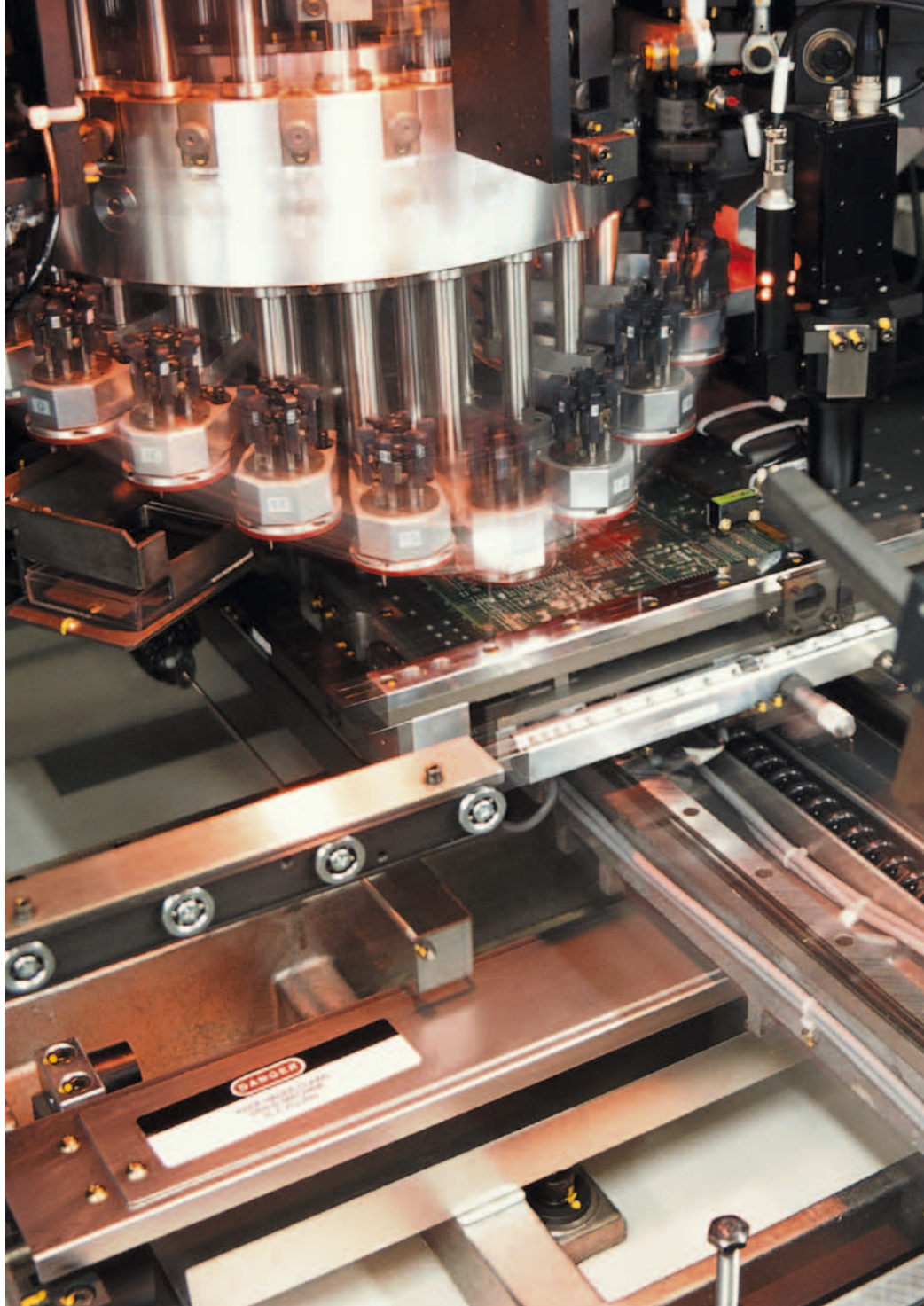


aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



# Motion Control Products

Overview



ENGINEERING YOUR SUCCESS.



**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.

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# Parker Hannifin

## The global leader in motion and control technologies and systems

### Global Partnerships Global Support

Parker is committed to helping make our customers more productive and more profitable through our global offering of motion and control products and systems. In an increasingly competitive global economy, we seek to develop customer relationships as technology partnerships. Working closely with our customers, we can ensure the best selection of technologies to suit the needs of our customers' applications.

### Electromechanical Technologies for High Dynamic Performance and Precision Motion

Parker electromechanical technologies form an important part of Parker's global motion and control offering. Electromechanical systems combine high performance speed and position control with the flexibility to adapt the systems to the rapidly changing needs of the industries we serve.

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



### Parker Hannifin Corporation

With annual sales exceeding \$12 billion in fiscal year 2011, Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets. The company employs approximately 58 000 people in 47 countries around the world.

Parker has increased its annual dividends paid to shareholders for 55 consecutive fiscal years, among the top five longest-running dividend-increase records in the S&P 500 index. For more information, visit the company's website at [www.parker.com](http://www.parker.com), or its investor information website at [www.phstock.com](http://www.phstock.com).

Issue: 2012

# Parker Hannifin

- the global leader in motion and control technologies

A world class player on a local stage

## Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

## Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

## Manufacturing to Meet Our Customers' Needs

Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

## Worldwide Manufacturing Locations

### Europe

Littlehampton, United Kingdom  
Dijon, France  
Offenburg, Germany  
Milan, Italy

### Asia

Shanghai, China  
Chennai, India

### North America

Rohnert Park, California  
Irwin, Pennsylvania  
Wadsworth, Ohio  
Charlotte, North Carolina  
New Ulm, Minnesota



Offenburg, Germany

## Local Manufacturing and Support in Europe

Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

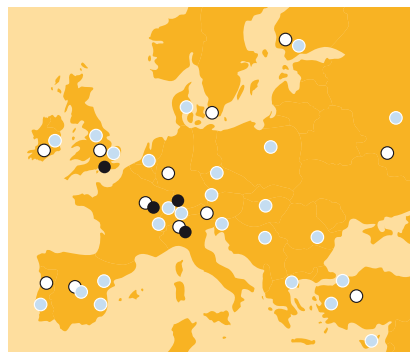
For contact information, please refer to the Sales Offices on the back cover of this document or visit [www.parker.com](http://www.parker.com)



Milan, Italy



Littlehampton, UK



- Manufacturing
- Parker Sales Offices
- Distributors

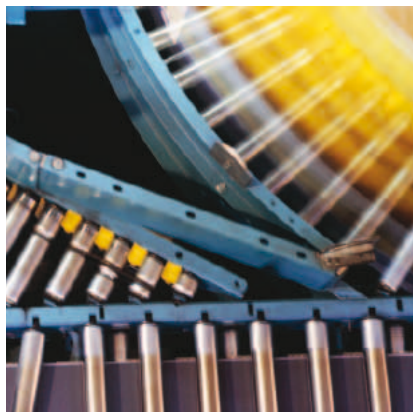


Dijon, France

# Solutions to Improve Productivity, Increase Flexibility and Save Energy

## Process Productivity and Reliability

Parker brings together the technology and experience required for continuous process applications across many industries. Electromechanical and drive products combine application specific functionality to ensure precise speed control and reliable performance. Parker combines more than 30 years of application experience with a global sales and support network that help you increase your machine availability.



	AC-Drives	DC-Drives	Direct-Drive Motors	Servo Drives and Motors
<b>Converting machinery</b>				
Folding, gluing, stitching and collating	✓	✓		✓
Coating, laminating and foil stamping	✓	✓	✓	✓
Slitting, cutting and rewinding	✓	✓	✓	✓
<b>Plastics processing machinery</b>				
Plastic extrusion	✓		✓	
Injection moulding	✓		✓	✓
Thermal forming	✓		✓	✓
<b>Wire and cable</b>				
Wire and cable manufacturing	✓	✓		✓
Winding/unwinding	✓	✓	✓	
Extrusion for wire and cable	✓	✓	✓	
<b>Printing Machinery</b>				
Web/sheetfed offset	✓		✓	✓
Flexo printing	✓		✓	✓
Gravure printing	✓		✓	✓
Shaftless printing	✓		✓	✓
<b>Other industries</b>				
Paper machinery	✓		✓	
Sugar processing	✓	✓		
Steel production	✓	✓	✓	
Construction materials	✓	✓		
Automotive test rigs	✓	✓	✓	

## Energy Efficiency and Clean Power

Parker has developed the technology to maximize the efficient use of energy in industrial, mobile and infrastructure environments.

### Hybrid Vehicle Technology

Parker has adapted its electric drive technologies for use in hybrid electric vehicles, including utility vehicles and passenger vehicles. Examples include inverters and motor drives, as well as electric drive motors.

### Energy-savings for pumps, fans and compressors

Parker has the drive technology to help you make significant energy savings in the operation of pumps, fans and compressors in both industrial and infrastructure applications, including:

- Commercial refrigeration
- Water and wastewater treatment
- Building automation
- Industrial processes
- Hydraulic systems



### Power Generation and Conversion

Using proven inverter technology, Parker has developed numerous solutions for the conversion of energy for commercial use from a variety of sources, including wind, wave and energy storage devices.

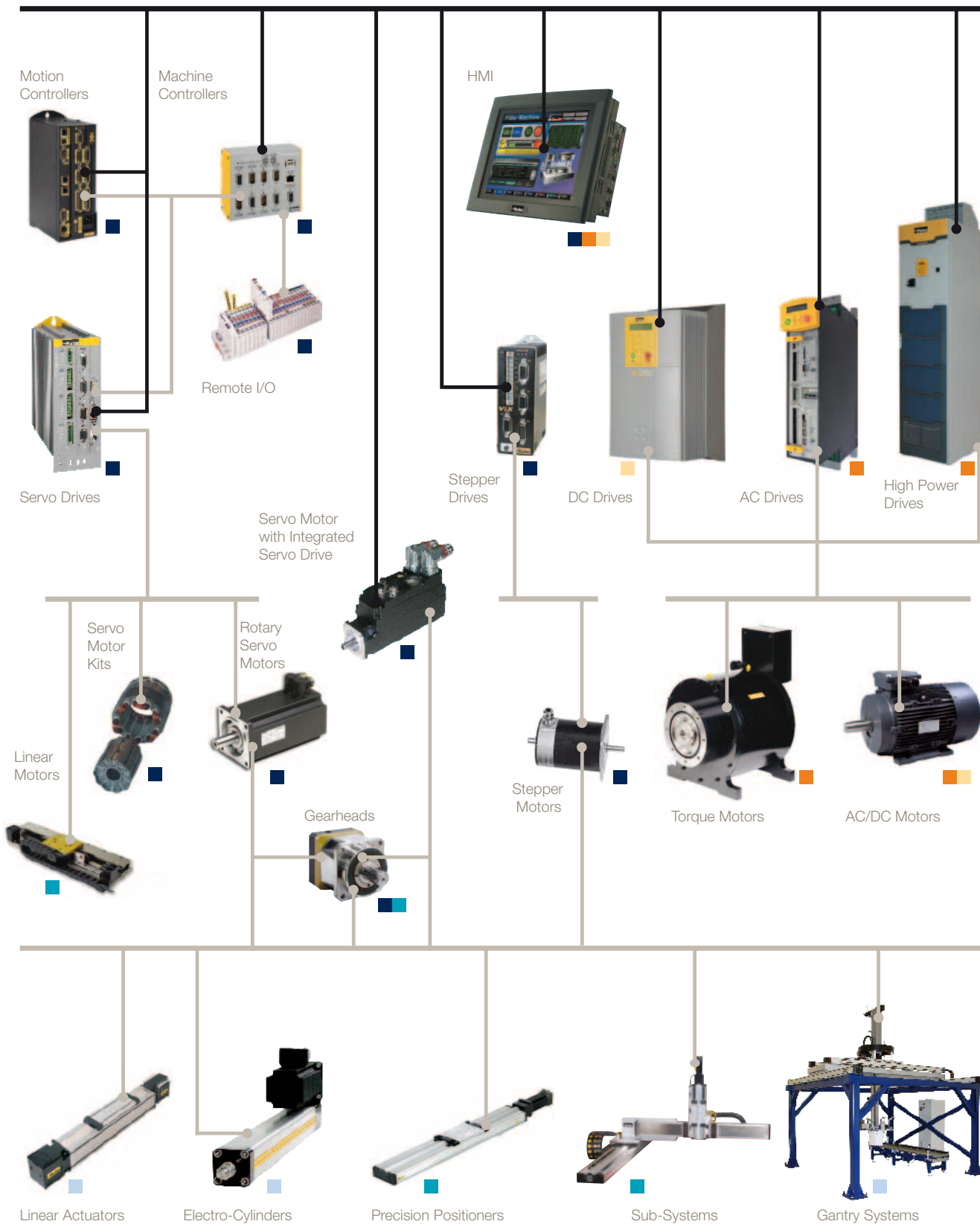
# Motion Control Systems for Total Production Flexibility

Parker's electromechanical automation customers enjoy total production flexibility in their general and precision motion control applications. Complete packaged linear positioning systems, coupled to servo and stepper drives and controls, enable our customers to develop a complete motion solution with one partner. Parker provides the products for a wide range of motion needs- power, speed, travel, force-with easy to use controls designed to work on multiple control and communication platforms. Additionally, Parker's products can be easily customized to suit specific applications.



