Your Partner in Bottled Water

Adding value to your business

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

Parker

domnick hunter

weplace trading & consulting

Distribuidor / Representante

www.weplace.pt
weplace@weplace.pt

Clear Options, Clear Thinking, Clear Results

Whatever your water source and quality directives that influence your bottling process, Parker domnick hunter understands the challenges and quality requirements that bottled water manufacturers demand globally.

Our proven product range and experience in bottled water applications enables us to offer a comprehensive approach from source to bottle via our dedicated Ep^3 program.

Supported by our team of sales application engineers, technical support scientists, process engineers, product managers and new product development team, our challenge is to add value to your process by constantly reviewing and adapting to meet your changing goals.

Focused on Adding Value to Your Business

Supported by innovative products, state-of-the-art technical facilities and a specialised international team, Parker domnick hunter's capability is based on understanding the specific needs of your business.

Global support

Part of the $12 billion turnover Parker Hannifin Corporation, we have subsidiaries in 25 countries worldwide with manufacturing sites in nine, so we can offer you truly global support with a local perspective.

World class facilities

Global investment programmes have created first-class R&D, manufacturing and support facilities across the world. In addition, product and service quality is assured through:

- Commitment to training and education programmes
- Active use of ISO 9001:2000 as a key business management system
- Compliance with environmental systems ISO14001:2004

Innovation at the core of a dedicated product range

Winovation™, Parker domnick hunter's class-leading product development programme, has delivered a dedicated application based product range. Customers are an integral part of our development process and our multi-disciplinary team is focused on developing solutions to meet our customers' present and future business needs.

This collaboration has led to a comprehensive range of filter formats to satisfy your requirements from R&D through to full-scale production.

Committed to process improvement

Our goal is to continually improve your productivity, reduce your process costs and ensure the safety of your final product. Parker domnick hunter commit to your goals through:

- Continued investment in research & technology
- Application driven approach to new products
- Market specific experience leading to tailored solutions
- Global network providing technical, service and sales support
- Excellent reputation gained through working with some of the world's leading companies
- Highly skilled and trained employees

Ep^3

Delivering value from source to bottle

Environment, product and process protection (Ep^3) represents a joint approach to bottled water processing to review and manage your entire process from source to bottling.

The Ep^3 program is used to optimise your process efficiency and product quality for continuous long term benefit by tailoring products and support that meet your specific needs.

Consultation - Starting with the customer

The philosophy starts with a clear understanding of your business needs and goals so that our team can deliver the best solutions by drawing on their experience to provide the best Ep^3 framework for you.

Assessment- A holistic approach

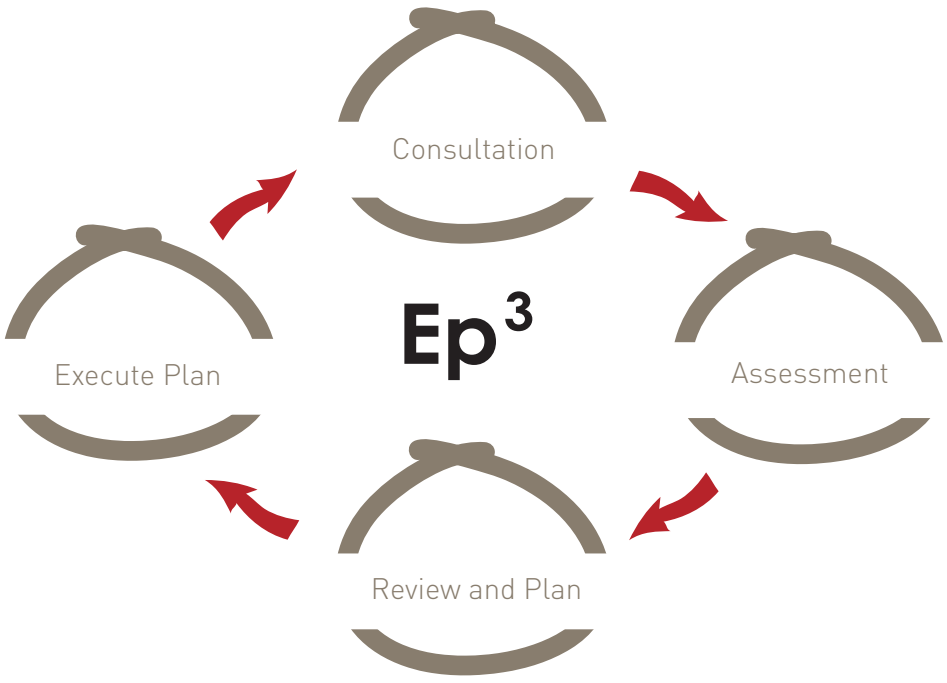
Using our process experts and scientists we will work with your teams to investigate all aspects of your current operations including source quality, filter performance, training and procedures.

