FSI®

FILTER SPECIALISTS, INC.

Innovative Solutions. Clear Results.

FILTRATION PRODUCTS MASTER CATALOG

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FILTRATION PRODUCTS MASTER CATALOG

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FILTER SPECIALISTS, INC.

FILTER VESSELS

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FILTER VESSELS

Slides:
- FSPN Multi-Hole Vessel
- FSPN 20
- FSPN 35
- FSPN 85
- FSPN 250
- FSPN Cross Section

BAG FILTER HOUSINGS
FSPN Vessels

Introduction

The FSPN line of filters covers nearly every fluid application need. From the compact FSPN-20 miniature single bag filter vessel to the large multi-bag designs, we have exactly what your flow demands require. The FSPN vessels can also be equipped with a variety of lid opening styles including manual, hydraulic, spring assist and Easy Open.

FSPN filter vessels using size 1 and 2 filter bags are designed, built and stamped to meet code requirements in our own ASME Code manufacturing facilities. Standard equipment features like the single-gasket seal, with sturdy perforated metal baskets provide durable and consistent performance.

Features

- Stock, Standard and Custom designs available
  - — *Stock:* 1-8 bags
  - — *Custom:* Available up to 99 bags
- ASME Code
- NPT or flange connections
- Positive bag seating without the use of a manual hold-down device
- Single gasket lid seal
- Full ports for unrestricted flow

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FILTER VESSELS

BAG FILTER HOUSINGS

Options

- **Lid Opening types**
  - Hydraulic Lid Lift with swing bolts
  - Spring Assist with swing bolts
  - EZ Open lid
- **100 & 300 PSI designs available** *(available on most models)*
- **CRN & CE code designs**
- **NSF 61 Certification available with FSPN Size 2 Vessels in 304 SS and 316 SS**
- **Solid Teflon or flat-gasket design**
- **Partial heat jacket or full jacket**
- **Corrosion allowance**
- **Mesh lined and heavy-duty rim baskets**
- **Hastelloy C, Alloy 20, 2205 Duplex** *(other materials by request)*
- **Sanitary or Victaulic connections** *(other connection types by request)*

FSPN Vessels

Specifications

Number of Bags	1-99
Filter Bag Size	Single Bag Design: 1, 2, 3, 4 Multi-Bag Design: 1, 2
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Connections	Flange or NPT
Surface Finish	Carbon Steel: Acrylic enamel painted exterior Stainless Steel: Light sand blast
Code Stamp (Size 1, 2 only)	ASME Sect VIII, Div 1, "U" or "UM" stamp
Gasket Material	Buna, EPR, Viton, Viton Teflon Encapsulated, Buna White FDA
PolyLoc® Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	Hinged or swing bolt with manual davit lid lift See options for alternate set-up

Locate Your Sales Representative

FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

FSPN VESSELS ~ HOW TO ORDER

FSPN0800	A	0150	N	04	F	04	F	04	X	2	P	065	A
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1 Model Number
FSPN0800

2 Vessel Material
A = Carbon Steel
B = 304 Stainless Steel
C = 316 Stainless Steel
F = Alloy 20
G = Hastelloy C-276
T = Titanium
S = Special

3 Vessel Pressure Rating (PSI)
0100, 0150, 0300
Per customer specification

4 Coating/Lining Material
N = None (Standard)
A = Electropolish
F = Paint finish/prep
J = Kynar or Halar
M = Prime electropolish
P = Plasite (epoxy) (10 mil)
S = Special
T = Teflon
X = Passivation

5 Inlet Size
(Example 4" = 04)

6 Inlet Type
C = Sanitary fitting
D = Flange, din
E = European EN Flange
F = Flange, slip-on, raised face, std.
H = Flange, weld neck, raised face
K = Flange, lap joint
M = Male NPT
N = Female NPT
P = Plain pipe
S = Special
T = Plain OD Tube
W = Socket weld

7 Outlet Size
(Example 4" = 04)

8 Outlet Type
See Inlet Type for code letter

9 Nozzle Configuration
See the nozzle configuration chart *(at the end of the FSPN vessel section)*

10 Internal Usage
A = Removable grate
B = Modified basket seat
F = Fixed grate
N = Steel ring bag only (no Polyloc®)
R = Snap fit rings
S = Special
X = Machined collar for Polyloc® (Std.)

11 Lid Opening Type
1 = Hinge
2 = Manual davit
3 = Hydraulic davit
4 = Clamshell
5 = E-Z Open
6 = Spring Assist
9 = Other

12 Jacket Type
N = None
P = Partial
F = Full

13 Jacket Pressure Rating
065 (Standard), 100, 150
Per customer specifications

14 Jacket Material
See Vessel Material group for code letters

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FSI
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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Standard FSPN Vessel Models

Model Number	FSPN 20	FSPN 35	FSPN 40	FSPN 85	FSPN 250	FSPN 355	FSPN 800	FSPN 1100	FSPN 2000	FSPN 2500	FSPN 3000	FSPN 3500	FSPN 4000	FSPN 4200	FSPN 4500	FSPN 4800	FSPN 5000
No. of Bags	1	1	1	1	2	3	4	6	8	10	12	14	16	18	20	22	24
Bag Size No.	3	4	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Surface Area per Bag, Ft	0.5	1.0	2.0	4.4	4.4	4.4	4.4	4.4.	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Surface Area per Vessel, Ft^2	0.5	1.0	2.0	4.4	8.8	13.2	17.6	26.4	35.2	44.0	52.8	61.6	70.4	79.2	88.0	96.8	105.6
Inlet and Outlet Size	1″	1″	2″	2″	3-4″	3-4″	4-6″	4-6″	6-8″	8-10″	8-10″	10-12″	10-12″	10-14″	10-14″	10-14″	10-14″
Max Flow Rate, GPM	15	30	60	120	240	360	480	720	960	1200	1440	1680	1920	2160	2400	2640	2880

NOTE: The maximum flow rate GPM is the MAXIMUM FLOW RATE recommended through the vessel using a 10 micron felt filter bag (PONG10) filtering water. Any increase in fluid viscosity will reduce the maximum GPM figures significantly. Please consult your FSI representative when sizing these vessels.

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

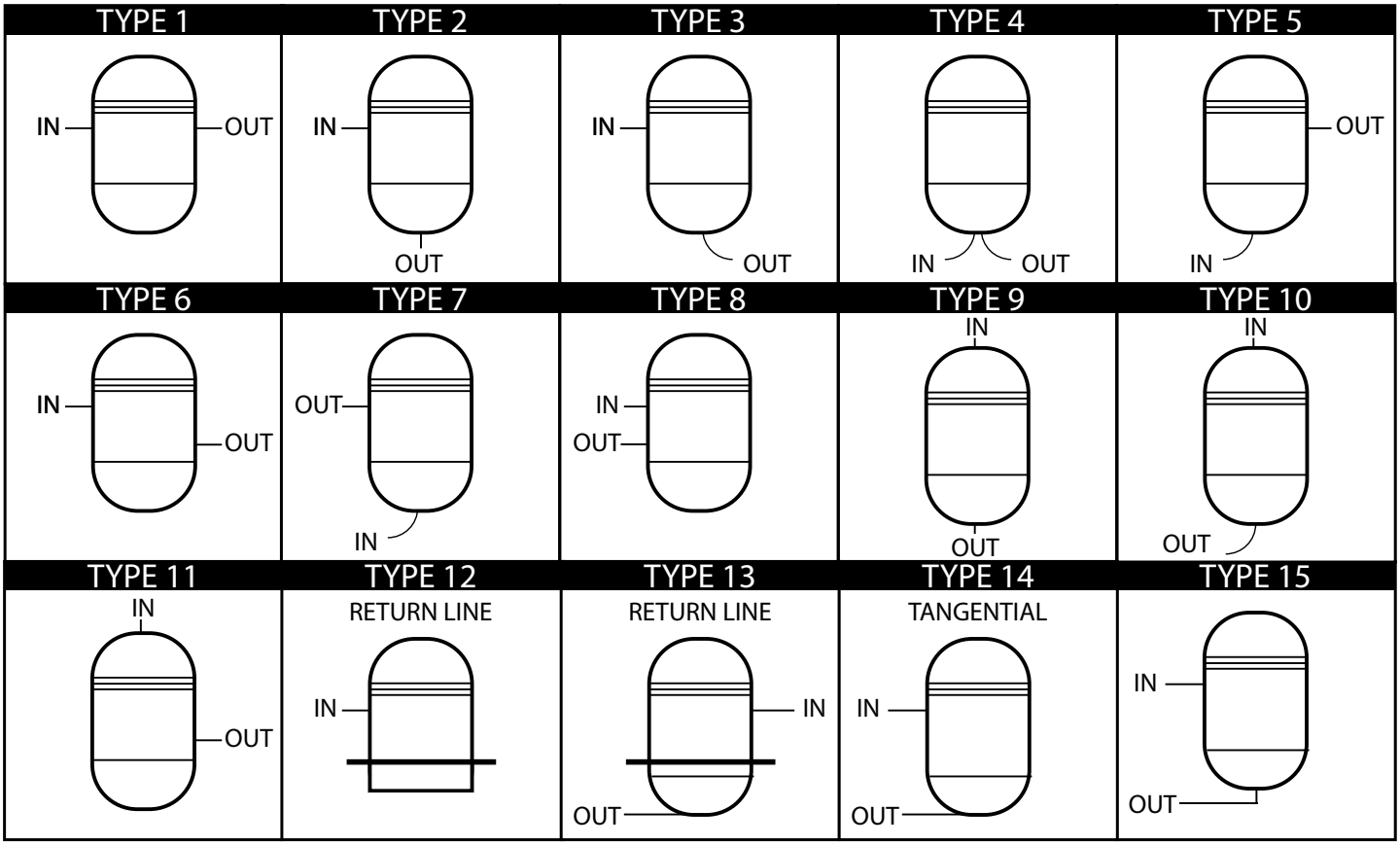
Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

FSPN Inlet-Outlet Configurations



NOTE: Inlet and outlet nozzles are shown in general positions. They can be rotated or relocated to meet customer requirements.

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | **FSPN E-Z Open** | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Slides: • FSPN E-Z Open
• FSPN E-Z Open *(closed)*

BAG FILTER HOUSINGS
FSPN E-Z Open

Introduction

The FSI answer to time-saving operations is the patented FSPZ Easy Open Lid Vessel, the innovative alternative to manually opening and closing a filter vessel. Utilizing a unique sliding bracket retaining system, it's operated simply by using the lid activator handle. The Easy Open Lid rotates and raises to a locked position in the time it normally takes to loosen one or two eyebolts on a conventional vessel.

The Easy Open Lid is available on bag filter models holding 4 to 24 bags. It can be fully opened in under 30 seconds which significantly lowers the cost of operating your vessels, and makes the change-out procedure easier and safer.

Features

- Innovative lid closure system opens in 30 seconds or less—no tools required, for faster change-outs with less effort
- Hydraulic opening and lifting device offers improved ergonomics to avoid repetitive-use injuries
- Splash shield, pressure relief valve, indicator lock pin and alignment pins assure safe operation
- Standard design pressure rating of 150 PSI

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | **FSPN E-Z Open** | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Options

- **100 & 300 PSI designs** *(available on most models)*
- **CE code designs**
- **Partial heat jacket or full jacket**
- **Corrosion allowance**
- **Mesh lined and heavy-duty rim baskets**
- **Sanitary or Victaulic connections** *(other connection types by request)*

U.S. Patent No. 8,083,087

BAG FILTER HOUSINGS

FSPN E-Z Open

Specifications

Number of Bags	4-24
Filter Bag Size	Multi-Bag Design: 2
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	Flange or NPT
Surface Finish	Carbon Steel: Acrylic enamel painted exterior Stainless Steel: Light sand blast
Code Stamp (Size 1, 2 only)	ASME Sect VIII, Div 1, "U" stamp
Gasket Material	Buna, EPR, Viton, Buna White FDA
PolyLoc® Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	EZ Open

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | **FSPN E-Z Open** | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

FSPN E-Z OPEN VESSELS ~ HOW TO ORDER

FSPZ0800	A	0150	N	04	F	04	F	04	X	5	P	065	A
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1. **Model Number**
   FSPZ0800

2. **Vessel Material**
   A = Carbon Steel
   B = 304 Stainless Steel
   C = 316 Stainless Steel

3. **Vessel Pressure Rating (PSI)**
   0100, 0150
   Per customer specification

4. **Coating/Lining Material**
   N = None (Standard)
   A = Electropolish
   M = Prime electropolish
   S = Special
   X = Passivation

5. **Inlet Size**
   (Example 4" = 04)

6. **Inlet Type**
   C = Sanitary fitting
   D = Flange, din
   E = European EN Flange
   F = Flange, slip-on, raised face, std.
   H = Flange, weld neck, raised face
   K = Flange, lap joint
   M = Male NPT
   N = Female NPT
   P = Plain pipe
   S = Special
   T = Plain OD Tube

7. **Outlet Size**
   (Example 4" = 04)

8. **Outlet Type**
   See Inlet Type for code letter

9. **Nozzle Configuration**
   See the nozzle configuration chart *(at the end of the FSPN vessel section)*

10. **Internal Usage**
    F = Fixed grate
    N = Steel ring bag only (no Polyloc®)
    R = Snap fit rings
    S = Special
    X = Machined collar for Polyloc® (Std.)

11. **Lid Opening Type**
    5 = E-Z Open

12. **Jacket Type**
    N = None
    P = Partial
    F = Full

13. **Jacket Pressure Rating**
    065 (Standard), 100, 150
    Per customer specifications

14. **Jacket Material**
    See Vessel Material group for code letters

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FILTER VESSELS

BAG FILTER HOUSINGS
CBFP 11, 12 Vessels

Introduction

When looking for a cost-effective single-bag filter vessel that is both durable and reliable, look to the FSI CBFP series vessels. Although the standard CBFP series vessels do not carry an ASME Code stamp, you can still realize the benefits of an economic filter vessel that is manufactured to the same high standards and engineering expertise that characterizes all of our other FSI vessels.

Features

- Offset, Side Inlet with Side Outlet (same side or opposite), or Side Inlet with Bottom Outlet configuration available
- Positive bag seating without the use of a manual hold-down device
- Single gasket cover seal
- Connections sizes available in either 2" or 3" NPT or flange

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FILTER VESSELS

BAG FILTER HOUSINGS

Options

- **Available with extra length legs and evacuation floats**
- **ASME Code upgrade available**
- **NSF 61 Certification available with CBFP12 304SS and 316SS**
- **Mesh lined and heavy duty rimmed basket available**
- **Sanitary and Victaulic connections** *(available upon request)*

CBFP 11, 12 Vessels

Specifications

Number of Bags	1
Filter Bag Size	1, 2
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	Flange or NPT
Surface Finish	Carbon Steel: Acrylic enamel painted exterior Stainless Steel: Light sand blast
Code Stamp	None
Gasket Material	Buna, EPR, Viton, Viton Teflon Encapsulated Buna White FDA
PolyLoc® Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	Swing bolt

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FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | **CBFP 11, 12 Vessels** | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

CBFP 11, 12 Vessels ~ HOW TO ORDER

CBF	P	0012	A	0150	N	02	F	02	F	06	A	1	N
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1. **Model Number**
   CBF
2. **Bag Style**
   P = PolyLoc®
   (standard on CBFP)
3. **Number of Bags**
   0011 = (1) #1 bag
   0012 = (1) #2 bag
4. **Vessel Material**
   A = Carbon Steel
   B = 304 Stainless Steel
   C = 316 Stainless Steel
5. **Vessel Pressure Rating (PSI)**
   0150
6. **Coating/Lining Material**
   A = Electropolish
   N = None
   S = Special
   X = Passivation
7. **Inlet Size**
   Use basic pipe size with the folowing exceptions:
   02 = 2″
   03 = 3″
8. **Inlet Type**
   C = Sanitary fitting
   D = Flange, din
   E = European EN Flange
   F = Flange, slip-on, raised face, std.
   N = Female NPT
   P = Plain pipe
   S = Special
   T = Plain OD Tube
9. **Outlet Size**
   See Inlet Size for codes
10. **Outlet Type**
    See Inlet Type for code letter
11. **Nozzle Configuration**
    02 = Side In/Bottom Out
    06 = Side In/Side Out, Offset
    08 = Side In/Side Out, Same Side

    See the nozzle configuration chart
12. **Internal Usage**
    A = Standard
13. **Lid Opening Type**
    1 = Hinge, std.
14. **Jacket Type**
    N = None

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | **CBFP 11, 12 Vessels** | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

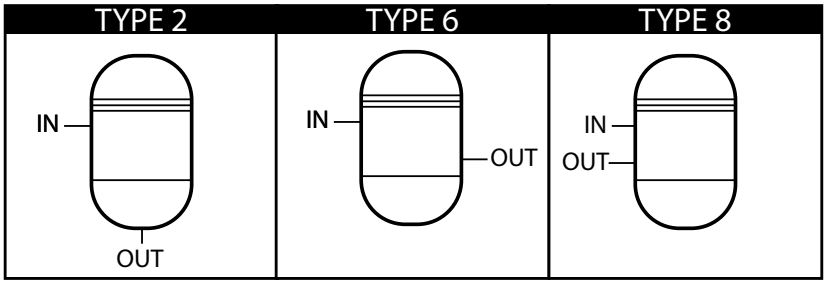
Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

CBFP Inlet-Outlet Configurations



CBFP 11, 12 Flow Rate Chart

Model Number	CBFP 11	CBFP 12
No. of Bags	1	1
Bag Size No.	1	2
Surface Area per Bag, Ft.	2.0	4.4
Surface Area per Vessel, Ft2	2.0	4.4
Inlet and Outlet Size	2"	2"
Max Flow Rate, GPM	60	120

NOTE: The maximum flow rate GPM is the MAXIMUM FLOW RATE recommended through the vessel using a 10 micron felt filter bag (PONG10) filtering water. Any increase in fluid viscosity will reduce the maximum GPM figures significantly. Please consult your FSI representative when sizing these vessels.

