



Simplex Bag Filters

Single or Double Length - PPL, PVDF



Features

- All-Plastic Construction
- PPL Offered in Single & Double Length; PVDF in Double Length
- Hand-Removable Cover
- Integral Mounting Flange
- External Cover Threads
- In-Line or Loop Flow
- FPM Seals

Options

- Flanged Connections
- EPDM Seals
- Pressure Differential Gauge and Switch
- Vent Gauge with Gauge Guard
- Multi-Vessel Manifolded Units
- 1/4" NPT Differential Pressure Gauge Holes

Corrosion Is Never a Problem

A metal filter housing will ultimately rust or corrode and contaminate the process media. There is no danger of this happening with a Hayward All-Plastic Simplex Bag Filter. It will never rust or corrode and never compromise the quality of the process fluid.

Wide Range of Filter Bags

Non-woven polypropylene filter bags are available in 1, 5, 10, 25, 50, 100 and 200 micron sizes. The retaining basket that holds the bag has a unique, universal seat that works with almost any standard 7" x 16" or 7" x 32" filter bag.

Extra Features, No Extra Cost

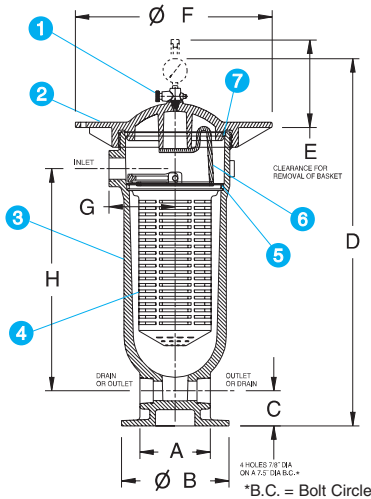
Features such as a vent/bleed valve installed on the cover of the polypropylene model and an integral mounting flange are all standard with every Hayward Simplex Bag Filter.

Easy Bag Change-Out

These filters are designed for easy service. A hand-removable cover and built-in basket and bag handles, make bag change-out fast and easy. No tools are needed and the filter is back in service in a matter of minutes. The external cover threads are not in contact with the process media – thus eliminating the need for cleaning each time the bag is changed. For extra strength the cover features specially designed buttress style threads.



Technical Information



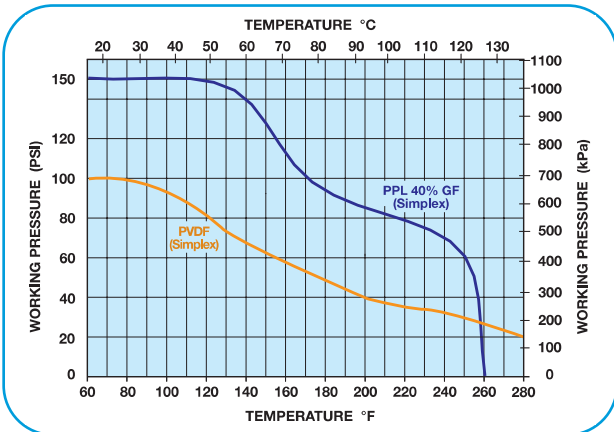
Parts List Simplex Bag Filter

1. Vent Valve with Optional Gauge (PPL Vessels Only)
2. Cover
3. Body (PPL Double & Single Length, PVDF Double Length Only)
4. Basket
5. Viton O-Ring
6. Bag Retainer
7. Viton O-Ring

Dimensions - Inches / Millimeters

Vessel Size	A	B	C	D	E	F	G	H	J	K	Weight (lb / kg)
Single Length	6.50 / 165	10.00 / 254	3.25 / 83	34.10 / 866	20.00 / 508	18.30 / 465	6.13 / 156	20.75 / 527	11.5 / 292	8.75 / 222	60 / 27
Double Length	6.50 / 165	10.00 / 254	3.25 / 83	50.10 / 1273	36.00 / 914	18.30 / 465	6.13 / 156	36.75 / 933	11.5 / 292	8.75 / 222	80 / 36