Review / planning - Defining opportunities

We formally report the assessment findings and jointly agree an action plan to deliver value to your business.

Execute the plan - Delivering value

Our teams work with you to deliver solutions to the identified opportunities through a process of evaluation, optimisation and documentation.



Consultation

Understanding your business needs

We work with key stakeholders in your organisation from areas such as quality, operations, marketing, purchasing and the senior management team. This ensures that we understand the wider aspects of your business that will impact on the final framework for supporting your wider goals.

Commercial

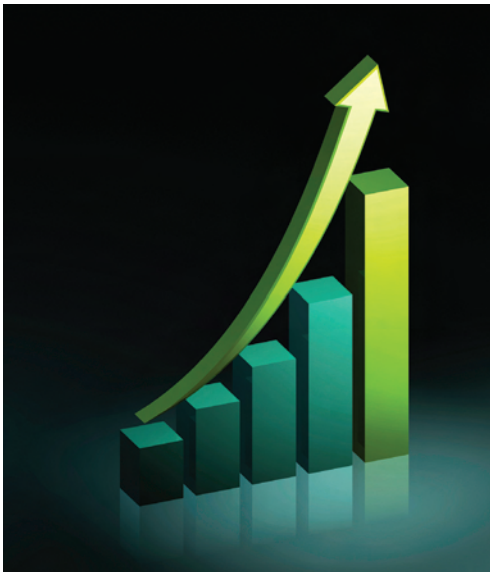
Understanding the commercial landscape in which you operate help us to ensure that we focus on both short and long term solutions. This may include:

- Historical perspective
- New product initiatives
- Group & customer directives
- Financial goals
- Supplier expectations

Operational

Our experience can help identify key operational areas where there are opportunities for improvement including:

- New product & packaging formats
- Regulatory changes
- Capacity changes
- Group & customer directives
- Financial goals
- Supplier expectations
- Quality requirements
- New water sources



The broad consultation process defines the scope of the assessment phase to ensure the Ep^3 program aligns with your goals.

Assessment

A thorough appraisal

This stage identifies all areas that may influence the filtration process, clarifies the current situation and through detailed assessment, highlights opportunities for future improvements.

Using our process experts and scientists we will work with your team to investigate all aspects of your current operations including source quality, filter performance, training and procedures. This detailed procedural review and testing may take place over an extended period using both on-site support and the Parker domnick hunter laboratory network.

Process audits

The audit provides a detailed overview of your process and associated procedures. This allows development of a detailed process map against which operating procedures, HACCP, training gaps and process anomalies can be reviewed and addressed.

Contamination analysis

Particle analysis can include determination of particle size and characteristics by light and scanning electron microscopy and laser particle size analysis. These techniques can give an indication of the contamination source and the expected workload of a filter system, thereby identifying the need for prefiltration or the use of an alternative technology.

Microbiological analysis

Our laboratories can provide both microbial counting and identification capabilities. Determination of the microbial loading within a process fluid can help identify the optimum filtration system whilst microbial identification can be a valuable tool in identifying extraneous contamination sources.

