



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



2/2 & 3/2 Solenoid Valves

High Pressure Pneumatic Applications - 40 bar



ENGINEERING YOUR SUCCESS.

2/2 & 3/2 Solenoid Valves for High Pressure pneumatic applications - 40 bar

Product offering:

- 2/2 valves and 3/2 way valves - pilot operated
- Pipe mounting (G 1/2- 3/4) or sub-base mounting
- 1.5 (2) - 40 bar
- Normally open or closed
- Internal or external pilot pressure supply

Customer Value Proposition:

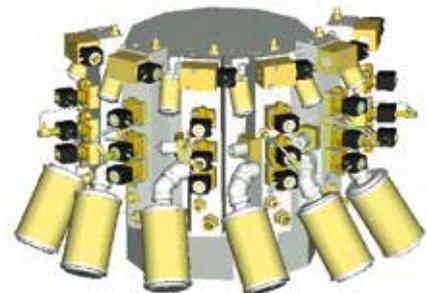
- Safety of operation
- Reliability
- Response time stability
- Repeatability
- No leakage
- Integrated non return valve (421version)

The use of high pressure gases became a necessity in the new technologies developed during the last years.

The control of these fluids can be done through the solenoid valves specially designed by Parker Lucifer for high pressure applications (maximum 50 bar).

The **life expectancy of several millions** of cycles, with **response time of few milliseconds**, allows the use of these valves on intensive applications and on high technology machines, as the plastic bottle blowing machines, or the laser cutting machines.

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs. Please contact your agent for more information.



Application Example

Plastic Bottle Blowing

Three 2-way solenoid valves permit to control the required blowing functions to produce plastic bottles.

In a first phase the N.O. valves (322 H 35) and N.C. valves (421 H 35) are energised. The pressure in the circuit is therefore established to a pre-determined level (2 to 15 bar). During the same time the 3/2 valve (331 B 31) maintains the mould closed with a 40 bar pressure.

In a second phase, the N.C. valve 321H35 is energised and the pressure increases up to 40 bar. Independently from the position of the 421H35 valve, the 321H35 valve assures by design that the 40 bar pressure is maintained and cannot go back into the "low pressure" circuit.

In a third phase, the N.O. valve 322H35 is de-energised and permits the discharge of the circuit down to 0 bar.

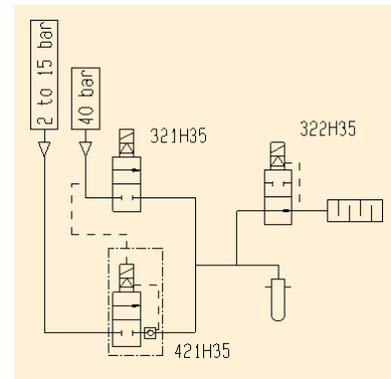
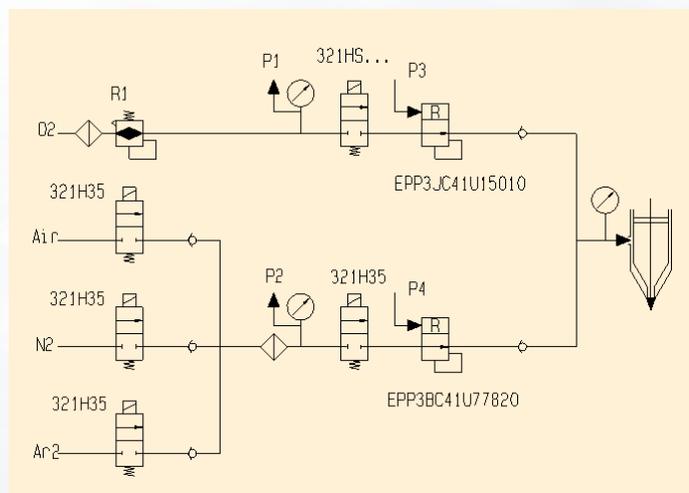


Fig.1
Three valves (F type) are grouped on a common block to assure the above mentioned operation.

Laser Cutting

For this application, few 2/2 Normally closed valves control the gas inlet, in order to assure the different phases and options of the laser cutting. The valves 321H35 are used for inert gases as Air, Argon, Nitrogen. A special model 321HS... is used for oxygen applications.

