

Your Partner in Wine Filtration

Adding value to your business

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





Clear thinking, clear results

No matter where in the world you operate or which wines you produce, Parker Hannifin understands the challenges faced by wine producers. We are dedicated to providing solutions that not only reduce processing costs but also control water and energy use. Our proven product range has been specially designed to ensure the quality of your final product while protecting the unique characteristics of your wine.



Focused on adding value to your business

The foundations of process improvement

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

Global support with a local perspective

With multiple laboratory and manufacturing facilities and a network of customer support centres operating in more than 50 countries worldwide, we can offer you a truly global support service.

World class facilities

Global investment and a strong commitment to technology 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 current ISO 9001 as a key business management system
- Compliance with current environmental systems ISO14001
- Conformance to current EC 1935 food contact directives

Innovation at the core of a dedicated product range

Winovation™, Parker'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.

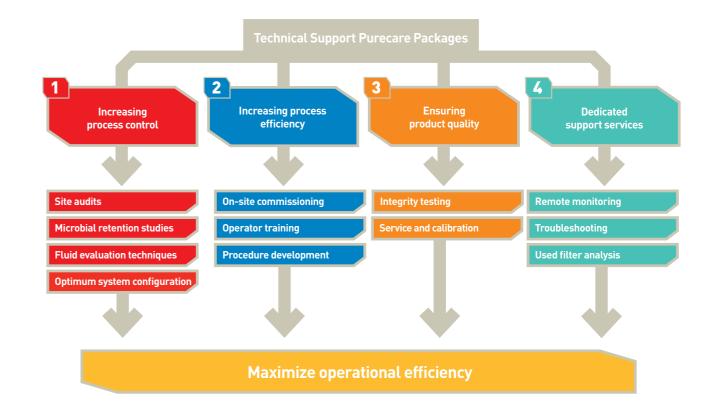
This collaboration has led to a comprehensive range of filter formats to satisfy all the requirements of wine producers.



Dedicated technical support services

Tailored to your individual needs

Our global network of technical support personnel are specially trained to help improve your productivity and process control, while ensuring your wine quality is protected. This support is delivered through our range of unique Purecare packages which can be customized to your requirements.





Delivering quality throughout your process

From clarification to complete microbial control

Parker's products and services have been designed to complement every aspect of the wine making process. From clarification applications to final microbial stabilization, our innovative solutions ensure quality and protect the unique sensory characteristics of your wine.

Assured performance

The Parker domnick hunter BEVPOR range of filter cartridges has been specifically developed to excel in final stabilization applications. Our team of Scientists have validated the microbial retention of the BEVPOR range along with the PREPOR range of pre-stabilization filters against typical organisms that could cause spoilage in wine.

Protecting the wine's unique character

Your choice of filtration membrane can have a major impact on the quality of your final product and the efficiency of your process. While some membranes can adsorb desirable components during processing, the Parker domnick hunter BEVPOR range incorporates a polyethersulphone (PES) membrane with ultra low adsorption properties to preserve the wine's taste and appearance.

Assuring quality

As well as guaranteeing the production of microbial stable wine, incorporating integrity testing as part of a Hazard Analysis of Critical Control Points (HACCP) framework demonstrates Good Manufacturing Practice (GMP) to your customers. Integrity testing can be performed on final stabilization filters using the Parker domnick hunter BEVCHECK PLUS instrument.



10 11

Total plant solutions

Process gas (sterile air)

Compressed air, carbon dioxide and nitrogen are used throughout the winery for clearing, blanketing, packaging and carbonation. Wherever gas comes into contact with the product or process lines, there is a possibility of microbiological and particulate contamination. The Parker domnick hunter HIGH FLOW BIO-X and TETPOR AIR ranges of sterilizing gas filters can guarantee sterile gas quality.

Crystal removal (clarification)

Potassium bitartrate and calcium tartrate are naturally occurring precipitates in wine and can form undesirable, non-hazardous crystals. Graded density, all polypropylene filters such as PEPLYN HA or PARMAX (high flow capacity) can remove these crystals from the wine while providing extended filter life within the application.

Wine polishing (clarification)

Clarification filtration is performed to ensure brightness and clarity of wines with low microbial loading. These applications typically use absolute rated PEPLYN HD elements with PROPLEAT or PROSPUN prefiltration if required.

Trap filtration (clarification)

Filtration mechanisms using powder filter aids such as diatomaceous earth (DE) can shed powders into the wine and downstream processes. The PEPLYN ${\sf HA}$ has been specifically designed to retain this powder on the media surface which can then be removed through regular backwashing.

Tank vents

Tank vent filtration provides sterile air into tanks when emptied, preventing the ingress of airborne organisms and yeasts. The HIGH FLOW BIO-X PTFE impregnated borosilicate microfibre cartridges are ideal for low pressure tank vent applications.