System design studies

Silt Density Index (SDI) is an evaluation of suspended particles and colloids in water based on rate of blockage of a test membrane. This allows comparison of the water quality at various stages throughout the process, providing an indication of the effectiveness of various treatment stages or seasonal variation.

Filterability testing

Using small scale devices with either laboratory or slipstream samples, filterability testing allows fast and economic evaluation of different system designs and their estimated lifetime prior to full scale implementation.

Review / Planning

Clear direction going forward

A report summarising the assessment findings is jointly reviewed with key stakeholders to identify opportunities, any associated constraints and a clear action plan to deliver short and long term value to your business.

Whilst the assessment process may identify multiple opportunities for action, we will work to prioritise immediate needs within the scope of a long term collaborative plan. In all cases we will develop agreed metrics against which the success of these projects can be quantified.

Clearly identified goals

The assessment findings are reviewed with stakeholders to prioritise and agree short and long term opportunities. This ensures coherent and objective decisions are made.

An agreed plan

A milestone plan is developed together to deliver the agreed objectives. The project is regularly assessed against set performance measures, reviewed and updated in line with your business development.

Ownership

It is critical at this stage to agree joint resource commitment to ensure the successful implementation of the agreed plan. The core project team from Parker domnick hunter includes key individuals allocated to your business.

Innovative Solutions

Customer driven ideas brought to life

Our commitment to meeting the specific needs of our customers has led to a number of key new products specifically designed for bottle water applications. Parker domnick hunter's New Product Development and Sustaining Engineering teams are structured to provide fast and effective solutions.

Many bottled water processes are challenged with a variety of contaminants and conditions which can substantially impact filtration performance and product quality. Understanding the source, required quality specifications and contaminant type is critical in determining the most suitable filters for clarification and microbial stabilisation. Typical considerations include:

- Humic & silicate based colloidal suspensions
- Hard water deposits
- Bioburden, pH and temperature induced turbidity
- Environmental and process contamination
- Particle release from sand and carbon beds

Parker domnick hunter has developed a specific range of products to meet the varying demands, often related to water source and season, of bottled water manufacturers.

PEPLYN range - Effective clarification solutions

PEPLYN HA is designed to capture particles on the surface of the media where the rigid, open pleat structure ensures that the backwash cleaning provides effective removal of trapped particulates.

PEPLYN HD has outstanding particulate holding capacity through its multi-layer depth construction providing optimised filtration for water sources with high particulate loading and size distribution.

PEPLYN MAX with its large diameter format and inside to outside flow configuration offers improved particulate rentention and life.

PREPOR - Extending the life of final filters

PREPOR PP and PREPOR GP provide efficient bioburden reduction and clarification, preventing premature blocking of the microbial stabilisation filters.

BEVPOR - Secure microbial stabilisation

The BEVPOR range has been specifically designed to address physical, chemical and microbial attributes of source water at pre-packaging stages.

BEVPOR PT through its use of a dual layer asymmetric PES membrane combines absolute microbial removal with effective capture of colloidal content which can under some conditions precipitate out in the final bottled product.

BEVPOR PW has been optimised for applications where pulses leading to water 'hammer' shocks can be generated as a result of the rapid on / off cycles during filling operations. BEVPOR PW has optimised pleat geometry to ensure sustained integrity and performance even under the harshest process conditions.

Purity that Goes Beyond Filtration

Improving quality & control

Developing solutions that support quality in every aspect of your process make us a truly unique supplier that allows you to have confidence and assurance in your final product and maintain the reputation of your brand.

Nitrogen generation

The MAXIGAS nitrogen generator produces high quality, cost effective beverage grade nitrogen gas from compressed air at a consistent flow, pressure and purity.

Blanketing

Stored water, or ingredients for flavouring, are susceptible to spoilage from ambient air. Filling the storage tank head space with a blanket of nitrogen inhibits spoilage and oxidation from maintaining a constant pressure as the temperature and level of ingredients inside the tank fluctuates.

Pressure transfer

Nitrogen is rapidly replacing carbon dioxide as the means of providing a motive force to transfer the product throughout the manufacturing process.