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FILTER VESSELS

BAG FILTER HOUSINGS
CBFP 13, 14 Vessels

Introduction

The CBFP 13 & 14 are cost effective bag filter vessels that are durable and reliable for low flow applications using a size 3 or 4 filter bag.

Features

- Offset, Side Inlet with Side Outlet (same side or opposite), or Side Inlet with Bottom Outlet configuration available
- Positive bag seating without the use of a manual hold-down device
- Single gasket cover seal
- Connections sizes available in either 1" or 2" NPT

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FILTER VESSELS

BAG FILTER HOUSINGS

Options

- **Mesh lined and heavy duty rimmed basket available**
- **Flange, Sanitary and Victaulic connections**
  (available upon request)
- **Adjustable clamp-on legs in Carbon Steel or 304 Stainless Steel**

CBFP 13, 14 Vessels

Specifications

Number of Bags	1
Filter Bag Size	3, 4
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	NPT
Surface Finish	Carbon Steel: Acrylic enamel painted exterior Stainless Steel: Light sand blast
Code Stamp	None
Gasket Material	Buna, EPR, Viton, Buna White FDA
PolyLoc® Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	Swing bolt

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FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | **CBFP 13, 14 Vessels** |
QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

CBFP 13, 14 Vessels ~ HOW TO ORDER

CBF	P	0013	A	0150	N	02	F	02	F	06	A	1	N
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1. **Model Number**
   CBF
2. **Bag Style**
   P = PolyLoc®
3. **Number of Bags**
   0013 = (1) #3 bag
   0014 = (1) #4 bag
4. **Vessel Material**
   A = Carbon Steel
   B = 304 Stainless Steel
   C = 316 Stainless Steel
5. **Vessel Pressure Rating (PSI)**
   0150
6. **Coating/Lining Material**
   A = Electropolish
   F = Paint finish/prep
   N = None
   S = Special
   X = Passivation
7. **Inlet Size**
   Use basic pipe size with the folowing exceptions:
   01 = 1″
   02 = 2″
8. **Inlet Type**
   C = Sanitary fitting
   D = Flange, din
   E = European EN Flange
   F = Flange, slip-on, raised face, std.
   N = Female NPT
   P = Plain pipe
   S = Special
   T = Plain OD Tube
   W= Socket weld
9. **Outlet Size**
   See Inlet Size for codes
10. **Outlet Type**
    See Inlet Type for code letter
11. **Nozzle Configuration**
    02 = Side In/Bottom Out
    06 = Side In/Side Out, Offset
    08 = Side In/Side Out, Same Side

    See the nozzle configuration chart
12. **Internal Usage**
    A = Standard
13. **Lid Opening Type**
    1 = Hinge, std.
14. **Jacket Type**
    N = None

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | **CBFP 13, 14 Vessels** |
QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

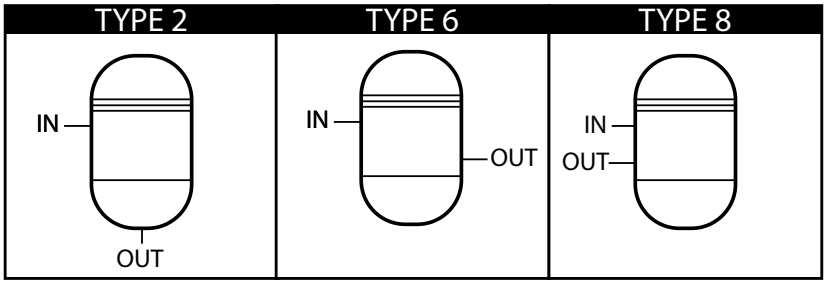
Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

CBFP Inlet-Outlet Configurations



CBFP 13, 14 Flow Rate Chart

Model Number	CBFP 13	CBFP 14
No. of Bags	1	1
Bag Size No.	3	4
Surface Area per Bag, Ft.	0.5	1.0
Surface Area per Vessel, Ft2	0.5	1.0
Inlet and Outlet Size	1"	1"
Max Flow Rate, GPM	15	30

NOTE: The maximum flow rate GPM is the MAXIMUM FLOW RATE recommended through the vessel using a 10 micron felt filter bag (PONG10) filtering water. Any increase in fluid viscosity will reduce the maximum GPM figures significantly. Please consult your FSI representative when sizing these vessels.

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels |
QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Slides: • QX4 Filter Vessel
• QX4 Filter Vessel Cutaway

BAG FILTER HOUSINGS
QX4 Filter Vessel

Introduction

(Uses Bags, ClearPleat PC Cartridge or NMO Welded Seam Bag)

The patented quick change QX4 filter vessel is designed to improve filtration efficiency, while saving time and production costs. Filter bags forming a positive seal in this vessel are available in polyester and polypropylene felt, along with polyester and nylon mesh. The new FSI ClearPleat PC absolute rated filter cartridge seals in this lightweight filter vessel providing absolute rated filtration in low flow industrial applications.

The QX4 is ideal for applications including gravure ink, flexographic ink, hydraulic fluid, cutting oil, coolants, parts washers, injection molding, spray nozzle protection, pre RO systems, pump seal protection, glue applications, and other low flow industrial applications.

Features

- Quick change in less than 30 seconds
- Easy disassembly, no tools required
- Lightweight – less than 8 lbs.
- PolyLoc® bags available in nylon monofilament, polyester multifilament, polypropylene and polyester felt for use with standard basket
- Flat bottom basket designed for use with ClearPleat PC, FSI's absolute rated pleated cartridge, or welded seam nylon monofilament filter bags

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | **QX4 Filter Vessel** | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Options

- **Standard Basket**
  (uses standard Size 4 filter bags)
- **Flat Bottom Basket**
  (uses ClearPleat PC or NMO Welded Seam bag)

U.S. Patent No. 7,857,144

BAG FILTER HOUSINGS

QX4 Filter Vessel

Specifications

Filter Bag Size	#4 size
Filter Cartridge	ClearPleat PC — Absolute Rated Pleated Cartridge
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	-20 to 250°F (-28 to 121°C)
Materials of Construction	304 Stainless Steel
Connections	1" NPT
Surface Finish	304SS w/Bead Blast
Code Stamp	Non-Code
Gasket Material	Teflon Encapsulated, Buna
PolyLoc® Bag Seal	Positive Bag Seal without manual hold down

QX4 Filter Vessels ~ HOW TO ORDER

Please reference Part Number	
VB434985N	QX4 Filter Vessel with Standard Basket and Teflon Encapsulated Gasket
VB431971Z	QX4 Filter Vessel with Flat Bottom Basket and Teflon Encapsulated Gasket
VB436604N	QX4 Filter Vessel with Standard Basket and Buna Gasket

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FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

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FILTER VESSELS

BAG FILTER HOUSINGS
SBF Compact Bag Vessels

Introduction

When space is an issue, look to FSI's compact bag filter. The SBF-75 is a reduced-size filter made with the same attention to detail that is in all of our larger designs. With dimensions of less than 10" high by 2 7/8", you get a full-featured bag filter that provides a full range of micron ratings.

Features

- Compact housing allows for filtering applications where space is limited
- Single bag filter is ideal for low flow systems
- Top-mounted lid swings away for easy access for easy cleaning and bag changes
- Nylon monofilament filter bags, available in micron ratings 1-400, offer broad range of chemical resistance, are unaffected by metal fatigue and corrosion, and do not release fibers into fluid flow
- Welded seam construction of the filter bags eliminates fluid bypass

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | **SBF Compact Bag Vessels** | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

BAG FILTER HOUSINGS

SBF Compact Bag Vessels

Specifications

Number of Bags	1
Filter Bag Size	SBF
Maximum Operating Pressure	300 PSI (20.68 Bar)
Design Temperature Range	-20 to 250°F (-28 to 121°C)
Materials of Construction	316 Stainless Steel
Non-Wetted Parts	Stainless Steel: May contain some plated Carbon Steel materials
Surface Finish	Light sand blast
Code Stamp	None
Gasket Material	Lid Gasket: Teflon Basket & Bag Gasket: Buna
Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	Swing bolt

HOW TO ORDER
SBF Compact Bag Vessel

Item Number VB019792S

HOW TO ORDER
Filter Bags for SBF Filter Vessel

B NMO 1 SBF

1 2 3 4

1. **Type of Filter**
   B = Bag
2. **Material**
   NMO = Mesh, Nylon Monofilament
3. **Micron Ratings**
   1, 5, 10, 25, 35, 55, 75, 100, 125, 150, 200, 300, 400
4. **Vessel Type**
   SBF = Single Bag Filter

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FILTER VESSELS

BAG FILTER HOUSINGS
FMC Drum Filters

Introduction

For filling lines, FSI offers the answer for the final filtration stage with the FMC-22, a light weight, easily maneuvered, quick-disconnect filter. It has a bag filter, positive gasket seal, restrainer basket, coupling and directional nozzle in one self-contained vessel. The unit even features built-in stops to limit insertion depth into closed head drums.

FSI offers this final stage drum filter in Stainless Steel or Carbon Steel, for applications ranging from chemicals, paints, inks, solvents and resins, to oil, petrochemicals and more viscous products as well.

Features

- FMC 1½" quick connect female coupling and Buna-N gaskets offered standard; optional 1½" male connector also available
- Nylon monofilament (NMO) bag features molded plastic seal to prevent fluid bypass
- Filter vessel made from 316 Stainless Steel or Carbon Steel.
- Overall length is only 9¼"
- Positive gasket seal available in Buna-N (standard), EPDM
- Shell, collar, coupling, stop pins and all parts included (also available without stop pins)

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | **FMC Drum Filters**

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

BAG FILTER HOUSINGS

FMC Drum Filters

Specifications

Number of Bags	1
Filter Bag Size	FMC
Maximum Operating Pressure	Open System
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 316 Stainless Steel
Non-Wetted Parts	Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	1½" Quick Connect
Surface Finish	Carbon Steel: Acrylic enamel paint Stainless Steel: Light sand blast
Code Stamp	None
Gasket Material	Buna-N, EPDM
Bag Seal	Positive Bag Seal without manual hold down
Lid Opening	Quick Connect

HOW TO ORDER
FMC Drum Filters

Item Number VB403831S

HOW TO ORDER
Filter Bags for FMC Drum Filters

B NMO 10 FMC

1 2 3 4

1. **Type of Filter**
   B = Bag
2. **Material**
   NMO = Mesh, Nylon Monofilament
3. **Micron Ratings**
   1, 5, 10, 25, 35, 55, 75, 100, 125 150, 200, 300, 400, 600, 800
4. **Vessel Type**
   FMC = 22 Drum Filter

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

Slides: • FSMC *(view 1)*
• FSMC *(view 2)*

CARTRIDGE FILTER HOUSINGS
FSMC Cartridge Filter Vessels

Introduction

The FSMC Series is an industrial cartridge filter vessel from FSI. The filter vessels are available in standard sizes to hold from three (3) to eighty-one (81) cartridges, with standard 2.5" OD, either DOE or 222 end cap SOE captive spring.

FSMC filter vessels are rated at 150 PSI (10.34 Bar) and standard materials include CS, 304 SS and 316 SS. All FSMC vessels are manufactured by FSI and meet ASME Code requirements.

Features

- Accommodates from three (3) to eighty-one (81) cartridges
- Standard Cartridges:
  – 1.0" ID x 2.5" OD (2.7 cm x 6.35cm)
  – 20" (50.8cm) Length
  – 30" (76.2 cm) Length
  – 40" (101.6 cm) Length
- Double Open End
- Single Open End Captive Spring Cartridges with 222 End Cap
- Available in Carbon Steel, 304 Stainless Steel, or 316 Stainless Steel
- Flange connections
- Meets ASME Code - ASME "UM" Stamp Standard, ASME "U" Stamp optional
- Elimination of sump disassembly with top-loading design

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

CARTRIDGE FILTER HOUSINGS

Options

- **Lid Opening Types:** Hydraulic Lid Lift with swing bolts
- **100 & 300 PSI designs available on most models** *(other pressures upon request)*
- **CRN & CE code designs**
- **NSF 61 certification available with FSMC 304 SS and 316 SS**
- **Solid Teflon or flat-gasket design**
- **Partial Heat Jacket or Full Jacket**
- **Corrosion allowance**
- **NPT connection**

FSMC Cartridge Filter Vessels

Specifications

Number of Cartridges	3-81 (3, 6, 12, 18, 27, 36, 42, 50, 59, 70, 81)
Filter Cartridge Size	1.0" ID x 2.5" OD (2.7 cm x 6.35 cm) 20" (50.8 cm) Length 30" (76.2 cm) Length 40" (101.6 cm) Lengths
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Materials of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	Flange
Surface Finish	Carbon Steel: Acrylic enamel paint Stainless Steel: Light sand blast
Code Stamp	ASME Sect VIII, Div. 1, "U" or "UM" stamp
Gasket Material	Buna, EPDM, Viton Teflon Encapsulated, Viton, White Buna FDA
Lid Opening	Hinge or swing bolt with manual davit lid lift

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FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels |
QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

FSMC Cartridge Filter Vessels ~ HOW TO ORDER

FSMC	06	20	C	0150	N	02	F	02	F	06	G	1	N
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1 Model Number
FSMC

2 Number of Cartridges
3, 6, 12, 18, 27, 36, 42, 50, 59, 70, 81

3 Cartridge Length
20", 30", 40"

4 Vessel Material
A = Electropolish
B = 304 Stainless Steel
C = 316 Stainless Steel
S = Special

5 Vessel Pressure Rating (PSI)
100, 150, 300
Per customer specification

6 Internal Finish
N = None (Standard)
A = Electropolish
S = Special
X = Passivation

7 Inlet Size
1D = 1.5"
02 = 2"
03 = 3"
04 = 4"
06 = 6"
08 = 8"
10= 10"

8 Inlet Type
C = Sanitary fitting
D = Flange, din
E = European EN Flange
F = Flange, slip-on, raised face, std.
N = Female NPT
P = Plain pipe
S = Special
T = Plain OD Tube
W= Socket weld

9 Outlet Size
See Inlet Size for codes

10 Outlet Type
See Inlet Type for codes

11 Nozzle Configuration
06 = Side In/Side Out, Offset
08 = Side In/Side Out, Same Side

See the nozzle configuration chart

12 Cartridge Type
J = SOE 222 "O" Ring/ Plastic spring
G = Double Open End (Angle post & Spring Seat)
S = Special

13 Lid Opening Type
1 = Hinge (Std. on 3 & 6)
2 = Manual davit (Std. on 12-81)
3 = Hydraulic

14 Jacket Type
N = None
P = Partial
F = Full

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

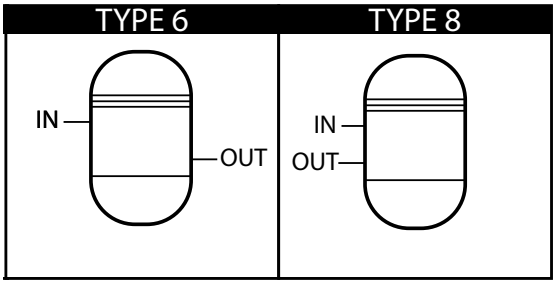
Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

FSMC Inlet-Outlet Configurations



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FSI
FILTER SPECIALISTS, INC.