Filter integrity testing

Integrity testing of sterilizing grade filters is a fundamental requirement of critical process applications ensuring the biological safety, quality and shelf-life of the product that reaches the customer. Parker provides a range of integrity testing instruments with a test protocol that fits well

- VALAIRDATA II aerosol challenge tests sterile air filters
- BEVCHECK PLUS provides automated pressure decay integrity testing of final stabilization membrane filters.

Final filtration (final stabilization)

The BEVPOR range of final stabilization filters provides full removal of yeast and typical spoilage organisms while protecting the wine's unique sensory characteristics through the use of a low adsorption PES membrane. Products in the BEVPOR range are robust enough to be repeatedly cleaned and sterilized in place by hot water, chemicals and steam.

Membrane protection (pre-stabilization)

Pre-stabilization filtration reduces colloids, yeast and microbiological loading prior to final filtration. This is typically performed using the PREPOR GP which combines the high dirt holding capacity of borosilicate microfibre and the robustness of polypropylene filter media for increased volume throughput and better resistance to cleaning and regeneration cycles.

Dechlorination

Water coming in direct contact with corks should be dechlorinated using a CARBOFLOW MX element to prevent the formation of trichloroanisole (TCA), the chemical associated with corked wine

Carbon dioxide polishing

Under HACCP principles, the quality of CO₂ used at the point of carbonation is defined as a critical control point (CCP). The PCO, 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, impurities such as benzene, acetaldehyde

Compressed air purification

Direct and indirect contact between compressed air and wine can lead to oxidization or contamination. Parker domnick hunter is market leader in compressed air solutions and can provide a complete range that will remove a potential 10 contaminants from up to 4 different SOURCES

- Water separators
- Coalescing filters Adsorption filters
- · Refrigeration dryers
- Dust removal filters

Nitrogen is used increasingly throughout the winery for pressure transfer, blanketing, purging, sparging and filling applications. Parker domnick hunter nitrogen generation systems can generate a consistent supply of nitrogen improving safety, increasing efficiency and providing a cost saving of up to 90%.

Protecting the finished product

By maximizing water quality

The quality of the water used throughout the wine making process has a major impact on that of the finished product and should not be overlooked. Parker has a selection of products for the removal of specific waterborne contaminants found in the wine making process.

Utilities water

High particulate loading and seasonal variation at the water source can lead to early blockage of downstream filtration stages, which can be prevented by effective clarification of utilities water. The all polypropylene design and graded density filter media make the PROSPUN and PROPLEAT ranges an excellent choice for economical clarification of water while PARMAX large diameter formats are ideal for high flow rate requirements.

Process water

BEVPOR filters provide control of yeast and microbial content in water used to pump, rinse or clean tanks, limiting the development of new bacteria during maturation or storage. Water coming into contact with corks should be dechlorinated using CARBOFLOW MX to prevent the formation of trichloroanisole (TCA), the chemical associated with corked wine.

Production water

Water used for bottle rinsing, product chasing or blending is a potential source of microbial contamination in the finished wine and therefore, filtration through a sub-micron membrane is required. Parker recommends a 0.2 micron BEVPOR filter to provide the required water





Water footprint

Parker is dedicated to providing solutions that reduce water consumption where possible. System optimization and procedural audits are designed to maximize efficiency of production processes as part of the Purecare range of after sales support packages.



Advanced process gas solutions

Creating the right environment

Incorrect management of process gases can be the beginning of quality problems within production. Parker domnick hunter is market leader in air and gas purification and can provide a range of high quality and cost-effective solutions for process gas purification.

Compressed air treatment

Parker can provide a comprehensive range of solutions to guarantee the efficient and trouble free operation of your compressed air system. Our qualified team can certify your system to the relevant quality class for your process in accordance with current ISO 8573.1 compressed air standards.

Nitrogen generation

Nitrogen use in the winery is increasing and can be used for a variety of applications including blanketing, sparging, and packaging. Parker can offer tailored nitrogen generation solutions providing a consistent, safe and efficient source of nitrogen gas.

Carbon dioxide polishing

The Parker domnick hunter PCO₂ system offers a comprehensive solution to preserve and guarantee the quality of gaseous carbon dioxide used for sparkling wines as well as other applications in the winery.

Sterile gas

With over 40 years' experience in the provision of sterile gas to wineries, Parker has an extensive range of solutions encompassing filters, integrity test methodologies and system designs to ensure the quality of your final product.



The ISBT has developed the quality guide and analytical procedure bibliography to provide guidance to manufacturers of carbonated beverages and suppliers of carbon dioxide to the carbonated beverage industries on key characteristics for the quality and purity of carbon dioxide as used as a direct food additive in beverages.