This can be attributed to the higher head pressure of nitrogen. As it abstains from dissolving into product as readily as carbon dioxide. Additionally, the lower pressures of carbon dioxide can slow down transfer times whilst restricting the distances that can be achieved.

Packaging

Gas flushing bottles, cans and cartons with nitrogen helps to reduce oxidation thus extending product shelf life in addition to maintaining product quality.

CO_2 purification

The PCO_2 system is designed as a quality incident protection unit acting as a point of use vapour 'polisher' and is proven to be effective at removing a wide range of potential CO_2 impurities, such as Benzene, Acetaldehyde & Hydrogen Sulphide.

Carbonation

Potential contamination of a CO_2 supply can occur as the result of impurities in the raw gas source not effectively being removed, or during storage and distribution.

Execute the Plan

Timely implementation and regular review

Our teams work with you to deliver solutions and value to your business based on the opportunities identified during the Ep^3 program. Whilst short term goals may be the priority, we never lose sight of the longer term or emerging opportunities for your business.

Tailored training

Parker domnick hunter can help you identify training requirements as part of your Ep^3 program and to deliver this training either on site or at our dedicated training facilities. Our training and development resources include e-learning modules, theoretical and practical courses. Modules include filter installation and handling, cleaning procedures, HACCP and integrity testing.

Supporting operational excellence

Our process experts and scientists can work with your team to develop standard operating procedures, help you meet changing quality requirements, support problem solving activities and transfer of improvements across sites.

Delivering sustained performance

Ep^3 is designed as an on-going program focused on delivering continued value. Our team will organise regular reviews to ensure that current improvements are sustained and new opportunities identified and delivered. In addition, we can provide support in the development of HACCP programs, integrity testing services and the latest remote monitoring methods that allow us to continually observe your filtration processes to maximise operational performance and life.

Making the Right Choice

Bottled water application product guide

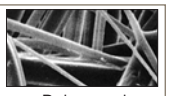
Material	Filter	Clarification	Pre-Stabilisation (Reduction of bio-burden and protection of final membrane filter)	Microbial Stabilisation (Removal of unwanted colloids, bioburden stability)
Polypropylene	PEPLYNMAX	5 - 20 micron Suited for high flow rates, high dirt loading coarse polymorphous particulates	NR	NR
	PEPLYN HD	3 - 10 micron High dirt load and polymorphous particulates	NR	NR
	PEPLYN HA	3 - 10 micron High area suitable for surface laden particulate backwashing	NR	NR
Glass Microfibre	PREPOR GF	0.6 - 1.5 micron	1 - 1.5 micron Suitable for use on very low particulate water sources (fine clarification)	NR
Glass Microfibre and Polypropylene	PREPOR GP	1.0 - 1.5 micron	0.6 - 1.5 micron Suitable for use on very low particulate water sources (fine clarification)	NR
Polyethersulphone	BEVPOR PS	NR	NR	0.2 or 0.45 micron
	BEVPOR PH	NR	NR	0.2 or 0.45 micron High surface area and extended life
	BEVPOR PW	NR	NR	0.2 or 0.45 micron Dual support layer. Asymmetric PES suited for high pressure surge and routine CIP environments
	BEVPOR PT	NR	NR	0.2 or 0.45 micron Double layer. Asymmetric PES (suited for colloid removal)

**NR - Not Recommended*

Products

Liquid filtration - Clarification and pre-stabilisation

PEPLYNMAX



5 - 20 micron absolute — Polypropylene

- Large diameter yields much higher flow rates compared to traditional filters
- Absolute retention ratings for critical filtration

PEPLYNMAX has been developed for pre-clarification and clarification of bottled water from source, using a depth polypropylene media with optimised pleat geometry. PEPLYNMAX with its wide format diameter offers high flow rates and an inside to outside flow configuration that offers high particulate holding capacities and better retention of contaminants.