Electronic pressure regulators type EPP... regulate the pressure from 0 to 20 bar, according to cutting conditions.



Application Example

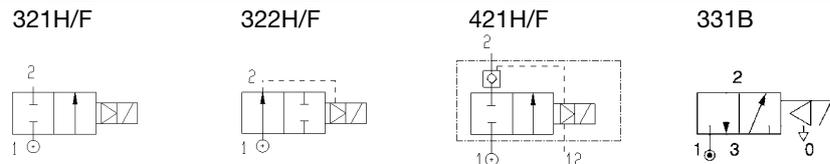
Main Technical Specifications

Function

2/2 pilot operated: Normally closed (with internal pilot pressure) 321H/F type
 Normally closed (with external pilot pressure) 421H/F type
 Normally open (with internal pilot pressure) 322H/F type

3/2 pilot operated: normally closed (with internal pressure) 331B type

ISO diagram



Mounting

- For direct pipe mounting G 1/2" or 3/4" (2/2 Valve type H); G 1/4 (3/2 Valve type B)
- For sub-base mounting (type F)

Nominal diameter

15 mm (type H), 14 mm (type F)

Pressures

For the version with external pilot pressure, the pilot pressure must always be higher than the controlled pressure

External Leakage

0 Ncc/min.

Internal Leakage

< 20 Ncc/min.

Fluids

Dry lubricated or non lubricated air, Argon, Nitrogen.
 Oxygen on request

Proof pressure

200 bar

Filtration

< 1 µm

Life expectancy

> 2 10⁶ cycles (dry and clean air)
 > 8 10⁶ cycles (lubricated air)

Temperatures

Ambient / fluid mini: -10 °C
 Ambient / fluid maxi: +50 °C

Materials specifications

Body/cover:	2/2 Valves: Brass - 3/2 Valves: Aluminium
Pilot seals :	PUR
Main seals :	FKM (Viton®) with isolating diaphragm from PUR
Tube and plunger :	Stainless steel
Coil :	Encapsulation from PA66 + 30% fiber glass

Options

Δp maxi 50 bar on request

Response Time

Depends on application

Mounting Position

Indifferent

Specials

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs.
 Please contact your agent for more information.

Port size	Orifice	Flow Factor (l/min)	Admissible differential pressure (bar)			Fluid Temp.	Seal Material (C°)	Reference Nos				Dim. Ref. N°
			Min.	Max. DC	Max. AC			Gaz Max.	Global Ref. No.	Valve	Housing	

2/2 Valves - Direct Pipe Mounting

Normally CLOSED

1/2"	15	3150	1.5	40	40	50	FKM	-	321H35	2995	see table	1
3/4"	15	3550	1.5	40	40	50	FKM	-	321H36	2995	see table	1

2/2 Valves - Direct Pipe Mounting

Normally OPEN

1/2"	15	3150	1.5	40	40	50	FKM	-	322H35	2995	see table	2
3/4"	15	3550	1.5	40	40	50	FKM	-	322H36	2995	see table	2

2/2 Valves - Direct Pipe Mounting

External Pilot

Normally CLOSED

1/2"	15	3150	2	40	40	50	FKM	-	421H35	2995	see table	3
3/4"	15	3550	2	40	40	50	FKM	-	421H36	2995	see table	3

2/2 Valves - Sub-base Mounting

Normally CLOSED

-	14	2100	1.5	40	40	50	FKM	-	321F35	2995	see table	4
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2/2 Valves - Sub-base Mounting

Normally OPEN

-	14	2100	1.5	40	40	50	FKM	-	322F35	2995	see table	5
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2/2 Valves - Sub-base Mounting

External Pilot

Normally CLOSED

-	14	2100	2	40	40	50	FKM	-	421F35	2995	see table	6
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3/2 Valves - Direct Pipe Mounting

Normally CLOSED

1/4"	8	750	1	40	40	50	PUR	-	331B31	2995	see table	7
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3/2 Valves - Sub-base Mounting

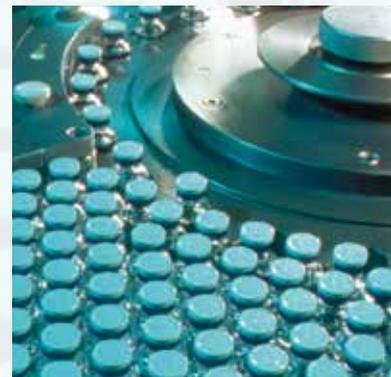
Normally CLOSED

-	8	750	1	40	40	50	PUR	-	331F31	2995	see table	-
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Available electrical parts:

You will find standard available coil details on the next pages. Due to the innovative sleeve design it is also possible to use all listed Parker valves with special solutions, like water tight (IP67) or explosion proof designs.

