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

Process Filtration

Filtration Products For Industrial Applications

Parker

ENGINEERING YOUR SUCCESS.

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CAT-500-08 Rev A 01/08

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INNOVATION

PARKER

Leader in process filtration, separation and purification

Parker process filtration products set the highest standards for filtrate quality, product reliability and cost-effective use. Parker products provide optimal solutions for food and beverage applications. Parker products are available in lengths from 4 to 40 inches and configurations to retrofit all commonly installed filter housings. Products are offered in membrane and depth media with a full range of cartridges, mini-cartridges and capsules to meet production-, pilot- and laboratory-scale requirements. Removal ratings from 0.02 to >800 µm are available. All Parker products are backed by in-depth Technical Support, fast order turnaround and factory-trained local Distributors.

APPLICATIONS

Parker industrial filtration products are optimized for:

Chemicals

Inks

Paints

Coatings

DI Water

R.O. Prefiltration

Water Injection

Magnetic Media

Petrochemicals

Specialty Chemicals

Bacteria Removal

Prefiltration

Venting

Steam Filtration

Gel Removal

Haze Removal

Sediment Removal

Clarification

QUALITY MANAGEMENT AND ISO 9001

Quality is of paramount importance to Parker. All products are manufactured under controlled environmental conditions and are subjected to demanding programs of quality assurance.

Parker is ISO 9001 Certified.

INDUSTRIAL FILTRATION:
A Core Expertise

Parker Process Advanced Filtration serves a vast range of applications in the inks, paints and coatings industries, as well as in the chemicals, petrochemicals and petroleum industries. Our top-performing products are backed by a global network of factory-trained distributors and technical support teams.

Through our Technical, R&D and Customer Service Teams we offer a wide range of services and solutions to ensure total customer satisfaction.

TECHNICAL CAPABILITIES

Our Technical Support Group (TSG) is dedicated to the needs of industrial filtration users worldwide. We have an extensive range of state-of-the art analytical instrumentation and a highly qualified team of scientists and engineers generating innovative solutions to a wide variety of filtration needs. We strive to optimize our customers' filtration applications by offering full technical support that includes:

- *process failure analyses*
- *contamination analyses*
- *process and cost improvement audits*
- *on-site testing services*

RESEARCH AND DEVELOPMENT

Our R&D teams are constantly working to innovate new products and discover technologies that will enhance the performance of process filtration, and keep us at the forefront of process filtration technology.

CUSTOMER SERVICE

An experienced team of professionals dedicated to respond quickly and comprehensively to orders – for both standard and customized products – and ensure their on-time delivery worldwide.

COMMITMENT

PROCESS FILTRATION PRODUCTS

Tailored to Industrial Applications

Parker manufactures filtration products for a wide variety of process industry applications. Parker's product line includes membrane cartridges, pleated cartridges, vessels, high efficiency filter bags, melt-blown cartridges, stainless steel media and more. Process filter media provide contaminant removal from 0.04 to 840 micron, with efficiencies as high as 99.9+ percent.

MEMBRANE FILTERS

FLUOROFLOW
PTFE

PROFLOW II G
PTFE

CLARIFLOW G
Polyethersulfone

CLARIFLOW WS
Polyethersulfone

PLEATED FILTERS

ABSO-MATE™ PAB
Polypropylene

POLY-MATE™ PLUS PMP
Polypropylene

POLY-MATE™ PM/PXD
Polypropylene

CLARIPOR™ CP
Polypropylene

GLASS-MATE™ PMG
Microfiber Glass

FULFLO® PCC
Cellulosic/Phenolic Resin

FULFLO® 336 PLEATED
Cellulosic and Polypropylene

FULFLO® 1401
Cellulosic and Polypropylene

LARGE DIAMETER PLEATED FILTERS

MEGAFLOW™ MFN
Cellulosic and Polypropylene

MEGAFLOW™+ MFA
Cellulosic and Polypropylene

MAXGUARD™ MX
Cellulosic / Polypropylene / Nomex

PARMAX™ RCP, RMG
Glass media or polypropylene structure

FLO-PAC® FP
Cellulosic

FLO-PAC®+ FPE
Cellulosic

MELT BLOWN

MEGABOND PLUS™ MBP
Polypropylene

AVASAN™ AVS
Polypropylene

DURABOND™ DBC
Polyolefin

ECOBOND™ EBC
Polypropylene

RESIN BONDED

PROBOND™ PRO
Phenolic Resin/Acrylic fiber

WOUND DEPTH

HONEYCOMB™ HFT
Various Media

ULTRAFINE HFT
Cotton and Polypropylene

FULFLO® XTL
Cotton and Polypropylene

FULFLO® SWC
Cotton and Polypropylene

FILTER BAG/STRAINER

FULFLO® BAG FILTERS
Various Materials

XLH (HIGH EFFICIENCY BAGS)
Polypropylene

FULFLO® BASKET STRAINERS
316 Stainless steel

FULFLO® COAXIAL RETAINER BASKET
316 Stainless steel

SORBENT CARTRIDGE SERIES

FULFLO® TRUBIND 300, 400, 700
Polymeric Media

FULFLO® ACTIVATED CARBON
Activated Carbon

METALIC ELEMENT SERIES

FULFLO® METALLIC
Pleated & Cylindrical 304 SS & 316 SS

HOUSINGS

Parker ASME code and non-code filter vessels are available in a varety of configurations for a broad range of liquid, compressed air and gas applications.

SINGLE CARTRIDGE HOUSINGS

FULFLO® B
Carbon Steel

FULFLO® BSSB
316 Stainless

FULFLO® 4.5 C
Carbon, 316 Stainless

FULFLO® SSTC
316 Stainless

FULFLO® M
316 Stainless

FULFLO® LT
SAN/Polypropylene

FULFLO® NP
Natural Polypropylene

MULTI-CARTRIDGE HOUSINGS

FULFLO® WH
304 & 316L Stainless

FULFLO® CH5
Carbon Steel, 304 Stainless

FULFLO® SF
Carbon Steel, 304 & 316L Stainless

FULFLO® HT
Carbon Steel

FULFLO® S
Carbon Steel, 304 & 316L Stainless

FULFLO® MP
304L & 316L Stainless

FULFLO® MEGAFLOW
Carbon Steel, 304 & 316L Stainless

FULFLO® FE
Carbon Steel, 304L & 316L Stainless

FULFLO® FP
Carbon Steel & 304L Stainless

FULFLO® CPM
Carbon Steel

FULFLO® P
Carbon Steel

BAG FILTER HOUSINGS

FULFLO® SB
Carbon Steel, 304 & 316L Stainless

FULFLO® FB
Carbon Steel, 304L & 316L Stainless

FULFLO® CB
Carbon Steel & 304 Stainless

Always at Our Customers' Service
Parker filtration distributors provide local stock and technical design help including 24-hour emergency service. They are supported by our "ever-ready" manufacturing teams. So, if you need technical literature or application support, please call 1-800-C-Parker for the name and location of your nearest Parker distributor.

PROCESS FILTRATION PRODUCTS

Tailored to Industrial Applications

Product line	Filter Ratings (microns)	Housings Available	Typical Applications
MEMBRANE FILTERS			
FLUOROFLOW	*0.05 to 1*	*Yes*	• *High purity aggressive chemicals*
PROFLOW II G	*0.05 to 1*	*Yes*	• *UHP - chemicals, solvents, rinse baths and gases*
CLARIFLOW G	*0.04 to 0.65*	*Yes*	• *Specialty chemicals* • *UHP water*
CLARIFLOW WS	*0.04 to 0.65*	*Yes*	• *Pre-R.O. and post-R.O.*
PLEATED FILTERS			
ABSO-MATE™ PAB	*0.2 to 70*	*Yes*	• *Membrane prefiltration chemicals* • *Waste water*
POLY-MATE™ PLUS PMP	*0.25 to 100*	*Yes*	• *Chemicals, magnetic media, photographic, electronics* • *DI water,* • *Process water*
POLY-MATE™ PM/PXD	*0.5 to 60*	*Yes*	• *Photographic* • *High-tech coatings* • *DI water and R.O. membrane prefiltration* • *Process water, wastewater and disposal wells*
CLARIPOR™ CP	*0.5 to 90*	*Yes*	• *Coatings, inkjet inks* • *Specialty chemicals*
GLASS-MATE™ PMG	*0.45 to 40*	*Yes*	• *R.O. prefiltration* • *Membrane prefiltration* • *Critical lubricating oils and oil field completion fluids*
FULFLO® PCC	*2 to 60*	*Yes*	• *Chemicals and oil field completion fluids* • *Metal treatment* • *Petroleum and process gases* • *Coatings* • *Process water*
FULFLO® 336 PLEATED	*3 to 150*	*No*	• *Petrochemicals, refineries & oil fields, amines, glycols, produced water*
FULFLO® 1401	*2 to 100*	*No*	• *Water injection* • *Chemical processes* • *Hydrocarbons* • *Solvents*
FLO-PAC® FP	*0.5 to 60*	*Yes*	• *Hydraulic and lubricating oils* • *Coolants - water-soluble, fuels and non-food-grade liquids*
FLO-PAC®+ FPE	*0.5 to 60*	*Yes*	• *Glycols, amines, esters, ketones, aromatic & aliphatic hydrocarbons, halogenated hydrocarbons*
LARGE DIAMETER PLEATED FILTERS			
MEGAFLOW™ MFN	*0.5 to 10*	*Yes*	• *DI Water* • *Chemical processing* • *High-tech coatings*
MEGAFLOW™+ MFA	*1 to 70* *140, 150*	*Yes*	• *Potable water* • *Coolants*
MAXGUARD™ MX	*0.5 to 100*	*No*	• *Oil Field - deep well injection, produced water*
PARMAX™ RCP, RMG	*1 to 90*	*Yes*	• *Specialty chemicals* • *Process Water*

Product line	Filter ratings (microns)	Available Housings	Typical applications
MELT BLOWN			
MEGABOND® PLUS MBP	*1 to 120*	*Yes*	• *Chemical processing* • *DI water* • *Coatings*
AVASAN™ AVS	*1 to 75*	*Yes*	• *DI and process water* • *R.O. prefiltration*
DURABOND® DBC	*1 to 100*	*Yes*	• *Chemical processing* • *Magnetic and industrial coatings* • *R.O. prefiltration, DI water and organic solvents*
ECOBOND® EBC	*1 to 50*	*Yes*	• *Chemical processing* • *Magnetic and industrial coatings* • *R.O. prefiltration, DI water and organic solvents* • *Oil field applications*
RESIN BONDED			
PROBOND® PRO	*2 to 150*	*Yes*	• *Inks and paints* • *Viscous fluids - adhesives, resins and emulsions, plasticizers*
WOUND DEPTH			
HONEYCOMB® HFT	*1 to 150*	*Yes*	• *Organic acids and solvents, petroleum oils, prefilter for membranes, concentrated and diluted alkalies, water, chemical processes*
ULTRAFINE® HFT	*0.5*	*Yes*	• *Organic acids and solvents, petroleum oils, prefilter for membranes, concentrated and diluted alkalies, water, chemical processes*
XTL™	*1 to 30*	*Yes*	• *Chemical processes* • *R.O prefiltration and process water* • *Lubricants* • *Organic solvents and amines*
SWC®	*1 to 100*	*Yes*	• *Organic Acids and Solvents* • *Petroleum Oils* • *Prefilter for Membranes - concentrated and diluted alkalies, water and chemical processes*
FILTER BAG MEDIA			
FULFLO® FILTER BAGS	*1 to 800*	*Yes*	• *Paints, inks and coatings* • *Bulk chemicals and resins* • *Prefilter to other cartridges*
XLH	*0.5 to 25*	*Yes*	• *Paints, inks and coatings* • *Adhesives and resins* • *Bulk chemicals* • *Prefilter to other cartridges*
FULFLO® BASKET STRAINERS	*20 to 100 Mesh*	*Yes*	• *Clarification at high pressure, temperature, or with high-viscosity fluids* • *Filtration of steam and aggressive gases*
FULFLO® COAXIAL RETAINER BASKET	*N/A*	*Yes*	• *Clarification at high pressure, temperature, or with high-viscosity fluids* • *Filtration of steam and aggressive gases*
CARTRIDGE SERIES			
TRUBIND 300, 400, 700	*Trace Oil Absorbent*	*Yes*	• *Removes trace oil from water*
FULFLO® ACTIVATED CARBON	*5 micron prefilter*	*Yes*	• *Chlorine removal* • *Organics removal*
METALIC ELEMENT SERIES			
FULFLO® METALLIC	*2 to 840*	*Yes*	*High-temperature liquids and steam*

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PROCESS FILTRATION PRODUCTS

Solutions for Inks, Paints and Coatings

Parker provides high-technology filtration products and services to the inks and industrial coatings market. The coatings industry produces high-viscosity mixtures of resins, solvents, pigments and other additives that provide specific properties to the end product. Proper blending, mixing and dispersion are necessary for quality coatings. Filtration of these fluids is key to removing gels, agglomerates and other contaminants to assure the desired coating properties. An effective filter must not affect adhesion, color, grind specification or dispersion of the coating. Many coatings require filters that "classify" or allow desirable particles to remain, while removing undesirable ones. Parker filters perform these functions. They contain no silicone or other material that can adversely affect adhesion of coatings.

Parker supplies the industrial coatings market with the best filtration solutions at the lowest cost of filter ownership available anywhere. Parker filters also help ink manufacturers maintain pigment concentration and color, by removing contaminants and ensuring that grind standards are met.

MEMBRANE FILTERS

CLARIFLOW G
Polyethersulfone

PLEATED FILTERS

ABSO-MATE™ PAB
Polypropylene

POLY-MATE™ PM/PXD
Polypropylene

GLASS-MATE™ PMG
Microfiber glass

CLARIPOR™ CP
Polypropylene

POLY-MATE™ PLUS PMP
Polypropylene

WOUND DEPTH, RESIN BONDED MELT BLOWN

MEGABOND PLUS™ MBP
Polypropylene

AVASAN™ AVS
Polypropylene

DURABOND™ DBC
Polyolefin

ECOBOND™ EBC
Polypropylene

PROBOND™ PRO
Phenolic Resin/Acrylic fiber

HFT WOUND
Various materials

FILTER BAG/ STRAINER

FULFLO® BASKET STRAINER
316 Stainless Steel

FULFLO® FILTER Bags
Various Materials

XLH - HIGH EFFICENCY BAG
Polypropylene

SINGLE-CARTRIDGE HOUSINGS

B SERIES
Carbon Steel

BSSB Series
316 Stainless

4, 5 C Series
Carbon Steel, 316 Stainless

SSTC Series
316 Stainless

M Series
Carbon Steel, 316 Stainless

MULTI-CARTRIDGE HOUSINGS

FULFLO® WH
304 & 316L Stainless

FULFLO® SF
Carbon Steel, 304 & 316L Stainless

FULFLO® S
Carbon Steel, 304 & 316L Stainless

FULFLO® FE
Carbon Steel, 304 & 316L Stainless

FULFLO® FP
Carbon Steel, & 304L Stainless

BAG FILTER HOUSINGS

FULFLO® SB
Carbon Steel, 304 & 316L Stainless

FULFLO® FCB
Carbon Steel & 304 Stainless

FULFLO® FB
Carbon Steel, 304 & 316L Stainless

PROCESS FILTRATION PRODUCTS

Solutions for Inks, Paints and Coatings

Product line	Materials	Filter ratings (microns)	Available Housings	Typical applications
MEMBRANE FILTERS				
CLARIFLOW G	*Polyethersulfone*	*0.04 to 0.65*	*Yes*	• *Final filtration* • *Ink jet inks*
PLEATED FILTERS				
ABSO-MATE™ PAB	*Polypropylene*	*0.2 to 70*	*Yes*	• *Inks and paints* • *Resins and emulsions* • *Plasticizers*
POLY-MATE™ PM/PXD	*Polypropylene*	*0.5 to 60*	*Yes*	• *Inks and paints* • *Resins and emulsions* • *Plasticizers*
GLASS-MATE™ PMG	*Microfiber glass*	*0.45 to 40*	*Yes*	• *Inks and paints* • *Resins and emulsions* • *Plasticizers*
CLARIPOR™ CP	*Polypropylene*	*0.5 to 90*	*Yes*	• *High tech optical coatings*
POLY-MATE™ PLUS PMP	*Polypropylene*	*0.25 to 100*	*Yes*	• *High-tech coatings* • *Photographic chemicals*
DEPTH FILTERS				
MEGABOND PLUS™ MBP	*Melt-Blown Polypropylene (Absolute-Rated)*	*1 to 120*	*Yes*	• *High-tech optical coating*
AVASAN™ AVS	*Melt-Blown Polypropylene*	*1 to 75*	*Yes*	• *Industrial coatings*
DURABOND™ DBC	*Bonded Polyolefin*	*1 to 100*	*Yes*	• *Industrial coatings*
ECOBOND™ EBC	*Melt-Blown Polypropylene*	*1 to 50*	*Yes*	• *Industrial coatings*
PROBOND™ PRO	*Resin Bonded Phenolic/ Acrylic Fiber*	*2 to 150*	*Yes*	• *Inks and paints* • *Viscous fluids - adhsives, resins, emulsions, and plasticizers*
FILTER BAG/ STRAINER				
FULFLO® BASKET STRAINER	*316 Stainless*	*20 to 100 mesh*	*Yes*	• *Coatings* • *Solvents*
FULFLO® FILTER BAG	*Polyester, Nomex, Polypropylene, Multi-filament Polyester, Monofilament Nylon*	*1 to 800*	*Yes*	• *Coatings* • *Paints*
XLH - HIGH EFFICENCY BAG	*Polypropylene*	*0.5 to 25*	*Yes*	• *Coatings* • *Paints*

Membrane Filter Cartridge Series

Fluoroflow® Cartridges

All-fluoropolymer cartridge for effective filtration of aggressive chemicals

Fluoroflow® pleated filter cartridges feature an all-fluoropolymer construction; this provides the highest chemical resistance when filtering acids, bases and solvents. Fluoroflow® cartridges fit standard filter housings and are available in a variety of filter ratings, lengths and end-fittings for maximum versatility. Fluoroflow® cartridges are available flushed with UPW to minimize extractables and wet-packed to eliminate the need for on-site wetting, to fit your needs.

The Fluorflow Cartridge is available in 0.05, 0.1, 0.2, 0.45, 1 and 100µm pore sizes.

Benefits

- High chemical compatibility maximizes process capability
- Wet-packed option eliminates lengthy wetting procedure and minimizes equipment downtime
- Biosafe in accordance with USP Class VI 121°C Plastics Test

Applications

- Aggressive chemicals and process fluids at temperatures up to 150°C
- Ozonated and/or hot UPW

Fluoroflow®

Specifications

Materials of Construction
100% Fluoropolymer construction

Effective Filtration Area
6.8ft² (0.63m²) per nominal 10" (250mm) cartridge

Metals Extractables
<20ppb (total) in a 10% HNO3 extraction of 1.5 liters for 24 hours at ambient temperature

Maximum Differential Pressure
Forward:
80psid (5.5bar) @ 75ºF (24ºC)
55psid (3.8bar) @ 167ºF (75ºC)
30psid (2.0bar) @ 257ºF (125ºC)
15psid (1.0bar) @ 300ºF (150ºC)
Reverse:
50psid (3.4bar) @ 75ºF (24ºC)
15psid (1.0bar) @ 250ºF (121ºC)

Cleanliness (particle shedding)
Wet-packed <2 particles/ml >0.2µm after 7gal at 1gpm

TOC/Resistivity Rinse-up (wet-packed)
TOC recovery within 3-5ppb of feed without additional rinse-up.
Resistivity recovery within 0.4megohm-cm of feed after 22gal @ 1gpm

Performance Attributes

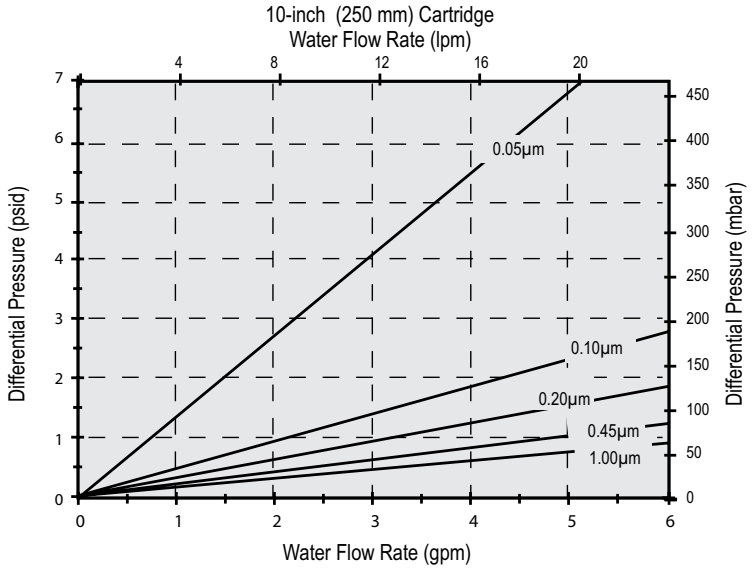
Water in Flow rates, Typical *
0.05µm 0.9gpm/psid (4.9lpm/100mbar)
0.10µm 2.3gpm/psid (12.7lpm/100mbar)
0.20µm 3.2gpm/psid (17.6lpm/100mbar)
0.45µm 4.7gpm/psid (25.8lpm/100mbar)
1.00µm 6.7gpm/psid (36.9lpm/100mbar)

* Per 10-inch (250 mm) cartrdige equivalent and for fluids with viscosity of 1cP.

Integrity test values

Filter Rating	Bubble Point*	
µm	psig	bar
0.05	≥40	2.8
0.10	≥21	1.5
0.20	≥13	0.9
0.45	≥7	0.5
1.00	≥3	0.2

* In 60/40 IPA/water @ 25°C



Ordering Information

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End Fitting

CODE	DESCRIPTION
2	226/Flat
3	222/Flat
7	226/Fin
8	222/Fin

Nominal Length

CODE	LENGTH
04	4" (102mm)
10	10" (250mm)
20	20" (500mm)
30	30" (750mm)
40	40" 1000mm)

Filter Rating

CODE	MICRON
925	0.05µm
001	0.1µm
002	0.2µm
004	0.45µm
010	1µm
503	100 (Nominal)

O-Rings

CODE	MATERIAL
2	Silicone
4	Viton®
5	FEP-Encapsulated Viton®
6	FEP-Encapsulated Silicone
7	Chemraz®
N	None

Options

CODE	TREATMENT
Blank	UPW Flush
F	Ozone UPW Flush
W	Wet Packed

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.
*Fluoroflow is a registered trademark of Parker Hannifin Corp.

ENGINEERING **YOUR** SUCCESS.

Proflow™ II General Grade Cartridges

Hydrophobic PTFE membrane for general purpose gas and solvent purification

Proflow™ II General grade cartridges provide an economic alternative for general applications where reliable gas and liquid flow rates are required. With 5.6 square feet of expanded PTFE membrane, Proflow II-G is a highly efficient hydrophobic barrier, for the production of dry gas, and will effectively purify aggressive liquids and organic solvents.

Proflow™ II-G cartridges are manufactured under cleanroom conditions and integrity tested before shipment to assure consistent performance and quality.

The Proflow™ II-G Cartridges are available in 0.05, 0.1, 0.2, 0.45, and 1.0µm pore sizes.

Benefits

- Reliable air and liquid flow rates for effective performance
- Broad chemical compatibility enables use in many applications
- Broad range of micron ratings for user convenience
- Superior hydrophobicity for long life in vent/air applications
- Integrity tested to ensure quality
- Biosafe in accordance with USP Class VI 121°C Plastics Test

Applications

- Photoresists
- Compressed gas
- Venting
- Electronic grade solvents
- Hot deionized water (less than 80°C)

Proflow™ II General Grade

Specifications

Materials of Construction

Membrane:
PTFE
Support Layers:
Polypropylene
Structure:
Polypropylene

Effective Filtration Area

5.6ft² (0.52m²) per 10" (250mm) cartridge

Maximum Differential Pressure/ Temperature

Forward:
80psid (5.5bar) @ 75ºF (24ºC)
40psid (2.8bar) @ 180ºF (82ºC)
Reverse:
50psid (3.4bar) @ 75ºF (24ºC)

Cleanliness (particle shedding)

Wet-packed <1 particles/ml >0.2µm after 6 gal at 1gpm
Data is from open bag and installed, no additional installation flushing.

TOC/Resistivity Rinse-up (wet-packed)

TOC rinse-up to background plus 5 ppb of feed after 70 gal @ 1 gpm.
Resistivity rinse-up to background minus 0.2 megohm-cm of feed after 30 gal @ 1 gpm.

Performance Attributes

Water in Flow rates, Typical *

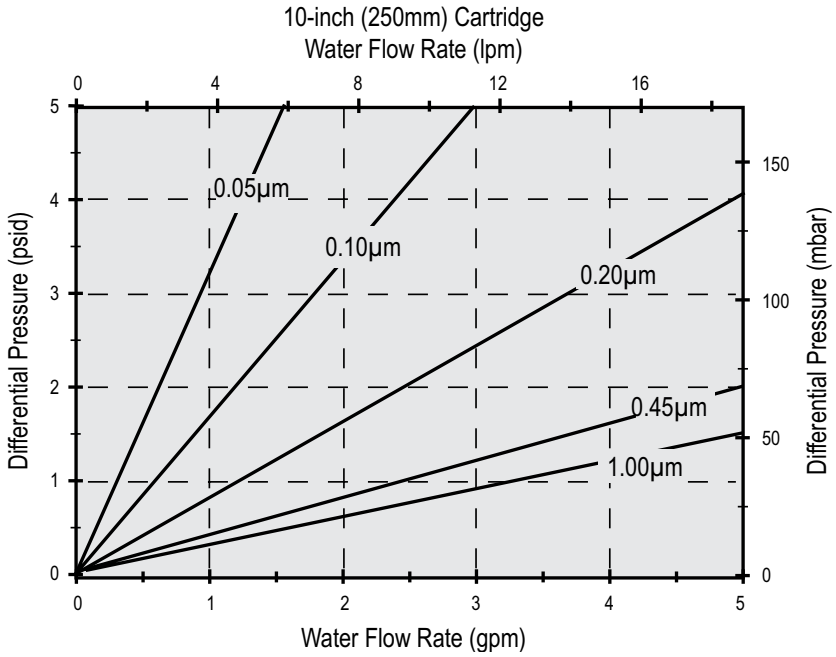
0.05µm 0.6gpm/psid (3.29lpm/100mbar)
0.10µm 1.2gpm/psid (6.59lpm/100mbar)
0.20µm 2.5gpm/psid (13.73lpm/100mbar)
0.45µm 5.1gpm/psid (28.00lpm/100mbar)
1.00µm 6.2gpm/psid (34.04lpm/100mbar)

* Per 10-inch (250 mm) cartrdige equivalent and for fluids with viscosity of 1cP.

Integrity test values

Filter Rating	Bubble Point*	
µm	psig	bar
0.05	≥40	2.8
0.10	≥21	1.5
0.20	≥13	0.9

* In 60/40 IPA/water @ 25°C



Ordering Information

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Application

CODE	TREATMENT
4	Standard
6	Flushed with 18 Megohm DI Water

Insert Style

CODE	DESCRIPTION
1	No Insert
5	(Standard) Encapsulated
6	Stainless Steel Encapsulated Polysulfone
A	1/2" Shortened on 222 Fitting

End Fitting

CODE	DESCRIPTION
0	DOE (Cuno®)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin
G	120/Internal/ Recessed End cap
H	213/Recessed Endcap (Ametek)
R	222/Recessed End cap

Nominal Length

CODE	LENGTH
10	10" (250mm)
20	20" (500mm)
30	30" (750mm)
40	40" 1000mm)

Filter Rating

CODE	MICRON
925	0.05µm
001	0.10µm
002	0.20µm
004	0.45µm
010	1.00µm

O-Rings

CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicone
4	Viton®
5*	FEP-Encapsulated Viton®
6*	FEP-Encapsulated Silicone
N	None

Gaskets

CODE	THICKNESS
1	0.200" (5mm)
2	0.125" (3mm)
4	(1) 0.200" (5mm) & (1) 0.125" (3mm)
N	No Gasket

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.
Proflow is a registered trademark of Parker Hannifin Corp.

ENGINEERING **YOUR** SUCCESS.

Clariflow® General Grade Cartridges

Hydrophilic Polyethersulfone (PES) membrane for aqueous liquid filtration applications

Clariflow® General grade cartridges are designed for general-purpose use in the filtration of high-purity liquids and aqueous chemicals.

The mirrored-anisotropic Polyethersulfone (PES) membrane is inherently hydrophilic and has a pore morphology that delivers exceptionally high flow rates.

Because there are no added surfactants or wetting agents, and the support layers and structure are all-polypropylene, the filter exhibits low extractables, broad chemical compatibility and good resistance to hydrolysis.

The Clariflow General Grade Cartridge is available in 0.04, 0.1, 0.2, 0.45, 0.65 and 0.8µm pore sizes.

Benefits

- High flow rate reduces processing time
- Broad chemical compatibility allows use in most applications
- Low differential pressure reduces system wear and tear
- Biosafe in accordance with USP Class VI 121°C Plastics Test

Applications

- Chemical filtration
- Liquid clarification
- Recirculating fluids
- General use water filtration
- Deionized water systems

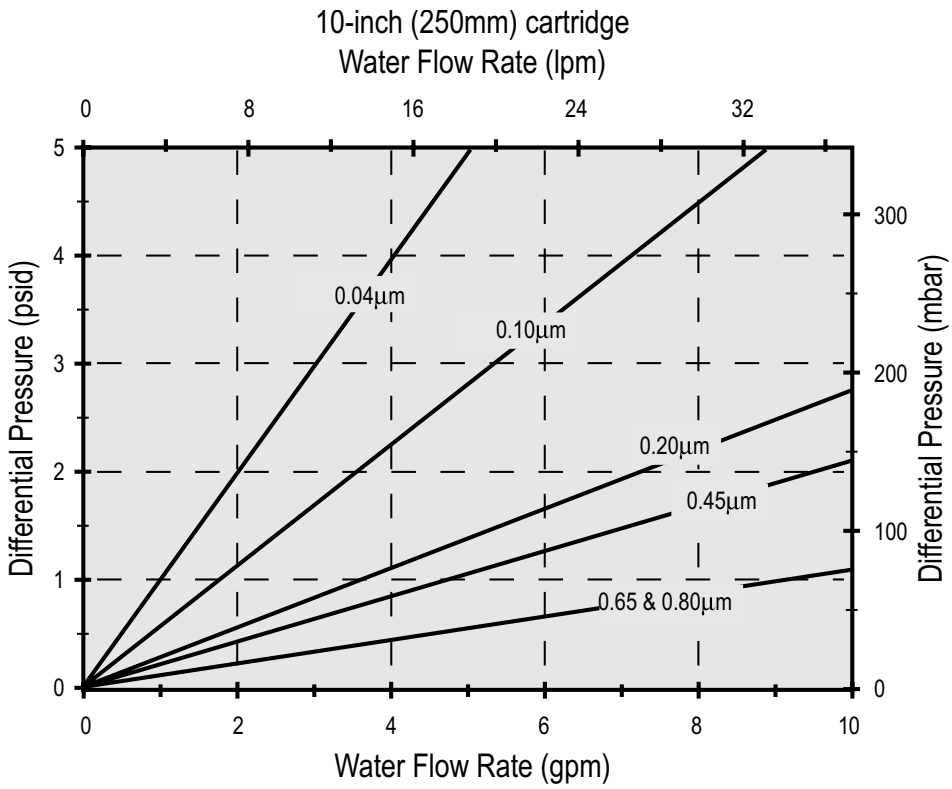
Clariflow® General Grade

Specifications

Materials of Construction
Membrane: Polyethersulfone
Support layers: Polypropylene
Structural: Polypropylene

Effective Filtration Area
6.8 ft² (0.63 m²) per 10" (250mm) cartridge

Maximum Differential Pressure/ Temperature
Forward:
80 psid (5.5 bar) at 75°F (24°C)
40 psid (2.8 bar) at 180°F (82°C)
Reverse:
50 psid (3.4 bar) at 75°F (24°C)



Performance Attributes

Water in Flow rates, Typical *

0.04µm	1.0gpm/psid (5.29lpm/100mbar)
0.10µm	1.8gpm/psid (9.88lpm/100mbar)
0.20µm	3.7gpm/psid (20.31lpm/100mbar)
0.45µm	4.8gpm/psid (26.35lpm/100mbar)
0.65µm	9.2gpm/psid (50.51lpm/100mbar)
0.80µm	9.5gpm/psid (52.16lpm/100mbar)

* Per 10-inch (250 mm) cartrdige equivalent and for fluids with viscosity of 1cP.

Ordering Information

25 – 10 □ □ □ — □ □ □ — □ — □ — □ — G

End Fitting

CODE	DESCRIPTION
0	DOE (CUNO)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin

Nominal Length

CODE	LENGTH
10	10" (250mm)
20	20" (500mm)
30	30" (750mm)
40	40" 1000mm)

Filter Rating

CODE	MICRON
924	0.04µm
001	0.10µm
002	0.20µm
004	0.45µm
006	0.65µm
008	0.80µm

Gasket/O-Rings

CODE	MATERIAL
0	Buna N
1	EPDM (Standard)
2	Silicone
4	Viton®
5*	FEP-Encapsulated Viton®
6*	FEP-Encapsulated Silicone
N	None

*O-Rings only

Thickness (Gasket Only)

CODE	MATERIAL
1	0.200" (5mm)
2	0.125" (3mm)
4	(1) 0.200" (5mm) & (1) 0.125" (3mm)
N	No Gasket

ENGINEERING **YOUR** SUCCESS.

Clariflow® WS Cartridges

Hydrophilic Polyethersulfone (PES) membrane for cost-effective purification

Clariflow WS cartridges are cost-effective alternatives to Clariflow Electronics and General grade cartridges for the filtration of a variety of aqueous liquids.

The Clariflow WS cartridge is built around a unique polyethersulfone (PES) membrane that is inherently hydrophilic, and contains no added surfactants or wetting agents. As such, it is known for clean filtrates, and also offers competitive flow rates, extended service life, and excellent resistance to hydrolysis.

Clariflow WS cartridges are fabricated under cleanroom conditions.

The Clariflow WS Cartridge is available in 0.04, 0.1, 0.2, 0.45, and 0.65µm cartridges.

Benefits

- Reliable and cost-effective to reduce expenses
- Broad chemical compatibility allows use in aqueous applications
- Resistance to hydrolysis allows extended use in UPW systems
- High flow rate / low differential pressure reduces system wear and tear
- Biosafe in accordance with USP Class VI 121°C Plastics Test

Applications

- Deionized water filtration
- Chemical filtration
- Liquid clarification
- Recirculating liquids
- Wine and beer clarification
- Juices
- Bottled water

Clariflow® WS

Specifications

Materials of Construction

Membrane:
Polyethersulfone
Support Layers:
Polypropylene
Structure:
Polypropylene

Effective Filtration Area

5.4ft² (0.50m²) per 10" (250mm) cartridge

Maximum Differential Pressure

Forward:
80psid (5.5bar) @ 75ºF (24ºC)
40psid (2.8bar) @ 180ºF (82ºC)
Reverse:
50psid (3.4bar) @ 75ºF (24ºC)

Bulk Packaging

Bulk packaged in case quantities to reduce material disposal

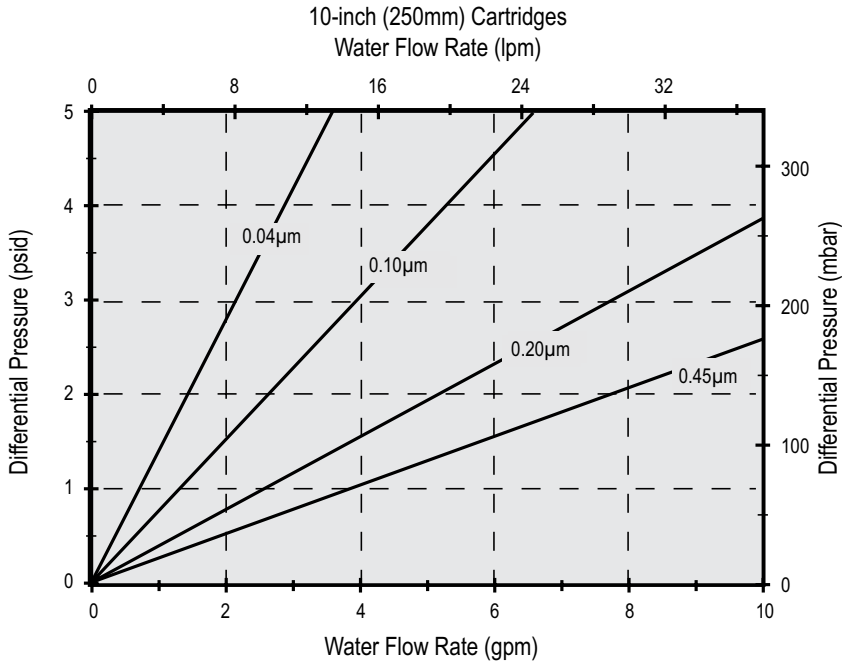
10"	28 per carton
20"	12 per carton
30"	12 per carton
40"	9 per carton

Performance Attributes

Water in Flow rates, Typical *

0.04µm 0.7gpm/psid (3.84lpm/100mbar)
0.10µm 1.3gpm/psid (7.14lpm/100mbar)
0.20µm 2.6gpm/psid (14.27lpm/100mbar)
0.45µm 3.8gpm/psid (20.86lpm/100mbar)

* Per 10-inch (250 mm) cartrdige equivalent and for fluids with viscosity of 1cP.



Ordering Information

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Insert Style

CODE	DESCRIPTION
1	No Insert (Standard)
5	Encapsulated 315 SS Insert
6	Encapsulated Polysulfone Insert
A	1/2" Shortened on 222 Fitting

End Fittings

CODE	DESCRIPTION
0	DOE (Cuno®)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin
G	120/Internal/ Recessed End cap
H	213/Recessed Endcap (Ametek)
R	222/Recessed End cap

Nominal Length

CODE	LENGTH
10	10" (250mm)
20	20" (500mm)
30	30" (750mm)
40	40" 1000mm)

Filter Rating

CODE	MICRON
924	0.04µm
001	0.10µm
002	0.20µm
004	0.45µm
006	0.65µm

Gasket/O-Rings

CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicone
4	Viton®
5*	Encapsulated Viton®
6*	Encapsulated Silicone
N	None

*O-rings only

Thickness (Gaskets Only)

CODE	THICKNESS
1	0.200" (5mm)
2	0.125" (3mm)
4	(1) 0.200" (5mm) & (1) 0.125" (3mm)
N	No Gasket

ENGINEERING **YOUR** SUCCESS.

