

Precision Automation Technologies

**Electromechanical Products
and System Solutions**

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Engineering Expertise



Premier Customer Service



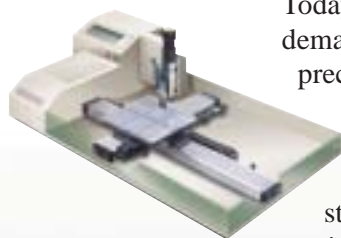
Worldwide Support Network

Parker offers more than 1,400 product lines that control motion in 1,000 mobile, industrial and aerospace markets. We are the only manufacturer to offer our customers a choice of hydraulic, pneumatic, electromechanical and computer motion control solutions. Furthermore, we have the largest global distribution network in our field, with over 7,500 distributors serving more than 422,000 customers.

Parker products are found everywhere: in orbiting satellites, machine tools, truck equipment, hospitals and laboratories ...anywhere machines depend on motion control.

Parker is the leading global manufacturer of components and systems designed to control motion, flow and pressure in all types of machinery.

Parker Hannifin is a Fortune 300 corporation listed on the New York Stock Exchange as PH.



Today's High-Technology automation applications demand performance in quality throughput and precision. Miniaturization of semiconductor, electronics and life science applications have created the need to partner with companies that have the experience and products to meet stringent specifications for smaller, more precise motion control solutions.

Parker's dedicated electromechanical business is rapidly becoming an industry leader in providing precision connectivity to PC-based controls for target industries including:

- Semiconductor
- Electronics
- Computer Peripherals
- Life Science
- Medical Equipment

Parker is about motion control engineering, manufacturing, application expertise and unparalleled customer service. Our electromechanical systems and solutions are available wherever needed—around the corner or around the world.



Customization and Testing

Unlike some motion control technologies, electromechanical applications often require custom solutions. Parker's Custom Systems Group is staffed by experienced engineers and technicians who utilize systematic processes for handling component modification or complete one-of-a-kind systems.

An advanced manufacturing and assembly process enables us to build precision and quality into every element of your motion system. Performance and specifications are verified with state-of-the-art testing, including:

Cleanroom Testing –

Parker is equipped with particulate testing 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 Labs – 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.

Industry's Best Lead Times

Lead times for electronic products are typically **five days** and motors and mechanical solutions are targeted for **10 days**.



www.parkermotion.com

The Parker Electromechanical Automation site offers the most extensive online support tools in the industry including:

- Innovative technology white papers
- FAQ database with more than 500 answers to common questions
- User guides and detailed product specifications
- Latest software and firmware revisions
- Comprehensive CAD drawings and 3D models for electronic and mechanical products
- Interactive product-selection tool
- Complete online catalog
- Application case studies
- Custom-solutions photo library

Parker Electromechanical Extranet



Parker's Extranet allows the customer to maintain a direct relationship with the factory. Available 24/7, the site allows customers to go online to track order status and perform other transactions, including ordering and scheduling. And of course, Parker's hallmark field service organization is always available to meet with the customer as desired.

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 pre-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. End result: reduced engineering effort, straightforward integration and modular compatibility.



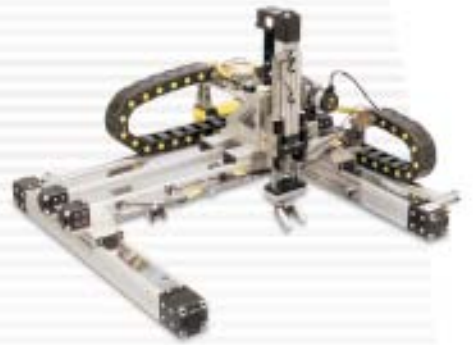
Component Products

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 leadtime, large selection and proven reliability.





Parker's Selectable Levels of Integration™



Parker Electromechanical Automation products are built using industry standard interfaces and market-leading features that combine great value and performance.

Whether using one component or an entire system, Parker has the right solution.



HMI (Human-Machine Interface)

Parker HMI incorporates Windows®-based software into rugged touchscreen computers to ease the development of the user interface without sacrificing the benefits of open architecture. Parker HMI also incorporates multiple connection options to easily tie the machine into higher level IT/IS systems.



Motion Controllers

Parker motion controllers are powerful multi-axis designs that have the processing power to coordinate multiple axes of motion. Parker controllers have advanced features built in, such as kinematics transformation for the control of robots and other non-linear functions. Each Parker controller comes with free libraries for Visual Basic® and C++®.





Drives

Parker drives are digital designs that deliver a maximum amount of power output and performance in minimal package size. These drives have industry leading power density and smart digital designs with features to ease integration and start-up.



Motors

Using advanced technologies, Parker rotary motors provide maximum performance and value. Our exposed-lamination designs provide maximum torque per package size, and the motor designs provide cog-free rotary motion for the best low speed smoothness. Patented linear motor designs provide the greatest winding uniformity and accuracy in the industry, and range from the smallest linear motor on the market to the largest force capacity.



Gearheads

Parker gearheads are high-precision designs that have less than three arc-min of backlash. They have an industry leading two-year warranty.



Positioning Tables

Parker high-precision positioning tables integrate linear motors or ground ballscrews and may be prepared for cleanroom operation. The designs combine the low cost of extruded aluminum with machined bases allowing “out of the box” submicron precision. Our positioning tables are modular designs that easily accommodate flexible configurations such as XY and XYZ.



Actuators

Parker actuators are modular single-axis actuators that can be easily configured in multi-axis systems. These actuators are screw- or belt-driven and give the designer a great deal of flexibility to apply the right actuator technology to meet the application needs for accuracy, speed and distance.



Systems

Through combining Parker’s breadth of motion control solutions in the form of XY systems, Cartesian robots, Gantry systems or completely custom configurations.



End Effectors

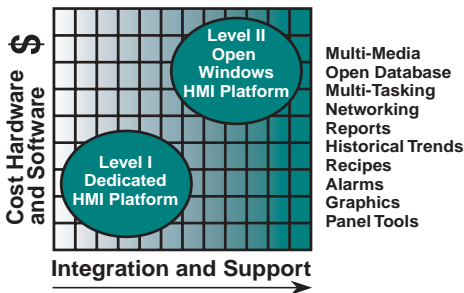
With the broadest range of automation products in the industry, Parker provides pneumatic grippers, rotational actuators and vacuum components.



Structural Framing

Parker Industrial Profile Systems provide full engineering, fabrication and assembly for any structural design. We provide the profiles, fasteners and accessories to complete any system. The only limitation is your imagination.

HMI Software



The graphical HMI market is broken down into two segments.

Dedicated HMI Platform - Level I:

- Panel replacement applications
- Hardware and software integrated into a single graphical product
- HMI application typically developed on a PC then downloaded to a cost-effective, often proprietary, platform

Windows® HMI Platforms - Level II:

- Windows-based software product running on office or industrial PCs
- Provides higher levels of functionality, but also requires higher levels of integration, support and costs

Level I: PowerStation Workstations with Interact Software



PowerStation workstations and Interact provide a powerful combination for Level I applications.

Every PowerStation is bundled with Interact. All you do is download your application and go.

PowerStations:

- 6", 10", 12" and 15" units
- Broad range of expansion and storage options
- Two RS 232/485/422 communication ports and built-in Ethernet

Interact software:

- Includes a family of modules for 3D panel tools, trending, networking and machine changeover
- Supports over 50 communication drivers

Level II: InteractX™ HMI Software and PX PowerStations



InteractX HMI software runs in Windows and is designed for machine control applications.