Precision fabrication

High quality housings and systems

With a range of stainless steel hardware, from single filtration housings through to complex automated filtration skids, Parker offers a range of fabrication solutions designed to meet international industry standards as well as specific customer requirements.

Dedicated fabrication facility

Parker's state-of-the-art fabrication facility manufactures a wide range of housing and system designs available in a variety of materials and surface finishes. Our standard range of stainless steel housings can be adapted to meet the specific needs of your process.

Manufacturing best practice

- ISO9001
- ISO13485
- ISO14001

Built in accordance with best sanitary design and manufacturing practice and the following industry standards:

- EC Pressure equipment directive
- ASME VIII BPVC (ASME IX)
- BS EN 287-1 (Welder approvals)
- BS EN 15614-1 (Weld Procedures)

Stamp of approval availability

- ASME 'U' stamp marking and national board registration
- EC PED CE marking and declaration of conformity



The Parker design philosophy

In situ quality assurance time after time

Parker offers a wide range of high quality filtration, purification and separation solutions which are essential to all modern production facilities. We have an unrivalled reputation for delivering high quality products which are developed using the Parker design philosophy.



Targeted solutions

Parker is passionate about delivering targeted solutions to meet our customers' present and future business needs. Winovation, our class-leading product development programme produces

dedicated application based products that deliver value. Our customers are at the heart of our development process and our collaborative approach ensures you have the right solutions when you need them.



Our philosophy

Parker has been supplying industry with high efficiency filtration, separation and purification products since 1963. Our philosophy "designed for air quality & energy efficiency" ensures that products

not only provide the user with clean, high quality liquid and gas, but also with low lifetime costs and reduced carbon dioxide (CO_2) emissions.



Air quality

Parker has been instrumental in the development of both IS08573 and IS012500, the international standards for compressed air quality and compressed air filter testing respectively. All Parker

products are designed to provide air quality in accordance with current ISO8573-1, air quality standard.



Energy efficiency

In these times of increasing energy costs, an efficient and cost-effective manufacturing process is a major factor in maintaining the profitability and growth of your business.

All Parker solutions are designed to minimize energy loss and guarantee product quality while increasing production efficiency.



Low lifetime costs

Equipment with a low purchase cost may turn out to be a poor investment in the long term. By guaranteeing quality and ensuring energy consumption is kept to a minimum, Parker filtration, separation and purification solutions can reduce the total cost of ownership and help improve profitability through improved manufacturing efficiencies.



Reduced CO₂ emissions

Many countries worldwide are looking closely at their manufacturing industries in an effort to reduce both water and carbon footprints. By significantly reducing the energy consumption through Purecare, Parker can help you to reduce both your water and carbon footprints helping to protect the environment.

Performance validation

Validating filters that exceed specifications

Parker domnick hunter products are often critical components of your process so we have ensured our solutions for wine production are designed and manufactured specifically for the food & beverage industry in accordance with all current standards and regulatory frameworks across the globe.

International Organisation for Standardization

ISO 9001

ISO 14001

ISO 10993

Code of Federal Regulations in accordance with the Food and Drug Administration (FDA)

21CFR Part 177

USP Plastics Class VI - 121C

European Community Food Contact Regulations

EC1935/2004

EC2002/72

EC975/2009

EC82/711

EC2023/2006

Bs en 1186-15













INTERNATIONAL APPROVALS





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Products

Liquid filtration - clarification

PROPLEAT



. Continuous length rigid sleeve and core provide high strength during normal and reverse

flow operations

• Retention ratings to suit a wide range of clarification applications

PROPLEAT cartridges have been developed to bridge the gap between meltblown depth filters and absolute rated pleated media filters. Their continuous length and all-polypropylene construction results in a robust yet economical design that maximizes the effective filtration area and provides wide chemical compatibility, coupled with low extractable levels.

PEPLYN HD

3 - 35 micron absolute



 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 wine from source. The PEPLYN HD has outstanding particulate holding capacity through its multi-layer depth construction providing optimized filtration for wine sources with high particulate loading and size distribution.

PROSPUN

0.5 - 75 micron



- · High dirt holding capacity
- . Consistent absolute retention under a wide range of operating conditions
- · Ideal for primary stage filtration

PROSPUN is the most economical solution for delivering general liquid clarification and particle retention. It can be used as a guard filter to protect the process against high variable levels of particulate

PARMAX



5 - 20 micron absolute

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

PARMAX has been developed for pre-clarification and clarification of bottled water from source, using a depth polypropylene media with optimised pleat geometry. PARMAX 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 HA



3 - 100 micron absolute

- Graded density results in high dirt holding capacity
- · Optimized pleat configuration maximizes backwash efficiency

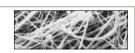
The PEPLYN HA has been developed using graded density polypropylene depth media for the clarification of wine. PEPLYN HA is designed to capture particles on the surface of the media where the rigid, open pleat structure ensures that the backwash cleaning provides effective removal of trapped particulate.