Fulflo® Abso-Mate™ Cartridges

Absolute, Cost-Effective Filtration From All Polyproylene Cartridges

Parker's Fulflo® Abso-Mate® Cartridges provide the ultimate in economical filtration for even the most critical process fluids. The proprietary melt blown media are rigidly controlled for reliable results time after time. Abso-Mate cartridges are produced without adhesives that can ptoentially contaminate fluids.

Abso-Mate Pleated Cartridges are available in 0.2μm, 0.45μm, 1μm, 2μm, 5μm, 10μm, 20μm, 40μm, and 70μm absolute rated pore sizes.

Benefits

- Absolute ratings for consistent and reliable performance (99.98%; ß = 5000)
- Backwashable media, reduces replacement maintenance and cartridge disposal costs
- Abso-Mate catridges are non-fiber releasing and contain minimal extractables
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- One-piece construction eliminates bypass concerns on mulitilength cartridges
- All-polypropylene construction offers wide chemical compatibility with most chemicals, acids, bases and solvents
- Fused construction and continuous lengths eliminate the need for adhesives and allow acurate bubble point integrity testing

Applications

- Membrane Prefilter
- Chemicals
- Catalyst Recovery
- Precious Metal Recovery
- Waste Water

ENGINEERING **YOUR** SUCCESS.

Fulflo® Abso-Mate™ Cartridges

Specifications

Materials of Construction:

Type of Construction
integrally sealed, all-polypropylene pleated media supported by all-polypropylene construction
Filter Media
melt blown polypropylene microfiber
Media Support Layers
Non-woven or mesh polypropylene
Media Support Core
Heavy wall high strength polypropylene
Media Support Cage and Thermally Welded End Caps
Molded polypropylene
Seal Materials
Buna-N, EPR, Silicone, Viton, PFA Encapsulated Viton*

Dimensions:

Cartridge Outside Diameter:
2-11/16 in
Cartridge Inside Diameter:
DOE: 1-1/16 in SOE: 1-5/32 in

Maximum Recommended Operating Conditions:

Temperature: 200°F (93°C)
Change Out ΔP: 35 psi (2.4 bar)
ΔP @ Ambient 70°F (21°C): 90 psi (6 bar)
ΔP @ 200°F (93°C): 20 psi (1.4 bar)
Flow Rate: 10 gpm (38 lpm) per 10 in length

Biological Safety/Product Purity:

Meets USP XXi VI requirements for plastics
All components FDA listed per CFR, Title 21
Non-fiber releasing per FDA Part 210.3B (5) and (6)
Non-photo sensitive

Filtration Ratings:

99.98% efficiency at 0.2, 0.45, 1, 2, 5, 10, 20, 40, & 70 µm pore sizes

Abso-Mate™ Flow Factors (psid/gpm @ 1 cks)

Rating Flow (µm)	Factor
0.20	3.100
0.45	1.000
1	0.750
2	0.300
5	0.072
10	0.031
20	0.021
40	0.012
70	0.008

Abso-Mate™ Length Factors

Length (in)	Factor
9	1.0
10	1.0
19	2.0
20	2.0
29	3.0
30	3.0
39	4.0
40	4.0

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean DP} \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{ß\text{-}1}{ß}\right) 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 3.5 gpm per 10 in (13.2 lpm per 254 mm) cartridge.

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is DP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or DP from 10 in (single length) to required cartridge length.

Liquid Particle Retention Ratings (µm) @ Removal Efficiency of:

Cartridge		β=5000 Absolute	β=1000 99.9%	β=100 99%	β=50 98%	β=20 95%
A	PAB002	0.2	<0.2	<0.2	<0.2	<0.1
B	PAB004	0.45	0.4	0.2	<0.2	<0.1
C	PAB010	1	0.8	0.4	<0.2	<0.1
D	PAB020	2	1.9	0.8	<0.2	<0.1
E	PAB050	5	3.8	1.4	0.4	0.15
F	PAB100	10	7	2	0.5	0.25
G	PAB200	20	13	4	1.8	0.35
H	PAB400	40	22	7	3.2	0.8
J	PAB700	70	52	22	15	5.5

Ordering Information

PAB □ — □ □ □ — □ □

Rating (µm)
002 = 0.2
004 = 0.45
010 = 1
020 = 2
050 = 5
100 = 10
200 = 20
400 = 40
700 = 70

Nominal Length

Code	in	mm
9	9-5/8	244
10	9-13/16	249
19	19-5/8	498
20	19-15/16	506
29	29-1/4	743
30	30-1/16	764
39	39	991
40	40	1016

Support Construction
F= Glass-filled Polypropylene (core only)
G = 304 Stainless Steel (core only)
N = Natural Polypropylene (All support components)
X = Coreless Cartridge

Seal Material
A = Polypropylene Foam (DOE gasket only)
E = EPR
N = Buna-N
S = Silicone
T = PFA Encapsulated Viton* (222, 226, O-ring only)
V = Viton*
X = No Seal Material

End Cap Configuration
AR = 020 O-Ring/Recessed cap
DO = Double open end (DOE)
DX = Double open end/extended core
LL = 120 O-Ring/Recessed cap
LR = 120 O-Ring/Recessed cap
OB = Std. Open End/Polypro Spring Closed End
PR = 213 O-Ring/Recessed cap
SC = 226 O-Ring/Flat
SF = 226 O-Ring/Fin
SSC = SS Inserted 226 O-ring/Closed
SSF = SS Inserted 226 Oring/Fin
TC = 222 O-Ring/Flat
TF = 222 O-Ring/Fin
STC = SS Inserted 222 O-ring/Closed
STF = SS Inserted 222 O-ring/Fin
TX = 222 O-ring/Flex Fin
XB = Ext. Core open End/ Polypro Spring Closed End

Special Options
B = Bubble-Point Test
R = DI Water Rinse (5 minutes)
Z6 = Individual Poly Bag only

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® Poly-Mate™ Plus Cartridges

High Surface Area and High Efficiency All-Polypropylene Pleated Cartridges

Fulflo® Poly-Mate™ Plus Cartridges, made of pleated polypropylene microfiber, provide high efficiency and high purity filtration. The high efficiency of the Poly-Mate™ Plus line makes it an ideal membrane prefilter or cost-effective alternative to membrane cartridges in a wide range of applications.

Poly-Mate Plus™ Pleated Cartridges are available in the following pore sizes (nominal rating at 90%): 0.25µm, 0.45µm, 0.8µm, 2.0µm, 3.0µm, 5.0µm, 30.0µm, 50.0µm, 100.0µm

Benefits

- All-polypropylene media and construction meet a broad range of performance requirements
- One-piece integral construction is 100% bonded for maximum cartridge integrity
- High surface area design provides superior flow rates and extended service life
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Fixed pore construction provides ultimate particle retention
- Major end seal options are available to fit most standard vessels
- Poly-Mate™ Plus cartridges are non-fiber releasing and ensure consistent quality filtration performance

Applications

- DI Water
- Process Water
- Magnetic Media
- Plating Chemicals
- Membrane Prefilter

Fulflo® Poly-Mate™ Plus Cartridges

Specifications

Materials of Construction:

Filter Media:
Melt blown polypropylene microfiber
Media Support Layers:
Non-woven or mesh polypropylene
Core:
Heavy wall high strength polypropylene
Media Support Cage and Thermally Welded End Caps: Molded polypropylene
Seal Materials:
Buna-N, EPR, Silicone, Viton*, PFA Encapsulated Viton*

Dimensions:

Cartridge Outside Diameter: 2-11/16 in
Cartridge Inside Diameter:
DOE: 1-1/16 in, SOE: 1-5/32 in

Maximum Recommended Operating Conditions:

Temperature: 200°F (93°C)
Temperature @ 35 psid: 160°F (71°C)
Change Out ΔP: 35 psi (2.4 bar)
ΔP @ Ambient 70°F (21°C): 70 psi (4.8 bar)
ΔP @ 200°F (93°C): 20 psi (1.4 bar)
Flow Rate: 10 gpm (38 lpm) per 10 in length

Biological Safety/Product Purity:

Meets USP Class VI requirements for plastics
All components FDA listed per CFR, Title 21
Non-fiber releasing per FDA Part 210.3B (5) and (6)
Non-photo sensitive

Filtration Ratings:

90% at 0.25, 0.45, 0.8, 2, 3, 5, 10, 30, 50 and 100 micrometer pore sizes

Poly-Mate™ Plus Length Factors

Length *(in)*	Factor
4	0.4
10	1.0
20	2.0
30	3.0
40	4.0

Poly-Mate Plus Flow Factors (psid/gpm @ 1 cks)

Rating Flow *(µm)*	Factor
0.25	0.0900
0.45	0.0530
0.8	0.0290
2	0.0068
3	0.0060
5	0.0048
10	0.0040
30	0.0030
50	0.0025
100	0.0020

Performing Attributes

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean DP x Length Factor}}{\text{Viscosity x Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate x Viscosity x Flow Factor}}{\text{Length Factor}}$$

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Liquid Particle Retention Ratings (µm)@ Removal Efficiency of:

Parker	90%	95%	98%	99.90%	99.98%
PMP002	0.30	0.45	0.90	1.6	2.2
PMP004	0.45	0.75	1.4	2.9	3.1
PMP008	0.8	1.5	3.2	8.0	9.2
PMP020	1.7	3.1	8.6	9.5	15.0
PMP030	3.0	4.6	6.1	11.0	12.0
PMP050	5.0	8.4	10.6	12.0	14.0
PMP100	10.0	12.0	15.0	17.0	21.0
PMP300	15.0	24.0	35.0	44.0	52.0
PMP500	50.0	56.0	62.0	68.0	71.0
PMP1000	100.0	109.0	117.0	126.0	138.0

Ordering Information

PMP — [ ] — [ ] [ ] [ ] — [ ] — [ ]

Cartridge Code	Pore Size	Nominal Length (in)	Support Construction	Seal Material	End Cap Configuration	Special Options
PMP = Poly-Mate Plus	002 = 0.25 004 = 0.45 008 = 0.8 020 = 2 030 = 3 050 = 5 100 = 10 300 = 30 500 = 50 1000 = 100	4 = 4 10 = 9-13/16 20 = 19-15/16 30 = 30-1/16 40 = 40	A = Natural Polypropylene (All support components)	E = EPR N = Buna-N S = Silicone T = PFA/Viton* (SOE) V = Viton*	AR = 020 O-Ring/Recessed cap DO = Double open end (DOE) DX = Double open end/extended core TC = 222 O-Ring/Flat TF = 222 O-Ring/Fin SC = 226 O-Ring/Flat SF = 226 O-Ring/Fin	No Symbol = No Option B = Bubble-Point Test R = DI Water Rinse (5 minutes) Z6 = Individual Poly Bag only

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® Poly-Mate™ Filter Cartridges

Quality, Economical Filtration for Critical Process Applications

Parker's Poly-Mate™ Cartridges incorporate a unique combination of polypropylene melt blown and spun-bonded media to provide high surface area, finish-free and non-fiber releasing filtration. All-polypropylene construction maximizes chemical resistance to acids, bases, salts, and most organic solvents.

Poly-Mate™ Pleated Cartridges are available in 0.5µm, 1µm, 5µm, 10µm, 30µm, and 60µm pore sizes (99% removal; ß = 100).

Benefits

- High efficiency rated for critical process applications (99% efficiency)
- High pleated surface area for extended service life, low pressure drop and high flow capacity
- Poly-Mate™ Xtra Duty™ (PXD) cartridge features glass-filled polypropylene core for high temperature and high pressure use with rigid outer cage supporting pleated media in backwash applications
- Optional stainless steel O-ring adapter inserts provide added strength for *in situ* sterilization
- Poly-Mate™ Xtra Duty cartridges are available with backwashable construction, reducing replacement maintenance and cartridge disposal costs
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- One piece, continuous to 40 in length, integrally sealed pleated filter media

Applications

- Disposal Wells
- Photographic
- Wastewater
- High-Technology Coatings
- R.O. Membrane Prefiltration
- Plating Chemicals
- Fine Chemicals
- Process Water
- Deionized Water

ENGINEERING **YOUR** SUCCESS.

Fulflo® Poly-Mate™ Filter Cartridges

Specifications

Materials of Construction:

- Filter media and support layers: polypropylene
- Surface treatment: none (fusion-sealed), chemically inert and neutral
- Media protection: PM – polypropylene netting; PXD – polypropylene cage
- Pleat pack side seal: fused polypropylene
- End caps: polypropylene
- Seals: Buna-N, EPR, silicone, Viton,* PFA encapsulated Viton* O-rings, polyethylene foam gaskets

Recommended Operating Conditions:

Poly-mate Cartridges

Change Out ΔP: 35 psid (2.4 bar)
Maximum Temperature: 200°F (93°C)
Maximum Temperature @ 35 psid (2.4 bar): 125°F (52°C)
Maximum ΔP @ 70°F (21°C): 60 psid (4.1 bar)
Maximum DP @ 200°F (93°C): 10 psid (0.7 bar)

Poly-mate Xtra-Duty Cartridges

Change Out ΔP: 35 psid (2.4 bar)
Maximum Temperature: 200°F (93°C)
Maximum Temperature @ 35 psid (2.4 bar): 200°F (93°C)
Maximum ΔP @ 70°F (21°C): 90 psid (6.1 bar)
Maximum DP @ 200°F (93°C): 35 psid (2.4 bar)

Performance Attributes

Dimensions:

- Cartridge Outside Diameter: 2-1/2 in (63.5 mm)
- Cartridge Inside Diameter: DOE – 1-1/16 in (27 mm) SOE – 1 in (25.4 mm)

Filtration Ratings:

- 99% at 0.5µm, 1µm, 5µm, 10µm, 30µm, and 60µm pore sizes

Effective Filtration Area:

- Up to 6.0 ft^2/10 in (0.6m^2/254 mm)

Recommended Maximum Flow Rate:

- Maximum 10 gpm per 10 in length

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

Percent Removal Efficiency $= \left(\frac{ß-1}{ß}\right) 100$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 3.5 gpm per 10 in (13.2 lpm per 254 mm) cartridge.

Notes:

1. **Clean ΔP** is PSI differential at start.
2. **Viscosity** is centistokes. Use Conversion Tables for other units.
3. **Flow Factor** is ΔP/GPM at 1 cks for 10 in (or single).
4. **Length Factors** convert flow or ΔP from 10 in (single length) to required cartridge length.

Poly-Mate/PXD Flow Factor (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
0.5	0.0900
1.0	0.0530
5.0	0.0290
10.0	0.0068
30.0	0.0048
60.0	0.0030

Poly-Mate/PXD Length Factor

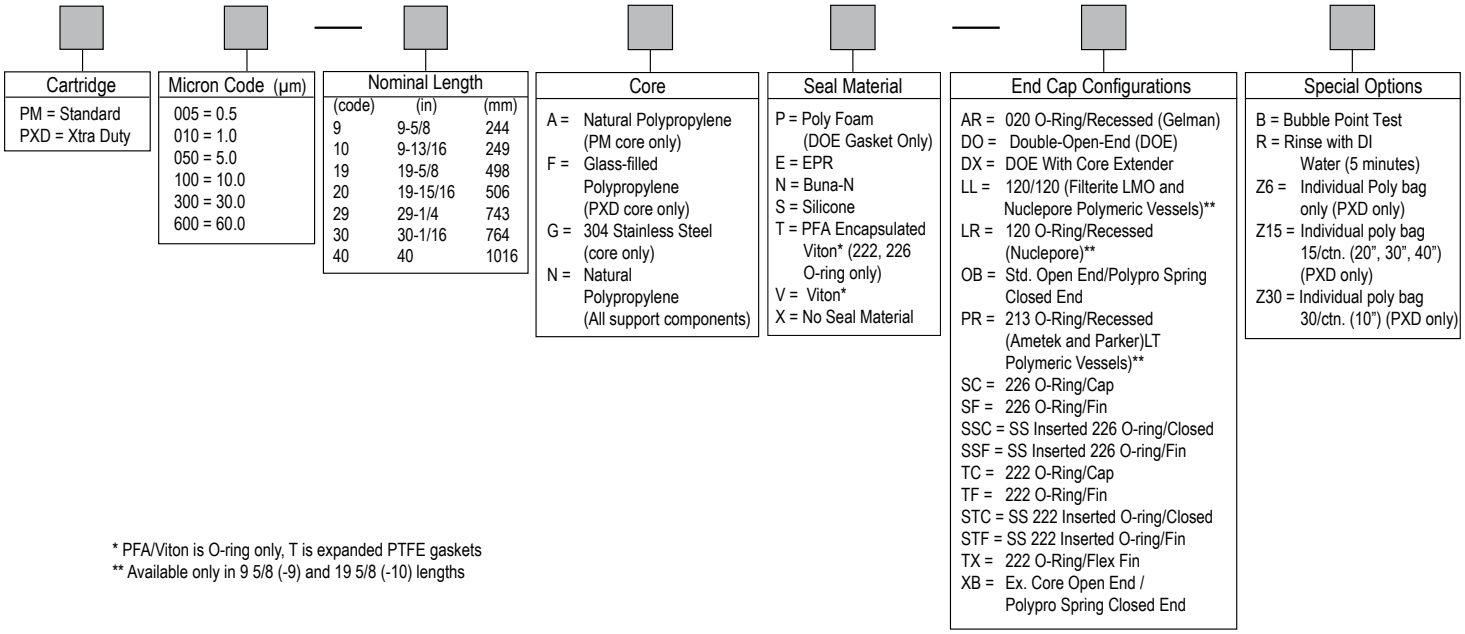
Length in	Length Factor
9	1
10	1
19	2
20	2
24	3
30	3
39	4
40	4

Liquid Particle Retention Ratings *(µm)* @ Removal Efficiencies of:

Cartridge	β = 5000 Absolute	β = 1000 99.9%	β = 100 99%	β = 50 98%	β = 20 95%	β = 10 90%
PM / PXD005	3	3	0.5	.25	<0.1	<0.1
PM / PXD010	5	4.5	1.0	0.5	0.2	<0.1
PM / PXD050	15	10	4	2.0	0.7	0.25
PM / PXD100	30	28	10	6	3	1.2
PM / PXD300	45	43	30	18	8	4.5
PM / PXD600	95	90	50	40	20	12

Fulflo® Poly-Mate™ Filter Cartridges

Ordering Information



Cartridge
PM = Standard
PXD = Xtra Duty

Micron Code (µm)
005 = 0.5
010 = 1.0
050 = 5.0
100 = 10.0
300 = 30.0
600 = 60.0

Nominal Length

(code)	(in)	(mm)
9	9-5/8	244
10	9-13/16	249
19	19-5/8	498
20	19-15/16	506
29	29-1/4	743
30	30-1/16	764
40	40	1016

Core
A = Natural Polypropylene (PM core only)
F = Glass-filled Polypropylene (PXD core only)
G = 304 Stainless Steel (core only)
N = Natural Polypropylene (All support components)

Seal Material
P = Poly Foam (DOE Gasket Only)
E = EPR
N = Buna-N
S = Silicone
T = PFA Encapsulated Viton* (222, 226 O-ring only)
V = Viton*
X = No Seal Material

End Cap Configurations
AR = 020 O-Ring/Recessed (Gelman)
DO = Double-Open-End (DOE)
DX = DOE With Core Extender
LL = 120/120 (Filterite LMO and Nuclepore Polymeric Vessels)**
LR = 120 O-Ring/Recessed (Nuclepore)**
OB = Std. Open End/Polypro Spring Closed End
PR = 213 O-Ring/Recessed (Ametek and Parker)LT Polymeric Vessels)**
SC = 226 O-Ring/Cap
SF = 226 O-Ring/Fin
SSC = SS Inserted 226 O-ring/Closed
SSF = SS Inserted 226 O-ring/Fin
TC = 222 O-Ring/Cap
TF = 222 O-Ring/Fin
STC = SS 222 Inserted O-ring/Closed
STF = SS 222 Inserted O-ring/Fin
TX = 222 O-Ring/Flex Fin
XB = Ex. Core Open End / Polypro Spring Closed End

Special Options
B = Bubble Point Test
R = Rinse with DI Water (5 minutes)
Z6 = Individual Poly bag only (PXD only)
Z15 = Individual poly bag 15/ctn. (20", 30", 40") (PXD only)
Z30 = Individual poly bag 30/ctn. (10") (PXD only)

* PFA/Viton is O-ring only, T is expanded PTFE gaskets
** Available only in 9 5/8 (-9) and 19 5/8 (-10) lengths

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

SPEC-C2040-Rev. A 01/08

ENGINEERING **YOUR** SUCCESS.

Claripor™ Filter Cartridges

Polypropylene Pleated Depth Media for Critical Process Applications

The best of pleated and depth style technologies combine in Parker's Claripor™ pleated depth filter cartridges. The unique layered construction provides absolute retention with high flow rates and excellent gel removal. These features, in addition to Claripor™'s high contaminant holding capacity and exceptional clarifying ability make it an ideal choice for a wide array of critical process applications.

Claripor™ cartridges are available with polypropylene media in absolute (99.98%) micron ratings from 0.5 to 90 microns.

Benefits

- Pleated construction yields high flow rates compared to traditional depth filters
- Rigid cage design permits superior strength
- Graded density layering for superior removal of amorphous particles
- Available with all industry standard end configurations
- Absolute retention ratings for critical filtration
- All materials listed as acceptable for potable and edible contact according to CFR Title 21
- Manufactured with strict quality control
- Parker Process Filtration Division is an ISO9001:2000 registered company

Applications

- Critical coatings
- Inkjet inks
- Specialty chemicals

Parker

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Claripor™ Filter Cartridges

Specifications

Materials of Construction
Media: Polypropylene
Support/Drainage: Polypropylene
Hardware: Polypropylene
O-Rings (SOE): EPR, Buna-N, Viton*, Silicone, PFA Encapsulated Viton*
Gaskets (DOE): EPR, Buna-N, Viton*, Silicone

Recommended Operating Conditions
Flow Rate: 5 gpm (18.9 lpm) per 10" equivalent
Change-out Pressure: 35 psid (2.4 bar)

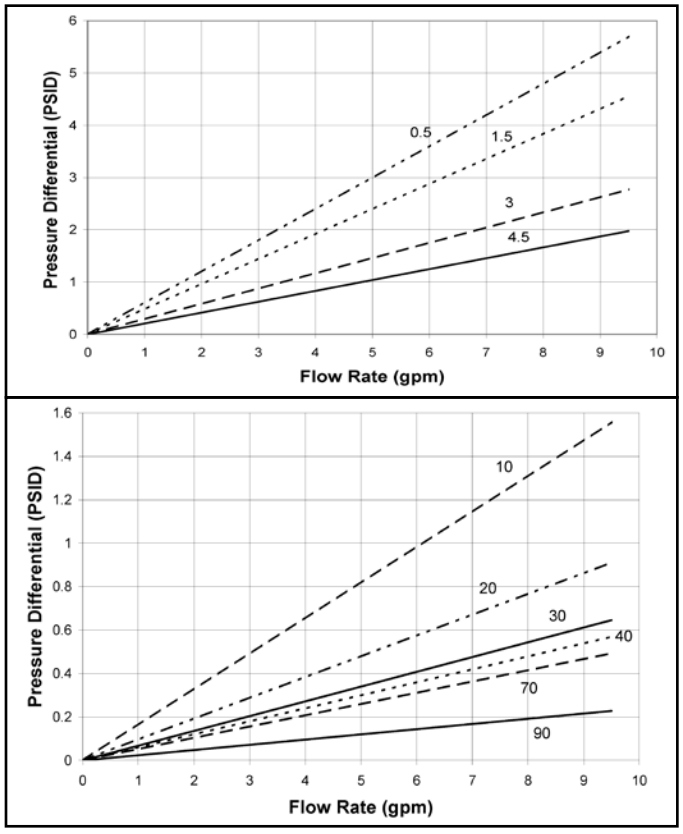
Retention Ratings (99.98%):
0.5, 1.5, 3, 4.5, 10, 20, 30, 40, 70, 90µm

Maximum Operating Conditions
Maximum Temperature:
176°F (80°C) @ 30 psid (2.1 bar)
Maximum Differential Pressure:
70 psi (4.8 bar) @ 77°F (25°C)
30 psi (2.1 bar) @ 176°F (80°C)

Dimensions (nominal)
Outside Diameter: 2.7" (6.86 cm)
Inside Diameter: 1" (2.54 cm)

Performance Attributes

Flow rate vs. DP for a 1 cks liquid @ 73°F (23°C)**



Ordering Information

CP — — —

Cartridge Code	Pore Size	Length	Core Material	Seal Material	End Cap Configuration
CP = Claripor	005 = 0.5 015 = 1.5 030 = 3.0 045 = 4.5 100 = 10 200 = 20 300 = 30 400 = 40 700 = 70 900 = 90	4 = 4" (10.16 cm) 5 = 5" (12.7 cm) 10 = 10" (25.4 cm) 20 = 20" (50.8 cm) 30 = 30" (76.2 cm) 40 = 40" (101.6 cm)	F = Glass-Filled Polypropylene A = Natural Polypropylene	E = EPR N = Buna-N V = Viton* S = Silicone T = PFA/Viton (SOE)	DO = Double open end DX = Double open end/extended core TC = 222/Flat TF = 222 O-Ring/Fin TX = 222 O-Ring/Flex Fin SC = 226/Flat SF = 226/Fin STC = 222 O-Ring/Flat cap with SS insert STF = 222 O-Ring/Fin cap with SS insert SSC = 226 O-Ring/Flat cap with SS insert SSF = 226 O-Ring/Fin cap with SS insert

Specifications are subject to change without notification.
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ENGINEERING **YOUR** SUCCESS.

Glass-Mate™ Cartridges

Absolute and economical filtration with pleated microfiberglass cartridges

Parker's Glass-Mate™ cartridges offer an economical choice for absolute-rated efficiency, high flow rate capability and long service life. A wide variety of construction components, end fittings and seal options make this product line ideal for prefiltration and point-of-use filtration for many industrial applications.

Glass-Mate cartridges are available in 0.45, 1, 2, 3, 5, 10, 20 and 40µm absolute-rated pore sizes.

Benefits

- Absolute-rated media provides reliable removal efficincy
- Thermal bonding eliminates particle bypass
- Laminated media/support layer maximizes flow capacity and media utilization and minimizes media migration
- Variety of construction/seal options for increased compatibility
- End fitting options provide competitive housing retrofit capability
- All FDA listed components biosafe per USP Class V1-121°C Plastic Tests allows filtration of edible and potable liquids
- High surface area yields high flow rate, low differential pressure
- Non-fiber-releasing media with minimal extractables provides high purity filtrate

Applications

- Chemicals
- Coatings
- Water
- R.O. prefiltration

Glass-Mate™ Cartridges

SPECIFICATIONS

Materials of Construction:
Filter Medium: Borosilicate microfiber-glass with acrylic binder
Support/Drainage Layers: Spunbonded polyester; laminated on the down-stream side

Recommended Operating Conditions:
Maximum Temperatures
Glass Filled Polypropylene
200°F @ 35ΔP (93°C/2.4 bar)
Polyester
140°F @ 35ΔP (60°C/2.4 bar)
Stainless Steel
275°F @ 35ΔP (135°C/2.4 bar)
Changeout Differential Pressure
35 psi (2.4 bar)
Maximum Flow Rate
10 gpm per 10 in length
(38 lpm/254 mm)
Design Flow Rate
2.5 gpm per 10 in length
(9.5 lpm/254 mm)

Effective Filtration Area:
5 ft^2/10 in (0.46 m^2/254 mm) minimum

Maximum Differential Pressure:
Glass-Filled Polypropylene
90 psi @ 75°F (6.2 bar/24°C)
Polyester
70 psi @ 75°F (4.8 bar/24°C)

Biological Safety/Product Purity:
Meets USP XXIV Class VI safety requirements for plastics
All components FDA listed per CFR, Title 21
Non-fiber releasing per FDA

Sterilization/Sanitization:
Hot water ("F" construction):
180°F (82°C) for 30 minutes at maximum 15 psid (1 bar).
In-Line Steam/Autoclave
("F" construction with stainless steel sleeve) 60 minutes at 255°F (140°C) at 2 psid (0.14 bar) maximum pressure.

GlassMate Flow Factor (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
0.45	*.108*
1	*.102*
2	*.095*
3	*.090*
5	*.072*
10	*.060*
20	*.042*
40	*.018*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

■ **Liquid Particle Retention Ratings (µm)@ Removal Efficiency of:**

Cartridge	ß = 5000 Absolute	ß = 1000 99.9%	ß = 100 99%	ß = 20 95%	ß = 10 90%
PMG004	0.45	0.3	<0.1	<0.1	<0.1
PMG010	1.0	0.6	0.2	<0.1	<0.1
PMG020	2.0	1.2	0.4	0.2	0.1
PMG030	3.0	1.8	0.6	0.3	0.2
PMG050	5	3	1.3	0.5	0.4
PMG100	10	7	3.5	1.6	1.2
PMG200	20	16	8	4	2.5
PMG400	40	32	20	11	8

Glass-Mate™ Cartridges

Ordering Information

PMG [ ] — [ ] [ ] [ ] — [ ] [ ]

Particle Removal Rating	
CODE	(µm)
002	0.2
004	0.45
010	1.0
020	2.0
050	5.0
100	10
200	20
400	40

Nominal Length	
CODE	LENGTH (mm)
9	9 5/8" (244)
10	9 13/16" (249)
19	19 5/8" (498)
20	19 15/16" (506)
29	29 1/4" (743)
30	30 1/16" (764)
39	39" (991)
40	40" (1016)

Support Construction	
CODE	DESCRIPTION
F	Glass Filled Polypropylene (core only)
P	Polyester

Seal Material	
CODE	DESCRIPTION
P	Polyethylene Foam (DOE Gasket Only)
E	EPR
N	Buna-N
S	Silicone
V	Viton*
X	No Seal Material

End Cap Configuration	
CODE	DESCRIPTION
AR	020 O-ring/Recessed Cap
DO	Double Open End (DOE)
DX	DOE With Core Extender
LL**	120 O-ring/Recessed Cap
LR**	120 O-ring/Recessed Cap
OB	Std. open end / Polypro Spring Closed End
PR**	213 O-ring/Recessed Cap
SC	226 O-ring/Flat Cap
SF	226 O-ring/Fin
TC	222 O-ring/Flat Cap
TF	222 O-ring/Fin
TX	222 O-ring/Flex Fin
XB	Ext. core open end/ Polypro Spring Closed End
SSC	S.S. Inserted 226 O-ring/Closed
SSF	S.S. Inserted 226 O-ring/Fin
STC	S.S. Inserted 222 O-ring/Closed
STF	S.S. Inserted 226 O-ring/Fin

** Available only in 9 5/8" (-9) and 19 5/8" (-19 lengths)

Special Options	
CODE	DESCRIPTION
Z6	Individual Poly Bag only
Z15	Individual Poly Bag 15/ctn. (20", 30", 40") (PXD only)
Z30	Individual Poly bag 30/ctn. (10")

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SPEC-C2041-Rev. A 01/08

ENGINEERING **YOUR** SUCCESS.

C-2020

Fulflo® PCC Filter Cartridge

Unique Cartridge Construction Improves Particle Retention, Service Life and Flow Rates

Parker Fulflo® Pleated Cellulosic Cartridges meet a broad range of critical filtration applications. Each cartridge in the Fulflo Pleated Cellulosic series is manufactured with premium grade, phenolic impregnated, cellulosic filter media. Phenolic resin locks the cellulosic fibers into a rigid, porous matrix. This structure provides superior particle removal and particle retention performance under the most severe conditions.

Fulflo Pleated Cartridges are available in 2µm, 3µm, 10µm, 30µm and 60µm pore sizes (99%+ removal: ß = 100).

Benefits

- Premium pleated cellulosic media allow high flow capacity at low pressure drop
- Available in a variety of cartridge lengths and end cap configurations to fit most industrial vessels
- Phenolic resin impregnated to provide strength, integrity and high contaminant capacity
- High flow rates permit the use of smaller vessels and fewer cartridges
- Lower ΔP reduces power requirements and pump wear and tear
- Longer cartridge life reduces frequency of filter change out resulting in less disposal costs, reduced inventory and less process interruptions

Applications

- Chemical
- Oil Field
- Photographic
- Film & Paper
- Metal Treatment
- Process Water
- Synthetic Fibers
- Process Gas
- Petroleum
- Coatings, Paint
- Ink & Resins
- Recording Media

ENGINEERING **YOUR** SUCCESS.

Fulflo® PCC Filter Cartridge

Specifications

Materials of Construction

Phenolic impregnated cellulosic media (PCC)
Polypropylene support
Stainless steel support (optional)
PCG is glass-modified cellulose

Recommended Operating Conditions

Maximum 10 gpm per 10 in length (38 lpm/254 mm)
Stainless Steel Support:
Maximum Temperature: 250°F (121°C)
Maximum DP: 50 psi (3.5 kg/cm²)
Optimum Change Out DP: 35 psi (2.5 km/cm²)

Polypropylene Support

Maximum Temperature @ 10 psid (0.7 km/cm²): 200°F (93°C)
Maximum Temperature @ 35 psid (2.5 km/cm²): 125°F (52°C)
Maximum ΔP @ 75°F (24°C): 60 psi (4.2 kg/cm²)
Change Out DP: 35 psi (2.5 km/cm²)

Filtration Ratings

99%+ at 2µm, 3µm, 10µm, 30µm, and 60µm pore sizes

Performance Attributes

PCC / PCG Flow Factor (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
2	0.026
3	0.017
10	0.002
30	0.001
60	0.0005

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{ß-1}{ß}\right) 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 3.5 gpm per 10 in (13.2 lpm per 254 mm) cartridge.

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Liquid Particle Retention Ratings

Cartridge	ß=5000 absolute	ß=1000 99.7%	ß=100 99%	ß=50 98%	ß@2 micron
PCG020	10	8.6	1.8	0.9	110
PCC3	12	10	3.2	1.7	64
PCC10	22	18	6	3.2	35
PCC30	100	85	11	4.5	25
PCC60	150	90	30	15.0	10

Ordering Information

Cartridge Code (µm)	Nominal Length (code)	(in)	(mm)	Support Construction	Seal Material	End Cap Configurations
PCG020 – 2	9	9-5/8	244	A = Polypropylene (DOE/SOE)	P = Poly Foam (DOE Gasket Only)	AR = 020 O-Ring/Recessed (Gelman)
PCC3 – 3	10	9-13/16	249	G = 304 Stainless Steel (DOE)	E = EPR	DO = Double-Open-End (DOE)
PCC10 – 10	19	19-5/8	498		N = Buna-N	DX = DOE With Core Extender
PCC30 – 30	20	19-15/16	506		S = Silicone	LL = 120/120 (Filterite LMO and Nuclepore Polymeric Vessels)**
PCC60 – 60	29	29-1/4	743		V = Viton*	LR = 120 O-Ring/Recessed (Nuclepore)**
	30	30-1/16	764			OB = Std. Open End/Polypro Spring Closed End
	40	40	1016			PR = 213 O-Ring/Recessed (Ametek and Parker)LT Polymeric Vessels)**
						SC = 226 O-Ring/Cap
						SF = 226 O-Ring/Fin
						TC = 222 O-Ring/Cap
						TF = 222 O-Ring/Fin
						TX = 222 O-Ring/Flex Fin
						XB = Ex. Core Open End / Polypro Spring Closed End

**Available only in 9-5/8 (-9) and 19-5/8 (-19) lengths.

Specifications are subject to change without notification.
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ENGINEERING **YOUR** SUCCESS.

C-2060

Fulflo® 336 Pleated Cartridge

Pleated cartridge construction improves filtration efficiency, dirt holding capacity and flow rates

Parker's Fulflo® Pleated 336 size filter cartridges provide highly efficient removal of solid contaminants from a variety of petrochemical, refinery and oilfield applications. Cartridges are manufactured from premium grade phenolic impregnated cellulose and polypropylene blown media. These structures provide superior removal efficiency. The cartridges are available in 3µ, 10µ, 12µ, 22µ, and 100µ pore sizes. (99.98% removal; ß = 5000)

Benefits

- Retrofits housings that use 3" OD x 36" long SOE cartridges with spring
- High surface area
- Low pressure drop
- Materials compatible with most applications
- High filtration efficiency
- High dirt-holding capacity
- Rugged construction

Applications

- Petrochemical
- Refineries
- Oil Fields
- Produced Water
- Amines
- Glycols

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Fulflo® 336 Pleated Cartridges

Specifications

Materials of Construction:

Cellulose: Phenolic impregnated cellulose media
Polypropylene support core and end caps (Steel core optional)
Buna-N gasket 316 st. stl. spring
Polypropylene: Filter media and support layers – Poplypropylene
Polypropylene support core and end caps (steel core optional)
Buna-N gasket 316 st. stl. spring

Recommended Operating Conditions:

Maximum 33 GPM per cartridge

Polypropylene Support:

Maximum Temperature @ 10 PSID (0.7 km/cm²): 200°F (93°C)
Maximum Temperature @ 35 PSID (2.5 km/cm²): 125°F (52°C)
Maximum Temperature @ 60 PSID (4.2 km/cm²): 75°F (24°C)
Optimum Change Out at ambient temp.: 35 PSID (25 km/cm)

Steel Support:

Maximum Temperature: 250°F (121°C)
Maximum ΔP: 50 PSID (3.5 km/cm²)
Optimum change Out ΔP: 35 PSID (2.5 km/cm²)

Dimensions:

Length: 34-3/4 in (883 mm) w/o spring:
37-1/8 in (943 mm) with spring
OD: 3 in (76 mm)
ID: 1-9/16 in (40 mm)

Length	Length Factor
336	*4*

Cartridge	Flow Factor
PPC005	0.090
PCG020	0.026
PCC2	0.017
PCC10	0.002
PCC30	0.001
PCC60	0.005

Cartridge	ß=5000 Absolute	ß=1000 99.7%	ß=100 99%	ß=50 98%	ß@2 micron
PPC005	3	2.8	0.5	<0.5	400
PCG020	10	8.6	1.8	0.9	110
PCC2	12	10	3.2	1.7	64
PCC10	22	18	6	3.2	35
PCC30	100	85	11	4.5	25
PCC60	150	90	30	15.0	10

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

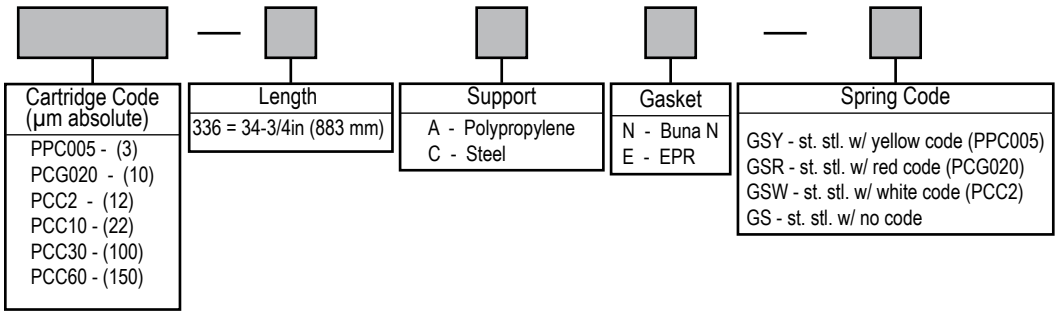
1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{ß-1}{ß}\right) 100$$

Ordering Information



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Fulflo® 1401 Pleated Cartridge

High Efficiency, Flow Rate, Dirt Holding Capacity & High Pressure Pleated Cartridges

Parker's Fulflo® 1401 cartridges are designed to replace similar competitive cartridges in high pressure water injection & disposal, gas streams and fluid processing. The cartridges are available in cellulosic and polypropylene media. Fulflo® 1401's are available in absolute ratings of 2.5, 6, 10, 12, 22, and 100 microns (ß = 5000, 99.98%)

Benefits

- Retrofits into compatible housing that use 1401 style cartridges
- Maximize surface area to prevent particle bridging.
- High filtration efficiency
- Low pressure drops
- High flow rates
- Internal o-ring seal for positive sealing
- Rugged construction

Applications

- Water Injection
- Solvents
- Acids
- Chemicals
- Hydrocarbons
- Water

Fulflo® 1401 Pleated Cartridges

Specifications

Filtration Rtings:
99.98% at 2.5µm, 6µm, 10µm, 12µm, 22µm, and 100µm pore sizes

Recommended Operating Conditions:
Pressure rating - 150 PSID
Temperature Rating - 275°F
Recommended flow rate - 75 GPM
Change out ΔP - 35 PSID

Dimensions:
3 3/4" OD x 2 1/8" ID x 38-3/4"long

Materials of Construction:
Filter media;
PCC/PCG - phenolic impregnated cellulose
PPC - Polypropylene
Core & End Cap: Steel
Outer Mesh Sleeve: Polypropylene
Internal O-Ring: Buna-N

■ **Liquid Particle Retention Ratings (µm)@ Removal Efficiency of:**

Cartridge	ß=5000 99.98%	ß=1000 99.9%	ß=100 99%	ß=20 95%	ß=10 90%
PPC005 -1401	2.5	2.8	0.5	<0.5	<0.5
PPC010 -1401	6	4.8	1.2	<0.5	<0.5
PPC020 -1401	10	8	5	<1.0	<0.5
PCG020 1401	10	8.6	1.8	0.9	<0.5
PCC3 - 1401	12	10	3	1.7	<0.5
PCC10 - 1401	22	18	6	3.2	<1.0
PCC30 - 1401	100	85	11	3.0	<1.0

1401 Cross Reference

Pall	Process Filtration
MCC 1401JO25 - H13	PPC005 - 1401
MCC 1401J060 - H13	PPC010 - 1401
MCC 1401 J100 - H13	PPC020 - 1401
MCC 1401 E100 - H13	PCG020 - 1401
MCC 1401E280 - H13	PCC10 - 1401
MCC 1401E500 - H13	PCC30 - 1401
	PCC3 - 1401

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

Percent Removal Efficiency = $\left(\frac{ß-1}{ß}\right) \times 100$

Performance determined per ASTM F-795-88. single-pass test using AC test dust in water.