Software features include:

- Panel tools
- Free-form graphics
- Alarming
- OPC client and server
- Over 40+ PLC drivers
- ActiveX™ support
- Integrated Visual Basic® for applications
- Multi-language
- Networking
- 21CFR11 compliant passwords

The PX PowerStations are industrial PCs with the InteractX run-time software pre-installed. The PX workstation display ranges from 10" to 18" for high-level graphic resolution.



PC PowerStations



Parker's hardware products include a complete line of industrial PCs. Designed to meet the most demanding industrial environments, these touchscreen units are available in a variety of display sizes and CPUs.

- CPUs: Celeron/Pentium 266 MHz to 1 GHz
- Windows® OS on hard drive or CompactFlash®
- Comm Ports: two RS232 and one RS232/422/485
- Built-in Ethernet: 10/100 Base-T
- Two USB and one parallel port
- Optional CD ROM and floppy drives
- Analog resistive touchscreen
- PC/104, PCI and ISA expansion slots
- 24 VDC power (AC optional)

- Display sizes:
 - PC 10
 - 10" VGA (640 x 480)
 - 10" SGA (800 x 600)
 - PC 12
 - 12" SGA (800 x 600)
 - PC 15
 - 15" XGA (1024 x 768)
 - PC 18
 - 18" SXGA (1268 x 1024)

Industrial Monitors



These sleek monitors are designed for the factory floor and enhance the appearance of any application.

- Analog resistive touchscreen
- Serial touchscreen interface to connect to your PC
- On-screen display control
- 24 VDC (AC optional)
- Approvals: UL, CE, Class 1 Div 2

- Display sizes:
 - 10" SGA (800 x 600)
 - 12" SGA (800 x 600)
 - 15" XGA (1024 x 768)
 - 18" SXGA (1268 x 1024)



ACR Controllers



The ACR controllers are some of the highest performing controllers on the market. Choose this series for its high-level motion algorithms and industry-leading control features for complex motion applications.

Real-Time Motion Control with Floating-Point DSP

The ACR's processor-based controllers can quickly process floating-point calculations on-board, typically in the 100 to 500 microsecond range (versus most controllers using software calculations that are in the 5,000 to 8,000 microsecond range). This allows the controller to service a preemptive multi-tasker, with up to 24 programs simultaneously. In addition, it can handle up to four communication channels concurrently. This means you can communicate with an ACR controller for troubleshooting and still have the HMI on a production machine fully online and active.

Motion

- 1 to 16 axes of stepper/servo control
- ± 10 V analog or 5 V step and direction command output

Advanced Control Features

- Preemptive multi-tasker
- Backlash and ballscrew compensation
- High speed (1 μ s) hardware position capture registers
- Time-based moves
- Segmented cam profiling
- High-speed triggers
- Dual-loop control
- Cubic splines
- NURBS
- 3D arcs
- Analog or digital feedback
- Automatic tangential tool orientation
- String handling
- S-curve profiling
- Gantry lock control

Interface Features

- Visual Basic® and C++® libraries
- ActiveX™ communication controls
- RS232/422
- Parker InteractX™ compatible via PC bus
- OPC server

Series	Bus Type	Number of Axes	CPU Speed	Digital I/O	I/O Type
8020	PCI	1 to 16	120 MFLOPS	64 std, 320 max	24 V
1505	PCI	1 to 12	120 MFLOPS	48 std, 176 max	TTL std, 24 V expansion I/O
8010	ISA	1 to 8	60 MFLOPS	64 std, 320 max	24 V
2000	ISA	1 to 4	50 MFLOPS	32 std, 288 max	24 V
1500	ISA	1 to 4	40 MFLOPS	48 std	TTL
1200	Standalone	1 to 2	40 MFLOPS	32 std, 288 max	24 V
9000	Standalone	1 to 16	120 MFLOPS	40 in, max	24 V



6K Controllers



The 6K family of controllers is the easiest and most flexible motion controller on the market. With the 6K, setup and programming is a snap in a wizard-based environment. Choose this controller for ease of use and flexibility to many different interface options, including Ethernet, fieldbus and serial interfaces.

Motion

- 1 to 8 axes of stepper/servo control
- ± 10 V analog or step and direction command output

Interface Features

- 10 Mbps twisted pair Ethernet with free drivers for Allen Bradley® SLC5/05, DVT and Opto22 Snap I/O
- RS232/485
- Profibus -DP option
- DeviceNet option
- ActiveX communication controls
- Parker Interact and InteractX compatible via Ethernet
- OPC Server
- Viewpoint VI's for Labview

Control Features

- Wizard-based Motion Planner™ software provided

- Multi-tasking (Up to 10 separate tasks)
- Position-based following
- PLC scan mode
- Scaling
- Variables and high level math functions
- 300K memory std (600 K max)

Onboard I/O

- 5 to 24 VDC
- 9 to 17 fast trigger inputs
- 4 to 8 digital outputs
- 12 MHz encoder input for each axis
- Auxiliary encoder input for following

Expansion I/O

- Ethernet I/O connection available (up to 22)
- Serial up to 256 digital and 64 analog I/O points

Series	Number of Axes	Onboard digital I/O	Expansion I/O
6K2	1 to 2	9 inputs, 4 outputs	Up to 256 digital, 64 analog
6K4	1 to 4	9 inputs, 4 outputs	Up to 256 digital, 64 analog
6K6	1 to 6	17 inputs, 8 outputs	Up to 256 digital, 64 analog
6K8	1 to 8	17 inputs, 8 outputs	Up to 256 digital, 64 analog

Wizard-based Motion with Motion Planner



Motion Planner is a free wizard-based programming environment that allows users of the 6K motion controller to complete their entire application without learning a programming language.

Wizard-based Programming Environment

- With Motion Planner, the 6K controller is the simplest motion controller on the market to program

- No programming or native-code writing is required by user
- 100% wizard-based tools from start-to-finish

- Servo Tuner

Additional Motion Planner Features

- Panel Maker
- Smart Editor
- Servo Tuner
- Terminal Emulator



Servo Drive Family Attributes

Series	ViX	Aries	Gemini	SLVD
Input power	24 to 80 VDC	120/240 VAC	120/240 VAC	240 VAC, 3-Phase
Shaft power, Continuous at 3,000 RPM	Up to 300 Watts, 2 versions	Up to 750 Watts, 4 versions	Up to 7.1 kW, 6 versions	Up to 800 Watts, 2 versions
Feedback	Encoder/Resolver	Encoder/SinCos	Encoder/Resolver	Resolver
Inputs/Outputs	5 inputs 3 outputs	Enable/Reset/Fault	8 inputs, 6 outputs, expandable (GV6K)	3 inputs 2 outputs
Command input	±10 V analog 5 V step/direction CW, CCW encoder input	±10 V analog 5 V step/direction CW, CCW encoder input	±10 V analog 5 V step/direction CW, CCW encoder input	±10 V analog 5 V step/direction CW, CCW encoder input
Controller version available	Yes	No	GV6, GV6K	Simple index moves possible
Compatible motor type	Standard brushless servo motor	Standard brushless servo motor	Standard brushless servo motor	Standard brushless servo motor
Compatible Parker motor	SM, BE, Neo, J, MaxPlus rotary and linear, SL	SM, BE, Neo, J, MaxPlus rotary and linear, SL	SM, BE, Neo, J, M MaxPlus rotary and linear, SL	BE, Neo, J, MaxPlus rotary, M

ViX Series



The ViX Series of servo drives and controller drives is flexible, powerful and compact. The ViX offers a high-resolution encoder feedback option for optimal use with linear servo motors, such as the MX80. Choose the ViX for low-cost multi-axis drive applications or for powerful but compact standalone drive/controller applications.