Please consult your local agent for more details.



Electrical Parts Availability

32 mm Electrical Parts Availability

481865 Series - Standard Coil Mono-Frequency, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only. This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

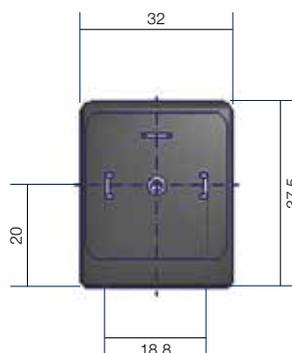
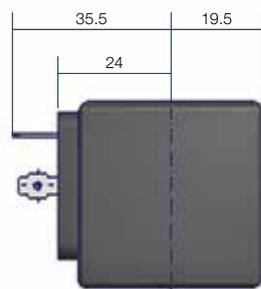
Voltage V	Power Consumption	Reference	Approvals	Ambient Temperature	Class of insulation	Dimensional Drawing
24/50	8 W	481865A2	-	-40°C to +50°C	F Class 155°C	8
48/50	8 W	481865A4	-	-40°C to +50°C	F Class 155°C	8
110/50	8 W	481865A5	-	-40°C to +50°C	F Class 155°C	8
220-230/50	8 W	4818653D	-	-40°C to +50°C	F Class 155°C	8
380/50	8 W	481865A9	-	-40°C to +50°C	F Class 155°C	8
24/60	8 W	481865B2	-	-40°C to +50°C	F Class 155°C	8
230/60	8 W	481865J3	-	-40°C to +50°C	F Class 155°C	8
115/60	8 W	481865K8	-	-40°C to +50°C	F Class 155°C	8
12 DC	9 W	481865C1	-	-40°C to +50°C	F Class 155°C	8
24 DC	9 W	481865C2	-	-40°C to +50°C	F Class 155°C	8
48 DC	9 W	481865C4	-	-40°C to +50°C	F Class 155°C	8
110V DC	9 W	481865C5	-	-40°C to +50°C	F Class 155°C	8

Voltage

Tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC)

Duty: Continuous duty coil (100%ED)

Weight: 130 g (without plug)



32 mm Electrical Parts Availability

483510 Series - Standard Bi-Frequency Coil, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

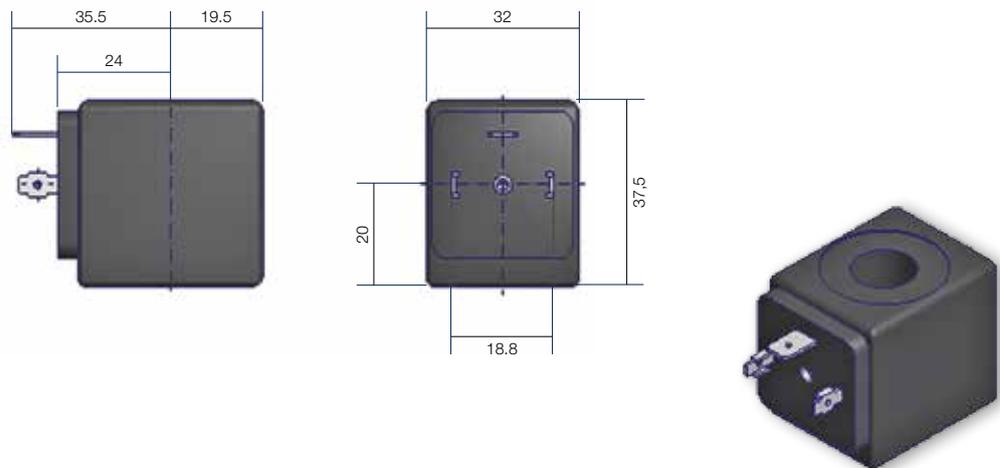
Voltage V	Power Consumption	Reference	Approvals	Ambient Temperature	Class of insulation	Dimensional Drawing
12/50-60	9 W	4835101W	-	-40°C to +50°C	F Class 155°C	8
24/50-60	9 W	483510P0	-	-40°C to +50°C	F Class 155°C	8
48/50-60	9 W	483510S4	-	-40°C to +50°C	F Class 155°C	8
110-115/50 120/60	9 W	483510S5	-	-40°C to +50°C	F Class 155°C	8
220-240/50 240/60	9 W	483510S6	-	-40°C to +50°C	F Class 155°C	8

