Food and Beverage

Food & Beverage

A guide to Products and Services

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

Parker | domnick hunter

ENGINEERING YOUR SUCCESS.

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Parker domnick hunter commitments

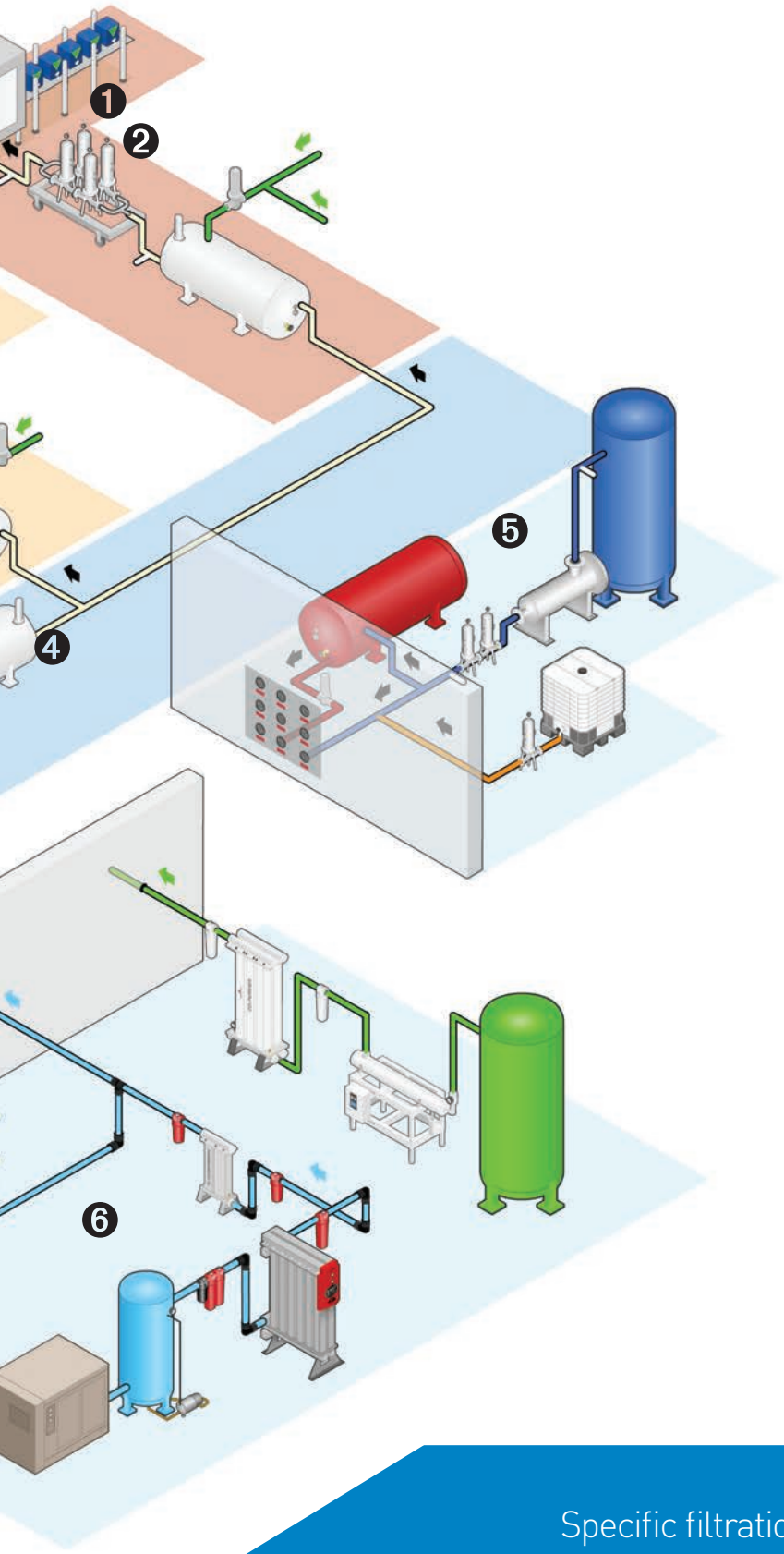
Wine
collection

Old and new world producers of wine have partnered with Parker domnick hunter to reach their quality and production requirements.

A proven product range combined with knowledgeable specialists of the wine making process enables Parker domnick hunter to provide value added solutions that guarantee both quality, and process efficiencies.

Parker domnick hunter provides local application specialists focussed on providing added value solutions to winemakers and contract packagers. The local team is supported by innovative products, state of the art manufacturing facilities and international support teams, all aimed at providing solutions which match Parker domnick hunter's capabilities with the needs of the producer. The ultimate aim is to offer producers greater control of their process, leading to consistent quality and improved operational efficiency.

Typical Process



Specialized Wine Applications

1. Final Stabilization
2. Pre-stabilization
3. Clarification
4. Sterilization of Gases
5. Water Utilities
6. Gas Utilities

Specific filtration requirements within the wine making, transportation and packaging processes dictate different design criteria for filter systems. Parker domnick hunter have a range of specialized filtration systems designed to add value at each stage of wine production, stabilization and packaging operations.

BEVPOR PS Wine

Filter Cartridges

BEVPOR PS wine filters protect the unique characteristics of wine by removing yeast and other spoilage organisms to ensure microbial stabilization prior to packaging.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms whilst preserving the wine's unique properties to ensure it reaches the consumer as the wine maker intended. Combined with hydrophilic properties for easy integrity testing, BEVPOR PS filters provide assured performance throughout their service life.

BEVPOR PS filters have been designed to provide a cost-effective solution to wine microbial stabilization by providing increased process control with increased operational efficiency.

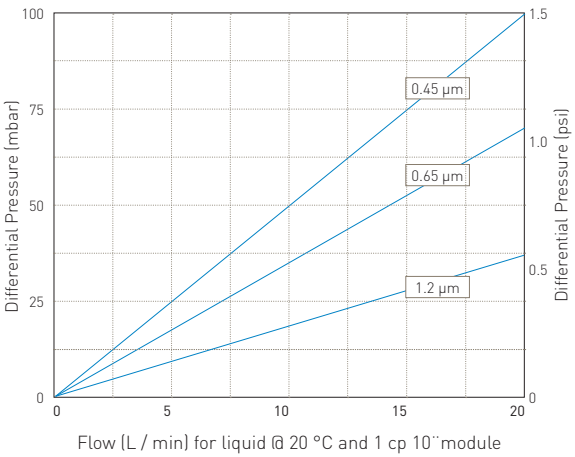
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ

Benefits

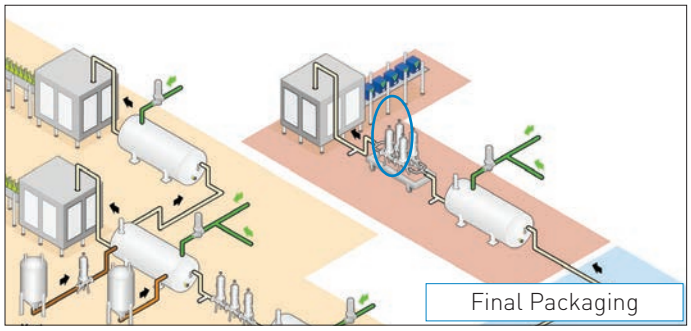
- Ensures effective microbial stabilization of wine
- Preserves the desirable characteristics of the wine
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130°C (266°F). They can be sanitized with hot water at up to 90°C (194°F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PS filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2		
	0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	2.0
Acetobacter oeni	FR	FR	7.6
Pseudomonas aeruginosa	9.1	8.9	4.8
Serratia marcescens	FR	FR	2.4

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10" per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating		
	0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPS - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.2 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR PW Wine

Filter Cartridges

BEVPOR PW wine filters protect the unique characteristics of wine by removing yeast and other spoilage organisms to ensure microbial stabilization prior to packaging.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms whilst preserving the wine's unique properties to ensure it reaches the consumer as the wine maker intended. Combined with hydrophilic properties for easy integrity testing, BEVPOR PW filters provide assured performance throughout their service life.

The incorporation of an active prefilter layer allows graded retention throughout the depth of the filter to resist blockage, resulting in an increased capacity and long service lifetimes.

BEVPOR PW filters have been designed to provide a cost-effective solution to wine microbial stabilization by providing increased process control with increased operational efficiency.

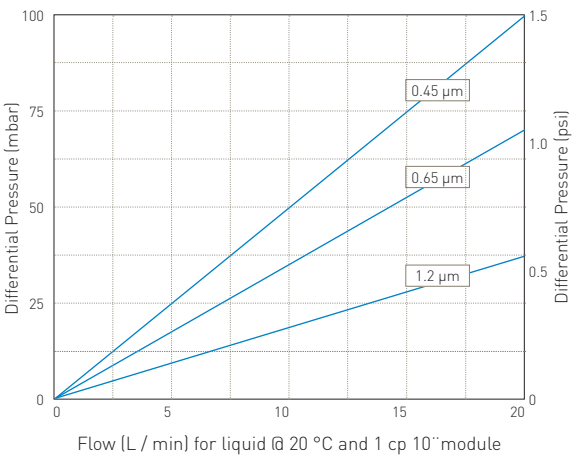
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer

Benefits

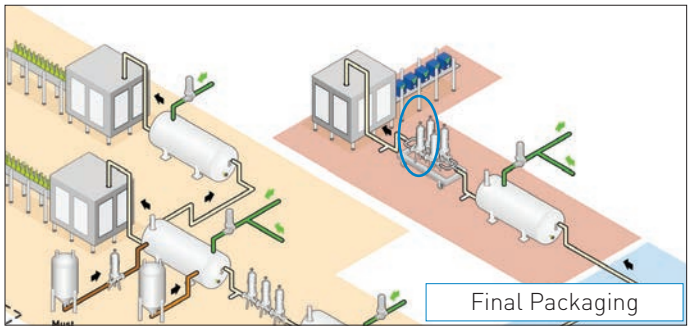
- Ensures effective microbial stabilization of wine
- Protects the desirable characteristics of the wine
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PW cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PW filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2		
	0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	2.0
Acetobacter oeni	FR	FR	7.6
Pseudomonas aeruginosa	9.1	8.9	4.8
Serratia marcescens	FR	FR	2.4

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating		
	0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPW - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.2 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR PH Wine

Filter Cartridges

BEVPOR PH wine filters protect the unique characteristics of wine by removing yeast and other spoilage organisms to ensure microbial stabilization prior to packaging.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms whilst preserving the wine's unique properties to ensure it reaches the consumer as the wine maker intended. Combined with hydrophilic properties for easy integrity testing, BEVPOR PH filters provide assured performance throughout their service life.

The incorporation of an integral prefilter layer, combined with an increased filtration area provides high wine flow rates, greater resistance to blockage and maximized service lifetime.

BEVPOR PH filters have been designed to provide the optimum solution to the microbial stabilization of wine by providing increased process control with maximized operational efficiency.

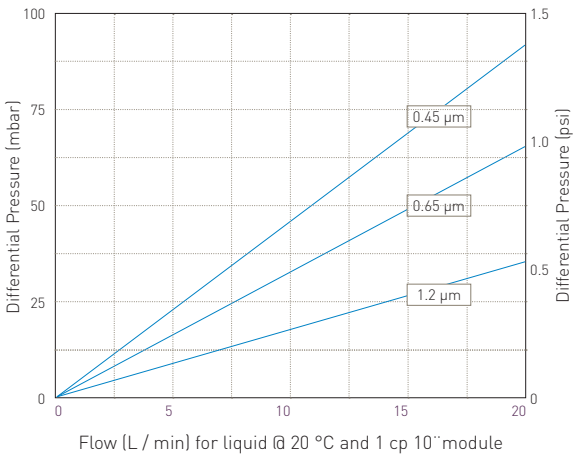
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer
- High filtration area

Benefits

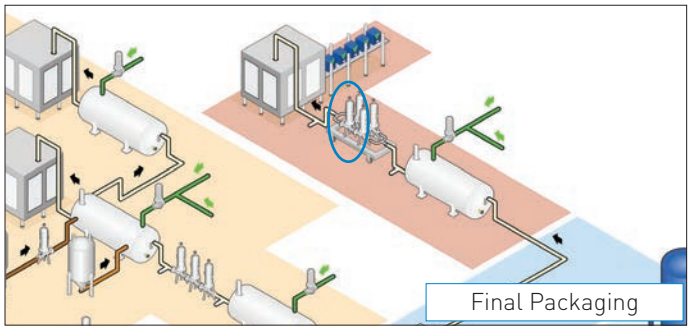
- Ensures effective microbial stabilization of wine
- Protects the desirable characteristics of the wine
- Assured filtration performance
- Increased throughput to blockage
- High wine flow and maximized operational efficiency

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10" (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

BEVPOR PH cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PH filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2 0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	2.0
Acetobacter oeni	FR	FR	7.6
Pseudomonas aeruginosa	9.1	8.9	4.8
Serratia marcescens	FR	FR	2.4

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10" module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10" (ml /min)	21.0	21.0	21.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPH - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)
4	40" (1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.2 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
R	BF / 222 Bayonet
G	Recess / 222

Code	O-rings
S	Silicone
E	EPDM

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PREPOR NG Wine

Filter Cartridges

Parker domnick hunter's continued focus on process optimization and control has led to the development of a new range of prefilters for the clarification and pre-stabilization stages of wine processing and packaging.

The control of particulate and microbial loading is important to provide stability to wine during storage and transport and to ensure that the finished product maintains and develops its desirable characteristics after packaging.

Parker domnick hunter's next generation of PREPOR NG filters have been developed to remove yeast and reduce bacterial loading to improve short-term stability and to increase the service life of downstream membrane filters. The robust componentry allows for caustic and backwash regeneration, making the filter stage a reliable and cost-effective solution to intermediate stabilization.

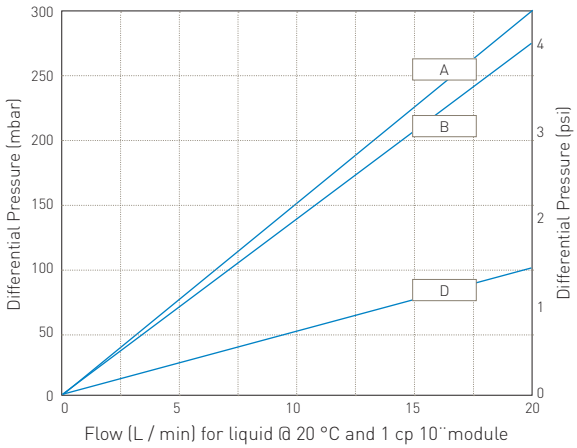
Features

- Fully validated yeast removal and bacterial reduction
- Truly optimized graded density using unique Optimized Depth Construction (ODC) Technology
- Mechanically strong and chemically resistant polypropylene construction designed for chemical CIP and backwash

Benefits

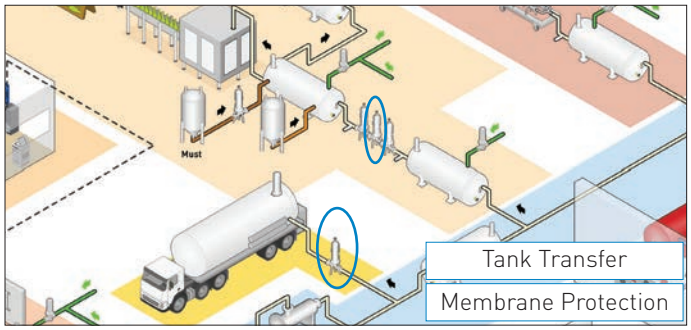
- Effective control of clarity and microbial stability
- Increased filtration capacity
- Increased service life when combined with regular CIP regeneration

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.5 m² (5.38 ft²)

Cleaning and Sterilization

PREPOR NG cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The absolute retention characteristics of PREPOR NG filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm²		
	A	B	D
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Oenococcus oenos	4.0	3.0	1.0
Acetobacter oeni	2.0	2.0	1.7
Serratia marcescens	3.9	3.4	1.9

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10" per 10˝module.

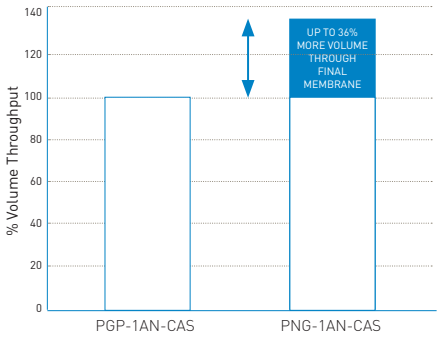
ODC Technology

Optimized Depth Construction (ODC) provides a unique graded density combining longer service life with absolute filtration efficiency.

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Performance Benefits



ODC technology combines fine particle retention with increased strength and stability to enhance the performance offered by the PREPOR range.

Ordering information

PNG - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
A	0.5
B	0.6
D	1.0

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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PEPLYN TF Wine

Filter Cartridges

PEPLYN TF filters have been specifically designed to protect wine from residual particulate which can remain following primary clarification processes. By combining absolute particle retention, high dirt holding capacity and resistance to blockage with ease of regeneration, PEPLYN TF filters provide the optimum solution for trap filtration.

The carefully constructed polypropylene media ensures insoluble particulate is captured on the surface of the filtration media, in a way that it can be easily removed through backwashing. This feature, combined with the strong, rigid construction provides reliable filtration performance over extended operational lifetimes.

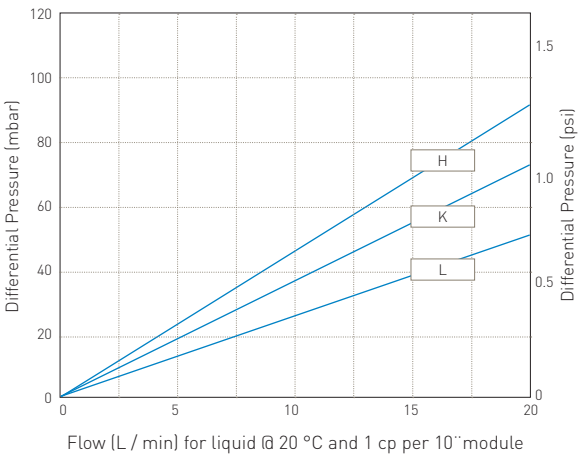
Features

- Robust polypropylene construction designed for chemical CIP and backwash
- High effective filtration area
- A range of absolute retention ratings

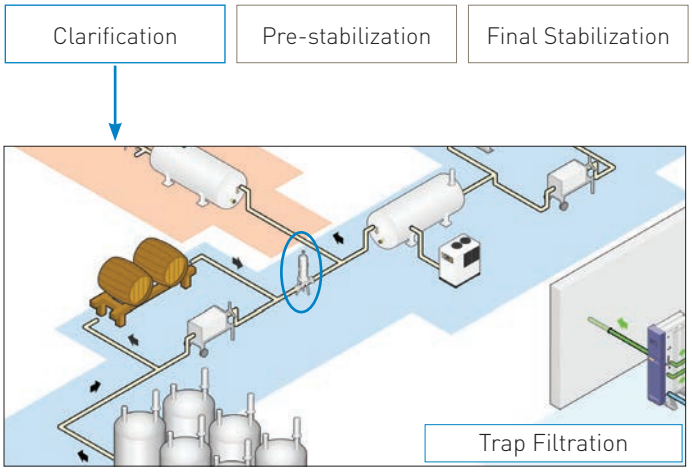
Benefits

- Extended service life when combined with regular CIP regeneration
- High wine flow and resistance to blockage under high loading conditions
- Defined cut-off to powders and flexibility to optimize the filtration

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.7 m^2 (7.53 ft^2)

Cleaning and Sterilization

PEPLYN TF cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of PEPLYN TF filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

Micron Rating at various efficiencies						
Efficiency	>99.99%	99.98%	99.90%	99%	95%	90%
Beta Ratio	10000	5000	1000	100	20	10
H	5.00	4.70	4.50	3.50	2.30	1.00
K	10.00	8.00	7.00	4.80	3.80	2.80
L	15.00	12.00	10.00	7.20	6.00	4.50

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

PTF - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
H	5
K	10
L	15

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

Parker domnick hunter commitments

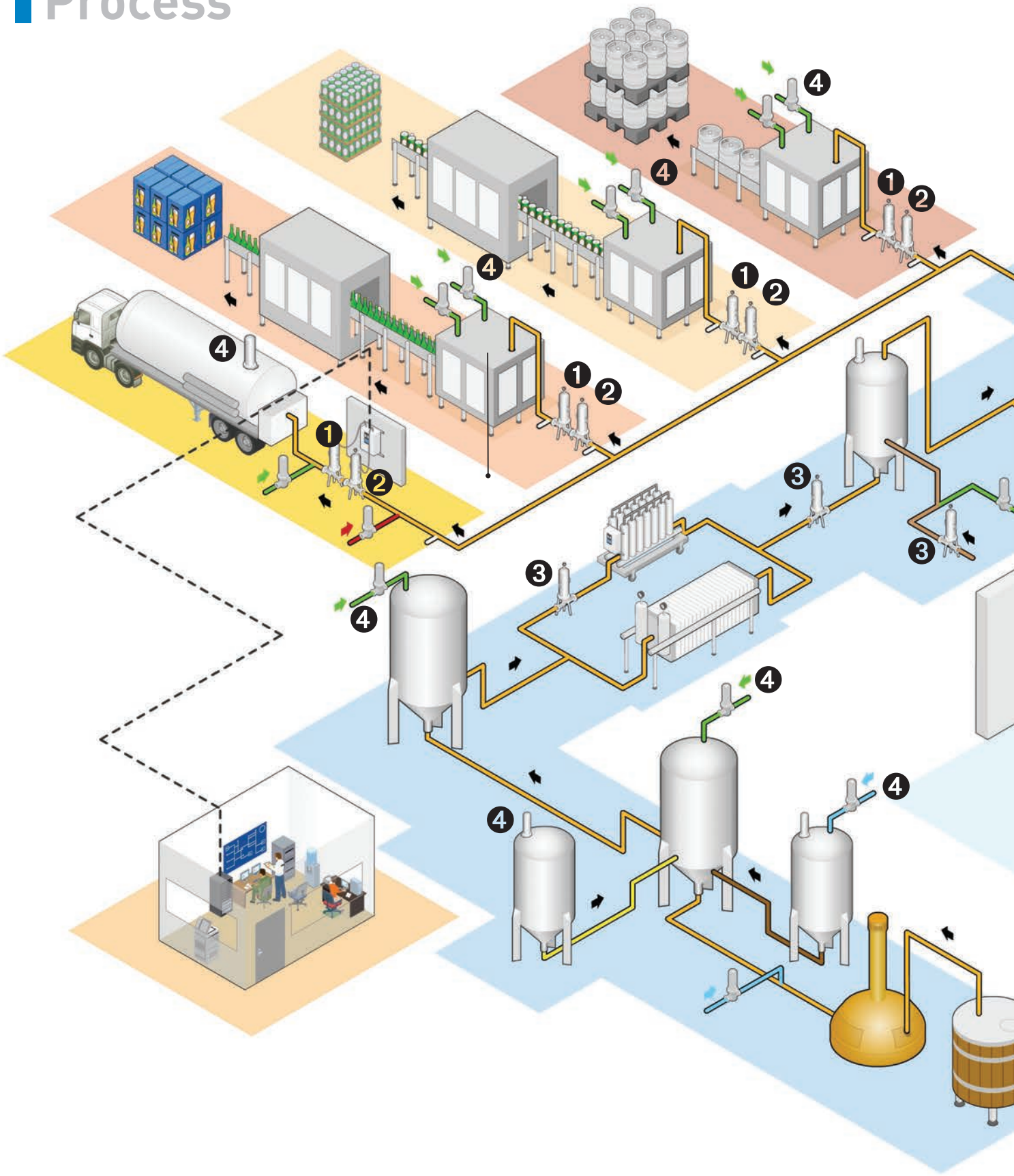
Brewing
collection

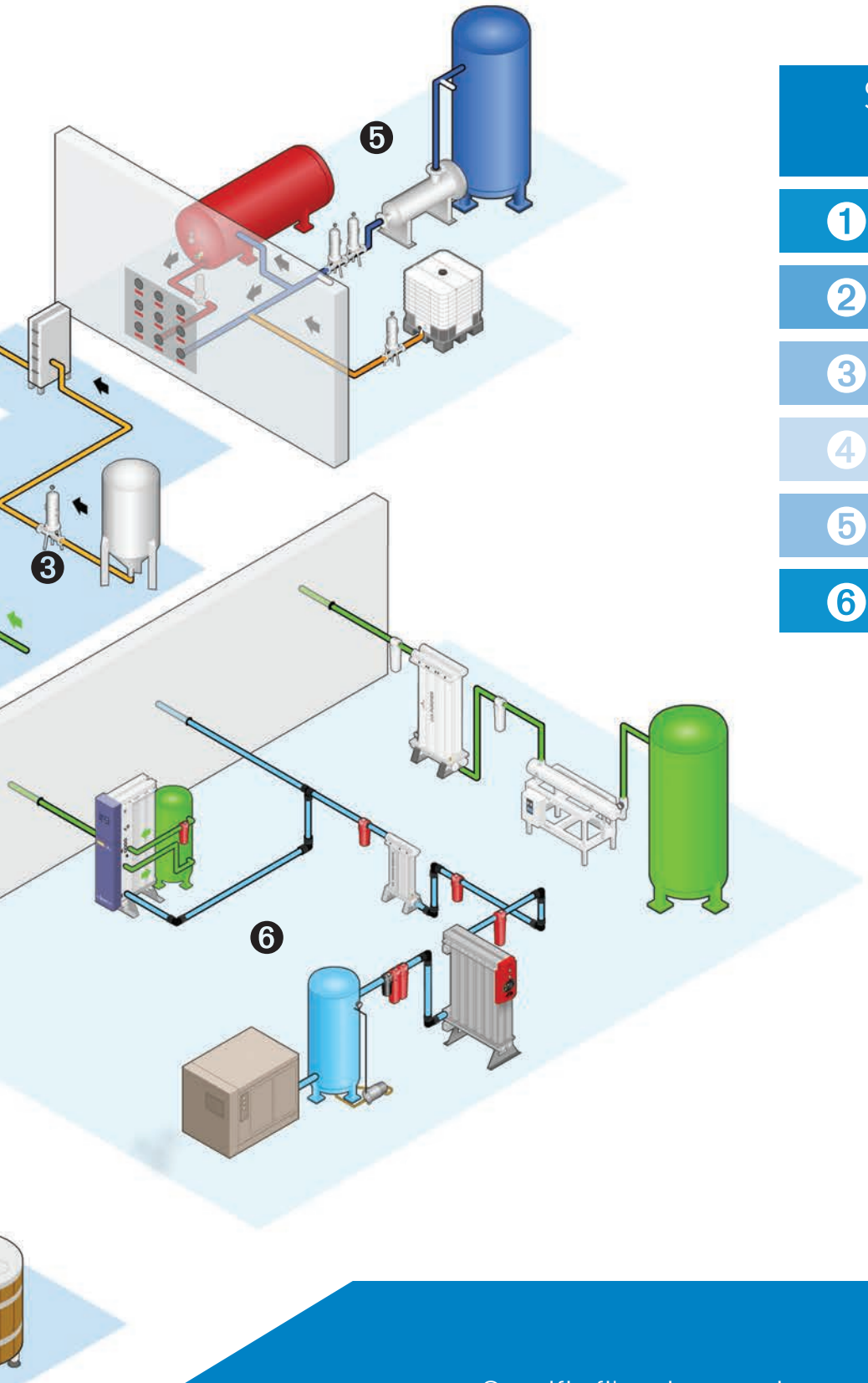
Large multinational corporations, regional brewers and micro-brewers alike have partnered with Parker domnick hunter to successfully reach their quality and production requirements.

At the heart of the brewing process lies a totally natural sequence of events – the anaerobic fermentation of malted barley by yeast. In order to consistently produce the perfect brew, the fermentation, stabilization and packaging stages need to be closely controlled. Each stage of the process typically requires dedicated technology and equipment and there is a huge range of choice and flexibility in approaches.

Parker domnick hunter provide tailored filtration solutions which meet specific performance criteria. Through a structured program of technical analysis available from a network of international support hubs, we work with end users to achieve their goals. By combining specialist brewing knowledge with a dedicated product range, we deliver the Parker domnick hunter commitments of; protecting beer quality, reducing processing costs and providing specialist support.

Typical Process





Specialized Brewing Applications

1. Cold Stabilization
2. Pre-stabilization
3. Trap Filtration
4. Sterilization of Gases
5. Water Utilities
6. Gas Utilities

Specific filtration requirements within the brewery dictate different design criteria for the filter systems. Parker domnick hunter have a range of specialized filtration systems designed to add value at each stage of beer production, stabilization and packaging operations.

BEVPOR PS Brewing

Filter Cartridges

BEVPOR PS beer filters protect the unique characteristics of beer by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the beer's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged. Combined with hydrophilic properties for easy integrity testing, BEVPOR PS filters provide assured performance throughout their service life.

BEVPOR PS filters have been designed to provide a cost effective solution to beer stabilization by providing increased process control with increased operational efficiency.

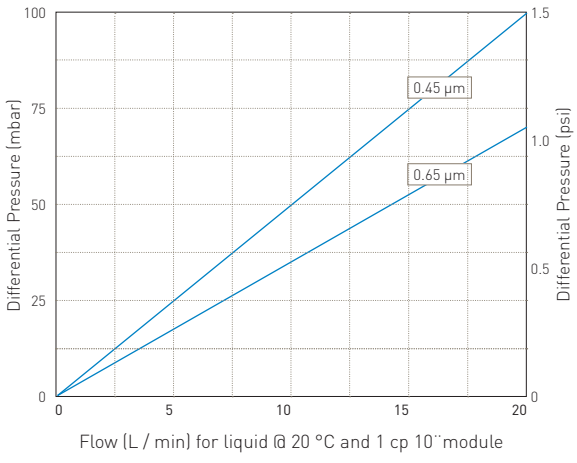
Features

- Validated retention to spoilage organisms
- Inert material of construction
- Easily integrity tested in-situ

Benefits

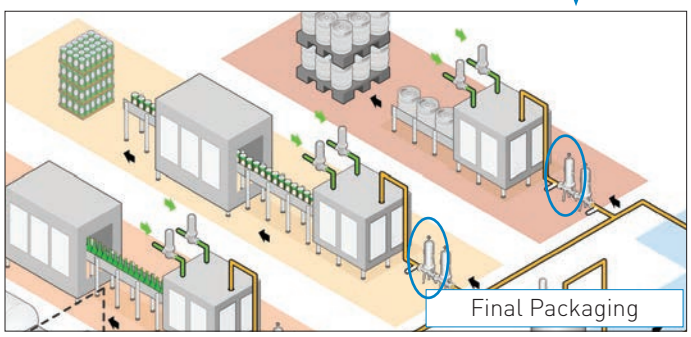
- Ensures effective microbial stabilization of beer
- Preserves the organoleptic qualities of the beer
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PS filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.45	0.65
Saccharomyces cerevisiae	FR	FR
Brettanomyces bruxellensis	FR	FR
Lactobacillus brevis	FR	FR
Acetobacter oeni	FR	FR
Pseudomonas aeruginosa	9.1	8.9
Serratia marcescens	FR	FR

*FR - Fully retentive during challenge

When expressed as titre reduction "FR" equates to >10⁷ per 10˝ module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65
Test Pressure (barg)	1.4	1.0
Test Pressure (psig)	20.0	15.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPS - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron	
04	0.45	µm
06	0.65	µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

BEVPOR PW Brewing

Filter Cartridges

BEVPOR PW beer filters protect the unique characteristics of beer by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the beer's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged.

The incorporation of an active prefilter layer allows graded retention throughout the depth of the filter to resist blockage, resulting in an increased capacity and long service lifetimes.

BEVPOR PW filters have been designed to provide a cost-effective solution to beer stabilization by providing increased process control with increased operational efficiency.

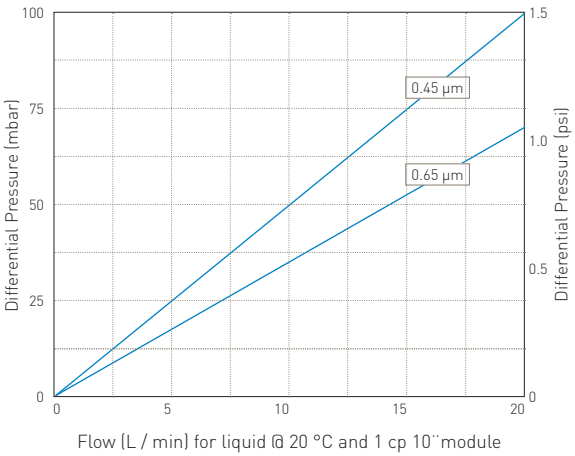
Features

- Validated retention to spoilage organisms
- Inert material of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer

Benefits

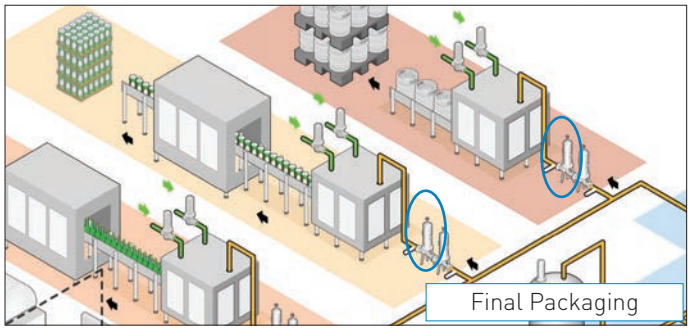
- Ensures effective microbial stabilization of beer
- Preserves the organoleptic qualities of the beer
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PW cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PW filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.45	0.65
Saccharomyces cerevisiae	FR	FR
Brettanomyces bruxellensis	FR	FR
Lactobacillus brevis	FR	FR
Acetobacter oeni	FR	FR
Pseudomonas aeruginosa	9.1	8.9
Serratia marcescens	FR	FR

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10⁷ per 10˝ module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65
Test Pressure (barg)	1.4	1.0
Test Pressure (psig)	20.0	15.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPW - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE
AVAILABLE

DS_BR_04_01/14 Rev. 1B

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BEVPOR PH Brewing

Filter Cartridges

BEVPOR PH beer filters protect the unique characteristics of beer by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the beer's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged.

The incorporation of an active prefilter layer, combined with an increased filtration area provides high beer flow rates, greater resistance to blockage and maximized service lifetime.

BEVPOR PH filters have been designed to provide the optimum solution to beer stabilization by providing increased process control with maximized operational efficiency.

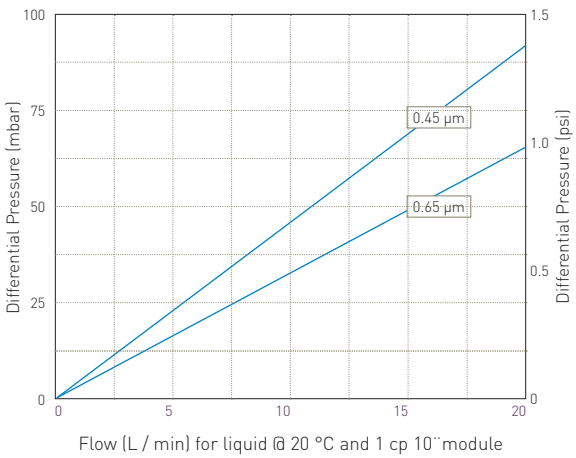
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer
- High filtration area

Benefits

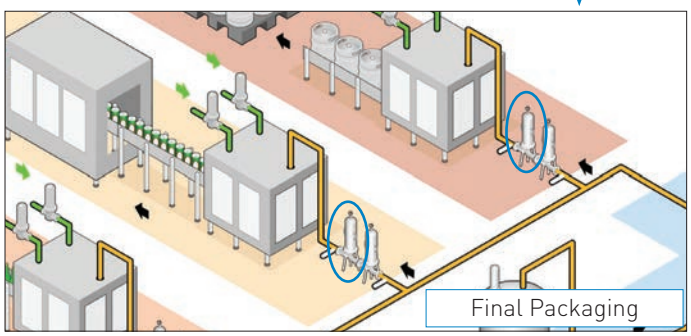
- Ensures effective microbial stabilization of beer
- Preserves the organoleptic qualities of the beer
- Assured filtration performance
- Increased throughput to blockage
- Maximized operational efficiency

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

BEVPOR PH cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PH filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2 0.45	0.65
Saccharomyces cerevisiae	FR	FR
Brettanomyces bruxellensis	FR	FR
Lactobacillus brevis	FR	FR
Acetobacter oeni	FR	FR
Pseudomonas aeruginosa	9.1	8.9
Serratia marcescens	FR	FR

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝ module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65
Test Pressure (barg)	1.4	1.0
Test Pressure (psig)	20.0	15.0
Max Diffusional Flow per 10˝ (ml /min)	21.0	21.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPH - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron	
04	0.45	µm
06	0.65	µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
R	BF / 222 Bayonet

Code	O-rings
S*	Silicone
E	EPDM

*Silicone O-rings supplied as standard

VSH & HSL
HOUSING RANGE AVAILABLE

PREPOR NG Brewing

Filter Cartridges

Parker domnick hunter's continued focus on process optimization and control has led to the development of a new range of prefilters to benefit the latter stages of beer stabilization processes.

Following upstream clarification stages there is a need to control the microbial loading of the bright beer before intermediate storage.

The new range of PREPOR NG filters has been specifically developed to remove yeast and particulate such as filter aids and haze components. The superior level of retention ensures that a consistent quality of brew is delivered to bright beer storage whilst also offering a greater level of membrane filter protection during cold stabilization.

The robust componentry is specifically designed to withstand caustic and backwash regeneration, making the filter stage a reliable and cost-effective solution to beer stabilization.

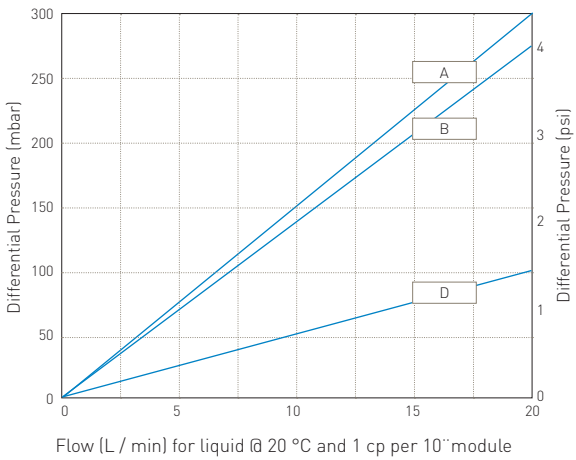
Features

- Fully validated yeast removal and bacterial reduction
- Truly optimized graded density using unique Optimized Depth Construction Technology
- Mechanically strong and chemically resistant polypropylene construction designed for chemical CIP and backwash

Benefits

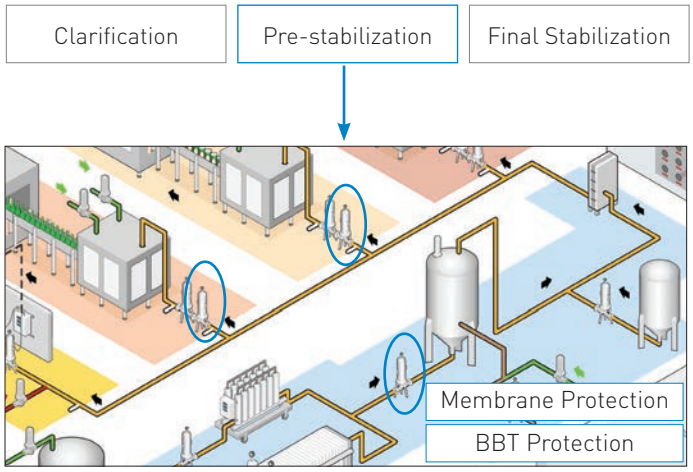
- Greater control of beer quality prior to final stabilization processes
- Increased filtration capacity
- Increased service life when combined with regular CIP regeneration

Performance Characteristics



Flow (L / min) for liquid @ 20 °C and 1 cp per 10¨module

Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.5 m² (5.38 ft²)

Cleaning and Sterilization

PREPOR NG cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The absolute retention characteristics of PREPOR NG filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm²		
	A	B	D
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	2.0
Acetobacter oeni	2.0	2.0	1.7
Serratia marcescens	3.9	3.4	1.9

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝module.

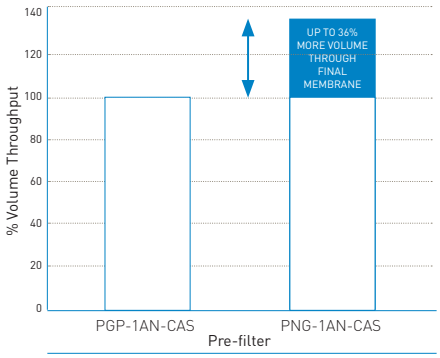
Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

ODC Technology

Optimized Depth Construction (ODC) provides a unique graded density combining longer service life with absolute filtration efficiency.

Performance Benefits



ODC technology combines fine particle retention with increased strength and stability to enhance the performance offered by the PREPOR range.

Ordering information

PNG - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
A	0.5
B	0.6
D	1.0

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL HOUSING RANGE AVAILABLE

PEPLYN TF Brewing

Filter Cartridges

PEPLYN TF filters have been specifically designed to protect beer from the passage of filter aids and lees used in primary clarification processes. By combining absolute particle retention, high dirt holding capacity and resistance to blockage with ease of regeneration, PEPLYN TF filters provide the optimum solution for trap filtration.

The carefully constructed polypropylene media ensures insoluble particulate is captured on the surface of the filtration media in a way that it can be easily removed through backwashing. This feature, combined with the strong, rigid construction provides reliable filtration performance over extended operational lifetimes.