	Mechanical Actuators	Motors and Gearheads	Drives	Controls	HMI
<b>Assembly machinery</b>					
Pick and Place	✓	✓	✓	✓	✓
Lifting	✓	✓	✓	✓	
Transfer machinery	✓	✓	✓	✓	✓
<b>Automotive industry</b>					
Body shop	✓	✓	✓	✓	
Paintshop applications	✓	✓	✓	✓	✓
Transfer machinery	✓	✓	✓	✓	✓
<b>Packaging machinery</b>					
Primary, secondary, tertiary	✓	✓	✓	✓	✓
Handling machinery	✓	✓	✓	✓	✓
<b>Food and Beverage processing machinery</b>					
Processing machinery	✓	✓	✓	✓	
Packaging machinery	✓	✓	✓	✓	
Handling machinery	✓	✓	✓	✓	✓
<b>Material handling systems</b>					
Transfer systems	✓	✓	✓	✓	✓
Pick and place systems	✓	✓	✓	✓	✓
<b>Material forming machinery</b>					
Presses	✓	✓	✓		✓
Tube bending	✓	✓	✓	✓	✓
Die Casting	✓	✓	✓		✓
Injection Molding / Plastic Extrusion	✓	✓	✓		✓
Transfer Systems	✓	✓	✓	✓	✓
ePump (Variable Speed HPU)		✓	✓	✓	
<b>Machine tools</b>					
High Speed Servo Spindles		✓			
Loader/Unloader	✓	✓	✓	✓	
Palletizing/Transfer	✓	✓	✓	✓	✓
Rotary/Tilting Tables		✓			
Door Systems	✓	✓	✓	✓	
<b>Semiconductor machinery</b>					
Front end processes	✓	✓	✓	✓	✓
Inspection machinery	✓	✓	✓	✓	✓
Packaging machinery	✓	✓	✓	✓	✓
Lithography	✓	✓	✓	✓	
<b>Medical equipment</b>					
Device manufacturing	✓	✓	✓	✓	✓
Product packaging and dispensing	✓	✓	✓	✓	✓
Scanning equipment	✓	✓	✓		
Pumps and analyzers		✓	✓		
<b>Entertainment</b>					
Theatre and studio automation	✓	✓	✓	✓	
Simulation and amusement rides	✓	✓	✓		

# Complete Range of Solutions





## Literature



### Motion Control Products

- Drives
- Servo Motors
- Gearboxes
- Controller Products

192-490123



### AC Drives and Motors

- Purpose Drives
- Compact Drives
- Modular Drives
- HMI
- Accessories
- AC Motors

HA501078



### DC Drives and Motors

- Digital DC Drives
- Analogue Converters
- HMI
- Accessories
- DC Motors

HA501079



### Linear Actuators

- Toothed Belt Driven Actuators
- Screw Driven Actuators
- Linear Motor Driven Actuators

192-490023



### Precision Technology

- Screw Driven Tables
- Linear Motor Driven Tables
- Linear Motors
- Linear Positioners
- Miniature Stages

192-591011



### Parker One Pneumatic

A complete range of pneumatic system components

- Actuator Products
- Control Devices
- Air Preparation & Airline Accessories

PDE2600PNUK

## Value Added Services

In addition to providing products and systems, Parker also provides a number of value added services to our customers:

- Programming and commissioning services
- Power quality and energy surveys
- 24-hour support and service
- Product repairs
- Product training

### Brochure for more information



192-493001

## Customization

Many automation applications cannot be solved with off the shelf products. Parker's products are designed to be versatile as well as easy to configure for the most of industrial and process applications. Some customers require solutions that can't be found in a catalogue, and Parker has the resources and expertise available to provide solutions:

- Custom motor designs
- Customized mechanical positioning systems
- Customized control functionality
- Customized communication solutions



## System Solutions

Parker offers system design and manufacturing in two main categories:

### Drive Systems

Complete AC and DC drive systems across a wide power range, from less than 1 kW to more than 2 MW. Systems typically include electrical enclosure, ancillary electronic equipment and full documentation. Commissioning and support services are standard.

### Mechanical Systems

Parker has more than 20 years of experience in providing a variety of multiple axis mechanical positioning systems, complete with motors, drives and controls. Typical applications include material transfer and pick and place gantry systems. Additionally, Parker designs and builds custom precision (micron and submicron level) positioning systems, integrating precision bearing, feedback and drive systems, including Parker's range of linear servo motors. Each system ships complete with motors, drives and controls, and can include the programming and commissioning.



# Drives

Servo Drives

Stepper Drives

DC Servo Drives



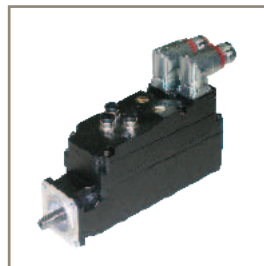
Compax3



SLVD-N



TPD-M



Motornet DC



Hi-Drive



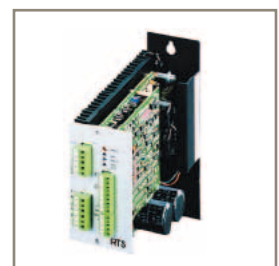
638



ViX Servo



ViX Stepper



RTS

# Markets and Applications



Product	Compax3	SLVD-N	TPD-M	Motornet DC	Hi-Drive	638	ViX Servo	ViX Stepper	RTS
Description	Intelligent Servo Drive	Compact Servo Drive	Triple Axis Servo Drive	Integrated Motor/ Servo Drive	Flexible Servo Drive	Servo Drive	Micro Servo Drive	Micro Stepper Drive	DC Servo Drive
Food, Pharma & Beverage	■	■	■	■	■				
Packaging Machines	■	■	■	■	■		■	■	
Material Forming	■		■		■				
Material Handling	■	■	■	■	■	■		■	
Factory Automation	■	■	■	■	■	■			
Life Science Diagnostic							■	■	■
Automotive Industry / In-Plant	■	■	■	■	■				
Printing Industry	■		■	■	■	■			
Textile Machines	■	■	■		■				
Robotics	■	■	■	■	■		■		
Machines Tools		■	■		■				
Servo Hydraulic Pumps	■								

# Key Features

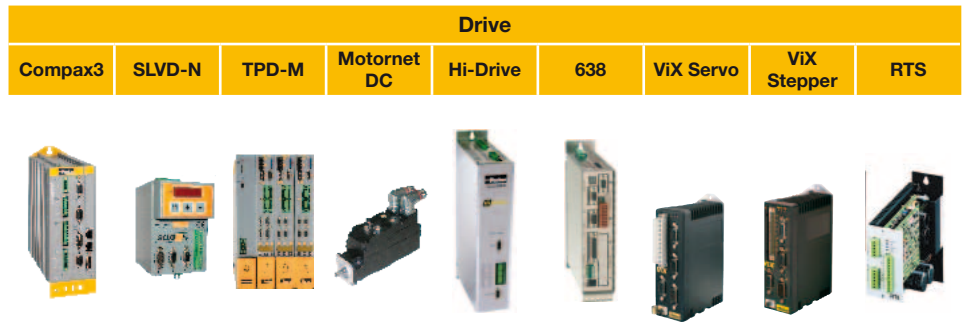
Product	Key Features	
Compax3	<ul style="list-style-type: none"> <li>• Simple system integration</li> <li>• Fieldbus &amp; Ethernet Communication</li> <li>• Wide Power / Voltage Range</li> <li>• Drives all motor types</li> <li>• Supports most feedback devices</li> </ul>	<ul style="list-style-type: none"> <li>• Standard IEC61131-3 programming</li> <li>• Application software integrated</li> <li>• Drive based safety</li> <li>• Fast control loops for demanding applications</li> </ul>
SLVD-N	<ul style="list-style-type: none"> <li>• Miniature / Compact Servo Drive</li> <li>• Optimized for centralized automation structures</li> </ul>	<ul style="list-style-type: none"> <li>• Use for applications with low number of axis</li> <li>• CANopen / EtherCAT communication</li> <li>• Simple application based programming</li> </ul>
TPD-M	<ul style="list-style-type: none"> <li>• Triple Servo Axis per Unit (3 drives in 1 Unit)</li> <li>• Optimized for centralized automation structures</li> </ul>	<ul style="list-style-type: none"> <li>• Use for applications with high number of axis</li> <li>• CANopen / EtherCAT communication</li> <li>• Simple application based programming</li> </ul>
Motornet DC	<ul style="list-style-type: none"> <li>• Servo Electronics integrated into the motor</li> <li>• Use in totally centralized automation structures</li> <li>• Dramatically reduced control cabinet space</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced cabelling needs</li> <li>• CANopen / EtherCAT communication</li> <li>• Modular machine design</li> </ul>
Hi-Drive	<ul style="list-style-type: none"> <li>• Simple programming</li> <li>• Multiple communication &amp; feedback</li> </ul>	
638	<ul style="list-style-type: none"> <li>• Simple programming</li> <li>• Multiple communication &amp; feedback</li> </ul>	
ViX Servo	<ul style="list-style-type: none"> <li>• Ultra compact housing</li> <li>• Low voltage drive</li> </ul>	
ViX Stepper	<ul style="list-style-type: none"> <li>• Ultra compact housing</li> <li>• Low voltage drive</li> </ul>	
RTS	<ul style="list-style-type: none"> <li>• Single / Three phase supply</li> <li>• Battery supply</li> </ul>	<ul style="list-style-type: none"> <li>• Operates on DC motors with or w/o a tacho</li> </ul>

# Drives by Function



Product	Compax3	SLVD-N	TPD-M	Motornet DC	Hi-Drive	638	ViX Servo	ViX Stepper	RTS
Description	Intelligent Servo Drive	Compact Servo Drive	Triple Axis Servo Drive	Integrated Motor/ Servo Drive	Flexible Servo Drive	Servo Drive	Micro Servo Drive	Micro Stepper Drive	DC Servo Drive
Servo	■	■	■	■	■	■	■		
Stepper								■	
DC Drive									■
Servo Motor	■	■	■	■	■	■	■		
Induction Motor	■	■	■		■				
Direct Drive Motors	■	■	■		■				
DC Motors									■
Stepper Motors								■	
Absolute Feedback	■	■	■	■	■	■			
Low Voltage Drives							■	■	
110/230 VAC	■	■	■	■	■	■			■
400/460 VAC	■		■	■	■	■			■
Single Axis Technology	■	■			■	■	■	■	■
Multi Axis Technology	■		■	■					
Integrated Motor/Drive				■					
Fieldbus Connectivity	■	■	■	■	■	■	■	■	
Ethernet Communication	■	■	■	■	■	■			
Standard Safety (STO)	■	■	■	■	■	■			
Advanced Safety	■								
IEC 61131-3 Programming	■	■			■				
Proprietary Programming		■	■	■	■	■	■	■	
Application Macros	■	■	■	■					

# Associated Drives & Motors



		Drive								
		Compax3	SLVD-N	TPD-M	Motornet DC	Hi-Drive	638	ViX Servo	ViX Stepper	RTS
Motor	SMB / SMH		■	■	■		■	■	■	
	MB / MH		■	■	■		■	■	■	
	NX		■	■	■		■	■	■	
	EX		■	■	■		■	■	■	
	NV		■				■			
	NK		■	■	■		■	■	■	
	SKW					n/a				
	HKW									
	TK		■				■			
	SY								■	
	RS									■
	RX									■
	AXEM									■

# Intelligent Servo Drive Compax3

## Overview

### Description

Compax3 is Parker Hannifin's global servo drive. The drive series includes single and multi axis drives as well as hydraulic controllers. It features a power range from 1 to 110 kVA.

