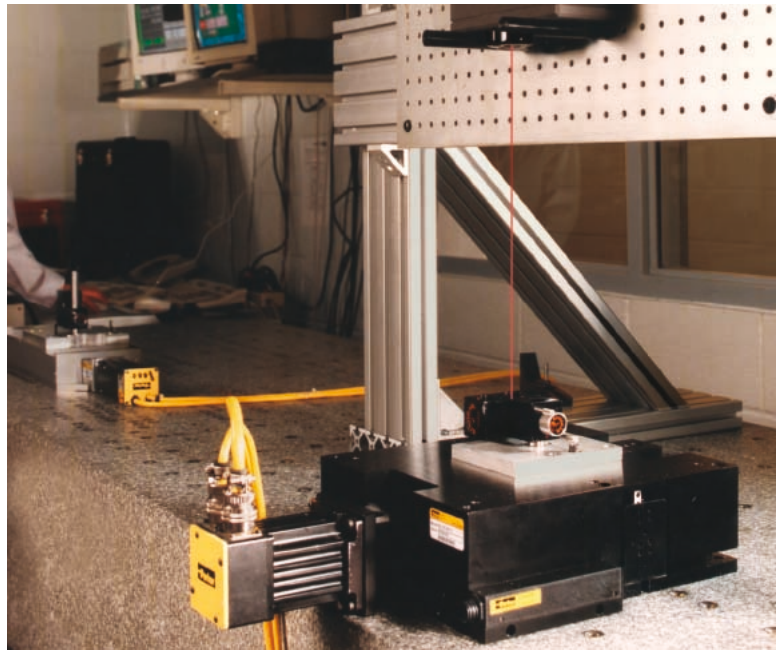


### Quality Design and Construction

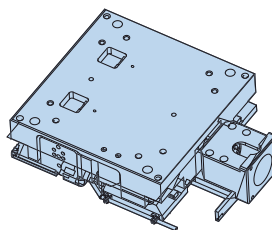
The ZP200 Z-axis lift table is a stable support platform which provides precise vertical translation and positioning, while maintaining X-Y integrity. Recirculating square rail bearings are incorporated into a unique variation of “wedge” mechanics to enable reliable high dynamic performance without the potential loss of travel encountered with cross roller bearings. The ZP200 is compatible with XR and LXR tables for multi-axis systems, and it can be utilized as the system base axis or top axis to fit the motion requirements of the application. Standard mounting holes and dowel pin locating holes ensure repeatable mounting.

### Options

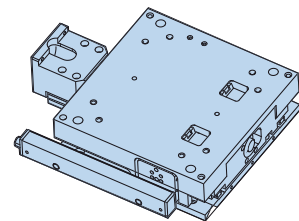
- Linear Encoder option with selectable resolutions of 0.1, 0.5, 1.0  $\mu\text{m}$
- Safety brake (can be mounted on site – directly to the ballscrew)
- Class 10 cleanroom preparation
- Selectable motor mounting and couplings for SM16 or NEMA 23 servo or stepper motors
- Easily adjustable travel “limit” and “home” sensors are provided in an enclosed sensor pack