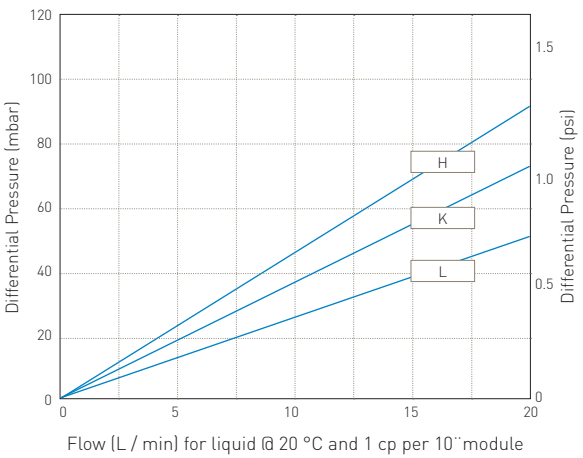
Features

- Robust polypropylene construction designed for chemical CIP and backwash
- High effective filtration area
- A range of absolute retention ratings

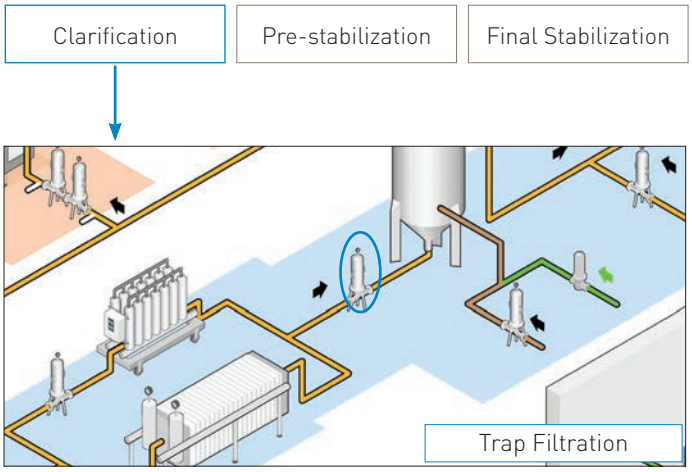
Benefits

- Extended service life when combined with regular CIP regeneration
- High beer flow and resistance to blockage under high loading
- Defined cut-off to powders and flexibility to optimize the filtration

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.7 m^2 (7.53 ft^2)

Cleaning and Sterilization

PEPLYN TF cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of PEPLYN TF filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

Micron Rating at various efficiencies						
Efficiency	>99.99%	99.98%	99.90%	99%	95%	90%
Beta Ratio	10000	5000	1000	100	20	10
H	5.00	4.70	4.50	3.50	2.30	1.00
K	10.00	8.00	7.00	4.80	3.80	2.80
L	15.00	12.00	10.00	7.20	6.00	4.50

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

PTF - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
H	5
K	10
L	15

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

Europe: ✆ +44 (0)191 4105121 | dhprocess@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.na@parker.com | www.parker.com/dhbeer

Parker domnick hunter commitments

Bottled Water collection

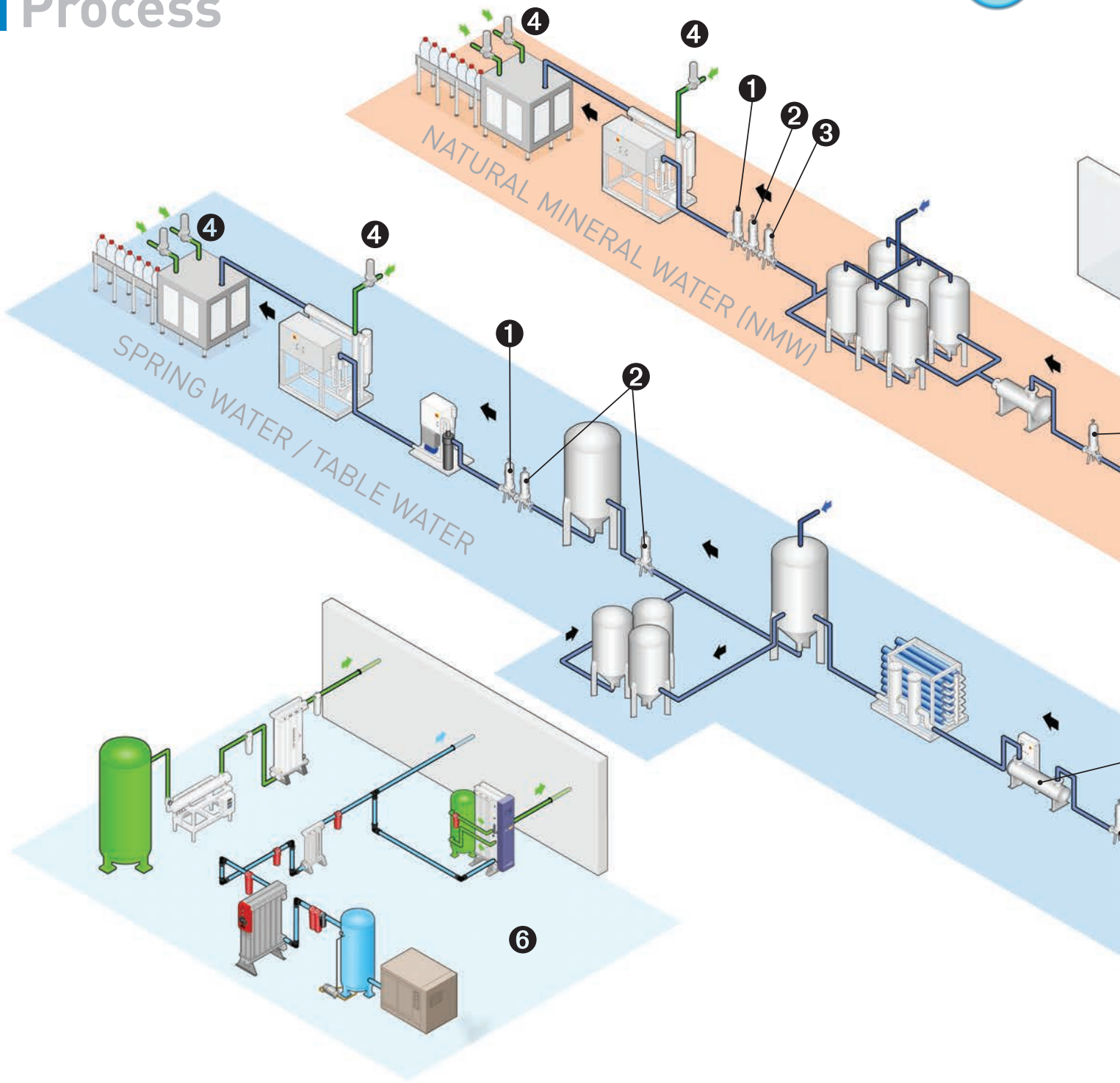
Multinational corporations and boutique producers of bottled water brands across the globe have partnered with Parker domnick hunter to successfully reach their quality and production requirements.

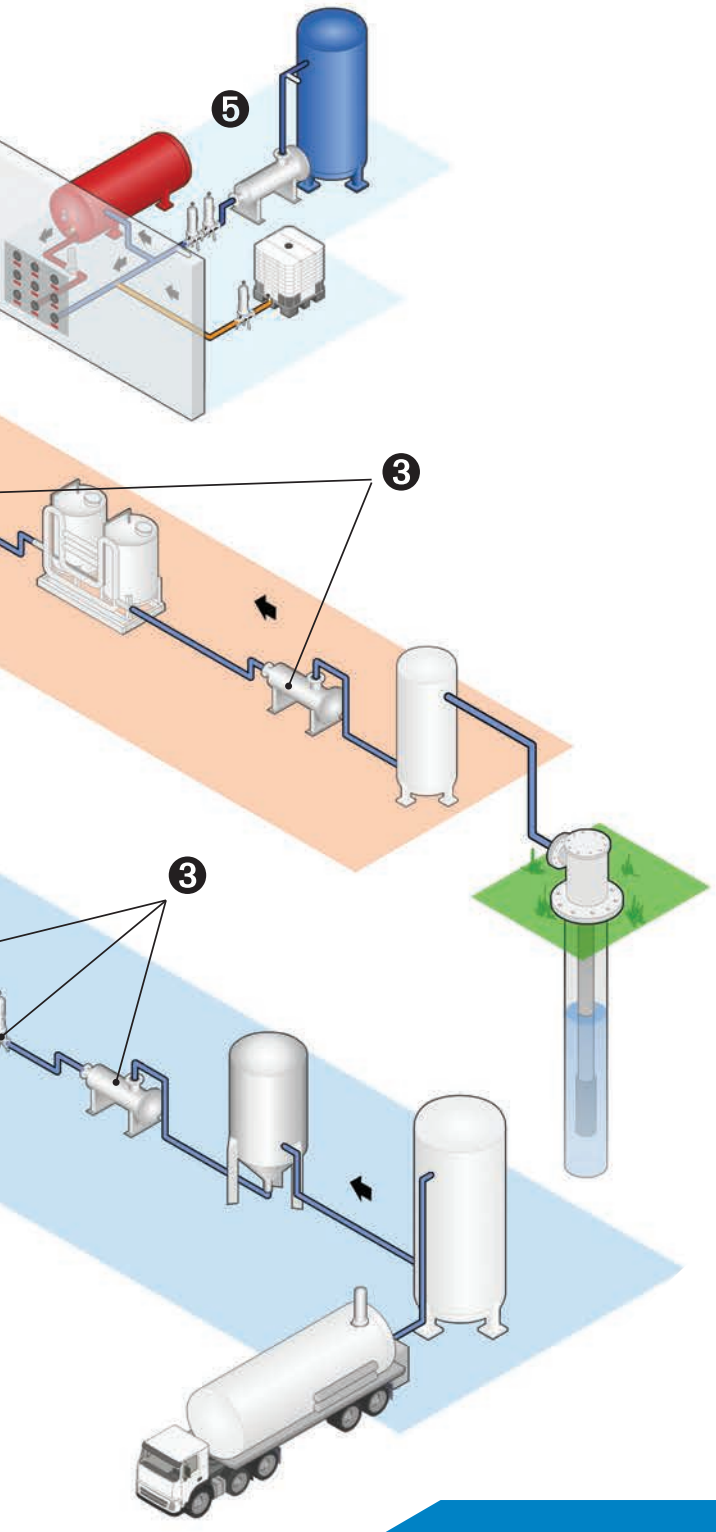
From plant to plant, every bottled water process is different depending upon; the category and branding of the finished bottled product, the local legislation of the intended market and the source of the water itself. These differences influence the performance expectations of the filtration systems and generate a wide degree of choice in approach to filtration. By understanding the specific requirements for each stage of the bottled water production process, Parker domnick hunter offer value added filtration solutions which deliver our commitments of; protecting water quality, reducing bottling costs and consumer and brand protection.

Parker domnick hunter provides tailored filtration solutions which meet the performance criteria required by a given process. Through a structured program of technical analysis available from a network of international support hubs, we work with end users to achieve their goals. Continued process optimization is our duty.

www.parker.com/dhbottledwater

Typical Process





Specialized Water Applications

1. Final Stabilization
2. Pre-stabilization
3. Clarification
4. Sterilization of Gases
5. Water Utilities
6. Gas Utilities

Specific filtration requirements within the water bottling process dictate different design criteria for the filter systems. Parker domnick hunter have a range of specialized filtration systems designed to add value at each stage of the water bottling process.

BEVPOR MS Bottled Water

Filter Cartridges

BEVPOR MS filters provide full retention to industry regulated, water contaminating organisms to ensure the micro-biological safety of bottled water.

The inert and highly asymmetric PES membrane provides validated microbial retention to regulated, contaminating organisms. The 0.2µm grade provides complete sterility in accordance to ASTM F838-05 requirements. Combined with hydrophilic properties for easy integrity testing, BEVPOR MS filters provide assured performance throughout their service life.

BEVPOR MS filters have been designed to provide a cost-effective solution to the microbial sterilization and stabilization of bottled water by providing increased process control with increased operational efficiency.

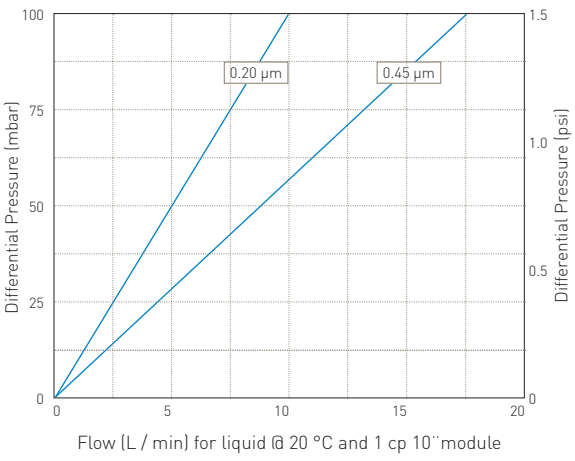
Features

- Validated retention to industry regulated organisms
- Inert materials of construction
- Easily integrity tested in-situ

Benefits

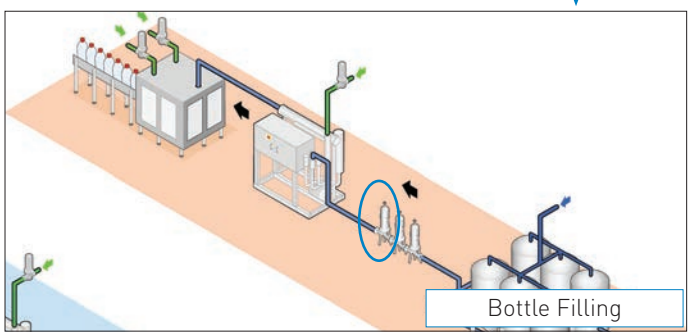
- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | **Final Stabilization**



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250mm) Up to 0.6m² (6.45ft²)

Cleaning and Sterilization

BEVPOR MS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130°C (266°F). They can be sanitized with hot water at up to 90°C (194°F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR MS filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10˝ cartridges with more than 10^7cfu per cm² using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm²	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	FR
Brevundimonas diminuta	FR	5

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10" per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	2.4	1.7
Test Pressure (psig)	35.0	25.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BMS - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron	
02	0.20	µm
04	0.45	µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR MW Bottled Water

Filter Cartridges

BEVPOR MW filters provide full retention to industry regulated, water contaminating organisms to ensure the microbiological safety of bottled water.

The inert and highly asymmetric PES membrane provides validated microbial retention to regulated, contaminating organisms. The 0.2µm grade provides complete sterility in accordance to ASTM F838-05 requirements. Combined with hydrophilic properties for easy integrity testing, BEVPOR MW filters provide assured performance throughout their service life.

The incorporation of an integral prefilter layer allows graded retention throughout the depth of the filter to resist blockage, resulting in increased capacity and long service lifetimes. BEVPOR MW filters have been designed to provide a cost-effective solution to the microbial sterilization and stabilization of bottled water by providing increased process control with increased operational efficiency.

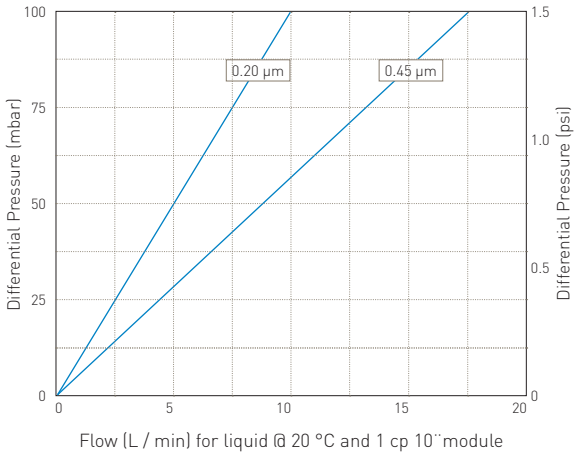
Features

- Validated retention to industry regulated organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer

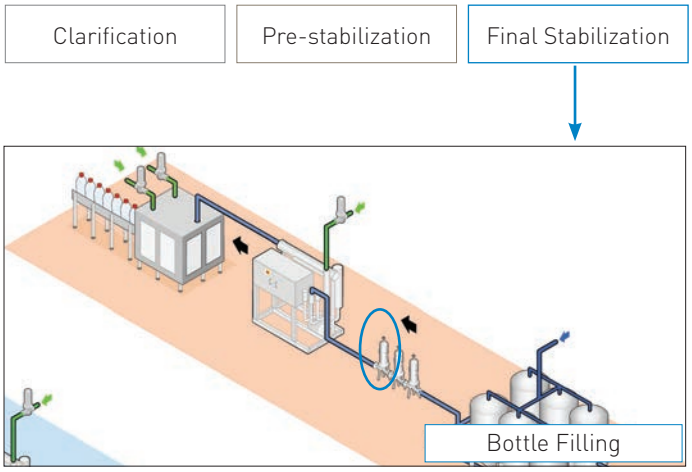
Benefits

- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10" (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR MW cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR MW filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10" cartridges with more than 10^7cfu per cm^2 using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	FR
Brevundimonas diminuta	FR	5

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10⁷ per 10" module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	2.4	1.7
Test Pressure (psig)	35.0	25.0
Max Diffusional Flow per 10" (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BMW - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)
4	40"	(1000 mm)

Code	Micron	
02	0.20	µm
04	0.45	µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR MH Bottled Water

Filter Cartridges

BEVPOR MH filters provide full retention to industry regulated, water contaminating organisms to ensure the microbiological safety of bottled water.

The inert and highly asymmetric PES membrane provides validated microbial retention to regulated, contaminating organisms. The 0.2µm grade provides complete sterility in accordance to ASTM F838-05 requirements. Combined with hydrophilic properties for easy integrity testing, BEVPOR MH filters provide assured performance throughout their service life. The incorporation of an active prefilter layer, combined with an increased filtration area provides high water flow rates, greater resistance to blockage and maximized service lifetimes.

BEVPOR MH filters have been designed to provide the optimum solution to the microbial sterilization and stabilization of bottled water by providing increased process control with increased operational efficiency.

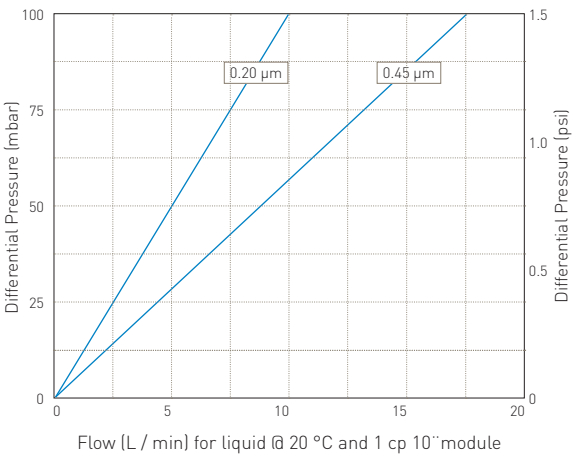
Features

- Validated retention to industry regulated organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer
- High filtration area

Benefits

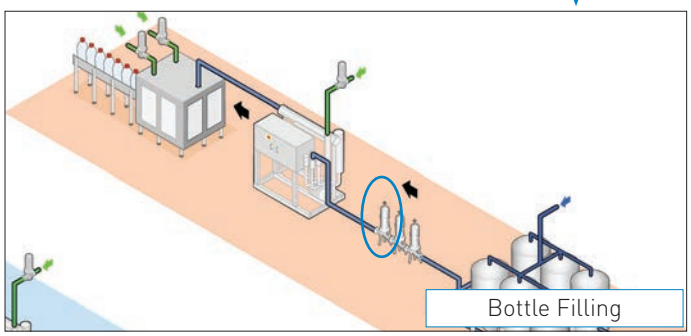
- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

BEVPOR MH cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR MH filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10˝ cartridges with more than 10^7cfu per cm^2 using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	FR
Brevundimonas diminuta	FR	5

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10" per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	2.4	1.7
Test Pressure (psig)	35.0	25.0
Max Diffusional Flow per 10˝ (ml /min)	21.0	21.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BMH - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron	
02	0.20	µm
04	0.45	µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR PS Bottled Water

Filter Cartridges

BEVPOR PS filters ensure the microbiological safety of bottled water whilst protecting the purity and essential characteristics of the source water.

The inert and highly asymmetric PES membrane provides validated microbial retention to industry regulated contaminating organisms. Combined with hydrophilic properties for easy integrity testing, BEVPOR PS filters provide assured performance throughout their service life.

BEVPOR PS filters have been designed to provide a cost-effective solution to the microbial stabilization of bottled water by providing increased process control with increased operational efficiency.

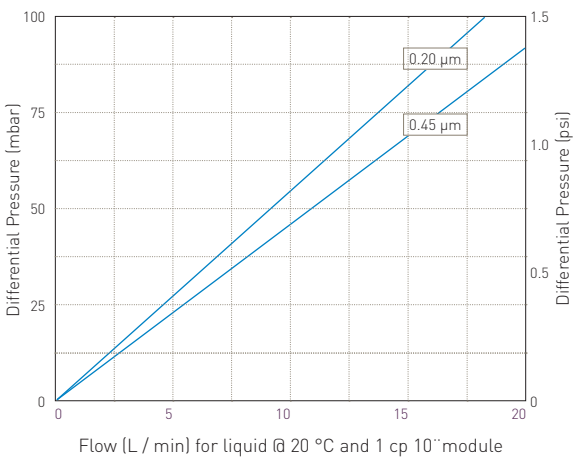
Features

- Validated retention to industry regulated micro-organisms
- Inert material of construction
- Easily integrity tested in-situ

Benefits

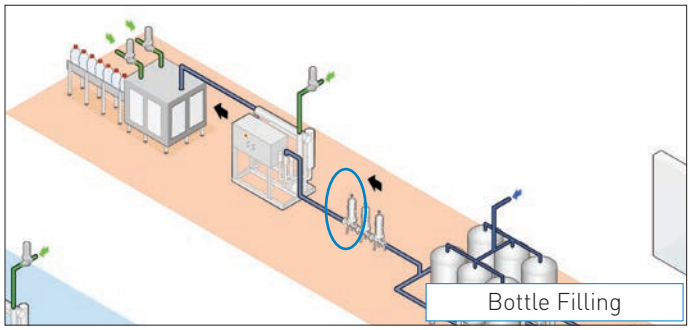
- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | **Final Stabilization**



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR PS filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10˝ cartridges with more than 10^7cfu per 10˝ cartridge using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	9.1
Brevundimonas diminuta	5	-

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10˝ per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	1.7	1.4
Test Pressure (psig)	25.0	20.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPS - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
02	0.20 µm
04	0.45 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR PW Bottled Water

Filter Cartridges

BEVPOR PW filters ensure the microbiological safety of bottled water whilst protecting the purity and essential characteristics of the source water.

The inert and highly asymmetric PES membrane provides validated microbial retention to industry regulated contaminating organisms. Combined with hydrophilic properties for easy integrity testing, BEVPOR PW filters provide assured performance throughout their service life.

The incorporation of an integral prefilter layer allows graded retention throughout the depth of the filter to resist blockage, resulting in increased capacity and long service lifetime.

BEVPOR PW filters have been designed to provide a cost-effective solution to the microbial stabilization of bottled water by providing increased process control with increased operational efficiency.

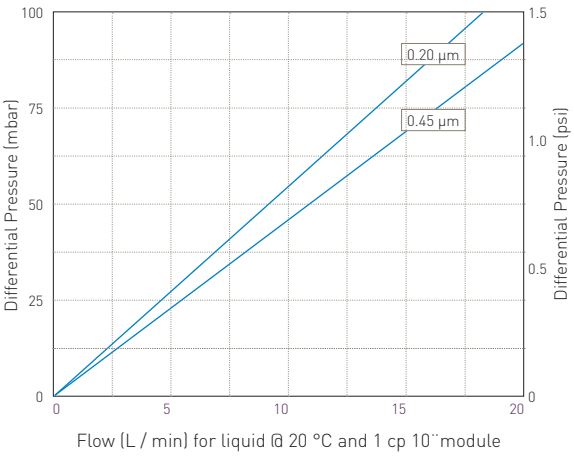
Features

- Validated retention to industry regulated micro-organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer

Benefits

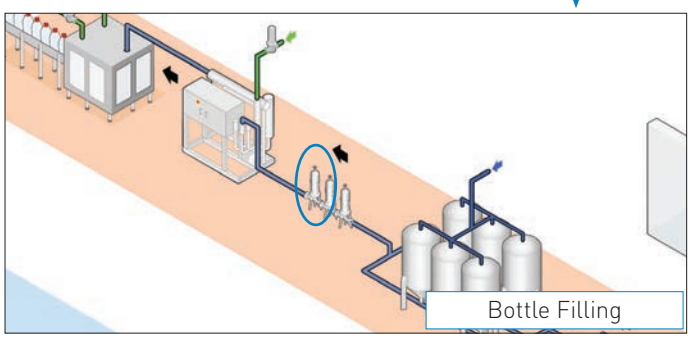
- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10¨ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PW cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR PW filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10" cartridges with more than 10^7cfu per 10" cartridge using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	9.1
Brevundimonas diminuta	5	-

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10¨module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	1.7	1.4
Test Pressure (psig)	25.0	20.0
Max Diffusional Flow per 10¨ (ml /min)	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPW - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)
1	10¨ (250 mm)
2	20¨ (500 mm)
3	30¨ (750 mm)
4	40¨ (1000 mm)

Code	Micron
02	0.20 µm
04	0.45 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S*	Silicone
E	EPDM

*Silicone O-rings supplied as standard

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BEVPOR PH Bottled Water

Filter Cartridges

BEVPOR PH filters ensure the microbiological safety of bottled water whilst protecting the purity and essential characteristics of the source water.

The inert and highly asymmetric PES membrane provides validated microbial retention to industry regulated contaminating organisms. Combined with hydrophilic properties for easy integrity testing, BEVPOR PH filters provide assured performance throughout their service life.

The incorporation of an integral prefilter layer, combined with an increased filtration area, provides high water flow rates, greater resistance to blockage and maximized service lifetime.

BEVPOR PH filters have been designed to provide the optimum solution to the microbial stabilization of bottled water by providing increased process control with increased operational efficiency.

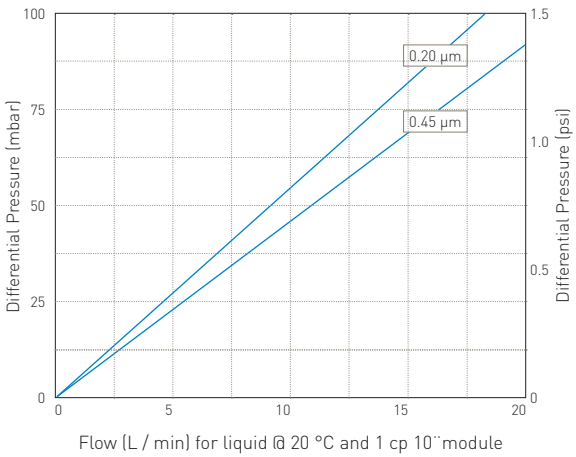
Features

- Validated retention to industry regulated micro-organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer
- High filtration area

Benefits

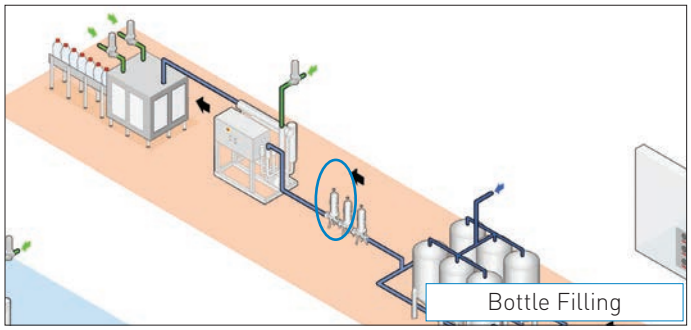
- Ensures the safety of the water prior to bottling
- Protects the purity and essential characteristics of the source water
- Assured filtration performance
- Increased throughput to blockage
- High water flow and maximized operational efficiency

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

BEVPOR PH cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

0.2µm BEVPOR PH filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10˝ cartridges with more than 10^7cfu per 10˝ cartridge using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	0.20	0.45
Serratia marcescens	FR	FR
Escherichia coli	FR	FR
Enterococcus faecalis	FR	FR
Clostridium perfringens	FR	FR
Pseudomonas aeruginosa	FR	9.1

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20	0.45
Test Pressure (barg)	1.7	1.4
Test Pressure (psig)	25.0	20.0
Max Diffusional Flow per 10˝ (ml /min)	21.0	21.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPH - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
02	0.20 µm
04	0.45 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Reccess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE
AVAILABLE

Europe: ✆ +44 (0)191 4105121 | dhprocessl@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.nal@parker.com | www.parker.com/dhbottledwater

PREPOR NG Bottled Water

Filter Cartridges

Parker domnick hunter's continued focus on process optimization has led to the development of a new range of prefilters which offer superior levels of membrane filter protection and reduced running costs for bottling plants worldwide.

Throughout the bottling process it is important to protect the water from external contamination. The PREPOR NG filter has been carefully designed and constructed to protect the purity and essential characteristics of the source water whilst reducing colloidal particulate and regulated micro-organisms over extended periods of use. This in turn reduces the potential for biofilm formation in downstream systems and significantly improves the operating lifetime of membrane final filters.

Increased resistance to frequent SIP / CIP cycles combined with the inherent strength and robust construction provides stable retention through the filter's lifetime.

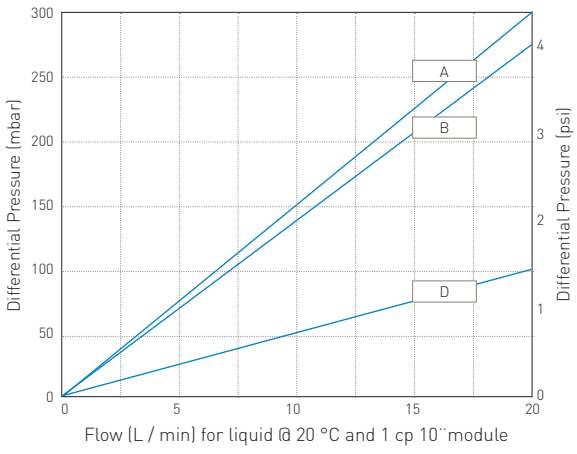
Features

- Fully validated microbial reduction
- Truly optimized graded density using unique Optimized Depth Construction Technology
- Mechanically strong and chemically resistant polypropylene construction

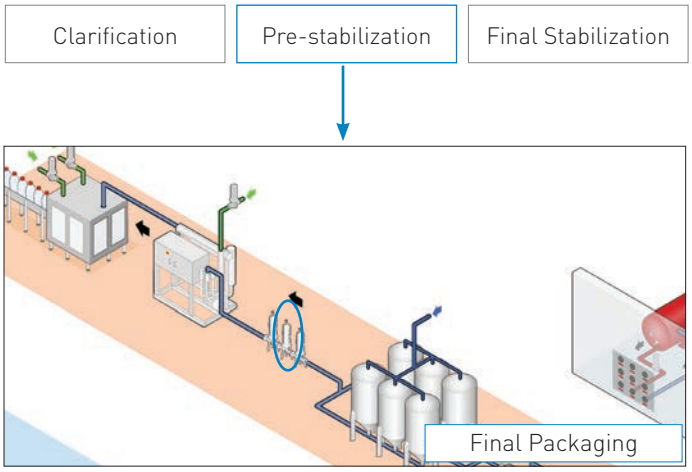
Benefits

- Reduced risk of microbial contamination during intermediate storage
- Improved retention efficiency and dirt holding capacity
- Stable, reliable retention efficiency throughout the service life

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.5 m² (5.38 ft²)

Cleaning and Sterilization

PREPOR NG cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The absolute retention characteristics of PREPOR NG filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm²		
	A	B	D
Pseudomonas aeruginosa	3.0	2.8	0.5
Clostridium perfringens	5.0	2.2	2.2
Serratia marcescens	3.9	3.4	1.9

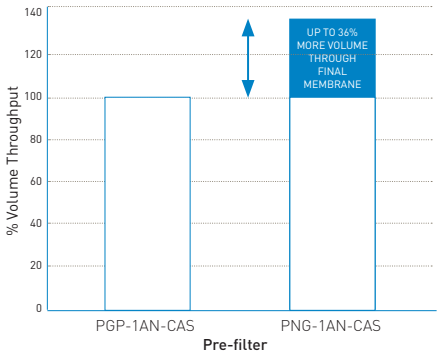
Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

ODC Technology

Optimized Depth Construction (ODC) provides a unique graded density combining longer service life with absolute filtration efficiency.

Performance Benefits



ODC technology combines fine particle retention with increased strength and stability to enhance the performance offered by the PREPOR range.

Ordering information

PNG - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
A	0.5
B	0.6
D	1.0

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

Parker domnick hunter commitments

Cider
collection

Cider choice and consumption continue to grow and quality specifications are increasing to reflect consumer needs and the extended shelf-life required for products that travel further afield. Aside of live and cloudy ciders, the emphasis for the majority of volume produced is to provide consumers with a fresh tasting, visually brilliant product.

Key to achieving these requirements is the efficacy of filtration throughout the process. For products that are to be pasteurised filtration of the final product is primarily to provide visual clarity, although use of stabilizing grade filters also provides a dual barrier approach to microbiological quality. For cold stabilized products, whether in glass, PET or keg, the filter must provide a guarantee of protection against microbiological instability. Throughout the process, microfiltration plays a large role in assuring the quality of ancillary fluids such as carbon dioxide, steam and water.

Parker domnick hunter has partnered with cider makers and packagers to meet their changing needs over the years. Through a structured application-led approach, we can provide options for various levels of clarification and microbiological stability throughout the production process, whilst demonstrating proven cost reductions through operational efficiencies and filter design. Quality, economy and continuing process optimisation are our ongoing commitments.

www.parker.com/dhcider

BEVPOR PS Cider

Filter Cartridges

BEVPOR PS cider filters protect the unique characteristics of cider by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the cider's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged. Combined with hydrophilic properties for easy integrity testing, BEVPOR PS filters provide assured performance throughout their service life.

BEVPOR PS filters have been designed to provide a cost-effective solution to cider stabilization by providing increased process control with increased operational efficiency.

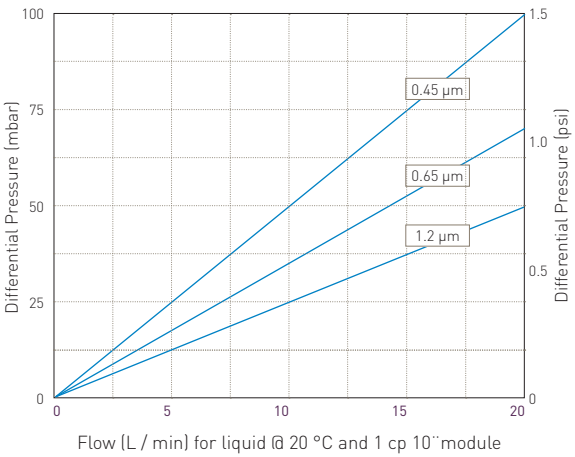
Features

- Validated retention to spoilage organisms
- Inert material of construction
- Easily integrity tested in-situ

Benefits

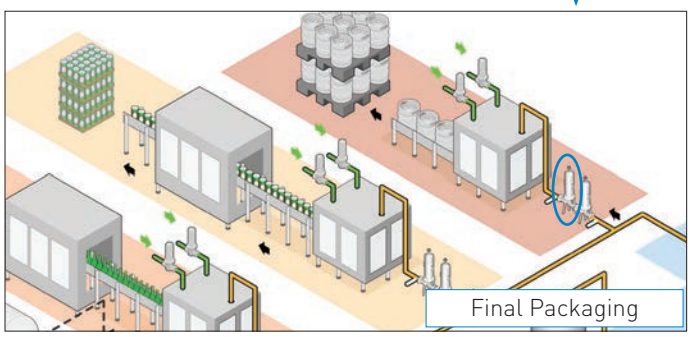
- Ensures effective microbial stabilization of cider
- Preserves the organoleptic qualities of the cider
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PS filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2		
	0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	-
Acetobacter oeni	FR	FR	-
Pseudomonas aeruginosa	9.1	8.9	-
Serratia marcescens	FR	FR	-

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10" per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPS - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.20 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

BEVPOR PW Cider

Filter Cartridges

BEVPOR PW cider filters protect the unique characteristics of cider by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the cider's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged.

The incorporation of an active prefilter layer allows graded retention throughout the depth of the filter to resist blockage, resulting in an increased capacity and long service lifetimes.

BEVPOR PW filters have been designed to provide a cost-effective solution to cider stabilization by providing increased process control with increased operational efficiency.

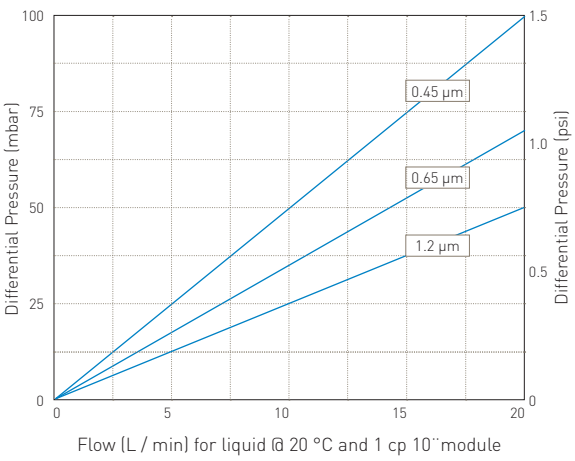
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer

Benefits

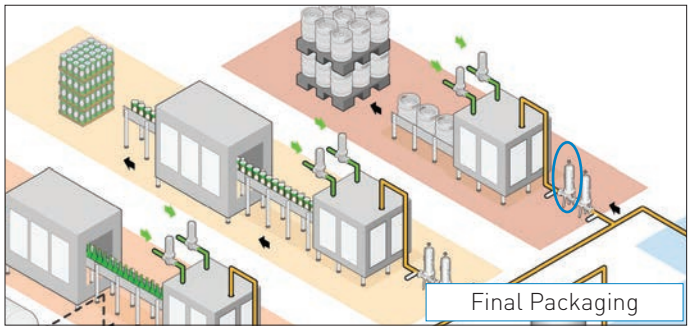
- Ensures effective microbial stabilization of cider
- Preserves the organoleptic qualities of the cider
- Assured filtration performance
- Increased throughput to blockage

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.45 ft^2)

Cleaning and Sterilization

BEVPOR PW cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PW filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2		
	0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	-
Acetobacter oeni	FR	FR	-
Pseudomonas aeruginosa	9.1	8.9	-
Serratia marcescens	FR	FR	-

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating		
	0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10˝ (ml /min)	16.0	16.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPW - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.20 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

BEVPOR PH Cider

Filter Cartridges

BEVPOR PH cider filters protect the unique characteristics of cider by removing yeast and other spoilage organisms to ensure microbial stability during cold stabilization.

The inert and highly asymmetric PES membrane provides validated microbial retention to typical spoilage organisms, whilst protecting the cider's organoleptic qualities to preserve a fresh taste and a long shelf-life once packaged.

The incorporation of an active prefilter layer, combined with an increased filtration area provides high cider flow rates, greater resistance to blockage and maximized service lifetime.

BEVPOR PH filters have been designed to provide the optimum solution to cider stabilization by providing increased process control with maximized operational efficiency.

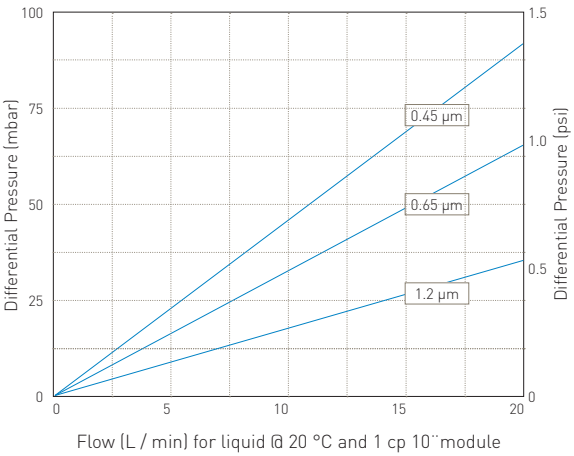
Features

- Validated retention to spoilage organisms
- Inert materials of construction
- Easily integrity tested in-situ
- Integral depth prefiltration layer
- High filtration area

Benefits

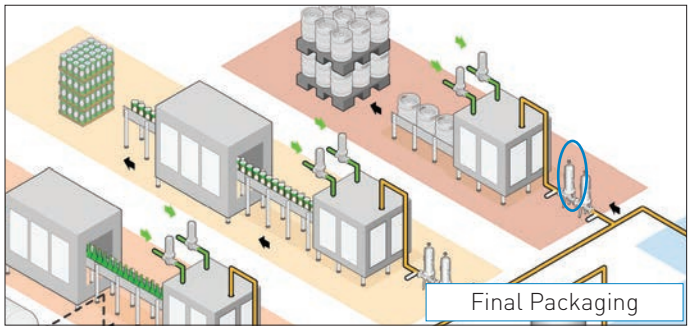
- Ensures effective microbial stabilization of cider
- Preserves the organoleptic qualities of the cider
- Assured filtration performance
- Increased throughput to blockage
- High cider flow and maximized operational efficiency

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

BEVPOR PH cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The retention characteristics of BEVPOR PH filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2		
	0.45	0.65	1.2
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	-
Acetobacter oeni	FR	FR	-
Pseudomonas aeruginosa	9.1	8.9	-
Serratia marcescens	FR	FR	-

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝ module.

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.45	0.65	1.2
Test Pressure (barg)	1.4	1.0	0.6
Test Pressure (psig)	20.0	15.0	9.0
Max Diffusional Flow per 10˝ (ml /min)	21.0	21.0	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BPH - [ ] [ ] - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
04	0.45 µm
06	0.65 µm
12	1.2 µm

Code	End Cap (10 inch)
C	Fin / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

PREPOR NG Cider

Filter Cartridges

Parker domnick hunter's continued focus on process optimization and control has led to the development of a new range or prefilters for the clarification and pre-stabilization stages of cider production.

The control of particulate and microbial loading is important to provide stability to cider during storage and transport and to ensure that the finished product maintains its desirable characteristics after packaging.

Parker domnick hunter's next generation of PREPOR filters have been developed to remove yeast and reduce bacterial loading to improve short-term stability and to increase the service life of downstream membrane filters. The robust componentry allows for caustic and backwash regeneration, making the filter stage a reliable and cost-effective solution to intermediate stabilization.

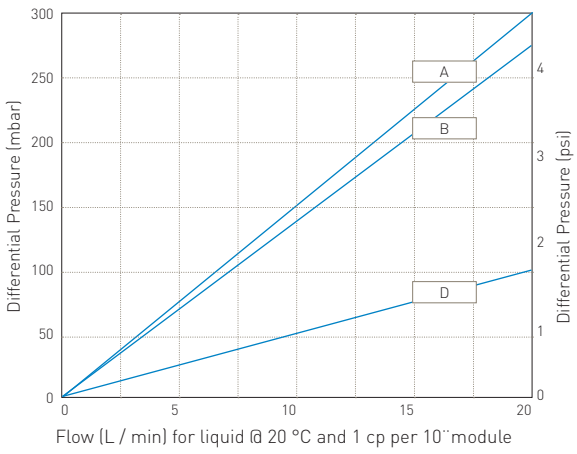
Features

- Fully validated yeast removal and bacterial reduction
- Truly optimized graded density using unique Optimized Depth Construction Technology
- Mechanically strong and chemically resistant polypropylene construction designed for chemical CIP and backwash

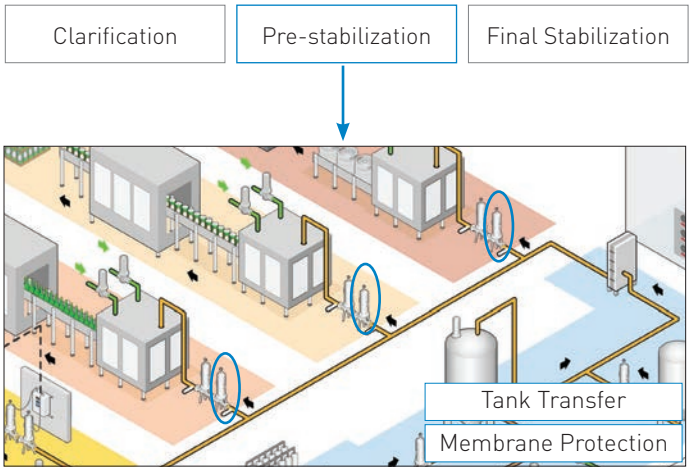
Benefits

- Effective control of clarity and microbial stability
- Increased filtration capacity
- Increased service life when combined with regular CIP regeneration

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.5 m² (5.38 ft²)

Cleaning and Sterilization

PREPOR NG cartridges can be repeatedly steam sterilized in-situ or autoclaved up to 135 °C (275 °F). They can be sanitized with hot water up to 90 °C (194 °F), are compatible with a wide range of chemicals and can be backwashed. Please refer to our Clean-in-Place Support Guide or contact your local Parker representative for more information.

Retention Characteristics

The absolute retention characteristics of PREPOR NG filters have been validated by challenges performed with the following organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm²		
	A	B	D
Saccharomyces cerevisiae	FR	FR	FR
Brettanomyces bruxellensis	FR	FR	FR
Lactobacillus brevis	FR	FR	2.0
Acetobacter oeni	2.0	2.0	1.7
Serratia marcescens	3.9	3.4	1.9

**FR - Fully retentive during challenge*

When expressed as titre reduction "FR" equates to >10^7 per 10˝module.

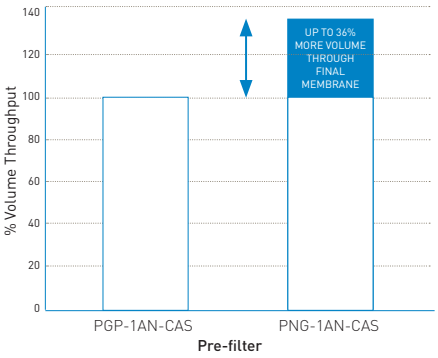
Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

ODC Technology

Optimized Depth Construction (ODC) provides a unique graded density combining longer service life with absolute filtration efficiency.

Performance Benefits



ODC technology combines fine particle retention with increased strength and stability to enhance the performance offered by the PREPOR range.

Ordering information

PNG - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
A	0.5
B	0.6
D	1.0

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

Parker domnick hunter commitments

General & Utilities collection

In addition to market sector specific products, Parker domnick hunter offer a range of filtration products which perform in other process and utility applications to defined specifications.

Controlling the physical, chemical and biological hazards in food production and packaging processes is key to achieving an efficient process and minimising wastage. Parker domnick hunter have a range of specialist filtration products aimed at protecting food processes from a wide range of contaminants in applications such as; clarification, pre-stabilization and final stabilization. These products have been designed against specific performance criteria and return defined performance against hazard elimination.

CRYPTOCLEAR PES Food and Beverage

Filter Cartridges

CRYPTOCLEAR PES utilizes the unique properties of a microbially retentive polyethersulphone membrane that provides absolute retention of *Cryptosporidium parvum oocysts* to meet the specific needs of the food, beverage and potable water industries.