The servo drives are completely developed and manufactured in Germany. An additional Compax3 production site was established in the US. As a global servo drive controller, Compax3 is of course available all over the world. Service and support sites are located in the vicinity of all major industry locations - worldwide. The "Parker Authorised Distribution Partners" do play an important role in this context - well-trained and experienced application and support specialists will provide the necessary professional support in any situation.

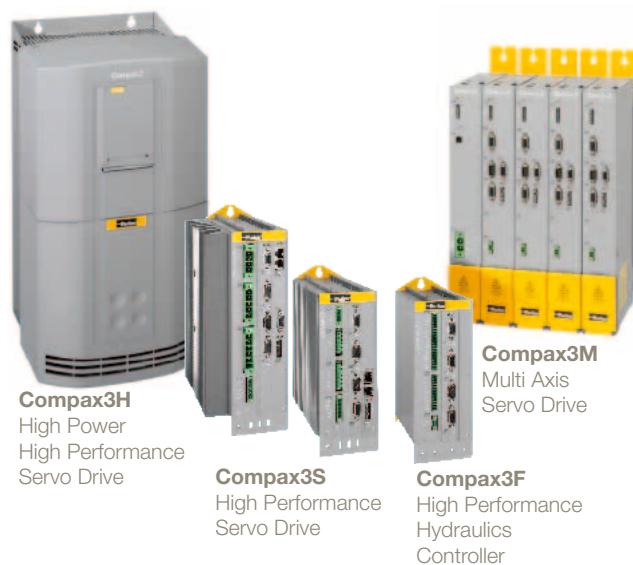
### Features

#### Hardware

- Power range from 1 to 110 kW
- 1 encoder output / 1 encoder input
- 8 digital inputs / 4 digital outputs
- 2 analog inputs (14 Bit)
- 2 analog outputs (8 Bit)
- Multiple fieldbus options
- Extensive safety technology

#### Technology Functions

- I10T10: Drive control via: velocity/torque control, step/direction input, encoder input
- I12T11: Positioning via digital I/Os, RS232/RS485, absolute/incremental positioning, registration mark related positioning, electronic gearbox, dynamic positioning
- T30: Programming based on IEC61131-3 with CoDeSys
  - PLCOpen function modules
  - IEC61131-3 - standard modules
  - C3-specific function modules
- T40: T30 functionality + cam function
- Technology controller with integrated Motion PLC  
Compax3 powerPLmC-C20



**Compax3H**  
High Power  
High Performance  
Servo Drive

**Compax3S**  
High Performance  
Servo Drive

**Compax3M**  
Multi Axis  
Servo Drive

### Technical Characteristics - Overview

Device:	Current [A]		Supply voltage	Power [kVA]
	I <sub>cont.</sub>	I <sub>peak</sub> (<5 s)		
Compax3				
S025V2	2.5	5.5	1 *	1.0
S063V2	6.3	12.6	230/240 VAC	2.5
S100V2	10	20	3 *	4.0
S150V2	15	30	230/240 VAC	6.0
S015V4	1.5	4.5	3 * 400/480 VAC	1.25
S038V4	3.8	9.0		3.1
S075V4	7.5	15		6.2
S150V4	15	30		11.5
S300V4 <sup>(1)</sup>	30	60		25.0
H050V4	50	75	3 * 400/480 VAC	35.0
H090V4	90	135		70.0
H125V4	125	187.5		91.0
H155V4	155	232.5		109.0

<sup>(1)</sup> Operation with condenser module C4.

Device:	Current [A]		DC bus voltage
	I <sub>cont.</sub>	I <sub>peak</sub> (<5 s)	
Compax3			
M050D6	5	10	325 ... 679 VDC (Rated voltage 560 VDC)
M100D6	10	20	
M150D6	15	30	
M300D6	30	60	



# Compact Servo Drive - SLVD-N

## Overview

### Description

SLVD-N is the family of compact digital servo drives for brushless motors which, in addition to positioning applications with trapezoidal profile, electrical shaft, electronic cam, spindle orientation, simulator of stepper motor and torque control, holds a PLC inside able to talk to the most common industrial programming systems, giving a great freedom of use of the inputs and outputs. It also allows the development of additional configurations to the basic features of the drive, such as gains adjustment of the loop in relation to speed or space, torque monitoring used for tools etc.

The SLVD-N range is equipped with a serial interface RS422/RS485 allowing the operator to configure, monitoring, give commands to up to 32 units simultaneously. A CANbus interface is available both in communication mode and in real time mode with SBCCAN, DS301, DS402 protocols.

### Typical applications:

- Packaging machines
- Pick & place systems
- General purpose machines

### Features

- Torque/current/speed control
- Advanced manager of torque limits
- Management of speed windows
- Positioner
- Electric shaft
- Electronic cam
- Controls the motor torque with the addition of speed control
- Virtual master
- Internal PLC - programming according to IEC61131 (option)
- Configurable feedback
- Standard interface: RS422/485, CANopen
- Optional interface: EtherCAT
- Internal braking resistor
- Internal EMC filter for three phase power supply
- Safety: STO function optional



### Technical Characteristics - Overview

<b>Power supply</b>	200...230 VAC single/three phase (±10 %) 50-60 Hz (±5 %) - only TT/TN networks
<b>Control supply</b>	24 VDC (-0/+10 %)
<b>Overload</b>	200 % for 2 s
<b>Operating temperature</b>	0...45 °C
<b>Operating humidity</b>	<85 % non condensing
<b>Altitude</b>	1000 m asl with 1.5 % derating every 100 m, up to 2000 m
<b>Protections</b>	IP20
<b>International standards</b>	CE, UL, cUL

Model	Continuous current [A]	Peak current [A]	Size
SLVD1N	1.25	2.5	1
SLVD2N	2.5	5	
SLVD5N	5	10	
SLVD7N	7	14	
SLVD10N	10	20	2
SLVD15N	15	30	
SLVD17N	17	34	

# Triple Axis Servo Drive - TPD-M

## Overview

### Description

TPD-M is a multi axis system where each power module can supply up to three servo motors. The base configuration consists of a common dc bus supply (PSU) and multiples TPD-M modules, connected through dc bus bars.

The modules are available as one, two or three axis versions. This makes the system very flexible.

The TPD-M drive has been specifically designed for the Packaging OEM market but it can also be used in many other centralized automation structures which incorporate a large number of servo axes offering significant advantages.

- Packaging machines
- Material forming machines
- Textile machines
- Paper and converting lines
- Plastics machines
- Machines tools

Motion control functionality is performed by means of EtherCAT Real Time CoE (CAN over Ethernet) communication, CAN / CANopen DS402 communication.

### Features

- The most compact multi-axis servo drive on the market
- Quick and simple wiring
- One, two or three axis versions
- Modular cooling
- Removable SD card
- Common DC bus connection
- Feedback: Resolver, Hiperface and EnDat interface, Hall sensors, rotary and linear encoders
- New feedback: Hiperface DSL interface®  
Reduced cabling; only one cable connection between drive & motor
- Fieldbus: CANopen - standard, EtherCAT - option



### Technical characteristics - Overview

TPD Axis	Continuous current [A <sub>rms</sub> ]	Peak current A (≤ 2 s)
3 axis	2 + 2 + 2	4 + 4 + 4
	8 + 5 + 5	16 + 10 + 10
2 axis	2 + 2	4 + 4
	5 + 5	10 + 10
1 axis	8 + 8	16 + 16
	5/10/15/30	10/20/30/60

# Servo Motor with Integrated Servo Drive - Motornet DC

## Overview

### Description

Motornet DC is a brushless servomotor system with integrated servo drive, supplied from a DC-bus voltage. Hybrid power, control and communications cables, a Power supply and Interface module complete the system and local I/O's can be connected directly to the motor.

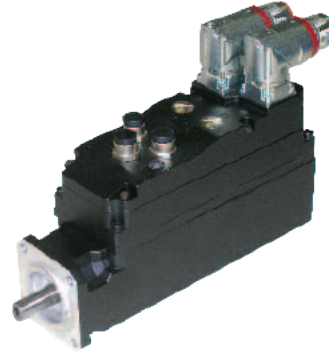
Ideally suited to multi-axis applications where a number of motors are mounted in close proximity on the machine, Motornet DC allows a decentralized approach to motion control to be taken.

- Packaging Machines
- Rotary Tables
- Filling, bottling and capping machines

Motion control functionality is executed by means of EtherCAT communication or optionally CANopen DS402 communication.

### Features

- Feedback: Resolver
- Fieldbus: EtherCAT
- 2 digital Inputs / 2 digital Outputs
- Protection level: IP64 / IP65 (optional)

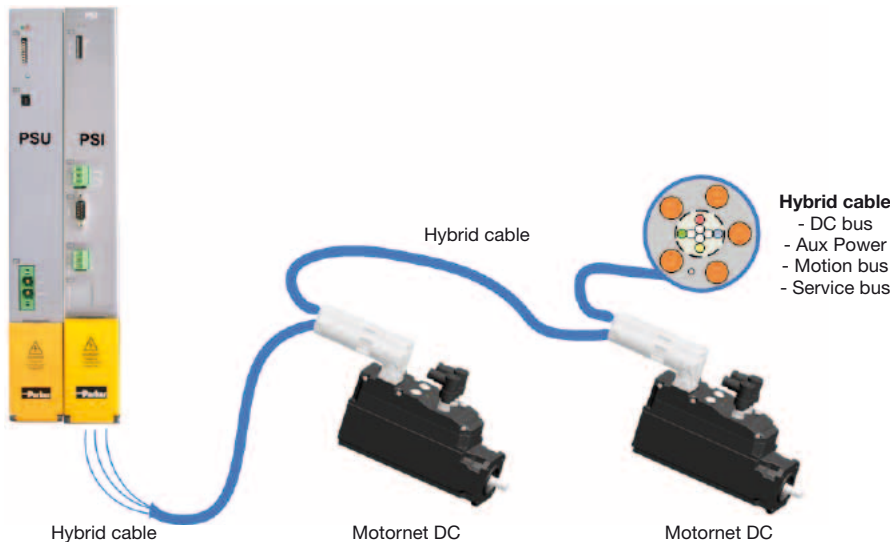


### General technical characteristics

		230 VAC supply		
		Size		
		MDC60	MDC70	MDC100
Speed 3000 min <sup>-1</sup>	Stall torque [Nm]	1	2.5	6.5
	Peak torque [Nm]	4	11	15
Speed 6000 min <sup>-1</sup>	Stall torque [Nm]	0.9	1.9	-
	Peak torque [Nm]	4	7	-
Inertia without brake [10 <sup>-3</sup> kgm <sup>2</sup> ]		0.0302	0.1	0.504

		400 VAC supply		
		Size		
		MDC60	MDC70	MDC100
Speed 3000 min <sup>-1</sup>	Stall torque [Nm]	1	2.6	7.5
	Peak torque [Nm]	4	11	26
Speed 5200 min <sup>-1</sup>	Stall torque [Nm]	-	-	5.7
	Peak torque [Nm]	-	-	15
Speed 6000 min <sup>-1</sup>	Stall torque [Nm]	0.9	2.2	-
	Peak torque [Nm]	4	7	-
Inertia without brake [10 <sup>-3</sup> kgm <sup>2</sup> ]		0.0302	0.1	0.504

### Typical System Architecture



# Flexible Servo Drive - Hi-Drive

## Overview

### Description

Hi-Drive is a fully digital drive for brushless motors with currents from 2 to 450 A and operating from 230 VAC or 480 VAC supplies. Hi-Drive is able to control induction motors; its target market is where high precision, accuracy, performance, fieldbus connectivity and custom applications are required.

