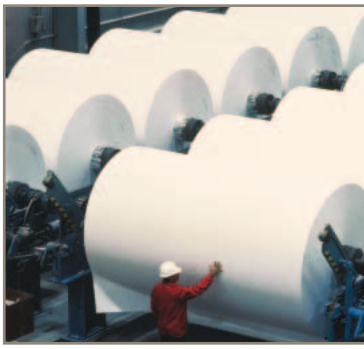
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Analogue DC Drives

506/507/508, 512C and 514C Series



Parker

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.

Analogue DC Drives

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.

Electromechanical Worldwide Manufacturing Locations

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

Asia
Wuxi, China
Chennai, India

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

Offenburg, Germany

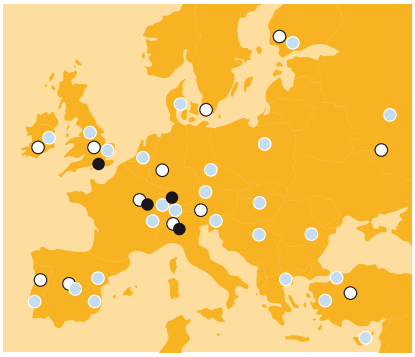
Local Manufacturing and Support in Europe

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

Milan, Italy

Littlehampton, UK



Electromechanical Manufacturing
Parker Sales Offices
Distributors

Dijon, France

Analogue DC Drives

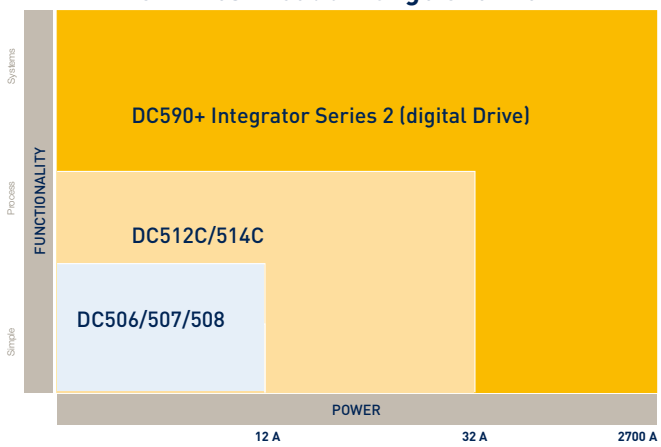
Up to 9 kW

Overview

Global DC Drive Solutions to Maximise Flexibility and Increase performance

With more than 30 years of worldwide application experience, Parker assists its customers in improving productivity and reducing energy consumption with a comprehensive, robust range of DC drives and drive systems. Parker DC drive products are sold, supported and serviced worldwide, with solutions from simple speed control to complex multi-motor coordinated process control.

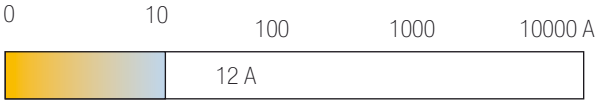
DC Drives Product Range Overview



Single Phase Analogue Non-Isolated Converter: 506/507/508

Economical, compact torque and speed control of permanent magnet or shunt wound DC motors. Selectable between 110 VAC or 230 VAC single phase supply. Tachometer or armature voltage feedback, 3, 6, or 12 A armature options.
Typical applications include:

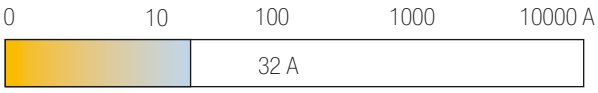
- Conveyors, basic speed control
- Packaging machinery



Single Phase Two Quadrant Analogue Isolated Converter: 512C

The 512C provides effective torque and speed control of permanent magnet or wound field DC motors. Extremely linear speed and current loops in an isolated package, ideal for single or multiple motor applications up to 32 A, 9 kW.
Typical applications include:

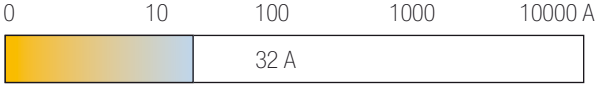
- Centrifugal fans and pumps
- Extruders and mixers
- Small paper converting machines



Single Phase Four Quadrant Analogue Isolated Converter: 514C

The 514C offers full four quadrant regenerative control of permanent magnet or wound field DC motors. Ideal for applications requiring accurate or rapid deceleration of high inertia loads. Effective for single or multiple motor applications to 32 A, 9 kW.
Typical applications include:

- Machine tool spindles
- Wire drawing machines
- Winders/Reelers



Analogue DC Drives - 506/507/508 Series

Up to 2 kW

Description

The 506, 507 and 508 series drives break new ground in cost-effective DC motor control. Available in 3, 6 or 12 A armature ratings, the feature packed minimum footprint design is ideal for speed or torque control of permanent magnet or shunt wound DC motors fed from single phase supplies.