CRYPTOCLEAR PES membrane has an asymmetrical pore structure with a high voids volume which offers unrivalled retention capacity resulting in higher throughputs and higher flow rates than symmetrical membranes.

The microporous membrane is inherently hydrophilic and can be integrity tested repeatedly, providing a valuable quality assurance tool that fits well into a HACCP framework.

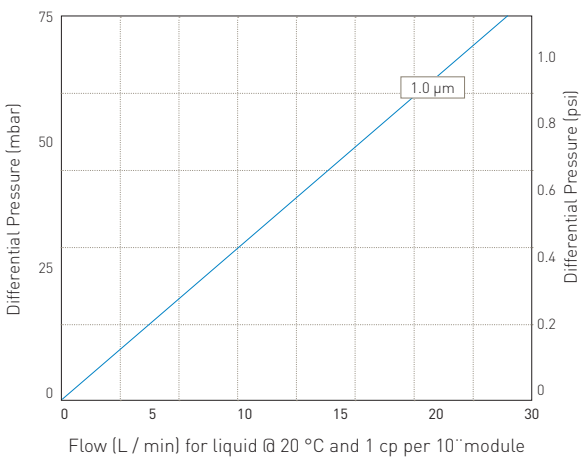
Features

- Specifically designed and independently tested for the removal of *Cryptosporidium parvum oocysts*
- Easily integrity tested in-situ
- Strong, robust construction for repeated cleaning and sanitization in-situ

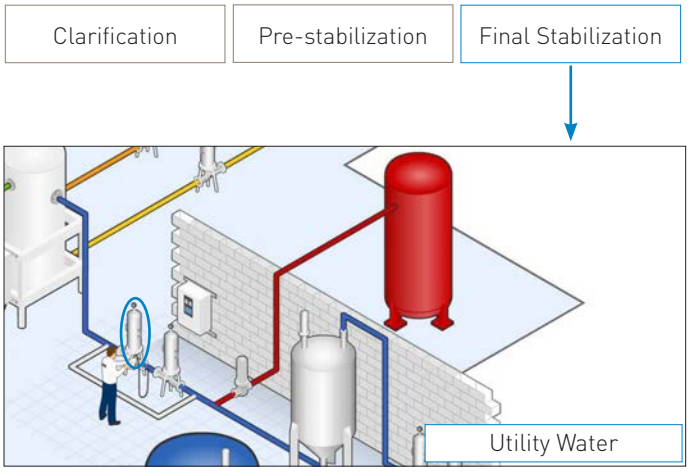
Benefits

- Eliminates the threat of *Cryptosporidium* infection from the water supply
- Assured filtration performance
- Extended service life from the membrane filter reduces the cost of filtration

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polyethersulphone
Prefilter Layer:	Polyester
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
Standard o-rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C. CRYPTOCLEAR PES is listed as a WRAS Approved Product.

WRAS - Water Regulations Advisory Scheme BS6920 Test of Effect on Water Quality.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilization

CRYPTOCLEAR PES cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 142 °C (287.6 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Please refer to our Clean-in-Place support guide or contact your local Parker representative for more information.

Retention Characteristics

The removal efficiencies of CRYPTOCLEAR PES cartridges have been determined from tests conducted by Thames Water Utilities Limited on live *Cryptosporidium oocysts*.

Product	Micron	Retention
CRYPTOCLEAR PES	1.0	100%

Integrity Test Data

All filters are flushed with purified water prior to despatch. They are integrity testable to the following limits:

Micron Rating		1.0
Diffusional Flow	(barg)	0.6
Test Pressure	(psig)	9.0
Max. Diffusional Flow (ml / min)	(10˝)	21.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

ZCCS □ - □ □

Code	Length (Nominal)	
K	5˝	(125 mm)
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
100	1.00 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

VSH & HSL
HOUSING RANGE AVAILABLE

CRYPTOCLEAR PLUS Food and Beverage

Filter Cartridges

CRYPTOCLEAR PLUS pleated filter cartridges have been designed specifically for the removal of *Cryptosporidium parvum* and *Giardia intestinalis* from water in the food, beverage and healthcare industries.

Extensive research, including live oocyst challenge has resulted in a graded density filtration medium that maximizes loading capacity of the filters whilst accurately defining particle and oocyst retention under a variety of operating conditions.

CRYPTOCLEAR PLUS cartridges can be repeatedly sanitized using hot water, steam and a wide range of chemicals.

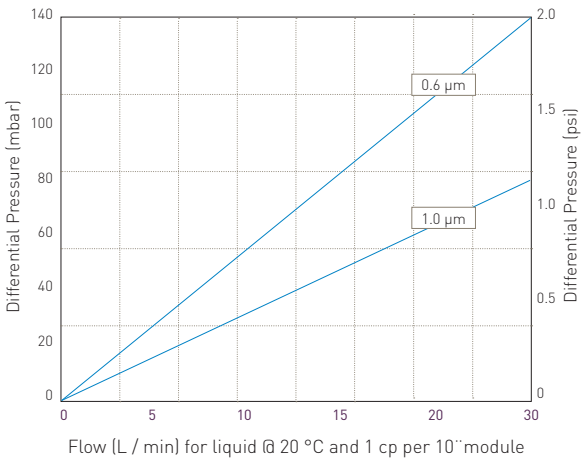
Features

- Specifically designed for the reduction of *Cryptosporidium parvum oocysts*
- Graded density polypropylene pleated media, optimized for dirt holding capacity and oocyst retention
- 0.6 and 1.0 micron retention ratings

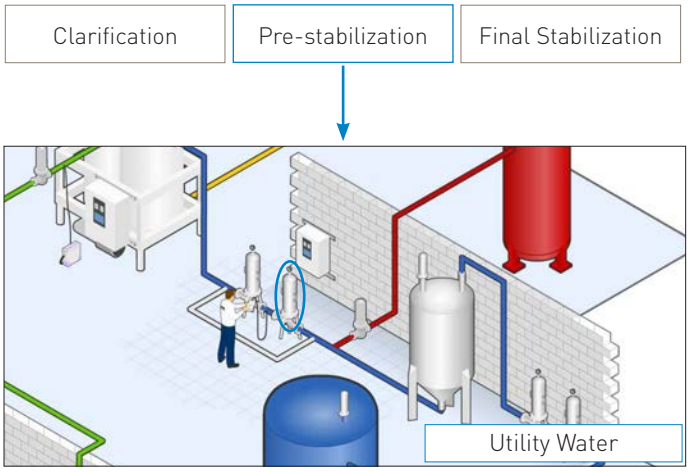
Benefits

- Assured performance to reduce the threat of *Cryptosporidium* infection
- Extended lifetime to blockage under high particle loading conditions
- Flexibility to optimize the filtration in-line with the facility requirements for *Cryptosporidium* control

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
Standard o-rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C. CRYPTOCLEAR PLUS is listed as a WRAS Approved Product.

WRAS - Water Regulations Advisory Scheme BS6920 Test of Effect on Water Quality.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.57 m^2 (6.13 ft^2)

Cleaning and Sterilization

CRYPTOCLEAR PLUS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 142 °C (287.6 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The removal efficiencies of CRYPTOCLEAR PLUS cartridges have been determined from tests conducted by Thames Water Utilities Limited on live *Cryptosporidium oocysts*.

Product	Micron	Retention
CRYPTOCLEAR PLUS	0.6	>99.997%
CRYPTOCLEAR PLUS	1.0	>99.3%

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

ZCCP □ - □ □

Code	Length (Nominal)
1	10˝ (250 mm)
2	20˝ (500 mm)
3	30˝ (750 mm)
4	40˝ (1000 mm)

Code	Micron
.60	0.6 µm
1.0	1.00 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

VSH & HSL
HOUSING RANGE AVAILABLE

DS_FBG_12_04/14 Rev. 1B

PREPOR PP
Food and Beverage

Filter Cartridges

PREPOR PP filter cartridges will significantly reduce the number of yeast and spoilage organisms from beverage products, providing extremely cost-effective pre-stabilization of process liquids.

PREPOR PP filters will also "condition" liquids and can be used to improve the visual clarity and filterability of products, to benefit the performance and efficiency of terminal stabilization operations such as final membrane stabilization and pasteurization.

The filters have been designed to withstand harsh operating conditions. Their mechanical strength and wide chemical resistance make them suitable for aggressive clean-in-place operations using chemicals and steam.

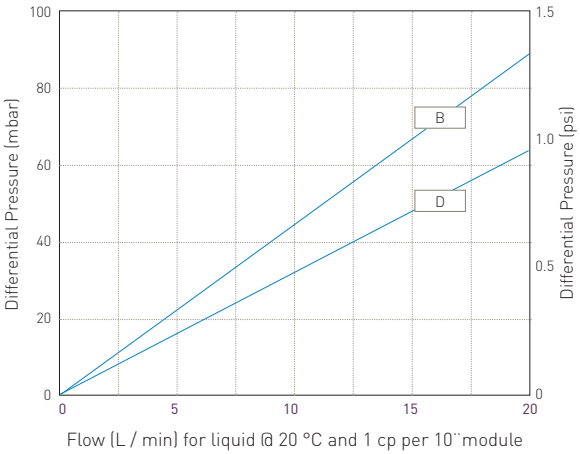
Features

- Validated retention to yeast and spoilage bacteria
- High filtration area pleated media
- Thermally bonded, all polypropylene construction

Benefits

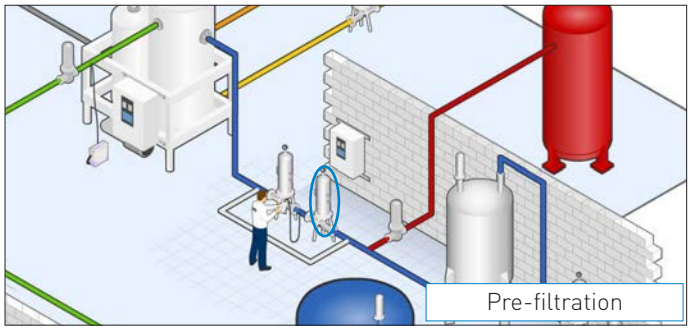
- Short-term microbial stability of process liquids
- High flow and service life to blockage
- Compatible with aggressive process conditions including chemical cleaning and steam sterilization

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings/gaskets:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.5 m^2 (5.38 ft^2)

Cleaning and Sterilization

PREPOR PP cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 135 °C (275 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The retention characteristics of PREPOR PP filters have been determined by a combination of controlled laboratory tests and in-use monitoring for a number of organisms.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2	
	B	D
Saccharomyces cerevisiae	4	2
Escherichia coli	2	-
Oenococcus oenos	2	-
Serratia marcescens	2	-

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

PPP - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
B	0.6 µm
D	1.0 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
H	UF Retrofit
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
HOUSING RANGE AVAILABLE

DS_FBG_09_01/14 Rev. 1B

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PEPLYN PLUS
Food and Beverage

Filter Cartridges

PEPLYN PLUS filter cartridges are utilized for the clarification and pre-stabilization of process liquids and supporting utility solutions for the beverage industries.

Available in a range of absolute retention ratings, PEPLYN PLUS cartridges represent a cost-effective solution to condition a range of beverage products prior to intermediate storage or final stabilization.

Extensive research has resulted in filter media with continuously graded fibre density giving progressively finer particulate retention through the depth of the media. This, combined with optimized media pleating density gives PEPLYN PLUS cartridges exceptional lifetime and retention performance characteristics.

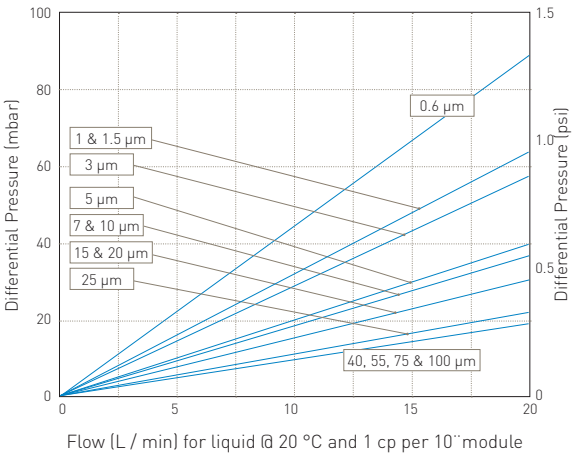
Features

- Absolute retention ratings from 0.6µm to 100µm
- Pleated media with graded density
- All polypropylene, thermally bonded cartridge construction

Benefits

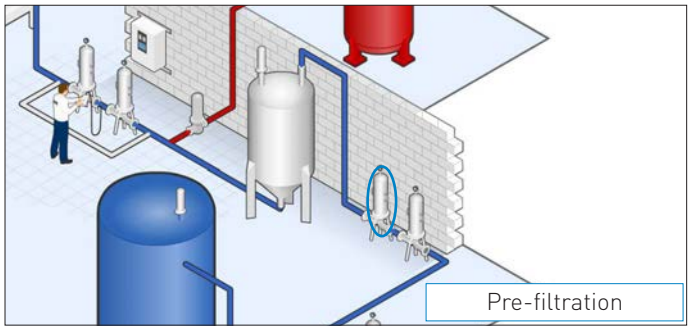
- Reliable, fine particle retention
- High flow and increased service life to blockage
- Compatible with aggressive process conditions including chemical cleaning and steam sanitization

Performance Characteristics



Filtration Stage

Clarification | Final Stabilization | Pre-stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert (if applicable):	316L Stainless Steel*

* Not available in B End Cap variants

Standard o-rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.5 ft^2)

Cleaning and Sterilization

PEPLYN PLUS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 135 °C (275 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The retention characteristics of PEPLYN PLUS filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

	Micron rating at various efficiencies				
Media	>99.99%	99.98%	99.90%	99%	90%
Code	10000	5000	1000	100	10
0.6	0.60	0.57	0.54	0.32	0.20
1.0	1.00	0.95	0.90	0.70	0.50
1.5	1.50	1.40	1.10	0.80	0.60
003	3.00	2.80	1.80	1.00	0.70
005	5.00	4.70	4.50	3.50	1.00
007	7.00	6.70	6.30	4.50	2.50
010	10.00	8.00	7.00	4.80	2.80
015	15.00	12.00	10.00	7.20	4.50
020	20.00	16.00	14.00	10.00	6.00
025	25.00	20.00	17.00	12.00	7.00

* Higher microns available upon request

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

ZCPP □ - □ □ - □ □

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron	Code	Micron
.60	0.6	015	15.0
1.0	1.0	020	20.0
1.5	1.5	025	25.0
003	3.0	040	40.0
005	5.0	055	55.0
007	7.0	075	75.0
010	10.0	100	100.0

Code	End Cap (10 inch)
B*	dh DOE
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
H	UF Retrofit
R	BF / 222 Bayonet

*EPDM gaskets supplied as standard

Code	Variant
S*	Steam Sterilizable

*Not available in B End Cap variant

Code	O-rings
S*	Silicone
E	EPDM

*Silicone O-rings supplied as standard

VSH & HSL
HOUSING RANGE AVAILABLE

PEPLYN HD
Food and Beverage

Filter Cartridges

PEPLYN HD filter cartridges have been developed to excel in liquid clarification applications where a consistent quality of filtrate is required from variable particle loadings of the process solution.

The PEPLYN HD filter media has outstanding particle holding capacity through its multi-layer high depth construction, providing extended service lifetimes and consistent quality filtrate under demanding conditions.

Capture of particles is throughout the depth of the media with larger particles being retained in the outer prefiltration layers, while the inner graded density media provides accurately defined retention to finer particulate. Both these mechanisms combine to provide a cartridge filter which returns extended service lifetimes.

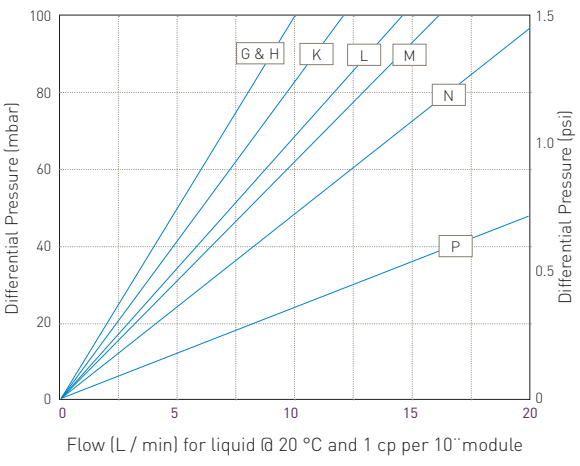
Features

- High depth, graded density filtration media
- Available in a range of absolute micron retention ratings
- All polypropylene, thermally bonded construction

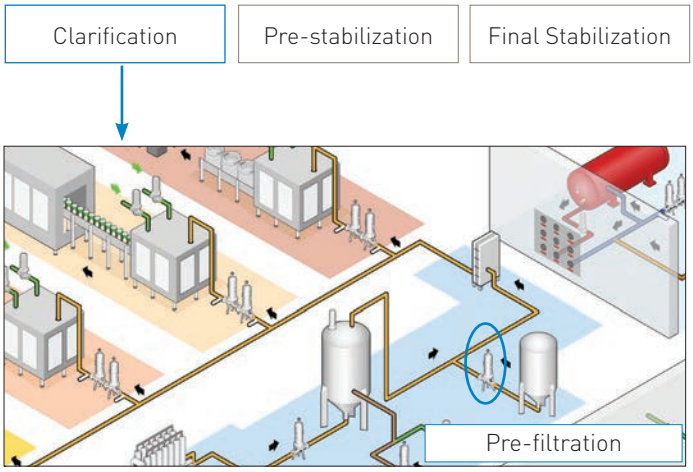
Benefits

- Increased dirt holding capacity and resistance to blockage under high loading conditions
- Ability to provide consistent quality of filtrate in a wide range of clarification applications
- Compatible with aggressive process conditions including chemical cleaning and steam sanitization

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Prefilter Layer:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.3 m² (3.22 ft²)

Cleaning and Sterilization

PEPLYN HD cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 135 °C (275 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The retention characteristics of PEPLYN HD filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

	Micron rating at various efficiencies					
Media	>99.99%	99.98%	99.90%	99%	95%	90%
Code	10000	5000	1000	100	20	10
G	3.00	2.80	1.80	1.00	0.85	0.70
H	4.80	4.70	3.20	2.60	1.90	1.60
K	9.00	8.20	6.90	5.00	3.70	3.40
L	12.00	10.00	7.80	5.90	4.60	4.00
M	14.00	10.00	9.20	6.90	6.10	5.00
N	17.00	14.00	12.00	9.00	7.00	6.00
P	22.00	18.00	15.00	12.00	9.40	6.80

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

PHD - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
G	3.0 µm
H	4.8 µm
K	9.0µm
L	12.0µm
M	14.0µm
N	17.0µm
P	22.0µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
H	UF Retrofit
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

VSH & HSL
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DS_FBG_06_01/14 Rev. 1B

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PEPLYN HA
Food and Beverage

Filter Cartridges

PEPLYN HA filters have been specifically developed to provide the optimum solution for particulate removal in liquid clarification applications.

The filtration media balances a high surface area and closely controlled porosity, in a configuration that maximizes the cleaning efficiency of the cartridge through backwash procedures.

Capture of larger insoluble particulate is predominantly on the surface of the media, where the rigid, open pleat structure ensures that backwash cleaning provides effective removal. Smaller colloids are retained throughout the depth of the graded density PEPLYN media, providing accurately defined retention under the variable particle loading conditions typical in clarification applications.

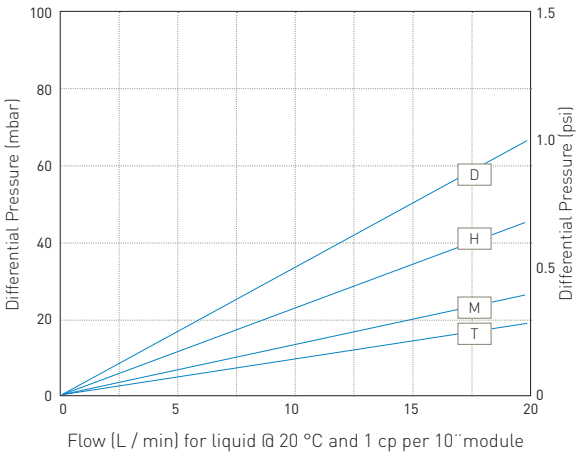
Features

- Specially designed media for backwash regeneration against insoluble particulate
- High surface area
- Available in a range of absolute micron retention ratings

Benefits

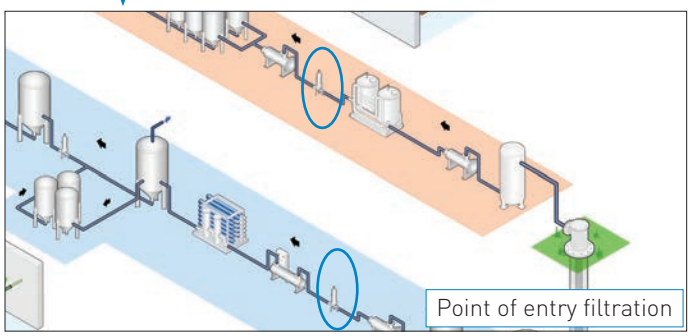
- Increased service life when combined with frequent backwash cleans
- High flow and increased resistance to blockage under high particle loading conditions
- A consistent and reliable quality filtrate delivered to intermediate storage in the bottling facility

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.7 m² (7.53 ft²)

Cleaning and Sterilization

PEPLYN HA cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 135 °C (275 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The retention characteristics of PEPLYN HA filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

	Micron rating at various efficiencies					
Media	>99.99%	99.98%	99.90%	99%	95%	90%
Code	10000	5000	1000	100	20	10
D	1.00	0.95	0.90	0.70	0.60	0.50
E	1.50	1.40	1.10	0.80	0.70	0.60
G	3.00	2.80	1.80	1.00	0.90	0.70
H	5.00	4.70	4.50	3.50	2.30	1.00
K	10.00	8.00	7.00	4.80	3.80	2.80
L	15.00	12.00	10.00	7.20	6.00	4.50
M	20.00	16.00	14.00	10.00	8.00	6.00
N	25.00	20.00	17.00	12.00	9.00	7.00
P	32.00	27.00	24.00	18.00	13.00	10.00
T	50.00	40.00	34.00	28.00	20.00	17.00
U	70.00	55.00	50.00	40.00	30.00	25.00
W	125.00	100.00	80.00	70.00	50.00	40.00

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

PHA - [ ] [ ] N - [ ] A [ ]

Code	Length (Nominal)	
1	10˝	(250 mm)
2	20˝	(500 mm)
3	30˝	(750 mm)
4	40˝	(1000 mm)

Code	Micron
D	1.00 µm
E	1.50 µm
G	3.00 µm
H	5.00 µm
K	10.00 µm
L	15.00 µm
M	20.00 µm
N	25.00 µm
P	32.00 µm
T	50.00 µm
U	70.00 µm
W	125.00 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
H	UF Retrofit
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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PROPLEAT PP Food and Beverage

Filter Cartridges

PROPLEAT PP filters have been developed to bridge the gap between meltblown depth filters and absolute rated pleated media filters for liquid clarification.

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.

All PROPLEAT PP cartridges exhibit 99% efficiency at their given retention rating, providing consistent and economical clarification in a diverse range of applications.

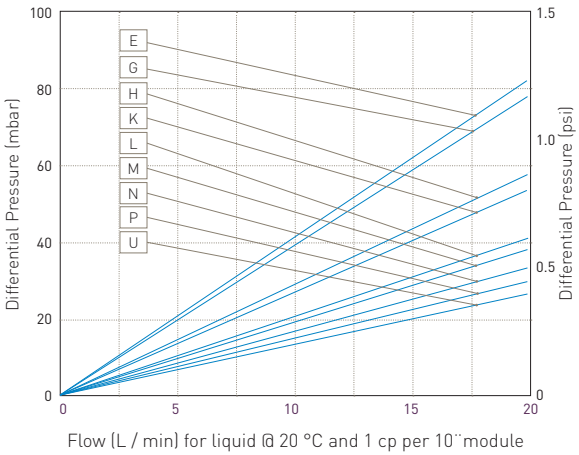
Features

- A wide range of retention ratings
- Continuous length thermally bonded polypropylene sleeve and core
- Elevated temperature option available for hot water sanitization and steam sterilization

Benefits

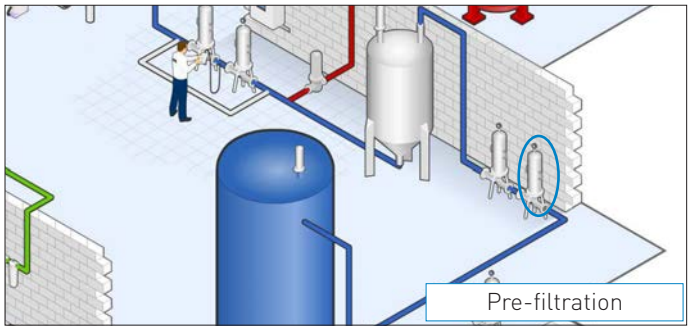
- Flexibility to excel in a wide range of clarification applicaitons
- Strong, robust construction to provide stable retention in diverse process conditions
- Ability to be cleaned and sterilized in-situ

Performance Characteristics



Filtration Stage

Clarification | Final Stabilization | Pre-stabilization



Specifications

Materials of Construction

- Filtration Media: Polypropylene
- Upstream Support: Polypropylene
- Downstream Support: Polypropylene
- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- End Caps: Polypropylene
- End Cap Insert (if applicable): 316L Stainless Steel*

* Not available in B and L End Cap variants

- Standard o-rings / Gaskets: Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10¨ (250 mm) Up to 0.6 m^2 (6.5 ft^2)

Cleaning and Sterilization

PROPLEAT PP cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 121 °C (250 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

Retention Characteristics

The retention characteristics of PROPLEAT PP filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

	99% approximate ratings at lower efficiencies		
Media	99%	95%	90%
Code ß Ratio	100	25	10
E	0.8	0.7	0.6
G	1.0	0.9	0.7
H	3.5	2.3	1.0
K	4.8	3.8	2.8
L	7.2	6.0	4.5
M	10.0	8.0	6.0
N	12.0	9.0	7.0
P	18.0	13.0	10.0
U	40.0	30.0	25.0

Recommended Rinse Volume

Prior to use - 10 litres per 10¨ (250 mm) cartridge.

Minimum Box Quantities

All cartridges supplied in boxes of 6.

Dimensions

- Nominal outside diameter:
  2.8¨ (70 mm) C,D,E,R Style
  2.5¨ (64 mm) B,L Style
- Nominal inside diameter:
  1.1¨ (28 mm)

Standard Lengths (DOE seal to seal)

Length	B Style	L Style
1	9 7/8¨ (250 mm)	9 7/8¨ (250 mm)
2	19 1/2¨ (498 mm)	20¨ (508 mm)
3	29 3/8¨ (746 mm)	30 1/8¨ (766 mm)
4	39 1/8¨ (994 mm)	40¨ (1014 mm)

Ordering information

PRPP □ - □ N □ - □ □

Code	Length (Nominal)	
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)
4	40¨	(1000 mm)

Retention Rating: E G H K L M N P U

Code	End Cap (10 inch)
B	dh DOE
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
L	Extended DOE
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

Code	Option
S*	Hot water / steam option

*Not available in B and L End Caps

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PARMAX
Food and Beverage

Filter Cartridges

The best of pleated and large diameter technologies are combined in Parker domnick hunter's PARMAX high flow filter cartridges.

The unique layered construction provides excellent retention across a wide range of flux rates. One 6¨ diameter cartridge can handle up to 80 m3 / hr flow (60¨ length). The inside to outside flow allows for a high contaminant holding capacity and a long filter life which makes the PARMAX an ideal choice for a wide variety of critical process applications.

PARMAX cartridges are available in polypropylene in absolute (99.98%) micro ratings from 1 to 90 microns.

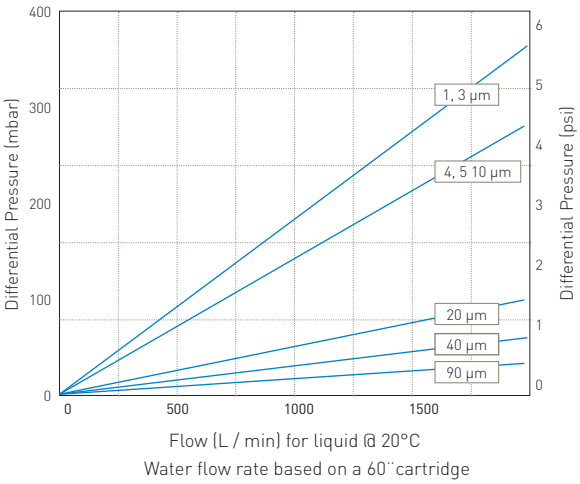
Features

- Large diameter for high flow rates and ease of change-out
- Absolute retention ratings from 1 micron to 90 micron
- Inside - out flow pattern ensures positive capture of contaminants

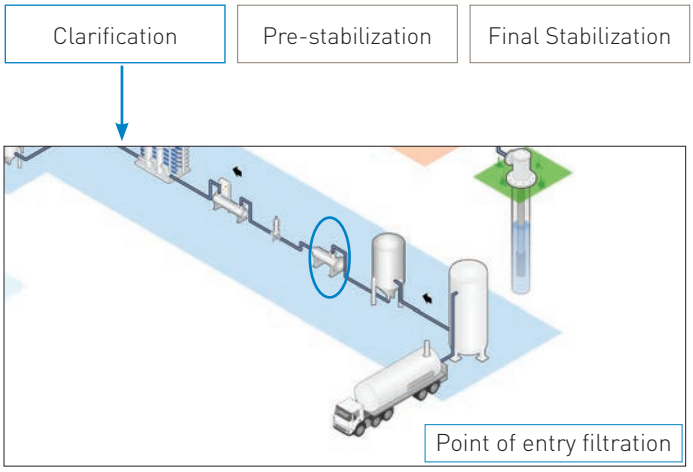
Benefits

- Small filter system size and reduced running cost to represent an economical solution to a wide range of clarification duties
- Consistent quality filtrate is delivered in a wide range of clarification applications
- Increased protection to downstream systems and elimination of start-up cleans following change-out

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Support / Drainage:	Polypropylene
Hardware:	Polypropylene
Standard O-rings (SOE):	EPDM
	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177 and current EC1935 / 2004.

Maximum Operating Temperature

80 °C (176 °F) @ 2.1 bar (30 psi)

Recommended Flow Rate Conditions

20" : Up to 40 m^3 / hr
40" : Up to 80 m^3 / hr
60" : Up to 80 m^3 / hr

Recommended Change Out Pressure

2.41 bar (32 psi)

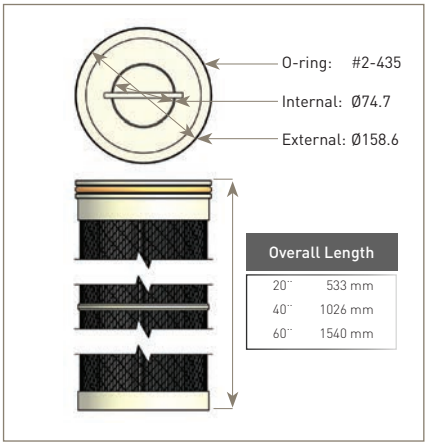
Retention Ratings (99.98%)

1, 3, 4.5, 10, 20, 40 and 90** µm

Maximum Differential Pressure

4.8 bar (70 psi) @ 25 °C (77 °F)
2.1 bar (30 psi) @ 80 °C (176 °F)

Dimensions (Nominal)



Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

□ | Code | Material

Code	Material
RCP	Polypropylene

□ - □ | Code | Micron

Code	Micron
010	1.0µm
030	3.0µm
045	4.5µm
100	10.0µm
200	20.0µm
400	40.0µm
900	90.0µm

□ | Code | Length (Nominal)

Code	Length (Nominal)
20	20" (508 mm)
40	40" (1016 mm)
60	60" (1524 mm)

□ | Code | Seal Material

Code	Seal Material
E	EPDM
S	Silicone

□ | Code | End Cap Configuration

Code	End Cap Configuration
PP	435 o-ring / closed

HSP
HOUSING RANGE AVAILABLE

MAXGUARD
Food and Beverage

Filter Cartridges

Parker's MAXGUARD high capacity cartridge product line provides a cost-effective alternative to bag media or standard 2-$^{1}/_{2}$ inch cartridges for high flow applications. Each MAXGUARD cartridge has a 6" (152 mm) nominal outside diameter and can handle flows up to 20m^{3}/hr, significantly reducing the number of cartridges required for large flow applications.

MAXGUARD cartridges are available in polypropylene media. All cartridges feature an industry standard 226 positive o-ring seal and easy-to-grasp integrated handle. All cartridges have absolute retention ratings (beta = 5000) ideal for critical applications.

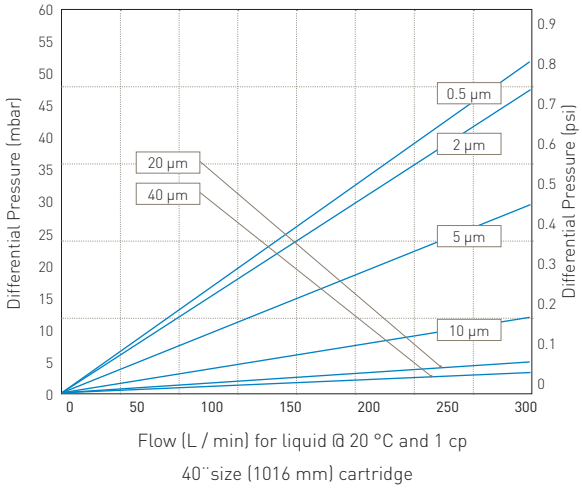
Features

- Large diameter for high flow rates and ease of change-out
- Absolute rated, high depth, polypropylene media
- Positive 226 o-ring seal for assured filtration integrity

Benefits

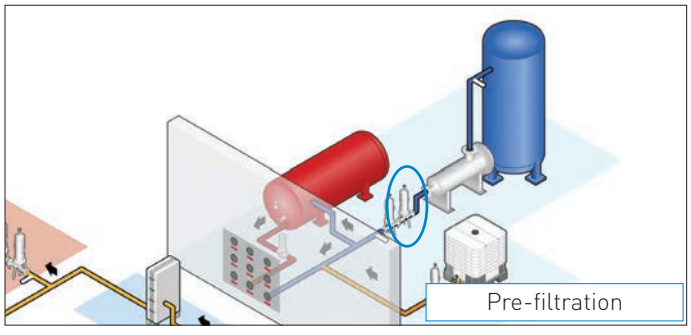
- Small filter system size and reduced running cost to represent economical solution to a wide range of clarification duties
- Consistent quality filtrate is delivered and increased resistance to blockage in a wide range of clarification applications
- Assurance of filtration efficiency for more critical applications

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene
Support Layers:	Polypropylene
Support Core:	Polypropylene
O-Rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Maximum Operating Temperature

Max Temperature: 80°C at 2.1 bar
Max Pressure: 4.8 bar at 25°C
2.1 bar at 80°C

Retention Ratings (99.98%)

99.98% specified micron rating

Flow Characteristics

MAXGUARD filters are capable of filtering 340 L / min per 40".

Recommended Change Out Pressure

2.41 bar (32 psi)

Dimensions (Nominal)

Cartridge Code	Micron Rating at Various Efficiencies 99.98%	99.90%	99%	98%	95%
POLYPROPYLENE					
MXGP005	0.5	0.4	0.2	>0.2	>0.1
MXGP020	2	1.4	0.4	0.2	>0.1
MXGP050	5	3.8	1.2	0.3	>0.1
MXGP100	10	7	3	0.9	>0.2
MXGP200	20	18	5	2	>0.2
MXGP400	40	23	18	8	>0.7

Ordering information

MXGP [ ] - [ ] [ ] - SM

Filter Media
Polypropylene

Code	Micron
050	0.5µm
020	2.0µm
050	5.0µm
100	10.0µm
200	20.0µm
400	40.0µm

Code	Length (Nominal)
30	30" (750 mm)
40	40" (1016 mm)

Code	Seal Material
S	Silicone

End Cap Configuration
226 O-ring / Flat cap w/ handle

Retrofits 740 series HOUSING RANGE

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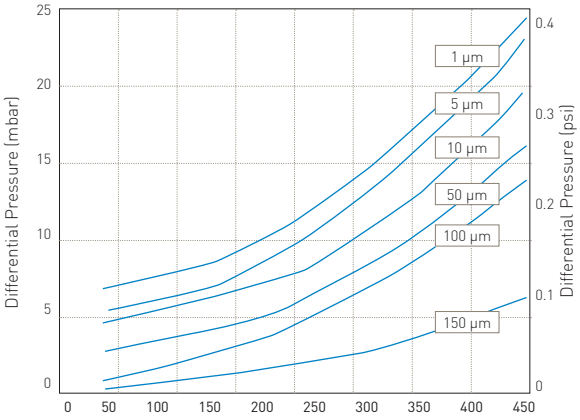
BAG Filters
Food and Beverage

Filter Cartridges

Parker domnick hunter's range of bag filters are manufactured from a variety of filter media each specifically chosen for its compatibility with a wide range of process liquids. Parker bag filters are of a fully welded design rather than sewn. No process liquid can bypass through needle holes caused by the sewing process or around a sewn ring. Parker domnick hunter's range of filter bags include:

Standard filter bags
Available in polypropylene, polyester and nylon from 1 to 1000µm.

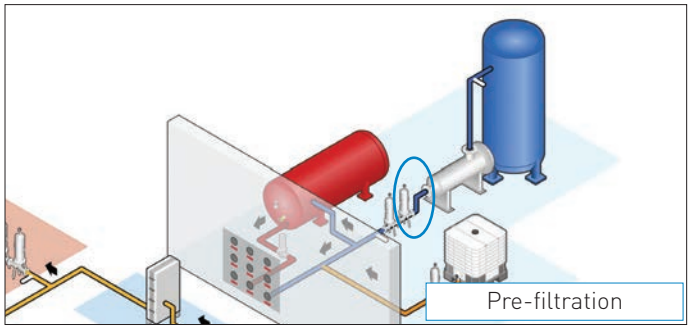
Performance Characteristics



For double length bags multiply flow rate by 2.1
For triple length by 2.3

Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Media:	Polypropylene Felt
	Polyester Felt
	Nylon Mesh
Ring:	Electro Plated Steel
	Stainless Steel
	Moulded Polypropylene
	Polypropylene

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177 and current EC1935 / 2004.

Viscous Flow Correction Factors

Viscous Correction Factors													
Fluid Viscosity (cps)	10000	8000	6000	4000	2000	1500	1000	800	600	400	200	100	1
Flow rate (% water)	2.1	2.6	3.5	5	8	11	16	17	25	35	58	58	100

Compatibility

Material	Max Temperature	Organic Solvents	Oils and Fats	Alkalies	Organic Acids	Mineral Acids	Oxidising Agents	Resistance micro-organisms
Polypropylene	95°C (203°F)	Good	V. Good	Good	V. Good	Good	Fair	Fair
Polyester	150°C (302°F)	V. Good	V. Good	Good	Good	Good	Good	Good

Bag size	Diameter	Length	Surface Area	Volume	Max Flow Rate
1	7" (180 mm)	17" (435 mm)	0.25 m^2	11.0 ltr	20 m^3/hr
2	7" (180 mm)	32" (810 mm)	0.5 m^2	20.5 ltr	40 m^3/hr
1 (mini)	4" (104 mm)	9" (230 mm)	0.07 m^2	1.9 ltr	6 m^3/hr
2 (mini)	4" (180 mm)	15" (380 mm)	0.12 m^2	3.2 ltr	10 m^3/hr

Flow rate is dependant upon media type, micron rating and the fluid being filtered

Ordering information

Code	Style
SG	Ring

Code	Diameter
7	Standard
4	Mini

Code	Yarn
1	Single
2	Double
3	Triple

Code	Media
P	Polypropylene Felt
S	Polyester Felt

Code	Felt Rating
001	1*
005	5
010	10
025	25
050	50
100	100
150	150

Code	Mesh Rating
045	45
100	100
150	150
250	250
500	500
800	800
999	1000

Code	Ring
S	Stainless Steel
M	Moulded PP
P	Polypropylene

Code	Ring
H	Handles
L	Loops

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BEVPOR WG Utilities

Filter Cartridges

Minimizing the cost of microbiological control while maintaining quality and product protection is a key requirement for utility water treatment within beverage production.

BEVPOR WG is an advanced membrane filter cartridge designed for the beverage industry to meet and surpass these criteria. Specifically developed as a beverage grade cartridge, BEVPOR WG utilizes 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 maximize mechanical strength and chemical compatibility enabling the filter to withstand repeated chemical cleaning and sterilization.

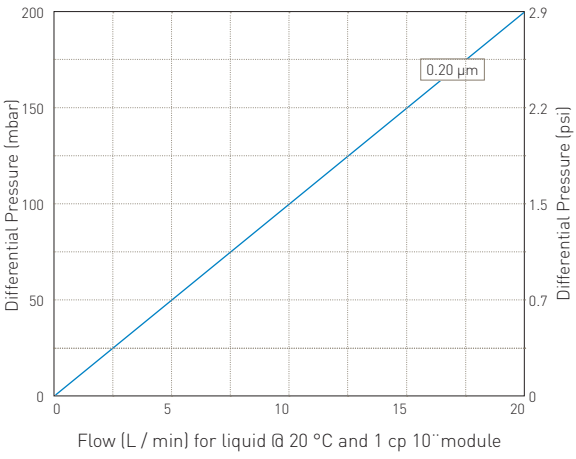
Features

- Sterilizing grade PES membrane
- Highly asymmetrical pore structure
- Robust materials of construction can be repeatedly steam sterilized and hot water sanitized

Benefits

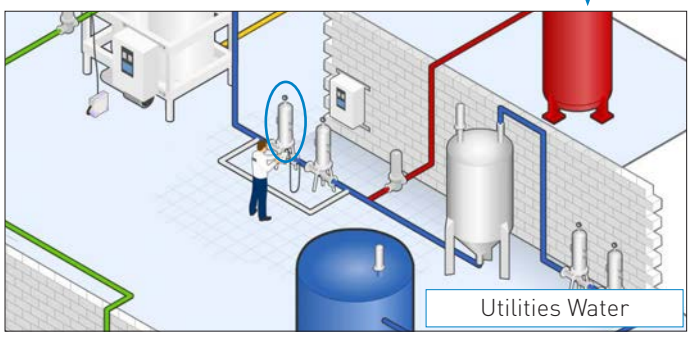
- Ensures safety of process water
- High flow and cost-effective performance
- Extended service life

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | **Final Stabilization**



Specifications

Materials of Construction

Filtration Media:	Polyethersulphone
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10" (250 mm) Up to 0.5 m² (5.38 ft²)

Cleaning and Sterilization

BEVPOR WG cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130°C (266°F). They can be sanitized with hot water at up to 90°C (194°F) and are compatible with a wide range of chemicals.

Please refer to our Clean in Place support guide or contact your local Parker representative for more information.

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BWG - [ ] 02 - [ ] A [ ]

Code	Length (Nominal)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)
4	40" (1000 mm)

Code	Micron
02	0.2 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
H	UF Retrofit
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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BEVPOR MS Utilities

Filter Cartridges

Minimizing the cost of microbiological control while maintaining quality and product protection is a key requirement for utility water treatment within beverage production. BEVPOR MS is an advanced membrane filter cartridge designed for the beverage industry to meet and surpass these criteria.

Specifically developed as a beverage grade cartridge, BEVPOR MS utilizes 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 maximize mechanical strength and chemical compatibility enabling the filter to withstand repeated chemical cleaning and sterilization.