- 24 to 80 VDC input
- 2.5 and 5 A(rms) versions available
- Torque, velocity or position control

- Resolver or encoder feedback (software selectable)
- High-resolution encoder feedback option
- Five digital inputs and three digital outputs
- CE (EMC and LVD), UL compliant
- CANopen and RS485 option
- Controller versions available

Aries Series



The Aries Series of digital servo drives is the easiest-to-use servo drive on the market. There is no setup, as it auto-configures to any Compumotor motor with smart encoder. With Aries, you only pay for what you need, as it is an optimized torque drive for use with a centralized controller and no additional circuitry. Choose the Aries for hassle-free, low-cost multi-axis torque drive applications.

- 120/240 VAC input
- 100, 200, 400 and 750 Watt versions
- Auto-configuration
- Torque control
- Encoder feedback/SinCos
- CE (EMC and LVD), UL compliant
- Optional velocity or step/direction input



Gemini Series



The Gemini Series is a family of servo drives and controller drives that cover an extremely wide range of motion control applications. The Gemini is available in three control levels (drive-only, basic controller drive, full-featured controller drive) and six power levels. Choose the Gemini when you need to be flexible or want to mix and match drives but keep the same connectivity and front-end software.

- 120/240 VAC input
- Torque, velocity or position control
- Seven versions from 2 to 30 A(rms) continuous current
- Up to 7.1 kW of shaft power

Gemini GV Digital Servo Drive	Gemini GV6 Digital Servo Drive with Basic Controller	Gemini GV6K Digital Servo Drive with full-featured Controller
Torque, velocity, step and direction CW/CCW/Encoder tracking mode Wizard-based setup	Basic motion Registration Conditionals Integer variables RS232 and RS485 standard Profibus-DP and DeviceNet options 8 inputs and 6 outputs	Position-based following Multi-tasking Scaling High-level variables 300 K memory RS232, RS485 and Ethernet standard 8 inputs and 6 outputs onboard Up to 256 expansion I/O optional

SLVD Series



The SLVD Series of digital servo drives is compact, robust, and economical. Every drive comes with the option of running in torque, velocity or position mode. The same drive can also run basic position presets or handle following applications. Choose the SLVD when you want a basic keypad interface or want a resolver-based feedback drive with a small amount of control functionality.

- 240 VAC, 3-phase input
- 1, 2, 5 and 7 A(rms) continuous versions available
- Keypad interface option
- Torque, velocity or position control
- Positioning presets and following available in drive
- CE (EMC & LVD)



Stepper Drive Family Attributes

Series	E-AC	E-DC	ViX
Power input	95 to 132 VAC	24 to 48 VDC	24 to 80 VDC
Peak current output (Amps)	0.02 to 3.5	0.2 to 4.8	0.2 to 8
Overall dimensions mm (in)	109.22 x 57.15 x 48.26 (4.3 x 2.25 x 1.9)	127 x 91.44 x 40.64 (5.0 x 3.6 x 1.6)	124.46 x 86.36 x 43.18 (4.9 x 3.4 x 1.7)
Control version	CP*E-AC	EX-DC	VIX250IM, VIX500IM
Control version features	Basic position, velocity or acceleration controls	Sequence select, position maintenance, stall detection, following, 6 inputs/3 outputs	Motion profiles, conditionals, registration position maintenance stall detection, following, 5 inputs/3 outputs

E-AC and E-DC Microstepping Drive



The E Series is a high-performing, low-cost family of packaged AC-input and DC-input microstepping drives.

- Anti-resonance circuitry suppresses mid-range instability
- Recommended motor inductance range of 0.5 mH to 80 mH
- Selectable resolution up to 50,800 steps/rev

- Auto standby reduces motor current (and heating)
- Current waveforms to optimize smoothness
- Optically isolated step- and direction-inputs
- Short circuit and over temperature protection

ViX Microstepping Controller Drives



The ViX Series is a digital, compact and high power family of DC-Input microstepping drives.

- Wizard-based configuration
- Anti-resonance circuitry suppresses mid-range instability
- Recommended motor inductance range of 0.5 mH to 20 mH

- Integer selectable resolution from 200 to 51,200 steps/rev
- Five digital inputs and three digital outputs
- One analog input
- Controller version provides basic control functionality
- RS485 and CANopen version also available

VS Series Stepper Motors



The VS Series of stepper motors is optimized for use with the E Series microstepping drives and controller drives. The VS Series motors are available in four different frame sizes and three different stack lengths, so it is easy to choose the optimal speed-torque combination.

- NEMA 11, 17, 23 and 34 sizes available
- Single, double, or triple stack lengths available
- Up to 170 VDC windings
- Single or double shaft
- Customization available



Dynaserv Series



The Dynaserv Series is a direct-drive servo system that eliminates the need for costly mechanical components and the backlash associated with them. The load is mounted directly onto the motor. The unique technology of the motor allows for resolutions of up to 4,096,000 pulses per revolution and torque up to 500 Nm (370 ft-lb). Choose the Dynaserv when you need high accuracy and high torque or would like to eliminate a gearbox or speed reducer.

- Resolutions up to 4,096,000
- Repeatability to ± 1 arc second
- 20 models: 4", 6", 8", or 10" diameters
- Torque up to 500 Nm (370 ft-lb)
- Speeds up to 5 rps
- Auto-tuning
- Hole through center for wires or tubing

Series	DR	DM
Motor sizes	4", 6", 8", 10"	4", 6", 10"
Feedback device	Resolver	Encoder
Motor body material	Steel	Aluminum
Compatible drives and power range	Dynaserv SR (G3, M2, Std and High power)	Dynaserv SD (G3, M2, Std only)
Main attributes	Lowest cost Largest through-hole Most robust	Most accurate Lightest weight

iBE Series



The iBE is an entire motion control system in a single package that effectively eliminates the need for a control panel. It combines a servo motor, drive, controller, and I/O into one package on the back of a high-quality brushless servo motor. Choose the iBE for your basic motion control applications or when your panel space is limited.

- Single-axis package motor/drive/controller
- 0.3 to 2.3 Nm (37 to 330 oz-in) continuous torque
- Brushless DC servo motor
- Dual-encoder capability

- Limit switch inputs
- Seven programmable inputs or outputs
- Single 24 to 48 VDC voltage input
- Battery operation is possible
- RS232/RS485 port
- NEMA 23 and NEMA 34 frames available
- Customize your motor to fit your application



Parker offers a broad range of standard options with all of our brushless servo motor families. Our numerous shaft, feedback and connection options fulfill the needs of most of our customers. However, we realize that from time to time the need arises to have a custom motor designed specifically for your application.

Whether you need custom connectors, mounting or winding, Parker will build a motor designed to your exact specifications and provide it with minimal impact on lead time and cost and no minimum quantities. We provide more than just a motor—we provide a **custom designed servo motor solution**.