Operating Temperature/Pressure



Technical Specifications

- Material of Construction:** Glass-reinforced polypropylene – single & double length; PVDF – double length only
- Piping Connections:** PPL: 2" NPT threaded or 150# ANSI flange. PVDF: 2" flange
- Drain Connections:** PPL: 2" NPT threaded or 150# ANSI flange. PVDF: 2" flange
- Bag Size:** Single length - 7" x 16", 2.0 square feet; double length - 7" x 32", 4.1 square feet, PPL fabric and ring
- Pressure Rating:** PPL 150 PSI, PVDF 100 PSI
- Seals:** Viton® (EPDM optional)
- Nominal Bag Ratings:** 1, 5, 10, 25, 50, 100, 150, 200, 400, 600 and 800 microns. Universal seat accepts most standard 7" diameter bags
- Flow Rate:** Single length, 50 gpm with clean bag; double length, 100 gpm with clean bag

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Viton® is a registered trademark of DuPont



Duplex Plastic Bag Filters

Single or Double Length – Polypropylene, PVC, CPVC



PVC,
CPVC

PPL

Features

- No Line Shutdown for Bag Change-Out
- Available in Both Single and Double Length Bag Sizes
- Can't Rust or Corrode
- Reversible Inlet and Outlet
- Rated to 150 PSI

Options

- Pressure Differential Gauges
- Pressure Differential Switches
- Automated Operation – Electric or Pneumatic

No Downtime for Bag Change-Out

With an all-plastic, corrosion-resistant Hayward Duplex Bag Filter, there is never a need to shut down the line and there is never any downtime necessary when changing filter bags. Just turn the lever handle to divert flow from one filter housing to the other. Then spin off the hand-removable cover, remove the dirty bag and install a new one.

Extra Features...

No Extra Cost

Features such as a rugged, lightweight fiberglass mounting platform and a vent/bleed valve installed on both filter housing covers are standard with every Hayward All-Plastic Duplex Bag Filter.

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Wide Range of Filter Bags

Non-woven polypropylene filter bags are available in 1, 5, 10, 25, 50, 100, 150, 200, 400, 600 and 800 micron sizes. The retaining basket that holds the bag has a unique, universal seat that works with almost any single or double length filter bag.



Technical Information

Parts List
Duplex Bag Filter - PPL*

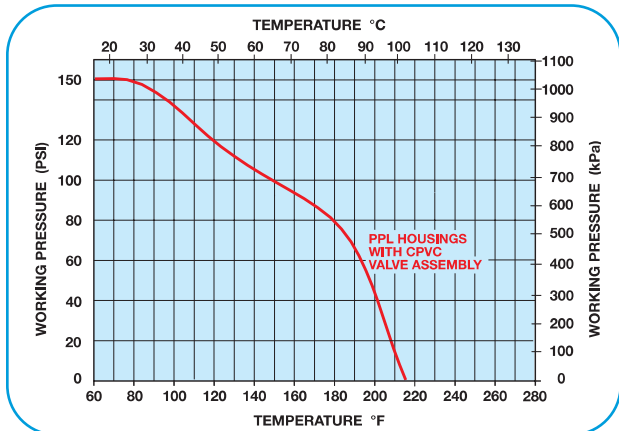
1. Vent Valve with Optional Gauge
2. Inlet Connection
3. Valve Assembly – Corzan® CPVC
4. Lever Handle
5. Filter Housing – Polypropylene
6. Linkage Assembly
7. Outlet Connection
8. Base Assembly
9. Support Stand
10. Drain Valve
11. Differential Gauge Mounting Bracket-Optional

* Consult Hayward for PVC and CPVC dimensions.

Dimensions - Inches / Millimeters

Vessel Size	A	B	C	D	E	F	G	H	J	K	L	M	Weight (lb / kg)
Single Length	59 / 150	52 / 132	4.5 / 11	9.3 / 24	5.5 / 14	20 / 51	49 / 123	6.1 / 16	30 / 76	39 / 99	23 / 58	15.3 / 39	162 / 74
Double Length	59 / 150	52 / 132	4.5 / 11	9.3 / 24	5.5 / 14	36 / 91	65 / 164	6.1 / 16	30 / 76	55 / 140	23 / 58	15.3 / 39	190 / 86

Operating Temperature/Pressure



Technical Specifications

- Bag Size:** Single length - 7" x 16", 2.0 square feet; double length - 7" x 32", 4.1 square feet, PPL fabric and ring
- Basket Open Area Ratio:** Single length 28:1; double length 60:1
- Piping Connections:** 2" 150# class flange
- Drain Connections:** 2" NPT
- Material of Construction:** Glass-reinforced polypropylene and Corzan® CPVC
- Seals:** FPM
- Pressure Rating:** 150 PSI @ 70° F
- Nominal Bag Ratings:** 1, 5, 10, 25, 50, 100, 150, 200, 400, 600 and 800 microns.
Universal seat accepts most standard 7" diameter bags
- Maximum Flow Rate:** 100 gpm
- Mounting Base:** Fiberglass
- Hardware:** Stainless steel



How to Select a Bag Filter

1. Check the Chart on the Right

...to make sure that the temperature/pressure of the application falls within the OK range.