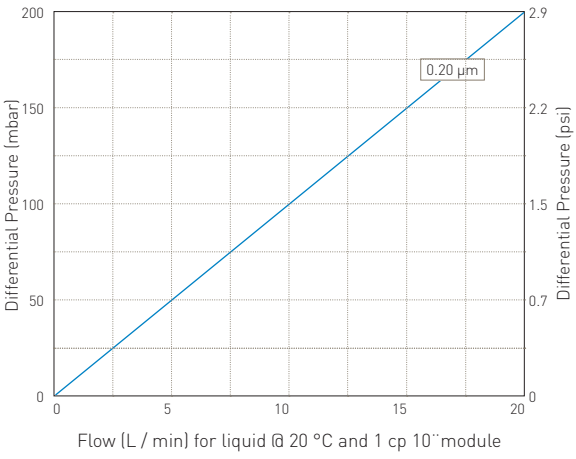
Features

- Sterilizing grade PES membrane
- Highly asymmetrical pore structure
- Robust materials of construction can be repeatedly steam sterilized and hot water sanitized
- Easily integrity tested in-situ

Benefits

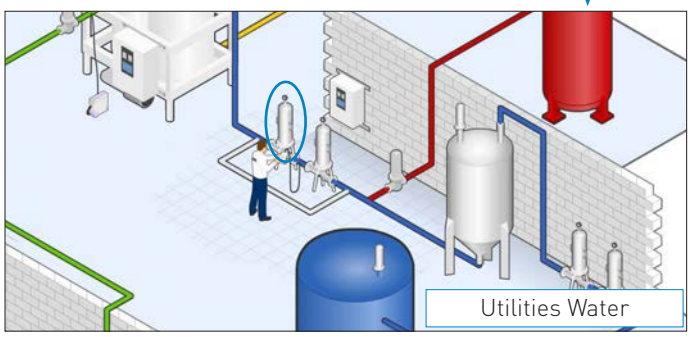
- Ensures safety of process water
- High flow and cost-effective performance
- Extended service life
- Assured filtration performance

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | **Final Stabilization**



Specifications

Materials of Construction

Filtration Media:	Polyethersulphone
Upstream Support:	Polyester
Downstream Support:	Polyester
Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Nylon
End Cap Insert:	316L Stainless Steel
O-rings:	Silicone / EPDM

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.6 m^2 (6.5 ft^2)

Cleaning and Sterilization

BEVPOR MS cartridges can be repeatedly steam sterilized in-situ or autoclaved at up to 130 °C (266 °F). They can be sanitized with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Retention Characteristics

0.2µm BEVPOR MS filters have been validated to provide sterile effluent after bacterial challenge testing following ASTM F838-05 methodology on 10˝ cartridges with more than 10^7 cfu per cm^2 using *Brevundimonas diminuta*.

In addition, challenges with the following EU regulated organisms have been performed.

Organism	LRV when challenged with a minimum of 10^7 cfu per cm^2
	0.20
Serratia marcescens	FR
Escherichia coli	FR
Enterococcus faecalis	FR
Clostridium perfringens	FR
Pseudomonas aeruginosa	FR

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Diffusional Flow Test Parameters	Micron Rating 0.20
Test Pressure (barg)	2.4
Test Pressure (psig)	35.0
Max Diffusional Flow Per 10˝ (ml / min)	16.0

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

BMS - [ ] 02 - [ ] A [ ]

Code	Length (Nominal)
1	10˝ (250 mm)
2	20˝ (500 mm)
3	30˝ (750 mm)
4	40˝ (1000 mm)

Code	Micron
02	0.2 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
G	Recess / 222
R	BF / 222 Bayonet

Code	O-rings
S	Silicone
E	EPDM

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SPUNFLOW QN Utilities

Filter Cartridges

Graded density, high porosity, SPUNFLOW QN filter elements are manufactured from thermally bonded Polypropylene microfibers. Offering high throughputs, low pressure loss, high holding dirt capacity and long on-stream life, the bonded fibre construction minimizes any possibility of fibre migration and is rugged enough to resist particle shedding, even under pulse conditions.

Consisting only of pure polymer, SPUNFLOW QN is compatible with most chemical processes and contain no additives, leachables or extractables and is compliant with the requirements of the FDA for food and beverage contact. Elements can be incinerated to trace ash reducing disposal costs.

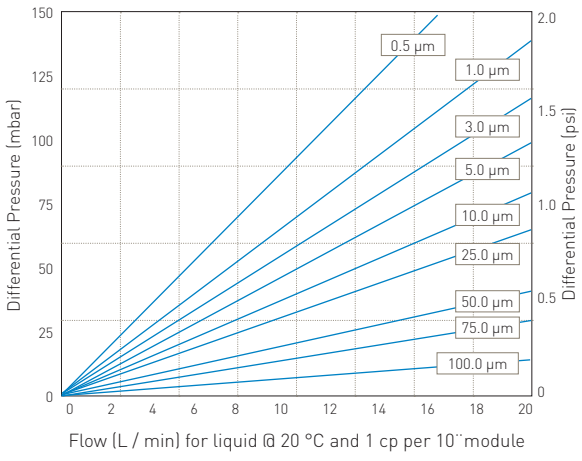
Features

- Thermally bonded polypropylene
- 90% nominal rated
- High throughput and low pressure loss

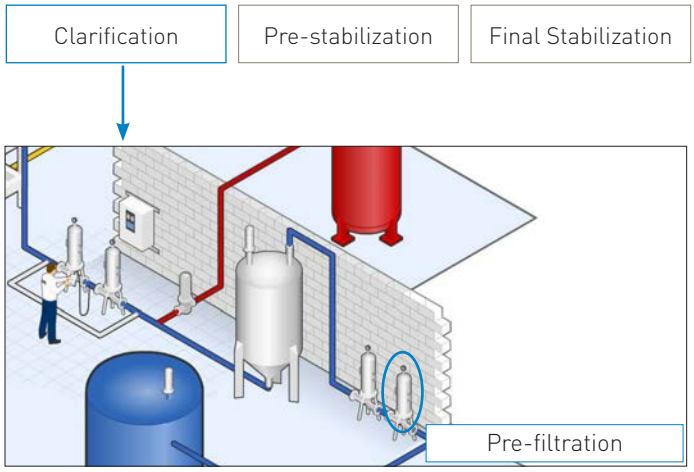
Benefits

- Ability to provide defined clarification under a wide particle loading of the feed solution
- Strong construction for stable retention
- Decreased system size and lower running costs provide an economical solution to clarification applications

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Filtration Membrane:	Polypropylene Polyester / Nylon
End Caps:	Polypropylene Nylon
Standard o-rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177 and current EC1935 / 2004.

Recommended Operating Conditions

Maximum Temperature:
Polypropylene - 65°C (149°F)

Maximum Differential Pressure
4 bar at 20°C (68°F)

Maximum Recommended Differential Pressure
2 bar (29 psid)

Dimensions

Standard Cartridge

Outside diameter:	62 mm (2.44¨)
Inside diameter:	29 mm (1.14¨)

End Capped Cartridge

Outside diameter:	64 mm (2.51¨)
Inside diameter:	27 mm (1.06¨)

Ordering information

QN □ □ □ □ □ □

Code	Length (Nominal)
09	9.75¨ (247 mm)
10	9.875¨ (251 mm)
11	10¨ (254 mm)
19	19.50¨ (500 mm)
20	20¨ (508 mm)
29	29.50¨ (750 mm)
30	30¨ (762 mm)
39	39.25¨ (1000 mm)
40	40¨ (1016 mm)

Other lengths available upon request

Code	Material
P	Polypropylene

Code	Micron
A5	0.5 µm
01	1µm
03	3 µm
05	5 µm
10	10 µm
25	25 µm
50	50 µm
75	75 µm
99	99 µm
CL	150 µm
CC	200 µm
CD	250µm

Code	End Fitting
0	DOE
2	Flat / 226
3	Flat / 222
6	Flat / 118 / 020
7	Fin / 226
8	Fin / 222
9	213
X	Plain
E	Ext Core

Code	Seal Material
X	None
E	EPDM
S	Silicone

Minimum Box Quantity	
10¨	40
20¨	20
30¨	20
40¨	20

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SPUNFLOW QA Utilities

Filter Cartridges

SPUNFLOW QA cartridges are a range of absolute graded density filter elements, manufactured from thermally bonded polypropylene microfibers layered onto a resilient centre core. The construction consists of numerous, distinctive filter zones with coarser outer layers acting as prefilters for the tighter, absolute rated central zone. This profile produces an element possessing high voids volume, for flow rates high flow rates, low pressure loss, high dirt holding capacity and long life.

The thermally bonded media also eliminates fibre migration and resists the tendency to unload during service.

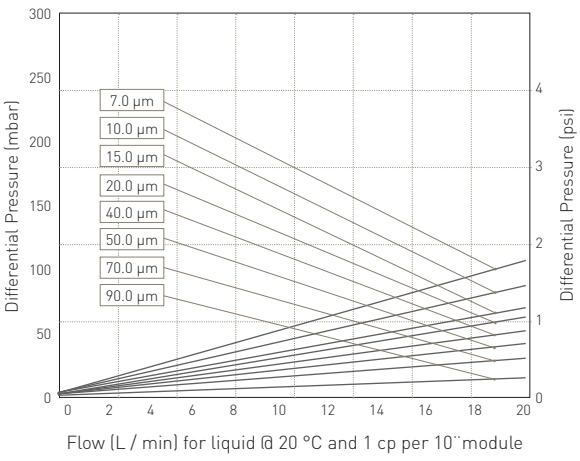
Features

- Absolute ratings from 0.5 to 120 micron
- Thermally bonded polypropylene
- High throughput and low pressure loss

Benefits

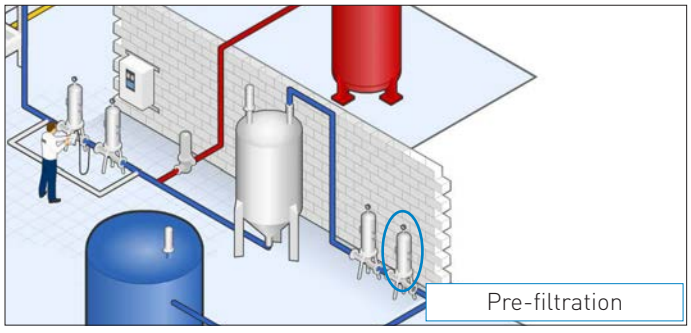
- Ability to provide defined clarification under a wide particle loading of the feed solution
- Strong construction for stable retention
- Decreased system size and lower running costs provide an economical solution to clarification applications

Performance Characteristics



Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Specifications

Materials of Construction

Filtration Membrane:	Polypropylene
End Caps:	Polypropylene Nylon
Standard o-rings:	Silicone

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177 and current EC1935 / 2004.

Recommended Operating Conditions

Maximum Temperature:
Polypropylene - 65°C (149°F)

Maximum Differential Pressure
4 bar at 20°C (68°F)

Maximum Recommended Differential Pressure
2 bar (29 psid)

Dimensions

Standard Cartridge

Outside diameter:	64 mm (2.52¨)
Inside diameter:	29 mm (1.14¨)

A caged version can be supplied in polypropylene 68mm (2.68¨)

Ordering information

QA □ □ □ □ □ □ □

Code	Length (Nominal)	
09	9.75¨	(247 mm)
10	9.875¨	(251 mm)
11	10¨	(254 mm)
19	19.50¨	(500 mm)
20	20¨	(508 mm)
29	29.50¨	(750 mm)
30	30¨	(762 mm)
39	39.25¨	(1000 mm)
40	40¨	(1016 mm)

Other lengths available upon request

Code	Material
P	Polypropylene

Code	Micron
A5	0.5 µm
A7	0.7 µm
01	1 µm
03	3 µm
05	5 µm
07	7 µm
10	10 µm
15	15 µm
20	20 µm
40	40 µm
50	50 µm
70	70 µm
90	90 µm
120	CA

Code	End Fitting
0	DOE
2	Flat / 226
3	Flat / 222
6	Flat / 118 / 020
7	Fin / 226
8	Fin / 222
9	213
X	Plain
E	Ext Core

Code	Seal Material
E	EPDM
S	Silicone

Code	Cage Option
S	Standard
L	Light Cage

Minimum Box Quantity	
10¨	40
20¨	20
30¨	20
40¨	20

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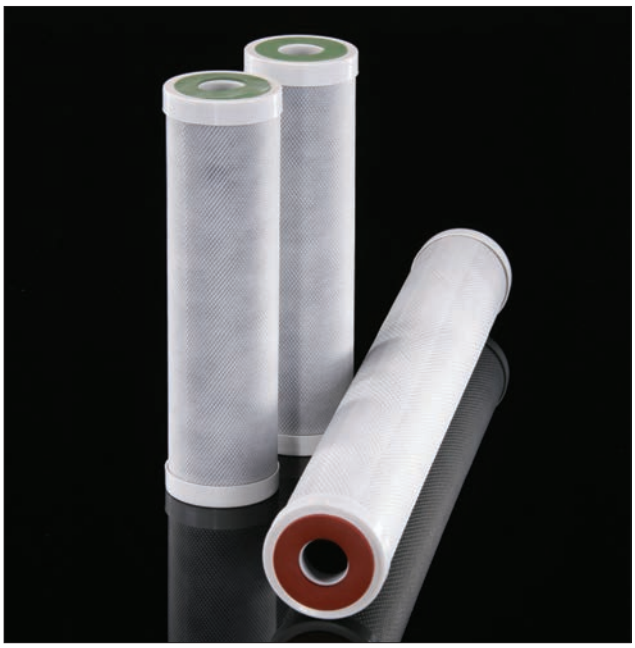
CARBOFLOW MX Utilities

Filter Cartridges



CARBOFLOW MX cartridges are offered in both high efficiency and general grades. They consist of bituminous coal sourced carbon, extruded together with an FDA listed thermoplastic binder, to produce an extremely porous yet rigid structure.

The result is a filter offering unsurpassed adsorptive capacity, up to 20 times that of traditional granular carbon or carbon impregnated filters, and high particle removal efficiency.

The rigid structure of CARBOFLOW MX not only minimizes any possibility of channeling, bypass or fluidizing, but also the release of carbon fines during start-up and operation. Such problems are common with more traditional carbon filters. CARBOFLOW MX is available in lengths up to 40" (1016 mm) together with end fittings to suit most industry standard housings.

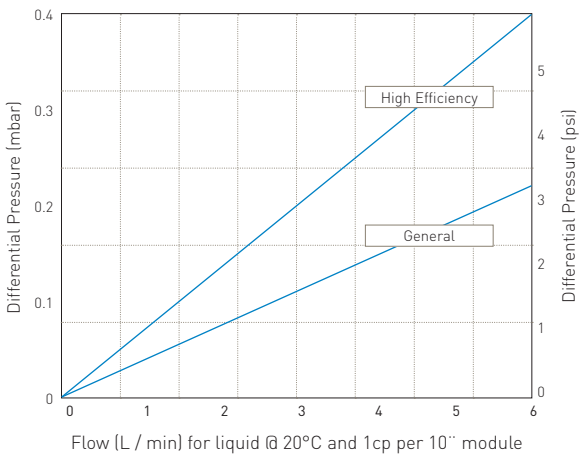
Features

- Solid piece, extruded construction
- High surface area

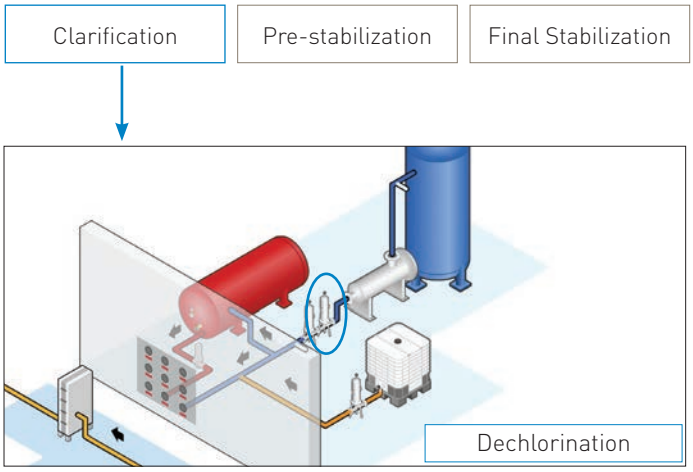
Benefits

- No flow channeling associated with other forms of carbon filter. This aspect provides a consistent level of adsorption and particle retention throughout the filter's lifetime
- Small system sizes per application reduce the cost of filtration and return an economical solution

Performance Characteristics



Filtration Stage



Specifications

Materials of Construction

Carbon:	Bituminous Coal
Carbon Type:	Steam activated Acid wash
Carbon Weight (per 10¨):	350g
End Caps:	Polypropylene

Food Contact Compliance

Materials conform to the relevant requirements of FDA 21 CFR Part 177, current EC1935 / 2004 and current USP Plastics Class VI - 121 °C.

Maximum Operating Temperature

60°C (158°F)

Maximum Differential Pressure

7 bar (101.52 psi)

Recommended Change Out Pressure

2 bar (29 psi)

Retention Characteristics

	1 High Efficiency	2 General
Particle Removal	99.9% @ 2 mic	98% @ 10 mic
Chlorine Reduction**	76 cu.m @ 4 l / min	22.7 cu.m @ 4 l / min
Chloroform Reduction*	3 cu.m @ 2 l / min	n / a

** Per 10¨ element, for longer lengths multiply pro-rata for details of test conditions contact Parker domnick hunter for details.*
*** Based on an inlet concentration of 2 ppm chlorine.*

Applications

- Pre and post R.O. filtration
- De-chlorination
- Process water
- Product rinse waters
- De-colourization

Ordering information

□ - □ □ □ □ □ □

Code	Flow Path
C	Carbon

Code	Length
05	4.75¨ (124 mm)
09	9.75¨ (247 mm)
10	9.875¨ (251 mm)
11	10¨ (254 mm)
19	19.50¨ (500 mm)
20	20¨ (508 mm)
29	29.50¨ (750 mm)
30	30¨ (762 mm)
39	39.25¨ (1000 mm)
40	40¨ (1016 mm)

Code	Type
M	Extruded

Code	Grade
1	High Efficiency
2	General

Code	End Fitting
0	DOE
2	Flat / 226
3	Flat / 222
7	Fin / 226
8	Fin / 222
9	213
S	SOE

Code	Seal Material
E	EPDM
S	Silicone

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Steam Filters Utilities

Filter Cartridges

Steam filtration is often neglected or regarded as an add on to liquid or gas filtration applications.

It is however, a specific application and should be treated with the same level of importance as air, gas and liquid systems if longer filter lifetimes and overall system cost-effectiveness are to be achieved.

The quality of steam used within food and dairy industries has been raised higher on the agenda in an ever increasing number of companies. Minimum acceptable standards are now being quoted on a more regular basis with particular reference to 'culinary grade' steam. Steam serves several purposes in the food and beverage industry. It is critical that this steam is of a high quality to ensure effective and continuous operation of the process.

Features

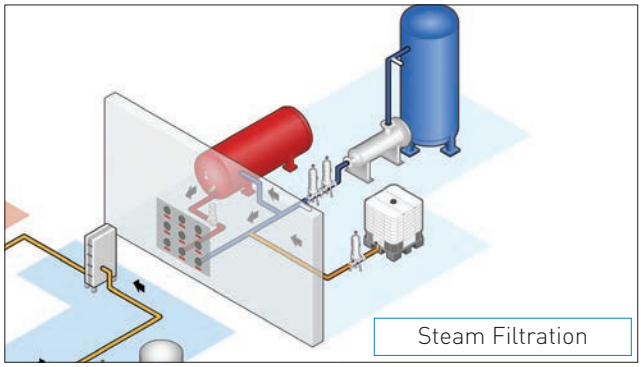
- Robust all welded 316L stainless steel construction
- 'JUMBO' filter configuration ensures maximum utilization of pipework capacity
- Available in culinary grade 1 micron absolute

Benefits

- Long service life under extreme conditions
- Reduced operational cost
- Assures performance to 3A standard

Filtration Stage

Clarification | Pre-stabilization | Final Stabilization



Which filter for which applicaiton?

Process Steam	Culinary Steam (3A Standard 609-03)
Direct from boiler No direct contact with product being manufacturered	95% retentioin of >2 micron particles in the liquid phase Manufactured from 300 series stainless steel Any additives to the boiler feed should conform to CFR Title 21, Chapter1, Part 173.310
Applications	**Applications**
General heating Steam jackets Bio waste kill systems	Used in direct contact with food Direct contact with food processing equipment and HVAC systems
Sintered 25µm: Used for relatively low flow rates **Pleated 5µm**: High flow rates and dirt holding capacity	**Sintered 1µm**: used for relatively low flow rates **Pleated 1µm**: Used to maximize steam capacity of pipe

Specifications - Pleated

Materials of Construction

Filtration Media:	316L Stainless Steel
Inner Support Core:	316L Stainless Steel
Outer Protection Cage:	316L Stainless Steel
End Caps:	316L Stainless Steel
Standard o-rings/gaskets:	EPDM (Standard) Silicone and Viton *(options available)*

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 2 barg (29.00 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Effective Filtration Area (EFA)

10" (250 mm)	0.15 m^2 (1.61 ft^2)

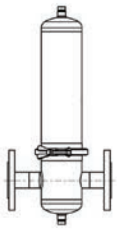
Housing Materials of Construction

Material:	316L Stainless Steel
Surface Finish	
Single Internal:	Electropolished Ra 0.8
Single External:	Mechanical Polish (Commercial Bright)
Jumbo Internal:	Upstream - Beadblast Outlet Assembly - Linished 180 grit
Jumbo External:	Beadblast
Vent / Drain Single / Jumbo:	1/4" BSPP Female Thread
Seal Material:	EPDM Aseptic Seal

Housing Design Pressure and Temperature

Single:	16 barg (232 psig) @ 200 °C (392 °F)
Jumbo:	7 barg (101 psig) @ 170 °C (338 °F)

1



2

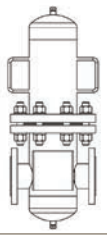


Figure	Housing Code	Connection Size	Capacity Kg / hr @ 1 barg <100 mbar or 40 m / sec	Overall Height	Replacement Filter Code
1	HBAHP01KY	1.5" (38.1 mm)		14.8" (376 mm)	ZCHS-K-....C
1	HBAHP011C	2" (50.8 mm)	150	20.7" (526 mm)	ZCHS-1-....C
			280		
2	VISCE-01J-D	3" (50.8 mm)		30.0" (763 mm)	ZCHS-J-...3
2	VISCE-01J-E	4" (101.6 mm)	750	35.2" (895 mm)	ZCHS-J-...4
2	VISCE-03J-G	6" (152.4 mm)	1300	41.2" (1049 mm)	3 x ZCHS-J...3
2	VISCE-03J-H	8" (203.2 mm)	2300	48.7" (1237 mm)	3 x ZCHS-J-...4
			3750		

Note: For efficient steam distribution it is recommended that steam velocities are restricted to 25 m / sec^{-1}. For more information on the HBA range, please contact Parker domnick hunter.

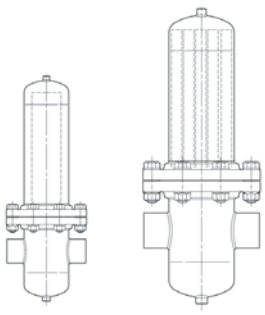
Correction Factors

To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor to find the equivalent flow @ 1 barg (14.50 psig).

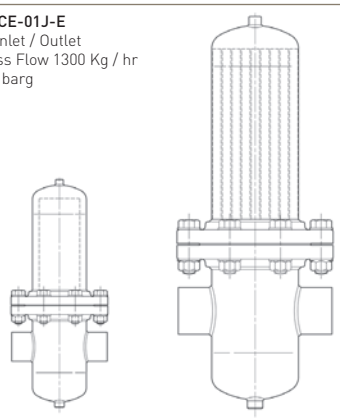
Steam Pressure	0	1	2	3	4	5	6	7	8	9	10
Correction Factor	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5

Table showing the relative system size difference between pleated cartridges left and sintered cartridges right.

VISCE-01J-D
3" Inlet / Outlet
Mass Flow 780 Kg / hr
@ 1 barg



VISCE-01J-E
4" Inlet / Outlet
Mass Flow 1300 Kg / hr
@ 1 barg



Steam Filters Utilities

Filter Cartridges

Specifications - Sintered

Materials of Construction

- Filtration Media: Sintered Stainless Steel (316L)
- End Caps: 316L Stainless Steel
- Standard o-rings/gaskets: EPDM (Standard) Silicone and Viton® *(options available)*

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 5 barg (72.51 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Housing Materials of Construction

- Material: 316L Stainless Steel
- Surface Finish
  - Internal: Electropolished Ra 0.8
  - External: Mechanical Polish (Commercial Bright)
- Vent / Drain: 1/4" BSPP Female Thread (Supplied with Plug)
- Seal Material: EPDM Aseptic Seal

Housing Design Pressure and Temperature

16 barg (232 psig) @ 200°C (392°F)

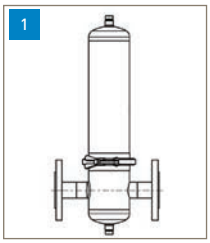


Figure	Housing Code	Connection Size	Capacity Kg / hr @ 1 barg <100 mbar or 40 m / sec 1 µm	25 µm	Overall Height	Replacement Filter Code
1	HBAHP01KY	1.5" (38.1 mm)	21	45	14.8" (376 mm)	ZCSSK-...C
1	HBAHP011C	2" (50.8 mm)	40	160	20.7" (526 mm)	ZCSS1-....C
1	HBAHP012C	2" (50.8 mm)	82	280	30.5" (776 mm)	ZCSS2-....C

Note: For efficient steam distribution it is recommended that steam velocities are restricted to 25 m / sec^{-1}. For more information on the HBA range, please contact Parker domnick hunter.

Correction Factors

To use the table above, the steam flow rates must be at 1 barg (14.50 psig). For system flows at different line pressures, divide the system flow by the correction factor to find the equivalent flow @ 1 barg (14.50 psig).

Steam Pressure	0	1	2	3	4	5	6	7	8	9	10
Correction Factor	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5

Ordering information

ZCSS [ ] - [ ] [ ]

Code	Length
B	2.5" (65 mm)
A	5" (125 mm)
K	5" (125 mm)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)
4	40" (1000 mm)

All cartridges supplied as single items

Code	Nominal Micron Rating Steam
001	1.0 µm (Culinary)
025	25.0 µm

Code	End Cap (10")
B	dh DOE
C	226 Bayonet

Code	End Cap (Demi)
T	TRUSEAL
Z	Demi A & B Std

ZCHS - [ ] - [ ] [ ]

Code	Length
B	2.5" (65 mm)
A	5" (125 mm)
K	5" (125 mm)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)
J	JUMBO

All cartridges supplied as single items

Code	Nominal Micron Rating Steam
001	1.0 µm (Culinary)
005	5.0 µm

Code	End Cap (10")
B	dh DOE
C	226 Bayonet
3	3" JUMBO
4	4" JUMBO

Code	End Cap (Demi)
T	TRUSEAL
Z	Demi A & B Std

SINTERED Stainless Steel Retrofit Cartridge Part Numbers - 1.0 µm & 25 µm

Parker domnick hunter Cartridge	DS-R 3/1	DS-R 3/1.4	DS-R 4/1.5	DS-R 4/2.5	DS-R 5/2.5	DS-R 5/3	DS-R 10/3	DS-R 15/3	DS-R 20/3	DS-R 30/3	DS-R 30/5				
Retrofit Cartridge	GS3/1 SS3/1	GS3/1.5 SS3/1.5	GS4/1.5 SS4/1.5	GS4/2.5 SS4/2.5	GS5/2.5 SS5/2.5	GS5/3 SS5/3	GS10/3 SS10/3	GS15/3 SS15/3	GS20/3 SS20/3	GS30/3 SS30/3	GS30/5 SS30/5				
Parker domnick hunter Cartridge	DS-R 02/05	DS-R 02/10	DS-R 03/05	DS-R 03/10	DS-R 04/10	DS-R 04/20	DS-R 05/20	DS-R 05/25	DS-R 07/25	DS-R 07/30	DS-R 10/30	DS-R 15/30	DS-R 20/30	DS-R 30/30	DS-R 30/50
Retrofit Cartridge	GS02/05 SS02/05	GS02/10 SS02/10	GS03/05 SS03/05	GS03/10 SS03/10	GS04/10 SS04/10	GS04/20 SS04/20	GS05/20 SS05/20	GS05/25 SS05/25	GS07/25 SS07/25	GS07/30 SS07/30	GS10/30 SS10/30	GS15/30 SS15/30	GS20/30 SS20/30	GS30/30 SS30/30	GS30/50 SS30/50
Parker domnick hunter Cartridge	PDS-R 02/05	PDS-R 02/10	PDS-R 03/05	PDS-R 03/10	PDS-R 04/10	PDS-R 04/20	PDS-R 05/20	PDS-R 05/25	PDS-R 07/25	PDS-R 07/30	PDS-R 10/30	PDS-R 15/30	PDS-R 20/30	PDS-R 30/30	PDS-R 30/50
Retrofit Cartridge	P-GS02/05 P-SS02/05	P-GS02/10 P-SS02/10	P-GS03/05 P-SS03/05	P-GS03/10 P-SS03/10	P-GS04/10 P-SS04/10	P-GS04/20 P-SS04/20	P-GS05/20 P-SS05/20	P-GS05/25 P-SS05/25	P-GS07/25 P-SS07/25	P-GS07/30 P-SS07/30	P-GS10/30 P-SS10/30	P-GS15/30 P-SS15/30	P-GS20/30 P-SS20/30	P-GS30/30 P-SS30/30	P-GS30/50 P-SS30/50

Specifications - Sintered retrofit cartridges

Materials of Construction

Filtration Media:	Sintered Stainless Steel (316L)
End Caps:	316L Stainless Steel
Standard o-rings/gaskets:	EPDM (Standard) Silicone and Viton® *(options available)*

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 10 barg (145.03 psig).

The maximum differential pressure in direction of flow (in to outside) is 5 barg (72.51 psig).

The maximum recommended continuous operating temperature range is -75 °C (-103 °F) to +200 °C (392 °F).

Note: Temperature dependant on o-ring compound

Ordering Information

SINTERED retrofit cartridges

Z □ □ - □ □

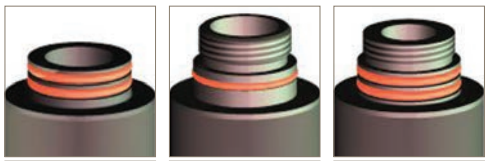
Code	Micron
P	1 micron
S	25 micron

All cartridges supplied as single items

Code	Length (Nominal)	
02	2¨	(65 mm)
03	3¨	(125 mm)
04	4¨	(125 mm)
05	5¨	(250 mm)
07	7¨	(500 mm)
10	10¨	(750 mm)
15	15¨	(750 mm)
20	20¨	(750 mm)
30	30¨	(750 mm)

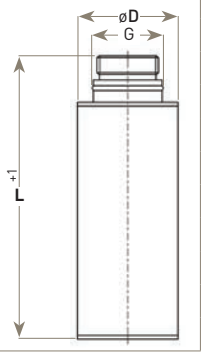
Code	Diameter (Nominal)
05	1¨
10	1¨
20	2¨
25	2.5¨
30	3¨
50	5¨

Code	End Cap (10¨)
UP	2 x o-ring
UR	1 x o-ring & thread
UI	2 x o-ring & thread

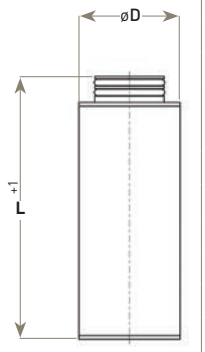


Code UP | Code UR | Code UI

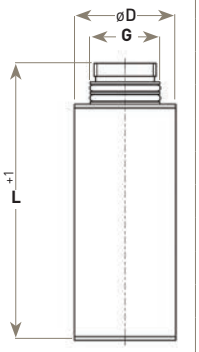
Description	L	D
ZP/ZS 0310 UR	88	40
ZP/ZS 0315 UR	88	40
ZP/ZS 0415 UR	124	40
ZP/ZS 0425 UR	125	54
ZP/ZS 0525 UR	152	54
ZP/ZS 0530 UR	148	76
ZP/ZS 1030 UR	269	76
ZP/ZS 1530 UR	405	76
ZP/ZS 2030 UR	532	76
ZP/ZS 3030 UR	784	76
ZP/ZS 3050 UR	774	130



Description	L	D
ZP/ZS 0210 UP	-	
ZP/ZS 0310 UP	86	35
ZP/ZS 0305 UP	-	-
ZP/ZS 0410 UP	114	35
ZP/ZS 0420 UP	117	40
ZP/ZS 0520 UP	141	40
ZP/ZS 0525 UP	141	54
ZP/ZS 0725 UP	193	54
ZP/ZS 0730 UP	196	76
ZP/ZS 1030 UP	269	76
ZP/ZS 1530 UP	396	76
ZP/ZS 2030 UP	523	76
ZP/ZS 3030 UP	775	76
ZP/ZS 3050 UP	775	76



Description	L	D
ZP/ZS 0205 UI	75	35
ZP/ZS 0210 UI	93	35
ZP/ZS 0305 UI	89	35
ZP/ZS 0310 UI	93	35
ZP/ZS 0410 UI	121	35
ZP/ZS 0420 UI	127	40
ZP/ZS 0520 UI	151	40
ZP/ZS 0525 UI	151	54
ZP/ZS 0725 UI	203	54
ZP/ZS 0730 UI	206	76
ZP/ZS 1030 UI	279	76
ZP/ZS 1530 UI	406	76
ZP/ZS 2030 UI	533	76
ZP/ZS 3030 UI	785	76
ZP/ZS 3050 UI	785	130



Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

Parker domnick hunter commitments

Air & Gas
collection

The treatment of gases in food and beverage production and packaging processes is of critical importance to protect the food from hazards which could otherwise deteriorate food quality or even worse, endanger human health.

With particular expertise in sterile gas filtration technology, Parker domnick hunter have continually innovated novel gas filtration solutions for the food industries. The range of gas filtration products and services have been designed to deliver optimum operational performance and maintain the commitments of; protecting food quality, reducing production costs and providing specialist support for the food industries.

HIGH FLOW BIO-X Air & Gas

Filter Cartridges

HIGH FLOW BIO-X sterile gas filters combine 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 usage and installation size within the fermentation, food and beverage industries.

The specially developed PTFE impregnation process imparts greater strength and permanent hydrophobicity to the borosilicate microfibre media. This leads to excellent performance in applications such as the provision of sterile gas in filling machines.

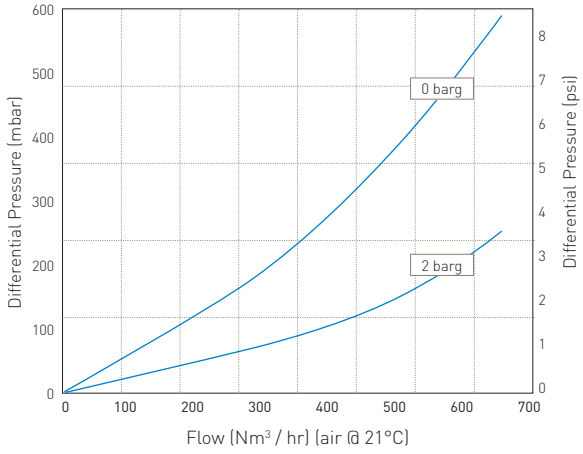
Features

- High flowing hydrophic PTFE impregnated media
- Fully validated by aerosolized bacterial and viral challenge
- Stainless steel inner core
- 100% integrity testable by Valairdata 3 aerosol challenge

Benefits

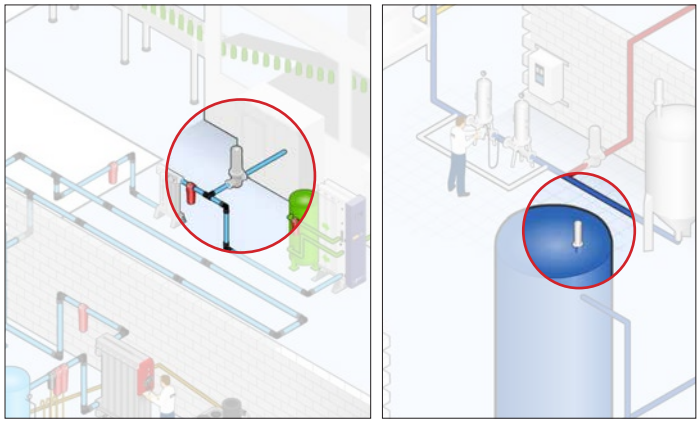
- Reduce system size and reduced total cost of ownership.
- Provides complete process security
- Strong and robust for extended service life
- Guaranteed performance in-situ

Performance Characteristics



Filtration Stage

Sterile Gas and Vent Filtration



Specifications

Materials of Construction

Filtration Media:	PTFE Impregnated Borosilicate Microfibre
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	316L Stainless Steel
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	Polyethersulphone
Standard o-rings/gaskets:	Silicone

Food Contact Compliance

Parker domnick hunter's range of HIGH FLOW BIO-X filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within food and beverage applications. Materials conform to the relevant requirements of the United States FDA 21 CFR part 177 and USP Plastics Class VI – 121°C.

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 3.5 barg (50.76 psig) at 70 °C (158 °F).

The maximum recommended continuous operating temperature is 70 °C (158 °F).

Effective Filtration Area (EFA)

10" (250 mm) Up to 0.38 m^2 (4.09 ft^2)

Sterilization

HIGH FLOW BIO-X cartridges can be in-situ steam sterilized or autoclaved up to 142 °C (287.6 °F) for a maximum of 150 steam cycles.

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Retention Characteristics

The HIGH FLOW BIO-X range of cartridges has been fully validated by aerosol bacterial challenge with challenge levels of 10^{12} *Brevundimonas diminuta* per 10" (250 mm) filter cartridge. Independent test work also shows full retention to *MS-2 Coliphage*.

Integrity Test Data

All cartridges are integrity tested prior to despatch by the aerosol challenge test method using the Parker domnick hunter VALAIRDATA 3.

Manufacturing Traceability

Each filter cartridge displays the product name, product code and lot number. Additionally, each module displays a unique serial number providing full manufacturing traceability.

Ordering information

ZCHB - [ ] [ ] - [ ]

Code	Length (Nominal)	
B*	2.5"	(65 mm)
A*	5"	(125 mm)
K	5"	(125 mm)
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)
4	40"	(1000 mm)

**Supplied in packs of 3*

Code	End Cap (10 inch)
C	P-7
P	BIO-X Retrofit
H	UF Retrofit

Code	End Cap (Demi)
H	UF Retrofit
T	TRUESEAL
Y	Demi MCY
Z	Demi A & B Std

Code	O-rings
E	EPDM
S	Silicone
V	Viton

**Silicone o-ring supplied as standard without having to specify 'S' code*

HBA & HPG
HOUSING RANGE AVAILABLE

Europe: ✆ +44 (0)191 4105121 | dhprocessid@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.na@parker.com | www.parker.com/dhbeverage

BIO-X II Air & Gas

Filter Cartridges

BIO-X II air sterilization filter cartridges utilize a borosilicate 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 microorganisms, including bacteria and viruses.

The media is sandwiched between polyaramid support materials to provide additional strength and prevent media migration. This is rigidly held between stainless steel support cylinders and finally encapsulated into stainless steel end caps. The result is a filter cartridge with the exceptional strength and efficiency necessary for absolute security in the most testing of applications.

BIO-X II filter cartridges are particularly suitable for the increasing number of high temperature applications. They also fulfil the sterile compressed air and gas requirements of the dairy, brewery and food processing industries.

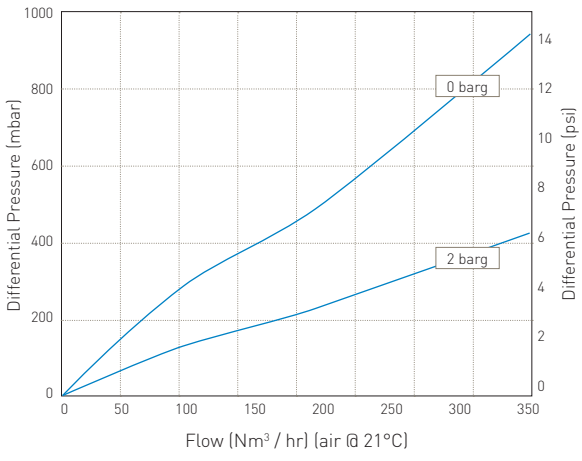
Features

- Robust stainless steel componentry
- Fully validated by aerosolized bacterial and viral challenge
- 100% integrity testable by Valairdata 3 aerosol challenge

Benefits

- High temperature operation up to 200°C (392°F)
- Process security under demanding conditions
- Guaranteed performance in-situ

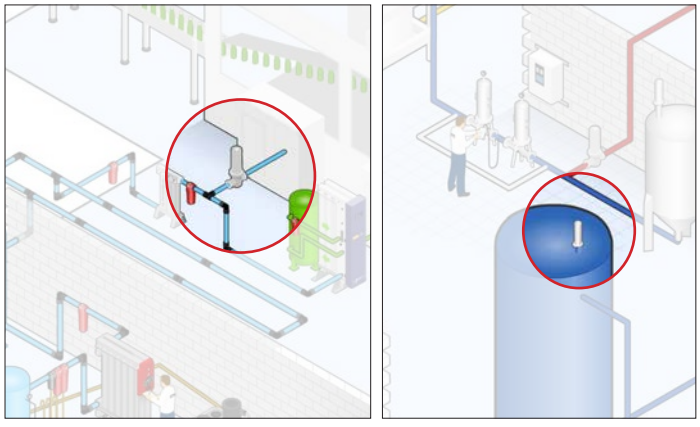
Performance Characteristics



ME10AB7SRH Cartridge

Filtration Stage

Sterile Gas and Vent Filtration



Specifications

Materials of Construction

Filtration Media:	Borosilicate Microfibre
Upstream Support:	Polyaramid
Downstream Support:	Polyaramid
Inner Support Core:	Stainless Steel
Outer Protection Cage:	Stainless Steel
End Caps:	Stainless Steel
Encapsulant:	Epoxy Resin
Standard o-rings/gaskets:	Silicone

Food and Biological Safety

Parker domnick hunter's range of BIO-X II filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within Food and Beverage applications. Materials conform to the relevant requirements for non-fibre release as laid down in the United States FDA 21 CFR 211.72 and 210,3(b).(6).

Recommended Operating Conditions

The maximum differential pressure is 700 mbar for economical element change.

Maximum Continuous Inlet Air Temperature

200 °C (392 °F) Intermittent
170 °C (338 °F) Continuous

Sterilization

BIO-X II filter elements can withstand a maximum of 100 in-line sterilization cycles with purified saturated steam. In-line sterilization 142 °C (287.6 °F), 2.8 barg (40.7 psig) for 30 minutes.

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Integrity Test Data

All cartridges are integrity tested prior to despatch by the aerosol challenge test method using the Parker domnick hunter Valairdata 3.

Retention Characteristics

The BIO-X II range of cartridges have been fully validated by bacterial challenge of aerosolized *Brevundimonas diminuta*.

Ordering information

Element Code	Cartridge Length	End Cap Location
MER-BZ	2.5" (65 mm)	Demi A & B Std (Z)
MER-AZ	5" (125 mm)	Demi A & B Std (Z)
ME10-AB7SRH	10" (250 mm)	BS226 (C)
ME20.AB7-SRH	20" (500 mm)	BS226 (C)
ME30.AB7-SRH	30" (750 mm)	BS226 (C)

All BIO-X cartridges are supplied as single units

HBA, HPG & HSV
HOUSING RANGE AVAILABLE

BIO-X II Retrofit Cartridge Part Numbers

Parker domnick hunter Cartridge	ME3/1	ME3/1.5	ME4/1.5	ME4/2.5	ME5/2.5	ME5/3	ME10/3	ME15/3	ME20/3	ME30/3	ME30/5	
Retrofit Cartridge	SRF3/1	SRF3/1.5	SRF4/1.5	SRF4/2.5	SRF5/2.5	SRF5/3	SRF10/3	SRF15/3	SRF20/3	SRF30/3	SRF30/5	
Parker domnick hunter Cartridge	MER2/10	MER3/10	MER4/20	MER5/20	MER5/25	MER7/25	MER7/30	MER10/30	MER15/30	MER20/30	MER30/30	MER30/50
Retrofit Cartridge	SRF02/10	SRF03/10	SRF04/20	SR05/20	SRF05/25	SRF07/25	SRF07/30	SRF10/30	SRF15/30	SRF20/30	SRF30/30	SRF30/50
Parker domnick hunter Cartridge	ME2/10	ME3/10	ME4/20	ME5/20	ME5/25	ME7/25	ME7/30	ME10/30	ME15/30	ME20/30	ME30/30	ME30/50
Retrofit Cartridge	P-SRF02/10	P-SRF03/10	P-SRF04/20	P-SRF05/20	P-SRF05/25	P-SRF07/25	P-SRF07/30	P-SRF10/30	P-SRF15/30	P-SRF20/30	P-SRF30/30	P-SRF30/50

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TETPOR AIR
Air & Gas

Filter Cartridges

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. A unique polypropylene prefilter layer extends service life in heavily contaminated environments.