Hi-Drive features several built-in motion control functions, including current, torque and speed control, positioning with trapezoidal profiles, digital lock with variable ratio and phase correction, electronic cam, real-time mode, S-ramp positioning, homing functions and position capture.

An axis card with Power PC 400 MHz micro processor which is able to control up to 32 interpolated axes via CANopen DS402, further enhances the Hi-Drive functionality.

The Hi-Drive series is suited for simple as well as extremely sophisticated applications such as: Printing machines, wood and metal working machines, feeders, palletizers, applications with different interpolated axes and robots.

### Features

- Current, torque and speed control
- Positioner with trapezoidal profile and S-ramps
- Digital lock with variable ratio and phase correction
- Electronic cam
- Configurable feedback input
- Configurable second encoder input
- Fieldbus RS232, RS422/485, SBCCan, EtherCAT, CANopen DS402
- DC bus connection to clamping board is possible (mono or three-phased)
- Built-in braking resistor (to 45 A)
- Safety relay optional CAT.3 EN 954-1
- Built-in EMI filter (to 130 A)
- Built-in three-phased line choke (75...55 A)



### Technical Characteristics - Overview

Device	Nominal current [A]	Peak current [A]	Peak current time [s]	Frame size
HID2	2	4	2	1
HID5	5	10		
HID8	8	16		
HID10	10	20		2
HID15	15	30		
HID16	16	32		
HID25	25	50	3	3
HID35	35	70		
HID45	45	90		
HID75	75	135	3	4
HID100	100	180		
HID130	130	234		
HID250	250	375	4.5	6
HID450	450	675		-

# Servo Drive - 638 Series

## Overview

### Description

638 series servo drives are suitable for all servo applications, from simple speed or current control to most complex positioning applications. The processor of 638 series servo drives gives a rapid response time to the control circuits of 105  $\mu$ s. Numerous expansion slots allow 638 series servo drives to reach a high degree of versatility, opening access to a wide variety of fieldbus communication and feedback sensors options.

### Features

- Integrated motion controller
- 230 or 400 VAC direct power supply
- STO: Safety torque off in accordance with EN13489-1 Category 3, Performance Level d and EN1037 as standard
- Ultra-fast control loops (105  $\mu$ s)
- Embedded PLC functions
- Programmable electronic cam
- 3 configurable trajectory generators
- Multi-axis synchronization through process bus
- Numerous fieldbuses options
- Hiperface and SSI encoder inputs options
- Optional flash memory chip for data storage
- Simple commissioning and programming Software



### Technical Characteristics - Overview

638 Servo drives	
Supply voltage	1*230 VAC ( $\pm$ 10 %), 50 - 60 Hz 3*230 VAC ( $\pm$ 10 %), 50 - 60 Hz 3*400/480 VAC ( $\pm$ 10 %), 50 - 60 Hz
Permanent current [Arms]	1...15
Peak current [A]	2...30
Overload	200 % during 5 s
Operating temperature	0...40 °C
Humidity	< 85 % relative humidity non-condensing
Altitude	1000 m (1 % derating per 100 m up to 4000 m)
Product enclosure rating	IP20



# Micro Servo Drive - ViX

## Overview

### Description

The freely-programmable, intelligent ViX servo drive delivers high levels of functionality and flexibility in programmable motion control. With an output in the 250-500 VA power range, ViX uses field-oriented digital control technology, to give enhanced dynamic performance with improved efficiency. Housed within an extremely compact case, ViX is suitable either for direct panel mounting or for attachment to a standard DIN rail.

The ViX drive is produced in two versions having continuous current ratings of 2.5 A and 5 A at motor bus voltages up to 80 V. A peak current capability of three times the continuous rating provides an outstanding acceleration performance. The device offers the choice of either resolver or encoder feedback (user selectable). To assist with initial commissioning, the drive can correct most motor and feedback wiring errors automatically.



### Features

- Fully digital design
- Field-oriented control for improved dynamic performance
- Panel or DIN rail mounting
- 2.5 A & 5.0 Arms
- 80 V DC Bus
- Built-in controller using Parker's proven EASI code
- Powerful EASI-V front-end software
- Programmable resolution
- Optional CANopen/RS485 interface
- Automatic standby current reduction
- Compact size
- Compatible with Parker servo motors

### Technical Characteristics - Overview

Device	Continuous current [Arms]	Peak current [A] (<2 s)	Interface	Supply voltage [VDC]
ViX250-AE	2.5	7.5	analog	24 & 24...80
ViX500-AE	5	15		24 & 48...80
ViX250-AH	2.5	7.5	High Res analog	24 & 24...80
ViX500-AH	5	15		24 & 48...80
ViX250-IE	2.5	7.5	Easi Code	24 & 24...80
ViX500-IE	5	15		24 & 48...80
ViX250-IH	2.5	7.5	High Res Easi Code	24 & 24...80
ViX500-IH	5	15		24 & 48...80
ViX250-CE	2.5	7.5	CANopen	24 & 24...80
ViX500-CE	5	15		24 & 48...80
ViX250-CH	2.5	7.5	High Res CANopen	24 & 24...80
ViX500-CH	5	15		24 & 48...80

# Micro Stepper Drive - ViX

## Overview

### Description

The award-winning ViX intelligent digital servo drive from Parker Hannifin has now been joined by a high-performance microstep version. Like its servo equivalent, the ViX microstep drive uses field-oriented digital control technology to give enhanced dynamic performance with improved efficiency. Housed within an extremely compact case, ViX is suitable either for direct panel mounting or for attachment to a standard DIN rail using an optional adaptor. The ViX microstep drive is produced in two versions having current ratings of 2.8 A and 5.6 A RMS at motor bus voltages up to 80 VDC. User resolution is freely programmable between 400 and 51 200 steps/rev. Regardless of the programmed resolution, the motor always operates at maximum resolution for optimum smoothness over the entire speed range. The power stage features full PWM control for accurate microstepping performance.



### Features

- Fully digital design
- Field-oriented control for improved low-speed performance
- Panel or DIN rail mounting
- 2.8 A & 5.6 A (rms)
- Up to 80 V DC bus
- Built-in controller using Parker's proven EASI code
- Powerful front-end software
- Fully-programmable resolution, up to 51 200 increments/rev
- Optional CANopen / RS485 interface
- Automatic standby current reduction
- Compact package
- Compatible with Parker high performance stepper motors

### Technical Characteristics - Overview

Device	Continuous current [A <sub>rms</sub> ]	Peak current [A] (<2 s)	Interface	Supply voltage [VDC]
ViX250-IM	2.8	4	Step+ Direction	24 & 24...80
ViX500-IM	5.6	8		24 & 48...80
ViX250-CM	2.8	4	CANopen	24 & 24...80
ViX500-CM	5.6	8		24 & 48...80

# DC Servo Drive - RTS

## Overview

### Description

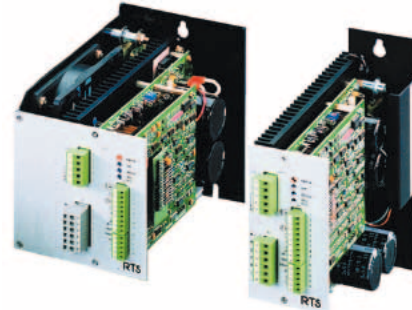
The RTS servo amplifiers are designed for driving DC servo motors and are available in ratings up to 6.5 kW.

These products enable speed control of DC motors with or without tachometers.

They integrate main supply, auxiliary supply and braking resistor circuits in a compact package.

### Features

- Battery, single-phase or three-phase power supply
- U-RI or tachometer control
- Integrated braking resistor
- Full protecting features
- High compactness
- Panel or rack mounting
- 3U Eurocard



### Technical Characteristics - Overview

RTS Series	
<b>Power supply</b>	Single phase, three phase or battery
<b>Nominal current</b>	3...40 A
<b>Peak current</b>	10...80 A
<b>Operating Temperature</b>	0...40 °C (derate by 35 % per 10 °C >40 °C to 60 °C max.)
<b>Altitude</b>	1000 m (derate by 10 % >1000 m per 1000 m to 4000 m max.)
<b>Protection</b>	IP00, IP20 for versions with covering cap



# Motors

Servo Motors

Spindle Motors

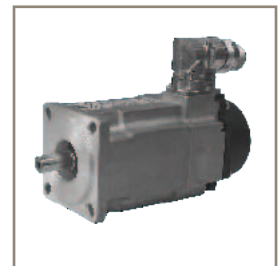
Stepper Motors / DC Servo Motors



SMB / SMH



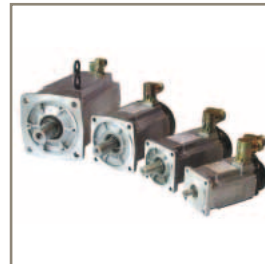
MB / MH



NX



EX



NV



NK



SKW



HKW



TK



SY Stepper Motors



RS



RX



AXEM

# Markets and Applications

Product	Image	Description	Markets												
			Food, Pharma & Beverage	Packaging Machines	Material Forming	Material Handling	Factory Automation	Life Science Diagnostic	Automotive Industry / In-Plant	Printing Industry	Textile Machines	Robotics	Tooling Machines	Servo Hydraulic Pumps	
SMB / SMH		Low Inertia Servo Motor	■	■	■	■	■	■	■	■	■	■	■	■	■
MB / MH		Servo Motor	■	■	■	■	■	■	■	■	■	■	■	■	■
NX		Low Cogging Servo Motor				■	■	■	■		■	■	■	■	
Motornet DC		Integrated Motor/Servo Drive	■	■	■	■	■			■	■	■	■		
EX		Explosion Proof Servo Motor	■		■		■			■	■		■		
NV		High Speed Servo Motor												■	
NK		Frameless Servo Motor							■	■			■	■	■
SKW		Frameless Spindle Motor												■	
HKW		Frameless AC Brushless Motor												■	
TK		Frameless Servo Motor				■	■							■	
SY Stepper		2-Phase Stepper Motor	■	■		■	■	■			■	■			
RS		High Performance DC Servo Motor						■	■			■			
RX		DC Servo Motor						■	■						
AXEM		Pancake DC Servo Motor						■	■			■			