Ordering Information

Cartridge Code (µm)	Nominal Particle (µm) Removal Rating	Size Code (Length)
PPC = Pleated Polypropylene Cartridge PCC = Pleated Cellulosic Cartridge	005 = 0.5 010 = 1.0 020 = 2.0 3 = 3.0 10 = 10.0 30 = 30.0	1401 = 38.75

Specifications are subject to change without notification.
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ENGINEERING **YOUR** SUCCESS.

Fulflo® Flo-Pac® Filter Cartridges

Superior Industrial Filtration From a Pleated Cartridge Design

Parker Fulflo® Flo-Pac® Cartridges are the perfect choice for many industrial filtration requirements. Flo-Pac pleated cartridges contain premium grade, phenolic impregnated cellulosic filter media. Parker's line of pleated cartridges is designed for critical filtration applications, providing long service life, high flow rate and low pressure drop.

Flo-Pac Pleated Cartridges are available in 0.5µm, 1µm, 5µm, 10µm, 20µm, 30µm, and 60µm pore sizes (95% removal; ß = 20).

Benefits

- Pleated cellulosic media allow high flow capacity at low pressure drop
- Available in a variety of sizes and configurations to fit most industrial vessels
- Phenolic resin impregnated to provide strength, integrity and high contaminant capacity
- High strength spiral core withstands pressure surges to 100 psid
- Suitable for operating temperatures to 250°F (121°C)
- Outer sleeve protects the media from damage
- ETP (Electro-tin-plated) steel metal components for both aqueous and oil-based applications
- Buna-N gaskets are standard, other materials are available

Applications

- Water Soluble
- Coolants
- Quench Oils
- Fuels
- Lubricating Oils
- Hydraulic Oils
- EDM Dielectrics
- Rolling Mill Oils
- Processing Liquids
- Gasoline

ENGINEERING **YOUR** SUCCESS.

Fulflo® Flo-Pac® Filter Cartridges

Specifications

Materials of Construction:

Filter Media: Phenolic impregnated cellulose
Cores ETP steel
End Caps: ETP steel
Sleeve: 300 series - polypropylene
600 & 700 series - ETP steel
Adhesive: Thermosetting PVC
End Seals: 300 & 700 Series–Buna-N gaskets, 600 Series–Buna-N gaskets/grommets, 500 Series–fiber gaskets,

Packaging:

300 Series:
310–24/carton (12 lb ≈ shipping wt)
320–12/carton (12 lb ≈ shipping wt)
330–12/carton (18 lb ≈ shipping wt)
340–12/carton (24 lb ≈ shipping wt)

500 Series:
518–6/carton (14 lb ≈ shipping wt)

600 Series:
614–6/carton (20 lb ≈ shipping wt)
629–4/carton (26 lb ≈ shipping wt)
644–4/carton (40 lb ≈ shipping wt)

700 Series:
718–6/carton (20 lb ≈ shipping wt)
736–4/carton (26 lb ≈ shipping wt)
754–4/carton (39 lb ≈ shipping wt)

Maximum Recommended Operating Conditions:

Temperature: 250°F (121°C)
Differential Pressure: 70 psi (4.8 bar)
Change Out ΔP: 35 psid (2.4 bar)
Flow Rate per Single Length Cartridge:

300 Series	7 gpm
500 Series	50 gpm
600 Series (3-1/2 in ID)	50 gpm
600 Series (1-9/16 in ID)	35 gpm
700 Series	50 gpm

Dimensions:

300 Series
2-1/2 in OD x 1 in ID x 9-5/8 in, 19-3/4 in, 29-1/4 in, 29-5/8 in, 40 in
500 Series
4-1/2 in OD x 1-3/4 in ID x 18 in
600 Series
6-1/4 in OD x 3-1/12, 1-9/16 in or 1-1/4 in ID x 14-3/8, 29 or 43-3/8 in long
700 Series
6-1/4 in OD x 2-5/8 in or 2-1/8 in ID x 18, 36, or 54 in long

Filtration Ratings:

95% at 0.5µm, 1µm, 5µm, 10µm, 20µm, 30µm, and 60µm pore sizes

Liquid Particle Retention Ratings (µm) at Removal Efficiencies of:

Cartridge	β=5000 Absolute	β=1000 99.9%	β=100 99%	β=20 95%	β=10 90%
FP-0.5	12	10	3	0.5	<0.5
FP-1	15	12	6	1	<1.0
FP-5	30	20	9	5	3.5
FP-10	50	35	18	10	7
FP-20	90	70	40	20	12
FP-30	100	85	50	30	21
FP-60	200	150	90	60	45

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

FP Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
0.5	0.0260
1	0.0170
5	0.0020
10	0.0018
20	0.0010
30	0.0009
60	0.0005

FP Length Factors

Style	Length Factor
FP310	1.0
FP320	2.0
FP330	3.0
FP340	4.0
FP518	3.3
FP614	3.6
FP629	7.2
FP644	10.8
FP718	6.5
FP736	13.0
FP754	19.5

Ordering Information

FP — ☐ — ☐ — ☐ — ☐ — ☐ — ☐

Cartridge Code
FP = Flo-Pac

Outside Diameter
3 = 2-1/2 in (300 Series)
5 = 4-1/2 in (500 Series)
6 = 6-1/4 in (600 Series)
7 = 6-1/4 in (700 Series)

Length

(code)	(in)	(series)
10	9-5/8	300
14	14-3/8	600
18	18	500,700
20	19-3/4	300
29	29	600
29	29-1/4	300
30	29-5/8	300
36	36	700
40	40	300
44	43-3/8	600
54	54	700

Micron Rating (µm)
0.5
1
5
10
20
30
60

Inside Diameter
None = 1 in (300 Series)
None = 1-3/4 in (500 Series)
None = 3-1/2 in (600 Series)
None = 2-5/8 in (700 Series)
1 = 1-9/16 in (600 Series)
8 = 2-1/8 in (700 Series)

Seal Material
None = Buna-N Gaskets
A = Vellumoid (300, 600, 700 Series)
B = Fiber (500 Series Only)
C = Cork (700 Series Only)
G = Buna-N Grommets (600 Series 1-9/16 in ID)
V = Viton*

Body
None = Metal (500, 600 700 series)
1 = Polypro (300 series)
M = Metal (300 series)
N = No Body

Specifications are subject to change without notification.
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SPEC-C4015-Rev. A 01/08

ENGINEERING **YOUR** SUCCESS.

Fulflo® Flo-Pac® + Filter Cartridges

Special Construction for Organic Solvent Filtration

Parker Fulflo® Flo-Pac®+ Cartridges are the filters of choice for many industrial filtration requirements. Flo-Pac+ Pleated Cartridges are manufactured with premium grade, phenolic impregnated cellulosic filter media for long service life, high flow rate and low pressure drop. Unique epoxy resin bonding of end caps, pleat side seal and gaskets provides excellent resistance to most organic solvents.

Flo-Pac+ Pleated Cartridges are available in 0.5µm, 1µm, 5µm, 10µm, 20µm, 30µm, and 60µm pore sizes (95% removal; ß = 20).

Benefits

- Epoxy bonding of end caps, pleat side seal and gaskets provides resistance to most organic solvents
- Premium pleated cellulosic media allow high flow capacity at low pressure drop
- Available in a variety of sizes and configurations to fit most industrial vessels
- Impregnated phenolic resin provides strength, integrity and high contaminant capacity
- Suitable for operating temperatures to 250°F (121°C)
- Perforated outer metal sleeve protects the media against damage.
- ETP (Electro-tin-plated) steel metal components for aqueous and oil-based applications
- Gaskets provide positive seals and are available in Viton,* cork and standard Vellumoid
- Recommended range is pH 4-10. Please call for specific recommendation
- Spiral core withstands pressure surges to 100 psid

Applications

- Aromatic Hydrocarbons (toluene, xylene, benzene)
- Ketones (acetone, isophorone, methylethyl ketone)
- Ethers (THF, dioxane)
- Amines (DEA, TEA, DMEA)
- Glycols (ethyl acetate, cellosolve acetate)
- Aliphatic Hydrocarbons (hexane, pentane, naphtha)
- Halogenated Hydrocarbons (methylene chloride, perchloroethylene)
- Esters (EG, PEG, DEG)

Fulflo® Flo-Pac® + Filter Cartridges

Specifications

Materials of Construction:

Filter Media: phenolic impregnated cellulose
Cores: ETP steel
End Caps: ETP steel
Sleeve: ETP steel
Adhesive: epoxy
End Seals: Vellumoid (standard), Viton,* cork

Maximum Recommended Operating Conditions:

Temperature: 250°F (121°C)
Change Out ΔP: 35 psi (2.4 bar)
Flow Rate per Single Length Cartridge:

300 Series	7 gpm
600 Series (3-1/2 in ID)	50 gpm
600 Series (1-9/16 in ID)	35 gpm
700 Series	50 gpm

Differential Pressure: 70 psi (4.8 bar)

Dimensions:

300 Series -
2-1/2 in OD x 1 in ID x 9-5/8 in, 19-3/4 in, 29-1/4 in, 29-5/8 in and 40 in long
600 Series -
6-1/4 in OD x 3-1/2 in ID or 1-9/16 in ID x 14-3/8 in long or 29 in long
700 Series -
6-1/4 in OD x 2-5/8 in or 2-1/8 in ID x 18 in or 36 in long

Packaging:

300 Series:
310–24/carton (12 lb ≈ shipping wt)
320–12/carton (12 lb ≈ shipping wt)
330–12/carton (18 lb ≈ shipping wt)
340–12/carton (24 lb ≈ shipping wt)
600 Series:
614–6/carton (20 lb ≈ shipping wt)
629–6/carton (40 lb ≈ shipping wt)
700 Series:
718–6/carton (20 lb ≈ shipping wt)
736–4/carton (26 lb ≈ shipping wt)

Filtration Ratings:

95% at 0.5µm, 1µm, 5µm,10µm, 20µm, 30µm, and 60µm pore sizes

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

FP Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
0.5	0.0260
1	0.0170
5	0.0020
10	0.0018
20	0.0010
30	0.0009
60	0.0005

FP Length Factors

Style	Length Factor
310	1.0
320	2.0
330	3.0
340	4.0
614	3.6
629	7.2
718	6.5
736	13.0

Liquid Particle Retention Ratings (µm) at Removal Efficiencies of:

Cartridge	ß=5000 Absolute	ß=1000 99.9%	ß=100 99%	ß=20 95%
FPE-0.5	12	10	3	0.5
FPE-1	15	12	6	1
FPE-5	30	20	9	5
FPE-10	50	35	18	10
FPE-20	90	70	40	20
FPE-30	100	85	50	30
FPE-60	200	150	90	60

Ordering Information

FPE — ☐ — ☐ — ☐ — ☐

Cartridge Code	Outside Diameter	Length			Micron Rating (µm)	Inside Diameter	Seals
		(code)	(in)	(series)			
FPE = Flo-Pac+	3 = 2-1/2 in (300 Series)	10	9-5/8	300	0.5	None = 1 in (300 Series)	A = Vellumoid
	6 = 6-1/4 in (600 Series)	14	14-3/8	600	1	None = 3-1/2 in (600 Series)	C = Cork
	7 = 6-1/4 in (700 Series)	18	18	700	5	None = 2-5/8 in (700 Series)	V = Viton*
		20	19-3/4	300	10	8 = 2-1/8 in (700 Series)	N = Buna-N
		29	29	600	20	1 = 1-9/16 in (600 Series)	
		29	29-1/4	300	30		
		30	29-5/8	300	60		
		36	36	700			
		40	40	300			

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Large Diameter Pleated Filter Cartridge Series

Fulflo® MegaFlow Filter Cartridges

High Flow Capacity Pleated Filter Cartridges

Parker's Fulflo® MegaFlow™ cartridges provide a cost effective alternative to wound and other 2 1/2 inch OD style filter cartridges in high flow applications such as reverse osmosis pre-filtration and similar applications where nominal efficiency is sufficient. Each MegaFlow™ cartridge can handle flow rates up to 175 gpm (662 lpm), significantly reducing the number of cartridges required and the housing size. Each 6 inch (152 mm) diameter MegaFlow™ cartridge has flow capacity equal to 8 standard 2 1/2 inch OD X 40 inch long filter cartridges. Positive O-ring seals and a built in handle make cartridge installation reliable, fast and easy.

MegaFlow™ cartridges are available in either pleated polypropylene or cellulose media with nominal ratings of 0.5, 1, 5 and 10 micron.

Benefits

- High flow capacity means fewer cartridges and reduces labor costs to change
- High flow capacity allows smaller housings and less capital expenditure
- Built in handle makes change fast, easy and safe
- O-ring seal assures filtration integrity
- Choice of polypropylene or cellulose media allows use in both aqueous and non-aqueous fluid applications
- Thermally bonded polypropylene and phenolic resin bonded cellulose filter media prevent particle bleed through and unloading that commonly occurs with wound cartridges
- High surface area pleated design provides lower pressure drop and longer service life than other cartridges
- All materials of construction in polypropylene cartridges comply with FDA regulations per CFR Title 21
- Horizontal and vertical housings are available for flow rates up to 3,325 gpm (12,586 LPM)

Applications

- Potable Water
- Waste Water
- Reverse Osmosis Pre-Filtration
- Lubricating Oil
- Coolants

ENGINEERING **YOUR** SUCCESS.

Fulflo® Mega-Flow Filter Cartridges

Specifications

Materials of Construction:
Media: Polypropylene microfiber (P Code); Cellulose with phenolic binder (C Code)
Support Layers: Polypropylene (P Code); None (C Code)
End caps: Glass Filled Polypropylene
O-Rings: Buna-N, EPR, Silicone, Fluoroelastomer

Recommended Operating Conditions:
Change Out Differential Pressure: 35 psid (2.4 bar)
Maximum Flow Rate: 175 gpm (662 lpm)
Maximum Temperature: 200°F (93°C)
Maximum Differential Pressure: 150 psid (10 bar)

Nominal Filtration Ratings:
(90%) 0.5, 1, 5 and 10 µm

Dimensions:
6 in (152 mm) OD, 3.5 in (89 mm) ID, 40 in (1016 mm) long

Surface Area:
55-60 ft² (5.1-5.6m²)

Cartridge Code	Nominal Rating	Media	Removal Rating (Microns) at Efficiency 90%	95%	98%	99%	99.9%	Flow Factor* [PSID/GPM (Mbar/lpm)]
MFNP005	0.5	Polypropylene	0.5	1	2	5	10	0.003 (0.06)
MFNP010	1	Polypropylene	1	3	7	10	30	0.0007 (0.014)
MFNP050	5	Polypropylene	5	10	20	30	50	0.0004 (0.008)
MFNP100	10	Polypropylene	10	30	50	60	90	0.0003 (0.006)
MFNC005	0.5	Cellulose	0.5	1	2	3	10	0.002 (0.03)
MFNC010	1	Cellulose	1	2	3	5	20	0.0002 (0.003)
MFNC050	5	Cellulose	5	8	10	15	85	0.0001 (0.002)
MFNC100	10	Cellulose	10	12	15	30	100	0.00005 (0.0009)

*In water at 1 cks

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

MCN | [ ] | [ ] | **40** | [ ]

Cartridge Code	Media	Micron Rating	Length	O-Ring Material
Mega Flow Nominal Series	P = Polypropylene C = Cellulose	005 = 0.5 µm 010 = 1 µm 050 = 5 µm 100 = 10 µm	40 = 40"	N = Buna - N E = EPR S = Silicone V = Viton*

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® Mega-Flow Plus Filter Cartridges

Absolute Rated, High Flow Capacity, Pleated Filter Cartridges

Parker's Fulflo® MegaFlow+™ cartridges are ideally suited for high flow applications where absolute particle removal is required. Each MegaFlow+™ cartridge can handle flow rates up to 175 gpm (662 lpm), significantly reducing the number of cartridges required as well as the housing size. Each 6 inch (152 mm) diameter MegaFlow+™ cartridge has flow capacity equal to 8 standard 2 ½ inch OD X 40 inch long cartridges. Positive O-ring seals and a built in handle make cartridge installation reliable, fast and easy.

MegaFlow+™ cartridges are available with pleated polypropylene media for use in a wide variety of fluids. Absolute ratings range from 1 µm to 150 µm.

Benefits

- High flow capacity means fewer cartridges and less time to change
- High flow capacity allows smaller housings
- Built in handle makes change fast, easy and safe
- O-ring seal assures filtration integrity
- Choice of polypropylene media expands fluid compatibility
- High surface area pleated design provides low pressure drop and long service life
- Polypropylene cartridges comply with FDA regulations per CFR Title 21
- Horizontal and vertical housings available for flow rates up to 3325 gpm (12,586 lpm)
- Reduces process interruptions

Applications

- Potable Water
- Vegetable Oil
- Wastewater
- Lubricants
- Food and Beverage
- Coolants

Parker

ENGINEERING **YOUR** SUCCESS.

Fulflo® Mega-Flow Plus Filter Cartridges

Specifications

Absolute Filtration Ratings:

(β_x = 5000; 99.98%):
Polypropylene: 1, 2, 5, 10, 20, 40, 70 µm
Cellulose: 10, 15, 25, 100, 150 µm

Materials of Construction:

Media: Polypropylene microfiber (P Code) Cellulose with phenolic binder (C Code)
Support Layers: Polypropylene (P Code);
End caps: Glass Filled Polypropylene
O-Rings: Buna-N, EPR, Silicone, Fluoro-elastomer

Recommended Operating Conditions:

Change Out Differential Pressure: 35 psid (2.4 bar)
Maximum Flow Rate: 175 gpm (662 lpm)
Maximum Temperature: 200°F (93°C)
Maximum Differential Pressure: 150 psid (10 bar)

Dimensions:

6 in (152 mm) OD 3.5 in (89 mm) ID, 40 in (1016 mm) long

Surface Area

55 - 60 ft.^{2} (5.1 - 5.6 m^2)

Cartridge Code	Absolute Rating	Media	Removal Rating (Microns) at Efficiency 99.98%	99.9%	99%	98%	Flow Factor* [PSID/GPM (Mbar/lpm)]
MFAP010	1	Polypropylene	1	0.8	0.45	<0.2	0.078 (1.4)
MFAP020	2	Polypropylene	2	1.5	0.8	0.2	0.031 (0.6)
MFAP050	5	Polypropylene	5	4	1	0.45	0.008 (0.01)
MFAP100	10	Polypropylene	10	7	2	0.5	0.003 (0.06)
MFAP200	20	Polypropylene	20	13	4	2	0.002 (0.04)
MFAP400	40	Polypropylene	40	22	7	3	0.001 (0.02)
MFAP700	70	Polypropylene	70	52	22	15	0.0008 (0.015)
MFAC100	10	Cellulose	10	8	2	1	0.003 (0.05)
MFAC150	15	Cellulose	15	10	3	2	0.002 (0.03)
MFAC250	25	Cellulose	25	20	5	3	0.0002 (0.003)
MFAC1000	100	Cellulose	100	85	10	5	0.0001 (0.002)
MFAC1500	150	Cellulose	150	100	30	15	0.00005 (0.0009)

*In water at 1 cks

Flow Rate and Pressure Drop Formulas:

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times}{\text{Viscosity x Flow Factor}}$$

$$\text{Clean } \Delta P = \text{Flow Rate x Viscosity x Flow Factor}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).

Ordering Information

MFA □ □ □ □ □

Cartridge Code	Media	Micron Rating	Length	O-Ring
Mega Flow+TM Absolute Series	P = Polypropylene C = Cellulose	010 = 1 µm (P) 020 = 2 µm (P) 050 = 5 µm (P) 100 = 10 µm (P, C) 150 = 15 µm (C) 200 = 20 µm (P) 250 = 25 µm (C) 400 = 40 µm (P) 700 = 70 µm (P) 1000 = 100 µm (C) 1500 = 150 µm (C)	40 = 40"	N = Buna - N E = EPR S = Silicone V = Viton*

Specifications are subject to change without notification.
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SPEC-C2051-Rev. A 01/08

ENGINEERING **YOUR** SUCCESS.

Fulflo® MaxGuard Filter Cartridges

MaxGuard™ High Capacity Cartridge

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" nominal outside diameter and can handle flows up to 90 gpm, significantly reducing the number of cartridges required for large flow applications.

MaxGuard™ cartridges are available in polypropylene, cellulose and Nomex™ media. All cartridges feature an industry standard 226 positive O-ring seal and easy-to-grasp integrated handle.

Benefits

- High flow capacity means fewer cartridges and reduced labor costs associated with change-out
- High flow capacity allows for smaller housings and less capital expenditure
- Heavy wall core ensures superior strength
- Integrated handle makes change-outs fast, easy and safe
- Positive 226 O-ring seal assures filtration integrity
- Absolute retention ratings for critical filtration
- Polypropylene cartridges listed as acceptable for potable and edible contact according to CFR Title 21
- Manufactured with strict quality control
- Parker Process Filtration Division is an ISO9001:2000 registered company

Applications

- Deep well injection
- Amines
- Commercial water
- Food and Beverage

ENGINEERING **YOUR** SUCCESS.

Fulflo® MaxGuard Filter Cartridges

Specifications

Liquid Particle Retention Ratings *(µm)* @ Removal Efficiency of:

Cartridge	ß=5000 Absolute	ß=1000 99.90%	ß=100 99%	ß=50 98%	ß=20 95%
MXGC020	2	1.6	0.4	0.2	<0.1
MXGC100	10	6	1.4	0.5	<0.2
MXGC150	15	11	3	1.5	<0.6
MXGC700	70	53	8.5	3	<0.5
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
MXGN1000	100	91	83	64	35

MaxGuard Cartridge Flow Factors (psid/gpm @ 1 cks)

Cartridge	Flow Factor
MXGC020	0.0017
MXGC100	0.0011
MXGC150	0.00012
MXGC700	0.000066
MXGP005	0.0900
MXGP020	0.00331

Cartridge	Flow Factor
MXGP050	0.00619
MXGP100	0.00218
MXGP200	0.00051
MXGP400	0.00023
MXGN1000	0.00002

* *Flow factors based on water at ambient temperature*

Ordering Information

MXGP

Cartridge Code	Pore Size (µm)	Length (in)	Seal Material	End Cap Configuration
MXGP = Polypropylene	005 = 0.5 020 = 2.0 050 = 5.0 100 = 10 200 = 20 400 = 40	30 = 30 40 = 40	E = EPR N = Buna-N V = Viton* S = Silicone T = PFA / Viton	SM = 226 O-Ring/ Flat Cap w/handle

MXGC

Cartridge Code	Pore Size (µm)	Length (in)	Seal Material	End Cap Configuration
MXGC = Cellulose	020 = 2.0 100 = 10 150 = 15 700 = 70	30 = 30 40 = 40	E = EPR N = Buna-N V = Viton* S = Silicone T = PFA / Viton	SM = 226 O-Ring/ Flat Cap w/handle

MXGN **1000** **SM**

Cartridge Code	Pore Size (µm)	Length (in)	Seal Material	End Cap Configuration
MXGN = Nomex	1000 = 100	30 = 30 40 = 40	E = EPR N = Buna-N V = Viton* S = Silicone T = PFA / Viton	SM = 226 O-Ring/ Flat Cap w/handle

Specifications

Materials of Construction:

- Media: MXGP (polypropylene), MXGC (cellulose), MXGN (Nomex™*)
- Support/Drainage: Polypropylene (MXGP/C), stainless steel (MXGN)
- Structural components: Polypropylene (MXGP/C), stainless steel (MXGN)
- Seal Material: Various

Recommended Operating Conditions:

- Maximum Temperature:
  MXGP/C - 176°F (80°C) @ 30 psid (2.1 bar)
  MXGN - 425°F (220°C) @ 30 psid
- Maximum Differential Pressure:
  Forward:
  70 psid (4.8 bar) @ 77°F (25°C)
  30 psid (2.1 bar) @ 176°F (80°C)
  Reverse (MXGN Only):
  50 psid (3.4 bar) @ 77°F (25°C)

Specifications are subject to change without notification.
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ENGINEERING **YOUR** SUCCESS.

Fulflo® ParMax Filter Cartridges

Large-diameter high-flow elements

The best of pleated and large diameter technologies are combined in Parker's ParMax™ high flow filter cartridges. ParMax™ cartridges are available with polypropylene and microfiberglass media in absolute (99.98%) ratings from 1 to 90 micron. The unique layered construction provides excellent retention across a wide range of flux rates. One-six inch diameter cartridge can handle up to 500 gpm flow (60" length). The inside-to-outside flow allows for a high contaminant holding capacity. High flow and a long filter life make the ParMax™ an ideal choice for a wide variety of critical process applications.

Benefits

- Large diameter yields much higher flow rates compared to traditional 2.5" filters
- High flow capacity permits use of fewer elements and cuts capital expenditure
- Inside-out flow pattern ensures positive capture of contaminants
- Absolute retention ratings for critical filtration
- All materials listed as acceptable for potable and edible contact according to CFR Title 21
- Manufactured with strict quality control
- Parker is an ISO9001:2000 Certified Division

Applications

- Process water
- Water
- Spirits
- Food and beverage

Fulflo® ParMax Filter Cartridges

Specifications

Materials of Construction:
Media:
RCP - polypropylene
RMG - microfiberglass
Support/Drainage
Polypropylene
Hardware
Polypropylene
O-rings
EPR, Buna-N, Viton®, silicone

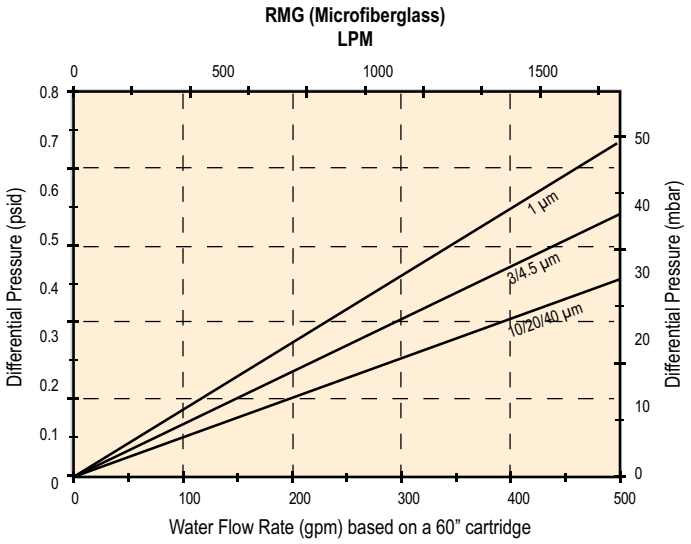
Retention Ratings (99.98%):
1, 3, 4.5, 10, 20, 30, 40 and 90 µm

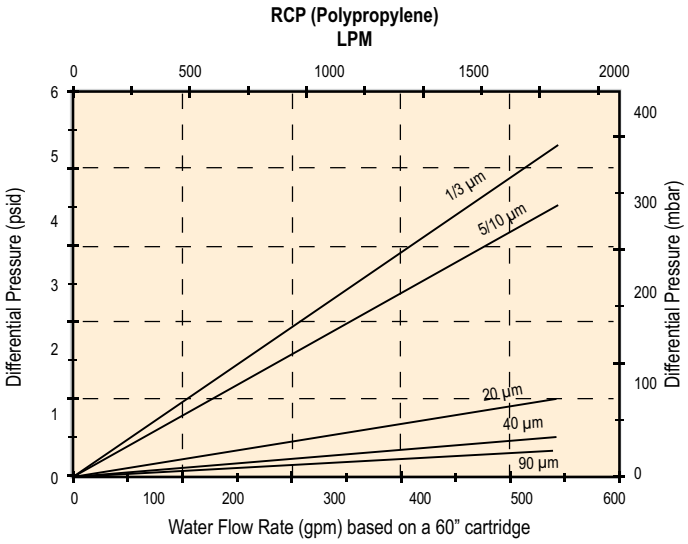
Maximum Operating Conditions:
Maximum Temperature
176°F (80°C) @ 30 psid (2.1 bar)

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

Recommended Operating Conditions:
Flow Rate
Up to 175 gpm (662 lpm)/20" element
Up to 350 gpm (1325 lpm)/40" element
Up to 500 gpm (1892 lpm)/60" element
Changeout Pressure
35 psid (2.41 bar)

Dimensions (nominal):
Outside Diameter: 6" (152mm)
Inside Diameter: 2.9" (74mm)





Ordering Information

Cartridge Code	
CODE	DESCRIPTION
RCP	Polypropylene
RMG	Glass

Micron Rating	
CODE	(µm)
010	1.0
030	3.0
045	0.45
100	10
200	20
400	40
900*	90

Length	
CODE	LENGTH (CM)
20	20" (50.8 cm)
40	40" (101.6 cm)
60	60" (152.4 cm)

Seal Material	
CODE	DESCRIPTION
E	EPR
N	Buna N
S	Silicone
V	Viton®

End Cap Configuration	
CODE	DESCRIPTION
PP	435 O-ring/ Closed

PP

*Available only in polypropylene media (RCP)

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

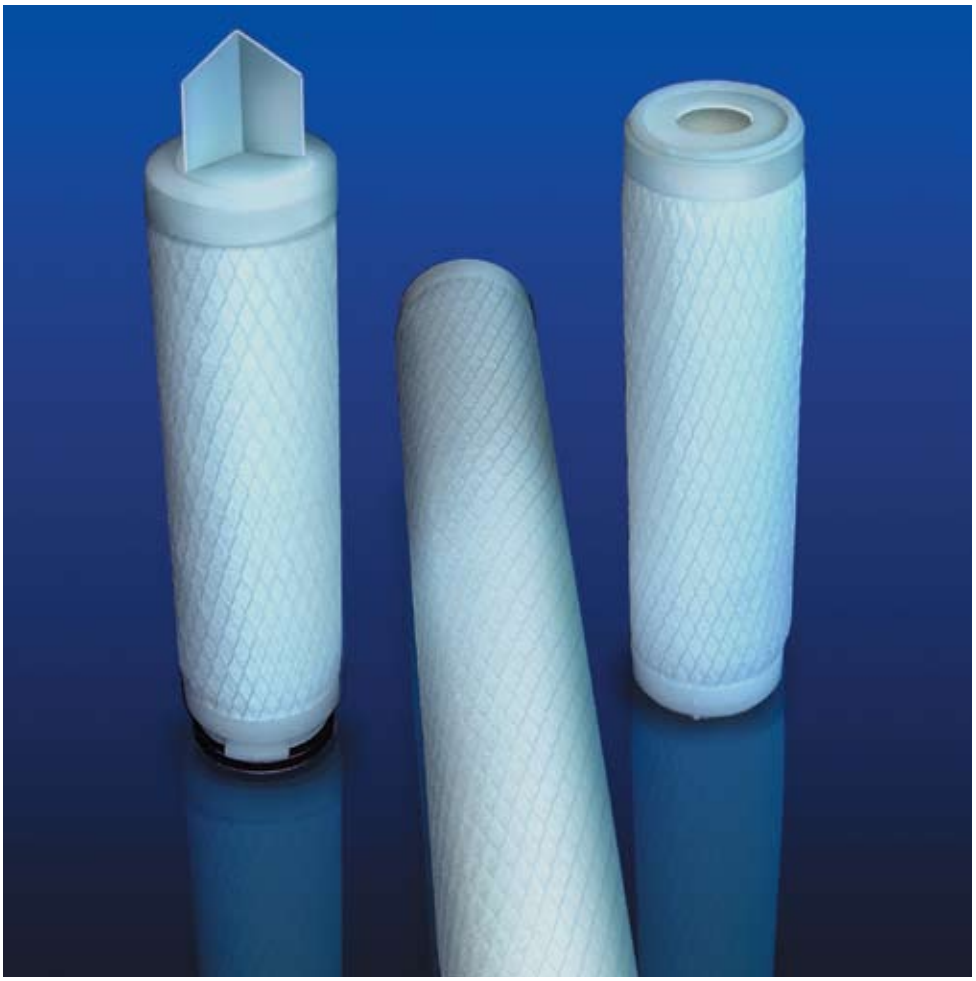
Melt Blown, Resin Bonded, and Wound Depth Filter Cartridge Series

Fulflo® MegaBond Plus™ Cartridges

Depth Cartridges with High Dirt Holding Capacity & Absolute Rated Filtration Efficiency

Parker's Fulflo® MegaBond Plus™ are absolute rated depth cartridges. Using a new innovative manufacturing process, the MBP has higher dirt holding capacities offering long service life and without contaminant migration. The MBP has a fixed core inner structure of thermally bonded continuous microfine polypropylene fibers. The outer layer fixed pore structure has been modified to maximize the graded density surface area to enhance dirt holding capacity.

Fulflo® MegaBond Plus™ cartridges are available in absolute (ß = 5000) ratings of 1µm, 3µm, 5µm, 10µm, 15µm, 20µm, 30µm, 40µm, 70µm, 90µm and 120µm.



Benefits

- Microfine, thermally bonded fiber construction provides superior filtration and often eliminates the need for circulation to achieve product clarity
- Non-fiber-releasing, continuous fiber matrix prevents media migration and ensures consistent production yields and overall quality filtration performance
- No surfactants or binders are present to interrupt product quality or cause foaming
- Double open-end cartridges have polyolefin gaskets thermally bonded to both ends eliminating fluid bypass between the cartridge and the vessel seal
- Superior inter-layer bonding eliminates contaminant unloading and channeling
- Unique outer graded density structure increases dirt holding capacity
- Polypropylene fiber provides broad chemical compatibility for a variety of applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Pore size differentiation is achieved using fibers of differing diameters and maintaining uniform density throughout the cartridge
- Pore sizes do not change as DP increases during service, providing consistent particle retention

Applications

- Photographics
- High Technology Coatings
- DI Water
- Plating Solutions
- Chemical Processing
- Membrane Prefiltration

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Fulflo® MegaBond Plus™ Cartridges

Specifications

Materials of Construction:
Polypropylene: microfiber 100% melt blown construction
Center Support Core/End Caps: natural polypropylene
Thermally Bonded Gaskets: polyolefin closed cell foam (DOE only)

MaximumRecommended Operating Conditions:
Temperature:
@ 60 psid (4.1 bar): 80°F (27°C)
@ 35 psid (2.4 bar): 160°F (71°C)
@ 15 psid (1.0 bar): 200°F (93°C)
Flow Rate: 5 gpm (18.9 lpm) per 10 in length
Recommended Maximum:
Change Out ΔP: 35 psi (2.4 bar)
Operating Pressure @ Ambient Temperature: 60 psid (4.1 bar)

Dimensions:
1 in ID x 2-9/16 in OD 10, 20, 30 and 40 in continuous nominal lengths

Absolute Filtration Ratings:
1µm, 3µm, 5µm, 10µm, 15µm, 20µm, 30µm, 40µm, 70µm, 90µm and 120µm

Beta Ratio (ß) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{ß-1}{ß}\right) 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 3.5 gpm per 10 in (13.2 lpm per 254 mm) cartridge.