Liquid filtration - pre-stabilization

PREPOR PP

0.6 - 1 micron absolute





2 - 10 micron absolute

PREPOR GF

- · Removal of low levels of bioburden, such as natural yeasts, from incoming liquids
- Fine clarification of products and ancillary liquids to extend the lifetime of microporous membrane filters

PREPOR GF filter cartridges have been specifically developed for fine clarification of wine, products and ancillary liquids. The higher efficiency grades also provide excellent bioburden reduction and protection to microporous membranes

PREPOR GP



0.5 - 1.5 micron absolute

Borosilicate microfibre / polypropylene

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

. Fine clarification to provide bright finished product

Prefiltration duty to extend the lifetime of downstream microporous filters

 ${\sf PREPOR\ PP\ filter\ cartridges\ will\ significantly\ reduce\ numbers\ of\ yeast\ and\ spoilage}$

filterability of products prior to terminal stabilization by thermal or filtrative methods.

organisms from beverage products, to provide extremely cost effective microbial stabilization. The cartridges will also 'condition' liquids and can be used to improve the

PREPOR GP with its pleated combination of borosilicate microfibre and high efficiency polypropylene media is ideally suited for polishing applications and final membrane protection in the wine industry.

Liquid filtration - final stabilization

BEVPOR PS

0.2 - 1.2 micron stabilizing



Polyethersulphone



0.2 - 0.65 micron

BEVPOR PT



Polypethersulphone

 Membrane prefilter layer provides extended service life in wine with colloidal loading 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.

BEVPOR PH

0.2 - 1.2 micron absolute



- Integral prefilter layer maximizes service life
- Can be sanitized and regenerated for extended life

· Can be sanitized and regenerated for extended life

enabling the filter to withstand repeated chemical cleaning and sterilization

Low adsorption of protein colours and flavours

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 sterilization.

BEVPOR PS utilizes an advanced polyethersulphone membrane configured to provide high flow and cost-effective performance. The membrane has an asymmetric pore structure, resulting in increased capacity to hold contaminants. Componentry has been selected to maximize mechanical strength and chemical compatibility

Products

Air / gas filtration

BIO-X



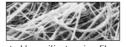
Sterilizing grade

High temperature operation 200 °C (329 °F)

· Robust construction

BIO-X II air sterilization filter cartridges utilize a borosilicate glass microfibre media. This media has proven to be particularly effective in the removal of sub-micron particles as small as 0.01 micron, therefore ensuring the removal of all micro-organisms including bacteria and

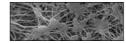
HIGH FLOW BIO-X



Sterilizing grade

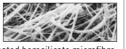
- Exceptional flow rates with low pressure drops

TETPOR AIR



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

TETPOR AIR sterilization filter cartridges offer exceptional filtration performance while providing the highest levels of biosecurity throughout the process industry. Operating at ambient temperature conditions, TETPOR AIR filter cartridges provide a cost effective filtration solution.



· Integrity testable by aerosol challenge

HIGH FLOW BIO-X combines proven depth filter technology and a pleated construction to provide retention down to 0.01 micron in gas. Flow rates typically 2-3 times that of membrane filters make HIGH FLOW BIO-X the filter that can dramatically reduce cartridge

Sterilizing grade

Steam filters

SINTERED

1.0 - 25 micron



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

Steam is an often neglected part of a process, regarded as an add on to a customer's liquid or gas filtration needs. It has however, large specific applications in its own right and should be treated with the same level of importance as air, gas and liquid systems if long filter lifetimes and system cost effectiveness are to be achieved.

PLEATED



316L stainless steel

1.0 - 5.0 micron

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

Steam is an often neglected part of a process, regarded as an add on to a customer's liquid or gas filtration needs. It has however, large specific applications in its own right and should be treated with the same level of importance as air, gas and liquid systems if long filter lifetimes and system cost effectiveness are to be achieved.

Products

Housings

Liquid housings



Air housings

· A full range of stainless steel housings specifically

designed for the beverage industry



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

Integrity testing

VALAIRDATA II

Aerosol challenge testing

. Integrity testing of gas filters

BEVCHECK PLUS



- Pressure decay and diffusional flow testing · Convenient built-in printer provides printed test report
- Flexible suitable for use with compressed air or nitrogen

Gas generation

MAXIGAS





- Easy to increase supply as require

CO₂ protection

PCO₂

Carbon dioxide polishing filter PCO₂ offers protection against carbon dioxide contamination and impurities of up to 10 times the allowable levels detailed in the ISBT carbon dioxide



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