Common Special Requests

Connectorization

- Right-angle connector housing
- MS connectors on back cover
- Special cable lengths
- High-flex cables
- Cable exiting through back cover
- Customer specified cables and connectors

Flanges

- Tapped mounting holes
- Customer specified flanges
- Face mount

Windings

- Specific bus voltage
- Higher speed

Gearheads

- Non-standard ratios
- Customer specified flanges
- Customer specified output shaft

Brakes

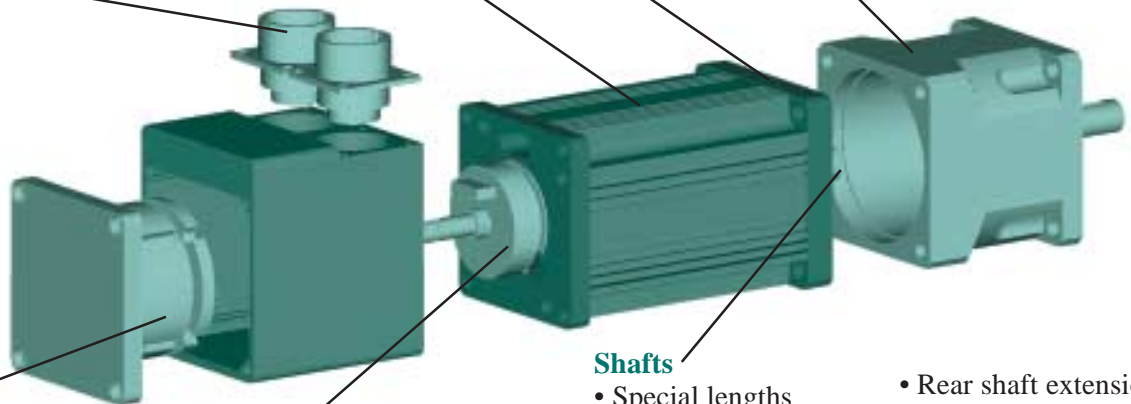
- Internal or external

Feedback

- Higher resolution encoders
- Higher temperature encoders

Shafts

- Special lengths
- Special flats
- Special keyways
- Special shaft diameters
- Metric shaft diameters
- Hollow shafts
- Rear shaft extension
- Double flats
- Shaft pinning
- Pressed on gears



Motor Family Attributes

Series	SM	SE	BE	MaxPlus
Application requirements	Smooth motion, lower acceleration higher speed	Smooth motion, lower acceleration, higher speed exposed encoder	Rapid moves, high acceleration	Rapid moves, high acceleration
Frame sizes	NEMA 16, 23	NEMA 16, 23	NEMA 16, 23, 34	8 sizes, 40 to 320 mm
Continuous torque range Nm (in-lbs)	9.2×10^{-2} to 1.3 (0.8 to 11.3)	9.2×10^{-2} to 1.3 (0.8 to 11.3)	0.2 to 5.2 (1.3 to 46.3)	5.6×10^{-2} to 451.9 (0.5 to 4,000)
Speed range	0 to 7,500 RPM	0 to 7,500 RPM	0 to 5,000 RPM	0 to 7,000 RPM
Feedback	Encoder/Resolver	Encoder	Encoder/Resolver	Encoder/Resolver

SM, SE Series



The SM Series brushless servo motors feature a slotless stator design that eliminates all detent torque in the motor, allowing the motors to provide extremely smooth motion, especially at low speeds. This design is also ideal for applications involving high inertia loads (such as lead screws and belt drives).

The SE Series motors provide the same performance as the SM Series, but in a lower-cost, space-saving package. Designed for embedded applications, these motors are available in flying lead configurations and have a plastic encoder cover.

- NEMA 16 and 23 sizes
- Up to 180 oz-in continuous torque
- Brushless construction
- Slotless design
 - Negligible detent torque
 - Reduced torque ripple
 - Higher rotor inertia
- Integrated planetary gearheads available
- TENV housing, IP65 option (SM Series)
- Custom modifications available
- Industry-leading delivery times
- CE compliant

Series SM/SE*	160	161	162	230**	231**	232**	233**
Continuous stall torque Nm (oz-in)	9.2×10^{-2} 13	0.2 26	0.3 47	0.2 26	0.4 54	0.7 106	1.1 156
Peak torque Nm (oz-in)	0.3 40	0.6 78	0.1 141	0.6 78	1.1 160	2.2 316	3.3 467
Rated speed (rpm)	7,500	7,500	7,500	7,500	7,500	7,500	5,800
Rotor inertia kg-m ² (oz-in-s ²)	5.0×10^{-6} 7.0×10^{-4}	1.1×10^{-5} 1.5×10^{-3}	1.8×10^{-6} 2.6×10^{-4}	2.7×10^{-5} 3.8×10^{-3}	5.2×10^{-5} 7.4×10^{-3}	9.3×10^{-5} 1.3×10^{-2}	1.4×10^{-4} 1.9×10^{-2}

*All specifications represent encoder feedback and are the same value for SE Series motors.

**Resolver version available with higher stall and peak torques.



BE Series



Compumotor's BE Series brushless servo motors produce high continuous stall torque in a cost-reduced package. The increased torque is the result of eight magnetic poles on the rotor instead of the four poles traditionally found on motors in these frame sizes.

The cost reduction is achieved from their open lamination design. Unlike traditional servo motors, the BE Series motors do not have a metal housing. The laminations of the motor stator are shaped into the body of the motor. The design reduces both material costs and motor assembly time.

- NEMA 16, 23 and 34 sizes
- Up to 5.2 Nm (741 oz-in) continuous torque
- Brushless construction
- Eight-pole open-lamination design
 - Increased torque
 - Lower cost
- Integrated planetary gearheads available
- Custom modifications available
- Industry-leading delivery times
- CE compliant

Series BE	161	162	163	164	230*	231*	232*	233*	341*	342*	343*	344*
Stall torque, Continuous Nm (oz-in)	0.1 (21)	0.3 (37)	0.3 (47)	0.4 (61)	0.4 (53)	0.7 (94)	1.1 (155)	1.5 (207)	1.7 (239)	2.9 (406)	4.0 (566)	4.8 (686)
Peak torque Nm (oz-in)	0.5 (64)	0.8 (111)	1.0 (142)	1.2 (173)	1.1 (160)	2.0 (283)	3.3 (464)	4.4 (622)	5.1 (717)	8.6 (1,217)	12.0 (1,697)	14.5 (2,058)
Rated speed (rpm)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Rotor inertia kg-m ² (lb-in-sec ²)	1.3x10 ⁻⁶ (1.8x10 ⁻⁴)	2.0x10 ⁻⁶ (2.9x10 ⁻⁴)	2.7x10 ⁻⁶ (3.8x10 ⁻⁴)	3.5x10 ⁻⁶ (5.0x10 ⁻⁴)	5.2x10 ⁻⁶ (7.4x10 ⁻⁴)	9.1x10 ⁻⁶ (1.3x10 ⁻³)	1.7x10 ⁻⁵ (2.4x10 ⁻³)	2.4x10 ⁻⁵ (3.4x10 ⁻³)	3.1x10 ⁻⁵ (4.3x10 ⁻³)	5.0x10 ⁻⁵ (7.0x10 ⁻³)	6.9x10 ⁻⁵ (9.8x10 ⁻³)	8.2x10 ⁻⁵ (1.2x10 ⁻²)

*Resolver version available with slightly higher stall and peak torques.

MaxPlus Series



The MaxPlus Series of brushless servo motors is redefining performance, flexibility and reliability with the industry's broadest range of brushless servo motors - from 40 mm to 320 mm. Choose the MaxPlus motor family for larger frame sizes, custom options, or when a wide range of motors is needed.

