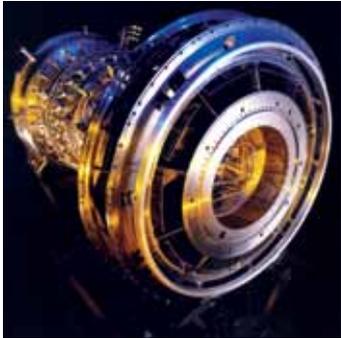




aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



## MGV Series

High-Speed Motors for Test Rigs



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.

## High-Speed Motors for Test Rigs - MGV

<b>Overview .....</b>	<b>5</b>
<b>Drawings.....</b>	<b>6</b>
<b>Drive Associations .....</b>	<b>7</b>
<b>Dimensions .....</b>	<b>9</b>
<b>Order Code.....</b>	<b>10</b>

# 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

# High-Speed Motors for Test Rigs - MGV

## Overview

### Description

MGV Series Servomotors are innovative direct drive solutions specially designed for applications that require high speeds and low inertias.

MGV motors can be found in many automotive or aeronautical component test rigs (starters, pumps, alternators, gearboxes...).

Highly responsive with exceptional dynamic performance, MGV motors are ideally suited to the needs of simulation testing: speed in urban cycle or motor racing, speed acyclism of an internal combustion engine, etc...

### Features

- High maximum speeds avoid the need for mechanical gearing
- Low inertia allows very fast acceleration/deceleration
- Constant power operation above nominal speed removes the requirement to oversize the drive
- Water cooling ensures compact size and low noise operation
- High dynamic capabilities allow the operating conditions of the tested product to be accurately reproduced

### Applikations

- **Engine testing**
  - Lorries
  - Cars
  - Motorbikes
- **Components testing**
  - Gearboxes
  - Differentials
  - Bearings
  - Belts
  - ...



### Technical Characteristics - Overview

<b>Power</b>	Up to 230 kW
<b>Speed</b>	Up to 45 000 min <sup>-1</sup>
<b>Field weakening</b>	Depending on the capabilities of the drive
<b>Mounting*</b>	Flange B3
<b>Protection degree</b>	IP40 as standard
<b>Cooling method</b>	Water jacket
<b>Supply voltage</b>	400 VAC
<b>Connections</b>	<ul style="list-style-type: none"> <li>• 1.2 m flying cable for power and thermal probe</li> <li>• Connector for feedback sensor signal</li> </ul>
<b>Stator winding isolation</b>	Class F in accordance with EN60034-1 (overmolding)
<b>Thermal protection</b>	1 PTC 150 probe as standard
<b>Rotor balancing</b>	G1 quality
<b>Shaft end</b>	Solid smooth shaft as standard
<b>Bearings</b>	Steel or ceramic depending on speed and load
<b>Feedback sensor</b>	2 poles resolver

\* **Note:** the motors are designed for horizontal operation. In case of vertical installation, please contact us.

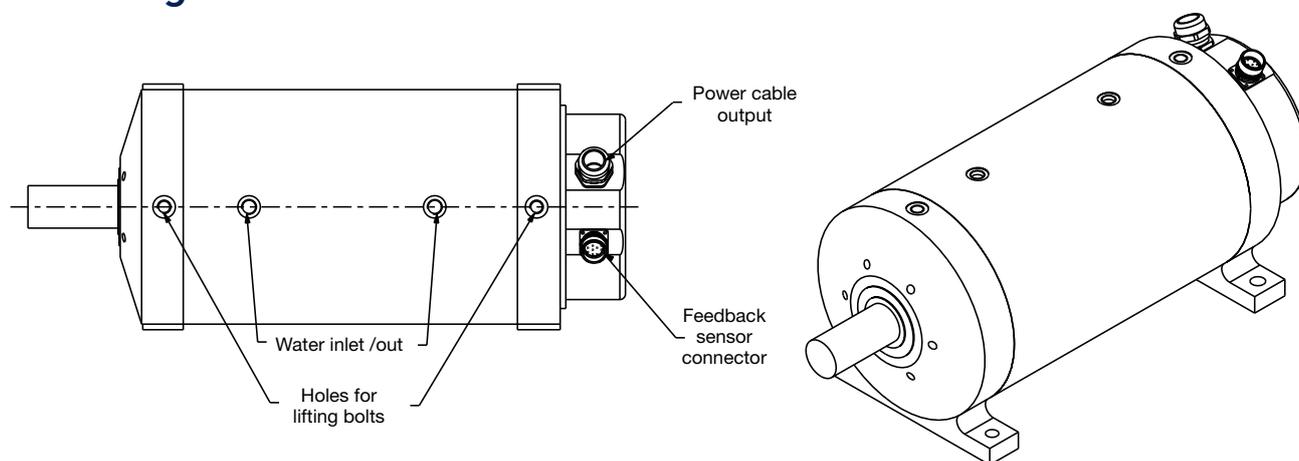
MGV Series are permanent magnet brushless servomotors integrated into a compact water cooled frame.