FP Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
MBP1	*2.17*
MBP3	*1.60*
MBP5	*0.90*
MBP10	*0.32*
MBP15	*0.16*
MBP20	*0.12*
MBP30	*0.10*
MBP40	*0.05*
MBP70	*<0.05*
MBP90	*<0.04*
MBP120	*<0.03*

FP Length Factors

Length (in)	Length Factor
9.75	*1.0*
10.00	*1.0*
19.50	*2.0*
20.00	*2.0*
29.25	*3.0*
30.00	*3.0*
39.00	*4.0*
40.00	*4.0*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Liquid Particle Retention Ratings *(µm)* @ Removal Efficiency of:

Beta Ratio Efficiency	ß = 5000 Absolute	ß = 1000 99.9%	ß = 100 99%	ß = 50 98%	ß = 10 90%
MBP1	1	0.9	0.5	0.4	0.2
MBP3	3	2.8	1.9	1.7	0.8
MBP5	5	3.7	2.3	1.6	1.2
MBP10	10	9.1	8.0	7.8	6.7
MBP15	15	12.0	9.6	8.9	7.2
MBP20	20	18.3	13.0	12.5	8.7
MBP30	30	25.0	20.0	18.0	13.0
MBP40	40	35.0	28.0	25.0	18.0
MBP70	70	60.0	48.0	42.0	30.0
MBP90	90	80.0	72.0	63.0	48.0
MBP120	120	105.0	95.0	85.0	70.0

Ordering Information

MBP — [ ] [ ] [ ] — [ ] — [ ]

Cartridge Code	Micron Rating (absolute) (µm)	Fiber Type	Nominal Length (in)	End Cap Configuration	Seal Material
MBP = Mega Bond Plus	1 30 3 40 5 70 10 90 20 120	M = Polypropylene (FDA Grade)	9-4 = 9-3/4 10 = 10 19-4 = 19-1/2 20 = 20 29-4 = 29-1/4 30 = 30 39-4 = 39 40 = 40	None = Standard DOE /Polyfoam AR = 020/Flat (Gelman) DO = Double open end (DOE) DX = DOE with Polypro extender LL = 120 O-Ring both ends** LR = 120 O-Ring/Recessed** OB = Std. Open End/Polypro spring closed end PR = 213 O-Ring/Recessed** SC = 226 O-Ring/Flat SF = 226 O-Ring/Fin SSC = SS Inserted 226 O-Ring/Closed SSF = SS Inserted 226 O-Ring/Fin STC = SS Inserted 222 O-Ring/Closed STF = SS Inserted 222 O-Ring/Fin TC = 222 O-Ring/Flat TF = 222 O-Ring/Fin TX = 222 O-Ring/Flex Fin XA = DOW w/Extended Core XB = Ext. Core Open End Polypro spring closed end	None = Polyfoam (DOE only) E = EPR N = Buna-N S = Silicone (O-Ring only) T = PFA Encapsulated Viton* (222, 226 O-Ring Only) V = Viton*

Specifications are subject to change without notification.
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C-1321

AVASAN™ Filter Cartridges

High Purity Melt Blown Depth Cartridges

Avasan™ (AVS) cartridges are manufactured with a proprietary melt blown manufacturing process using a specially formulated polypropylene polymer. This formulation provides a uniquely graded density filter cartridge designed for high purity applications. The fiber matrix of the cartridge has been engineered to provide structural integrity throughout the long service life of the cartridge and the finish-free construction provides optimum fluid purity and eliminates foaming. Avasan's inherent fluid compatibility properties plus graded density make it the economical filter choice for high clarity requirements.

Benefits

- Continuous bonding of fibers throughout the filter matrix ensures non-fiber releasing construction
- Superior inter-layer bonding provides true three dimensional filtration and a construction that does not compress with increasing pressure
- Pure polypropylene construction
- Finish-free construction provides optimum fluid purity and eliminates foaming
- Graded density construction provides built-in prefiltration and longer life
- All materials biosafe in accordance with USP Class VI-121°C Plastic Test
- All materials listed as acceptable for potable and edible contact according to CFR Title 21
- Parker Process Filtration Division is an ISO9000:2000 Certified Division

Applications

- DI Water
- RO Prefiltration
- Potable Water
- Plating Solutions
- Chemical Processing Fluids

Parker

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AVASAN™ Filter Cartridges

Specifications

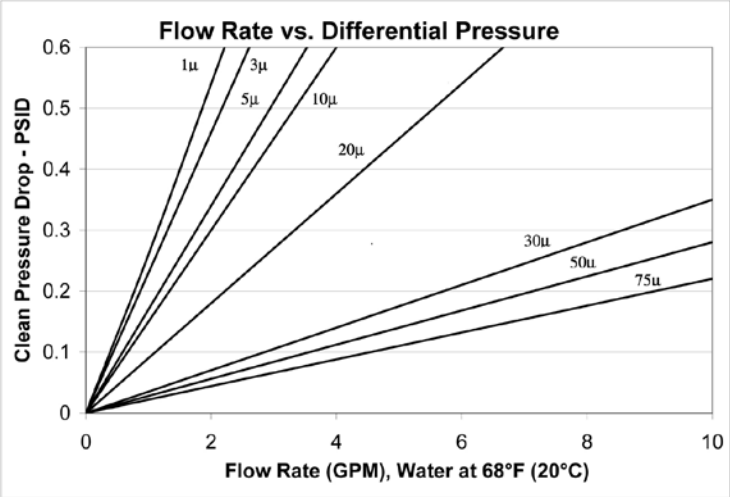
Materials of Construction:
Filter Medium
100% melt blown polypropylene
End Caps/Adapters (optional)
Various; refer to Ordering Information
Seal Options
Various; refer to Ordering Information

- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.
- Pending Certifications: NSF - Materials only

Maximum Recommended Operating Conditions:
Temperature:
@ 50 psid (3.45 bar): 80°F (27°C)
@ 25 psid (1.72 bar): 140°F (60°C)
Flow Rate:
5 gpm (18.9 lpm) per 10" length
Recommended Maximum:
Change Out ΔP: 35 psi (2.4 bar)

Dimensions (Nominal):
1-1/16 in. (27mm) ID x 2-7/16 in. (62mm) OD (max.)
4, 10, 20, 30, and 40 in. continuous nominal lengths

Nominal Filtration Ratings (90%) :
1µm, 3µm, 5µm, 10µm, 20µm, 30µm, 50µm and 75µm



Flow rate is per 10" cartridge. For liquids other than water, multiply the pressure drop by the fluid viscosity in centipose.

Ordering Information

AVS — ☐ — ☐ — ☐ — ☐ — ☐

Cartridge Code	Micrometer Rating (µm)	Filter Medium	Nominal Length (in)	End Cap Configuration	Seal Material
AVS = AVS Cartridge	1 3 5 10 20 30 50 75	M = FDA Grade Polypropylene	Code = in = mm 4 = 4 = 102 9.75 = 9.75 = 248 10 = 10 = 254 19.5 = 19.5 = 495 20 = 20 = 508 29.25 = 29.25 = 743 30 = 30 = 762 40 = 40 = 1016	None = DOE (w/o gaskets) DO = Double open end (DOE) LL = 120 O-Ring both ends** LR = 120 O-Ring/Recessed** OB = Std. Open End/Polypro spring closed end PR = 213 O-Ring/Recessed** SC = 226 O-Ring/Flat SF = 226 O-Ring/Fin TC = 222 O-Ring/Flat TF = 222 O-Ring/Fin TX = 222 O-Ring/Flex Fin XA = DOW w/Extended Core XB = Ext. Core Open End Polypro spring closed end	None = Omit P = Poly Foam Gaskets w/Collars (DO only) E = EPR N = Buna-N S = Silicone (O-Ring only) T = PFA Encapsulated Viton* (222, 226 O-Ring Only) V = Viton* W = Poly Foam Gaskets without Collars (DO only)

**Available only in 9-3/4" (9-4) and 19-1/2" (19-4) lengths.

Specifications are subject to change without notification.
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Fulflo® EcoBond™ Filter Cartridges

High Purity Filtration With Low Cost Melt Blown Depth Cartridges

Parker's Fulflo® EcoBond™ Cartridges are the most economical high purity filter cartridges available. Featuring a graded density matrix of uniform polypropylene fibers, the EcoBond™ provides consistent filtration for a wide variety of fluids. No fiber finish or surfactants are present to generate extractables leading to foaming or other undesirable effects on the filtrate.

Fulflo EcoBond™ Cartridges are available in nominal ratings of 1µm, 5µm, 10µm, 25 µm and 50µm.

Benefits

- Thermally bonded melt blown fiber matrix provides dimensionally stable construction
- Continuous fiber matrix prevents media migration and ensures consistent quality filtration performance
- Finish-free construction provides optimum fluid purity and eliminates foaming condition
- Superior inter-layer bonding eliminates contaminant unloading and channeling
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water components
- Narrow range fiber size optimizes consistency of filtration performance
- Polypropylene construction provides broad chemical compatibility for a variety of applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Single component construction simplifies compatibility options and provides easy disposal

Applications

- Photographic Chemicals
- DI Water
- Plating Solutions
- R.O. Prefiltration
- Membrane Prefiltration
- Organic Solvents
- Oilfield Fluids
- Bleach
- Potable Water
- Chemical Processing Fluids

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Fulflo® EcoBond™ Filter Cartridges

Specifications

Materials of Construction:
Filter Medium
100% melt blown polypropylene
End Caps/Adapters (optional)
polyolefin copolymer
Seal Options
Various; refer to Ordering Information

Maximum Recommended Operating Conditions:
Temperature:
@ 40 psid (2.7 bar): 80°F (27°C)
@ 20 psid (1.4 bar): 140°F (60°C)
Flow Rate:
5 gpm (18.9 lpm) per 10 in length
Recommended Maximum:
Change Out ΔP: 30 psi (2.1 bar)
Operating Differential
Pressure @ Ambient Temperature:
40 psi (2.7 bar)

Dimensions:
1-1/16 in ID x 2-7/16 in OD (max)
10, 20, 30, 40 and 50 in continuous nominal lengths

Nominal Filtration Ratings (90%) :
1µm, 5µm, 10µm, 25µm, and 50µm

EBC Flow Factors

Rating (µm)	Aqueous Service PSI/GPM per 10 in Cartridge
EBC1	*0.10*
EBC5	*0.08*
EBC10	*0.07*
EBC25	*0.06*
EBC50	*0.05*

EBC Length Factors

Length (in)	Length Factor
9.75	*1.0*
10.00	*1.0*
19.50	*2.0*
20.00	*2.0*
29.25	*3.0*
30.00	*3.0*
39.00	*4.0*
40.00	*4.0*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

EBC □ □ □ □ — □ —

Cartridge Code
EBC = EcoBond Cartridge

Micrometer Rating (µm)
1
5
10
25
50

Filter Medium
M = FDA Grade Polypropylene

Nominal Length (in)

Code		in	mm
9-4	=	9-3/4	248
10	=	10	254
19-4	=	19-1/2	495
20	=	20	508
29-4	=	29-1/4	743
30	=	30	762
39-4	=	39	991
40	=	40	1016
50	=	50	1270

End Cap Configuration
None = DOE (w/o gaskets)
AR = 020/Flat (Gelman)
DO = Double open end (DOE)
LL = 120 O-Ring both ends**
LR = 120 O-Ring/Recessed**
OB = Std. Open End/Polypro spring closed end
PR = 213 O-Ring/Recessed**
SC = 226 O-Ring/Flat
SF = 226 O-Ring/Fin
TC = 222 O-Ring/Flat
TF = 222 O-Ring/Fin
TX = 222 O-Ring/Flex Fin
XA = DOW w/Extended Core
XB = Ext. Core Open End Polypro spring closed end

Seal Material
None = No Seal Material (Std. DOE)
P = Poly Foam Gaskets w/Collars (DO only)
E = EPR
N = Buna-N
S = Silicone (O-Ring only)
T = PFA Encapsulated Viton* (222, 226 O-Ring Only)
V = Viton*
W = Poly Foam Gaskets without Collars (DO only)

**Available only in 9-3/4" (9-4) and 19-1/2" (19-4) lengths.

Specifications are subject to change without notification.
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Fulflo® DuraBond™ Cartridges

Economical Filtration With High Strength Thermally Bonded Depth Cartridges

Parker's Fulflo® DuraBond™ Cartridges are the most economical high strength filter cartridges available. Featuring an integral rigid thermally bonded construction, the DuraBond™ provides consistent filtration for a wide variety of fluids. Its fixed pore structure acts as a sieve-like particle "classification" filter for pigmented coatings allowing pigments to pass while stopping large agglomerates.

Fulflo® DuraBond™ Cartridges are available in nominal ratings of 1µm, 3µm, 5µm, 10µm, 25µm, 50µm, 75µm and 100µm.

Benefits

- Fixed pore structure provides efficiency, integrity and optimum particle retention
- Thermally bonded bicomponent fiber matrix provides rigid dimensionally stable construction without fiber migration
- Rigid construction eliminates contaminant unloading and channeling
- Corrugated porous surface maximizes dirt holding capacity
- Silicone free construction will not change coating properties
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water components
- Polyolefin construction provides broad chemical compatibility for a variety of applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- DuraBond™ cartridges can be easily disposed by shredding, incinerating or crushing
- DuraBond™ construction provides particle "classification" effect with pigmented coatings
- Double-open-end style is self-sealing without separate gasket material

Applications

- Photographic Chemicals
- DI Water
- Plating Solutions
- Bleach
- R. O. Prefiltration
- Organic Solvents
- Oilfield Fluids
- Membrane Prefiltration
- Industrial Coatings
- Magnetic Coatings
- Potable Water
- Processing Fluids

Parker

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Fulflo® DuraBond™ Cartridges

Specifications

Materials of Construction:
Filter Medium: Thermal Bonded bicomponent matrix of polypropylene/ polyethylene
End Caps/Adapters (optional): polyolefin copolymer
Seal Options: Various; refer to Ordering Information

Dimensions:
1-1/16 in (27mm) ID x 2-7/16 (62mm) in OD
10, 20, 30, 40, and 50 in continuous nominal lengths

Maximum Recommended Operating Conditions:
Temperature: 175°F (80°C)
Pressure:
100 psid (6.8bar)@72°F (27°C)
50 psid (3.4bar)@175°F (80°C)
Flow rate:
5gpm (18.9 lpm) per 10 in length.
Changeout ΔP: 30 psi (2.1 bar)

Nominal Filtration Ratings:
(90% efficiency) 1, 3, 5, 10, 25, 50, 75, 100 µm

DBC Flow Factors

Rating (µm)	Aqueous Service PSI/GPM per 10 in Cartridge
DBC1	*0.109*
DBC3	*0.087*
DBC5	*0.073*
DBC10	*0.058*
DBC25	*0.031*
DBC50	*0.022*
DBC75	*0.015*
DBC100	*0.012*

DBC Length Factors

Length (in)	Length Factor
9.75	*1.0*
10.00	*1.0*
19.50	*2.0*
20.00	*2.0*
29.25	*3.0*
30.00	*3.0*
39.00	*4.0*
40.00	*4.0*
50.00	*5.0*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Liquid Particle Retention Ratings *(µm)* @ Removal Efficiency of:

Cartridge	β = 10 90%	β = 20 95%	β = 100 99%	β = 1000 99.9%
DBC1	1	2	4	5
DBC3	3	4	8	10
DBC5	5	10	16	20
DBC10	10	15	25	30
DBC25	25	30	50	55
DBC50	50	70	80	90
DBC75	75	100	>100	>100
DBC100	100	>100	>100	>100

Beta Ratio (ß) = Upstream Particle Count @ Specified Particle Size and Larger / Downstream Particle Count @ Specified Particle Size and Larger

$$\text{Percent Removal Efficiency} = \left(\frac{ß-1}{ß}\right) \times 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 2.5 gpm per 10 in (9.5 lpm per 254 mm).

Ordering Information

DBC — ☐ — ☐ — ☐ — ☐ — ☐

Cartridge Code
DBC = DuraBond Cartridge

Micrometer Rating (µm)
1
3
5
10
25
50
75
100

Filter Medium
M = FDA Grade Polypropylene

Nominal Length (in)

Code		in	mm
9-4	=	9-3/4	248
10	=	10	254
19-4	=	19-1/2	495
20	=	20	508
29-4	=	29-1/4	743
30	=	30	762
39-4	=	39	991
40	=	40	1016
50	=	50	1270

End Cap Configuration
None = DOE (w/o gaskets)
AR = 020/Flat (Gelman)
DO = Double open end (DOE)
LL = 120 O-Ring both ends**
LR = 120 O-Ring/Recessed**
OB = Std. Open End/Polypro spring closed end
PR = 213 O-Ring/Recessed**
SC = 226 O-Ring/Flat
SF = 226 O-Ring/Fin
TC = 222 O-Ring/Flat
TF = 222 O-Ring/Fin
TX = 222 O-Ring/Flex Fin
XA = DOW w/Extended Core
XB = Ext. Core Open End Polypro spring closed end

Seal Material
None = No Seal Material (Std. DOE)
P = Poly Foam Gaskets w/Collars (DO only)
E = EPR
N = Buna-N
S = Silicone (O-Ring only)
T = PFA Encapsulated Viton* (222, 226 O-Ring Only)
V = Viton*
W = Poly Foam Gaskets without Collars (DO only)

** Available only in 9-3/4" (9-4) and 19-1/2" (19-4) lengths.

Specifications are subject to change without notification.
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Fulflo® ProBond™ Filter Cartridges

A Patented Breakthrough in Resin Bonded Cartridge Design

Parker ProBond™ cartridges have a unique, proprietary two-stage filtration design to maximize particle retention and service life in viscous fluid filtration applications. An outer, spiral, prefilter wrap, made from a fiber blend of polyester and acrylic, increases cartridge strength and eliminates residual debris associated with conventional or machined and grooved, resin bonded cartridges.

ProBond filter cartridges are available in eight differentiated removal ratings of 2µm, 5µm, 10µm, 25µm, 50µm, 75µm, 125µm and 150µm pore sizes to meet a wide range of performance requirements.

Benefits

- Outer, spiral wrap collects large particles and agglomerates, while inner layers control particle removal at rated size
- Outer wrap increases surface area and eliminates loose debris and contamination caused by machined products
- Extra-long acrylic fibers provide added strength, resist breakage and migration common with competitive “short fiber” cartridges
- Available with optimal single-open-end seals (222 o-ring with flat cap) in ABS or nylon
- Phenolic resin impregnation strengthens cartridge for use with high viscosity fluid
- Withstands pressure surges up to 150 psid across cartridge (depending on fluid temperature)
- One-piece construction eliminates bypass concerns with multilength cartridges and eases change out
- Silicone-free construction ensures no contamination to adversely affect adhesion properties of coatings

Applications

- Paints
- Printing Inks
- Adhesives
- Resins
- Emulsions
- Chemical Coatings
- Organic Solvents
- Plasticizers
- Waxes
- Oilfield Fluids
- Process Water
- Petroleum Products

Fulflo® ProBond™ Filter Cartridges

Specifications

Materials of Construction:

1st stage Pre-filter wrap: Polyester/Acrylic long staple fiber blend
2nd stage Final Filter wrap: Acrylic long staple fiber
Fibers impregnated with Phenolic Resin

Type of Construction:
Coreless, one-piece, rigid resin bonded fibrous matrix

Maximum Recommended Operating Conditions:

Flow Rate: 5 gpm per 10 in length (18.9 lpm per 254 mm length)
Temperature: 250°F (121°C)
Maximum Recommended Change Out ΔP: 50 psid (3.5 bar)
Recommended Maximum Differential Pressure:
Cartridge Pressure Resistance:
150 psid (10 bar) @ 70°F (21°C)
125 psid (8.6 bar) @ 100°F (38°C)
90 psid (6.2 bar) @ 150°F (65°C)
65 psid (4.5 bar) @ 180°F (82°C)
25 psid (1.7 bar) @ 250°F (121°C)

Particle Removal Ratings:

2µm, 5µm, 10µm, 25µm, 50µm, 75µm, 125µm and 150µm

Dimensions, in (mm):

Outside Diameter: 2-9/16 in (65)
Inside Diameter: 1-1/8 in (28.6)
Lengths: Nominal, 10, 20, 30 and 40 in lengths

Environmental/Chemical Compatibility:

Classified as a nonhazardous material
- Incinerable (8000 BTU/lb)
- Crushable and shredable
- Certified silicone-free
- Suitable for weak acids and bases (pH 5-9)
- Unsuitable for oxidizing agents
- Not recommended for FDA applications

End Adapters:

None on double open end style
ABS (Acrylonitrile Butadiene Styrene) for most applications
Nylon (NTC) for aromatic solvents

ProBond Flow Factors

Rating (µm)	Flow Factors
2	0.08
5	0.04
10	0.02
25	0.012
50	0.01
75	0.006
125	0.0013
150	0.0010

ProBond Length Factors

Length (in)	Length Factor
9	1.0
10	1.0
19	2.0
20	2.0
29	3.0
30	3.0
39	4.0
40	4.0

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

PRO — □ — □ — □

Cartridge Code
PRO = ProBond Series

Micron Rating (µm)
2
5
10
25
50
75
125
150

Length

(code)	(in)	(series)
9	9-3/4	248
10	10	254
19	19-1/2	495
20	20	508
29	29-1/4	743
30	30	762
39	39	961
39	39	991
40	40	1016

End Cap Configurations
Omit = Standard DOE (coreless)
CXC = Extended Tinned Steel Core
C = Tinned Steel Core
NTC = Single Open End 222 O-ring/Flat Cap (Nylon)
OB = Std. Open End/Polypro Spring Closed End
TC = Single Open End
XA = 222 O-Ring/Flat Cap (ABS Plastic)
XB = Poly Extender Ext. Core Open End/ Polypro Spring Closed End

Seal Material
Omit = DOE and XA
E = EPR
N = Buna-N
S = Silicone (O-Ring only)
T = PFA Encapsulated Viton* (222, 226 O-Ring Only)
V = Viton*
W = Poly Foam Gaskets

Specifications are subject to change without notification.
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Fulflo® Honeycomb™ Filter Cartridges

Multipurpose Filtration Solutions With Parker's Wound Depth Cartridges

Parker Process Filtration has been a leader in filter media innovation and performance since we first invented the Honeycomb™ Filter Tube over 65 years ago. Parker has the world's largest manufacturing capacity for wound cartridges, offering superior quality along with technical, engineering and marketing support.

Effective removal ratings at nominal 90% efficiency from 0.5µm to 150µm range.

Benefits

- A broad range of media provide excellent compatibility with a variety of organic solvents, animal, petroleum and vegetable oils
- Optional core covers and end treatments assure fiber migration control
- Multiple length cartridges minimize changeout time, eliminate spacers and are available to fit competitive filter vessels
- FDA grade polypropylene (DOE only) cartridges certified to ANSI/NSF61 standard for contact with drinking water components
- Continuous strand winding geometry provides performance consistency
- One-piece metal extended center core option eliminates the need for cartridge guides in all competitive and Fulflo® multicartridge vessels
- A special snap-in extender is available for polypropylene cores
- Cotton, rayon, polypropylene, nylon and polyester materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Various O-ring and end cap options are available

Applications

- Oxidizing Agents
- Concentrated Alkalies
- Potable Liquids
- Dilute Acids & Alkalies
- Mineral Acids
- Organic Acids & Solvents
- Petroleum Oils
- Photo Solutions
- Amines
- Water
- Prefilter for Membranes

Fulflo® Honeycomb™ Cartridges

Wound Depth Cartridge Design and Function

Wound cartridges provide true depth filtration utilizing hundreds of tapered filtering passages of controlled size and shape. Each layer of roving contributes to true depth filtration by trapping its share of particles. Wound cartridges offer a gradual pressure increase during cartridge life versus surface-type media that have an abrupt flow cutoff when loaded. In addition, the irregular outer layer reduces surface blinding, assuring both longer cartridge life and full cartridge utilization.

Ultrafine Wound Depth Cartridges for Critical Filtration Applications

Ultrafine cartridges are a unique member of the Honeycomb™ wound depth cartridge family. They are specifically designed for critical filtration applications in the 0.5µm range. When absolute 0.5µm filtration is required, the nominal Ultrafine cartridge can be used as a prefilter, thereby significantly extending membrane life. Ultrafine cartridges remove 90% of particles larger than 0.5µm in size. This type of filtration provides excellent protection for equipment or processes that must be protected from fine particles.

Applications include:

- Prefilter for membranes
- Rinse water in semiconductor manufacturing
- Fine filtration for ultrasonic parts, washer solvents and other high-purity solvents
- Prefilter for industrial reverse osmosis equipment

Ultrafine Ordering Information

Filter Medium	Nominal Length	Core Material	Core Cover Material		End Cap Configuration
C = FDA Grade Cotton E = FDA Grade Rayon M = FDA Grade Polypropylene T = Industrial Grade Polypropylene WC = Industrial Grade White Cotton	9-4 = 9-7/8 10 = 10 19-4 = 19-1/2 20 = 20 29-4 = 29-1/4 30 = 30-3/16 39-4 = 39 40 = 40-3/16	No Symbol = Tinned Steel A = Polypropylene A3 = Glass-Filled Polypropylene G = 304 Stainless Steel S = 316 Stainless Steel	No Symbol = No Cover B = Nylon V = Nonwoven Polyester W = Cellulosic Paper Y = Polypropylene	—	None = DOE (without gaskets) DO = DOE (With Gaskets) TC = 222/Closed OB = Std. Open End/Polypro Spring Closed End TF = 222/Fin SC = 226/Closed SF = 226/Fin XA = Polypro Extender XB = Ex.Core Open End/ Polypro Spring Closed End XC = Extended Metal

Fulflo® Honeycomb™ Cartridges

Specifications

Wound Cartridge Flow Factors for Aqueous (Water Based) Fluids (psid/gpm @ 1 cks)

Rating *(µm)*	Polypropylene Polyester Nylon	Cotton Rayon	Glass
0.5	0.9924	2.6590	0.5000
1	0.7463	2.0000	0.4211
3	0.3330	0.6250	0.3478
5	0.2381	0.3636	0.1951
10	0.1429	0.1931	0.1430
20	0.0898	0.1075	0.1096
30	0.0704	0.0855	0.0816
50	0.0595	0.0709	0.0678
75	0.0538	0.0645	0.0611
100	0.0500	0.0624	0.0590

Wound Cartridge Flow Factors for Nonaqueous (Solvent or Oil Based) Fluids (psid/gpm @ 1 cks)

Rating (µm)	Polypropylene Polyester Nylon	Cotton Rayon	Glass
0.5	1.8350	1.3800	0.5000
1	1.0000	0.7519	0.4211
3	0.5800	0.3003	0.3478
5	0.3003	0.1949	0.1951
10	0.1299	0.1000	0.1430
20	0.0560	0.0350	0.1096
30	0.0200	0.0175	0.0816
50	0.0141	0.0130	0.0678
75	0.0120	0.0100	0.0611
100	0.0080	0.0065	0.0590

Wound Cartridge Length Factors

Length *(in)*	Length Factor
10	1.0
20	2.0
30	3.0
40	4.0
50	5.0

Flow Rate and Pressure Drop Formulae:

$$\textbf{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\textbf{Clean } \Delta\textbf{P} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:
1. **Clean ΔP** is PSI differential at start.
2. **Viscosity** is centistokes.
   Use Conversion Tables for other units.
3. **Flow Factor** is ΔP/GPM at 1 cks
   for 10 in (or single).
4. **Length Factors** convert flow or ΔP from 10 in (single length) to required cartridge length.

Wound Cartridge Nominal Micrometer Ratings

Cartridge Designation	Rating *(µm)*	Compressed Air and Gas Micron Rating
8R, E8R, N8R, U8R, S8R, M8R, R8R, T8R, WC8R	100	15
10R, E10R, N10R, U10R, S10R, R10R, T10R, M10R, WC10R	75	13
11R, E11R, N11R, U11R, S11R, M11R, R11R, T11R, WC11R	50	12
12R, E12R, N12R, U12R, S12R, M12R, R12R, T12R, WC12R	40	—
13R, E13R, N13R, U13R, S13R, M13R, R13R, T13R, WC13R	30	10
15R, E15R, N15R, U15R, S15R, M15R, R15R, T15R, WC15R	20	7
17R, E17R, N17R, U17R, S17R, M17R, R17R, T17R, WC17R	15	5
19R, E19R, N19R, U19R, S19R, M19R, R19R, T19R, WC19R	10	3
21R, E21R, N21R, U21R, — S21R, M21R, R21R, T21R, WC21R	7	—
23R, E23R, N23R, U23R, S23R, M23R, R23R, T23R, WC23R	5	2
27R, E27R, N27R, U27R, S27R, M27R, R27R, T27R, WC27R	3	1
39R, E39R, N39R, U39R, S39R, M39R, R39R, T39R, WC39R	1	Less than 1
Ultrafine (C, E, M, T, WC)	0.5	Less than 0.5

Fulflo® Honeycomb™ Cartridges

Specifications

Nominal Removal Ratings:

- @ 90% efficiency from 0.5µm to 150µm

Maximum Recommended Operating Conditions:

- Change Out ΔP: 30 psi (2.1 bar)
- ΔP @ Ambient Temperature: 60 psi (4.1 bar)
- Flow Rate: 10 gpm (38 lpm) per 10 in length
- Temperature (See table below)

Dimensions:

- 1 in ID x 2-7/16 OD
- 3 in to 50 in lengths

Wound Cartridge Glass Fiber Nominal Micrometer Ratings

Cartridge Designation	Liquids	Compressed Air and Gases
K5B	100 - 150	100+
K5R	75 - 100	10
K6R	40	7
K8R	30	5
K10R	20	3
K12R	15	1
K15R	10	<1
K19R	5	<1
K23R	3	<1
K27R	1	<1
K39R	0.5	<1

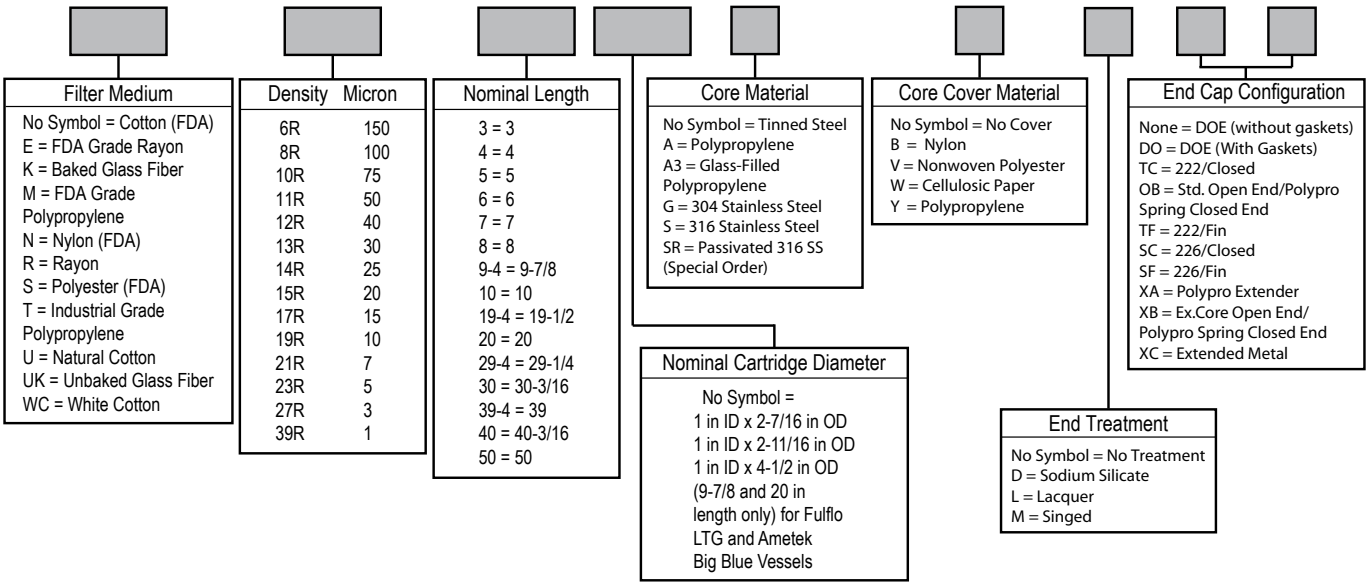
Note: All glass cartridges have standard glass core cover.

Maximum Operating Temperature @ 35 psid

Cartridge Material	Metal Core	Polypropylene Core	Glass-Filled Polypropylene
Cotton	250°F (121°C)	120°F (49°C)	—
Glass	750°F (402°C)	—	—
Nylon	275°F (135°C)	120°F (49°C)	—
Polypropylene	200°F (93°C)	120°F (49°C)†	200°F (93°C)
Polyester	275°F (135°C)	120°F (49°C)	—
Rayon	250°F (121°C)	120°F (49°C)	—

Note: Refer Material Selection Guide for additional compatibility information.

Ordering Information



Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

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Fulflo® SWC Filter Cartridges

Economical Filtration Solutions With String Wound Depth Cartridges

Parker Process Filtration's SWC Filter cartridge offers a wide range of fibers and core materials. Roving is wound onto a center core for strength. The diagonal pattern of the media forms a tight, interlocking weave. Parker Process Filtration has one of the world's largest manufacturing plants for wound cartridges, offering superior quality along with technical, engineering and marketing support.

Nominal removal ratings from 1µm to 100µm are available.

Benefits

- SWC's provide excellent compatibility with a variety of organic solvents and petroleum products
- Optional core covers available to assure fiber migration control
- Multiple length cartridges minimize change out time, eliminate spacers and are available to fit competitive filter vessels
- Cotton and polypropylene materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Continuous strand roving geometry provides performance consistency
- Exended center core option eliminates the need for cartridge guides in competitve and Fulflo multicartridge vessels
- One piece extended length center cores are available in tinned steel, 316 stainless steel and 304 stainless steel
- A special snap-in extender is available for polypropylene cores
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water components

Applications

- Prefilter for R.O. Membranes
- Water
- Alkalies
- Dilute Acids & Alkalies
- Organic Acids & Solvents
- Potable Liquids
- Petroleum Oils
- Mineral Acids

Fulflo® SWC Filter Cartridges

Specifications

Materials of Construction:
Polypropylene
Cotton

Maximum Recommended Operating Conditions:
Temperature:
Polypropylene:
200°F (93°C) with tinned steel or stainless steel cores;
120°F (49°C) with polypropylene cores;
Cotton:
250°F (121°C) with tinned steel or stainless steel cores:
120°F (49°C) with polypropylene cores.
Change Out ΔP: 30 psi (2.1 bar)
ΔP @ Ambient Temperature:
60 psi (4.1 bar)
Flow Rate: 5 gpm (18.9 lpm) per 10 in length

Nominal Removal Ratings:
90% efficiency from 1µm to 100µm

Dimensions:
1 in ID x 2-3/8 in OD
10, 20, 30 and 40 in lengths

SWC Length Factors

Length (in)	Length Factor
10	1.0
20	2.0
30	3.0
40	4.0

SWC Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Cotton	All Synthetics
1	2.00	0.75
3	0.63	0.33
5	0.36	0.24
10	0.19	0.14
15	0.16	0.12
20	0.11	0.09
25	0.10	0.08
30	0.09	0.07
50	0.07	0.06
75	0.06	0.05
100	0.06	0.05

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

SWC □ □ □ □ □ □ □ — □

Cartridge Code	Micron Rating (nominal) (µm)	Fiber Type	Nominal Length (in)	Core Material	Core Cover Material	Core Extender	Packaging Options
SWC = String Wound Cartridge	1 3 5 10 20 25 30 50 75 100	C = Cotton (FDA) L = Polypropylene (utility grade) M = Polypropylene (FDA Grade) T = Polypropylene (industrial grade) U = Cotton, natural WC = White Cotton	9-4 = 9-7/8 10 = 10 19-4 = 19-1/2 20 = 20 29-4 = 29-1/4 30 = 30-3/16 39 = 39 40 = 40-3/16	No Symbol = Tinned Steel A = Polypropylene G = 304 Stainless Steel S = 316 Stainless Steel	No Symbol = No Cover V = Nonwoven Polyester Y = Polypropylene	No Symbol = None OB = Std. Open End/Polypro spring closed end XA = Poly/Extender XB = Ex. Core open end/ Polypro spring closed XC = Metal extender	Z = Individual Poly Bag

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Fulflo® XTL™ Filter Cartridges

Technologically Advanced Wound Cartridge Design Doubles Cartridge Life and Improves Performance

The unique construction of Parker's patented* Fulflo® XTL™ (extended life) cartridges provides twice the average life of conventionally wound cartridges for process fluid filtration. Computer modeling has optimized the wound cartridge geometry maximizing the use of the internal cartridge surface area. The enhanced design provides improved dirt-holding capacity (twice the average) over standard wound cartridges, while providing true controlled-depth filtration.

Fulflo® XTL cartridges are available in nominal (90%) ratings of 1µm, 3µm, 5µm, 10µm, 20µm and 30µm.

Benefits

- XTL cartridges result in significant cost savings based on fewer system interruptions, decreased labor expenses for change outs, and reduced inventory and cartridge disposal costs
- Unique computer programming capability permits the design and manufacture of special cartridge constructions to suit the requirements of nearly any filtration application
- "M" polypropylene and "C" cotton materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Continuous strand roving geometry provides performance consistency
- XTL wound cartridges fit all Fulflo vessels and most competitive vessels without compromising final product clarity or flow characteristics of the cartridge. The most noticeable difference is the extended life savings offered by XTL cartridges
- Extended center cores are available in tinned steel, 316 stainless steel and 304 stainless steel
- A special snap-in extender is available for polypropylene cores
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water components

Applications

- Potable Liquids
- Organic Solvents
- Process Water
- Photoprocessing
- Lubricants
- R.O. Prefiltration
- Amines
- Chemical Process

Fulflo® XTL™ Filter Cartridges

Specifications

Materials of Construction:
Polypropylene
Cotton

Maximum Recommended Operating Conditions:

Temperature:
Polypropylene:
200°F (93°C) with tinned steel or stainless steel cores;
120°F (49°C) with polypropylene cores;
180°F (82°C) with glass-filled polypropylene cores
Cotton:
250°F (121°C) with tinned steel or stainless steel cores;
120°F (49°C) with polypropylene cores;
180°F (82°C) with glass-filled polypropylene cores

Recommended Maximum:
Change Out ΔP: 30 psi (2.4 bar)
Operating ΔP @ Ambient Temperature: 60 psi (4.1 bar)
Flow Rate: 5 gpm (18.9 lpm) per 10 in length

Dimensions:
1 in ID x 2-1/2 in OD (nominal) 10, 20, 30 and 40 in lengths nominal)

Filtration Ratings:
1µm, 3µm, 5µm, 10µm, 20µm and 30µm @ 90% nominal efficiency

XTL Length Factors

Length (in)	Length Factor
10	1.0
20	2.0
30	3.0
40	4.0
50	5.0

XTL™ Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Cotton	Polypropylene
1	2.00	0.75
3	0.63	0.33
5	0.36	0.24
10	0.19	0.14
20	0.11	0.09
30	0.09	0.07

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean } \Delta P = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Brand A @ 15 psid

XTL @ 15 psid

Most wound cartridges tend to surface load thus preventing the maximum use of their internal surface area. As a result of a unique design and manufacturing process, the XTL cartridge allows the maximum use of its internal surface area. Shown here are illustrations of typical dirt-loading characteristics of a standard wound cartridge and an XTL catridge at 15 psi differential.