Typical applications include:

- Conveyors, Basic speed control
- Packaging machinery

Features

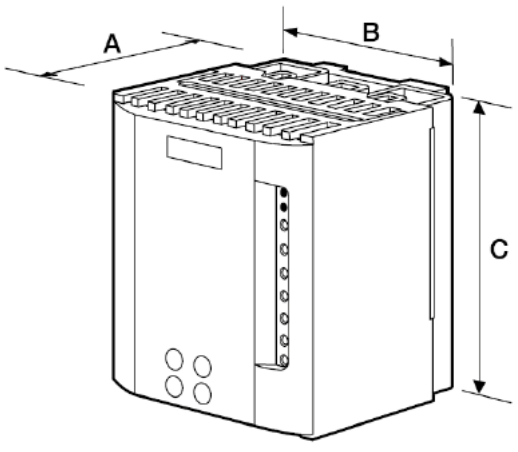
- Low cost high featured design
- IP20 protected covers
- Compact footprint and DIN rail mounting
- Selectable 110 VAC or 230 VAC supply
- Selectable tacho or armature voltage feedback

Standards

- CE Marked to EN50178 (Safety, Low Voltage Directive)
- CE Marked to EN61800-3 (EMC Directive) with external filter
- NRTL Listed to US Standard UL508C
- NRTL listed to Canadian standard C22.2#14

Dimensions

Type	A	B	C	Weight [kg]
506	80	105	140	0.59
507	80	105	140	0.59
508	90	105	140	0.70



Dimensions [mm]

Technical Characteristics - Overview

Supply voltage	110...120 VAC, or 220...240 VAC ±10 % single phase 50...60 Hz ±5 %
Ambient	0...45 °C, Altitude 1000 m
Installation/diagnostics	
Environment	IP20 Protection
Mounting	DIN rail
Control	Speed or torque
Output	2 A VDC field control
Detection	15 s stall detect
Protection	Electronic overcurrent protection
Signal	Drive healthy and zero speed
Inputs	Main and trim setpoint inputs
Ramps	Independent acceleration and deceleration ramps
Diagnostics	Via LED
Potentiometer adjustments	
Speed	maximum / minimum
Current limit	
Speed stability	
Time	acceleration (1...15 s) deceleration (1...15 s)
IR compensation	
Switch selectable	
Supply voltage	110/120 VAC or 220/240 VAC
Speed Feedback	Tachogenerator / armature voltage feedback
Calibration	Speed and Current

Order Code	Armature Current [ADC]	Supply Voltage [VAC]	Armature Voltage [VDC]	Field Voltage [VDC]
506-00-20-00	0...3	110...120	90	100
	0...3	220...240	180	210
507-00-20-00	0...6	110...120	90	100
	0...6	220...240	180	210
508-00-20-00	0...12	110...120	90	100
	0...12	220...240	180	210

Analogue DC Drives - 512C Series

Up to 9 kW

Description

Isolated control circuitry, a host of user facilities and extremely linear control loop make the 512C ideal for single motor or multi-drive low power applications. Designed for use on single phase supplies, the 512C is suitable for controlling permanent magnet or field wound DC motors in speed or torque control.

Typical applications include:

- Centrifugal fans and pumps
- Extruders and mixers
- Small paper converting machines

Features

- Fully isolated control circuits
- 110 V ... 415 V supply selection by jumpers
- CE marked and EMC compliant
- Multiple input speed and current setpoints
- Zero speed and drive healthy outputs
- Extremely linear control loops

Standards

- CE Marked to EN50178 (Safety, Low Voltage Directive)
- CE Marked to EN61800-3 (EMC Directive) with external filter
- NRTL Listed to US Standard UL508C
- NRTL listed to Canadian standard C22.2#14