TETPOR AIR filter cartridges also utilize a well-proven, inherently hydrophobic expanded PTFE membrane validated as sterilizing grade in liquid in accordance with ASTM F838-05. This ensures the removal of all airborne bacteria, viruses and bacteriophage.

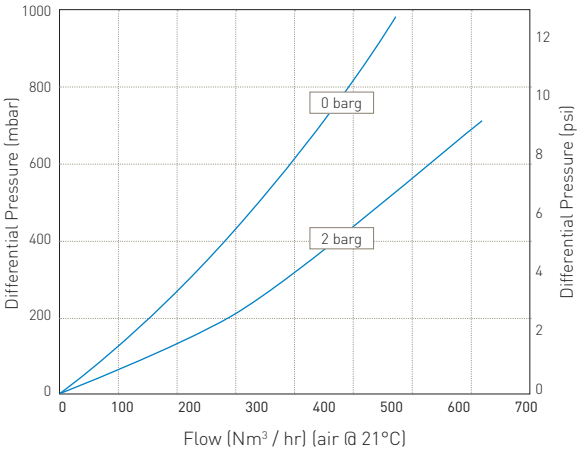
Features

- Highly hydrophobic PTFE membrane
- Fully validated to ASTM F838-05 liquid bacterial challenge
- Fully validated to aerosol and viral challenge

Benefits

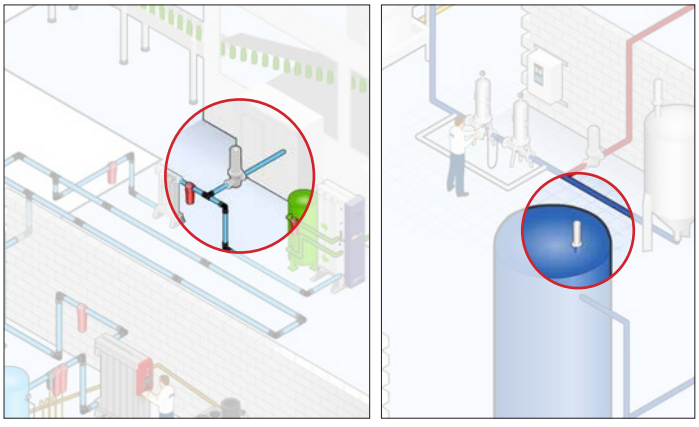
- Prevents membrane blinding during high humidity conditions
- Provides sterile effluent in high humidity environments and increased product protection
- Can be integrity tested in-situ using Valairdata 3

Performance Characteristics



Filtration Stage

Sterile Gas and Vent Filtration



Specifications

Materials of Construction

Filtration Membrane:	Expanded PTFE
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene

Filter Cartridges

Inner Support Core:	Polypropylene
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	316L Stainless Steel
Standard o-rings/gaskets:	Silicone

Food Contact Compliance

Parker domnick hunter's range of TETPOR AIR filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within Food and Beverage applications. Materials conform to the relevant requirements of the United States FDA 21 CFR part 177 and USP Plastics Class VI – 121°C.

Recommended Operating Conditions

Filter Cartridges

Up to 60 °C (140 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max Forward dP (bar)	Max Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.7	24.6

Parker Hannifin certify that this product complies with the European Council Pressure Equipment Directive (PED) 97/23/EC Article 3, Paragraph 3 - Sound Engineering Practice (SEP). This product is intended for use with Group 1 & 2 Dangerous and Harmless Liquids and Group 2 Harmless Gases at the operating conditions stated in this document : In compliance with PED Article 3, Paragraph 3, SEP, this product does not bear the CE mark.

Effective Filtration Area

10¨ (250 mm):	0.77m²	(8.28 ft2)
K Size:	0.36m²	(3.87 ft2)
A Size:	0.25m²	(2.69 ft2)
B Size:	0.12m²	(1.29 ft2)
E Size:	0.06m²	(0.64 ft2)

Sterilization

	Autoclave Cycles	Autoclave Temp	Steam-in-place Cycles (30 min)	Steam-in-place Temp
Cartridges	120	142°C (287°F)	120	142°C (287°F)
DEMICAP	100	135°C (275°F)	-	-

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Integrity Test Data

All modules are integrity tested prior to despatch by diffusional flow. Values are for cartridges wetted with 60 / 40 IPA / Water.

Cartridge	Test Pressure (barg)	Test Pressure (psig)	Diffusional Flow (ml / min)
E	0.8	11.6	1.5
B	0.8	11.6	3.0
A	0.8	11.6	6.0
K	0.8	11.6	8.3
10¨	0.8	11.6	17.7

Retention Characteristics

TETPOR AIR filter cartridges are validated by bacterial challenge testing with Brevundimonas diminuta to current ASTM F838-05 methodology (10^7 organisms / cm^2 EFA minimum) with typical in-house challenge levels being 1011 organisms per 10¨ (250 mm) filter cartridge.

In addition, TETPOR AIR filter cartridges are also validated by aerosol bacterial and MS-2 coliphage challenge testing.

Ordering information

ZCMT [ ] / [ ] [ ] - [ ] [ ]

Code	Length (Nominal)	
B*	2.5¨	(65 mm)
A*	5¨	(125 mm)
K	5¨	(125 mm)
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)

**Supplied in packs of 3*

Code	Micron
020	0.2

Code	End Cap (10¨)
B*	dh DOE
C	BF / 226 Bayonet
D	Fin / 222
E	Flat Top / 222
F	BF / 216 / 218
G	Recess / 222
H	UF Retrofit
R	BF / 222 Bayonet

**EPDM gaskets supplied as standard*

Code	End Cap (Demi)
SK	Retrofit
T	TRUESEAL
X	116
Y	Demi Sub
Z	Demi A & B Std

Code	Variant
A	Air / Gas

Code	O-rings
E	EPDM
P	PTFE Encapsulated Silicone
S*	Silicone
V	Viton

** Silicone o-ring supplied as standard without having to specify the 'S' code*

HBA, HPG & HSV
HOUSING RANGE AVAILABLE

HIGH FLOW TETPOR II Air & Gas

Filter Cartridges

HIGH FLOW TETPOR II gas sterilization filters have been developed to benefit from technological advances within the manufacture of PTFE membranes. This new generation of filter sets the standard with an unrivalled combination of efficiency, flow rate and strength.

The HIGH FLOW TETPOR II is validated as a 0.2 micron sterilizing grade filter in liquids through ASTM F838-05 and 0.01 micron in gas through full retention to an aerosol challenge of MS2 phage. This ensures the filter will guarantee the sterility of your process in the worst-case scenario where the filter may be subjected to bulk liquid due to a process problem. Subtle changes to the structure of the hydrophobic PTFE have also resulted in the production of an extremely robust product now validated for 225 steam sterilization cycles @ 142 °C (287.6 °F). The combination of non-woven supports upstream of the membrane and an expanded net layer downstream has significant benefits. It provides increased protection and service life while guaranteeing zero fibre shedding into the process.

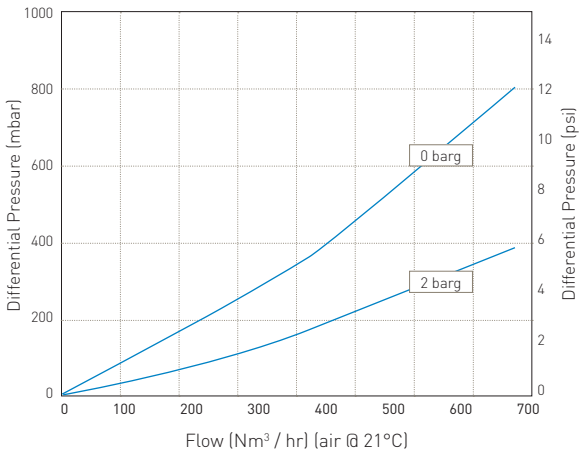
Features

- Highly hydrophobic PTFE membrane
- Fully validated to ASTM F838-05 liquid bacterial challenge
- Fully validated to aerosol and viral challenge
- Unique high flowing PTFE membrane
- Can be in-situ steam sterilized for up to 225 cycles at 142°C

Benefits

- Prevents membrane blinding during high humidity conditions
- Provides sterile effluent in high humidity environments and increased product protection
- Increased energy savings due to reduced pressure loss
- Long service life under aggressive processing conditions

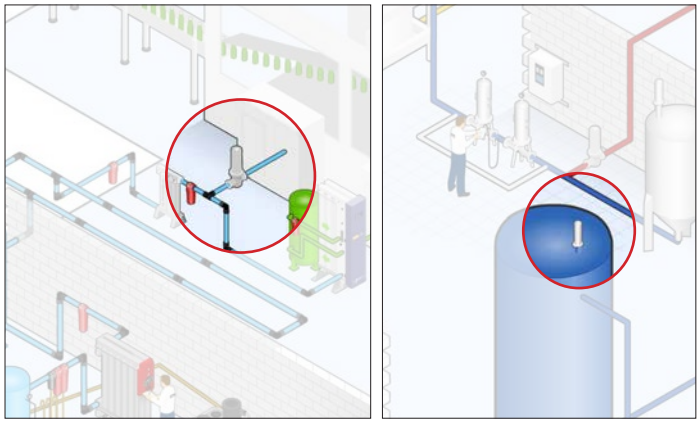
Performance Characteristics



For A size filter, multiply dP by factor of 3 at same flow

Filtration Stage

Sterile Gas and Vent Filtration



Specifications

Materials of Construction

Filtration Media:	Expanded PTFE
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	316L Stainless Steel
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	Polysulphone
Standard o-rings/gaskets:	Silicone

Food Contact Compliance

Parker domnick hunter's range of HIGH FLOW TETPOR II filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within Food and Beverage applications. Materials conform to the relevant requirements of the United States FDA 21 CFR part 177 and USP Plastics Class VI – 121°C .

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 3.5 barg (50.76 psig) at 60 °C (140 °F).

The maximum recommended continuous inlet air temperature is 60 °C (140 °F).

Note: HIGH FLOW TETPOR II cartridges can be used as WFI vents in heated housings if changed on a 4-6 monthly basis.

Sterilization

HIGH FLOW TETPOR II cartridges can be in-situ steam sterilized for up to 225 cycles at 142 °C (287.6 °F).

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Retention Characteristics

HIGH FLOW TETPOR II cartridges have been fully validated as 0.2 micron sterilizing grade filter cartridges, for compressed air and gas applications. They exceed liquid bacterial challenge levels as recommended by ASTM+. In addition, HIGH FLOW TETPOR II is also validated by aerosol bacterial and MS-2 Coliphage challenge testing.

+ASTM American Society for Testing and Materials

Integrity Test Data

All modules are integrity tested prior to despatch by diffusional flow. Values are for cartridges wetted with 60 / 40 IPA / Water.

Cartridge	Test Pressure (barg)	Test Pressure (psig)	Diffusional Flow (ml / min)
D	0.8	11.6	0.6
C	0.8	11.6	1.1
B	0.8	11.6	2.8
A	0.8	11.6	5.6
K	0.8	11.6	7.70
10¨	0.8	11.6	16.5
20¨	0.8	11.6	33.0
30¨	0.8	11.6	49.5

Ordering information

ZHFT / [ ] [ ] - [ ]

Code	Length (Nominal)	
D*	1.5¨	(35 mm)
C*	2.5¨	(65 mm)
B*	2.5¨	(65 mm)
A*	5¨	(125 mm)
K	5¨	(125 mm)
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)

**Supplied in packs of 3*

Code	End Cap (10 inch)
C	P-7
P	BIO-X Retrofit
H	UF Retrofit

Code	End Cap (Demi)
H	UF Retrofit
W	HF Demi C & D
T	TRUESEAL
Y	Demi MCY
Z	Demi A & B Std

Code	O-rings
E	EPDM
P[1]	PTFE Encapsulated Silicone
S[2]	Silicone
V	Viton

[1] *Not available on C and D length variants*

[2] *Silicone o-ring supplied as standard without having to specify the 'S' code*

HBA, HPG & HSV
HOUSING RANGE AVAILABLE

Europe: ✆ +44 (0)191 4105121 | dhprocess@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.na@parker.com | www.parker.com/dhbeverage

HIGH FLOW PREPOR GFA Air & Gas

Filter Cartridges

HIGH FLOW PREPOR GFA is a high capacity glass fibre prefilter specifically designed for the removal of bulk particulate from compressed air and gases.

It is used extensively for prefiltration duties in dry compressed air systems and provides excellent protection for final sterile filters.

HIGH FLOW PREPOR GFA utilizes pleated glass fibre filter media encased within an upstream and downstream expanded polypropylene mesh filter support. The pleat pack is supported by an inner stainless steel core and outer heat stabilized polypropylene cage, heat bonded to heat stabilized polypropylene end caps.

The combination of high voids volume filter media and pleated construction results in a filter cartridge with exceptional dirt holding capacity, able to operate at very low differential pressures.

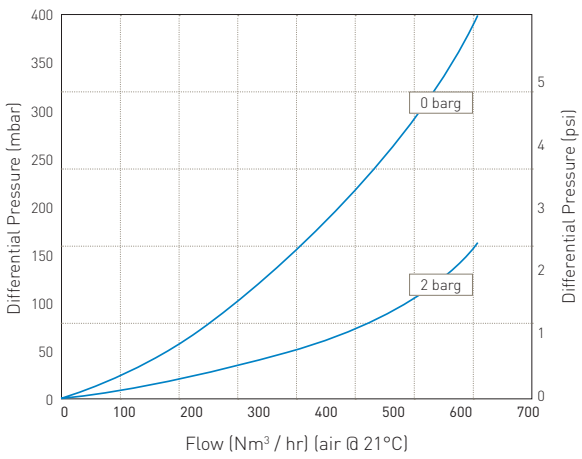
Features

- High surface area and voids volume filter media
- Reliable efficient protection of final sterilization filters
- Retention to 1.0µm in gas

Benefits

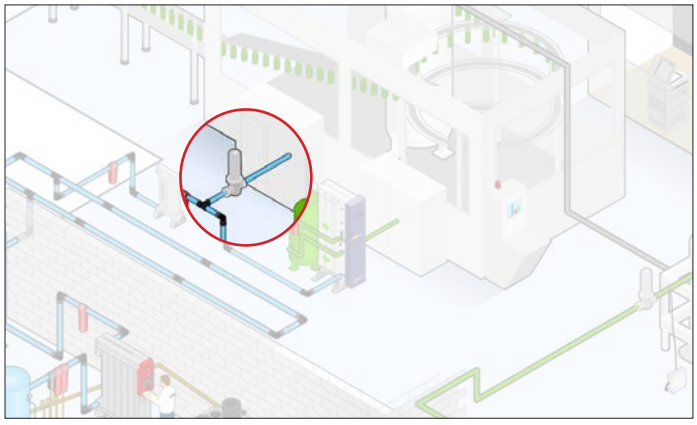
- Exceptionally high flow rates with low pressure drops
- Reliable efficient protection of final sterilization filters
- Heat stabilized componentry to allow operation at elevated temperatures

Performance Characteristics



Filtration Stage

Particulate Removal



Specifications

Materials of Construction

Filtration Media:	Glass Microfibre
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	316L Stainless Steel
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
End Cap Insert:	Stainless Steel
Standard o-rings/gaskets:	Silicone

Food Contact Compliance

Parker domnick hunter's range of HIGH FLOW PREPOR GFA filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within Food and Beverage applications. Materials conform to the relevant requirements of the United States FDA 21CFR part 177 and USP Plastics Class VI – 121°C .

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 3.5 barg (50.76 psig) at 20 °C (68 °F).

The maximum recommended continuous operating temperature is 70 °C (158 °F).

Note: For temperatures from 70 °C (158 °F) to 100 °C (212 °F) a special product with polyester supports is available.

Effective Filtration Area (EFA)

10¨ (250 mm) 0.48 m2 (5.16 ft2)

Ordering information

ZCHP □ - □ - □

Code	Length (Nominal)	
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)

Code	End Cap (10 inch)
C	BF / 226 Bayonet
P	BIO-X Retrofit

Code	O-rings
E	EPDM
S	Silicone
V	Viton®

Code	Variant*
S4*	High temperature

HBA
HOUSING RANGE AVAILABLE

Europe: ✆ +44 (0)191 4105121 | dhprocessd@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.na@parker.com | www.parker.com/dhbeverage

PEPLYN AIR
Air & Gas

Filter Cartridges

PEPLYN AIR filter cartridges have been specifically designed to guarantee removal of particulate from gas streams.

They can be used to protect sterilizing grade filters in pressurized systems or in exhaust gas vent applications.

PEPLYN AIR is particularly suitable for:

- Inlet gas in the fermentation industry as protection to sterilizing grade filters where polypropylene media is preferred
- As protection to sterilizing grade filters in exhaust gas systems
- Vent applications
- Systems where high particulate loading is expected

PEPLYN AIR has the ability to be steam sterilized and has a broad range of chemical compatibility

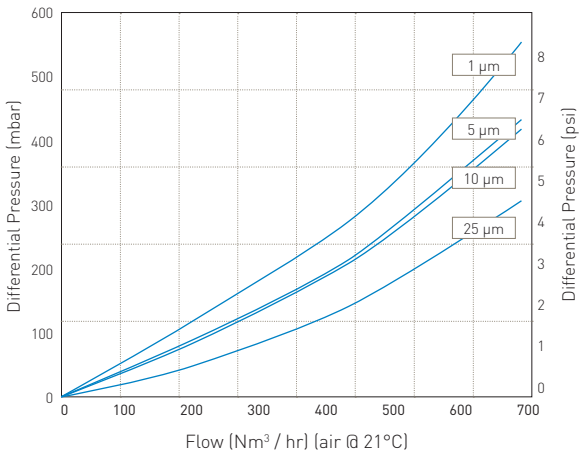
Features

- Strong and durable polypropylene filtration media
- Graded density, pleated construction

Benefits

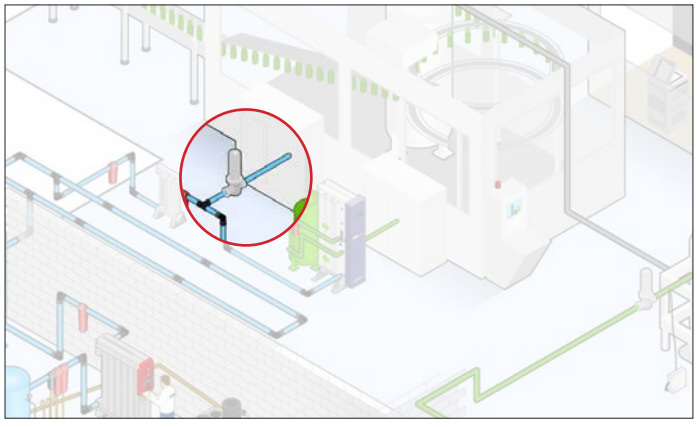
- Effective particle retention and steam sterilizable capability
- High flow rate and long service life

Performance Characteristics



Filtration Stage

Particulate Removal



Specifications

Materials of Construction

Filtration Media:	Meltblown Polypropylene
Upstream Support:	Polypropylene
Downstream Support:	Polypropylene
Inner Support Core:	316L Stainless Steel
Outer Protection Cage:	Polypropylene
End Caps:	Polypropylene
Standard o-rings/gaskets:	Silicone

Food Contact Compliance

Parker domnick hunter's range of PEPLYN AIR filters are intended for indirect food contact and as such are manufactured from materials suitable for the sterilization of compressed gasses within Food and Beverage applications. Materials conform to the relevant requirements of the United States FDA 21CFR part 177 and USP Plastics Class VI – 121°C .

Recommended Operating Conditions

The maximum differential pressure in direction of flow (outside to in) is 3.5 barg (50.76 psig) at 20 °C (68 °F).

The maximum recommended continuous operating temperature is 50 °C (122 °F).

Effective Filtration Area (EFA)

10" (250 mm) Up to 0.48 m^2 (5.16 ft^2)

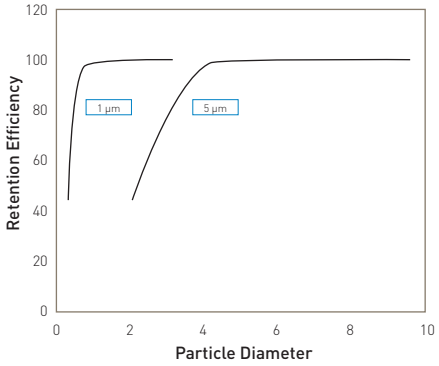
Cleaning and Sterilization

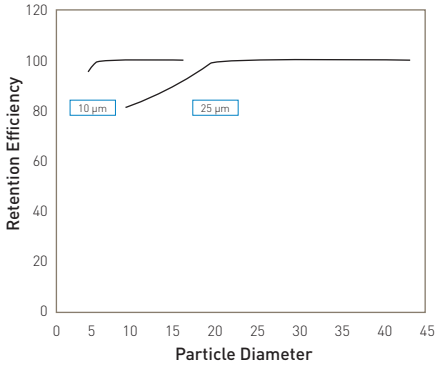
PEPLYN AIR cartridges can be repeatedly in situ steam sterilized or autoclaved up to 142 °C (287.6 °F).

Determination of Micron Ratings

Particle removal efficiencies of PEPLYN AIR cartridges have been determined independently by challenging with a cut silica test dust, generated by BUS1701 dust injector used in conjunction with laser particle counters.

Micron Efficiency Ratings





Ordering information

ZCPH □ - □ □ - □

Code	Length (Nominal)	
B*	2.5"	(65 mm)
A*	5"	(125 mm)
K	5"	(125 mm)
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)

** Supplied in packs of 3*

Code	Micron
1.0	1.0 µm
005	5.0 µm
010	10.0 µm
025	25.0 µm

Code	End Cap (10 inch)
C	BF / 226 Bayonet
H	UF Retrofit

Code	End Cap (Demi)
T	TRUESEAL
Y	Demi Stub
Z	Demi A & B Std

Code	O-rings
E	EPDM
P	PTFE Encapsulated Silicone
S	Silicone
V	Viton®

** Silicone o-ring supplied as standard without having to specify the 'S' code*

HBA
HOUSING RANGE AVAILABLE


Valairdata 3
Integrity Test Unit

Parker domnick hunter commitments

Instruments
collection

There is a growing trend for higher quality and more consistent products manufactured by the food industry. In order to remain competitive, manufacturers must continually strive for better process control to eliminate hazards which could affect the quality and consistency of the foods they produce.

In order to help food manufacturers overcome the challenges of producing safe foods consistently without non-conformance or wastage, adoption of the principles outlined in the HACCP framework has become mandatory (ref: EU Regulation 852/2004). Routine integrity testing of critical filters offers a way of ensuring the on-going performance of critical filtration systems and ensures the food production plant operates in line with the HACCP principles.

Parker domnick hunter offer a range of automated integrity test instruments used to check the integrity of critical liquid or gas filters. The instruments satisfy the food industry requirements for filter testing by offering automated operation, accurate detection of filter integrity and easy documentation and management of test results.

Valairdata 3

Integrity Test Unit

Valairdata 3 is the next generation of fully automated, aerosol challenge integrity test unit, designed to test the integrity of sterile gas filters quickly and easily.

The Valairdata 3 aerosol challenge test is fully correlated to aerosolized *B.diminuta, B.subtilis* and Enterobacteria phage MS2 challenges and is a recommended test methodology in the PDA's "Sterilizing Filtration of Gas – Technical Report #40".

The unit utilizes Parker domnick hunter's 40 years of experience in the provision of world leading sterile gas solutions by further improving the usability and sensitivity of the test process and offers significant savings in operator time.

Features

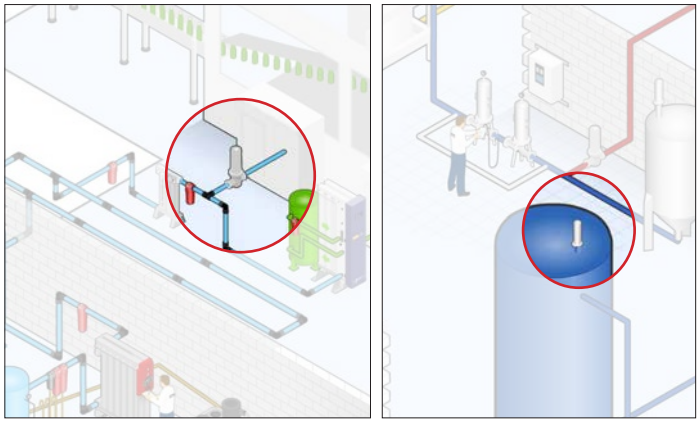
- 5.7" TFT LCD touch screen operation
- Multi-language menu availability
- Testing correlated to aerosol and viral challenges
- Developed to GAMP 5 guidelines
- Transfer of data via USB memory stick
- 4GB internal memory storage

Benefits

- Easy to use
- Portable for in-situ testing around the facility
- Quick determination of a filter's ability to sterilize gas - around 30 second test time for 10¨housing, 5 seconds for discs
- Increased sensitivity compared to liquid based tests, especially on multi-cartridge systems
- No unit specific PC software required

Filtration Stage

Sterile Gas and Vent Filtration



Specifications

Weight:	8 kg
Instrument size:	Width: 363 mm Height: 308 mm Depth: 155 mm
Electrical requirement:	Battery operated 3.2V / 16Ah & mains 100-240 VAC : 50/60 Hz
Laser:	Type: Solid state laser diode Power: 24 Volts DC Sample flow rate: 0.1cfm
Aerosol generator:	Aerosol generated from Purity™ FGW015 white mineral oil FDA:178-3620
CE standards:	LVD - EN61010-1-1 EMC - EN61326-1
Pneumatic requirements:	Input pressure: 4.5 to 7 barg clean dry air or nitrogen Pneumatic Rectus 21 KA connections
Packaging:	Waterproof and airtight solid case for transportation Padded carry bag for site portability
Languages:	English, German, French, Swedish, Italian, Portuguese, Danish and Spanish

Instrument Options

	WVA-3-ST Standard	WVA-3-SE Secure
Design environments approvals:	GAMP 5	GAMP 5
21CFR Part 11:	No	Yes (transferred data is user's responsibiity)
Security user levels:	Operator Administrator	Operator - password protected Administrator - password protected
Audit trail:	No	Yes

Ordering information

WVA - 3 - ☐

Code	Length (Nominal)
ST	Standard
SE	Secure

Calibration code: 609500026

Customer Support

Parker domnick hunter can offer full after sales support worldwide, whether it is commissioning of the instrument, calibration / service or full training of site operators.

Europe: ✆ +44 (0)191 4105121 | dhprocessid@parker.com | North America: ✆ toll free: +1 877 784 2234 | dhpsales.nal@parker.com | www.parker.com/dhbeverage

BEVCHECK & BEVCHECK PLUS

Integrity Test Units

Monitoring performance and product quality

Simple routine integrity testing for the beverage industry.

BEVCHECK

The BEVCHECK is an easy to use, portable unit that allows you to test the integrity of your membrane filters using the pressure decay method. Test data can be reported as pressure decay or diffusional flow.

BEVCHECK is a small hand held unit, or is light enough to be mounted directly on to a connection on the filter housing. Software included with the unit enables it to be connected to a PC for enhanced programming and data handling flexibility.

BEVCHECK PLUS

The BEVCHECK PLUS provides an automated method for testing membrane filter cartridges used in beverage applications. Using the pressure decay method, the unit controls the whole test from increase of pressure, through stabilization and pressure decay measurement, to release of pressure.

Test data can be reported as pressure decay or diffusional flow and is provided in a printed summary. The unit is small enough to be portable around the production facility, or can be positioned centrally for remote connection to the filter housings.

BEVCHECK & BEVCHECK PLUS
Integrity Test Units

- Large memory stores up to 19 programs and 100 test reports
- Flexible - suitable for use with compressed air or nitrogen
- Accommodates a wide range of filter retention ratings and housing sizes
- Clear liquid crystal display and wipe clean keypad
- Self test function automatically checks the function of the unit
- PC interface and software provides additional programming and data handling flexibility
- IP53 protection class
- Hand held portability with rechargeable battery operation
- Convenient built-in printer provides printed test report (PLUS)

Physical Parameters

	BEVCHECK	BEVCHECK PLUS
Housing Material	ABS	Polystyrol
Instrument Size	(WxDxH) 105 mm x 210 mm x 45 mm (4¨ x 8.25¨ x 1.75¨)	(WxDxH) 315 mm x 280 mm x 150 mm (12.5¨x 11¨ x 6¨)
Weight	0.5 Kg (1.1 lbs)	3.9 Kg (8.6 lbs)
Ingress Protection Class	IP53	IP53
Power Supply	Re-Chargeable HiMH Battery (4.8 V / 1.5 Ah) & External Charger (100- 230V AC / 47 - 63 Hz / 7.5V 1.33A)	HiMH Battery (4.8 V / 1.5 Ah) & External Charger / Mains (230V AC:18V DC, 1.7A / 230V AC:15V AC, 15VA)
Battery Life (From Full Charge)	7 hours Typ.	2 hours Typ.
Keyboard	16 Key - Polycarbonate Keypad	16 Key - Polycarbonate Keypad
Inlet Pressure Required	0 - 4000 mbar	0 - 4500 mbar
Operation Temperature	3 - 33 °C (37.4 - 91.4 °F)	3 - 30 °C (37.4 - 95 °F)
Pneumatic Connectors	Compressed Air / Filter : Rectus 21 Male	Compressed Air / Filter : Festo 4 mm Stäubi RBE03 Male Vent : Festo 4 mm
Storage Temperature	3 - 35 °C (37.4 - 95 °F)	3 - 35 °C (37.4 - 86 °F)
Ambient Humidity	5 - 95% Rel.	5 - 95% Rel.
Display	LCD - 16 Character x 2 Lines	LCD - 20 Character x 4 Lines
Printer	None	Built in Thermal Printer - 57 mm Printer
Language	English, German, Italian, French, Spanish & Portugese	English, German, Italian, French, Spanish & Portugese
Storable Test Programs	19	19
Storable Test Records	100	100
Test Pressure Control	Manual (Additional Accessory Kit Required)	Fully Automatic
Test Pressure Range	0 - 4000 mbar	0 - 3900 mbar
Housing Volume Range	10 - 999999 ml	10 - 999999 ml
Diffusional Flow Range	1 - 99.9 ml / min	1 - 999.9 ml / min
Stabilisation Time Range	1 - 1800 secs	1 - 1800 secs
Test Time Range	1 - 1800 secs	1 - 1800 secs
Interfaces	PC Data / Remote Operation : RS232 4-Pole Jack	D-Sub 25 Pole PC Data / Remote Operation : RS232 9-Digit Male
Documentation / Ancillaries	CE Declaration of Conformity Calibration Certificate Winfilter PC Software Power Supply / Charger with Country Specific Mains Adaptor PC Comms Cable (RS232 - 4 Pole Jack to 9 Pin Male) Installation, Operation & Maintenance Instructions (IOMI) Foam Lined Carry Case	CE Declaration of Conformity Calibration Certificate Winfilter PC Software Power Supply / Charger with Country Specific Mains Adaptor PC Comms Cable (RS232 - 4 Pole Jack to 9 Pin Male) Installation, Operation & Maintenance Instructions (IOMI) Foam Lined Carry Case

Ordering Information

	BEVCHECK	BEVCHECK PLUS
Model	WBC-230	WBC-BEVCHECK PLUS
Calibration order code	609500028	609500091


domnick
hunter

Parker domnick hunter commitments

Housings
collection

Selecting the correct filter housing for an application is as important as selecting the correct filter. Parker domnick hunter offer a range of housings for the filtration of both liquids and gases to meet the stringent requirements of food and beverage applications.

From single demi-housings for point-of-use gas flows, to multi-round liquid housings for final filtration of your product, we can supply housings in a wide range of connection sizes and finishes to meet any flow rate or application requirements.

- Liquid prefiltration
- Liquid final filtration
- Gas filtration
- Vent filtration
- Steam filtration

Focussed on meeting specifications and legislations relevant to the food and beverage industries, our housings are manufactured from 316L stainless steel for all product contact surfaces, and are designed to achieve optimal flow and lowest differential pressure for maximum efficiency.

HIL Filter Housings

Industrial Liquid

- Industrial liquid housing for prefiltration and clarification duties
- STANDARD product
  - BSP (G) or NPT connections and standard finish
- PLUS product
  - Available in 3 different vessel classes: Standard (CE), Atex and High Pressure
  - Standard and electropolished surface finishes available
  - A number of inlet / outlet port connections
  - Choice of BSP (G) / ISO 228, NPT or no vent
  - Choice of BSP (G) / ISO 228 or NPT drain
  - Option of C (226) location and fabricated (not cast) head

Specification

STANDARD Range
Materials of Construction

- Housing: Cast Head - Stainless Steel
  Bowl - 316L - Stainless Steel
- Seals: EPDM FDA
- Clamps: 304 Stainless Steel

Surface Finish

- Internal: As Welded
- External: Polished 0.8 µm Ra (32 µIn Ra)

All finished pickled and passivated

PLUS Range
Materials of Construction

- Housing: Cast Head - 316L Stainless Steel
  Bowl - 316L - Stainless Steel
- Seals: EPDM FDA
  PTFE FDA
  Silicone FDA
  Viton® / FKM FDA
- Clamps: 304 Stainless Steel

Surface Finish
Two Finishes Available

- Standard Finish
  Head-Cast, Pickled and Passivated
  Bowl Internal: As Welded
  Pickled and Passivated
  Bowl External: Polished 0.8 µm Ra (32 µIn Ra)

- Standard Electropolished Finish
  Head-Cast, Electropolished
  Bowl Internal: Electropolished
  Bowl External: Polished 0.8 µm Ra (32 µIn Ra)

All finished pickled and passivated

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish and detail drawings available upon request.

Certification

Supplied as standard with vessel inspection certificate.

Material Test Certification

EN10204 3.1 supplied upon request.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory Pressure Equipment Regulations (PER) 1999 N° 2001.

Design Basis

ASME VIII Division 1.

STANDARD Range

Working Condition PED 97/23/EC			Maximum Pressure		
Fluid Group	State	Temperature	011	012	013
Non Dangerous	Liquid / Gas	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid / Gas	150 °C (302 °F)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
PED Conformity Assessment Category			SEP	CAT I	CAT I
Volume (litres)			3.2	5.1	7.0

PLUS Range

CE Working Condition PED 97/23/EC			Maximum Pressure			
Fluid Group	State	Temperature	011	012	013	014
Non Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	150 °C (302 °F)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
Non Dangerous	Liquid	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	150 °C (302 °F)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
PED Conformity Assessment Category			Code B & D Code C	SEP SEP	CAT I SEP	CAT I CAT I	CAT I CAT I
Volume (litres)			Code B & D Code C	3.2 2.9	5.1 4.8	7.0 6.7	8.9 8.6

ATEX Working Condition PED 97/23/EC			Maximum Pressure			
Fluid Group	State	Temperature	011	012	013	014
Non Dangerous	Gas / Vapour	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	135 °C (275 °F)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
Non Dangerous	Liquid	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	135 °C (275 °F)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
PED Conformity Assessment Category			Code B & D Code C	SEP SEP	CAT I SEP	CAT I CAT I	CAT I CAT I
Volume (litres)			Code B & D Code C	3.2 2.9	5.1 4.8	7.0 6.7	8.9 8.6

High Pressure Working Condition PED 97/23/EC			Maximum Pressure			
Fluid Group	State	Temperature	011	012	013	014
Non Dangerous	Gas / Vapour / Liquid	205 °C (401 °F)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)
PED Conformity Assessment Category			Code B & D Code C	CAT I 2.9	CAT I 4.8	CAT I 6.7	CAT I 8.6
Volume (litres)			Code B & D Code C	3.2 SEP	5.1 CAT I	7.0 CAT I	8.9 CAT I

Note: All housings are full vacuum rated.

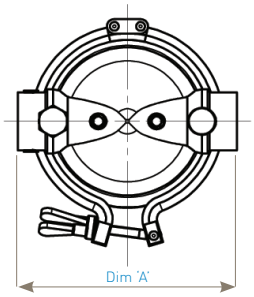
HIL Filter Housings

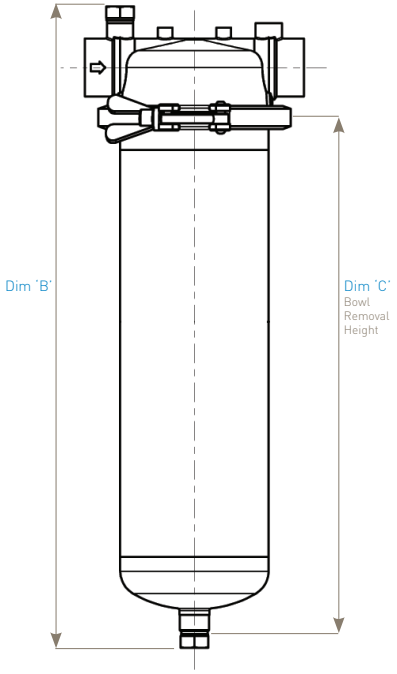
Industrial Liquid

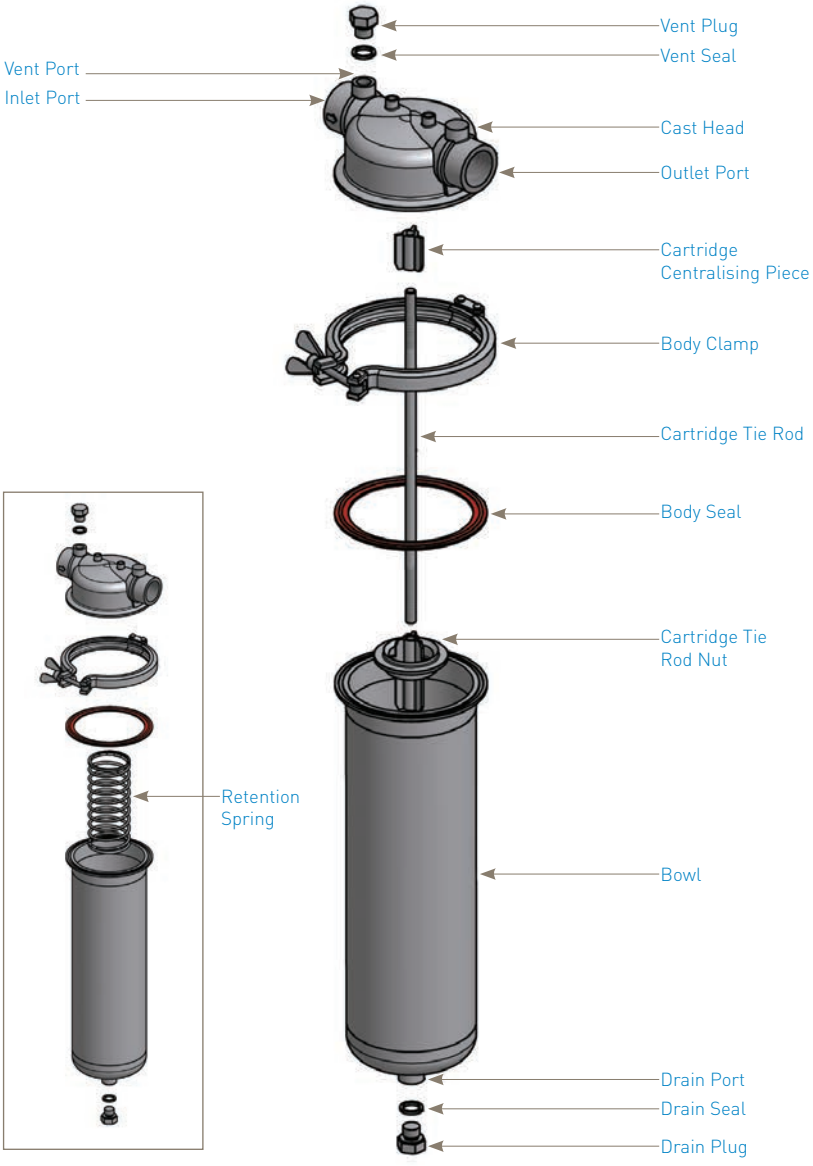
Physical Characteristics

Bowl Height	Dimensions (mm) 'A'	'B'	'C'	Typical Weight Bowl	Head	Total
250 mm (10")	150 mm (5.9")	441 mm (17.4")	297 mm (11.7")	1.5 Kg (3.3 lbs)	1.2 Kg (2.6 lbs)	3.8 Kg (8.4 lbs)
500 mm (20")	150 mm (5.9")	691 mm (27.2")	550 mm (21.7")	2.5 Kg (5.5 lbs)	1.2 Kg (2.6 lbs)	4.9 Kg (10.8 lbs)
750 mm (30")	150 mm (5.9")	936 mm (26.9")	814 mm (32.0")	3.5 Kg (7.7 lbs)	1.2 Kg (2.6 lbs)	6.0 Kg (13.2 lbs)

Dimensions shown are based on the STANDARD range. For accurate dimensions, please contact Parker domnick hunter.







Example: Showing 10" Size with 1" connections

The PLUS product range is available with many options of connections, vents, drains, surface finish, seals classification, etc. Please see product coding.

STANDARD Range - 10" to 30"

HIL [ ] 01 [ ] [ ] [ ] - [ ] - [ ]

Code | Vessel Class	Code | Length (Nominal)	Code | Connection Size	Code | Standard	Code | Cartridge	Code | Seal
CE Standard	1 10" (250 mm) 2 20" (500 mm) 3 30" (750 mm)	B 1" (25.4 mm)	B BSPP (G) / ISO 228 N NPT	B DOE D 222	E EPDM

PLUS Range - 10" to 40"

HIL [ ] 01 [ ] [ ] [ ] [ ] [ ] - [ ] [ ] - [ ] - [ ]

Code | Vessel Class	Code | Length (Nominal)	Code | Connection Size	Code | Standard	Code | Cartridge	Code | Seal	Code | Vent	Code | Drain
CE Standard AT ATEX HP* High Pressure	1 10" (250 mm) 2 20" (500 mm) 3 30" (750 mm) 4 40" (1000 mm)	B 1" (25.4 mm) Y 1 1/2" (38.1 mm)	B[1] BSPP (G) / ISO 228 F[2] FLANGE ANSI cl.150 H FLANGE ANSI cl.300 L FLANGE ISO / DIN N[1] NPT (F) T[1][3] Tri-Clamp®	B DOE C 226 D 222	E EPDM P* PTFE S Silicone V Viton® / FKM	B 1/4" BSPP (F) /G1/4" N 1/4" NPT (F) X[3] No Vent	B 1/4" BSPP (G1/4") N 1/4" NPT

* Supplied complete with a double bolted clamp

* Double bolted clamp required

[1] Only available in 1" connection

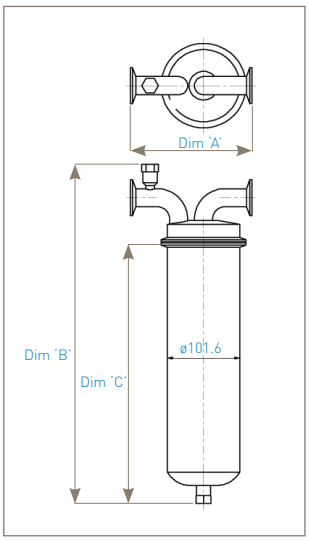
[2] Not suited for High Pressure Vessels. HP Vessels to use ANSI RF 300.

[3] Only available with 'C' Style cartridge configuration

Code | Surface Finish		Internal	External
E	Standard Electropolished	Electropolished	0.8 µm
I	Standard	As Welded	0.8 µm

Code | Tagged	
T	Yes
X	No

For Tagged Options customer identification numbers required at time of ordering



C STYLE LOCATOR

Important Note:
As shown on the coding chart above, the HIL is also available with an option 'C' (226) location. This design incorporates a machined, not cast, head and swept bend connections, as show in the diagram.

Bowl Height	Dimensions (mm) 'A'	'B'	'C'
250 mm (10")	196 mm (7.7")	429 mm (16.9")	297 mm (11.7")
500 mm (20")	196 mm (7.7")	679 mm (26.7")	550 mm (25.4")
750 mm (30")	196 mm (7.7")	924 mm (36.4")	814 mm (32.0")
1000 mm (40")	196 mm (7.7")	1174 mm (46.2")	1058 mm (41.7")

Dimensions based on C Style with no vent and 1 inch BSPP connection

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Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

HIL Multi Filter Housings

Industrial Liquid

- Flow efficient range of multi element industrial liquid housings
- Designed specifically for prefiltration and clarification applications
- Available with a number of inlet/outlet port connections
- Standard and electropolished surface finishes
- Suitable for cartridge types:
  - DOE or 222 (10¨to 40¨)
- Option for ATEX compliance directive 94/9/EC

Specification

STANDARD Range
Materials of Construction

- Housing: 316L Stainless Steel
- Seals: EPDM FDA
  Silicone FDA
  Viton® / FKM FDA
- Clamps: 304 Stainless Steel

Two Finishes Available

- Standard Finish 'I'
  Internal: As Welded
  Pickled and Passivated
  External: Polished 0.8 µm Ra (32 µIn Ra)
- Electropolished Finish 'E'
  Internal: As Welded
  Electropolished
  External: Electropolished 0.8 µm Ra (32 µIn Ra)

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish and detail drawings available upon request.