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

XTL □ □ □ □ □ □ □ □ □ — □

Cartridge Code	Micron Rating (nominal) (µm)	Fiber Type	Nominal Length (in)	Core Material	Core Cover Material	End Treatment	End Cap Configuration	Seal Material	Packaging Options
"Extended Life" Wound Cartridge	1 3 5 10 20 30	C = Cotton (FDA) M = Polypropylene (FDA Grade) T = Polypropylene WC = White Cotton	9-4 = 9-7/8 10 = 10 19-4 = 19-1/2 20 = 20 29-4 = 29-1/4 30 = 30 39-4 = 39 40 = 40	No Symbol = Tinned Steel A = Polypropylene A3 = Glass-Filled Polypropylene G = 304 Stainless Steel S = 316 Stainless Steel	No Symbol = No Cover V = Nonwoven Polyester Y = Polypropylene	No Symbol = No Treatment L = Lacquer M - Singed	None = DOE (w/o gaskets) DO = Double open end (DOE) TC = 222 O-Ring/Flat TF = 222 O-Ring/Fin OB = Std. Open End/Polypro spring closed end SC = 226 O-Ring/Flat SF = 226 O-Ring/Fin XA = Poly/Extender XB = Ex. Core open end/ Polypro spring closed XC = Metal extender	P = Poly Foam N = Buna-N E = EPR S = Silicone V = Viton* None = Standard DOE	Z = Individual Poly Bag

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Filter Bag Media and Strainer Series

Fulflo® Filter Bags

Fulflo® Filter Bags Provide High Quality, Consistent Filtration Performance

Fulflo® Filter Bags are ideal for virtually any process filtration application requiring the removal of solids. Parker's Fulflo® filter bags are manufactured and tested under the strictest quality control standards to assure consistent performance. Parker's Fulflo® filter bags perform at high flow rates and viscosities to 10,000 cps or higher.

Standard Fulflo® Filter Bags are available in 1µm to 800µm particle retention ratings.

Benefits

- Standard filter bags fit Fulfo® vessels and most major competitive models
- The "C" Style Fulflo® bag features a polypropylene Quik-Seal ring which effectively seals the bag into standard Parker bag vessels
- The "G" Style Fulflo® bag features a carbon steel snap ring for positive sealing in competitive vessels
- Fulflo® Quik-Seal™ option is available for all "G" style Fulflo® filter bag media
- Felt bags come standard with glazed surface treatment to effectively control migration of fibers into the filtered product
- Polypropylene felt (P) bags are suitable for incidental food contact per CFR Title 21

Applications

- Solvents
- Bulk Chemicals
- Coatings
- Coolants
- Petroleum Oils
- Inks
- Paints
- Adhesives
- Liquid Detergents
- Resins
- Prefilters for Finer Cartridges
- Parts Washing Systems
- Water

Fulflo® Filter Bags

Specifications

Maximum Recommended Operating Conditions:

Temperature:
Polyester: 275°F (136°C)
Polypropylene: 200°F (94°C)
Monofilament Nylon Mesh: 275°F (136°C)
Nomex®*: 425°F (220°C)
Multifilament Polyester Mesh: 275°F (136°C)

Flow Rate: (Per single length)
Standard Bag: 80 gpm (303 lpm)
Changeout ΔP: 35 psi (2.4 bar)
Pressure: 70 psid (4.8 bar)

Size:
C1: 7.5" X 17.5"
C2: 7.5" X 31.5"
G1: 7" X 17.5"
G2: 7" X 31.5"

Effective Removal Ratings:
0.5µm to 800µm

Bag Media Selection:

Monofilament Mesh: Single strand nylon with retention ratings from 100µm to 600µm

Glazed Felt: In polypropylene or polyester felts, the surface fibers are melt bonded to one another, reducing the possibility of fiber migration

Multifilament Mesh: Strong fabric woven from twisted strands. Particle retention ratings from 150µm to 800µm

High Temperature Nomex®

Standard Seal: (no seal option specified)
C = Plastic Quik-Seal™ Ring (polypropylene for P felt and polyester for PE felt)
G = Steel Snap Ring

Standard Bag Flow Factors

Rating (µm)	Flow Factors
1	*0.00083*
3	*0.00059*
5	*0.00044*
10	*0.00029*
25	*0.00017*
50	*0.00013*
75	*0.00008*
100	*0.00007*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for single legth bag.
4. Length Factors convert flow or ΔP from single length bags. Use length factor or 1 for single length and a factor of 2 for double length.

Ordering Information

Bag Style	Bag Size	Media	Micron	Seal Options	Other Options	Example
Polypropylene, Polyester Felt Bags						
C	*1* *2*	*P = Polypropylene* *PE = Polyester*	*1, 3, 5, 10, 25, 50, 100 (P)* *1, 3, 5, 10, 25, 50, 75, 100, 200, (PE)*	*F=Flex Band Seal*		*C2PE10* *C2P50-F*
G	*1* *2*	*P = Polypropylene* *PE = Polyester*	*1, 3, 5, 10, 25, 50, 100 (P)* *1, 3, 5, 10, 25, 50, 75, 100, 200, (PE)*	*Q = Top Sealing Plastic Ring*		*G2PE25* *G1P100-Q*
Polyester Multifiliament Bags						
C	*1* *2*	*PEMU = Polyester*	*150, 200, 250, 300, 400, 800*	*F = Flex Band Seal* *PE = Polyester Quik-Seal Ring*		*C2PEMU150-P*
G	*1* *2*	*PEMU = Polyester*	*150, 200, 250, 300, 400, 800*	*Q = Top Sealing Plastic Ring*	*H = Cotton Handle*	*G2PEMU400-H*
Nomex Felt Bags						
C	*1* *2*	*NOM = Nomex*	*25, 50, 100*	*F = Flex Band Seal (Required)*		*C2NOM50*
G	*1* *2*	*NOM = Nomex*	*25, 50, 100*		*H = Cotton Handle*	*G1NOM50*
Nylon Monofilament Bags						
C	*1* *2*	*MNO = Nylon*	*100, 200, 300, 400, 600*	*F = Flex Band Seal* *PE = Polyester Quik-Seal Ring*		*C2MNO200*
G	*1* *2*	*MNO = Nylon*	*100, 200, 300, 400, 600*	*Q = Top Sealing Plastic Ring*		*G2MNO200-Q*

Specifications are subject to change without notification.

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C-5031

XLH® Filter Bags

Fulflo® XLH High Efficiency Filter Bags Provide High Quality Filtration Performance

Fulflo® Filter Bags are ideal for virtually any process filtration application requiring the removal of solids. Parker's Fulflo® filter bags are manufactured and tested under the strictest quality control standards to assure consistent performance. Parker's Fulflo® filter bags perform at high flow rates and viscosities to 10,000 cps or higher.

XLH high efficiency filter bags perform at efficiencies similar to depth cartridges. XLH bags are available in 0.5µm, 1µm, 2.5µm,10µm and 25µm particle retention ratings.

Benefits

- Parker's XLH all-polypropylene high efficiency filter bags provide twice the dirt-holding capacity at a lower cost than many competitive bags and cartridges of the same micrometer rating
- XLH bags require less frequent change out, less storage and disposal space, and are easy to install and remove
- Each bag is incinerable (with Quik-Seal™ option), reducing filter disposal costs
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21

Applications

- Adhesives
- Solvents
- Bulk Chemicals
- Coatings
- Coolants
- Petroleum Oils
- Inks
- Paints
- Liquid Detergents
- Water
- Resins
- Prefilters for Finer Cartridges
- Parts Washing Systems

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XLH® Filter Bags

Specifications

Materials of Construction:

Microfiber: FDA grade polypropylene microfiber used in the XLH bag series assures high-efficiency performance and is oil absorbent.

Particle retention ratings:
0.5µm to 25µm

Maximum Recommended Operating Conditions:

Temperature:
Polypropylene–200°F (94°C)
Flow Rate (Per single length)
XLH 25 gpm (95 lpm)
Changeout ΔP: 35 psi (2.4 bar)
Maximum Allowable Pressure:
70 psid (4.8 bar)
Standard Seal:
(No seal option specified)
C = Plastic Quik-Seal Ring
G = Steel Snap Ring

XLH Flow Factors

Rating (µm)	Flow Factors
0.5	*0.0185*
1	*0.0143*
2.5	*0.0130*
10	*0.0043*
25	*0.0031*

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for single legth bag.
4. Length Factors convert flow or ΔP from single length bags. Use length factor or 1 for single length and a factor of 2 for double length.

■ XLH Filter Bag Retention Ratings

Rating *(µm)*	Particle Size *(µm)* at Which Efficiency Is: 90%	95%	99%
0.5	0.5	1	5
1	1	2	10
2.5	2.5	4	16
10	10	14	22
25	25	30	40

$$\text{Beta Ratio } (ß) = \frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{ß-1}{ß}\right) \times 100$$

Ordering Information

Bag Style	Bag Size	Media	Micron	Seal Options	Other Options	Example
C	*1* *2*	*XLH = High Efficiency*	*0.5, 1, 2.5, 10, 25,*			
G	*1* *2*	*XLH = High Efficiency*	*0.5, 1. 2.5, 10, 25*	*Q = Top Sealing Plastic Bag*	*H = Cotton Handles*	

Specifications are subject to change without notification.

ENGINEERING **YOUR** SUCCESS.

C-1070

Fulflo® Coaxial Basket

Parker's Coaxial Retainer Basket for Increased Flow Rate in Existing Single Length Parker Vessels

Parker's unique coaxial basket increases flow rates of existing single length bag housings by converting the housing to double length bags.

Benefits

- 316 stainless steel construction
- Accepts double length bag in single length envelope
- Special plunger to assist in filter bag installation
- Shorter length disposal package
- Retrofits all standard Fulflo bag housings
- Requires less head room for spent filter bag removal
- Increases flow rate in single length vessel
- Increases life and efficiency at same flow rate
- Designs for competitive vessels available (consult factory)

Applications

- Latex Emulsions
- Water Coolants
- Resins
- Solvents
- Coatings

ENGINEERING **YOUR** SUCCESS.

Fulflo® Bag Filter Basket

Specifications

Materials of Construction:
316 stainless steel

Recommended Media:
For use with double length (size #2) mesh and needled felt media (100 micron and less) only

Housing Retrofit:
SB models
FB models
FCB models

- Coaxial basket with “CX” bag installed
- Add “CX” prefix to standard bag part number
- “CX” bag has internal loop to assist in spent bag removal when installed in coaxial basket

- Coaxial basket and plunger
- Double length mesh or felt bag in a single length envelope
- Convert single length housing to double length bag option
- Increase flow rate or increase efficiency and life at same flow rate

Ordering Information

Description	Part Number
Coaxial Basket	0370-5227
Plunger Tool	4540-5001

Specifications are subject to change without notification.

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Fulflo® Basket Strainers

Effective Large Particle Removal With Fulflo® Basket Strainers

Fulflo basket strainers effectively remove large-sized particles ranging from US Mesh 20 to 100 (840µm to 149µm) from liquids with viscosities of up to 15,000 SSU. Parker basket strainers are useful as prefilters for the collection of gross contaminants.

Benefits

- Available in two standard sizes to fit all Fulflo bag filter vessels
- Each strainer constructed of 316 stainless steel and features a permanent handle for easy installation, removal and cleaning
- Fulflo strainer vessels designed for maximum operating pressures of up to 150 psi (9.0 bar) and high flow rates
- Cleanable permanent media
- Optional ratings available down to 550 mesh (25 micron)
- Five standard ratings available from 20 to 100 mesh.

Applications

- Discharge Water
- Process Water
- Coolants
- Cutting Oils
- Inks
- Lubricants
- Paints
- Resins
- Solvents
- Bulk Chemicals
- Parts Washing Systems
- Adhesives

Fulflo® Basket Strainers

Specifications

Maximum Operating Pressure Differential:
150 psid (10.3 bar)

Length: (Basket Only)
Single = 14-3/4 in (37 cm)
Double = 27-3/4 in (70 cm)

Length: (Including Handle)
Single = 18-3/4 in (47 cm)
Double = 31-3/4 in (80 cm)

Outer Diameter:
Single = 7-7/16 in (19 cm)
Double = 7-7/16 in (19 cm)

Basket Capacity:
Single = 2.2 gal (8.3 liters)
Double = 4.3 gal (16.3 liters)

Weight:
Single = 5.4 lbs (2 kg)
Double = 9.4 lbs (4.3 kg)

Mesh Surface Area:
Single = 2.3 ft2 (2139 cm2)
Double = 4.2 ft2 (3906 cm2)

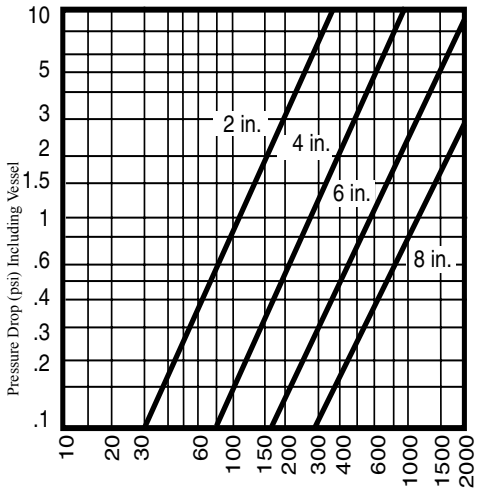
Pressure Drop Determination for Fulflo® Basket Strainers

1. From the pressure drop chart below, determine the pressure drop through the vessel using the known flow rate and inlet/outlet size. The chart is for water flowing through a vessel containing a clean 20 mesh basket.
2. To determine the pressure drop for a vessel with other strainers, multiply the above value by the appropriate correction factor in the following table (water only):
3. Correction factor for liquids other than water:
   a. Multiply pressure drop for water, determined by completing steps 1 and 2, by the specific gravity of the liquid.
   b. Multiply the results of "a" by the viscosity and mesh correction factor in the table at right.

Mesh Correction Factors

Viscosity SSU	20 Mesh	40 Mesh	60 Mesh	80 Mesh	100 Mesh
500	1.6	1.9	2.1	2.4	2.6
1,000	1.7	2.2	2.4	2.6	2.8
2,000	1.9	2.4	2.7	2.9	3.2
3,000	2.0	2.6	2.9	3.2	3.5
5,000	2.2	3.0	3.5	4.0	4.5
10,000	2.5	3.5	4.2	5.0	6.0

Water Correction Factor	
20 Mesh	*1.0*
40 Mesh	*1.2*
60 Mesh	*1.4*
80 Mesh	*1.6*
100 Mesh	*1.7*



*Vessel Port Size

Ordering Information

Strainer Baskets With Handles

Single Length, Stainless Steel	Part Number
1/8 in Perforations	0370-5177
20 Mesh (840µm)	0370-5059
40 Mesh (420µm)	0370-5060
60 Mesh (250µm)	0370-5061
80 Mesh (177µm)	0370-5062
100 Mesh (149µm)	0370-5063

Double Length, Stainless Steel	Part Number
1/8 in Perforations	0370-5156
20 Mesh (840µm)	0370-5064
40 Mesh (420µm)	0370-5065
60 Mesh (250µm)	0370-5066
80 Mesh (177µm)	0370-5067
100 Mesh (149µm)	0370-5068

Specifications are subject to change without notification.

ENGINEERING **YOUR** SUCCESS.

Sorbent Media Series

C-8500

Fulflo® TruBind™ 300 Cartridges

Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Parker Fulflo® TruBindTM absorbent cartridges utilize a modified polymeric absorbent that economically and effectively reduces trace hydrocarbon contamination in aqueous fluids. The enhanced polymer, configured in a radial-flow-design cartridge, provides maximum utilization of available surface area. This product can be used alone or as an enhancement to other systems. Whether process fluid reclamation or meeting disposal requirements is the goal, TruBind can solve many demanding hydrocarbon-contaminated aqueous fluid problems.

Benefits

- Increases machine tool life when installed at point-of-use
- Increases working life of valuable process fluids
- Reduces hydrocarbon levels to meet EPA discharge regulations
- Absorbed hydrocarbon is chemically bound by polymer and is not leachable
- Absorbent polymer is enhanced to maximize utilization of surface area
- Radial flow design of cartridge allows maximum flow with minimal pressure drop
- High integrity construction withstands harsh process environment
- A variety of cartridge sizes and end cap options increase housing selection
- TruBind cartridges are completely incinerable
- Parker's TQM system assures consistent and reliable performance

Applications

- Water Soluble Machine
- Alkaline Parts Washing
- Industrial Discharge Water
- Produced Water Disposal
- E-Coat Paint
- Post Oil/Water Separator
- Compressor Condensate
- Car & Truck Wash Water
- Plating Bath
- Gas & Oil Facility Wastewater
- Surface Water Runoff (Truck stops, airports, auto service stations)
- Bilge Water
- Pre Carbon Bed
- Aerosol Mists Cooling Water
- Tanker Ballast Water
- Pre R.O. Membrane Polishing

Parker

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Fulflo® TruBind™ 300 Cartridges

Specifications

Materials of Construction:

Absorbent: Proprietary modified polymer
Support Construction: 100% polyolefin
Seal Material: Gasket (Polyethylene Foam); 222 O-Ring (Buna-N)

Maximum Recommended Operating Conditions:

Temperature:
150°F (65°C) @ 20 psid (1.4 bar);
180°F (82°C) @10 psid (0.7 bar)
Pressure:
40 psid (2.8 bar) @ 75°F (24°C)
Flow Rate:
1.0 gpm per 10-inch cartridge
Changeout Pressure Drop (net):
10 psi (0.7 bar)
Flow Factor:
0.03 psid per 1 gpm at 1cks viscosity per 10 in cartridge
pH Range: 2 - 12

Lengths: 10-40 in (249mm-1016mm)
Outside Diameter: 2-1/2 in (63.5 mm)
Inside Diameter: 1-1/16 in (27 mm)

BioSafety:

The TruBind cartridge is classified as non-hazardous and incinerable. Disposal must be dictated by local regulations pertaining to the absorbed contaminant.

Recommended Vessels:

All standard Fulflo vessels designed for 2-1/2 in OD cartridges.

Technology

Unlike competitive technologies in which hydrocarbons are removed through surface adsorption onto the medium, TruBind cartridges utilize a proprietary modified polymer that both absorbs and chemically binds the hydrocarbon molecules into its interior matrices. The affinity of the polymeric absorbent for hydrocarbon contaminant is so great that accelerated testing by the Toxic Characteristics Leachate Procedure (TCLP) indicated the effluent hydrocarbon level in water to be below current and proposed EPA limits. The modified polymer was formulated to control the speed of hydrocarbon absorption by eliminating the potential for skin formation at the polymer/hydrocarbon interface. Consequently this polymer, when incorporated into a radial-flow-design cartridge, insures maximum utilization of surface area. The nature of the polymer makes it an effective absorbent for free, emulsified and dissolved oils, synthetic lubricants, grease and a multitude of organic solvents.

Performance

TruBind absorbent cartridge efficiency depends upon the residence time of the fluid within the cartridge, which is a function of the volumetric flow rate.

1. Hydrocarbon Removal Efficiency: At an equivalent flow rate of 1.0 gpm per 10-inch cartridge the TruBind cartridge typically reduces trace hydrocarbon contaminant in excess of 95% in single pass mode. This efficiency level can be maintained only to a net differential pressure of 10 psi. Series or multipass filtration can virtually eliminate hydrocarbon contamination.
2. Hydrocarbon Absorbent Capacity: The TruBind cartridge medium has the potential to remove up to 250 grams (approximately one-half pint) of low density hydrocarbon contaminant.On this basis, the table below provides expected life data in hours or gallons at several trace contaminant levels based on a 1.0 gpm flow rate per 10-inch cartridge. Absorbent capacity will decrease as density of hydrocarbon increases.
3. Flow Rate Capability: A maximum flow rate of 1.0 gpm per 10-inch length cartridge is recommended for the most effective removal of trace hydrocarbon contaminant.

Hydrocarbon (ppm)	Concentration (% by weight)	Hydrocarbon Removal per Minute (grams)	Estimated Life in Hours	Gallons Fluid Treated	Estimated Cost per Gallon of Treated Flud
10	*.001*	*0.04*	*106.0*	*6,330*	*$ .003*
100	*.01*	*0.40*	*10.6*	*633*	*$ .03*
1,000	*.1*	*4.00*	*1.1*	*63*	*$ .30*

Note: Cost per gallon decreases significantly with longer cartridges.

Ordering Information

TBC — [ ] — [ ] — [ ] — [ ]

Cartridge Series	Length			Support Core	End Cap Configuration	Seal Material
TruBind Absorbent Cartridge	(code)	(in)	(mm)	A = Standard Wall Polypropylene Core	DO = Double-Open-End (gasket seal) DX = DOE w/core extender TC = Single-Open-End (222 O-ring seal) TX = 222 O-ring/Flex Fin	A = Polyolefin Foam Gasket (standard for "DO" seal design) N = Buna-N O-Ring (standard for "TC" seal design)
	9	9-5/8	244			
	10	9-13/16	249			
	19	19-5/8	498			
	20	19-15/16	506			
	29	29-1/4	743			
	30	30-1/16	764			
	39	39	991			
	40	40	1016			

Specifications are subject to change without notification.

ENGINEERING **YOUR** SUCCESS.

C-8510

Fulflo® TruBind™ 400 Cartridges

Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Parker Fulflo® TruBind™ absorbent cartridges utilize a modified polymeric absorbent that economically and effectively reduces trace hydrocarbon contamination in aqueous fluids. The enhanced polymer, configured in a radial-flow-design cartridge, provides maximum utilization of available surface area. This product can be used alone or as an enhancement to other systems. Whether process fluid reclamation or meeting disposal requirements is the goal, TruBind™ can solve many demanding hydrocarbon-contaminated aqueous fluid problems.

Benefits

- Increases machine tool life when installed at point-of-use
- Increases working life of valuable process fluids
- Reduces hydrocarbon levels to meet EPA discharge regulations
- Absorbed hydrocarbon is chemically bound by polymer and is not leachable
- Absorbent polymer is enhanced to maximize utilization of surface area
- Radial flow design of cartridge allows maximum flow with minimal pressure drop
- High integrity construction withstands harsh process environment
- TruBind™ cartridges are completely incinerable
- Parker's TQM system assures consistent and reliable performance

Applications

- Water Soluble Machine Tool Coolants
- Alkaline Parts Washing
- Industrial Discharge
- Car & Truck Wash Water
- Gas & Oil Facility Wastewater
- Tanker Ballast Water
- Bilge Water
- Surface Water Runoff
- Produced Water Disposal (Truck stops, airports, auto service stations)
- Pre Carbon Bed
- post Oil/Water Separator
- E-Coat Paint
- Compressor Condensate
- Pre R.O. Membrane Water
- Plating Bath
- Aerosol Mists

Parker

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Fulflo® TruBind™ 400 Cartridges

Specifications

Materials of Construction:
Absorbent: Proprietary polymer
Support Construction: 100% polyolefin
Seal Material: Polyethylene Foam

Cartridge Dimensions (nominal)
Lengths:
9-13/16 in (249mm)
19-15/16 in (506mm)
Outside Diameter:
4-1/2 in (114 mm)
Inside Diameter:
1-1/16 in (27 mm)

Maximum Recommended Operating Conditions:
Temperature:
150°F (65°C) @20 psid (1.4 bar);
180°F (82°C) @10 psid (0.7 bar)
Pressure:
40 psid (2.8 bar) @ 75°F (24°C)
Flow Rate:
3.0 gpm per 10-inch cartridge
Changeout Pressure Drop (net):
10 psi (0.7 bar)
Flow Factor:
0.1 psid per 1 gpm at 1 cks viscosity per 10 in cartridge
pH Range: 2 - 12

BioSafety:
The TruBind cartridge is classified as non-hazardous and incinerable. Disposal must be dictated by local regulations pertaining to the absorbed contaminant.

Recommended Vessels:
Parker LTG10 and LTG20 polymeric vessels and equivalent competitive vessels.

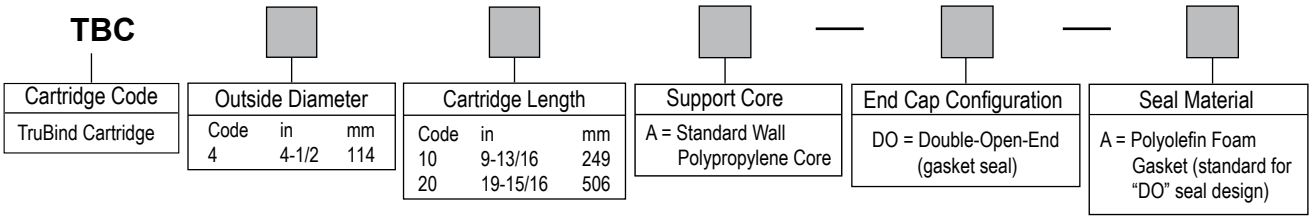
Technology
Unlike competitive technologies in which hydrocarbons are removed through surface adsorption onto the medium, TruBind cartridges utilize a proprietary modified polymer that both absorbs and chemically binds the hydrocarbon molecules into its interior matrices. The affinity of the polymeric absorbent for hydrocarbon contaminant is so great that accelerated testing by the Toxic Characteristics Leachate Procedure (TCLP) indicated the effluent hydrocarbon level in water to be below current and proposed EPA limits. The modified polymer was formulated to control the speed of hydrocarbon absorption by eliminating the potential for skin formation at the polymer/hydrocarbon interface. Consequently this polymer, when incorporated into a radial-flow-design cartridge, insures maximum utilization of surface area. The nature of the polymer makes it an effective absorbent for free, emulsified and dissolved oils, synthetic lubricants, grease and a multitude of organic solvents.

Performance
TruBind absorbent cartridge efficiency depends upon the residence time of the fluid within the cartridge, which is a function of the volumetric flow rate.

1. Hydrocarbon Removal Efficiency: At an equivalent flow rate of 3.0 gpm per 10-inch cartridge the TruBind cartridge typically reduces trace hydrocarbon contaminant in excess of 95% in single pass mode. This efficiency level can be maintained only to a net differential pressure of 10 psi. Series or multipass filtration can virtually eliminate hydrocarbon contamination.
2. Hydrocarbon Absorbent Capacity: The TruBind cartridge medium has the potential to remove up to 500 grams (approximately one pint) of low density hydrocarbon contaminant. On this basis, the table below provides expected life data in hours or gallons at several trace contaminant levels based on a 3.0 gpm flow rate per 10-inch cartridge. Absorbent capacity will decrease as density of hydrocarbon increases.
3. Flow Rate Capability: A maximum flow rate of 3.0 gpm per 10-inch length cartridge is recommended for the most effective removal of trace hydrocarbon contaminant.

Hydrocarbon (ppm)	Concentration (% by Weight)	Hydrocarbon Removal per Minute (grams)	Estimated Life in Hours	Gallons Fluid Treated	Estimated Cost per Gallon of Treated Fluid
10	*.001*	*0.11*	*80.0*	*14,400*	*$ .002*
100	*.01*	*1.10*	*8.0*	*1,400*	*$ .025*
1,000	*.1*	*11.00*	*0.8*	*144*	*$ .24*

Ordering Information



Specifications are subject to change without notification.

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C-8520

Fulflo® TruBind™ 700 Cartridges

Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Parker Hannifin's Fulflo® TruBindTM absorbent cartridges utilize a modified polymeric absorbent that economically and effectively reduces trace hydrocarbon contamination in aqueous fluids. The enhanced polymer, configured in a radial-flow-design cartridge, provides maximum utilization of available surface area. This product can be used alone or as an enhancement to other systems. Whether process fluid reclamation or meeting disposal requirements is the goal, TruBind™ can solve many demanding hydrocarbon contaminated aqueous fluid problems.

Benefits

- Increases machine tool life when installed at point-of-use
- Increases working life of valuable process fluids
- Reduces hydrocarbon levels to meet EPA discharge regulations
- Absorbed hydrocarbon is chemically bound by polymer and is not leachable
- Absorbent polymer is enhanced to maximize utilization of surface area
- Radial flow design of cartridge allows maximum flow with minimal pressure drop
- High integrity construction withstands harsh process environment
- Retrofits parker P, FP, FPM vessel series
- TruBindTM cartridges are completely incinerable

Applications

- Water Soluble Machine Tool Coolants
- Industrial Discharge Water
- Produced Water Disposal
- Pre R.O.
- Aerosol Mists
- Injection Molding Cooling Water
- Car & Truck Wash Water
- Gas & Oil Facility Wastewater
- Floor Scrubbing Waste Water Polishing
- Leisure/Commercial Shipping (Truck stops, airports, auto service stations)
- Bilge Water
- Alkaline Parts Washing
- E-Coat Paint
- Tanker Ballast Water
- Plating Solutions
- Pre Carbon Bed Membrane
- Compressor Condensate
- Post Oil/Water Separator
- Surface Water Runoff

Fulflo® TruBind™ 700 Cartridges

Specifications

Materials of Construction:
Absorbent: Laminated Proprietary Polymer
Support Construction: 100% polyolefin
Seal Materia: Buna-N gasket

Cartridge Dimensions (nominal)
Length: 18 in (457 mm)
Outside Diameter
6-1/4 in (159 mm)
Inside Diameter
2-5/8 in (67 mm) with separate support core

Maximum Recommended Operating Conditions:
Temperature:
150°F (65°C) @ 20 psid (1.4 bar);
180°F(82°c) @ 10 psid (0.7 bar)
Pressure:
60 psid (4.1 bar) @ 75°F (24°C)
Flow Rate: 5 gpm per cartridge
Changeout Pressure Drop (net):
10 psi (0.7 bar)
Flow Factor:
0.3 psid per 1 gpm at 1 cks viscosity per cartridge
pH range: 2 -12

Recommended Vessels:
Parker Fulflo "P", "FP", "FPM" Series

BioSafety:
The TruBind™ cartridge is classified as non-hazardous and incinerable. Disposal must be dictated by local regulations pertaining to the absorbed contaminant

Technology
Unlike competitive technologies in which hydrocarbons are removed through surface adsorption onto the medium, TruBind cartridges utilize a proprietary modified polymer that both absorbs and chemically binds the hydrocarbon molecules into its interior matrices. The affinity of the polymeric absorbent for hydrocarbon contaminant is so great that accelerated testing by the Toxic Characteristics Leachate Procedure (TCLP) indicated the effluent hydrocarbon level in water to be below current and proposed EPA limits. The modified polymer was formulated to control the speed of hydrocarbon absorption by eliminating the potential for skin formation at the polymer/hydrocarbon interface. Consequently this polymer, when incorporated into a radial-flow-design cartridge, insures maximum utilization of surface area. The nature of the polymer makes it an effective absorbent for free, emulsified and dissolved oils, synthetic lubricants, grease and a multitude of organic solvents.

Performance
TruBind™ absorbent cartridge efficiency depends upon the residence time of the fluid within the cartridge, which is a function of the volumetric flow rate.

1. Hydrocarbon Removal Efficiency: At an equivalent flow rate of 5 gpm per cartridge the TruBind™ cartridge typically reduces trace hydrocarbon contaminant in excess of 95% in single pass mode. This efficiency level can be maintained only to a net differential pressure of 10 psi. Series or multipass filtration can virtually eliminate hydrocarbon contamination.
2. Hydrocarbon Absorbent Capacity: The TruBind™ cartridge medium has the potential to remove up to 1200 grams (approximately one quart) of low density hydrocarbon contaminant. On this basis, the table below provides expected life data in hours or gallons at several trace contaminant levels based on a 5 gpm flow rate per cartridge. Absorbent capacity will decrease as density of hydrocarbon increases.

3. Flow Rate Capability: A maximum flow rate of 5 gpm per cartridge is recommended for the most effective removal of trace hydrocarbon contaminant.

Hydrocarbon (ppm)	Concentration (% by Weight)	Hydrocarbon Removal per Minute (grams)	Estimated Life in Hours	Gallons Fluid Treated	Estimated Cost per Gallon of Treated Fluid
10	*.001*	*0.189*	*111.39*	*31746*	*$ .003*
100	*.01*	*1.795*	*11.14*	*3175*	*$ .030*
1,000	*.1*	*17.954*	*1.11*	*317.5*	*$ .295*

TruBind™ 700 Series is coreless and requires a support core prior to cartridge installation in vessel. The polyethylene core gives the cartridge sufficient strength and precludes cartridge collapse at recommended operating conditions. Support core is a reusable part and does not need to be replaced.
Part Number: 4452-5120

Ordering Information

TBC — ☐ — ☐ — ☐ — ☐ — ☐

Cartridge Series	Outside Diameter	Cartridge Length	Support Core	Cartridge Seal Design	Seal Material
TruBind Absorbent Cartridge	Code 7: in 6-1/4, mm 159	Code 18: in 18, mm 457	A = Heavy Wall Polypropylene Core	DO = Double Open End	N = Buna N Gasket

Specifications are subject to change without notification.

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Fulflo® MC and RC Carbon Filter Cartridges

Activated Carbon Cartridges Eliminates Taste, Odor and Sediment in Potable Water

Parker's FDA grade MC and RC activated carbon cartridge series provides effective control of taste and odor causing contaminants in water such as chlorine and dissolved organics. At the same time suspended solids are controlled to a nominal 5 micrometer level.

The MC Series features a unique 3-stage "treatment" matrix with a granular carbon chamber between two layers of 5 micron rated wound polypropylene medium. The RC Series is similarly constructed but with a larger outside diameter and in a variety of lengths to fit standard double open end Fulflo® "B" series vessels.

The MMCT-10 is unique within this series as a single-open-end carbon bottle design in which flow is channeled through the entire length of the cartridge. With this design contact time is maximized for optimum adsorptive contaminant removal.

Benefits

- All components of the carbon cartridge series meet FDA guidelines for potable and edible liquid contact according to CFR Title 21
- Six different cartridge sizes to accomodate most Fulflo® and similar style competitive vessels
- Unique design with prefiltration and post filtration stage to optimize activated carbon layer
- Liquid phase high surface area activated carbon maximizes chlorine removal
- Unique 3-stage water treatment capability from one filter cartridge

Applications

- Drinking Water
- Plating Solutions
- Waste Water Treatment
- Color Contaminated Fluids

Fulflo® MC and RC Carbon Filter Cartridges

Specifications

Materials of Construction:
Absorbent Granulated 12 x 40 Mesh Activated Carbon
Filter Medium: FDA Grade Wound Polypropylene
Support Contruction: Polypropylene
End Caps (RC/MC): PVC
End Cap Adhesve (RC/MC): PVC
Gasket: EPDM

Maximum Recommended Operating Conditions:
Flow Rate:
1.0 gpm (3.8 lpm) per 10 in length for optimum absorbent contact time
Temperature:
140°F (76°C) @ 30 psid (2.1 bar)
Pressure:
60 psid (4.1 bar) @ 75°F (24°C)
Changeout Pressure Drop:
30 psid (2.1 bar) or when objectionable taste and odor are detected in effluent water.

Particle Removal Rating:
5 Micrometer Nominal

Packaging:
All cartridges packaged 20 units per master carton.
RC Series cartridges are packaged in individual boxes and include Buna N vessel shell gasket (P/N 2620-5046)
MC Series cartridges are individually poly shrink wrapped with label but without individual carton.

Master Carton Weight (lbs.):

RC4	11
RC10	25
MC10-2	17
MC20-2	34
MC30-2	26
MMCT-10	19

Ordering Information

Cartridge Part Number	Carbon Content (weight in grams)	Nominal Dimensions	Recommended Filter Vessel
RC4	95	3-13/16 in long x 3-1/4 in OD x 1-1/16 in ID	BR4-3/8 SD
RC10	275	9-13/16 in long x 3-1/4 in OD x 1-1/16 in ID	BSB10 - 3/4 SD
MC10-2	115	9-13/16 in long x 2-3/4 in OD x 1-1/16 in ID	LT10 and all other Fulflo vessels except FE Series
MC20-2	250	19-15/16 in long x 2-3/4 in OD x 1-1/16 in ID	LT20 and all other Fulflo vessels except FE Series
MC30-2	395	30-1/16 in long x 2-3/4 in OD x 1-1/16 in ID	All Fulflo vessels except FE Series
MMCT-10	185	9-13/16 in long x 2-3/4 in OD x 1-1/16 in ID	LT10 only

Notes:
(1) MMCT-10 is single open end style and fits only LT10 and similar competitive vessels.
(2) All other cartridges are double open end style. MC cartridges are stackable in multi-length vessels by using stainless steel spacers (P/N 5710-5022).

Specifications are subject to change without notification.

ENGINEERING **YOUR** SUCCESS.

Metallic Media Series

Fulflo® Metallic Filter Cartridges

Optimize Process Filtration with High Integrity Metallic Cartridges

Parker's Fulflo® stainless steel cartridges provide the optimum filtration solution for fluids and gases in high temperature and high flow rate applications.

Available in a cylindrical or pleated design, cleanable stainless steel cartridges are the logical choice when natural and synthetic media cartridges cannot meet aggressive process conditions.

Fulflo® reusable 304 and 316 grade stainless steel cartridges offer versatility of choice with fourteen nominal particle removal ratings, six standard lengths and a variety of end configurations and seal materials.

Benefits

- Temperature capability up to 500° F with synthetic seals; up to 1500°F with NPT connections
- Available in 304 and 316 stainless steel for compatibility choice with aggressive chemicals
- Available in fourteen nominal ratings from 2 to 840 microns for a wide range of particle size removal
- Dimensional integrity of stainless steel media accomodates high flow rate and high temperature systems
- Cartridges may be cleaned and reused
- Available with a wide range of grommet and O-ring materials to optimize fluid and temperature compatibility
- Variety of seal configurations allow retrofit in many filter vessel designs
- Welded and crimped construction eliminates the need for adhesives which can be a contaminant source and limit temperature range
- Pleated surface maximizes filtration area for longer service life
- Plain (cylindrical) surface provides ease of cleaning
- Optional perforated stainless steel pleat protectors minimize handling damage
- Meets FDA guidelines for use with potable and edible liquids

Applications

- Heat Transfer
- Hot Melt Processes
- Viscous Fluids
- Hot Wax
- Aggresive Gases
- Polymer Filtration
- High Temperature Processes
- Process Fluids Steam
- Corrosive Fluids
- Catalyst Recovery
- Caustic Cleaning Solutions

ENGINEERING **YOUR** SUCCESS.