PEPLYN HD

3 - 35 micron absolute — Polypropylene

- Graded density and increased depth resulting in high dirt holding capacity
- Ideally suited to high volume, forward flow processes

PEPLYN HD has been developed using graded pore density depth polypropylene media for clarification of bottled water from source.

The PEPLYN HD has outstanding particulate holding capacity through its multi-layer depth construction providing optimised filtration for bottled water sources with high particulate loading and size distribution.

PEPLYN HA

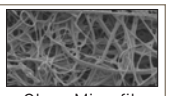
3 - 100 micron absolute — Polypropylene

- Graded density results in high dirt holding capacity
- Optimised pleat configuration maximises backwash efficiency

The PEPLYN HA has been developed using graded density polypropylene depth media for the clarification of bottle water.

PEPLYN HA is designed to capture particles on the surface of the media where the rigid, open pleat structure ensures that the backwash cleaning provides effective removal of trapped particulate.

PREPOR GF



2 - 10 micron absolute — Glass Microfibre

- High voids volume media provides high dirt holding capacity
- Higher flow than polypropylene media results in low pressure drop even in viscous liquids

PREPOR GF liquid filter cartridges are utilised for the clarification, stabilisation and bioburden reduction of aqueous solutions, media and biologicals. These filters have a high dirt holding capacity and exhibit exceptional flow performance compared to polypropylene filters. The hydrophilic nature of PREPOR GF filter cartridges also makes them more suitable for gravity fed systems.

PREPOR GP

0.6 - 1.5 micron stabilising — Glass Microfibre / Polypropylene

- Composite media provides high strength and dirt holding capacity
- High efficiency removal of spoilage organisms and yeasts

PREPOR GP with its pleated combination of glass microfibre and high efficiency polypropylene media is ideally suited for fine clarification and pre-microbial filtration in bottled water applications.

Liquid filtration - Microbial stabilisation

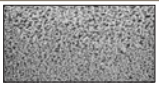
BEVPOR PS

0.2 - 1.2 micron stabilising — Polyethersulphone

- Can be sanitised and regenerated for extended life
- Low adsorption of protein colours and flavours

BEVPOR PS utilises an advanced polyethersulphone membrane configured to provide high flow and cost effective performance. The membrane has an asymmetric pore structure which provides graded filtration throughout its depth, resulting in increased capacity to hold contaminants. Componentry has been selected to maximise mechanical strength and chemical compatibility enabling the filter to withstand repeated chemical cleaning and sterilisation.

BEVPOR PH

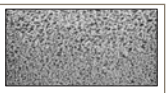


0.2 - 1.2 micron — Polyethersulphone

- Integral prefilter layer maximises service life
- Can be sanitised and regenerated for extended life
- Higher surface area extends service life

The BEVPOR PH combines a prefiltration layer with a final PES asymmetric membrane to provide a graded filtration throughout their depth that enables high flow rates, long life and improved throughputs. The hardware selected in the construction of the BEVPOR PH is able to withstand repeated chemical cleaning and steam sterilisation.

BEVPOR PW

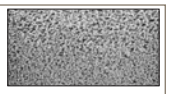


0.2 - 1.2 micron — Polyethersulphone

- Optimised for the microbiological stabilisation of bottle water
- Repeatedly integrity testable

BEVPOR PW has been designed with a modified pleat configuration to ensure sustained integrity and performance even under the harshest process conditions. The BEVPOR PW is a robust filter suited for applications where pulsation of water 'hammer' shocks can be generated as a result of the rapid on / off cycles during filling operations.

BEVPOR PT



0.2 - 0.65 micron — Polyethersulphone

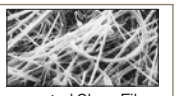
- Prefilter layer means colloids extending service life
- Low adsorption of protein, colours and flavours

The BEVPOR PT has been developed using a PES membrane and an integral prefilter layer to provide high flow rates, long life and improved throughputs. Combination of the asymmetric pore prefilter and final membrane layers, provide a graded filtration throughout their depth, resulting in increased capacity to hold colloidal matter and other contaminants.