FILTER VESSELS

PLASTIC FILTER HOUSINGS
X100 Convertible Filter Housing

Introduction

Different industrial applications can have different requirements in terms of equipment and filter media. The X100 filter housing is highly adaptable to precisely fit your particular needs. This strong, light weight and economical filter vessel is resistant to a wide range of chemicals, and converts easily from filter bag usage to cartridge filters. It allows the user to choose the filter media and construction to precisely fit their particular needs.

The X100 is manufactured from polypropylene, with a UV inhibitor for all-weather durability. The specially designed, threaded lid allows for sealing and unsealing without the need of tools.

Features

- 100% Polypropylene Construction
- UV inhibitor for long-lasting, all-weather operation and durability
- Easily convertible between bag filter and cartridge filter housing
- Filtration media available in 1-800 micron ratings
- Twist-off lid design requires no tools for quick and easy change-out
- Clean wall design provides easy access for manual cleaning or in-place flushing
- Side inlet/bottom outlet eliminates sump to reduce waste
- Hermetic sealing bag and cartridge filters result in no fluid by-pass
- X100 bag and X100 with X20 cartridge are FDA compliant

Slides:
- X100
- X100-X3 Cartridge
- X100 Stand Tri-Pod Legs
- X100 Plastic Legs
- X100 Conebase

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

PLASTIC FILTER HOUSINGS

X100 Convertible Filter Housing

Specifications

Filter Bag Size for X100B Filter	X01 bag is 6" dia. x 20" long (2 sq. ft. of surface area)
Filter Cartridge Size for X100C Filter	X20 cartridge is 1.625" ID x 5.5" OD x 23.25" L (total volume 500 cubic inches)
Filter Cartridge Size for X100X3 Filter	Use 3 standard DOE 20" cartridges
Operating Pressure	100 PSI (6.89 Bar) @ 110°F (43°C)
Design Operating Temperature	110°F (43°C)
Material of Construction	100% Polypropylene
Connection	2" NPT
Certifications	CE Mark
FDA Compliance	X100B and X100C are FDA Compliant
Gasket Material	Buna or Viton
Seal	Hermetic Sealing of both Bags and Cartridges

Options

- **Bag Filter Vessel using X01 filter bag** *(see chart for filter bag material and micron ratings)*
- **Cartridge Vessel using X20 polypropylene microfiber filter cartridge** *(1.625" ID x 5.5" OD x 23.25"L)* **1-100 microns**
- **Cartridge Vessel using 3 standard polypropylene 20" filter cartridges either Vorex® cartridges or Vorex® HP absolute rated cartridges** *(see chart for micron ratings)*
- **Stands:**
  Standard with Plastic Legs
  304SS Tri-Pod Legs
  Cone Stand with 2" NPT fitting either 90° elbow or T-pipe configuration

Item Numbers for How to Order Chart

416014B
x100B - Bag Filter

416014C
X100C - Cartridge Filter designed for use with X20 cartridge

416014X3
X100X3 - Cartridge Filter designed for use with 3 standard 2" cartridges

4016014C - U.S. Patent No. 5,527,463

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FSI
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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

PLASTIC FILTER HOUSINGS

X100 Convertible Filter Housing

Specifications

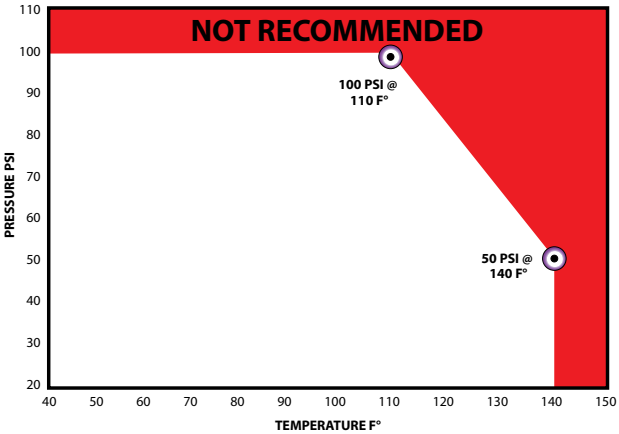
Bags for X100B	**Model**	**Microns**
Polypropylene Felt	PONG ( ) X01	1, 5, 10, 25, 50, 100
Polypropylene Monofilament Mesh	PMO ( ) X01	100, 150, 200, 300, 600, 800
Polypropylene Microfiber	POMF ( ) AX01	1, 2, 10, 25, 90, 0*

** BPOMFOAX01 filter bag is a special purpose oil-adsorbent bag with a micron rating of 25*

Cartridges for X100C	**Model**	**Microns**
100% Polypropylene Microfiber	CMMF ( ) X20	1, 5, 10, 25, 50, 75, 100

Cartridges for X100X3	**Model**	**Microns**
100% Polypropylene Microfiber - Nominal Rated	CMMF ( ) 20	1, 3, 5, 10, 25, 50, 75, 100
100% Polypropylene Microfiber w/polypropylene core and polyfoam end gasket - Absolute Rated	CMHP ( ) 20EP	1, 3, 5, 10, 25, 35, 50, 75, 100

Operating Range for x100 Filter Housing
(Water Service)



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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | **XL234 Modular Filter Housings**

Specialty Filter Housings

Basket Strainers

Slides:
- XL234 Modular Filters
- XL234 Top
- EZLoc Patented Filter Ring
- XL234 Polypropylene Basket
- XL234 Filter Cartridge Assembly

PLASTIC FILTER HOUSINGS
XL234 Modular Filter Housing

Introduction

XL234 Modular Filter System makes change-outs faster and easier than ever with its unique twist-off lid. You can choose from a 7-cartridge system or our new patented EZLoc filter bag with a built-in polypropylene ring that makes filter bypass a thing of the past. Either choice offers long service life and can be changed in minutes without tools!

Features

- Sturdy vessel construction – glass-filled polypropylene with UV inhibitors for durability and compatibility with a broad range of chemicals
- Corrosion and Rust Resistant
- Quick and easy lid system requires no tools for opening and closing
- Molded legs for easy installation
- Sacrificial vent grommet safety feature to indicate filter is completely closed, preventing accidents

Cartridge System:

- Vessel is 100% nonmetallic including cartridge carrier and holds seven standard 20", 30" or 40" cartridges
  – Double Open End
  – Single Open End 222 "O" Ring with Bayonet
- Uses Standard Vorex or Vorex HP (absolute rated) cartridges
- Increased surface area for flow rate of up to 140 GPM

Bag System:

- Vessel is 100% nonmetallic with 100% polypropylene basket
- Bag has 20% more surface area than standard #2 filter bag for flow rates up to 160 GPM
- EZLoc patented filter ring snaps in easily to form a hermetic seal, preventing bypass
- Variety of materials available including: *(see chart for micron ratings)*
  – Polypropylene Felt
  – Polypropylene Microfiber
  – Polypropylene Monofilament Mesh

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | **XL234 Modular Filter Housings**

Specialty Filter Housings

Basket Strainers

PLASTIC FILTER HOUSINGS

Options

- **2" NPT, Style 6 Standard**
  Inline side in, side out
- **2" NPT, Style 8 Optional**
  Same side - side in, side out
- **3" Flange, Style 2 Standard**
  Side in, bottom out
  – Extended legs available for units not being skid-mounted

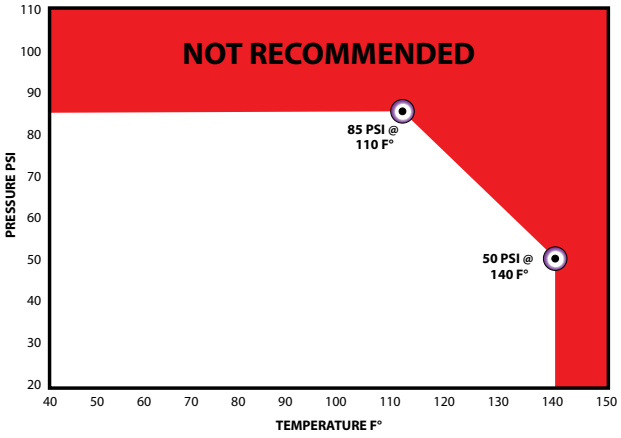
***U.S. Patent No. 6,966,444**

XL234 Modular Filter Housing

Specifications

Bag Vessel (30") Filter Bags	Bag filter takes one (1) proprietary size filter bag, with 20% more surface area than a std. size 2 filter bag
Cartridge Vessel (20", 30" or 40") Filter Cartridges	Cartridge filter takes seven (7) standard 20", 30", 40" cartridges with either DOE or SOE 222 "O" Ring with Bayonet
Maximum Operating Pressure	85 PSI (5.86 Bar) @ 110°F (43°C)
Design Operating Temperature	110°F (43°C)
Material of Construction	Glass Filled Polypropylene
Gasket Material	Buna or Viton
Connections	2" (5.08cm) NPT or 3" (7.62cm) Flange
EZLoc*	Hermetically seals bag to filter

Operating Range for XL234 Filter Housing
(Water Service)



XL234

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels | QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | **XL234 Modular Filter Housings**

Specialty Filter Housings

Basket Strainers

XL234 Modular Filter Housings ~ HOW TO ORDER

XL C 200 D 2N 6 Z

1 2 3 4 5 6 7

1. **Model Number**
   XL234
2. **Type**
   B = Bag
   C = Cartridge
3. **Size**
   100 = Bag
   200 = 20" Cartridge
   300 = 30" Cartridge
   400 = 40" Cartridge
4. **Media**
   B = Bag
   D = Double Open End Cartridge (no end cap)
   S = Single Open End 222 "O" Ring w/Bayonet
5. **Inlet/Outlet Size**
   2N = 2" NPT
   3F = 3" Flange
   2B = 2" BSP (British std.)
6. **Inlet/Outlet Configuration**
   2" NPT/2'BSP:
   6 = Side In/Side Out (std.)
   8 = Side In/Side Out Same Side
   3" Flange
   2 = Side In/Bottom Out (td.)
7. **Gasket Material**
   Z = Buna
   VI = Viton

B PONG 10 XL

1 2 3 4

1. **Product**
   B = Bag
2. **Material**
   PONG = Polypropylene Felt
   POMF = Polypropylene Microfiber
   PMO = Polypropylene Monofilament Mesh
3. **Micron**
   PONG: 1, 3, 5, 10, 25, 50, 75, 100
   POMF: 1A = 1 Micron
   2A = 2 Micron
   10A = 10 Micron
   25A = 25 Micron
   90A = 90 Micron
   OA: Spec. Purpose oil-adsorbent 25 Micron
   PMO: 100, 150, 200, 300, 600, 800
4. **Size**
   XL = for use in XL234 Filter Vessel

CM HP 10 40 B Z

1 2 3 4 5 6

1. **Product**
   CM = Microfiber Cartridge
2. **Type**
   MF = Vorex Cartridge
   HP = Vorex HP Absolute Rated
3. **Micron**
   MF: 1, 3, 5, 10, 25, 50, 75, 100
   HP: 1, 3, 5, 10, 25, 35, 50, 75, 100
4. **Length**
   20", 30", 40"
5. **End Caps**
   Blank = Double Open End
   B = SOE 222 "O" Ring/ Bayonet
6. **Gasket Material**
   Z = Buna
   V = Viton

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FILTER VESSELS

SPECIALTY FILTER HOUSINGS
Basket Strainers

Introduction

FSI strainers are designed and built to the same standards as other FSI vessels. Durable, ASME Code construction, an efficient in-line and offset style design, and inlet/outlet ports from 2" up to 16" provide the economical solution to most industrial straining requirements. Typical applications include water and waste treatment industries, power generation plants, and the marine, paper, pharmaceutical and food industries.

An important design element to consider in a basket strainer are the free open areas. This is the ratio of open area through the strainer basket to the cross sectional area of the pipeline. FSI strainers provide at least an 8 to 1 ratio. Anything less may cause additional pressure drop.

Features

- Single basket strainers up to 8" pipe size available
- Standard 150 PSI ASME Code construction
- Compact multi-basket designs eliminate tall, difficult-to-remove baskets to save space and for ease of cleaning
- Standard Stainless Steel basket material has 9/64" diameter perforations, offering 50% open area *(mesh lined also available)*
- Easy-to-remove baskets and quick opening, swing-type head cover, promote fast cleaning and filter change-out *(hydraulic lid lifter also available)*
- Up to 6000 GPM flow rate

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FILTER VESSELS

Bag Filter Housings

FSPN Vessels | FSPN E-Z Open | CBFP 11, 12 Vessels | CBFP 13, 14 Vessels |
QX4 Filter Vessel | SBF Compact Bag Vessels | FMC Drum Filters

Cartridge Filter Housings

FSMC Cartridge Filter Vessels

Plastic Filter Housings

X100 Convertible Filter Housing | XL234 Modular Filter Housings

Specialty Filter Housings

Basket Strainers

SPECIALTY FILTER HOUSINGS

Basket Strainers

Specifications

Number of Baskets	Single or Multi-Basket
Maximum Operating Pressure	150 PSI (10.34 Bar)
Design Temperature Range	Carbon Steel: 20 to 500°F (-6 to 260°C) Stainless Steel: -20 to 250°F (-28 to 121°C)
Material of Construction	Carbon Steel, 304 & 316 Stainless Steel
Non-Wetted Parts	Carbon Steel: Carbon Steel Stainless Steel: May contain some plated Carbon Steel materials
Number of Gaskets	1
Connections	2" to 16" Flange
Surface Finish	Carbon Steel: Acrylic enamel painted exterior Stainless Steel: Light sand blast
Code Stamp	ASME Sect VIII
Gasket Material	Buna-N, EPR, Viton

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FILTER BAGS

Innovative Solutions. Clear Results.

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FILTER BAGS

FELT FILTER BAGS
Standard Felt Filter Bags

FSI Felt Bags are the Answer

When it comes to felt filter bags, FSI has the answer. Our years of experience give us an advantage over our competitors, and our felt filter bags show it. Our felt bags are designed to withstand higher solid loading, and are suitable for applications using vessel or open filtration systems.

FSI's "Comprehensive Manufacturing Control" philosophy insures that we will maintain our status as the industry leader in all phases of the filter business. Our integrated technology, control over our manufacturing and quality leads to consistent performance. With FSI filter bags, you can count on a quality product every time.

We start with the finest material possible. FSI makes its own fiber to produce the felt material used in our felt filter bags inhouse, guaranteeing the highest quality. Our Extended Life filter bag provides superior filtration of all sized particles, as well as up to twice the dirt holding capacity of a standard filter bag.

Our no-bypass welded seams eliminate the possibility of fluid bypass through needle holes. We provide a variety of glazed and singed finishes to inhibit fiber migration. FSI also offers polyester inserted felts. These inserted felts include a reinforcing scrim needled inside the felt material, to provide added strength and durability, when a restrainer basket is not being used.