Fulflo® Metallic Filter Cartridges

Specifications

Materials of Construction:

Filter Medium:
Stainless steel wire cloth
Structural Components:
100% stainless steel
Seal Materials:
Grommets: Buna N, Viton, PTFE, EPDM
O-Rings:
Buna N, EPDM, Viton, PFA encapsulated Viton
Construction Method:
Welded and crimped (no adhesives)

Meets FDA guidelines with optional seal materials ("F" Code)

Maximum Recommended Operating Conditions:

Temperature:
1500ºF (816°C)
NPTF and NPTM styles only

500ºF (260°C)
Any cartridge style with PTFE grommet

400ºF (204°C)
Any cartridge style with Viton or PFA encapsulated Viton seal material

300ºF (149°C)
Any cartridge style with EPDM seal material

250ºF (121°C)
Any cartridge style with Buna N seal material

Differential Pressure:
Standard core: 60 psi (4.1 bar)
High pressure core: 300 psi (20.7 bar)
Flow Rate:
10 gpm (38 lpm) per 10 in cartridge
Changeout ΔP: 35 psi (2.4 bar)

Particle Removal Ratings (Nominal):

Effective Filtration Area:
Cylindrical
0.5 ft²/10 in length (465 cm²/254mm)
Pleated
1.7 ft²/10 in length (1580 cm²/254 mm)

Dimensions

Outside Diameter
Cylindrical: 2-1/2 in (64 mm)
Pleated: 2-5/8 in (67 mm)
Inside Diameter
1-1/16 in (27 mm)
Lengths (nominal)
10, 20 and 30 in
Grommet
1-1/16 in (27 mm) ID X 1-7/8 in (48 mm) OD

Flow Rate and Pressure Drop Formulas

$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Removal Rating/Mesh Count/Open Area

Micrometer Rating Nominal/(Absolute)		Mesh Count (per inch)	Percent Open Area
2	(9)	325 x 2300	NA
5	(14)	200 x 1400	NA
10	(18)	165 x 1400	NA
20	(32)	200 x 600	NA
40	(55)	120 x 400	NA
75		190 x 200	35
100		30 x 150	31
150		90 x 100	33
190		70 x 80	35
230		50 x 60	41
280		40 x 50	35
370		40 x 40	36
540		30 x 30	45
840		20 x 20	52

Ratings From 2 - 40 micrometers are twill dutch weave pattern
Ratings From 75 - 840 micrometers are open square weave pattern

Flow Factors

Length (in)	Flow Factor
9 3/4, 10	0.00036
19 1/2, 20	0.00076
29 1/4, 30	0.00116

Note: *Flow factors are the same for all ratings.*
Center core ID and length are primary flow restrictions.

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 in (or single).
4. Length Factors convert flow or ΔP from 10 in (single length) to required cartridge length.

Ordering Information

Cartridge Code	Nominal Micrometer Rating (µm)	Nominal Length (in)	Media/Support Construction	Seal Material	End Cap Configuration	Special Options
CSS = Cylindrical Stainless Steel PSS = Pleated Stainless Steel	2 5 10 20 40 75 100 150 190 230 280 370 540 840	Code = in = mm 4 = 4 = 102 9.75 = 9.75 = 248 10 = 10 = 254 19.5 = 19.5 = 495 20 = 20 = 508 29.25 = 29.25 = 743 30 = 30 = 762 40 = 40 = 1016	G = 304 Stainless Steel S = 316 Stainless Steel	E = EPDM F = PTFE (Grommet only) N = Buna-N T = PFA/Viton* (O-Ring Only) V = Viton* X = No Seal Material (FC, MC style)	DO = Double open end (DOE) DX = Double Open end with extended Core FC = Single open end w/1" NPTF female connetion MC = Single open end w/1" NPTM male SC = 226 O-Ring/Flat TC = 222 O-Ring/Flat	F = FDA Grade Seal Material H = High Pressure Core (316 SS) P = Pleat Protector sleeve (316 SS)

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Single Cartridge Filter Vessel Series

Fulflo® B Filter Vessels

Fulflo® "B" Series Filters Are Suitable for a Wide Range of Industrial Applications

Carbon Steel "B" Vessels feature single center bolt for quick cartridge changing and in-line connections for easy installation.

Duplex vessels permit independent or parallel shell operation. In addition, they offer the advantage of continuous service because one can be serviced while the other is operating. Manifold vessels work simultaneously in parallel shells to provide higher flow rates with less pressure drop than single-shell models.

Air and gas single-shell vessels feature in-line pipe connections for easy installation and aluminum baffel sleeve deflectors for two-stage moisture removal.

Benefits

- Single center bolt for quick cartridge change
- In-line pipe connection for easy installation
- Optional integrally cast brackets for easy mounting
- Drains and vents standard on all models
- Standard Buna-N closure gasket material with optional Viton,* Neoprene and fluoropolymer gaskets available
- Spring-loaded bottom seats for positive cartridge sealing
- Duplex vessels for continuous service
- Manifold unit for increased flow
- B-Series filter vessels take standard DOE cartridges

Applications

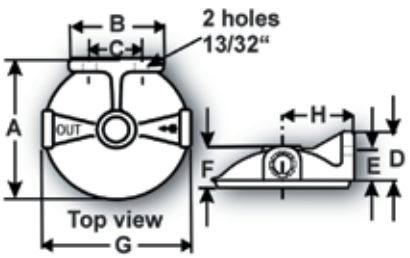
- Petrochemicals
- Coolants
- Hydraulic Oils
- Process Water
- Solvents
- Potable Liquids
- Compressed Air

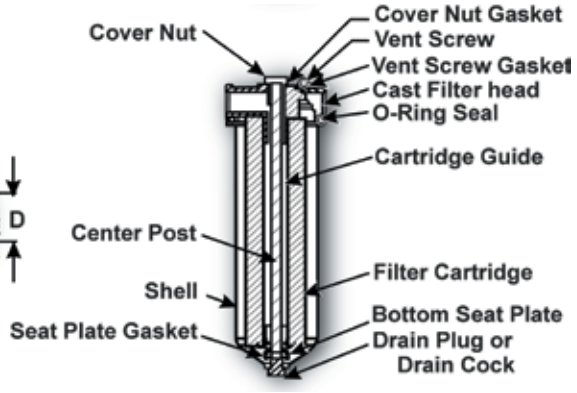
Fulflo® B Filter Vessels

Bracketed Head Dimensions *(in)*

	NPT 1/4 *(in)*	NPT 3/4 *(in)*
A	*4.22*	*4.22*
B	*2.75*	*3.31*
C	*1.50*	*2.19*
D	*1.50*	*1.88*
E	*1.0*	*1.38*
F	*1.25*	*1.66*
G	*4.19*	*4.31*
H	*2.13*	*2.13*

Note: *Flow factors are the same for all ratings.*
Center core ID and length are primary flow restrictions.





Duplex (BDX1) and Manifold (BMCX2) Design Specifications

Model	Typical Aqueous Flow* *(gpm)*	(Number) & Length of Cartridges *(in)*	Pipe Size (NPT) *(in)*	Maximum Operating Pressure *(psi @ 200°F)*	Overall Height *(in)*	Shipping Weight *(lbs)*
BDX1-10-1/2 DS	*5/10*	*(2) 10*	*1/2*	*150 psi (10.3 bar)****	*13.75*	*16*
*BMCS2-10-1 SD***	*10*	*(2) 10*	*1*	*150 psi (10.3 bar)****	*13.63*	*14*

* Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult nomographs or flow curves for each application.
** Two shells in parallel. No bracket required.
*** Maximum available working pressure is 100 psi (6.9 bar) at 250°F (121°C).

Design Specifications

Model	Rated Capacity*	(Number) & Length of Wound Depth Cartridges *(in)*	Operating Pressure *(psi @ 200°F)*	Overall Height *(in)*	Outside Diameter *(in)*	Face-to-Face Dim. *(in)*	Pipe Size (NPT) *(in)*	Shipping Weight *(lbs)*
AIR AND OTHER GASES								
B3A-(1/4 OR 3/8) SC	*65 scfm*	*(1) 3*	*125 psi (8.6 bar)*	*7.0*	*3.63*	*4.19*	*.25–.38*	*3.0*
B5A-(1/2 or 3/4) SD	*110 scfm*	*(1) 5*	*125 psi (8.6 bar)*	*9.25*	*3.63*	*4.31*	*.5–.75*	*3.75*
B7A-1/2 OR 3/4) SD	*150 scfm*	*(1) 7*	*125 psi (8.6 bar)*	*11.38*	*3.63*	*4.5*	*.75–1*	*5.25*
AF7-3/4SD	*180 scfm*	*(1) 7*	*150 psi (10.3 bar)†*	*11.38*	*3.63*	*4.31*	*.75*	*4.25*
LIQUIDS								
B10-3/4 SD	*5 gpm*	*(1) 10*	*150 psi (10.3 bar)‡*	*12.88*	*3.63*	*4.31*	*.75*	*6.0*
B20-3/4 SD	*10 gpm*	*(1) 20*	*150 psi (10.3 bar)‡*	*23.0*	*3.63*	*4.31*	*.75*	*9.25*
B10-1 SD	*5 gpm*	*(1) 10*	*150 psi (10.3 bar)‡*	*13.25*	*3.63*	*4.5*	*1.0*	*6.0*
B20-1 SD	*10 gpm*	*(1) 20*	*150 psi (10.3 bar)‡*	*23.25*	*3.63*	*4.5*	*1.0*	*9.25*

* Maximum flow rate for gases based on air at 70°F (21°C) and maximum operating pressure with initial pressure loss of 3 psig (.2 bar) with a 5µm viscose wound depth filter cartridge.
† Maximum allowable working pressure is 250 psi (17.2 bar) at 100°F (38°C).
‡ Maximum allowable working pressure is 100 psi (6.9 bar) at 250°F (121°C).

Ordering Information

Design Series	Cartridge Length	Connection Size (in)	Spring-Loaded Seal	Drain
B = Carbon Steel BDX1 = Duplex AF = Air	3A 5A 7 (AF only) 7A 10 20	1/4 3/8 1/2 3/4 1	S	D

Note:B3A, B5A, and B7A vessels supplied with 10µm Fulflo wound cotton cartridge
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Fulflo® Single Cartridge Filter Vessels

Fulflo® Single Cartridge Stainless Steel Filter Vessels Are for Water and Corrosive Fluid Applications

The BSSB models have a 316 stainless steel shell and a four-boss 316 stainless steel head for applications where an all-stainless steel construction is required.

Benefits

- Single center bolt for quick cartridge change
- In-line pipe connections for easy installation
- Bracket kit for installation on drilled head bosses for easy mounting
- Spring-loaded bottom seats for positive cartridge sealing
- O-ring closure seal provides positive sealing

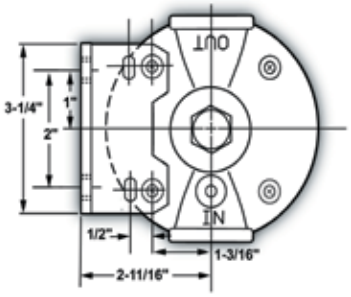
Applications

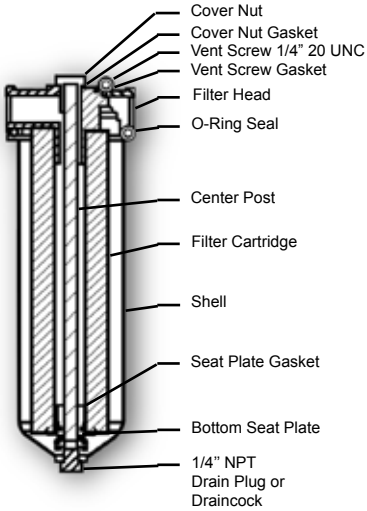
- Petrochemicals
- Coolants
- Hydraulic Oils
- Process Water
- Solvents
- Potable Liquids
- Compressed Air

Fulflo® Single Cartridge Filter Vessels

Bracketed Head Dimensions

BSSB





BSSB Design Specifications

Model	Typical Aqueous Flow* *(gpm)*	(Number) & Length of Wound Depth Cartridges *(in)*	Maximum Operating Pressure	Overall Height *(in)*	Outside Dia. *(in)*	Face-to-Face Dim. *(in)*	pipe Size (NPT) *(in)*	Shipping Weight *(lbs)*
BSSB10-3/4 SD	5	(1) 10	150 psi (10.3 bar)@250°F†	12.75	3.63	4.31	.75	6.0
BSSB20-3/4 SD	10	(1) 20	150 psi (10.3 bar)@250°F†	22.88	3.63	4.31	.75	10.50
BSSB10-1 SD	5	(1) 10	150 psi (10.3 bar)@250°F†	13.0	3.63	4.5	1.0	6.0
BSSB20-1 SD	10	(1) 20	150 psi (10.3 bar)@250°F†	23.13	3.63	4.5	1.0	10.50
BSSB30-1 SD	15	(1) 30	150 psi (10.3 bar)@250°F†	33.25	3.63	4.5	1.0	15.00

* Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type.
† Maximum allowable working pressure is 175 psi (12.1 bar) at 200°F (94°C).

Ordering Information

Design Series	Cartridge Length	Connection Size (in)	Spring-Loaded Seal	Drain
BSSB = 4 BOSS 316 SS Head/ 316 SS Shell	10 20 30	3/4 1	S	D

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Fulflo® TC Single Cartridge Stainless Steel Filter Vessel

Fulflo® Single Cartridge Stainless Steel Vessels Are for use With SOE-222 Style Filter Cartridges

The SSTC models have a 316 stainless steel shell and a four-boss 316 stainless steel head for applications where an all-stainless steel construction is required. The vessels feature a head which accepts SOE TC style filter cartridges which eliminates the possibility of fluid bypass.

Benefits

- The vessels are sealed using a ring type threaded closure which requires no special tools to change the cartridges
- Threaded ring closure for quick cartridge change
- 222 seal cup for TC and competitive cartridge sealing (M3, Code 3, Code 0)
- Integrally cast brackets for easy mounting
- Standard Buna-N closure o-ring material with optional Viton, EPR and Silicone available
- Available for use with 10”, 20” and 30” cartridge lengths
- Vessel has no internal parts
- Cartridge seating is positive and can be checked prior to closing
- All components have electropolished finish

Applications

- Solvents
- Chemicals
- Potable Water
- Parts Washer

Parker

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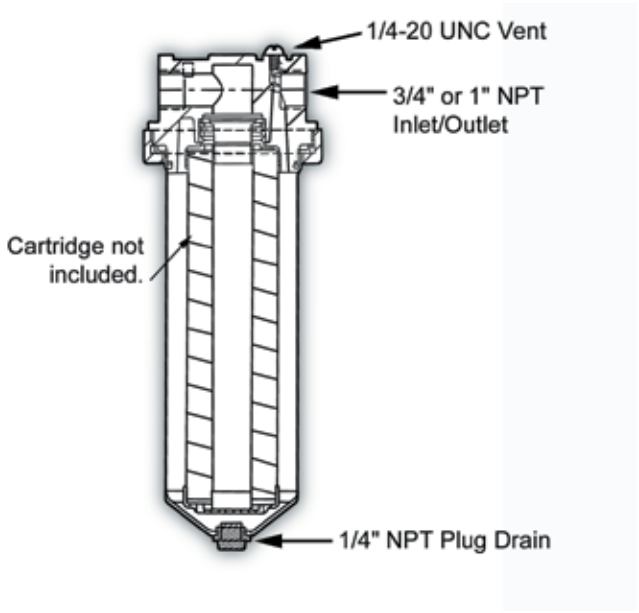
Fulflo® Single Cartridge Stainless Steel Filter Vessel

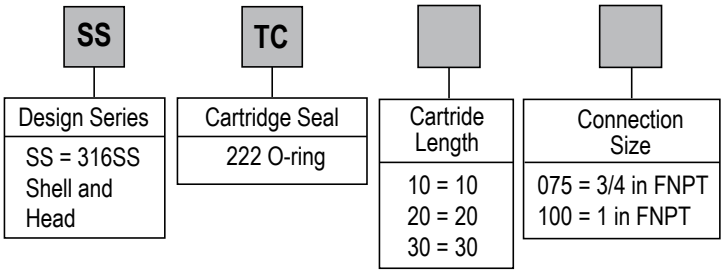
Design Specifications

Model	Typical Aqueous Flow* *(gpm)*	Length of Cartridges *(in)*	Operating Pressure *(psi @ 250°F)*	Overall Height *(in)*	Outside Diameter Face-to-Face *(in)*	Pipe Size (NPT) *(in)*	Shipping Weight *(lbs)*
SSTC10-075	5	10	200 psi (13.8 bar)	12.25	3.50	.75	7.80
SSTC20-075	10	20	200 psi (13.8 bar)	22.38	3.50	.75	9.00
SSTC30-075	15	30	200 psi (13.8 bar)	32.50	3.50	.75	10.20
SSTC10-100	5	10	200 psi (13.8 bar)	12.25	3.50	1.00	7.80
SSTC20-100	10	20	200 psi (13.8 bar)	22.38	3.50	1.00	9.00
SSTC30-100	15	30	200 psi (13.8 bar)	32.50	3.50	1.00	10.20

Optional Seals Provided	
Viton	*P/N 4152-8236*
EPR	*P/N 4154-5236*
Silicone	*P/N 4151-4236*
FEP/Viton	*P/N 4154-4236*
FEB/Silicon	*P/N 4150-5617*



Ordering Information



Note: Buna-N is standard seal.

Specifications are subject to change without notification.
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Fulflo® High-Pressure Single Cartridge Filter Vessel (4.5C)

Fulflo® High-Pressure Filter Vessels Are Ideal for High-Pressure Liquid Applications

Ideal for a wide range of industrial machinery and process industry applications, these vessels combine extremely high-pressure rating capability with ease of installation and rugged durability.

Benefits

- 4.5C features multiple bolt closure to meet high-pressure requirements
- In-line pipe connections for easy installation
- Available in carbon steel and 316 stainless steel materials
- Spring-loaded bottom seats for positive cartridge sealing
- Drain and vent standard on all models
- Vessels accept a single 10” or 20” DOE (double-open-end) seal elements

Applications

- Petrochemicals
- Coolants
- Hydraulic Oils
- Process Water
- Solvents
- Other High-Pressure Liquids

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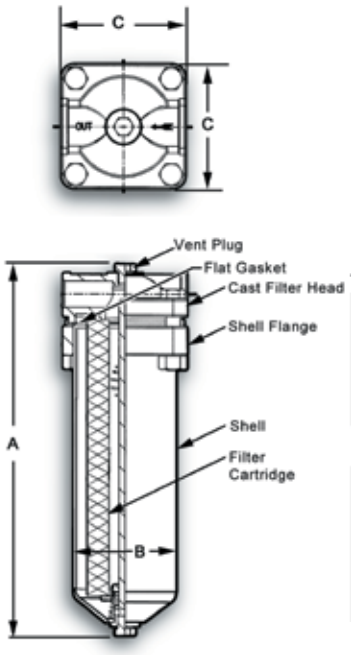
Fulflo® High-Pressure Single Cartridge Filter Vessel

Design Specifications

Model	Rated Capacity* *(gpm)*	(Number) & Length of Wound Depth Cartridges *(in)*	Maximum Operating Pressure *(psi)*	Maximum Operating Temperature	Overall Height *(in)*	Outside Diameter *(in)*	Face-to-Face Dim. *(in)*	Pipe Size (NPT) *(in)*	Shipping Weight *(lbs)*
4.5C10-3/4 SD	*5*	*(1) 10*	*450 psi (31.0 bar)*	*400°F (204°C)*	*13.31*	*3.63*	*4.38*	*.75*	*9*
SS4.5C10-3/4 SD	*5*	*(1) 10*	*450 psi (31.0 bar)*	*400°F (204°C)*	*13.31*	*3.63*	*4.38*	*.75*	*10*
4.5C20-3/4 SD	*10*	*(1) 10*	*450 psi (31.0 bar)*	*400°F (204°C)*	*29.19*	*3.63*	*4.38*	*.75*	*12.25*
SS4.5C20-3.4SD	*10*	*(1) 10*	*450 psi (31.0 bar)*	*400°F (204°C)*	*29.19*	*3.63*	*4.38*	*.75*	*13.25*

* Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type.



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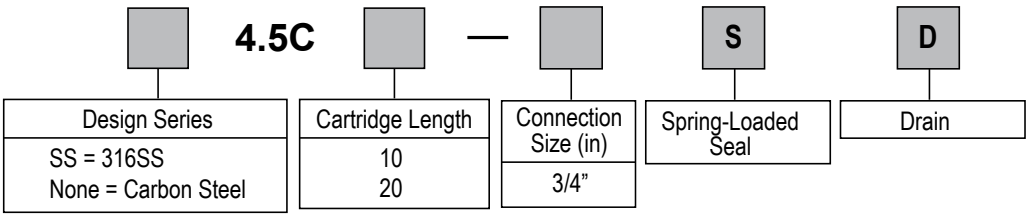

Specifications are subject to change without notification.

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Fulflo® “M” Series Single Cartridge Vessels

Fulflo® High-Pressure Single Cartridge

Parker’s “M” Series Single Cartridge Filter Vessels are designed for a broad range of high pressure industrial and chemical process applications. All details of design, materials, construction and workmanship comply with the ASME code for pressure vessels. The “M” series is available with and without the ASME stamp.

Benefits

- ASME design to insure integrity, available with and without the ASME stamp
- T-Style head and shell for ease of instalation and servicing
- Standard O-Ring closure seal is Buna N, with optional materials available for improved chemical compatibility and higher temperature rating
- Flanged or threaded connections to suit installation requirements and preference
- Optional 150, 300 or 600 lb. RFSO flange connections for installation flexibility
- 1-inch connections for maximum flow capability of filter cartridges
- Utilizes one 10-, 20- or 30-inch cartridge
- Multiple bolt closure with bright zinc plated studs
- Optional single-open-end (SOE 2-222 TC Style) cartridge adapter for positive sealing of high efficiency filter cartridges
- Wide range of cartridge media available for process clarity control and chemical compatibility
- Rigid cartridge support post with threaded end seal for positive double open end (DOE) cartridge seating

Applications

- Chemicals
- Catalyst Recovery
- Solvents
- Cutting Oils
- Other High Pressure Liquids
- Process Water
- Lubricants
- Coolants
- Hydraulic Oils
- Compressed Air and Gases

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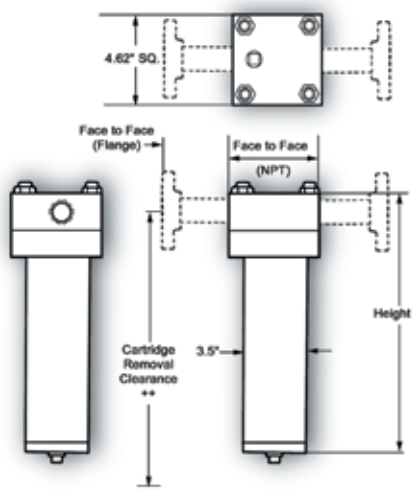
Fulflo® “M” Series Single Cartridge Vessels

Specifications

Carbon steel or 316 stainless steel material
Drain: 1/4 in NPT
Vent: 1/4 in NPT
Bolting: (4) 5/8-11 UNC bright zinc plated carbon steel
Head to shell seal



Maximum Allowable Working Pressure

Connections	Designation	Carbon Steel at 250°(121°C)	316 Stainless Steel at 250°(121°C)
FNPT	T	1610 psig	1610 psig
150 lb. Flange	F	245 psig	225 psig
300 lb. Flange	H	665 psig	590 psig
600 lb. Flange	J	1332 psig	1180 psig

Note: FNPT maximum pressure is 1610 psig at 300°F with EPR O-ring, 400°F with Viton* and FEP encapsulated Viton* O-ring, and 500°F with FEP Encapsulated Silicone. Flanged units (F, H, and J designations) are based on ANSI B16.5 pressure at 250°F (121°C). The flanged versions can also be rated for the higher design temperature in which case the pressure rating will be reduced according to ANSI B16.5. Indicate th desired temperature in degrees F at the end of the model number. The gasket material and flange rating must be changed accordingly.

“M” Series Flow Rates and Dimensions

Model	Typical Aqueous† Flow Rate *(gpm)*	Cartridge Length *(in)*	Height *(in)*++	Inlet Face to Outlet Face *(in)*		Removal Weight *(lbs)*		Clearance *(in)*++
				FNPT	Flanged	FNPT	Flanged	
MC(N or U)1S	6	10	14.5	4.62	12.62	37	45	22
MC(N or U)1D	12	20	24.5	4.62	12.62	46	54	42
MC(N or U)1T	18	30	34.5	4.62	12.62	55	63	62

† Actual flow is dependent on fluid viscosity, micron rating, contaminant, media type and desired initial pressure drop.
++ Add 3” when using TC internal option for use with TC style 2-222 O-ring cartridges.

Ordering Information

M □ □ □ □ □ □ □ □ □ □

Material	Design	Columns	Length	Inlet/Outlet	I/O Type	Gasket Material	Internal Option	Special temperature for flanged units
C = Carbon Steel S = 316 SS	N = Non-Code U = ASME U-Stamp	1 = 1 Element	S = 10” Cart. D = 20” Cart. T = 30” Cart.	1 = 1”.	T = FNPT F = Flanged 150# H = Flanged 300# J = Flanged 600#	N = Buna-n E = EPR V = Viton* T = FEP encapsulated Viton* L = FEP encapsulated silicone	2-222 o-ring adapter Blank = center post for DOE	Blank = 250° (121°C)

ENGINEERING **YOUR** SUCCESS.

Fulflo® LT Series

Fulflo® Polymeric Vessels for Water Filtration

Parker Fulflo® LT Series Polymeric Vessels are an ideal economical choice for low flow industrial and potable water applications. Standard and large diameter vessels accommodate 2-1/2 and 4-1/2 inch O.D. double-open-end Fulflo cartridges and meet FDA requirements for use with potable fluids. Both 10-in and 20-in vessels, with or without pressure relief vent, are available. Installation wrenches and brackets are optional.

Benefits

- Fulflo® polymeric vessels are available in two diameters and lengths, with or without relief vent
- The all-polymeric, corrosion-resistant LT series vessels are economical alternatives to stainless steel vessels when high temperature and high pressure are not specified
- All models are made of materials that meet FDA requirements
- The LTG model vessels provide both 1 in and 1-1/2 in NPT connection in same head
- Positive head-to-shell "stop" prevents over tightening
- Unique o-ring design ensures effective sealing by positive tangential contact and eliminates accidental misplacement
- LT model vessels are ideal for Fulflo® bonded, pleated and wound cartridges, as well as activated carbon core models MMCT-10, MC10-2, MC20-2 and MC30-2
- LTG model vessels are ideal for Fulflo® TruBind® 400 series cartridges and 4-1/2 in O.D. wound cartridges in double-open-end style
- Optional installation wrenches accomodate faster cartridge changeout
- Mounting brackets are available for pipe and wall installation
- LT series vessels are tested to industry standards of Water Quality Association for burst pressure, seal integrity, and fatigue resistance

Applications

- Potable Water
- Leisure/Commercial Shipping Bilge Water
- DI Water
- Industrial Discharge
- Alkaline Parts Washing
- Post Oil/Water Separator Polishing
- Process Water
- Compressor Condensate

ENGINEERING **YOUR** SUCCESS.

Fulflo® LT Series

Specifications

Materials of Construction:
White talc-reinforced polypropylene head with clear Styrene-Acrylonitrile (SAN) shell.

Head-to-shell O-ring:
LT model: 2-240 Buna-N
LTG model: 2-358 Buna-N

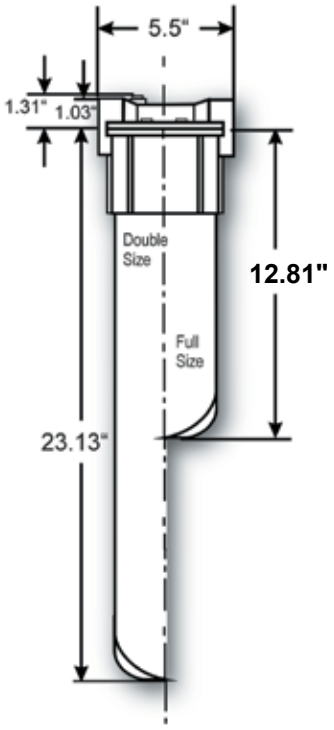
Recommended Operating Conditions:
Maximum operating temperature:
125°F (52°C) @ 100 psi (6.9 bar)
Maximum operating pressure:
LT:150 psi (10.3 bar) @ 75°F (22°C)
LTG: 125 psi. (8.6 bar) @75°F (22°C)

Maximum Recommended Flow Rate:
LT10: 6 gpm (23 lpm)
LT20: 12 gpm (45 lpm)
LTG10: 10 gpm (38 lpm)
LTG20: 20 gpm (76 lpm)

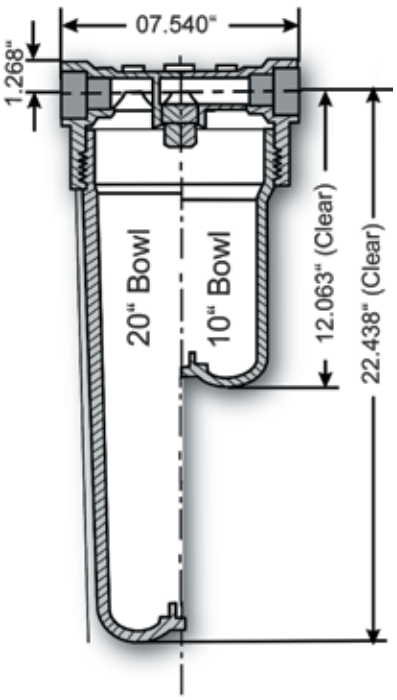
Connection Dimensions:
LT: 3/4 in NPTF
LTG: 1 and 1-1/2 in NPTF (dual connection)

Accepts Industry Standard Cartridge Sizes (Nominal):
Lengths:
9-13/16 in (249 mm); 20 in (508 mm) I.D.
1-1/16 in (27mm)
O.D. LT: 2-1/2 in (64 mm)
LTG: 4-1/2 in (114mm)

Optional Seal Configuration:
LT: Accomodates 213 o-ring seal ("PR" cartridge code)



Model LT



Model LTG

Available Options for LTG Model

Option	Part Number
Wrench for 10 in Shell	6880-6000
Wrench for 20 in Shell	6880-6001
L-Bracket— Wall Mount	0820-6001

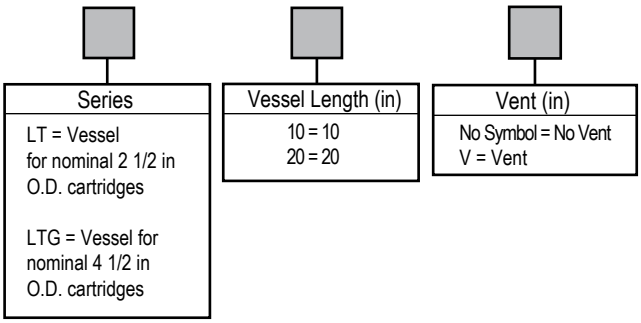
Available Options for LT Model

Option	Part Number
Wrench for 10 in Shell	6880-1-005
Wrench for 20 in Shell	6880-1-010
L-Bracket—Wall Mount	0820-6010
U-Bracket—Pipe Mount	0820-6015

Available Vessel Part Numbers

LT Model	LTG Model
LT10	LTG10
LT10V	LTG10V
LT20	LTG20
LT20V	LTG20V

Ordering Information



Specifications are subject to change without notification.

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C-3055

Fulflo® NP Filter Vessels

Fulflo® Natural Polyprolylene Vessels for High Purity Applications

Parker's Fulflo® NP series vessels feature pure natural polypropylene construction. The NP series is an ideal economical alternative to stainless steel and fluoropolymer vessels for filtration of corrosive fluids. They are essential for applications and processes demanding high purity filtration. Availability of 10-inch and 20-inch lengths and both single and double-open-end seal designs adds additional versatility.

Benefits

- Fulflo® NP series vessels available in two lengths and two seal designs offer versatility
- Several O-ring options maximize compatibility choices. Viton* is standard
- Smooth fluid contact surfaces prevent bacteria and contaminant build-up
- U-bracket available for pipe mounting
- Mounting bosses in head accomodate L-bracket
- Securely retained head-to-shell O-ring ensures effective sealing by positive tangential contact and eliminates accidental misalignment
- Positive head-to-shell "stop" prevents overtightening
- Individual packaging ensures cleanliness until use
- NP vessels accept all standard double-open-end and single-open-end 2-222 O-ring design Fulflo filter cartridges
- NP vessels of pure polypropylene meet FDA requirements for edible and potable liquid filtration
- Available with pressure relief vent or threaded vent and drain
- Service wrenches available for easy installation
- NP vessels totally incinerable after useful life

Applications

- DI Water
- Inorganic Chemicals
- Photographic Solutions
- Organic Solvents
- Process Gases
- Electronic Grade Chemicals

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Fulflo® NP Filter Vessels

Specifications

Materials of Construction:
Vessel 100% natural FDA grade polypropylene
Head-to-shell 2-240 O-Ring:
Standard (Industrial Grade): Viton*
Optional (FDA Grade): Buna-N, EPDM, Silicone, FEP encapsulated silicone
Pressure Relief Button O-Ring: Buna-N only

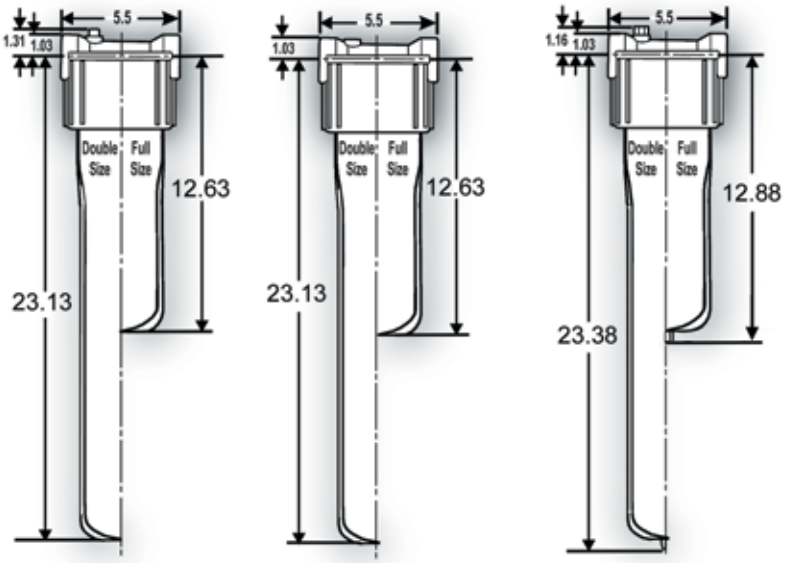
Maximum Recommended Operating Conditions:
Temperature:
125°F (52°C) @ 100 psi (6.9 bar)
Pressure:
150 psi (10.3 bar) @ 75°F (22°C)
Flow Rate:
6 gpm (23 lpm) for 10 in vessel
12 gpm (45 lpm) for 20 in vessel

Recommended Cartridge Dimensions:
NP10:
2-3/8 in to 2-3/4 in O.D. x 1 in I.D. x 9-5/8 in to 9-13/16 in long
NP20:
2-3/8 in to 2-3/4 in O.D. x 1 in I.D. x 19-7/8 in to 20-1/16 in long

Connection Dimensions:
Inlet/Outlet: 3/4 in (19 mm) NPTF
Vent/Drain: 1/4 in (6.4 mm) NPTF

Cartridge Seal Designs:
"TC":
Single-Open-End with 222 O-ring receptacle
"DO":
Double-Open-End with knife edge seal; also accepts 213 O-ring seal cartridge (PR code)

Vessel Assembly Dimensions:



Vessel with pressure relief button | *Vessel without pressure relief button* | *Vessel with 1/4" NPT vent and drain*

Compatible Chemicals (125°F max. temp.)

Acetic Acid	*50%*
Acetone	*99.5%*
Ammonium Fluoride	*40%*
Ammonium Hydroxide	*10%*
Hydrochloric Acid	*37%*
Hydrofluoric Acid	*49%, 52%*
Nitric Acid	*10%*
Phosphoric Acid	*85%*
Potassium Hydroxide	*45%*
Sodium Hydroxide	*50%*
Tetrachloroethylene	*99.0%*

Standard Vessel Assemblies

NP10-DO-N-V	*NP20-DO-N-V*
NP10-DO-R-V	*NP20-DO-R-V*
NP10-D0-DV-V	*NP20-DO-DV-V*
NP10-TC-N-V	*NP20-TC-N-V*
NP10-TC-R-V	*NP20-TC-R-V*
NP10-TC-DV-V	*NP20-TC-DV-V*

Ordering Information

Vessel Type	Shell Length	Cartridge Seal Design	Vent/Drain Options	Head-to-Shell 240 O-Ring
NP	10 = 10 20 = 20	DO = Double-Open-End (gasket seal) TC = Single-Open-End (222 O-ring)	D = 1/4 Femal NPT Drain (plugged N = No Vent, Drain or Pressure Relief Button R = Pressure Relief Button** V = 1/4 in Female NPT Vent (plugged)	E = EPDM (FDA grade) L = FEP/silicone (FDA grade) N = Buna-N (FDA grade) S = Silicone (FDA grade) V = Viton* (Industrial grade)

** Pressure Relief Button ("R") not recommended for hazard fluid applications.

Specifications are subject to change without notification.
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Multi-Cartridge Filter Vessel Series

Fulflo® WH Filter Vessels

WH Vessels

The WH cartridge filter vessels are a lightweight, economical, Non-ASME industrial / commercial design suitable for a wide variety of filtration applications. The 100% stainless steel and passivated finish provides superior corrosion resistance and an excellent appearance. The swing type closure bolts and hinged cover design (up to 35 round) make cartridge change-out quick and easy.