Technical Characteristics - Overview

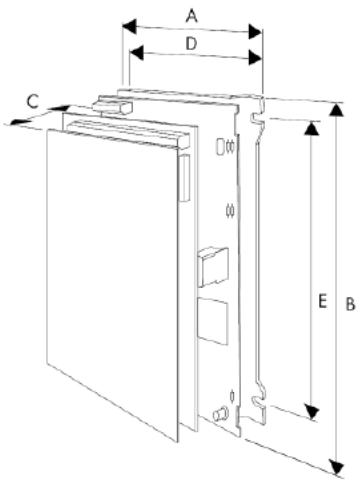
Supply Voltage	110...115 V, 220...240 V or 380...415 V ±10 %; 50...60 Hz ±5 %; single phase; selection by switch
Ambient	0...40°C, Altitude max 1000 m
Overload	150 % for 60 s
Installation/diagnostics	
Voltage selection	Jumper selection of supply voltage
Control	Speed or torque
Output	3A DC field control
Diagnostics	Power on, stall detect and overcurrent LEDs
Protection	Electronic overcurrent protection
Speed output	Buffered 10 V, 10 mA
Current output	Buffered 7.5 V, 10 mA
Ramp output	Buffered (master/slave)
Reference supply	10 Vcc (10 mA)
Inputs	Total setpoint Off
Drive Outputs	Drive Healthy
Output speed / setpoint	Zero Speed / zero setpoint
Potentiometer adjustments	
Speed	maximum / minimum
Current Limit	
Speed stability	
Time	acceleration (1...15 s) deceleration (1...15 s)
IR Compensation	

Supply Voltage [VAC]	Armature Voltage [VDC]	Field Voltage [VDC]
110	90	100
240	180	210
415	320	360

Order Code	Armature Current [ADC]
512C-04-00-00	4
512C-08-00-00	8
512C-16-00-00	16
512C-32-00-00	32

Dimensions

Type	A	B	C	D	E	Weight [kg]
512C-04, -08 or -16	160	240	85	148	210	1.5/1.6/1.6
512C-32	160	240	123	148	210	2.9



Dimensions [mm]

Analogue DC Drives - 514C Series

Up to 9 kW

Description

The regenerative 514C DC thyristor drive offers full four quadrant control of DC motors from single phase supplies. As such it is ideal for applications involving overhauling loads or where rapid and accurate deceleration is required. Together with the non-regenerative 512C they offer the perfect solution for lower power single motor and multi-drive applications.

Typical applications include:

- Machine tool spindles
- Wire drawing machines
- Winders/Reelers

Features

- Four quadrant regenerative control
- 110...500 VAC AC supply selection by jumpers
- CE marked and EMC compliant
- AC power contactor logic and supply
- Many system features
- Extremely linear control loops

User Facilities

- Four quafrant regenerative control
- Seperate AC auxiliary supply
- AC supply contactor logic
- Torque or speed control
- Three setpoint and torque limit inputs
- Buffered analogue current output (10 V, 10 mA)
- +10 V and -10 V analogue reference supplies
- +24 V digital reference supply
- Drive healthy output
- Buffered speed & ramp output (10 V, 10 mA)
- Buffered total setpoint output (10 V, 10 mA)
- Zero speed / zero setpoint output

Potentiometer Adjustments

- Maximum speed / Current limit
- Acceleration time and Deceleration time (0...40 s)
- IR Compensation
- Speed loop gain - proportional and integral
- Current gain - proportional and integral
- Zero speed offset or threshold

Standards

- CE Marked to EN50178 (Safety, Low Voltage Directive)
- CE Marked to EN61800-3 (EMC Directive) with external filter
- NRTL Listed to US Standard UL508C
- NRTL listed to Canadian standard C22.2#14

Technical Characteristics - Overview

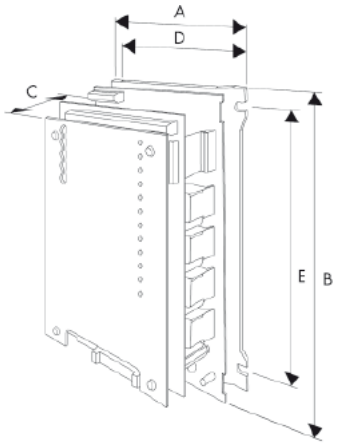
Supply voltage	110...500 V +10 % user selectable
Auxiliary supply	110/120 or 220/240 V +10 % user selectable Sinlge phase 50...60 Hz +10 %
Ambient	0...40 °C - Altitude: up to 1000 m without derating
Overload	150 % for 60 s

Supply Voltage [VAC]	Armature Voltage [VDC]	Field Voltage [VDC]
110	80	100
240	180	210
415-500	320	360

Order Code	Armature Current [ADC]
514C-04-00-00	4
514C-08-00-00	8
514C-16-00-00	16
514C-32-00-00	32

Dimensions

Type	A	B	C	D	E	Weight [kg]
514C-04, -08	160	240	90	148	210	1.6
514C-16, -32	160	240	130	148	210	3.0



Dimensions [mm]

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

Aftermarket services
Commercial transports
Engines
General & business aviation
Helicopters
Launch vehicles
Military aircraft
Missiles
Power generation
Regional transports
Unmanned aerial vehicles