2. Determine the Flow Rate

...in gpm, of the system into which the bag filter is to be installed. Hayward single and double-length bag filters work with flows of up to 100 gpm. If the system's flow rate is greater, consider using two or more filters manifolded together. For example, if the system flow rate is 150 gpm, using two manifolded filters would reduce the flow to a manageable 75 gpm through each.

3. Select the Bag

...Hayward bags are available in 5, 10, 25, 50 and 100 micron ratings. The bags are made from non-woven polypropylene felt material. They are double stitched and heat treated to minimize fiber migration. All bags are individually plastic wrapped and sealed to prevent contamination in shipping and handling. A single length bag has a surface area of 2.0 sq ft and a double length 4.1 sq ft.

4. Consider Startup Pressure Loss

...Bag filters are typically sized so that there is a 2 PSI or less pressure loss across them with a clean bag installed. Keep in mind that this is just a guide. Remember that in most

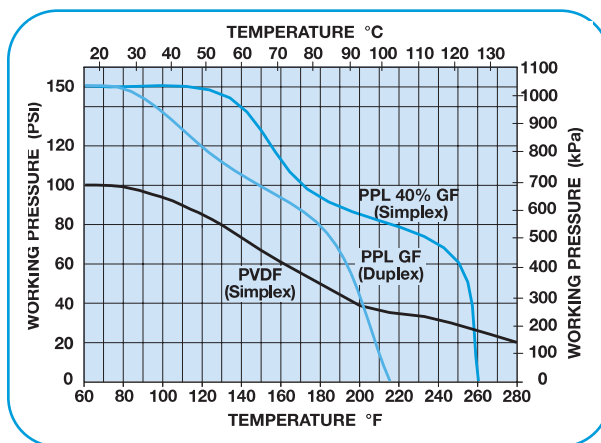
applications filtration efficiency falls off at about 8 to 10 PSI loss and bag changeout should take place before a 20 PSI loss is reached. When in doubt select the filter with the lowest pressure loss. The time between bag changeouts for a double length filter is more than twice that of a single length filter in the same application.

5. Calculate Startup Pressure Loss

...To figure the total pressure loss across the filter with a clean bag requires making two pressure loss calculations and adding them together: The loss across the filter vessel without a bag and the bag loss.

First: Use the system flow rate and Chart Number One to determine the loss across the filter without a bag (single and double length filter vessels have virtually the same pressure loss without a bag). Example – A flow rate of 30 gpm results in a 0.4 PSI pressure loss. If the process media is water or has a viscosity less than 200 cps, that's it. If the viscosity is greater, select the correction factor that matches the process media viscosity in CPS units from Table Number One. Multiply the pressure drop by this factor.

Second: Single and double length filter bags have different pressure losses.



Use Chart Number Two to determine the pressure loss per square foot of bag surface. Example – With a system flow rate of 30 gpm, a 5 or 10 micron bag would have a 0.2 PSI loss per square foot. This loss is divided by 2.0 for a single length bag or 4.1 for a double length bag. These factors are the respective surface areas of the bags in square feet. The loss for a single bag would be 0.1 PSI ($0.2 \div 2.0$) and 0.05 for a double length bag ($0.2 \div 4.1$). For fluids with viscosities other than water, select the correction factor from Table Two and multiply the pressure drop by it. Example – If the fluid viscosity were 800 cps, the pressure loss for a single length bag would be 5.0 (0.1×50.0).

Last: Add the pressure loss of the vessel and the bag together to get the pressure loss across the filter with the bag installed.