Benefits

- Hinged cover (up to 35 round) and swing bolt closure for fast, easy cartridge changeout
- Maximum design pressure is 150 psig (10.3 bar) at 250°F (121°C) for use in a wide range of operating conditions
- 100% stainless steel for corrosion resistance. Bolting is zinc plated carbon steel.
- Dual purpose cartridge seats for use with double open end and 2-222 O-ring single open end cartridges
- Standard finish is passivated
- 316 Stainless steel cartridge seats, top seat plate assemblies, and tri-fold element guides for long term use
- Standard Buna-N O-ring with optional fluoroelastomer and EPR for wide range of applications
- Standard features include vent, clean drain and dirty drain connections

Applications

- Potable Water
- Process Water
- Edible Oils
- Beverages
- Chemicals
- Solvents
- Pre-Reverse Osmosis

Parker

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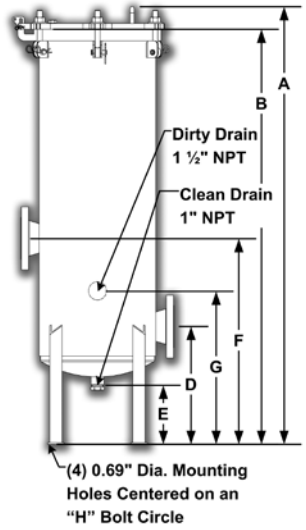
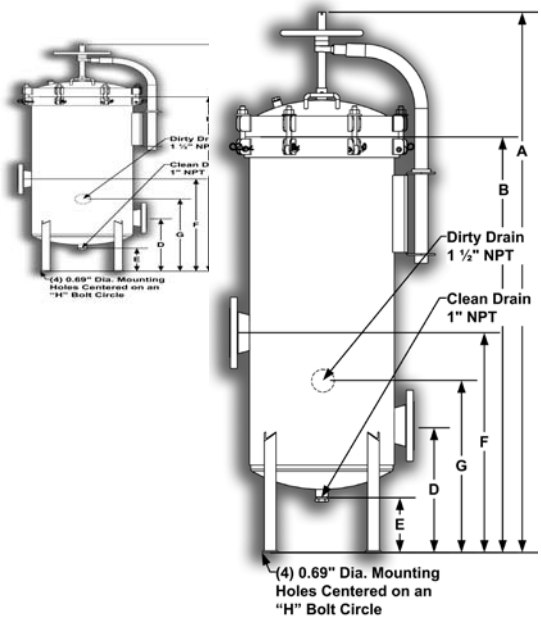
Fulflo® WH Filter Vessels

Specifications

WH7, WH9, WH12, WH16, WH21



WH29 & WH35



Design Specifications

Model	Cart Qty Length	Typcial Flow†	A	B	C	D	E	F	G	H	Weight *(lbs)*
*WH*9T3F*	*(9) 30*	*189*	*51.94*	*49.38*	*15.49*	*14.00*	*5.75*	*21.50*	*18.25*	*10.46*	*165*
*WH*9Q3F*	*(9) 40*	*252*	*62.00*	*59.44*	*15.49*	*14.00*	*5.75*	*21.50*	*18.25*	*10.46*	*180*
*WH*12T3F*	*(12) 30*	*252*	*51.94*	*49.38*	*16.80*	*14.00*	*7.29*	*21.50*	*18.25*	*11.72*	*175*
*WH*12Q3F*	*(12) 40*	*336*	*62.00*	*59.44*	*16.80*	*14.00*	*7.29*	*21.50*	*18.25*	*11.72*	*195*
*WH*16T4F*	*(16) 30*	*336*	*52.06*	*49.38*	*19.05*	*14.00*	*7.02*	*24.50*	*18.25*	*13.74*	*235*
*WH*16Q4F*	*(16) 40*	*448*	*62.13*	*59.44*	*19.05*	*14.00*	*7.02*	*24.50*	*18.25*	*13.74*	*150*
*WH*21T4F*	*(21) 30*	*441*	*52.06*	*49.38*	*21.30*	*14.00*	*6.29*	*24.50*	*18.25*	*15.76*	*165*
*WH*21Q4F*	*(21) 40*	*588*	*62.13*	*59.44*	*21.30*	*14.00*	*6.29*	*24.50*	*18.25*	*15.76*	*185*
*WH*29T6F*	*(29) 30*	*609*	*68.35*	*52.56*	*23.52*	*16.00*	*6.93*	*27.75*	*22.00*	*17.80*	*395*
*WH*29Q6F*	*(29) 40*	*812*	*78.41*	*62.63*	*23.52*	*16.00*	*6.93*	*27.75*	*22.00*	*17.80*	*420*
*WH*35T6F*	*(35) 30*	*735*	*68.62*	*52.56*	*25.52*	*16.00*	*6.26*	*27.75*	*22.00*	*19.81*	*445*
*WH*35Q6F*	*(35) 40*	*980*	*78.68*	*62.63*	*25.52*	*16.00*	*6.26*	*27.75*	*22.00*	*19.81*	*470*

†Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application. Flow rates shown do not consider inlet velocity limitations.

Ordering Information

WH □ □ □ □ □ □ □

Design Series	Material of Construction	Columns	Length	Inlet/ Outlet	I/O Type	Finish
	G = 304 SS S = 316L SS	9 12 16 21 29 35	S = 10" D = 20" T = 30" Q = 40"	1.5 = 1.5 2 = 2 3 = 3 4 = 4 6 = 6	F = ANSI 150 lb RFSO Flange T = FNPT	P = Passivate

Specifications are subject to change without notification.

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Fulflo® CH5 Filter Vessels

Carbon Steel and 304 Stainless Filter Element Vessel Series

The Fulflo® CH5 Non-Code Filter Vessels are lightweight and provide economical filtration of liquids.

The CH5 Vessel Series accommodates either double-open-end (DOE) or single-open-end (SOE) filter elements in 10 inch, 20 inch or 30 inch lengths.

Benefits

- Single O-ring design closure assures quick, positive cover sealing
- Swing bolts for fast, easy and safe opening and closing of cover
- Pivot pin cover allows cover to remain attached when opened
- Buna-N O-ring standard with optional EPR and Viton®
- Zinc plated closure bolts and legs for corrosion resistance
- Adjustable leg height
- Standard features include vent, clean drain and dirty drain connections

Applications

- Potable Water
- Lubricants
- Process Water
- Coolants
- Edible Oils
- Cutting oils
- Coatings
- Solvents

Fulflo® CH5 Filter Vessels

Specifications

Materials of Construction
Carbon Steel and 304 Stainless Steel

Dimensions
See layout drawing

Number of Cartridges
Five 10 inch, 20 inch or 30 inch

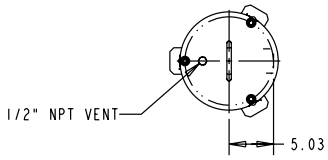
Fulflo® CH5 Vessel Series Rated Capacity
25 gpm
50 gpm
75 gpm

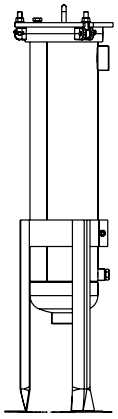
Maximum Recommended Operating Conditions
175 psi (12 bar) at 250°F (121°C)

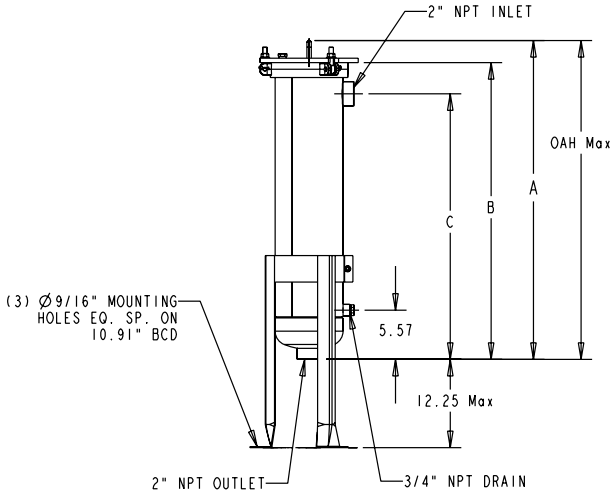
Product Configurations
Pipe size or connection:
2” NPT inlet & outlet
1/2” NPT vent
3/4” NPT drain

Shipping Weight
60 lbs
75 lbs

Model	A	B	C	OAH Max	Shipping Weight (lbs)
CH5S2	25.16	22.60	19.07	37.41	57
CH5D2T	35.16	32.60	29.07	47.41	67
CH5D2T	45.16	42.60	39.07	57.41	77
4CH5S2T	25.16	22.60	19.07	37.41	57
4CH5S2T	35.16	32.60	29.07	47.41	67
4CH5T2T	45.16	42.60	39.07	47.41	77







Ordering Information

CH5

Material	Element Length	Inlet/Outlet	Inlet/Outlet
None = Carbon Steel 4 = 304 Stainless Steel	S = 10” D = 20” T = 30”	2 = 2” NPT	T = NPT

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Fulflo® SF Filter Vessels

High Flow Rates With Fulflo® SF ASME Code Vessels

Fulflo® SF Multi-Cartridge Filter Vessels meet a broad range of liquid and gas applications. All details of design, materials, construction and workmanship of the SF vessel series conform to ASME code.

The SF Vessel Series accommodates double-open-end (DOE) and single-open-end (SOE) cartridges in 10 in, 20 in, 30 in and 40 in equivalents.

Benefits

- Designed and fabricated in accordance with the ASME Boiler and Pressure Vessel Code, U or UM stamp
- Non-code design and construction (parallel to code standards) available
- Mechanical coverlifts of carbon steel construction standard on models SF12 and SF19.
- Designed for minimum pressure drop
- External welded attachments on stainless steel models are also stainless steel
- Dual purpose cartridge seats for use with double open end and 2-222 O-ring single open end cartridges
- All SF models feature swing bolts with eyenuts for easier cleaning and servicing
- O-ring seals provide positive closure
- Standard Buna-N O-rings with optional Viton* elastomer, neoprene, ethylene propylene rubber and fluoropolymer elastomer O-rings are also available for temperatures up to 500°F (260°C)
- Hydraulic coverlifts optional on SF12 and SF19 models

Applications

- Water
- Concentrated Alkalies
- Dilute Acids & Alkalies
- Mineral Acids
- Organic Acids
- Oxidizing Agents
- Solvents
- Petroleum Oils
- Potable Liquids
- Photo Solutions

Fulflo® SF Filter Vessels

Design Specifications

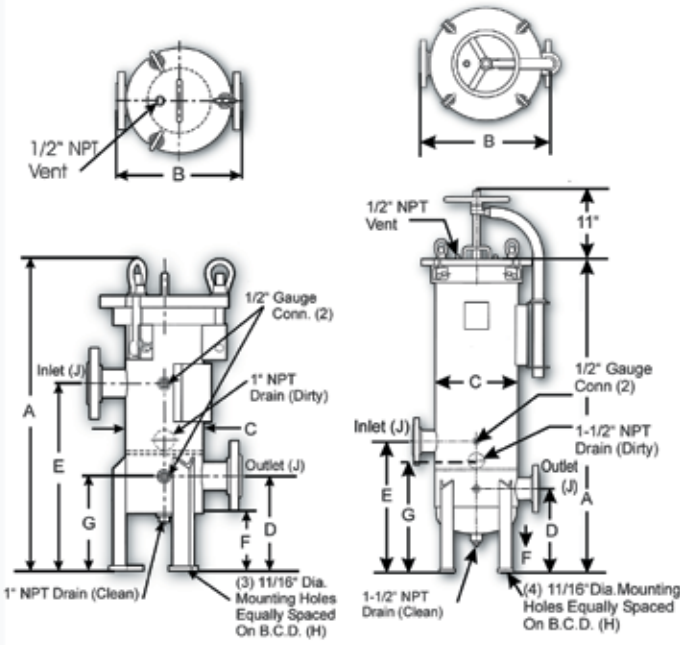
No. & Model	Max. Length of Cart. (in)	Dimensions Flow (gpm)	Shipping Weight (lbs)	A†	B	C	D	E	F	G	H	J
SF3-1-2F	(3) 10	15	26.69	12.69	6.63 OD	8.19	16.19	5.00	11.31	5.81	2	125
SF6-1-2F	(6) 10	30	26.94	14.88	8.63 OD	8.19	16.19	5.06	11.31	7.81	2	180
SF6-2-2F	(6) 20	60	37.00	14.88	8.63 OD	8.19	16.19	5.06	11.31	7.81	2	185
SF6-3-2F	(6) 30	90	47.06	14.88	8.63 OD	8.19	16.19	5.06	11.31	7.81	2	200
SF6-4-3F	(6) 40	120	58.50	14.88	8.63 OD	8.19	16.19	5.06	12.00	7.81	3	220
SF12-3-3F	(12) 30	180	53.75	20.50	12.06 ID	13.38	21.00	5.00	17.88	11.68	3	310
SF12-3-4F	(12) 30	180	53.75	20.50	12.06 ID	13.38	21.00	5.00	17.88	11.68	4	315
SF12-4-4F	(12) 40	240	60.31	20.50	12.06 ID	13.38	21.00	5.00	17.88	11.68	4	330
SF19-3-4F	(19) 30	285	50.19	23.50	15.06 ID	13.38	21.00	5.00	17.88	14.75	4	420
SF19-4-4F	(19) 40	380	60.31	23.50	15.06 ID	13.38	21.00	5.00	17.88	14.75	4	440

† Add 5 in to this dimension for hydraulic coverlift.
†† Inlet and outlet size standard ASA flanges.

Maximum Operating Conditions

Material of Construction	Maximum Operating Pressure (psi at 250°F)†	Maximum Design Temperature
Carbon Steel	150 psi (10.3 bar)	500°F (260°C)
Carbon Steel	300 psi (20.7 bar)	500°F (260°C)
304 Stainless Steel	150 psi (10.3 bar)	300°F (150°C)
304 Stainless Steel	300 psi (20.7 bar)	300°F (150°C)
316 Stainless Steel	150 psi (10.3 bar)	400°F (204°C)
316 Stainless Steel	300 psi (20.7 bar)	400°F (204°C)

† Operating temperature limited by standard gasket material and exterior paint.



SF3, SF6 **SF12, SF19**

Ordering Information

		SF		—		—		
Material	Design Series		Number of Columns		Cartridge Length (in)		Inlet/Outlet Flange Size	Coverlift Option
No Symbol = Carbon Steel 4 = 304 Stainless Steel 6 = 316 Stainless Steel	H = 300 psi C = Non code design		3 6 12 19		1 = 10 2 = 20 3 = 30 4 = 40		2F 3F 4F	K1= Mechanical K2 = Hydraulic

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

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Fulflo® HT Filter Vessels

Filter Heat Transfer Oils and Other High Temperature Fluids with Fulfo HT Series ASME Code Vessels

Fulflo® HT multi-cartridge filter vessels are specifically designed for filtration of high temperature heat transfer oils and other hot fluids. All details of design, materials and construction of the HT vessel series conform to ASME code.

The HT series vessels are designed for use with double open end (DOE) and single open end (SOE) cartridges in 10, 20 and 30 inch lengths.

Benefits

- ANSI blind flange closure for positive seal and common replacement gasket size
- High temperature 304 SS spiral wound closure gasket with non-asbestos filler for use at elevated temperature and when fire safe non O-ring design is required
- Modified silicone paint, suitable for high temperature, applied over sandblasted surface for exterior protection
- Nickel plated bolting for corrosion resistance at high temperature
- Cartridge top seats, guides and bottom seats made of 316 SS for corrosion resistance
- Inlet and outlet nozzles extended 6 inches to allow for installation of protective insulation
- Extended nameplate so design information is visible after protective insulation is installed
- Designed for minimum pressure drop
- Designed and fabricated in accordance with ASME Boiler and Pressure Vessel code, U or UM stamp
- Design: 123 PSIG at 650°F and 418 PSIG at 650°F
- Dual purpose cartridge seat for use with double open end and 2-222 O-ring single open end cartridges

Applications

- Heat Transfer Oils
- High Temperature Oils
- Hot Fluids and Gases

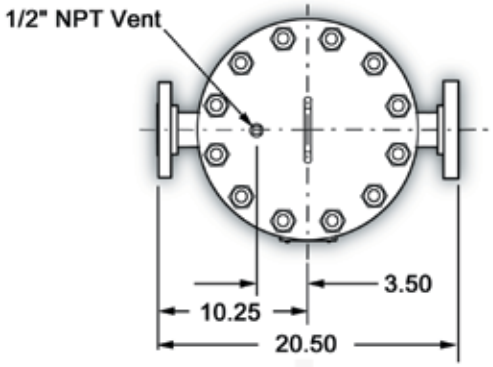
ENGINEERING **YOUR** SUCCESS.

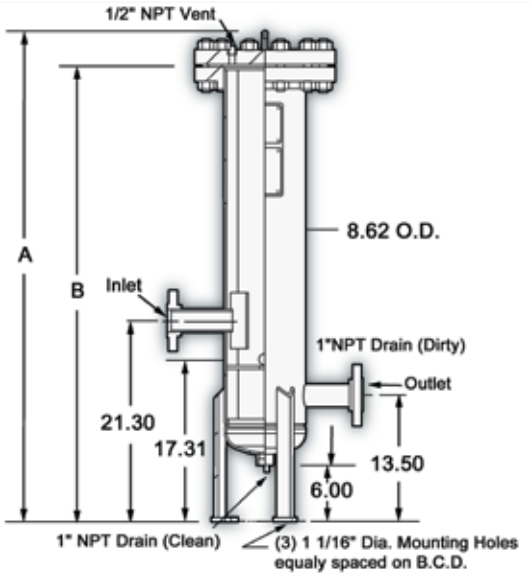
Fulflo® HT Filter Vessels

Model	Number & Length of Cartridge *(in)*	Flow† *(gpm)*	Dimensions *(in)* A	B	Shipping Weight *(lbs)* 150U, UM	300U, UM
HT6-1-2F	6 (10)	30	32.38	28.63	175	260
HT6-2-2F	6 (20)	60	42.44	38.69	190	275
HT6-3-2F	6 (30)	90	52.50	48.75	205	290

† Based on 5 gpm per 10" cartridge

Material of Construction	Maximum Operating Pressure	Maximum Operating Temperature	Code
Carbon Steel	123 psi (8.48 bar)	650°F (343°C)	150 U, UM
Carbon Steel	418 psi (28.2 bar)	650°F (343°C)	300 U, UM





Ordering Information

HT	6		2F	
Design Series	Number of Columns	Cartridge Length	Inlet/Outlet Flange Size	Code Stamp
High Temperature	6	1 - 10in 2 - 20in 3 - 30in	2 in	UM150 UM300 U150 U300

Specifications are subject to change without notification.

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Fulflo® S Filter Vessels

Fulflo® S Series ASME Code Filter Vessels

Fulflo® S Series Multi-Cartridge Filter Vessels meet a broad range of liquid and gas applications for flow rates up to 2,040 gpm (7,720 lpm). All details of design, materials, construction and workmanship of the S vessel series conform to ASME code.
The S Vessel Series accommodates double-open-end (DOE) or single-open-end (SOE) filter cartridges in 10 in, 20 in, 30 in and 40 in equivalents.

Benefits

- Built in accordance with ASME boiler and pressure vessel code
- Available in 150 psi (10.3 bar) and 300 psi (20.7 bar) designs
- Non-code design and construction (parallel to code standards) available
- Mechanical coverlifts standard on most models
- S85 and S102 feature hydraulic coverlifts (available on all models as an option)
- Dual purpose cartridge seats for use with double open end and 2-222 O-ring single open end cartridges
- Buna-N O-ring closure seal provides positive cover sealing.
- Viton* elastomer, neoprene, ethylene propylene rubber and fluoropolymer elastomer O-rings are also available for temperatures up to 500°F (261°C)
- All S models feature swing bolts with closures for quick cleaning and servicing
- Accepts double-open-end (DOE) or single-open-end (SOE) cartridges

Applications

- Liquid
- Gas
- Food & Beverage
- Chemical Processes
- Petrochemical
- Paints & Coatings
- Industrial

Fulflo® S Filter Vessels

150 psi (10.3 bar) Design Specifications

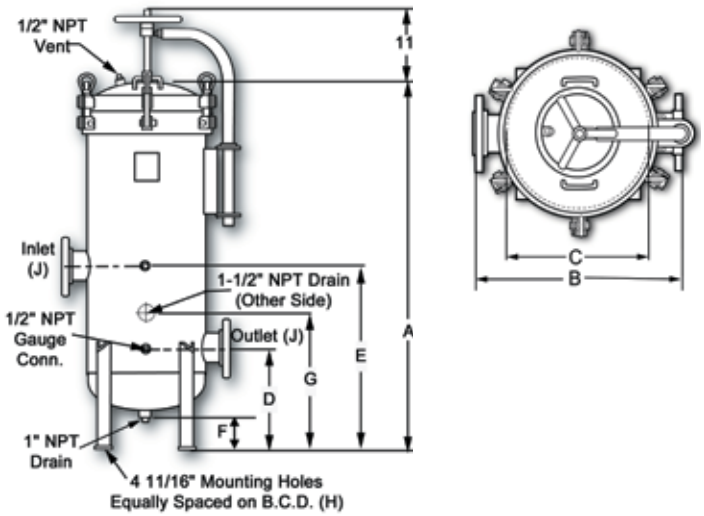
No. & Model	Length of Cartridges (in)	Maximum Flow (gpm)	Dimensions A†	B	C	D	E	F	G	H	Shipping J††	Weight (lbs)
S25-3-4F	(25) 30	375	55.88	26.00	18.06	15.50	28	5	20.44	17.76	4	515
S25-4-6F	(25) 40	500	69.75	26.00	18.06	16.50	31	5	22.25	17.76	6	540
S35-3-4F	(35) 30	525	58.19	29.25	20.06	16.50	31	5	22.56	19.77	4	640
S35-3-6F	(35) 30	525	58.19	29.25	20.06	16.50	31	5	22.56	19.77	6	645
S35-4-6F	(35) 40	700	68.25	29.25	20.06	16.50	31	5	22.56	19.77	6	695
S40-3-6F	(40) 30	600	60.25	30.75	22.06	18.00	32	5	23.31	21.70	6	810
S52-3-4F	(52) 30	780	63.69	33.38	24.06	20.50	34	5	27.56	23.72	4	855
S52-3-6F	(52) 30	780	63,69	33.38	24.06	20.50	34	5	27.56	23.72	6	865
S52-4-8F	(52) 40	1040	73.69	33.38	24.06	20.50	34	5	27.56	23.72	6	900
S85-3-8F	(85) 30	1275	67.25	39.75	30.06	24.00	40	6	31.50	29.81	8	1170
S85-4-8F	(85) 40	1700	73.63	39.75	30.06	24.00	40	6	31.50	29.81	8	1200
S102-3-8F	(102) 30	1530	68.63	42.25	32.06	23.63	41.25	6	31.69	31.81	8	1450
S102-4-8F	(102) 40	2040	79.94	42.25	32.06	23.63	41.25	6	31.69	31.81	8	1600

† Add 5 in to this dimension for hydraulic coverlift.
†† Inlet and outlet size standard ASA flanges.

Maximum Operating Conditions

Material of Construction	Maximum Operating Pressure (psi at 250°F) †	Maximum Design Temperature
Carbon Steel	*150 psi (10.3 bar)*	*500°F (260°C)*
Carbon Steel	*300 psi (20.7 bar)*	*500°F (260°C)*
304 Stainless Steel	*150 psi (10.3 bar)*	*300°F (150°C)*
304 Stainless Steel	*300 psi (20.7 bar)*	*300°F (150°C)*
316 Stainless Steel	*150 psi (10.3 bar)*	*400°F (204°C)*
316 Stainless Steel	*300 psi (20.7 bar)*	*400°F (204°C)*

† Operating temperature limited by standard gasket material and exterior paint.



Ordering Information

Material	Design Series	Number of Columns		Cartridge Length (in)		Inlet/Outlet Flange Size	Coverlift Option
No Symbol = Carbon Steel 4 = 304 Stainless Steel 6 = 316 Stainless Steel	HS = High Pressure CS = Non-Code	25 35 40 52 85 102	—	3 30 4 = 40	—	4F = 4 in Flange 6F = 6 in Flange 8F = 8 in Flange	K1= Mechanical K2 = Hydraulic

Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® MP Filter Vessels

Fulflo® MP (Membrane Protectors) Filter Vessels Protect Membranes by Prefiltering R.O. Feed Water

MP Filter Vessels are ideal for a wide range of filtration applications including prefiltration of brackish, process and sea water. All MP Series vessels are built in accordance with ASME boiler and Pressure Vessel Code, U stamp. All MP vessels have dual purpose bottom seats for use with either double-open-end or 222 O-ring design.

Benefits

- Flow rates from 108 gpm to 3520 gpm
- Pressure ratings from 100 psi (6.9 bar) to 150 psi (10.3 bar)
- 304L or 316L stainless steel
- Stainless steel welded attachments
- Swing bolt closure for quick opening, with hex nuts for use with pneumatic tools
- Optional stainless steel bolting and davit assembly
- Horizontal vessels provide for easy cartridge installation
- Dual pupose cartridge seats for use with double open end and 2-222 O-ring single-open-end cartridges
- Glassbead blasted exteriors
- Passivated interior and exterior surfaces to remove free carbon and protect against corrosion
- Buna-N O-ring closure seal provides positive cover sealing
- Horizontal vessel utilizes removalbe internal cartridge support plate
- Large size clean and dirty drain for uniform piping and valve size

Applications

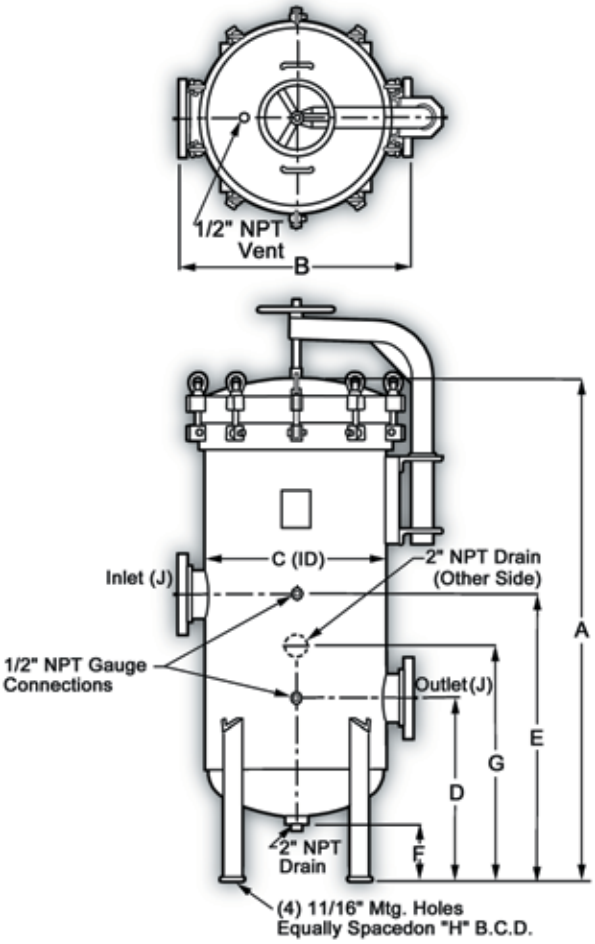
- Brackish and Sea Water
- Semiconductor Process Water
- Boiler Feed Water
- Reverse Osmosis Prefiltering
- Potable Water
- Electronic Rinse Water
- Deionized Water

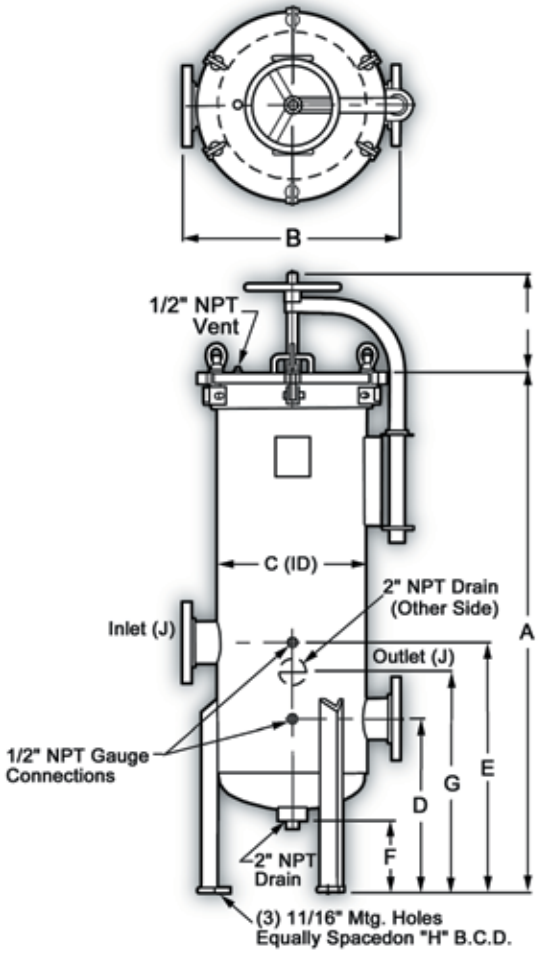
Fulflo® MP Filter Vessels

Fulflo® MP Filter Series Throughput
Based on flow of water (in gpm) per 10-inch cartridge

10 inch Cartridges	Filter Model	At 3 gpm** per 10 inch (gpm)*	(mgd)	At 3.5 gpm per 10 inch (gpm)	(mgd)	At 4.5 gpm per 10 inch (gpm)	(mgd)	At 5 gpm per 10 inch (gpm)	(mgd)
VERTICAL VESSELS									
36	MP12-3-3FK1	108	0.2	126	0.2	162	0.2	180	0.3
48	MP12-4-3FK1	144	0.2	168	0.3	216	0.3	240	0.3
63	MP21-3-4FK1	189	0.3	221	0.4	284	0.4	315	0.5
84	MP21-3-4FK1	252	0.4	294	0.5	378	0.5	420	0.6
87	MP29-3-4FK1	261	0.4	305	0.5	392	0.6	435	0.6
105	MP35-3-6FK1	315	0.5	368	0.6	473	0.7	525	0.8
116	MP29-4-6FK1	348	0.5	406	0.7	522	0.8	580	0.8
120	MP40-3-6FK1	360	0.5	420	0.7	540	0.8	600	0.9
140	MP35-4-6FK1	420	0.6	490	0.8	630	0.9	700	1.0
156	MP52-3-6FK1	468	0.7	546	0.9	702	1.0	780	1.1
160	MP40-4-6FK1	480	0.7	560	0.9	720	1.0	800	1.2
208	MP52-4-8FK1	624	0.9	728	1.2	936	1.3	1040	1.5
258	MP86-3-8FK1	774	1.1	903	1.5	1161	1.7	1290	1.9
309	MP103-3-8FK1	927	1.3	1082	1.8	1391	2.0	1545	2.2
344	MP86-4-10FK1	1032	1.5	1204	2.0	1548	2.2	1720	2.5
412	MP103-4-10FK1	1236	1.8	1442	2.4	1854	2.7	2060	3.0
472	MP118-4-12FK1	1416	2.0	1652	2.7	2124	3.1	2360	3.4
704	MP176-4-14FK1	2115	3.0	2464	4.1	3168	4.6	3520	5.1
HORIZONTAL VESSELS									
120	MP40H-3-6FK1	360	0.5	420	0.7	540	0.8	600	0.9
156	MP52H-3-6FK1	468	0.7	546	0.9	702	1.0	780	1.1
160	MP40H-4-6FK1	480	0.7	560	0.9	720	1.0	800	1.2
208	MP52H-4-8FK1	624	0.9	728	1.2	936	1.3	1040	1.5
258	MP86H-3-8FK1	774	1.1	903	1.5	1161	1.7	1290	1.9
309	MP103H-3-8FK1	927	1.3	1082	1.8	1391	2.0	1545	2.2
344	MP86H-4-10FK1	1032	1.5	1204	2.0	1548	2.2	1720	2.5
412	MP103-4-10FK1	1236	1.8	1442	2.4	1854	2.7	2060	3.0
472	MP118H-4-12FK1	1416	2.0	1652	2.7	2124	3.1	2360	3.4
704	MP176H-4-14FK1	2112	3.0	2464	4.1	3168	4.6	3520	5.1

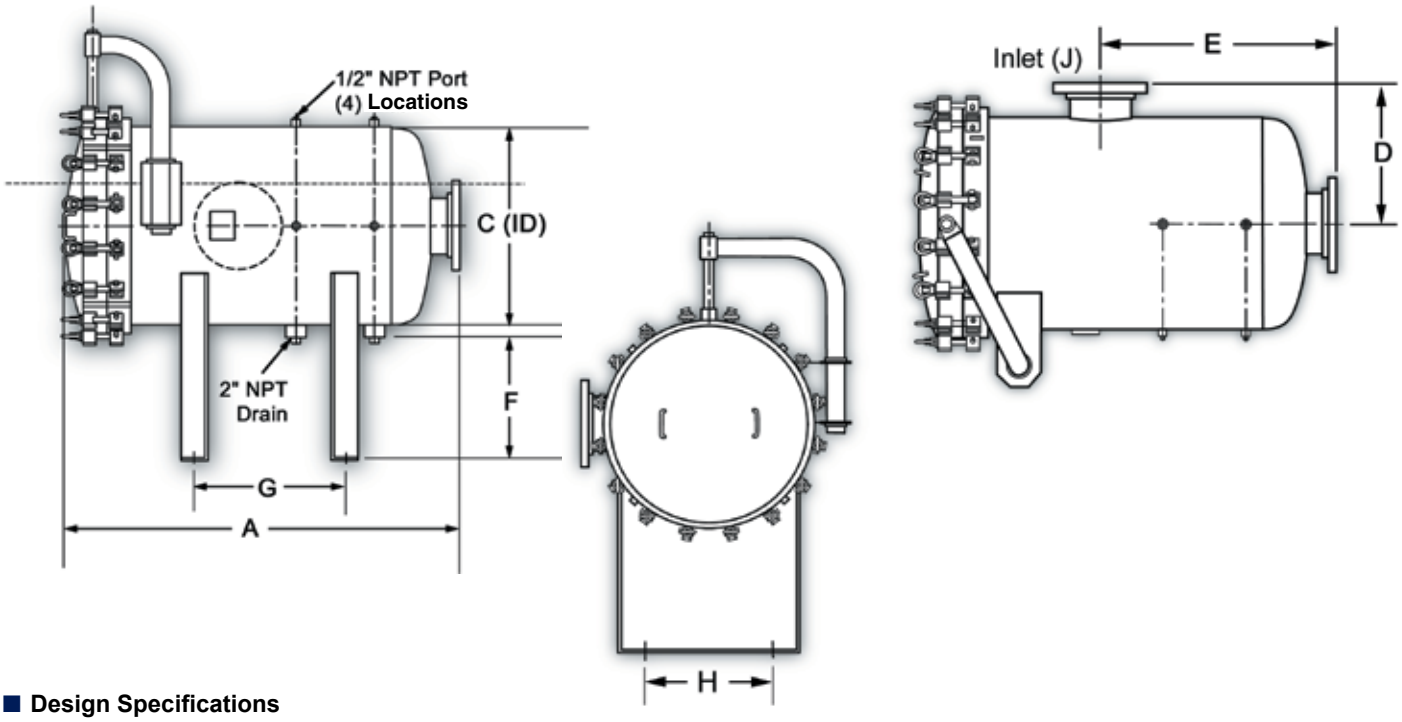
* gpm = gallons per minute; mgd = millions of gallons per day
** Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.





Design Specifications

Model	No. & Length of Cartridges *(in)*	Dimensions *(in)* A	B	C	D	E	F	G	H	J	K	Shipping Weight *(lbs)*
MP12-3-3FK1	12 (30)	67.75	20.00	12.813	18.50	27.00	8.00	23.75	12.50	3 NPS	3	390
MP12-4-4FK1	12 (40)	77.75	20.00	12.813	18.50	27.00	8.00	23.75	12.50	4 NPS	3	420
MP21-3-4FK1	21 (30)	68.75	24.00	16.063	19.25	27.75	8.00	24.50	15.75	4 NPS	3	500
MP21-4-4FK1	21 (40)	78.75	24.00	16.063	19.25	27.75	8.00	24.50	15.75	4 NPS	3	530
MP29-3-4FK1	29 (30)	75.25	26.00	18.063	22.00	33.25	8.00	28.25	17.88	4 NPS	3	570
MP29-4-6FK1	29 (40)	85.25	26.00	18.063	22.00	33.25	8.00	28.25	17.88	6 NPS	3	620
MP35-3-6FK1	35 (30)	76.00	28.00	20.063	22.50	34.00	8.00	28.75	19.88	6 NPS	3	650
MP35-4-6FK1	35 (40)	86.00	28.00	20.063	22.50	34.00	8.00	28.75	19.88	6 NPS	3	680
MP40-3-6FK1	40 (30)	77.00	30.00	22.063	23.00	34.25	8.00	29.25	21.88	6 NPS	4	710
MP40-4-6FK1	40 (40)	87.00	30.00	22.063	23.00	34.25	8.00	29.25	21.88	6 NPS	4	750
MP52-3-6FK1	52 (30)	80.75	32.00	24.063	25.50	40.00	8.00	32.75	23.75	6 NPS	4	790
MP52-4-8FK1	52 (40)	90.75	32.00	24.063	25.50	40.00	8.00	32.75	23.75	8 NPS	4	860
MP86-3-8FK2	86 (30)	86.75	40.00	30.063	29.00	46.50	8.00	37.75	30.00	8 NPS	4	1280
MP86-4-10FK2	86 (40)	96.75	40.00	30.063	29.00	46.50	8.00	37.75	30.00	10 NPS	4	1380
MP103-3-8FK2	103 (30)	87.75	42.00	32.063	29.50	47.00	8.00	38.25	32.00	8 NPS	4	1410
MP103-4-10FK2	103 (40)	97.75	42.00	32.063	29.50	47.00	8.00	38.25	32.00	10 NPS	4	1510
MP118-4-12FK2	118 (40)	102.00	46.00	36.063	32.50	52.25	8.00	42.00	35.88	12 NPS	4	1830
MP176-4-14FK2	176 (40)	107.00	54.00	42.063	35.00	57.00	8.00	45.50	42.00	14 NPS	4	2650



Design Specifications

Model	Elements *(in)*	Dimensions *(in)* A	B	C	D	E	F	G	H	J	Shipping Weight *(lbs)*
MP40H-3-6FKI	40 (30)	55.50	62.00	22.063	15.00	32.00	23.00	23.00	12.00	6 NPS	850
MP40H-4-6FKI	40 (40)	65.50	62.00	22.063	15.00	36.00	23.00	32.00	12.00	6 NPS	880
MP52H-3-6FKI	52 (30)	55.25	63.00	24.063	16.00	32.00	22.00	23.00	14.00	6 NPS	920
MP52H-4-8FKI	52 (40)	65.25	63.00	24.063	16.00	36.00	22.00	32.00	14.00	8 NPS	990
MP86H—3-8FKI	86 (30)	60.25	66.00	30.063	20.00	34.00	19.00	24.00	20.00	8 NPS	1490
MP86H-4-10FKI	86 (40)	68.25	66.00	30.063	20.00	38.00	19.00	32.00	20.00	10 NPS	1560
MP103H-3-8FKI	103 (30)	60.75	67.00	32.063	21.00	34.00	18.00	24.00	22.00	8 NPS	1620
MP103H-4-10FKI	103 (40)	68.75	67.00	32.063	21.00	38.00	18.00	32.00	22.00	10 NPS	1700
MP118H-4-12FKI	118 (40)	72.00	69.00	36.063	23.00	40.00	16.00	32.00	26.00	12 NPS	2040
MP176H-4-14FKI	176 (40)	74.75	72.00	42.063	27.00	41.00	13.00	32.00	32.00	14 NPS	2820

Ordering Information

Material	Design	Columns	Cartridge Length (x 10 in)	Inlet/Outlet	Coverlift
4L = 304L SS 6L = 316L SS	MP = Vertical Series (12-176 Columns) MPXXH = Horizontal Series (40-176 Columns)	# of Columns		F = Flange size in inches	No Symbol = None K1 = Mechanical K2 - Hydraulic

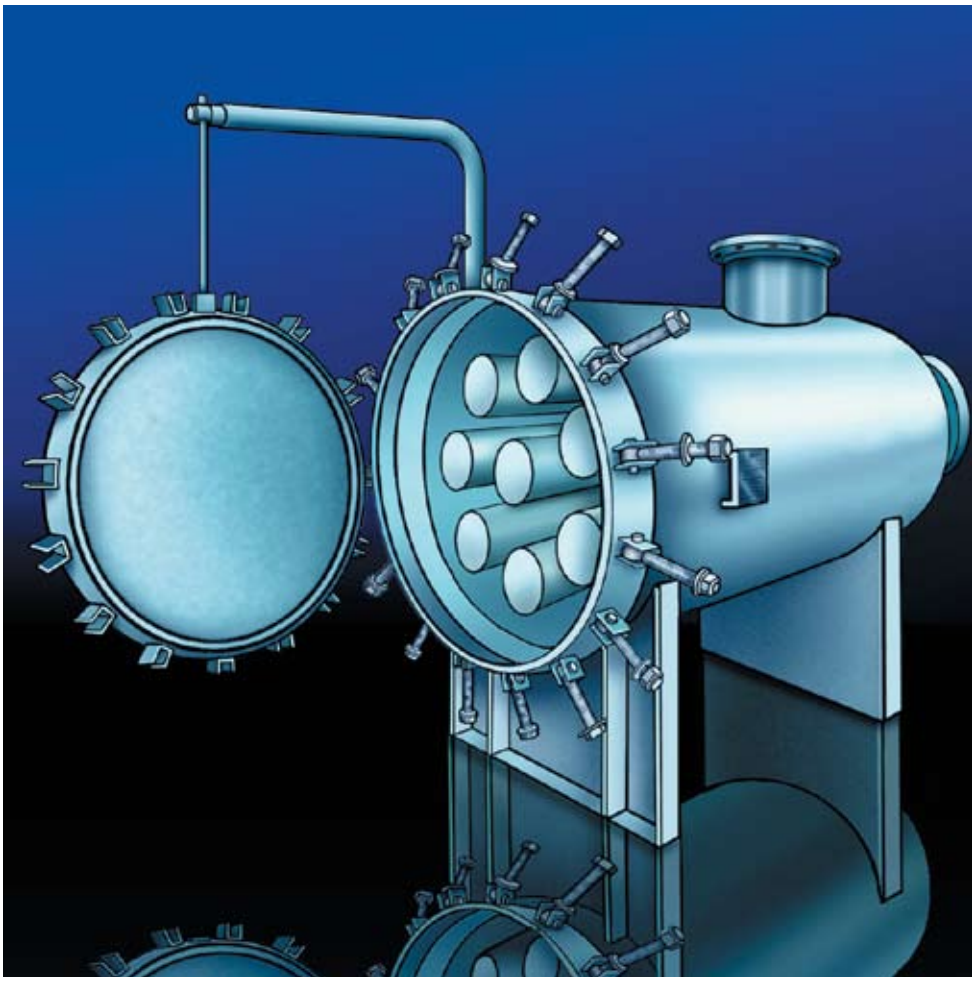
Specifications are subject to change without notification.
*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® Mega Flow Filter Vessels

Vessels for High Flow Capacity MegaFlow Filter Cartridges

MegaFlow™ vessels are designed to accept MegaFlow™ filter cartridges that handle up to 175 gpm (662 lpm) each. They provide significant size and capital cost reduction compared with vessels containing conventional size filter cartridges. The horizontal design and coreless cartridge configuration make cartridge change fast and easy. Models are available for flow rates up to 3325 gpm (12,586 lpm).