	Pulp & Paper	Renewable Energy	Aerospace	Radiation Hardend	Marine	Continuous Process	Hazardous / Ex Environment	Simulation / Testing	Mobile Hybrid Solutions	Key Features
	■					■		■	■	<ul style="list-style-type: none"> <li>• High dynamical</li> <li>• Low inertia</li> <li>• Multiple feedback devices</li> </ul> <ul style="list-style-type: none"> <li>• Option: Brake</li> <li>• Platform for customization</li> </ul>
	■					■	■	■	■	<ul style="list-style-type: none"> <li>• High dynamical</li> <li>• Low inertia</li> <li>• Multiple feedback devices</li> </ul> <ul style="list-style-type: none"> <li>• Option: Brake</li> <li>• Platform for customization</li> </ul>
	■	■	■	■	■	■		■	■	<ul style="list-style-type: none"> <li>• Smooth rotation</li> <li>• Low cogging</li> <li>• Option: sensorless</li> </ul> <ul style="list-style-type: none"> <li>• High torque density</li> <li>• Medium inertia</li> </ul>
	■					■		■	■	<ul style="list-style-type: none"> <li>• Servo Electronics integrated into the motor</li> <li>• Use in total de-centralized automation structures</li> </ul> <ul style="list-style-type: none"> <li>• Reduced cabelling needs</li> <li>• CANopen / EtherCAT communication</li> </ul>
							■			<ul style="list-style-type: none"> <li>• Explosion proof design / ATEX</li> <li>• Flameproof by UL</li> </ul> <ul style="list-style-type: none"> <li>• Compact, robust</li> </ul>
										<ul style="list-style-type: none"> <li>• Smooth rotation</li> <li>• Low cogging</li> <li>• High accuracy balanced</li> </ul> <ul style="list-style-type: none"> <li>• Low vibration</li> <li>• High torque density</li> </ul>
									■	<ul style="list-style-type: none"> <li>• Hollow shaft</li> <li>• Frameless design</li> <li>• Smooth rotation</li> <li>• Low cogging</li> </ul> <ul style="list-style-type: none"> <li>• Very compact / reduced weight</li> <li>• Direct drive</li> </ul>
										<ul style="list-style-type: none"> <li>• Compact design</li> <li>• High speed</li> </ul> <ul style="list-style-type: none"> <li>• Hollow shaft</li> </ul>
									■	<ul style="list-style-type: none"> <li>• Watercooled</li> </ul> <ul style="list-style-type: none"> <li>• High speed (up to 50 000 min<sup>-1</sup>)</li> </ul>
	■	■			■					<ul style="list-style-type: none"> <li>• Hollow shaft</li> <li>• Frameless design</li> <li>• High torque direct drive (310 to 22 000 Nm)</li> </ul> <ul style="list-style-type: none"> <li>• High number of poles: 24 to 120</li> <li>• Direct machine integration</li> <li>• Direct drive</li> </ul>
										<ul style="list-style-type: none"> <li>• Robust</li> <li>• Simple 2-phase design</li> </ul>
				■						<ul style="list-style-type: none"> <li>• Compact design</li> <li>• High dynamic</li> </ul> <ul style="list-style-type: none"> <li>• Smooth at low speed</li> <li>• Long life time</li> </ul>
										<ul style="list-style-type: none"> <li>• Compact design</li> <li>• High dynamic</li> </ul> <ul style="list-style-type: none"> <li>• Low speed smoothness</li> <li>• Long life time</li> </ul>
					■					<ul style="list-style-type: none"> <li>• Ultra compact housing</li> <li>• No cogging</li> </ul> <ul style="list-style-type: none"> <li>• Low speed smoothness</li> <li>• Robust</li> </ul>

# Main Functions

Product		Description	Low Inertia	Low Cogging	High Speed	Direct Drive	Resolver	Encoder	Absolute Feedback	Sensorless Option	Brake Option	Kit Option	Hollow Shaft Option	Water Cooling Option
SMB / SMH		Low Inertia Servo Motor	■				■	■	■	■	■	■		
MB / MH		Servo Motor	■				■	■	■		■	■		
NX		Low Cogging Servo Motor		■			■	■	■	■	■			
Motornet DC		Integrated Motor/ Servo Drive	■				■	■	■		■			
EX		Explosion Proof Servo Motors		■			■	■	■		■			
NV		High Speed Servo Motor		■	■		■	■			■			
NK		Frameless Servo Motor		■		■	■	■	■		■	■		■
SKW		Frameless Spindle Motor	■		■	■	■	■			■	■	■	■
HKW		Frameless AC Brushless Motor	■		■	■	■	■				■	■	■
TK		Frameless Servo Motor		■		■		■	■			■	■	■
SY		2-Phase Stepper Motor		■				■		■				
RS		High Performance DC Servo Motors	■	■				■		■	■			
RX		DC Servo Motor		■				■		■	■			
AXEM		Pancake DC Servo Motor	■	■				■		■	■			

	Integrated Electronics	Customization Platform	Explosion Proof	Speed [min <sup>-1</sup> ]		Torque [Nm]	
		■		7500	■	17	■
		■	■	10000	■	285	■
		■		8900	■	64	■
	■			6000	■	8	■
			■	8000	■	35	■
	■			17000	■	11.5	■
				8000	■	72	■
				12000	■	24.4	■
				50000	■	1800	■
				835	■	21000	■
				800	■	13	■
	■			3000	■	13	■
	■			3000	■	8	■
				4800	■	20	■

# Low Inertia Servo Motors - SMB / SMH

## Overview

### Description

The SMB / SMH\* Series of highly-dynamic brushless servo motors have been design to combine the cutting-edge technology of Parker Hannifin products with an extremely high performance.

Thanks to the innovative “salient pole” technology, the motor’s dimensions are considerably reduced with significant advantages in terms of specific torque, overall dimensions and dynamic performance. Compared to traditional-technology brushless servo motors, the specific torque is approximately 30 % higher, overall dimensions are considerably reduced and, consequently rotor inertias are extremely low. Thanks to the high quality of Neodymium-Iron-Boron magnets, and also the encapsulation method used to fasten them to the shaft, the SMB/H motors can achieve very high acceleration and withstand high overloads without risk of demagnetisation or detachment of the magnets.

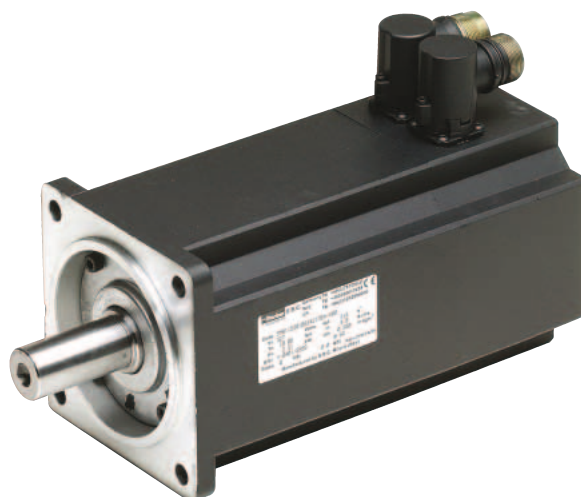
Specific applications for the SMB/H Series include all types especially those for the packaging and handling industry, and all those applications where very high dynamic performances and very low inertias are required.

### Features

- High number of feedback options
- Customised windings/voltages
- Increased Inertia option
- Multiple connection options

### Application

- Food, Pharma & Beverage
- Packaging Machines
- Material Forming
- Material Handling
- Factory Automation
- Life Science Diagnostic
- Automotive Industry / In-Plant
- Printing Industry
- Textile Machines
- Robotics
- Servo Hydraulic Pumps



### Technical Characteristics - Overview

<b>Motor Type</b>	Permanent magnets synchronous servomotor
<b>Rotor Design</b>	Rotor with surface rare earth magnets
<b>Number of poles</b>	10 for SM_ 42 8 for SM_ 60-82-100-115-142
<b>Power Range</b>	0.2 – 5.3 kW
<b>Torque Range</b>	0.35 – 17 Nm
<b>Speed Range</b>	0 – 7500 min <sup>-1</sup>
<b>Mounting</b>	Flange with smooth holes
<b>Shaft End</b>	Plain keyed shaft Plain smooth shaft (option)
<b>Cooling</b>	Natural ventilation
<b>Protection Level (IEC60034-5)</b>	IP64 IP65 (option)
<b>Feedback sensor</b>	Resolver Absolute Endat or Hiperface Incremental Encoder
<b>Other options</b>	Brake Thermal protection (PTC for SMB and KTY for SMH) Increased inertia
<b>Marking</b>	CE / UL
<b>Voltage Supply</b>	230 / 400 VAC other voltage uder request
<b>Temperature Class</b>	Class F
<b>Connections</b>	Connectors Flying cables Terminal Box (see table option for combination)

\* SMB: for Drives TPD-M, SLVD-N, TWIN-N, SPD-N, Hi-Drive  
SMH: for Drive Compax3

# Servo Motor - MB / MH

## Overview

### Description

The MB / MH <sup>(1)</sup> series caters for torques in the range of 0.2 to 285 Nm, speeds up to 10000 min<sup>-1</sup> and includes a total of 75 models available across 6 frame sizes. Thanks to the high quality and performance of the Neodymium-Iron-Boron magnets, and also the encapsulation method used to fasten them to the shaft, the MB / MH series of motors can achieve very high accelerations and withstand high overload without the risk of demagnetisation or detachment of the magnets.

Furthermore, shaft and flange size flexibility on all models provides the user with the possibility to optimise their motor selection for any given application.

Adequate mechanical over-sizing, low inertia in an extra-strong mechanism and a broad range of models permits the application of the MB / MH series in all fields where high dynamic performance and utmost reliability are crucial features.

Typical applications include any type of automatic machinery, especially in the product packaging and handling industry, and wherever the demand exists for axis speed and position synchronisation.

### Features

- Large set of feedback option
- Customization
- Increase inertia option
- ATEX certification for MB/MH105/145
- Options
  - Flying cables
  - Terminal box (power and resolver)
  - External encoder
  - Increased inertia
  - Brake
  - Feedback - resolver/incremental/ SinCos/absolute encoder
  - Thermal protection (PTC for MB and KTY for MH)
  - Second shaft

### Application

- Food, Pharma & Beverage
- Packaging Machines
- Material Forming
- Material Handling
- Factory Automation
- Life Science Diagnostic
- Automotive Industry / In-Plant
- Printing Industry
- Textile Machines
- Robotics
- Servo Hydraulic Pumps



### Technical Characteristics - Overview

<b>Motor Type</b>	Permanent magnets synchronous servo motor
<b>Rotor Design</b>	Rotor with surface rare earth magnets
<b>Power supply</b>	230 VAC or 400 VAC
<b>Operating temperature</b>	-10/+40 °C
<b>Number of poles</b>	4 for M_ 56-70 8 for M_ 105-145-205-265
<b>Power Range</b>	0.05...67 kW
<b>Torque Range</b>	0.2...285 Nm
<b>Speed Range</b>	0...10000 min <sup>-1</sup>
<b>Mounting</b>	Flange with smooth holes B14, B3 option
<b>Shaft End</b>	Plain keyed shaft Plain smooth shaft (option)
<b>Cooling</b>	Natural ventilation Self-ventilation (option for size 105-145-205) Forced Ventilation (option for size 105-145-205) Water cooled (option for size 145)
<b>Protection Level (IEC60034-5)</b>	IP64 IP65 (option)
<b>Feedback sensor</b>	Resolver Absolute Endat or Hiperface Incremental Encoder
<b>Voltage Supply</b>	230 / 400 VAC
<b>Temperature Class</b>	Class F
<b>Connections</b>	Connectors Flying cables Terminal Box (see table option for combination)
<b>Marking</b>	CE
<b>Standards In compliance with:</b>	73/23/CEE e 93/68/CEE EN60034-1 EN60034-5 EN60034-5/A1 EN60034-9 EN60034-14

<sup>(1)</sup> MB: for Drives TPD-M, SLVD-N, Twin-N, SPD-N, Hi-Drive / MH: for Drive Compax3

# Low Cogging Servo Motor - NX Series

## Overview

### Description

NX Series brushless servomotors from Parker combine exceptional precision and motion quality, high dynamic performance and very compact dimensions. A large set of torque / speed characteristics, options and customization possibilities are available, making NX Series servomotors the ideal solution for most servosystems applications.