- Eight sizes; 40 to 320 mm
- Up to 28.2 Nm (4,000 lb-in) of continuous torque
- Brushless construction

- Bridged stator design
 - Industry-leading torque to inertia ratios
 - Low audible noise
- Integrated planetary gearheads available
- IP65 standard
- Custom modifications available
- Industry-leading delivery times
- CE compliant

MaxPlus Frame Size	40 mm	66 mm	72 mm	89 mm	114 mm	142 mm	190 mm
Continuous stall torque range Nm (lb-in)	0.06 to 0.21 (0.51 to 1.87)	0.2 to 1.1 (1.6 to 10)	0.7 to 2 (6 to 19)	1 to 4 (12 to 39)	4 to 13 (38 to 116)	10 to 40 (85 to 360)	22 to 123 (200 to 1,092)
Peak torque range Nm (lb-in)	0.17 to 0.6 (1.53 to 5.60)	0.9 to 3 (7.8 to 30.0)	2 to 6 (17 to 56)	4 to 15 (36 to 137)	13 to 46 (114 to 407)	29 to 121 (255 to 1,081)	67 to 368 (600 to 3,276)
Max operating speed range	4,400 to 6,000	3,000 to 6,000	4,000 to 7,000	2,000 to 5,000	1,900 to 4,200	1,750 to 2,700	1,500 to 3,000



Precision Gearhead



The GTN and GTR gearheads are high precision planetary gear reducers designed for high performance servo applications. The GTN gears are fine-hobbed, case hardened, and precision honed to exceed AGMA class 12. The honing process, coupled with our innovative “universal” mounting method, ensures that contamination does not occur during the break-in period nor introduced when mounting a motor.

- 14 ratios from 3:1 to 100:1
- Less than three arc-minute backlash
- IP65 environmental protection
- Exceptional reliability

Frame Size (mm)	Backlash (arc.min.)				Continuous Maximum Noise (dBa)						Efficiency %			
	In-Line		Rt. Angle		Torque (Nm)		Input Speed (rpm)				In-Line		Rt. Angle	
	≤10:1	>10:1	≤10:1	>10:1	≤10:1	>10:1	In-Line	Rt. Angle	In-Line	Rt. Angle	≤10:1	>10:1	≤10:1	>10:1
70	<3	<5	<5	<7	50	77	10,000	5,000	<58	<60	>98	>95	>97	>94
90	<3	<5	<5	<7	110	120	8,000	4,500	<60	<62	>98	>95	>97	>94
115	<3	<5	<5	<7	210	260	8,000	4,000	<65	<67	>98	>95	>97	>94
142	<3	<5	<5	<7	700	910	6,000	3,500	<68	<70	>98	>95	>97	>94
190	<3	<5	<5	<7	1,600	1,800	6,000	3,000	<70	<72	>98	>95	>97	>94

Economy Gearhead



PEN, PER, PTN and PTR gearheads provide economical servo and stepper motor drive solutions for automation and motion control applications. All Parker planetary gearheads feature fine-hobbed, case hardened, and precision honed gears for maximum performance reliability. The tapped face PTN and PTR offer an exceptional value with pricing comparable to lower quality spur gears.

- 14 Ratios from 3:1 to 100:1
- Input speeds to 10,000 rpm
- IP54 environmental protection
- 60 second motor mounting
- 14 Ratios from 3:1 to 100:1
- IP54 environmental protection
- Lubricated for life
- Effortless motor mounting

Mounting Style	Frame Size (mm)	Backlash (arc.min.)						Continuous Maximum Noise (dBa)						Efficiency %					
		In-Line		Rt. Angle				Torque (Nm)		Input Speed (rpm)		(dBa)		In-Line		Rt. Angle			
		≤8:1	>8:1	100:1	≤8:1	>8:1	100:1	≤8:1	>8:1	100:1	In-Line	Rt. Angle	In-Line	Rt. Angle	≤8:1	>8:1	100:1	≤64:1	100:1
Flange	60	<20	<25	<30	<30	<35	<40	16	44	44	8,000	6,000	<58	<66	>96	>94	>90	>94	>90
Flange	90	<12	<17	<22	<22	<27	<32	50	120	120	6,000	6,000	<60	<68	>96	>94	>90	>92	>90
Flange	115	<8	<12	<16	<18	<22	<26	120	260	260	6,000	6,000	<65	<73	>96	>94	>90	>98	>90
Face	40	<30	<35	<30	<40	<45	<40	6	20	20	10,000	–	<55	<63	>98	>95	>97	>94	>90
Face	60	<20	<25	<30	<30	<35	<40	16	44	44	8,000	6,000	<58	<66	>96	>94	>90	>94	>90
Face	80	<12	<7	<22	<22	<17	<32	50	120	120	6,000	6,000	<60	<68	>96	>94	>90	>92	>90
Face	120	<8	<12	<16	<18	<22	<26	120	260	260	6,000	6,000	<65	<73	>96	>94	>90	>88	>90
Face	160	<8	<10	–	<18	<20	–	450	800	–	6,000	–	<70	<78	>96	>94	–	–	–



MaxPlus Linear Series Aircore



The MaxPlus Series of linear servo motors can cover any linear motor application with up to 557 Nm (411 lbf) of continuous force. The MaxPlus Series has an extremely small package size and is an aircore (ironless) design that allows for zero cogging torque and no attractive force. It is ideal for high smoothness, high forces or when you have a multi-axis linear application with different size axes.

- Continuous force range: 1 to 557 Nm (0.8 to 411 lbf)
- Industry's smallest package size per force
- Six versions : 1200, 1500, 1600, 2000, 2400, 2800
- High acceleration
- Air and water cooling optional
- Custom modifications available

SL Series - Slotless



The SL Series of linear servo motor components has a slotless design and only one row of magnet bars. When compared to an ironless design, this allows for lower cost, lower weight, and better heat dissipation. Choose the SL Series for general-purpose linear servo motor applications where low cost is required.

- Low cost and weight
- Better heat dissipation
- Air and water cooling optional
- Custom modifications available
- Available in a slotless design without a backiron for zero cogging torque and greater smoothness

- Force range: 12 to 144 Nm (9 to 106 lbf)
- Frame sizes (forcer widths): 63, 102, 140 mm

Linear Motor Family Attributes

Series	MaxPlus Linear	SL
Forcer type	Aircore (Ironless)	Slotless with backiron
Cogging force	None	Low
Magnet rail	Single or double row	Single row
Force/Volume	Medium/low	Medium
Attractive force	None	Medium
Heat dissipation	Good	Better
Application	Rapid, smooth, accurate	General purpose
Continuous force range Nm (lbf)	1 to 557 (0.8 to 411)	12 to 144 (9 to 106)
Speed range	Bearing dependent	Bearing dependent



400LXR Series Linear Motor Driven Positioning Tables



The 400LXR Series linear servo motor tables offer high acceleration, velocity, and precision with quick settling for superior throughput. Optimum performance is achieved by combining slotless linear motor technology with performance-matched feedback and mechanical elements. Offered in three widths and a myriad of options, the 400LXR Series can solve most high-performance applications.

- 100% certification of precision
- Optional cleanroom preparation

- Easy multi-axis configuration
- Pre-engineered, low profile, modular cable management
- Proven IP30 strip-seal protection
- Accelerations to 5 g's
- Velocities to 3 m/s
- Encoder resolutions to 0.1 μm
- Fast settling
- Dowel holes provided for precise payload and multi-axis mounting

Series	404LXR	406LXR	412LXR
Profile (mm), w x h	100 x 60	150 x 70	285 x 105
Travel lengths (mm)	50 to 1,000	50 to 1,950	150 to 3,000
Load (kg)	45	180	950
Acceleration (g's)	5	5	5
Velocity (m/sec)	3	3	3
Peak force (N)	180	330	1,000
Continuous force (N)	50	110	355
Resolution (μm)	0.1 to 5	0.1 to 5	0.1 to 5
Repeatability (μm)*	± 1	± 1	± 1

*Resolution dependent

DXL150 Series Co-Planar, Dual-Carriage Linear Motor Table



The DXL150 dual-carriage positioning table consists of two independent carriages on the same precision ground base and bearing ways. This arrangement ensures excellent co-planar motion.