ZP200 utilized in a laser test set-up



Encoder



Sensor Pack

## ZP200 Series Technical Data

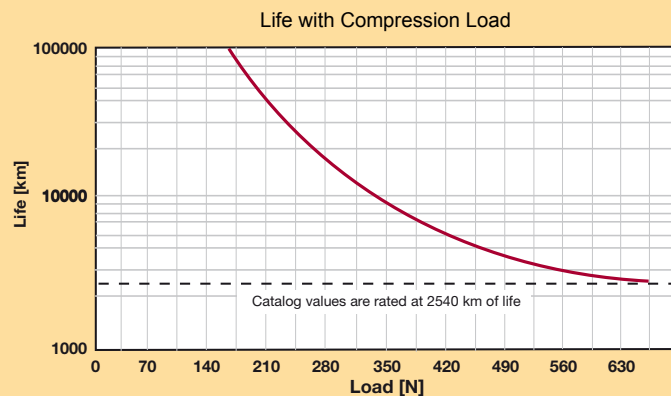
	Unit	Precision	Standard
<b>Travel (Z-axis)</b>		25 mm (limit to limit)	25 mm (limit to limit)
<b>Positional accuracy</b> without encoder <sup>1,2,7</sup> with linear encoder <sup>3,6,7</sup>	[μm]	8 8	20 —
<b>Positional repeatability</b> without encoder <sup>1,7</sup> with 1.0 μm linearencoder <sup>6,7</sup> with 0.5 μm linear encoder <sup>6,7</sup> with 0.1 μm linear encoder <sup>6,7</sup>	[μm]	±3 ±5 ±4 ±3	±10 — — —
<b>Lift lead ratio<sup>4</sup></b> 5 mm lead 10 mm lead 20 mm lead	[mm/rev]		1.8199 3.6397 7.2794
<b>Lift velocity</b> 5 mm lead 10 mm lead 20 mm lead	[mm/s]		110 220 440
<b>Load capacity (normal load)</b>	[kg]	15	75
<b>Duty cycle</b>	[%]		100
<b>Max. acceleration</b>	[m/s <sup>2</sup> ]		7.2
<b>Efficiency</b>	[%]		90
<b>Max. breakaway torque<sup>5</sup></b>	[Nm]		0.15
<b>Max. friction torque<sup>5</sup></b>	[Nm]		0.13
<b>Linear bearing – coefficient of friction</b>			0.01
<b>Ballscrew diameter</b>	[mm]		16
<b>Unit mass</b>	[kg]		5.82
<b>Top plate weight</b>	[kg]		2.25
<b>Pitch moment <sup>7</sup></b>	[arcsec]	±15	±45
<b>Roll moment <sup>7</sup></b>	[arcsec]	±15	±25
<b>Input moment of inertia</b> 5 mm lead 10 mm lead 20 mm lead	[10 <sup>-5</sup> kgm <sup>2</sup> ]		2.32 2.51 3.12

- 1) Measured 38 mm directly above the true center of the top mounting surface.
- 2) Measured using calibrated lead value (provided).
- 3) Slope correction value provided
- 4) Lift per 1 motor shaft revolution. Lift lead listed is nominal. All units are provided with calibrated lead value.
- 5) Torque ratings are measured with unit unloaded, traveling upward.
- 6) Measured directly over encoder on outer edge.
- 7) Pitch and roll specifications are measured with <1 kg load. Addition of a load increases pitch and roll error by 10 arcseconds per 5 kg of load assuming the load center of gravity is located at the center of the stage platform. Cantilevered loading increases these errors more.

## ZP200 Series Life/Load Diagrams

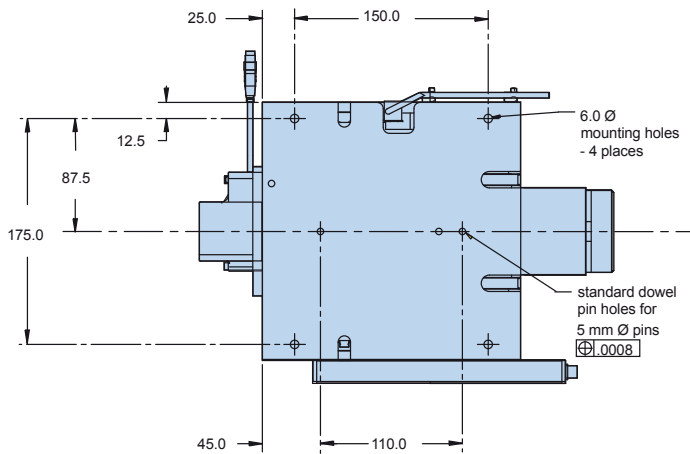
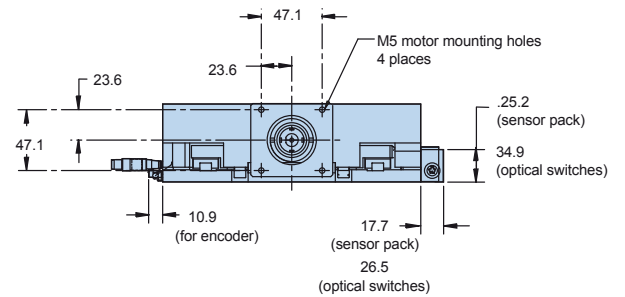
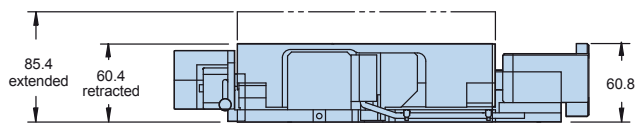
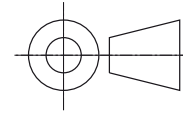
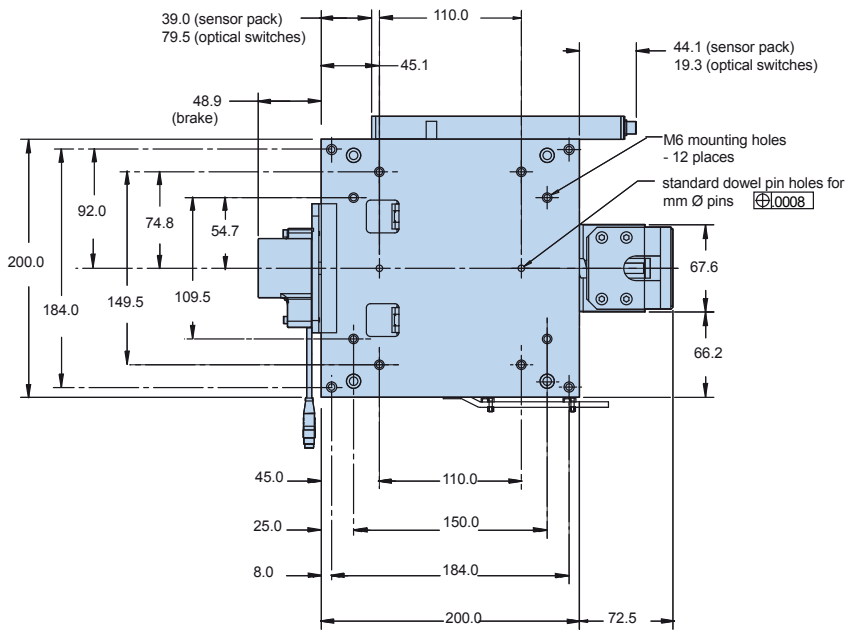
### Table Life/Load with load (normal force)