Key Products

Control systems & actuation products
Engine systems & components
Fluid conveyance systems & components
Fluid metering, delivery & atomization devices
Fuel systems & components
Fuel tank inerting systems
Hydraulic systems & components
Thermal management
Wheels & brakes

Climate Control

Key Markets

Agriculture
Air conditioning
Construction Machinery
Food & beverage
Industrial machinery
Life sciences
Oil & gas
Precision cooling
Process
Refrigeration
Transportation

Key Products

Accumulators
Advanced actuators
CO_2 controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves

Electromechanical

Key Markets

Aerospace
Factory automation
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, gantry robots & slides
Electrohydrostatic actuation systems
Electromechanical actuation systems
Human machine interface
Linear motors
Stepper motors, servo motors, drives & controls
Structural extrusions

Filtration

Key Markets

Aerospace
Food & beverage
Industrial plant & equipment
Life sciences
Marine
Mobile equipment
Oil & gas
Power generation & renewable energy
Process
Transportation
Water Purification

Key Products

Analytical gas generators
Compressed air filters & dryers
Engine air, coolant, fuel & oil filtration systems
Fluid condition monitoring systems
Hydraulic & lubrication filters
Hydrogen, nitrogen & zero air generators
Instrumentation filters
Membrane & fiber filters
Microfiltration
Sterile air filtration
Water desalination & purification filters & systems

Fluid & Gas Handling

Key Markets

Aerial lift
Agriculture
Bulk chemical handling
Construction machinery
Food & beverage
Fuel & gas delivery
Industrial machinery
Life sciences
Marine
Mining
Mobile
Oil & gas
Renewable energy
Transportation

Key Products

Check valves
Connectors for low pressure fluid conveyance
Deep sea umbilicals
Diagnostic equipment
Hose couplings
Industrial hose
Mooring systems & power cables
PTFE hose & tubing
Quick couplings
Rubber & thermoplastic hose
Tube fittings & adapters
Tubing & plastic fittings

Hydraulics

Key Markets

Aerial lift
Agriculture
Alternative energy
Construction machinery
Forestry
Industrial machinery
Machine tools
Marine
Material handling
Mining
Oil & gas
Power generation
Refuse vehicles
Renewable energy
Truck hydraulics
Turf equipment

Key Products

Accumulators
Cartridge valves
Electrohydraulic actuators
Human machine interfaces
Hybrid drives
Hydraulic cylinders
Hydraulic motors & pumps
Hydraulic systems
Hydraulic valves & controls
Hydrostatic steering
Integrated hydraulic circuits
Power take-offs
Power units
Rotary actuators
Sensors

Pneumatics

Key Markets

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

Key Products

Air preparation
Brass fittings & valves
Manifolds
Pneumatic accessories
Pneumatic actuators & grippers
Pneumatic valves & controls
Quick disconnects
Rotary actuators
Rubber & thermoplastic hose & couplings
Structural extrusions
Thermoplastic tubing & fittings
Vacuum generators, cups & sensors

Process Control

Key Markets

Alternative fuels
Biopharmaceuticals
Chemical & refining
Food & beverage
Marine & shipbuilding
Medical & dental
Microelectronics
Nuclear Power
Offshore oil exploration
Oil & gas
Pharmaceuticals
Power generation
Pulp & paper
Steel
Water/wastewater

Key Products

Analytical Instruments
Analytical sample conditioning products & systems
Chemical injection fittings & valves
Fluoropolymer chemical delivery fittings, valves & pumps
High purity gas delivery fittings, valves, regulators & digital flow controllers
Industrial mass flow meters/ controllers
Permanent no-weld tube fittings
Precision industrial regulators & flow controllers
Process control double block & bleeds
Process control fittings, valves, regulators & manifold valves

Sealing & Shielding

Key Markets

Aerospace
Chemical processing
Consumer
Fluid power
General industrial
Information technology
Life sciences
Microelectronics
Military
Oil & gas
Power generation
Renewable energy
Telecommunications
Transportation

Key Products

Dynamic seals
Elastomeric o-rings
Electro-medical instrument design & assembly
EMI shielding
Extruded & precision-cut, fabricated elastomeric seals
High temperature metal seals
Homogeneous & inserted elastomeric shapes
Medical device fabrication & assembly
Metal & plastic retained composite seals
Shielded optical windows
Silicone tubing & extrusions
Thermal management
Vibration dampening

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

BG – Bulgaria, Sofia
Tel: +359 2 980 1344
parker.bulgaria@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, Budaörs
Tel: +36 23 885 470
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 7273 561 000
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, Toluca
Tel: +52 72 2275 4200

192-302010N1 January 2014

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