- Dual independent carriages
- Co-planar motion
- Ultra precise velocity control
- Cog-free linear motors
- Cleanroom compatible
- Tooling reference edge and dowel holes on each carriage
- Encoder resolution to 10 nm

Series	DXL150
Profile (mm), w x h	150 x 55
Travel lengths (mm)	35
Load (kg)	150
Acceleration (g's)	2
Velocity (m/sec)	0.5
Peak force (N)	44
Continuous force (N)	19
Resolution (μm)	0.01 to 5
Repeatability (μm)*	± 0.3

*Resolution dependent



MX80 Series



Parker's MX80 family of positioning slides is small in size and big on performance. This miniature stage family offers multiple drive technologies including linear motor, ballscrew, leadscrew, micrometer, and manual. Multi-axis systems are easily constructed that mix drive technologies, allowing price performance trade-offs 'per-axis'.

The MX80 family features anti-cage creep cross-roller bearings, encoder resolutions down to 10 nanometers, integrated home/limit switches, and high-flex cables.

- Miniature size - low profile
- Cross roller bearing (zero cage creep design)
- Encoder resolutions to 10 nm
- Accelerations to 5 g's
- Velocities to 2 m/s
- Fast settling
- Smooth translation
- Steel or aluminum body
- Cleanroom and low-ESD options
- Dowel holes provided for precise payload and multi-axis mounting
- Master reference surface to actual path of travel
- Integral home/limit sensors
- High-flex cable system



Series	MX80LP	MX80LS	MX80SP	MX80SS	MX80M
Profile (mm), w x h	80 x 25	80 x 25	80 x 35	80 x 35	80 x 25
Drive system	Linear Motor	Linear Motor	Ballscrew	Leadscrew	Micrometer
Travel lengths (mm)	25 to 150	25 to 150	25 to 150	25 to 150	50
Peak thrust (N)	24	24	123	44	-
Load Capacity (kg)	8	8	8	8	20
Max resolution (µm)	0.01	0.01	0.5	1	1
Repeatability (µm)	±0.4	±0.8	±3	±5	-
Accuracy (µm)	3	12	22	30	-
Material	Steel	Aluminum	Aluminum	Aluminum	Aluminum



400XR Series Precision Ballscrew Tables



The 400XR precision table family offers precise linear positioning with excellent straightness and flatness of travel. Superior performance, modularity, and quick delivery make these tables the perfect building blocks for multi-axis positioning systems. An unrivaled array of sizes, features, and options such as cleanroom preparation, linear encoder feedback, and parallel motor mounts distinguishes the 400XR family from all others.

- Precision ground ballscrew drive
- High strength aluminum body
- Stiff square rail bearings
- Flexible motor mount
- Certified precision
- Proven IP30 rated strip seal
- Dowel holes for precise mounting
- Optional linear feedback, brake, sensor pack, cleanroom prep
- Quick delivery

Series	401XR	402XR	404XR	406XR	412XR
Profile (mm), w x h	41 x 43	58 x 58	95 x 48	150 x 70	285 x 105
Travel lengths (mm)	50 to 300	50 to 600	50 to 600	100 to 2,000	150 to 2,000
Rated load (kg)	50	100	170	630	950
Acceleration (g's)	2	2	2	2	2
Repeatability (µm)	1.3	1.3	1.3	1.3	5

404XE Series Economy Linear Tables



The 404XE positioner combines versatility and rugged construction into a compact platform ideal for 100% duty automation applications. Like its cousin the 404XR, the 404XE offers a myriad of options and accessories. The XE is also mount compatible with the XR and LXR precision tables allowing mix-and-match of technologies as cost and performance mandate.

- Reliable, cost-effective positioner
- Short carriage and parallel motor mounts to minimize length
- High strength design
- Multi-axis configurations
- Dowel holes for precise mounting
- XR/LXR compatible
- 100% duty cycle
- Optional linear feedback, brake, sensor pack, cleanroom prep

Series	404XE
Profile (mm), w x h	95 x 48
Travel lengths (mm)	25 to 700
Rated load - Short carriage (kg)	61.3
Rated load - Long carriage (kg)	122.6
Acceleration (g's)	2
Velocity (mm/sec)*	260 to 1,500
Repeatability (µm)*	±20 to 30

*Travel and screw dependent



ZP200 Vertical Lift "Wedge" Table



Parker's ZP200 vertical lift platform offers precise vertical positioning for elevating small to large payloads 75 kg (up to 165 lbs). A unique wedge design generates stable vertical elevation of the platform with absolutely no displacement in the horizontal plane.

- 25 mm of travel
- 100% duty cycle

- Laser certified precision
- Multi-axis compatible with XR, LXR, XE, and MX80 tables
- Precision linear encoder option
- Class 10 cleanroom option

Series	ZP200P	ZP200S
Profile (mm), w x h	200 x 60.4	200 x 60.4
Travel length (mm)	25	25
Rated load (kg)	15	75
Accuracy (µm)*	8	20
Repeatability (µm)*	±3	±5
Velocity (mm/sec)**	440	440
Acceleration (m/s/s)	7.2	7.2

*Encoder dependent

**Screw dependent

200RT Rotary Table



The 200RT Series rotary tables offer precision motorized rotation and angular positioning. The 200RT is mount compatible with Parker's linear positioners and their low profile design minimizes stack height in multi-axis configurations. Five diameters and four drive ratios make matching size, speed, and load requirements simple.

- Preloaded, precision worm gear
- Repeatable indexing – 12 arc sec

- 360-degree continuous rotation
- Through hole for cables, etc.
- Dual race preloaded angular contact support bearing
- Four selectable drive ratios: 36:1, 45:1, 90:1, 180:1
- Direct mount encoder option
- English or metric mounting

Series	205RT	206RT	208RT	210RT	212RT
Profile (mm), dia x h	127 x 46	152.4 x 50.8	203.2 x 63.5	254 x 76.2	254 x 76.2
Rated load (kgf)	11	68	68	90	90
Repeatability (arc sec)*	12	12	12	12	12
Accuracy (arc min)*	3	3	3	3	3
Runout/Concentricity (µm)*	25	25	25	25	25
Output torque (Nm)	2.8	4.5	4.5	21.5	21.5

*Grade of precision and ratio dependent



XRS Standard Systems



Built from Parker's XR and LXR positioners, the XRS Systems are pre-engineered Cartesian systems including all the bracketry, cable management, and motors necessary for an off-the-shelf system solution.

There are more than 120 standard systems available with popular payload and work areas. XRS is the only Cartesian system to mix linear motor and ballscrew technologies, yielding unsurpassed performance.

- Three platforms: small, medium and large
- XY and XYZ configurations
- Linear motor and ballscrew technologies

- Right- and left-hand versions
- Work areas to 1 m x 1 m
- Payloads: 5, 12 and 25 kg
- "Pass through" high-flex cabling for power, signals, and air
- Dowel holes for repeatable system and payload installation
- 3D CAD drawings available
- Easily customized for special requirements: travel, payload, idlers, cleanroom, etc.