Features

- We offer a full line of felt materials and micron ratings
- Conventional sewn bags or the PolyWeld® welded seam bags available
- FSI PolyLoc® ring or other common bag rings available on most bags
- Heavy Duty and Extended Life designs available to suit your filtration needs

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |
Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

Specifications

- **Available Materials**
  PO = Felt, Polypropylene
  PE = Felt, Polyester
  N = Felt, Nylon
  HT = Felt, High Temperature
  TFE = Felt, Teflon
- **Maximum Operating Temperature**
  Polypropylene: 200-220° F (93-104° C)
  Polyester: 275-325° F (135-162° C)
  Nylon: 275-300° F (135-149° C)
  High Temperature: 400-450° F (204-232° C)
  Teflon: 450-500° F (232-260° C)
- **Suggested Differential Pressure**
  35 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  PO = 1, 3, 5, 10, 25, 50, 100
  PE = 1, 3, 5, 10, 25, 50, 75, 100, 200
  N = 5, 10, 25, 50, 100
  HT = 5, 10, 25, 50, 100, 200
  TFE = 1, 5, 10, 25
- **Sizes**
  #1: 7" x 16" (17.78 cm x 40.65 cm)
  #2: 7" x 32" (17.78 cm x 81.28 cm)
  #3: 4" x 8.25" (10.16 cm x 20.96 cm)
  #4: 4" x 14" (10.16 cm x 35.56 cm)
  #5: 6 7/8" x 34" (17.46 cm x 86.36 cm)
  #6: 6 7/8" x 16" 1/2" (17.46 cm x 41.91 cm)
  #7: 5 1/2" x 16" (13.97 cm x 40.64 cm)
  #8: 5 1/2" x 22" (13.97 cm x 55.88 cm)
  #9: 5 1/2" x 33" (13.97 cm x 83.82 cm)
- **Rings**
  P = Polypropylene PolyLoc®
  PE = Polyester PolyLoc®
  N = Nylon PolyLoc®
  C = Cuno
  S = Snap ring metal
  SSS = Stainless steel snap ring
  CO = Commercial steel ring
  COP = Commercial plastic ring
  RP = Ronningen-Petter snap ring
  RPP = Ronningen-Petter plastic ring
  RPF = Ronningen-Petter flange

FELT FILTER BAGS

Standard Felt Filter Bags

Item # **BPONG10P2PC**

Type of Filter	B = Filter Bag	
Material	See specifications	N = Non-inserted felt I = Inserted felt *(polyester only)* G = Glazed finish F = Fuzzy finish *(polyester only)*
Micron Rating	See specifications	
Cover	P = Plain PEM = Polyester multifilament NMO = Nylon monofilament	
Size	1, 2, 3, 4, 5*, 6*, 7, 8, 9	
Ring	See specifications	
Suffix	WE** = Welded Seam Construction A = Auto Construction *(seam inside bag)* C = Cotton Handle N = Nylon Handle LOOPS = Loops	

* SIZES 5, 6, AVAILABLE WITH S RING ONLY
** AVAILABLE IN SIZES 1 AND 2, POLYPROPYLENE AND POLYESTER NON-INSERTED ONLY

How To Install a Bag Properly

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FILTER BAGS

FELT FILTER BAGS
Polyweld® Filter Bags

FSI's PolyWeld® filter bags hold a distinct advantage over all types of needle-sewn bags. The welded seams completely eliminate the possibility of unfiltered liquid bypass occurring due to needle holes. The result is a tighter seam, higher bag efficiencies and improved finish product yields. In addition, the fused edges of our PolyWeld bag provide a fiber-free finish and virtually eliminate unwanted fiber migration. Since the PolyWeld bag is not constructed with thread, the possibility of silicone contamination from this source is also removed. FSI's PolyWeld filter bags are available in standard and extended life polypropylene felt, and standard and extended life polyester felt.

Features

- Welded construction of bags completely eliminates unfiltered liquid bypass from occurring due to needle holes
- Available in standard polypropylene, polyester and extended life felt for broad range of product compatibility
- Glazed finish eliminates fiber migration for clearer results
- PolyLoc® ring creates a hermetic seal that prevents liquid bypass and produces clearer results
- Polypropylene is FDA food grade compliant to government standards
- FDA Compliant Polyester felt is available (non-standard)
- Silicone free to eliminate cratering for improved surface results
- Available from stock for quick delivery

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FILTER BAGS

FELT FILTER BAGS

Specifications

- **Available Materials**
  Polypropylene, Polyester Standard and FDA Compliant Polyester

  Polypropylene and Polyester Extended Life
- **Maximum Operating Temperature**
  Polypropylene: 200-220° F (93-104° C)
  Polyester: 275-325° F (135-162° C)
- **Suggested Differential Pressure**
  35 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  BPONG = 1, 3, 5, 10, 25, 50, 100
  BPENG = 1, 3, 5, 10, 25, 75, 100, 200
  BPOEX = 5, 10, 25, 50 100
  BPEEX = 1, 5, 10, 25, 50, 100
- **Sizes**
  #1: 7" x 16" (17.78 cm x 40.65 cm)
  #2: 7" x 32" (17.8 cm x 81.3 cm)
- **Plastic PolyLoc® Rings**
- **Welded Seam Construction**

Polyweld® Filter Bags

Item # **BPONG100P2PWE**

Type of Filter	**B = Filter Bag**	
Material	Standard: PONG = Polypropylene PENG = Polyester	Extended Life: POEX = Polypropylene PEEX = Polyester
Micron Rating	See specifications	See specifications
Cover	P = Plain (no cover)	
Size	1, 2	
Ring	P = Polypropylene PolyLoc® PE = Polyester PolyLoc®	
Suffix	WE = Welded Seam Construction F = FDA Compliant Polyester	

How To Install a Bag Properly

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FILTER BAGS

Slides: • POEX Filter Bags
• POEX Felt *(close up)*

FELT FILTER BAGS
Extended Life Filter Bags (POEX/PEEX)

The Extended Life filter bags (POEX and PEEX) provide outstanding performance on many types of contaminants such as gels, particles with wide ranges of sizes, and particles with various irregular shapes. The coarse, pre-filtering layer is designed to provide long service life, capturing a large amount of contaminants without excess surface loading. The POEX has been field-proven to hold up to twice the amount of contaminants as a standard felt bag, reducing waste volume and bag changes. The Extended Life filter bag is ideal for automotive coatings, chemicals, resins, edible oils and other fluid applications.

Features

- Excellent filtration on many contaminants - gels, particles with wide range of sizes and particles with irregular shapes
- A coarse inner layer, graded pore structure, greater depth than standard bags provides excellent filtration performance
- Available in polyester (PEEX) and polypropylene (POEX)
- Twice the standard dirt-holding capacity of traditional felt bags to provide longer service life, fewer change-outs and reduced waste
- Polypropylene bags are FDA compliant
- Micron rating for polypropylene 5-100; polyester 1-100
- PolyWeld® seam construction with hermetically sealing PolyLoc® ring eliminates liquid bypass
- Glazed finish eliminates unwanted fiber migration

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FILTER BAGS

FELT FILTER BAGS

Specifications

- **Available Materials**
  Polypropylene
  Polyester
- **Maximum Operating Temperature**
  Polypropylene: 200-220° F (93-104° C)
  Polyester: 275-325° F (135-162° C)
- **Suggested Differential Pressure**
  35 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  PEEX= 1, 5, 10, 25, 50, 100
  POEX= 5, 10, 25, 50, 100
- **Sizes**
  #1: 7" x 16" (17.78 cm x 40.65 cm)
  #2: 7" x 32" (17.8 cm x 81.3 cm)
- **Plastic PolyLoc® Rings**
- **Welded Seam Construction**

Extended Life Filter Bags (POEX/PEEX)

Item # **BPOEX10P2PWE**

Type of Filter	B = Filter Bag		
Material	PEEX = Polyester extended life felt	POEX = Polypropylene extended life felt	
Micron Rating	See specifications	See specifications	
Cover	P = Plain		
Size	1, 2		
Ring	P = Polypropylene PolyLoc®	PE = Polyester PolyLoc®	S = Steel Ring*
Suffix	WE = Welded Seam Construction		

* AVAILABLE WITH SEWN SEAMS ONLY

How To Install a Bag Properly

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FILTER BAGS

FELT FILTER BAGS
MAX PONG

The PONG Heavy Duty Extended Life filter bag (MAX PONG) is the leader in high-efficiency, low-cost filtration. Its seamless micro-fiber graded density cartridge insert removes trace oils that frequently occur in process fluids, and provides up to four times the dirt-holding capacity of conventional polypropylene bags. Combined with its welded seam felt cover and PolyLoc® ring for elimination of unfiltered bypass, it becomes the perfect choice for uses where longer-lasting, high-efficiency filter bags are needed. The MAX PONG Heavy Duty Extended Life filter bag is ideal for continuous flow applications such as e-coat and phosphate baths, and batch applications including oils, edible oils and syrups, or any final or polishing filter requirements.

Features

- High-efficiency, low-cost filtration is ideal for continuous flow applications
- Welded seam construction eliminates unfiltered bypass due to needle holes
- Large dirt-holding capacity and lower pressure drop provide long service life
- Adsorbs smaller particles and filters wide range of particle sizes
- Pure polypropylene microfiber insert contains no sizing, bonding adhesive, resin, lubricant, silicone or antistatic chemicals
- FDA compliant to meet food grade government standards
- PolyLoc® ring creates hermetic seal to prevent liquid bypass

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FILTER BAGS

FELT FILTER BAGS

Specifications

- **Available Materials**
  Polypropylene filter bag with
  100% polypropylene rigid insert
- **Maximum Operating Temperature**
  Polypropylene: 200-220° F (93-104° C)
- **Suggested Differential Pressure**
  35 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  1, 5, 10, 25, 50, 100
- **Sizes**
  #1: 7" x 16" (17.78 cm x 40.64 cm)
  #2: 7" x 32" (17.78 cm x 80 cm)
- **Plastic PolyLoc® Rings**
- **Welded Seam Construction**

MAX PONG Filter Bags

Item # **BMAXPONG52PWE**

Type of Filter	B = Filter Bag
Prefix	MAX = Maximum Life
Material	PONG = Polypropylene non-inserted felt
Micron Rating	See specifications
Size	1, 2
Ring	P = PolyLoc®
Suffix	WE = Welded Seam Construction

How To Install a Bag Properly

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FILTER BAGS

POLYMICRO MICROFIBER FILTER BAGS
POMF Filter Bags

The Polymicro microfiber filter bag (POMF) provides outstanding performance for applications requiring higher filtration efficiency. The POMF contains three layers: a pre-filtering layer that removes coarse debris; the primary layer, composed of micro pores (for efficient particle retention); and an outer cover that prevents fiber migration. The finish-free fibers are non-foaming, which is ideal for food, beverage, water, chemical and coating applications.

Features

- Proprietary polypropylene, triple-layer construction adsorbs hydrocarbons from air, gas and aqueous streams for clearer results
- Outer cover prevents fiber migration to reduce waste
- Non-foaming microfiber offers product cleanliness, high performance and longer service life
- High void volume means longer service life, higher contaminant loading and reduced waste loads
- Easy change-out reduces down time
- PolyLoc® ring creates a hermetic seal within a vessel housing to prevent liquid bypass
- POMF 1A, 2A, 10A and 25A bags are made from FDA-compliant materials
- POMF1A, 2A, 10A & 25A are available with NSF Standard 61 Certification
- Available in stock for quick, one-week delivery

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

Specifications

- **POMF1A, 2A, 10A & 25A**
  Available with NSF Standard 61 Certification
- **POMF 1A, 2A, 10A and 25A**
  Bags are made from FDA-compliant materials (OA bags also include an additional layer of oil removing material)
- **Auto Construction**
  (Seams on Inside)
- **Available Materials**
  Polypropylene microfiber
- **Maximum Operating Temperature**
  160° F (93° C)
- **Suggested Differential Pressure**
  35 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  1A: 1 micron
  2A: 2 micron
  10A: 10 micron
  25A: 25 micron
  50A: 50 micron
  90A: 90 micron
  120A: 120 micron
  OA: Special purpose 25 micron
  (includes an additional layer of oil removing material)
- **Sizes**
  #1: 7" dia. x 16" long, 65 GPM
  #2: 7" dia. x 32" long, 125 GPM
  #3: 4" dia. x 8.25" long, 20 GPM
  #4: 4" dia. x 14" long, 35 GPM
- **Available Rings**
  (See chart on right for all available rings)

POLYMICRO MICROFIBER FILTER BAGS

POMF Filter Bags

Item # **BPOMF1AP2P**

Type of Filter	B= Filter Bag
Material	POMF = Polypropylene microfiber
Micron Rating	See specifications
Cover	Plain
Size	1, 2, 3, 4
Ring	P = PolyLoc® S = Snap fit metal RPP = Ronningen-Petter plastic ring CO = Commercial steel ring COP = Commercial plastic ring RP = Ronningen-Petter snap fit

Item # **BPOMF1APP2P61**

Type of Filter, Material, Micron Rating, Size and Ring nomenclature same for NSF 61 Certified bags. *See Above.*

Cover	PP = Special NSF Construction
Suffix	61 = NSF 61 Certified

How To Install a Bag Properly

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FILTER BAGS

SEAMLESS-ABSOLUTE RATED BOS Filter Bags

The BOS filter bag is a Polymicro® seamless filter bag, constructed entirely without seams. This unique material composition allows for a higher efficiency, with graded pore-size distribution creating absolute filtration. Thermally bonded microfibers create a seamless filter bag that has high tensile strength, providing superior resistance to channeling, unloading, bypass and other forms of traditional leakage that result from pulsating water.

The benefit of using this advanced filter bag is precise particle retention. The BOS filter bag is an ideal product for use in a wide variety of high-purity applications, where absolute filtration is required.

Features

- Seamless construction offers unequalled benefit of eliminating fluid bypass
- Absolute rated (98%) 3-100 microns for highest efficiency and consistent quality
- Microfiber-graded pore design provides lower initial pressure drop
- Thermally-bonded microfibers contain no sizing, bonding adhesive, resin or silicone
- FDA compliant
- Can be incinerated for easy disposal
- Available with NSF Standard 61 Certification

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

SEAMLESS-ABSOLUTE RATED

Specifications

- **Available Materials**
  Polypropylene
- **Seamless Construction**
- **Maximum Operating Temperature**
  160° F (71° C)
- **Suggested Differential Pressure**
  35 PSIG maximum – dirty
  10-15 PSIG optimum change out
- **Absolute (98%) Micron Rating**
  3, 5, 10, 25, 35, 50, 75, 100
- **Sizes**
  #1: 7" x 16" (17.8 cm x 40.65 cm)
  #2: 7" x 32" (17.8 cm x 81.3 cm)
- **Plastic PolyLoc® Rings**
- **Available with NSF Standard 61 Certification**

BOS Filter Bags

Item # **BOS5PM2P**	
Code	BOS = Polymicro seamless
Micron Rating	See specifications
Cover	PM = Polypropylene
Size	1, 2
Ring	P = Polypropylene PolyLoc®

Item # **BOS5PP2P61**	
Code	BOS = Polymicro seamless
Micron Rating	See specifications
Cover	PP = Special NSF Construction
Size	2
Ring	P = Polypropylene PolyLoc®
Suffix	61 = NSF 61 Certified

How To Install a Bag Properly

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

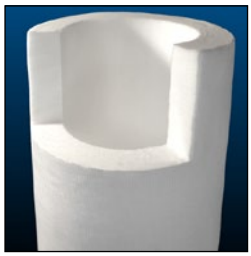
Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | **BOS Gradient Filter Element** | BOS MAX Filter Bags

Mesh Filter Bags



SEAMLESS-ABSOLUTE RATED
BOS Gradient Filter Elements

BOS Gradient Filter element is the first of its kind, with seamless design and true gradient density. This absolute rated element provides users with the depth of a cartridge and the convenience of a bag. This 100% polypropylene microfiber product adsorbs up to 16 times its own weight in hydrocarbons (oils) and will last up to 18 times the life of other products (depending on particle distribution and application).