### Advantages

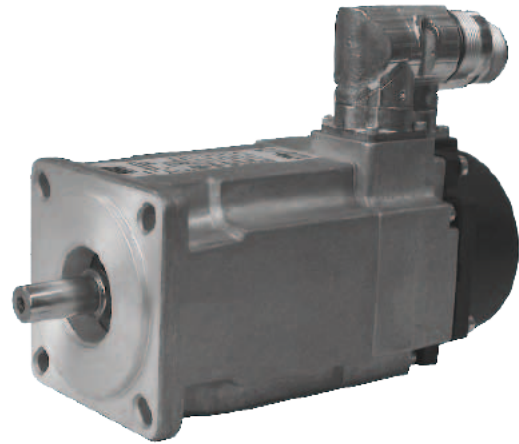
- High precision and motion quality
- High dynamic performance
- Compact robust
- Large set of options and customization possibilities
- CE and UL marking certification available

### Applications

- Life Science Diagnostic
- Tooling Machines
- Pulp & Paper
- Renewable Energy
- Aerospace
- Radiation Hardend
- Marine
- Continuous Process
- Mobile Hybrid Solutions

### Features

- **Mounting**
  - Flange with clearance holes
- **Shaft end**
  - Plain smooth shaft (standard)
  - Plain keyed shaft (option)
- **Cooling**
  - Natural ventilation
  - Forced ventilation (NX860V only)
- **Feedback sensors**
  - Resolver (standard)
  - Absolute EnDat, Hiperface, Encoder
  - Posivex (only with Digivex Motion)
- **Other options**
  - Brake
  - Thermal protection (PTC, Thermo Switch or KTY)



### Technical Characteristics - Overview

<b>Motor type</b>	Permanent magnet synchronous servomotors	
<b>Rotor design</b>	Rotor with concentrated-flux rare earth magnets	
<b>Number of poles</b>	10	
<b>Power range</b>	0.2 ... 13.7 kW	
<b>Torque range</b>	0.45 - 64 Nm	
<b>Speed range</b>	0 ... 7500 min <sup>-1</sup>	
<b>Protection level (IEC60034-5)</b>	<ul style="list-style-type: none"> <li>• IP64 (standard)</li> <li>• IP65 (option)</li> <li>• IP44 (ventilated version)</li> </ul>	
<b>Marking</b>	CE	UL
<b>Voltage supply</b>	230 / 400 VAC	230 / 480 VAC
<b>Temperature class (IEC60034-1)</b>	<ul style="list-style-type: none"> <li>• Class F</li> </ul>	<ul style="list-style-type: none"> <li>• Class A (NX1 – 2)</li> <li>• Class F (NX3 – 8)</li> </ul>
<b>Connections</b>	<ul style="list-style-type: none"> <li>• Connectors (standard)</li> <li>• Flying cables (option)</li> <li>• Terminal box (option)</li> </ul>	<ul style="list-style-type: none"> <li>• Connectors (NX1 – 8)</li> <li>• Terminal box (NX860V)</li> </ul>



# Explosion Proof Servo Motor - EX Series

## Overview

### Description

EX series is a range of permanent magnet servo motor designed for use in explosive atmospheres. Featuring robust explosion-proof housings, EX motors are capable of bearing internal explosions with no risks of propagation to the neighbouring environment. Two versions are available, conforming with North American or European safety standards. EX servomotors are characterized by excellent motion quality, great acceleration / deceleration capabilities, and high torque output over a wide speed range. Various winding variants and numerous options are available to offer maximum flexibility.



### Advantages

- Servo motors with explosion proof housings
- CE or UL versions available
- High dynamic performance
- Compact and robust
- Maintenance free

### Applications

- Food, Pharma & Beverage
- Material Forming
- Printing Industry
- Hazardous / Ex Environment

### Features

- **Mounting**  
Flange with clearance holes
- **Mechanical interface**
  - Solid smooth shaft (standard)
  - Solid shaft with key (option)
- **Feedback sensors**
  - 2 pole resolver (standard)
  - Absolute EnDat encoder (option)
  - Absolute Hiperface encoder (option)
- **Thermal protection**  
Thermoswitches and thermofuses integrated in the windings
- **Other options**  
Parking brake

## Technical Characteristics - Overview

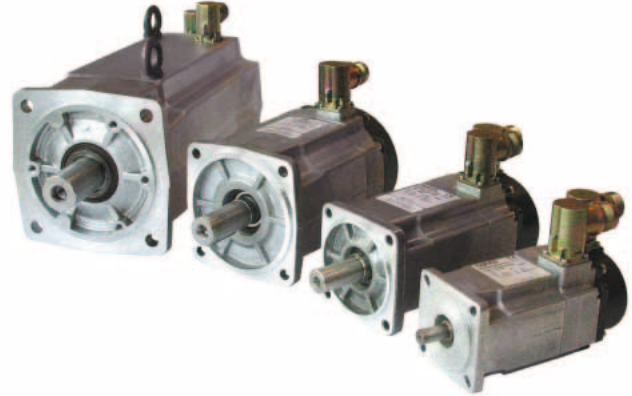
<b>Motor type</b>	Permanent magnet synchronous motors	
<b>Number of poles</b>	10	
<b>Torque range</b>	1.75 to 35 Nm	
<b>Speed range</b>	2000 to 8000 min <sup>-1</sup>	
<b>Marking</b>	CE	UL
<b>Voltage supply</b>	230 / 400 VAC	230 / 480 VAC
<b>Conformance</b>	ATEX 94/9/EC Directive	UL 674 standard: Electric Motors and Generators for use in Division 1 Hazardous (Classified) Locations
	EN60079-0, EN60079-1, EN61241-0 and EN61241-1 standards	
<b>Classification</b>	II 2G Ex d IIB T4 IP64 (Gas)	Class 1, Division 1, Group C & D
	II 2GD Ex d IIB T4 IP65 Ex tD A21 IP65 T135°C (Gas and dust)	
<b>Ingress protection level</b>	IP64 (standard)	IP65
	IP65 (option)	
<b>Connections</b>	Cable glands	Tapped holes

# High Speed Servo Motor - NV Series

## Overview

### Description

The NV series is a range of compact servomotors specially designed for high speed operation. NV motors are balanced with high accuracy to minimize the level of vibration and to increase their service life, making them particularly suitable for auxiliary spindle applications on machine tools. NV motors feature high dynamic performance and torque densities, while taking advantage of a large variety of options and customization possibilities. Available in kit version on request



### Advantages

- High-Speed capabilities, precise and accurate positioning, high dynamic performance
- Compact and robust
- Design flexibility

### Application

- Tooling Machines

### Features

- Mounting
  - Flange with clearance holes
- Mechanical interface
  - Solid smooth shaft
- Feedback sensor
  - 2 pole resolver (standard)
  - Absolute encoders: EnDat, Hiperface, Posivex (options)
  - Without sensor (on request)
- Connections
  - Connectors
  - Terminal box (fan cooled motors)
- Options
  - Thermal protection (PTC, Thermo Switch or KTY)

### Technical Characteristics - Overview

<b>Motor type</b>	Synchronous permanent magnet servomotors
<b>Poles number</b>	10
<b>Voltage supply</b>	230 VAC or 400 VAC
<b>Power range</b>	0.7 ... 12 kW
<b>Torque range</b>	0.4 ... 11.5 Nm
<b>Speed range</b>	7 000 ... 17 000 min <sup>-1</sup>
<b>Ingress protection level (IEC60034-5)</b>	<ul style="list-style-type: none"> <li>• IP64 (standard)</li> <li>• IP65 (option)</li> </ul>
<b>Cooling method</b>	<ul style="list-style-type: none"> <li>• Natural ventilation (standard)</li> <li>• Fan cooling (NV860V)</li> </ul>
<b>Temperature class (IEC60034-1)</b>	Class F

# Frameless Servo Motor - NK Series

## Overview

### Description

Servo motor kit is an innovative and comprehensive approach enabling the complete integration of the motor in a simplified mechanical system. This approach ensures that the size constraints of the machine are utilized to maximum effect. This delivers a more accurate, reliable and robust solution than traditional construction methods. A complete range of products is available to meet the design needs of many different mechanical systems in a host of different applications. Other more bespoke adaptations can be developed upon request.

### Advantages

- Compact footprint and reduced weight of the mechanical systems
- Reduced cost
- Direct Drive: accurate and robust mechanics
- Complete and optimized solution including sensor, cooling system and drive
- Integration assistance

### Applications

- Tooling Machines



### Technical Characteristics - Overview

Frameless servomotors	
Low speed torque	0.4 ... 42 Nm
Max. speed	8000 min <sup>-1</sup>
Max. constant power	0.25 ... 7.7 kW
Inertia	13 ... 9200 kgmm <sup>2</sup>
Weight	0.422 ... 17.445 kg
Frameless servomotors with water cooling	
Low speed torque	3.4 ... 72 Nm
Max. speed	15000 min <sup>-1</sup>
Max. constant power	4.7 ... 30 kW
Inertia	79 ... 9200 kgmm <sup>2</sup>
Weight	0.8885 ... 17.44 kg

# Frameless Spindle Servo Motor - SKW Series

## Overview

### Description

SK motors are compact and highly dynamic permanent magnet synchronous servomotors for spindle applications up to 20 kW. Delivered as separate components to be integrated into the mechanical structure of the machine, SK motors offer constant torque capabilities over a wide speed range.



### Features

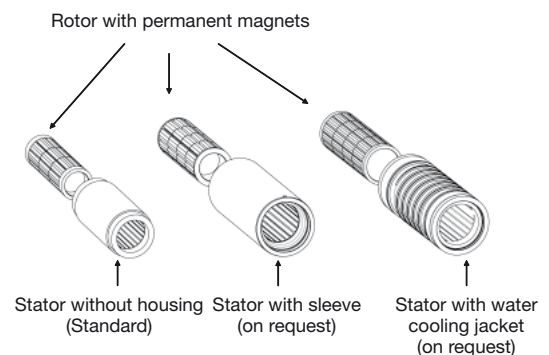
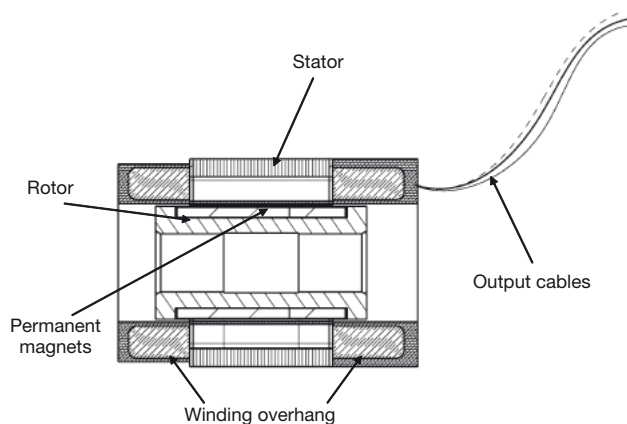
- **Parker SK Series Kit Spindle Motors include**
  - a rotor with permanent magnets which can, on request, be mounted on customer's shaft
  - a wound stator which can, on request, be designed with a cooling jacket or integrated into customer's mechanics
- **Kit solution leading to simplified mechanical designs**
- **High dynamic performance and power density: increased productivity and to reduced size compared to induction motors**
- **Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, no dilatation effect**
- **Increased internal diameter compared to other solutions: increased rigidity and greater capacity for bar stock handling in automatic lathes**
- **Compatibility with cost effective sensorless drives from Parker**

### Technical Characteristics - Overview

<b>Motor Type</b>	Permanent magnet synchronous motors
<b>Power supply</b>	3 ph - 400 VAC
<b>Power range</b>	up to 20 kW
<b>Speed range</b>	<ul style="list-style-type: none"> <li>• up to 12 000 min<sup>-1</sup></li> <li>• higher speeds on request</li> </ul>
<b>Insulation (CEI 60034-1)</b>	Class F
<b>Cooling</b>	<ul style="list-style-type: none"> <li>• Water cooling (standard)</li> <li>• Natural convection on request</li> </ul>
<b>Connections</b>	2 m flying cables without connectors
<b>Construction type</b>	Individual components (rotor, stator, feedback sensor)

### Applications

- Tooling Machines



# Frameless AC Brushless Motor - HKW Series

## Overview

### Description

HKW motors are high performance permanent magnet synchronous servomotors for spindle applications up to 230 kW.

Delivered as separate components to be integrated into the mechanical structure of the machine, HKW motors benefit from the use of field weakening, in order to achieve both high torque at slow speed, and very high maximum speed at constant power.