XRS Platform	Small	Medium	Large
Max work area (mm)	600 x 300 x 100	2,000 x 600 x 150	3,000 x 1,000 x 150
Max payload (kg)	5	12	25
Max velocity (mm/sec)	2,250	2,000	2,000
Max resolution (µm)	1	1	1
X-Axis drive	Ballscrew or linear motor	Ballscrew or linear motor	Ballscrew or linear motor
Y-Axis drive	Ballscrew	Ballscrew or linear motor	Ballscrew or linear motor
Z-Axis drive	Ballscrew	Ballscrew	Ballscrew

Custom Precision Systems

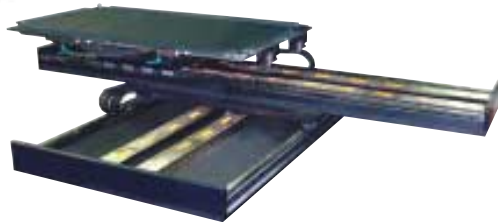


From simple modifications of standard product to completely custom designs, Parker's 30 years of experience with precision systems uniquely enables us to quickly and effectively design, manufacture, and deliver the best positioning solution.

Beyond design and manufacture, Parker's metrology equipment and expertise also enables us to test and qualify a system's precision, performance, and cleanliness.

Common customizations:

- Unique mechanical arrangements
- Precision gantries or open frames
- Multiple or special carriages
- Longer or shorter travels
- Special precision requirements
- Special move requirements
- Cleanroom requirements
- Vacuum requirements
- Low ESD requirements
- Point of measurement tests
- Custom cable management
- Qualification tests



HPLA-HLE Series Belt – Pulley Actuator



The HPLA and HLE are ideal for guiding, transporting and positioning payloads over large distances at high speeds and accelerations. The polymer wheel bearing is especially suited to cleanroom applications since it requires no lubrication or maintenance. Cleanroom test data is available on request.

- Reliable and proven technology
- 20 meters of travel with splice
- 5 m/s maximum velocity
- Ideal for cleanroom wafer handling applications
- Stainless steel option provides moisture and chemical resistance
- Quiet operation
- Low maintenance

Series	HLE60	HPLA80	HLE100	HPLA120	BLMA120
Cross-section (mm)	60 x 60	80 x 80	100 x 100	120 x 120	120 x 120
Drive type	Belt-pulley	Belt-pulley	Belt-pulley	Belt-pulley	Linear Motor
Max travel (m)	3	5.6	6.2	9.5	6.3
Max velocity (m/s)	5	5	5	5	7
Rated acceleration (g's)*	1	1	1	1	5
Max thrust (N)	688	1,114	1,478	2,234	1,720
Rated load (N)	750	1,300	1,250	2,500	1,500
Repeatability (mm)	±0.2	±0.2	±0.2	±0.2	±0.01
Linear feedback	No	Optional	No	Optional	Standard
Cleanroom option	Yes	Yes	Yes	Yes	Yes
Stainless option	Yes	Yes	Yes	Yes	Yes

*Higher applications possible - application dependent

BLMA Series Balanced Linear Motor Actuator



The innovative BLMA provides linear motor performance in the form of a long travel actuator. Utilizing a patented balanced linear motor design; the BLMA offers the best possible settling time and response of any long travel actuator. A single magnet track keeps cost and weight to a minimum.

- Highest dynamic performance, even at long travels
- High positional stiffness

- Fastest settling time
- Balanced ironcore linear motor
- Internal linear feedback
- 1,720 N of peak force
- 7 m/s max velocity
- High-flex cable management
- Mount compatible with HPLA



Gantry Systems



Using the HPLA and BLMA actuators as building blocks, Parker can create gantry-style robots that are more economical than pedestal-style robots. Parker's standard systems accommodate work areas up to 7.9 m x 3.3 m x 1.5 m and payloads up to 100 kg. Larger work areas and payloads are accommodated with custom configurations.

- Sizing and selection tools available for standard systems
- Easy to customize
- Economical for automated storage and retrieval systems
- Cleanroom compatible
- Gantry-style optimizes floor space utilization versus arm robot



**System 1
XX'-Y'**

Payload: 15 kg to 100 kg
Work Area: 7.9 m x 3 m
Velocity: Up to 3 m/s

Provides two axes of horizontal motion and is designed for rapid transport of light to moderate payloads in a single plane.



**System 2
XX'-YY'**

Payload: 30 kg to 200 kg
Work Area: 7.9 m x 3 m
Velocity: Up to 4 m/s

Provides two axes of horizontal motion and is designed for rapid transport of moderate to heavy payloads in a single plane.



**System 3
XX'-Z**

Payload: 10 kg to 100 kg
Work Area: 7.9 m x 1 m
Velocity: Up to 2.5 m/s

Provides two axes of motion in a vertical plane. Its heavy-duty Z-axis with rod guide minimizes the effects of high acceleration of heavier payloads.



**System 4
XX'-Z**

Payload: 10 kg to 100 kg
Work Area: 7.9 m x 1 m
Velocity: Up to 2.5 m/s

Variation of System 3 through alternative mounting. It is popular for front-loading applications and is often implemented as a wall-mount unit.



**System 5
XX'-Z**

Payload: 50 kg to 100 kg
Work Area: 7.9 m x 1.5 m
Velocity: Up to 2.5 m/s

An X-Z system utilizing an HZR for the vertical axis. This belt-driven Z-axis allows higher accelerations and velocities than System 3.



**System 6
XX'-YY'-Z**

Payload: 10 kg to 100 kg
Work Area: 7.9 m x 3 m x 1 m
Velocity: Up to 2.5 m/s

A three-axes version of System 2. The ET cylinder is used for the Z-axis provides high vertical thrust at moderate speeds.



**System 7
XX'-YY'-Z**

Payload: 50 kg to 100 kg
Work Area: 7.9 m x 3.3 m x 1.5 m
Velocity: Up to 2.5 m/s

A three-axes version of System 5. It handles heavy payloads with the Z-axis retracted and light to moderate payloads while extended.



ERV and ER Series Rodless Actuators



Parker's ERV Series rodless actuator is designed with an extruded base and an external carriage containing outboard roller bearings for high load capacity in an affordable package.

- High-strength extruded body
- External bearing carriage for high-loads
- Economical design for high-load and high-speed applications

The ER Series rodless actuator features an internal bearing carriage and the option of a belt or screw drive.

- Modular design with either belt or screw drive
- Internal bearing carriage with strip seal

Series	ER32	ER50	ER80	ERV5	ERV8
Max load Roller bearing N (lbf)	222 (50)	445 (100)	667 (150)	1,125 (253)	2,113 (475)
Max load Square rail N (lbf)	1,112 (250)	2,225 (500)	4,445 (1,000)	–	–
Extended carriage N (lbf)	–	–	–	2,100 (410)	4,480 (1,008)
Max velocity Belt m/sec (in/sec)*	3.6 (140)	5.1 (200)	5.1 (200)	5.1 (200)	5.1 (200)
Ball screw m/sec (in/sec)*	0.42 (16.7)	2.1 (79)	1.3 (50)	–	–
Acme screw m/sec (in/sec)*	1.1 (42)	0.85 (33)	1.1 (42)	–	–
Rated acceleration (g's)*	1	1	1	1	1
Max travel (m)**	1.6 (62.1)	3.4 (133)	2.6 (102)	6 (238)	6 (238)
Bi-directional repeatability Screw (mm)	0.025	0.025	0.025	–	–
Belt (mm)	0.102	0.102	0.102	0.10	0.10

*Application dependant, consult catalog for specifications

ET Series Electric Cylinders



The ET Series electric cylinders are engineered to provide long life and high thrust capacity in a compact cylinder package. Its robust design ensures durability in the most demanding applications.