Chart Number One
Vessel Pressure Loss

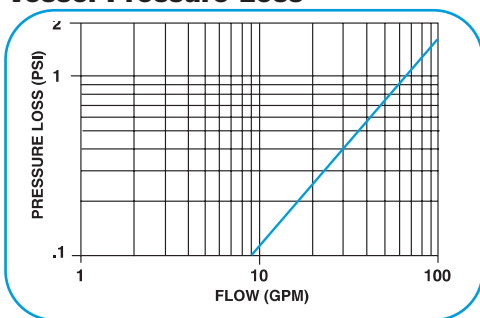


Chart Number Two
Bag Pressure Loss

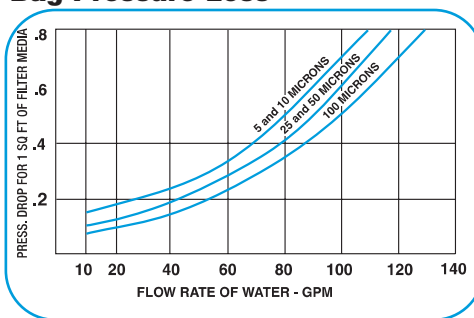


Table Number One
Vessel Viscosity Correction

Viscosity in CPS	200	400	600	800	1000	2000
Correction Factor	1.10	1.20	1.40	1.50	1.60	1.80

Pressure differential data determined by ISA S75.02 test procedure. It is shown only as a guide and may vary by application.

Table Number Two
Bag Viscosity Correction

Viscosity Factor	1.0	200	16.6	800	50.0
Water	1.0	200	16.6	800	50.0
50	4.5	400	27.7	1000	56.2
100	8.5	600	38.9	2000	113.6



How to Select a Bag Filter

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...in gpm, of the system into which the bag filter is to be installed. Hayward single and double-length bag filters work with flows of up to 100 gpm. If the system's flow rate is greater, consider using two or more filters manifolded together. For example, if the system flow rate is 150 gpm, using two manifolded filters would reduce the flow to a manageable 75 gpm through each.

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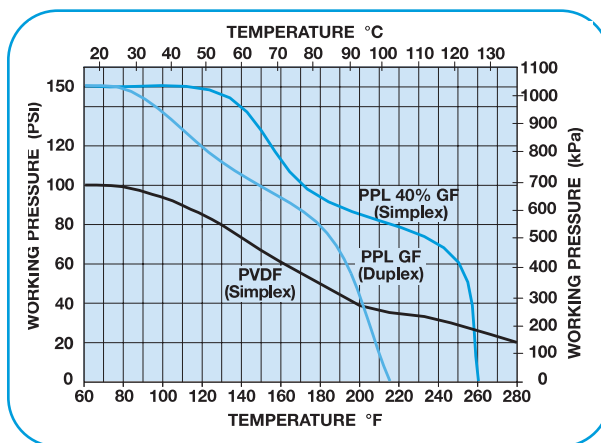
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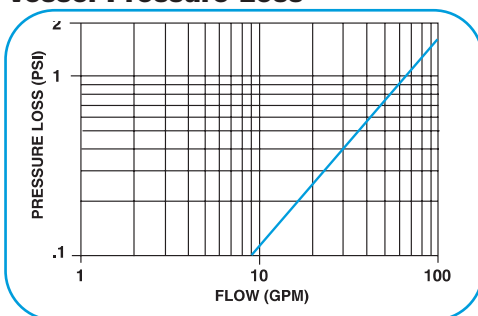


Chart Number Two
Bag Pressure Loss

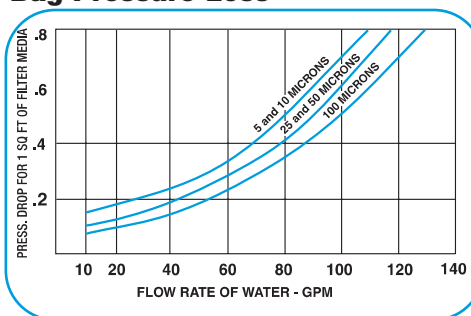


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Table Number Two
Bag Viscosity Correction

Viscosity Factor	200	400	600	800	1000	2000
Water 1	1.0	16.6	27.7	38.9	50.0	113.6
50	4.5	27.7	38.9	50.0	113.6	
100	8.5	38.9	50.0	113.6		



All-Plastic High Capacity Cartridge Filters

For Water or Chemical Filtration



Housings Feature

- All-Plastic PPL or PVDF Construction
- FPM or EPDM Seals
- Threaded or Flanged Connections
- Hand-Removable Cover
- High Pressure Ratings
- Inline or Loop Piping Setup
- Simplex or Duplex Models

Cartridges Feature

- Nominal and Absolute Rated Cartridges
- Large Filtration Area
- High Dirt Holding Capacity

An Important Advance in Cartridge Filtration

Now you can have all the benefits of cartridge filtration for industrial and commercial applications – while getting complete corrosion resistance. Hayward's one-piece, seamless, plastic-body cartridge filters will never rust or corrode, nor will they contaminate the process fluid.