Certification

Supplied as standard with vessel inspection certificate and EC Declaration of conformity.

Material Test Certification

EN10204 3.1/2.2 supplied upon request.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory Pressure Equipment Regulations (PER) 1999 N° 2001.

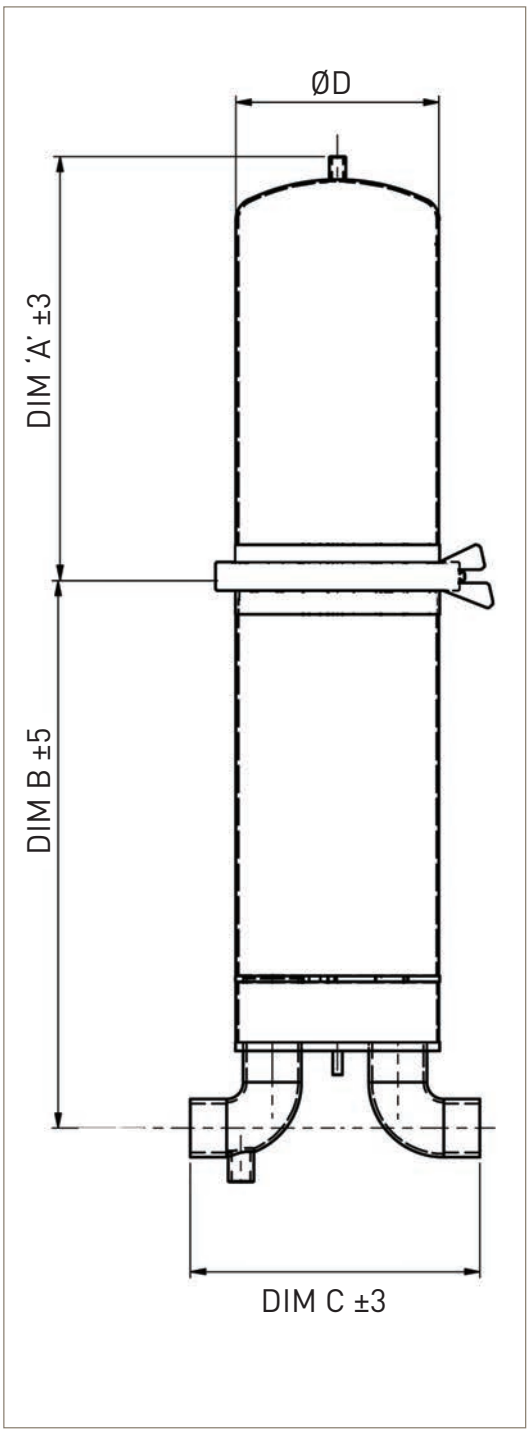
Design Basis

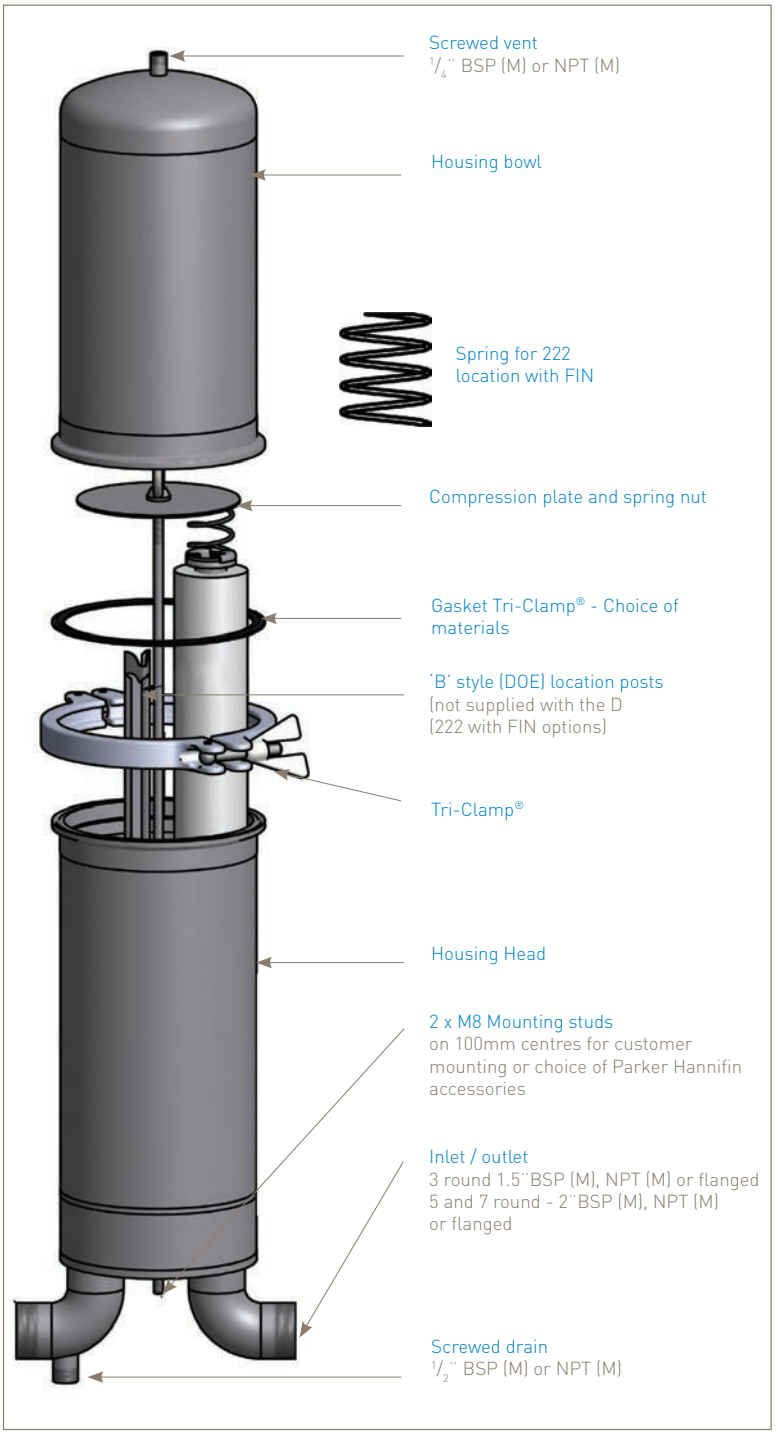
ASME VIII Division 1.

CE	Working Condition PED 97/23/EC		Maximum Pressure +FV		
Fluid Group	State	Temperature	3 Round	5/7 Round	8/10 Round
Non Dangerous	Liquid	-10 °C (14 °F) to 150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Gas		8 barg (116 psig)	4 barg (58 psig)	3 barg (44 psig)
PED Conformity Assessment Category			CAT I	CAT I	CAT I

ATEX	Working Condition PED 97/23/EC		Maximum Pressure +FV		
Fluid Group	State	Temperature	3 Round	5/7 Round	8/10 Round
Non Dangerous	Liquid	-10 °C (14 °F) to 135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Gas		8 barg (116 psig)	4 barg (58 psig)	3 barg (44 psig)
PED Conformity Assessment Category			CAT I	CAT I	CAT I

Note: All housings are full vacuum rated.





		Dimensions						Approximate weight and volume		
		A'	B'	C'			'D'	BOWL	TOTAL (Threaded version only)	VOLUME
				BSP (M)	NPT (M)	FLANGED				
3 ROUND	10"	101 mm (4.0 in)	455 mm (17.9 in)	230 mm (9 in)	230 mm (9 in)	294 mm (11.6 in)	168 mm (6.6 in)	2.0 kg (4.4 lbs)	8.9 kg (21.0 lbs)	10.4 L (2.75 USg)
	20"	348 mm (13.7 in)						4.0 kg (8.8 lbs)	11.0 kg (24.0 lbs)	15.7 L (4.15 USg)
	30"	598 mm (23.5 in)						6.0 kg (13.2 lbs)	13.1 kg (29.9 lbs)	21.0 L (5.5 USg)
	40"	848 mm (33.4 in)						8.0 kg (17.6 lbs)	15.2 kg (33.5 lbs)	26.3 L (6.8 USg)
5 & 7 ROUND	10"	109 mm (4.3 in)	468 mm (17.7 in)	296 mm (11.7 in)	296 mm (11.7 in)	347 mm (13.7 in)	219 mm (8.6 in)	1.6 kg (3.5 lbs)	12.9 kg (28.0 lbs)	18.0 L (4.6 USg)
	20"	360 mm (14.2 in)						4.4 kg (9.7 lbs)	15.7 kg (35.0 lbs)	27.0 L (7.0 USg)
	30"	610 mm (24.0 in)						7.1 kg (15.6 lbs)	18.4 kg (41.0 lbs)	36.0 L (9.3 USg)
	40"	860 mm (33.9 in)						9.8 kg (21.6 lbs)	21.1 kg (46.5 lbs)	45.0 L (11.7 USg)

Refer to coding structure for configuration options.

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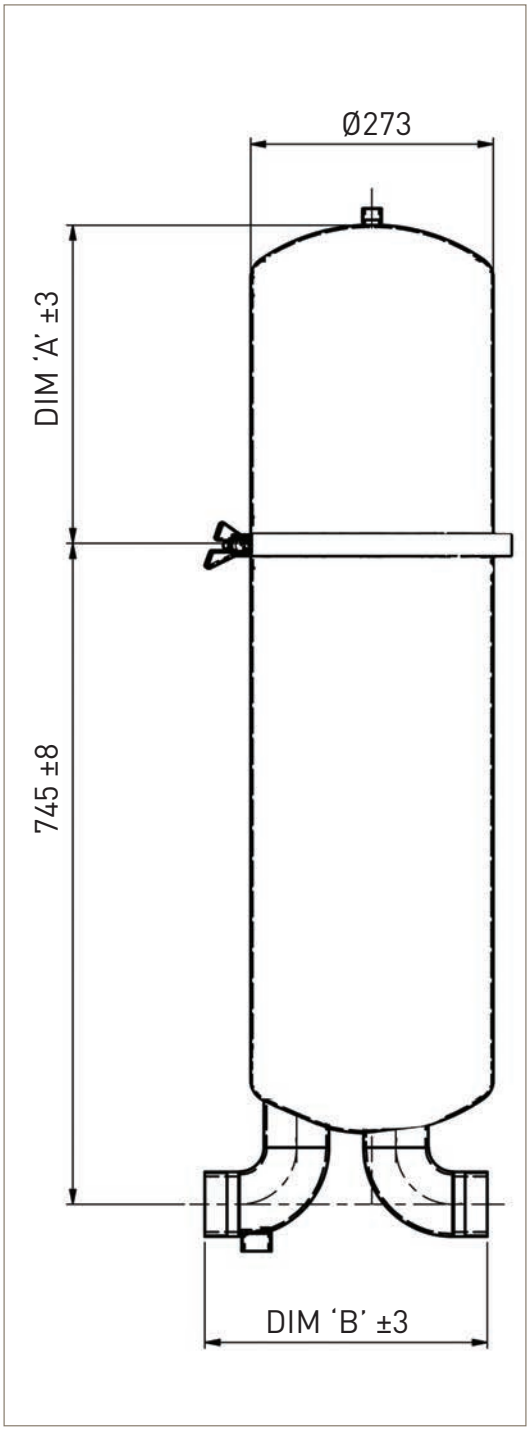
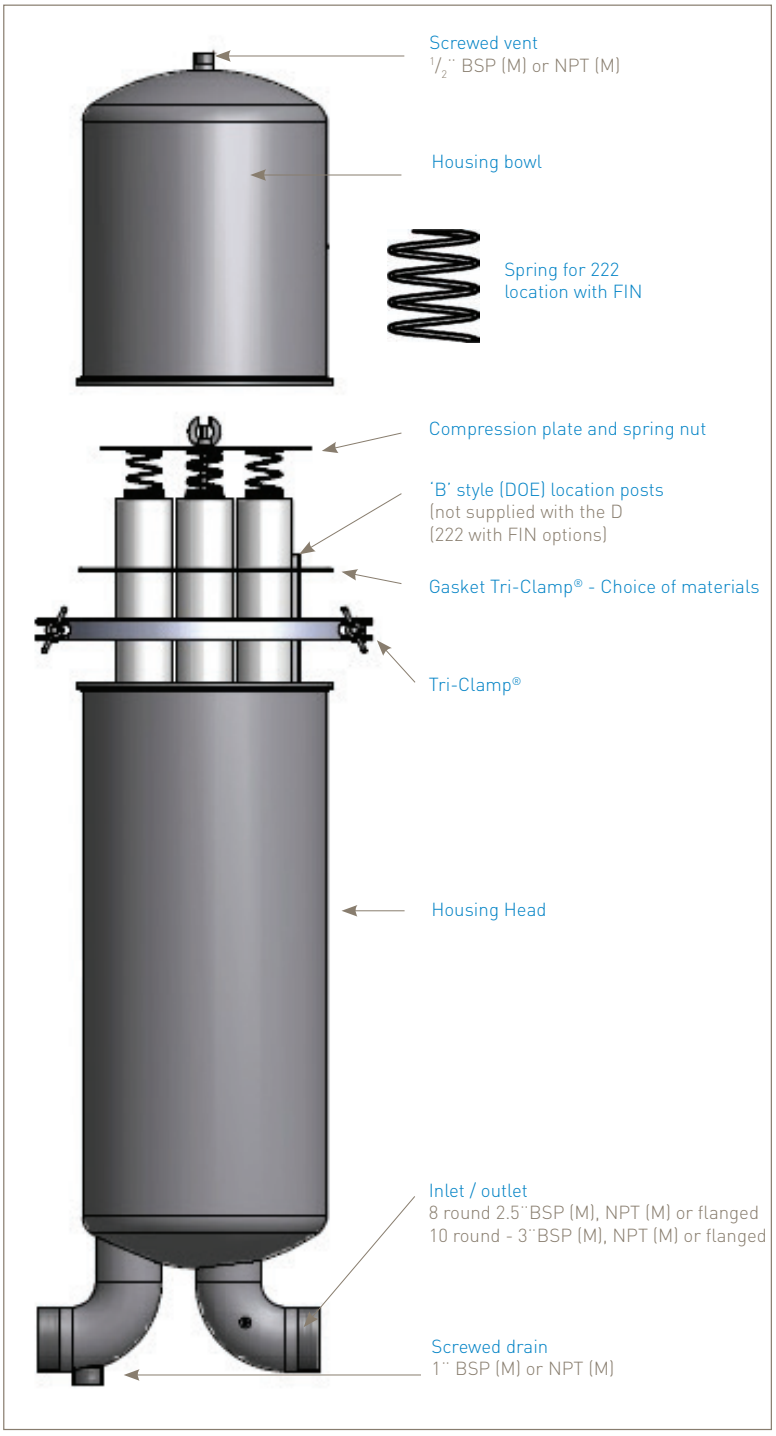
HIL Multi Filter Housings

Industrial Liquid





		Dimensions				Approximate weight and volume		
		A'	B'			BOWL	TOTAL (Threaded version only)	VOLUME
			BSP (M)	NPT (M)	FLANGED			
8 ROUND	20" 30" 40"	107 mm (4.2 in) 357 mm (14 in) 607 mm (24 in)	316 mm (12.4 in)	332 mm (13.1 in)	356 mm (14 in)	2.2 kg (5.0 lbs) 5.7 kg (12.5 lbs) 9.0 kg (20 lbs)	20.0 kg (44.0 lbs) 23.5 kg (52.0 lbs) 27.0 kg (60.0 lbs)	42.0 L (11.1 USg) 56.0 L (14.8 USg) 69.0 L (18.2 USg)
10 ROUND	20" 30" 40"	107 mm (4.2 in) 357 mm (14 in) 607 mm (24.0 in)	410 mm (16.1 in)	410 mm (16.1 in)	382 mm (15 in)	2.2 kg (5.0 lbs) 5.6 kg (12.3 lbs) 9.0 kg (20 lbs)	22.2 kg (49.0 lbs) 25.6 kg (56.4 lbs) 29.0 kg (63.9 lbs)	45.0 L (11.9 USg) 59.3 L (15.7 USg) 73.5 L (19.4 USg)

Refer to coding structure for configuration options.

Product coding

	Connection	Code	Max Flow	
HIL **03	1.5¨Connections	Y	175 L/min	45 USg/min
HIL **05 /07	2¨Connections	C	280 L/min	72 USg/min
HIL **08	2.5¨Connections	X	420 L/min	109 USg/min
HIL **10	3¨Connections	D	650 L/min	168 USg/min

HIL □ □ □ □ □ □ □ □ - □ □ - □ - □ □

Code	Vessel Class
CE	PED 97/23/EC
AT	PED 97/23/EC +ATEX 94/9/EC

Code	Round
03	3
05	5
08	8

Code	Length (Nominal)	
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)
4	40¨	(1000 mm)

Code	Nozzle
Y	1.5¨
C	2.0¨
X	2.5¨

Code	Connection Type
B[1]	BSP (M) / ISO 7
N[2]	NPT Male
F	ANSI RF150
L[1]	ISO / DIN PN16

Connection Type
1 - Only available with BSP(M) drain
2 - Only available with NPT(M) drain

Code	Cartridge
B	DOE
D	222

Code	Seal
E	EPDM
S	Silicone
V	Viton® FKM

Code	Vent
B	BSP (M) / ISO 7
N	NPT (M)

Code	Drain
B	BSP (M) / ISO 7
N	NPT (M)

Vent and Drain Sizes
3 and 5 round: 1/4¨ vent, 1/2¨ drain
8 round 1/2¨ vent, 1¨ drain

Code	Surface Finish
I	Pickled and passivated
E	Electropolished

Code	Tagged
X	Not tagged
T	Tagged

Code	Packing
C	Carton
E	Wood Crate

Only 62 and 64 mm diameter cartridges can be used in the 7 and 10 round housings.

HIL □ □ □ □ □ □ □ □ - □ □ - □ - □ □

Code	Vessel Class
CE	PED 97/23/EC
AT	PED 97/23/EC +ATEX 94/9/EC

Code	Round
07	7
10	10

Code	Length (Nominal)	
1	10¨	(250 mm)
2	20¨	(500 mm)
3	30¨	(750 mm)
4	40¨	(1000 mm)

Code	Nozzle
C	2.0¨
D	3.0¨

Code	Connection Type
B[1]	BSP (M) / ISO 7
N[2]	NPT Male
F	ANSI RF150
L[1]	ISO / DIN PN16

Connection Type
1 - Only available with BSP(M) drain
2 - Only available with NPT(M) drain

Code	Cartridge
B	DOE
D	222

Code	Seal
E	EPDM
S	Silicone
V	Viton® FKM

Code	Vent
B	BSP (M) / ISO 7
N	NPT (M)

Code	Drain
B	BSP (M) / ISO 7
N	NPT (M)

Vent and Drain Sizes
7 round: 1/4¨ vent, 1/2¨ drain
10 round 1/2¨ vent, 1¨ drain

I	Pickled and passivated
E	Electropolished

Code	Tagged
X	Not tagged
T	Tagged

Code	Packing
C	Carton
E	Wood Crate

Notes:
3, 5 and 7 Round housings available for use with 10¨to 40¨cartridges
8 and 10 Round housings available for use with 20¨to 40¨cartridges

Delivery schedules (excluding shipping)

Blue Options - 2-3 working weeks
Orange Options - 4-5 working weeks

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HIL Multi Filter Housings

Industrial Liquid

Accessories

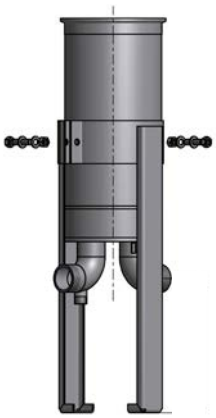
Adjustable legs.
Accessory Kit

3 round
639504203 (XLGSS12IL1)

5 and 7 round
639504204 (XLGSS12IL2)

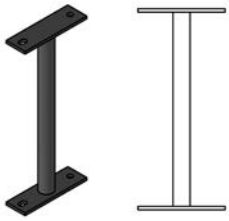
8 and 10 round
639504205 (XLGSS13IL1)

Adjustable legs giving centre to floor height adjustment between 50 and 375 mm for 3,5 and 7 round and 50-300 mm for 8 and 10 round. (clearance required for drain)

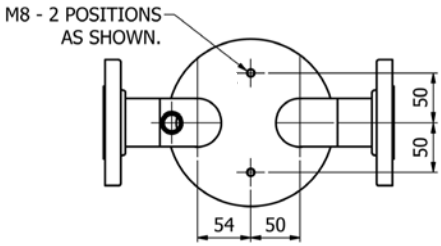


Fixed legs.
Accessory Kit
3, 5 and 7 round only
639504206 (XLGSS12IL3)

Fixed base support for M8 mounting studs giving centre to floor height of 230 mm. Vessel to be properly supported on the pipework as close as possible to the inlet/outlet.

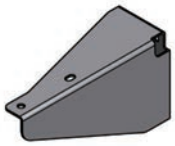


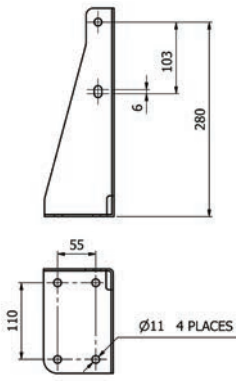
Customer mounting, 3, 5 & 7 round only.
Two M8 mounting studs are provided as shown to allow the customer to custom mount the housing as they require, alternatively we provide accessories shown.



Note A
Gap available for 50 mm (2 in) wide support.

Wall mounting, 3, 5 & 7 round only.
Accessory Kit - 639504207 (XMBSS12IL1)
Wall mounting bracket. Customer to ensure wall strength and if necessary provide a backing plate.





HIL Pressure Gauge			
Type	**Connection**	**Pressure**	**Ordering Code**
All stainless steel wetted parts with glycerine fill fluid (includes adapter for assembly to housing. Also includes adaptor for connecting vent valve [1/4" BSP(F) / 1/4" NPT (F)]	1/4" / 1/2" BSP	0 - 10 barg	639504201 (XPGSS03BS01)
	1/4" / 1/2" NPT	0 - 10 barg	639504202 (XPGSS03NP01)

Industrial 1 Piece Ball Valve		
Type	**Connection**	**Ordering Code**
316 stainless steel 1 piece ball valve with PTFE ball. Female / female.	1/4" BSP	639502594 (XVASS03BS6)
	1/4" NPT	639504220 (XVASS03NP1)
	1/2" BSP	639502595 (XVASS04BS1)
	1/2" NPT	639504221 (XVASS04NP2)
	1" BSP	639504218 (XVASS05BS3)
	1" NPT	639504219 (XVASS05NP1)

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HSL Filter Housings

Sanitary Liquid

- Single element sanitary liquid housing
- Designed specifically for the food & beverage and pharmaceutical industries
- Sanitary tri-clamp body closure as standard
- STANDARD product
  - Sanitary surface finish
  - Tri-clamp connections
- PLUS product
  - Available in 3 different vessel classes: Standard (CE), Atex and High Pressure
  - Sanitary or sanitary electropolished surface finish options
  - Wide range of vent and drain connections
  - Choice of gasket and seal materials

Specification

STANDARD Range
Materials of Construction

- Housing: 316L Stainless Steel
- Seals: Silicone FDA
- Clamps: 304 Stainless Steel

Surface Finish

- Internal: Polished 0.4 µm Ra (16 µIn Ra)
- External: Polished 0.25 µm Ra (10 µIn Ra)

All finishes pickled & passivated.

PLUS Range
Materials of Construction

- Housing: 316L Stainless Steel
- Seals: EPDM FDA
  PTFE FDA
  Silicone FDA
  Viton® / FKM FDA
- Clamps: 304 Stainless Steel

Surface Finish

- Sanitary Finish
  Internal: Polished 0.4 µm Ra (16 µIn Ra)
  External: Polished 0.25 µm Ra (10 µIn Ra)

- Sanitary Electropolished Finish
  Internal: Electropolished 0.4 µm Ra (16 µIn Ra) and Electropolished
  External: Polished 0.25 µm Ra (10 µIn Ra)

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish & detail drawings available upon request.

Certification

Supplied as standard with vessel inspection certificate.

Material Test Certification

EN10204 3.1 supplied upon request.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory Pressure Equipment Regulations (PER) 1999 N° 2001.

Design Basis

ASME VIII Division 1.

Standard Range

Working Condition PED 97/23/EC			Maximum Pressure				
Fluid Group	State	Temperature	01A	01B	011	012	013
Non Dangerous	Liquid / Gas	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid / Gas	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	SEP	CAT I
Volume (litres)			0.75	0.5	2.9	4.8	6.7

Plus Range

CE Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)
Non Dangerous	Liquid	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	SEP	SEP	CAT I	CAT I
Volume (litres)			0.75	0.5	1.7	2.9	4.8	6.7	8.6

ATEX Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)
Non Dangerous	Liquid	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)	5 barg (72.5 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	SEP	SEP	CAT I	CAT I
Volume (litres)			0.75	0.5	1.7	2.9	4.8	6.7	8.6

High Pressure Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour / Liquid	205 °C (401 °F)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	SEP	CAT I	CAT I	CAT I
Volume (litres)			0.75	0.5	1.7	2.9	4.8	6.7	8.6

Note: All housings are full vacuum rated.

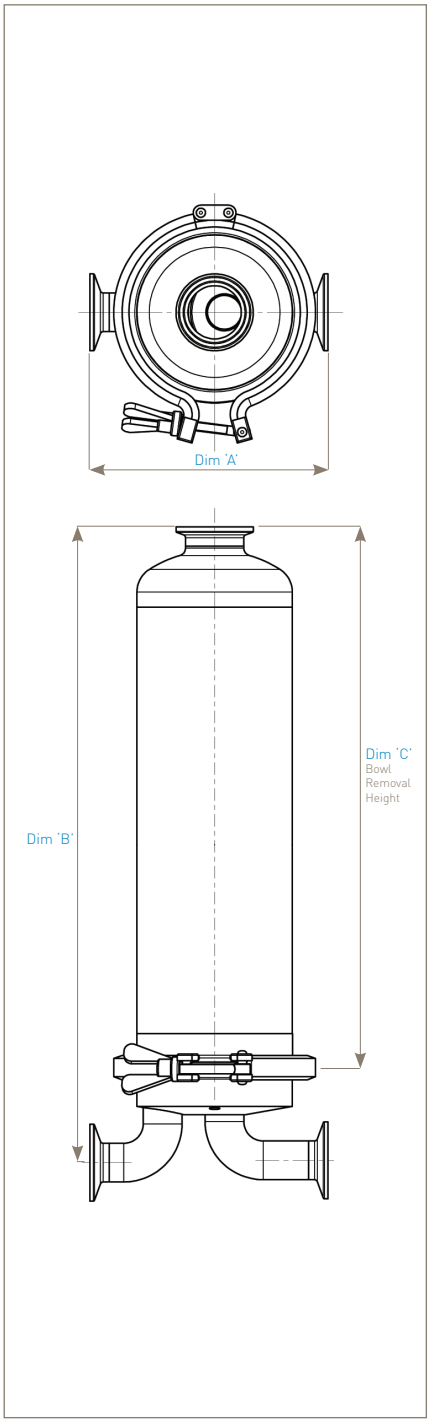
HSL Filter Housings

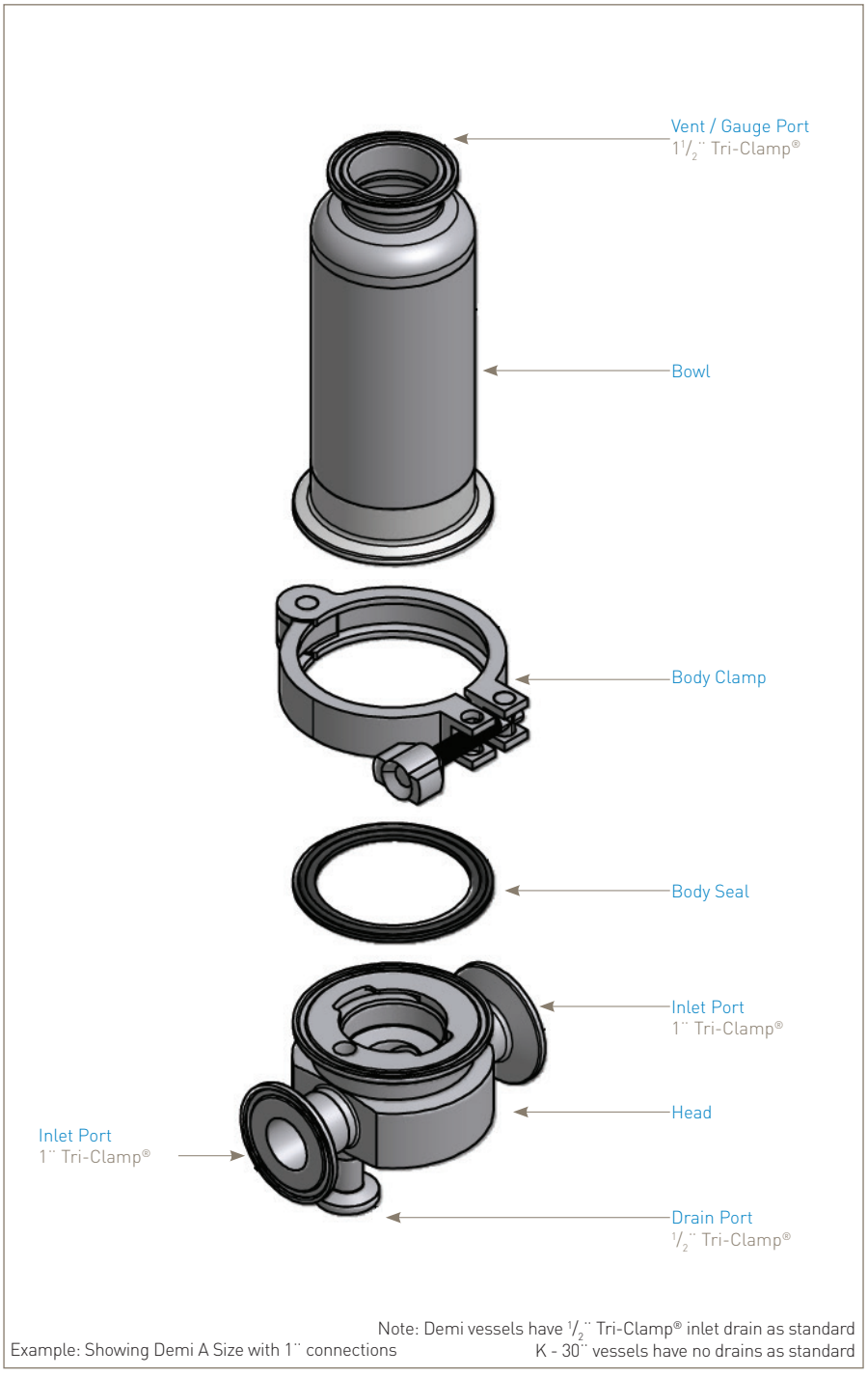
Sanitary Liquid

Physical Characteristics

Bowl Height	Dimensions (mm) 'A'	'B'	'C'	Typical Weight
A Size 125 mm (5¨)	117 mm (4.6¨)	191 mm (7.5¨)	130 mm (5.1¨)	2.0 Kg (4.4lbs)
B Size 65 mm (2 1/2¨)	117 mm (4.6¨)	136 mm (5.4¨)	70 mm (2.8¨)	1.8 Kg (3.9lbs)
250 mm (10¨)	156 mm (6.1¨)	417 mm (16.4¨)	313 mm (12.3¨)	3.8 Kg (8.3 lbs)
500 mm (20¨)	156 mm (6.1¨)	667 mm (26.3¨)	561 mm (22.1¨)	4.8 Kg (10.5 lbs)
750 mm (30¨)	156 mm (6.1¨)	912 mm (35.9¨)	809 mm (31.8¨)	5.7 Kg (12.5 lbs)
1000 mm (40¨)	156 mm (6.1¨)	1160 mm (45.7¨)	1057 mm (41.6¨)	6.7 Kg (14.7 lbs)

Dimensions shown are based on the STANDARD range. For accurate dimensions, please contact Parker domnick hunter.





Example: Showing Demi A Size with 1¨ connections

Note: Demi vessels have 1/2¨ Tri-Clamp® inlet drain as standard
K - 30¨ vessels have no drains as standard

The PLUS product range is available with many options of connections, vents, drains, surface finish, seals classification, etc. Please see product coding.

STANDARD Range - 10" to 30"

HSL □ 01 □ □ □ - □ - □

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	1	10" (250 mm)	B	1" (25.4 mm)	T	Tri-Clamp®	C	226	S	Silicone
		2	20" (500 mm)								
		3	30" (750 mm)								

Note: No drain(s) as standard.

STANDARD Range - Demi A & B

HSL □ 01 □ □ □ - □ - □

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	A	5" (125 mm)	B	1"	T	Tri-Clamp®	T	126	S	Silicone
		B	2 1/2" (65 mm)								

Note: 1/2" Tri-Clamp® inlet drain as standard.

PLUS Range - K to 40"

HSL □ 01 □ □ □ □ □ - □ □ - □ - □

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	K	5" (125 mm)	B	1" (25.4 mm)	D	DIN11851(M)	C	226	E	EPDM
AT	ATEX	1	10" (250 mm)			F [1] [2]	ANSI RF 150			P*	PTFE
HP*	High Pressure	2	20" (500 mm)			H [2]	ANSI RF 300			S	Silicone
		3	30" (750 mm)			L [2]	FLANGE ISO / DIN			V	Viton® / FKM
		4	40" (1000 mm)			R	RJT(M)				
						S	SMS Union (M)				
						T	Tri-Clamp®				
						W	Butt Weld BS4825 Pt.1				

* Supplied complete with a double bolted clamp

* Double bolted clamp required

[1] Not suited for High Pressure Vessels. HP Vessels to use ANSI RF 300.
[2] Flanged vessels based on 1" O.D. pipe but use 3/4" or NW20 flanges.

Code	Vent
A	1 1/2" Tri-Clamp® & 2 x Rectus 21
B	1 1/2" Tri-Clamp® & 2 x Stäubli™ RBE03
H	1 1/2" Tri-Clamp® & Hosebarb
I	1 1/2" Tri-Clamp® & Stäubli™ RBE03
M	1 1/2" Tri-Clamp® & 1/2" Tri-Clamp®
R	1 1/2" Tri-Clamp® & Rectus 21
S	Stäubli™ RBE03 Vertical
T	1 1/2" Tri-Clamp® Only

Code	Drain
H	Hosebarb Inlet Only
R	Rectus 21 Inlet Only
S	Stäubli™ RBE03 Inlet Only
X	No Drain
Y	1" Tri-Clamp® Inlet Only
Z	1" TCF Inlet & Outlet

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

For Tagged Options customer identification numbers required at time of ordering

Code	Tagged
T	Yes
X	No

PLUS Range - Demi A & B

HSL □ 01 □ □ □ □ □ - □ □ - □ - □

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	A	5" (125 mm)	B	1"	D	DIN11851	T	126	E	EPDM
AT	ATEX	B	2 1/2" (65 mm)			F [1] [2]	ANSI RF 150			P*	PTFE
HP	High Pressure					H [2]	ANSI RF 300			S	Silicone
						L	FLANGE ISO / DIN			V	Viton™ / FKM
						R	RJT				
						S	SMS Union (M)				
						T	Tri-Clamp®				
						W	Butt Weld BS4825 Pt.1				

* Double bolted clamp required

[1] Not suited for High Pressure Vessels. HP Vessels to use ANSI RF 300.
[2] Only available in 3/4".

Code	Vent
A	1 1/2" Tri-Clamp® & 2 x Rectus 21
B	1 1/2" Tri-Clamp® & 2 x Staubli RBE03
H	1 1/2" Tri-Clamp® & Hosebarb
I	1 1/2" Tri-Clamp® & Staubli RBE03
M	1 1/2" Tri-Clamp® & 1/2" TCF
R	1 1/2" Tri-Clamp® & Rectus 21
S	Staubli RBE03
T	1 1/2" Tri-Clamp® Only

Code	Drain
H	Hosebarb Inlet Only
R	Rectus 21 Inlet Only
S	Staubli RBE03 Inlet Only
T	1/2" Tri-Clamp® Inlet Only
X	No Drain

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

For Tagged Options customer identification numbers required at time of ordering

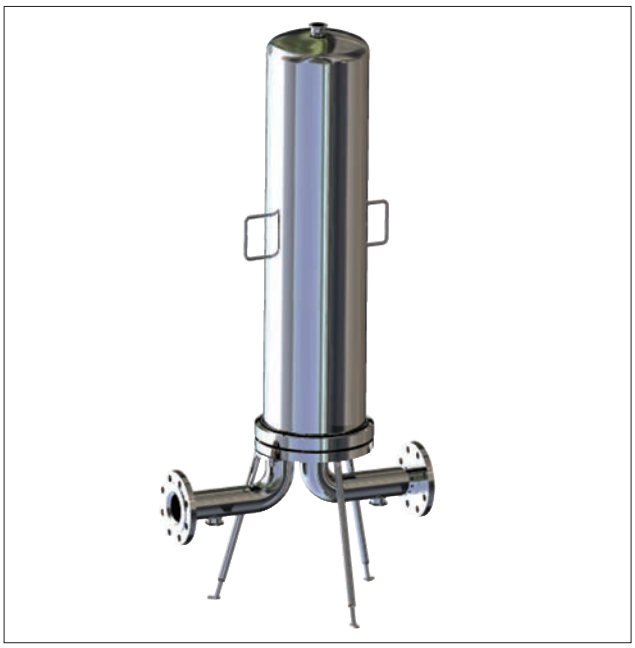
Code	Tagged
T	Yes
X	No

Stäubli™ is a trademark of Stäubli AG.
Tri-Clamp® is a trademark of Alfa-Laval, Inc.
Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

Note: All Tri-Clamp® connections conform to BS4825 Pt. 3

VSH Multi Filter Housings

Beverage



- Multi-element sanitary liquid housing
- Designed specifically for the food and beverage industry
- High quality crevice free construction
- Available in 3 to 30 round versions
- Steam sterilizable

Specification

Materials of Construction

- Housing: 316L Stainless Steel
- Seals: EPDM FDA

Surface Finish

- Internal: Mechanically Polished Ra <0.8 µm
- External: Mechanically Polished

Steam Sterilization

Refer to Parker domnick hunter for individual housing parameters.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory pressure equipment regulations (PER) 1999 N° 2001.

Design Basis

ASME VIII Division 1

Custom Design

Parker domnick hunter offers a specialist and fabrication service allowing individual customer system specifications to be met.

Note: For 12, 18, 24 and 30 Round options, please contact Parker domnick hunter for detailed technical drawings.

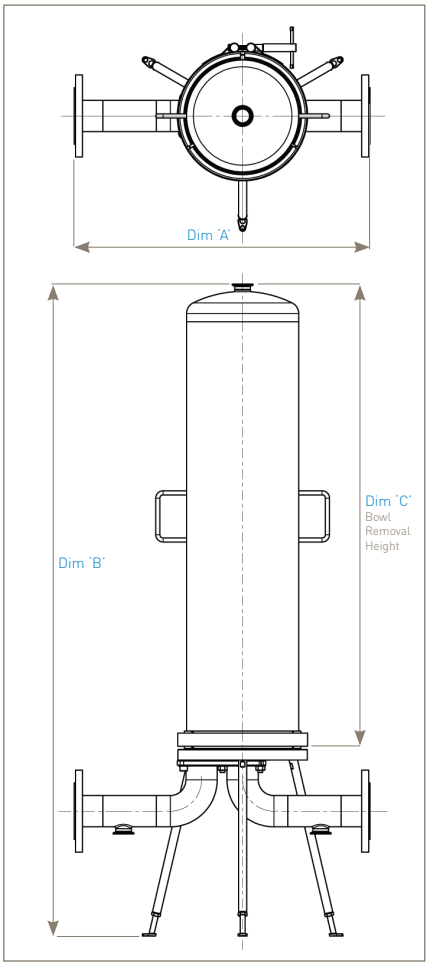
Working Condition PED 97/23/EC			Maximum Pressure			
Fluid Group	**State**	**Temperature**	**031**	**032**	**033**	**034**
Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Dangerous	Gas / Vapour	0 - 150 °C (0 - 302 °F)	6.8 barg (99 psig)	3.9 barg (57 psig)	2.8 barg (41 psig)	2.1 barg (30.5 psig)
Non Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Non Dangerous	Gas / Vapour	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Gas / Vapour	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Volume (litres)			7.3	12.6	17.8	23.1
Fluid Group	**State**	**Temperature**	**051**	**052**	**053**	**054**
Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Dangerous	Gas / Vapour	0 - 150 °C (0 - 302 °F)	4.5 barg (65 psig)	2.4 barg (35 psig)	1.7 barg (25 psig)	1.3 barg (19 psig)
Non Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Non Dangerous	Gas / Vapour	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	9.9 barg (144 psig)	6.8 barg (99 psig)	5.2 barg (75 psig)
Non Dangerous	Gas / Vapour	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	6.8 barg (99 psig)	5.2 barg (75 psig)
Volume (litres)			11.0	20.0	29.1	38.2
Fluid Group	**State**	**Temperature**	**081**	**082**	**083**	**084**
Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Dangerous	Gas / Vapour	0 - 150 °C (0 - 302 °F)	2.3 barg (33 psig)	1.4 barg (20 psig)	1 barg (14.5 psig)	0.7 barg (10 psig)
Non Dangerous	Liquid	0 - 40 °C (0 - 104 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Non Dangerous	Liquid	150 °C (302 °F)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)	7.5 barg (109 psig)
Non Dangerous	Gas / Vapour	0 - 40 °C (0 - 104 °F)	9.4 barg (136 psig)	5.6 barg (81 psig)	4.0 barg (58 psig)	3.1 barg (45 psig)
Non Dangerous	Gas / Vapour	150 °C (302 °F)	7.5 barg (109 psig)	5.6 barg (81 psig)	4.0 barg (58 psig)	3.1 barg (45 psig)
Volume (litres)			21.3	35.3	49.7	63.9
PED Conformity Assessment Category			CAT I	CAT I	CAT I	CAT I

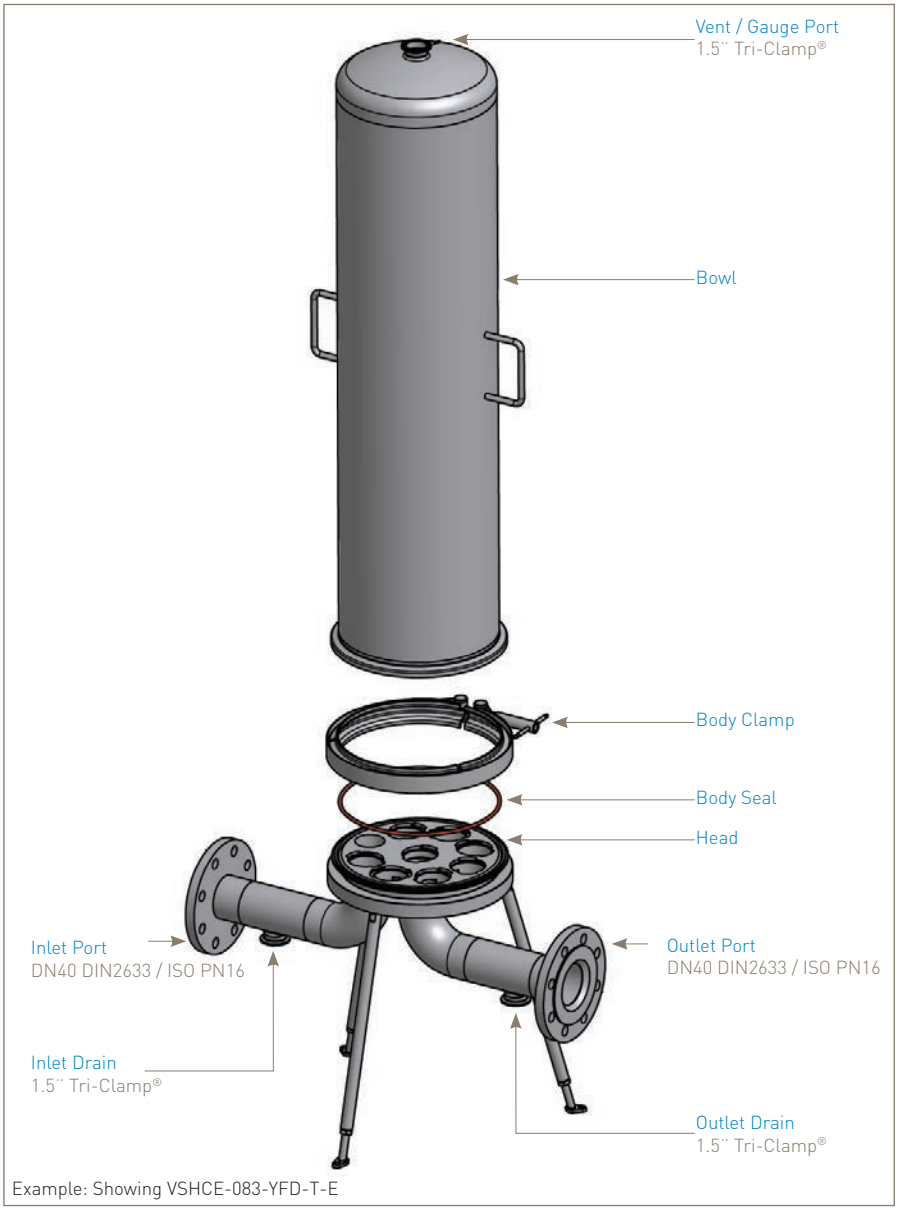
Physical Characteristics

Type	Dimensions (mm) 'A'	'B'	'C'	Typical Weight
10¨ (250 mm)	606	840	290	27.0
20¨ (500 mm)	606	1060	540	30.0
30¨ (750 mm)	606	1310	790	33.0
40¨ (1000 mm)	606	1560	1040	36.0

Dimensions shown are for an 8 Round VSH, DN40 DIN2633 inlet / outlet connections. For the full range of dimensions and weights, please contact Parker domnick hunter.