Voltage

Tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC)

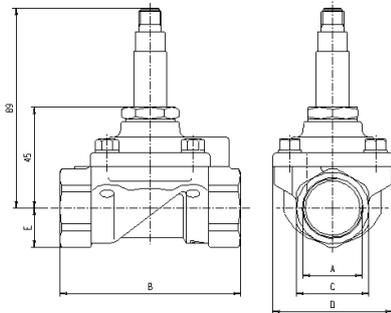
Duty Continuous duty coil (100%ED)

Weight: 130 g (without plug)

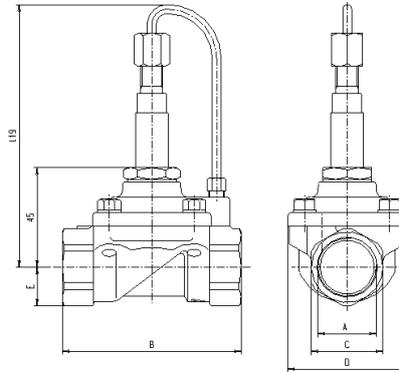


Dimensions

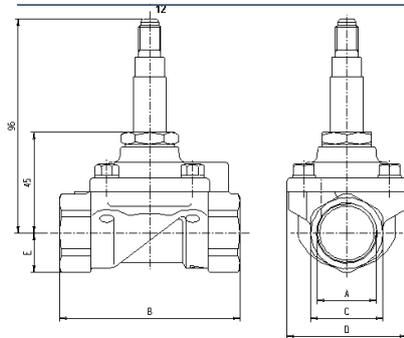
Dimensions Reference N° 1



Dimensions Reference N° 2

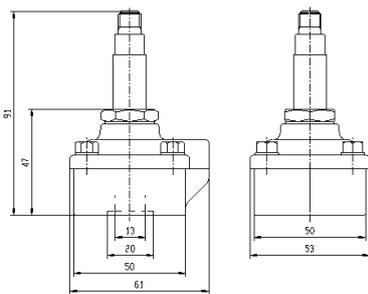


Dimensions Reference N° 3

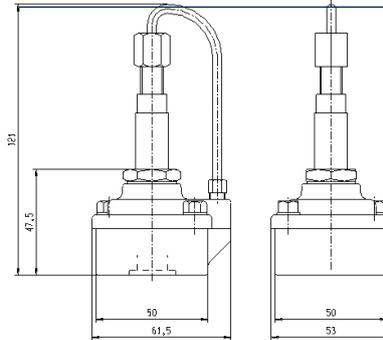


	A	B	C	D	E
G3/4"	80	32	53	17.5	
G1/2"	75	27	53	13.5	

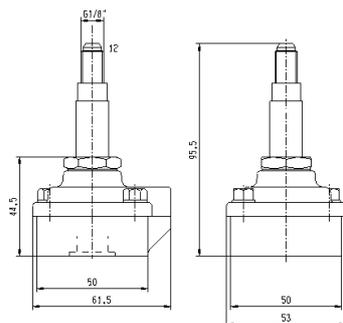
Dimensions Reference N° 4



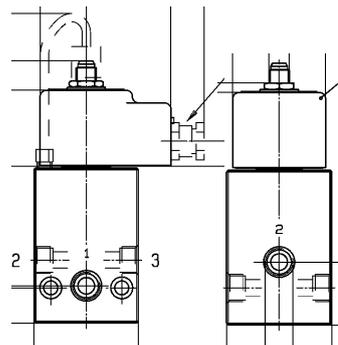
Dimensions Reference N° 5



Dimensions Reference N° 6



Dimensions Reference N° 7



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

- CO₂ 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
- 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



ENGINEERING YOUR SUCCESS.

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

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

EMEA Product Information Centre

Free phone: 00 800 27 27 5374

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US Product Information Centre

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

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