Thousands of Applications

Hayward's Series 4200 all-plastic cartridge filters have been designed to work in the most demanding of applications – whether for high purity water or aggressive chemical filtration. These heavy-wall-housing filters will withstand operating pressures of up to 150 PSI with no problem. Series 4200 filters will work in corrosive atmospheres and harsh environments, places where a metal housing would have to be painted or epoxy-coated just to survive. All this, plus light weight and easy installation, make the Hayward Series 4200 cartridge filter right for your application.

The Right Configuration for Your Application

Series 4200 cartridge filter housings are offered in three sizes – making it easier to choose the exact filter for your application requirements. And you can choose between two types of Hayward cartridges. Hayward HC cellulose cartridges are perfect for all types of water filtration up to 165°F. Their special design packs 47 sq ft of filter media into a 16" tall cartridge. Hayward PF polypropylene cartridges are silicone-free and feature graded density construction for superior particle retention.

Duplex Models

Choose a Hayward Series 4200 duplex cartridge filter for those applications where the pipeline flow cannot be shut down to change out filter cartridges. Duplex filters allow the pipeline flow to be diverted to one of the two filter housings. This permits the off-line housing to be serviced without flow shutdown.



Series 4200 Plastic Filter Housings for Cartridges



Features

- All-plastic PPL or PVDF construction
- FPM or EPDM seals
- Threaded or flanged connections
- Hand-removable cover
- High pressure ratings
- In-line or loop piping setup
- For water filtration applications, CFLT4201 accepts one 16" cartridge; CFLT4202 accepts two 16" cartridges, end to end
- For absolute filtration applications, five-element 20" and 30" cartridges are accepted by housings CFLT4203 and CFLT4202, respectively

Will Not Rust or Corrode

A metal filter housing will ultimately rust or corrode and contaminate the process media. There is no danger of this happening with a Hayward Series 4200, all-plastic, seamless body, polypropylene cartridge filter housing. It will never compromise the quality of the filtration system by rusting or corroding. The Model CFLT4202 simplex housing is also available in PVDF for the filtration of extremely corrosive fluids such as bromine, chlorine, toluene and trichloroethylene.

Application Versatility

With three filter housing sizes, the Series 4200 easily adapts to all Hayward filter cartridges. The Hayward HC cartridge, a nominally rated water filter cartridge, fits the Model CFLT4201 and CFLT4202 housings, while the absolute-rated PF cartridge fits the CFLT4203 and CFLT4202 housings for high purity and aggressive chemical applications. Adapter kits custom configure each housing to the specific filter cartridge.

Easy to Service

The Series 4200 filter housings are designed for quick and easy filter cartridge changeout. A hand removable cover simplifies cartridge changing. No tools are needed and the filter is back in service in a matter of minutes. The external cover threads are not in contact with the process media – eliminating the need for cleaning each time the cartridge is changed – a real time saving feature. Extra strength buttress style cover threads are a standard feature on all filter housings.

Easy Installation

Support stands are not needed for the Series 4200 housings. An integrally molded support flange ensures fast, rock solid installation. The 2" inlet and outlet connections are parallel and easy to pipe into. Two outlet connections are available for either in-line or loop piping arrangements.

Extra Features, No Extra Cost

An all-plastic vent/bleed valve on the cover is standard on every all-plastic Series 4200 cartridge filter housing. Duplex models come ready mounted on a fiberglass mounting skid.

Duplex Model for Continuous Flow

In many applications it is not possible to shut the process line down for cartridge changeout. For these applications a duplex cartridge filter skid assembly is available. Here, two filter housings are linked with a special all-plastic CPVC valve assembly that diverts the flow from one housing to the other without having to shut down the system. Just a quarter turn of a handle diverts the flow from one housing to the other – making it possible to change the cartridge in the out of service housing while the flow continues through the other housing.