Features/Benefits

Gradient Density provides:

- Up to 18 times extended life compared to other products, dependent upon particle distribution and application
- Longer life means fewer bag changes which results in lower labor costs and less loss of product
- Not compressible in operation providing greater dirt holding capacity
- Designed for typical broad particle distribution applications.
- Will allow more efficient filtration (lower micron) without sacrificing product life

Polypropylene Microfiber Material

- Adsorbs up to 16 times its own weight in hydrocarbons (oils)
- Inventory reduction. Eliminates need for stocking "oil" bags
- Thermally bonded, with no lubricants or surface active agents
- Available with NSF Standard 61 Certification

Fits existing FSI standard basket

- No retrofit costs

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FILTER BAGS

SEAMLESS-ABSOLUTE RATED

Specifications

- **Available Materials**
  Polypropylene Microfiber
- **Seamless Construction**
- **Maximum Operating Temperature**
  160° F (71° C)
- **Suggested Differential Pressure**
  20 PSIG maximum – dirty
  10-15 PSIG optimum change out
- **Absolute (98%) Micron Rating**
  3, 5, 10, 25, 50, 75, 100, 125
- **Sizes**
  #2: 7" X 32" (17.8 cm X 81.32 cm)
- **Thermally Bonded Ring**
- **Available with NSF Standard 61 Certification**

BOS Gradient Filter Elements

Item # **BOSG50PM2P**	
Code	BOS = Seamless Polypropylene
Type of Filter	G = Gradient
Micron Rating	See specifications
Cover	PM = Polypropylene
Size	2
Ring	P = Polypropylene

Item # **BOSG50PP2PG61**	
Code	BOS = Seamless Polypropylene
Type of Filter	G = Gradient
Micron Rating	See specifications
Cover	PP = Special NSF Construction
Size	2
Ring	P = Polypropylene
Suffix	G61 = NSF 61 Certified

How To Install a Bag Properly

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FILTER BAGS

SEAMLESS-ABSOLUTE RATED BOS MAX Filter

The innovative BOS MAX heavy duty seamless filter bags have an advanced design that provides extended life and increased efficiency with a greater depth filtration than conventional filter bags. It provides all of the benefits of the standard BOS filter bag with a semi-rigid microfiber insert that increases the dirt holding capacity of the filter while providing the absolute filtration of the BOS filter bag.

Features

- BOS MAX Heavy Duty Extended Life Bags contain a semi-rigid, microfiber cartridge insert for up to four times the life of standard BOS bags and are ideal for high-purity applications
- Absolute rated 3-100 microns for high efficiency and consistent quality
- Thermally-bonded microfibers contain no sizing, bonding adhesive, resin or silicone
- Contaminant free to eliminate craters providing better surface results
- PolyLoc® ring creates hermetic seal within a vessel housing to prevent liquid bypass

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FILTER BAGS

SEAMLESS-ABSOLUTE RATED

Specifications

- **Available Materials**
  Polypropylene
- **Seamless Construction**
- **Maximum Operating Temperature**
  160° F (71° C)
- **Suggested Differential Pressure**
  35 PSIG maximum – dirty
  10-15 PSIG optimum change out
- **Absolute (98%) Micron Rating**
  3, 5, 10, 25, 35, 50, 75, 100
- **Sizes**
  #1: 7" x 16" (17.8 cm x 40.65 cm)
  #2: 7" x 32" (17.8 cm x 81.3 cm)
- **Plastic PolyLoc® Rings**

BOS MAX Filter Bags

Item # **BOS5PM2PMAX**

Code	BOS = Polymicro seamless
Micron Rating	See specifications
Cover	PM = Polypropylene
Size	1, 2
Ring	P = Polypropylene PolyLoc®
Suffix	MAX = Maximum life

How To Install a Bag Properly

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

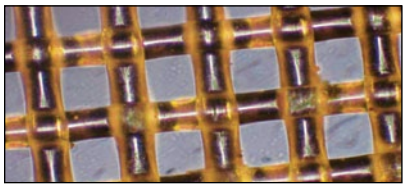
Mesh Filter Bags

MESH FILTER BAGS

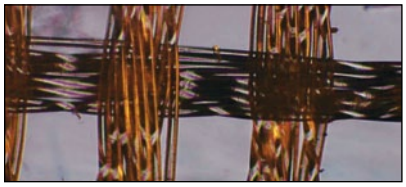
All FSI mesh bags are constructed using a woven or knitted fabric. Whether your particular environment requires a single filament mesh that provides excellent strength with no fiber migration, or a woven multi-strand mesh designed for economical filtration bags, we have your needs covered. The yarn in all of our mesh filter bags is abrasion resistant, compatible with a broad range of chemicals, unaffected by metal fatigue or corrosion, and boasts high tensile strength.

Features

- Available in nylon monofilament, polyester multifilament and polypropylene monofilament offering broad range of chemical compatibility and price ranges
- Monofilament mesh bags provide extra strength and abrasion resistance
- Precision mesh materials produce predictable results for consistent performance
- Offered in standard and custom sizes to provide a perfect fit for standard and unique applications
- Offered in micron ratings 1-1500 with plastic and metal rings for versatility
- Silicone free to prevent cratering for a better surface finish



Monofilament Mesh is a woven fabric where each thread is a single filament, boasting excellent strength with no fiber migration.



Mutifilament Mesh is a woven fabric where each strand consists of many smaller diameter threads.

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FSI
FILTER SPECIALISTS, INC.

FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

FILTER BAGS

Specifications

- **Available Materials**
  Nylon Monofilament
  Polyester Multifilament
  Polypropylene Monofilament
- **Micron Rating**
  NMO = 1, 5, 10, 25, 35, 45, 55, 65, 75, 100, 125, 150, 175, 200, 250, 400, 600, 800, 1200

  PEM = 75, 100, 125, 150, 200, 250, 400, 800, 1500

  PMO = 100, 150, 200, 250, 300, 600, 800
- **Sizes**
  #1: 7" x 16" (17.78 cm x 40.65 cm)
  #2: 7" x 32" (17.78 cm x 80 cm)
  #3: 4" x 8 1/4" (10.16 cm x 20.96 cm)
  #4: 4" x 14" (10.16 cm x 35 cm)
  #5: 6 7/8" x 34" (17.46 cm x 86.36 cm)
  #6: 6 7/8" x 16 1/2" (17.46 cm x 41.91 cm)
  #7: 5 1/2" x 16" (13.97 cm x 40.64 cm)
  #8: 5 1/2" x 22" (13.97 cm x 55.88 cm)
  #9: 5 1/2" x 33" (13.97 cm x 83.82 cm)

  5GP: 5 Gallon Pail (19L)
  12X18D: 12" x 18" Drawstring (30.48 cm x 43.2 cm)

  18X24D: 18" x 24" Drawstring (45 cm x 60.96 cm)

  18X28D: 18" x 28" Drawstring (45 cm x 71.12 cm)

MESH FILTER BAGS

Item # **BPEM100P1PA**

Type of Filter	B = Filter Bag
Material	NMO = Mesh, Nylon monofilament PEM = Mesh, Polyester multifilament PMO = Mesh, Polypropylene monofilament
Micron Rating	See specifications
Cover	P = Plain (no cover)
Size	1, 2, 3, 4, 5, 6, 7, 8, 9 5GP (5 Gallon Pail) 12x18D, 18x24D, 18x28D (D = Draw-string)
Ring	P = Polypropylene PolyLoc® PE = Polyester PolyLoc® C = Cuno N = Nylon PolyLoc® S = Snap fit metal SSS = Stainless steel snap fit CO = Commercial steel ring COP = Commercial plastic ring
Suffix	WE = Welded Seam Construction *(available on sizes 3 & 4 NMO only)* A = Auto Construction LOOPS = Loops C = Cotton Handle N = Nylon Handle

How To Install a Bag Properly

Locate Your Sales Representative

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FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

Filter Fabric Qualities

Fabric	Cotton	Polyester	Glass	Nylon	Nomex	Polypropylene
Specific Gravity	1.55	1.38	2.56	1.14	1.14	0.9
Tensile Strength	44 - 109	64 - 124	200 - 215	58 - 128	58 - 128	50 - 85
Abrasion & Flex	Fair	Very Good	Poor	Excellent	Very Good	Very Good
Weak Acids	Poor	Very Good	Excellent	Fair	Fair	Excellent
Strong Acids	Poor	Good	Good	Poor	Poor	Excellent
Weak Alkali	Excellent	Good	Fair	Excellent	Excellent	Excellent
Strong Alkali	Excellent	Poor	Poor	Excellent	Excellent	Excellent
Solvents	Good	Good	Excellent	Good	Good	Fair
Temperature (F°)	200 - 240°	275 - 325°	500 - 600°	275 - 300°	400 - 450°	200 - 220°

Filter Bag Data

Bag Size	1	2	3	4	X01	XL
Surface Area Per Bag (ft2/m2)	2.0/0.19	4.4/0.41	0.5/0.05	1.0/0.9	2.0/0.19	5.3/0.49
Volume Per Bag (gal*/liter)	2.1/7.9	4.6/17.3	0.37/1.4	0.67/2.5	2.1/7.9	5.5/0.51
Bag Diameter (inch/cm)	7.0/17.8	7.0/17.8	4.0/10.2	4.0/10.2	6.0/15.2	9.25/23.5
Bag Length (inch/cm)	16/40.65	32.0/81.3	8.25/20.9	14.0/35.5	22/55.9	32/81.3
FSI Filter Vessel Model Number	FSPN-40 CBFP-11	FSPN-85 FSPN-250 CBFP-12 and all multi-hole vessels	FSPN-20 BFN-13	FSPN-35 BFN-14	X100B	XL234

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FSI
FILTER SPECIALISTS, INC.

FILTER BAGS

Felt Filter Bags

Standard Felt Filter Bags | Polyweld® Filter Bags |

Extended Life Filter Bags (POEX/PEEX) | MAX PONG Filter Bags

Polymicro Microfiber Filter Bags

POMF Filter Bags

Seamless-Absolute Rated

BOS Filter Bags | BOS Gradient Filter Elements | BOS MAX Filter Bags

Mesh Filter Bags

Flow Rates of Filter Bags

In most filtration applications, fluid viscosities do not exceed 50cps. Using the following Flow Rates Per #2 Size Bag as a guide, the suggested flow rates should result in a CLEAN Pressure Drop under 2 PSID.

Material Used	Micron Rating	Flow Rate (GPM)
Felt	1 & 3	80 GPM/#2 BAG
Felt	5 THRU 200	120 GPM/#2 BAG
Mesh	1, 3, 5 & 100	100 GPM/#2 BAG
Mesh	25 THRU 100	125 GPM/#2 BAG
Mesh	150 THRU 800	150 GPM/#2 BAG
Microfiber	1A and 2A	60 GPM/#2 BAG
Microfiber	10A, 25A, 90A & 0A	80 GPM/#2 BAG

Micron Rating & Availability

Micron Availability		Micron Rating																									
Fiber	Material	1	3	5	10	25	35	50	65	75	90	100	120	125	150	175	200	250	300	400	600	700	800	1200	1500
Polyester Felt	Felt	■	■	■	■	■		■		■		■					■								
Nylon	Felt			■	■	■		■				■													
Polypropylene	Felt	■	■	■	■	■		■				■													
Teflon®	Felt	■		■	■	■																			
High Temperature	Felt			■	■	■		■				■					■								
Polypropylene	Microfiber	■	■		■	■		■			■		■												
Nylon	Monofilament Mesh	■		■	■	■	■	■	■	■		■		■	■	■	■	■	■	■	■		■	■	
Polypropylene	Monofilament Mesh											■			■		■	■	■		■		■		
Polyester	Multifilament Mesh									■		■		■	■		■	■	■	■	■		■		■

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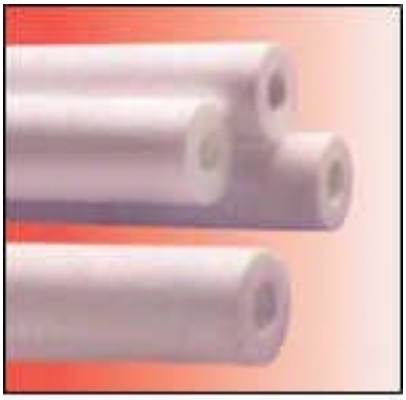
FILTER CARTRIDGES



Slides: •Vorex®
•Vorex® Cut-Away

VOREX® FILTER CARTRIDGES

The Vorex® is a nominally rated microfiber cartridge that works well as either a pre-filter or final filter in a wide range of applications including industrial, chemical process, food & beverage, cosmetics and water.

Our Vorex® filters are manufactured through an exclusive process that thermally bonds pure polypropylene microfibers. Lower density fibers are at the surface and sequentially higher density fibers are used toward the center. This process traps particles more evenly throughout the cross section.

Features

- Manufactured from 100% polypropylene microfibers eliminating extractables
- Adsorbs trace hydrocarbons for clearer results and faster rinse-in
- Provides high flow rates with lower pressure drops for longer life at a very economical price
- Singed finish eliminates fiber migration and produces a cleaner product
- Supports a wide range of chemical, industrial, food/beverage, cosmetics and water applications
- Available in 1-100 microns to meet a wide range of cleanliness applications
- Incinerates to non-volatile trace ash for easy disposal
- NSF 42 certified, FDA approved and rated USP Plastic Class VI to meet government regulations
- Silicone free material eliminates cratering to provide better surface results
- In-stock availability assures quick delivery and reduces your inventory costs
- Available with inner polypropylene core for additional support for high pressure applications

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FILTER CARTRIDGES

Specifications

- **Available Materials**
  MF = Microfiber (standard no core)
  MC = Microfiber with polypropylene core
- **Maximum Operating Temperature**
  160°F max. – polypropylene
- **Suggested Differential Pressure**
  30 PSIG maximum — dirty
  10-15 PSIG optimum change out
- **Micron Rating**
  001, 005, 010, 025, 050, 075, 100
- **Sizes**
  9.75" (24.38 cm)
  10" (25 cm)
  19.5" (49.53 cm)
  19.75" (50.17 cm)
  20" (50.8 cm)
  29.25" (74.3 cm)
  29.5" (74.93 cm)
  29.75" (75.44 cm)
  30" (76.2 cm)
  39" (99.06 cm)
  39.5" (100.33 cm)
  39.75" (100.97 cm)
  40" (101.6 cm)
- FSI's polypropylene microfiber media complies with the appropriate U.S. Food and Drug Administration guidelines, as outlined in the Code of Federal regulations, Title 21, Sections 177.1520 (a), (1) and Section 177.1520 (c), (1.1).
- Vorex® filter cartridges are certified by NSF International under ANSI/NSF Standard 42.
- Vorex® filter cartridges meet the requirements of a USP Plastic Class VI as demonstrated by USP Biological Reactivity Tests, in Vivo.

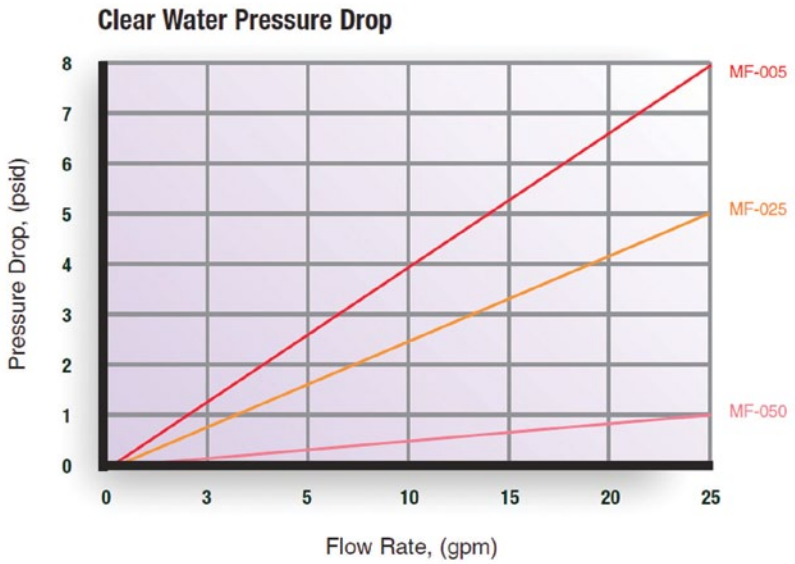
FILTER CARTRIDGES

Vorex® Filter Cartridges

Item # **CMMF02520**

Type of Filter	CM = Meltblown cartridge
Material	MF = Microfiber (standard no core) MC = Microfiber with polypropylene core
Micron Rating	See specifications
Length*	See specifications

* STANDARD LENGTHS LISTED. CUSTOM LENGTHS AVAILABLE.