### Applications

- Tooling Machines

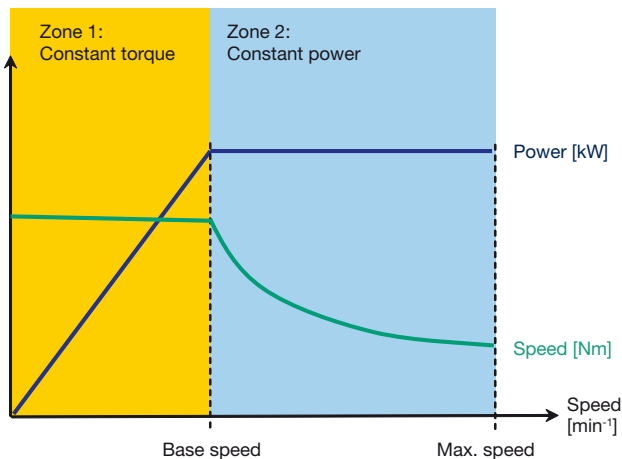
### Features

- Kit solution leading to simplified mechanical design
- Very high speed capabilities - up to 50 000 min<sup>-1</sup>
- Constant power operation up to 10 x base speed: no oversizing of the drive
- High dynamic performance and power density: increased productivity and reduced size compared to induction motors
- Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, no dilatation effect
- Compatibility with third-party drives
  - Siemens
  - Fanuc



### Technical Characteristics - Overview

<b>Motor type</b>	Permanent magnet synchronous motors
<b>Type of construction</b>	Individual components: rotor, stator and feedback sensor
<b>Power supply</b>	3 ph - 400 VAC
<b>Power range</b>	up to 230 kW
<b>Speed range</b>	up to 50 000 min <sup>-1</sup>
<b>Insulation of stator winding according to CEI 60034-1</b>	Class F
<b>Ambiant temperature</b>	40 °C maxi
<b>Altitude</b>	< 1000 m
<b>Cooling</b>	<ul style="list-style-type: none"> <li>• Water cooling (standard)</li> <li>• Natural convection on request</li> </ul>
<b>Stator design variants</b>	<ul style="list-style-type: none"> <li>• Stator without housing (standard)</li> <li>• Stator housing on request, with or without water cooling circuit</li> </ul>
<b>Rotor design variants</b>	<ul style="list-style-type: none"> <li>• Rotor without hub (standard)</li> <li>• Rotor with hub on request</li> </ul>
<b>Connections</b>	2 m flying cables without connectors



# Frameless Servo Motor - TK Series

## Overview

### Description

Delivered as separate rotor and stator to be integrated into the mechanical structure of the machine, TK series torque motors lead to simplified designs, reduced costs, and increased accuracy.

TK series is distinguished from existing solutions by their exceptional robustness, making them particularly suited to harsh environments.

Benefiting from Parker's unprecedented know-how in the design and manufacture of torque motors, TK series can also be delivered as complete sub-assemblies including frame, cooling system, bearings, feedback sensor...

### Advantages

- Simplified mechanical designs
- Reduced sizes and weights
- Reduced maintenance
- Increased rigidity and accuracy

### Applications

- Material Forming
- Material Handling
- Tooling Machines
- Pulp & Paper

### Features

- **Mounting**  
Tapped holes on rotor and stator periphery
- **Cooling**  
Water cooling (standard) or natural convection (available with derating, consult us)
- **Thermal protection**  
PTC and KTY probes fitted into the stator winding
- **Feedback sensor**  
Chosen depending upon mechanical conditions, required accuracy and drive specifics: resolver, sin/cos encoder...
- **Electrical connections**  
Flying cables without connectors, 2 m length



### Technical Characteristics - Overview

<b>Shaft-heights</b>	130 - 200 - 315 - 400 mm
<b>Power supply</b>	400 VAC three-phased
<b>Torque</b>	up to 21000 Nm
<b>Stator winding's insulation according to CEI 60034-1</b>	Class F

# Stepper Motor - SY

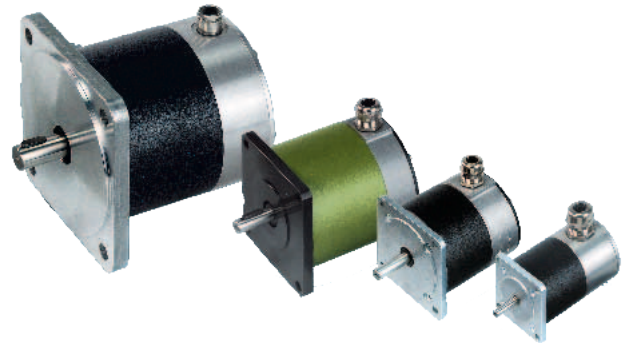
## Overview

### Description

The stepper motors of the SY-series are two-phase steppers and are designed for industrial applications. Flying leads and terminal box versions are available and encoders can be ordered as optional items.

### Features

- 1.8 degree - 2 phase hybrid stepper motors
- Nema 23 , Nema 34 & Nema 42 frame sizes with 1-, 2- and 3-stack motor lengths
- Rated at IP55 as standard
- Option for: IP68 on terminal box version
- Option for: 200 or 500 line encoder
- Option for: Vacuum preparation to 10<sup>-6</sup> Torr
- Holding brake available
- Rear shaft options
- Terminal box or flying leads
- Maximum holding torque 0.45 - 13 Nm
- Current per phase: 4.2 - 10 A (rms)
- Inductance per phase: 1 - 2.7 mH
- Rotor inertias: 12.5 - 1200 kgmm<sup>2</sup>



### Technical Characteristics - Overview

Type	SY56	SY87	SY107
Maximum holding torque [Nm]	0.45...1.25	1.8...5.4	9...13
Current per phase (parallel) [Arms]	4.2...6.5	4.2...8.4	8.0...10
Inductance per phase [mH]	1.0...1.2	1.6...1.7	2.4...2.7
Rotor inertia [kgmm <sup>2</sup> ]	12.5...32.5	65...195	800...1200
Axial bearing loading [N]	80	180	400
Radial bearing loading [N]	150	280	650
Weight [kg]	0.6...1.35	1.7...2.85	7.2...9.8

# High Performance DC Servo Motor - RS Series

## Overview

### Description

Using high energy magnets, RS DC motors combined with RTS drives are particularly suitable for applications which require a very compact solution or a high dynamic level.

### Characteristics and advantages

- High performance characteristics
- Excellent low-speed functioning
- High compactness
- Very long service life
- Rare earth magnets
- Tacho, encoder resolver and brake in option



### Features

- **Shaft**
  - RS1 to RS4: Smooth full shaft
  - RS5 and RS6: Full keyed shaft
- **2<sup>nd</sup> Shaft end**
  - RS1 to RS3: possibility to mount standard tacho or encoder
  - RS5 and RS6: possibility to mount standard tacho, adaptation for encoder mounting in option
- **Output cables 1 m without connector**
- **Options**
  - Brake (RS2 to RS6)
  - Tachometer
  - Adaptation 2<sup>nd</sup> shaft end for encoder mounting (RS5 and RS6)

### Technical Characteristics - Overview

<b>Motor type</b>	DC motors with rare earth magnets
<b>Number of poles</b>	4
<b>Protection degree</b>	<ul style="list-style-type: none"> <li>• RS1 to RS4: IP40</li> <li>• RS5 and RS6: IP54</li> </ul>
<b>Insulation</b>	Class F
<b>Torque at low speed</b>	0.05...13 Nm
<b>Permanent current at low speed</b>	1.5 ... 28 A
<b>Rated voltage</b>	20.7...105 V
<b>Rated speed</b>	2000...3000 min <sup>-1</sup>
<b>Rotor inertia</b>	2.4...8300 kgmm <sup>2</sup>



# Low-Cost DC Servo Motor - RX Series

## Overview

### Description

The RX DC motors, combined with RTS drives, provide an economical solution for any servo applications. They are particularly suitable for low power systems in clean atmospheres.

### Advantages

- Excellent price/performance ratio
- Very low torque modulation
- High quality construction
- Very long service life
- 2nd shaft end for tacho and encoder mounting
- Tacho and brake as option

### Applications

- Factory Automation
- Life Science Diagnostic

### Features

- **Shaft**
  - RX1 and RX3: Smooth full shaft
  - RX5 and RX6: Full keyed shaft
- **2<sup>nd</sup> Shaft end**
  - RX1 and RX3: possibility to mount standard tacho or encoder
  - RX5 and RX6: possibility to mount standard tacho, adaptation for encoder mounting in option
- **Output cables 1 m without connector**
- **Options**
  - Brake
  - Tachometer
  - Adaptation 2<sup>nd</sup> shaft end for encoder mounting (RX5 and RX6)



### Technical Characteristics - Overview

<b>Motor type</b>	CC Motors with rare ferrite magnets
<b>Protection degree</b>	<ul style="list-style-type: none"> <li>• RX1 and RX3: IP40</li> <li>• RX5 and RX6: IP54</li> </ul>
<b>Insulation</b>	Class F

# Pancake DC Servo Motor - AXEM Series

## Overview

### Description

The AXEM motor, with more than 2 million units produced, is one of the most widespread servo motors in the world. With its disk rotor, composed solely of copper and insulator the Axem motor achieves high dynamics and excellent regulation of motion at low speed, as well as silent and vibration-free functioning. It is robust, efficient, and low maintenance.

### Advantages

- Very low speed modulation
- Exceptional regulation at low speed
- High dynamic characteristics  
low rotor inertia
- Silent and vibration-free functioning
- Maintenance free
- Disk rotor
- Protection: IP44  
IP20 for ventilated models
- Class F insulation

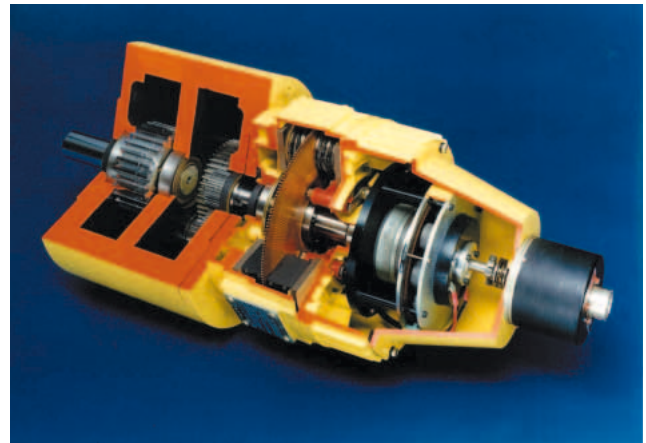
### Applications

- Factory Automation
- Life Science Diagnostic



### Technical Characteristics - Overview

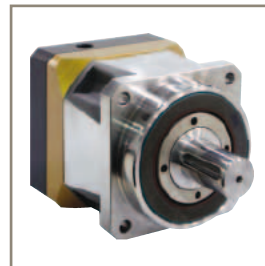
<b>Nominal torque</b>	0.14...19.2 Nm
<b>Nominal current</b>	6.4...44 A
<b>Nominal voltage</b>	14...178 V
<b>Nominal speed</b>	3000, 4800 min <sup>-1</sup>
<b>Inertia</b>	29...7400 kgmm <sup>2</sup>



# Planetary Gearboxes

Precision Gearboxes PS / RS Series

Economic Gearboxes PE Series



PR / RS



PE



# Precision Planetary Gearboxes PS / RS Series

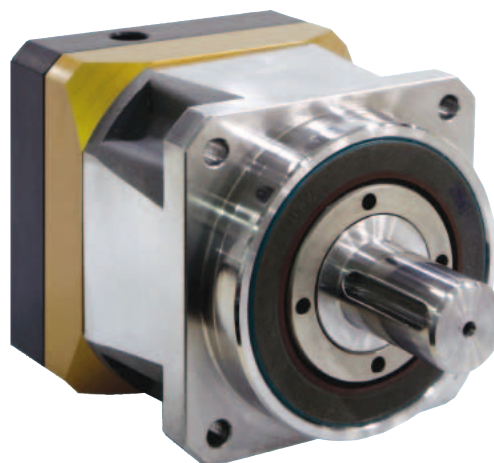
## Overview

### Description

The Helical Planetary Gearboxes incorporate design enhancements to provide superior performance for the most demanding high performance applications. The PS / RS gearboxes incorporate dual angular contact bearings providing higher radial load capacities while maintaining high input speeds. The design enhancements comprise among others, needle bearings to ensure a longer lifetime. Internal design changes and optimized gearing geometries provide the basis for the universal mounting position.