MGV Series servomotors are especially suitable for Automotive and Aerospace components testing, where they offer a large number of advantages over traditional fan ventilated induction motors:

- **Increased maximum speeds**
- **Removal of mechanical gearing**
- **Reduced size**
- **Reduced noise**

A large number of winding variants are available, meeting any desired torque / speed characteristics up to 230 kW.

## Drawings



## Drive Associations

Motor	Drive	S1 Power P S1 [kW]	Low speed torque S1 M <sub>0</sub> [Nm]	Base speed N <sub>b</sub> [min <sup>-1</sup> ]	Max. speed N [min <sup>-1</sup> ]	Permanent current at low speed I <sub>0</sub> [A <sub>rms</sub> ]	Inertia J [kgmm <sup>2</sup> ]
MGV430BAL	Drive 25/51 - 400	10	7.3	13 100	45 000	24.7	890
MGV430BAI	Drive 35/79 - 400	15.6	6.8	21 900	45 000	35	890
MGV635CAF	Drive 37/57 - 400	15.6	20	7 450	30 000	36.6	3520
MGV635CAD	Drive 55/85 - 400	25	20	11 900	30 000	54.8	3520
MGV840CAR	Drive 24/37 - 400	10	68	1 410	24 000	23.2	18 600
MGV840CAH	Drive 73/114 - 400	32	68	4 500	24 000	72.6	18 600
MGV840CAF	Drive 94/151 - 400	44	66	6 370	24 000	93.8	18 600
MGV840CAD	Drive 123/227 - 400	63	58	10 300	24 000	123	18 600
MGV950CAC	Drive 222/456 - 400	105	200	5 010	20 000	252	63 000
MGV950CAX	Drive 454/821 - 400	175	200	8 350	20 000	454	63 000
MGV970CBX	Drive 542/661 - 400	230	390	5 630	12 000	542	86 600
MGVA50DAC	Drive 154/191 - 400	67	480	1 330	12 000	154	292 000
MGVA50DAB	Drive 230/287 - 400	101	480	2 010	12 000	230	292 000
MGVA50DAA	Drive 439/598 - 400	200	460	4 150	12 000	439	292 000
MGVA50DBB	Drive 470/660 - 400	195	620	3 000	12 000	465.2	292 000

## Global solution

### Easy integration

Parker Hiross has been designing and manufacturing equipment for industrial water cooling since 1964. Using closed circuits, pollution and waste water are eliminated and efficiency is improved, resulting in energy savings. Hyperchill products can be used to cool the MGV motor enabling you to benefit from a completed integrated Parker solution. We can also help you in the selection, assembly and use of a torque measuring flange that meets your needs.



### Benefits

- A complete solution from a single supplier
- Maximum reliability
- An optimized system
- Low noise system (deported system)

## Drive Associations

### Complete and powerful AFE 4Q solution

When using Parker's drives in an AFE configuration, harmonic distortion is reduced to (THD < 3%) in accordance with IEEE519 and allows power to be fed back onto the supply grid.

In addition, MGV motors benefit from the use of field-weakening which enable them to deliver high torque at low speed as well as constant power from nominal up to maximum speed.

This removes the need to oversize the drive.