This chart show the Vorex® filter cartridge pressure drop as related to flow-rate per 10 inch cartridge length. Results may vary in actual service.

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FILTER CARTRIDGES

Slides: • Vorex® HP
• Vorex® HP and End Caps

VOREX® HP FILTER CARTRIDGES

The absolute-rated Vorex® HP cartridge provides superior flow, increased dirt holding capacity and a lower pressure drop. The HP cartridge is manufactured with 100 percent polypropylene microfibers and core. Thermal bonding eliminates the need for bonding resins and adhesives, which may be contaminants themselves. The innovative core provides stability, which allows for the use of very fine microfibers to greatly improve the filtration efficiency. The microfibers vary in diameter throughout the depth of the cartridge to attain an optimal gradient density with a much larger void area. The benefit is substantially longer on-stream life, increased dirt holding, and a lower pressure drop. The Vorex® HP cartridge delivers a highly cost effective filtration solution.

The Vorex® HP is excellent for many high purity and standard industrial applications including chemical process industry, pure water filtration, metal finishing, metal working, magnetic media, photographic, petrochemicals and potable water.

Features

- Long on-stream life, superior dirt-holding capacity, and low pressure drop provide excellent cost savings
- Manufactured from 100% polypropylene for purity
- Silicone-free material prevents cratering and provides a better surface finish
- Foaming is eliminated with pure polypropylene microfibers that have no extrusion oils, surfactants or antistatic chemicals assuring better performance and faster rinse-in
- Thermally bonded end-cap configurations fit a variety of standard filter cartridge housings to reduce costs
- Polypropylene core is resistant to collapse, temperature effect, channeling and bypass
- Filter medium will not compress and unload trapped contaminants for improved efficiency and cleaner product
- Singed finish eliminates fiber migration producing clearer results
- FDA compliant for food and beverage applications and USP Plastic Class VI rated to meet government requirements

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FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC

Specifications

- **Available Materials**
  Polypropylene Microfiber with Polypropylene Core
- **Maximum Operating Temperature**
  160°F max. – polypropylene
- **Suggested Differential Pressure**
  30 PSIG maximum — dirty
  15 PSIG optimum change out
  1-3 PSIG initial
- **Absolute (99%) Micron Rating**
  0005 (0.5), 001, 003, 005, 010, 025, 035, 050, 075, 100
- **Length**
  9.75" (24.38 cm)
  10" (25 cm)
  19.5" (49.53 cm)
  19.75" (50.17 cm)
  20" (50.8 cm)
  29.25" (74.3 cm)
  29.75" (75.44 cm)
  30" (76.2 cm)
  40" (101.6 cm)
- **Rings**
  N = Neoprene
  P = Polyethylene Foam
  R = EPR
  S = Silicone (FDA)
  V = Viton®
  VT = Viton Teflon Encapsulated
  Z = Buna-N
- FSI's polypropylene microfiber media complies with the appropriate U.S. Food and Drug Administration guidelines, as outlined in the Code of Federal regulations, Title 21, Sections 177.1520 (a), (1) and Section 177.1520 ©
- Vorex microfiber cartridges meet the requirements of a USP Plastic Class VI as demonstrated by USP Biological Reactivity Tests, in Vivo.

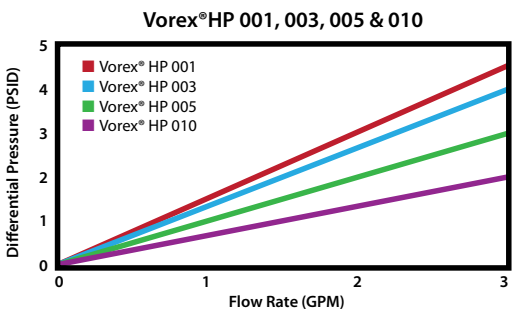
FILTER CARTRIDGES

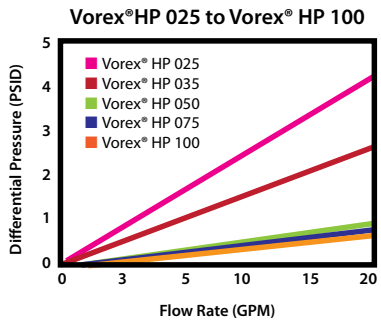
Vorex® HP Filter Cartridges

Item # **CMHP02520BZ**

Type of Filter	CM = Meltblown cartridge
Material	HP = Microfiber, Vorex HP
Micron Rating	See specifications
Length	See specifications
End Fitting Options	A = SOE 222 "O" Ring/Solid End Cap (Code3) B = SOE 222 "O" Ring/Bayonet (Code 8) C = SOE 226 "O" Ring/Bayonet (Code 7) D = DOE-Flat Gasket/Flat Gasket, Polypropylene End Cap w/Gasket E = DOE Polyfoam Flat Gasket F = Self Sealing Spring
Gasket and "O" Ring Material	See specifications

Clear Water Pressure Drop





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FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC

POLYWOUND STRING WOUND FILTER CARTRIDGES

FSI Polywound filter cartridges are the result of years of experience, as well as extensive research and development, and state-of-the-art manufacturing technology. The Polywound nominally rated cartridges are available in a wide array of yarn and core materials, and are designed to meet a variety of industrial processing needs. This cartridge provides an exceptional quality media filter option.

Features

- Available in polypropylene, polyester, cotton and baked glass for broad chemical compatibility and to meet a wide variety of applications
- Baked glass has high temperature compatibility of 750° F for greater versatility
- Single-strand, continuous winding process offers consistent quality, high particulate retention and reduced bypass for clearer results and long life
- FDA compliant polypropylene cartridges are available for food and beverage applications to meet government standards
- 2.5" OD is offered in standard lengths and 4.5" OD is available in 10" and 20" lengths to fit existing housings and replace most brands
- Micron ratings from 1-150 microns meet required cleanliness levels
- Well suited for applications such as paints, coatings and high-viscosity chemicals that need large particle filtration

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FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC

FILTER CARTRIDGES

Specifications

- **Available Materials**
  PO = Polypropylene
  PE = Polyester
  BC = Bleached cotton
  BG = Baked glass
- **Dimensions**
  1.06" ID x 2.5" OD
  Special dimension of
  1.06" ID x 4.5" OD available for
  polypropylene material only
  (available in 10" and 20" lengths)
- **Micron Rating**
  001, 005, 010, 025, 050, 075, 100, 150
- **Length**
  9.75" (24.77 cm)
  10" (25.4 cm)
  19.5" (49.53 cm)
  20" (50.8 cm)
  30" (76.2 cm)
  39" (99.06 cm)
  40" (101.6 cm)

Polywound String Wound Filter Cartridges

Item # **CWPO010P10**

Type of Filter	CW = Wound cartridge
Material	PO = Polypropylene FDA Compliant POI = Polypropylene Industrial (non-FDA) PE = Polyester BC = Bleached cotton BG = Baked glass
Micron Rating	See specifications
Core	P = Polypropylene S = 304 SS T = Tinned steel X = 316 SS
Length	See specifications

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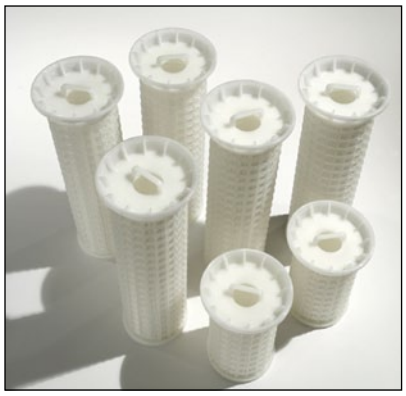
FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC



CLEARPLEAT PC

When you want the highest-performance and greatest impact to the bottom-line possible, the solution is our new ClearPleat PC. Unique construction, longer service life, and greater product quality consistency are just a few reasons why the ClearPleat PC is the clear choice for critical applications requiring a "performance grade" cartridge.

Features

- Absolute-rated (99.98%) provides consistent and repeatable filtration
- Pleated media provides longer service life (higher surface area) and less product loss (fewer changeouts)
- Thermal bonded construction improves cleanliness. Ultrasonic bonding of side seal eliminates debris.
- Fits BFNP 13 & 14, FSPN 20 & 35 filters with no retrofit costs
- Inside to Outside Flow allows contamination to be captured inside the element
- No crater-causing contaminants make it safe for use in all paint applications
- Dual cage is one-piece polypropylene with polypropylene end caps
- Available in nylon monofilament mesh and polypropylene microfiber

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FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC

Specifications

- **Available Materials**
  MF = Microfiber
  NM = Nylon monofilament mesh
- **Suggested Differential Pressure**
  35 PSIG maximum – dirty
  10-15 PSIG optimum change out
- **Absolute (99.98%) Micron Rating**
  MF: 1, 5, 10, 20, 35, 50
  NM: 40, 60, 85, 110, 140, 165
- **Length**
  MF & NM:
  #3: 6"
  #4: 12"

FILTER CARTRIDGES

ClearPleat PC

Item # **CPPCMF50P3**

Type of Filter	PC = Pleated cartridge
Material	MF = Microfiber NM = Nylon monofilament mesh
Micron Rating	See specifications
Length	See specifications
End Cap	P = Polypropylene

ClearPleat Efficiency Ratings

Microfiber

Micron Ratings		Flow Rates	
99.98%	Size	GPM@1psid	GPM@2psid
1	3	3	5
5	3	4	7
10	3	4.5	8
20	3	5	10
35	3	7	15
50	3	10	20
1	4	5	9
5	4	8	17
10	4	9	19
20	4	11	>20
35	4	12	>20
50	4	15	>20

Mesh

Micron Ratings		Flow Rates	
99.98%	Size	GPM@1psid	GPM@2psid
40	3	11	>20
60	3	12	>20
85	3	14	>20
110	3	15	>20
140	3	15	>20
165	3	16	>20
40	4	11	>20
60	4	12	>20
85	4	14	>20
110	4	15	>20
140	4	15	>20
165	4	17	>20

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FILTER CARTRIDGES

Vorex® Filter Cartridges

Vorex® HP Filter Cartridges

Polywound String Wound Filter Cartridges

ClearPleat PC

Flow Rates of Filter Cartridges

For Cartridge applications with Water-Like Viscosities the following rules of thumb can be followed for 10" equivalent length. These flow rates should keep the CLEAN Pressure Drop under 3 PSID.

Material Used	Micron Rating	Flow Rate (10" Equivalent)
CWPO/PE	1 & 3	3 GPM/10"
CWPO/PE	5 THRU 50	4 GPM/10"
CWPO/PE	75 THRU 100	5 GPM/10"
CMMF	1, 3, & 5	3 GPM/10"
CMMF	10, 25 & 50	4 GPM/10"
CMMF	75, 100 & 150	5 GPM/10"
CMHP	1 & 3	2 GPM/10"
CMHP	5, 10, 25, 35 & 50	3 GPM/10"
CMHP	75 & 100	4 GPM/10"

FILTER SPECIALISTS, INC.

SPECIALTY PRODUCTS

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SPECIALTY PRODUCTS

FerrX 5000® Magnetic Separator

FerrX5000® Magnetic Separator

The patented FerrX5000® is specifically designed to remove ferrous materials from the effluents used to clean and rinse the surface of automotive and other welded body units, prior to the paint application. By positioning powerful rare earth magnets in the effluent stream, FerrX5000® attracts and captures ferrous particles. The self-cleaning cycle automatically purges these particles into a waste stream. No disassembly or daily attendance by plant personnel needed.

Field trials prove that the FerrX5000® can remove 50 to 150 pounds of ferrous material per week from the pre-clean phosphate tanks. A single unit installed in the phosphate pre-clean process has been proven to eliminate more than 50 percent of the metal particulate defects in a cured electro deposition surface.

Features

- Fully Automated and Self Cleaning
- Stainless Steel Construction
- Captures Ferrous Material
  - — Can remove more than 50 lbs. per day of ferrous material
  - — Can eliminate more than 90% of ferrous particulate that comes in contact
- Compact Design with Rolling Cart
- Fail-Closed Inlet Valve
- PLC controlled
- Safe to Operate

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FSI
FILTER SPECIALISTS, INC.

FerrX 5000® Magnetic Separator

Options

- **PLC –Allen Bradley Standard**
  (other manufacturer's equipment can be substituted)

U.S. Patent No. 6,638,425

U.S. Patent No. 6,833,069

SPECIALTY PRODUCTS

FerrX 5000® Magnetic Separator

Specifications

Magnets	10,000 min. Gauss Rating
Operating Pressure	100 PSI
Operating Temperature	180° F
Materials of Construction	Stainless Steel Unit on Carbon Steel Cart
Connections	3", 150# ANSI, type 304 SS S.O.R.F. Flanges on inlet and outlet
Flow Rate	300 GPM
PLC Unit	Allen Bradley Standard
Power Requirements	380-480 Volt, 50/60Hz, 3-Phase Supply
Additional Requirements	80 to 90 PSI compressed air supply
Dimensions	50" Long x 20" Wide x 65" Tall

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ACCESSORIES

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ACCESSORIES

Evacuation Floats

FSI evacuation floats are used to displace liquid in filters during processing operations. The floats reduce product loss due to spillage and reduce the volume of liquid moving through the bag at one time, thus lowering the bag weight.

ACCESSORIES

Evacuation Floats

Specifications

Sizes Available	FSPN Size 1, 2, 3, 4 CBFP Size 1, 2 BFNP Size 3, 4 Size 1 and Size 2 filter vessels
Operating Pressure	125 PSI and 270 PSI
Material of Construction	316 SS

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FILTER VESSELS | FILTER BAGS | FILTER CARTRIDGES | SPECIALTY PRODUCTS | ACCESSORIES | TECHNICAL SPECS

ACCESSORIES

Adapter Heads

Adapter Heads are available in a variety of pipe size and materials to be used with steel ring bags in open filter system. Adapter heads are ideal for applications where vessels are impractical.

ACCESSORIES

Adapter Heads

Specifications	
Sizes Available	4" and 7" diameter
Materials of Construction	316 SS and Polypropylene*
Connections	¾", 1", 1½", 2" NPT

*Polypropylene available in 2" NPT only

Locate Your Sales Representative

ACCESSORIES

Gaskets / O-Rings

Depending on the product to be filtered, FSI filter vessels feature the option of a variety of materials to meet the specific application.

ACCESSORIES

Gaskets / O-Rings

Specifications	
Sizes Available	Sizes to fit standard sizes 1, 2, 3 and 4 Single Hole and Size 1 and 2 Multi-Hole filter vessels
Materials of Construction	Buna-N, White Buna (FDA), Viton, Viton Teflon Encapsulated, Teflon and EPR

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ACCESSORIES

Magnets

FSI bag magnets use a powerful magnetic source to prevent tramp metal from plugging and slitting filter bags. The magnet assemblies are designed for easy installation, cleaning and removal. The assemblies are available to fit #1 and #2 size filter bags.

ACCESSORIES

Magnets

Specifications	
Sizes Available	12″ for Size 1 filter bags 24″ for Size 2 filter bags
Materials of Construction	304 SS
Gauss Rating	1,975 average

Item # **EWA263730B**	
Size	12″ Magnet for Size 1 filter bag

Item # **EWA263740B**	
Size	24″ Magnet for Size 2 filter bag

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TECHNICAL SPECS

Glossary - A

A | B - Ce | Co - Ef | El - F | G - Me | Me - Pl | Pl - Se | Se - To | Tu - W

Abrasion
Migration of foreign material which enters the fluid stream from system components that wear from close tolerances, vibration or shock.

Absolute
A term used to describe or define a degree of filtration. There are various methods used in the filtration industry to determine absolute ratings, which are not necessarily interchangeable. Absolute rated filters always state a removal efficiency at the micron rating, generally between 98 – 99.98%.
See nominal.