Products

Sterile gas and vent filtration

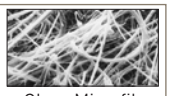
HF BIO-X



0.1 micron sterilising — PTFE Impregnated Glass Fibre

- 94% voids volume PTFE impregnated glass fibre
- Exceptional flow rates with low pressure drops
- Integrity testable by aerosol challenge

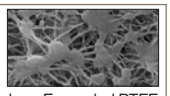
BIO-X



0.01 micron sterilising — Glass Microfibre

- High temperature operation 200 °C (329 °F)
- Robust construction

TETPOR AIR

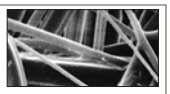


0.2 micron — Polypropylene Expanded PTFE

- Assured biosecurity with absolute rated filtration
- High flow rates with low pressure drops
- High voids volume PTFE membrane

Liquid filters

PROSPUN



0.5 - 75 micron absolute — Polypropylene

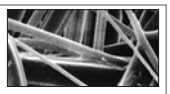
- Economical general clarification
- Excellent first-stage protection of downstream processes

CARBOFLOW MX

Adsorptive colour, odor and taste removal — Extruded Activated Carbon

- High capacity, long life
- Extruded media provides particulate reduction as well as adsorption

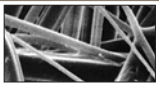
PREPOR PP



0.6 - 1.5 micron stabilising — Polypropylene

- Maximised chemical and mechanical resistance for repeated regeneration
- Yeast removal and spoilage organism reduction

PROPLEAT



1 - 75 micron — Polypropylene

- Economical general clarification
- Higher area than spun bonded products provides longer life to blockage

BAG FILTERS

Medium to Coarse — Various

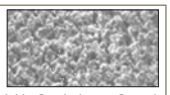
- Economical general clarification in non-critical applications

SMALL SCALE

- Filter discs and disposable capsules are available for sampling and small scale applications.

Steam filters

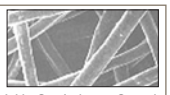
SINTERED



1.0 - 25 micron — 316L Stainless Steel

- Ideally suited for low flow rate applications
- Available in culinary grade 1 micron
- Low pressure drops

PLEATED



1.0 - 5.0 micron — 316L Stainless Steel

- Re-cleanable metal fibre 316L Stainless Steel
- Exceptionally high flow rates
- Available in culinary grade 1 micron

Housings

LIQUID HOUSINGS

- A full range of stainless steel housings specifically designed for the beverage industry

AIR HOUSINGS

- A full range of stainless steel housings specifically designed for the beverage industry

Integrity testing

VALAIRDATA II

Integrity Testing

- Aerosol challenge testing
- Integrity testing of gas filters

BEVCHECK

Integrity Testing

- Pressure decay and diffusional flow testing
- Portable - lightweight, hand held unit
- Simple to use - pre-programmed operation

Gas Generation

MAXIGAS

Nitrogen gas generators

Providing a mini bulk tanks, MAXIGAS generators produce a fraction of the cost.

- Space saving
- Easy to increase supply as required

CO_2 Protection

PCO_2

Carbon dioxide polishing filter

PCO_2 offers protection against carbon dioxide contamination and impurities of up to 10 times the allowable levels detailed in the ISBT carbon dioxide quality guidelines.

Sales Offices Worldwide

AE – United Arab Emirates, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501 970
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Bélgica, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – República Checa, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Alemania, 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 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France,Contamine-sur-Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Atnas
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

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

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +(81) 3 6408 3901

KR – Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Subang Jaya
Tel: +60 3 5638 1476

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Varsovia
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

SA – Republic of South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

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

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – England, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

11/08 Rev. 1A

Parker Hannifin Ltd
Parker domnick hunter
Process Division
Durham Road
Birtley, Co. Durham
DH3 2SF, England
phone +44 (0)191 4105121
fax +44 (0)191 4105312
email: dhprocess@parker.com
www.domnickhunter.com

Parker

dh domnick hunter