Housing/Cartridge Specifier

Housing	Hayward HC Cartridge	Max. Flow Rate	Hayward PF Cartridge	Max. Flow Rate
CFLT4201	One 16"	50 gpm	—	—
CFLT4202	Two 16"	100 gpm	Five 30"	100 gpm
CFLT4203	—	—	Five 20"	50gpm



Hayward HC Cartridges for Water Filtration



Features

- FDA-approved materials
- High particle retention
- Long life
- High holding capacity
- 5-micron size

More Filtration Area

The Hayward HC cartridge is a high capacity cartridge that has over 47 sq ft of filter area. That's more than 10 times the filtration area of a typical standard 10" cartridge – resulting in a higher dirt loading capacity and less downtime for cartridge changeout. These cartridges measure almost 16" tall. For flow rates of up to 50 gpm, use one cartridge installed in a CFLT4201 filter housing. Two cartridges can be installed end-to-end in a CFLT4202 housing – creating a total of 94 sq ft of filtration area for applications requiring flow rates up to 100 gpm.



Heavy Duty Construction

HC cartridges are constructed with a polypropylene core, cellulose element and sealed with plastisol end caps. All materials are FDA approved. HC cartridge is offered in 5 nominally rated micron size.

Best Cartridge for Water Filtration Applications

HC cartridges are ideal for all types of water filtration up to 165°F. Whether your application requires the filtering of salt water, cooling water, well water, waste water or drinking water, the Hayward HC cartridge is the right choice for your filtration requirements.

Hayward PF Cartridges for Absolute Filtration



Features

- Large pleat design – more filter for the money
- Silicone free – for high purity applications
- Graded density – for superior particle retention
- Ratings of 1, 5 and 10 microns
- FDA-approved materials

Absolute Filtration to 99.98%

Hayward PF cartridges are the perfect choice when the quality of the process liquid cannot be compromised. They are designed for applications that require absolute filtration to 99.98% and are rated at 1, 5 and 10 microns.



Superior Design for Long Life

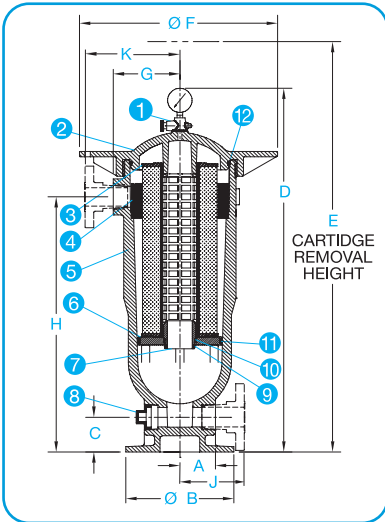
PF cartridges are silicone free and constructed from a continuous, graded, polypropylene fiber. A high efficiency pleat configuration results in high flow rates and dirt loading capacity with minimal pressure drop. The media is housed within a polypropylene cage for support under high flow conditions and permits a more even distribution of the process liquid through the filter media for longer cartridge life. Easy, positive installation of the cartridge into the housing is assured by the Type 222 double o-ring seal design. You never have to guess if the cartridge is properly installed. The PF cartridges consist of five filtration elements and are available in two lengths. The 20" cartridge fits the CFLT4203 filter housing for flow rates up to 50 gpm and a 30" cartridge in the CFLT4202 filter housing for applications requiring flow rates up to 100 gpm.

Unlimited Applications

The Hayward PF cartridge, combined with the Hayward Series 4200 housing, is the best chemically resistant filtration system available. It is ideal for applications requiring quality filtration of bulk chemicals, oils, photographic chemicals, cosmetics, pharmaceuticals, inks, dyes, paints and water. Hayward PF cartridges also meet FDA requirements for food and beverage contact.