The graph provides a preliminary evaluation of the support bearing life/force characteristics. The curves show the life/load relationship when the applied load is centered on the carriage, normal (perpendicular) to the carriage mounting surface.



# ZP200 Dimensions

Dimensions [mm]



	ZP200 as Base	ZP200 top axis
404XR	Yes	—*
404LXR	Yes	—*
406XR	Yes	Yes
406LXR	Yes	Yes

\*Not recommended – please contact us

## 100-9274-01 XR Adapter Plate

A multi-axis adapter plate is available to mount the ZP200 to an XR/LXR table or, mount an XR/LXR table to the ZP200. This plate is 9.53 mm thick and includes standard dowel pin holes for repeatable alignment.

# ZP200 Series 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
Order example	ZP200	T01	M	S	D2	H12	L12	C3	M3	E2	B2	R1	P1

<p><b>1 Series</b> ZP200</p> <p><b>2 Travel - mm</b> T01 25</p> <p><b>3 Mounting</b> M Metric</p> <p><b>4 Grade</b> P Precision S Standard</p> <p><b>5 Drive screw</b> D2 5 mm lead D3 10 mm lead D4 20 mm lead</p> <p><b>6 Home sensor</b> H1 without H11 N.C. sinking, sensor pack H12 N.O. sinking, sensor pack H13 N.C. sourcing, sensor pack H14 N.O. sourcing, sensor pack</p> <p><b>7 Limit sensor</b> L1 without L11 N.C. sinking, sensor pack L12 N.O. sinking, sensor pack L13 N.C. sourcing, sensor pack L14 N.O. sourcing, sensor pack</p>	<p><b>8 Coupling</b> C1 without C3 6.3 mm Bellows C5 9.6 mm Bellows C23 9.0 mm Bellows</p> <p><b>9 Motor mount</b> M1 No motor mount M2 SM16, BE16 M3 NEMA 23 und SM23 M61 BE23</p> <p><b>10 Linear encoder option</b> E1 without E2 1.0 µm E3 0.5 µm E4 0.1 µm E5 5.0 µm E7 Sine-Cosine Encoder</p> <p><b>11 Brake option</b> B1 without B2 Shaft brake</p> <p><b>12 Cleanroom prep</b> R1 Class 1000 R2 Class 10</p> <p><b>13 P1</b> Place holder</p>
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**WARNING – USER RESPONSIBILITY**

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

Additional information available on:

[www.parker-eme.com/zp200](http://www.parker-eme.com/zp200)