- Ball or Acme screw drive
- Angular contact thrust bearings for long life

- Stainless steel thrust tube
- Anti-rotate rod guide bearing
- IP65 option available
- Cleanroom preparation available
- 3D drawings available online

Series	ET32	ET50	ET80	ET100	ET125
Max thrust N (lbf)	600 (135)	3,200 (720)	7,200 (1,600)	23,500 (5,300)	44,500 (10,000)
Max velocity Ball screw m/sec (in/sec)*	1.3 (50)	1.5 (60)	1.3 (50)	1.6 (63)	1.3 (52)
Acme Screw m/sec (in/sec)*	1.1 (42)	0.85 (33)	1.1 (42)	1.1 (42)	–
Rated acceleration (g's)*	1	1	1	1	1
Max travel (m)	1	1	1.5	1.5	2.4
Bi-directional repeatability (mm)	0.025	0.025	0.025	0.025	0.025

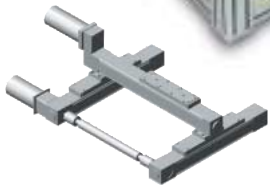
*Application dependant, consult catalog for specifications



Cartesian Systems

Using the ET, ER and ERV actuators as building blocks, Parker can create economical and customized work cell-level robotic solutions that are ideal for pick-and-place and dispensing applications. Beyond the base system, Parker can integrate pneumatic axes, grippers, vacuum cups, custom structures and guarding.

- Standard or custom configurations available
- Economical robotic solution
- Optional hardware
 - Cable management
 - Machine base and guarding
 - Pneumatic actuators
 - Vacuum and generators



**System EM1
XX'-Y'**

Payload: 75 kg
Velocity: Up to 3 m/s

A dual actuator X-axis supports a single Y-axis actuator. The dual X-axis may be belt-driven with a linked drive shaft, dual screw drive or driven by one actuator, while the other actuator serves as a non-driven idler.



**System EM2
XX'-YY'**

Payload: 65 kg
Velocity: Up to 2.5 m/s

A dual actuator X-axis supports dual Y-axis actuators. Better suited to large or cumbersome loads.



**System EM3
X-Z**

Payload : 40 kg
Velocity: Up to 1 m/s

A single actuator X-axis supports a single Z-axis. The Z-axis may be electromechanical or pneumatic.



**System EM4
XX'-Z**

Payload: 50 kg
Velocity: Up to 1 m/s

A dual actuator X-axis supports a single Z-axis. Offers increased rigidity for pick and place applications.



**System EM5
XX'-Y-Z**

Payload: 35 kg
Velocity: Up to 1 m/s

A Z-axis is added to the Type 1 system. The third axis may be electromechanical or pneumatic and may carry Parker end effector hardware.



**System EM6
XX'-YY'-Z**

Payload: 65 kg
Velocity: Up to 1 m/s

A Z-axis is added to the Type 2 system. The third axis may be electromechanical or pneumatic and may carry Parker end effector hardware.



Pneumatic Grippers



With more than 100 types available in more than 1,000 configurations, Parker's complete line of pneumatic grippers can solve any application. Parker offers products designed to handle the lightest loads in cleanroom environments, in addition to products capable of producing grip forces up to 12.5 kN (3,000 lbf) in high speed and high load situations.

- Three gripper styles
- High grip force to weight ratio keeps other system components smaller
- Hardened steel jaws for rigid mounting

- Precision bearings and hard anodized wear parts ensure long cycle life
- Cleanroom-certified products with purge ports
- Spring assist and spring return options make grippers fail-safe under power failure
- Dust cover and wiper assemblies for harsh environment
- Connectivity to Parker mechanical tables and actuators

	Parallel Type	Three-Jaw Type	Angular Type
Maximum stroke range mm (in)	4 to 150 (0.2 to 6.0)	8 to 35 (0.3 to 1.4)	–
Angular rotation (degrees)	–	–	12°, 30°, 180°
Total grip force range N (lbf) at 7 bar (100 psi)	28 to 3,088 (6 to 694)	356 to 12,460 (80 to 2,800)	5 to 2,318 (2 to 521)
Pressure range bar (psi)	0.3 to 7 (5 to 100)	1.5 to 7 (20 to 100)	0.3 to 7 (5 to 100)
Cleanroom capability	Optional	Standard	Optional
Sensors (Proximity, Reed, Hall Effect)	Available	Available	Available
Non-synchronous motion	Optional	Not available	Not available
Filtration requirement		40 micron (dry air)	

Vacuum Cups



- Flat and bellows styles
- Sizes up to 200 mm diameter
- Wide variety of cup material and mounting styles

Integrated Vacuum Generators



- Integrated solenoids and sensors for reduced cycle time
- Emergency stop systems
- High vacuum flows

Pressure Sensors



- Vacuum to 8,820 PSI range
- Up to IP67 rating
- PNP/NPN open collector transistor outputs
- 4-20 mA, 1-5 VDC analog outputs



Modular Solutions to Fit Your Needs



Industrial Profile Systems modular framing systems from Parker offer unique benefits over traditional methods of structural fabrication. Parker Industrial Profile Systems are pre-engineered to enable you to reduce lead times for engineering and fabrication, resulting in reduced costs, and offer extreme flexibility and superior versatility. Modifications are easily made through all stages of a project with quick turnaround from design to completion.

Benefits

- Extremely short turnaround time from design to completion
- No welding, grinding, cleaning, painting or distortions
- Lower cost through the elimination of costly traditional manufacturing processes
- Flexibility to reconfigure as requirements change

Profiles

Parker Industrial Profile Systems has one of the most comprehensive product offerings in the industry.

- More than 100 individual high-strength aluminum profiles
- Sizes range from 20 mm to 160 mm
- Extensive range of smooth, grooveless profiles
- Specifically designed for high tech industries
- Provide attractive and robust structures

Linear Motion

- Roller bearing systems
- Extrusion-based linear actuators
- Delrin and UHMW slide bearings

Fasteners and Accessories

- Unique T-slot design for reliable connection and easy modification
- Metric and English hardware available
- Complete line of accessories



Typical Applications

- Enclosures and guarding
- Machine bases and frames
- Work stations and tables
- Material handling equipment



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WARNING

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System Requirements

To view the CD, the following are required:

- Pentium®-class processor
- Win® 95 OSR 2.0, Win 98 Sec. Ed., Win ME, Win NT 4.0 (with Service Pack 5 or 6), Win 2000 or Win XP
- 16 MB of RAM (32 recommended)
- 20 MB of available hard-disk space

Acrobat Reader™

Catalog files are viewed using Adobe Acrobat Reader. If you do not have Acrobat Reader installed on your PC, it will install from the CD. If you have Acrobat Reader but do not have the search plug-in, you will be given the option to either install Acrobat Reader 5.0 with search, leaving your existing version, or not install Acrobat Reader 5.0 with search.

You must have the search plug-in to take advantage of the search feature described in the next section.

To View the CD

The CD is self-loading. Just place it in your CD drive. Acrobat Reader will open (or install), and the opening page will appear on your monitor. From this page you can navigate to the following sections.

- **Search** takes you to the search feature. When the search window opens, type a word(s) or code* and press enter. A list of pages where that word appears is shown. Select one and click the View button. Repeat as needed.
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- **Warning/Offer of Sale** takes you to these legal documents.
- **Getting Started** provides a summary of how to navigate using Acrobat Reader.
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