Common mounting kits across multiple gear head lines promote quicker deliveries and ease of mounting to any servo motor.

Mounting to any servo motor is as easy as A-B-C (adapter, bushing, collet).



### Features

- **Higher radial load capacity:**  
Angular contact output bearings
- **Increased service life:**  
Needle bearings
- **Life time lubrication**
- **Universal Mounting Kits:**  
Quicker deliveries and easier mounting
- **High nominal torque and low backlash:**  
Helical planetary gearing
- **High stiffness:** Integrated planetary gear head
- **High wear resistance:**  
Plasma Nitriding heat treating

### Technical Characteristics - Overview

Series	Unit	PS	RS
<b>Gear geometry</b>		Helical Planetary	Helical Planetary/ Spur Bevel
<b>Type</b>		In-Line	Right Angle
<b>Frame sizes</b>	[mm]	60...115	
<b>Maximum input speed</b>	[min <sup>-1</sup> ]	up to 6000	
<b>Nominal torque</b>	[Nm]	27...230	13...220
<b>Radial force</b>	[N]	>7500	
<b>Life</b>	[h]	20 000	
<b>Backlash</b>	[arcmin]	up to <3	up to <4

# Economical Planetary Gearheads - PE

## Overview

### Description

The PLE is the perfect economy alternative to the PS gearbox. This planetary gearbox was especially designed for all applications where a considerably low backlash is not of vital importance.

### Features

- Excellent price/performance ratio
- Input speeds up to 8000 min<sup>-1</sup>
- Low backlash
- High output torques
- PCS-2 system
- High efficiency (96 %)
- 22 ratios  $i=3...512$
- Low noise
- High quality (ISO 9001)
- Any fitting position possible
- Simple motor fitting
- Life time lubrication
- Direction of rotation equidirectional
- Balanced motor pinion



### Technical Characteristics Overview

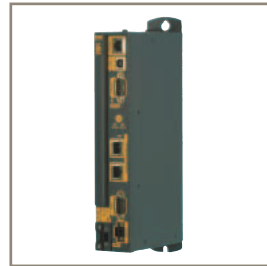
Features	Unit	Division
Geometry		Planetary Gearheads
Type		Inline
Drives sizes	[mm]	60, 90, 115
Maximum input speed	[min <sup>-1</sup> ]	up to 13000
Nominal torque	[Nm]	260
Radial force	[N]	up to 2400
Service life	[h]	30000
Backlash	[arcmin]	<8

# Controller Products

Controller

HMI

I/Os



ACR9600



Interact Xpress HMI



*power* PLmC



Parker I/Os





# IEC61131-3 Controller with Powerlink - ACR9640

## Overview

### Description

The ACR EPL family is Parker's premier standalone motion controller family, capable of controlling up to 16 axes of motion. Connectivity and communication features give the ACR EPL flexibility for use in a wide variety of machine architectures. The ACR EPL excels as a standalone machine and motion controller, interfacing with a PC or working alongside a PLC. A powerful DSP makes the ACR EPL an outstanding multitasking servo controller. The ACR EPL includes easy-to-use project-development tools that enable fast, efficient application creation and maintenance. The ACR EPL is the solution for standalone applications requiring industry-leading performance in an affordable and easy-to-use package. The ACR9640 is a compact, cost-effective, EPL-only controller including Ethernet, USB and an integrated 2-port hub for ETHERNET Powerlink connections. I/O can be added using CANopen or by utilizing the inputs and outputs on the EPL drives.

ETHERNET Powerlink expands the ACR EPL family by adding a real-time motion controller over standard Ethernet hardware. The high speed digital communications network enhances machine performance and configuration possibilities while reducing set-up time and installation complexity.

### Features

- Control of 16 ETHERNET Powerlink drives
- 10/100 Base-T Ethernet
- USB 2.0
- EtherNet/IP compatibility
- CANopen expansion I/O
- CE (EMC & LVD), UL and cUL Recognized
- Multitasking of up to 24 simultaneous programs
- Interpolation of 8 axes in any combination
- IEC61131-3 programming with structured text, continuous function chart and ladder diagram



### Technical Characteristics - Overview

	ACR9640
<b>Power supply</b>	24 VDC, 1A
<b>Processor</b>	32 bit DSP @150 MFLOPS/75 Hz
<b>User memory</b>	2 MB flash-based
<b>Motion bus</b>	ETHERNET Powerlink: 16 axes
<b>Operating system</b>	Multi-tasking RTOS
<b>Ethernet</b>	TCP/UDP, ETHERNET/IP
<b>CANopen</b>	DS401 protocol

# IEC61131-3 Controller with CANopen - C3 powerPLmC-E30

## Overview

### Description

Compax3 *powerPLmC* is a control system for combined PLC, motion and visualization tasks. CANopen combines the bus components with the CANopen master "Compax3 *powerPLmC*". The power range of commands based IEC61131-3 is available for control tasks.

Programming takes place in the "CoDeSys" high-power programming system via Ethernet. The implementation of the motion tasks is supported by PLCopen function modules.



### Features

- **32 Bit - RISC - Processor:** <100 µs for 1000 IL commands
- **CANopen multi-axis communication**
- **Simple integration of the servo axes via the Drive Interface**
- **Ethernet:**
  - Programming interface,
  - Remote diagnostics via Internet/Intranet
  - Process visualization,
  - System integration
- **Programmable based on IEC61131-3 / PLCopen**
- **CoDeSys V2.3 development tool**
- **PLC functionality**
  - 4 real-time task types: free-running, cyclical, event-triggered (internal or external events)
  - Debugging, single step, watch function, log
  - Online program change
- **PLC extensions offered by Parker:**
  - POP: Parker Operator Panel (MMI) - from the 4-line display to the color touch screen
  - PIO: Parker digital and analogue inputs/outputs - modular extensions
  - InteractXpress (HMI)

### Technical Characteristics - Overview

<b>Platform</b>	32 bit RISC processor 200 MHz
<b>Program memory</b>	128MB Compact Flash card
<b>Data memory SDRAM / Data memory non volatile</b>	16 MB / 32 kB (Retain)
<b>Controller features</b>	
<b>Processing time</b>	<100 µs for 1000 IL rows
<b>Minimal cycle time</b>	Typical 1 ms
<b>Programming and debugging</b>	
<b>Programming system</b>	CoDeSys V2.3
<b>Programming languages</b>	IL, SFC, FBP, ST, LD, CFC
<b>Visualization</b>	
<b>Locally on the programming system</b>	Yes
<b>Web Server</b>	Yes
<b>OPC Server</b>	Yes
<b>Interfaces</b>	
<b>general</b>	2x RS232
<b>Fieldbus options</b>	<ul style="list-style-type: none"> <li>• 2 x CANopen Master</li> <li>• DP - SLAVE (Profibus)</li> <li>• Ethernet                             <ul style="list-style-type: none"> <li>• 10/100 MBauds</li> <li>• TCP / UDP</li> <li>• Modbus TCP/IP Server</li> </ul> </li> </ul>
<b>Digital and analog inputs/outputs option</b>	Any (depending on the number of axes) via PIO and CANopen

# Touchscreen HMI with Integrated Webserver - Interact Xpress

## Overview

### Description

#### Distributed HMI in a durable and affordable package

XPR PowerStation line offers a hardware/software solution that simplifies and cost-reduces distributed HMI applications. Available with a 6", 8", 10", 15" TFT panel mount touchscreen or new non-display system. XPR models are designed to optimize the performance, storage and connectivity features of Interact Xpress™ HMI software.

This CE-based workstations features the latest embedded processor technology supporting fanless operation, CompactFlash® storage, USB, serial and 100Base-T Ethernet connectivity.

#### Take full advantage of the web for; HMI design, publishing, runtime and support

Interact Xpress fully leverages the wide availability of web browsing software to enable distributed HMI software, remote support and application sharing on the internet and IP networks. Interact Xpress HMI applications are developed, edited, published and run in an HMI that is a web server, allowing users and OEMs to easily publish upgrades and applications to any global location with an internet connection and a web browser.

Interact Xpress combines a rich, graphical runtime interface with HMI development tools that can be accessed from either the HMI panel or any PC running Internet Explorer®.

### Features

- Fanless operation
- More than 40 communication drivers
- Complex animation capabilities
- Alarm logging
- Sending email on alarms
- Recipes
- Real time trending
- PDF documents viewing
- Multi language support
- Screen templates



### Technical Characteristics - Overview

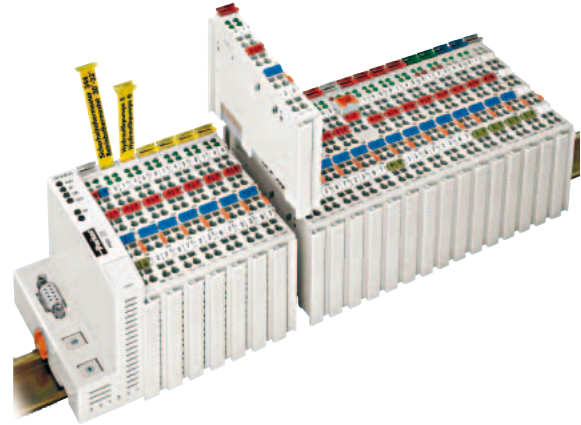
<b>Display</b>	262 144 color TFT
<b>Storage options</b>	128 MB CompactFlash
<b>Operating system</b>	Windows CE
<b>Ports</b>	<ul style="list-style-type: none"><li>• 2 USB</li><li>• RS232/422/485</li><li>• 10/100 Base-T Ethernet</li></ul>
<b>Power supply</b>	24 VDC

# Modular I/O - System - PIO

## Overview

### Description

Parker Hannifin's modular expandable bus terminal system uses electronic devices to capture a wide variety of control signals from field devices. Connections to the field level can be implemented quickly and reliably with PIO. PIO offers the convenience of exceptionally simple installation. The individual modules can be installed and removed without any tools. Different modules can be combined with each other within the bus terminal system. Gold-plated contacts guarantee reliable connections between the individual modules. A conducting ground contact adds additional safety.



### Features

- Fieldbus independent layout
- Easy to extend with additional modules
- Exceptionally compact design
- Intrinsically-safe contacts
- Maintenance free
- Mixed voltages can be combined
- Great flexibility ensures optimal adaptability in different applications
- Integrated input filter
- Opto-isolation
- Suitable for copper cables from 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>
- Error and status display (LED)
- Access options for simple signal test
- Short-circuit proof inputs
- Options for clear, unambiguous identification

### Technical Characteristics - Overview

PIO - Parker I/O-System	
Bus terminals	Digital and analog input and output terminals
Fieldbus coupler (Standard and ECO version)	<ul style="list-style-type: none"> <li>• CANopen</li> <li>• PROFIBUS</li> <li>• DeviceNet</li> <li>• ETHERNET TCP/IP</li> </ul>
Current via power contacts	max. 10 A
Voltage isolation	500 V System / Supply
Operating temperature	0...55 °C
Enclosure rating	IP20
Resistance to vibrations	in accordance with IEC 60068-2-6
Resistance to impact	in accordance with IEC 60068-2-27
EMC Interference immunity	in accordance with EN 50082-2 (96)
Interference emission	in accordance with EN 50081-2 (94)
International Standards	CE, UL 508





# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- CO<sup>2</sup> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL,  
IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

### US Product Information Centre

Toll-free number: 1-800-27 27 537

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