Absorb
To take up by cohesive, chemical or molecular action.

Absorbent
A filter medium that is similar to a sponge, drawing fluid and retaining it within its structure. In this sense it can act as a filter to remove (adsorb) and retain fluid.

Acidity
The quality, state or degree of being acidic. In lubricating oils, acidity denotes the presence of acid-type constituents whose concentration is usually defined in terms of a neutralization number. The constituents vary in nature and may or may not markedly influence the behavior of the fluid.

Additive
A supplementary material combined with a base material to provide special properties.

Adsorption
The attraction and/or the retention of particles by molecular attraction or electrostatic forces present between the particles and a filter medium. Also, the attraction of gasses, liquids or solids to surface areas of textile fibers, yarns, fabrics, or any similar type of material.

Adsorbent
Any material which adsorbs: i.e., the solid which attracts and holds on its surface the gas, vapor or liquid. Also, a filter medium primarily intended to hold its soluble and insoluble contaminates on its surface by molecular adhesion – through no chemical change.

Agglomerate
A group of two or more particles combined, joined or clustered, by any means.

Aggregate
A relatively stable assembly of dry particles formed under the influence of physical forces.

Ambient
Surrounding. For example, the ambient operating temperature of a vessel is temperature that is essentially the same as that surrounding the vessel.

ASME
The American Society of Mechanical Engineers.

Atmospheric pressure
The force exerted on a unit area by the weight of the atmosphere.

TECHNICAL SPECS

Glossary B - Ce

A | B - Ce | Co - Ef | EI - F | G - Me | Me - Pl | Pl - Se | Se - To | Tu - W

Back pressure
In filter use, resistance offered by the filter, usually measured in PSI.

Backwash
To clean a filter element by reversing the direction of flow through it.

Basket strainer
A vessel for the removal of coarse bulk solids from liquid, air or gas. The element is usually a steel perforated basket, or a mesh lined basket.

Beta (ß) Ratio
The Beta (ß) Ratio is a rating system introduced with the object of giving both filter manufacturer and user an accurate representative comparison amongst filter media. Also, an indication of how a filter performs throughout the life of the filter. The Beta Ratio is an average filtration rating (single pass and multi-pass).

Bleeder
A valve which diverts part of the fluid from the main flow of the system.

BUNA-N
A synthetic rubber gasket material, used for vessel closures, flanges and filter elements.

Burst
An outward structural failure of the filter element caused by excessive differential pressure.

By-pass
A condition that occurs when:
a) a bag or cartridge is not seated or sealed properly in the filter housing; or
b) the filter media is violated and permits unfiltered fluid to pass through.

Cake
Solids deposited on the filter medium during filtration in sufficient thickness to be removed in sheets of sizeable pieces. In many cases, cake may provide its own filter media by adding to the surface of the media.

Capacity
The volume of product which a vessel will accommodate, expressed in gallons or similar units. Also, an amount which will filter at a given efficiency and flow rate, expressed in gallons per minute or similar units.

Cartridge
A filter for the clarification of process liquids containing small amounts of solids. Made of a porous medium, it is used in a vessel, which performs the actual filtration process.

Center-rod/ post
The component of a vessel used for mounting the cartridge in the vessel, usually made of a round bar material. A center pipe can also be used for the same purpose, but is made instead with perforated effect and directs flow through the cartridge.

Centipoise
One one-hundredth of a poise. A poise is the unit of viscosity expressed as one dyne per second per square centimeter.

Centistoke
One one-hundredth of a stoke. A stoke is equal to the viscosity in poises times the density of the fluid in grams per cubic centimeter.

Clear water pressure drop
Differential pressure across the filter as measured using clean water at a particular flow rate.

Coagulant
That which produces agglomeration of suspended solids.

TECHNICAL SPECS

Glossary Co - Ef

Coagulant
That which produces agglomeration of suspended solids.

Coalescing
The action of uniting of small droplets of one liquid preparatory to its being separated from another liquid.

Contaminant
Any undesirable particle or impurity in a stream.

Core
An inner material used for the center of an element as support, which may also be called a center tube when used with string-wound filters.

Corrosion
The conversion of metals into oxides, hydrated oxides, carbonates, or other compounds due to the action of air, water or both. Salts and sulphur are also important sources of corrosion. Removal of solids and water reduces the effect or speed of corrosion in many cases, and in other cases, corrosion inhibitors are used to reduce the effect of corrosion.

Degradation
The loss of desirable physical properties by a textile material as a result of some process or physical/chemical process. Also, the wearing down or reduction in the efficiency of a media.

Delta P (P)
A symbol (P) designating pressure drop. The difference in pressure between two points, generally measured at the inlet and outlet point of a filter, separator/filter, etc. Normally measured in pounds per square inch (psi), inches of mercury (in. Hg.), or inches of water (in. H20). Also known as pressure drop.

Density
The weight per unit volume of a substance (specific weight).

Depth
A filter medium which primarily retains contaminants with the tortuous passages within the thickness of the element wall. Depth-type filtration Filtration that is accomplished by flowing a fluid through a mass filter media, with a much longer and random path through the filter. The density of the structure can be density graded, which is of particular advantage where the particular sizes of the contaminant are widely distributed. Certain types of solids, or combinations of solids, do not work well with surface filtration, and depth filtration is found to be more suitable.

Dilatant
A flow condition where certain liquids will show an increase in viscosity as the rate of shear or flow is increased.

Discharge
The flow rate through a filter.

Effective area
The area of a medium that is exposed to the flow, and is usable for its intended purpose: coalescing, filtering or separating. This is the opposite of blind spots or dead area.

Effective open area
Area of the filtering medium through which the fluid may flow.

Efficiency
The degree to which an element will perform in removing solids and/or liquids, usually expressed as output divided by input.

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TECHNICAL SPECS

Glossary El - F

Element
The medium used in a vessel to perform the function of filtration or separation. Also called the cartridge or filter. The porous device which performs the actual process of filtration.

Emulsion
A finely divided suspension of an oil in water or vice versa. Also, a dispersion of finely held particles in a stream which do not necessarily dissolve in each other, but are held in suspension.

Entrainment
Mist, fog or droplets of a liquid which are usually considered to be a contaminate when encountered in the filtration industry.

Feed
Liquid to be processed containing one or more liquid phases, such as an emulsion, and/or suspended solids, and/or insoluble solids.

Felt
A nonwoven sheet of fibers, made by a combination of mechanical and chemical actions, including pressure, moisture and heat.

Fiber
A flexible material with two relatively small dimensions and one long dimension.

Fiber migration
Undesirable movement of filter material from the media into the feed stream.

Filter
A term generally applied to a device used to remove solid contaminants from a liquid or gas, or to separate one liquid from another liquid or gas. A filter, as referred to in the filtration industry, is a device which removes contaminants.

Filtration efficiency
Expressed as a percent of contaminant introduced to the system. It is the ability of a filter to remove specified contaminants at a given contaminant concentration under specified test conditions.

Filter element life
The span of operation from clean unit to a predetermined pressure drop build up, usually measured in elapsed time.

Filter medium|
The porous material mounted on a plate or frame which separates the solids from the liquids in filtering. Also referred to as filter cloth, filter plate or septum. The material that performs the actual process of filtration.

Filtrate
Filtered fluid which flows out of a filter.

Filtration rating
The diameter of the largest hard spherical particle that will pass through a filter under specified test conditions. This is an indication of the largest opening in the filter medium.

Flow characteristics
The nature of fluid movement as being either turbulent, laminar, constant or of a variable rate, to various degrees.

Flow rate
The rate at which a product is passed through a vessel or system, generally expressed as gallons per minute, cubic feet per minute, per hour, per day, etc.

Fluid
A liquid or gas which can be filtered by passing through a filter.

TECHNICAL SPECS

Glossary G - Me

Gage pressure
All pressure greater than atmospheric pressure, as read on a pressure gage.

Gel
A semi-solid that is susceptible to pressure deformation. Gels have the habit of sticking to other surfaces.

Glazed finish
A finishing process that produces a smooth, highly polished surface using extreme temperature. Eliminates filter fiber migration.

Gradient density
A media of different densities, with one media packed around the center tube and a media of less density around the outside. Both medias are tapered at opposite ends, which allows high flow through the less dense media, and tighter filtration through the dense media.

Housing
A container for a filter element(s). Also known as a vessel.

Hydraulics
The study of fluids at rest or in motion.

Hydrophilic
Having a strong affinity for or the ability to absorb water.

Hydrophobic
Lacking affinity for or the ability to absorb water.

Hydrostatic test
A test conducted with either air, water or other fluids at a given value over design pressure, to prove the structural integrity of a pressure vessel.

Immiscible
Incapable of being mixed; insoluble; the opposite of miscible.

Impregnation
The process of treating a coarse filter medium with resins.

Impurity
Any undesirable material in the fluid.
See contaminant.

Initial pressure drop
A loss in pressure between the inlet and the outlet connections upon the start of flow through a vessel using new elements.

In-line
When inlet and outlet connections are positioned at the same height on the opposite sides of a vessel so that an imaginary straight line can be drawn connecting one to the other.

Insoluble
Incapable of being dissolved in a fluid; the opposite of soluble.

Matrix
The structural support yarn or twine in wound elements, usually wound in a diamond pattern.

Maximum operating pressure
The highest pressure allowed in a system.

Media/ Medium
A porous or slotted mass in a filter element that separates solids from a fluid by a difference in the size of openings, and also through direct containment.
A material of controlled pore size or mass through which a product is passed in order to remove foreign particles held in suspension, or to repel droplets of coalesced water; or a material without controlled pore size, such as glass fiber mats, which contribute to filtration, coalescence, or separation of two immiscible liquids.

TECHNICAL SPECS

Glossary Me - Pl

A | B - Ce | Co - Ef | El - F | G - Me | Me - Pl | Pl - Se | Se - To | Tu - W

Media migration/ Migration
The carry-over of fibers from the filter, separator elements or other filter, into the effluent. The contaminant or media released to pass downstream from the filter element.

Membrane
In the filtration industry, the term is used to describe the media through which the liquid stream is to be passed or exchanged. Membranes are usually associated with ion exchanged media such as dialysis, osmosis, diffusion, etc., although filter paper itself could be classified as a membrane.

Micron
A short unit of length in the metric system, equal to onemillionth of a meter, 10-4 centimeter, 10-3 millimeter, or 0.000039 of an inch. A micron is used as a criterion to evaluate the performance or efficiency of a filter media, or to describe the condition of either the influent or effluent. Usually stated in terms of being either absolute or nominal.

Modular
A filter element which has no separate housing of its own, but whose housing is incorporated into the equipment it services. It may also incorporate a suitable enclosure for the filter cavity.

Monofilament mesh
A woven fabric with evenly-spaced holes. Each thread is a single filament. The mesh combines excellent strength with little or no fiber migration.

Multifilament mesh
A type or woven fabric, where each thread consists of many smaller diameter threads twisted together.

Newtonian
A liquid which does not change in viscosity when faced with a change in rate of shear, agitation or flow rate.

Nominal rating
An arbitrary value determined by the filter manufacturer and expressed in terms of percentage retention by weight of a specified contaminant (usually glass beads) of a given size.

NPT
National Pipe Thread standard.

Open area ratio
The ratio of pore area of a filter medium, expressed as a percent of total area.

Operating pressure
The normal pressure at which a system operates.

Particle count
The practice of counting particles of solid matter in groups based on relative size. Frequently used in engineering, a filter to a specific task, or to evaluate the performance of a filter under specific operating conditions.

Particle size distribution
A tabulation resulting from a particle count of solids grouped by specified micron sizes to determine the condition of either the influent or effluent stream.

pH
The value indicating the acidity or alkalinity of a material. It is the negative logarithm of the effective hydrogen ion concentration. A pH of 7.0 is neutral, less than 7.0 is acidic, and greater than 7.0 is considered a base.

Pleated
A filter element whose medium consists of a series of uniform folds and has the geometric shape of a cylinder, cone, disc, plate, etc.

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TECHNICAL SPECS

Glossary Pl - Se

Plugged
The condition of a filter when it has collected its full capacity of contaminants and will not pass any more fluid.

Porosity
The property of a solid which contains many minute channels or open spaces. The fraction is a percentage of the total volume occupied by these channels or spaces. Also describes a filter media which may have larger pores than other media.

Prefilter
A filter for removing gross contaminate before the product stream enters the separator.

Pressure
The force exerted per unit area by a fluid, typically measured in pounds per square inch (psi).

Pressure, absolute
Gage pressure plus 14.7 psi.

Pressure, atmospheric
The force exerted by the atmosphere at sea level, which is equivalent to 14.7 psi.

Pressure drop
The difference in pressure between two points, generally at the inlet and outlet of a filter or a separator/filter. Measured in pounds per square inch gage, or inches of mercury. *See delta P.*

PSI
Pounds per square inch.

PSIA
Pounds per square inch absolute.

PSID
Pound per square inch differential.

PSIG
Pounds per square inch gage.

SAE
The Society of Automotive Engineers.

SAE number
A classification of lubricating oils for either crankcases or transmissions, in terms of viscosity, as standardized by the Society of Automotive Engineers.

Saybold Seconds Universal (SSU)
Units of viscosity as measured by observing the time in seconds required for 60 ml. of a fluid to drain through a tubular orifice 0.483 inches long by 0.0695 inches in diameter at stated conditions of temperature and pressure.

SCFD
Standard cubic feet per day.

SCFH
Standard cubic feet per hour.

SCFM
Standard cubic feet per minute.

Separation
The action of separating solids or liquids from fluids. May be accomplished by impingement, filtration or by coalescing.

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TECHNICAL SPECS

Glossary Se - To

Separator/filter
A vessel which removes solids and entrained liquids from another liquid or gas, using some combination of a baffle and/or coalescer, filter or separator element. A vessel may be single stage, two stage, or single or two stage with prefilter section for gross solids removal. The usual application is the removal of water from gas or another immiscible liquid. General reference to term applies the equipment capable of both separation and filtration to specific degrees of efficiencies.

Service life
The length of time an element operates before reaching the maximum allowable pressure drop.

Shell
The outer wall of a vessel, usually referred to as the body.

Singed finish
The process of removing fibers from a cartridge or fabric by passing over a flame or other heat source. The process creates a smooth finish that inhibits fiber migration.

Sintered
Media, usually metallic, that is processed to cause diffusion bonds at all contacting points, retaining openings for the passage of filtrate.

Skid mounted
When one or more vessels with pumps and motors are mounted on a portable platform.

Sludge
Dirt, carbon, water and chemical compounds found in oils.

Solids
A mass or matter contained in a stream which is considered undesirable and should be removed.

Solution
A single phase combination of liquid and non-liquid substances, or two or more liquids.

Specific gravity
The ratio of a substance's weight to that of some standard substance (water for liquids and solids, air or hydrogen for gases). This is by definition a unitless value.

Surface area
The total area of an element that is exposed to an approaching flow.

Suspension
Solids or liquids that are held in other liquids.

Suspended solids
Non-settled particles in a fluid.

Tensile strength
The maximum stress a material that is subjected to a stretching load can withstand, without tearing.

Thixotropic
A liquid which shows a marked reduction in viscosity as the rate of shear, agitation or flow rate is increased.

Tortuosity
The ratio of the average effective flow path length to the minimum theoretical flow path length (thickness) of a filter medium.

Glossary Tu - W

A | B - Ce | Co - Ef | El - F | G - Me | Me - Pl | Pl - Se | Se - To | Tu - W

Turbidity
A cloudy or hazy appearance in a naturally clear liquid, caused by the suspension of colloidal liquid droplets or fine solids.

Turn-over
The number of times the contents of the system pass through a filter per unit of time.

Ultrafilter
A type of membrane used to remove very fine suspended submicronic particles as well as some dissolved solids.

Unloading
The release downstream of trapped contaminant, due to a change in flow rate, mechanical shock and/or vibration, or as excessive pressure builds up, or due to a media failure.

Vacuum
A reference to a pressure that measures below atmospheric pressure.