Note: All housings are full vacuum rated.





Example: Showing VSHCE-083-YFD-T-E

Ordering Information

VSH □ - □ □ - □ □ □ - □ - □

Code	Vessel Class
CE	Standard

Code	N° of Cartridges
03	3
05	5
08	8
12	12
18	18
24	24
30	30

Note: 3, 5 and 8 Round housings available with 10¨, 20¨, 30¨ and 40¨ bowls
12, 18, 24 and 30 Round housings available with 20¨ and 30¨ bowls only

Code	Length (Nominal)
1	10¨ (250 mm)
2	20¨ (500 mm)
3	30¨ (750 mm)
4	40¨ (1000 mm)

Code	Connection Size
B	1¨
Y	1.5¨
C	2¨
X	2.5¨
D	3¨
E	4¨

Code	Connection Type
D*	DIN Male
F*	Flanged
M	SMS Male
R	RJT Male
T	Tri-Clamp®
W	Butt Weld

*Check flange size code to ensure correct item is supplied.

Code	Connection Standard
A	NPT / ANSI
B	British Standard
D	DIN
I	ISO

Code	Vent / Drain Conn. Type
T	Tri-Clamp®

Code	Seal
E	EPDM
S	Silicone
V	Viton® / FKM

N° of Cartridges	Connection Size Availability 1.5¨	2¨	2.5¨	3¨	4¨
03	✔				
05	✔	✔			
08	✔	✔	✔	✔	
12				✔	✔
18				✔	✔
24				✔	✔
30				✔	✔

Tri-Clamp® is a trademark of Alfa-Laval, Inc.
Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

Note: For accessories, i.e. gauges, please contact Parker domnick hunter - Process Division for full availability.

HBA Filter Housings

Air / Gas Filtration

- Flow efficient range of air / gas housings
- Demi (TRUESEAL) and K-40¨ (226) housing sizes
- Designed to maximize flow and minimize pressure drop
- Designed specifically for the food and beverage industry
- STANDARD product
  - Economy and short delivery lead times
- PLUS product
  - Available in 4 different vessel classes: Standard CE, Atex, High Pressure and Oxygen Service
  - Standard, sanitary and sanitary electropolished surface finishes available
  - A number of inlet / outlet port connections
  - Wide range of vent and drain options

Specification

STANDARD Range
Materials of Construction

Housing:	316L Stainless Steel
Seals:	Silicone FDA
Vent / Drain Seals:	PTFE FDA
Clamps:	304 Stainless Steel

Standard Surface Finish

Internal:	As welded
External:	Polished 0.8 µm Ra (32 µIn Ra)

All finishes pickled and passivated.

PLUS Range
Materials of Construction

Housing:	316L Stainless Steel
Body Seals:	Viton® / FKM FDA EPDM FDA PTFE FDA Silicone FDA
Clamps:	304 Stainless Steel

Surface Finish

Parker domnick hunter's PLUS range of filter housings are available in a wide range of surface finishes and options. Please see product coding.

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish and detail drawings available upon request.

Certification

Supplied as standard with vessel inspection certificate.

Material Test Certification

EN10204 3.1 supplied upon request.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory Pressure Equipment Regulations (PER) 1999 N° 2001.

Design Basis

ASME VIII Division 1.

STANDARD Range

Working Condition PED 97/23/EC			Maximum Pressure				
Fluid Group	State	Temperature	01A	01B	01K	011	012
Non Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	5 barg (73 psig)	5 barg (73 psig)	5 barg (73 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	SEP	CAT I
Volume (litres)			0.75	0.5	2.5	3.7	5.6

PLUS Range

CE Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	8 barg (116 psig)	8 barg (116 psig)	8 barg (116 psig)	7 barg (102 psig)	5 barg (73 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	CAT I	CAT I	CAT I	CAT I
Volume (litres)			0.75	0.5	2.5	3.7	5.6	7.5	9.4

ATEX Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour	135 °C (275 °F)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)	10 barg (145 psig)
Dangerous	Gas / Vapour	135 °C (275 °F)	8 barg (116 psig)	8 barg (116 psig)	8 barg (116 psig)	8 barg (116 psig)	8 barg (116 psig)	7 barg (102 psig)	5 barg (73 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	CAT I	CAT I	CAT I	CAT I
Volume (litres)			0.75	0.5	2.5	3.7	5.6	7.5	9.4

High Pressure Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Non Dangerous	Gas / Vapour	205 °C (401 °F)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	CAT I	CAT I	CAT I	CAT I
Volume (litres)			0.75	0.5	2.5	3.7	5.6	7.5	9.4

Oxygen Service Working Condition PED 97/23/EC			Maximum Pressure						
Fluid Group	State	Temperature	01A	01B	01K	011	012	013	014
Dangerous	Gas / Vapour	150 °C (302 °F)	10 barg (145 psig)	10 barg (145 psig)	8 barg (116 psig)	8 barg (116 psig)	8 barg (116 psig)	6.6 barg (96 psig)	5.3 barg (77 psig)
PED Conformity Assessment Category			SEP	SEP	SEP	CAT I	CAT I	CAT I	CAT I
Volume (litres)			0.75	0.5	2.5	3.7	5.6	7.5	9.4

Note: All housings are full vacuum rated.

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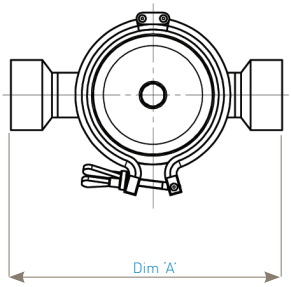
HBA Filter Housings

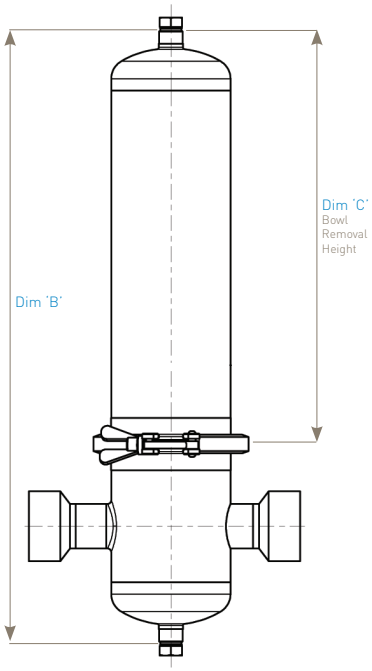
Air / Gas Filtration

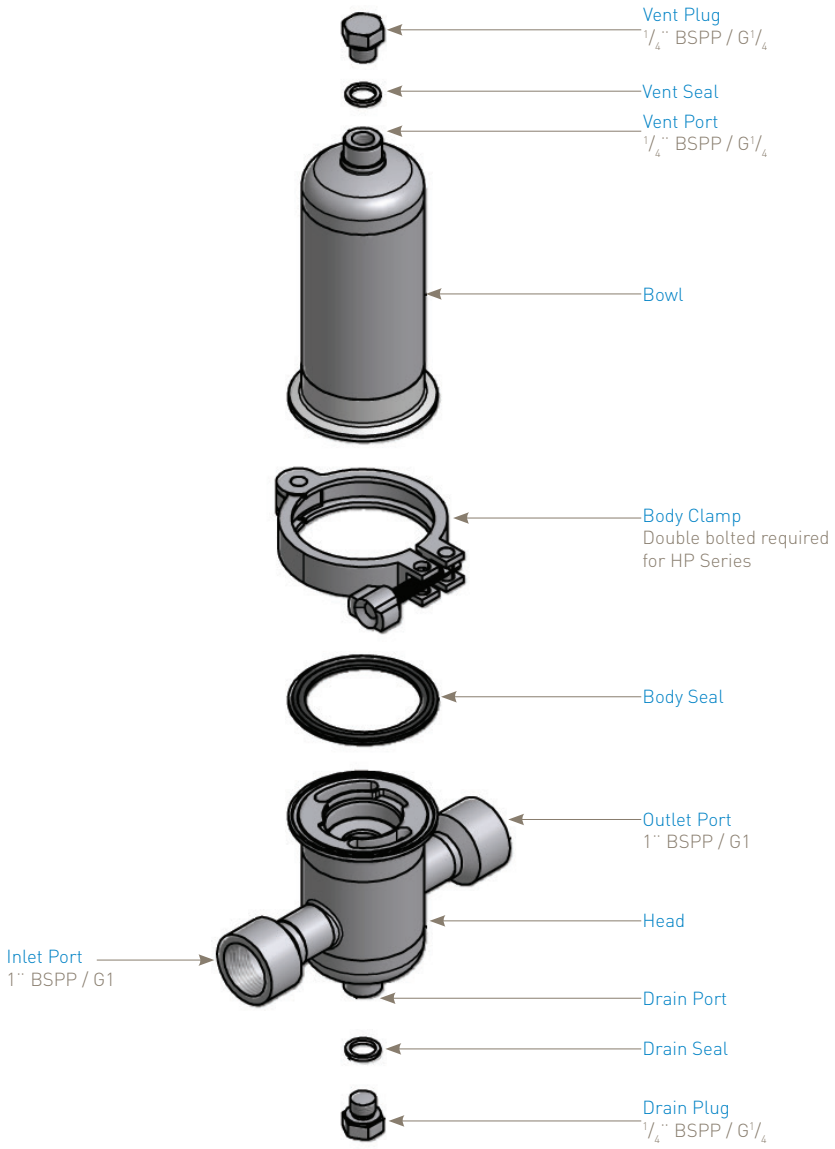
Physical Characteristics

Bowl Height	Dimensions (mm) 'A'	'B'	'C'	Typical Weight
A Size 125 mm (5")	175 mm (6.9")	258 mm (10.2")	130 mm (5.1")	1.6 Kg (3.5lbs)
B Size 65 mm (2½")	175 mm (6.9")	203 mm (8.0")	70 mm (2.8")	1.5 Kg (3.3lbs)
K Size 125 mm (5")	231 mm (9.1")	375 mm (14.8")	223 mm (8.8")	3.3 Kg (9.3 lbs)
10 in 250 mm (10")	231 mm (9.1")	525 mm (20.7")	342 mm (13.5")	3.9 Kg (8.6 lbs)
20 in 500 mm (20")	231 mm (9.1")	775 mm (30.5")	590 mm (23.2")	4.9 Kg (10.8 lbs)
30 in 750 mm (30")	231 mm (9.1")	1020 mm (40.2")	838 mm (33.0")	5.9 Kg (13 lbs)
40 in 1000 mm (40")	231 mm (9.1")	1270 mm (50")	1068 mm (42.0")	6.9 Kg (15.2 lbs)

Dimensions shown are based on the STANDARD range. For accurate dimensions, please contact Parker domnick hunter.







Example: Showing Demi A Size with 1" BSPP / G1 connections

The PLUS product range is available with many options of connections, vents, drains, surface finish, seals classification, etc. Please see product coding.

STANDARD Range - K to 20¨

HBA [ ] 01 [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	K	5¨ (125 mm)	Y	1 1/2¨ (38.1 mm)	B	BSPP / ISO 228	C	226	S	Silicone
		1	10¨ (250 mm)			N	NPT				
		2	20¨ (500 mm)								

STANDARD Range - Demi A & B

HBA [ ] 01 [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal
CE	Standard	A	5¨ (125 mm)	B	1¨	B	BSPP / ISO 228	C	226	S	Silicone
		B	2 1/2¨ (65 mm)			N	NPT				

PLUS Range - K to 40¨

HBA [ ] 01 [ ] [ ] [ ] [ ] [ ] [ ] - [ ] [ ] - [ ] - [ ]

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal	Code	Vent	Code	Drain
CE	Standard	K	5¨ (125 mm)	Y	1 1/2¨ (38.1 mm)	B	BSPP (G) / ISO 228	C	226	E	EPDM	B	1/4¨ BSPP (F) / G1/4	B	1/4¨ BSPP (F) / G1/4
AT	ATEX 94/9/EC	1	10¨ (250 mm)	C	2¨ (50.8 mm)	D	DIN11851(M)			P*	PTFE	C	Rectus 21 Vertical[2]	N	1/4¨ NPT
HP*	High Pressure	2	20¨ (500 mm)			F [1]	FLANGE ANSI cl.150			S	Silicone	H	1 1/2¨ Tri-Clamp® & Hosebarb[2]	H	Hosebarb
OX	Oxygen Service	3	30¨ (750 mm)			H	FLANGE ANSI cl.300			V	Viton® / FKM	I	1 1/2¨ Tri-Clamp® & Staubli™ RBE03[2]	R	Rectus 21
		4	40¨ (1000 mm)			L	FLANGE ISO / DIN					M	1 1/2¨ Tri-Clamp® & 1/2¨ TCF[2]	S	Staubli™ RBE03
						N	NPT (F)					N	1/4¨ Tri-Clamp® (F)	T	1/2¨ Tri-Clamp®
						M*	SMS Pipe (3008)					R	1 1/2¨ Tri-Clamp® & Rectus 21[2]		
						T	Tri-Clamp®					S	Staubli™ RBE03 Vertical[2]		
						W	Butt Weld BS4825 Pt.1					T	1 1/2¨ Tri-Clamp® Only [2]		

* Supplied complete with a double bolted clamp

* Double bolted clamp required

[2] Not available in Industrial

[1] Not suited for High Pressure Vessels. HP Vessels to use ANSI RF 300.
* SMS 1.12¨ = 38 OD x 1.2 THK
SMS 2¨ = 51 OD x 1.2 THK

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
I	Standard	As Welded	0.8 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

For Tagged Options customer identification numbers required at time

Code	Tagged
T	Yes
X	No

PLUS Range - Demi A & B

HBA [ ] 01 [ ] [ ] [ ] [ ] [ ] [ ] - [ ] [ ] - [ ] - [ ]

Code	Vessel Class	Code	Length (Nominal)	Code	Connection Size	Code	Standard	Code	Cartridge	Code	Seal	Code	Vent	Code	Drain
CE	Standard	A	5¨ (125 mm)	B	1¨	B	BSPP (G) / ISO 228	T	126	E	EPDM	B	1/4¨ BSPP (F) / G1/4	B	1/4¨ BSPP (F) / G1/4
AT	ATEX 94/9/EC	B	2 1/2¨ (65 mm)	T	3/4¨	D[2]	DIN11851			P*	PTFE	C	Rectus 21 Vertical	N	1/4¨ NPT
HP*	High Pressure			A	1/2¨	F[3] [4]	ANSI RF 150			S	Silicone	H[1]	1 1/2¨ Tri-Clamp® & Hosebarb	H	Hosebarb
OX	Oxygen Service			X	3/8¨	H[3]	ANSI RF 300			V	Viton® / FKM	I[1]	1 1/2¨ Tri-Clamp® & Staubli™ RBE03	R	Rectus 21
				Q	1/4¨	L[3]	FLANGE ISO / DIN					M[1]	1 1/2¨ Tri-Clamp® & 1/2¨ Tri-Clamp®	S	Staubli™ RBE03
						M*	SMS Pipe (3008)					N	1/4¨ Tri-Clamp® (F)	T	1/2¨ Tri-Clamp®
						N	NPT (F)					R[1]	1 1/2¨ Tri-Clamp® & Rectus 21		
						T[3]	Tri-Clamp®					S	Staubli™ RBE03 Vertical		
						W[3]	Butt Weld BS4825 Pt.1					T	1 1/2¨ Tri-Clamp® Only		

* Supplied complete with a double bolted clamp

* Double bolted clamp required

[1] Not available in Industrial Finish.
[2] Only available in 1¨.
[3] Not available in 1/4¨ or 3/8¨.
[4] Not suited for High Pressure Vessels. HP Vessels to use ANSI RF 300.
* SMS 1¨ = 25 OD x 1.2 THK

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
I	Standard	As Welded	0.8 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

For Tagged Options customer identification numbers required at time of ordering

Code	Tagged
T	Yes
X	No

Stäubli™ is a trademark of Stäubli AG.
Tri-Clamp® is a trademark of Alfa-Laval, Inc.
Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

Note: All Tri-Clamp® connections conform to BS4825 Pt. 3

HPG Enhanced Plus Filter Housings

High pressure air / gas

- Flow efficient range of housings for sterile filtration higher pressure air and gases
- Standard, sanitary and sanitary electropolished surface finishes available
- A number of inlet / outlet port connections available
- Range of vent and drain options
- Two pressure ratings:
  - 25 barg (363 psig) @ 130 °C (266 °F)
  - Typical application CO2 and nitrogen sterile filtration
  - Higher pressure steam to 16 barg (232 psig)

  - 40 barg (580 psig) @ 130 °C (266 °F)
  - Typical application PET bottle blowing
  - Higher pressure steam to 32 barg (464 psig)
  - Group 1 gases, solvents and vapours to 16 barg (232 psig)

Specification

Materials of Construction

- Housing: 316L Stainless Steel
- Seals: EPDM FDA
  Silicone FDA
  Viton™ / FKM FDA
  PTFE FDA
- Vent / Drain Seals: PTFE FDA

Standard Surface Finish

- Internal: As welded
  Pickled and Passivated
- External: Polished 0.8 µm Ra

Sanitary Surface Finish

- Internal: Polished 0.4 µm Ra
- External: Polished 0.25 µm Ra

Sanitary Electropolished Finish

- Internal: Electropolished 0.4 µm Ra
- External: Polished 0.25 µm Ra

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish & detail drawings available upon request.

Design Code

Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory Pressure Equipment Regulations (PER) 1999 N° 2001.

Design Basis

ASME VIII Division 1

HPG25			Maximum Pressure					
Fluid Group	State	Temperature	01B	01A	01K	011	012	013
Non Dangerous	Gas / Vapour	130 °C (266 °F)	25 barg (362 psig)	25 barg (362 psig)	25 barg (362 psig)	25 barg (362 psig)	25 barg (362 psig)	25 barg (362 psig)
	Steam	204 °C (400 °F)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)
PED Conformity Assessment Category			SEP	SEP	CAT I	CAT I	CAT I	CAT I
Volume (litres)			0.5	0.7	2.5	3.5	5.5	7.5

HPG40			Maximum Pressure					
Fluid Group	State	Temperature	01B	01A	01K	011	012	013
Non Dangerous	Gas / Vapour	130 °C (266 °F)	40 barg (580 psig)	40 barg (580 psig)	40 barg (580 psig)	40 barg (580 psig)	40 barg (580 psig)	40 barg (580 psig)
	Steam	239 °C (462 °F)	32 barg (464 psig)	32 barg (464 psig)	32 barg (464 psig)	32 barg (464 psig)	32 barg (464 psig)	32 barg (464 psig)
PED Conformity Assessment Category			SEP	SEP	CAT I	CAT II	CAT II	CAT II
Volume (litres)			0.5	0.7	2.5	3.5	5.5	7.5

HPG40			Maximum Pressure					
Fluid Group	State	Temperature	01B	01A	01K	011	012	013
Dangerous Group 1	Gas / Vapour	130 °C (266 °F)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16 barg (232 psig)	16.barg (232 psig)	16 barg (232 psig)
PED Conformity Assessment Category			SEP	SEP	CAT I	CAT II	CAT II	CAT II
Volume (litres)			0.5	0.7	2.5	3.5	5.5	7.5

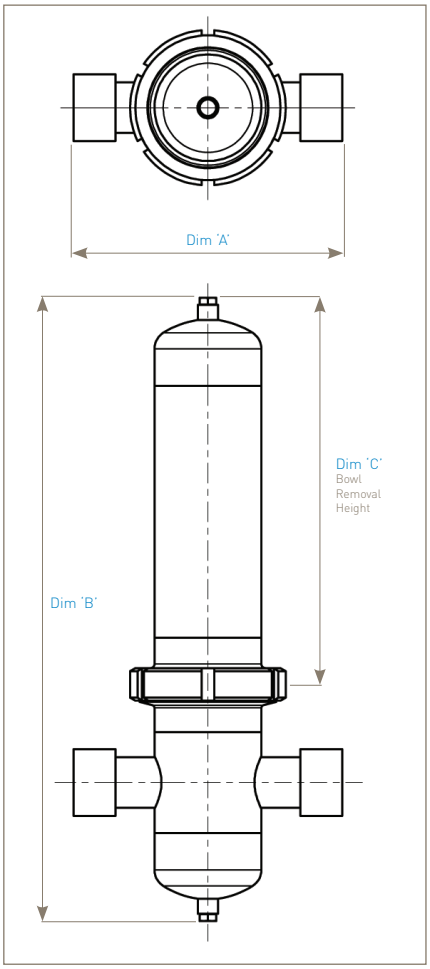
Note: All housings are full vacuum rated.

HPG Enhanced Plus Filter Housings
High pressure air / gas

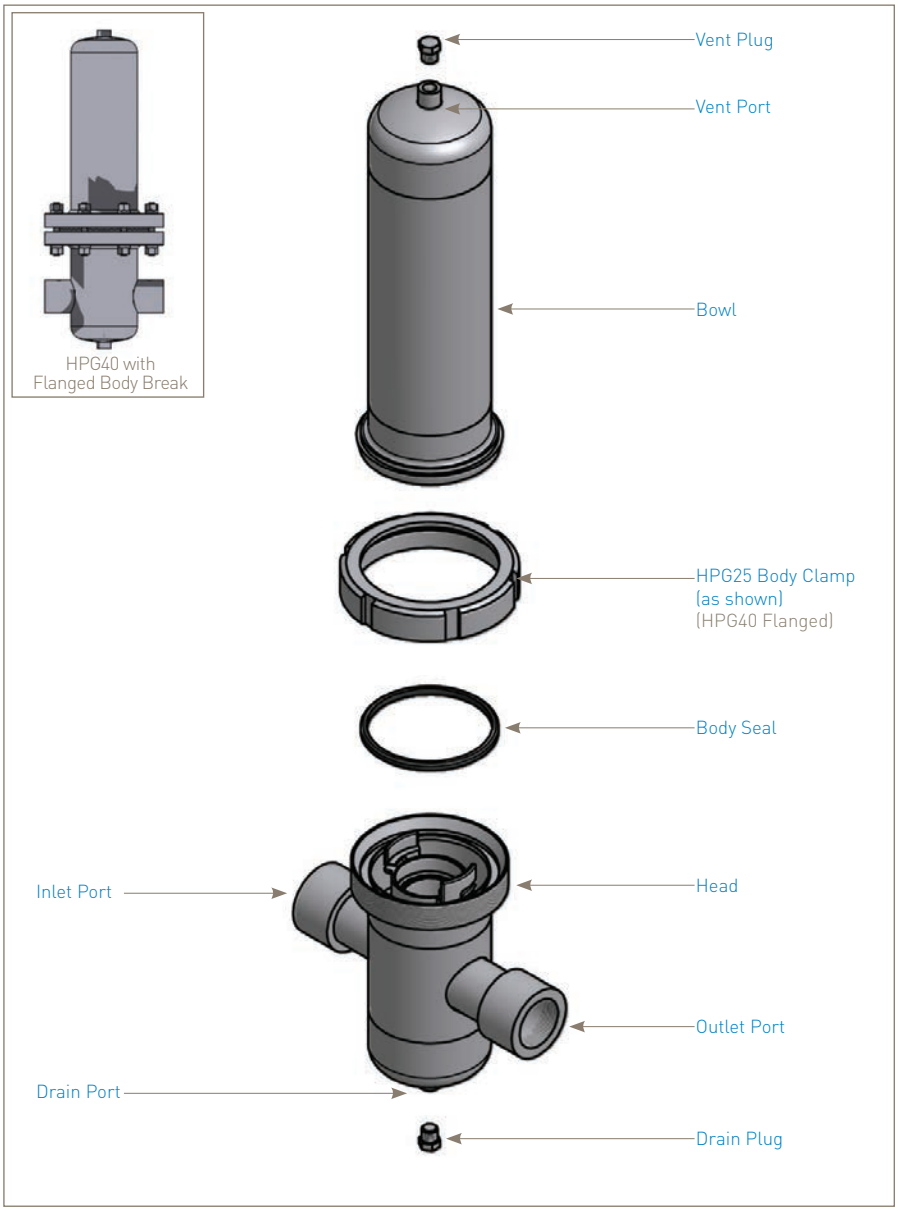
Physical Characteristics

Bowl Height		Dimensions (mm) 'A'	'B'	'C'	Typical Weight (Kg) Bowl	Head	Total
B Size	(65 mm)	175	253	70	0.75	1.50	2.25
A Size	(125 mm)	175	308	130	1.00	1.50	2.50
K Size	(125 mm)	259	398	223	1.00	5.40	7.00
10"	(250 mm)	259	550	342	1.60	5.40	7.60
20"	(500 mm)	259	800	590	2.60	5.40	8.60
30"	(750 mm)	259	1050	840	3.60	5.40	9.60

Dimensions shown are for a vessel with 1 1/2" BSPP / G 1 1/2, 1/4" BSPP / G 1/4 vent and drain. For other formats, please contact Parker domnick hunter.



HPG40 with Flanged Body Break



Ordering Information

HPG [ ] 01 [ ] [ ] [ ] [ ] [ ] - [ ] [ ] - [ ] - [ ]

Code	Vessel Class
25	25 barg
40	40 barg

Code	Length (Nominal)
B	2.5" (65 mm)
A	5" (125 mm)
K	5" (125 mm)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)

Code	Connection Size
B[1]	1" (25.4 mm)
Y[2]	1 1/2" (48.3 mm)

Code	Standard
B[3]	BSPP (F) / ISO 228
H[3]	FLANGE ANSI cl. 300
L[3] [4]	FLANGE ISO / DIN
N[3]	NPT (F)
W[1] [2]	Butt Weld

Code	Cartridge
C	226
T	126

Code	Seal
E	EPDM
P	PTFE
S	Silicone
V	Viton™ / FKM

Code	Vent
B	1/4" BSPP (F) /G1/4"
N	1/4" NPT (F)

Code	Drain
B	1/4" BSPP (F) /G1/4"
N	1/4" NPT (F)

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
I	Standard	As Welded	0.8 µm
P	Sanitary Electropolish	0.4 µm EP	0.25 µm

For Tagged Options customer identification numbers required at time

Code	Tagged
T	Yes
X	No

Notes:
1. Demi A & B housings have 1" OD (Ø25.4 x 1.6 - BS4825) connections only and TRUESEAL (Code T) cartridge, DIN Union body break.
2. K - 30" housings have 1.5" NPS Sch10s (Ø48.3 x 2.77 ANSI B36.19) connection and 226 (Code C) cartridges.
3. Sanitary - screwed and traditional flanges not considered sanitary.
4. Flanged 'L' code connections as follows: HPG25 ISO DIN PN40
   HPG40 ISO DIN PN63
5. Viton™ is a registered trademark of DuPont Performance Elastomers L.L.C..

HSV
Filter Housings

Vent applications

- Direct connection to tank boss allows housing to be self-supportive
- Easy assembly and maintenance
- STANDARD product
  - Standard surface finish and tri-clamp connection
- PLUS product
  - Available as STANDARD or for Atex applications
  - Standard, sanitary and sanitary electropolished surface finishes available
  - Connection choices

(Also see HSVLP L-Port Datasheet)

Specification

STANDARD Range
Materials of Construction

Housing:	316L Stainless Steel
Seals:	Silicone FDA
Clamps:	304 Stainless Steel

Surface Finish

Internal:	As welded
External:	Polished 0.8 µm (32 µIn Ra)

All finishes pickled and passivated

PLUS Range
Materials of Construction

Housing:	316L Stainless Steel
Seals:	EPDM FDA Silicone FDA Viton® / FKM FDA

Note: Seal used only to position bowl clamp arrangement.

Clamps:	304 Stainless Steel

Standard Surface Finish

Internal:	As welded Pickled and Passivated
External:	Polished 0.8 µm Ra (32 µIn Ra)

Sanitary Finish

Internal:	Polished 0.4 µm Ra (16 µIn Ra)
External:	Polished 0.25 µm Ra (10 µIn Ra)

Sanitary Electropolished Finish

Internal:	Polished 0.4 µm Ra (16 µIn Ra) and Electropolished
External:	Polished 0.25 µm Ra (10 µIn Ra)

Welding

All assembly welds are full penetration.
All welds are crevice and undercut free.
Weld finish and detail drawings available upon request.

Certification

Supplied as standard with vessel inspection certificate

Material Test Certification

EN10204 3.1 supplied upon request.

Recommended Operation Guidelines
Sizing

Sizing vent vessels particulary for vacuum sensitive tanks can require specialist advice. It is important that VENT housings are sized on maximum gas flow capacity under actual operation conditions.

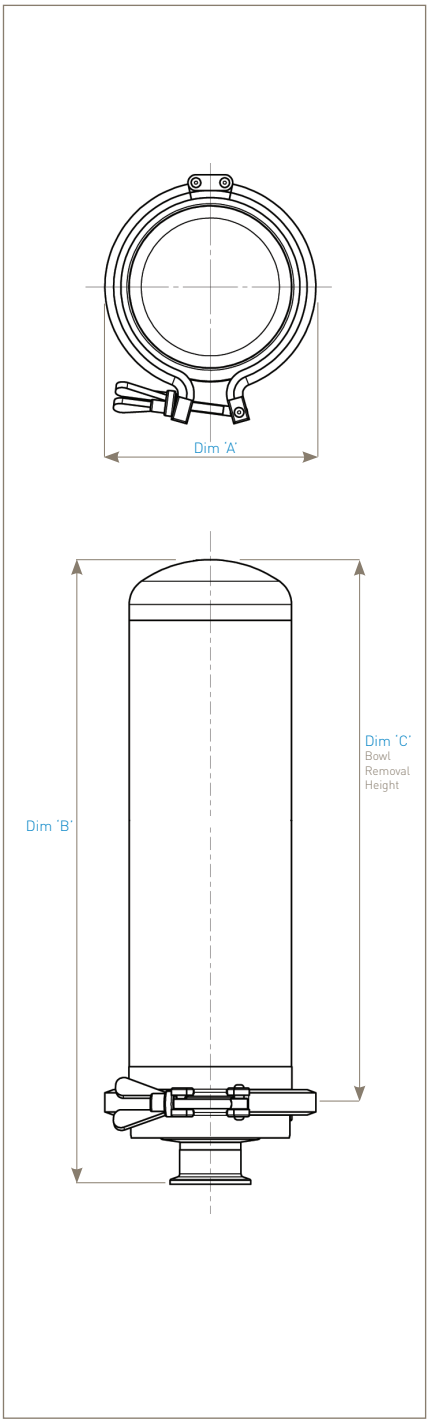
Vacuum Protection

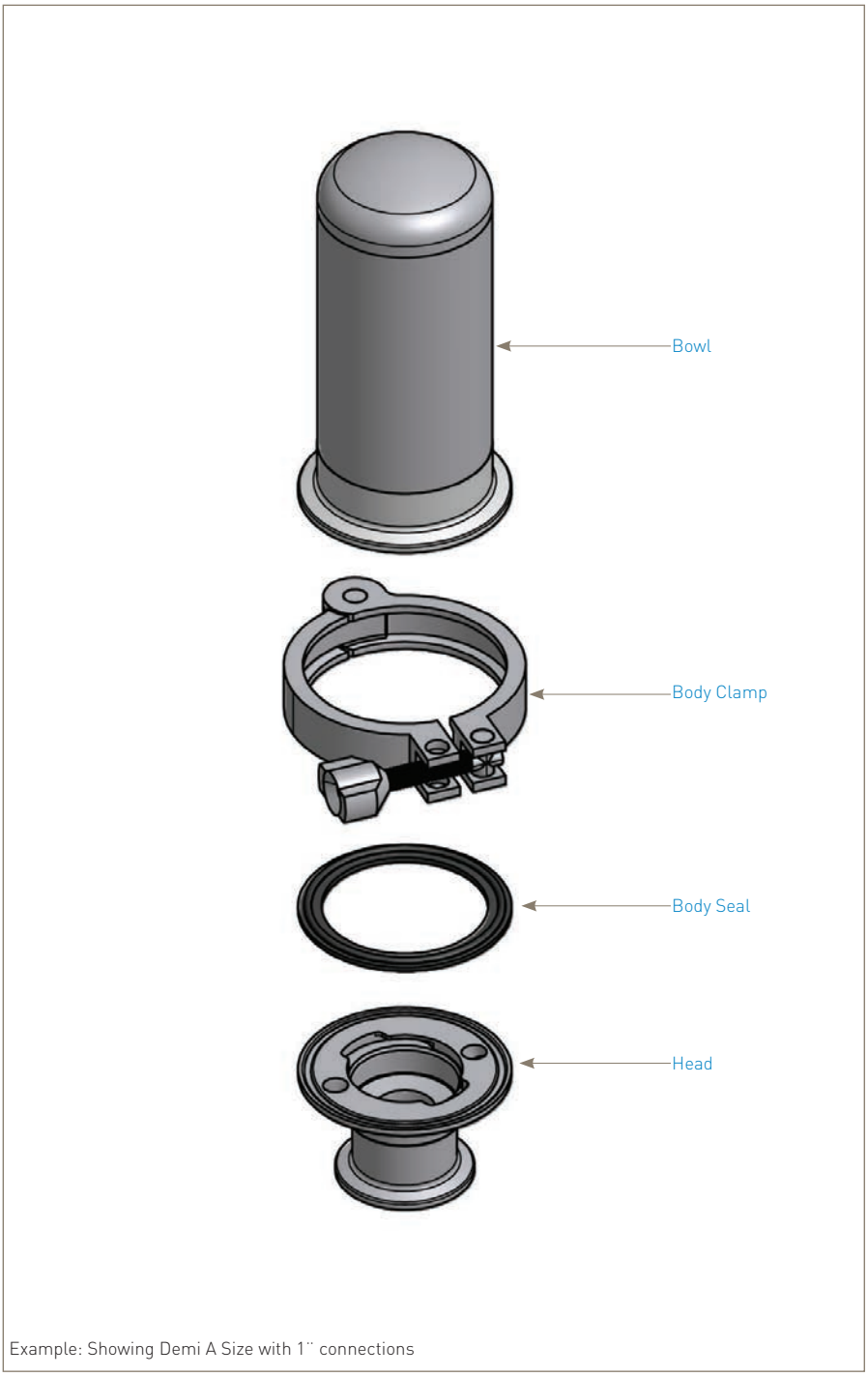
Where a tank is vacuum sensitive, there is a risk of tank collapse. In such cases the fitting of an appropriately rated bursting disc (or similar) and, if necessary a pressure relief valve, is highly recommended.

Physical Characteristics

Bowl Height	Dimensions (mm) 'A'	'B'	'C'	Typical Weight
A Size 125 mm [5¨]	75 mm [2.9¨]	195 mm [7.7¨]	130 mm [5.1¨]	1.0 Kg [2.2lbs]
B Size 65 mm [2 1/2¨]	75 mm [2.9¨]	140 mm [5.5¨]	70 mm [2.8¨]	0.9 Kg [1.9lbs]
125 mm [5¨]	132 mm [5.2¨]	242 mm [9.5¨]	194 mm [7.6¨]	2.2 Kg [4.8 lbs]
250 mm [10¨]	132 mm [5.2¨]	392 mm [15.4¨]	313 mm [12.3¨]	2.8 Kg [6.1 lbs]
500 mm [20¨]	132 mm [5.2¨]	642 mm [25.3¨]	561 mm [22.1¨]	3.8 Kg [8.3 lbs]
750 mm [30¨]	132 mm [5.2¨]	890 mm [35.0¨]	809 mm [31.8¨]	4.8 Kg [10.6 lbs]
1000 mm [40¨]	132 mm [5.2¨]	1138 mm [44.8¨]	1057 mm [41.6¨]	5.8 Kg [12.8 lbs]

Dimensions shown are based on the STANDARD range. For accurate dimensions, please contact Parker domnick hunter.





Example: Showing Demi A Size with 1¨ connections

The PLUS product range is available with many options of connections, vents, drains, surface finish, seals classification, etc. Please see product coding.

Note: All housings are full vacuum rated.

DS_FBH_07_01/14 Rev. 1B

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HSV
Filter Housings
Vent applicaitions

STANDARD Range - K to 20¨

HSV [ ] 01 [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class
DH	Vent Housing

Code	Length (Nominal)
K	5¨ (125 mm)
1	10¨ (250 mm)
2	20¨ (500 mm)

Code	Connection Size
Y	1 1/2¨ (38.1 mm)

Code	Standard
T	Tri-Clamp®

Code	Cartridge
C	226

Code	Seal
S	Silicone

STANDARD Range - Demi A & B

HSV [ ] 01 [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class
DH	Vent Housing

Code	Length (Nominal)
A	5¨ (125 mm)
B	2 1/2¨ (65 mm)

Code	Connection Size
B	1¨ (25.4 mm)

Code	Standard
T	Tri-Clamp®

Code	Cartridge
T	126

Code	Seal
S	Silicone

PLUS Range - K to 40¨

HSV [ ] 01 [ ] [ ] [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class
DH	Standard
AT	ATEX

Code	Length (Nominal)
K	5¨ (125 mm)
1	10¨ (250 mm)
2	20¨ (500 mm)
3	30¨ (750 mm)
4	40¨ (1000 mm)

Code	Connection Size
C	2¨ (50.8 mm)
Y	1 1/2¨ (38.1 mm)

Code	Standard
B	BSPP (F) / ISO 228
D	DIN11851(M)
F	ANSI RF150
L	ISO / DIN PN16
N	NPT (F)
T	Tri-Clamp®
W	Butt Weld BS4825 Pt. 1

Code	Cartridge
C	226

Code	Seal
E	EPDM
P	PTFE
S	Silicone
V	Viton® / FKM

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
I	Standard	As Welded	0.8 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

Code	Tagged
T	Yes
X	No

For Tagged Options customer identification numbers required at time of ordering

PLUS Range - Demi A & B

HSV [ ] 01 [ ] [ ] [ ] [ ] [ ] - [ ] - [ ]

Code	Vessel Class
DH	Standard
AT	ATEX

Code	Length (Nominal)
A	5¨ (125 mm)
B	2 1/2¨ (65 mm)

Code	Connection Size
B	1¨ (25.4 mm)

Code	Standard
B	BSPP (F) / ISO 228
D	DIN11851(M)
F	ANSI RF150
L	ISO / DIN PN16
N	NPT (F)
T	Tri-Clamp®

Code	Cartridge
T	126

Code	Seal
E	EPDM
P	PTFE
S	Silicone
V	Viton® / FKM

Code	Surface Finish	Internal	External
B	Sanitary	0.4 µm	0.25 µm
I	Standard	As Welded	0.8 µm
P	Sanitary Electropolished	0.4 µm EP	0.25 µm

Code	Tagged
T	Yes
X	No

For Tagged Options customer identification numbers required at time of ordering

Stäubli™ is a trademark of Stäubli AG.
Tri-Clamp® is a trademark of Alfa-Laval, Inc.
Viton® is a registered trademark of DuPont Performance Elastomers L.L.C..

Note: All Tri-Clamp® connections conform to BS4825 Pt. 3

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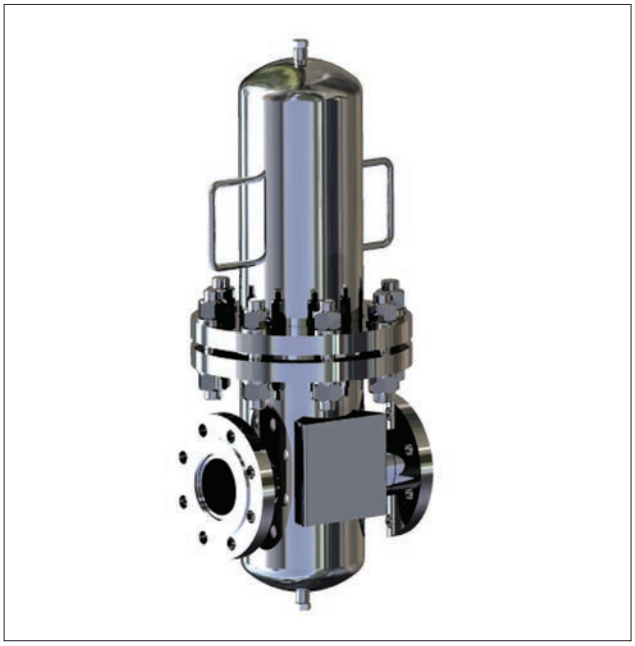
VIS Filter Housings

High Flow Steam



- Specifically designed to maximize flow rates and minimize pressure drop
- Compatible with JUMBO element to maximize steam capacity

Specification

STANDARD Range
Materials of Construction

Housing:	316L Stainless Steel
Seals:	EPDM FDA

Surface Finish

Internal:	Inside of outlet and distribution box to be mechanically polished 0.8 µm Ra. Pickled and Passivated.
External:	Grit blast 5 µm Ra mean

Maximum Allowable Working Pressure (MAWP)
7 barg (101.5 psig)

Maximim Allowable Working Temperature (MAWT)
170.5°C (339°F)

Design Code
Housings designed in accordance with the European Council Pressure Equipment Directive (PED) 97/23/EC and the UK statutory pressure equipment regulations (PER) 1999 N° 2001.

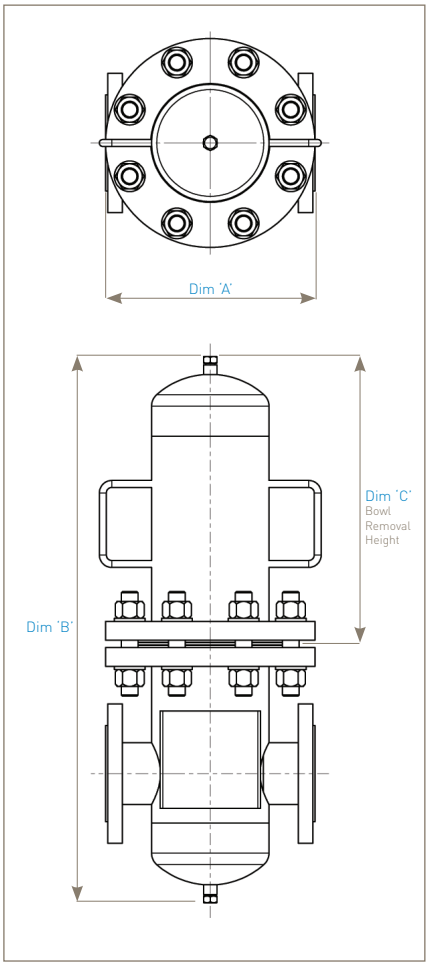
Design Basis
ASME VIII Division 1.