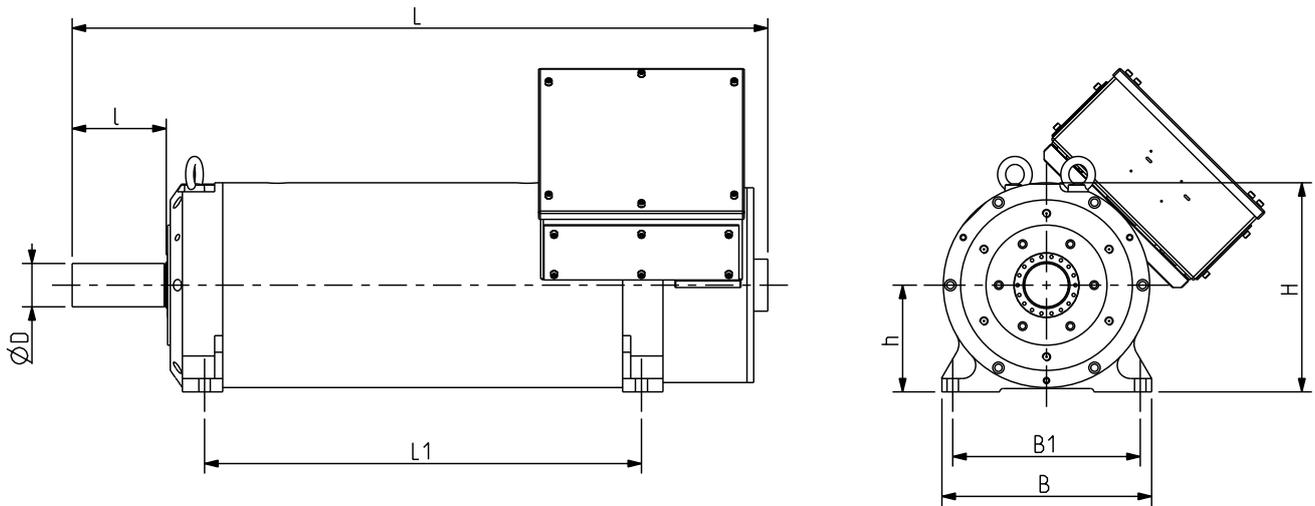
Motor	AC890 drive	S1 power P S1 [kW]	Low speed torque S1 M <sub>o</sub> [Nm]	Base speed N <sub>b</sub> [min <sup>-1</sup> ]	Max. speed N [min <sup>-1</sup> ]
MGV430BAL	890SD-53230SC	10	7.3	13000	27900
MGV430BAI	890SD-532450D	16	6.8	22000	30000
MGV635CAF	890SD-532450D	16	20	7500	15800
MGV635CAD	890SD-532590D	24	18	13000	20000
MGV635CAD	890SD-432730E	25	20	12000	16000
MGV840CAP	890SD-532450D	16	68	2300	4510
MGV840CAH	890SD-432870E	32	68	4500	9010
MGV840CAF	890SD-433105F	44	66	6400	12000
MGV840CAD	890SD-433145F	63	58	10000	16000
MGV950CAC	890SD-433316G	110	200	5000	10200
MGV950CAX	890SD-433420H	160	170	8900	16000
MGV950CAX	890SD-433520H	180	200	8400	16000
MGV970CBX	890SD-433520H	220	350	6000	10900
MGVA50DAC	890SD-433145F	66	450	1400	2500
MGVA50DAB	890SD-433250G	100	480	2000	3750
MGVA50DAA	890SD-433520H	200	460	4200	7510
MGVA50DBB	890SD-433520H	200	620	3000	5780



Motor	Digivex drive	S1 power P S1 [kW]	Low speed torque S1 M <sub>o</sub> [Nm]	Base speed N <sub>b</sub> [min <sup>-1</sup> ]	Max. speed N [min <sup>-1</sup> ]
MGV430BAL	DIGIVEX 32/64	9.7	6.9	13000	45000
MGV430BAI	DIGIVEX 50/80	16	6.8	22000	45000
MGV635CAF	DIGIVEX 50/80	16	19	7600	30000
MGV635CAD	DIGIVEX 100/120	25	20	12000	30000
MGV840CAP	DIGIVEX 50/80	16	66	2300	24000
MGV840CAH	DIGIVEX 100/120	32	66	4600	24000
MGV840CAF	DIGIVEX 150	44	66	6400	24000
MGV840CAD	DIGIVEX 300	63	58	10000	24000
MGVA50DAC	DIGIVEX 300	67	480	1300	12000



## Dimensions



Motor	Dimensions [mm]								Weight [kg]
	L	L1	B	B1	H	h	l	ØD	
<b>MGV430</b>	376	225	150	125	150	80	50	24	33
<b>MGV635</b>	444	275	160	140	170	90	58	32	50
<b>MGV840</b>	531	334	220	190	217	112	80	38	100
<b>MGV950</b>	1050	496	290	254	295	160	110	48	250
<b>MGV970</b>	1250	658	290	254	295	160	110	42	270
<b>MGVA50</b>	1300	650	312	277	313	160	140	65	400

## Order Code

### MGV Series

	1	2	3	4	5	6	7	8	9
Order example	<b>MGV</b>	<b>840</b>	<b>CAE</b>	<b>A</b>	<b>B3</b>	<b>L</b>	<b>R</b>	<b>1</b>	<b>000</b>