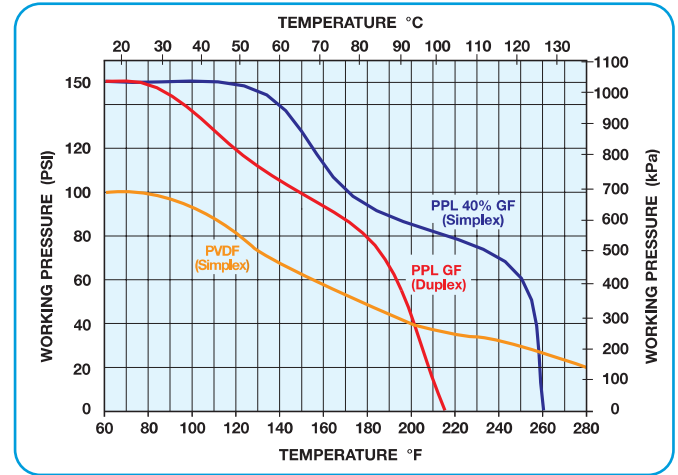
Technical Information



Series CFLT4200 Simplex Parts List

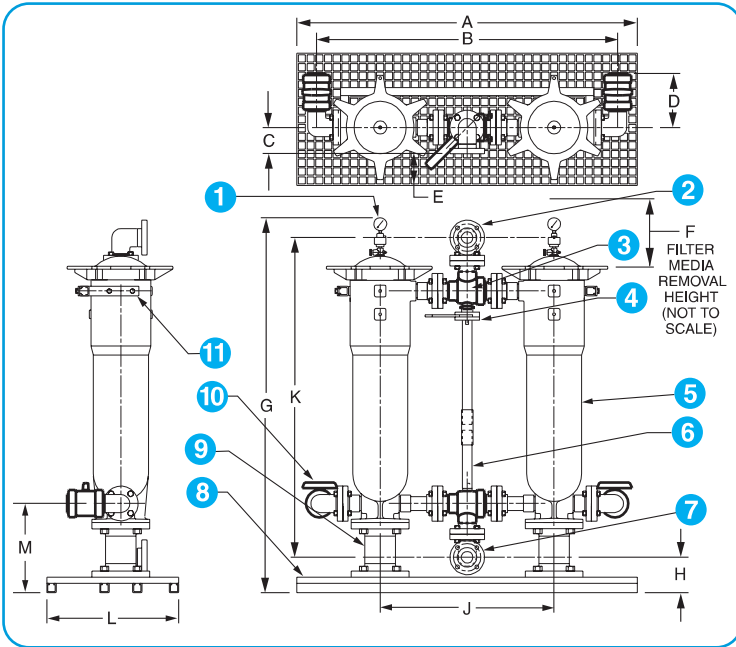
1. PPL vent valve (with optional gauge)
2. Cover
3. HC cartridge
4. Flow diffuser (HC only)
5. Body
6. Support
7. Connector
8. Drain plug
- 9-12. O-ring

Operating Temperatures/Pressures



Model 4200 Simplex Dimensions - Inches / Millimeters

Model	A	B	C	D	E (HC Cart.)	E (PF Cart.)	F	G	H	J	K	Weight (lb/kg)
CFLT4201	6.5 / 165	10 / 254	3.25 / 83	34.1 / 866	45 / 1143	—	18.38 / 467	6.21 / 156	20.75 / 527	5.75 / 146	8.75 / 222	50 / 22.7
CFLT4202				50.2 / 1275	61 / 1549	75 / 1905			36.75 / 933			65 / 29.5
CFLT4203				38.1 / 967	—	49 / 1245			24.75 / 628			58 / 26.4



Series CFLT4200 Duplex Parts List

1. PPL vent valve with optional gauge
2. Inlet connection
3. Valve assembly, Corzan® CPVC
4. Lever handle
5. Filter housing, polypropylene
6. Linkage assembly
7. Outlet connection
8. Base assembly
9. Support stand
10. Drain valve, optional
11. Differential gauge mounting bracket, optional

Technical Specifications

- Material of Construction:** Glass reinforced polypropylene or PVDF (Model CFLT4202 only)
- Piping Connections:** PPL – 2" NPT threaded or optional 150# ANSI flanged. PVDF – 2" socket fusion or optional flanged
- Pressure Rating:** PPL – 150 PSI. PVDF – 100 PSI non-shock at 70°F
- Seals:** FPM or optional EPDM

Corzan® is a registered trademark of Noveon, Inc.

Model 4200 Duplex Dimensions - Inches / Centimeters

Model	A	B	C	D	E	F (HC Cart.)	F (PF Cart.)	G	H	J	K	L	M	Weight (lb/kg)
CFLT4201	59 / 150	52 / 132	4.5 / 11	9.3 / 24	5.5 / 14	55 / 1397	—	49 / 123	6.1 / 16	30 / 76	39 / 99	23 / 58	15.3 / 39	162 / 74
CFLT4202						71 / 1803	85 / 2159	65 / 164			55 / 140			190 / 86
CFLT4203						—	59 / 1499	53 / 135			43 / 109			170 / 77