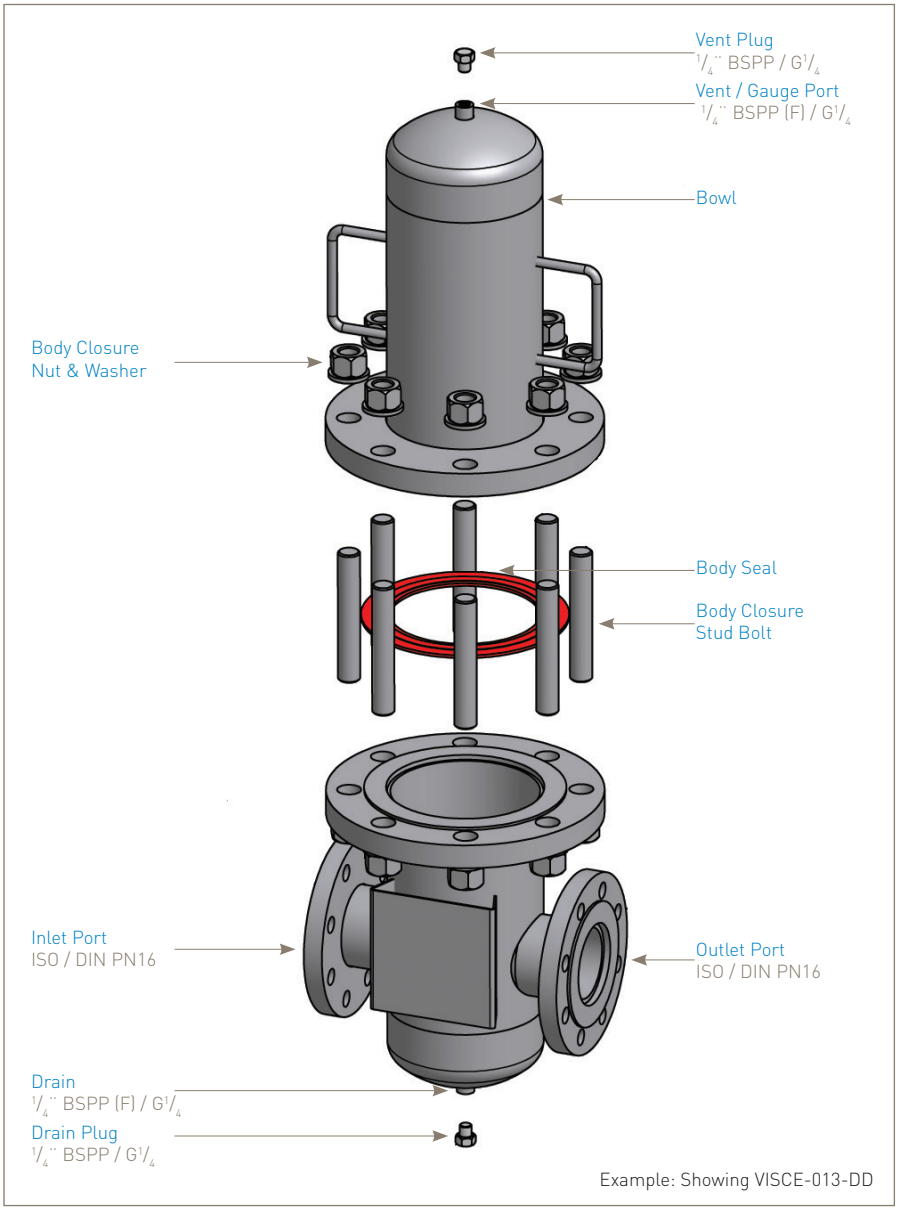
Physical Characteristics

Type	Dimensions (mm) 'A'	'B'	'C'	Typical Weight
VISCE-01J -DD	300	763	310	30.0
VISCE-01J -ED	330	895	140	50.0
VISCE-3J -DD	515	1049	410	100.0
VISCE-3J -ED	700	1237	490	

For the full range of dimensions and weights, please contact Parker domnick hunter.

Note: All housings are full vacuum rated.





Example: Showing VISCE-013-DD

Ordering Information

VIS □ - □ □ - □ □

Code | Vessel Class		Code | N° of Cartridges		Code | Length (Nominal)		Code | Connection Size		Code | Connection Type	
CE	Standard	01	1	J	Jumbo	D*	3"	D	ISO / DIN PN16 Flange
		03	3			E*	4"	A	ANSI cl. 150 Flange
						G**	6"		
						H**	8"		

* Single housings only
** Round housings only

Note: For accessories, i.e. gauges, please contact Parker domnick hunter - Process Division for full availability.

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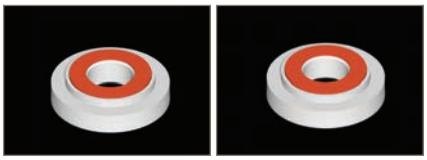
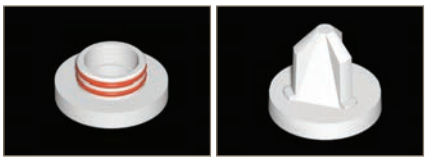
End Cap styles

Cartridge End Caps

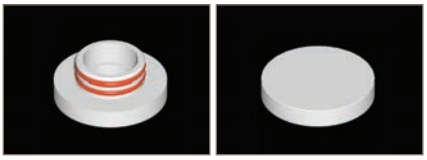


B, L Style Flat Gaskets

C Style 226 o-rings

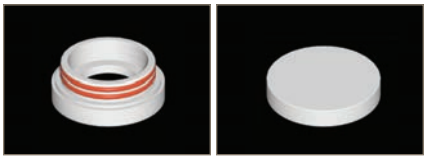


D Style 222 o-rings

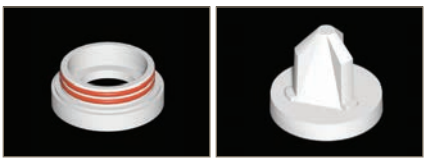


E Style 222 o-rings

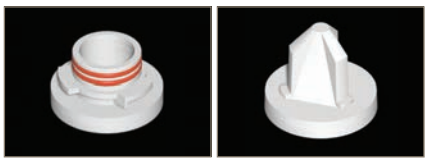
G Style 222 o-rings



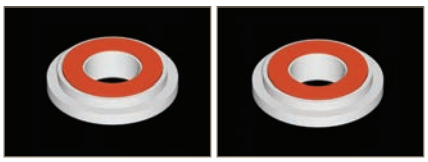
H Style 54 mm ID
x 4 mm o-rings



P Style 227 o-rings



R Style 222 o-rings



S Style Flat Gaskets

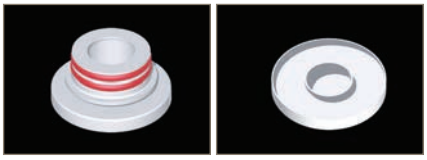
T Style 126 o-rings
(demi only)

U Style 222 o-rings

W Style 111 o-rings
(demi only)

Y Style 116 o-rings
(internal) (demi only)

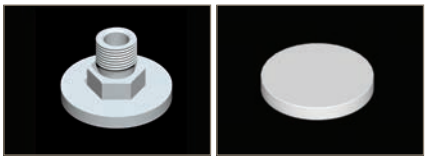
Z Style 116 o-rings
(internal) (demi only)



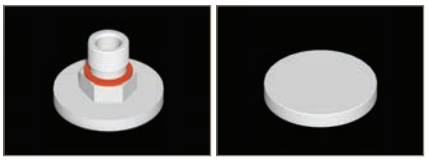
Demi H Style 217 o-rings
(demi only)

Other end cap options are available

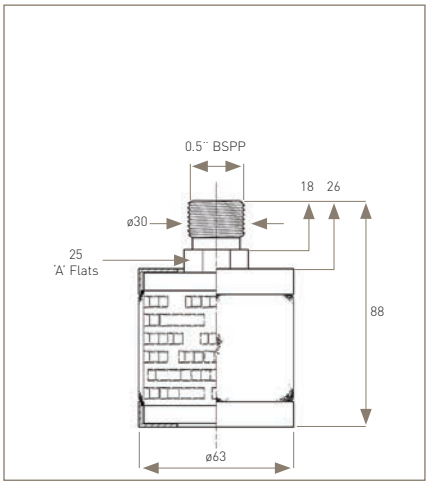
Vent autoclave filter End Caps and dimensions



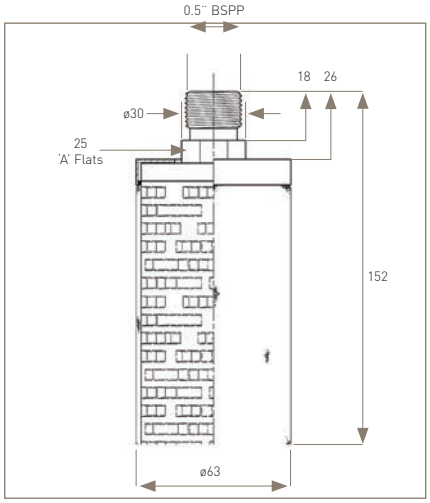
X Style $^{1}/_{2}$ ¨ NPTM
Thread & Gasket



V Style BSPP
Thread & Gasket



'B' Size

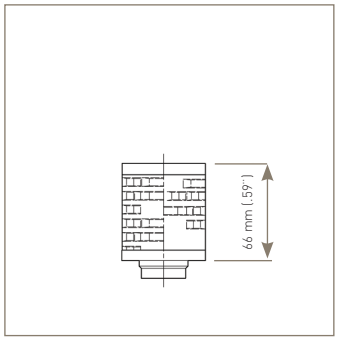


'A' Size

End Cap cross reference chart

Parker domnick hunter	PA	MI	SA
B	MCY 10¨	F	23
C (10¨ Size)	7	7	25
C (K Size)	2		
D	8	5	26
E / G	E = 3 / G = 25	0	27
F	MYS	8	24
L	MCY 20¨ and above	F	23
R			28
X			
Y	MCY2230		
Z	MCY2230 / 4463		

Cartridge dimensions



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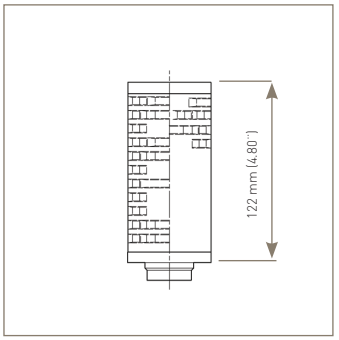

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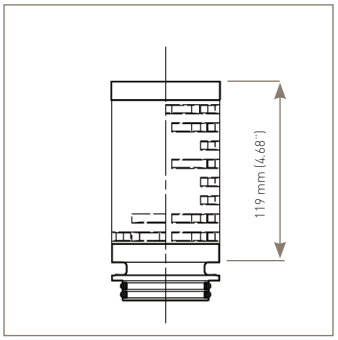
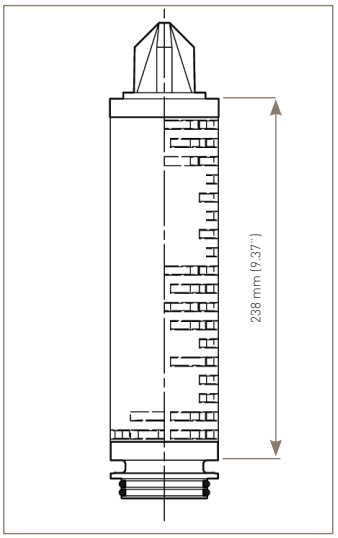


'K' Size



10¨ Size

Conversion tables

Volume rate of flow

CONVERT FROM ↓ TO →	Multiplying Factors									
	litre / sec	litre / hr	m^3 / sec	m^3 / hr	ft^3 / min	ft^3 / hr	UK gal / min	UK gal / hr	US gal / min	US gal / hr
litre / sec	1.	3600.	0.001	3.6	2.118882	127.133	13.19814	791.8884	15.85032	951.019
litre / hr	0.000278	1.	0.00000028	0.001	0.000588	0.035315	0.003666	0.219969	0.004403	0.264172
m^3 / sec	1000.	3 600 000.	1.	3600.	2118.88	127 133.	13 198.1	791 889.	15 850.3	951 019.
m^3 / hr	0.27778	1000.	0.000278	1.	0.588578	35.3415	3.66615	219.969	4.402863	264.1718
ft^3 / min	0.471947	1699.017	0.000472	1.699017	1.	60.	6.228833	373.730	7.480517	448.8310
ft^3 / hr	0.007866	28.3168	-	0.028317	0.01667	1.	0.103814	6.228833	0.124675	7.480517
UK gal / min	0.0757	272.766	0.0000758	0.272766	0.160544	9.63262	1.	60.	1.20095	72.05700
UK gal / hr	0.001263	4.54609	-	0.004546	0.002676	0.160544	0.016667	1.	0.020016	1.20095
US gal /min	0.063090	226.8	0.0000631	0.227125	7.4805	448.8	0.832674	49.96045	1.	60.
US gal / hr	0.001052	3.785411	-	0.003785	0.133681	0.133681	0.013878	0.832674	0.016667	1.

Pressure (liquid column, atmospheric, etc.)

CONVERT FROM ↓ TO →	Multiplying Factors									
	lb / in^2	inH_2O	ftH_2O	inHg	atmos.	mmHg	mbar	kgf / cm^2	N / m^2	N / mm^2
lb / in^2	1.	27.6799	2.30667	2.03602	0.068046	51.7149	68.9476	0.070307	6894.76	0.0068948
inH_2O	0.036127	1.	0.083333	0.073556	0.0024583	1.86832	2.49089	0.002540	249.089	0.0002491
ftH_2O	0.433528	12.	1.	0.882671	0.029500	22.4198	29.8907	0.03048	2989.07	0.0029891
inHg	0.491154	13.5951	1.13292	1.	0.033421	25.4	33.8639	0.034532	3386.39	0.003386
atmos.	14.6959	406.781	33.8984	29.9213	1.	760.000	1013.25	1.03323	101 235.	0.101325
mmHg	0.019337	0.535240	0.044603	0.03937	0.0013158	1.	1.33322	0.0013591	133.322	0.0001333
mbar	0.014504	0.401463	0.033455	0.029530	0.0009869	0.750062	1.	0.0010197	100.	0.0001
kgf / cm^2	14.2233	393.700	32.8084	28.959	0.967841	735.559	980.655	1.	98 066.5	0.98066
N / m^2	0.000145	0.004015	0.0003345	0.0002953	0.000099	0.007501	0.01	0.0000102	1.	0.000001
N / mm^2	145.038	4014.63	334.553	295.300	9.86923	7500.62	10 000.	10.1972	1 000 000.	1.

Mass

CONVERT FROM ↓ TO →	Multiplying Factors						
	grain	metric carat	gram	dram	drachm (apoth)	oz	oz tr or oz apoth
grain	1.	0.323995	0.064799	0.36571	0.016667	0.002286	0.002083
metric carat	3.08647	1.	0.2	0.112877	0.51441	0.007055	0.006430
gram	15.4324	5.	1.	0.564383	0.257206	0.035274	0.032151
dram	27.34375	8.85923	1.77185	1.	0.455729	0.0625	0.056966
drachm (apoth)	60.	19.4397	3.88793	2.19429	1.	0.137143	0.125
oz	437.5	141.748	28.3495	16.	7.29167	1.	0.911458
oz tr or oz path	480.	155.517	31.1035	17.5543	8.	1.09714	1.

Conversion tables

Mass

CONVERT FROM ↓ TO →	Multiplying Factors							
	lb	kg	slug	US cwt	UK cwt	oz / US ton	tonne	UK ton
lb	1.	0.453592	0.031081	0.01	0.008929	0.0005	0.000454	0.000446
kg	2.20462	1.	0.068522	0.022046	0.019684	0.001102	0.001	0.000984
slug	32.1740	14.5939	1.	0.32174	0.287268	0.016087	0.014594	0.014363
US cwt	100.	45.3592	3.10810	1.	0.892857	0.05	0.045359	0.044643
UK cwt	112.	50.8023	3.481072	1.12	1.	0.056	0.050802	0.05
oz / US ton	2000.	907.185	62.1620	20.	17.8571	1.	0.907185	0.892857
tonne	2204.62	1000.	68.5218	22.0462	19.6841	1.10231	1.	0.984207
UK ton	2240.	1016.05	69.62143	22.4	20.	1.12	1.01605	1.

Volume and capacity

CONVERT FROM ↓ TO →	Multiplying Factors									
	cm^3	in^3	ft^3	yd^3	m^3	litre	UK pint	UK gallon	US pint	US gallon
cm^3	1.	0.061024	0.0000353	-	0.000001	0.001	0.001760	0.000220	0.002113	0.000264
in^3	16.3871	1.	0.0005787	0.0000214	0.0000164	0.016387	0.028837	0.003605	0.034632	0.004329
ft^3	28 316.8	1728.	1.	0.037037	0.028317	28.3168	49.8307	6.22883	59.8442	7.48052
yd^3	764 555.	46 656	27.	1.	0.764555	764.555	1345.429	168.1784	1615.793	201.9740
m^3	1 000 000.	61 023.7	35.3145	1.30795	1.	1000.	1759.75	219.969	2113.38	264.172
litre	1000.	61.0237	0.035315	0.001308	0.001	1.	1.75975	0.219969	2.11338	0.264172
UK pint	568.261	34.6774	0.020068	0.000743	0.0005683	0.568261	1.	0.125	1.20095	0.150119
UK gallon	4 546.09	277.420	0.160544	0.005946	0.0045461	4.54609	8.	1.	9.60760	1.20095
US pint	473.176	28.875	0.016710	0.000619	0.0004732	0.473176	0.832674	0.104084	1.	0.125
US gallon	3 785.41	231.	0.133681	0.004951	0.0037854	3.785411	6.661392	0.832674	8.	1.

Volume and capacity

CONVERT FROM ↓ TO →	Multiplying Factors								
	UK minim	US minim	cm^3	UK fl drachm	US fl drachm	UK fl ounce	US fl ounce	litre	in^3
UK minim	1.	0.960760	0.059194	0.016667	0.016013	0.002083	0.002002	0.0000592	0.0036122
US minim	1.04084	1.	0.061611	0.17348	0.01667	0.002168	0.002084	0.0000616	0.0037597
cm^3	16.8936	16.2307	1.	0.281561	0.270519	0.035195	0.033814	0.001	0.061024
UK fl drachm	60.	57.64560	3.55163	1.	0.960760	0.125	0.120095	0.003552	0.216734
US fl drachm	62.45040	60.	3.696678	1.04084	1.	0.130105	0.125	0.003697	0.225585
UK fl ounce	480.	461.1648	28.4131	8.	7.68608	1.	0.960760	0.028413	1.73387
US fl ounce	499.604	480.	29.5735	8.32674	8.	1.04084	1.	0.029573	1.80469
litre	16 893.6	16 230.7	1000.	281.561	270.5125	35.1951	33.8140	1.	61.0237
in^3	276.837	265.9739	16.3871	4.61395	4.432899	0.576744	0.554113	0.016387	1.

Installation and operating guidelines

For liquid and gas filter cartridges

Introduction

These guidelines give the correct methods for using liquid and gas filter cartridges manufactured by Parker domnick hunter. If you have any queries, our process filtration specialists will be pleased to discuss your particular filtration requirements or answer any questions you may have. We may also be contacted at any of the addresses given on the reverse of this document or through our worldwide network of subsidiary companies and distributors.

1. Storage

1.1 Store cartridges in a clean and dry environment and avoid placing heavy objects on the top of the cartridge tube or packaging. The cartridges should not be exposed to temperatures below 5 °C (41 °F) or above 40 °C (104 °F) or to direct sunlight.

1.2 Keep the cartridge in it's sealed polyethylene bag until it is time to install it.

1.3 The shelf-life for cartridge filters is as follows:-

ASYPOR membrane variants	- 2 years
Liquid membrane cartridges	- 3 years
Liquid depth cartridges	- 5 years
TETPOR membrane variants	- 5 years
Gas membrane cartridges	- 5 years
Gas depth cartridges	- 5 years
Gamma irradiated cartridges	- Consult Certificate of Conformance

2. Installation

The various cartridge formats and end caps are shown on the end of this sheet, please refer to this if you are unsure which cartridge format you have.

2.1 New housings should be flushed out with clean water / air (dependant on the application) prior to installation of the cartridge to remove any debris. Ensure tie-rods / support plates are removed prior to flushing as vibration (especially in air) can cause components to loosen.

2.2 Before changing or installing a liquid or gas cartridge filter ensure that the filter vessel is depressurized and any liquid has been drained off. (Most vent filter cartridges are open to atmosphere but if the filter is connected to a pressurized line then ensure that the filter vessel is depressurized before removing the filter bowl).

2.3 Remove the filter bowl. For plastic housings the bowl is unscrewed and for stainless steel housings the bowl is held in place using a band clamp or a bolted flange.

2.4 Cut open the polyethylene bag at the cartridge open end and check that the o-ring seals or gaskets are clean, intact, correctly located in their grooves and not damaged.

2.5 Lubricate o-ring seals with a lubricant that is compatible with the process fluid (e.g. clean water) or use process liquid itself. Note: No lubricant should be used for oxygen applications.

2.6 Using the bag as protection and holding the cartridge as near as possible to the open end as opposed to the main body of the cartridge or the top end cap, press the cartridge firmly into or onto the housing locations. Keep the cartridge vertical to prevent damage to the o-rings.

a) If the vessel has a bayonet type cartridge location (A,C & R), slightly turn the cartridge clock-wise to locate the retaining lugs.

b) For double open ended cartridges (B), take care to ensure that the cartridge gaskets on both the housing and cartridge are centred over the housing knife edge seals at both ends before closing the vessel.

c) Cartridges with a threaded end cap (V) should be screwed in until the gasket is compressed.

d) Threaded vent filters should be screwed into position until the flat gasket is compressed (BSPP) or the thread locks (NPT).

2.7 Remove the polyethylene bag from the cartridge(s) before the vessel is closed.

2.8 Some filter housings take more than one cartridge (multi-round) and they will have a support plate that locates on top of the cartridges and prevents movement and damage. Refer to the vessel instructions for the way that this plate is secured and ensure that it is always installed before the vessel bowl is located.

3. Operation (liquid cartridges)

Filter cartridges should not be subjected to excessive hydraulic shock and should never be reverse pressurized from the downstream to the upstream side (inside to out).

3.1 Slowly open the upstream valve and allow liquid into the filter vessel.

3.2 The vent valve located at the top of the vessel should be cracked open to allow air to escape and to ensure that the filter vessel is full of liquid. The vent valve should be closed when liquid starts to exit the valve.

N.B. If hazardous liquids are being filtered, please ensure that vent and drain valves are connected to a suitable drain line.

3.3 Slowly open the downstream valve and allow the filtered liquid to flow. It is recommended that newly installed cartridges are briefly flushed to drain and remove an debris that may have been inadvertently generated during cartridge installation or to remove trace levels of surfactant that may be present in some filter media. Liquid cartridges are shown to be blocked when the differential pressure across the filter has significantly increased and / or the flow of liquid through them is reduced to an unacceptable level. If you do not have pressure gauges that indicate the differential pressure then please contact Parker domnick hunter or their representative.

4. Operation (gas / vent cartridges)

Vent / Gas filter cartridges are hydrophobic and they will not operate effectively if they are covered in water or steam condensate. This can lead to tank collapse or cartridge deformation so please ensure that if vent filters do come into contact with water they are replaced.

Gas cartridges are blocked when the differential pressure across the filter is high and/or the flow of gas through them is significantly reduced. In normal operation they should be changed at least annually.

5. Integrity testing

Some liquid and gas cartridges may be integrity tested by a number of manual or automatic methods. Please contact Parker domnick hunter or it's representative for further information on which method is most suitable for your application or refer to the appropriate product datasheet.

6. Hot water sanitization (Liquid hydrophilic cartridges)

Recirculate prefiltered water through the filter for 1 hour at 80 °C (176 °F), the maximum differential pressure across the filter should be no more than 0.3 bar (5 psi). Open all system outlet valves to sanitize the system thoroughly.

7. Steam sterilization

Please refer to the datasheets to find out if your cartridge filter and housing can be autoclaved or steamed in place (SIP) and the allowed maximum temperature. To minimize the risk of contamination to a sterile system the filter should be autoclaved or SIP'd immediately prior to use.

N.B. Plastic housings cannot be steam sterilized or autoclaved.

Steam-in-place (SIP)

It is important that both liquid and gas filter cartridges do not have bulk steam flowed through them during SIP because excessive differential presure can cause damage to the cartridge at high temperatures. It is also usual to filter the steam so that any dirt it carries does not block or damage the filter.

Vacuum autoclave sterilization

The cartridge should be installed in the housing, the vent / drain valves left open and the housing bowl left slightly open. Do not allow the cartridge to support the vessel base or allow the bowl to rest on the cartridge during autoclaving. The assembly should be autoclaved on a cycle with a slow exhaust. Where possible liquid cartridges should be flushed with clean water prior to autoclaving.

Parker domnick hunter has detailed guidelines for the sanitization and steam sterilization of liquid and gas filters so if you are unsure of the procedures please contact Parker domnick hunter or it's representative.

Disposal

All cartridge filters should be disposed of in a safe manner and in line with Health & Safety Guidelines.

www.parker.com/dhpiomic

Glossary of terms used in filtration

A

Absolute pressure
Associated with gas systems. The absolute pressure is the total pressure exerted on a system equal to atmospheric pressure plus gauge pressure, for example 2 barg = 3 bar absolute.

Absolute rating
A definitive value given to a filter that represents the smallest particle size capable of being captured by the filter. Typically it refers to 100% retention at a particular micron rating. The assigning of micron ratings is however dependant on the test methodology used. e.g.: a sterile grade absolute rated liquid filter is assigned a 0.2 micron rating if it retains all microorganisms of a predetermined size it does not mean that the filter has 0.2 micron pores. When selecting a filter for a particular application always refer to the methods and assumptions made for assigning the micron rating.

Air flow
A measure of the amount of air that flows through a filter at a certain system pressure and pressure drop. This is typically expressed in normalized units i.e.: the relative flow rate at atmospheric pressure and is quoted for a clean unused filter. Always quote system pressures when sizing gas filters.

Aerosol integrity testing
A method specifically designed for sterile gas filters whereby aerosol in the most penetrating particle size (MPPS: 0.2–0.3 micron) is used as a non-destructive challenge to the filter to determine whether it is providing sterile gas. The test can be performed using an automated test instrument such as the Parker domnick hunter Valairdata 3.

Autoclave
A closed pressure vessel into which steam is introduced (typically at a temperature of 121 - 134 °C (250 - 273 °F)) to sterilize the contents.

B

Backwash
A reverse flow of liquid through a filter in order to flush out trapped solids.

Bacterial challenge
This refers to a live bacterial challenge of a filter in either the liquid or gas phase. The type of organism used for the test depends on the assigned micron rating of the filter. For example a 0.2 micron sterile grade liquid filter is challenged with the organism Brevundimonas diminuta (test method ASTM 838-05) while a 0.45 micron absolute rated liquid filter is challenged with a suspension of Serratia marcesens. In some cases for critical performance validation requirements it will be necessary to challenge the filter with bacteria in the actual process fluid being filtered.

Beta rating
A measure of a filter's efficiency based on the number of particles present in the influent (upstream) to those in the effluent (downstream). Efficiency is expressed as a BETA ratio and is calculated as follows:

$$\text{Beta Ratio} = \frac{\text{Number of particles in the influent}}{\text{Number of particles in the effluent}}$$

Generally a Beta Ratio at 5000 is accepted by the industry as being an 'absolute' rating for media prefilters.

C

Cartridge or filter cartridge
A filtration or separation device usually supplied in a cylindrical format which locates easily and quickly into a filter housing.

Chemical compatibility
When selecting filter materials attention needs to be given to their compatibility to the fluid which is to be filtered. A filter (depending on application) needs to be assessed for reduction in performance in terms of material degradation, integrity, etc. as well as quantifying any extractables levels. It should be noted that the compatibility of a filter is dependent on the process conditions. General material compatibility databases assume limited temperature and exposure time. They also refer to just one chemical. In an actual process there could be a combination of chemicals, high differential pressure and high temperature which all could influence filter performance. General guidance on filter performance can be given from experience and in-house data but normally it is recommended that filter compatibility is tested in the process conditions.

Clarification
This is the selective removal of particulate from a process fluid usually achieved through depth filtration. The degree of clarification is dependant on customer specification.

Colony forming unit (CFU)
The minimum number of cells on an agar plate which will give rise to a visible colony. This term is most commonly seen in the validation of sterile filters to a live bacterial challenge where the challenge and the number of organisms recovered is stated in CFU.

Coalescing
When small droplets of aerosolized liquid merge together to form larger droplets. This normally occurs in a depth filter as the process gas carrying the entrained liquid droplets passes through the filtration media. A coalescing filter such as the Parker domnick hunter OIL-X also flows from the inside of the cartridge to the outside so any coalesced liquid drains to the base of the filter and subsequently into the bottom of the filter housing.

Colloid
Colloids are molecules that have not coagulated together to form a precipitate but remain in liquid suspension. These molecules are very small in size and have a molecular charge that affects their affinity for other molecules and materials. The choice of filter type and design is of paramount importance for a colloidal system if premature blockage is to be avoided.

Compaction
This can occur to a filtration medium when it is subjected to high differential pressures. The high forces on the filtration media (especially depth type) can lead to compression of the structure and subsequent changes in filtration characteristics.

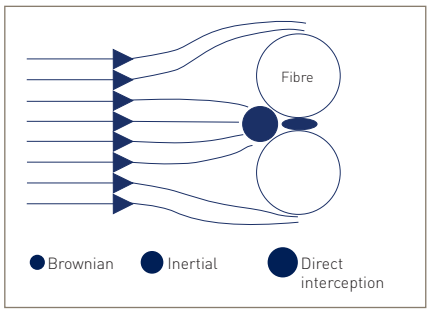
Concentrate
The retained non filtered stream from a crossflow filter system.

Cross flow filtration
A filter characterized by the feed stream traveling parallel to instead of directly through the filtration medium. This has the advantage of minimizing the blockage of the membrane as the system is to some extent 'self cleaning'.

D

Dead leg
An area of pipework where there is potentially no flow and therefore stagnant conditions exists. It is extremely important to eliminate these if contamination issues are to be minimized.

Depth filter
A depth filter is characterized by the thickness of the filtration media as well as its structure. A depth filter is normally fibrous in nature and contaminant is retained through the depth of the filtration media rather than just the surface.

Diffusional interception


This is the dominant removal mechanism for the smallest particles captured by a filter in the gas phase. Particles as small as 0.01 µm exhibit great diffusional movement (Brownian Motion) which has the effect of increasing its nominal mean diameter to the filter. The efficiency of this capture mechanism decreases as the particle size increases.

Diffusional flow
A non-destructive integrity test method for membrane based filters. It involves wetting out every pore in the membrane structure with water or the process fluid or a low surface tension liquid in case of hydrophobic membrane. Compressed air is applied to the upstream side of the filter and gas diffuses through the wetted pores. This flow rate is either measured directly by mass flow meters or indirectly via measuring the drop in pressure on the upstream side of the filter.

Differential pressure
Differential pressure (dP) is the difference in the pressure measured upstream (influent) and downstream (effluent) of a filter. Particularly in liquid applications differential pressure will increase to a point where either filter damage or insufficient flow will result. The higher the differential pressure the higher the energy cost so it is important to balance the pressure drop requirements with the installation size and required lifetime to blockage. Units of measurement are bar and psi as opposed to barg and psig.

Glossary of terms used in filtration

E

Effective filtration area (EFA)
This is the area of filtration material available for filtration.

Effluent
The fluid which has passed through a filter.

Extractables
When a filter is in contact with the process fluid, chemical components may leach from the materials of construction and deposited in the filtrate. The levels of non-volatile extractables for a limited number of fluids are quoted in the filter validation guide. The level of extractables is dependent on the process conditions. Filtration of solvents, high temperature fluids and steam sterilization are three areas where extractables can increase.

F

Filter (noun) / filter cartridge / cartridge
An apparatus which performs filtration.

Filter (verb)
To pass a fluid or gas through a porous medium in order to remove solid particles.

Filter efficiency
Filter efficiency is a measure of the percentage of particles that are removed from the fluid by the filter. Typically these are given in terms of the % removal for a certain size of particle. A filter efficiency may also be given across a range of particle sizes . For a number of gas applications the efficiency of a filter may be quoted in relation to the filters ability to remove particles at the most penetrating particle size (MPPS) of 0.2-0.3 micron. Always ensure filter efficiency is matched to the requirements of the process.

Filterability indices (FI) and Vmax
This is an indication of a filters capacity to process certain fluids. It generally gives a measure of the rate of blockage of a filter as well as the theoretical maximum throughput. The time required to flow two consecutive 200 ml fluid samples is recorded and the filterability indices are calculated from the results. The two formulae used are as follows:

$$(Vmax) = \frac{400 + 400T_1}{(T_2 - 2T_1)}$$

$$FI = (T_2 - 2T_1)$$

T_1 = Time to filter first 200 ml
T_2 = Time to filter second 200 ml

It should be noted that these methods give a general indication of performance and are often more useful in comparative performance measurement between different filter types.

Filtrate
Another name for effluent.

Filter sterilization
Sterilization is the act of making an organism barren or infertile (unable to reproduce). The sterilization of a filter can be achieved by a number of methods including dry heat, steam, ethylene oxide, hydrogen peroxide or irradiation. The method chosen depends on the process and the materials of construction of the filter but by far the most widely used is that of steam, either in an autoclave or via steam-in-place (SIP).

Flux
The rate of fluid flow (gas or liquid) when expressed in terms of flow per unit area of the filter that removes the contaminants from the fluid stream. It can apply to both depth and membrane media.

G

Gauge pressure
The pressure of a system measured by a gauge, which excludes atmospheric pressure, for example 1 bar atmosphere (or 1 bar absolute) = 0 barg.

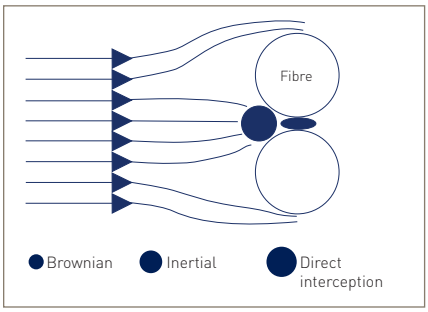
H

Housing
An enclosure for a filter element, typically rated for pressure, that directs the fluid through the filter.

Hydrophilic
Hydrophilicity is the ability of a filtration media to 'wet out', that is, for the porous structure to be completed filled with the liquid being filtered. This is an important characteristic as incomplete wetting of the structure can lead to a reduction in flow capacity and problems with integrity testing. All liquid filters are 'hydrophilic' apart from those that may have been selected for use with aggressive solvents. These filters are typically based on a fluoropolymer and their structure needs to be wetted with a low surface tension liquid such as isopropyl alcohol. Once the structure has been wet, the filter will process aqueous solutions without a problem.

I

Inertial impaction
This is a removal mechanism for particles captured by a filter in the gas phase. The particles follow the streamlines of gas between the filter fibres and membrane pores. Due to their mass the inertia of the particle will cause it to move out of the streamline and attach itself to a fibre or pore wall. The effect of this capture mechanism increases with particle size / mass.



Influent
The fluid entering the filter system.

In vitro
In an unnatural position e.g. outside the body " In vitro" is Latin for "in glass" an experiment performed without the involvement of a whole, living organism.

In vivo
The testing of a substance or experimentation in or using a living, whole organism.

L

Log reduction value (LRV)
This is a measurement of a filters removal efficiency for a specific contaminant. It is normally associated with the bacterial retention of a filter. The LRV is :

$$\text{Log}_{10} \frac{\text{Number of bacteria in the influent}}{\text{Number of bacteria in the effluent}}$$

e.g. $\left(\text{Log}_{10} \frac{1 \times 10^{10}}{1}\right)$ = LRV of >10

It is always expressed as > (greater than) as 1 has to be used for the effluent even if there are no organisms present. This can also be expressed as a 10 log reduction or a titre reduction of 10^{10}.

M

Medium (Media)
This is the component of the filter that removes the contaminants from the fluid stream. Also commonly referring to depth - type materials, in its more generic sense a filter medium / media can refer to either depth or membrane filter materials.

Microfiltration
Microfiltration is the process of removing particles from a liquid or gas by passing it through a porous medium. It generally involves removing particles between the sizes of 10 and 0.04 micron in liquids, and down to 0.01 micron in gases.

Micron (micrometer)
Designated by the Greek letter µ a micron is 10^{-3}mm (millimeters) or 10^{4} (Angstroms) or 0.00003937 inch. For a perspective on this size a human hair is approximately 70 microns thick and the limit of resolution of the naked eye is around 40 microns.

Membrane
A membrane is a thin, porous film typically between 30 and 150 micron in thickness. It has of tens of millions of pores / cm^2 through which the process fluid runs. The nature of the pore structure is determined by the manufacturing method. Solvent cast membranes such as Polyethersulphone (PES) and Mixed Esters of Cellulose (MEC) have a defined pore structure which can be asymmetric whilst membrane such as Polytetrafluoroethylene (PTFE) which is manufactured by 'stretching' have a fibrous appearance and a less defined pore structure.

N

Nanofiltration
Filtration that removes both particles and small dissolved molecules and ions. Finer than ultrafiltration, not as fine as Reverse Osmosis.

Nanometer
A nanometer is 10^{-9} meters

Nominal filter rating
This rating is often quoted within the filtration industry but great care should be taken in ensuring the efficiency and test methodologies are completely understood. A 5 micron nominal filter could be 99% retentive at 5 micron, another could be 80%. It can be very misleading to compare the performance of filters on nominal ratings. When selecting a filter the duty required should be

Glossary of terms used in filtration

compared to the individual performance characteristics of filter. Parker domnick hunter has the experience to help select the most appropriate filter for the application.

O

Oleophobic
Oleophobic membranes and depth media have the capability to repel fluids such as oil and lubricants. This phenomena is used in some of the new generation oil coalescing filters.

Oxidation
This refers to the degradation of materials in the presence of oxygen and high temperature. It is normally associated with high temperature gas systems where the combination of steam sterilization can lead to the onset of oxidation of polypropylene filtration components in as little as 3 months. For applications where continuous (1 year and above) exposure to high temperature is required the use of a special product with oxidation resistant filtration support materials such as the HIGH FLOW TETPOR H.T. is recommended.

Oxidation can also occur on filters used in ozonated water systems. In these instances careful selection of filter components is required.

P

Pleating
Filtration media can be pleated or corregated to maximize the filtration area. By pleating filtration media it is possible to fit a large EFA in a relatively small cartridge volume.

Voids volume (porosity)
This is a measurement of the free space in a filtration media. The more free space the less the resistance to flow. Typical values for a membrane are in the region of 50 – 80% and for depth type media between 60 - 95%.

Pressure decay
A non-destructive integrity test method for membrane based filters. It involves wetting out every pore in the membrane structure with water or the process fluid or a low surface tension liquid in case of hydrophobic membrane. Compressed air is applied to the upstream side of the filter and gas diffuses through the wetted pores. This causes a pressure drop in the upstream side of the filter known as the pressure decay. The maximum allowable pressure decay for a filter is dependant on the upstream volume and therefore must be known.

Pressure Decay (mbar /min) =

$$\frac{\text{Diffusional Flow (ml / min)}}{\text{Upstream Vol (l)}}$$

Pyrogenicity
Pyrogenicity is the tendency of a substance to raise body temperature when injected into the body. Filtration materials that come in contact with injectable liquids must meet pyrogenicity standards and be classified as non-pyrogenic. Pyrogenicity can be determined by such standard tests as the Limulus Amoebocyte Lysate (LAL) test.

Permeate
Synonymous with filtrate.

R

Regeneration
When a filter becomes blocked with protein based material it may be possible to regenerate, or clean the filter, so improving overall lifetime.

Reverse jetting
The application of high pressure compressed gas to the inside of a filter to release powder collected on its surface.

Reverse osmosis
Forcing a liquid through a non-porous membrane, removing particles, along with dissolved molecules and ions. Reverse osmosis is the finest form of membrane separation and is used to desalinate water for drinking, and in the preparation of ultrapure water for various industries.

S

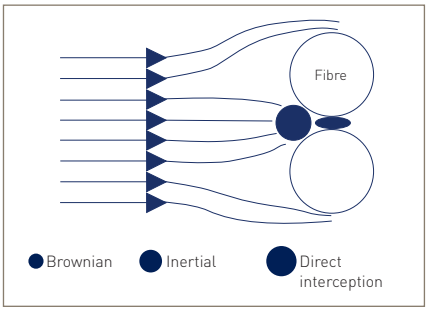
Sanitization
Reduction not elimination of a microbial population to render a fluid/system free from spoilage organisms and increase shelf-life of products.

Sedimentation
The process by which suspended solid particles in a liquid phase gravitate downwards. Eventually they will settle on the bottom of the holding tank, pipework etc. The rate of sedimentation is governed by particle mass and fluid velocity.

Separation
Separation is the process of dividing a fluid stream (either liquid or gas) into separate components. This can include separation of two phases (liquid from gas), separation of soluble impurities (known as purification) or solids from a fluid (filtration). The products of a separation can themselves be separated further in many cases.

Silt density index (SDI)
This is another measure of the rate of blockage and is typically used when the system is relatively clean and the difference between T_{400} and T_{200} (see Filterability Indices) is so small that large inaccuracies can occur. The SDI uses the time taken for two 500 ml samples of fluid to pass though a 47 mm diameter 0.45 µm disc. There is typically a 15 minute gap between the two samples being taken.

Size exclusion
This is a removal mechanism for particles captured by a filter in either the liquid or gas phase. It applies to particles that are physically too large to pass through the filter structure. The mechanism is not affected by flow rate unless pressure drops cause deformation of the particle.



Solute
A solid which is dissolved in a solvent. For instance, the salt in salt water is a solute.

Solvent
A liquid substance capable of dissolving other substances. The solvent does not change its state in forming a solution.

Stabilization
This is the reduction in microbial loading in a fluid system and is generally associated with the beverage industry where partial rather than complete removal of spoilage organisms may be required to extend shelf-life.

Sterilization
In terms of filtration this means the elimination of all living microorganisms from the influent stream.

Surfactant
Acronym for a surface active agent. In filtration it is also sometimes called a wetting agent. If a filter is being used to filter aqueous solutions and incomplete wetting of the membrane pore structure is encountered a 'wetting agent' may be added to the membrane surface by flowing a quantity of surfactant through the filter. However, the use of a wetting agent is not desirable, especially in a pharmaceutical environment, as there is also the possibility of the surfactant leaching from the filter into the filtrate during processing or steam sterilization, etc.

T

Thermal stability
This is most important during sterilization of the filter. The majority of cartridge and disposable type filters are manufactured from polymers such as polypropylene and nylon. During sterilization the components of the filter expand and contract putting great strain on the device. The filter performance with respect to steam sterilization should be matched closely to the requirements of the process. It should be noted that some filter configurations cannot be in-situ steam sterilized but can only be autoclaved.

Titre reduction
See LRV.

Turbidity
This is a measurement of the amount of suspended particles in a fluid and is effectively a clarity index. It is measured in NTU (Nephelometric Turbidity Units).

Glossary of terms used in filtration

U

Unloading
The release of contaminants which had initially been captured by a filter. This is most likely to occur in filtration systems with are subjected to high pressure pulses such as high capacity filling lines.

Ultrafiltration
Filtration of a liquid that separates suspended or dissolved substances based on their molecular weight or size. Ultrafiltration generally refers to separating everything larger than a large molecule. Compare to microfiltration, nanofiltration, reverse osmosis.

V

Viscosity
Viscosity is a measurement of the resistance to flow of a fluid. The more viscous the fluid, the greater the time required to filter. Viscosity will in general reduce with an increase in temperature. This is why very viscous solutions such as glucose are heated prior to filtration.

Vmax
See Filterability Indices.

W

Water flow
Measure of the amount of water that flows through a filter. Related to the degree of contamination, differential pressure, total porosity, and filter area (ASTM:F317-72). Expressed in the membrane industry in units of milliliters / minute / square centimetre.

Water Intrusion
A non-destructive integrity test method specifically designed for hydrophobic filters. It involves filling the upstream volume of a filter housing with water and applying a pressure, typically in the order 2.5 barg. As the membrane is hydrophobic the bulk water will not pass through. However, due to the difference in pressure between the upstream and downstream side of the filter there is a net loss of water from the upstream side due to evaporation and the slight penetration of water into the pore structure. This loss of water results in a pressure drop which is displayed as either a water intrusion value or a water flow value. The water intrusion is the measure of the increase in compressible gas volume expressed at atmospheric pressure and the water flow equates to the volume of water lost from the system.

Water flow = Water Intrusion / Absolute test pressure.

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