<b>1</b>	<b>Product series</b>	
	<b>MGV</b>	Water cooling high speed motors
<b>2</b>	<b>Size</b>	
	<b>430</b>	see "Drive Associations" tables
	<b>635</b>	
	<b>840</b>	
	...	
<b>3</b>	<b>Torque/Speed characteristics</b>	
	<b>BAL</b>	see "Drive Associations" tables
	<b>BAI</b>	
	<b>CAF</b>	
	...	
<b>4</b>	<b>Feedback sensor</b>	
	<b>A</b>	Resolver
	<b>K</b>	Sin/cos encoder (option)
<b>5</b>	<b>Mounting</b>	
	<b>B3</b>	Horizontal, Foot mounting (standard)
<b>6</b>	<b>Design</b>	
	<b>L</b>	High speed design
	<b>H</b>	Very high speed design
	<b>X</b>	Ultra high speed design
<b>7</b>	<b>Fix Code</b>	
	<b>R</b>	
<b>8</b>	<b>Electrical connections</b>	
	<b>1</b>	Power out cables 1.2 m, PTC and connector for encoder signals (standard)
	<b>6</b>	Terminal box (option)
<b>9</b>	<b>Interface</b>	
	<b>000</b>	Standard motor
		Other code: customer specificity

# 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<sub>2</sub> 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

# Parker Worldwide

## Europe, Middle East, Africa

**AE – United Arab Emirates,**  
Dubai

Tel: +971 4 8127100  
parker.me@parker.com

**AT – Austria,** Wiener Neustadt

Tel: +43 (0)2622 23501-0  
parker.austria@parker.com

**AT – Eastern Europe,** Wiener  
Neustadt

Tel: +43 (0)2622 23501 900  
parker.easteurope@parker.com

**AZ – Azerbaijan,** Baku

Tel: +994 50 2233 458  
parker.azerbaijan@parker.com

**BE/LU – Belgium,** Nivelles

Tel: +32 (0)67 280 900  
parker.belgium@parker.com

**BY – Belarus,** Minsk

Tel: +375 17 209 9399  
parker.belarus@parker.com

**CH – Switzerland,** Etoy

Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ – Czech Republic,** Klecany

Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE – Germany,** Kaarst

Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK – Denmark,** Ballerup

Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES – Spain,** Madrid

Tel: +34 902 330 001  
parker.spain@parker.com

**FI – Finland,** Vantaa

Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR – France,** Contamine s/Arve

Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR – Greece,** Athens

Tel: +30 210 933 6450  
parker.greece@parker.com

**HU – Hungary,** Budapest

Tel: +36 1 220 4155  
parker.hungary@parker.com

**IE – Ireland,** Dublin

Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IT – Italy,** Corsico (MI)

Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ – Kazakhstan,** Almaty

Tel: +7 7272 505 800  
parker.easteurope@parker.com

**NL – The Netherlands,** Oldenzaal

Tel: +31 (0)541 585 000  
parker.nl@parker.com

**NO – Norway,** Asker

Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL – Poland,** Warsaw

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT – Portugal,** Leca da Palmeira

Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO – Romania,** Bucharest

Tel: +40 21 252 1382  
parker.romania@parker.com

**RU – Russia,** Moscow

Tel: +7 495 645-2156  
parker.russia@parker.com

**SE – Sweden,** Spånga

Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK – Slovakia,** Banská Bystrica

Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL – Slovenia,** Novo Mesto

Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR – Turkey,** Istanbul

Tel: +90 216 4997081  
parker.turkey@parker.com

**UA – Ukraine,** Kiev

Tel +380 44 494 2731  
parker.ukraine@parker.com

**UK – United Kingdom,** Warwick

Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA – South Africa,** Kempton Park

Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA – Canada,** Milton, Ontario

Tel: +1 905 693 3000

**US – USA,** Cleveland

Tel: +1 216 896 3000

## Asia Pacific

**AU – Australia,** Castle Hill

Tel: +61 (0)2-9634 7777

**CN – China,** Shanghai

Tel: +86 21 2899 5000

**HK – Hong Kong**

Tel: +852 2428 8008

**IN – India,** Mumbai

Tel: +91 22 6513 7081-85

**JP – Japan,** Tokyo

Tel: +81 (0)3 6408 3901

**KR – South Korea,** Seoul

Tel: +82 2 559 0400

**MY – Malaysia,** Shah Alam

Tel: +60 3 7849 0800

**NZ – New Zealand,** Mt Wellington

Tel: +64 9 574 1744

**SG – Singapore**

Tel: +65 6887 6300

**TH – Thailand,** Bangkok

Tel: +662 186 7000-99

**TW – Taiwan,** Taipei

Tel: +886 2 2298 8987

## South America

**AR – Argentina,** Buenos Aires

Tel: +54 3327 44 4129

**BR – Brazil,** Sao Jose dos Campos

Tel: +55 800 727 5374

**CL – Chile,** Santiago

Tel: +56 2 623 1216

**MX – Mexico,** Apodaca

Tel: +52 81 8156 6000

We reserve the right to make technical changes. The data correspond to the technical state at the time of printing.  
© 2011 Parker Hannifin Corporation.  
All rights reserved.

192-063018N1

January 2012



### EMEA Product Information Centre

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

www.parker.com

Your local authorized Parker distributor