Vessel
A container in which the filtration process occurs, through a filter media such as cartridges or bags that are installed inside.

Viscosity
The degree of fluidity; also, the property of a fluid's molecular structure by virtue of which they resist flow; the internal flow resistance of a fluid; or, the resistance of flow exhibited by a liquid resulting from the combined effects of cohesion and adhesion. The units of measurement are the poise and the stoke. A liquid has the viscosity of one poise if a force of one dyne per square centimeter causes two parallel liquid surfaces one square centimeter in area and one centimeter apart to move past each other at a rate of one centimeter per second. There are a great many crude and empirical methods for measuring viscosity, which generally involve measurements for the time of flow or movement of a ball, ring or other object in a specially shaped or sized apparatus.

Wound
A filter medium comprised of two or more layers of helical wraps of a continuous strand or filament in a predetermined pattern.

Woven
A filter medium made from strands of fiber, thread or wire, interlaced into a cloth through the action of a loom.

TECHNICAL SPECS

Laws of Physics & Common Equations

Pascal's Law
Pressure exerted on a confined fluid is transmitted undiminished in all directions, and acts with equal force on all equal areas and at right angles to them.

Hydraulics
Simply, a means of power transmission.

Work
Force acting through distance.

WORK = FORCE x DISTANCE

Example:
Work = lbs. x inches, or
Force (lbs.) x Distance (ins.)

Power
The rate of doing work.

$$\text{Power} = \frac{\text{Work}}{\text{Time}} = \frac{\text{Force x Distance}}{\text{Time}}$$

Force
The Force (pounds) exerted by a piston can be determined by multiplying the piston area (sq. inches) by the pressure applied (psi).

Force = Pressure x Area

Volume
To determine volume (cubic inches) required to move a piston a given distance, multiply the piston cross sectional area (sq. inches) by the stroke required (inches).

Volume = Area x L

Compression of Hydraulic Oil
Hydraulic oil serves as an excellent lubricant, is practically non-compressible. It will compress approximately 0.4 of 1% at 1000 psi and 1.1% at 3000 psi at 1200.

Weight of Hydraulic Oil
The weight of hydraulic oil may vary with a change in viscosity; however, 55 to 58 lbs. per cubic foot covers the viscosity range from 150 SSU to 900 SSU at 1000˚F.

Pressure in a Column of Oil
The pressure at the bottom of a one-foot column of oil will be approximately 0.4 psi. To find the approximate pressure in psi at the bottom of any column of oil, multiply the height in feet by 0.4.

Atmospheric pressure
Equivalent to 14.7 PSIA at sea level.
ΔP means pressure difference.

Gage readings
Gage readings do not include atmospheric pressure unless marked PSIA.

Pressure drop
There must be a pressure drop (pressure difference) across an orifice or restriction to cause flow through it. Conversely, if there is no flow, there will be no pressure drop.

Pumps and fluids
Fluid is pushed, not drawn, into a pump. If pumping from an open reservoir, atmospheric pressure pushes the fluid into the pump. Some pumps are used specifically to create pressure. Any resulting flow is incidental. A pump does not pump pressure; its purpose is to create flow. A pump used to transmit power is usually positive displacement type.

Pressure
Pressure is caused by resistance to flow. A pressure gage indicates the pressure in a given unit, measured in PSI.

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Pressure Drop / Velocity to GPM Table

Discharge — **Pressure Drop (per 100 Feet) and Velocity in Schedule 40 Pipe for Water at 60° F**

Gallons per Minute	Cubic Ft. per second	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)	Velocity Ft. per second	Press. Drop (PSI)
1	0.00223											0.371	0.048				
2	0.00446											0.743	0.164				
3	0.00668											1.114	0.336	0.473	0.043		
4	0.00891											1.49	0.565	0.63	0.071		
5	0.01114											1.86	0.835	0.788	0.104		
10	0.02228	0.956	0.108									3.71	2.99	1.58	0.361		
20	0.04456	1.91	0.375	0.868	0.056							7.43	10.9	3.16	1.28		
30	0.06684	2.87	0.786	1.3	0.114							11.14	23.8	4.73	2.72		
40	0.08912	3.83	1.35	1.74	0.192	1.01	0.052					14.85	41.5	6.3	4.65		
50	0.1114	4.87	2.03	2.17	0.288	1.26	0.076							7.88	7.15		
60	0.1337	5.74	2.87	2.6	0.46	1.51	0.107							9.47	10.21		
70	0.156	6.7	3.84	3.04	0.54	1.76	0.143	1.12	0.047					11.05	13.71		
80	0.1782	7.65	4.97	3.47	0.687	2.02	0.18	1.28	0.06					12.62	17.59		
90	0.2005	8.6	6.2	3.91	0.861	2.27	0.224	1.44	0.074					14.2	22		
100	0.2228	9.56	7.59	4.34	1.05	2.52	0.272	1.6	0.09	1.11	0.036			15.7	26.9		
150	0.3342	14.36	16.7	6.51	2.24	3.78	0.58	2.41	0.19	1.67	0.077						
200	0.4456	19.14	28.8	8.68	3.87	5.04	0.985	3.21	0.323	2.22	0.13						
250	0.557			10.85	5.93	6.3	1.46	4.01	0.495	2.78	0.195	1.6	0.051				
300	0.6684			13	8.36	7.56	2.11	4.81	0.683	3.33	0.275	1.92	0.072				
350	0.7798					8.82	2.84	5.62	0.919	3.89	0.367	2.24	0.095				
400	0.8912					10.08	3.68	6.42	1.19	4.44	0.471	2.56	0.121				
450	1.003					11.34	4.6	7.22	1.48	5	0.59	2.89	0.151				
500	1.114					12.6	5.65	8.02	1.81	5.55	0.72	3.21	0.182	2.03	0.059		
600	1.337					15.12	8.04	9.63	2.55	6.66	1.02	3.85	0.258	2.44	0.083		
700	1.56							11.23	3.43	7.78	1.35	4.49	0.343	2.85	0.112	2.01	0.047
800	1.782							12.83	4.43	8.88	1.75	5.13	0.443	3.25	0.142	2.29	0.061
900	2.005							14.44	5.58	9.99	2.18	5.77	0.554	3.66	0.179	2.58	0.075
1000	2.228							16.04	6.84	11.1	2.68	6.41	0.675	4.06	0.218	2.87	0.091
1500	3.342									16.66	5.85	9.62	1.46	6.1	0.466	4.29	0.195
2000	4.456									22.21	10.3	12.82	2.55	8.12	0.808	5.73	0.339
2500	5.57											16.03	3.94	10.17	1.24	7.17	0.515
3000	6.684											19.24	5.59	12.2	1.76	8.59	0.731
3500	7.798											22.44	7.56	14.24	2.38	10.03	0.982
4000	8.912											25.65	9.8	16.27	3.08	11.47	1.27
4500	10.03											28.87	12.2	18.31	3.87	12.29	1.6

TECHNICAL SPECS

Water and Suspended Solid Conversions

Water Pressure (PSI) to Feet of Head

Pounds per Square Inch	Feet Head	Pounds per Square Inch	Feet Head
1	2.31	110	253.98
2	4.62	120	277.07
3	6.93	130	300.16
4	9.24	140	323.25
5	11.54	150	346.34
6	13.85	160	369.43
7	16.16	170	392.52
8	18.47	180	415.61
9	20.78	190	438.71
10	23.09	200	461.78
15	34.63	250	577.24
20	46.18	300	692.69
25	57.72	350	808.13
30	69.27	400	922.58
40	92.36	450	1039.05
50	115.45	500	1154.48
60	138.54	600	1385.39
70	161.63	700	1616.30
80	184.72	800	1847.20
90	207.81	900	2078.10
100	230.90	1000	2309.00

NOTE:
One pound of pressure per square inch of water is equal to 2.309 feet of water at 62˚F. To find the feet head of water for any pressure not given in the table, multiply the pressure pounds per square inch by 2.309.

Water Feet of Head to PSI

Pounds per Square Inch	Feet Head	Pounds per Square Inch	Feet Head
1	0.43	110	47.64
2	0.87	120	51.97
3	1.3	130	56.3
4	1.73	140	60.63
5	2.17	150	64.96
6	2.6	160	69.29
7	3.03	170	73.63
8	3.46	180	77.96
9	3.9	190	82.27
10	4.33	200	86.62
15	6.5	250	108.27
20	8.66	300	129.93
25	10.83	350	151.58
30	12.99	400	173.24
40	17.32	450	194.85
50	21.65	500	216.55
60	25.99	600	259.85
70	30.32	700	303.16
80	34.65	800	346.47
90	39.98	900	389.78
100	43.31	1000	433

NOTE:
One foot of water at 62˚F is equal to 0.433 pounds of pressure per square inch. To find the pressure per square inch for any feet head not given in the table, multiply the feet head by 0.433.

Suspended Solid Conversion Table

PPM	%	LBS / 1000 Gal
10,000	1	80
8,000	0.8	70
6,000	0.6	50
4,000	0.4	35
2,000	0.2	15
1,000	0.1	9
800	0.08	6.5
600	0.06	5.5
400	0.04	3.5
200	0.02	1.75
100	0.01	0.85
80	0.008	0.65
60	0.006	0.5
40	0.004	0.35
20	0.002	0.175
10	0.001	0.08
8	0.0008	0.065
6	0.0006	0.055
4	0.0004	0.035
2	0.0002	0.0175
1	0.0001	0

TECHNICAL SPECS

Decimal Equivalents

Decimal Equivalents of Fractions

Inches	Decimal
1/64	0.015625
1/32	0.03125
3/64	0.046875
1/16	0.0625
5/64	0.078125
1/12	0.0833
3/32	0.09375
7/64	0.109375
1/8	0.125
9/64	0.140625
5/32	0.15625
11/64	0.171825
3/16	0.1875
13/64	0.203125
7/32	0.21875
15/64	0.234375
1/4	0.25
17/64	0.265625
9/32	0.28125
19/64	0.296875
5/16	0.3125
21/64	0.328125
1/3	0.333
11/32	0.34375
23/64	0.359375
3/8	0.375

Inches	Decimal
25/64	0.390625
13/32	0.40625
27/64	0.421875
7/16	0.4375
29/64	0.453125
15/32	0.46875
31/64	0.484375
1/2	0.5
33/64	0.515625
17/32	0.53125
35/64	0.546875
9/16	0.5625
37/64	0.578125
19/32	0.59375
39/64	0.609375
5/8	0.625
41/64	0.640625
21/32	0.65625
43/64	0.671875
11/16	0.6875
45/64	0.703125
23/32	0.71875
47/64	0.734375
3/4	0.75
49/64	0.765625
25/32	0.78125

Inches	Decimal
51/64	0.796875
13/16	0.8125
53/64	0.828125
27/32	0.84375
55/64	0.859375
7/8	0.875
57/64	0.890625
29/32	0.90625
59/64	0.921875
15/16	0.9375
61/64	0.953125
31/32	0.96875
63/64	0.984375

Decimal Equivalents of US Mesh Rating

US Mesh	Micron	Inches
10	2000	0.0787
14	1410	0.0555
16	1200	0.0472
18	1000	0.0394
20	840	0.0331
24	800	0.0315
25	707	0.028
30	600	0.0236
35	500	0.0197
42	400	0.0157
45	350	0.0138
50	300	0.0118
60	250	0.0098
76	200	0.0079
80	175	0.0069
100	150	0.0059
120	125	0.0049
140	105	0.0041
150	100	0.0039
200	75	0.003
230	65	0.0026
260	55	0.0022
280	50	0.002
305	45	0.0018
355	35	0.0014
550	25	0.0009
800	15	0.0006
1250	10	0.0004
--	5	0.0002

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TECHNICAL SPECS

Pressure Conversion Table

	Atmo-spheres	Bars	Dynes/cm²	In. of Hg (0°C)	In. of H20 (4°C)	kg/m²	Lb./in.² (psi)	Lb./ft.²	mm of Hg (torr)	Pascals
Atmo-spheres		9.86923×10^{-1}	9.86923×10^{-7}	3.34207×10^{-2}	2.458×10^{-3}	9.678×10^{-5}	6.8046×10^{-2}	4.7254×10^{-4}	1.31×10^{-3}	9.869×10^{-6}
Bars	1.01325		10^{-6}	3.3864×10^{-2}	2.491×10^{-3}	9.8067×10^{-5}	6.8948×10^{-2}	4.788×10^{-4}	1.333×10^{-3}	105
Dynes/cm²	1.01325×10^{6}	x106		3.386×10^{4}	2.491×10^{3}	98.067	6.8948	4.788×10^{6}	1.333	10
In. of Hg (0°C)	29.9213	29.53	2.953×10^{-5}		7.355×10^{-2}	2.896×10^{-3}	2.036	1.4139×10^{-2}	3.937×10^{-2}	2.953×10^{-4}
In. of H20 (4°C)	406.8	401.48	4.0148×10^{-4}	13.6		3.937×10^{-2}	27.68	0.1922	0.5354	4.014×10^{-3}
kg/m²	1.033227×10^{4}	1.0197×10^{4}	1.0197×10^{-2}	345.3	25.4		7.030×10^{2}	4.882	13.59	0.1019
Lb./in.² (psi)	14.695595	14.504	1.4504×10^{-5}	0.4912	3.6126×10^{-2}	1.423×10^{-3}		6.944×10^{-3}	1.934×10^{-2}	1.45×10^{-4}
Lb./ft.²	2116.22	2088.5	2.0885×10^{-3}	70.726	5.202	0.204	144		2.7844	2.089×10^{-2}
mm of Hg (torr)	760	750.06	7.5006×10^{-4}	25.4	1.86	7.3558×10^{-2}	51.71	0.3591		7.502×10^{-3}
Pascals	1.01325×10^{5}	1.000×10^{5}	10^{-1}	3.386×10^{3}	2.491×10^{2}	9.8067	6.894×10^{3}	47.88	1.333×10^{2}	

To use the above table, locate the initial measurement along the top of the table, and multiply by the number in the row that corresponds to the final measurement in the left column.

For example: to convert from Atmospheres to Pascals, locate the Atmospheres column at the top of the table and move down to the row that corresponds to Pascals on the left, which says to multiply Atmospheres by 1.01325×10^{5} to obtain the equivalent measurement in Pascals.

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TECHNICAL SPECS

Conversion Factors

Multiply	By	To Get
Atmospheres	14.7	PSI
Barrels of Oil	42	Gallons (U.S.)
Centimeters	0.03281	Feet
Centimeters	0.3937	Inches
Centipoises	0.01	Poises
Centistokes	0.01	Stokes
Cubic centimeters	0.06102	Cubic inches
Cubic centimeters	0.0002642	Gallons (liq.)
Cubic feet	7.4805	Gallons (liq.)
Cubic feet	0.1728	Cubic inches
Cubic feet/minute	7.4805	Gallons per minute
Cubic inches	0.004329	Gallons
Cubic inches	16.387	Cubic cm.
Cubic inches	0.0005787	Cubic feet
Cubic meters	264.17	Gallons (liq.)
Cubic meters	35.31	Cubic feet
Feet	30.48006	Centimeters
Feet	0.3048006	Meters
Feet of water	0.4335	PSI
Feet of water	0.8826	Inches of Hg
Feet/minute	0.01136	Miles per hour
Feet/second	0.681818	Miles per hour
Gallons	3,785.43	Cubic cm.
Gallons	231	Cubic inches
Gallons	0.83268	Gallons (imp.)
Gallons	0.13368	Cubic feet
Gallons/minute	0.13368	Cubic feet/minute

Multiply	By	To Get
Inches	0.0254	Meters
Inches of Hg	1.133	Feet of water
Inches of Hg	0.491	PSI
Kilograms	2.2046	Pounds (avdp.)
Kilograms/sq. cm.	14.2233	PSI
Kilograms/sq. mm	1,422.33	PSI
Liters	0.264178	Gallons
Meters	3.2808	Feet
Poise	1000	Centipoise
Pounds of water	0.11985	Gallons
PSI	2.036	Inches of Hg
PSI	2.31	Feet of water
Square inches	6.5416	Square cm.