Benefits

- Horizontal design makes cartridge change practically effortless
- Vessels have slight pitch to prevent liquid from spilling when opening cover
- Pemanent internal perforated post supports cartridges and eliminates loose internal parts
- Cartridges have internal O-ring for positve seal
- Cartridge top is located flush with cover to facilitate cartridge change
- Inlet connection is below cartridges to prevent impingement on media
- Built to ASME Boiler And Pressure Code to insure integrity
- Available in carbon steel, 304L stainless steel and 316L stainless steel for a wide variety of applications
- O-ring cover seal for quick and positive vessel cover sealing
- Cover locating pin for quick and accurate alignment
- Available in 150 PSI and 300 PSI pressure ratings

Applications

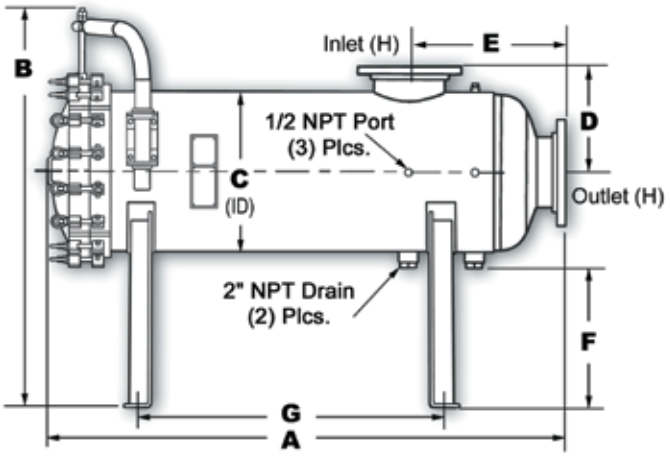
- Reverse Osmosis Filtration
- Potable Water
- Process Water
- Edible Oils
- Lubricants
- Coolants
- Cutting Oils
- Solvents
- Chemicals

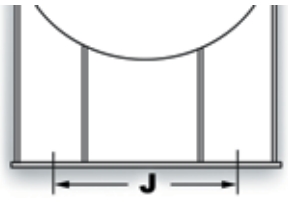
Fulflo® Mega Flow Filter Vessels

Design Specifications

Material of Construction	Design Pressure	Maximum Design Temperature*
Carbon Steel	150 psi (10.3 bar)	250°F (121°C)
Carbon Steel	300 psi (20.7 bar)	250°F (121°C)
304L Stainless Steel	150 psi (10.3 bar)	250°F (121°C)
304L Stainless Steel	300 psi (20.7 bar)	250°F (121°C)
316L Stainless Steel	150 psi (10.3 bar)	250°F (121°C)
316L Stainless Steel	300 psi (20.7 bar)	250°F (121°C)

* Operating temperature limited by standard gasket material and exterior paint.





(Bolt Spacing)

Reference Dimensions

Model	Elements	A	B	C	D	E	F	G	H	J	Flow GPM	Shipping Weight
MF02	2	69.31	57.44	14.063	11.25	20.00	27.09	46.00	6 NPS	8.00	250	615
MF03	3	69.81	58.44	16.063	12.25	21.00	26.09	46.00	6 NPS	8.00	525	715
MF04	4	75.20	58.00	18.063	13.25	22.00	25.09	48.00	8 NPS	10.00	700	790
MF05	5	75.47	59.00	20.063	14.25	22.00	24.09	48.00	8 NPS	12.00	875	920
MF07	7	78.73	60.00	22.063	15.25	24.00	23.09	48.00	10 NPS	12.00	1225	1120
MF08	8	79.00	61.00	24.063	16.25	24.00	22.09	48.00	10 NPS	14.00	1400	1245
MF12	12	85.93	64.06	30.063	20.25	28.00	19.03	52.00	12 NPS	20.00	2100	1915
MF15	15	92.95	65.06	32.063	21.50	30.00	18.03	54.00	14 NPS	22.00	2625	2175
MF19	19	95.32	73.31	36.063	23.75	34.00	22.03	56.00	16 NPS	26.00	3325	2870

Actual flow rate is dependent on fluid viscosity, micron rating, contaminant, media type and inlet velocity. Consult media flow charts for each application.
Shipping weights and dimensions are for 150 PSIG nominal design only.

Ordering Information

MF

Material	Design	Cartridge Qty.	Vessel Orientation	Inlet/Outlet Size	Inlet/Outlet Connection Type	Finish
C = Carbon Steel G = 304L Stainless Steel S = 316L Stainless Steel	N = Non-Code U = ASME Code	01-1 Cartridge 02-2 Cartridges 03-3 Cartridges 04-4 Cartridges 05-5 Cartridges 07-7 Cartridges 08-8 Cartridges 12-12 Cartridges 15-15 Cartridges 19-19 Cartridges	V - Vertical H - Horizontal	06 = 6 “ 08 = 8” 10 = 10” 12 = 12” 14 = 14” 16 = 16”	F = ANSI 150 lb. flange H = ANSI 300 lb. flange	C - Painted B - Glass Bead Blast P - Passivated E - Electropolished

Specifications are subject to change without notification.

ENGINEERING **YOUR** SUCCESS.

Fulflo® FE Filter Vessels

FE Model Cartridge Filter Vessels Designed for Economical Filtration of Liquids and Gases

The FE Filter Vessel Series accommodates double-open-end (DOE) and single-open-end (SOE) filter cartridges in 10 in, 20 in and 30 in lengths.

Benefits

- Single O-ring design closure assures quick, positive cover sealing
- Swing bolts with eyenuts for fast, easy opening and closing of cover
- Maximum design pressure is 150 psig (10.3 bar) at 450°F* (232°C) and 200 psig at 100°F (38°C) plus full vacuum
- Buna-N O-ring standard with EPR, Viton* and fluoropolymer available
- Dual purpose cartridge seats for use with double open end and 2-222 O-ring single open end cartridges
- ASME Code UM stamp is standard (U stamp is optional)
- Threaded vent and drain connections
- Adjustable leg height
- Threaded or flanged inlet and outlet
- Side inlet; cover opens without disconnecting piping
- Side inlet, bottom outlet and crevice-free welded design provide a smooth interior for easy wash-out and cleaning

Applications

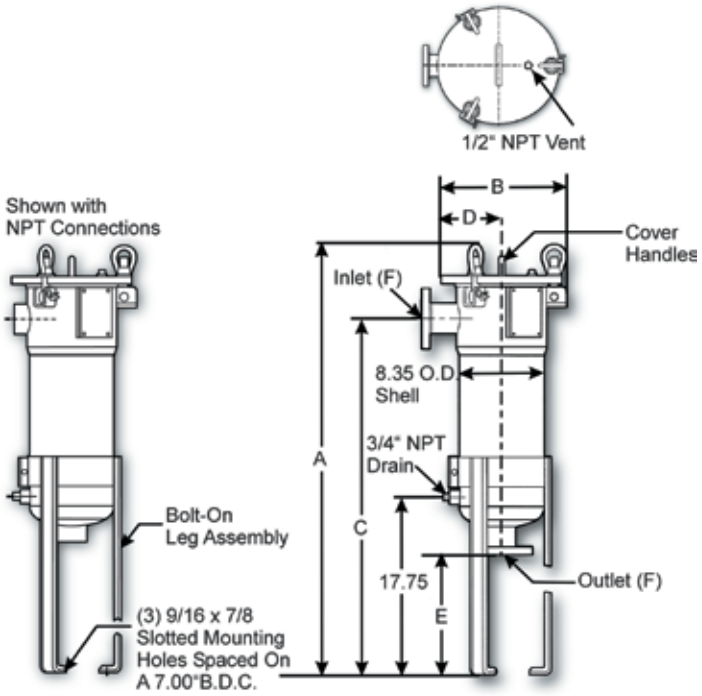
- Potable Water
- Process Water
- Coatings
- Lubricants
- Coolants
- Cutting Oils
- Solvents

Fulflo® FE Filter Vessels

Design Specifications

Model	No. & Length of Cartridges (in)	Aqueous Flow† (gpm)	Typical Dimensions (in)	A	B	C	D	E	F	Shipping Weight (lbs)
FE6-1-2	6 (10)	30	33.00	12.25	25.56	5.75	13.19	2 NPT	82	3.6
FE6-1-2F	6 (10)	30	33.00	14.50	25.56	8.00	12.00	2 NPS	90	3.6
FE6-2-2	6 (20)	60	43.06	12.25	35.63	5.75	13.19	2 NPT	87	5.4
FE6-2-2F	6 (20)	60	43.06	14.50	35.63	8.00	12.00	2 NPS	95	5.4
FE6-3-2	6 (30)	90	53.13	12.25	45.69	5.75	13.19	2 NPT	92	7.8
FE6-3-2F	6 (30)	90	53.13	14.50	45.69	8.00	12.00	2 NPS	100	7.8
FE6-3-3F	6 (30)	90	53.13	14.50	45.69	8.00	11.75	3 NPS	110	7.8

† Actual rate is dependent on fluid viscosity, micron rating, contaminant and media type.
Consult flow charts for each application.



Ordering Information

	FE	6		
Material	Model	Number of Column	Number of 10 in Cartridges/Column	Inlet/Outlet Flange Size
None = Carbon 4L = 304L Stainless Steel 6L = 316L Stainless Steel	FE	6	1 2 3	2 3 No F = NPT

Specifications are subject to change without notification.
* Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc.

ENGINEERING **YOUR** SUCCESS.

Fulflo® FP Filter Vessels

Fulflo® FP Model Cartridge Filter Vessels Designed for Economical Liquid Filtration

The FP Filter Vessel Series is designed for use with the Fulflo® Flo-Pac® 718 and 736 Pleated Filter Cartridge Series.

Benefits

- Single O-ring design closure assures quick, positive cover sealing.
- Swing bolts with eyenuts for fast, easy opening and closing of cover
- Maximum design pressure is 150 psi (10.3 bar) at 450°F* (232°C) and 200 psig at 100°F (38°C) plus full vacuum
- Buna-N O-ring standard with EPR, Viton** and fluoropolymer available
- ASME Code UM stamp is standard (U stamp is optional)
- Threaded vent and drain connections
- Adjustable leg height
- Threaded or flanged inlet and outlet options
- Side inlet, bottom outlet and crevice-free welded design provide a smooth interior for easy wash-out and cleaning

Applications

- Process Water
- Coatings
- Lubricants
- Coolants
- Cutting Oils
- Solvents
- EDM

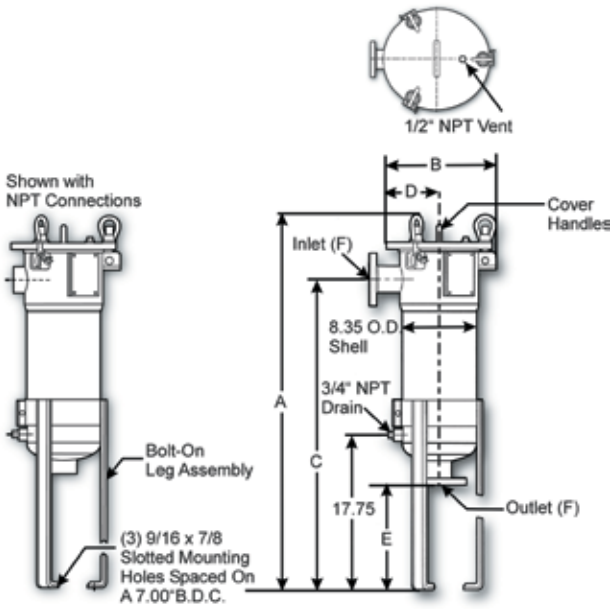
Fulflo® FP Filter Vessels

Design Specifications

Model Volume	No. & Length of Cartridges (in)	Typical Aqueous Flow † (gpm)	Dimensions (in) A	B	C	D	E	F	Shipping Weight (lbs) (gal)
FP1-1-2	(1) 18	50	42.56	12.25	35.13	5.75	13.19	2 NPT	112 5.5
FP1-1-2F	(1) 18	50	42.56	14.50	35.13	8.00	12.00	2 NPS	120 5.5
FP1-2-2	(2) 18	100	60.56	12.25	53.13	5.75	13.19	2 NPT	132 9.6
FP1-2-2F	(2) 18	100	60.56	14.50	53.13	8.00	12.00	2 NPS	140 9.6
FP1-2-3F	(2) 18	100	60.56	14.50	53.13	8.00	11.75	2 NPS	150 9.6

(F) NPS - ANSI Class 150# Slip-On Flanges
(F) NPT - ANSI Class 300# Threaded Couplings

†Actual rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.



* Operating temperature limited to 250°C (121°F) by standard Buna-N O-Ring and exterior paint on carbon steel models. Optional O-Ring materials are available.

Ordering Information

	FP	1		
Material		Model Number of Columns	Number of 18 in Cartridges/Column	Inlet/Outlet Flange Size
None = Carbon Steel 4L = 304L Stainless Steel		1	1 2	2 3 No F = NPT

Specifications are subject to change without notification.
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Fulflo® CPM Oil Filter Vessels

Steel Single Element Filter Vessel Series

The light, compact oil filtration solution. The Fulflo® CPM Vessel Series of single element oil filters is designed for high efficiency and economical operation in oil reclamation and maintenance applications. The compact design makes the CPM vessel series easy to mount on equipment an on the floor to conserve space. The adjustable legs offer installation flexibility by allowing various inlet elevations and nozzle orientations.

Benefits

- Single O-ring design closure assures quick, positive cover sealing
- Swing bolts for fast, easy and safe opening and closing of cover
- Pivot pin cover allows cover to remain attached when opened
- Adjustable leg height

Applications

- Hydraulic oils
- Quench Oils
- Engine & Compressor Lube Oils
- Cutting Oils
- Coolants
- EDM Liquids

Fulflo® CPM Oil Filter Vessels

Specifications

Maximum Recommended Operating Conditions:

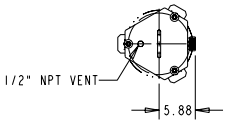
175 psi (12 bar) at 250°C(121°F)

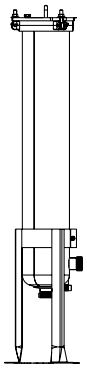
- Buna-N O-Ring standard with optional EPR and Viton*
- Carbon steel vessel construction
- Zinc plated bolting and legs for corrosion resistance

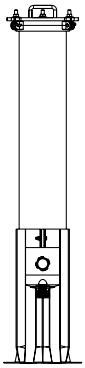
Cartridge Configuration Supported

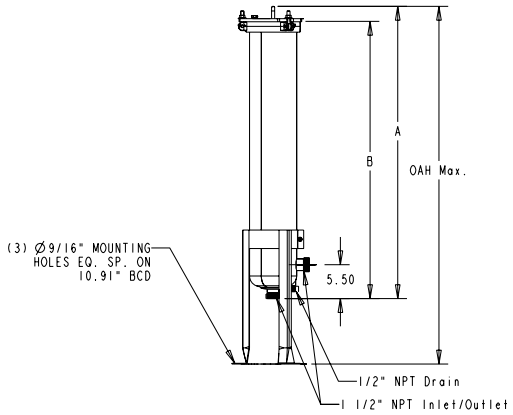
Filter Element	Series Number	Operating Temperature
Fulflo® Flo-Pac & Flo-Pac+®	*718, 736*	*250°F (121°C)*
TruBind®	*700*	*150°F (65°C) @ 20 psid (1.4 bar)*
		180°F (82°C) @ 10 psid (0.7 bar)

Model	Number of 18" Elements Per Column	Typical Aqueous Flow† *(gpm)*	A	B	C	Shipping Weight *(lbs)*
CPM1-1.5	1	30	29.44	27.00	40.66	58
CPM2-1.5	2	60	47.44	45.00	58.06	75









Ordering Information

CPM ☐ — ☐

Number of 18 in Elements	
Code	Quantity
1	1
2	2

Inlet/Outlet Flange Size	
Code	Description
15	1.5 MNPT (external thread)

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C-4030

Fulflo® P Filter Vessel

High Efficiency and High Flow Rate with Fulflo® P Vessel Series

Fulflo® P Series Multi-Cartridge Filter Vessels are designed for high flow rate where the contaminants can be effectively removed by pleated paper (surface type) media.
The P Vessel Series is designed for use with the Fulflo® Flo-Pac® 718 and 736 pleated filter cartridge series. TruBind® 700 Series absorbent cartridges also fit these vessels.

Benefits

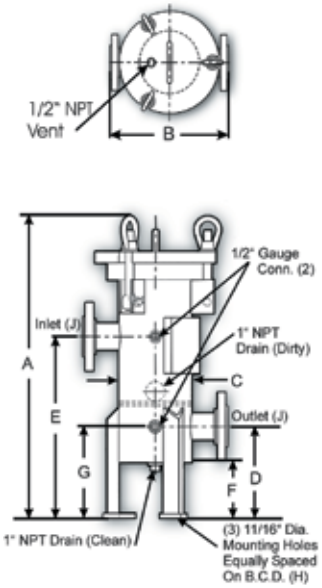
- Designed and fabricated in accordance with the ASME Boiler and Pressure Vessel Code, U or UM stamp with 150 psi (10.3 bar) rating at 250°F (121°C)
- Non-code design and construction (parallel to code standards) available
- Mechanical coverlifts
- Designed for minimum pressure drop
- Cartridge capacity from 1 to 18 cartridges
- All P models feature swing bolts for easier cleaning and servicing
- O-ring seals provide positive closure sealing
- Standard Buna-N seal with optional Viton* elastomer, neoprene, ethylene propylene rubber and fluoropolymer elastomer O-rings
- Optional hydraulic coverlifts

Applications

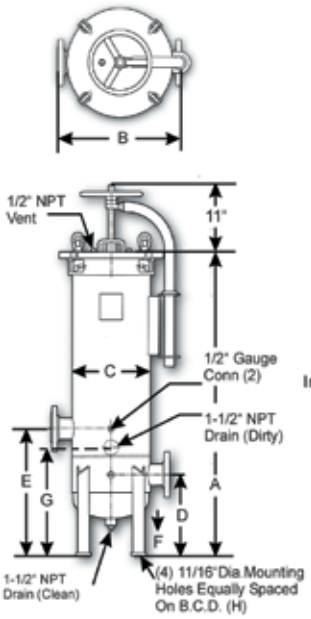
- Fuels
- Lubricating Oils
- Solvents
- Coolants
- Refineries
- Hydraulic Oils
- Rolling Mill Oils
- Processing Liquids

Fulflo® P Filter Vessel

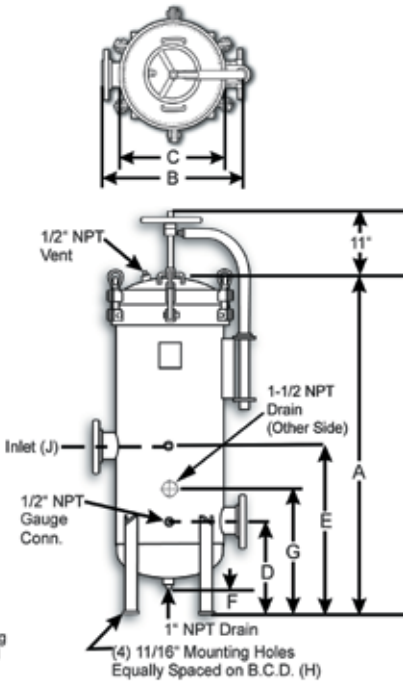
Model P1-1-2F



Model P3-2-3F



Model P18-2-8F



Reference Dimensions

Model	Number & Length of Cartridges *(in)*	Maximum flow (GPM)	Dimensions (in) A	B	C	D	E	F	G	H	J	Shipping Weight *(lbs)*
P1-1-2F	*1 (18)*	*50*	*36.13*	*14.88*	*8.63*	*8.19*	*16.19*	*5.06*	*11.31*	*7.81*	2	*180*
P1-2-2F	*1 (36)*	*100*	*54.13*	*14.88*	*8.63*	*8.19*	*16.19*	*5.06*	*11.31*	*7.81*	2	*200*
P3-1-3F	*3 (18)*	*150*	*38.74*	*22.50*	*15.06*	*13.38*	*21.00*	*5.00*	*17.88*	*14.75*	3	*405*
P3-2-3F	*3 (36)*	*300*	*57.31*	*22.50*	*15.06*	*13.38*	*21.00*	*5.00*	*17.88*	*14.75*	3	*465*
P6-2-6F	*6 (36)*	*600*	*65.00*	*29.25*	*20.06*	*16.50*	*31.00*	*5.00*	*22.56*	*19.75*	6	*790*
P9-2-6F	*6 (36)*	*900*	*67.19*	*33.38*	*24.06*	*18.00*	*31.00*	*6.00*	*24.19*	*23.75*	6	*985*
P18-2-8F	*18 (36)*	*1800*	*76.06*	*42.25*	*32.06*	*23.63*	*41.25*	*6.00*	*31.69*	*31.81*	8	*1570*

Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.
Shipping weights and dimensions are for 150 psig nominal design only.

+Add 5" to this dimension for hydraulic coverlift

Ordering Information

Design Series	Number of Columns	Cartridges per Column	Inlet /Outlet Flange Size	Coverlift Option
Code Design = P Non-Code Design = CP	1 3 6 9 18	1 2	2F 3F 6F 8F	K1 = Mechanical K2 = Hydraulic

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Bag Filter Vessel Series

Fulflo® SB Filter Vessels

High Flow Rates and High Solids Retention Capability With Fulflo® SB Series ASME Code Single and Multiple Bag Vessels

Constructed to handle flow rates of up to 1120 gpm (4240 lpm), the Fulflo® SB Series of bag and strainer filter vessels provides excellent filtration in a wide range of industrial and chemical applications. All details of design, materials, construction and workmanship of the SB Vessel Series conform to ASME code and are available in non-code design and construction.

Benefits

- Accepts "C" style flex band bags for optimized independent seal
- Built in accordance with ASME (U or UM stamp) Boiler and Pressure vessel code
- Non-code design and construction (parallel code standards) available
- Maximum design pressure is 150 psi (10.3 bar) or 300 psi (20.7 bar)
- Available in carbon steel, 304 stainless steel, or 316 stainless steel
- Single O-ring seal closure design assures quick, positive cover seal
- Swing bolts with hexnuts for fast, easy opening and closing of cover
- Buna-N standard O-ring with Viton* elastomer, neoprene, ethylene propylene rubber and fluoropolymer elastomer O-rings also available
- Positive bag media seal prior to sealing housing

Applications

- Potable Water
- Process Water
- Coatings
- Lubricants
- Coolants
- Cutting Oils
- Solvents

Fulflo® SB Filter Vessels

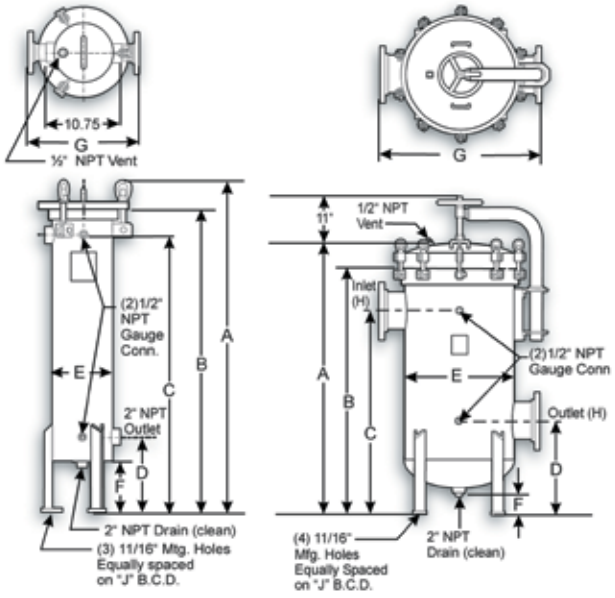
Design Specifications

Model	Maximum Flow† (gpm)	Dimensions (in) A	B	C	D	E	F	G	H	J	Shipping Weight *(lbs)*
SB11-2	*80*	*34.88*	*30.69*	*26.75*	*10.75*	*8.63*	*7.31*	*10.75*	*2.00*	*7.81*	*180*
SB11-2F	*80*	*34.88*	*30.69*	*26.75*	*10.75*	*8.63*	*7.31*	*14.88*	*2.00*	*7.81*	*180*
SB12-2	*160*	*47.88*	*43.69*	*39.75*	*10.75*	*8.63*	*7.31*	*10.75*	*2.00*	*7.81*	*200*
SB12-2F	*160*	*47.88*	*43.69*	*39.75*	*10.75*	*8.63*	*7.31*	*14.88*	*2.00*	*7.81*	*200*
SB12-3F	*160*	*48.81*	*44.63*	*40.00*	*10.75*	*8.63*	*7.31*	*16.00*	*2.00*	*7.81*	*200*
SB31-3FK1	*240*	*43.00*	*38.25*	*32.00*	*17.00*	*18.44*	*6.00*	*26.00*	*3.00*	*17.75*	*600*
SB32-4FK1	*480*	*56.00*	*51.25*	*45.00*	*17.00*	*18.44*	*6.00*	*26.00*	*4.00*	*17.75*	*650*
SB41-4FK1	*320*	*43.50*	*38.63*	*32.00*	*17.00*	*20.44*	*6.00*	*28.00*	*4.00*	*19.79*	*670*
SB42-4FK1	*640*	*56.50*	*51.63*	*45.00*	*17.00*	*20.44*	*6.00*	*28.00*	*4.00*	*19.79*	*720*
SB42-6FK1	*640*	*60.19*	*55.13*	*47.00*	*18.00*	*20.44*	*6.00*	*30.00*	*6.00*	*19.79*	*740*
SB52-6FK1	*800*	*60.50*	*54.50*	*45.00*	*20.00*	*22.44*	*6.00*	*30.00*	*6.00*	*21.71*	*700*
SB62-8FK1	*960*	*64.00*	*58.00*	*48.00*	*22.00*	*26.00*	*5.00*	*36.00*	*8.00*	*25.30*	*1105*
SB72-6FK1	*1120*	*59.75*	*53.75*	*45.00*	*20.00*	*26.00*	*5.00*	*34.00*	*6.00*	*25.30*	*1070*
SB72-8FK1	*1120*	*64.00*	*58.00*	*48.00*	*22.00*	*26.00*	*5.00*	*36.00*	*8.00*	*25.30*	*1105*
SB82-8FK1	*1440*	*64.56*	*58.00*	*48.00*	*23.25*	*28.44*	*5.00*	*38.00*	*8.00*	*27.88*	*1180*
SB92-8FK1	*1440*	*66.75*	*60.00*	*50.00*	*24.00*	*30.56*	*6.00*	*40.00*	*8.00*	*29.80*	*1180*

†Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.

Material of Construction	Maximum Operating Pressure (psi at 250°F)†	Maximum Design Temperature*	Config.
Carbon Steel	150 psi (10.3 bar)	500°F (260°C)	SB
Carbon Steel	300 psi (20.7 bar)	500°F (260°C)	HSB
304 Stainless Steel	150 psi (10.3 bar)	300°F (150°C)	SB
304 Stainless Steel	300 psi (20.7 bar)	300°F (150°C)	HSB
316 Stainless Steel	150 psi (10.3 bar)	400°F (204°C)	SB
316 Stainless Steel	300 psi (20.7 bar)	400°F (204°C)	HSB

† *Operating temperature limited by standard gasket material and exterior paint.*



SB11 & SB12 Only | All Others

Ordering Information

Material	Design Series	Standard Bag Design Series	Number of Bags	Bag Length	Inlet/Outlet Flange Size	Coverlift Option
No Symbol = Carbon Steel 4 = 304 Stainless Steel 6 = 316 Stainless Steel	H = 300 PSI C = Non-Code Design No Symbol = Code	SB = 1 Bag or Multiple Bags	1 3 4 5 6 7 8 9	1 = Single 2 = Double	F = Flange No Symbol = NPT 2 = 2 in Flange 3 = 3 in Flange 4 = 4 in Flange 6 = 6 in Flange 8 = 8 in Flange	K1 = Mechanical K2 = Hydraulic No Symbol = None

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Fulflo® FB Filter Vessels

FB Model Bag Filter Vessels Designed for Economical Filtration of Liquids and Gases

The Fulflo® FB Series of bag and strainer filter vessels provides excellent filtration in a wide range of industrial and chemical applications. All details of design, materials, construction and workmanship of the FB Vessel Series conform to ASME code and are available in non-code design and construction.

Benefits

- Single O-ring design closure assures quick, positive cover sealing (O-rings are not required to seal filter bags.)
- Swing bolts with eyenuts for fast, easy opening and closing of cover
- Buna-N O-ring standard with EPR, Viton* and fluoropolymer available
- Maximum design pressure is 150 psi (10.3 bar) at 450°F** (232°C)
- ASME Code UM stamp is standard (U stamp is optional)
- Threaded vent and drain connections
- Adjustable leg height. Threaded or flanged inlet and outlet
- Side inlet; cover opens without disconnecting piping
- Side inlet, bottom outlet and crevice-free welded design provide a smooth interior for easy wash-out and cleaning
- Hinged cover for easy opening
- Positive seal of "C" style flex band bags prior to closing the vessel cover
- Optional hold-down assembly for conversion to “G” style bag media seal available.

Applications

- Potable Water
- Process Water
- Coatings
- Lubricants
- Coolants
- Cutting Oils
- Solvents

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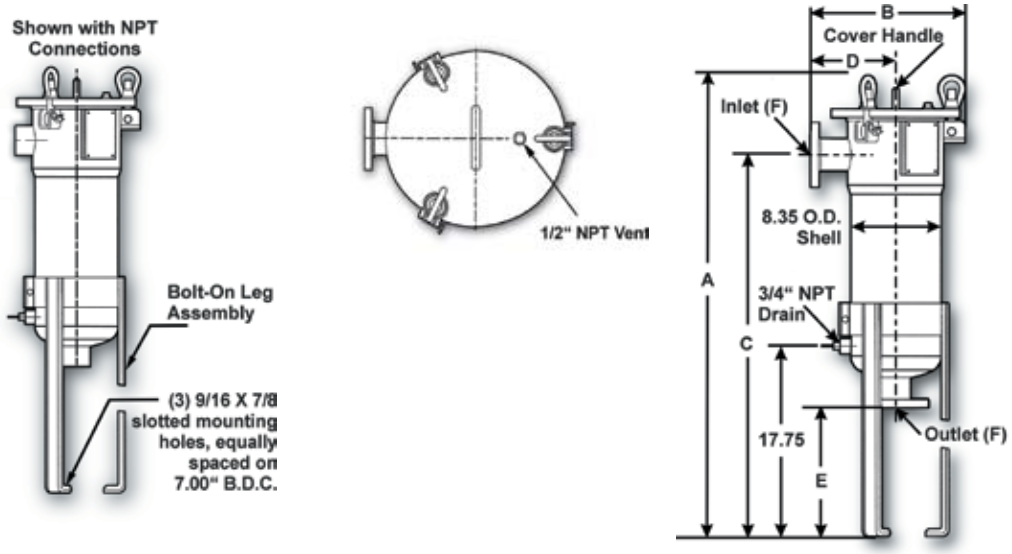
Fulflo® FB Filter Vessels

Design Specifications

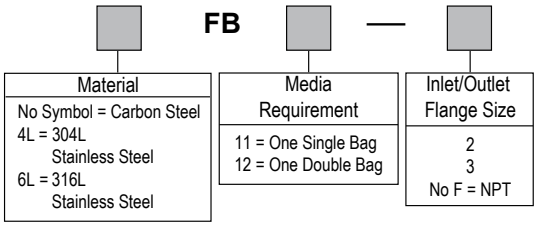
Model	Bag Style	Typical Aqueous Flow† (gpm)	Dimensions (in) A	B	C	D	E	F	Shipping Weight (lbs)	Volume (gal)
FB11-2	Single	80	43.06	12.25	35.63	5.75	13.19	2 NPT	90	5.4
FB11-2F	Single	80	43.06	14.50	35.63	8.00	12.00	2 NPS	100	5.4
FB12-2	Double	160	53.94	12.25	46.50	5.75	13.19	2 NPT	95	7.8
FB12-2F	Double	160	53.94	14.50	46.50	8.00	12.00	2 NPS	105	7.8
FB12-3F	Double	160	53.94	14.50	46.50	8.00	11.75	3 NPS	115	.8

† Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.



** Operating temperature limited to 250°C (121°F) by standard Buna-N O-Ring and exterior paint on carbon steel models. Optional O-Ring materials are available.

Ordering Information



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Fulflo® CB Filter Vessels

CB Model Bag Filter Vessels are Designed for Economical Filtration of a Wide Variety of Industrial Liquids

The CB bag filter vessel series is an economical design that features the integrity of a bolted closure. The CB series is available in either carbon steel or 304 or 316 stainless steel. Both models have zinc plated closure bolts and zinc plated legs for corrosion resistance. The integral basket support provides a smooth interior for easy cleaning and bag installation. The CB is for use with either single or double length bags with flex type bag bands and can also be used with solid ring and plastic ring bags by using the optional bag sealing insert and adding an O-ring under the basket rim. The adjustable legs offer installation flexibility by allowing various inlet elevations and nozzle orientations.

Benefits

- Single O-ring design closure assures quick, positive cover sealing
- Swing bolts for fast, easy and safe opening and closing of cover
- Buna-N O-ring standard with optional EPR and Viton*
- Maximum design pressure is 175 psi (12 bar) at 250°F** (121°C)
- Good manufacturing practice industrial design
- Threaded vent and drain connections
- Carbon steel with zinc plated support basket or 304SS with 316SS support basket
- Adjustable leg height
- Side inlet allows cover to open without disconnecting piping
- Integral basket support design provides a smooth interior for easy wash-out and cleaning
- Pivot pin cover allows cover to remain attached when opened
- Positive seal of "C" style flex band bags prior to closing the vessel cover
- Optional hold-down assembly for conversion to solid ring ("G"style) and plastic ring ("Q" style) bags
- Zinc plated closure bolts and legs for corrosion resistance

Applications

- Potable Water
- Solvents
- Process Water
- Lubricants
- Cutting Oils
- Coolants
- Coatings

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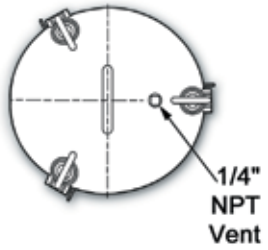
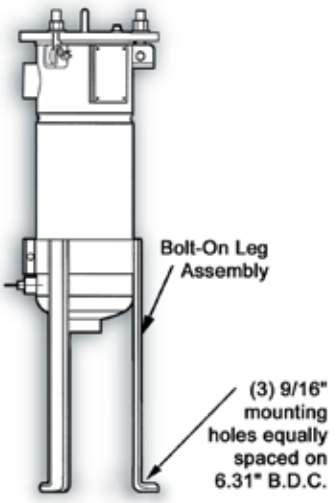
Fulflo® CB Filter Vessels

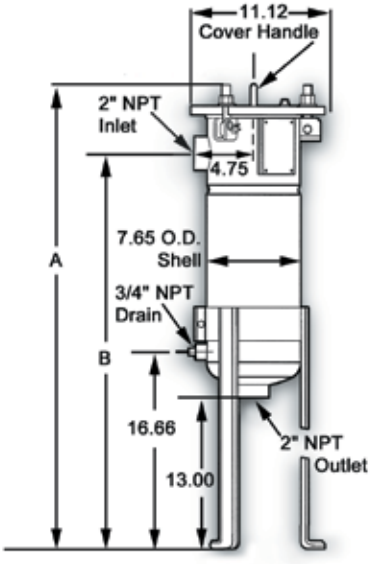
Design Specifications

Model	Bag Style	Typical Aqueous Flow† (gpm)	Dimensions A	Dimensions B	Shipping Weight (lbs)	Volume (gallons)
CB11-2	*Single*	*80*	*40.50*	*33.25*	*65*	*4.3*
CB12-2	*Double*	*160*	*55.50*	*48.25*	*90*	*7.2*

† Actual flow rate is dependent on fluid viscosity, micron rating, contaminant and media type. Consult flow charts for each application.







** Operating temperature limited to 250°C (121°F) by standard Buna-N O-Ring and exterior paint on carbon steel models. Optional O-Ring materials are available.

Ordering Information

CB ☐ — ☐

Material	Media Requirement	Inlet/Outlet Flange Size
No Symbol = Carbon Steel 4 = 304L Stainless Steel 6 = 316L Stainless Steel	11 = One Single Bag 12 = One Double Bag	2"

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WARNING

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